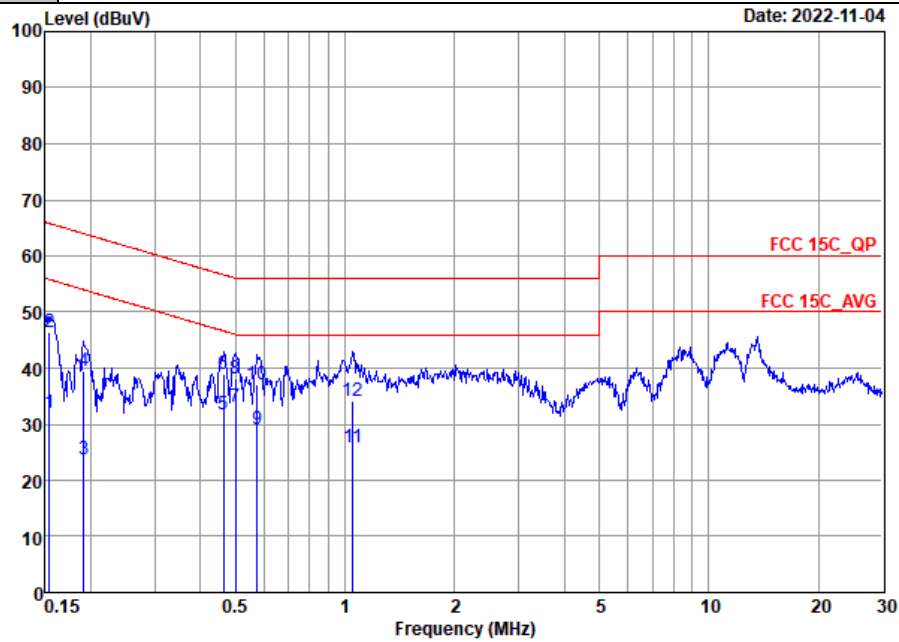




Appendix B. AC Conducted Emission Test Results

Test Engineer :	Lily Qiu	Temperature :	20~23°C
		Relative Humidity :	41~46%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		

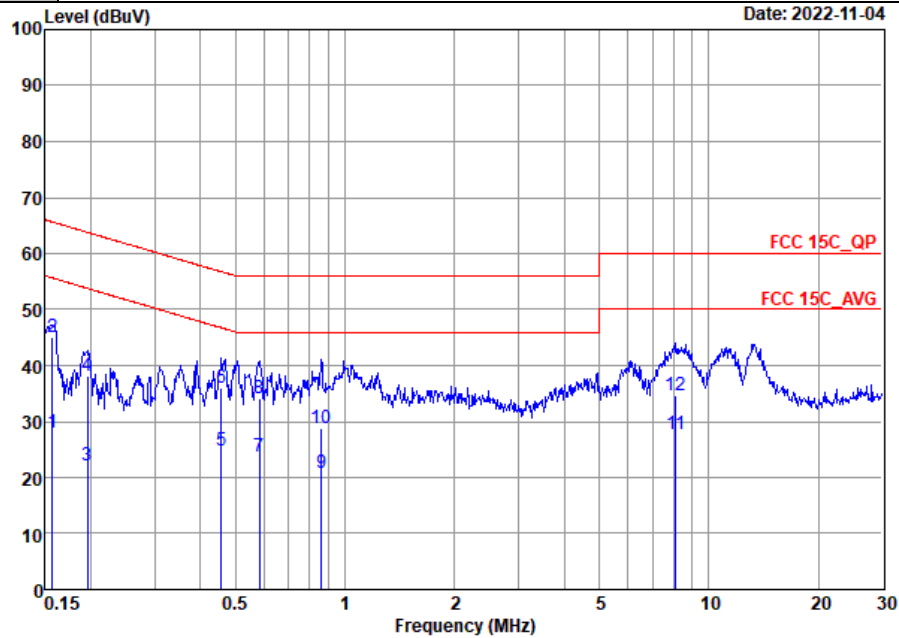


Site : CO01-SZ
 Condition: FCC 15C_QP LISN_20220811_ L LINE

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.15	31.89	-23.89	55.78	10.90	10.20	10.79	Average
2	0.15	46.49	-19.29	65.78	25.50	10.20	10.79	QP
3	0.19	23.65	-30.33	53.98	3.20	10.20	10.25	Average
4	0.19	39.35	-24.63	63.98	18.90	10.20	10.25	QP
5	0.46	31.64	-14.99	46.63	9.81	10.11	11.72	Average
6	0.46	38.84	-17.79	56.63	17.01	10.11	11.72	QP
7 *	0.50	32.98	-13.03	46.01	11.00	10.12	11.86	Average
8	0.50	38.18	-17.83	56.01	16.20	10.12	11.86	QP
9	0.57	29.14	-16.86	46.00	7.49	10.11	11.54	Average
10	0.57	37.14	-18.86	56.00	15.49	10.11	11.54	QP
11	1.05	25.86	-20.14	46.00	5.50	10.13	10.23	Average
12	1.05	34.06	-21.94	56.00	13.70	10.13	10.23	QP



Test Engineer :	Lily Qiu	Temperature :	20~23°C
		Relative Humidity :	41~46%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Site : CO01-SZ
 Condition: FCC 15C_QP LISN_20220811_ N NEUTRAL

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.16	27.96	-27.69	55.65	6.90	10.31	10.75	Average
2 *	0.16	44.96	-20.69	65.65	23.90	10.31	10.75	QP
3	0.20	22.19	-31.61	53.80	1.70	10.28	10.21	Average
4	0.20	38.19	-25.61	63.80	17.70	10.28	10.21	QP
5	0.46	24.78	-21.98	46.76	2.90	10.19	11.69	Average
6	0.46	35.88	-20.88	56.76	14.00	10.19	11.69	QP
7	0.58	23.63	-22.37	46.00	1.90	10.23	11.50	Average
8	0.58	34.23	-21.77	56.00	12.50	10.23	11.50	QP
9	0.86	20.84	-25.16	46.00	0.10	10.15	10.59	Average
10	0.86	28.84	-27.16	56.00	8.10	10.15	10.59	QP
11	8.11	27.69	-22.31	50.00	7.40	10.01	10.28	Average
12	8.11	34.59	-25.41	60.00	14.30	10.01	10.28	QP

Note:

- Level(dBμV) = Read Level(dBμV) + LISN Factor(dB) + Cable Loss(dB)
- Over Limit(dB) = Level(dBμV) – Limit Line(dBμV)



Appendix C. Radiated Spurious Emission

2.4GHz 2400~2483.5MHz

BT (Band Edge @ 3m)

Mode	Note	Frequency (MHz)	Level (dBμV/m)	Margin (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
BT CH00 2402MHz		2371.11	45.77	-28.23	74	38.7	32.22	7.55	32.7	100	310	P	H
		2371.11	20.98	-33.02	54	-	-	-	-	-	-	A	H
	*	2402	101.38	-	-	94.21	32.28	7.59	32.7	100	310	P	H
	*	2402	76.59	-	-	-	-	-	-	-	-	A	H
		2376.045	46.14	-27.86	74	39.05	32.23	7.56	32.7	257	258	P	V
		2376.045	21.35	-32.65	54	-	-	-	-	-	-	A	V
	*	2402	103.44	-	-	96.27	32.28	7.59	32.7	257	258	P	V
	*	2402	78.65	-	-	-	-	-	-	-	-	A	V
BT CH 39 2441MHz		2366.98	45.73	-28.27	74	38.67	32.21	7.55	32.7	100	310	P	H
		2366.98	20.94	-33.06	54	-	-	-	-	-	-	A	H
	*	2441	99.36	-	-	92.05	32.37	7.64	32.7	100	310	P	H
	*	2441	74.57	-	-	-	-	-	-	-	-	A	H
		2497.62	45.48	-28.52	74	37.97	32.49	7.72	32.7	100	310	P	H
		2497.62	20.69	-33.31	54	-	-	-	-	-	-	A	H
		2373.98	45.5	-28.5	74	38.42	32.22	7.56	32.7	216	261	P	V
		2373.98	20.71	-33.29	54	-	-	-	-	-	-	A	V
	*	2441	101.43	-	-	94.12	32.37	7.64	32.7	216	261	P	V
	*	2441	76.64	-	-	-	-	-	-	-	-	A	V
		2496.08	45.47	-28.53	74	37.97	32.49	7.71	32.7	216	261	P	V
		2496.08	20.68	-33.32	54	-	-	-	-	-	-	A	V
BT CH 78 2480MHz	*	2480	97.85	-	-	90.4	32.46	7.69	32.7	100	232	P	H
	*	2480	73.06	-	-	-	-	-	-	-	-	A	H
		2484.72	45.28	-28.72	74	37.81	32.47	7.7	32.7	100	232	P	H
		2484.72	20.49	-33.51	54	-	-	-	-	-	-	A	H
	*	2480	101.26	-	-	93.81	32.46	7.69	32.7	213	260	P	V
	*	2480	76.47	-	-	-	-	-	-	-	-	A	V
		2495.16	45.58	-28.42	74	38.08	32.49	7.71	32.7	213	260	P	V
		2495.16	20.79	-33.21	54	-	-	-	-	-	-	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz

BT (Harmonic @ 3m)

Mode	Note	Frequency (MHz)	Level (dBμV/m)	Margin (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
BT CH 00 2402MHz		4804	44.94	-29.06	74	51.38	34.82	10.89	52.15	-	-	P	H
		4804	20.15	-33.85	54	-	-	-	-	-	-	A	H
		4804	44.9	-29.1	74	51.34	34.82	10.89	52.15	-	-	P	V
		4804	20.11	-33.89	54	-	-	-	-	-	-	A	V
BT CH 39 2441MHz		4882	44.49	-29.51	74	50.73	34.85	11.01	52.1	-	-	P	H
		4882	19.7	-34.3	54	-	-	-	-	-	-	A	H
		7323	47.33	-26.67	74	49.42	36.33	13.35	51.77	-	-	P	H
		7323	22.54	-31.46	54	-	-	-	-	-	-	A	H
		4882	44.66	-29.34	74	50.9	34.85	11.01	52.1	-	-	P	V
		4882	19.87	-34.13	54	-	-	-	-	-	-	A	V
		7323	47.77	-26.23	74	49.86	36.33	13.35	51.77	-	-	P	V
		7323	22.98	-31.02	54	-	-	-	-	-	-	A	V
BT CH 78 2480MHz		4960	45.09	-28.91	74	51.1	34.88	11.14	52.03	-	-	P	H
		4960	20.3	-33.7	54	-	-	-	-	-	-	A	H
		7440	47.81	-26.19	74	49.9	36.38	13.18	51.65	-	-	P	H
		7440	23.02	-30.98	54	-	-	-	-	-	-	A	H
		4960	45.36	-28.64	74	51.37	34.88	11.14	52.03	-	-	P	V
		4960	20.57	-33.43	54	-	-	-	-	-	-	A	V
		7440	48.15	-25.85	74	50.24	36.38	13.18	51.65	-	-	P	V
		7440	23.36	-30.64	54	-	-	-	-	-	-	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Emission below 1GHz

2.4GHz BT (LF)

Mode	Note	Frequency (MHz)	Level (dBμV/m)	Margin (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
2.4GHz BT LF		44.55	19.16	-20.84	40	32.9	19.61	1.6	34.95	-	-	P	H
		152.22	27.21	-16.29	43.5	40.71	18.86	2.34	34.7	-	-	P	H
		321	25.66	-20.34	46	37.36	19.59	3.31	34.6	-	-	P	H
		368.53	27.04	-18.96	46	37.55	20.66	3.39	34.56	-	-	P	H
		542.16	24.67	-21.33	46	31.63	24.06	3.48	34.5	-	-	P	H
		728.4	27.32	-18.68	46	30.61	27.38	3.73	34.4	-	-	P	H
		43.58	26.25	-13.75	40	40.1	19.54	1.55	34.94	-	-	P	V
		166.77	32.48	-11.02	43.5	46.78	17.98	2.42	34.7	-	-	P	V
		321	27.49	-18.51	46	39.19	19.59	3.31	34.6	-	-	P	V
		547.98	25.43	-20.57	46	32.27	24.16	3.5	34.5	-	-	P	V
		723.55	27.19	-18.81	46	30.52	27.33	3.74	34.4	-	-	P	V
		823.46	28.4	-17.6	46	30.02	28.29	4.39	34.3	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against limit line.												



Note symbol

*	Fundamental Frequency which can be ignored. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency.
!	Test result is Margin line.
P/A	Peak or Average
H/V	Horizontal or Vertical



A calculation example for radiated spurious emission is shown as below:

BT	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
BT CH 00 2402MHz		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
		2390	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	A	H

1. Path Loss(dB) = Cable loss(dB) + Filter loss(dB) + Attenuator loss(dB)
2. Level(dBμV/m) =
Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)
3. Margin (dB) = Level(dBμV/m) – Limit Line(dBμV/m)

For Peak Limit @ 2390MHz:

1. Level(dBμV/m)
= Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)
= 32.22(dB/m) + 4.58(dB) + 54.51(dBμV) – 35.86 (dB)
= 55.45 (dBμV/m)
2. Margin (dB)
= Level(dBμV/m) – Limit Line(dBμV/m)
= 55.45(dBμV/m) – 74(dBμV/m)
= -18.55(dB)

For Average Limit @ 2390MHz:

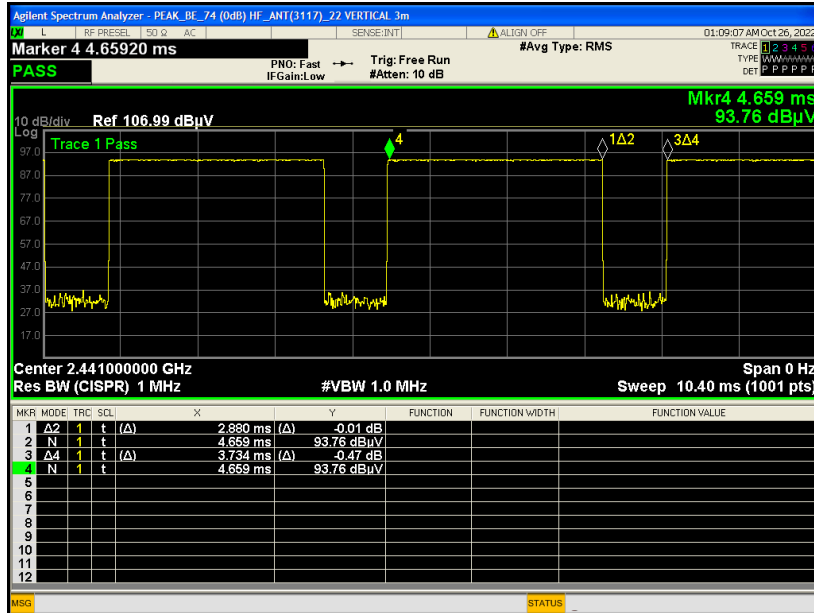
1. Level(dBμV/m)
= Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)
= 32.22(dB/m) + 4.58(dB) + 42.6(dBμV) – 35.86 (dB)
= 43.54 (dBμV/m)
2. Margin (dB)
= Level(dBμV/m) – Limit Line(dBμV/m)
= 43.54(dBμV/m) – 54(dBμV/m)
= -10.46(dB)

Both peak and average measured complies with the limit line, so test result is “PASS”.

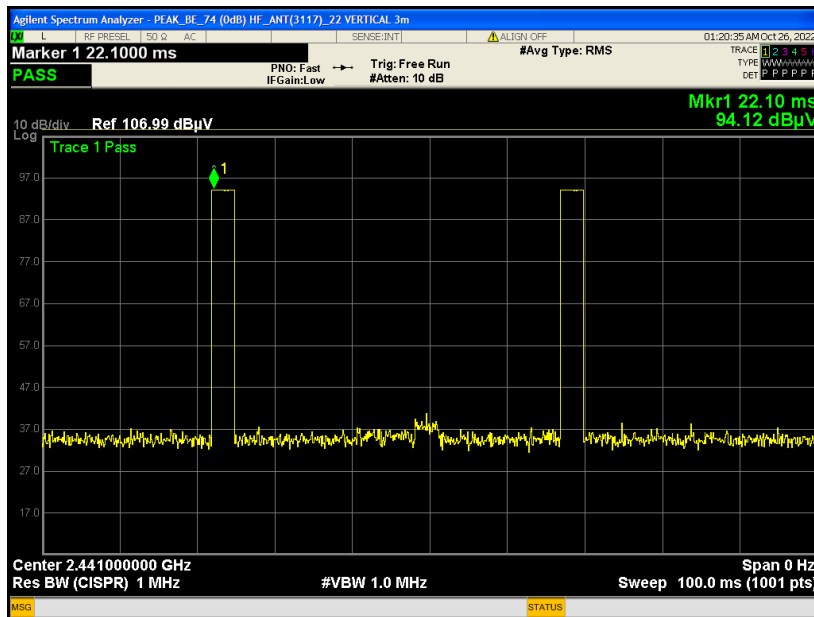


Appendix D. Duty Cycle Plots

DH5 on time (One Pulse) Plot on Channel 39



DH5 on time (Count Pulses) Plot on Channel 39



Note:

1. Worst case Duty cycle = on time/100 milliseconds = 2 * 2.880 / 100 = 5.76 %
2. Worst case Duty cycle correction factor = 20*log(Duty cycle) = -24.79 dB
3. DH5 has the highest duty cycle worst case and is reported.