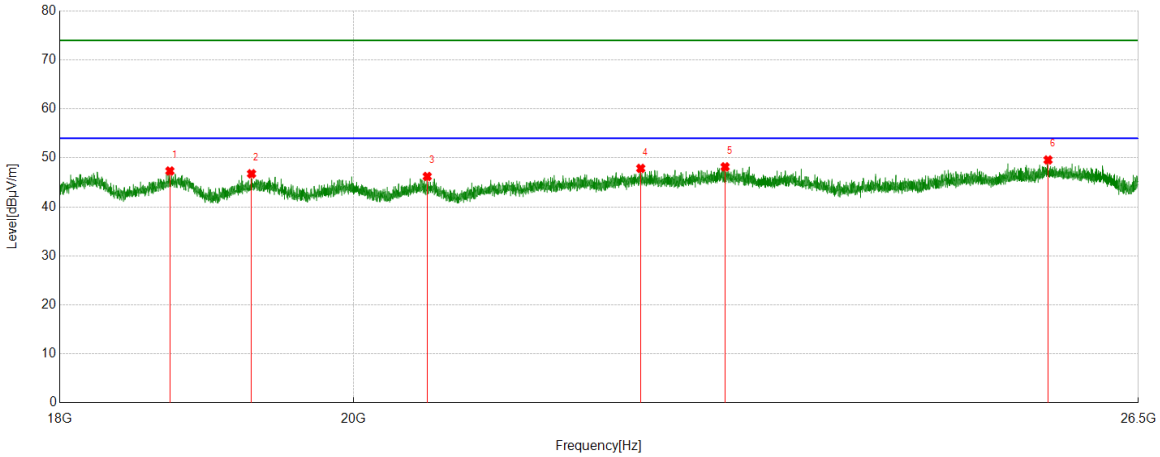
Test Mode	Channel	Polarization	Verdict
DH5	HCH	Vertical	PASS



No.	Frequency	Reading Level	Correct Factor	Result	Limit	Margin	Remark
	[MHz]	[dBuV/m]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	
1	18725.9726	48.74	-1.41	47.33	74.00	-26.67	Peak
2	19281.9282	48.11	-1.35	46.76	74.00	-27.24	Peak
3	20535.8036	47.22	-1.01	46.21	74.00	-27.79	Peak
4	22169.667	47.98	-0.12	47.86	74.00	-26.14	Peak
5	22850.5851	47.49	0.68	48.17	74.00	-25.83	Peak
6	25655.8656	49.00	0.58	49.58	74.00	-24.42	Peak

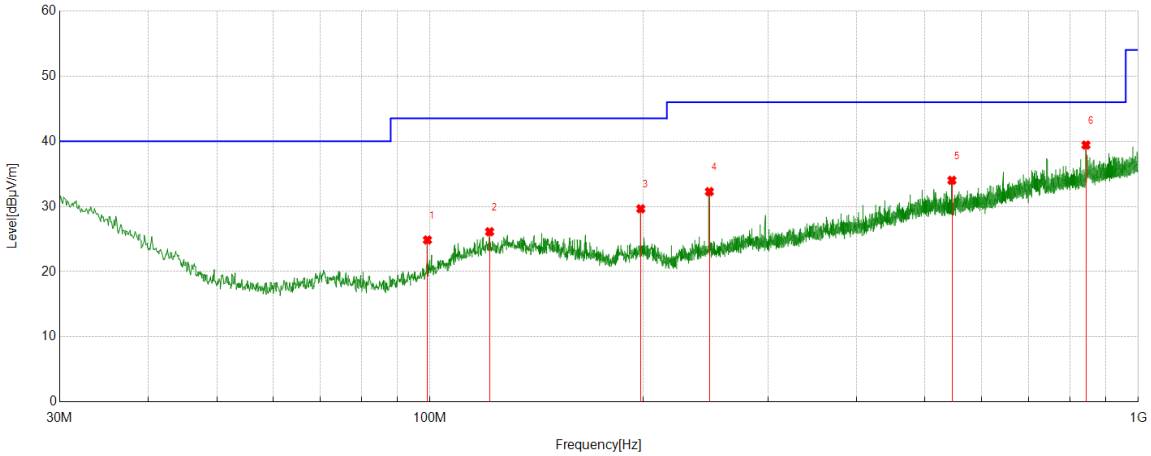
Note: 1. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
3. Measurement = Reading Level + Correct Factor.
4. Only the worst case emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

Part 4: 30MHz~1GHz

Antenna Type 2: External Dipole Antenna

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

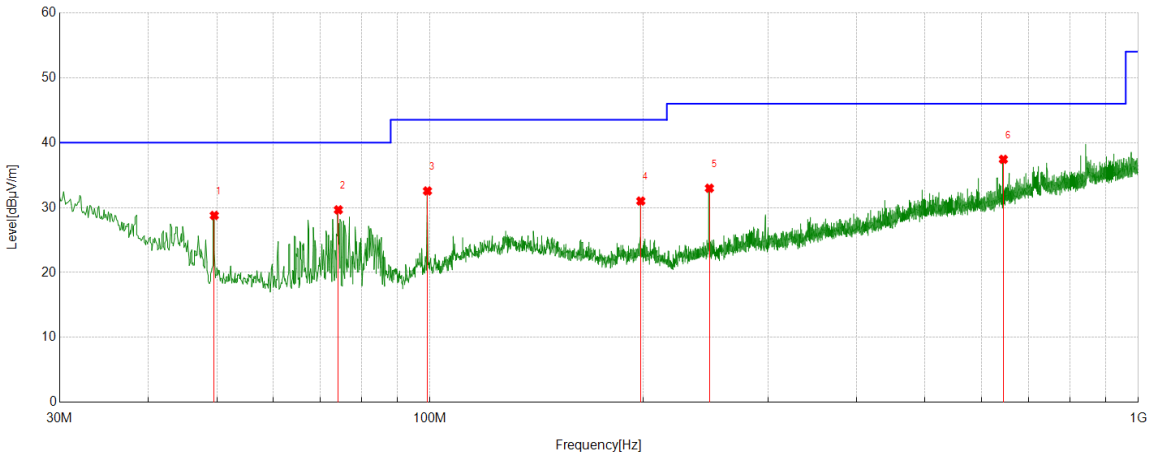
Test Mode	Channel	Polarization	Verdict
DH5	HCH	Horizontal	PASS



No.	Frequency	Reading Level	Correct Factor	Result	Limit	Margin	Remark
	[MHz]	[dBuV/m]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	
1	99.1679	8.19	16.67	24.86	43.50	-18.64	Peak
2	121.3831	5.74	20.38	26.12	43.50	-17.38	Peak
3	198.4088	10.57	19.07	29.64	43.50	-13.86	Peak
4	247.9808	13.31	18.96	32.27	46.00	-13.73	Peak
5	545.6066	7.93	26.08	34.01	46.00	-11.99	Peak
6	843.4263	9.06	30.36	39.42	46.00	-6.58	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.

Test Mode	Channel	Polarization	Verdict
DH5	HCH	Vertical	PASS



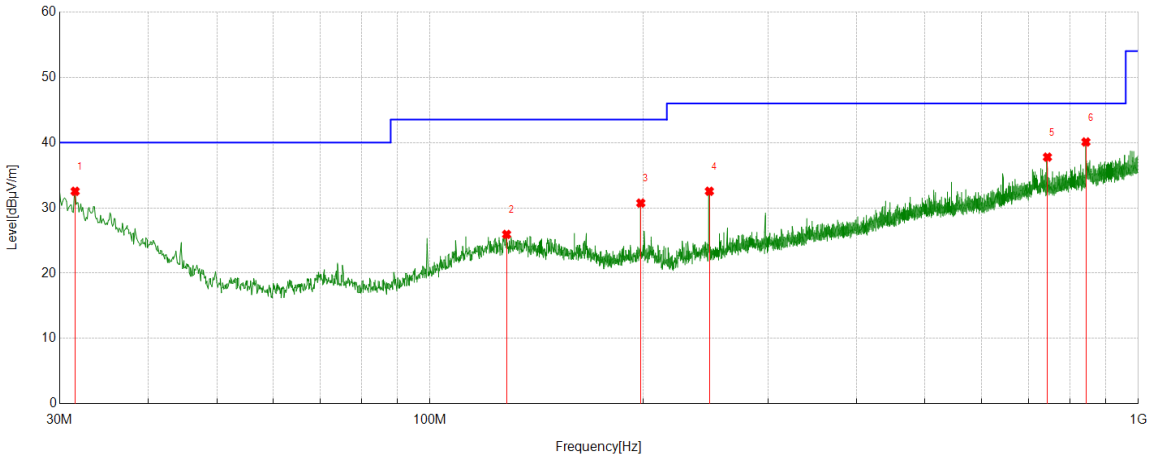
No.	Frequency	Reading Level	Correct Factor	Result	Limit	Margin	Remark
	[MHz]	[dBuV/m]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	
1	49.596	13.99	14.80	28.79	40.00	-11.21	Peak
2	74.2364	15.04	14.61	29.65	40.00	-10.35	Peak
3	99.1679	15.89	16.67	32.56	43.50	-10.94	Peak
4	198.4088	11.94	19.07	31.01	43.50	-12.49	Peak
5	247.9808	14.02	18.96	32.98	46.00	-13.02	Peak
6	644.8475	9.97	27.46	37.43	46.00	-8.57	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.

Antenna Type 1: PCB Antenna

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

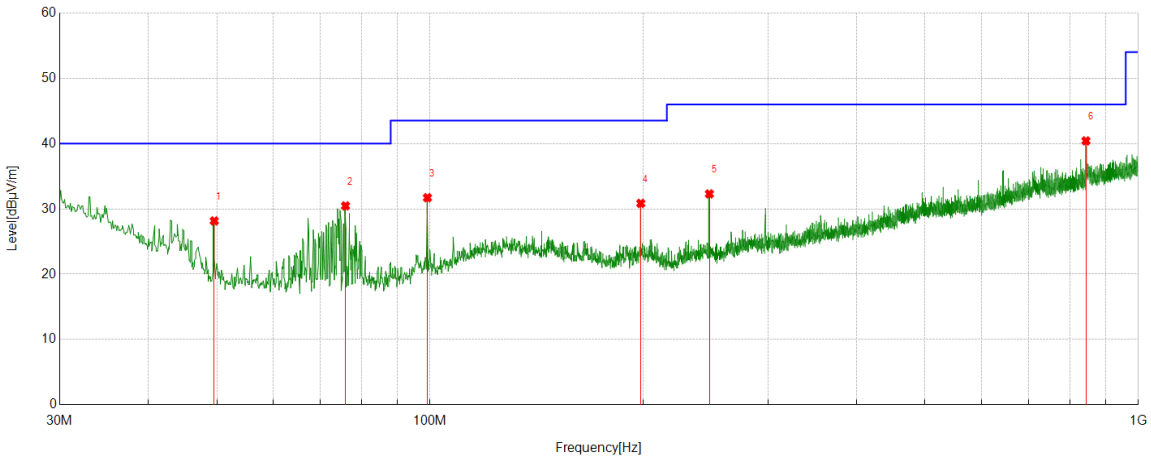
Test Mode	Channel	Polarization	Verdict
DH5	HCH	Horizontal	PASS



No.	Frequency	Reading Level	Correct Factor	Result	Limit	Margin	Remark
	[MHz]	[dBuV/m]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	
1	31.5522	6.48	26.06	32.54	40.00	-7.46	Peak
2	128.2708	5.70	20.24	25.94	43.50	-17.56	Peak
3	198.4088	11.67	19.07	30.74	43.50	-12.76	Peak
4	247.9808	13.59	18.96	32.55	46.00	-13.45	Peak
5	744.0884	8.72	29.05	37.77	46.00	-8.23	Peak
6	843.4263	9.73	30.36	40.09	46.00	-5.91	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.

Test Mode	Channel	Polarization	Verdict
DH5	HCH	Vertical	PASS



No.	Frequency	Reading Level	Correct Factor	Result	Limit	Margin	Remark
	[MHz]	[dBuV/m]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	
1	49.596	13.36	14.80	28.16	40.00	-11.84	Peak
2	75.9826	15.92	14.54	30.46	40.00	-9.54	Peak
3	99.1679	15.04	16.67	31.71	43.50	-11.79	Peak
4	198.4088	11.78	19.07	30.85	43.50	-12.65	Peak
5	247.9808	13.34	18.96	32.30	46.00	-13.70	Peak
6	843.4263	10.05	30.36	40.41	46.00	-5.59	Peak

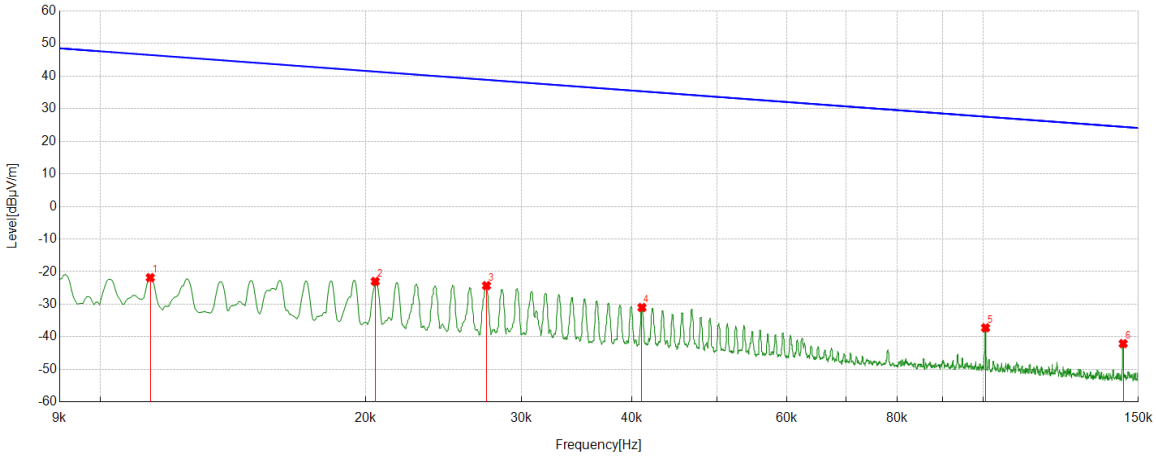
Note: 1. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
2. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.
3. Measurement = Reading Level + Correct Factor.

Part 5: 9kHz~30MHz

Antenna Type 2: External Dipole Antenna

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

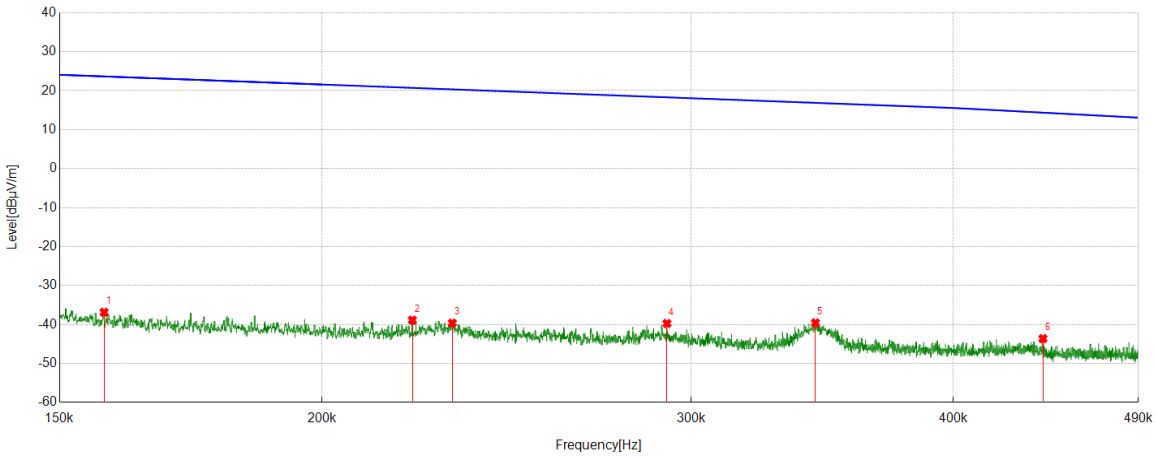
Test Mode	Channel	Frequency Range	Verdict
DH5	HCH	9kHz~150kHz	PASS



No.	Frequency	Reading Level	Correct Factor	FCC Result	FCC Limit	ISED Result	ISED Limit	Margin	Remark
	[MHz]	[dBuV/m]	[dB]	[dBuV/m]	[dBuV/m]	[dBuA/m]	[dBuA/m]	[dB]	
1	0.0114	39.28	-61.11	-21.83	46.46	-73.33	-5.04	-68.29	Peak
2	0.0205	37.86	-60.85	-22.99	41.36	-74.49	-10.14	-64.35	Peak
3	0.0274	36.60	-60.89	-24.29	38.85	-75.79	-12.65	-63.14	Peak
4	0.0411	29.98	-60.98	-31.00	35.32	-82.50	-16.18	-66.32	Peak
5	0.1007	23.50	-60.73	-37.23	27.54	-88.73	-23.96	-64.77	Peak
6	0.1442	19.18	-61.25	-42.07	24.42	-93.57	-27.08	-66.49	Peak

Note: 1. Measurement = Reading Level + Correct 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.

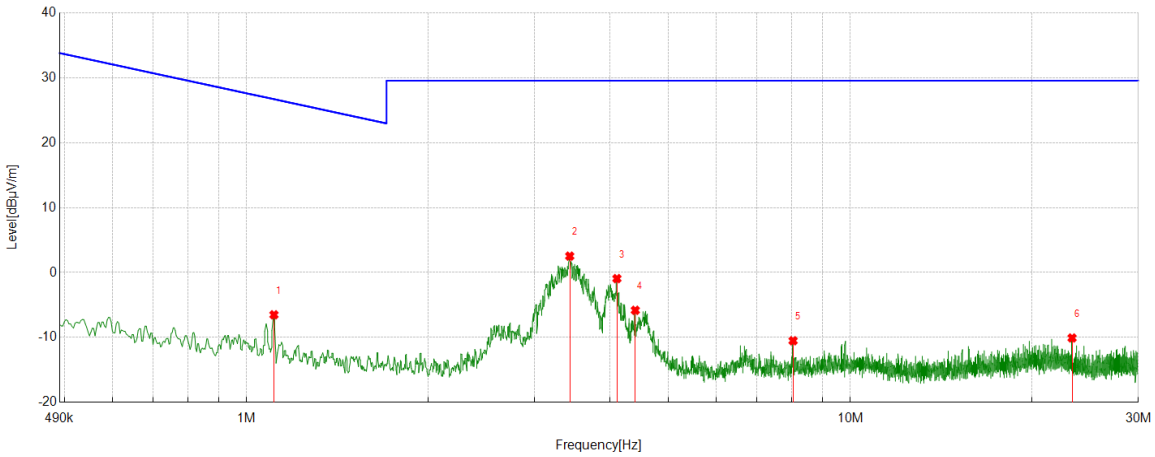
Test Mode	Channel	Frequency Range	Verdict
DH5	HCH	150kHz~490kHz	PASS



No.	Frequency	Reading Level	Correct Factor	FCC Result	FCC Limit	ISED Result	ISED Limit	Margin	Remark
	[MHz]	[dBuV/m]	[dB]	[dBuV/m]	[dBuV/m]	[dBuA/m]	[dBuA/m]	[dB]	
1	0.1575	24.43	-61.28	-36.85	23.66	-88.35	-27.84	-60.51	Peak
2	0.2209	22.06	-60.95	-38.89	20.72	-90.39	-30.78	-59.61	Peak
3	0.2308	21.26	-60.90	-39.64	20.34	-91.14	-31.16	-59.98	Peak
4	0.2921	21.03	-60.77	-39.74	18.29	-91.24	-33.21	-58.03	Peak
5	0.3438	21.15	-60.72	-39.57	16.88	-91.07	-34.62	-56.45	Peak
6	0.4413	17.02	-60.64	-43.62	14.36	-95.12	-37.14	-57.98	Peak

Note: 1. Measurement = Reading Level + Correct 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
DH5	HCH	490kHz~30MHz	PASS



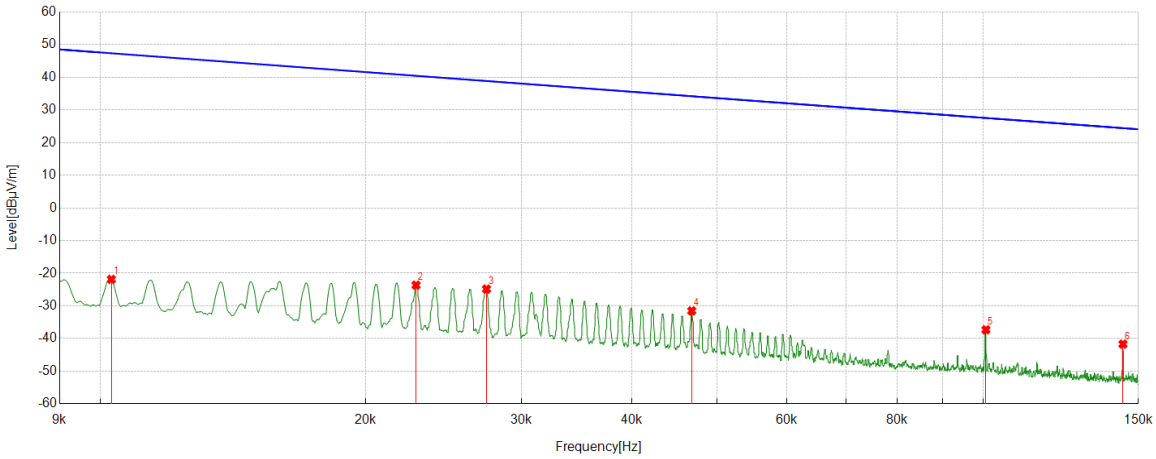
No.	Frequency	Reading Level	Correct Factor	FCC Result	FCC Limit	ISED Result	ISED Limit	Margin	Remark
	[MHz]	[dBuV/m]	[dB]	[dBuV/m]	[dBuV/m]	[dBuA/m]	[dBuA/m]	[dB]	
1	1.1098	13.84	-20.34	-6.50	26.70	-58.00	-24.80	-33.20	Peak
2	3.4295	22.82	-20.29	2.53	29.54	-48.97	-21.96	-27.01	Peak
3	4.1053	19.13	-20.06	-0.93	29.54	-52.43	-21.96	-30.47	Peak
4	4.4034	14.31	-20.12	-5.81	29.54	-57.31	-21.96	-35.35	Peak
5	8.0394	8.87	-19.37	-10.50	29.54	-62.00	-21.96	-40.04	Peak
6	23.3006	7.75	-17.82	-10.07	29.54	-61.57	-21.96	-39.61	Peak

Note: 1. Measurement = Reading Level + Correct 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.

Antenna Type 1: PCB Antenna

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

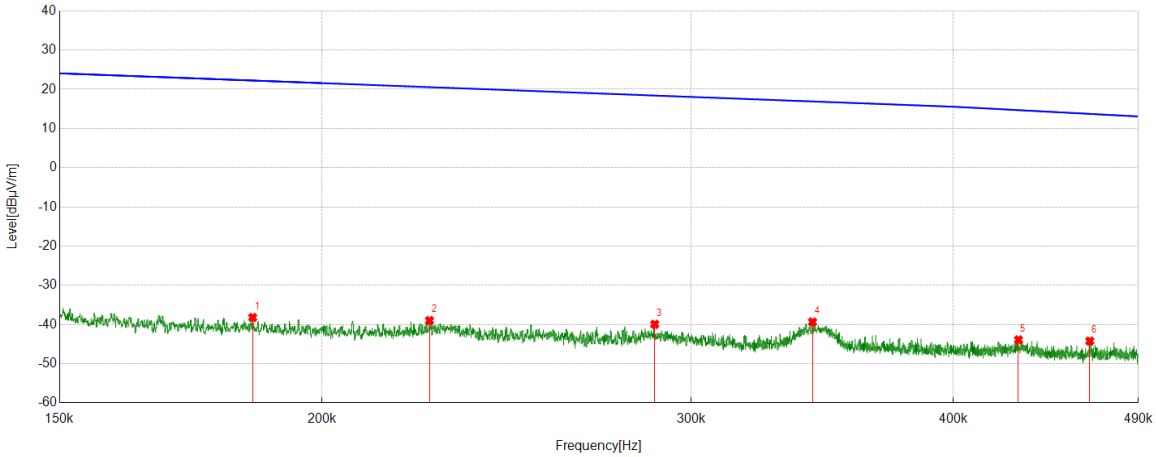
Test Mode	Channel	Frequency Range	Verdict
DH5	HCH	9kHz~150kHz	PASS



No.	Frequency	Reading Level	Correct Factor	FCC Result	FCC Limit	ISED Result	ISED Limit	Margin	Remark
	[MHz]	[dBuV/m]	[dB]	[dBuV/m]	[dBuV/m]	[dBuA/m]	[dBuA/m]	[dB]	
1	0.0103	39.26	-61.14	-21.88	47.37	-73.38	-4.13	-69.25	Peak
2	0.0228	37.22	-60.86	-23.64	40.43	-75.14	-11.07	-64.07	Peak
3	0.0274	36.04	-60.89	-24.85	38.85	-76.35	-12.65	-63.70	Peak
4	0.0468	29.50	-61.02	-31.52	34.19	-83.02	-17.31	-65.71	Peak
5	0.1008	23.42	-60.73	-37.31	27.53	-88.81	-23.97	-64.84	Peak
6	0.1441	19.55	-61.25	-41.70	24.43	-93.20	-27.07	-66.13	Peak

Note: 1. Measurement = Reading Level + Correct 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.

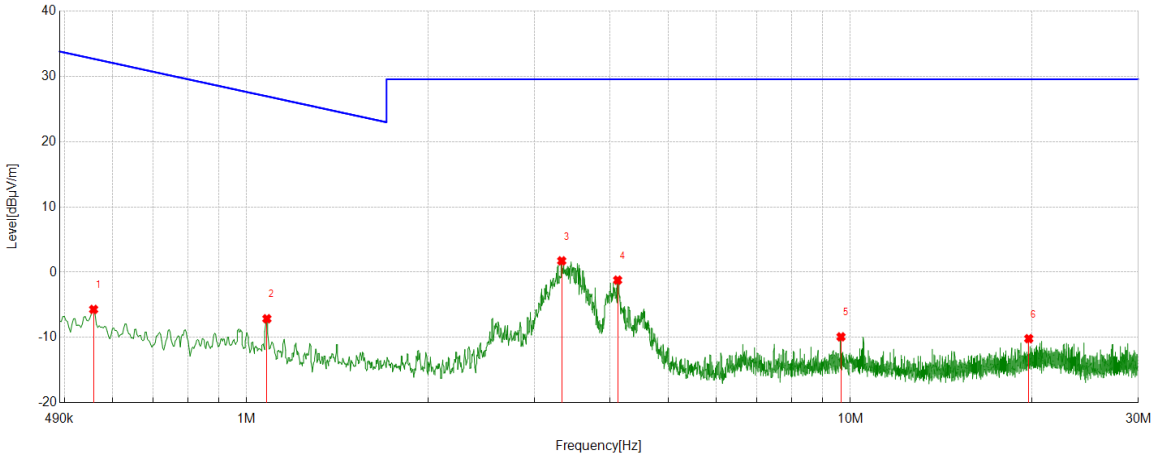
Test Mode	Channel	Frequency Range	Verdict
DH5	HCH	150kHz~490kHz	PASS



No.	Frequency	Reading Level	Correct Factor	FCC Result	FCC Limit	ISED Result	ISED Limit	Margin	Remark
	[MHz]	[dBuV/m]	[dB]	[dBuV/m]	[dBuV/m]	[dBuA/m]	[dBuA/m]	[dB]	
1	0.1854	22.93	-61.14	-38.21	22.24	-89.71	-29.26	-60.45	Peak
2	0.2251	21.94	-60.93	-38.99	20.55	-90.49	-30.95	-59.54	Peak
3	0.2882	20.82	-60.77	-39.95	18.41	-91.45	-33.09	-58.36	Peak
4	0.3427	21.37	-60.73	-39.36	16.90	-90.86	-34.60	-56.26	Peak
5	0.4296	16.73	-60.65	-43.92	14.69	-95.42	-36.81	-58.61	Peak
6	0.4646	16.39	-60.62	-44.23	13.73	-95.73	-37.77	-57.96	Peak

Note: 1. Measurement = Reading Level + Correct 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
DH5	HCH	490kHz~30MHz	PASS



No.	Frequency	Reading Level	Correct Factor	FCC Result	FCC Limit	ISED Result	ISED Limit	Margin	Remark
	[MHz]	[dBuV/m]	[dB]	[dBuV/m]	[dBuV/m]	[dBuA/m]	[dBuA/m]	[dB]	
1	0.5579	14.92	-20.61	-5.69	32.67	-57.19	-18.83	-38.36	Peak
2	1.0803	13.22	-20.34	-7.12	26.94	-58.62	-24.56	-34.06	Peak
3	3.3262	22.08	-20.34	1.74	29.54	-49.76	-21.96	-27.80	Peak
4	4.1171	18.85	-20.06	-1.21	29.54	-52.71	-21.96	-30.75	Peak
5	9.6508	9.00	-18.89	-9.89	29.54	-61.39	-21.96	-39.43	Peak
6	19.7531	7.25	-17.42	-10.17	29.54	-61.67	-21.96	-39.71	Peak

Note: 1. Measurement = Reading Level + Correct 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.

7. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

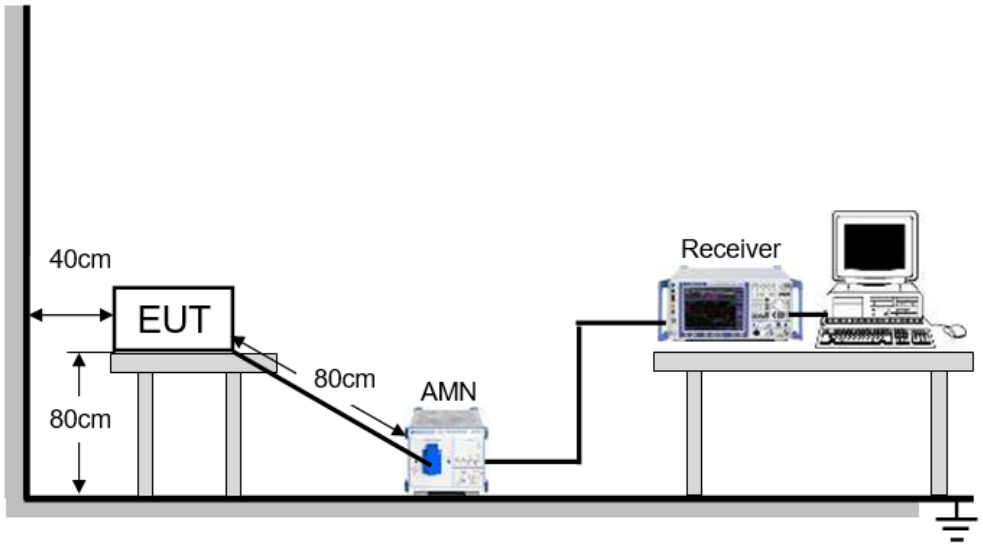
Please refer to FCC §15.207 (a)

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 ENVIRONMENT

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

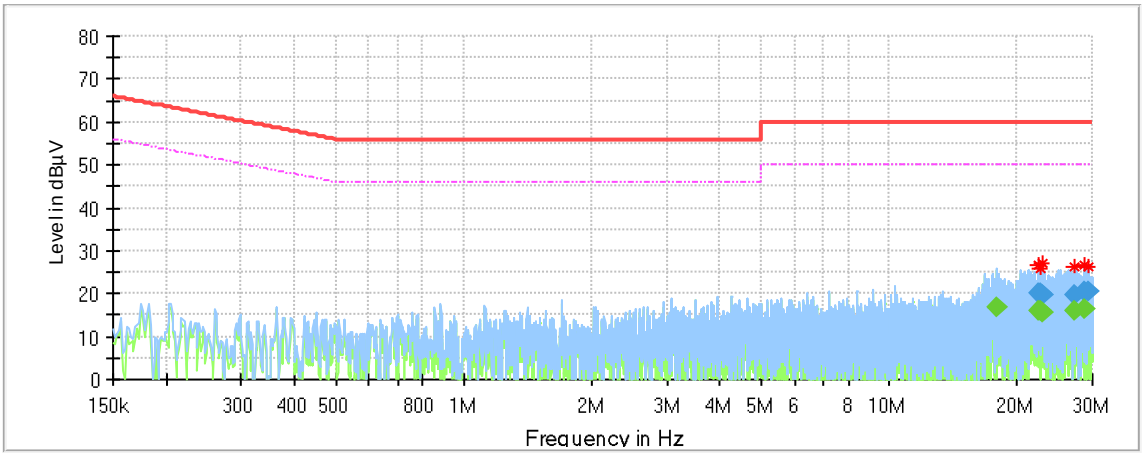
TEST SETUP AND PROCEDURE



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.

LINE L RESULTS (WORST-CASE CONFIGURATION)

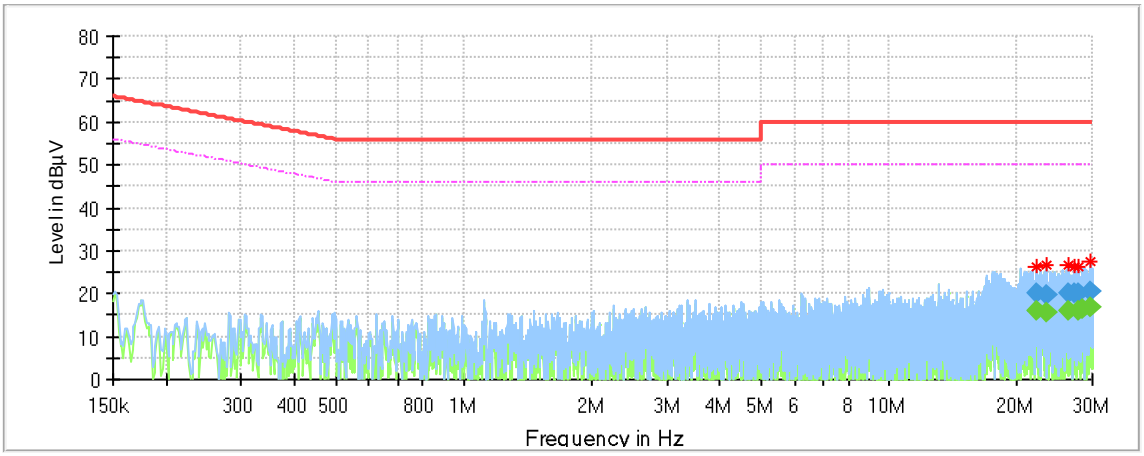


Final_Result

Frequency [MHz]	QuasiPeak [dBµV]	Average [dBµV]	Limit [dBµV]	Margin [dB]	Meas. Time [ms]	Bandwidth [kHz]	Line	Filter	Corr. [dB]
17.945078	---	16.98	50.00	33.02	1000.0	9.000	L1	OFF	9.7
22.531530	---	16.04	50.00	33.96	1000.0	9.000	L1	OFF	9.8
22.531530	20.02	---	60.00	39.98	1000.0	9.000	L1	OFF	9.8
22.628543	---	16.12	50.00	33.88	1000.0	9.000	L1	OFF	9.8
22.628543	20.08	---	60.00	39.92	1000.0	9.000	L1	OFF	9.8
22.953908	---	15.76	50.00	34.24	1000.0	9.000	L1	OFF	9.8
22.953908	19.85	---	60.00	40.15	1000.0	9.000	L1	OFF	9.8
27.346335	19.77	---	60.00	40.23	1000.0	9.000	L1	OFF	9.8
27.346335	---	15.98	50.00	34.02	1000.0	9.000	L1	OFF	9.8
28.834358	20.46	---	60.00	39.54	1000.0	9.000	L1	OFF	9.8
28.834358	---	16.47	50.00	33.53	1000.0	9.000	L1	OFF	9.8
29.307480	20.55	---	60.00	39.45	1000.0	9.000	L1	OFF	9.8

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. The EUT was test with two type antennas, the result of the EUT with type 2 antenna was worse case and recorded in this report.
6. Pre-testing all test modes and channels and find the HCH of DH5 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]
22.244970	---	16.18	50.00	33.82	1000.0	9.000	N	OFF	10.0
22.244970	20.19	---	60.00	39.81	1000.0	9.000	N	OFF	10.0
23.294198	---	15.78	50.00	34.22	1000.0	9.000	N	OFF	10.0
23.294198	19.66	---	60.00	40.34	1000.0	9.000	N	OFF	10.0
26.413523	---	15.98	50.00	34.02	1000.0	9.000	N	OFF	9.8
26.413523	19.93	---	60.00	40.07	1000.0	9.000	N	OFF	9.8
27.114998	20.09	---	60.00	39.91	1000.0	9.000	N	OFF	9.8
27.741848	---	15.87	50.00	34.13	1000.0	9.000	N	OFF	9.8
27.741848	19.92	---	60.00	40.08	1000.0	9.000	N	OFF	9.8
28.373175	---	16.29	50.00	33.71	1000.0	9.000	N	OFF	9.8
29.801498	---	16.74	50.00	33.26	1000.0	9.000	N	OFF	9.7
29.801498	20.52	---	60.00	39.48	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. The EUT was test with two type antennas, the result of the EUT with type 2 antenna was worse case and recorded in this report.
6. Pre-testing all test modes and channels and find the HCH of DH5 which is the worst case, so only the worst case is included in this test report.

8. 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