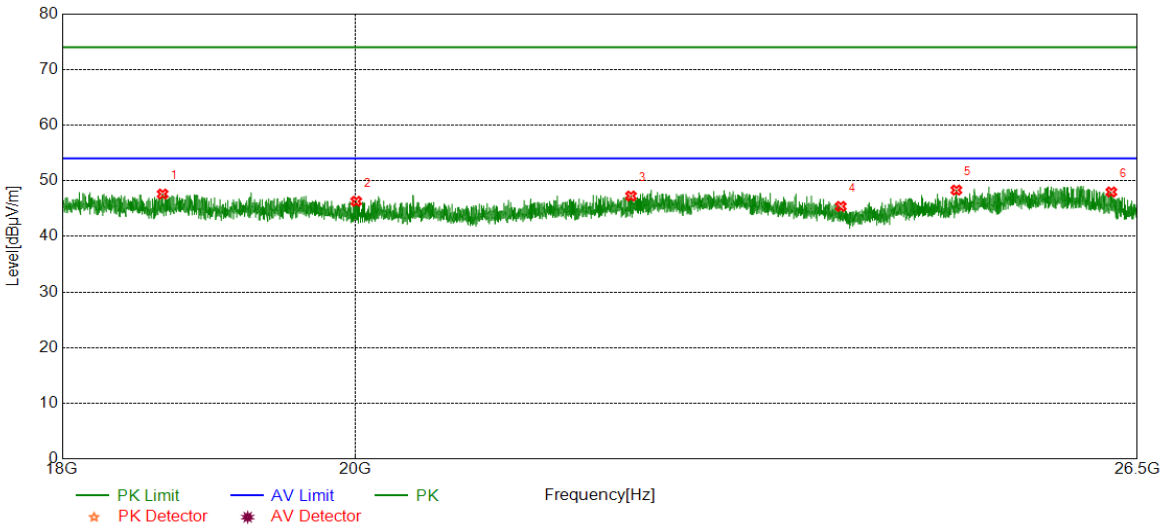
Part III: 18GHz~26.5GHz

SPURIOUS EMISSIONS 18GHz TO 26.5GHz (WORST-CASE CONFIGURATION)

Test Mode	Channel	Polarization	Verdict
11B	HCH	Horizontal	PASS



No.	Frequency	Reading Level	Correct Factor	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
1	18662.2162	48.60	-0.99	47.61	74.00	-26.39	peak
2	20008.7509	46.82	-0.52	46.30	74.00	-27.70	peak
3	22088.0588	46.98	0.28	47.26	74.00	-26.74	peak
4	23820.5321	46.24	-0.85	45.39	74.00	-28.61	peak
5	24832.1332	48.47	-0.15	48.32	74.00	-25.68	peak
6	26256.0256	46.79	1.19	47.98	74.00	-26.02	peak

Note: 1.If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
3. Measurement = Reading Level + Correct Factor.

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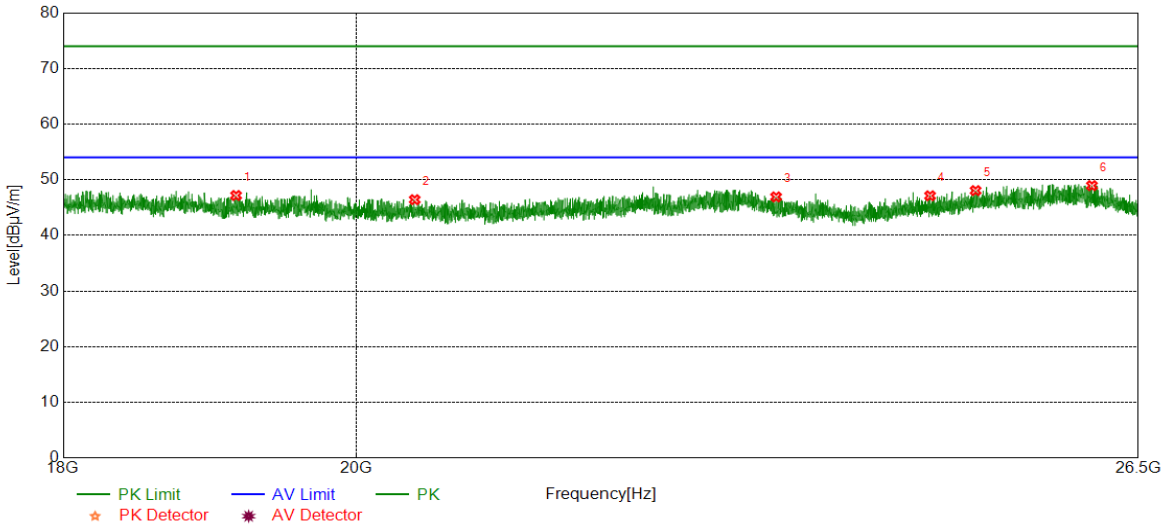
Test Mode	Channel	Polarization	Verdict
11B	HCH	Vertical	PASS



No.	Frequency	Reading Level	Correct Factor	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
1	19155.2655	48.17	-1.00	47.17	74.00	-26.83	peak
2	20426.9927	47.08	-0.66	46.42	74.00	-27.58	peak
3	23263.7264	46.38	0.54	46.92	74.00	-27.08	peak
4	24589.0089	47.58	-0.46	47.12	74.00	-26.88	peak
5	24995.3495	48.03	0.02	48.05	74.00	-25.95	peak
6	26063.9064	47.40	1.54	48.94	74.00	-25.06	peak

Note: 1.If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
3. Measurement = Reading Level + Correct Factor.

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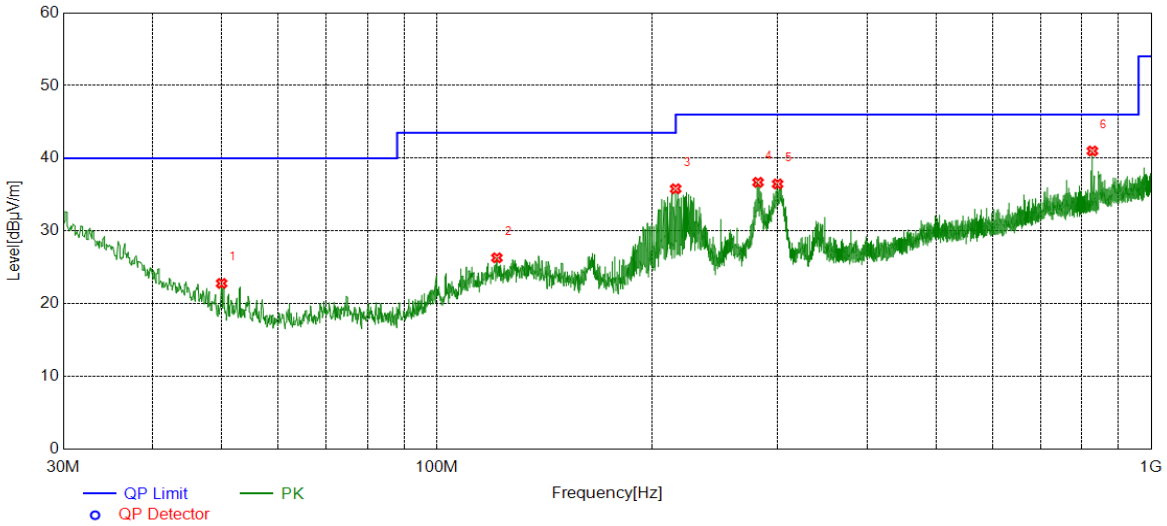
Part IV: 30MHz~1GHz

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

Test Mode	Channel	Polarization	Verdict
11B	HCH	Horizontal	PASS



No.	Frequency (MHz)	Reading Level (dBuV/m)	Correct Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	49.9840	8.23	14.56	22.79	40.00	-17.21	peak
2	121.3831	5.93	20.38	26.31	43.50	-17.19	peak
3	215.9676	17.86	17.94	35.80	43.50	-7.70	peak
4	281.6432	16.20	20.49	36.69	46.00	-9.31	peak
5	299.9780	15.99	20.48	36.47	46.00	-9.53	peak
6	827.3227	10.83	30.17	41.00	46.00	-5.00	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.

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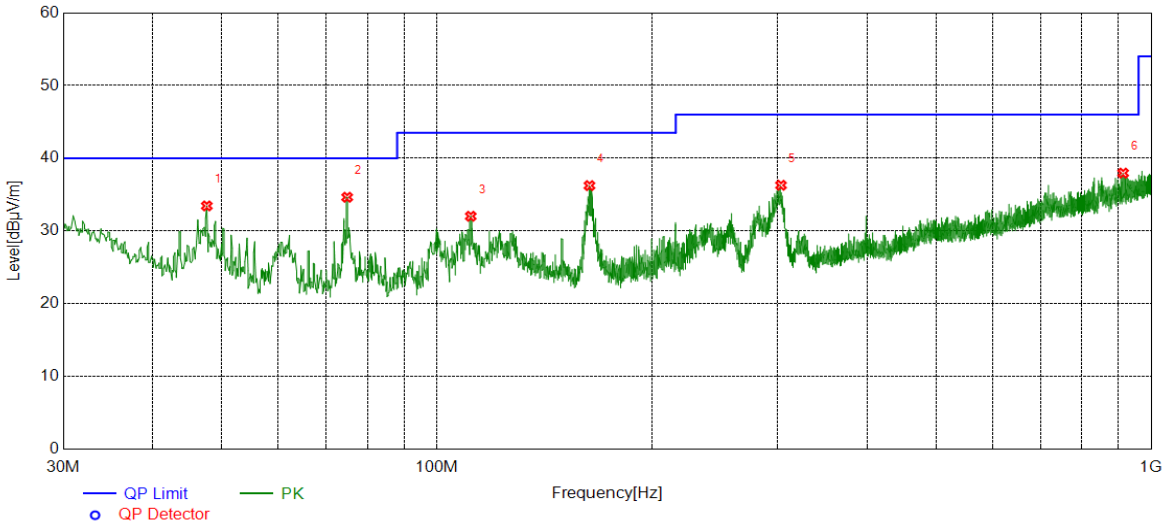
Test Mode	Channel	Polarization	Verdict
11B	HCH	Vertical	PASS



No.	Frequency	Reading Level	Correct Factor	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
1	47.6558	17.46	15.99	33.45	40.00	-6.55	peak
2	74.9155	20.07	14.57	34.64	40.00	-5.36	peak
3	111.5852	13.12	18.91	32.03	43.50	-11.47	peak
4	163.5824	17.61	18.63	36.24	43.50	-7.26	peak
5	303.2763	15.74	20.55	36.29	46.00	-9.71	peak
6	913.4673	6.69	31.27	37.96	46.00	-8.04	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.

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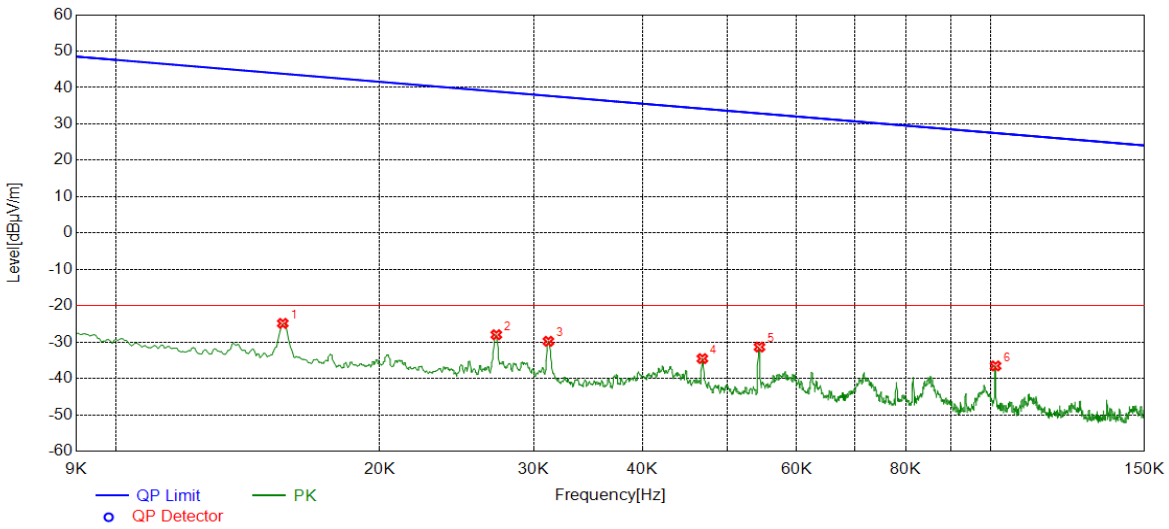
Part V: 9KHz~30MHz

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

Test Mode	Channel	Frequency Range	Verdict
11B	HCH	9KHz~150KHz	PASS



No.	Frequency	Reading Level	Correct Factor	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
1	0.0155	37.04	-61.89	-24.85	43.77	-68.62	peak
2	0.0272	33.79	-61.77	-27.98	38.91	-66.89	peak
3	0.0312	31.96	-61.74	-29.78	37.71	-67.49	peak
4	0.0468	27.20	-61.74	-34.54	34.19	-68.73	peak
5	0.0544	30.39	-61.75	-31.36	32.89	-64.25	peak
6	0.1013	25.27	-61.82	-36.55	27.49	-64.04	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. Result 300m= Result 3m-80 dBuV/m
3. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.
4. 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

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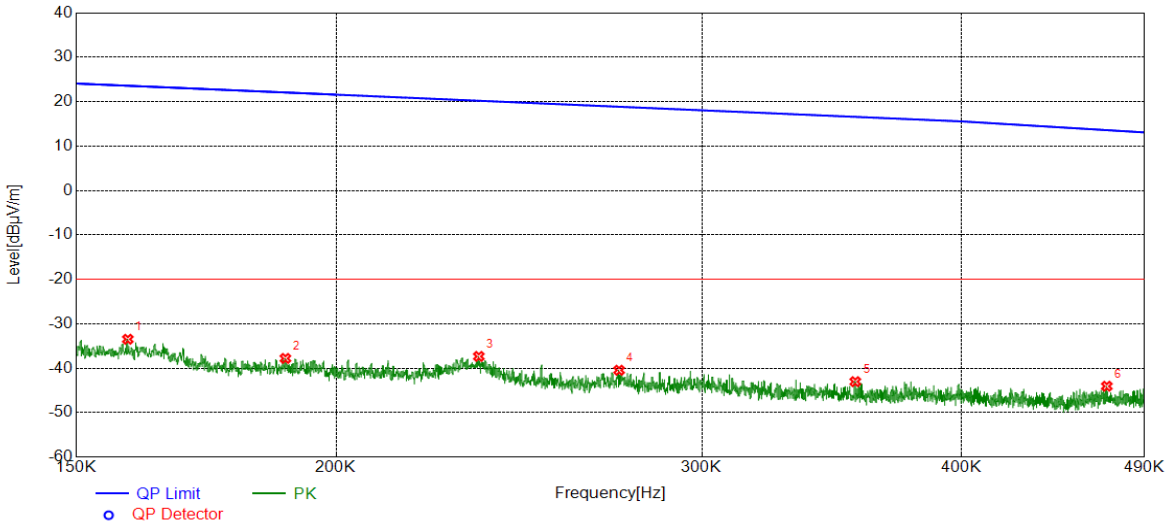
Test Mode	Channel	Frequency Range	Verdict
11B	HCH	150KHz~490Hz	PASS



No.	Frequency	Reading Level	Correct Factor	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
1	0.1588	28.37	-61.84	-33.47	23.58	-57.05	peak
2	0.1891	24.07	-61.86	-37.79	22.07	-59.86	peak
3	0.2343	24.53	-61.87	-37.34	20.21	-57.55	peak
4	0.2737	21.44	-61.89	-40.45	18.86	-59.31	peak
5	0.3556	18.88	-61.90	-43.02	16.58	-59.60	peak
6	0.4699	17.84	-61.89	-44.05	13.59	-57.64	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. Result 300m= Result 3m-80 dBuV/m
3. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.
4. 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

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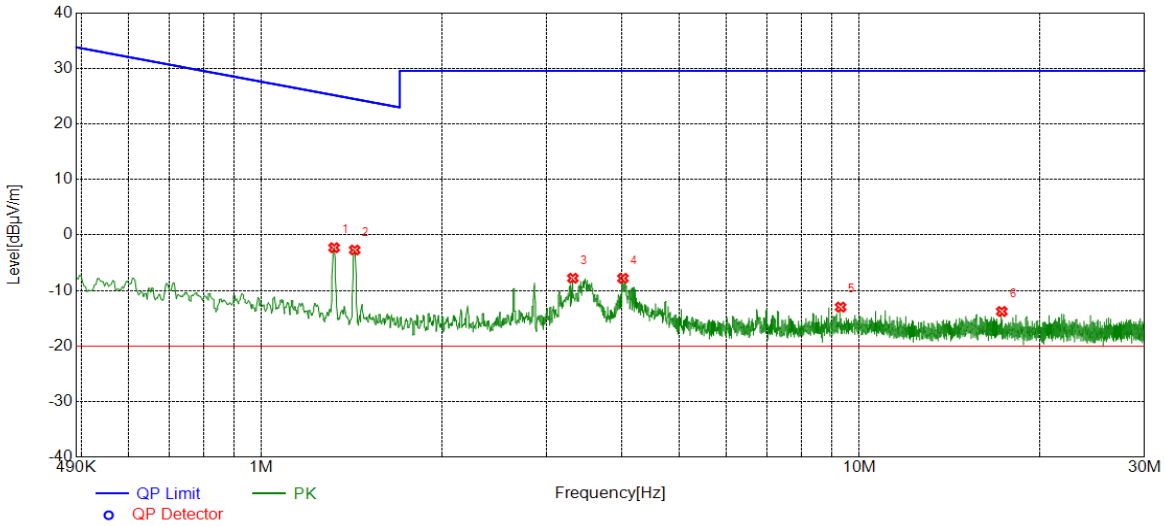
Test Mode	Channel	Frequency Range	Verdict
11B	HCH	490KHz~30MHz	PASS



No.	Frequency	Reading Level	Correct Factor	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
1	1.3223	19.55	-21.84	-2.29	25.18	-27.47	peak
2	1.4315	19.13	-21.84	-2.71	24.49	-27.20	peak
3	3.3173	13.98	-21.77	-7.79	29.54	-37.33	peak
4	4.0227	13.93	-21.74	-7.81	29.54	-37.35	peak
5	9.3026	8.62	-21.62	-13.00	29.54	-42.54	peak
6	17.3065	7.71	-21.49	-13.78	29.54	-43.32	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. Result 30m= Result 3m-40 dBuV/m
3. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.
4. 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

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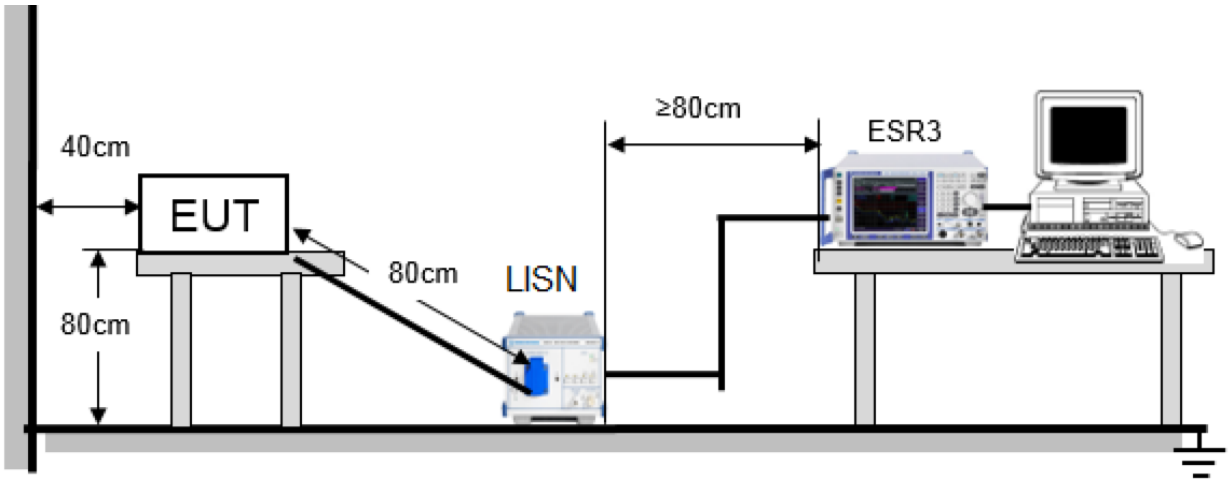
8. AC POWER LINE CONDUCTED EMISSIONS

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 80cm 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 a 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

Environment Parameter	Selected Values During Tests
Relative Humidity	58.3%
Atmospheric Pressure:	103kPa
Temperature	18.4°C

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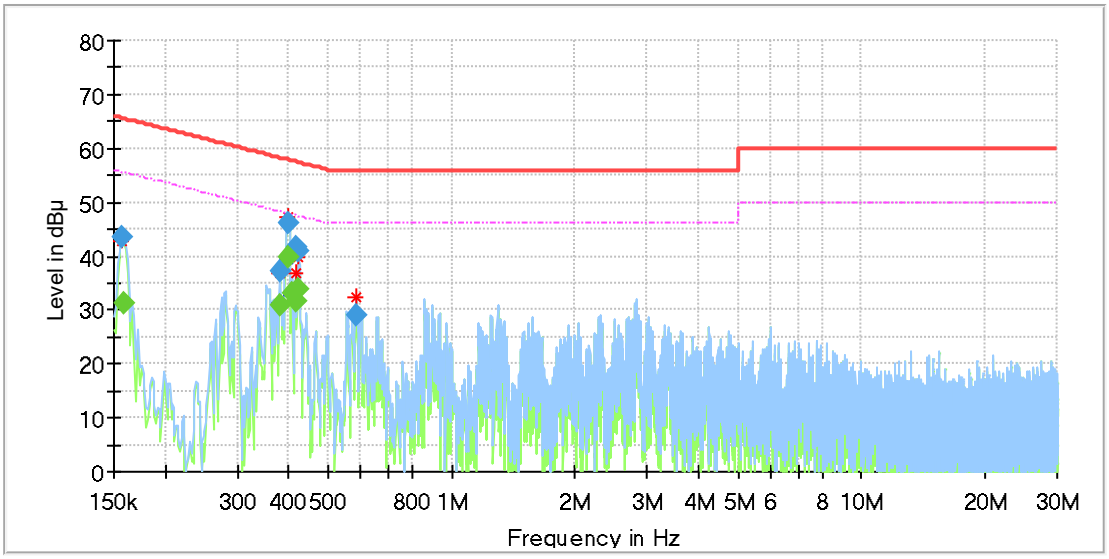
TEST RESULTS (WORST CASE CONFIGURATION)

For L Line:



Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.157463	43.55	---	65.60	22.05	1000.0	9.000	L1	OFF	9.6
0.158955	---	31.22	55.52	24.30	1000.0	9.000	L1	OFF	9.6
0.381338	---	31.03	48.25	17.22	1000.0	9.000	L1	OFF	9.7
0.381338	37.04	---	58.25	21.21	1000.0	9.000	L1	OFF	9.7
0.399248	---	39.78	47.87	8.09	1000.0	9.000	L1	OFF	9.8
0.400740	46.32	---	57.84	11.52	1000.0	9.000	L1	OFF	9.8
0.408203	---	32.98	47.69	14.70	1000.0	9.000	L1	OFF	9.8
0.415665	41.59	---	57.53	15.95	1000.0	9.000	L1	OFF	9.8
0.415665	---	31.73	47.53	15.81	1000.0	9.000	L1	OFF	9.8
0.423128	40.85	---	57.39	16.54	1000.0	9.000	L1	OFF	9.8
0.423128	---	33.80	47.39	13.58	1000.0	9.000	L1	OFF	9.8
0.585810	28.94	---	56.00	27.06	1000.0	9.000	L1	OFF	9.4

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 HCH of 11B mode which is the worst case, so only the worst case is included in this test report.

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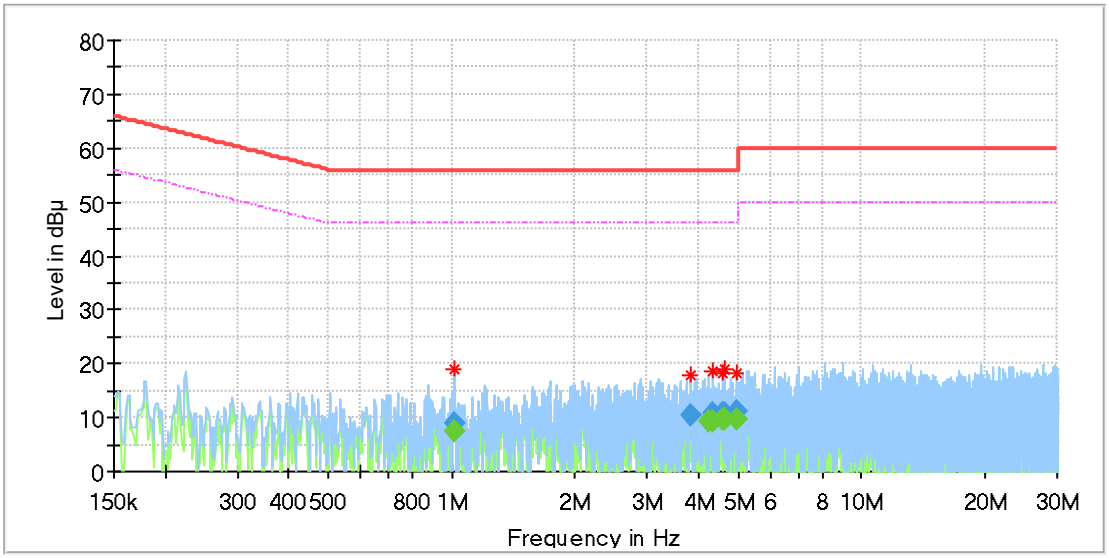
For N Line:



Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
1.015650	---	7.49	46.00	38.51	1000.0	9.000	N	OFF	9.6
1.015650	8.97	---	56.00	47.03	1000.0	9.000	N	OFF	9.6
3.815580	10.37	---	56.00	45.63	1000.0	9.000	N	OFF	9.5
4.249898	---	9.33	46.00	36.67	1000.0	9.000	N	OFF	9.6
4.334970	---	9.41	46.00	36.59	1000.0	9.000	N	OFF	9.6
4.334970	10.74	---	56.00	45.26	1000.0	9.000	N	OFF	9.6
4.599143	10.90	---	56.00	45.10	1000.0	9.000	N	OFF	9.6
4.599143	---	9.53	46.00	36.47	1000.0	9.000	N	OFF	9.6
4.649888	10.94	---	56.00	45.06	1000.0	9.000	N	OFF	9.6
4.649888	---	9.52	46.00	36.48	1000.0	9.000	N	OFF	9.6
4.963313	---	9.69	46.00	36.31	1000.0	9.000	N	OFF	9.7
4.963313	11.03	---	56.00	44.97	1000.0	9.000	N	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 HCH of 11B mode swhich is the worst case, so only the worst case is included in this test report.

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9. 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 CONNECTOR

EUT has a EUT with one Dipole antenna.

ANTENNA GAIN

The antenna gain of EUT is less than 6 dBi

END OF REPORT

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