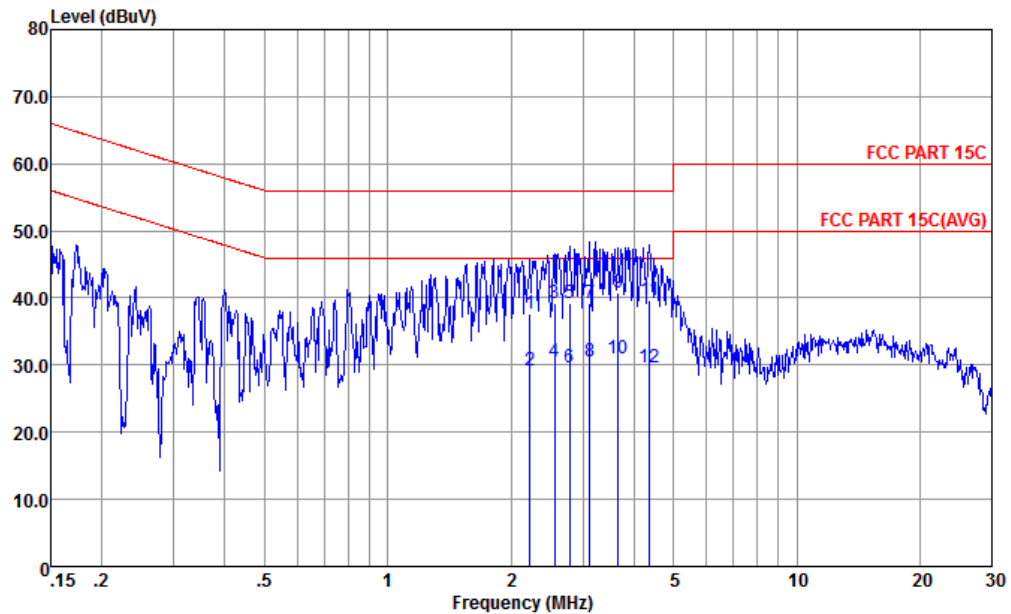




Appendix B. AC Conducted Emission Test Results

Test Engineer :	Amos Zhao	Temperature :	25.3~26.2°C
		Relative Humidity :	38~40%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		

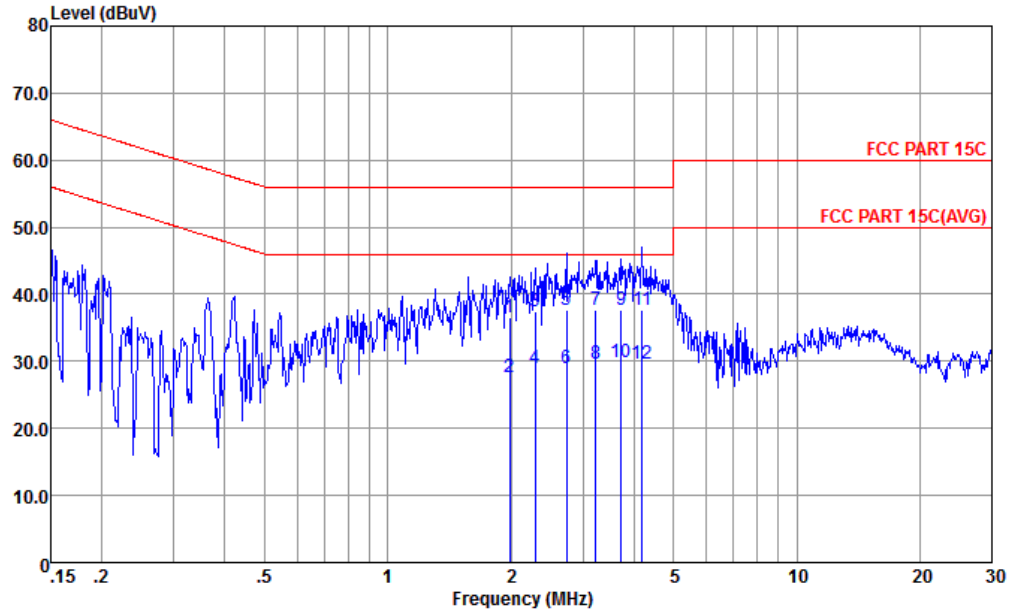


Site : CO01-KS
 Condition : FCC PART 15C LISN-060105-L LINE

	Freq	Level	Over	Limit	Read	LISN	Cable	Remark
	MHz	dBuV	Limit	Line	Level	Factor	Loss	
			dB	dBuV	dBuV	dB	dB	
1	2.225	37.57	-18.43	56.00	27.20	0.14	10.23	QP
2	2.225	29.17	-16.83	46.00	18.80	0.14	10.23	Average
3	2.554	39.18	-16.82	56.00	28.79	0.15	10.24	QP
4	2.554	30.58	-15.42	46.00	20.19	0.15	10.24	Average
5	2.779	39.29	-16.71	56.00	28.90	0.15	10.24	QP
6	2.779	29.69	-16.31	46.00	19.30	0.15	10.24	Average
7	3.123	39.30	-16.70	56.00	28.91	0.15	10.24	QP
8	3.123	30.60	-15.40	46.00	20.21	0.15	10.24	Average
9	3.661	40.71	-15.29	56.00	30.30	0.16	10.25	QP
10 *	3.661	30.91	-15.09	46.00	20.50	0.16	10.25	Average
11	4.361	39.63	-16.37	56.00	29.20	0.17	10.26	QP
12	4.361	29.73	-16.27	46.00	19.30	0.17	10.26	Average



Test Engineer :	Amos Zhao	Temperature :	25.3~26.2°C
		Relative Humidity :	38~40%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Site : CO01-KS
 Condition : FCC PART 15C LISN-060105-N NEUTRAL

	Freq	Level	Over	Limit	Read	LISN	Cable	Remark
	MHz	dBuV	Limit	Line	Level	Factor	Loss	
			dB	dBuV	dBuV	dB	dB	
1	1.991	36.57	-19.43	56.00	26.20	0.14	10.23	QP
2	1.991	27.67	-18.33	46.00	17.30	0.14	10.23	Average
3	2.297	37.48	-18.52	56.00	27.11	0.14	10.23	QP
4	2.297	28.88	-17.12	46.00	18.51	0.14	10.23	Average
5	2.736	37.59	-18.41	56.00	27.20	0.15	10.24	QP
6	2.736	28.89	-17.11	46.00	18.50	0.15	10.24	Average
7	3.224	37.60	-18.40	56.00	27.21	0.15	10.24	QP
8	3.224	29.70	-16.30	46.00	19.31	0.15	10.24	Average
9	3.720	37.71	-18.29	56.00	27.30	0.16	10.25	QP
10 *	3.720	29.91	-16.09	46.00	19.50	0.16	10.25	Average
11	4.180	37.63	-18.37	56.00	27.20	0.17	10.26	QP
12	4.180	29.73	-16.27	46.00	19.30	0.17	10.26	Average

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)

BT	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
		(MHz)	(dB μ V/m)	(dB)	(dB μ V/m)	(dB μ V)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
BT CH00 2402MHz		2369.15	56.68	-17.32	74	48.51	31.96	7.11	30.9	203	305	P	H
	*	2369.15	31.95	-22.05	54	-	-	-	-	-	-	A	H
		2402	103.33	---	---	95.08	32	7.13	30.88	203	305	P	H
		2402	78.60	---	---	-	-	-	-	-	-	A	H
		2349.52	56.46	-17.54	74	48.43	31.89	7.06	30.92	380	289	P	V
	*	2349.52	31.73	-22.27	54	-	-	-	-	-	-	A	V
		2402	96.48	---	---	88.23	32	7.13	30.88	380	289	P	V
		2402	71.75	---	---	-	-	-	-	-	-	A	V
BT CH 39 2441MHz		2362.39	56.83	-17.17	74	48.74	31.93	7.08	30.92	141	355	P	H
	*	2362.39	32.10	-21.90	54	-	-	-	-	-	-	A	H
		2442	101.65	---	---	93.09	32.08	7.22	30.74	141	355	P	H
		2442	76.92	---	---	-	-	-	-	-	-	A	H
		2485.09	56.73	-17.27	74	48	32.12	7.28	30.67	141	355	P	H
		2485.09	32.00	-22.00	54	-	-	-	-	-	-	A	H
		2380.2	57.01	-16.99	74	48.84	31.96	7.11	30.9	348	152	P	V
	*	2380.2	32.28	-21.72	54	-	-	-	-	-	-	A	V
		2442	93.03	---	---	84.47	32.08	7.22	30.74	348	152	P	V
		2442	68.30	---	---	-	-	-	-	-	-	A	V
		2490.97	56.51	-17.49	74	47.71	32.15	7.32	30.67	348	152	P	V
		2490.97	31.78	-22.22	54	-	-	-	-	-	-	A	V
BT CH 78 2480MHz	*	2480	99.68	---	---	90.95	32.12	7.28	30.67	113	352	P	H
		2480	74.95	---	---	-	-	-	-	-	-	A	H
		2483.86	56.88	-17.12	74	48.15	32.12	7.28	30.67	113	352	P	H
		2483.86	32.15	-21.85	54	-	-	-	-	-	-	A	H
	*	2480	89.55	---	---	80.82	32.12	7.28	30.67	262	360	P	V
		2480	64.82	---	---	-	-	-	-	-	-	A	V
		2494.54	57.06	-16.94	74	48.19	32.15	7.32	30.6	262	360	P	V
		2494.54	32.33	-21.67	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)

Table with 14 columns: BT, Note, Frequency (MHz), Level (dBµV/m), Over Limit (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). Rows include data for BT CH 00 (2402MHz), BT CH 39 (2441MHz), and BT CH 78 (2480MHz).



Emission below 1GHz

2.4GHz BT (LF)

BT	Note	Frequency	Level	Over	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)
2.4GHz BT LF		30	22.28	-17.72	40	29.42	24.8	0.76	32.7	-	-	P	H
		59.1	26.92	-13.08	40	47.28	11.7	1.06	33.12	-	-	P	H
		94.99	21.02	-22.48	43.5	37.25	15.1	1.37	32.7	-	-	P	H
		117.3	19.86	-23.64	43.5	33.82	17.3	1.61	32.87	-	-	P	H
		350.1	22.99	-23.01	46	32.93	20.2	2.76	32.9	-	-	P	H
		607.15	25.99	-20.01	46	29.43	25.44	3.65	32.53	-	-	P	H
		30.97	29.48	-10.52	40	36.82	24.7	0.76	32.8	-	-	P	V
		48.43	28.78	-11.22	40	45.77	15	0.98	32.97	-	-	P	V
		95.96	22.59	-20.91	43.5	38.74	15.2	1.39	32.74	-	-	P	V
		131.85	18.86	-24.64	43.5	32.5	17.5	1.7	32.84	-	-	P	V
		250.19	16.92	-29.08	46	29.52	18.4	2.1	33.1	-	-	P	V
		549.92	24.01	-21.99	46	28.32	25.1	3.19	32.6	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against limit line.												



2.4GHz 2400~2483.5MHz

Co-location_BT<E_B7_BW_20M (Band Edge @ 3m)

BT	Note	Frequency	Level	Over	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 78 2480MHz	*	2480	100.43	-	-	91.7	32.12	7.28	30.67	250	352	P	H
		2480	75.70	-	-	-	-	-	-	-	-	A	H
		2490.7	60.21	-13.79	74	51.41	32.15	7.32	30.67	250	352	P	H
		2490.7	35.48	-18.52	54	-	-	-	-	-	-	A	H
	*	2480	92.02	-	-	83.29	32.12	7.28	30.67	367	140	P	V
		2480	67.29	-	-	-	-	-	-	-	-	A	V
		2490.46	57.35	-16.65	74	48.55	32.15	7.32	30.67	367	140	P	V
		2490.46	32.62	-21.38	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

Co-location_BT<E_B7_BW_20M (Harmonic @ 3m)

BT	Note	Frequency	Level	Over	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 78 2480MHz		4965	40.63	-33.37	74	61.47	34.1	10.51	65.45	300	360	P	H
		7440	48.5	-25.5	74	65.15	35.8	12.88	65.33	300	360	P	H
		4960	40.94	-33.06	74	61.78	34.1	10.51	65.45	100	243	P	V
		7440	47.11	-26.89	74	63.76	35.8	12.88	65.33	100	243	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average 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 over limit 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	Over	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		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
CH 00		2390	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	A	H
2402MHz													

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. Over Limit(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. Over Limit(dB)
= Level(dBμV/m) – Limit Line(dBμV/m)
= 55.45(dBμV/m) – 74(dBμV/m)
= -18.55(dB)

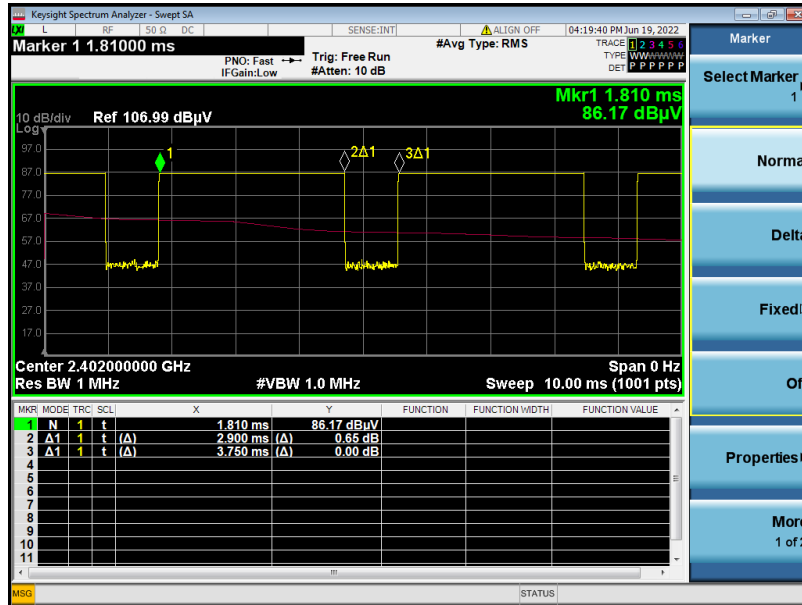
For Average Limit @ 2390MHz:

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. Over Limit(dB)
= Level(dBμV/m) – Limit Line(dBμV/m)
= 43.54(dBμV/m) – 54(dBμV/m)
= -10.46(dB)

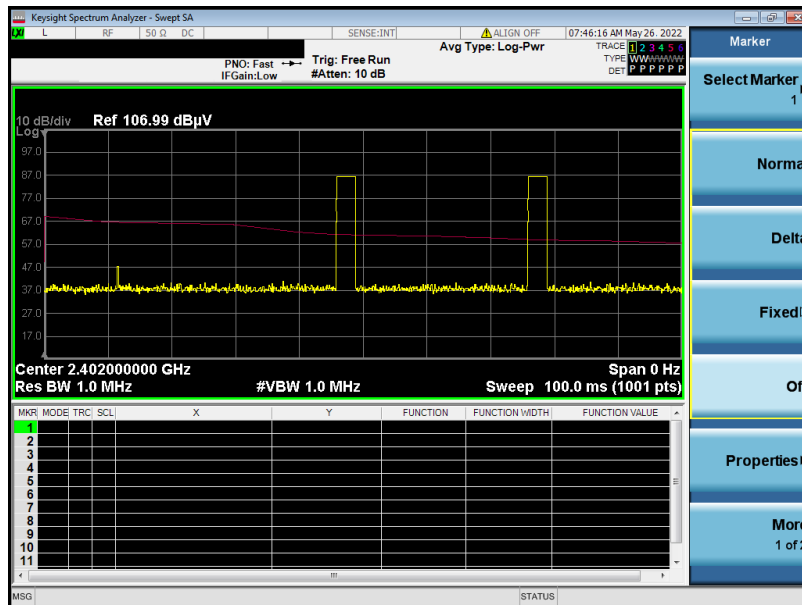
Both peak and average measured complies with the limit line, so test result is “PASS”

Appendix D. Duty Cycle Plots

3DH5 on time (One Pulse) Plot on Channel 39



3DH5 on time (Count Pulses) Plot on Channel 39



Note:

1. Worst case Duty cycle = on time/100 milliseconds = $2 * 2.90 / 100 = 5.80 \%$
2. Worst case Duty cycle correction factor = $20 * \log(\text{Duty cycle}) = -24.73 \text{ dB}$
3. 3DH5 has the highest duty cycle worst case and is reported.