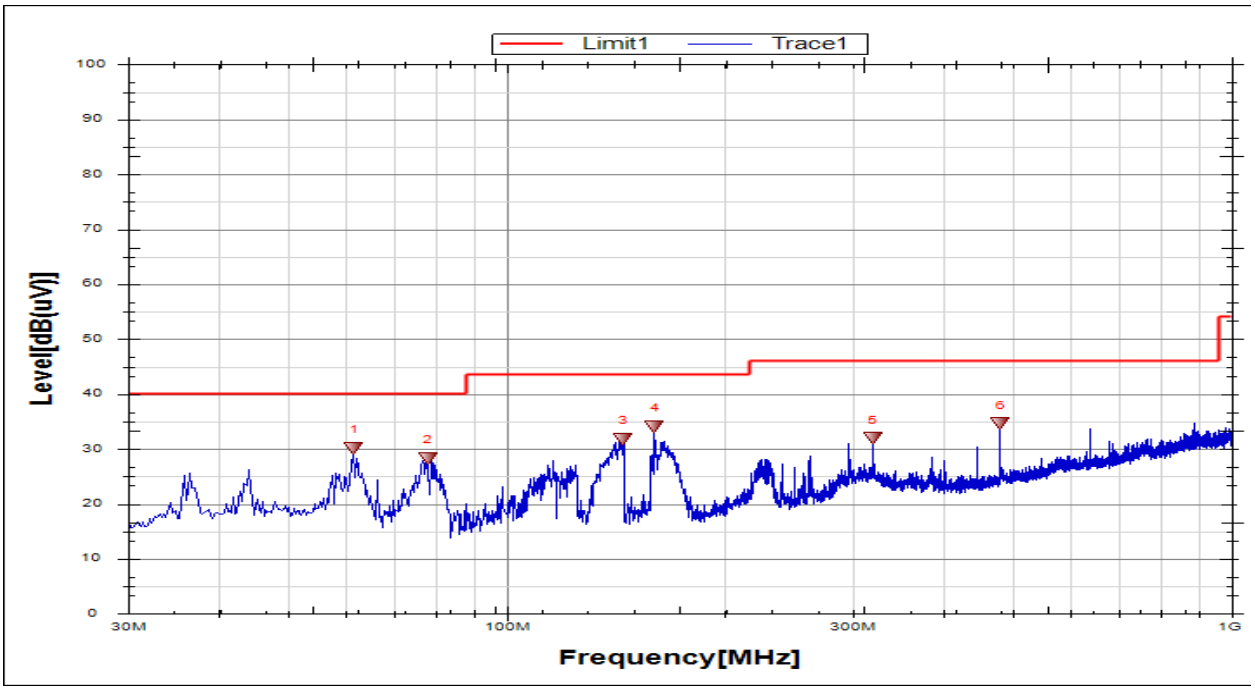
Part 4: 30MHz~1GHz

SPURIOUS EMISSIONS 30M TO 1GHz (WORST-CASE CONFIGURATION)

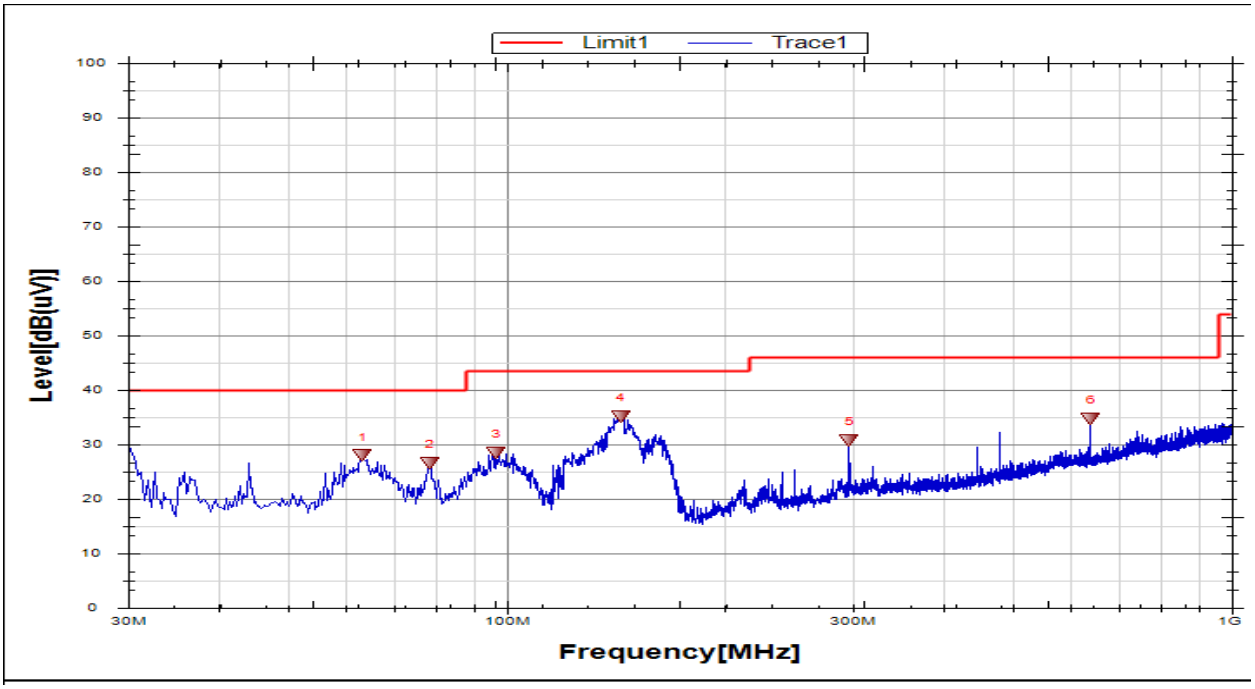
Test Mode	Channel	Polarization	Verdict
11B	LCH	Horizontal	PASS



No.	Frequency	Reading Level	Correct Factor	Result	Limit	Margin	Remark
	[MHz]	[dBuV]	[dB/m]	[dBuV/m]	[dBuV/m]	[dB]	
1	61.5329	11.09	19.14	30.23	40.0	-9.77	Peak
2	77.7845	13.97	14.39	28.36	40.0	-11.64	Peak
3	144.7314	16.48	15.34	31.82	43.5	-11.68	Peak
4	160.0127	18.17	15.89	34.06	43.5	-9.44	Peak
5	319.8604	9.94	21.95	31.89	46.0	-14.11	Peak
6	479.9507	9.38	25.23	34.61	46.0	-11.39	Peak

Note: 1. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
2. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.
3. Measurement = Reading Level + Correct Factor,
Correct Factor = Antenna Factor + Loss (Cable).

Test Mode	Channel	Polarization	Verdict
11B	LCH	Vertical	PASS



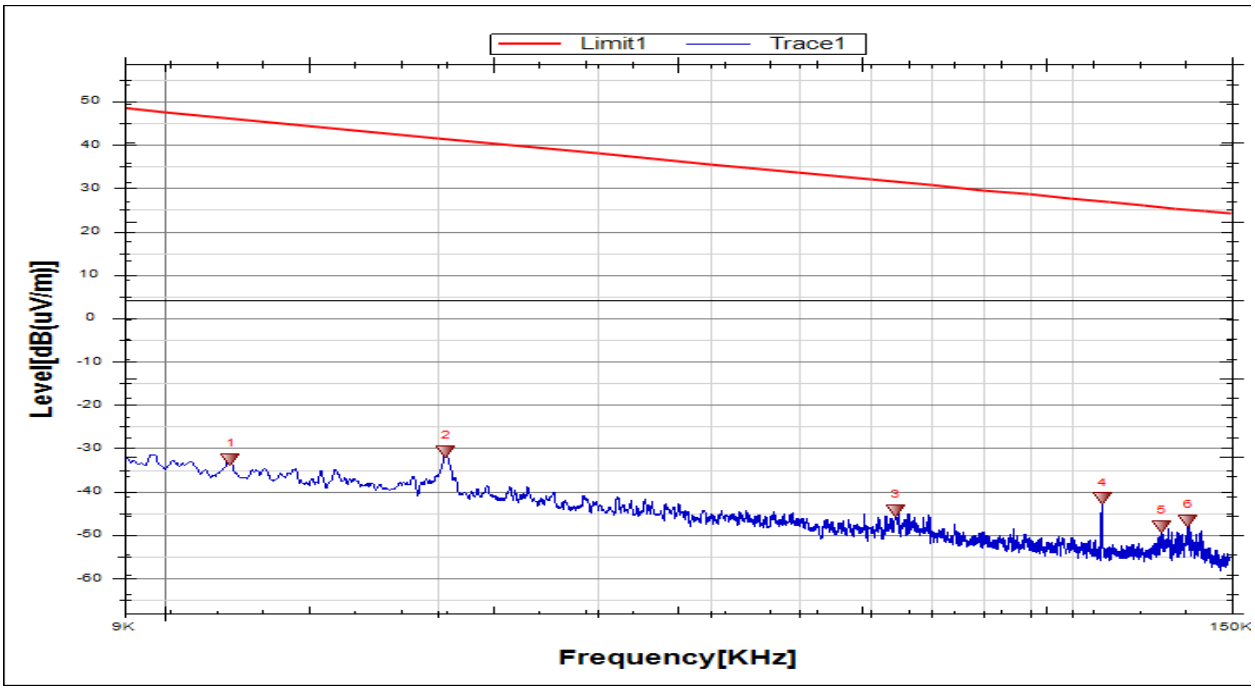
No.	Frequency	Reading Level	Correct Factor	Result	Limit	Margin	Remark
	[MHz]	[dBuV]	[dB/m]	[dBuV/m]	[dBuV/m]	[dB]	
1	63.2309	9.42	18.57	27.99	40.0	-12.01	Peak
2	78.2696	12.41	14.27	26.68	40.0	-13.32	Peak
3	96.7043	10.36	18.23	28.59	43.5	-14.91	Peak
4	143.5185	19.83	15.33	35.16	43.5	-8.34	Peak
5	297.0597	9.68	21.12	30.80	46.0	-15.20	Peak
6	640.0409	6.60	28.13	34.73	46.0	-11.27	Peak

Note: 1. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
2. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.
3. Measurement = Reading Level + Correct Factor,
Correct Factor = Antenna Factor + Loss (Cable).

Part 5: 9kHz~30MHz

SPURIOUS EMISSIONS Below 30MHz (WORST CASE CONFIGURATION-FACE ON)

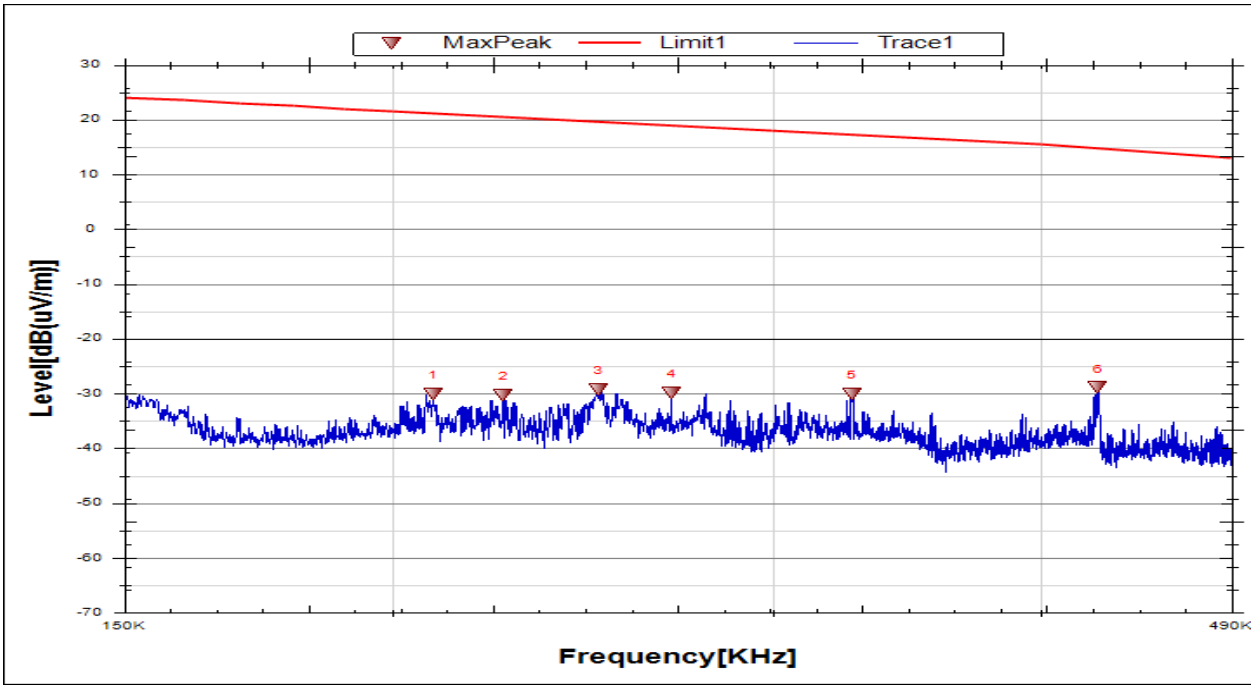
Test Mode	Channel	Frequency Range	Verdict
11B	LCH	9kHz~150kHz	PASS



No.	Frequency	Reading Level	Correct Factor	FCC Result	FCC Limit	ISED Result	ISED Limit	Margin	Remark
	[MHz]	[dBuV]	[dB/m]	[dBuV/m]	[dBuV/m]	[dBuA/m]	[dBuA/m]	[dB]	
1	0.0118	29.21	-61.89	-32.68	46.52	-84.18	-4.98	-79.20	Peak
2	0.0204	31.12	-61.81	-30.69	41.44	-82.19	-10.06	-72.13	Peak
3	0.0639	17.33	-61.76	-44.43	31.53	-95.93	-19.97	-75.96	Peak
4	0.1080	20.17	-61.81	-41.64	26.94	-93.14	-24.56	-68.58	Peak
5	0.1256	13.82	-61.82	-48.00	25.63	-99.50	-25.87	-73.63	Peak
6	0.1343	15.03	-61.83	-46.80	25.05	-98.30	-26.45	-71.85	Peak

Note: 1. Measurement = Reading Level + Correct Factor,
Correct Factor = Antenna Factor + Loss (Cable) + Distance Factor.
2. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.
3. All 3 polarizations(Horizontal, Face-on and Face-off) of the loop antenna had been tested, but only the worst data recorded in the report.

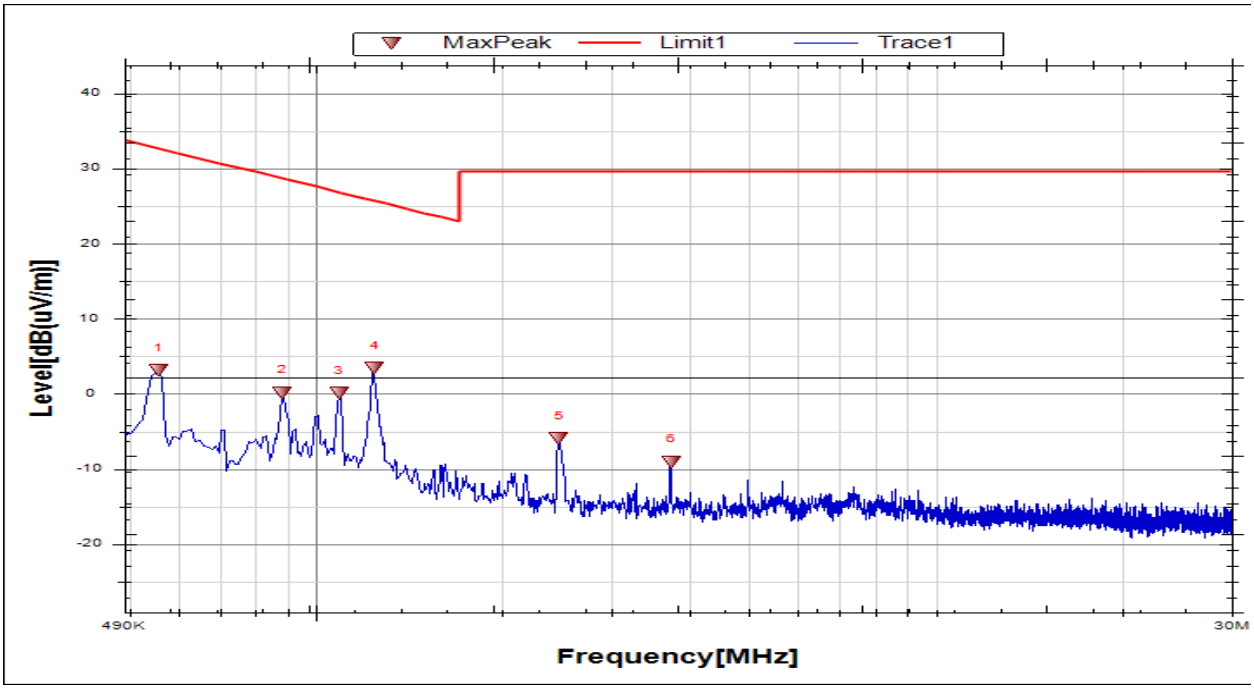
Test Mode	Channel	Frequency Range	Verdict
11B	LCH	150kHz~490kHz	PASS



No.	Frequency	Reading Level	Correct Factor	FCC Result	FCC Limit	ISED Result	ISED Limit	Margin	Remark
	[MHz]	[dBuV]	[dB/m]	[dBuV/m]	[dBuV/m]	[dBuA/m]	[dBuA/m]	[dB]	
1	0.2087	31.76	-61.86	-30.10	21.27	-81.60	-30.23	-51.37	Peak
2	0.2250	31.67	-61.87	-30.20	20.70	-81.70	-30.80	-50.90	Peak
3	0.2491	32.65	-61.88	-29.23	19.85	-80.73	-31.65	-49.08	Peak
4	0.2693	31.99	-61.89	-29.90	19.14	-81.4	-32.36	-49.04	Peak
5	0.3265	31.94	-61.9	-29.96	17.40	-81.46	-34.10	-47.36	Peak
6	0.4248	32.97	-61.88	-28.91	14.88	-80.41	-36.62	-43.79	Peak

Note: 1. Measurement = Reading Level + Correct Factor,
Correct Factor = Antenna Factor + Loss (Cable) + Distance Factor.
2. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.
3. All 3 polarizations(Horizontal, Face-on and Face-off) of the loop antenna had been tested, but only the worst data recorded in the report.

Test Mode	Channel	Frequency Range	Verdict
11B	LCH	490kHz~30MHz	PASS



No.	Frequency	Reading Level	Correct Factor	FCC Result	FCC Limit	ISED Result	ISED Limit	Margin	Remark
	[MHz]	[dBuV]	[dB/m]	[dBuV/m]	[dBuV/m]	[dBuA/m]	[dBuA/m]	[dB]	
1	0.5564	24.99	-21.87	3.12	32.74	-48.38	-18.76	-29.62	Peak
2	0.8811	22.04	-21.85	0.19	28.71	-51.31	-22.79	-28.52	Peak
3	1.0877	21.98	-21.85	0.13	26.88	-51.37	-24.62	-26.75	Peak
4	1.2427	25.30	-21.84	3.46	25.73	-48.04	-25.77	-22.27	Peak
5	2.4676	15.84	-21.80	-5.96	29.54	-57.46	-21.96	-35.50	Peak
6	3.7368	12.74	-21.76	-9.02	29.54	-60.52	-21.96	-38.56	Peak

Note: 1. Measurement = Reading Level + Correct Factor,
Correct Factor = Antenna Factor + Loss (Cable) + Distance Factor.
2. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.
3. All 3 polarizations(Horizontal, Face-on and Face-off) of the loop antenna had been tested, but only the worst data recorded in the report.

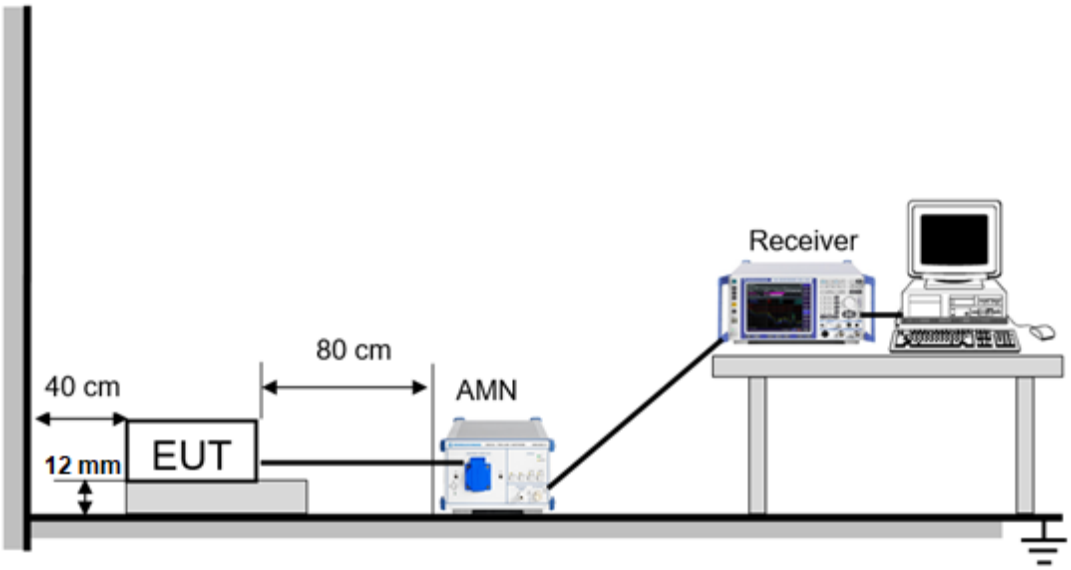
9. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

Please refer to FCC §15.207 (a)

FREQUENCY (MHz)	Limit (dBuV)	
	Quasi-peak	Average
0.15 -0.5	66 - 56 *	56 - 46 *
0.50 -5.0	56.00	46.00
5.0 -30.0	60.00	50.00

TEST SETUP AND PROCEDURE



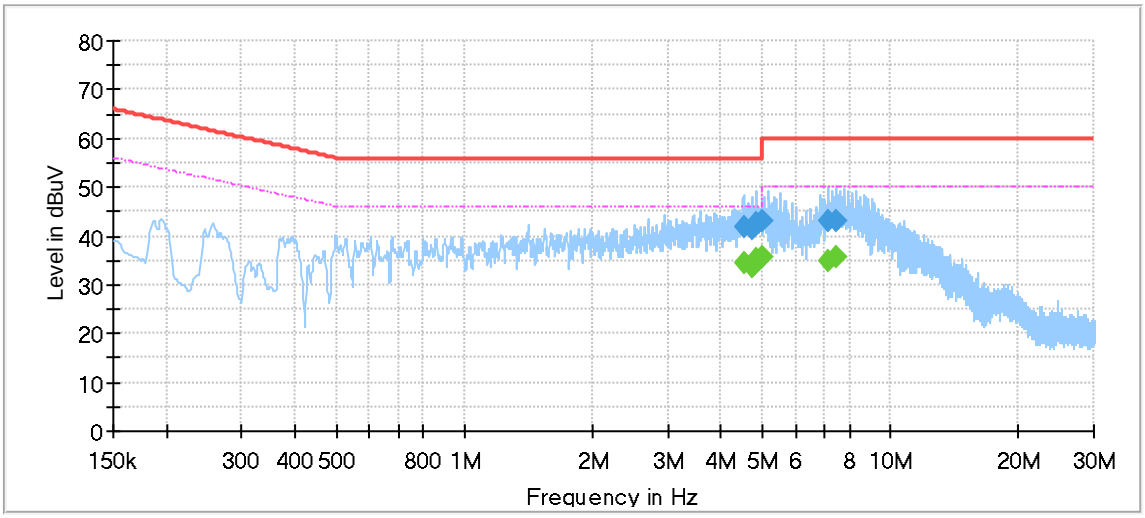
The EUT is put on a table of non-conducting material that is 12 mm high. The vertical conducting wall of shielding is located 40cm to the rear of the EUT. The power line of the EUT is connected to the AC mains through an Artificial Mains Network (A.M.N.). A EMI Measurement Receiver (R&S Test Receiver ESR3) is used to test the emissions from both sides of AC line. According to the requirements in Section 6.2 of ANSI C63.10-2013.Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-Peak and average detector mode. The bandwidth of EMI test receiver is set at 9kHz.

The arrangement of the equipment is installed to meet the standards and operating in a manner, which tends to maximize its emission characteristics in a normal application.

TEST ENVIRONMENT

Temperature	22°C	Relative Humidity	56%
Atmosphere Pressure	101kPa	Test Voltage	AC 120V

LINE L RESULTS (WORST-CASE CONFIGURATION)

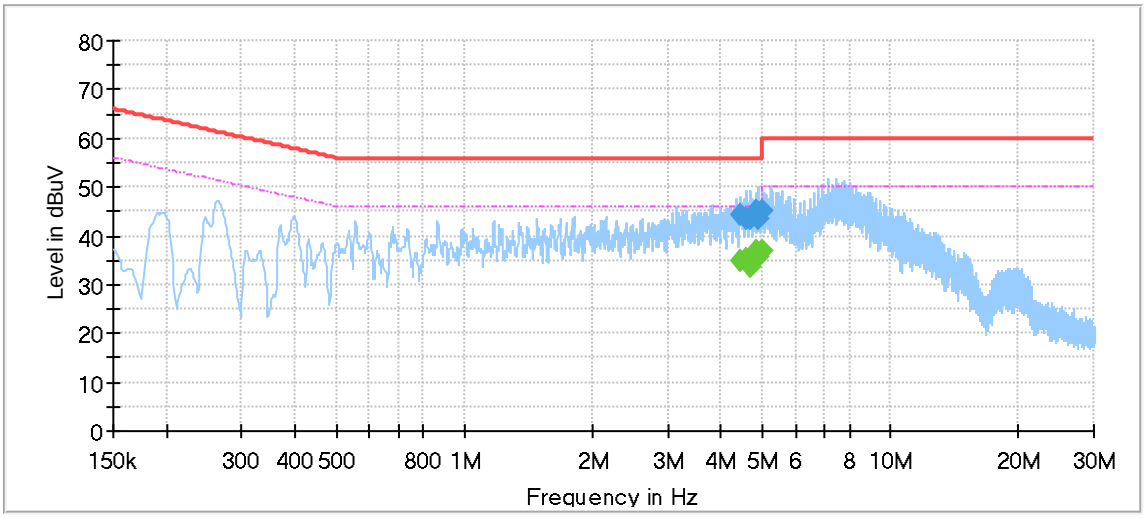


Final_Result

Frequency [MHz]	QuasiPeak [dBµV]	Average [dBµV]	Limit [dBµV]	Margin [dB]	Meas. Time [ms]	Bandwidth [kHz]	Line	Filter	Corr. [dB]
4.517055	---	34.26	46.00	11.74	1000.0	9.000	L1	OFF	9.6
4.517055	41.70	---	56.00	14.30	1000.0	9.000	L1	OFF	9.6
4.718543	---	33.50	46.00	12.50	1000.0	9.000	L1	OFF	9.6
4.718543	41.45	---	56.00	14.55	1000.0	9.000	L1	OFF	9.6
4.854360	---	35.27	46.00	10.73	1000.0	9.000	L1	OFF	9.6
4.854360	42.81	---	56.00	13.19	1000.0	9.000	L1	OFF	9.6
4.990178	---	35.57	46.00	10.43	1000.0	9.000	L1	OFF	9.6
4.990178	43.21	---	56.00	12.79	1000.0	9.000	L1	OFF	9.6
7.146840	---	34.83	50.00	15.17	1000.0	9.000	L1	OFF	9.7
7.146840	43.01	---	60.00	16.99	1000.0	9.000	L1	OFF	9.7
7.484145	---	35.68	50.00	14.32	1000.0	9.000	L1	OFF	9.7
7.484145	43.25	---	60.00	16.75	1000.0	9.000	L1	OFF	9.7

Note: 1. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.
2. Test setup: RBW: 200 Hz (9 kHz—150 kHz), 9 kHz (150 kHz—30 MHz).
3. Step size: 80Hz (0.009MHz-0.15MHz), 4 kHz (0.15MHz-30MHz), Scan time: auto.
4. The extension cord/outlet strip was calibrated with the LISN as required by ANSI C63.10:2013 Clause 6.2.2.
5. Pre-testing all test modes and channels, and find the LCH of 11B which is the worst case, so only the worst case is included in this test report.
6. Two models of adapter will be collocated to the EUT, both of them have been test, the model KL-WA300100-X is the worse case and recorded in this test report.

LINE N RESULTS (WORST-CASE CONFIGURATION)



Final_Result

Frequency [MHz]	QuasiPeak [dBµV]	Average [dBµV]	Limit [dBµV]	Margin [dB]	Meas. Time [ms]	Bandwidth [kHz]	Line	Filter	Corr. [dB]
4.426013	---	34.98	46.00	11.02	1000.0	9.000	N	OFF	9.6
4.426013	44.24	---	56.00	11.76	1000.0	9.000	N	OFF	9.6
4.575263	---	35.38	46.00	10.62	1000.0	9.000	N	OFF	9.6
4.575263	43.46	---	56.00	12.54	1000.0	9.000	N	OFF	9.6
4.711080	---	33.76	46.00	12.24	1000.0	9.000	N	OFF	9.6
4.711080	43.33	---	56.00	12.67	1000.0	9.000	N	OFF	9.6
4.857345	---	36.88	46.00	9.12	1000.0	9.000	N	OFF	9.6
4.857345	45.33	---	56.00	10.67	1000.0	9.000	N	OFF	9.6
4.912568	---	35.76	46.00	10.24	1000.0	9.000	N	OFF	9.6
4.912568	43.62	---	56.00	12.38	1000.0	9.000	N	OFF	9.6
4.979730	---	36.93	46.00	9.07	1000.0	9.000	N	OFF	9.6
4.979730	45.15	---	56.00	10.85	1000.0	9.000	N	OFF	9.6

Note: 1. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.
2. Test setup: RBW: 200 Hz (9 kHz—150 kHz), 9 kHz (150 kHz—30 MHz).
3. Step size: 80Hz (0.009MHz-0.15MHz), 4 kHz (0.15MHz-30MHz), Scan time: auto.
4. The extension cord/outlet strip was calibrated with the LISN as required by ANSI C63.10:2013 Clause 6.2.2.
5. Pre-testing all test modes and channels, and find the LCH of 11B which is the worst case, so only the worst case is included in this test report.
6. Two models of adapter will be collocated to the EUT, both of them have been test, the model KL-WA300100-X is the worse case and recorded in this test report.

10. ANTENNA REQUIREMENTS

APPLICABLE REQUIREMENTS

Please refer to FCC §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.

Please refer to FCC §15.247(b)(4)
The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

ANTENNA GAIN

The antenna gain of EUT is less than 6 dBi

END OF REPORT