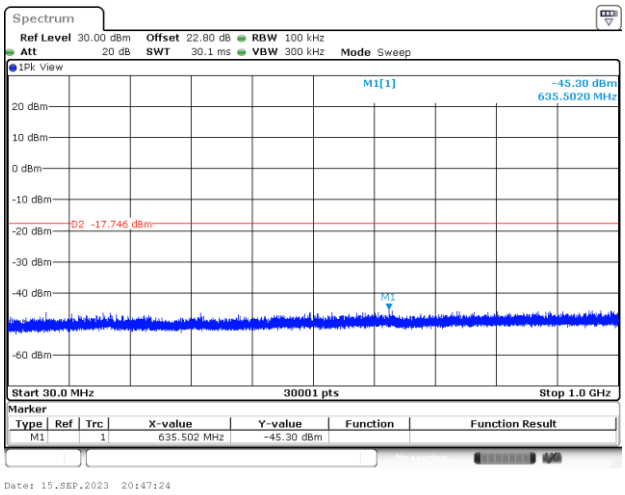
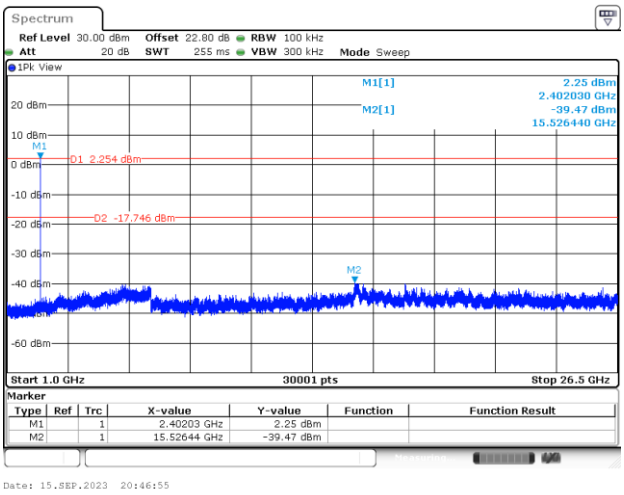
Spurious Emission

<1Mbps>

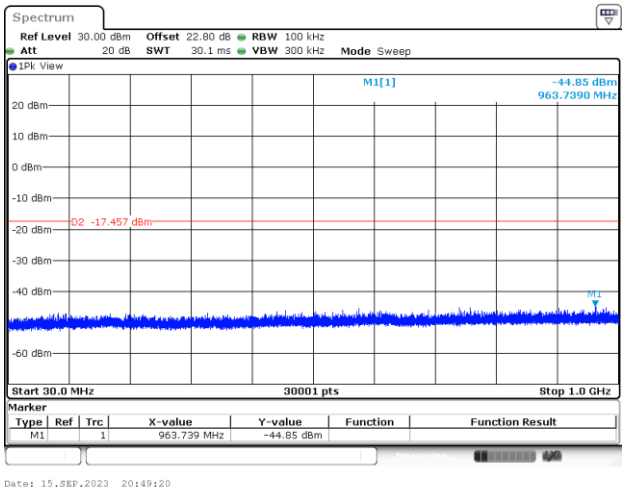
CSE Plot on Ch 00 between 30MHz ~ 1 GHz



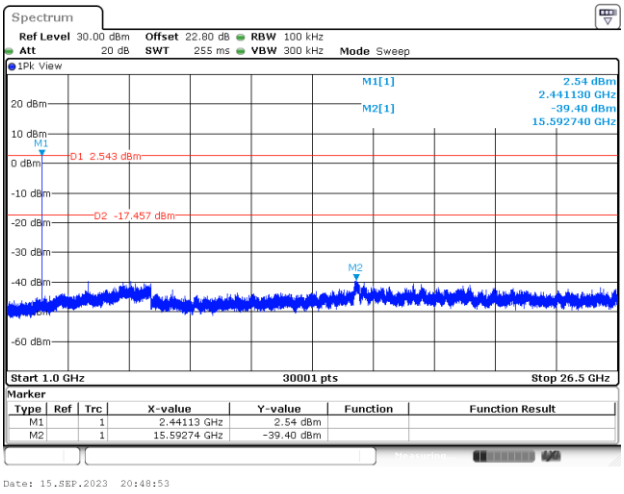
CSE Plot on Ch 00 between 1 GHz ~ 26.5 GHz

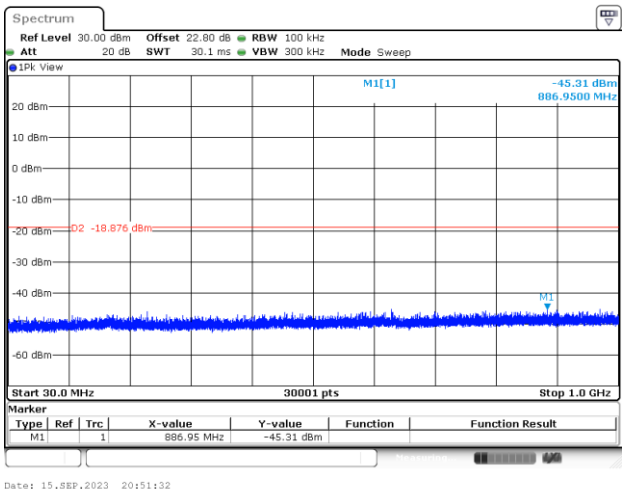
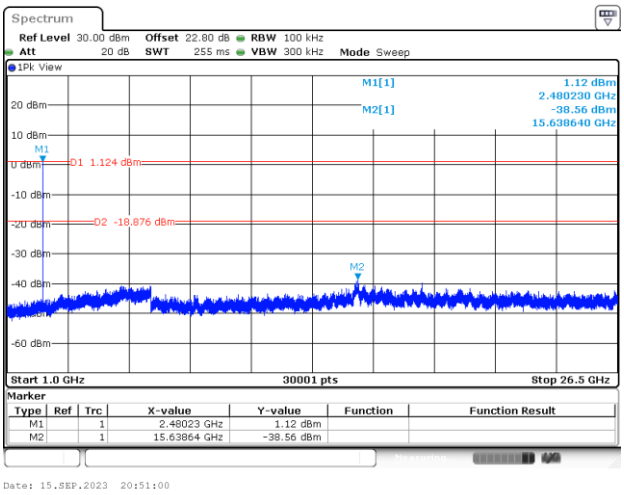


CSE Plot on Ch 39 between 30MHz ~ 1 GHz



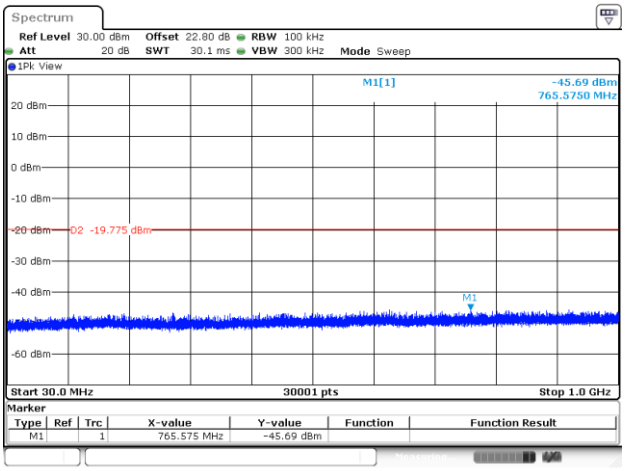
CSE Plot on Ch 39 between 1 GHz ~ 26.5 GHz



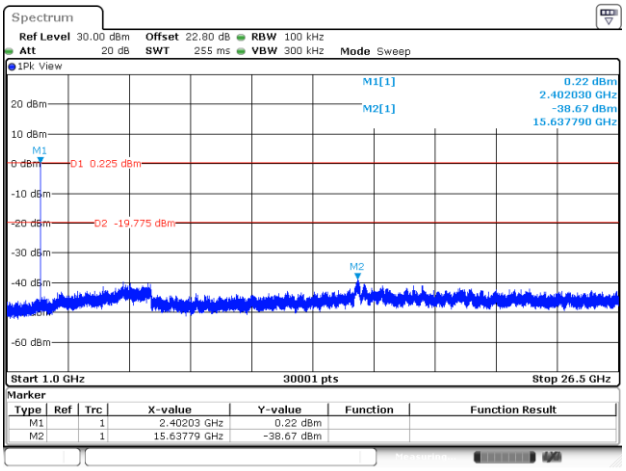
CSE Plot on Ch 78 between 30MHz ~ 1 GHz	CSE Plot on Ch 78 between 1 GHz ~ 26.5 GHz
	

<2Mbps>

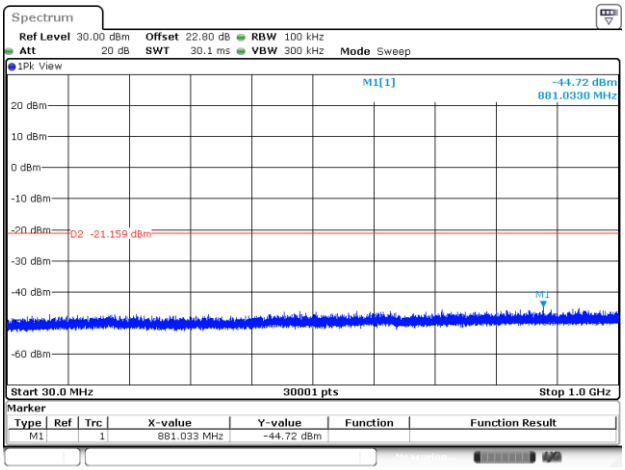
CSE Plot on Ch 00 between 30MHz ~ 1 GHz



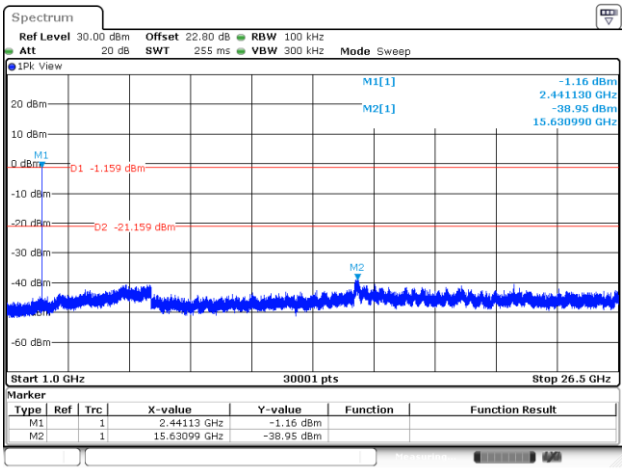
CSE Plot on Ch 00 between 1 GHz ~ 26.5 GHz

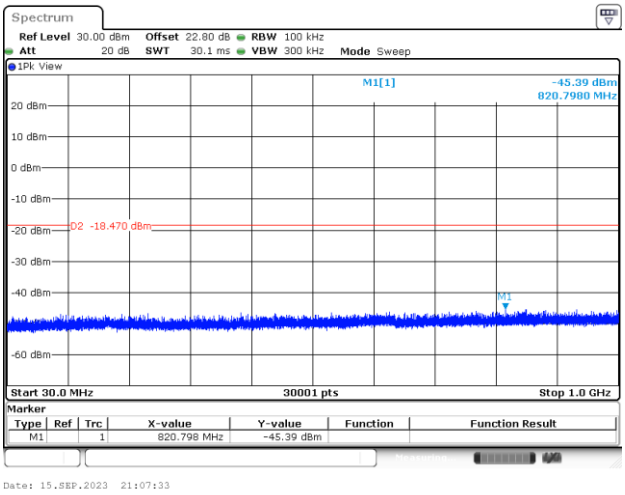
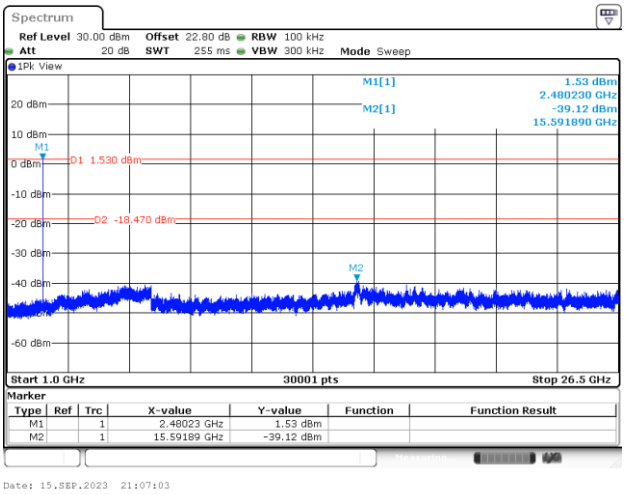


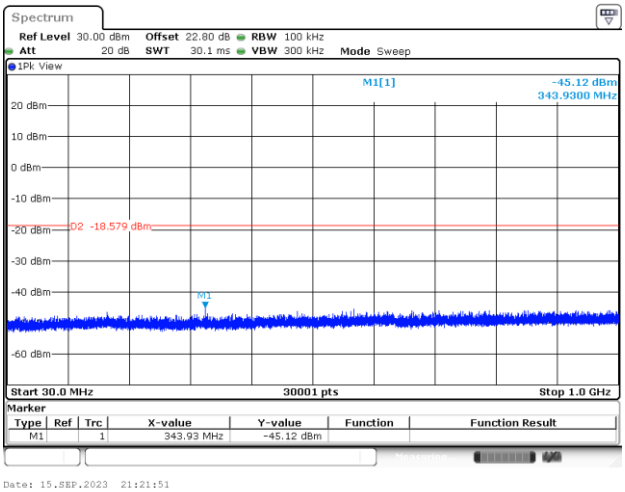
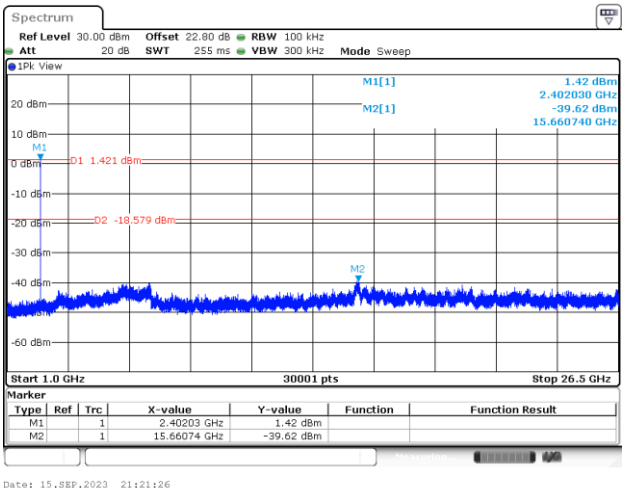
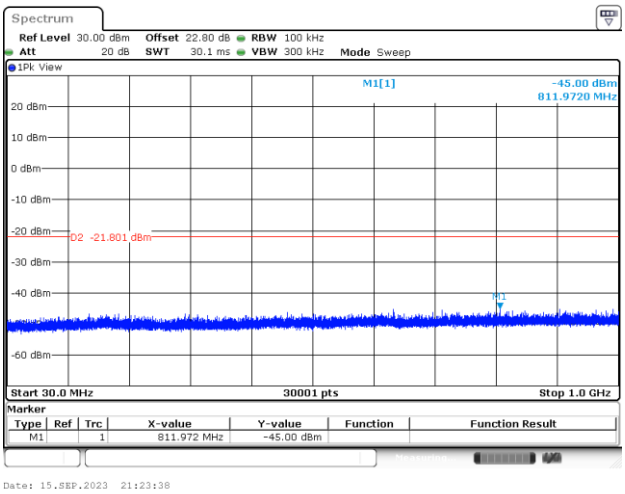
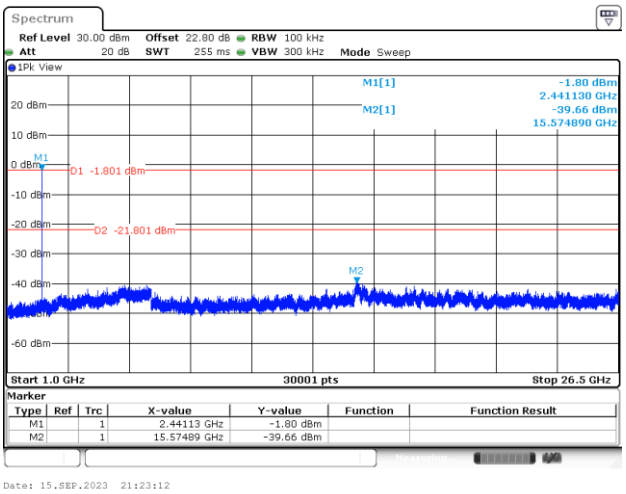
CSE Plot on Ch 39 between 30MHz ~ 1 GHz

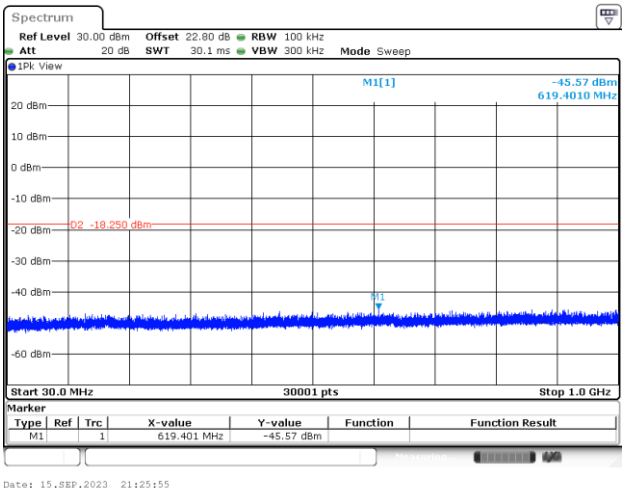
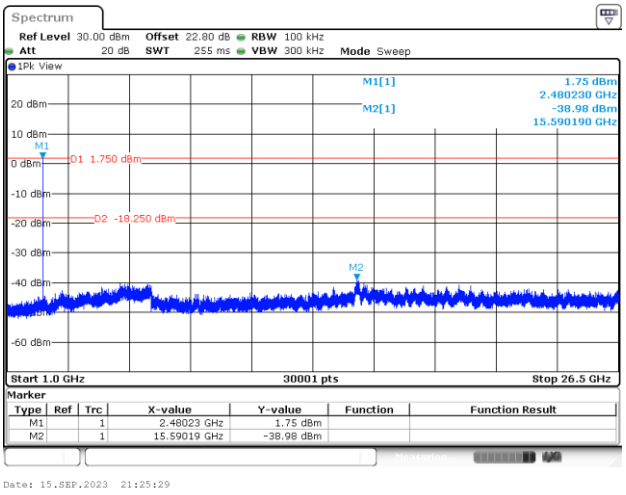


CSE Plot on Ch 39 between 1 GHz ~ 26.5 GHz



CSE Plot on Ch 78 between 30MHz ~ 1 GHz	CSE Plot on Ch 78 between 1 GHz ~ 26.5 GHz
	

<3Mbps>	
CSE Plot on Ch 00 between 30MHz ~ 1 GHz	**CSE Plot on Ch 00 between 1 GHz ~ 26.5 GHz**
	
CSE Plot on Ch 39 between 30MHz ~ 1 GHz	**CSE Plot on Ch 39 between 1 GHz ~ 26.5 GHz**
	

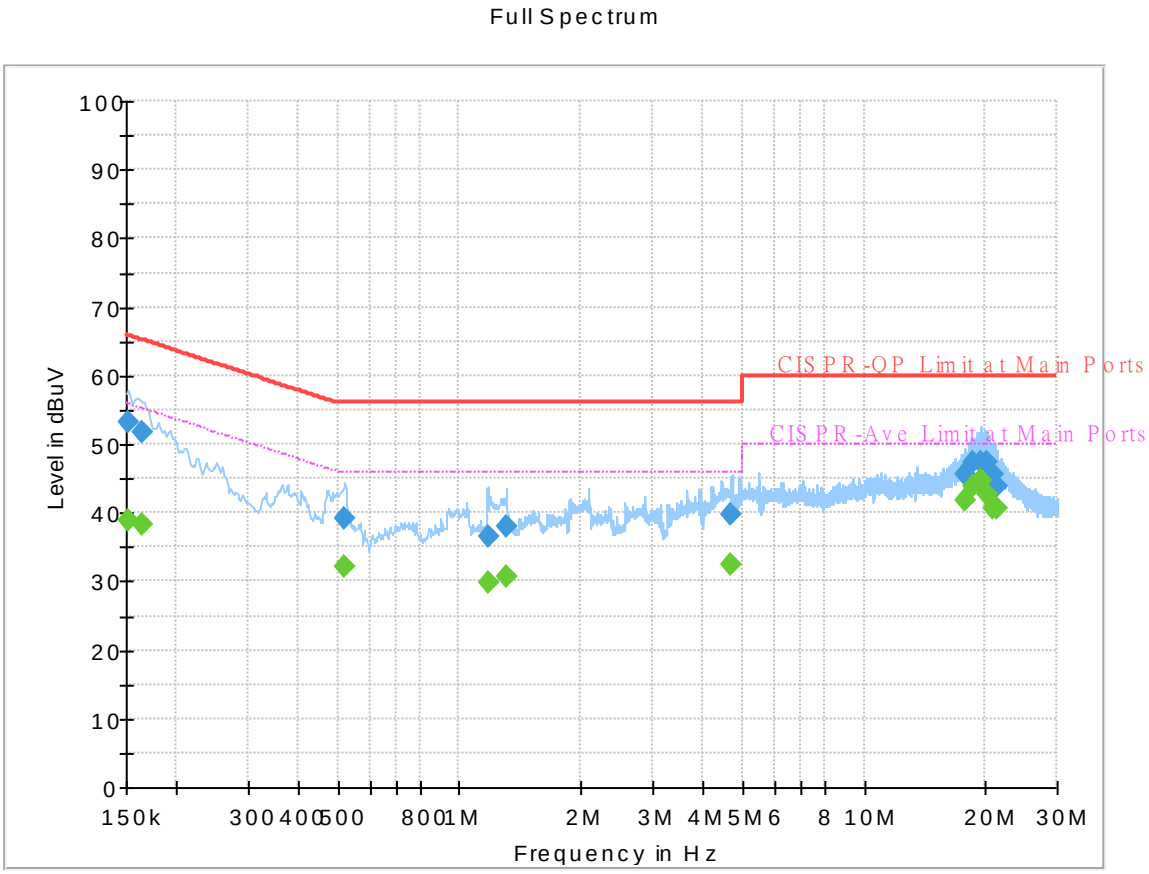
CSE Plot on Ch 78 between 30MHz ~ 1 GHz	CSE Plot on Ch 78 between 1 GHz ~ 26.5 GHz
	

Appendix B. AC Conducted Emission Test Results

Test Engineer :	Calvin Wang	**Temperature :**	23~26℃
		Relative Humidity :	45~55%

EUT Information

Report NO :	371809
Test Mode :	Mode 1
Test Voltage :	120Vac/60Hz
Phase :	Line



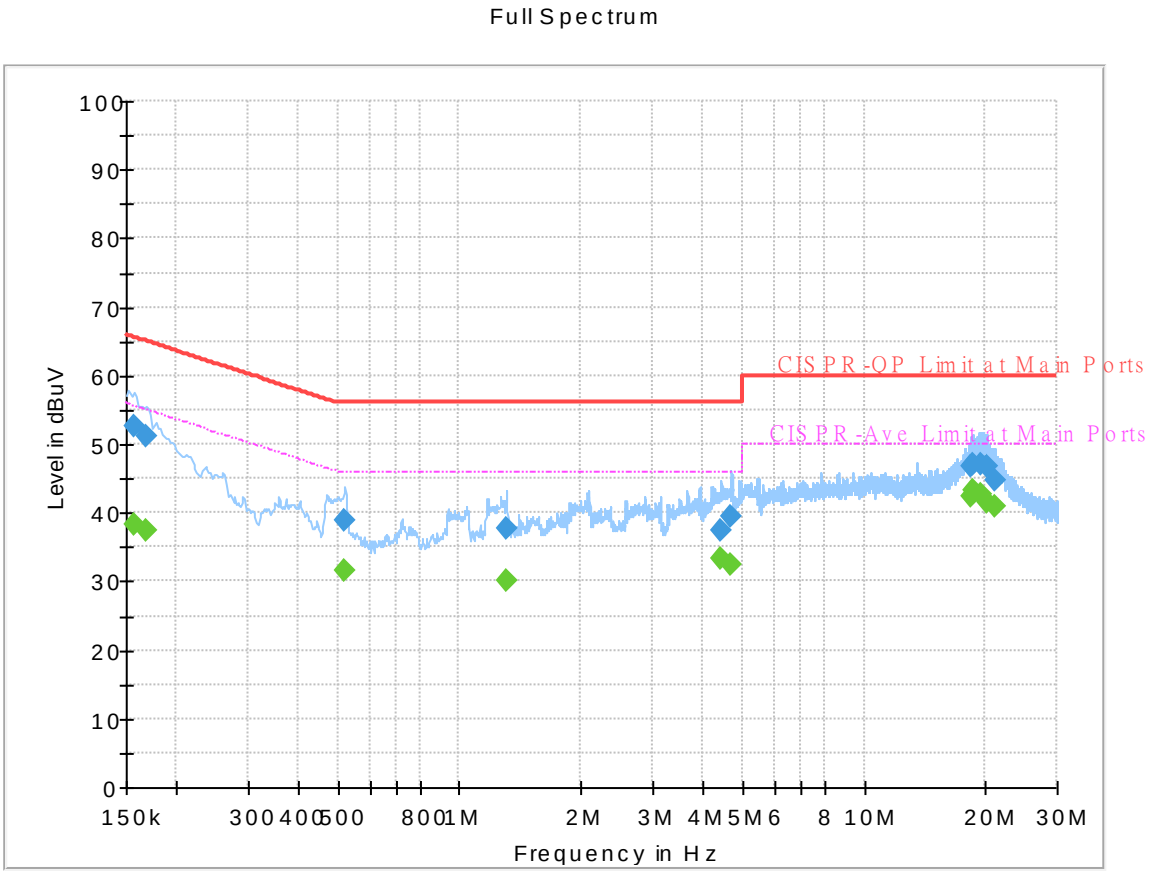
Final_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.152250	---	38.79	55.88	17.09	L1	OFF	19.7
0.152250	53.18	---	65.88	12.70	L1	OFF	19.7
0.163500	---	38.24	55.28	17.04	L1	OFF	19.7
0.163500	51.67	---	65.28	13.61	L1	OFF	19.7
0.521250	---	32.16	46.00	13.84	L1	OFF	19.7
0.521250	39.27	---	56.00	16.73	L1	OFF	19.7
1.173750	---	29.74	46.00	16.26	L1	OFF	19.8
1.173750	36.41	---	56.00	19.59	L1	OFF	19.8
1.304250	---	30.63	46.00	15.37	L1	OFF	19.8
1.304250	37.91	---	56.00	18.09	L1	OFF	19.8
4.708500	---	32.48	46.00	13.52	L1	OFF	19.9
4.708500	39.82	---	56.00	16.18	L1	OFF	19.9
17.830500	---	41.88	50.00	8.12	L1	OFF	20.3
17.830500	45.60	---	60.00	14.40	L1	OFF	20.3
18.609000	---	43.73	50.00	6.27	L1	OFF	20.3
18.609000	47.48	---	60.00	12.52	L1	OFF	20.3
19.416750	---	44.66	50.00	5.34	L1	OFF	20.3
19.416750	47.51	---	60.00	12.49	L1	OFF	20.3
20.177250	---	42.62	50.00	7.38	L1	OFF	20.3
20.177250	47.47	---	60.00	12.53	L1	OFF	20.3
20.721750	---	40.65	50.00	9.35	L1	OFF	20.3

20.721750	**45.50**	**---**	**60.00**	**14.50**	**L1**	**OFF**	**20.3**
21.286500	**---**	**40.74**	**50.00**	**9.26**	**L1**	**OFF**	**20.3**
21.286500	**43.99**	**---**	**60.00**	**16.01**	**L1**	**OFF**	**20.3**

EUT Information

Report NO :	371809
Test Mode :	Mode 1
Test Voltage :	120Vac/60Hz
Phase :	Neutral



Final_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.156750	---	38.45	55.63	17.18	N	OFF	19.7
0.156750	52.69	---	65.63	12.94	N	OFF	19.7
0.168000	---	37.38	55.06	17.68	N	OFF	19.7
0.168000	51.27	---	65.06	13.79	N	OFF	19.7
0.519000	---	31.63	46.00	14.37	N	OFF	19.7
0.519000	38.85	---	56.00	17.15	N	OFF	19.7
1.304250	---	30.13	46.00	15.87	N	OFF	19.8
1.304250	37.70	---	56.00	18.30	N	OFF	19.8
4.422750	---	33.32	46.00	12.68	N	OFF	19.9
4.422750	37.48	---	56.00	18.52	N	OFF	19.9
4.706250	---	32.55	46.00	13.45	N	OFF	19.9
4.706250	39.60	---	56.00	16.40	N	OFF	19.9
18.352500	---	42.39	50.00	7.61	N	OFF	20.4
18.352500	46.70	---	60.00	13.30	N	OFF	20.4
18.611250	---	43.36	50.00	6.64	N	OFF	20.4
18.611250	47.16	---	60.00	12.84	N	OFF	20.4
19.565250	---	42.76	50.00	7.24	N	OFF	20.4
19.565250	46.94	---	60.00	13.06	N	OFF	20.4
20.179500	---	41.59	50.00	8.41	N	OFF	20.4
20.179500	46.64	---	60.00	13.36	N	OFF	20.4
20.980500	---	41.02	50.00	8.98	N	OFF	20.5

20.980500	**44.67**	**---**	**60.00**	**15.33**	**N**	**OFF**	**20.5**

Appendix C. Radiated Spurious Emission

Test Engineer :	Jack Tasi, Gary Guo and Steven Wu	Temperature :	20~25°C
		Relative Humidity :	66.8~69.2%

<Ant. 1>

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		2328.165	44.2	-29.8	74	40.25	27.12	7.31	30.48	276	181	P	H
		2328.165	19.44	-34.56	54	-	-	-	-	-	-	A	H
	*	2402	100.23	-	-	95.83	27.4	7.46	30.46	276	181	P	H
	*	2402	75.47	-	-	-	-	-	-	-	-	A	H
													H
													H
		2350.005	44.21	-29.79	74	40.13	27.2	7.36	30.48	400	239	P	V
		2350.005	19.45	-34.55	54	-	-	-	-	-	-	A	V
	*	2402	88.92	-	-	84.52	27.4	7.46	30.46	400	239	P	V
	*	2402	64.16	-	-	-	-	-	-	-	-	A	V
													V
													V
BT CH 39 2441MHz		2366.28	44.52	-29.48	74	40.4	27.2	7.39	30.47	262	182	P	H
		2366.28	19.76	-34.24	54	-	-	-	-	-	-	A	H
	*	2441	100.98	-	-	96.31	27.6	7.52	30.45	262	182	P	H
	*	2441	76.22	-	-	-	-	-	-	-	-	A	H
		2490.48	45.1	-28.9	74	40.13	27.8	7.6	30.43	262	182	P	H
		2490.48	20.34	-33.66	54	-	-	-	-	-	-	A	H
		2346.82	43.67	-30.33	74	39.6	27.2	7.35	30.48	400	293	P	V
		2346.82	18.91	-35.09	54	-	-	-	-	-	-	A	V
	*	2441	89.97	-	-	85.3	27.6	7.52	30.45	400	293	P	V
	*	2441	65.21	-	-	-	-	-	-	-	-	A	V
		2493.28	45.26	-28.74	74	40.29	27.8	7.6	30.43	400	293	P	V
		2493.28	20.5	-33.5	54	-	-	-	-	-	-	A	V

BT CH 78 2480MHz	*	2480	98.78	-	-	93.94	27.7	7.58	30.44	288	176	P	H
	*	2480	74.02	-	-	-	-	-	-	-	-	A	H
		2490.68	44.96	-29.04	74	39.99	27.8	7.6	30.43	288	176	P	H
		2490.68	20.2	-33.8	54	-	-	-	-	-	-	A	H
													H
													H
	*	2480	88.73	-	-	83.89	27.7	7.58	30.44	380	282	P	V
	*	2480	63.97	-	-	-	-	-	-	-	-	A	V
		2492.16	45.52	-28.48	74	40.55	27.8	7.6	30.43	380	282	P	V
		2492.16	20.76	-33.24	54	-	-	-	-	-	-	A	V
													V
													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	39.15	-34.85	74	62.25	32.32	11.23	66.65	-	-	P	H
		4804	14.39	-39.61	54	-	-	-	-	-	-	A	H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
		4804	39.86	-34.14	74	62.96	32.32	11.23	66.65	-	-	P	V
		4804	15.1	-38.9	54	-	-	-	-	-	-	A	V
													V
													V
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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 39 2441MHz		4882	39.75	-34.25	74	62.37	32.66	11.3	66.58	-	-	P	H
		4882	14.99	-39.01	54	-	-	-	-	-	-	A	H
		7320	44.12	-29.88	74	60.16	36.86	13.43	66.33	-	-	P	H
		7320	19.36	-34.64	54	-	-	-	-	-	-	A	H
													H
													H
													H
													H
													H
													H
													H
													H
		4882	39.34	-34.66	74	61.96	32.66	11.3	66.58	-	-	P	V
		4882	14.58	-39.42	54	-	-	-	-	-	-	A	V
		7320	43.25	-30.75	74	59.29	36.86	13.43	66.33	-	-	P	V
		7320	18.49	-35.51	54	-	-	-	-	-	-	A	V
													V
													V
													V
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													V

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 78 2480MHz		4960	39.52	-34.48	74	61.78	32.88	11.37	66.51	-	-	P	H
		4960	14.76	-39.24	54	-	-	-	-	-	-	A	H
		7440	42.53	-31.47	74	59.03	36.44	13.44	66.38	-	-	P	H
		7440	17.77	-36.23	54	-	-	-	-	-	-	A	H
													H
													H
													H
													H
													H
													H
													H
													H
		4960	39.17	-34.83	74	61.43	32.88	11.37	66.51	-	-	P	V
		4960	14.41	-39.59	54	-	-	-	-	-	-	A	V
		7440	42.67	-31.33	74	59.17	36.44	13.44	66.38	-	-	P	V
		7440	17.91	-36.09	54	-	-	-	-	-	-	A	V
													V
													V
													V
													V
													V
													V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line. 3. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.												

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		57.54	25.68	-14.32	40	45.02	12	1.08	32.42	-	-	P	H
		78.33	30.33	-9.67	40	48.37	13.18	1.18	32.4	-	-	P	H
		150.15	34.15	-9.35	43.5	47.61	17.22	1.74	32.42	-	-	P	H
		440	23.91	-22.09	46	30.34	22.94	3.14	32.51	-	-	P	H
		554.8	25.84	-20.16	46	29.34	25.6	3.46	32.56	-	-	P	H
		898.5	34.25	-11.75	46	33.01	28.58	4.6	31.94	-	-	P	H
													H
													H
													H
													H
													H
													H
		42.15	32.78	-7.22	40	46.16	18.21	0.88	32.47	100	38	Q	V
		47.82	34.57	-5.43	40	50.91	15.15	0.97	32.46	100	51	Q	V
		51.06	37.7	-2.3	40	55.34	13.8	1.01	32.45	100	307	Q	V
		559.7	26.23	-19.77	46	29.56	25.76	3.49	32.58	-	-	P	V
		743.8	29.93	-16.07	46	30.62	27.63	4.22	32.54	-	-	P	V
		897.8	34.25	-11.75	46	33.03	28.57	4.59	31.94	-	-	P	V
													V
													V
													V
													V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against limit line. 3. The emission position marked as “-” means no suspected emission found and emission level has at least 6dB margin against limit or emission is noise floor only.												

<Ant. 2>

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		2384.97	45.29	-28.71	74	40.98	27.35	7.43	30.47	262	165	P	H
		2384.97	20.5	-33.5	54	-	-	-	-	-	-	A	H
	*	2402	104.94	-	-	100.54	27.4	7.46	30.46	262	165	P	H
		2402	80.15	-	-	-	-	-	-			A	H
													H
													H
		2321.13	44.85	-29.15	74	40.86	27.19	7.29	30.49	287	236	P	V
		2321.13	20.06	-33.94	54	-	-	-	-	-	-	A	V
	*	2402	96.16	-	-	91.76	27.4	7.46	30.46	287	236	P	V
		2402	71.37	-	-	-	-	-	-			A	V
													V
													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	38.32	-35.68	74	61.53	32.32	11.12	66.65	-	-	P	H
		4804	13.53	-40.47	54	-	-	-	-	-	-	A	H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
		4804	38.67	-35.33	74	61.88	32.32	11.12	66.65	-	-	P	V
		4804	13.88	-40.12	54	-	-	-	-	-	-	A	V
													V
													V
													V
													V
													V
													V
													V
													V
													V
													V

Remark

1. No other spurious found.
2. All results are PASS against Peak and Average limit line.
3. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.

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		95.61	25.31	-18.19	43.5	40.53	15.81	1.39	32.42	-	-	P	H
		158.52	26.68	-16.82	43.5	40.62	16.72	1.76	32.42	-	-	P	H
		187.95	27.45	-16.05	43.5	42.93	14.93	1.95	32.36	-	-	P	H
		460.3	24.07	-21.93	46	30.05	23.39	3.18	32.55	-	-	P	H
		641.6	29.08	-16.92	46	31.34	26.53	3.84	32.63	-	-	P	H
		871.9	31.49	-14.51	46	30.04	29.04	4.5	32.09	-	-	P	H
													H
													H
													H
													H
													H
													H
		32.7	35.09	-4.91	40	43.06	23.72	0.76	32.45	100	77	Q	V
		96.15	23.85	-19.65	43.5	39	15.88	1.39	32.42	-	-	P	V
		180.93	29.88	-13.62	43.5	45.16	15.16	1.9	32.34	-	-	P	V
		488.3	25.23	-20.77	46	30.82	23.85	3.22	32.66	-	-	P	V
		634.6	28.47	-17.53	46	30.77	26.55	3.81	32.66	-	-	P	V
		860	31.64	-14.36	46	30.29	29.05	4.46	32.16	-	-	P	V
													V
													V
													V
													V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against limit line. 3. The emission position marked as “-” means no suspected emission found and emission level has at least 6dB margin against limit or emission is noise floor only.												

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	**P**eak or **A**verage
H/V	**H**orizontal or **V**ertical

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

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)

Peak measured complies with the limit line, so test result is “PASS”.

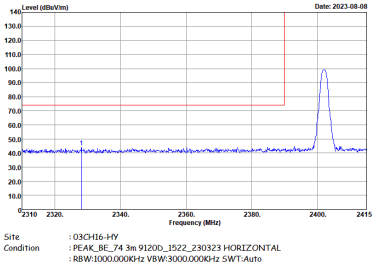
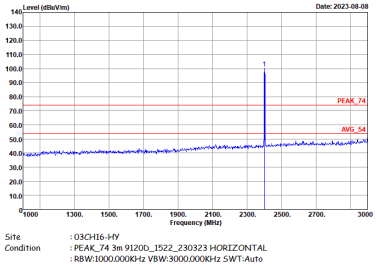
Appendix D. Radiated Spurious Emission Plots

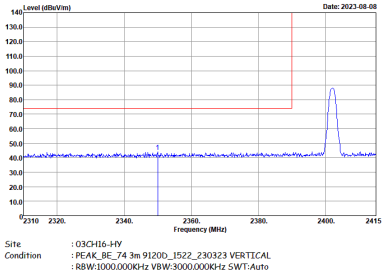
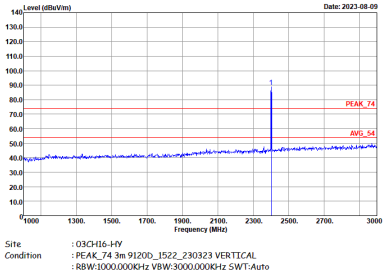
Test Engineer :	Jack Tasi, Gary Guo and Steven Wu	Temperature :	20~25°C
		Relative Humidity :	66.8~69.2%

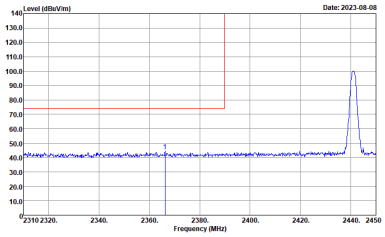
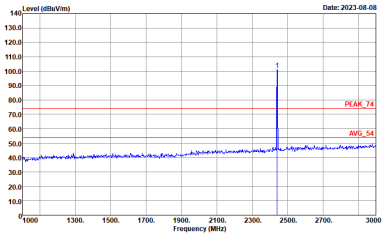
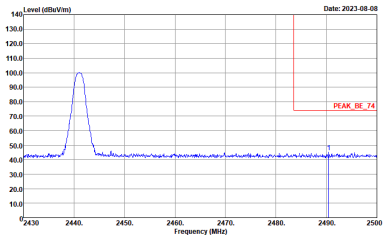
<Ant. 1>

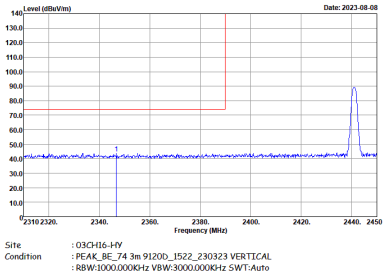
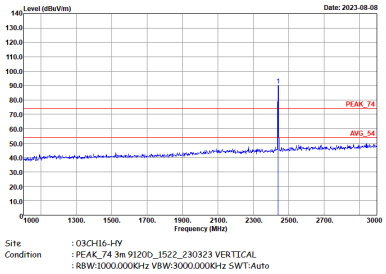
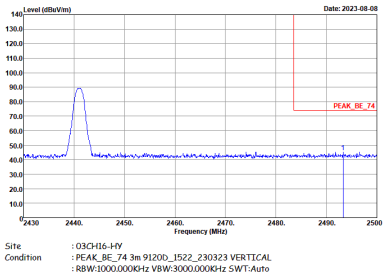
2.4GHz 2400~2483.5MHz

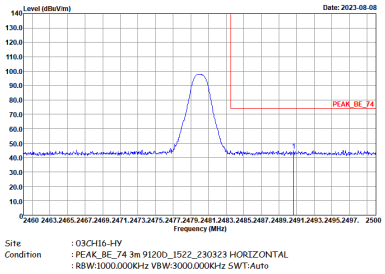
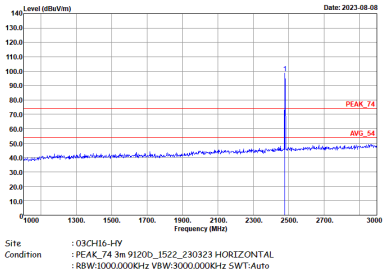
BT (Band Edge @ 3m)

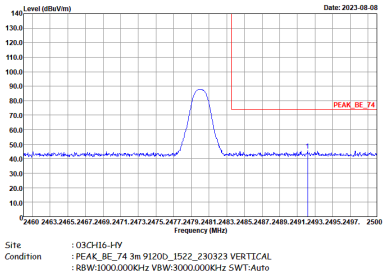
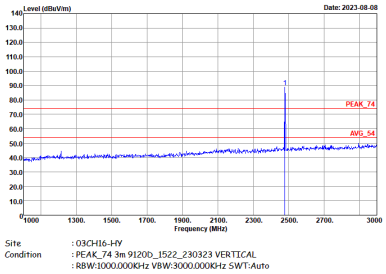
BT	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	BT CH00 2402MHz	
	Horizontal	Fundamental
Peak		

BT	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	BT CH00 2402MHz	
	Vertical	Fundamental
Peak		

BT	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	BT CH39 2441MHz	
	Horizontal	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE_74 3m 9120D_1522_230323 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK_74 3m 9120D_1522_230323 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Peak	 Site : 03CH16-HY Condition : PEAK_BE_74 3m 9120D_1522_230323 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Left blank

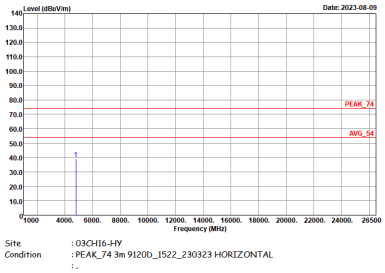
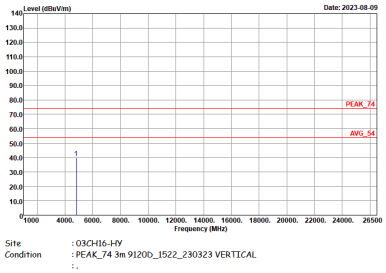
BT	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	BT CH39 2441MHz	
	Vertical	Fundamental
Peak		
Peak		Left blank

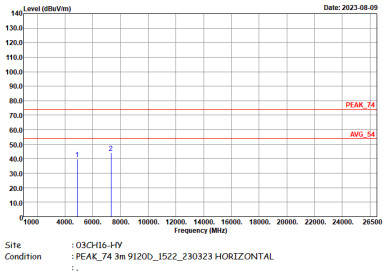
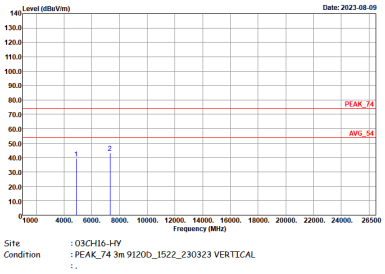
BT	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	BT CH78 2480MHz	
	Horizontal	Fundamental
Peak		

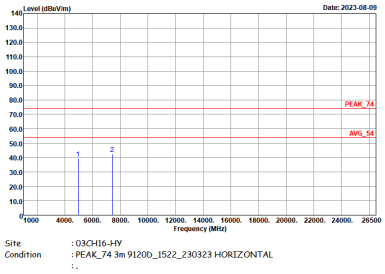
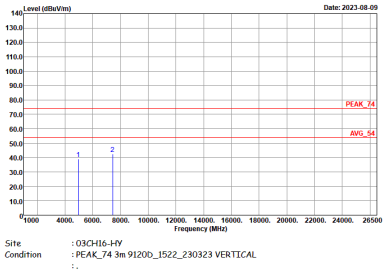
BT	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	BT CH78 2480MHz	
	Vertical	Fundamental
Peak		

2.4GHz 2400~2483.5MHz

BT (Harmonic @ 3m)

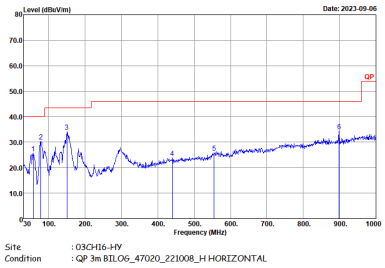
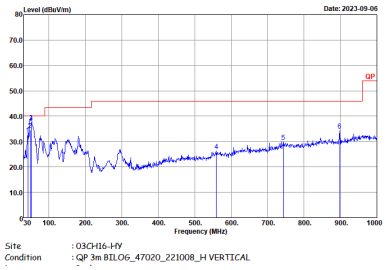
BT	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
	BT CH00 2402MHz	
	Horizontal	Vertical
Peak Avg.		

BT	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
	BT CH39 2441MHz	
	Horizontal	Vertical
Peak Avg.		

BT	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
	BT CH78 2480MHz	
	Horizontal	Vertical
Peak Avg.		

Emission below 1GHz

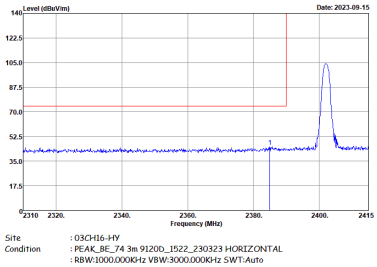
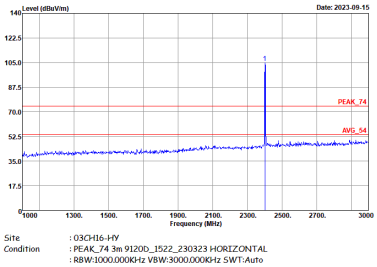
2.4GHz BT (LF)

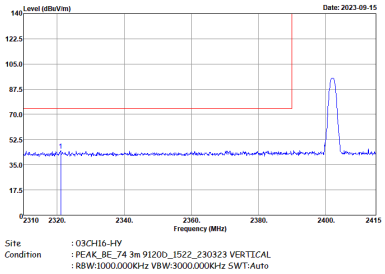
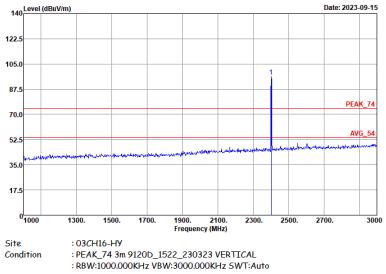
BT	2.4GHz 2400~2483.5MHz	
	BT LF	
	Horizontal	Vertical
QP / Peak		

<Ant. 2>

2.4GHz 2400~2483.5MHz

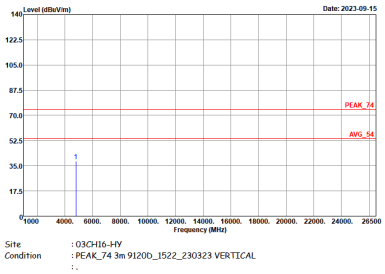
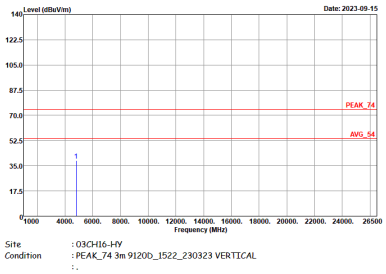
BT (Band Edge @ 3m)

BT	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	BT CH00 2402MHz	
	Horizontal	Fundamental
Peak		

BT	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	BT CH00 2402MHz	
	Vertical	Fundamental
Peak		

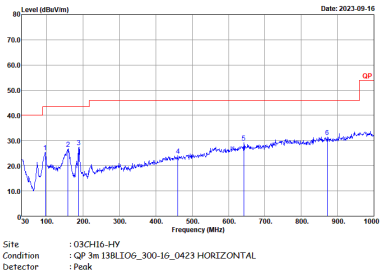
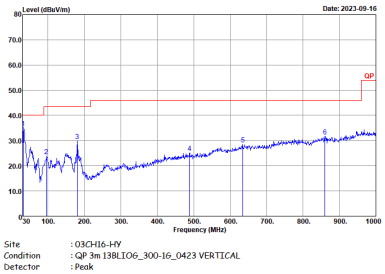
2.4GHz 2400~2483.5MHz

BT (Harmonic @ 3m)

BT	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
	BT CH00 2402MHz	
	Horizontal	Vertical
Peak Avg.		

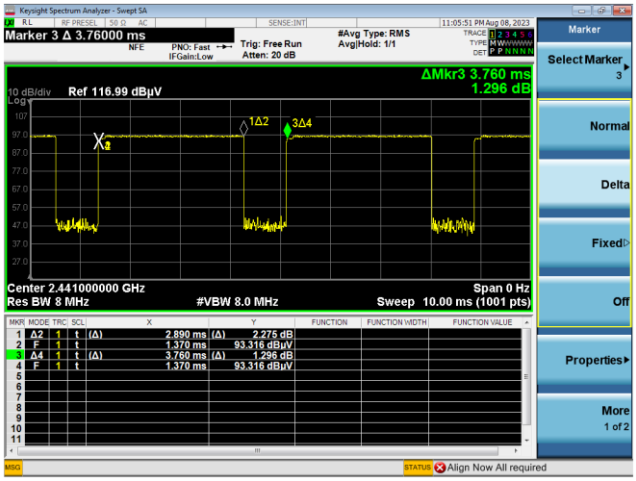
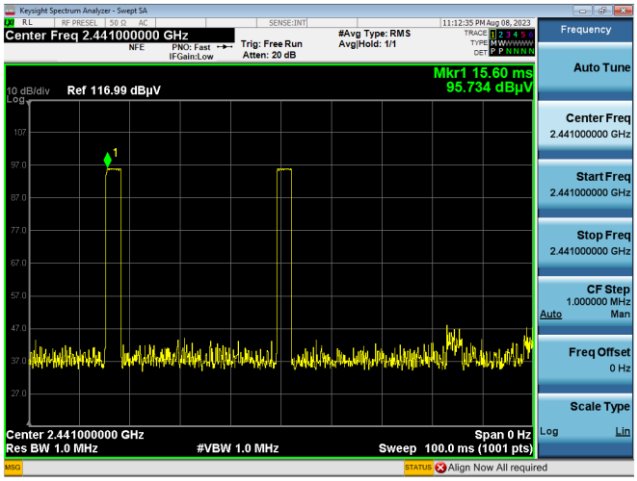
Emission below 1GHz

2.4GHz BT (LF)

BT	2.4GHz 2400~2483.5MHz	
	BT LF	
	Horizontal	Vertical
QP / Peak		

Appendix E. Duty Cycle Plots

<Ant. 1>

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

Note:

1. Worst case Duty cycle = on time/100 milliseconds = 2 * 2.89 / 100 = 5.78 %
2. Worst case Duty cycle correction factor = 20*log(Duty cycle) = -24.76 dB
3. 3DH5 has the highest duty cycle worst case and is reported.

Duty Cycle Correction Factor Consideration for AFH mode:

Bluetooth normal hopping rate is 1600Hz and reduced to 800Hz in AFH mode; due to the reduced number of hopping frequencies, with the same packet configuration the dwell time in each channel frequency within 100msec period is longer in AFH mode than normal mode.

In AFH mode, the minimum hopping frequencies are 20, to get the longest dwell time DH5 packet is observed; the on time period to have DH5 packet completing one hopping sequence is

2.89 ms x 20 channels = 57.8 ms

There cannot be 2 complete hopping sequences within 100ms period, considering the random hopping behavior, maximum 2 hops can be possibly observed within the period. [100 ms / 57.8 ms] = 2 hops

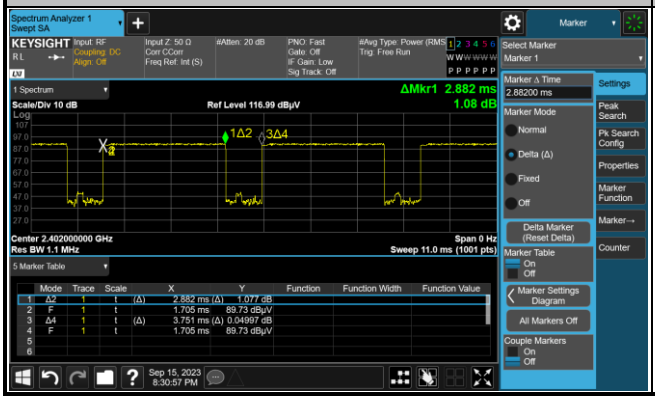
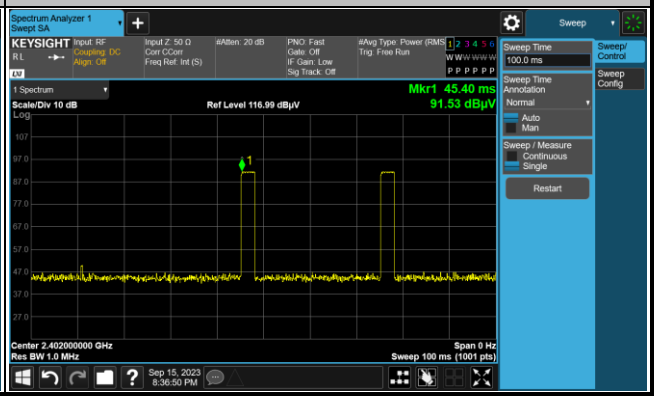
Thus, the maximum possible ON time:

2.89 ms x 2 = 5.78 ms

Worst case Duty Cycle Correction factor, which is derived from the maximum possible ON time,

20 x log(5.78 ms/100 ms) = -24.76 dB

<Ant. 2>

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

Note:

1. Worst case Duty cycle = on time/100 milliseconds = 2 * 2.882 / 100 = 5.764 %
2. Worst case Duty cycle correction factor = 20*log(Duty cycle) = -24.79 dB
3. 3DH5 has the highest duty cycle worst case and is reported.

Duty Cycle Correction Factor Consideration for AFH mode:

Bluetooth normal hopping rate is 1600Hz and reduced to 800Hz in AFH mode; due to the reduced number of hopping frequencies, with the same packet configuration the dwell time in each channel frequency within 100msec period is longer in AFH mode than normal mode.

In AFH mode, the minimum hopping frequencies are 20, to get the longest dwell time DH5 packet is observed; the on time period to have DH5 packet completing one hopping sequence is

2.882 ms x 20 channels = 57.64 ms

There cannot be 2 complete hopping sequences within 100ms period, considering the random hopping behavior, maximum 2 hops can be possibly observed within the period. [100 ms / 57.64 ms] = 2 hops

Thus, the maximum possible ON time:

2.882 ms x 2 = 5.764 ms

Worst case Duty Cycle Correction factor, which is derived from the maximum possible ON time,

20 x log(5.764 ms/100 ms) = -24.79 dB