



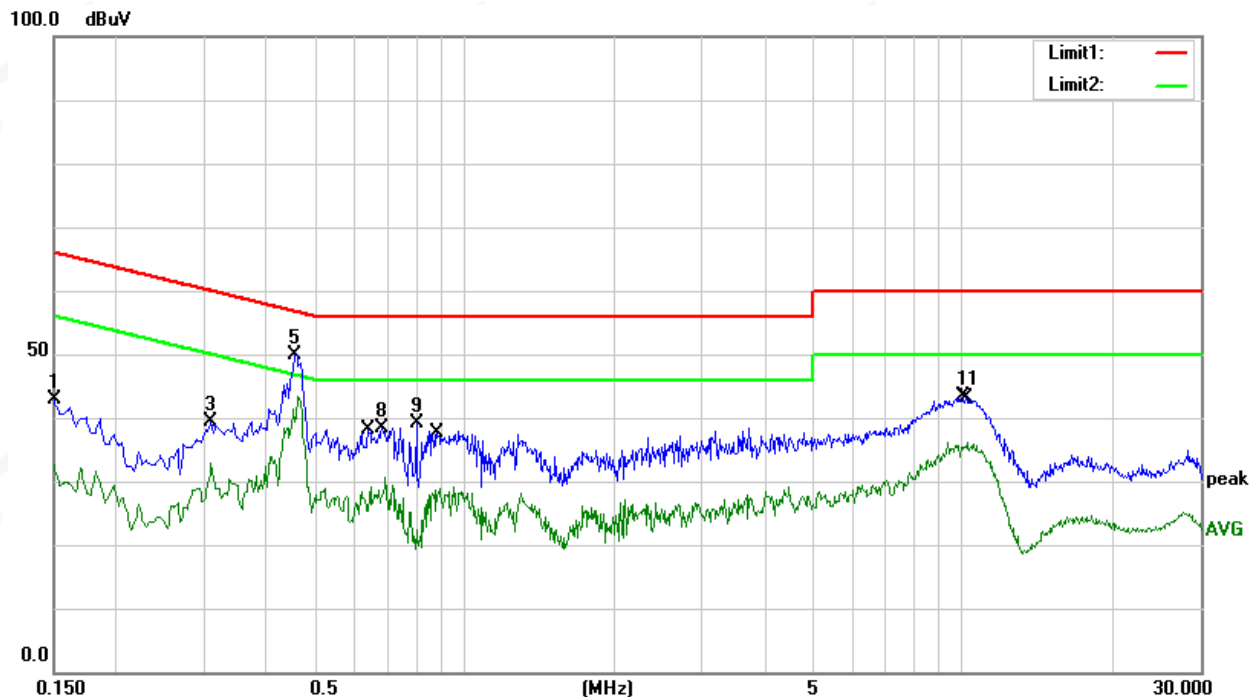
3.1.5 TEST RESULT

Temperature:	25.1°C	Relative Humidity:	59%
Test Voltage:	AC 120V/60Hz	Phase:	L
Test Mode:	Mode 4		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1500	23.09	19.78	42.87	66.00	-23.13	QP
2	0.1500	12.81	19.78	32.59	56.00	-23.41	AVG
3	0.3100	19.18	20.20	39.38	59.97	-20.59	QP
4	0.3100	12.64	20.20	32.84	49.97	-17.13	AVG
5	0.4580	29.87	20.01	49.88	56.73	-6.85	QP
6	0.4620	23.41	20.01	43.42	46.66	-3.24	AVG
7	0.6500	9.16	19.87	29.03	46.00	-16.97	QP
8	0.6860	18.55	19.83	38.38	56.00	-17.62	AVG
9	0.8020	19.25	19.80	39.05	56.00	-16.95	QP
10	0.8740	8.87	19.79	28.66	46.00	-17.34	AVG
11	10.0380	23.18	20.27	43.45	60.00	-16.55	QP
12	10.2140	15.79	20.28	36.07	50.00	-13.93	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Margin = Result (Result = Reading + Factor) – Limit



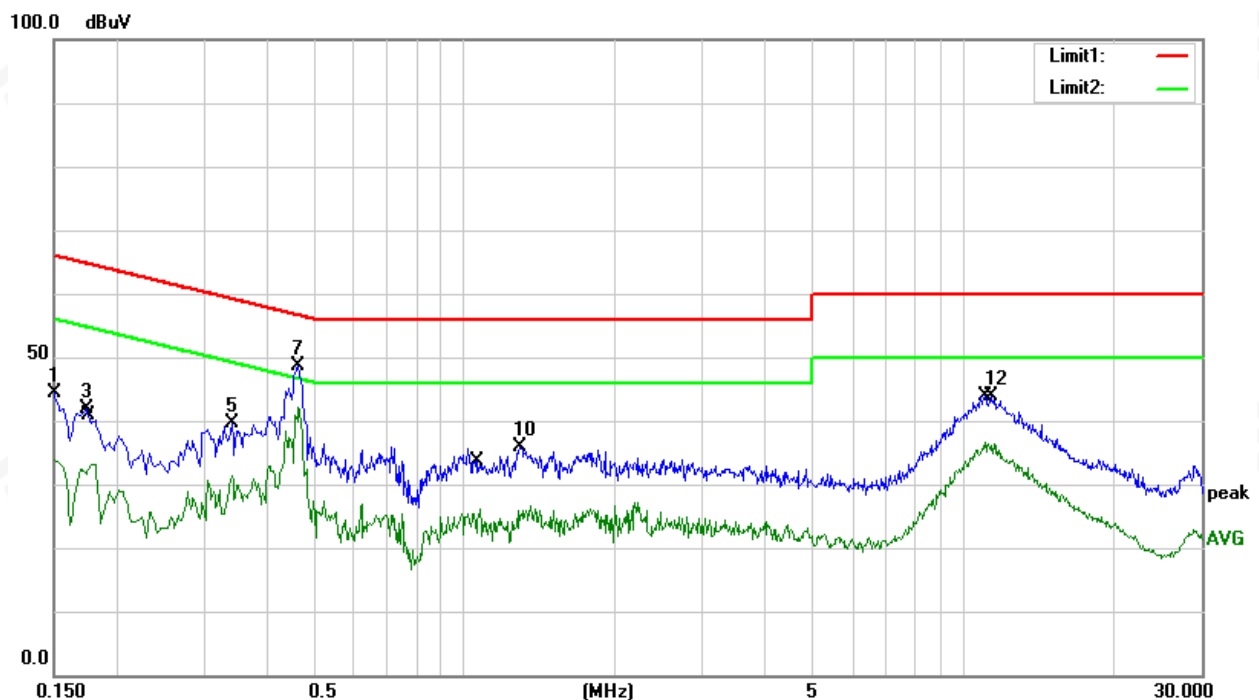


Temperature:	25.1°C	Relative Humidity:	59%
Test Voltage:	AC 120V/60Hz	Phase:	N
Test Mode:	Mode 4		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1500	24.64	19.74	44.38	66.00	-21.62	QP
2	0.1500	14.25	19.74	33.99	56.00	-22.01	AVG
3	0.1740	21.97	19.80	41.77	64.77	-23.00	QP
4	0.1780	13.32	19.81	33.13	54.58	-21.45	AVG
5	0.3420	19.58	20.17	39.75	59.15	-19.40	QP
6	0.3420	11.09	20.17	31.26	49.15	-17.89	AVG
7	0.4620	28.58	19.99	48.57	56.66	-8.09	QP
8	0.4660	22.03	19.99	42.02	46.58	-4.56	AVG
9	1.0740	6.25	19.78	26.03	46.00	-19.97	QP
10	1.2900	16.00	19.80	35.80	56.00	-20.20	AVG
11	11.0460	16.48	20.05	36.53	50.00	-13.47	QP
12	11.3820	23.87	20.07	43.94	60.00	-16.06	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Margin = Result (Result = Reading + Factor)–Limit





3.2 RADIATED EMISSION MEASUREMENT

3.2.1 RADIATED EMISSION LIMITS

In any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on Part 15.249 and the Part 15.209(a) limit in the table below has to be followed.

Standard FCC 15.209

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
960~1000	500	3
Above 1000	Other:74.0 dB(μV)/m (Peak) 54.0 dB(μV)/m (Average)	3

Standard FCC 15.249

Frequency of Emission (MHz)	Field Strength of fundamental (millivolts /meter)	Field Strength of Harmonics (microvolts/meter)
900~928	50	500
2400~2483.5	50	500
5725~5875	50	500
24000~242500	250	2500

Notes:

- (1) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.
- (2) Emission level (dBuV/m) =20log Emission level (uV/m).

LIMITS OF RESTRICTED FREQUENCY BANDS

FREQUENCY (MHz)	FREQUENCY (MHz)	FREQUENCY (MHz)	FREQUENCY (GHz)
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7



6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	Above 38.6
13.36-13.41			

Spectrum Parameter	Setting
Detector	Peak/AV
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RB (emission in restricted band)	>20BW
VB (emission in restricted band)	=3xRB

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~90kHz / RB 200Hz for PK & AV
	90kHz~110kHz / RB 200Hz for QP
	110kHz~490kHz / RB 200Hz for PK & AV
	490kHz~30MHz / RB 9kHz for QP
	30MHz~1000MHz / RB 120kHz for QP



3.2.2 TEST PROCEDURE

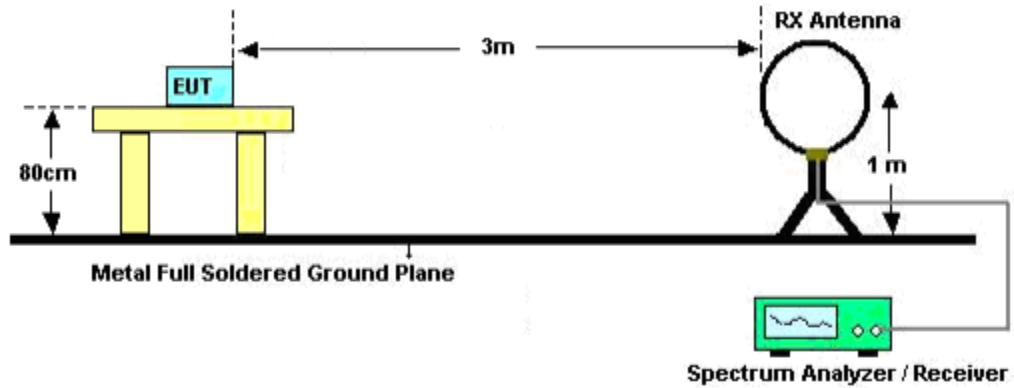
- a. The measuring distance of 3m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation (Below 1GHz)
- b. The measuring distance of 3m shall be used for measurements. The EUT was placed on the top of a rotating table 1.5 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation (Above 1GHz)
- c. The height of the test antenna shall vary between 1m to 4m. Both horizontal and vertical polarization of the antenna are set to make the measurement.
- d. The initial step in collecting radiated emission data is a receive peak detector mode. Pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- e. All readings are peak unless otherwise stated QP in column of Note. Peak denoted that the Peak reading complies with the QP limits and then QP Mode measurement didn't perform (Below 1GHz)
- f. All readings are Peak mode value unless otherwise stated AVG in column of Note. If the Peak mode measured value complies with the Peak limits and lower than AVG Limits, the EUT shall be deemed to meet Peak & AVG limits and then only Peak mode was measured, but AVG mode didn't perform. (Above 1GHz)
- g. For the actual test configuration, please refer to the related Item –EUT Test Photos.
Note: Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axes. The worst case emissions were reported.

3.2.3 DEVIATION FROM TEST STANDARD

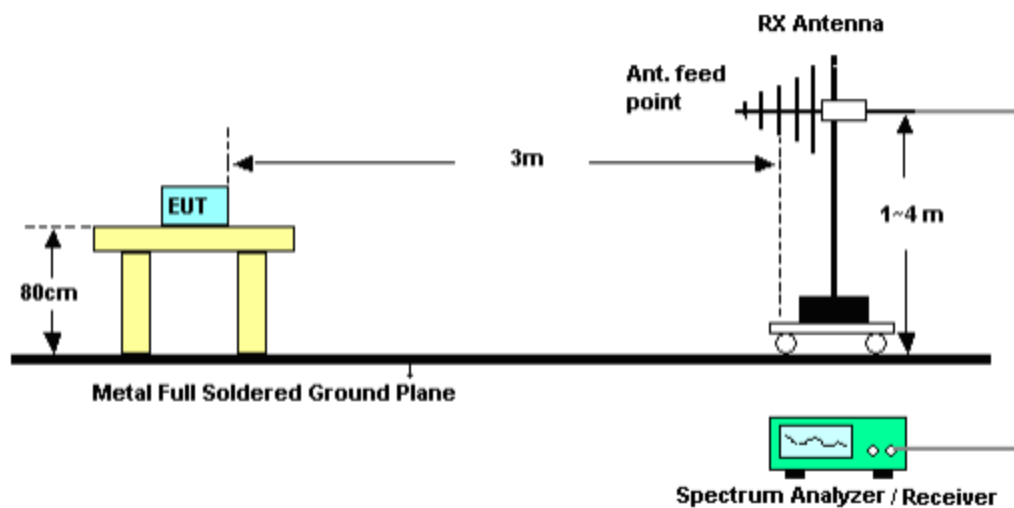
No deviation

3.2.4 TEST SETUP

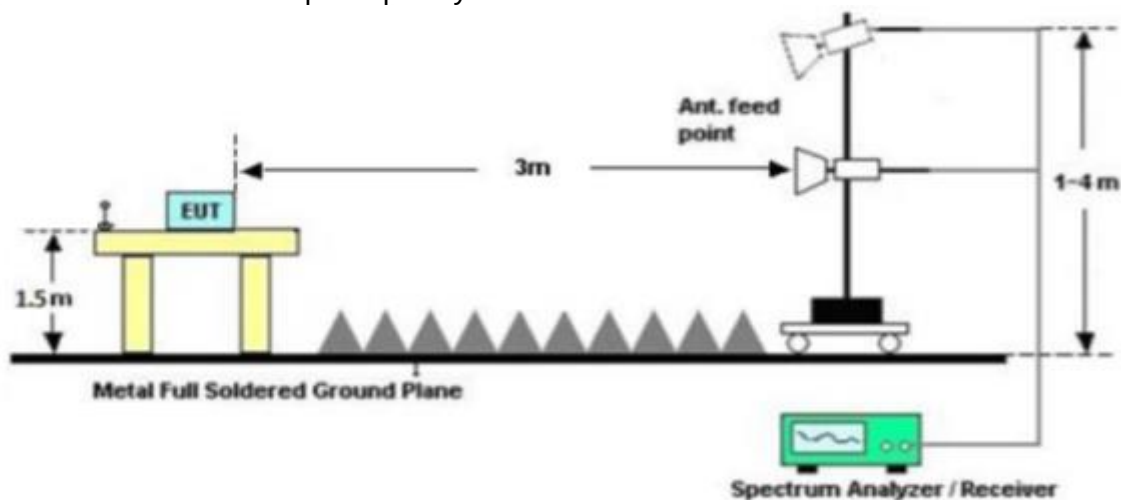
(A) Radiated Emission Test-Up Frequency Below 30MHz



(B) Radiated Emission Test-Up Frequency 30MHz~1GHz



(C) Radiated Emission Test-Up Frequency Above 1GHz





3.2.5 FIELD STRENGTH CALCULATION

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor (if any) from the measured reading. The basic equation with a sample calculation is as follows:

Margin=PL-PK L or AL- AV L; Margin only shown the worst case.

Where

PR = Peak Reading

AR = Average Reading

PL = Peak Level

AL = Average Level

AF = Antenna Factor

PK L = Peak Limit

AV L = AV Limit

For example

Frequency	PR	AR	AF	PL	AL	PK L	AV L	Margin
(MHz)	(dBμV/m)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV/m)	(dBμV/m)	(dBμV/m)	(dB)
2178	40.23	30.31	9.83	50.06	40.14	74.00	54.00	-13.86



3.2.6 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

Below 30 MHz

Temperature:	23.4°C	Relative Humidity:	60%
Test Voltage:	AC 120V/60Hz	Polarization:	---
Test Mode:	TX Mode		

Freq.	Reading	Limit	Margin	State
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F
--	--	--	--	PASS
--	--	--	--	PASS

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

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



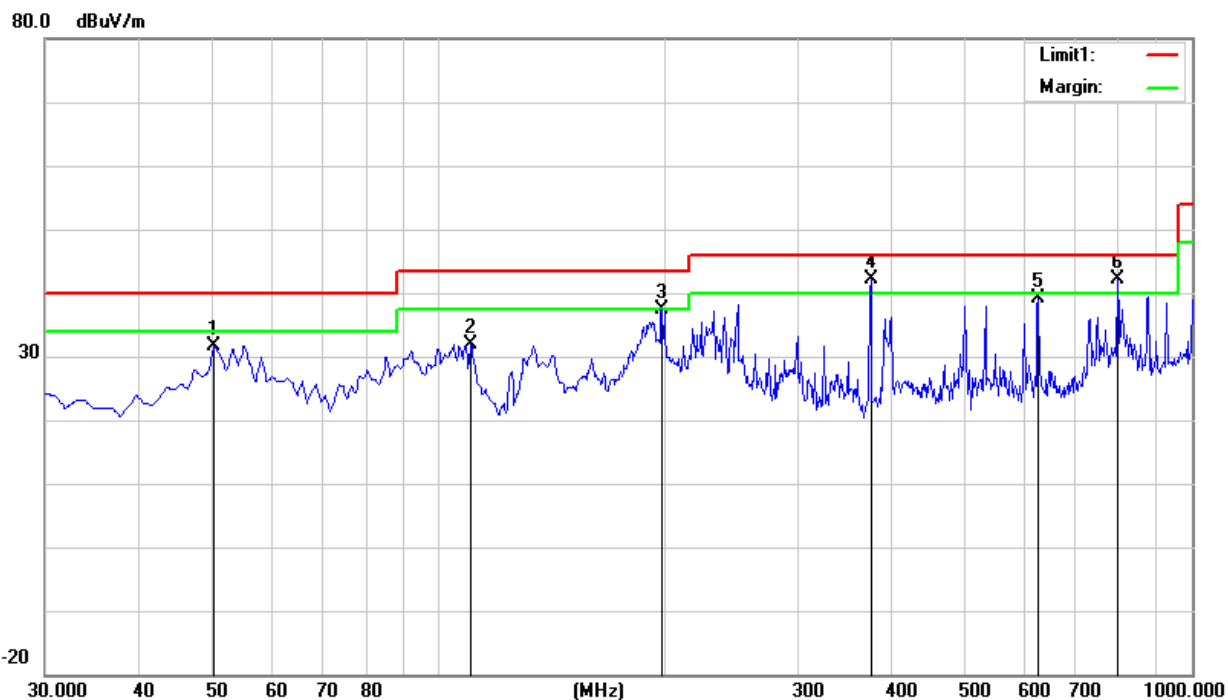
Between 30MHz – 1000 MHz Radiation Spurious

Temperature:	23.4℃	Relative Humidity:	60%
Test Voltage:	AC 120V/60Hz	Phase:	Horizontal
Test Mode:	Mode 1/2/3(mode 2wost mode)		

No.	Frequency (MHz)	Reading (dBUV)	Correct Factor(dB/m)	Result (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Remark
1	50.3700	55.04	-23.42	31.62	40.00	-8.38	peak
2	110.5100	50.85	-19.01	31.84	43.50	-11.66	peak
3	197.8928	58.56	-21.12	37.44	43.50	-6.06	peak
4	375.3200	54.47	-12.37	42.10	46.00	-3.90	peak
5	625.5800	44.32	-5.25	39.07	46.00	-6.93	peak
6	796.3000	44.09	-2.02	42.07	46.00	-3.93	peak

Remark:

1. Margin = Result (Result =Reading + Factor)–Limit
2. Factor= Antenna factor+Cable attenuation factor(cable loss)-Amplifier gain
3. All Antenna port have been tested,only show the worst case





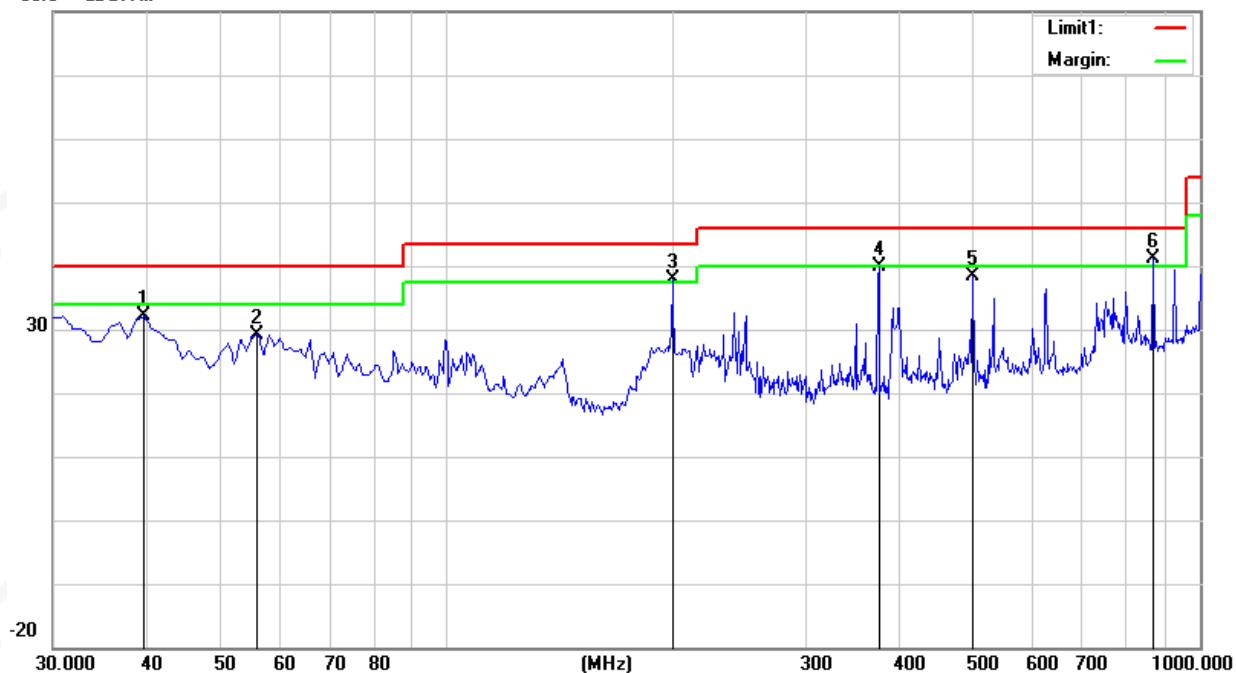
Temperature:	23.4°C	Relative Humidity:	60%
Test Voltage:	AC 120V/60Hz	Phase:	Vertical
Test Mode:	Mode 1/2/3(mode 2wost mode)		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	39.7000	49.98	-17.88	32.10	40.00	-7.90	peak
2	56.1900	54.47	-25.30	29.17	40.00	-10.83	peak
3	199.7500	59.06	-21.11	37.95	43.50	-5.55	peak
4	375.3200	52.23	-12.37	39.86	46.00	-6.14	peak
5	500.4500	46.29	-8.01	38.28	46.00	-7.72	peak
6	869.0500	41.70	-0.52	41.18	46.00	-4.82	peak

Remark:

1. Margin = Result (Result =Reading + Factor)-Limit
2. Factor= Antenna factor+Cable attenuation factor(cable loss)-Amplifier gain
3. All Antenna port have been tested,only show the worst case

80.0 dBuV/m



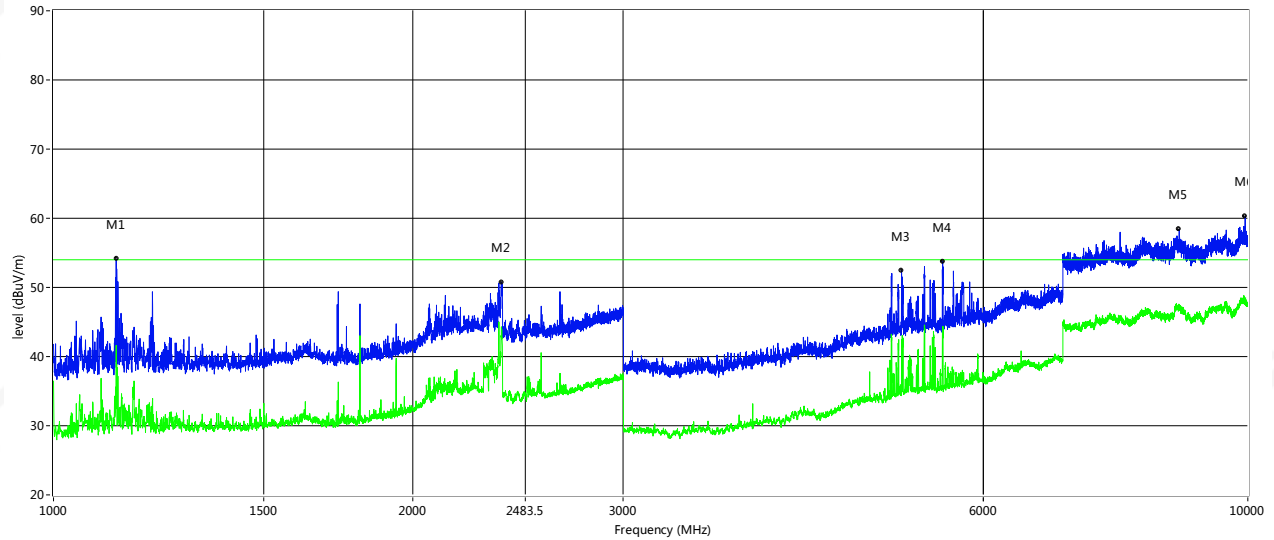


Above 1G Radiation Spurious

902.75MHz

Horizontal

RE_FCC Test Case_FCC 15C 1GHz-10GHz

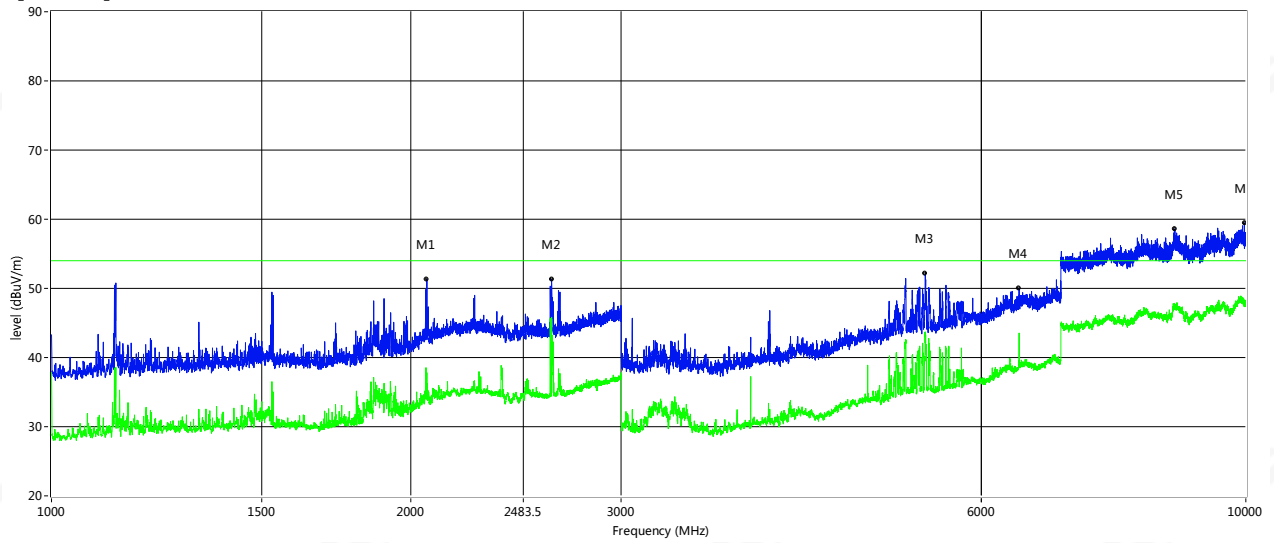


Frequency (MHz)	Peak Level (dBuV /m)	Average Level (dBuV /m)	Factor (dB)	PK Limit (dBuV /m)	AV Limit (dBuV /m)	Over Limit (dB)	Table (o)	Height (cm)	ANT	Verdict
1128.500	54.11	41.61	-1.43	74.0	54.0	-12.39	233.80	100	Horizontal	Pass
2371.000	50.77	44.27	4.21	74.0	54.0	-9.73	278.80	100	Horizontal	Pass
5130.000	52.43	42.29	-5.34	74.0	54.0	-11.71	289.20	100	Horizontal	Pass
5552.000	53.74	44.25	-4.54	74.0	54.0	-9.75	118.70	100	Horizontal	Pass
8761.000	58.42	47.29	4.97	74.0	54.0	-6.71	310.20	100	Horizontal	Pass
9948.250	60.29	48.28	5.81	74.0	54.0	-5.72	347.10	100	Horizontal	Pass



Vertical

RE_FCC Test Case_FCC 15C 1GHz-10GHz



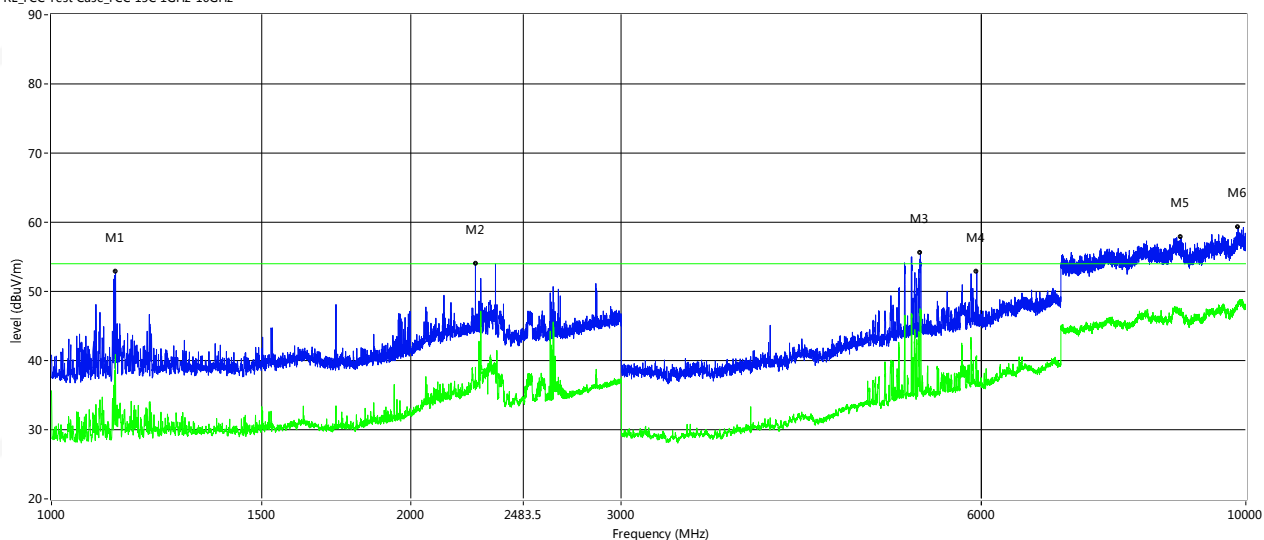
Frequency (MHz)	Peak Level (dBuV /m)	Average Level (dBuV /m)	Factor (dB)	PK Limit (dBuV /m)	AV Limit (dBuV /m)	Over Limit (dB)	Table (o)	Height (cm)	ANT	Verdict
2062.000	51.33	37.81	3.06	74.0	54.0	-16.19	111.00	100	Vertical	Pass
2622.500	51.30	40.51	4.24	74.0	54.0	-13.49	291.90	100	Vertical	Pass
5390.000	52.08	42.13	-4.78	74.0	54.0	-11.87	348.50	100	Vertical	Pass
6459.000	49.99	43.54	-0.76	74.0	54.0	-10.46	29.40	100	Vertical	Pass
8722.000	58.61	47.68	5.09	74.0	54.0	-6.32	205.20	100	Vertical	Pass
9971.500	59.45	47.82	5.51	74.0	54.0	-6.18	149.00	100	Vertical	Pass



915.25MHz

Horizontal

RE_FCC Test Case_FCC 15C 1GHz-10GHz



Frequency (MHz)	Peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	AV Limit (dBuV/m)	Over Limit (dB)	Table (o)	Height (cm)	ANT	Verdict
1131.500	52.81	37.57	-1.42	74.0	54.0	-16.43	237.60	100	Horizontal	Pass
2264.500	53.93	39.03	4.62	74.0	54.0	-14.97	146.30	100	Horizontal	Pass
5340.000	55.51	46.64	-4.91	74.0	54.0	-7.36	283.60	100	Horizontal	Pass
5953.000	52.79	39.55	-3.12	74.0	54.0	-14.45	289.20	100	Horizontal	Pass
8825.500	57.85	47.12	4.69	74.0	54.0	-6.88	201.90	100	Horizontal	Pass
9852.250	59.32	48.34	6.32	74.0	54.0	-5.66	308.30	100	Horizontal	Pass