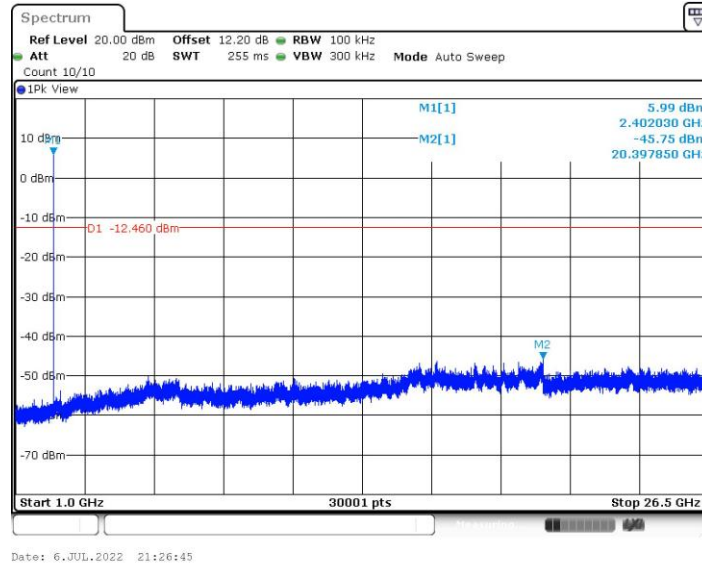
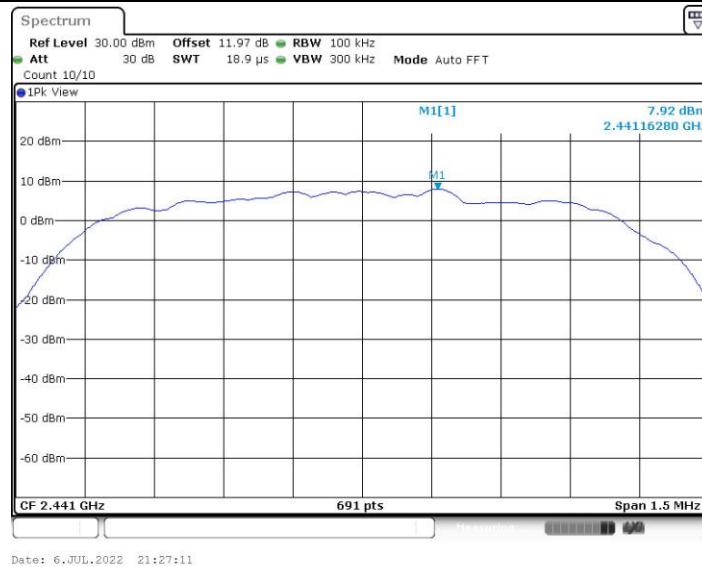


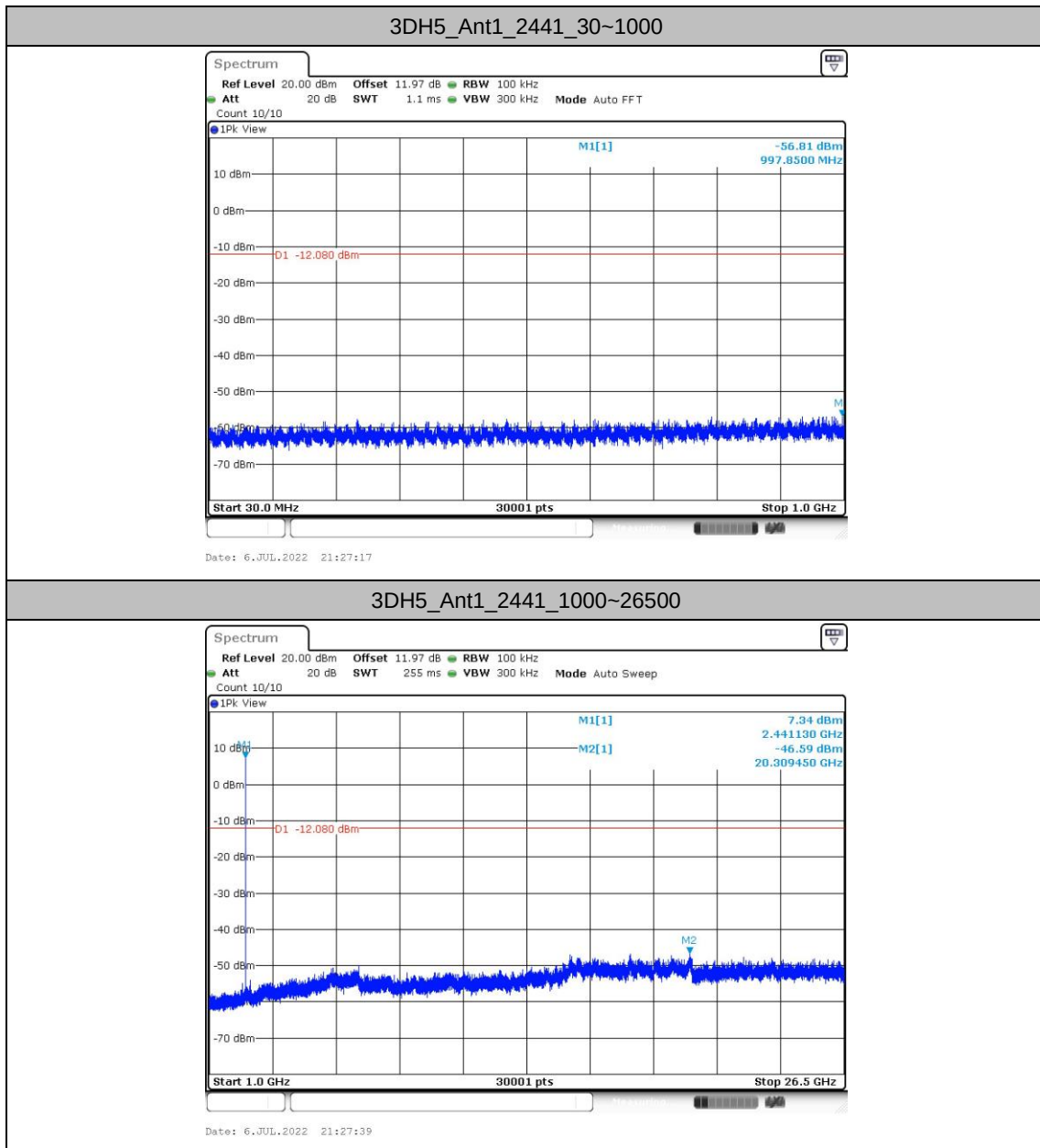


3DH5_Ant1_2402_1000~26500



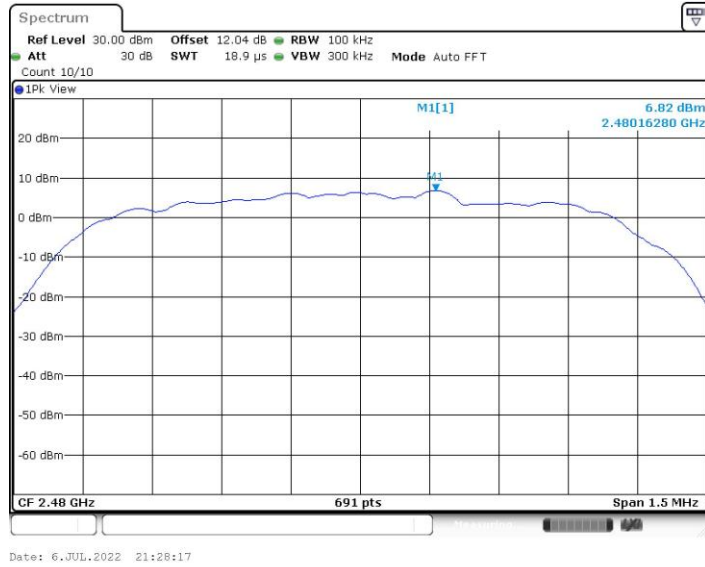
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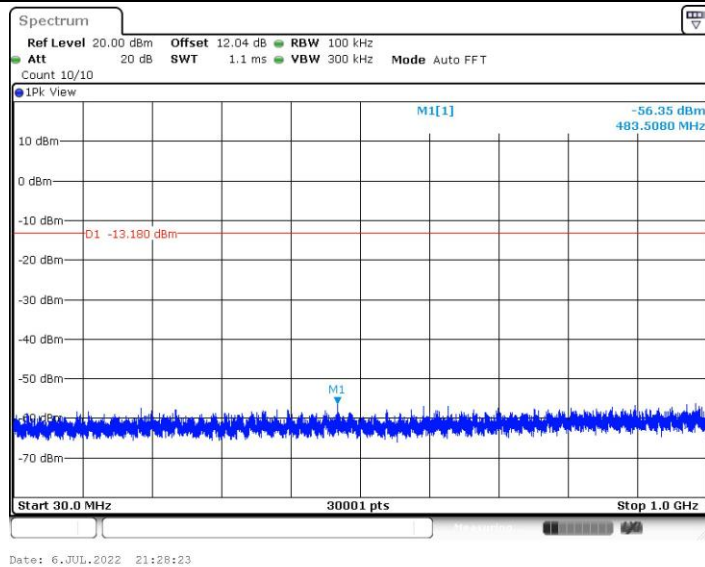


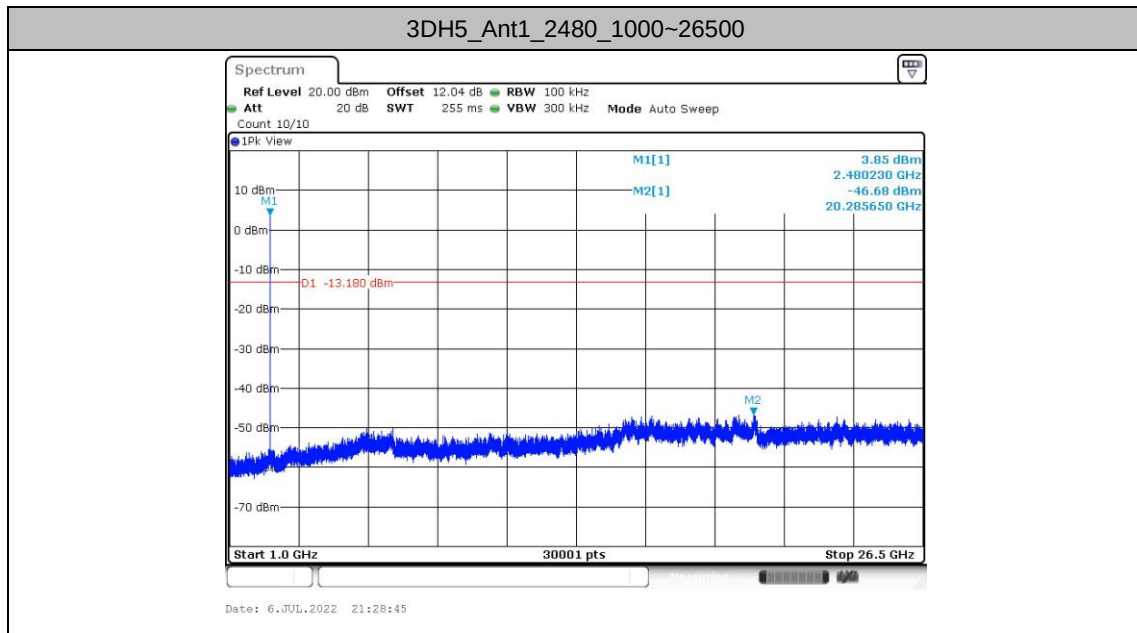


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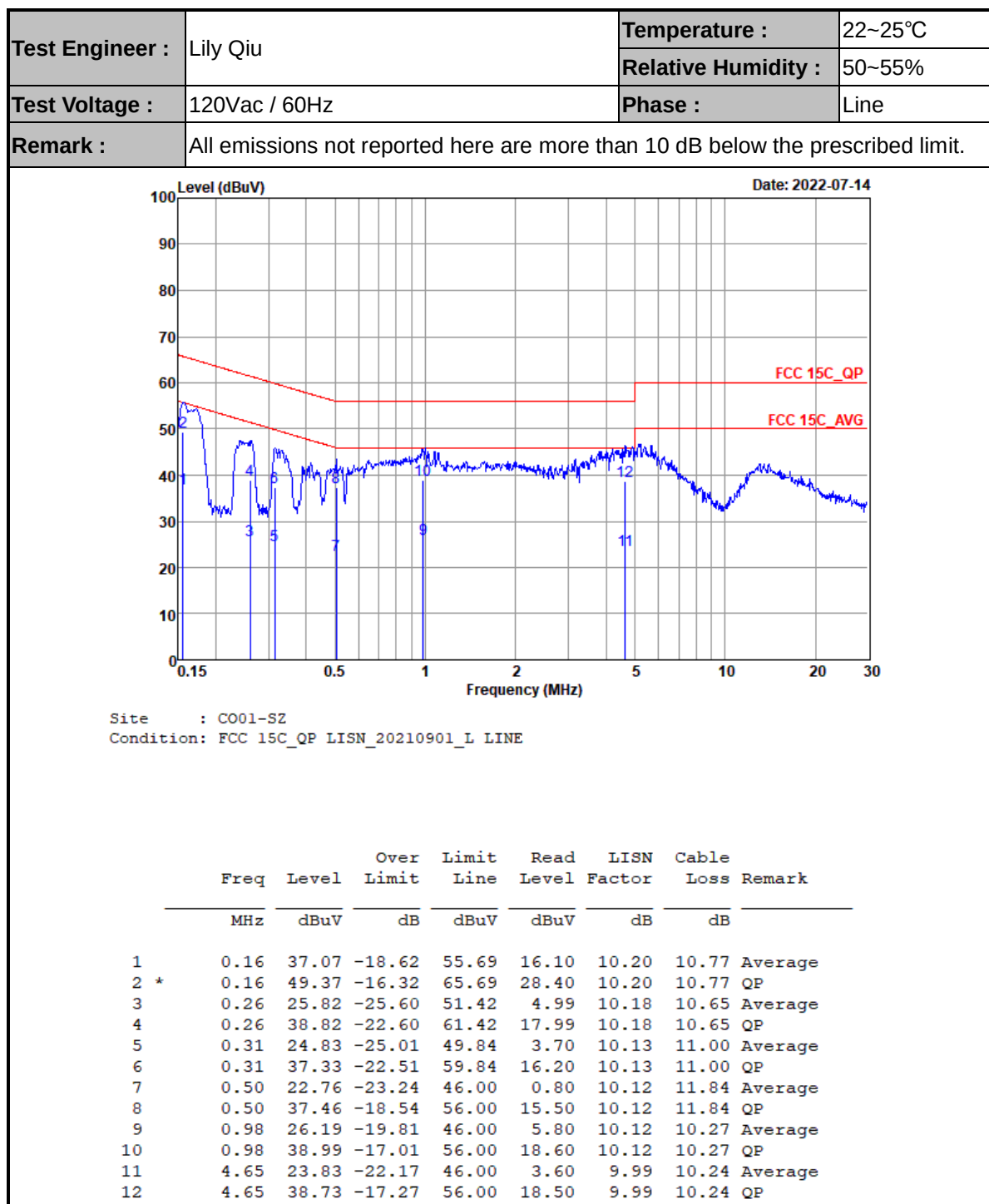
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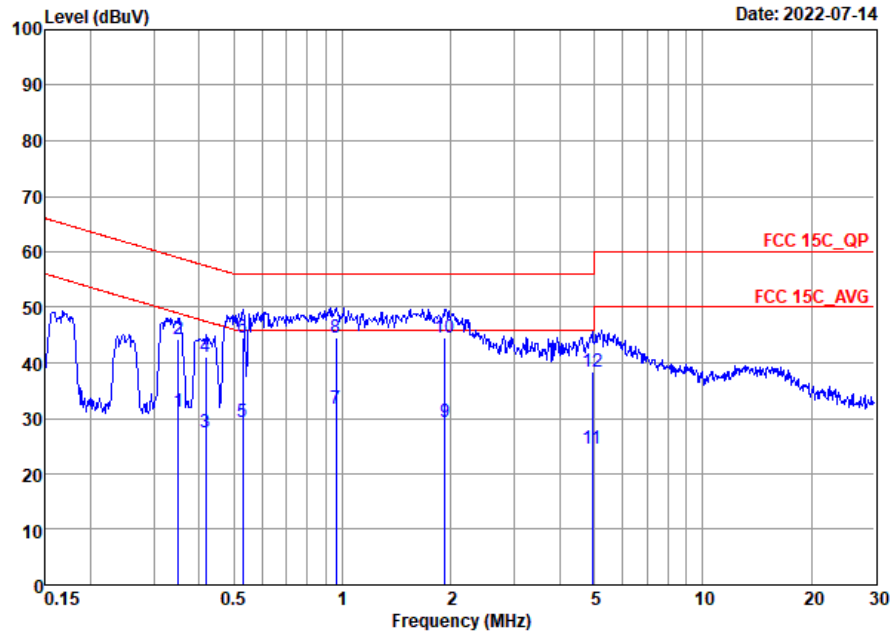




Appendix B. AC Conducted Emission Test Results



Test Engineer :	Lily Qiu	Temperature :	22~25°C
		Relative Humidity :	50~55%
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_20210901_N NEUTRAL

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.35	31.16	-17.80	48.96	9.80	10.17	11.19	Average
2	0.35	44.16	-14.80	58.96	22.80	10.17	11.19	QP
3	0.42	27.52	-19.99	47.51	5.80	10.19	11.53	Average
4	0.42	41.02	-16.49	57.51	19.30	10.19	11.53	QP
5	0.53	29.43	-16.57	46.00	7.49	10.21	11.73	Average
6 *	0.53	44.63	-11.37	56.00	22.69	10.21	11.73	QP
7	0.96	31.67	-14.33	46.00	11.10	10.23	10.34	Average
8	0.96	44.47	-11.53	56.00	23.90	10.23	10.34	QP
9	1.93	29.34	-16.66	46.00	8.90	10.20	10.24	Average
10	1.93	44.44	-11.56	56.00	24.00	10.20	10.24	QP
11	4.93	24.47	-21.53	46.00	4.10	10.13	10.24	Average
12	4.93	38.37	-17.63	56.00	18.00	10.13	10.24	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)

BT	Note	Frequency	Level	Margin	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
BT CH00 2402MHz		2352.63	44.78	-29.22	74	39.83	31.7	5.51	32.26	276	303	P	H
		2352.63	19.99	-34.01	54	-	-	-	-	276	303	A	H
		2402	101.44	-	-	96.43	31.7	5.55	32.24	276	303	P	H
	*	2402	76.65	-	-	-	-	-	-	276	303	A	H
		2354.205	44.69	-29.31	74	39.74	31.7	5.51	32.26	152	235	P	V
		2354.205	19.9	-34.1	54	-	-	-	-	152	235	A	V
		2402	91.01	-	-	86	31.7	5.55	32.24	152	235	P	V
	*	2402	66.22	-	-	-	-	-	-	152	235	A	V
BT CH 39 2441MHz		2360.82	43.99	-30.01	74	39.04	31.7	5.51	32.26	290	303	P	H
		2360.82	19.2	-34.8	54	-	-	-	-	-	-	A	H
	*	2441	101.3	-	-	95.74	32	5.61	32.05	290	303	P	H
	*	2441	76.51	-	-	-	-	-	-	-	-	A	H
		2496.08	45.25	-28.75	74	39.32	32.1	5.68	31.85	290	303	P	H
		2496.08	20.46	-33.54	54	-	-	-	-	-	-	A	H
		2367.96	44.57	-29.43	74	39.61	31.7	5.51	32.25	150	235	P	V
		2367.96	19.78	-34.22	54	-	-	-	-	-	-	A	V
	*	2441	91.76	-	-	86.2	32	5.61	32.05	150	235	P	V
	*	2441	66.97	-	-	-	-	-	-	-	-	A	V
		2485.51	45.12	-28.88	74	39.34	32.07	5.66	31.95	150	235	P	V
		2485.51	20.33	-33.67	54	-	-	-	-	-	-	A	V



BT CH 78 2480MHz	*	2480	101.57	-	-	95.79	32.07	5.66	31.95	291	308	P	H
		2483.72	50.77	-23.23	74	44.99	32.07	5.66	31.95	291	308	P	H
		2483.72	25.98	-28.02	54	-	-	-	-	-	-	A	H
	*	2480	90.59	-	-	84.81	32.07	5.66	31.95	151	226	P	V
	*	2480	65.8	-	-	-	-	-	-	-	-	A	V
		2490.6	45.78	-28.22	74	39.95	32.1	5.68	31.95	151	226	P	V
		2490.6	20.99	-33.01	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)

BT	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	41.61	-32.39	74	57.03	33.8	8.68	57.9	-	-	P	H
		4804	16.82	-37.18	54	-	-	-	-	-	-	A	H
		4804	41.52	-32.48	74	56.94	33.8	8.68	57.9	-	-	P	V
		4804	16.73	-37.27	54	-	-	-	-			A	V
BT CH 39 2441MHz		4882	41.95	-32.05	74	57.33	33.73	8.79	57.9	-	-	P	H
		4882	17.16	-36.84	54	-	-	-	-			A	H
		7323	44.23	-29.77	74	56.93	35.73	11.09	59.52	-	-	P	H
		7323	19.44	-34.56	54	-	-	-	-			A	H
		4882	41.3	-32.7	74	56.68	33.73	8.79	57.9	-	-	P	V
		4882	16.51	-37.49	54	-	-	-	-			A	V
		7323	43.93	-30.07	74	56.63	35.73	11.09	59.52	-	-	P	V
		7323	19.14	-34.86	54	-	-	-	-			A	V
BT CH 78 2480MHz		4960	43.7	-30.3	74	58.57	33.73	8.98	57.58	-	-	P	H
		4960	18.91	-35.09	54	-	-	-	-	-	-	A	H
		7440	46.31	-27.69	74	58.38	35.78	11.12	58.97	-	-	P	H
		7440	21.52	-32.48	54	-	-	-	-	-	-	A	H
		4960	43.78	-30.22	74	58.65	33.73	8.98	57.58	-	-	P	V
		4960	18.99	-35.01	54	-	-	-	-	-	-	A	V
		7440	46.09	-27.91	74	58.16	35.78	11.12	58.97	-	-	P	V
		7440	21.3	-32.7	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)

BT	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
					Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
2.4GHz BT LF		91.11	22.99	-20.51	43.5	43.25	13.94	0.98	35.18	-	-	P	H
		196.84	24.73	-18.77	43.5	41.87	16.51	1.45	35.1	-	-	P	H
		317.12	26.19	-19.81	46	39.06	20.15	1.88	34.9	-	-	P	H
		468.44	23.92	-22.08	46	32.88	23.43	2.31	34.7	-	-	P	H
		581.93	24.67	-21.33	46	31.15	25.43	2.63	34.54	-	-	P	H
		974.78	29.23	-24.77	54	29.96	29.99	3.43	34.15	-	-	P	H
		36.79	24.86	-15.14	40	39.84	19.38	0.64	35	-	-	P	V
		94.02	23.82	-19.68	43.5	44.03	13.98	1	35.19	-	-	P	V
		196.84	28.01	-15.49	43.5	45.15	16.51	1.45	35.1	-	-	P	V
		325.85	26.59	-19.41	46	39.15	20.44	1.9	34.9	-	-	P	V
		562.53	24.95	-21.05	46	31.88	25.06	2.58	34.57	-	-	P	V
		988.36	29.64	-24.36	54	30.17	30.13	3.46	34.12	-	-	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.
					Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
		(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)

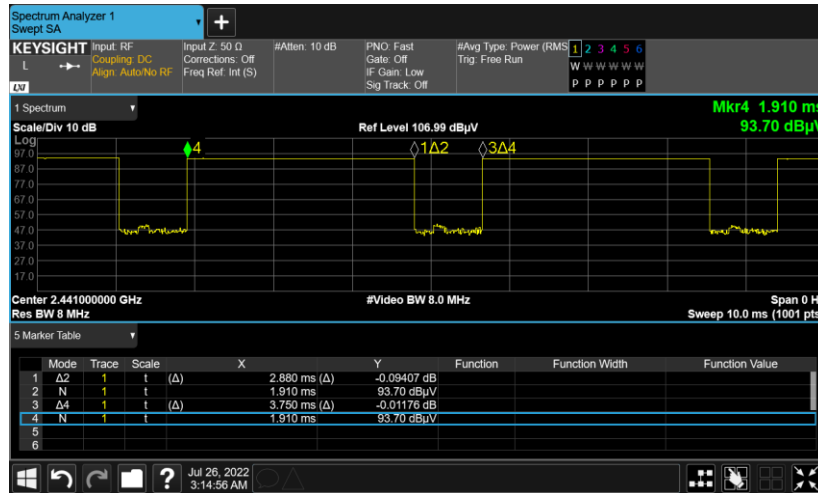
For Average Limit @ 2390MHz:

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)

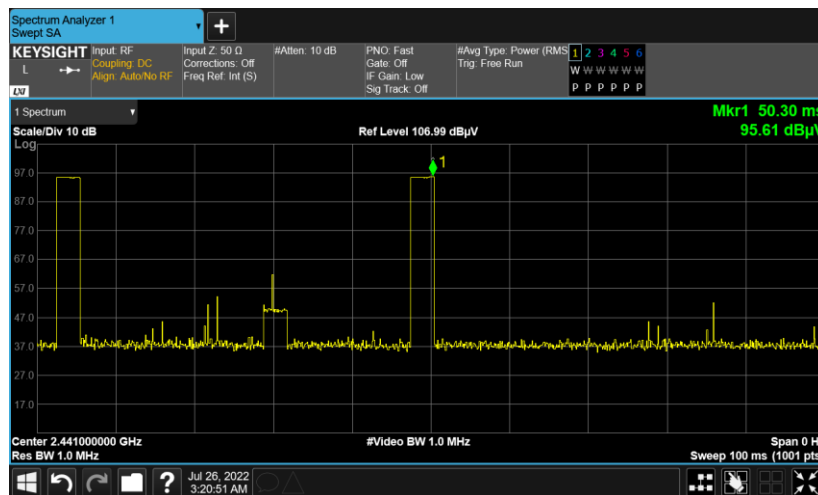
Both peak and average measured complies with the limit line, so test result is “PASS”.

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 = $2 * 2.88 / 100 = 5.76 \%$
2. Worst case Duty cycle correction factor = $20 * \log(\text{Duty cycle}) = -24.79 \text{ dB}$
3. DH5 has the highest duty cycle worst case and is reported.