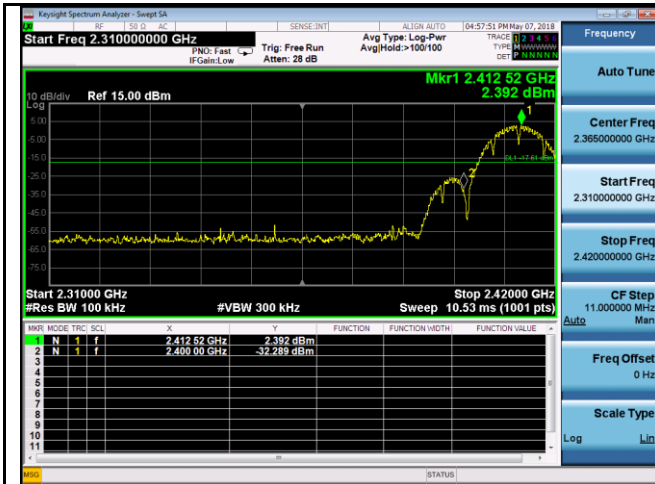


### Test Plots

### Band Edge measurement result

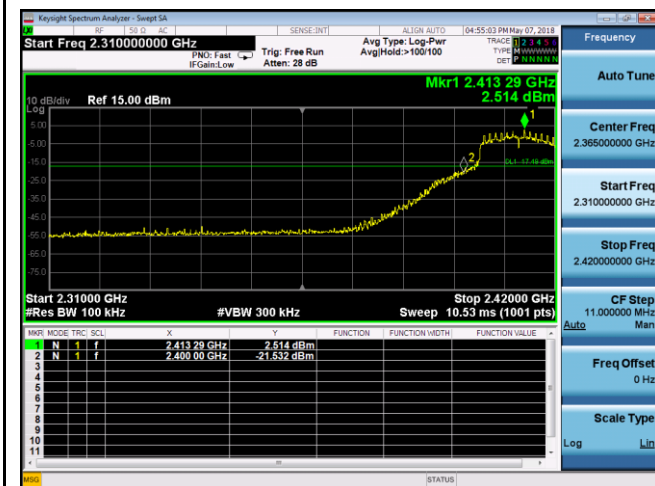
TX 0:



Band Edge, Left Side - 802.11b



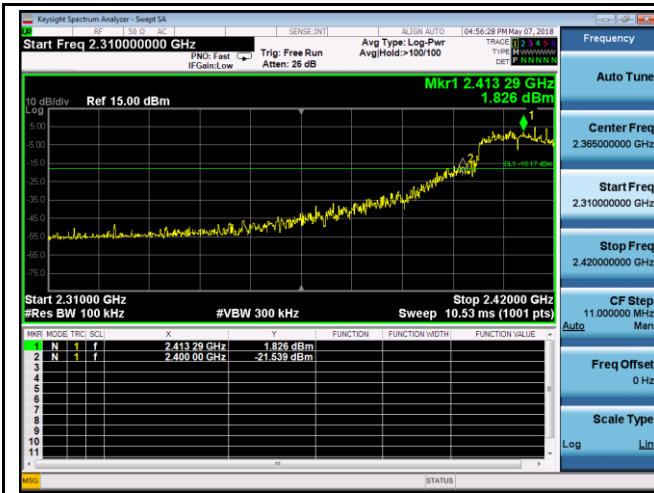
Band Edge, Right Side - 802.11b



Band Edge, Left Side - 802.11g



Band Edge, Right Side - 802.11g



Band Edge, Left Side - 802.11n20



Band Edge, Right Side - 802.11n20



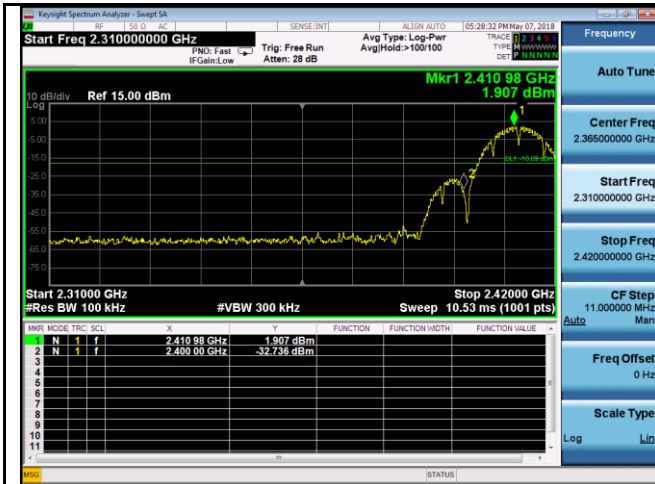
Band Edge, Left Side - 802.11n40



Band Edge, Right Side - 802.11n40

Note: Both Horizontal and vertical polarities were investigated

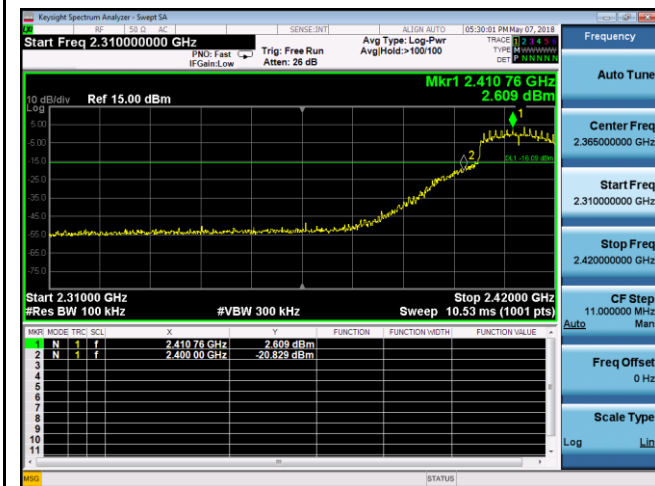
**TX 1:**



Band Edge, Left Side - 802.11b



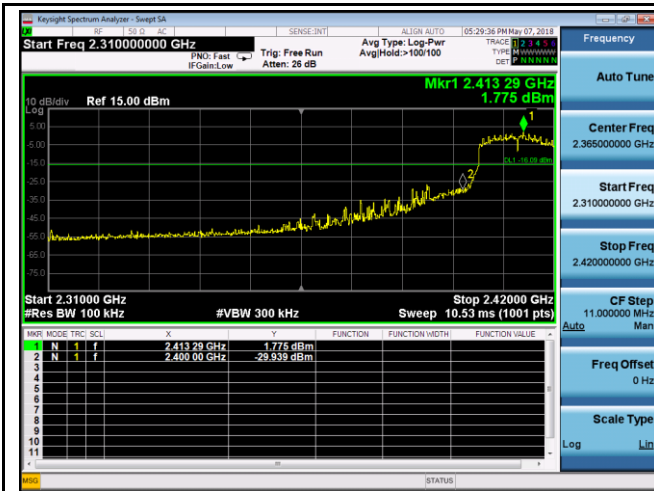
Band Edge, Right Side - 802.11b



Band Edge, Left Side - 802.11g



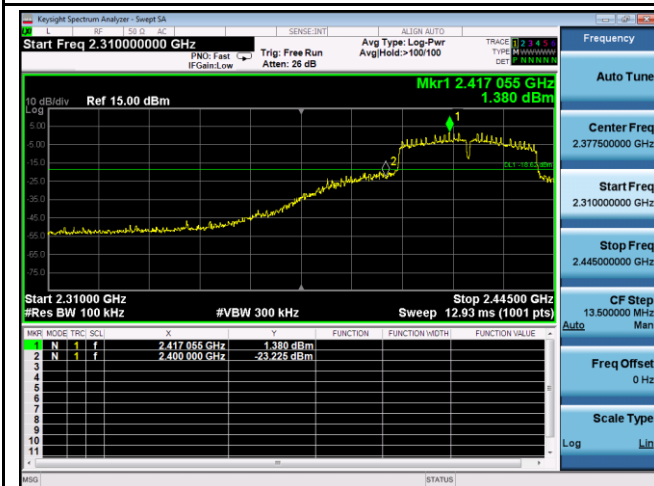
Band Edge, Right Side - 802.11g



Band Edge, Left Side - 802.11n20



Band Edge, Right Side - 802.11n20



Band Edge, Left Side - 802.11n40



Band Edge, Right Side - 802.11n40

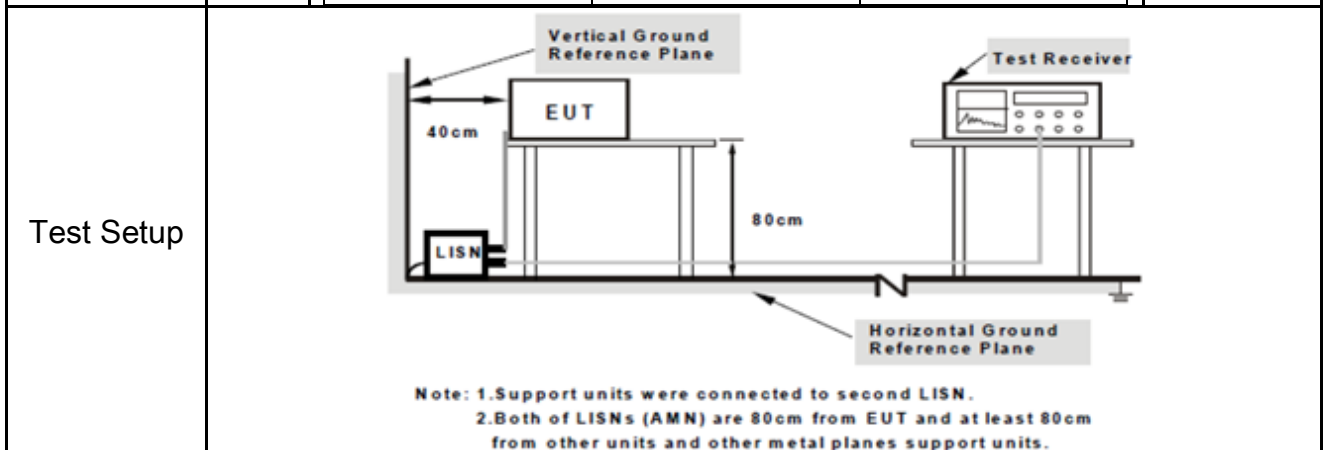
Note: Both Horizontal and vertical polarities were investigated

## 6.6 AC Power Line Conducted Emissions

Temperature	25°C
Relative Humidity	57%
Atmospheric Pressure	1014mbar
Test date :	May 07, 2018
Tested By :	Aaron Liang

### Requirement(s):

Spec	Item	Requirement	Applicable														
47CFR§15.207, RSS210 (A8.1)	a)	For Low-power radio-frequency devices that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 [mu] H/50 ohms line impedance stabilization network (LISN). The lower limit applies at the boundary between the frequencies ranges.	<input checked="" type="checkbox"/>														
		<table border="1"> <thead> <tr> <th rowspan="2">Frequency ranges (MHz)</th> <th colspan="2">Limit (dBµV)</th> </tr> <tr> <th>QP</th> <th>Average</th> </tr> </thead> <tbody> <tr> <td>0.15 ~ 0.5</td> <td>66 – 56</td> <td>56 – 46</td> </tr> <tr> <td>0.5 ~ 5</td> <td>56</td> <td>46</td> </tr> <tr> <td>5 ~ 30</td> <td>60</td> <td>50</td> </tr> </tbody> </table>		Frequency ranges (MHz)	Limit (dBµV)		QP	Average	0.15 ~ 0.5	66 – 56	56 – 46	0.5 ~ 5	56	46	5 ~ 30	60	50
		Frequency ranges (MHz)			Limit (dBµV)												
				QP	Average												
0.15 ~ 0.5	66 – 56	56 – 46															
0.5 ~ 5	56	46															
5 ~ 30	60	50															



Procedure	<ol style="list-style-type: none"> <li>The EUT and supporting equipment were set up in accordance with the requirements of the standard on top of a 1.5m x 1m x 0.8m high, non-metallic table.</li> <li>The power supply for the EUT was fed through a 50W/50mH EUT LISN, connected to filtered mains.</li> <li>The RF OUT of the EUT LISN was connected to the EMI test receiver via a low-loss</li> </ol>
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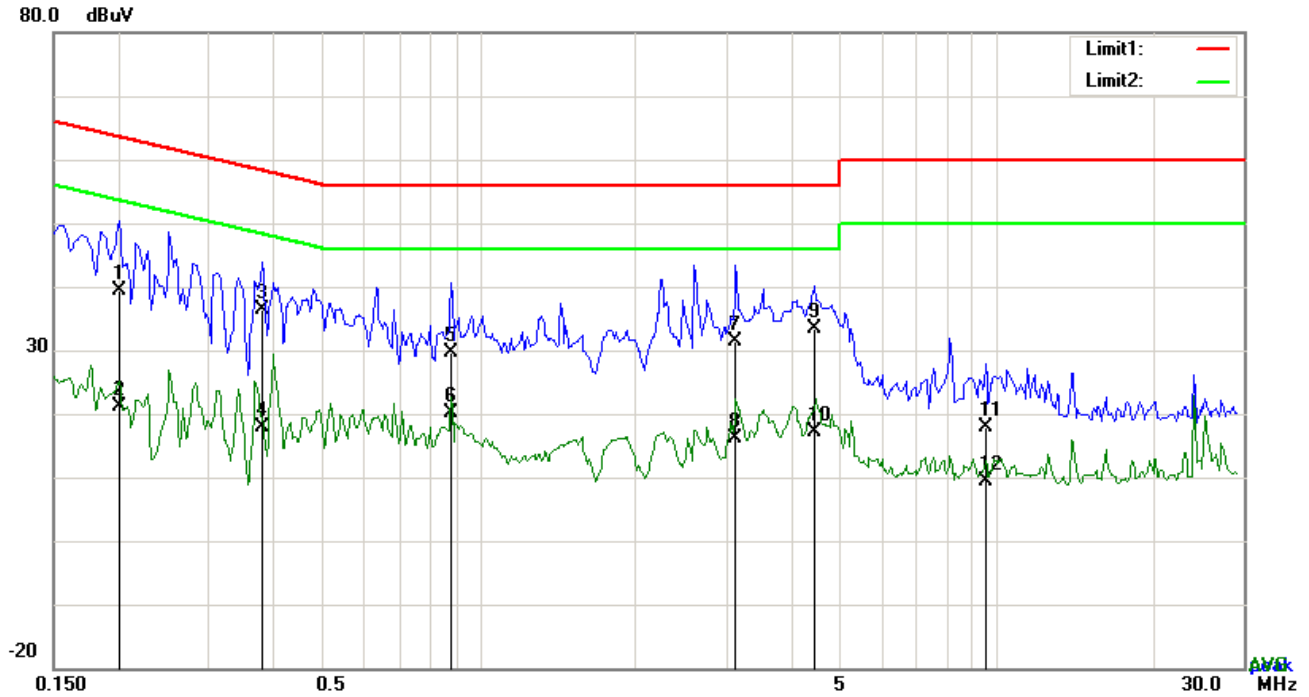
	<p>coaxial cable.</p> <ol style="list-style-type: none"> <li>4. All other supporting equipment were powered separately from another main supply.</li> <li>5. The EUT was switched on and allowed to warm up to its normal operating condition.</li> <li>6. A scan was made on the NEUTRAL line (for AC mains) or Earth line (for DC power) over the required frequency range using an EMI test receiver.</li> <li>7. High peaks, relative to the limit line, The EMI test receiver was then tuned to the selected frequencies and the necessary measurements made with a receiver bandwidth setting of 10 kHz.</li> <li>8. Step 7 was then repeated for the LIVE line (for AC mains) or DC line (for DC power).</li> </ol>
Remark	Transformer model: EPC13 test data
Result	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail

Test Data  Yes  N/A

Test Plot  Yes (See below)  N/A

TX 0:

<b>Test Mode:</b>	<b>Transmitting Mode</b>
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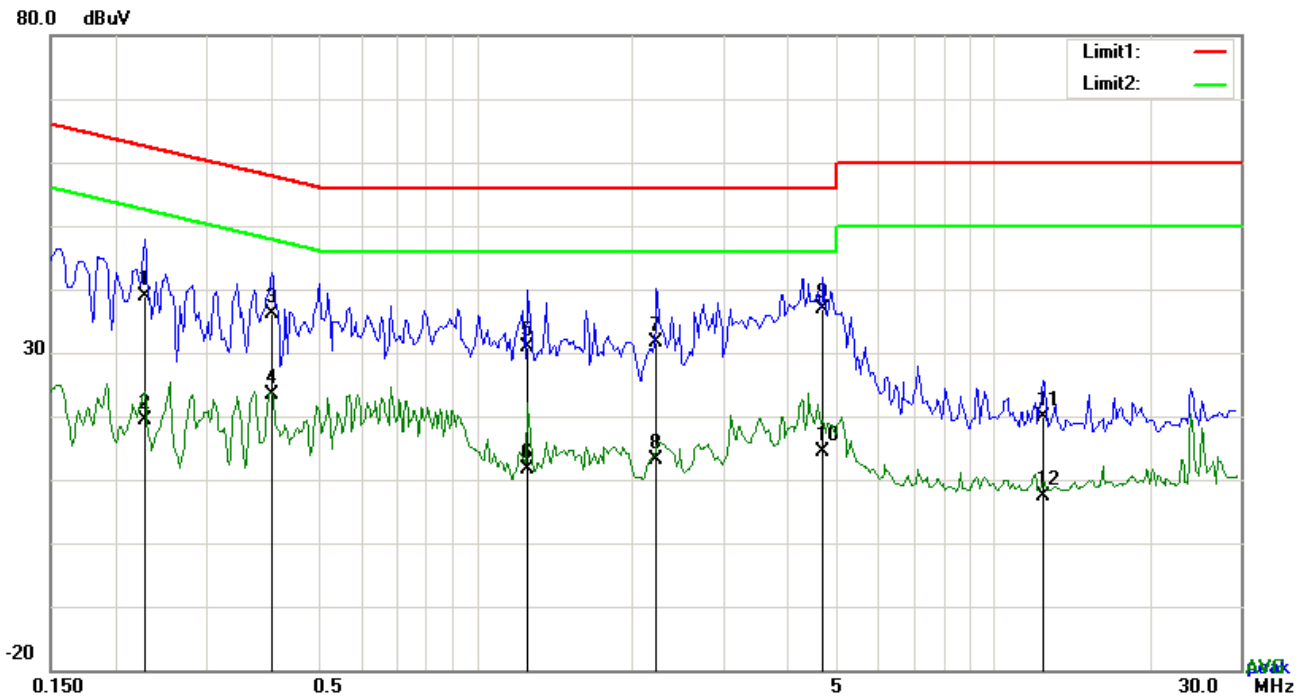


*Test Data*

**Phase Line Plot at 120Vac, 60Hz**

No.	P/L	Frequency (MHz)	Reading (dBμV)	Detector	Corrected (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)
1	L1	0.2007	29.38	QP	10.03	39.41	63.58	-24.17
2	L1	0.2007	11.19	AVG	10.03	21.22	53.58	-32.36
3	L1	0.3801	26.26	QP	10.03	36.29	58.28	-21.99
4	L1	0.3801	7.73	AVG	10.03	17.76	48.28	-30.52
5	L1	0.8832	19.60	QP	10.03	29.63	56.00	-26.37
6	L1	0.8832	10.15	AVG	10.03	20.18	46.00	-25.82
7	L1	3.1287	21.28	QP	10.06	31.34	56.00	-24.66
8	L1	3.1287	6.16	AVG	10.06	16.22	46.00	-29.78
9	L1	4.4469	23.33	QP	10.07	33.40	56.00	-22.60
10	L1	4.4469	7.03	AVG	10.07	17.10	46.00	-28.90
11	L1	9.5091	7.83	QP	10.14	17.97	60.00	-42.03
12	L1	9.5091	-0.81	AVG	10.14	9.33	50.00	-40.67

<b>Test Mode:</b>	<b>Transmitting Mode</b>
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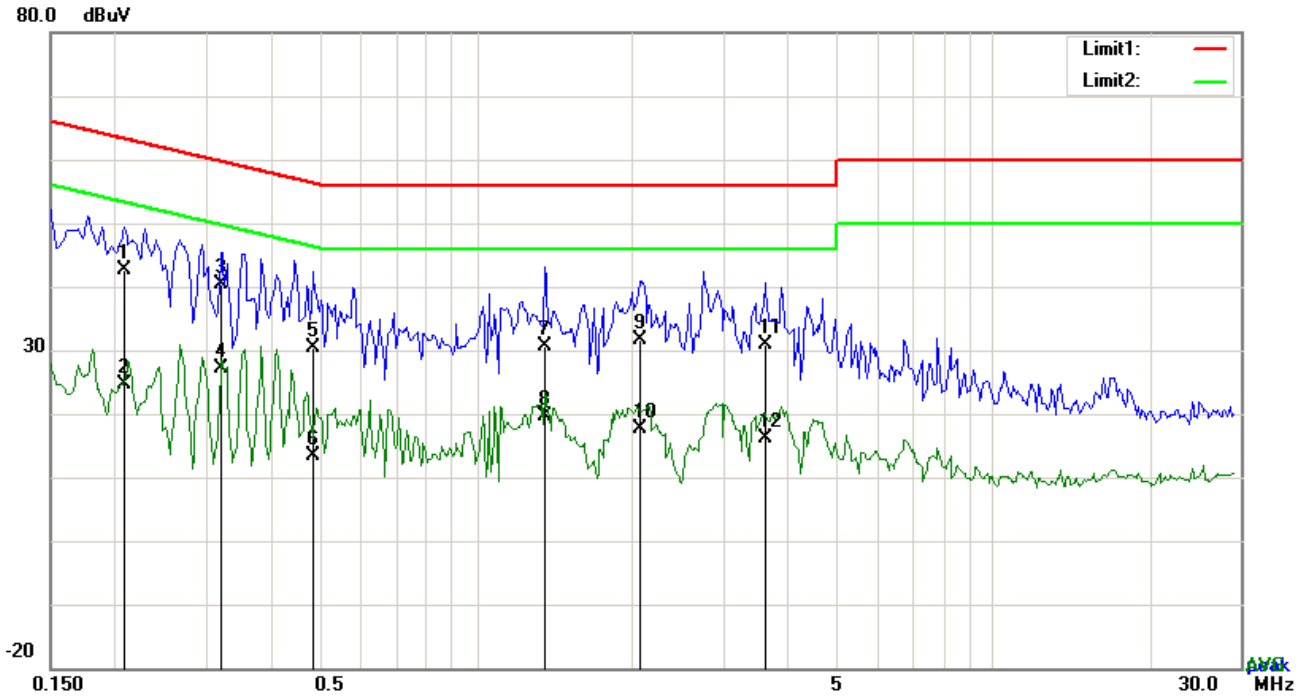
**Test Data**

**Phase Neutral Plot at 120Vac, 60Hz**

No.	P/L	Frequency (MHz)	Reading (dBμV)	Detector	Corrected (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)
1	N	0.2280	28.93	QP	10.02	38.95	62.52	-23.57
2	N	0.2280	9.39	AVG	10.02	19.41	52.52	-33.11
3	N	0.4035	26.11	QP	10.02	36.13	57.78	-21.65
4	N	0.4035	13.26	AVG	10.02	23.28	47.78	-24.50
5	N	1.2537	20.95	QP	10.03	30.98	56.00	-25.02
6	N	1.2537	1.66	AVG	10.03	11.69	46.00	-34.31
7	N	2.2326	21.62	QP	10.04	31.66	56.00	-24.34
8	N	2.2326	3.14	AVG	10.04	13.18	46.00	-32.82
9	N	4.6770	26.69	QP	10.07	36.76	56.00	-19.24
10	N	4.6770	4.22	AVG	10.07	14.29	46.00	-31.71
11	N	12.5121	9.76	QP	10.17	19.93	60.00	-40.07
12	N	12.5121	-2.76	AVG	10.17	7.41	50.00	-42.59



<b>Test Mode:</b>	<b>Transmitting Mode</b>
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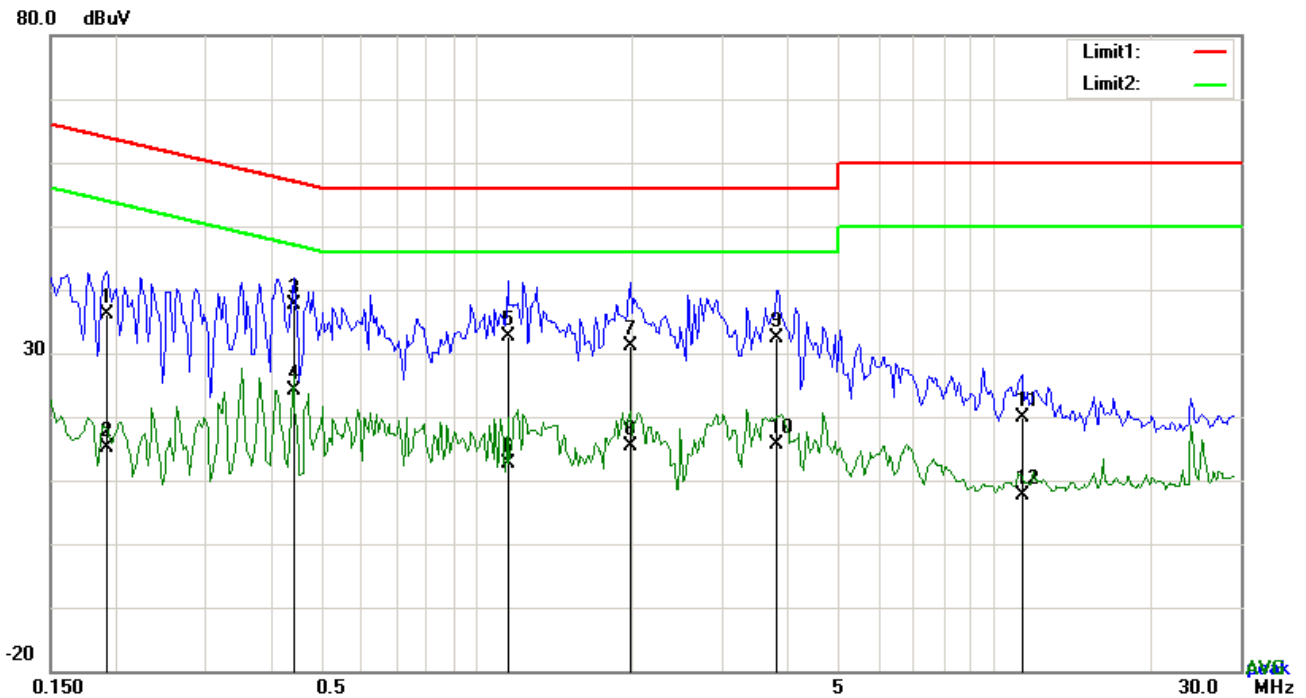


**Test Data**

**Phase Line Plot at 240Vac, 60Hz**

No.	P/L	Frequency (MHz)	Reading (dBμV)	Detector	Corrected (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)
1	L1	0.2085	32.48	QP	10.03	42.51	63.26	-20.75
2	L1	0.2085	14.58	AVG	10.03	24.61	53.26	-28.65
3	L1	0.3216	30.37	QP	10.03	40.40	59.67	-19.27
4	L1	0.3216	17.02	AVG	10.03	27.05	49.67	-22.62
5	L1	0.4815	20.30	QP	10.03	30.33	56.31	-25.98
6	L1	0.4815	3.24	AVG	10.03	13.27	46.31	-33.04
7	L1	1.3551	20.59	QP	10.03	30.62	56.00	-25.38
8	L1	1.3551	9.59	AVG	10.03	19.62	46.00	-26.38
9	L1	2.0727	21.48	QP	10.04	31.52	56.00	-24.48
10	L1	2.0727	7.62	AVG	10.04	17.66	46.00	-28.34
11	L1	3.6045	20.71	QP	10.06	30.77	56.00	-25.23
12	L1	3.6045	6.07	AVG	10.06	16.13	46.00	-29.87

<b>Test Mode:</b>	<b>Transmitting Mode</b>
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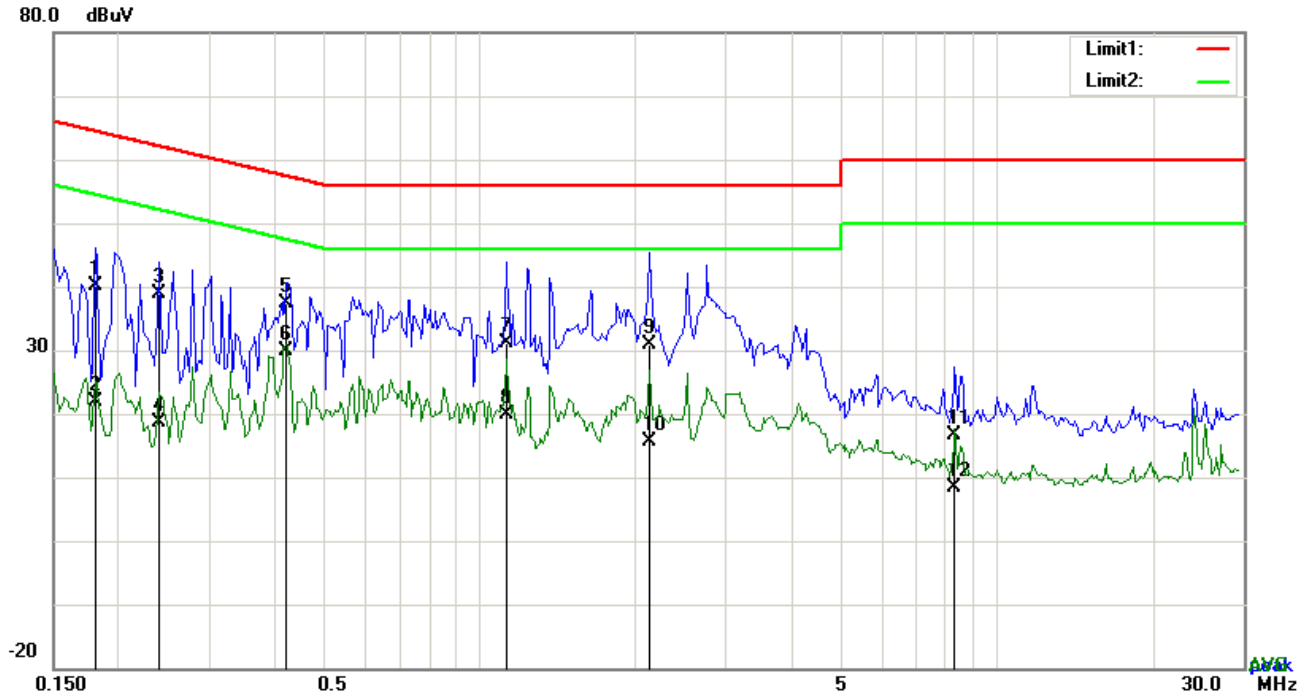
**Test Data**

**Phase Neutral Plot at 240Vac, 60Hz**

No.	P/L	Frequency (MHz)	Reading (dBμV)	Detector	Corrected (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)
1	N	0.1929	26.10	QP	10.02	36.12	63.91	-27.79
2	N	0.1929	5.09	AVG	10.02	15.11	53.91	-38.80
3	N	0.4425	27.50	QP	10.02	37.52	57.01	-19.49
4	N	0.4425	14.12	AVG	10.02	24.14	47.01	-22.87
5	N	1.1523	22.59	QP	10.03	32.62	56.00	-23.38
6	N	1.1523	2.60	AVG	10.03	12.63	46.00	-33.37
7	N	1.9830	21.04	QP	10.04	31.08	56.00	-24.92
8	N	1.9830	5.31	AVG	10.04	15.35	46.00	-30.65
9	N	3.8190	22.24	QP	10.06	32.30	56.00	-23.70
10	N	3.8190	5.55	AVG	10.06	15.61	46.00	-30.39
11	N	11.3460	9.72	QP	10.16	19.88	60.00	-40.12
12	N	11.3460	-2.49	AVG	10.16	7.67	50.00	-42.33

TX 1:

<b>Test Mode:</b>	<b>Transmitting Mode</b>
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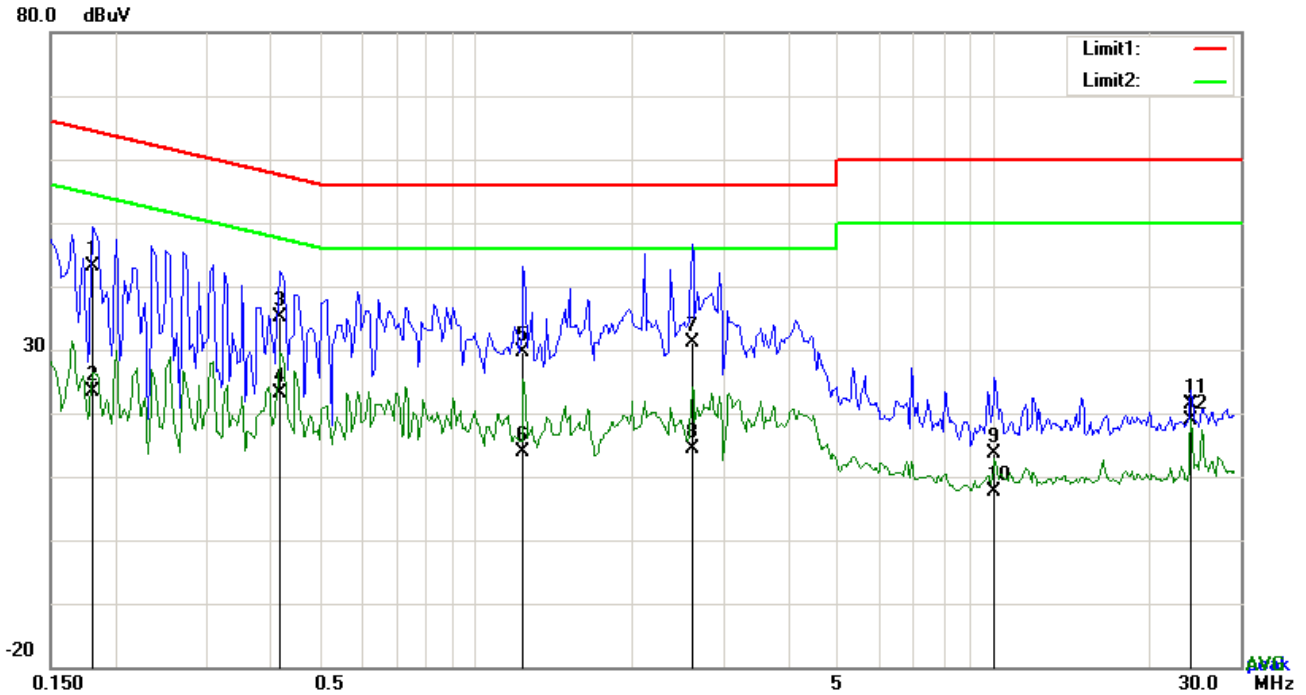


*Test Data*

**Phase Line Plot at 120Vac, 60Hz**

No.	P/L	Frequency (MHz)	Reading (dBμV)	Detector	Corrected (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)
1	L1	0.1812	30.15	QP	10.03	40.18	64.43	-24.25
2	L1	0.1812	11.95	AVG	10.03	21.98	54.43	-32.45
3	L1	0.2397	28.93	QP	10.03	38.96	62.11	-23.15
4	L1	0.2397	8.51	AVG	10.03	18.54	52.11	-33.57
5	L1	0.4230	27.29	QP	10.03	37.32	57.39	-20.07
6	L1	0.4230	19.88	AVG	10.03	29.91	47.39	-17.48
7	L1	1.1250	21.03	QP	10.03	31.06	56.00	-24.94
8	L1	1.1250	9.93	AVG	10.03	19.96	46.00	-26.04
9	L1	2.1312	20.93	QP	10.04	30.97	56.00	-25.03
10	L1	2.1312	5.58	AVG	10.04	15.62	46.00	-30.38
11	L1	8.2962	6.61	QP	10.13	16.74	60.00	-43.26
12	L1	8.2962	-1.80	AVG	10.13	8.33	50.00	-41.67

<b>Test Mode:</b>	<b>Transmitting Mode</b>
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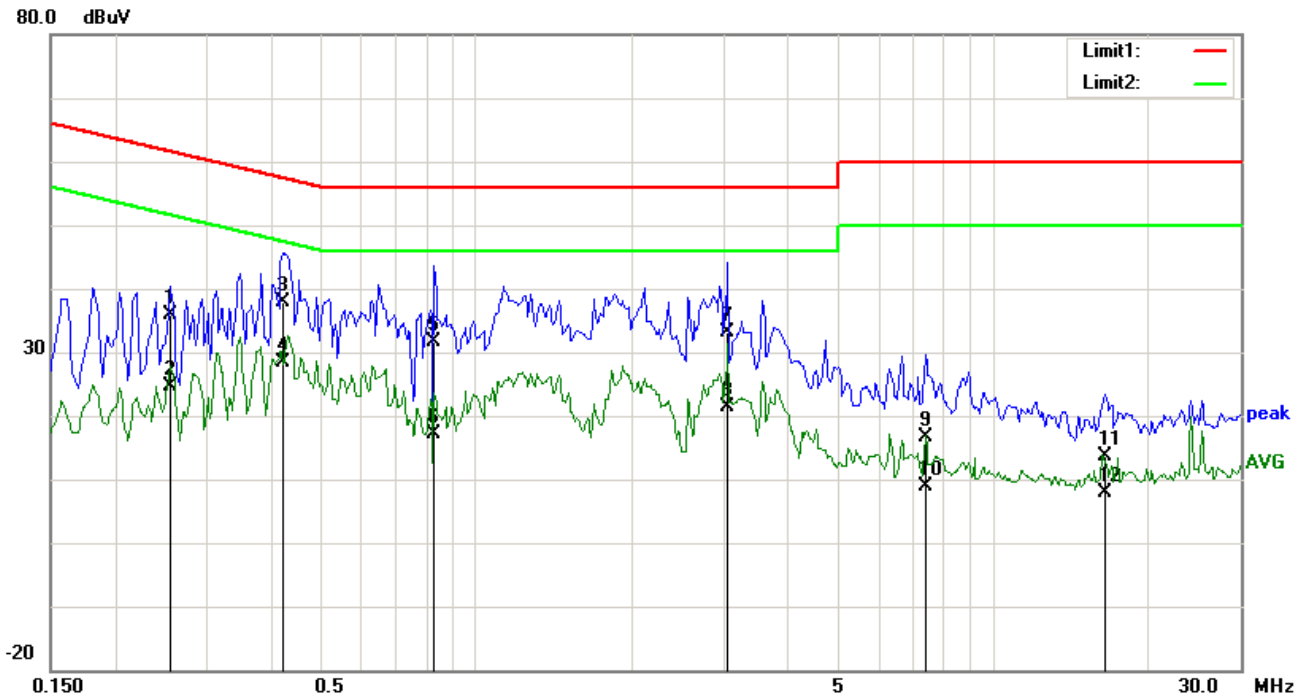


**Test Data**

**Phase Neutral Plot at 120Vac, 60Hz**

No.	P/L	Frequency (MHz)	Reading (dBμV)	Detector	Corrected (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)
1	N	0.1812	33.15	QP	10.02	43.17	64.43	-21.26
2	N	0.1812	13.43	AVG	10.02	23.45	54.43	-30.98
3	N	0.4152	24.99	QP	10.02	35.01	57.54	-22.53
4	N	0.4152	13.23	AVG	10.02	23.25	47.54	-24.29
5	N	1.2342	19.48	QP	10.03	29.51	56.00	-26.49
6	N	1.2342	3.86	AVG	10.03	13.89	46.00	-32.11
7	N	2.6187	21.05	QP	10.05	31.10	56.00	-24.90
8	N	2.6187	4.26	AVG	10.05	14.31	46.00	-31.69
9	N	10.0590	3.41	QP	10.14	13.55	60.00	-46.45
10	N	10.0590	-2.52	AVG	10.14	7.62	50.00	-42.38
11	N	24.0249	11.00	QP	10.32	21.32	60.00	-38.68
12	N	24.0249	8.58	AVG	10.32	18.90	50.00	-31.10

<b>Test Mode:</b>	<b>Transmitting Mode</b>
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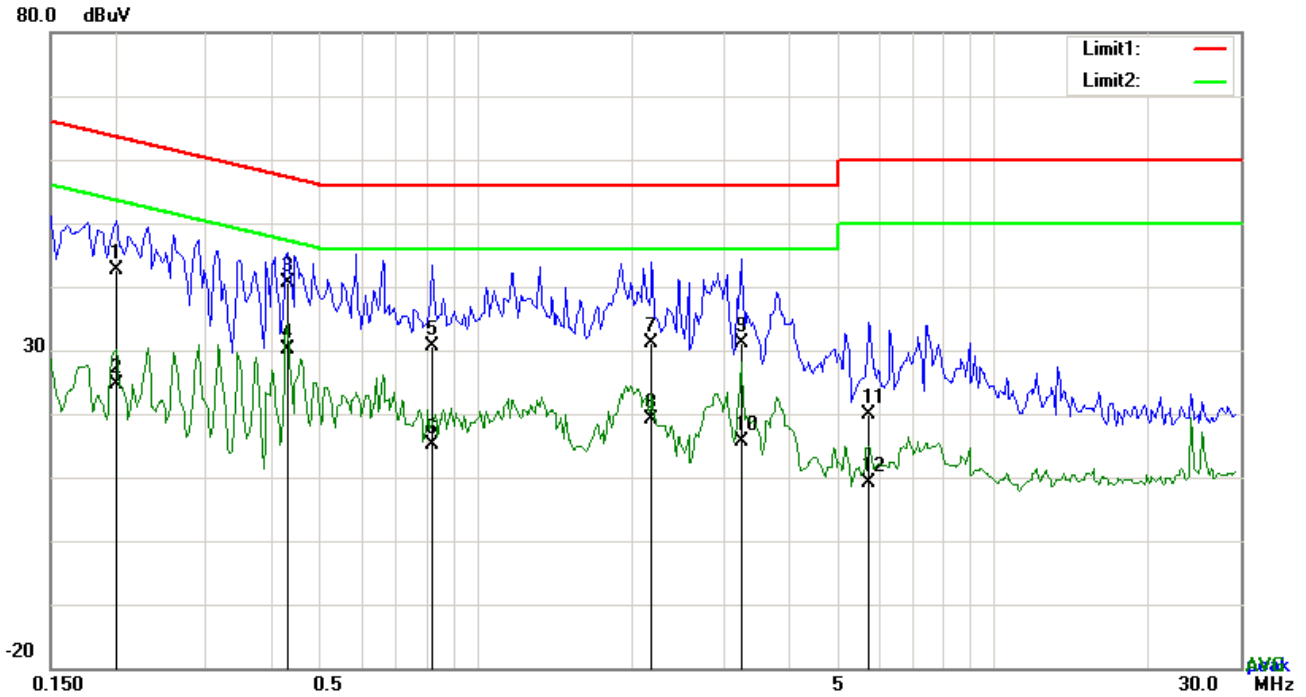


**Test Data**

**Phase Line Plot at 240Vac, 60Hz**

No.	P/L	Frequency (MHz)	Reading (dBμV)	Detector	Corrected (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)
1	L1	0.2553	25.88	QP	10.03	35.91	61.58	-25.67
2	L1	0.2553	14.57	AVG	10.03	24.60	51.58	-26.98
3	L1	0.4230	27.82	QP	10.03	37.85	57.39	-19.54
4	L1	0.4230	18.42	AVG	10.03	28.45	47.39	-18.94
5	L1	0.8286	21.59	QP	10.03	31.62	56.00	-24.38
6	L1	0.8286	7.20	AVG	10.03	17.23	46.00	-28.77
7	L1	3.0663	23.00	QP	10.06	33.06	56.00	-22.94
8	L1	3.0663	11.37	AVG	10.06	21.43	46.00	-24.57
9	L1	7.3719	6.43	QP	10.11	16.54	60.00	-43.46
10	L1	7.3719	-1.30	AVG	10.11	8.81	50.00	-41.19
11	L1	16.4277	3.42	QP	10.25	13.67	60.00	-46.33
12	L1	16.4277	-2.29	AVG	10.25	7.96	50.00	-42.04

<b>Test Mode:</b>	<b>Transmitting Mode</b>
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**Test Data**

**Phase Neutral Plot at 240Vac, 60Hz**

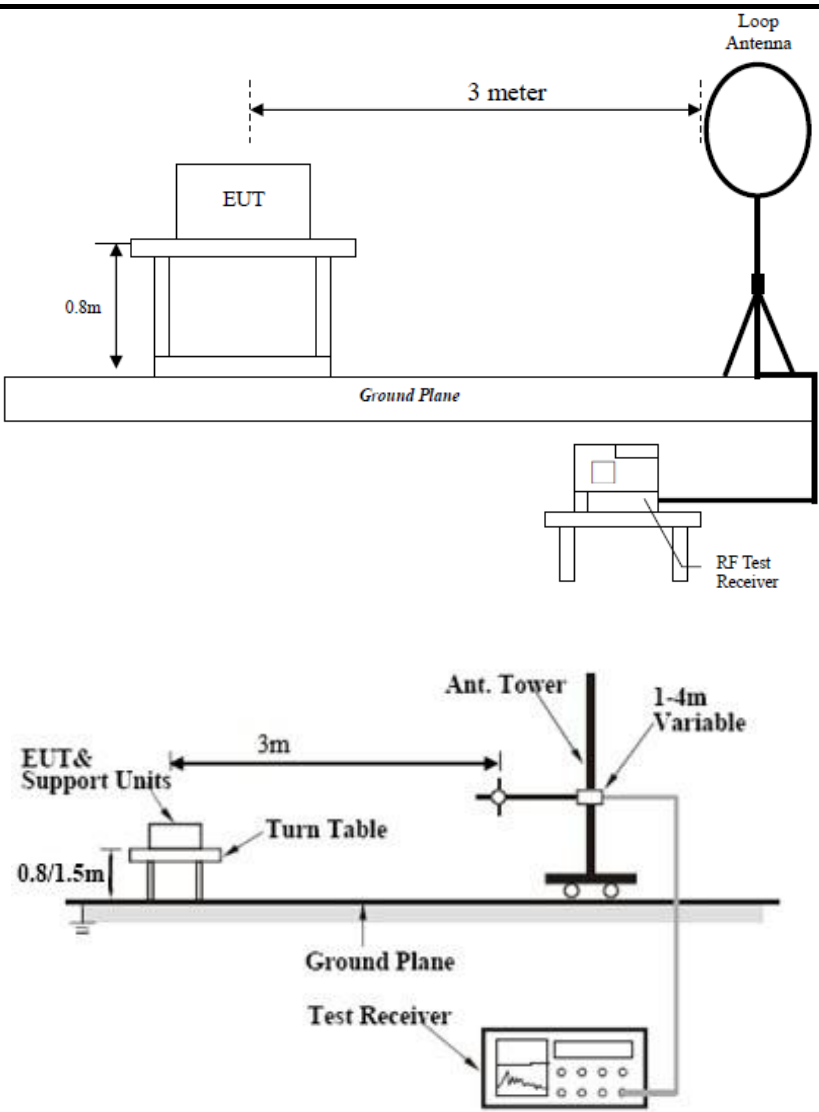
No.	P/L	Frequency (MHz)	Reading (dBμV)	Detector	Corrected (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)
1	N	0.2007	32.51	QP	10.02	42.53	63.58	-21.05
2	N	0.2007	14.52	AVG	10.02	24.54	53.58	-29.04
3	N	0.4308	30.65	QP	10.02	40.67	57.24	-16.57
4	N	0.4308	20.04	AVG	10.02	30.06	47.24	-17.18
5	N	0.8208	20.50	QP	10.03	30.53	56.00	-25.47
6	N	0.8208	5.19	AVG	10.03	15.22	46.00	-30.78
7	N	2.1819	21.10	QP	10.04	31.14	56.00	-24.86
8	N	2.1819	9.02	AVG	10.04	19.06	46.00	-26.94
9	N	3.2457	21.01	QP	10.05	31.06	56.00	-24.94
10	N	3.2457	5.67	AVG	10.05	15.72	46.00	-30.28
11	N	5.7339	9.71	QP	10.08	19.79	60.00	-40.21
12	N	5.7339	-1.01	AVG	10.08	9.07	50.00	-40.93

## 6.7 Radiated Spurious Emissions & Restricted Band

Temperature	25°C
Relative Humidity	57%
Atmospheric Pressure	1014mbar
Test date :	May 07, 2018
Tested By :	Aaron Liang

### Requirement(s):

Spec	Item	Requirement	Applicable																
47CFR§15.247(d), RSS210 (A8.5)	a)	<p>Except higher limit as specified elsewhere in other section, the emissions from the low-power radio-frequency devices shall not exceed the field strength levels specified in the following table and the level of any unwanted emissions shall not exceed the level of the fundamental emission. The tighter limit applies at the band edges</p> <table border="1"> <thead> <tr> <th>Frequency range (MHz)</th> <th>Field Strength (µV/m)</th> </tr> </thead> <tbody> <tr> <td>0.009~0.490</td> <td>2400/F(KHz)</td> </tr> <tr> <td>0.490~1.705</td> <td>24000/F(KHz)</td> </tr> <tr> <td>1.705~30.0</td> <td>30</td> </tr> <tr> <td>30 – 88</td> <td>100</td> </tr> <tr> <td>88 – 216</td> <td>150</td> </tr> <tr> <td>216 960</td> <td>200</td> </tr> <tr> <td>Above 960</td> <td>500</td> </tr> </tbody> </table>	Frequency range (MHz)	Field Strength (µV/m)	0.009~0.490	2400/F(KHz)	0.490~1.705	24000/F(KHz)	1.705~30.0	30	30 – 88	100	88 – 216	150	216 960	200	Above 960	500	<input checked="" type="checkbox"/>
	Frequency range (MHz)	Field Strength (µV/m)																	
	0.009~0.490	2400/F(KHz)																	
0.490~1.705	24000/F(KHz)																		
1.705~30.0	30																		
30 – 88	100																		
88 – 216	150																		
216 960	200																		
Above 960	500																		
b)	<p>For non-restricted band, In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB or 30dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, determined by the measurement method on output power to be used. Attenuation below the general limits specified in § 15.209(a) is not required</p> <p><input checked="" type="checkbox"/> 20 dB down      <input type="checkbox"/> 30 dB down</p>	<input checked="" type="checkbox"/>																	
c)	<p>or restricted band, emission must also comply with the radiated emission limits specified in 15.209</p>	<input checked="" type="checkbox"/>																	

<p>Test Setup</p>	
<p>Procedure</p>	<ol style="list-style-type: none"> <li>1. The EUT was switched on and allowed to warm up to its normal operating condition.</li> <li>2. The test was carried out at the selected frequency points obtained from the EUT characterization. Maximization of the emissions, was carried out by rotating the EUT, changing the antenna polarization, and adjusting the antenna height in the following manner:             <ol style="list-style-type: none"> <li>a. Vertical or horizontal polarization (whichever gave the higher emission level over a full rotation of the EUT) was chosen.</li> <li>b. The EUT was then rotated to the direction that gave the maximum emission.</li> <li>c. Finally, the antenna height was adjusted to the height that gave the maximum emission.</li> </ol> </li> <li>3. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasiy Peak detection at frequency below 1GHz.</li> <li>4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz with Peak detection for Peak measurement at frequency above 1GHz.</li> </ol>



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	<p>The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz with Peak detection for Average Measurement as below at frequency above 1GHz.</p> <p>5. Steps 2 and 3 were repeated for the next frequency point, until all selected frequency points were measured.</p>
Remark	Transformer model: EPC13 test data
Result	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail

Test Data  Yes  N/A

Test Plot  Yes (See below)  N/A

**Test Result:**

<b>Test Mode:</b>	Transmitting Mode
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Frequency range: 9KHz - 30MHz

Freq. (MHz)	Detection value	Factor (dB/m)	Reading (dBuV/m)	Result (dBuV/m)	Limit@3m (dBuV/m)	Margin (dB)
--	--	--	--	--	--	>20
--	--	--	--	--	--	>20

**Note:**

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Distance extrapolation factor =  $40 \log (\text{specific distance}/\text{test distance})$ (dB);

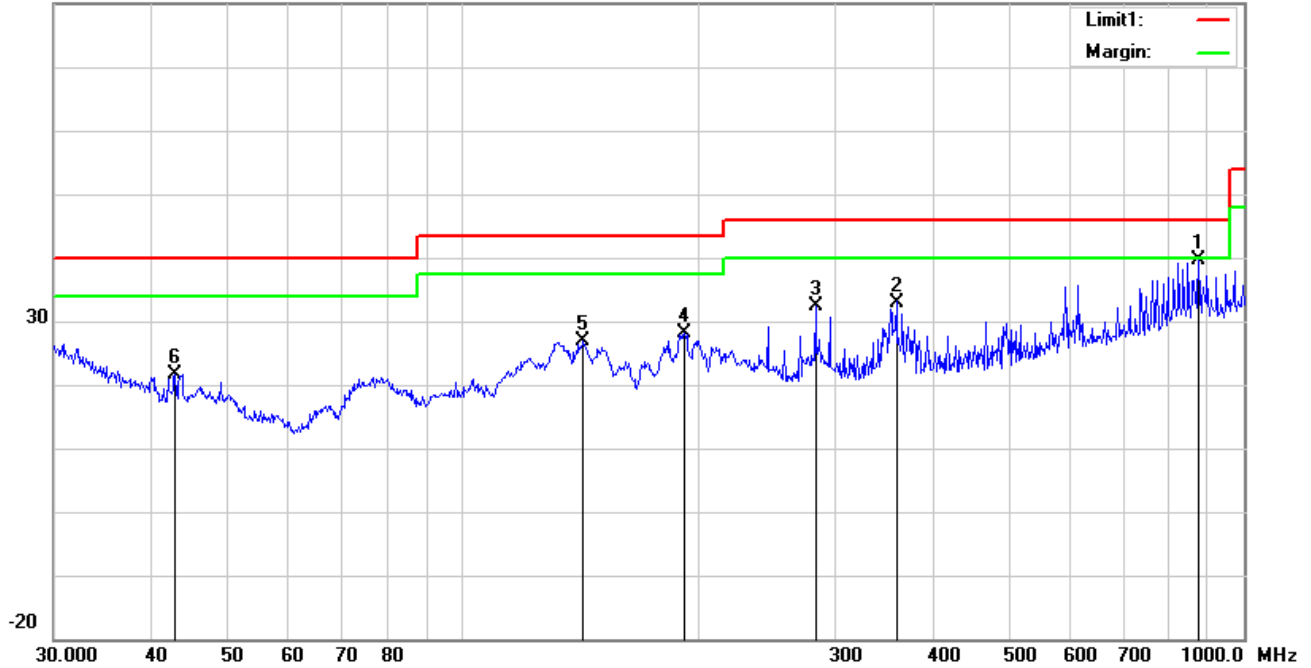
Limit line = specific limits(dBuv) + distance extrapolation factor.

TX 0:

<b>Test Mode:</b>	<b>Transmitting Mode</b>
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30MHz -1GHz

80.0 dBuV/m



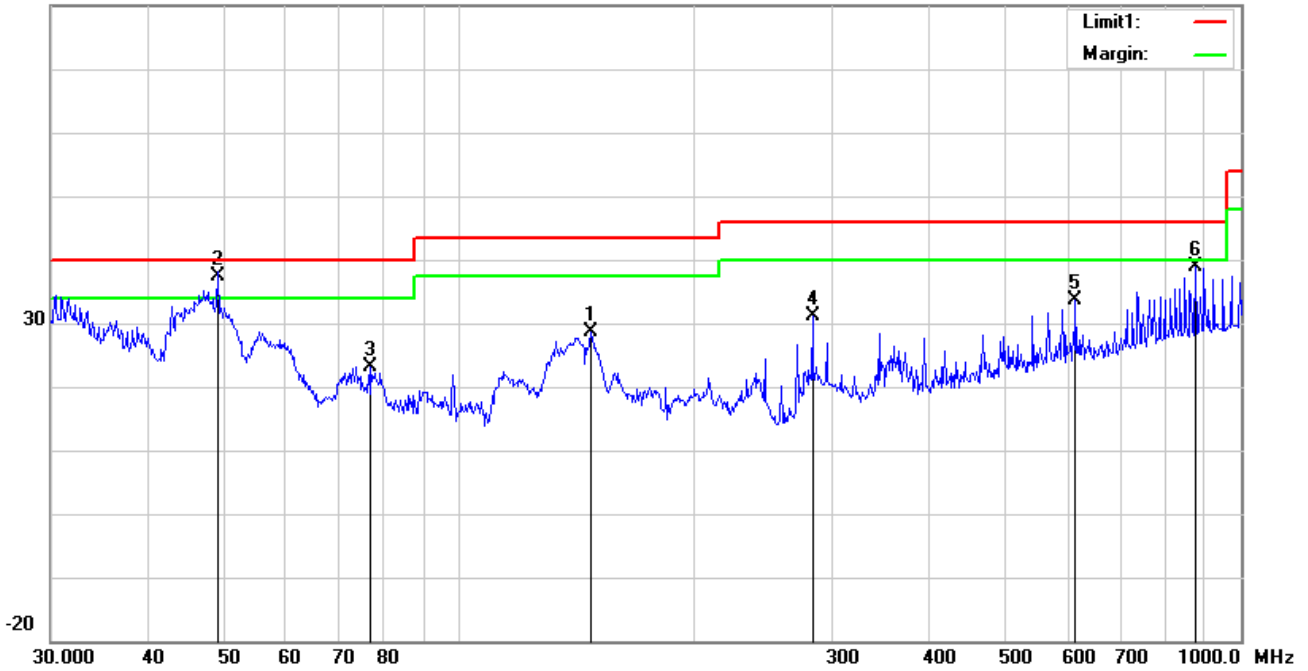
*Test Data*

Vertical Polarity Plot @3m

No.	P/L	Frequency (MHz)	Reading (dBuV/m)	Detector	Ant_F (dB/m)	PA_G (dB)	Cab_L (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	H	875.2470	35.45	peak	22.23	20.95	2.97	39.70	46.00	-6.30
2	H	359.1860	38.25	peak	14.84	22.12	2.03	33.00	46.00	-13.00
3	H	282.9852	40.13	peak	12.85	22.29	1.76	32.45	46.00	-13.55
4	H	192.4186	37.17	peak	11.68	22.33	1.54	28.06	43.50	-15.44
5	H	142.8244	35.45	peak	12.60	22.39	1.29	26.95	43.50	-16.55
6	H	42.8998	31.08	peak	11.99	22.29	0.77	21.55	40.00	-18.45

### 30MHz -1GHz

80.0 dBuV/m



### Test Data

#### Horizontal Polarity Plot @3m

No	P/L	Frequency	Reading	Detector	Ant_F	PA_G	Cab_L	Result	Limit	Margin
		(MHz)	(dBuV/m)		(dB/m)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
1	V	147.4036	37.17	peak	12.60	22.36	1.32	28.73	43.50	-14.77
2	V	49.0145	50.24	QP	8.83	22.36	0.79	37.50	40.00	-2.50
3	V	77.0505	36.79	peak	7.66	22.41	1.00	23.04	40.00	-16.96
4	V	282.9852	38.72	peak	12.85	22.29	1.76	31.04	46.00	-14.96
5	V	614.2142	33.40	peak	19.26	21.55	2.53	33.64	46.00	-12.36
6	V	875.2470	34.55	peak	22.23	20.95	2.97	38.80	46.00	-7.20

### Above 1GHz

<b>Test Mode:</b>	<b>Transmitting Mode</b>
-------------------	--------------------------

Frequency	Meter Reading	Antenna Factor	Cable loss	Preamp factor	Emission Level	Limits	Margin	Detector	Polarity
(MHz)	(dBμV)	(dB)	(dB)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	(PK/AV)	(H/V)
Low Channel:802.11b(Worst Case)-2412MHz									
2390	41.59	28.72	3.36	26.32	47.35	74.00	-26.65	peak	Vertical
4824	31.41	32.94	3.98	27.49	40.84	54.00	-13.16	Average	Vertical
4824	41.29	32.94	3.98	27.49	50.72	74.00	-23.28	peak	Vertical
7240	31.66	25.28	5.51	27.94	34.51	54.00	-19.49	Average	Vertical
7240	42.23	25.28	5.51	27.94	45.08	74.00	-28.92	peak	Vertical
2390	41.24	28.72	3.36	26.32	47.00	74.00	-27.00	peak	Horizontal
4824	31.28	32.94	3.98	27.49	40.71	54.00	-13.29	Average	Horizontal
4824	42.32	32.94	3.98	27.49	51.75	74.00	-22.25	peak	Horizontal
7240	31.78	25.28	5.51	27.94	34.63	54.00	-19.37	Average	Horizontal
7240	41.27	25.28	5.51	27.94	44.12	74.00	-29.88	peak	Horizontal
Middle Channel:802.11b(Worst Case)-2437MHz									
4876	31.54	32.11	4.04	27.53	40.16	54.00	-13.84	Average	Vertical
4876	41.50	32.11	4.04	27.53	50.12	74.00	-23.88	peak	Vertical
7311	31.25	24.33	5.58	27.96	33.20	54.00	-20.80	Average	Vertical
7311	41.47	24.33	5.58	27.96	43.42	74.00	-30.58	peak	Vertical
4876	31.65	32.11	4.04	27.53	40.27	54.00	-13.73	Average	Horizontal
4876	41.80	32.11	4.04	27.53	50.42	74.00	-23.58	peak	Horizontal
7311	31.32	24.33	5.58	27.96	33.27	54.00	-20.73	Average	Horizontal
7311	41.19	24.33	5.58	27.96	43.14	74.00	-30.86	peak	Horizontal
High Channel:802.11b(Worst Case)-2462MHz									
2483.2	41.53	28.79	3.48	26.34	47.46	74.00	-26.54	peak	Vertical
4924	31.92	31.32	4.12	27.58	39.78	54.00	-14.22	Average	Vertical
4924	41.12	31.32	4.12	27.58	48.98	74.00	-25.02	peak	Vertical
7386	31.70	24.38	5.68	27.99	33.77	54.00	-20.23	Average	Vertical
7386	41.56	24.38	5.68	27.99	43.63	74.00	-30.37	peak	Vertical
2483.2	41.23	28.79	3.48	26.34	47.16	74.00	-26.84	peak	Horizontal
4924	31.23	31.32	4.12	27.58	39.09	54.00	-14.91	Average	Horizontal
4924	42.70	31.32	4.12	27.58	50.56	74.00	-23.44	peak	Horizontal
7386	31.12	24.38	5.68	27.99	33.19	54.00	-20.81	Average	Horizontal
7386	41.99	24.38	5.68	27.99	44.06	74.00	-29.94	peak	Horizontal

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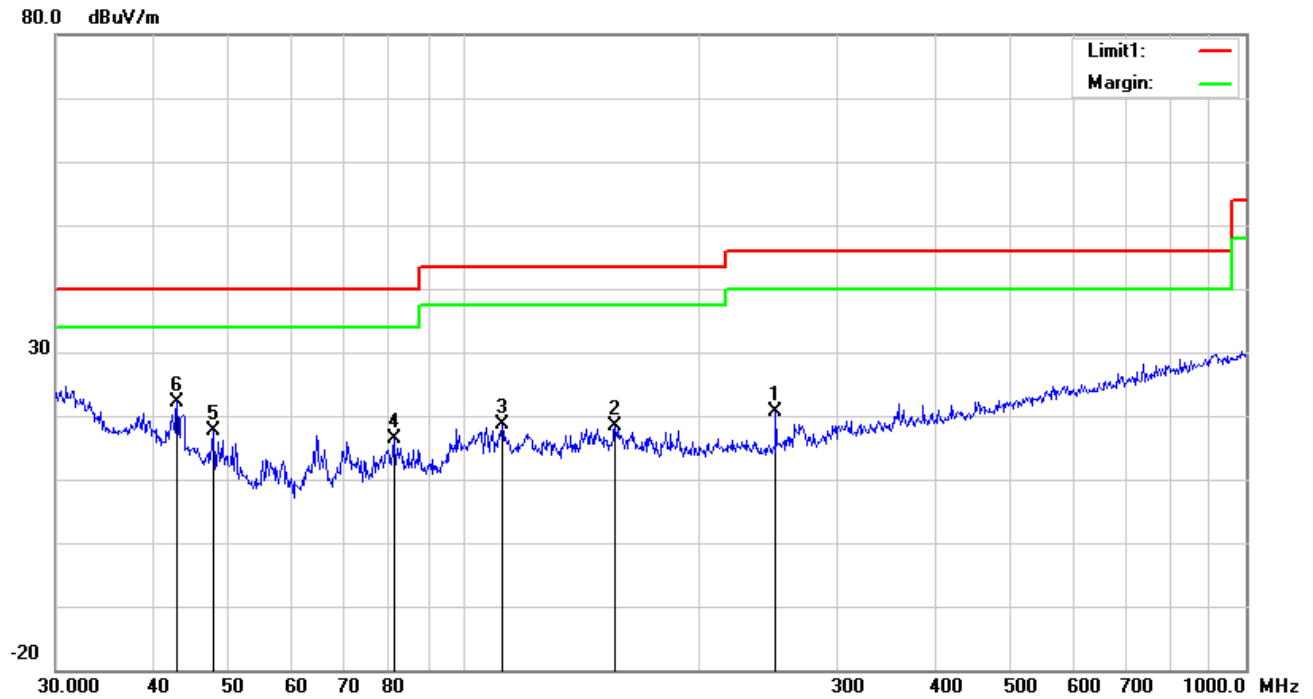
**Note:**

- 1, The testing has been conformed to  $10 \times 2462\text{MHz} = 24,620\text{MHz}$*
- 2, All other emissions more than 30 dB below the limit*
- 3, X-Axis, Y-Axis and Z-Axis were investigated. The results above show only the worst case.*
- 4, The radiated spurious test above 18GHz is subcontracted to SIEMIC (Nanjing-China) Laboratories. and found 30dB below the limit at least.*

**TX 1:**

<b>Test Mode:</b>	<b>Transmitting Mode</b>
-------------------	--------------------------

**30MHz -1GHz**

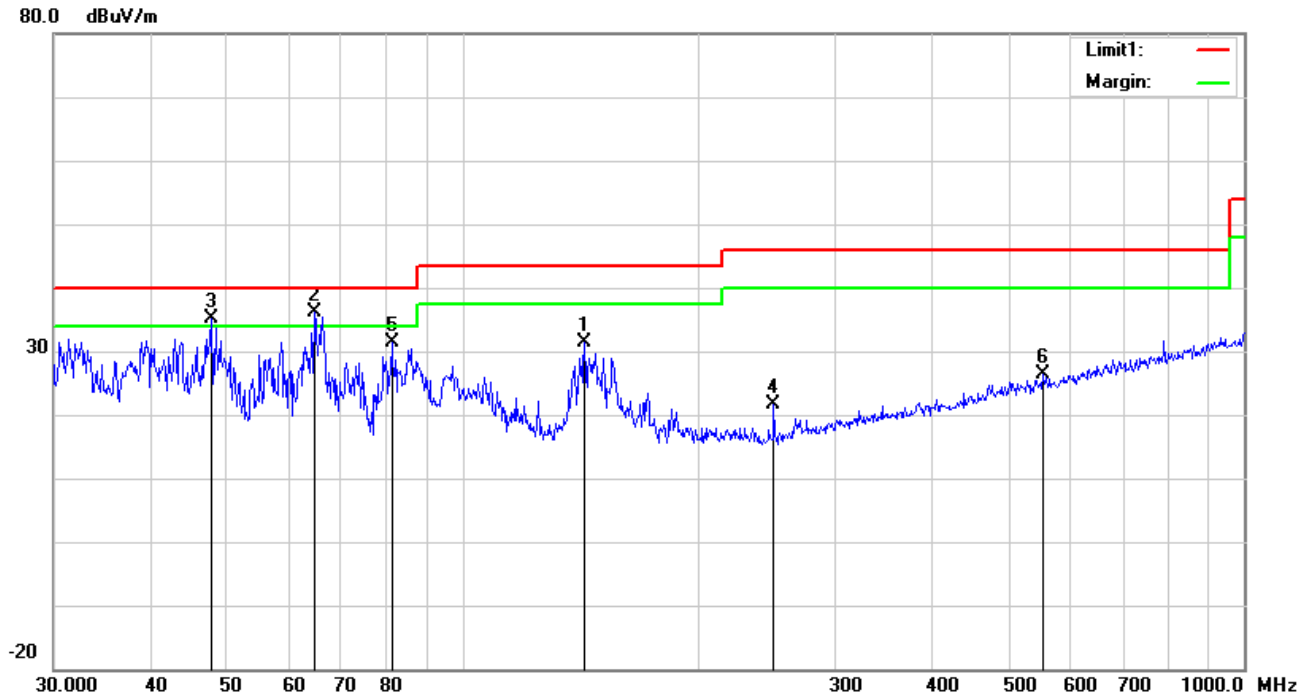


**Test Data**

**Vertical Polarity Plot @3m**

No.	P/L	Frequency (MHz)	Reading (dBuV/m)	Detector	Ant_F (dB/m)	PA_G (dB)	Cab_L (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	H	250.3012	29.84	peak	11.41	22.29	1.70	20.66	46.00	-25.34
2	H	155.9101	26.65	peak	12.60	22.30	1.37	18.32	43.50	-25.18
3	H	111.7380	27.34	peak	12.45	22.34	1.17	18.62	43.50	-24.88
4	H	81.2117	30.17	peak	7.65	22.41	1.05	16.46	40.00	-23.54
5	H	47.8260	29.90	peak	9.36	22.34	0.78	17.70	40.00	-22.30
6	H	42.8998	31.78	peak	11.99	22.29	0.77	22.25	40.00	-17.75

### 30MHz -1GHz



*Test Data*

### Horizontal Polarity Plot @3m

No	P/L	Frequency	Reading	Detector	Ant_F	PA_G	Cab_L	Result	Limit	Margin
		(MHz)	(dBuV/m)		(dB/m)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
1	V	143.3261	39.92	peak	12.60	22.39	1.29	31.42	43.50	-12.08
2	V	64.6594	50.19	peak	7.53	22.40	0.87	36.19	40.00	-3.81
3	V	47.6586	47.15	peak	9.43	22.34	0.78	35.02	40.00	-4.98
4	V	250.3012	30.71	peak	11.41	22.29	1.70	21.53	46.00	-24.47
5	V	81.2117	45.12	peak	7.65	22.41	1.05	31.41	40.00	-8.59
6	V	552.8833	27.03	peak	18.44	21.69	2.48	26.26	46.00	-19.74



### Above 1GHz

<b>Test Mode:</b>	<b>Transmitting Mode</b>
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Frequency	Meter Reading	Antenna Factor	Cable loss	Preamp factor	Emission Level	Limits	Margin	Detector	Polarity
(MHz)	(dB $\mu$ V)	(dB)	(dB)	(dB)	(dB $\mu$ V/m)	(dB $\mu$ V/m)	(dB)	(PK/AV)	(H/V)
Low Channel:802.11n(Worst Case)-2412MHz									
2392	42.28	28.72	3.36	26.32	48.04	74.00	-25.96	peak	Vertical
4824.2	31.98	32.94	3.98	27.49	41.41	54.00	-12.59	Average	Vertical
4824.2	41.74	32.94	3.98	27.49	51.17	74.00	-22.83	peak	Vertical
7241	32.69	25.28	5.51	27.94	35.54	54.00	-18.46	Average	Vertical
7241	42.57	25.28	5.51	27.94	45.42	74.00	-28.58	peak	Vertical
2392	42.64	28.72	3.36	26.32	48.40	74.00	-25.60	peak	Horizontal
4824.2	32.35	32.94	3.98	27.49	41.78	54.00	-12.22	Average	Horizontal
4824.2	43.32	32.94	3.98	27.49	52.75	74.00	-21.25	peak	Horizontal
7241	32.05	25.28	5.51	27.94	34.90	54.00	-19.10	Average	Horizontal
7241	41.58	25.28	5.51	27.94	44.43	74.00	-29.57	peak	Horizontal
Middle Channel:802.11n(Worst Case)-2437MHz									
4875	32.02	32.11	4.04	27.53	40.64	54.00	-13.36	Average	Vertical
4875	42.36	32.11	4.04	27.53	50.98	74.00	-23.02	peak	Vertical
7311.5	32.58	24.33	5.58	27.96	34.53	54.00	-19.47	Average	Vertical
7311.5	42.28	24.33	5.58	27.96	44.23	74.00	-29.77	peak	Vertical
4875	32.02	32.11	4.04	27.53	40.64	54.00	-13.36	Average	Horizontal
4875	42.06	32.11	4.04	27.53	50.68	74.00	-23.32	peak	Horizontal
7311.5	31.58	24.33	5.58	27.96	33.53	54.00	-20.47	Average	Horizontal
7311.5	42.01	24.33	5.58	27.96	43.96	74.00	-30.04	peak	Horizontal
High Channel:802.11n(Worst Case)-2462MHz									
2483.5	42.55	28.79	3.48	26.34	48.48	74.00	-25.52	peak	Vertical
4923.5	31.99	31.32	4.12	27.58	39.85	54.00	-14.15	Average	Vertical
4923.5	42.31	31.32	4.12	27.58	50.17	74.00	-23.83	peak	Vertical
7385	32.44	24.38	5.68	27.99	34.51	54.00	-19.49	Average	Vertical
7385	42.05	24.38	5.68	27.99	44.12	74.00	-29.88	peak	Vertical
2483.5	41.57	28.79	3.48	26.34	47.50	74.00	-26.50	peak	Horizontal
4923.5	32.36	31.32	4.12	27.58	40.22	54.00	-13.78	Average	Horizontal
4923.5	42.89	31.32	4.12	27.58	50.75	74.00	-23.25	peak	Horizontal
7385	32.36	24.38	5.68	27.99	34.43	54.00	-19.57	Average	Horizontal
7385	42.56	24.38	5.68	27.99	44.63	74.00	-29.37	peak	Horizontal

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**Note:**

- 1, The testing has been conformed to  $10 \times 2462\text{MHz} = 24,620\text{MHz}$*
- 2, All other emissions more than 30 dB below the limit*
- 3, X-Axis, Y-Axis and Z-Axis were investigated. The results above show only the worst case.*
- 4, The radiated spurious test above 18GHz is subcontracted to SIEMIC (Nanjing-China) Laboratories. and found 30dB below the limit at least.*

## Annex A. TEST INSTRUMENT

Instrument	Model	Serial #	Cal Date	Cal Due	In use
<b>AC Line Conducted</b>					
EMI test receiver	ESCS30	8471241027	09/15/2017	09/14/2018	<input checked="" type="checkbox"/>
Line Impedance	LI-125A	191106	09/23/2017	09/22/2018	<input checked="" type="checkbox"/>
Line Impedance	LI-125A	191107	09/23/2017	09/22/2018	<input checked="" type="checkbox"/>
ISN	ISN T800	34373	09/23/2017	09/22/2018	<input type="checkbox"/>
Transient Limiter	LIT-153	531118	08/30/2017	08/29/2018	<input type="checkbox"/>
<b>RF conducted test</b>					
Agilent ESA-E SERIES	E4407B	MY45108319	09/15/2017	09/14/2018	<input checked="" type="checkbox"/>
Power Splitter	1#	1#	08/30/2017	08/29/2018	<input checked="" type="checkbox"/>
DC Power Supply	E3640A	MY40004013	09/15/2017	09/14/2018	<input checked="" type="checkbox"/>
<b>Radiated Emissions</b>					
EMI test receiver	ESL6	100262	09/15/2017	09/14/2018	<input checked="" type="checkbox"/>
Positioning Controller	UC3000	MF780208282	11/17/2017	11/16/2018	<input checked="" type="checkbox"/>
OPT 010 AMPLIFIER (0.1-1300MHz)	8447E	2727A02430	08/30/2017	08/29/2018	<input checked="" type="checkbox"/>
Microwave Preamplifier (1 ~ 26.5GHz)	8449B	3008A02402	03/22/2018	03/21/2019	<input checked="" type="checkbox"/>
Horn Antenna	BBHA9170	3145226D1	09/27/2017	09/26/2018	<input checked="" type="checkbox"/>
Active Antenna (9kHz-30MHz)	AL-130	121031	10/12/2017	10/11/2018	<input checked="" type="checkbox"/>
Bilog Antenna (30MHz~6GHz)	JB6	A110712	09/19/2017	09/18/2018	<input checked="" type="checkbox"/>
Double Ridge Horn Antenna (1 ~18GHz)	AH-118	71283	09/22/2017	09/21/2018	<input checked="" type="checkbox"/>
Universal Radio Communication Tester	CMU200	121393	09/23/2017	09/22/2018	<input checked="" type="checkbox"/>

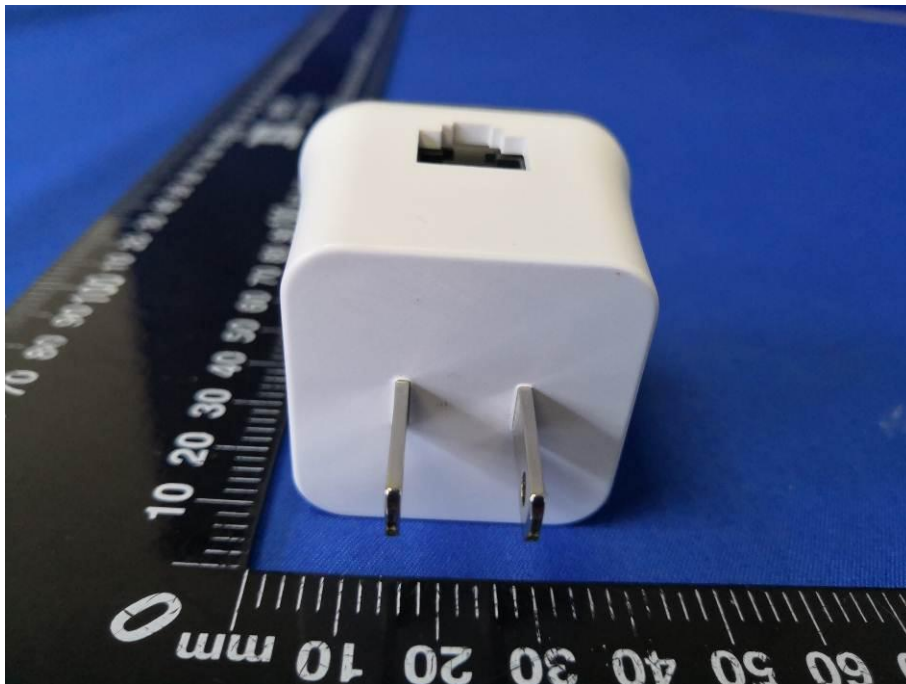
**Annex B. EUT and Test Setup Photographs**

**Annex B.i. Photograph: EUT External Photo**

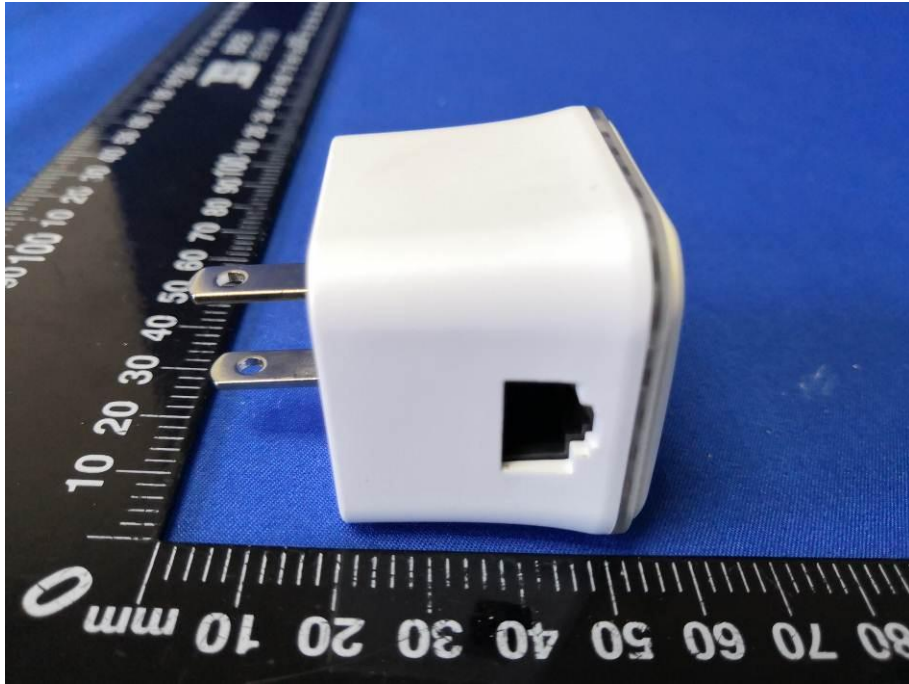
EUT - Front View



EUT - Rear View



EUT - Top View



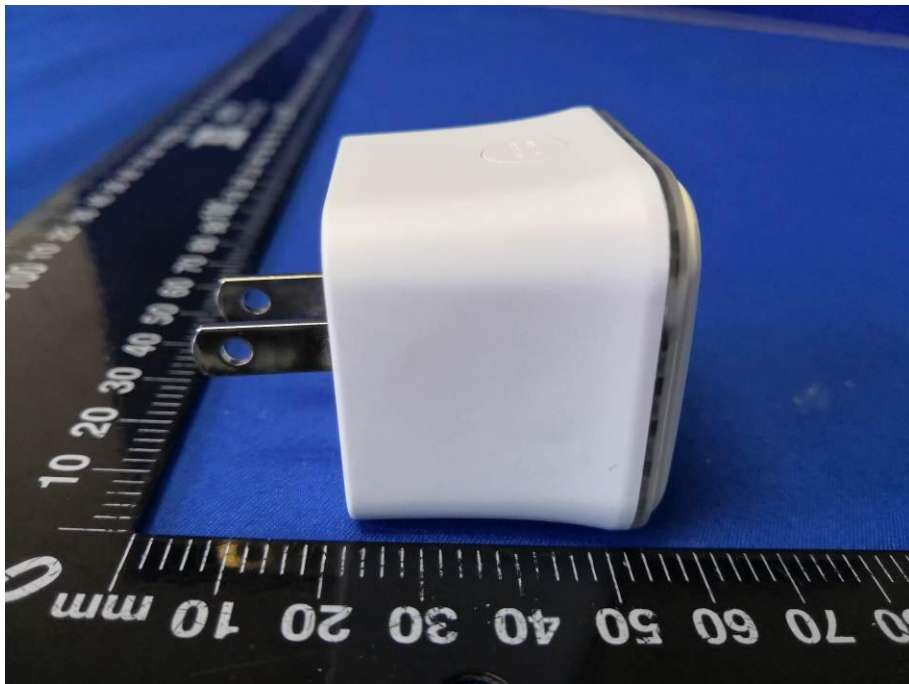
EUT - Bottom View



EUT - Left View

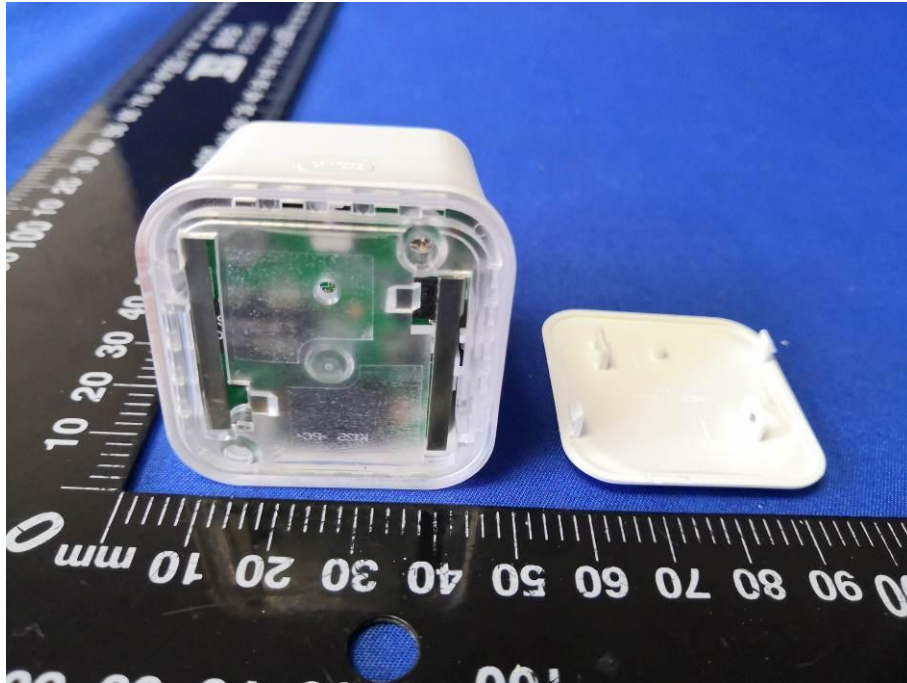


EUT - Right View

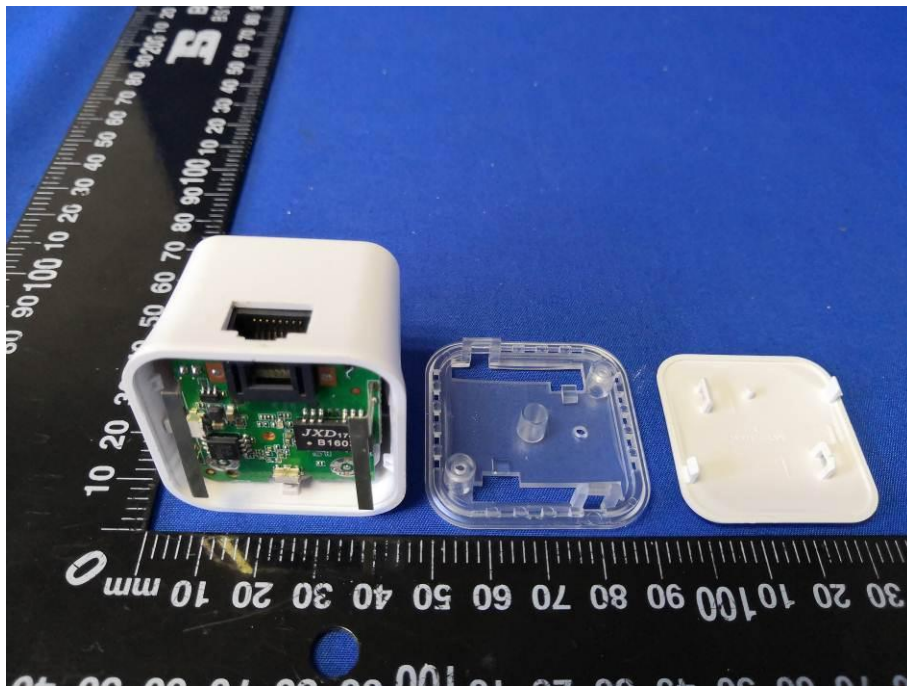


**Annex B.ii. Photograph: EUT Internal Photo**

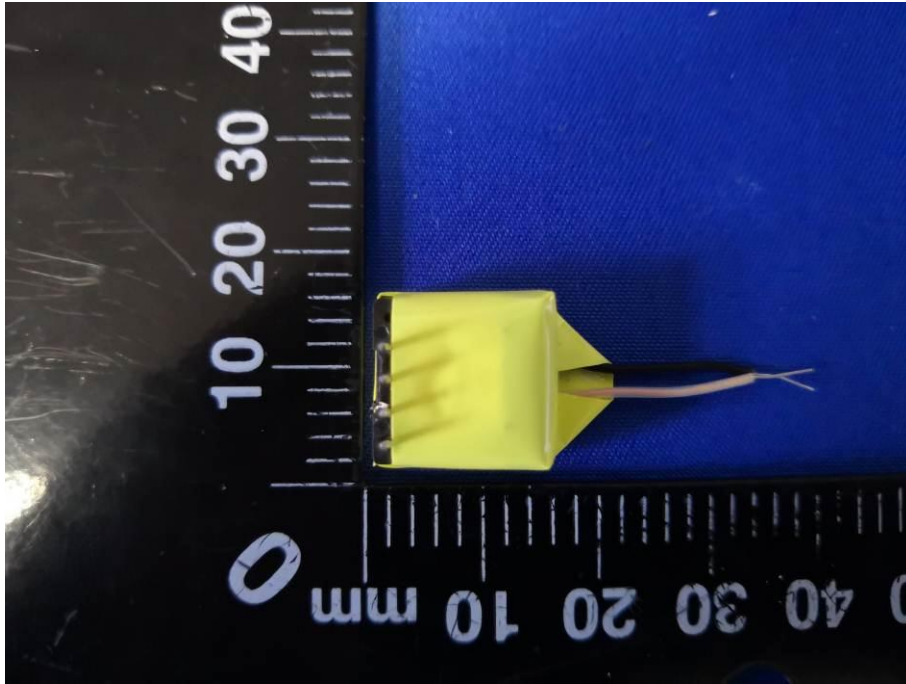
Cover Off - Top View 1



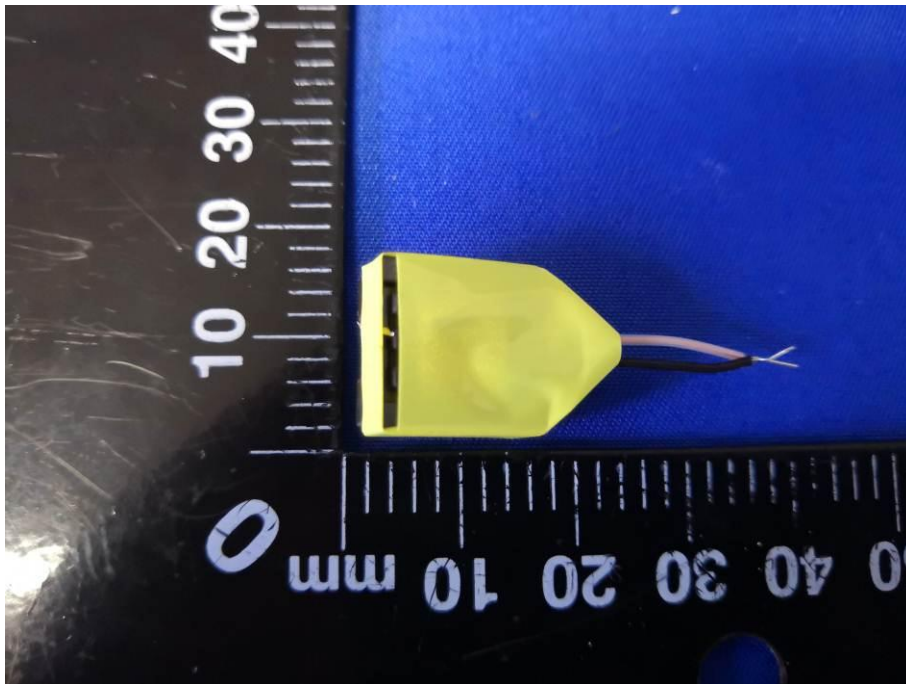
Cover Off - Top View 2



Transformer View(Model: EPC13)

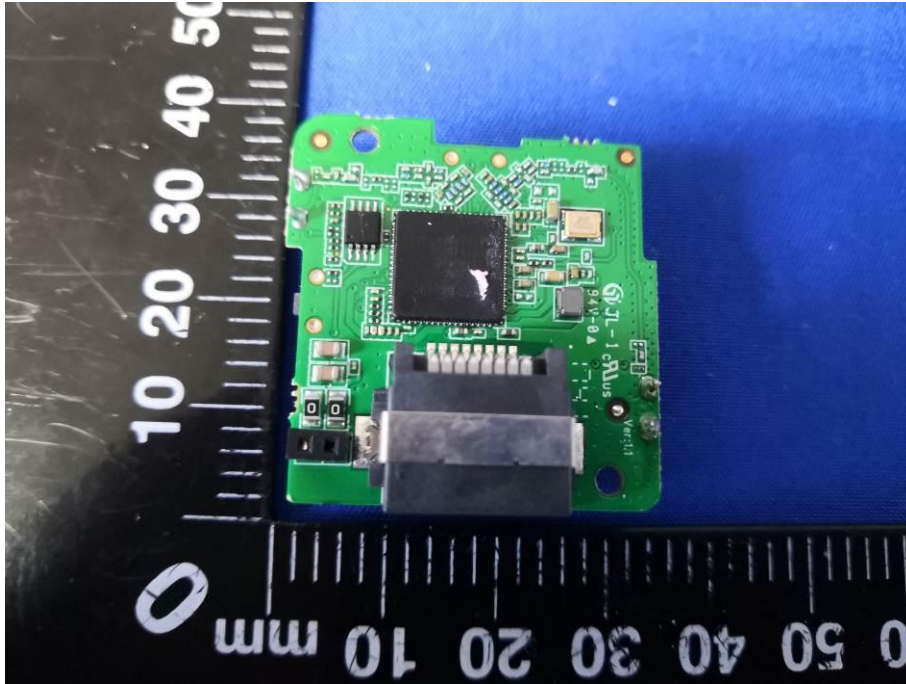


Transformer View(Model: EPC13)

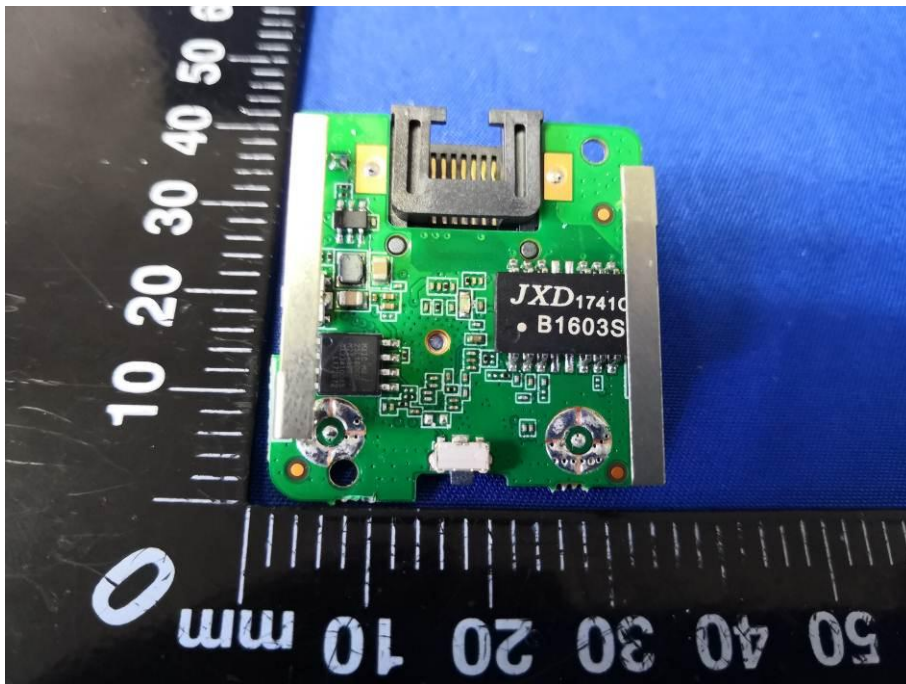




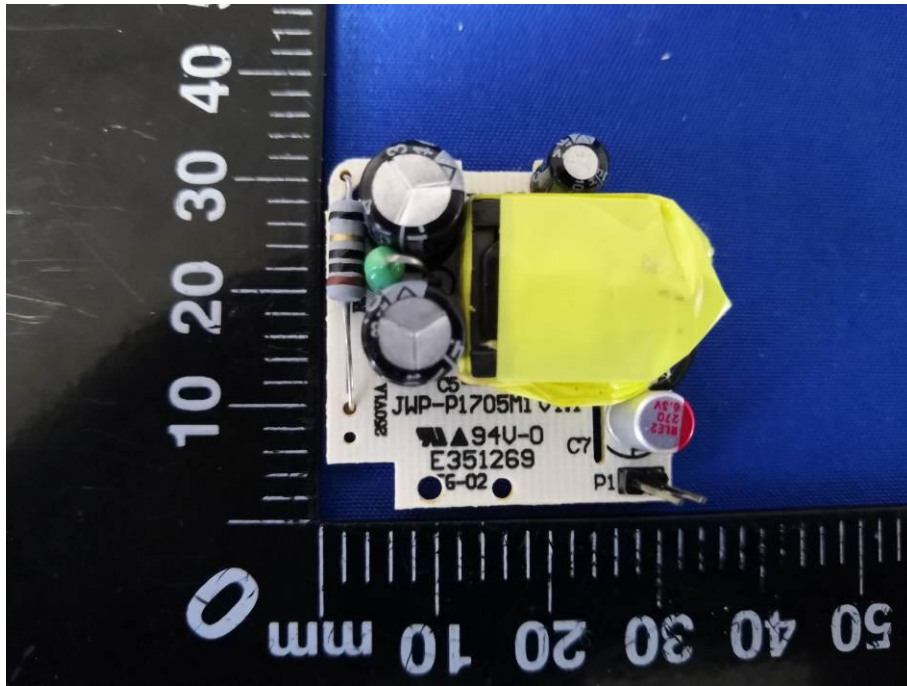
Mainboard - Front View



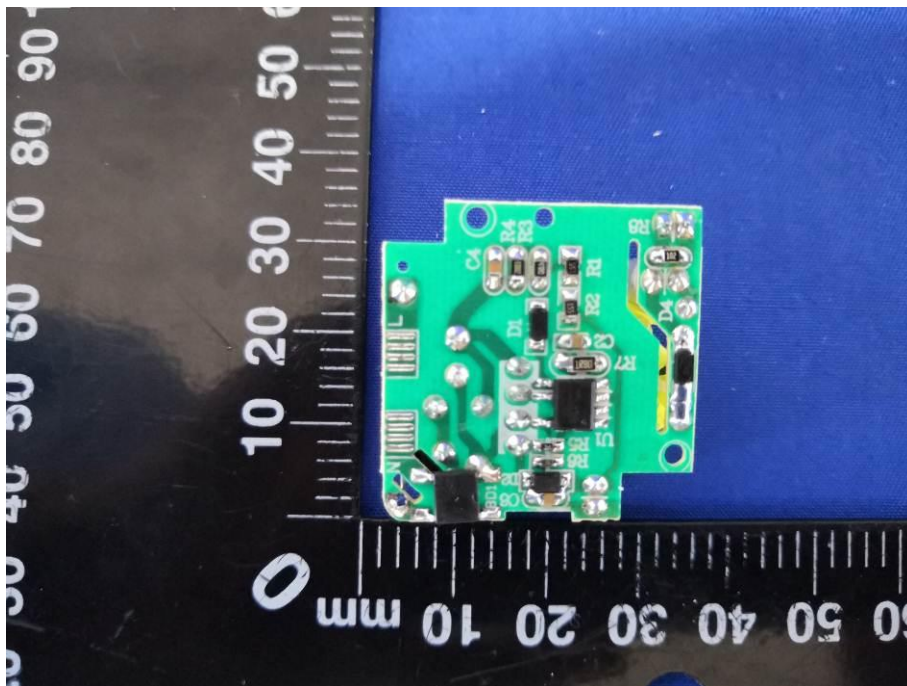
Mainboard - Rear View



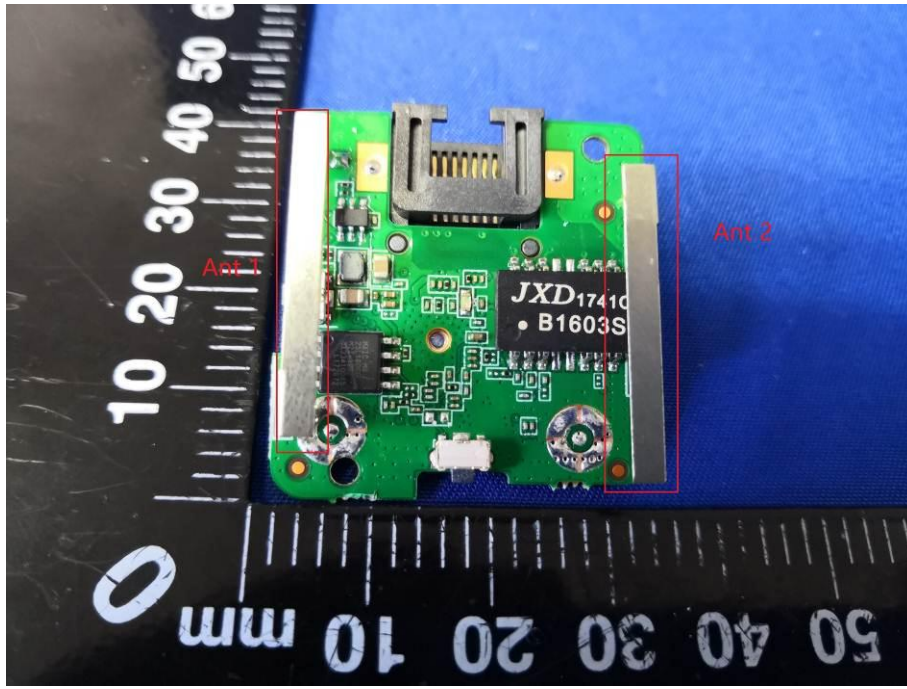
Power- Front View



Power – Rear View



Antenna View



**Annex B.iii. Photograph: Test Setup Photo**

**TX 0:**



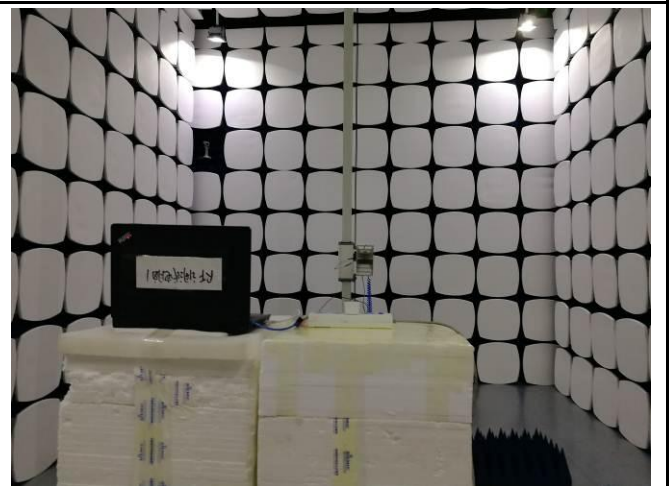
Conducted Emissions Test Setup Front View



Conducted Emissions Test Setup Side View



Radiated Spurious Emissions Test Setup Below 1GHz



Radiated Spurious Emissions Test Setup Above  
1GHz

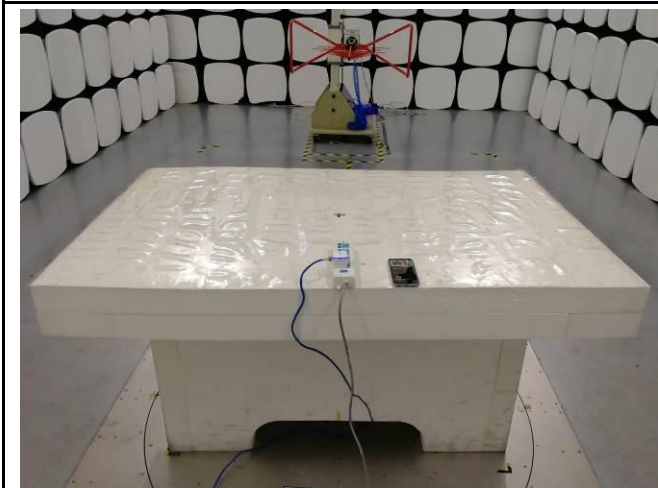
**TX 1:**



Conducted Emissions Test Setup Front View



Conducted Emissions Test Setup Side View



Radiated Spurious Emissions Test Setup Below 1GHz

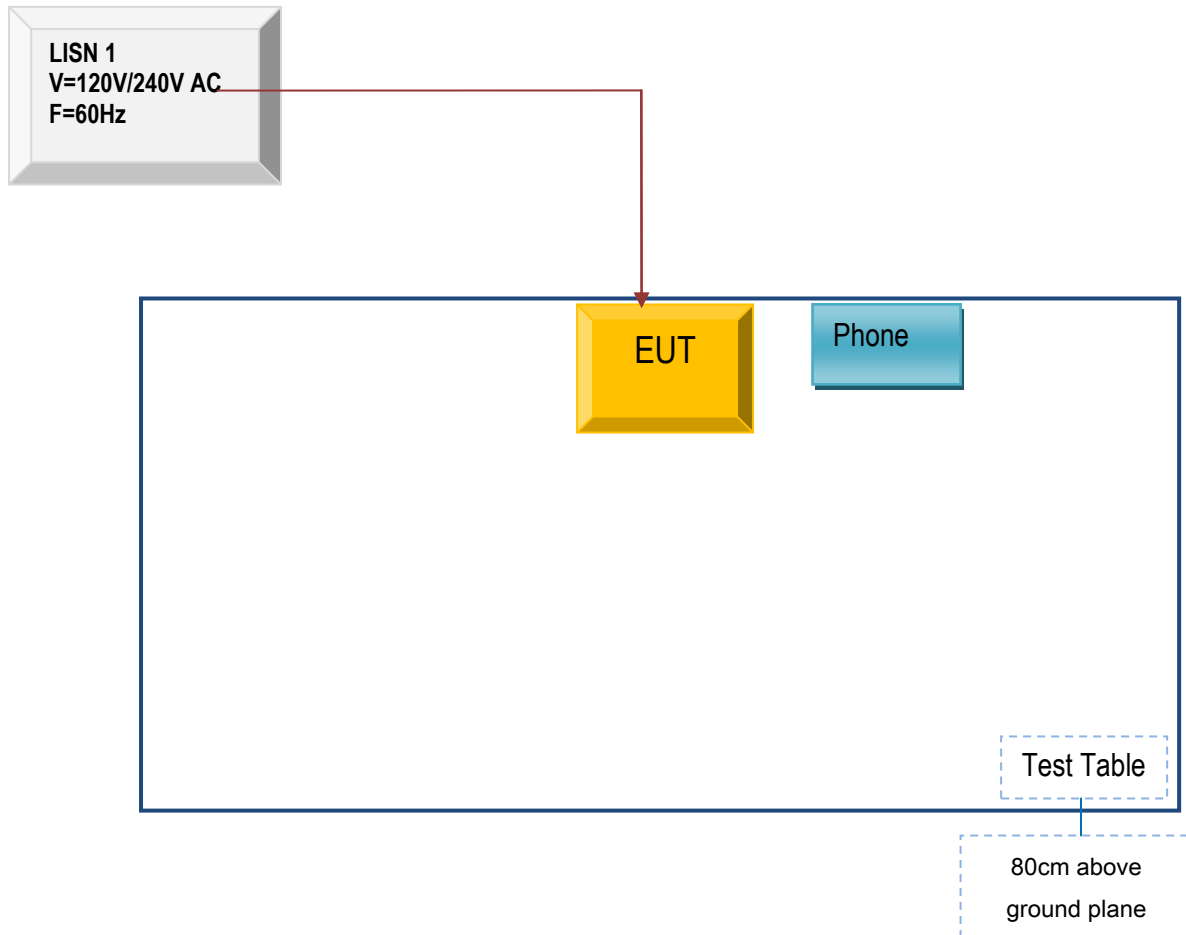


Radiated Spurious Emissions Test Setup Above  
1GHz

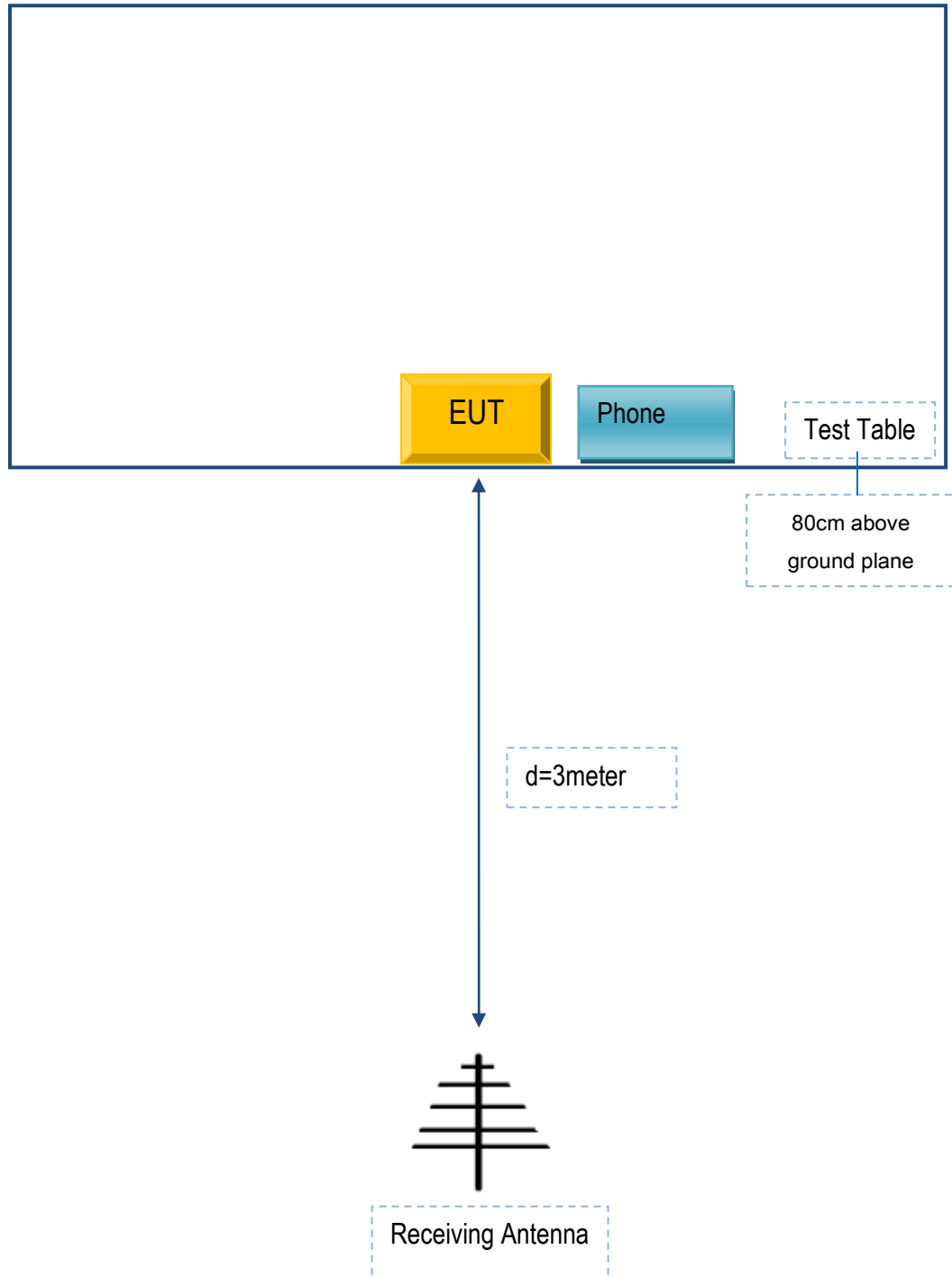
## Annex C. TEST SETUP AND SUPPORTING EQUIPMENT

### Annex C.ii. TEST SET UP BLOCK

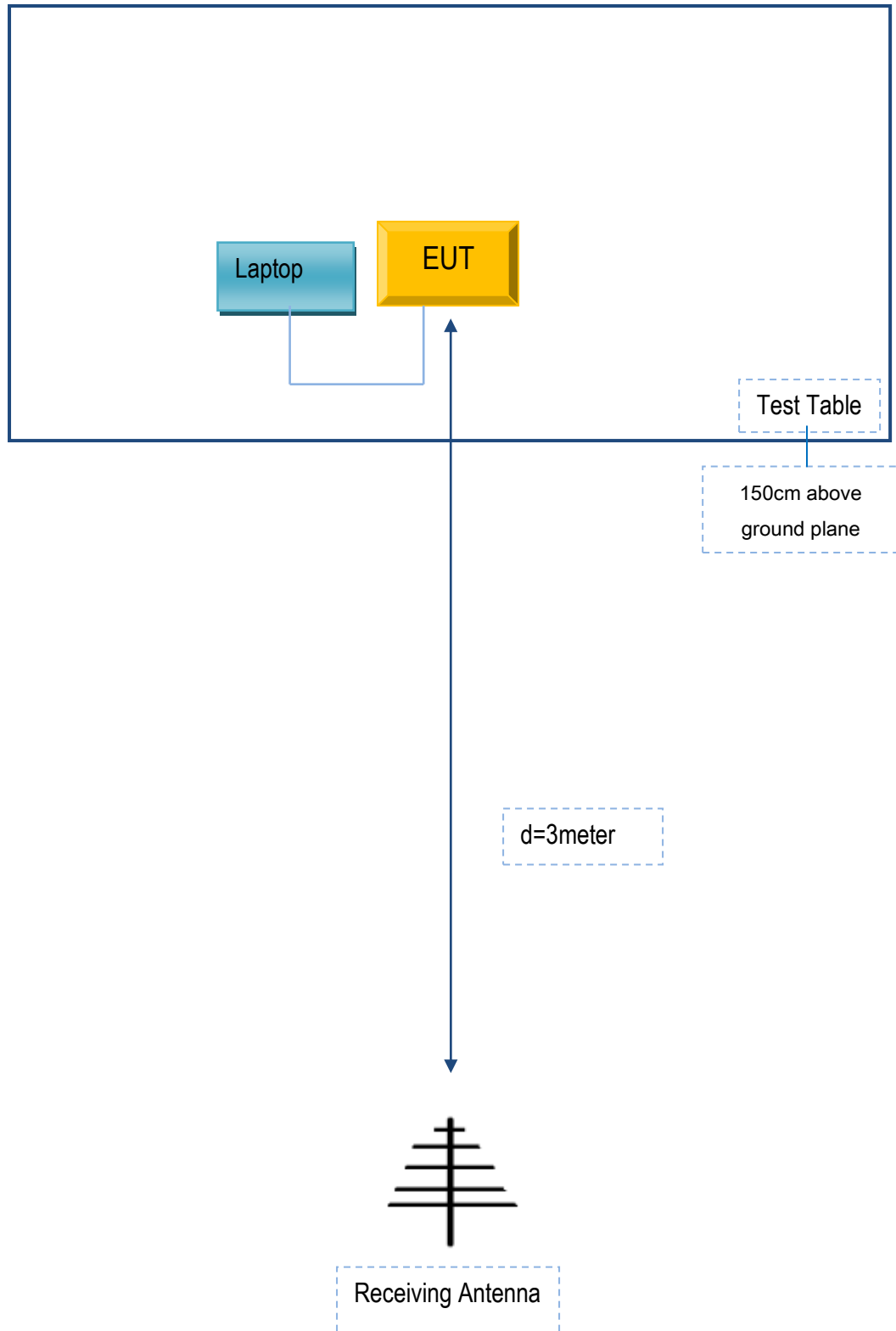
#### Block Configuration Diagram for AC Line Conducted Emissions



**Block Configuration Diagram for Radiated Emissions ( Below 1GHz ) .**



**Block Configuration Diagram for Radiated Emissions ( Above 1GHz ) .**





## Annex C. ii. SUPPORTING EQUIPMENT DESCRIPTION

The following is a description of supporting equipment and details of cables used with the EUT.

### Supporting Equipment:

Manufacturer	Equipment Description	Model	Serial No
Lenovo	Laptop	E40	N/A
Huawei	Phone	Honor 9	N/A

### Supporting Cable:

Cable type	Shield Type	Ferrite Core	Length	Serial No
USB Cable	Un-shielding	No	0.8m	N/A

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## Annex D. User Manual / Block Diagram / Schematics / Partlist

Please see the attachment

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## Annex E. DECLARATION OF SIMILARITY

N/A