

8.5 POWER LINE CONDUCTED EMISSIONS

8.5.1 Applicable Standard

According to FCC Part 15.207(a)

8.5.2 Conformance Limit

FCC Part 15, Subpart B, Class A

Frequency MHz	Limits dB(μV)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	79	66
0.50 ~ 30.00	73	60

8.5.3 Test Configuration

Test according to clause 6.3 conducted emission test setup

8.5.4 Test Procedure

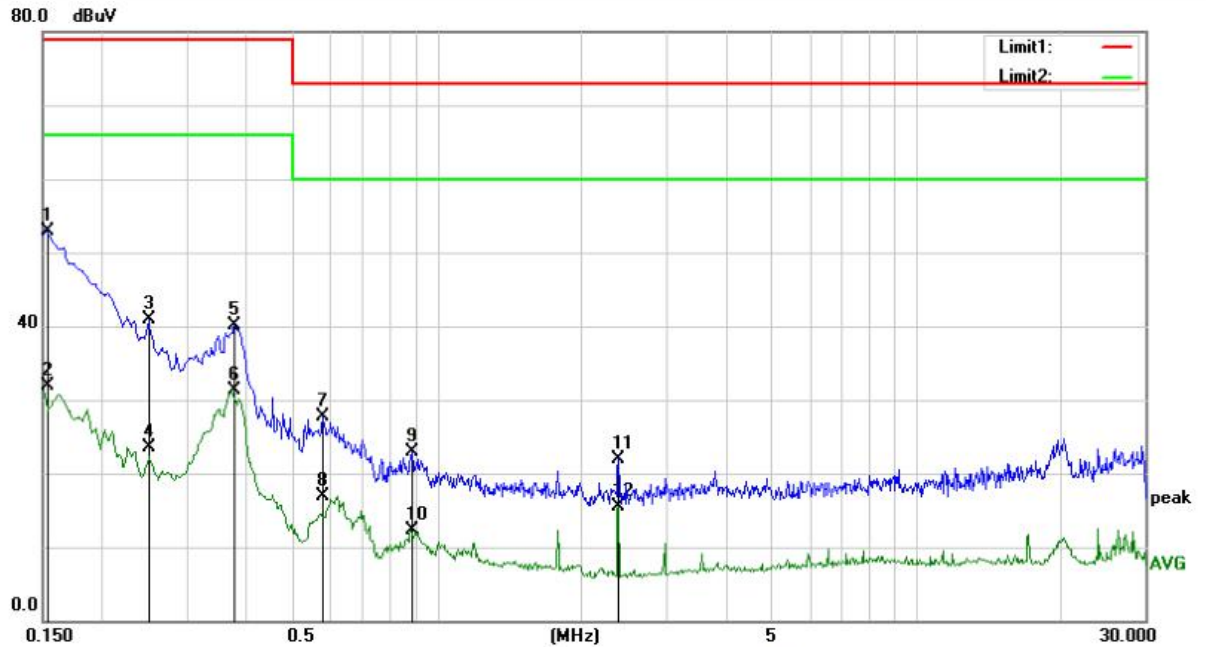
The EUT was placed on a table which is 0.8m above ground plane.
Maximum procedure was performed on the highest emissions to ensure EUT compliance.
Repeat above procedures until all frequency measured were complete.

8.5.5 Test Results

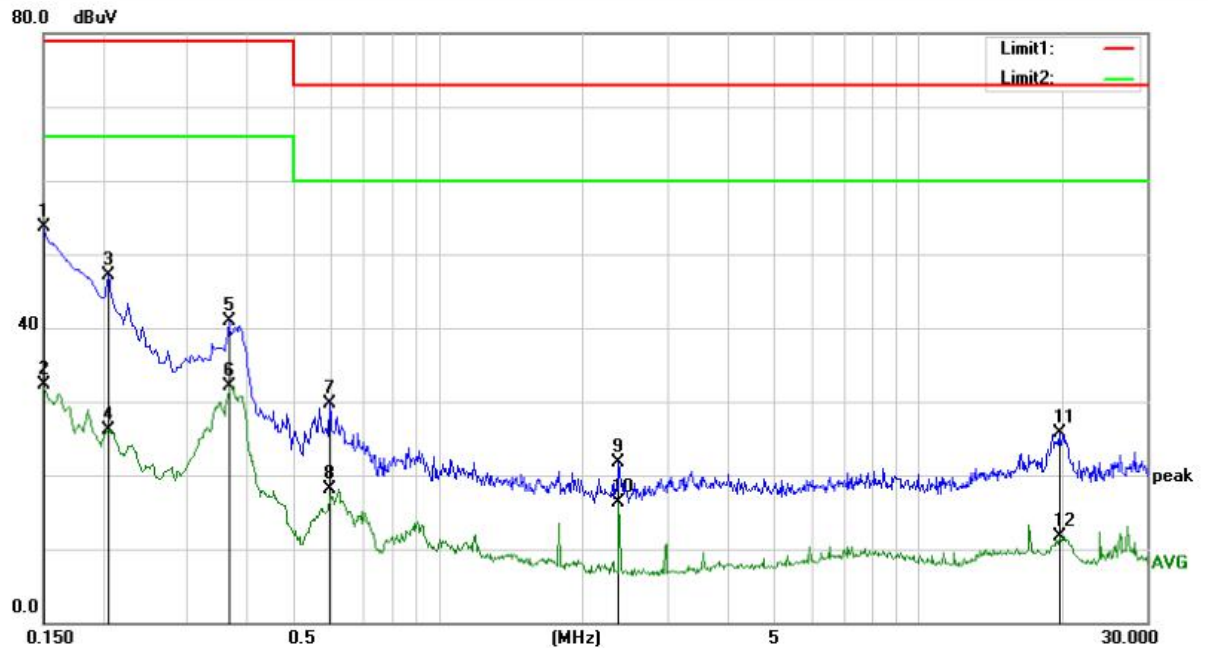
Temperature :	25.1℃	ATM Pressure::	1011 mbar
Humidity :	45 %	Test Engineer:	XZC

Pass

The all voltage have been tested, and the worst result recorded was report as below.



Site Conduction #1				Phase: N		Temperature: 25.1			
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1532	42.92	9.93	52.85	79.00	-26.15	QP	
2		0.1532	22.06	9.93	31.99	66.00	-34.01	AVG	
3		0.2494	30.92	9.93	40.85	79.00	-38.15	QP	
4		0.2494	13.61	9.93	23.54	66.00	-42.46	AVG	
5		0.3771	30.30	9.90	40.20	79.00	-38.80	QP	
6		0.3771	21.37	9.90	31.27	66.00	-34.73	AVG	
7		0.5761	17.77	9.95	27.72	73.00	-45.28	QP	
8		0.5761	7.01	9.95	16.96	60.00	-43.04	AVG	
9		0.8803	12.81	10.00	22.81	73.00	-50.19	QP	
10		0.8803	2.39	10.00	12.39	60.00	-47.61	AVG	
11		2.3835	11.95	10.05	22.00	73.00	-51.00	QP	
12		2.3835	5.51	10.05	15.56	60.00	-44.44	AVG	



Site Conduction #1				Phase: L1			Temperature: 25.1		
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	*	0.1500	43.80	9.93	53.73	79.00	-25.27	QP	
2		0.1500	22.46	9.93	32.39	66.00	-33.61	AVG	
3		0.2050	37.19	9.90	47.09	79.00	-31.91	QP	
4		0.2050	16.13	9.90	26.03	66.00	-39.97	AVG	
5		0.3653	30.97	9.90	40.87	79.00	-38.13	QP	
6		0.3653	22.20	9.90	32.10	66.00	-33.90	AVG	
7		0.5916	19.73	9.95	29.68	73.00	-43.32	QP	
8		0.5916	8.21	9.95	18.16	60.00	-41.84	AVG	
9		2.3710	11.74	10.05	21.79	73.00	-51.21	QP	
10		2.3710	6.28	10.05	16.33	60.00	-43.67	AVG	
11		19.6353	15.10	10.63	25.73	73.00	-47.27	QP	
12		19.6353	1.16	10.63	11.79	60.00	-48.21	AVG	

8.6 ANTENNA APPLICATION

8.6.1 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. This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, §15.213, §15.217, §15.219, or §15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

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. And according to FCC 47 CFR Section 15.407 (a), 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.

8.6.2 Result

Temperature : 25°C ATM Pressure:: 1011 mbar
Humidity : 60 % Test Engineer: GJ

PASS

The EUT is integrated antenna, Ant1: 12.42dBi, Ant2: 12.68dBi.

- ☒ Antennas 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)

Which in accordance to section 15.203, please refer to the internal photos.

Detail of factor for radiated emission:

Frequency(MHz)	Ant_F(dB)	Cab_L(dB)	Preamp(dB)	Correct Factor(dB)
0.009	20.6	0.03	\	20.63
0.15	20.7	0.1	\	20.8
1	20.9	0.15	\	21.05
10	20.1	0.28	\	20.38
30	18.8	0.45	\	19.25
30	11.7	0.62	27.9	-15.58
100	12.5	1.02	27.8	-14.28
300	12.9	1.91	27.5	-12.69
600	19.2	2.92	27	-4.88
800	21.1	3.54	26.6	-1.96
1000	22.3	4.17	26.2	0.27
1000	25.6	1.76	41.4	-14.04
3000	28.9	3.27	43.2	-11.03
5000	31.1	4.2	44.6	-9.3
8000	36.2	5.95	44.7	-2.55
10000	38.4	6.3	43.9	0.8
12000	38.5	7.14	42.3	3.34
15000	40.2	8.15	41.4	6.95
18000	45.4	9.02	41.3	13.12
18000	37.9	1.81	47.9	-8.19
21000	37.9	1.95	48.7	-8.85
25000	39.3	2.01	42.8	-1.49
28000	39.6	2.16	46.0	-4.24
31000	41.2	2.24	44.5	-1.06
34000	41.5	2.29	46.6	-2.81
37000	43.8	2.30	46.4	-0.3
40000	43.2	2.50	42.2	3.5

--- End of Report ---

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