

■ Spurious Emission Above 1GHz(1GHz to 25GHz)

All the antenna(Antenna 1) and modes(802.11b/g/n) have been tested and the worst(Antenna 1, 802.11b) result recorded was report as below:

Test mode: 802.11b		Frequency:		Channel 1: 2412MHz			
Freq. (MHz)	Ant.Pol. H/V	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
		PK	AV	PK	AV	PK	AV
6853.125	V	53.56	38.10	74	54	20.44	15.90
10018.125	V	62.03	41.88	74	54	11.97	12.12
12596.25	V	63.27	45.33	74	54	10.73	8.67
5673.75	H	49.80	32.71	74	54	24.20	21.29
9990	H	62.10	42.64	74	54	11.90	11.36
12585	H	62.70	44.89	74	54	11.30	9.11

- Note:** (1) All Readings are Peak Value (VBW=3MHz) and Peak Value (VBW=10Hz).
 (2) Emission Level= Reading Level+Correct Factor +Cable Loss.
 (3) Correct Factor= Ant_F + Cab_L - Preamp
 (4)The reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Test mode: 802.11b Frequency: Channel 6: 2437MHz

Freq. (MHz)	Ant.Pol. H/V	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
		PK	AV	PK	AV	PK	AV
7021.875	V	54.84	37.77	74	54	19.16	16.23
9924.375	V	62.07	42.88	74	54	11.93	11.12
12590.625	V	62.68	45.57	74	54	11.32	8.43
7325.625	H	54.74	37.78	74	54	19.26	16.22
9909.375	H	61.85	43.00	74	54	12.15	11.00
12590.625	H	62.85	45.69	74	54	11.15	8.31

Note: (1) All Readings are Peak Value (VBW=3MHz) and Peak Value (VBW=10Hz).
 (2) Emission Level= Reading Level+Correct Factor +Cable Loss.
 (3) Correct Factor= Ant_F + Cab_L - Preamp
 (4)The reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Test mode: 802.11b Frequency: Channel 11: 2462MHz

Freq. (MHz)	Ant.Pol. H/V	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
		PK	AV	PK	AV	PK	AV
6504.375	V	54.01	36.46	74	54	19.99	17.54
9907.5	V	62.08	42.96	74	54	11.92	11.04
12588.75	V	63.42	45.28	74	54	10.58	8.72
6600	H	53.41	37.16	74	54	20.59	16.84
9913.125	H	62.36	42.94	74	54	11.64	11.06
12609.375	H	62.63	45.27	74	54	11.37	8.73

Note: (1) All Readings are Peak Value (VBW=3MHz) and Peak Value (VBW=10Hz).
 (2) Emission Level= Reading Level+Correct Factor +Cable Loss.
 (3) Correct Factor= Ant_F + Cab_L - Preamp
 (4)The reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

■ Spurious Emission in Restricted Band 2310-2390MHz and 2483.5-2500MHz

All the antenna(Antenna 1) and modes(802.11b/g/n) have been tested and the worst(Antenna 1, 802.11b) result recorded was report as below:

Test mode: 802.11b Frequency: Channel 1: 2412MHz

Frequency (MHz)	Polarity	PK(dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)	AV(dBuV/m) (VBW=10Hz)	Limit 3m (dBuV/m)
2388.47	H	45.56	74.00	37.76	54.00
2389.94	V	50.88	74.00	38.10	54.00

Test mode: 802.11b Frequency: Channel 11: 2462MHz

Frequency (MHz)	Polarity	PK(dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)	AV(dBuV/m) (VBW=10Hz)	Limit 3m (dBuV/m)
2483.63	H	54.97	74.00	38.18	54.00
2483.91	V	50.08	74.00	38.53	54.00

- Note:**
- (1) All Readings are Peak Value (VBW=3MHz) and Peak Value (VBW=10Hz).
 - (2) Emission Level= Reading Level+Correct Factor +Cable Loss.
 - (3) Correct Factor= Ant_F + Cab_L - Preamp
 - (4) The reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

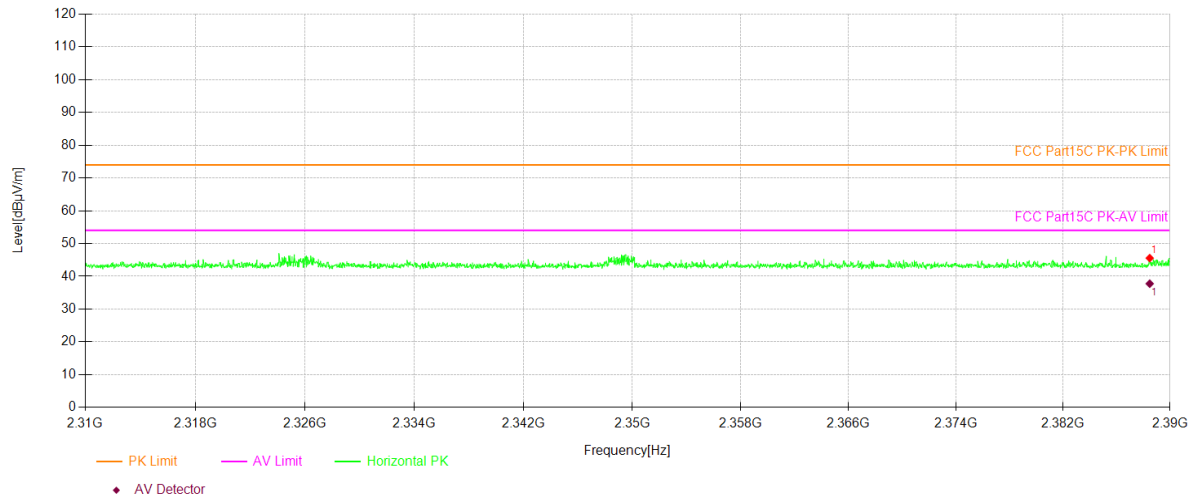
Test Model

802.11b

Spurious Emission in Restricted Band 2310-2390MHz

Channel 1: 2412MHz

Polarity: H



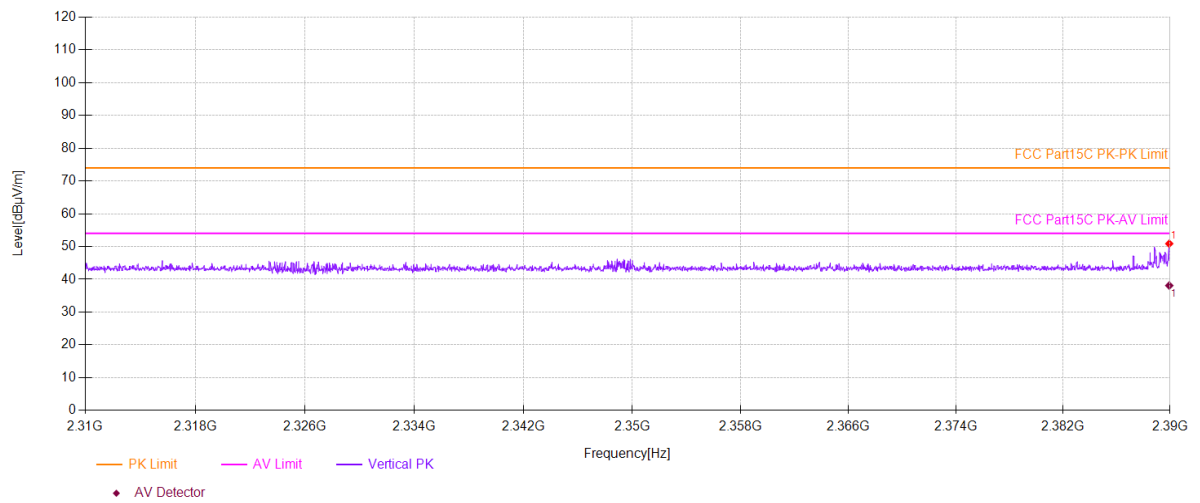
Test Model

802.11b

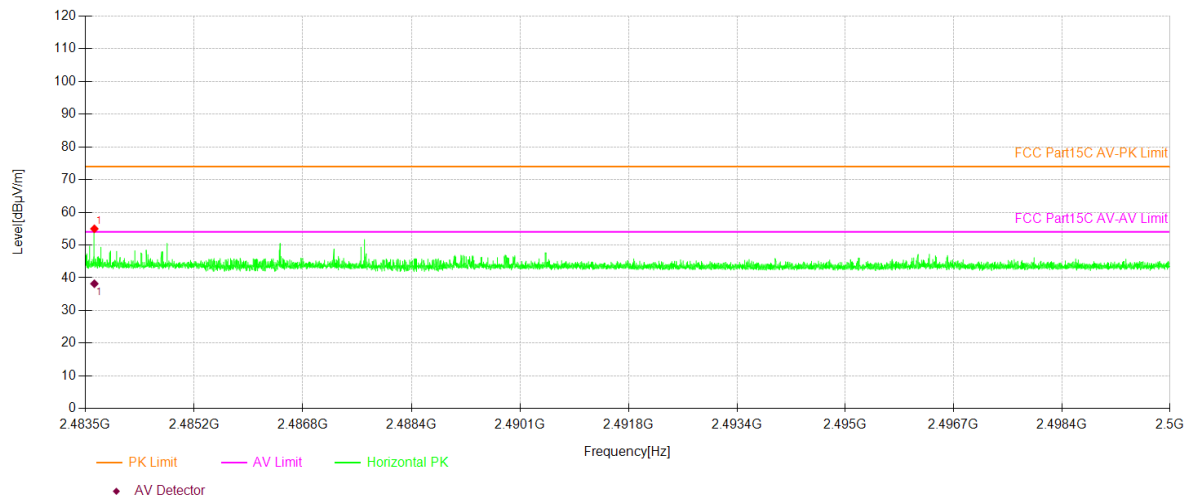
Spurious Emission in Restricted Band 2310-2390MHz

Channel 1: 2412MHz

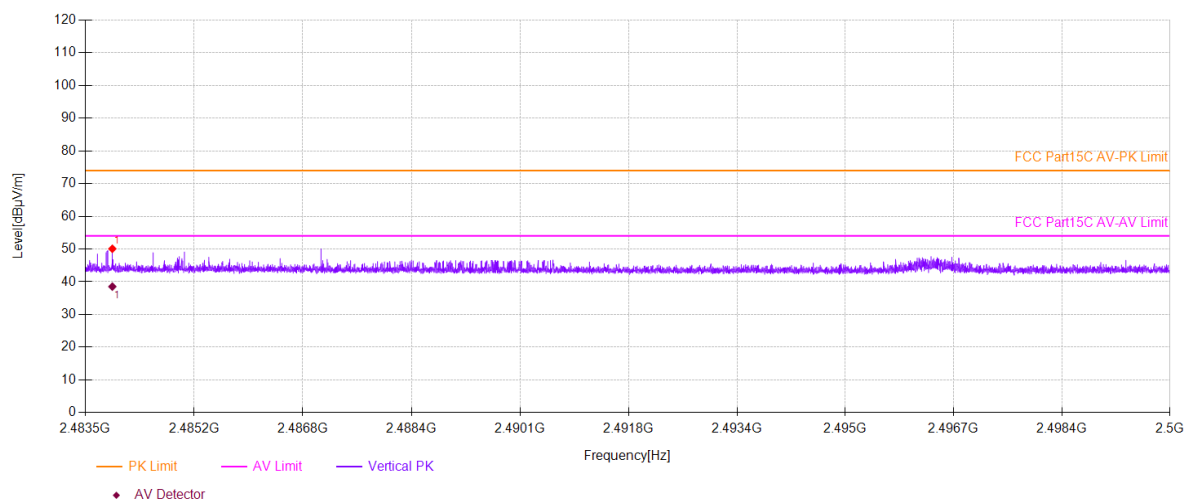
Polarity: V



Test Model 802.11b Spurious Emission in Restricted Band 2483.5-2500MHz
Channel 11: 2462MHz Polarity: H



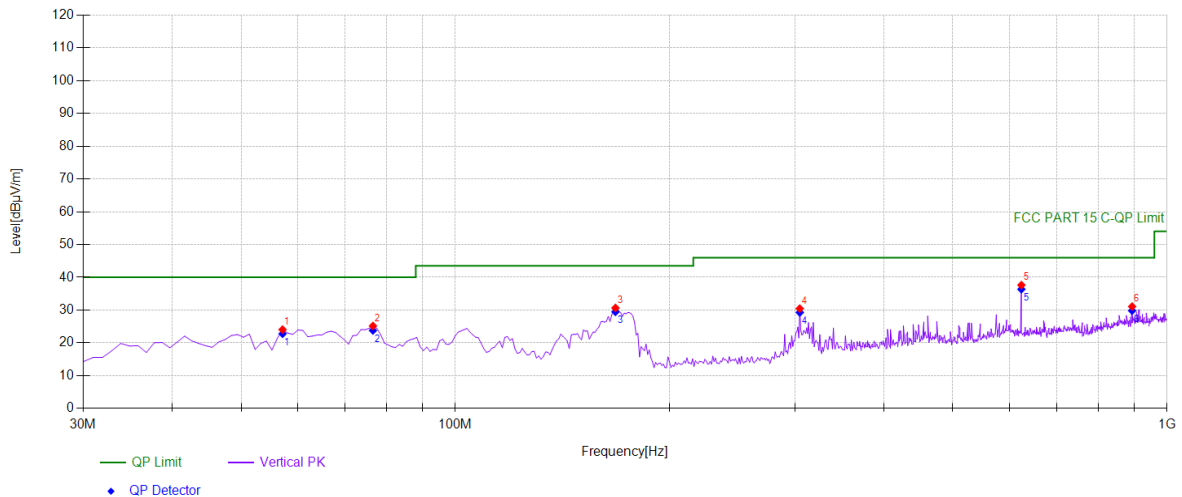
Test Model 802.11b Spurious Emission in Restricted Band 2483.5-2500MHz
Channel 11: 2462MHz Polarity: V



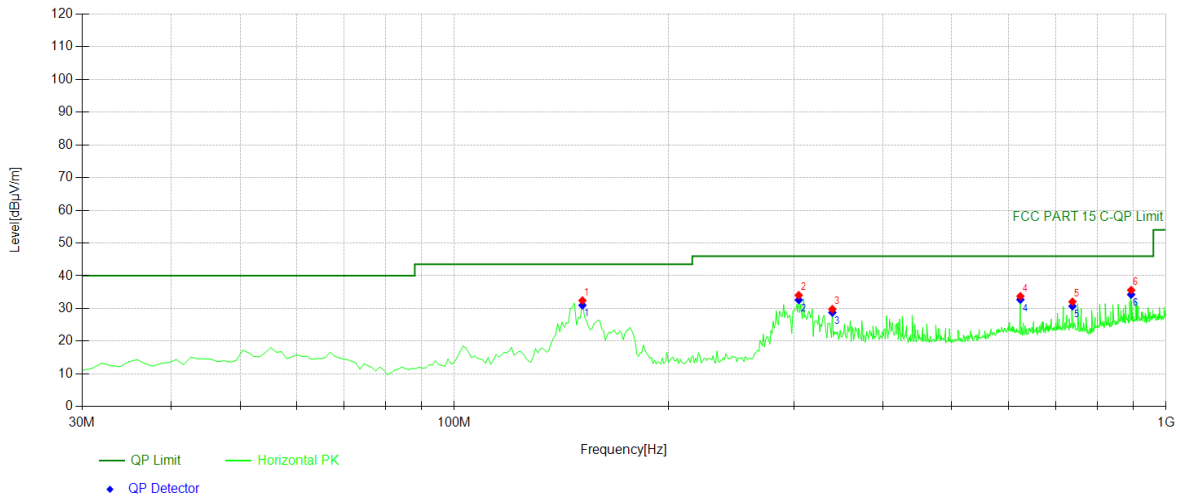
■ Spurious Emission below 1GHz (30MHz to 1GHz)

All the antenna(Antenna 1) and modes(802.11b/g/n) have been tested and the worst(Antenna 1, 802.11b) result recorded was report as below:

2412



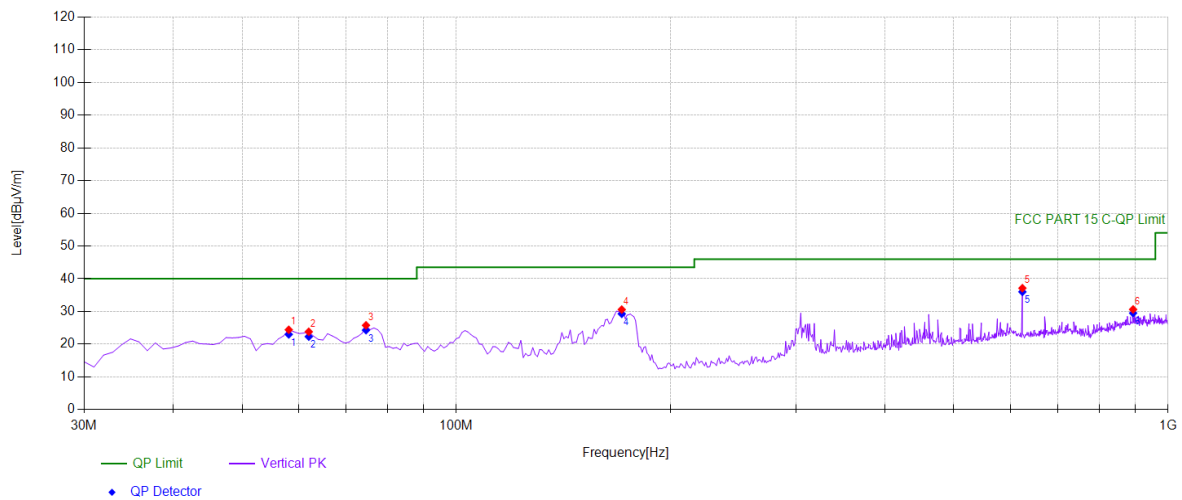
Suspected Data List								
NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB/m]	Level [dBμV/m]	Detector	Limit [dBμV/m]	Margin [dB]	Polarity
1	57.1872	41.12	-17.06	24.06	PK	40.00	15.94	Vertical
2	76.6066	44.96	-19.79	25.17	PK	40.00	14.83	Vertical
3	167.8779	49.79	-19.13	30.66	PK	43.50	12.84	Vertical
4	304.7848	44.40	-13.93	30.47	PK	46.00	15.53	Vertical
5	624.2342	45.08	-7.44	37.64	PK	46.00	8.36	Vertical
6	893.1932	34.51	-3.41	31.10	PK	46.00	14.90	Vertical



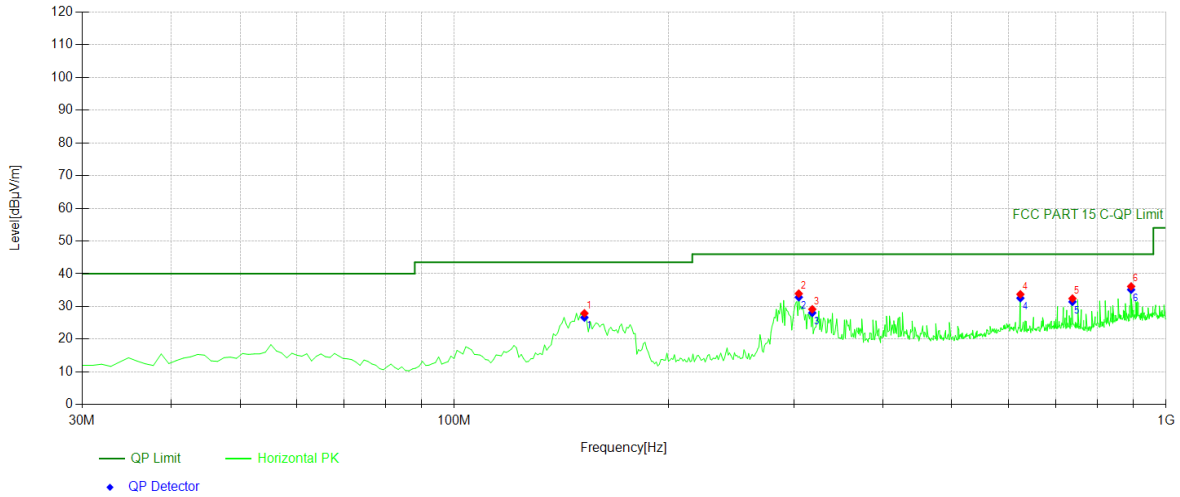
Suspected Data List

NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB/m]	Level [dBμV/m]	Detector	Limit [dBμV/m]	Margin [dB]	Polarity
1	151.3714	52.08	-19.64	32.44	PK	43.50	11.06	Horizontal
2	304.7848	47.98	-13.93	34.05	PK	46.00	11.95	Horizontal
3	339.7397	42.16	-12.37	29.79	PK	46.00	16.21	Horizontal
4	624.2342	41.18	-7.44	33.74	PK	46.00	12.26	Horizontal
5	738.8088	37.84	-5.78	32.06	PK	46.00	13.94	Horizontal
6	893.1932	39.03	-3.41	35.62	PK	46.00	10.38	Horizontal

2437



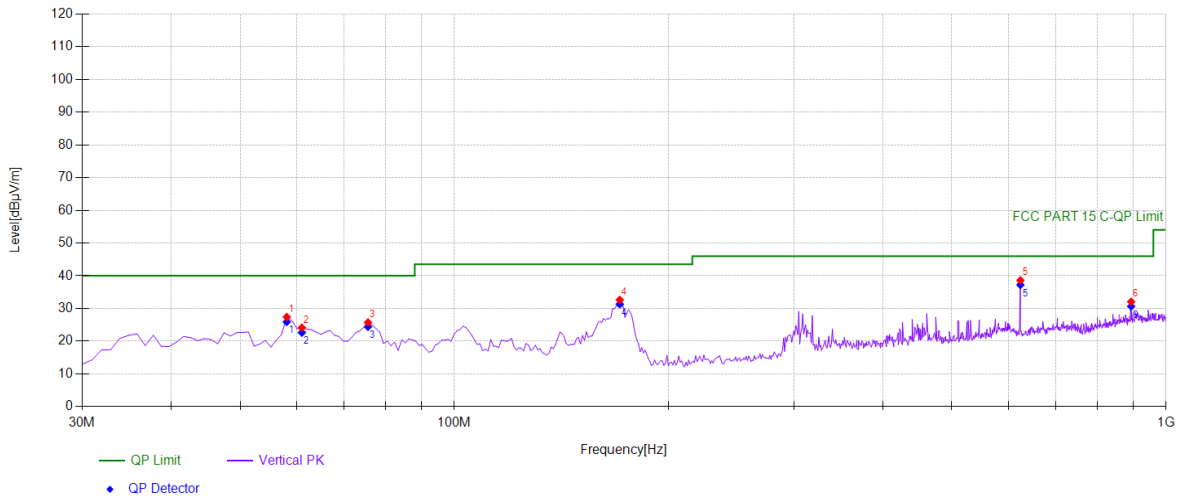
Suspected Data List								
NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB/m]	Level [dBμV/m]	Detector	Limit [dBμV/m]	Margin [dB]	Polarity
1	58.1582	41.62	-17.20	24.42	PK	40.00	15.58	Vertical
2	62.042	41.53	-17.72	23.81	PK	40.00	16.19	Vertical
3	74.6647	45.28	-19.50	25.78	PK	40.00	14.22	Vertical
4	170.7908	49.61	-19.02	30.59	PK	43.50	12.91	Vertical
5	624.2342	44.57	-7.44	37.13	PK	46.00	8.87	Vertical
6	893.1932	34.04	-3.41	30.63	PK	46.00	15.37	Vertical



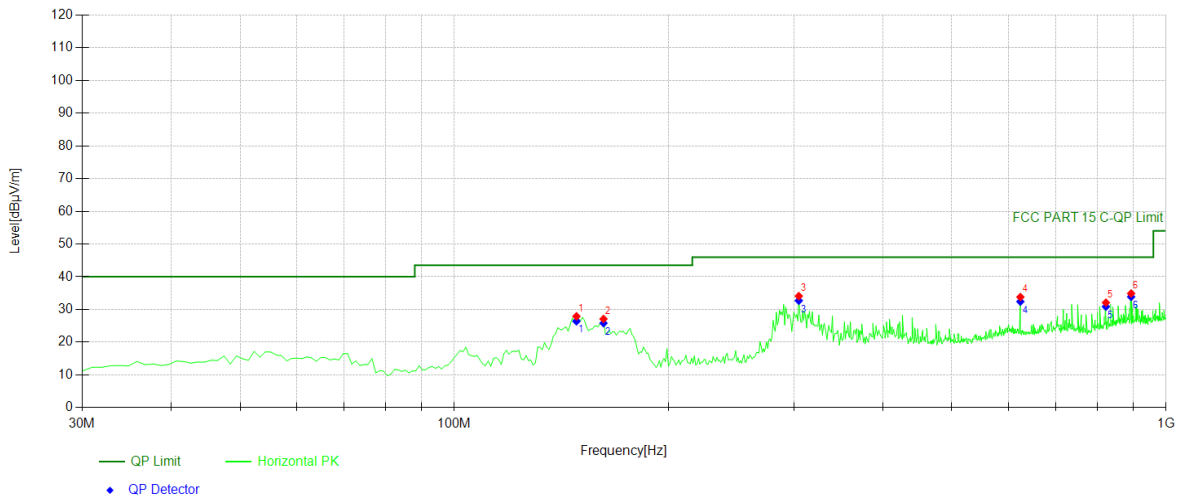
Suspected Data List

NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB/m]	Level [dBμV/m]	Detector	Limit [dBμV/m]	Margin [dB]	Polarity
1	152.3423	47.53	-19.62	27.91	PK	43.50	15.59	Horizontal
2	304.7848	47.86	-13.93	33.93	PK	46.00	12.07	Horizontal
3	318.3784	42.83	-13.68	29.15	PK	46.00	16.85	Horizontal
4	624.2342	41.17	-7.44	33.73	PK	46.00	12.27	Horizontal
5	738.8088	38.21	-5.78	32.43	PK	46.00	13.57	Horizontal
6	893.1932	39.54	-3.41	36.13	PK	46.00	9.87	Horizontal

2462



Suspected Data List								
NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB/m]	Level [dBμV/m]	Detector	Limit [dBμV/m]	Margin [dB]	Polarity
1	58.1582	44.60	-17.20	27.40	PK	40.00	12.60	Vertical
2	61.0711	41.72	-17.58	24.14	PK	40.00	15.86	Vertical
3	75.6356	45.37	-19.64	25.73	PK	40.00	14.27	Vertical
4	170.7908	51.66	-19.02	32.64	PK	43.50	10.86	Vertical
5	624.2342	46.06	-7.44	38.62	PK	46.00	7.38	Vertical
6	893.1932	35.47	-3.41	32.06	PK	46.00	13.94	Vertical



Suspected Data List

NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB/m]	Level [dBμV/m]	Detector	Limit [dBμV/m]	Margin [dB]	Polarity
1	148.4585	47.62	-19.71	27.91	PK	43.50	15.59	Horizontal
2	162.0521	46.49	-19.37	27.12	PK	43.50	16.38	Horizontal
3	304.7848	48.03	-13.93	34.10	PK	46.00	11.90	Horizontal
4	624.2342	41.25	-7.44	33.81	PK	46.00	12.19	Horizontal
5	823.2833	37.22	-5.12	32.10	PK	46.00	13.90	Horizontal
6	893.1932	38.31	-3.41	34.90	PK	46.00	11.10	Horizontal

8.8 CONDUCTED EMISSION TEST

8.8.1 Applicable Standard

According to FCC Part 15.207(a)

According to RSS-Gen 8.8

8.8.2 Conformance Limit

Frequency(MHz)	Conducted Emission Limit	
	Quasi-peak	Average
0.15-0.5	66-56	56-46
0.5-5.0	56	46
5.0-30.0	60	50

Note: 1. The lower limit shall apply at the transition frequencies

2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

8.8.3 Test Configuration

Test according to clause 7.3 conducted emission test setup

8.8.4 Test Procedure

The EUT was placed on a table which is 0.8m above ground plane.

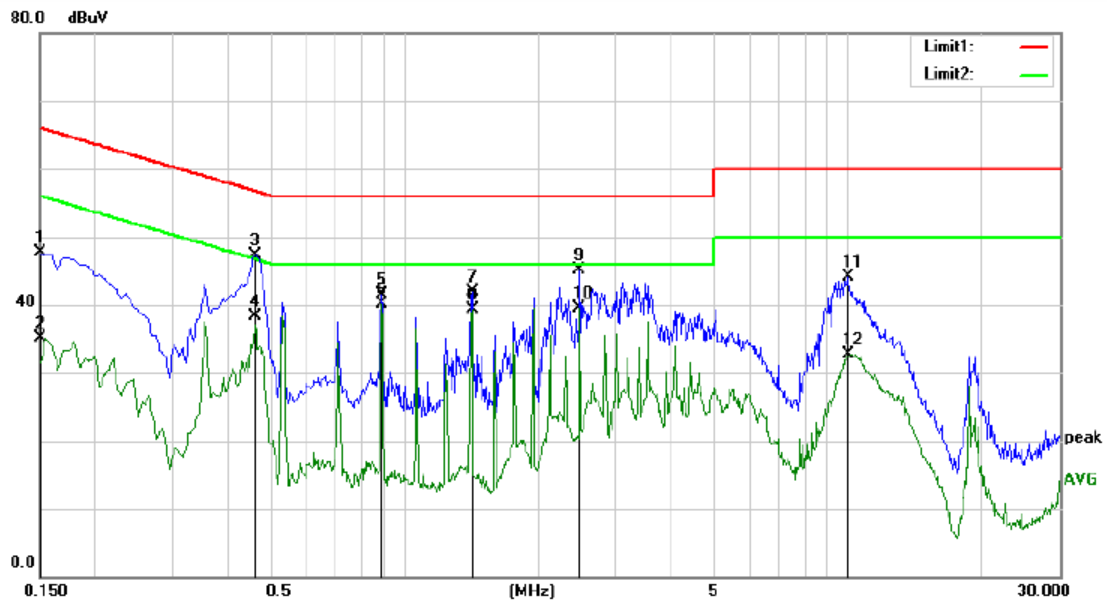
Maximum procedure was performed on the highest emissions to ensure EUT compliance.

Repeat above procedures until all frequency measured were complete.

8.8.5 Test Results

Pass

The AC120V &240V voltage have been tested, and the worst result recorded was report as below:



Site Conduction #1

Phase: **L1**

Temperature: 21.9

Limit: (CE)FCC PART 15 class B_QP

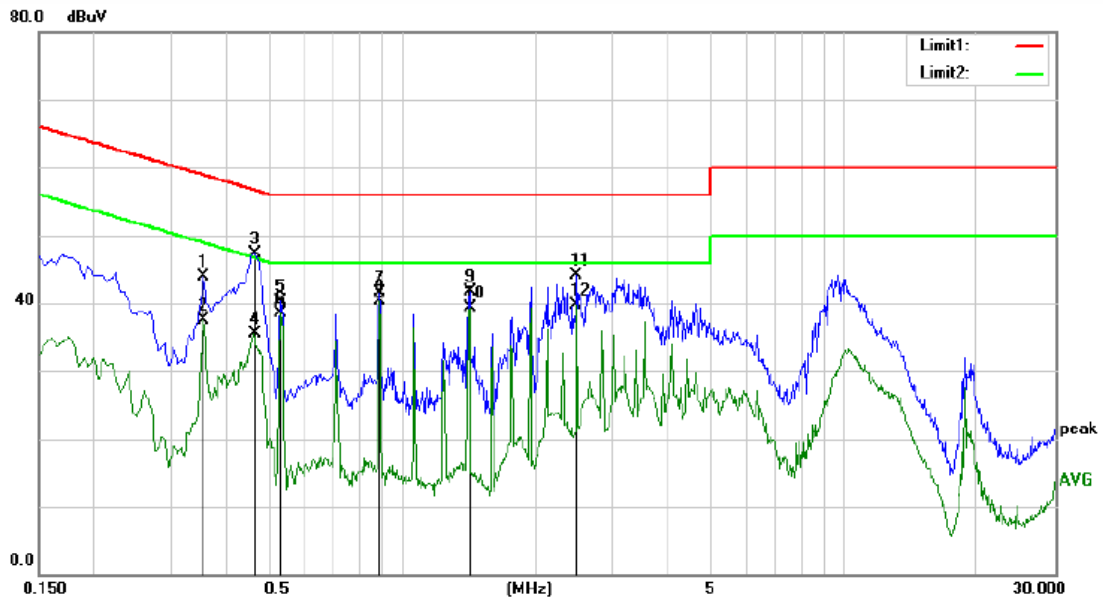
Power: AC 120V/60Hz

Humidity: 58 %

Mode: WiFi

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1500	38.11	9.53	47.64	66.00	-18.36	QP	
2		0.1500	25.52	9.53	35.05	56.00	-20.95	AVG	
3		0.4600	37.80	9.53	47.33	56.69	-9.36	QP	
4		0.4600	28.84	9.53	38.37	46.69	-8.32	AVG	
5		0.8850	32.00	9.55	41.55	56.00	-14.45	QP	
6	*	0.8850	30.58	9.55	40.13	46.00	-5.87	AVG	
7		1.4200	32.37	9.55	41.92	56.00	-14.08	QP	
8		1.4200	29.85	9.55	39.40	46.00	-6.60	AVG	
9		2.4800	35.61	9.55	45.16	56.00	-10.84	QP	
10		2.4800	30.00	9.55	39.55	46.00	-6.45	AVG	
11		10.0050	34.35	9.70	44.05	60.00	-15.95	QP	
12		10.0050	23.08	9.70	32.78	50.00	-17.22	AVG	



Site Conduction #1

Phase: **N**

Temperature: 21.9

Limit: (CE)FCC PART 15 class B_QP

Power: AC 120V/60Hz

Humidity: 58 %

Mode: WiFi

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.3550	34.33	9.54	43.87	58.84	-14.97	QP	
2		0.3550	27.91	9.54	37.45	48.84	-11.39	AVG	
3		0.4650	37.75	9.53	47.28	56.60	-9.32	QP	
4		0.4650	26.06	9.53	35.59	46.60	-11.01	AVG	
5		0.5300	30.78	9.53	40.31	56.00	-15.69	QP	
6		0.5300	28.99	9.53	38.52	46.00	-7.48	AVG	
7		0.8850	32.04	9.55	41.59	56.00	-14.41	QP	
8	*	0.8850	30.79	9.55	40.34	46.00	-5.66	AVG	
9		1.4200	32.18	9.55	41.73	56.00	-14.27	QP	
10		1.4200	29.84	9.55	39.39	46.00	-6.61	AVG	
11		2.4800	34.65	9.55	44.20	56.00	-11.80	QP	
12		2.4800	30.25	9.55	39.80	46.00	-6.20	AVG	

8.9 ANTENNA APPLICATION

8.9.1 Antenna Requirement

Standard	Requirement
FCC CRF Part 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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.
FCC 47 CFR Part 15.247 (b)	If transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.
RSS-Gen Section 6.8	The applicant for equipment certification shall provide a list of all antenna types that may be used with the transmitter, where applicable (i.e. for transmitters with detachable antenna), indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna. The test report shall demonstrate the compliance of the transmitter with the limit for maximum equivalent isotropically radiated power (e.i.r.p.) specified in the applicable RSS, when the transmitter is equipped with any antenna type, selected from this list.
RSS-247 Section 5.4	If the transmitter employs an antenna system that emits multiple directional beams, but does not emit multiple directional beams simultaneously, the total output power conducted to the array or arrays that comprise the device (i.e. the sum of the power supplied to all antennas, antenna elements, staves, etc., and summed across all carriers or frequency channels) shall not exceed the applicable output power limit. However, the total conducted output power shall be reduced by 1 dB below the specified limits for each 3 dB that the directional gain of the antenna/antenna array exceeds 6 dBi. The directional antenna gain shall be computed as the sum of 10 log (number of array elements or staves) plus the directional gain of the element or staff having the highest gain.

8.9.2 Result

PASS.

- Note:
- ☒ Antenna use a permanently attached antenna which is not replaceable.
 - ☐ Not using a standard antenna jack or electrical connector for antenna replacement
 - ☐ The antenna has to be professionally installed (please provide method of installation)

Please refer to the attached document Internal Photos to show the antenna connector.

----- END OF REPORT -----