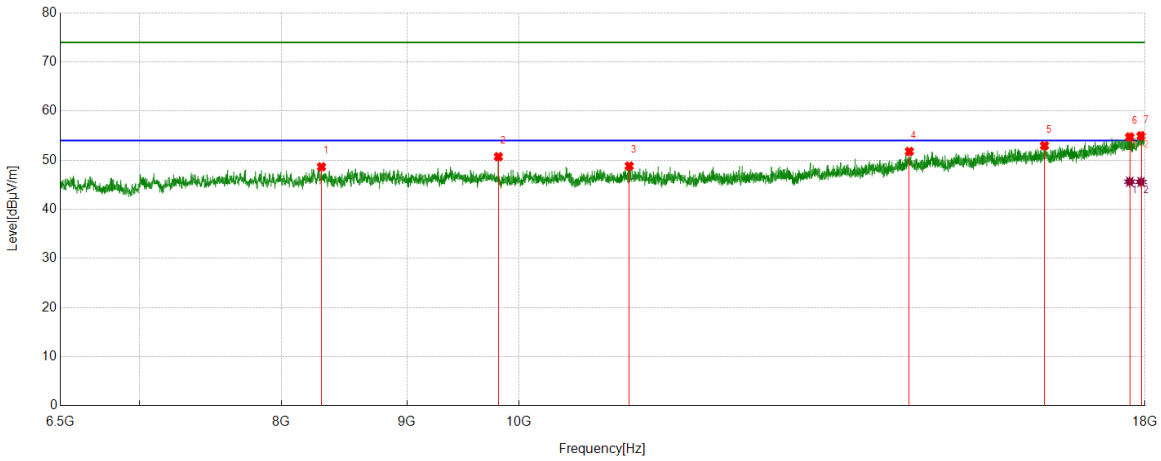
Test Mode	Channel	Polarization	Verdict
11N HT40	HCH	Vertical	PASS



PK Result:

No.	Frequency	Reading Level	Correct Factor	Result	Limit	Margin	Remark
	[MHz]	[dBuV]	[dB/m]	[dBuV/m]	[dBuV/m]	[dB]	
1	8307.1634	42.34	6.32	48.66	74.00	-25.34	Vertical
2	9808.101	44.35	6.37	50.72	74.00	-23.28	Vertical
3	11090.5113	41.46	7.36	48.82	74.00	-25.18	Vertical
4	14427.3659	38.91	12.89	51.80	74.00	-22.20	Vertical
5	16378.2973	37.90	15.07	52.97	74.00	-21.03	Vertical
6	17744.093	36.17	18.57	54.74	74.00	-19.26	Vertical
7	17935.3044	35.55	19.42	54.97	74.00	-19.03	Vertical

AV Result:

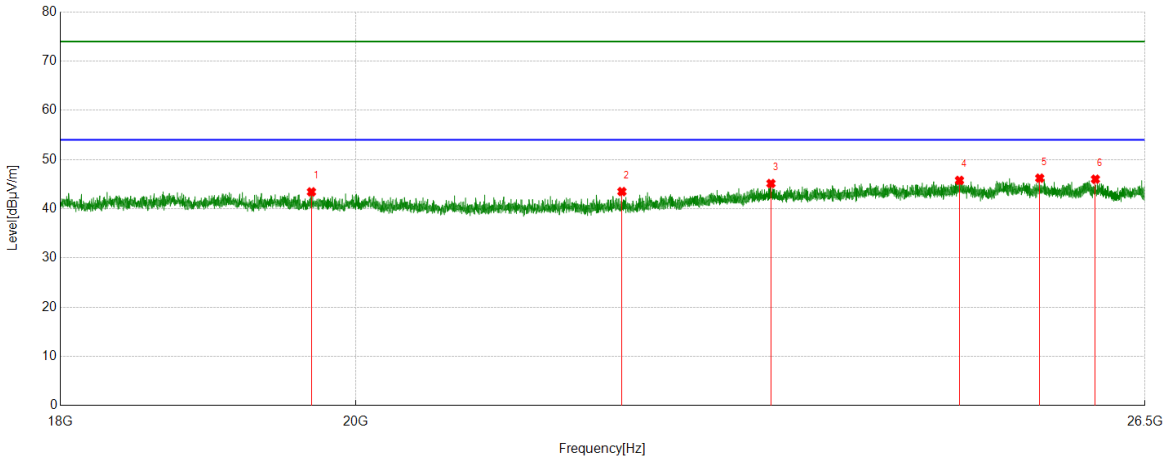
No.	Frequency	Reading Level	Correct Factor	Result	Limit	Margin	Remark
	[MHz]	[dBuV]	[dB/m]	[dBuV/m]	[dBuV/m]	[dB]	
1	17744.093	27.06	18.57	45.63	54.00	-8.37	Vertical
2	17935.3044	26.16	19.42	45.58	54.00	-8.42	Vertical

Note: 1. Measurement = Reading Level + Correct Factor,
Correct Factor = Antenna Factor + Loss (Cable + Filter) – Amplifier Gain.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak detector: RBW: 1 MHz, VBW: 3 MHz.
4. Average detector: RBW: 1 MHz, VBW: 1/T MHz(refer to clause 7.1.).
5. For above 3GHz part, filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for HPF losses.
6. Only the worst case emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

Part 3: 18GHz~26.5GHz

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

Test Mode	Channel	Polarization	Verdict
11B	MCH	Horizontal	PASS

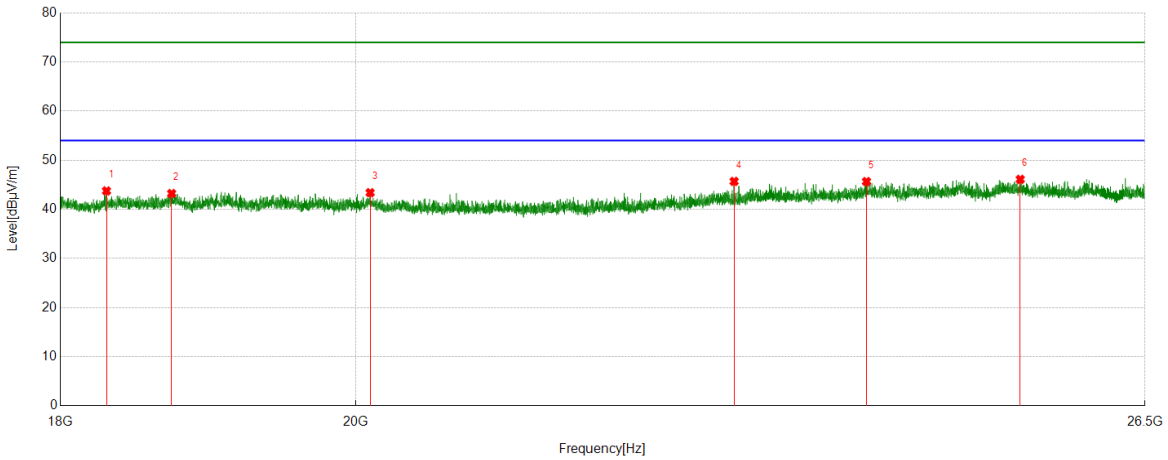


PK Result:

No.	Frequency	Reading Level	Correct Factor	Result	Limit	Margin	Remark
	[MHz]	[dBuV]	[dB/m]	[dBuV/m]	[dBuV/m]	[dB]	
1	19686.5687	48.84	-5.41	43.43	74.00	-30.57	Horizontal
2	21991.1491	49.25	-5.76	43.49	74.00	-30.51	Horizontal
3	23191.4691	48.55	-3.41	45.14	74.00	-28.86	Horizontal
4	24804.0804	49.10	-3.33	45.77	74.00	-28.23	Horizontal
5	25524.1024	49.38	-3.16	46.22	74.00	-27.78	Horizontal
6	26035.8536	48.64	-2.63	46.01	74.00	-27.99	Horizontal

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,
Correct Factor = Antenna Factor + Loss (Cable) – Amplifier Gain.
4. Only the worst case emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

Test Mode	Channel	Polarization	Verdict
11B	MCH	Vertical	PASS



PK Result:

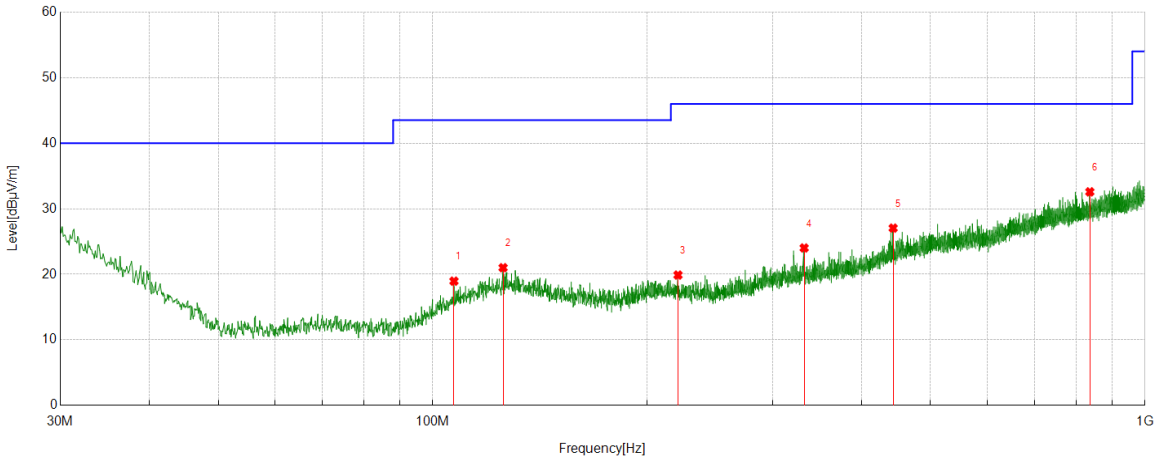
No.	Frequency	Reading Level	Correct Factor	Result	Limit	Margin	Remark
	[MHz]	[dBuV]	[dB/m]	[dBuV/m]	[dBuV/m]	[dB]	
1	18299.2299	50.51	-6.76	43.75	74.00	-30.25	Vertical
2	18729.3729	49.46	-6.24	43.22	74.00	-30.78	Vertical
3	20103.1103	48.55	-5.16	43.39	74.00	-30.61	Vertical
4	22888.8389	49.45	-3.76	45.69	74.00	-28.31	Vertical
5	23994.7995	48.28	-2.62	45.66	74.00	-28.34	Vertical
6	25347.2847	49.39	-3.29	46.10	74.00	-27.90	Vertical

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,
Correct Factor = Antenna Factor + Loss (Cable) – Amplifier Gain.
4. Only the worst case emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

Part 4: 30MHz~1GHz

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

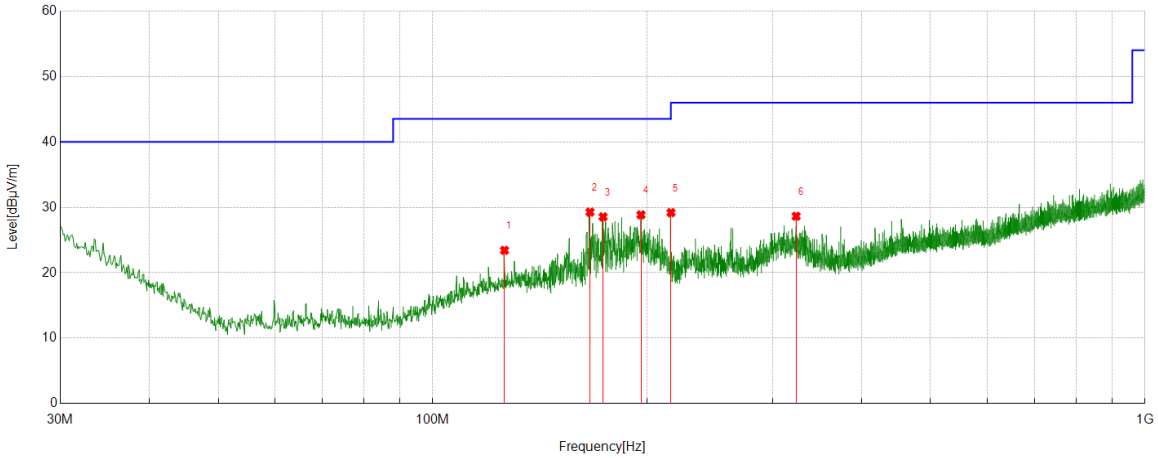
Test Mode	Channel	Polarization	Verdict
11B	MCH	Horizontal	PASS



No.	Frequency	Reading Level	Correct Factor	Result	Limit	Margin	Remark
	[MHz]	[dBuV]	[dB/m]	[dBuV/m]	[dBuV/m]	[dB]	
1	107.1227	0.44	18.52	18.96	43.50	-24.54	Peak
2	125.5546	0.35	20.66	21.01	43.50	-22.49	Peak
3	221.0121	0.44	19.45	19.89	46.00	-26.11	Peak
4	332.2822	2.35	21.67	24.02	46.00	-21.98	Peak
5	443.0673	2.26	24.79	27.05	46.00	-18.95	Peak
6	836.7327	2.04	30.54	32.58	46.00	-13.42	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	MCH	Vertical	PASS



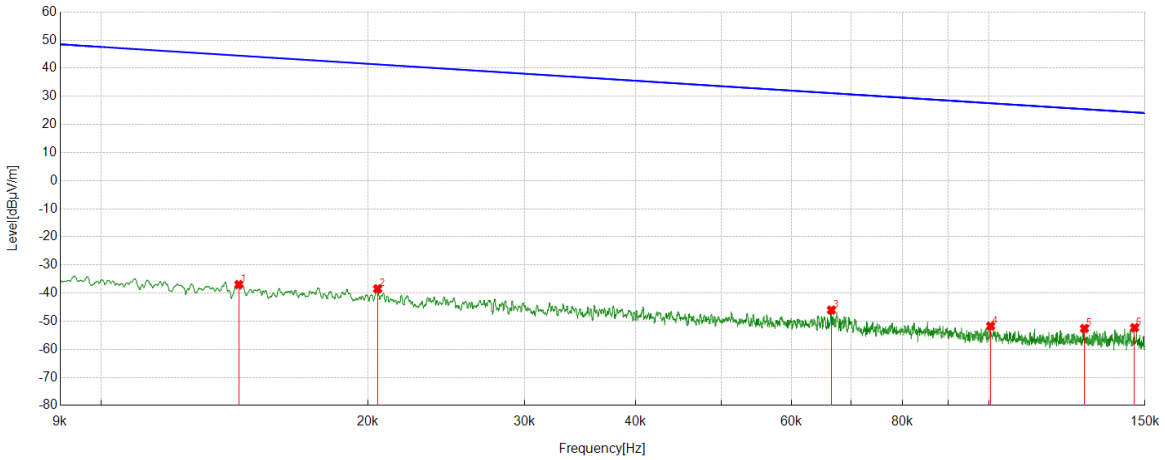
No.	Frequency	Reading Level	Correct Factor	Result	Limit	Margin	Remark
	[MHz]	[dBuV]	[dB/m]	[dBuV/m]	[dBuV/m]	[dB]	
1	126.1366	2.73	20.70	23.43	43.50	-20.07	Peak
2	166.2986	10.50	18.77	29.27	43.50	-14.23	Peak
3	173.4773	10.10	18.45	28.55	43.50	-14.95	Peak
4	196.0806	9.65	19.20	28.85	43.50	-14.65	Peak
5	216.0646	9.67	19.52	29.19	46.00	-16.81	Peak
6	323.8424	7.15	21.49	28.64	46.00	-17.36	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)

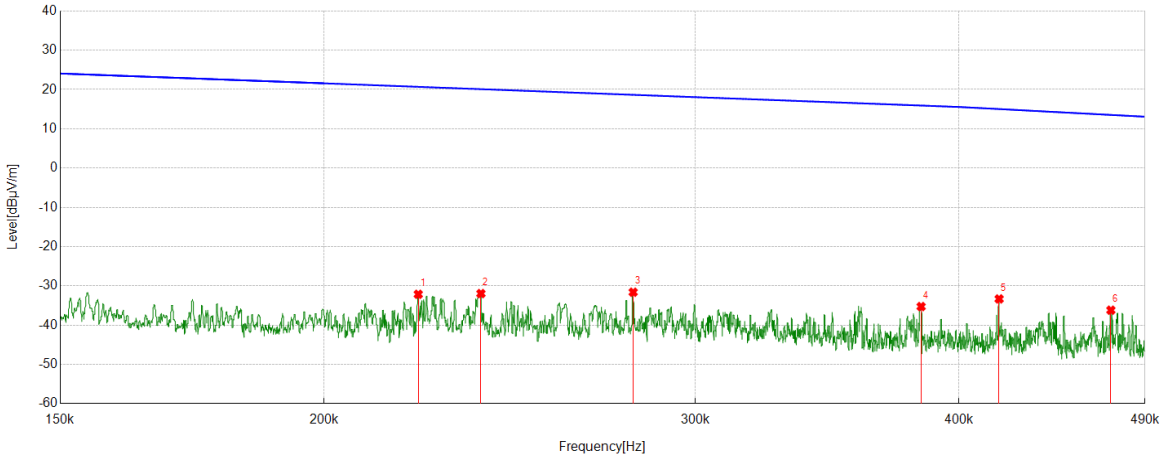
Test Mode	Channel	Frequency Range	Verdict
11B	MCH	9kHz~150kHz	PASS



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	0.0143	24.99	-61.96	-36.97	44.52	-88.47	-6.98	-81.49	Peak
2	0.0205	23.41	-61.90	-38.49	41.37	-89.99	-10.13	-79.86	Peak
3	0.0665	15.80	-61.86	-46.06	31.15	-97.56	-20.35	-77.21	Peak
4	0.1005	10.16	-61.91	-51.75	27.56	-103.25	-23.94	-79.31	Peak
5	0.1282	9.32	-61.92	-52.60	25.45	-104.1	-26.05	-78.05	Peak
6	0.1460	9.60	-61.93	-52.33	24.32	-103.83	-27.18	-76.65	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.

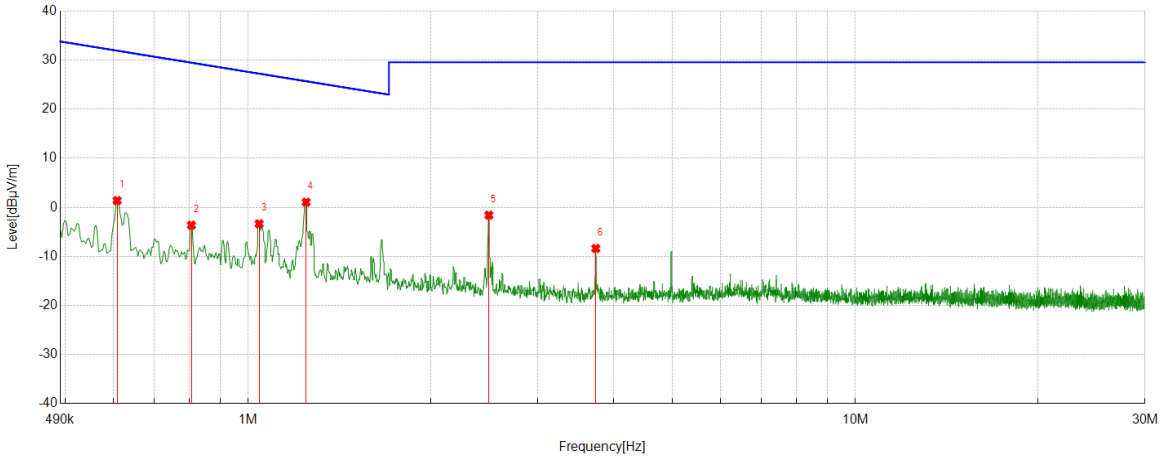
Test Mode	Channel	Frequency Range	Verdict
11B	MCH	150kHz~490kHz	PASS



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	0.2217	29.84	-61.98	-32.14	20.68	-83.64	-30.82	-52.82	Peak
2	0.2374	30.03	-61.99	-31.96	20.09	-83.46	-31.41	-52.05	Peak
3	0.2803	30.40	-62.01	-31.61	18.65	-83.11	-32.85	-50.26	Peak
4	0.3838	26.76	-62.03	-35.27	15.92	-86.77	-35.58	-51.19	Peak
5	0.4179	28.72	-62.04	-33.32	15.02	-84.82	-36.48	-48.34	Peak
6	0.4721	25.88	-62.07	-36.19	13.53	-87.69	-37.97	-49.72	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	MCH	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	0.6081	23.47	-22.09	1.38	31.92	-50.12	-19.58	-30.54	Peak
2	0.8058	18.44	-22.07	-3.63	29.48	-55.13	-22.02	-33.11	Peak
3	1.0419	18.71	-22.07	-3.36	27.25	-54.86	-24.25	-30.61	Peak
4	1.2455	23.11	-22.05	1.06	25.70	-50.44	-25.80	-24.64	Peak
5	2.4910	20.42	-22.01	-1.59	29.54	-53.09	-21.96	-31.13	Peak
6	3.7364	13.58	-21.96	-8.38	29.54	-59.88	-21.96	-37.92	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.

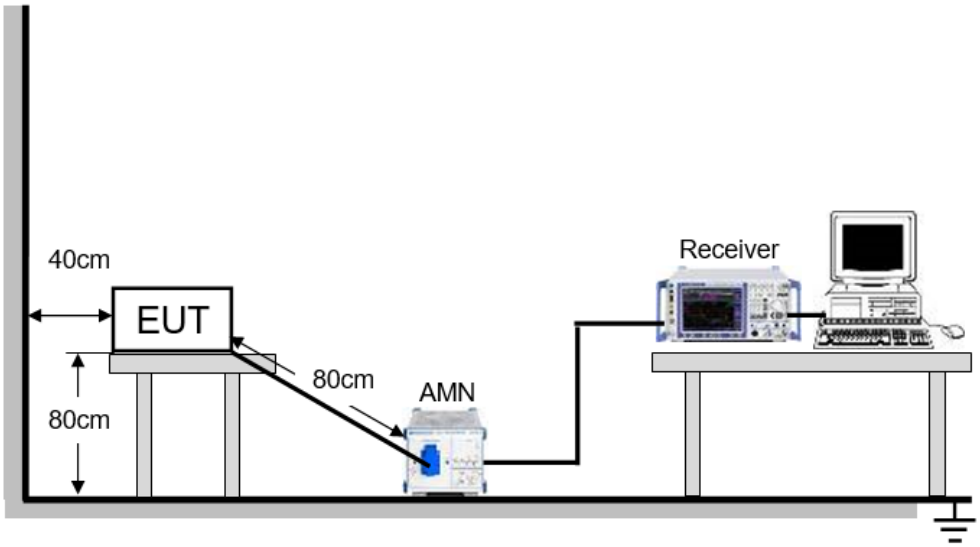
9. AC POWER LINE CONDUCTED EMISSIONS

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



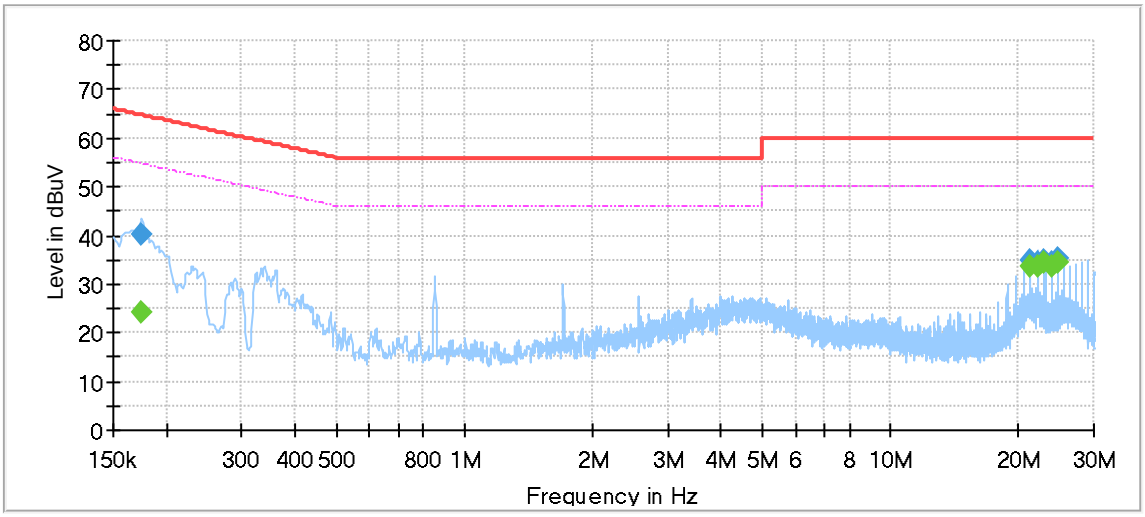
The EUT is put on a table of non-conducting material that is 80cm high. The vertical conducting wall of shielding is located 40cm to the rear of the EUT. The power line of the EUT is connected to the AC mains through an Artificial Mains Network (A.M.N.). A EMI Measurement Receiver (R&S Test Receiver 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)

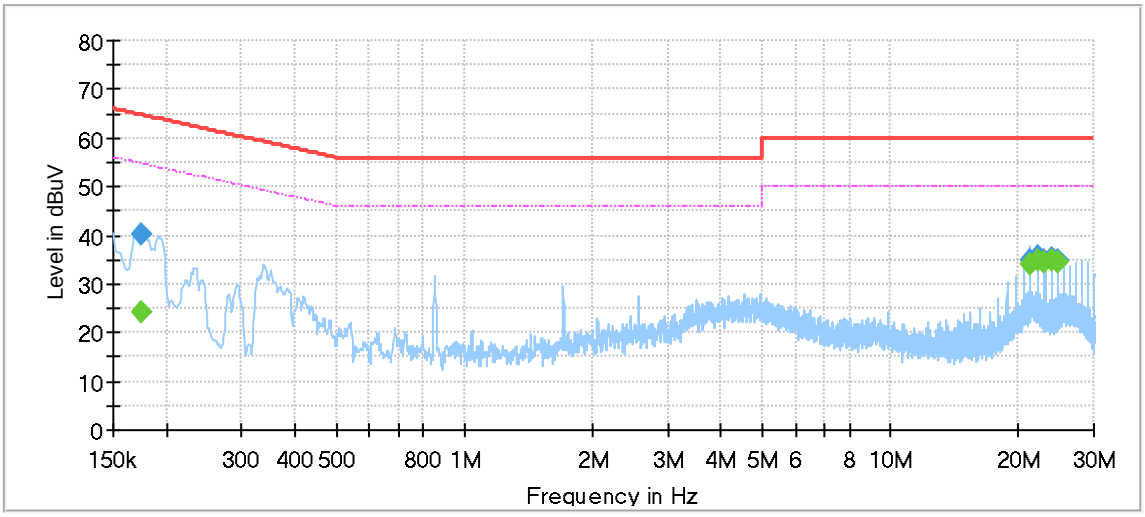


Final_Result

Frequency [MHz]	QuasiPeak [dBµV]	Average [dBµV]	Limit [dBµV]	Margin [dB]	Meas. Time [ms]	Bandwidth [kHz]	Line	Filter	Corr. [dB]
0.175373	---	24.20	54.70	30.50	1000.0	9.000	L1	OFF	9.6
0.175373	40.40	---	64.70	24.30	1000.0	9.000	L1	OFF	9.6
21.322605	---	33.79	50.00	16.21	1000.0	9.000	L1	OFF	9.5
21.322605	34.67	---	60.00	25.33	1000.0	9.000	L1	OFF	9.5
22.176315	---	33.46	50.00	16.54	1000.0	9.000	L1	OFF	9.5
22.176315	34.57	---	60.00	25.43	1000.0	9.000	L1	OFF	9.5
23.027040	---	34.26	50.00	15.74	1000.0	9.000	L1	OFF	9.5
23.027040	34.73	---	60.00	25.27	1000.0	9.000	L1	OFF	9.5
23.882243	---	33.67	50.00	16.33	1000.0	9.000	L1	OFF	9.5
23.882243	34.40	---	60.00	25.60	1000.0	9.000	L1	OFF	9.5
24.732968	---	34.63	50.00	15.37	1000.0	9.000	L1	OFF	9.4
24.732968	35.12	---	60.00	24.88	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 MCH of 11B which is the worst case, so only the worst case is included 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]
0.175373	---	24.12	54.70	30.58	1000.0	9.000	N	OFF	9.6
0.175373	40.31	---	64.70	24.39	1000.0	9.000	N	OFF	9.6
21.322605	---	34.07	50.00	15.93	1000.0	9.000	N	OFF	9.5
21.322605	34.88	---	60.00	25.12	1000.0	9.000	N	OFF	9.5
22.174823	---	34.85	50.00	15.15	1000.0	9.000	N	OFF	9.4
22.174823	35.52	---	60.00	24.48	1000.0	9.000	N	OFF	9.4
23.027040	---	34.42	50.00	15.58	1000.0	9.000	N	OFF	9.4
23.027040	34.91	---	60.00	25.09	1000.0	9.000	N	OFF	9.4
23.880750	---	34.84	50.00	15.16	1000.0	9.000	N	OFF	9.4
23.880750	35.22	---	60.00	24.78	1000.0	9.000	N	OFF	9.4
24.734460	---	34.32	50.00	15.68	1000.0	9.000	N	OFF	9.4
24.734460	34.91	---	60.00	25.09	1000.0	9.000	N	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 MCH of 11B which is the worst case, so only the worst case is included 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