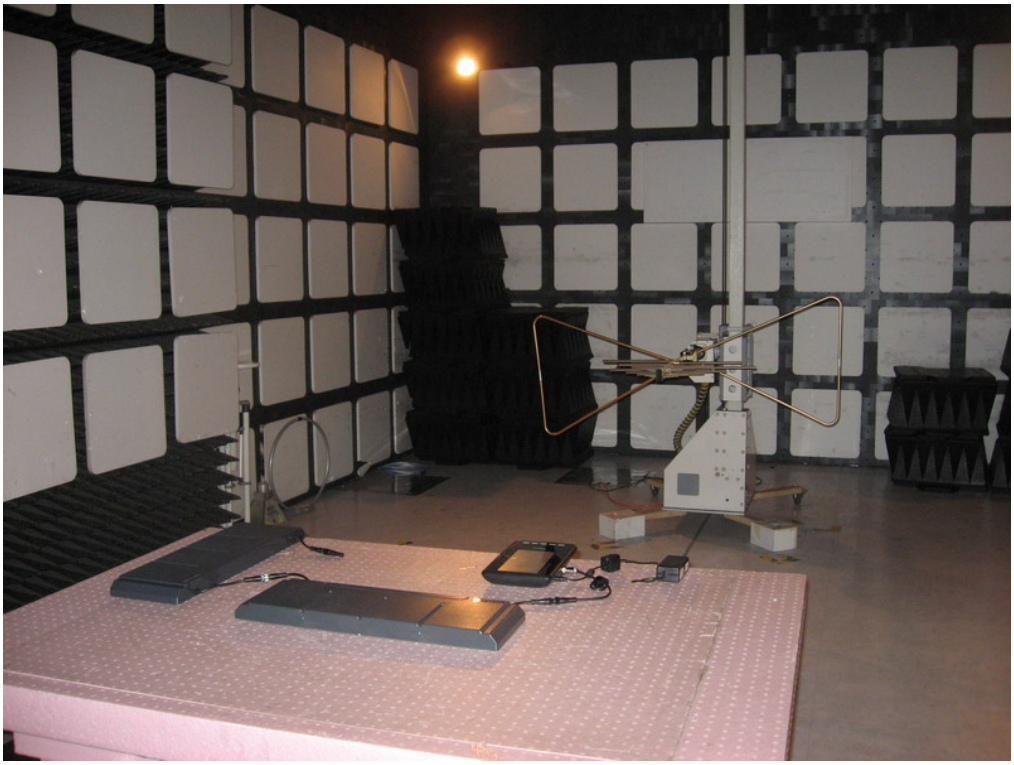
4.6 Photos of Radiation Measuring Setup



5 CONDUCTED EMISSION MEASUREMENT

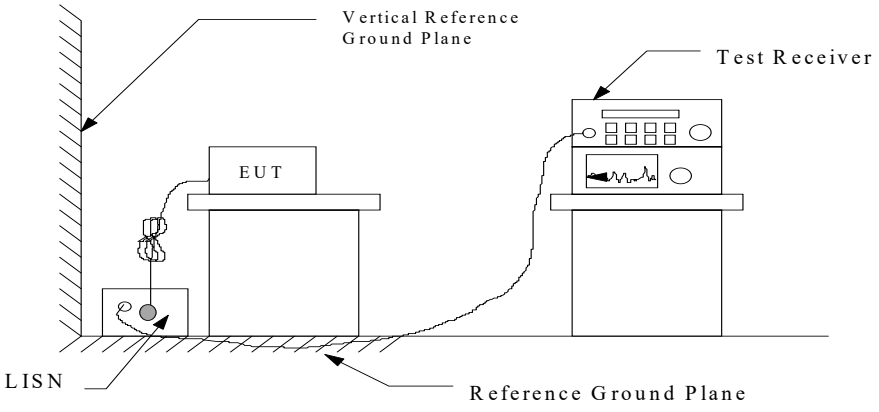
5.1 Standard Applicable

For unintentional and intentional device, Line Conducted Emission Limits are in accordance to §15.107(a) and §15.207(a) respectively. Both Limits are identical specification.

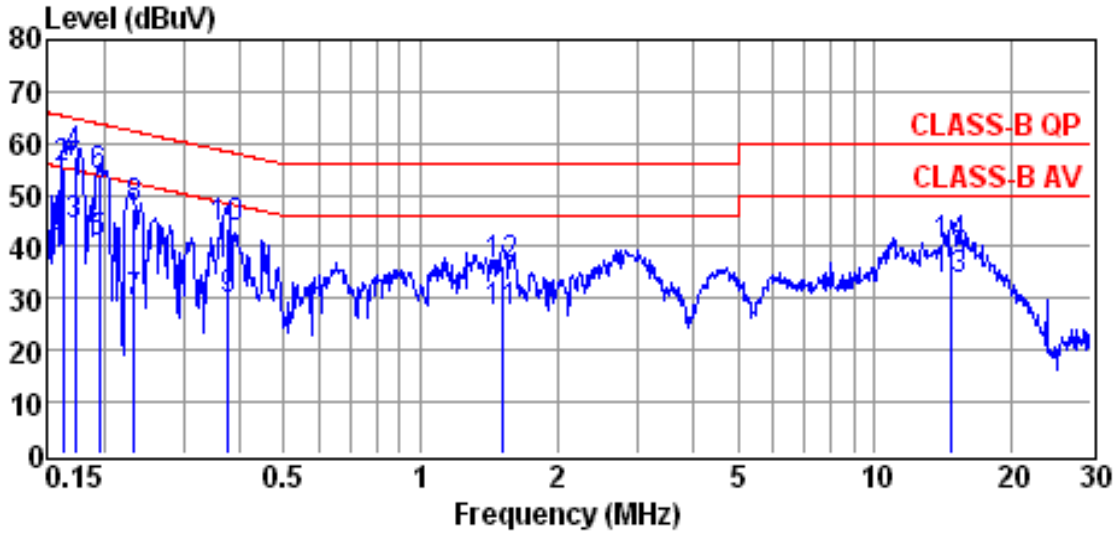
5.2 Measurement Procedure

1. Setup the configuration per figure 3.
2. A preliminary scan with a spectrum monitor is performed to identify the frequency of emission that has the highest amplitude relative to the limit by operating the EUT in selected modes of operation, typical cable positions, and with a typical system configuration.
3. Record the 6 or 8 highest emissions relative to the limit.
4. Measure each frequency obtained from step 3 by a test receiver set on quasi peak detector function, and then record the accuracy frequency and emission level. If all emissions measured in the specified band are attenuated more than 20 dB from the limit, this step would be ignored, and the peak detector function would be used.
5. Confirm the highest three emissions with variation of the EUT cable configuration and record the final data.
6. Repeat all above procedures on measuring each operation mode of EUT.

Figure 3 : Conducted emissions measurement configuration



5.3 Conducted Emission Data

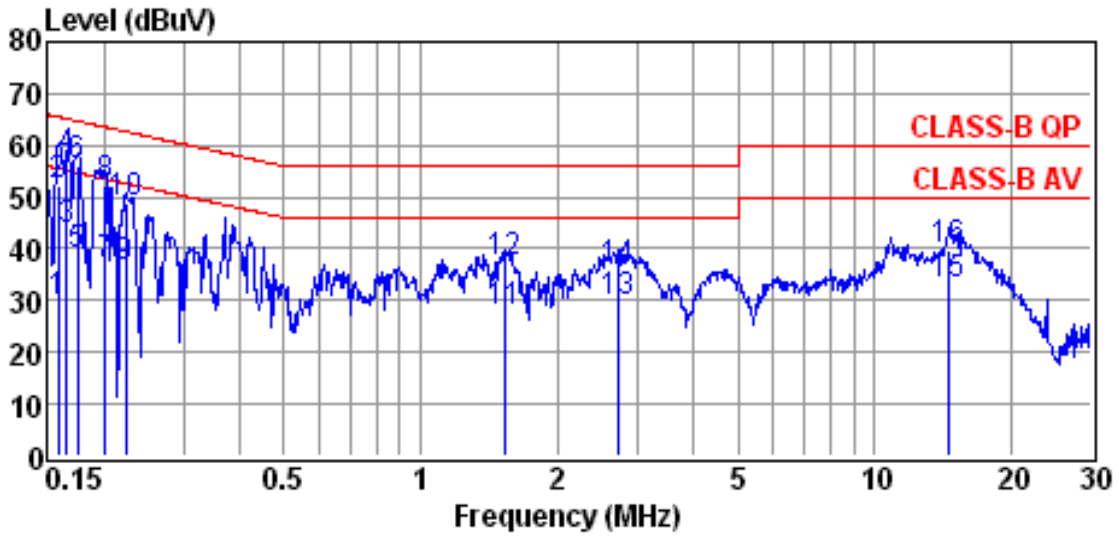


Site	: conducted #1	Date	: 01-11-2018
Condition	: CLASS-B QP	LISN	: NEUTRAL
Tem / Hum	: 25 ℃ / 61%	Test Mode	: Operation
EUT	: LB-004		
Power Rating	: 120Vac/60Hz to Host Device		

Freq (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV)	Limit Line (dBuV)	Over Limit (dB)	Remark
0.1633	28.47	10.17	38.64	55.30	-16.66	Average
0.1633	45.02	10.17	55.19	65.30	-10.11	QP
0.1731	34.09	10.16	44.25	54.81	-10.56	Average
0.1731	47.44	10.16	57.60	64.81	-7.21	QP
0.1955	30.50	10.16	40.66	53.80	-13.14	Average
0.1955	43.59	10.16	53.75	63.80	-10.05	QP
0.2341	19.00	10.16	29.16	52.30	-23.14	Average
0.2341	37.08	10.16	47.24	62.30	-15.06	QP
0.3771	19.34	10.18	29.52	48.34	-18.82	Average
0.3771	33.39	10.18	43.57	58.34	-14.77	QP
1.5190	16.89	10.24	27.13	46.00	-18.87	Average
1.5190	26.17	10.24	36.41	56.00	-19.59	QP
14.8280	22.51	10.92	33.43	50.00	-16.57	Average
14.8280	29.15	10.92	40.07	60.00	-19.93	QP

Note :

1. Result = Reading + Factor
2. Factor = LISN Factor + Cable Loss



Site : conducted #1
Date : 01-11-2011
Condition : CLASS-B QP
LISN : LINE
Tem / Hum : 25 ℃ / 61%
Test Mode : Operation
EUT : LB-004
Power Rating : 120Vac/60Hz to Host Device

Freq (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV)	Limit Line (dBuV)	Over Limit (dB)	Remark
0.1590	19.42	10.17	29.59	55.52	-25.93	Average
0.1590	41.91	10.17	52.08	65.52	-13.44	QP
0.1659	33.48	10.17	43.65	55.16	-11.51	Average
0.1659	47.36	10.17	57.53	65.16	-7.63	QP
0.1749	28.74	10.17	38.91	54.72	-15.81	Average
0.1749	45.72	10.17	55.89	64.72	-8.83	QP
0.2018	26.94	10.17	37.11	53.54	-16.43	Average
0.2018	42.27	10.17	52.44	63.54	-11.10	QP
0.2244	26.27	10.17	36.44	52.66	-16.22	Average
0.2244	38.74	10.17	48.91	62.66	-13.75	QP
1.5350	17.72	10.24	27.96	46.00	-18.04	Average
1.5350	27.32	10.24	37.56	56.00	-18.44	QP
2.7360	19.52	10.32	29.84	46.00	-16.16	Average
2.7360	25.44	10.32	35.76	56.00	-20.24	QP
14.5940	22.05	10.99	33.04	50.00	-16.96	Average
14.5940	28.77	10.99	39.76	60.00	-20.24	QP

Note :
1. Result = Reading + Factor
2. Factor = LISN Factor + Cable Loss

5.4 Result Data Calculation

The result data is calculated by adding the LISN Factor to the measured reading. The basic equation with a sample calculation is as follows:

RESULT = READING + LISN FACTOR

Assume a receiver reading of 22.5 dBμV is obtained, and LISN Factor is 0.1 dB, then the total of disturbance voltage is 22.6 dBμV.

RESULT = 22.5 + 0.1 = 22.6 dBμV
Level in μV = Common Antilogarithm[(22.6 dBμV)/20]
= 13.48 μV

5.5 Conducted Measurement Equipment

The following test equipment are used during the conducted test.

Equipment	Manufacturer	Model No.	Calibration Date	Next Cal. Date
EMI Test Receiver	Rohde & Schwarz	ESCI	2017/07/07	2018/07/06
LISN	Rohde & Schwarz	ESH2-Z5	2017/04/01	2018/03/31

5.6 Photos of Conduction Measuring Setup