Appendix for n38A (2570-2620)

Catalogue

1. Effective Isotropic Radiated Power

1.1. Test Results @ Ant1 (Antenna Gain=-4.50dBi)

SCS	Bandwidth	Channel	Modulation	Conducted Result (dBm)			Max EIRP (dBm)	Limit (dBm)	Verdict
				Inner_1RB_Left	Inner_1RB_Right	Inner_Full			
30KHz	20MHz	LCH	DFT-Pi2BPSK	22.91	22.81	22.83	18.41	33.00	Pass
30KHz	20MHz	LCH	DFT-QPSK	22.85	22.80	22.84	18.35	33.00	Pass
30KHz	20MHz	LCH	DFT-16QAM	22.09	22.01	22.01	17.59	33.00	Pass
30KHz	20MHz	LCH	DFT-64QAM	20.52	20.38	20.45	16.02	33.00	Pass
30KHz	20MHz	LCH	DFT-256QAM	18.55	18.31	18.40	14.05	33.00	Pass
30KHz	20MHz	LCH	CP-QPSK	21.53	21.41	21.39	17.03	33.00	Pass
30KHz	20MHz	MCH	DFT-Pi2BPSK	22.77	22.68	22.77	18.27	33.00	Pass
30KHz	20MHz	MCH	DFT-QPSK	22.74	22.64	22.75	18.25	33.00	Pass
30KHz	20MHz	MCH	DFT-16QAM	21.99	21.90	21.91	17.49	33.00	Pass
30KHz	20MHz	MCH	DFT-64QAM	20.35	20.29	20.31	15.85	33.00	Pass
30KHz	20MHz	MCH	DFT-256QAM	18.34	18.28	18.30	13.84	33.00	Pass
30KHz	20MHz	MCH	CP-QPSK	21.39	21.29	21.36	16.89	33.00	Pass
30KHz	20MHz	HCH	DFT-Pi2BPSK	22.65	22.61	22.59	18.15	33.00	Pass
30KHz	20MHz	HCH	DFT-QPSK	22.61	22.50	22.60	18.11	33.00	Pass
30KHz	20MHz	HCH	DFT-16QAM	21.81	21.74	21.72	17.31	33.00	Pass
30KHz	20MHz	HCH	DFT-64QAM	20.22	20.14	20.14	15.72	33.00	Pass
30KHz	20MHz	HCH	DFT-256QAM	18.25	18.15	18.18	13.75	33.00	Pass
30KHz	20MHz	HCH	CP-QPSK	21.18	21.20	21.18	16.70	33.00	Pass
30KHz	30MHz	LCH	DFT-Pi2BPSK	22.98	22.76	22.84	18.48	33.00	Pass
30KHz	30MHz	LCH	DFT-QPSK	22.91	22.74	22.81	18.41	33.00	Pass
30KHz	30MHz	LCH	DFT-16QAM	22.25	21.98	21.88	17.75	33.00	Pass
30KHz	30MHz	LCH	DFT-64QAM	20.54	20.34	20.36	16.04	33.00	Pass
30KHz	30MHz	LCH	DFT-256QAM	18.59	18.38	18.38	14.09	33.00	Pass
30KHz	30MHz	LCH	CP-QPSK	21.63	21.32	21.46	17.13	33.00	Pass
30KHz	30MHz	MCH	DFT-Pi2BPSK	22.85	22.73	22.76	18.35	33.00	Pass
30KHz	30MHz	MCH	DFT-QPSK	22.80	22.73	22.74	18.30	33.00	Pass
30KHz	30MHz	MCH	DFT-16QAM	22.02	21.80	21.83	17.52	33.00	Pass
30KHz	30MHz	MCH	DFT-64QAM	20.41	20.23	20.30	15.91	33.00	Pass
30KHz	30MHz	MCH	DFT-256QAM	18.45	18.32	18.35	13.95	33.00	Pass
30KHz	30MHz	MCH	CP-QPSK	21.50	21.38	21.35	17.00	33.00	Pass
30KHz	30MHz	HCH	DFT-Pi2BPSK	22.77	22.71	22.66	18.27	33.00	Pass
30KHz	30MHz	HCH	DFT-QPSK	22.79	22.72	22.67	18.29	33.00	Pass
30KHz	30MHz	HCH	DFT-16QAM	22.03	21.97	21.76	17.53	33.00	Pass
30KHz	30MHz	HCH	DFT-64QAM	20.30	20.29	20.23	15.80	33.00	Pass
30KHz	30MHz	HCH	DFT-256QAM	18.47	18.38	18.24	13.97	33.00	Pass
30KHz	30MHz	HCH	CP-QPSK	21.41	21.39	21.27	16.91	33.00	Pass
30KHz	40MHz	LCH	DFT-Pi2BPSK	23.00	22.65	22.83	18.50	33.00	Pass
30KHz	40MHz	LCH	DFT-QPSK	22.95	22.71	22.82	18.45	33.00	Pass
30KHz	40MHz	LCH	DFT-16QAM	22.12	21.86	21.93	17.62	33.00	Pass
30KHz	40MHz	LCH	DFT-64QAM	20.52	20.27	20.41	16.02	33.00	Pass
30KHz	40MHz	LCH	DFT-256QAM	18.66	18.40	18.46	14.16	33.00	Pass
30KHz	40MHz	LCH	CP-QPSK	21.65	21.35	21.44	17.15	33.00	Pass
30KHz	40MHz	MCH	DFT-Pi2BPSK	22.93	22.76	22.76	18.43	33.00	Pass
30KHz	40MHz	MCH	DFT-QPSK	22.84	22.71	22.81	18.34	33.00	Pass
30KHz	40MHz	MCH	DFT-16QAM	22.07	21.94	21.85	17.57	33.00	Pass
30KHz	40MHz	MCH	DFT-64QAM	20.49	20.35	20.35	15.99	33.00	Pass
30KHz	40MHz	MCH	DFT-256QAM	18.57	18.38	18.42	14.07	33.00	Pass
30KHz	40MHz	MCH	CP-QPSK	21.64	21.37	21.44	17.14	33.00	Pass
30KHz	40MHz	HCH	DFT-Pi2BPSK	22.82	22.74	22.73	18.32	33.00	Pass
30KHz	40MHz	HCH	DFT-QPSK	22.83	22.77	22.72	18.33	33.00	Pass
30KHz	40MHz	HCH	DFT-16QAM	22.05	21.93	21.85	17.55	33.00	Pass
30KHz	40MHz	HCH	DFT-64QAM	20.44	20.35	20.23	15.94	33.00	Pass
30KHz	40MHz	HCH	DFT-256QAM	18.48	18.43	18.30	13.98	33.00	Pass
30KHz	40MHz	HCH	CP-QPSK	21.50	21.39	21.36	17.00	33.00	Pass

2. Peak-to-Average Ratio

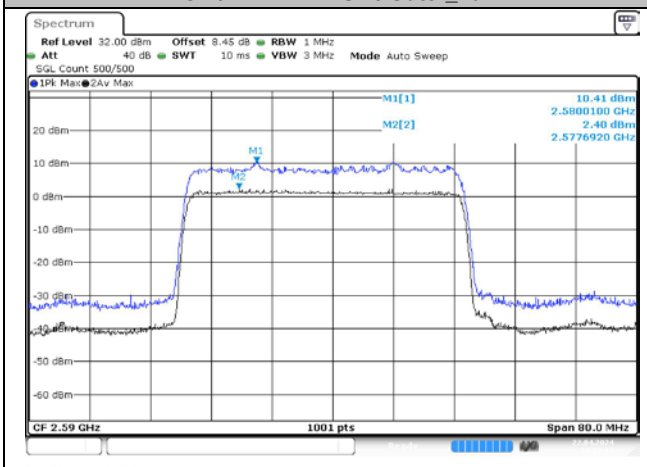
2.1. Test Results

SCS	Bandwidth	Channel	Modulation	Result (dB)		Limit (dB)	Verdict
				DFT-Pi2BPSK	DFT-QPSK		
30KHz	40MHz	LCH	Outer_Full	8.00	7.66	13.00	Pass
30KHz	40MHz	MCH	Outer_Full	8.03	7.85	13.00	Pass
30KHz	40MHz	HCH	Outer_Full	8.19	9.09	13.00	Pass

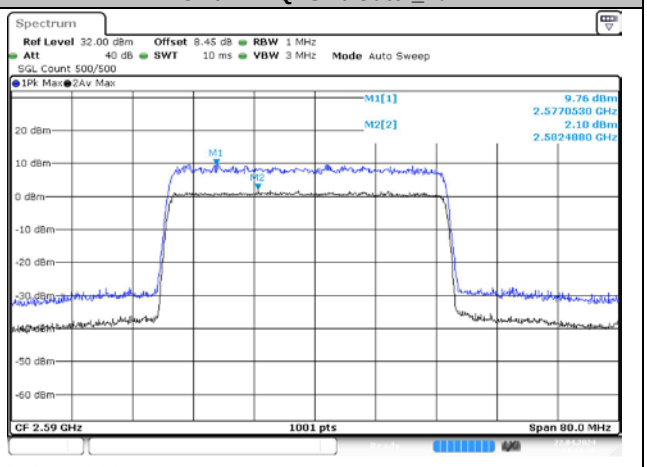
2.2. Test Plots

n38A / 30KHz / 40MHz

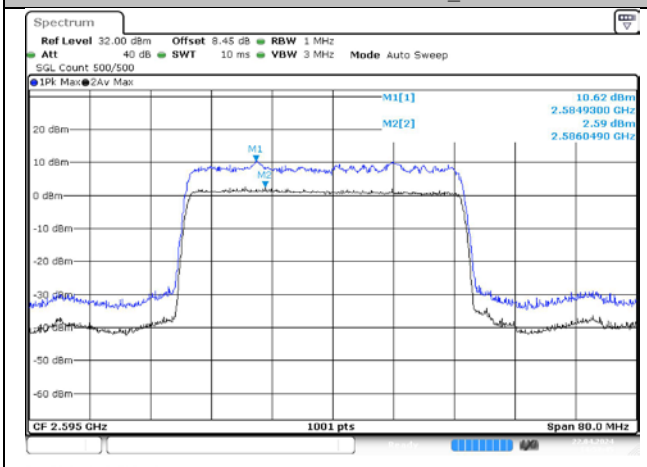
LCH / DFT-Pi2BPSK / Outer_Full



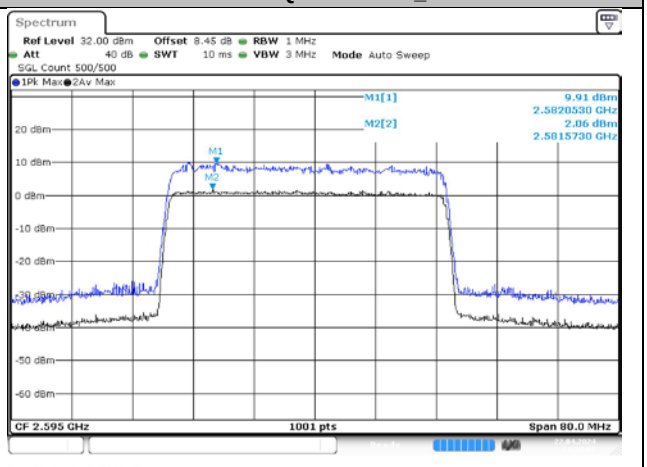
LCH / DFT-QPSK / Outer_Full



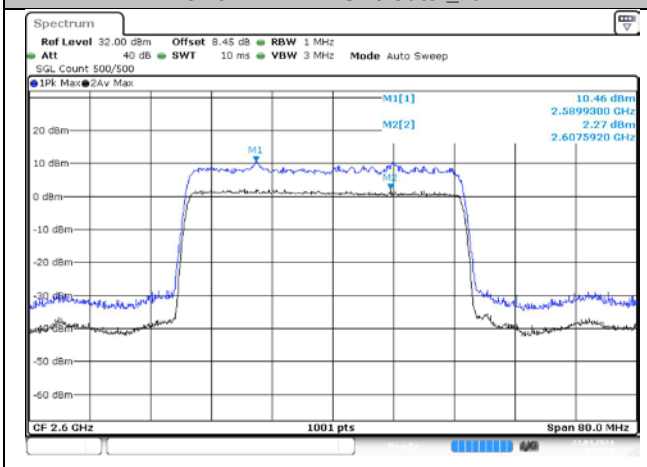
MCH / DFT-Pi2BPSK / Outer_Full



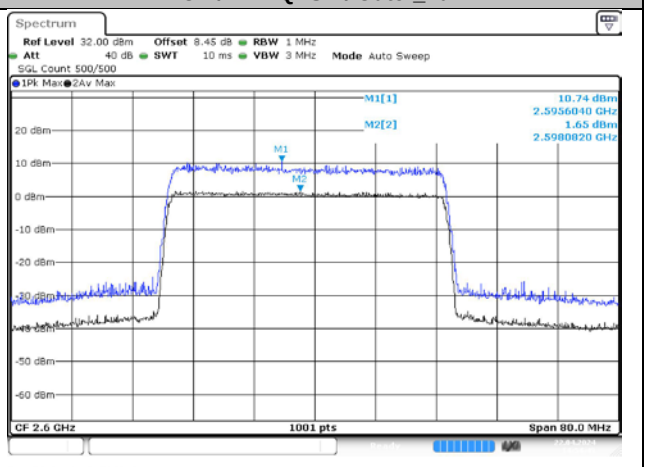
MCH / DFT-QPSK / Outer_Full



HCH / DFT-Pi2BPSK / Outer_Full

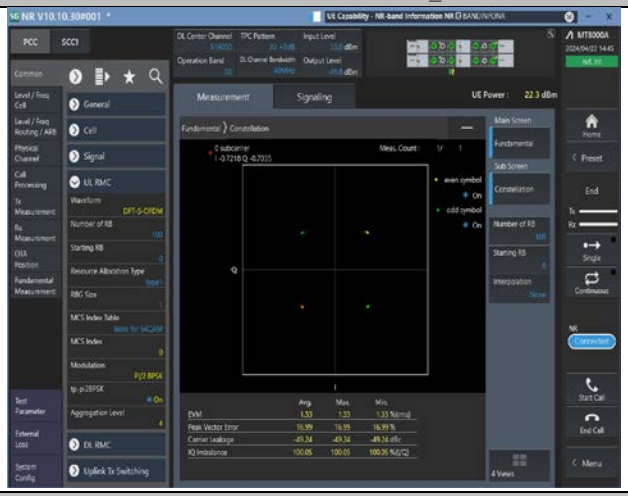
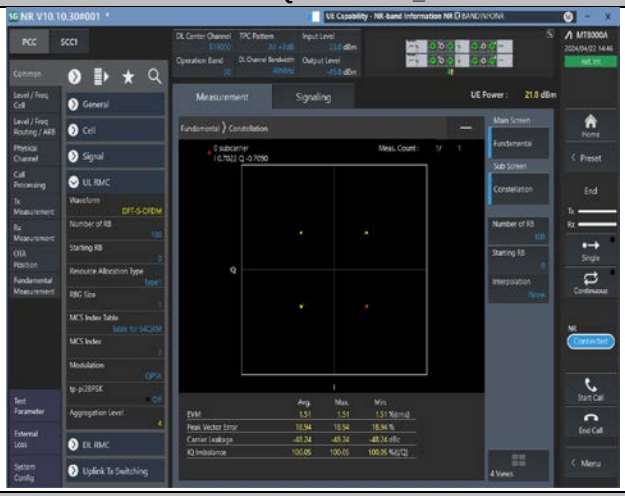
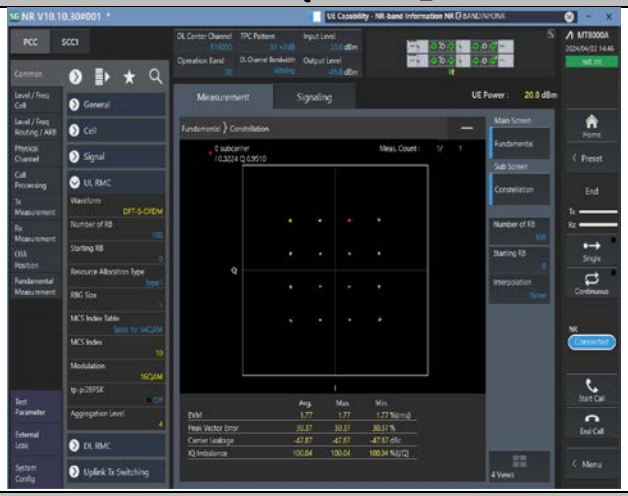
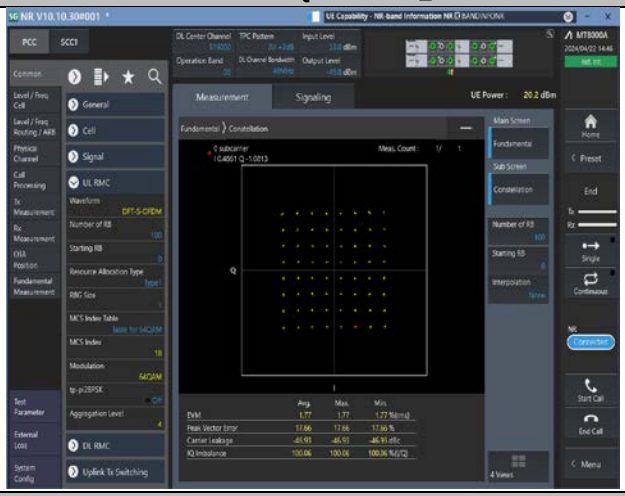
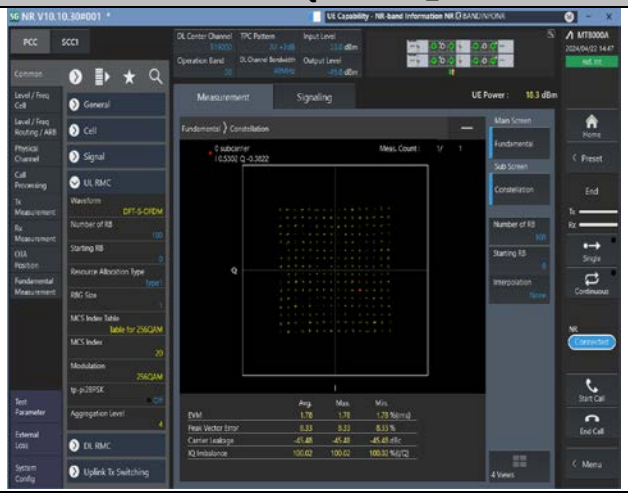
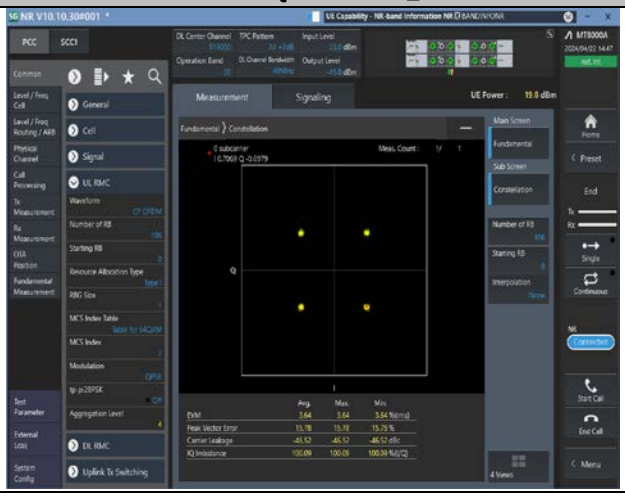


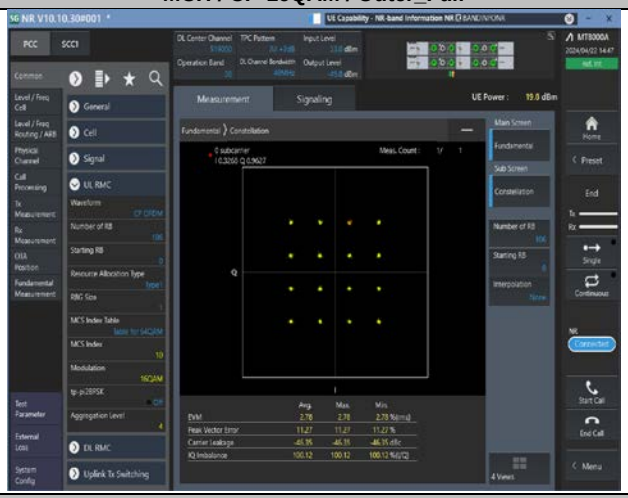
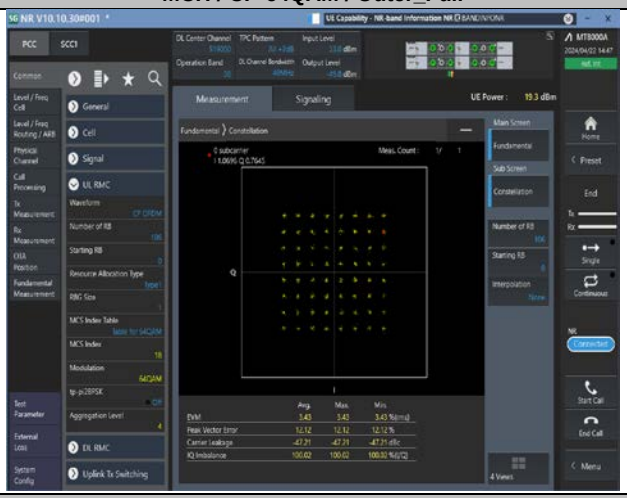
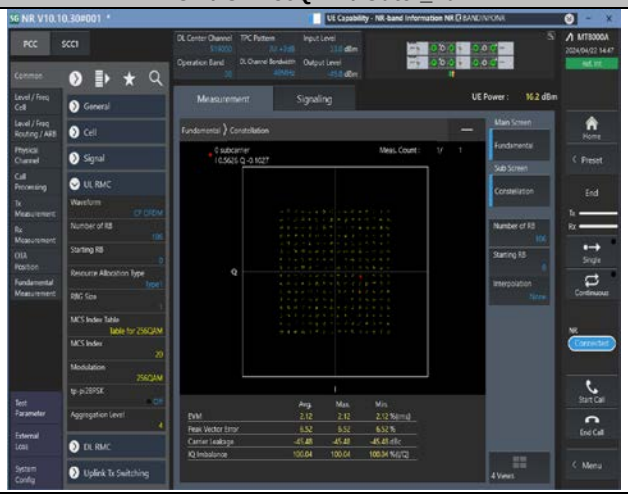
HCH / DFT-QPSK / Outer_Full



3. Modulation Characteristics

3.1. Test Plots

n38A / 30KHz / 40MHz	
MCH / DFT-Pi2BPSK / Outer_Full	MCH / DFT-QPSK / Outer_Full
	
MCH / DFT-16QAM / Outer_Full	MCH / DFT-64QAM / Outer_Full
	
MCH / DFT-256QAM / Outer_Full	MCH / CP-QPSK / Outer_Full
	

MCH / CP-16QAM / Outer_Full	MCH / CP-64QAM / Outer_Full
	
MCH / CP-256QAM / Outer_Full	
	***Intentionally Blank***

4. 99% Occupied Bandwidth & 26dB Emission Bandwidth

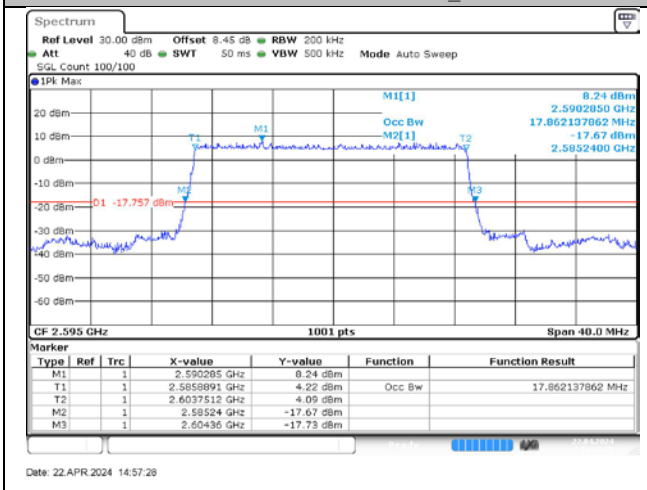
4.1. Test Results

SCS	Bandwidth	Modulation	RB Config	99% Occupied Bandwidth (MHz)	26dB Emission Bandwidth (MHz)	Verdict
30KHz	20MHz	DFT-Pi2BPSK	Outer_Full	17.86	19.12	Pass
30KHz	20MHz	DFT-QPSK	Outer_Full	17.90	19.28	Pass
30KHz	20MHz	CP-QPSK	Outer_Full	18.18	19.52	Pass
30KHz	20MHz	CP-16QAM	Outer_Full	18.18	19.48	Pass
30KHz	20MHz	CP-64QAM	Outer_Full	18.26	19.60	Pass
30KHz	20MHz	CP-256QAM	Outer_Full	18.22	19.60	Pass
30KHz	30MHz	DFT-Pi2BPSK	Outer_Full	26.79	28.20	Pass
30KHz	30MHz	DFT-QPSK	Outer_Full	26.79	28.38	Pass
30KHz	30MHz	CP-QPSK	Outer_Full	27.81	29.34	Pass
30KHz	30MHz	CP-16QAM	Outer_Full	27.87	29.46	Pass
30KHz	30MHz	CP-64QAM	Outer_Full	27.87	29.34	Pass
30KHz	30MHz	CP-256QAM	Outer_Full	27.81	29.40	Pass
30KHz	40MHz	DFT-Pi2BPSK	Outer_Full	35.64	37.52	Pass
30KHz	40MHz	DFT-QPSK	Outer_Full	35.72	37.52	Pass
30KHz	40MHz	CP-QPSK	Outer_Full	37.80	39.68	Pass
30KHz	40MHz	CP-16QAM	Outer_Full	37.80	39.76	Pass
30KHz	40MHz	CP-64QAM	Outer_Full	37.80	39.68	Pass
30KHz	40MHz	CP-256QAM	Outer_Full	37.80	39.84	Pass

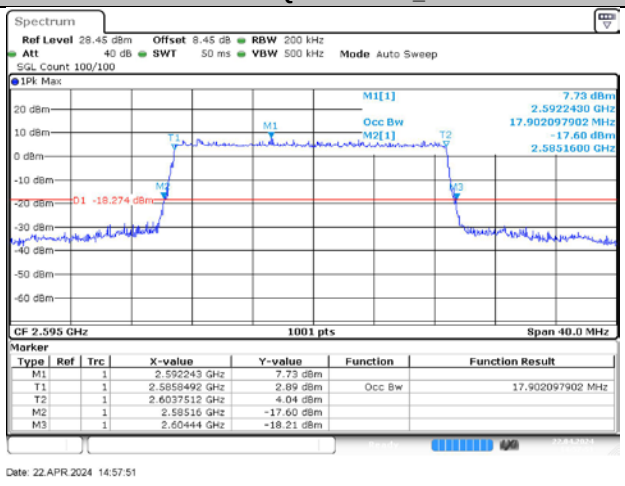
4.2. Test Plots

n38A / 30KHz / 20MHz

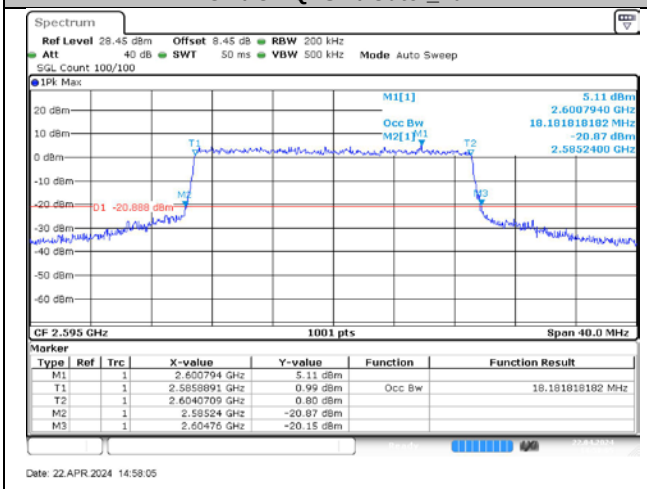
MCH / DFT-Pi2BPSK / Outer_Full



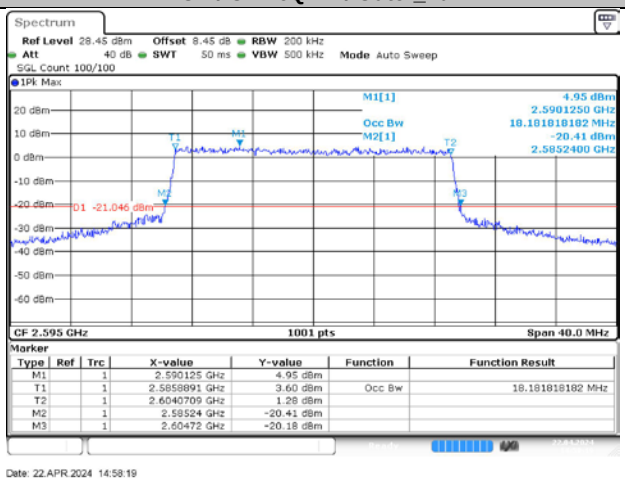
MCH / DFT-QPSK / Outer_Full



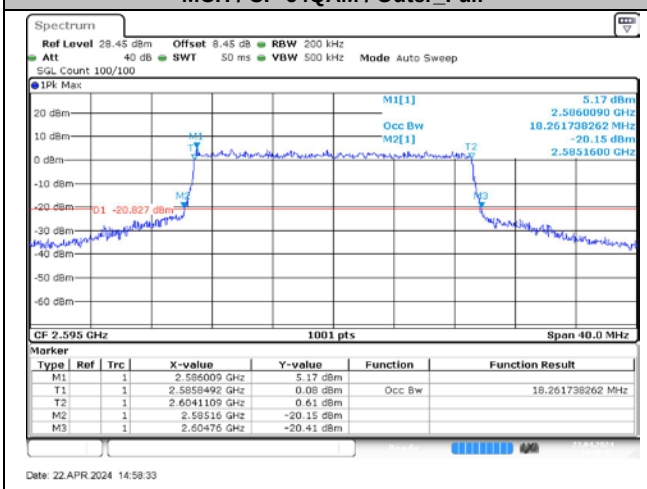
MCH / CP-QPSK / Outer_Full



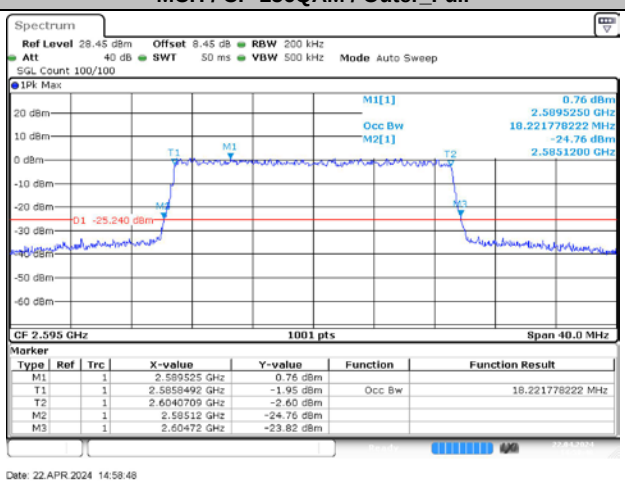
MCH / CP-16QAM / Outer_Full

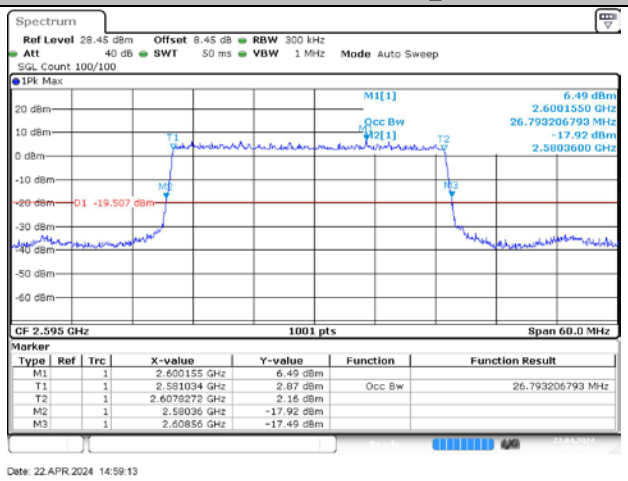
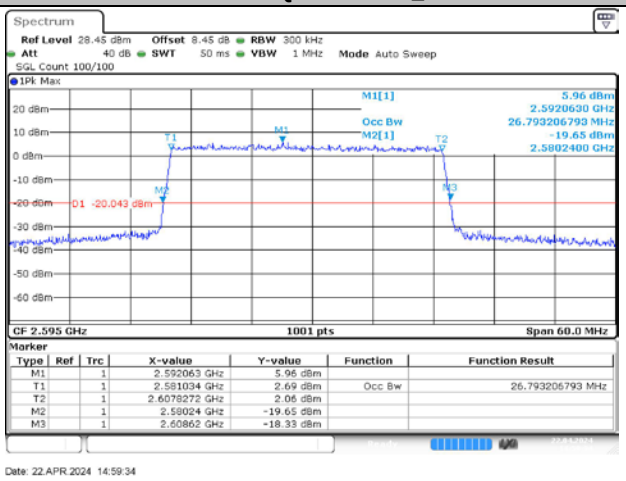
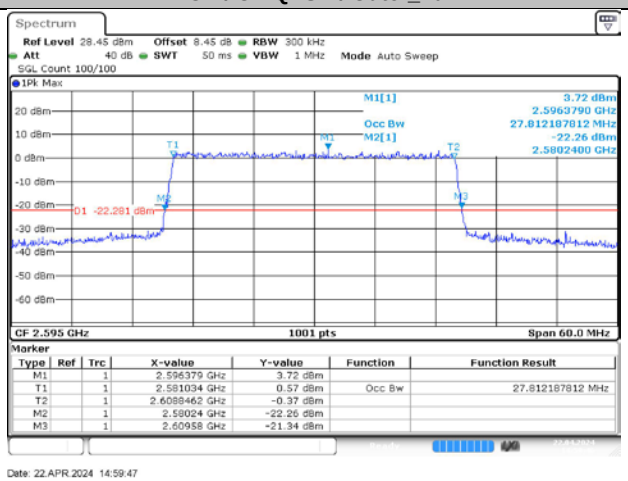
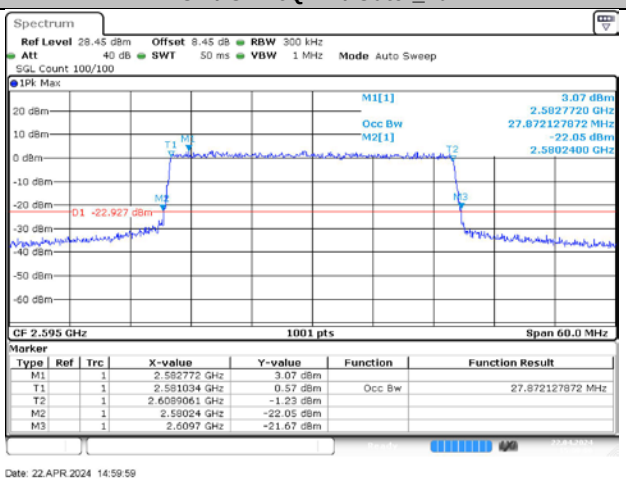
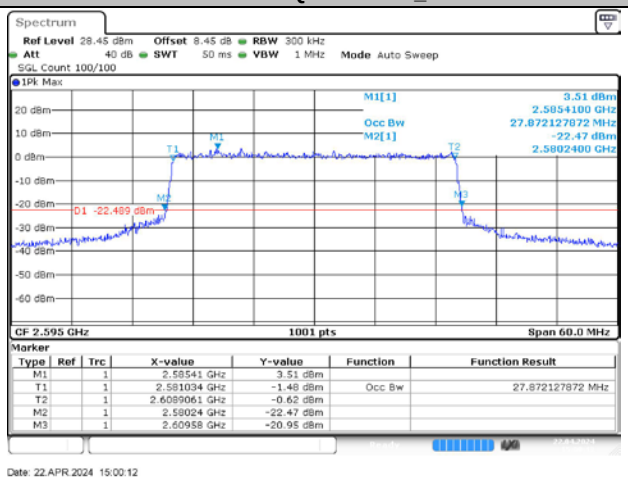
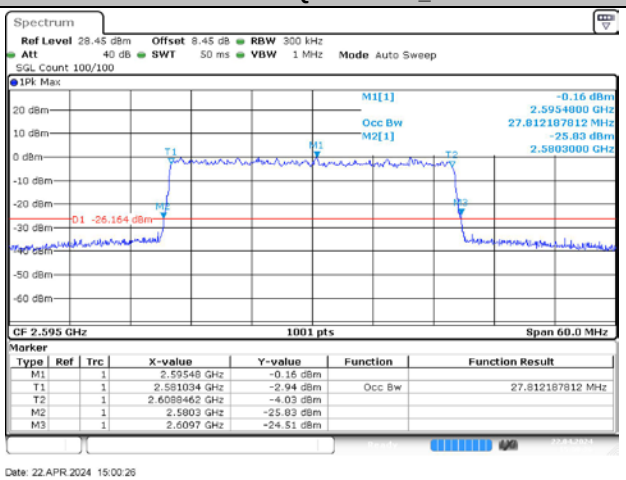


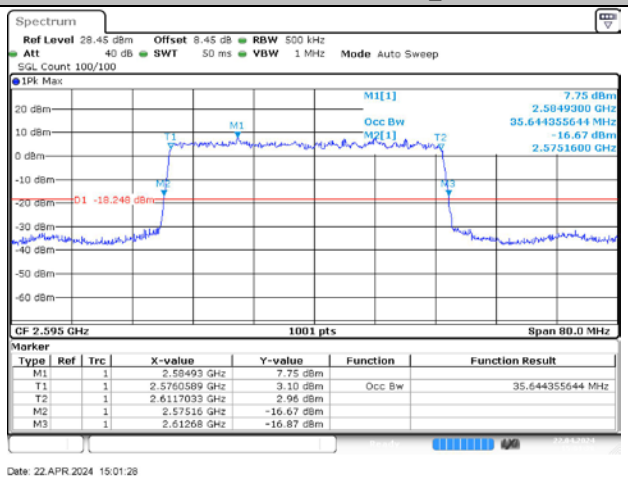
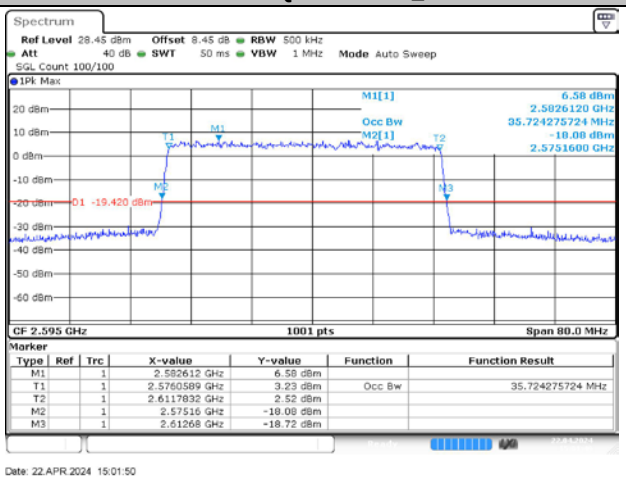
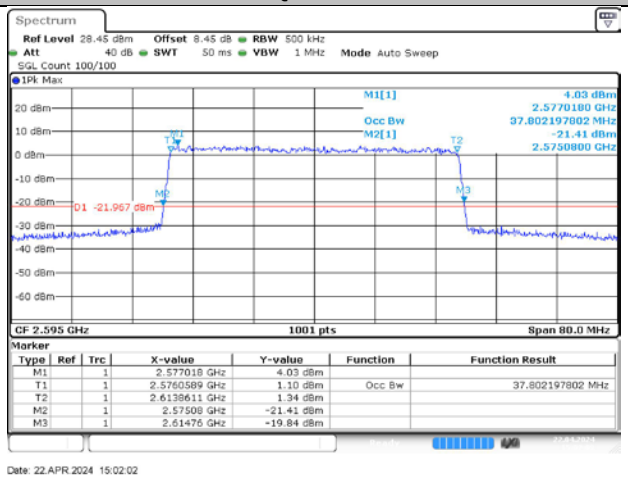
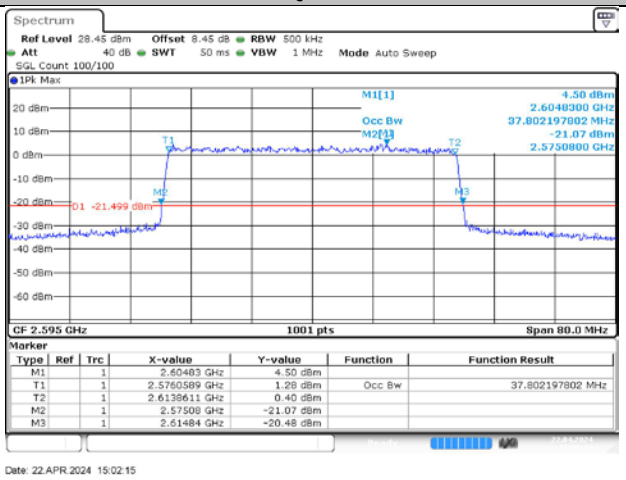
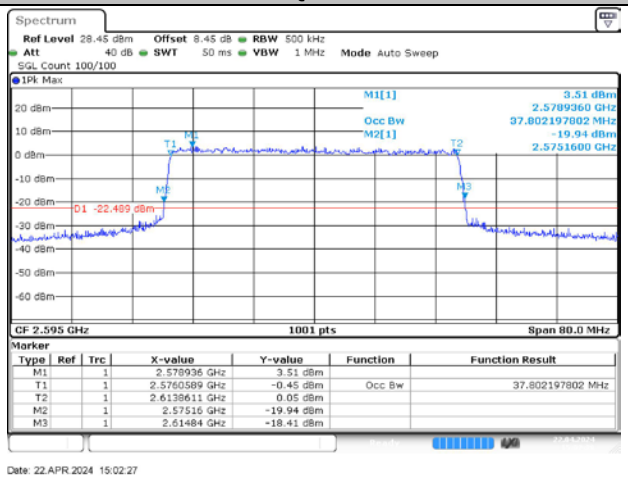
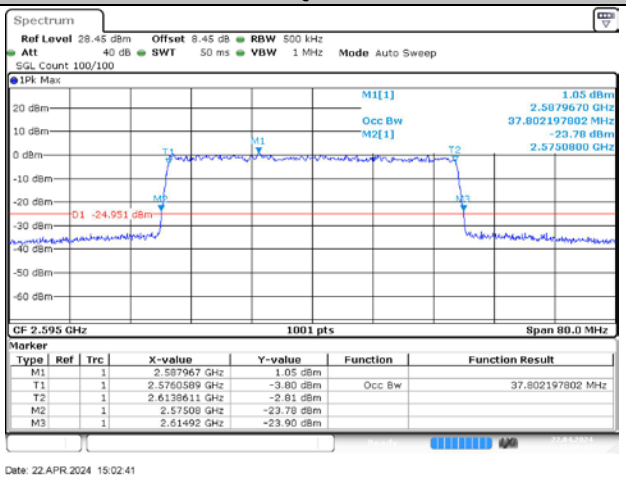
MCH / CP-64QAM / Outer_Full



MCH / CP-256QAM / Outer_Full



n38A / 30KHz / 30MHz	
MCH / DFT-Pi2BPSK / Outer_Full	MCH / DFT-QPSK / Outer_Full
	
MCH / CP-QPSK / Outer_Full	MCH / CP-16QAM / Outer_Full
	
MCH / CP-64QAM / Outer_Full	MCH / CP-256QAM / Outer_Full
	

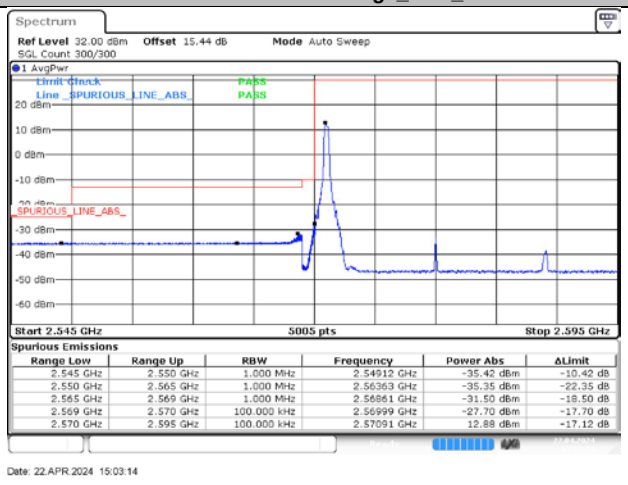
n38A / 30KHz / 40MHz	
MCH / DFT-Pi2BPSK / Outer_Full	MCH / DFT-QPSK / Outer_Full
	
MCH / CP-QPSK / Outer_Full	MCH / CP-16QAM / Outer_Full
	
MCH / CP-64QAM / Outer_Full	MCH / CP-256QAM / Outer_Full
	

5. Conducted Band Edges

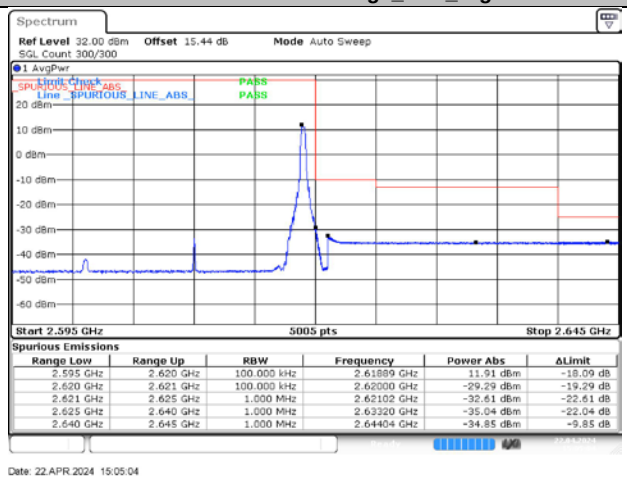
5.1. Test Plots

n38A / 30KHz / 20MHz

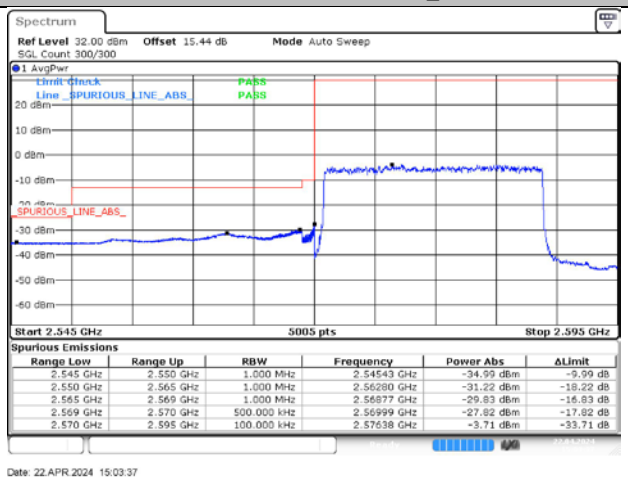
LCH / DFT-Pi2BPSK / Edge_1RB_Left



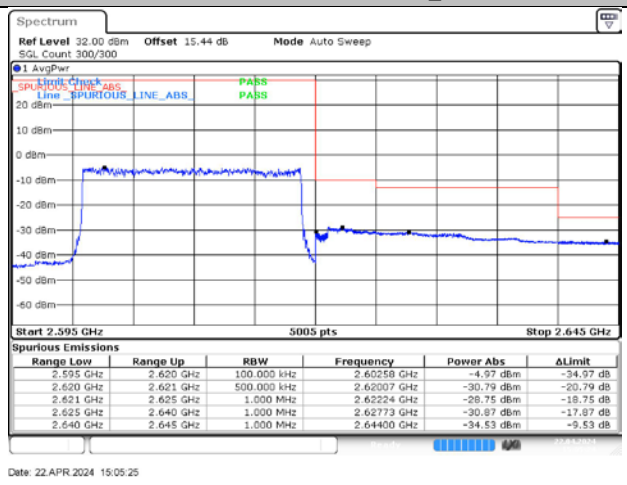
HCH / DFT-Pi2BPSK / Edge_1RB_Right



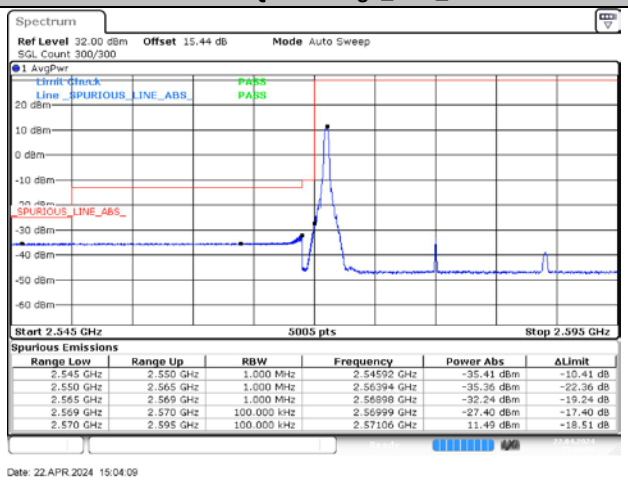
LCH / DFT-Pi2BPSK / Outer_Full



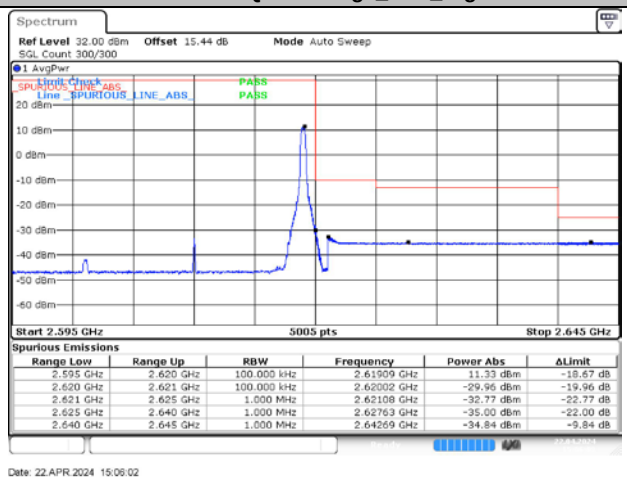
HCH / DFT-Pi2BPSK / Outer_Full

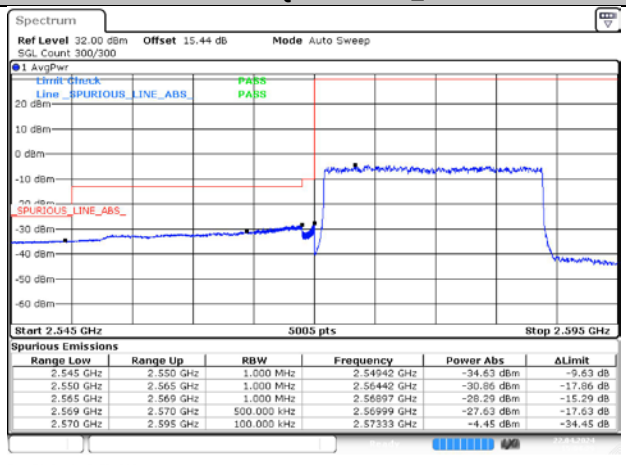
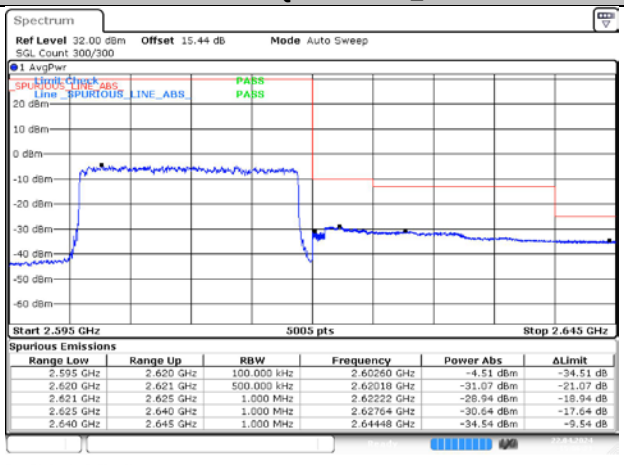


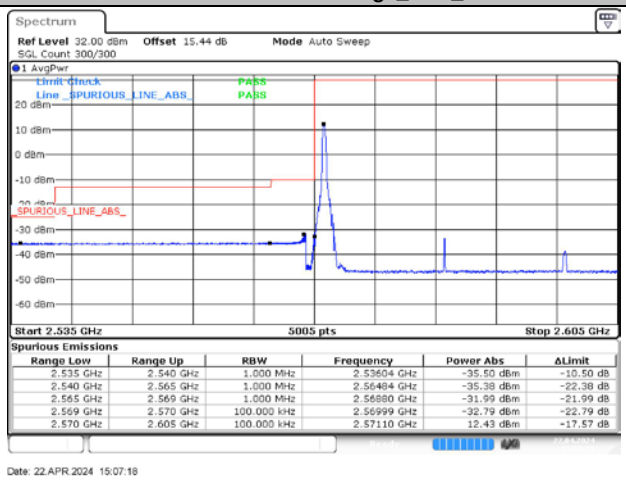
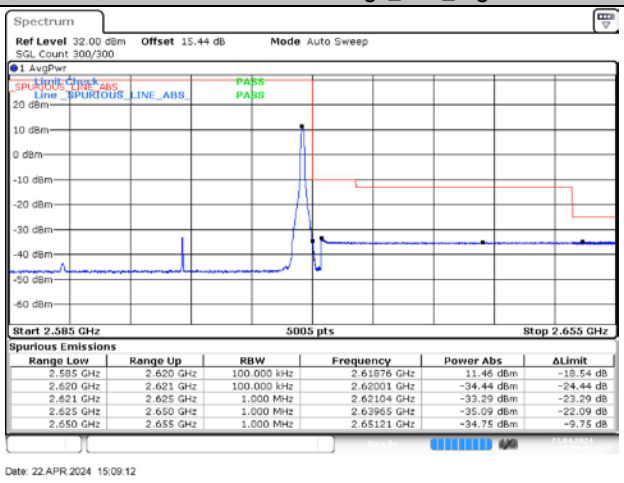
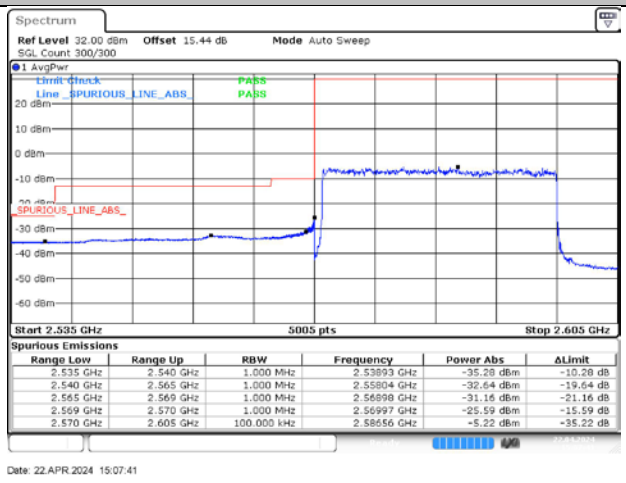
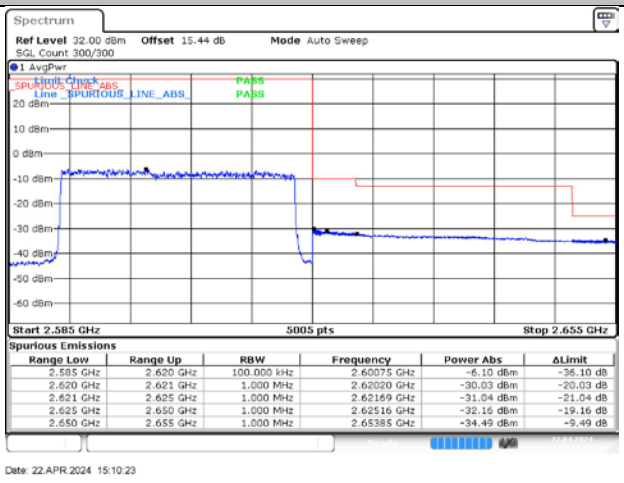
LCH / DFT-QPSK / Edge_1RB_Left

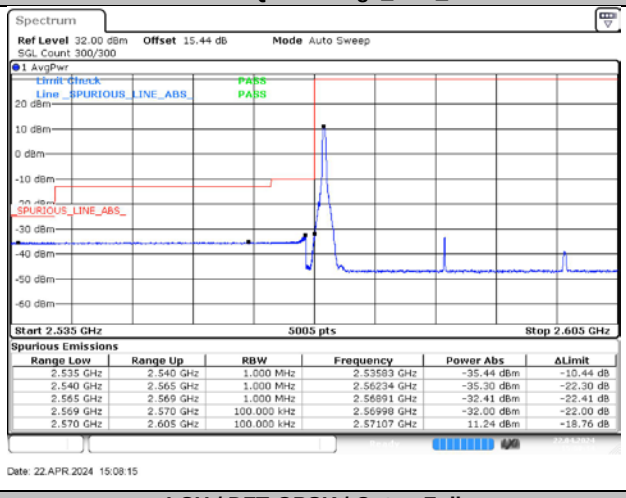
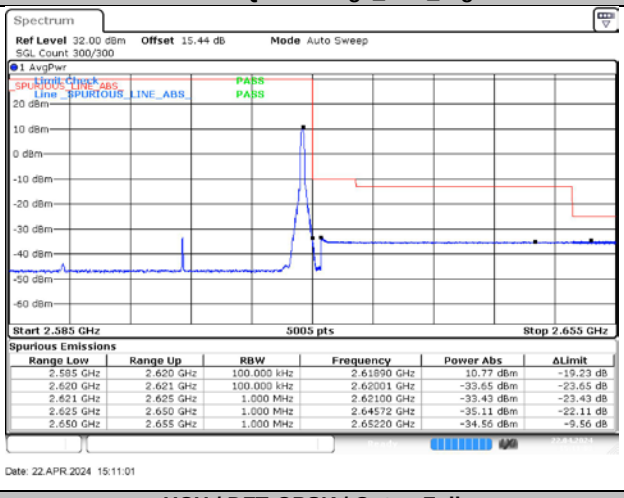
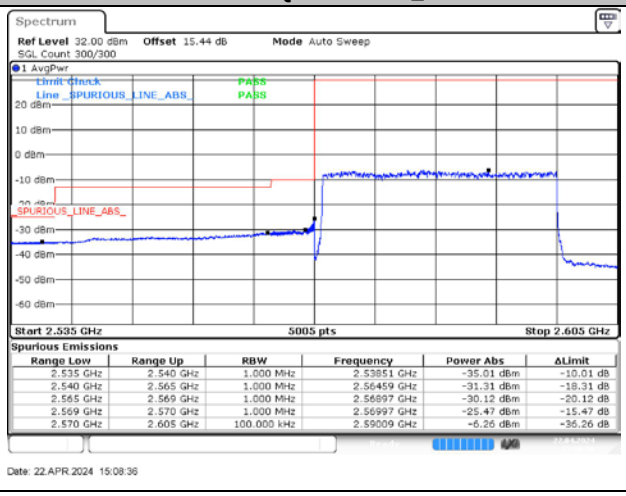
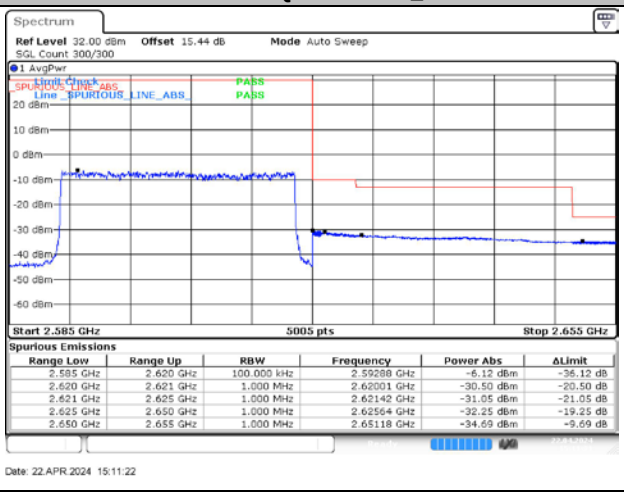


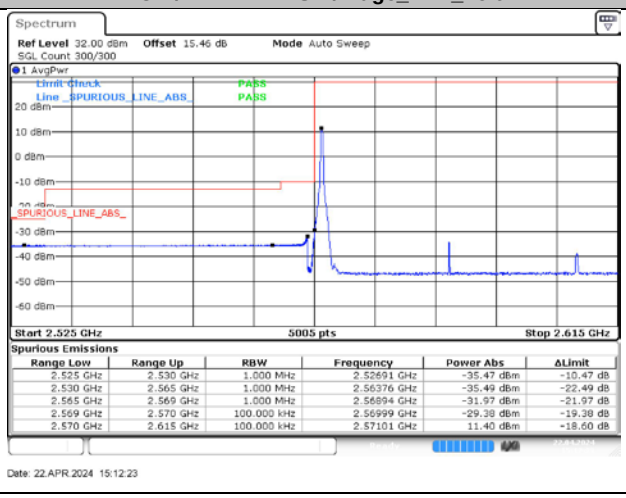
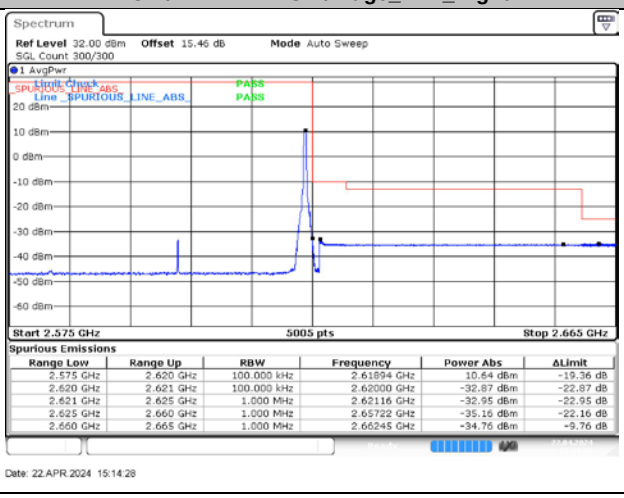
HCH / DFT-QPSK / Edge_1RB_Right



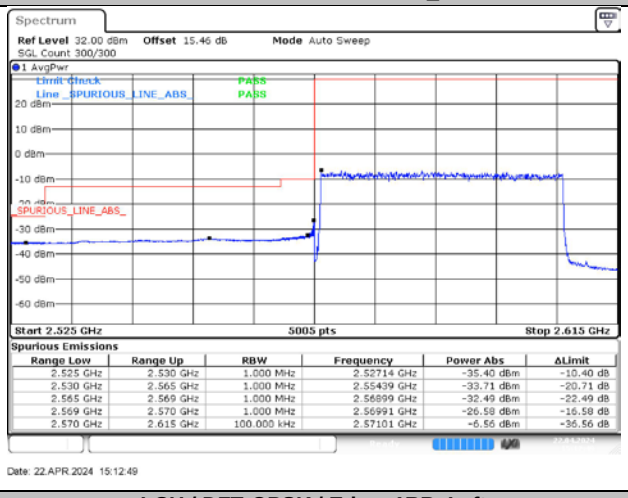
LCH / DFT-QPSK / Outer_Full	HCH / DFT-QPSK / Outer_Full
	

n38A / 30KHz / 30MHz	
LCH / DFT-Pi2BPSK / Edge_1RB_Left	HCH / DFT-Pi2BPSK / Edge_1RB_Right
	
LCH / DFT-Pi2BPSK / Outer_Full	HCH / DFT-Pi2BPSK / Outer_Full
	

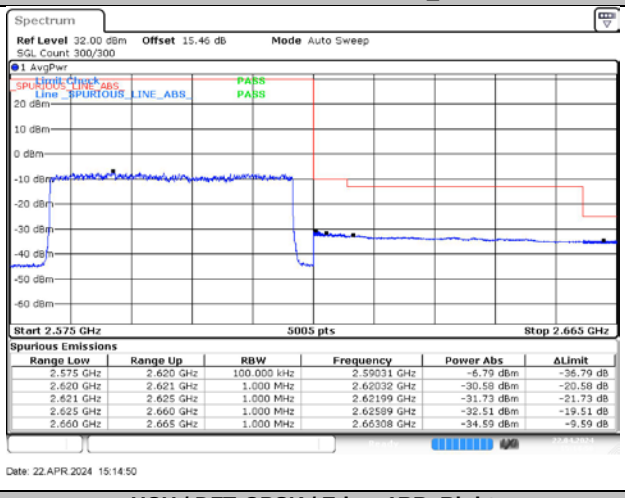
LCH / DFT-QPSK / Edge_1RB_Left	HCH / DFT-QPSK / Edge_1RB_Right
	
LCH / DFT-QPSK / Outer_Full	HCH / DFT-QPSK / Outer_Full
	

n38A / 30KHz / 40MHz	
LCH / DFT-Pi2BPSK / Edge_1RB_Left	HCH / DFT-Pi2BPSK / Edge_1RB_Right
	

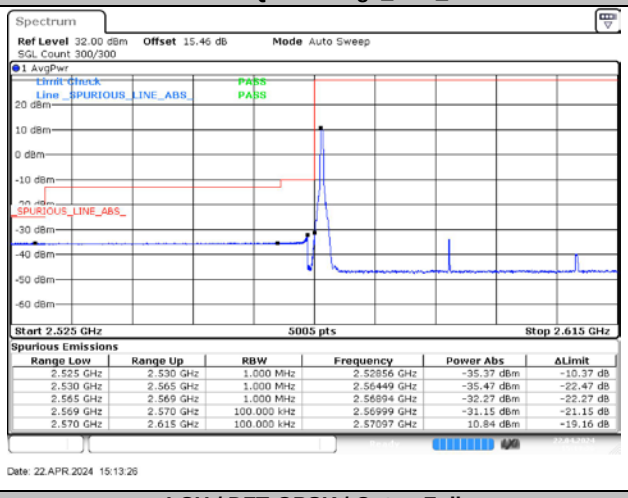
LCH / DFT-Pi2BPSK / Outer_Full



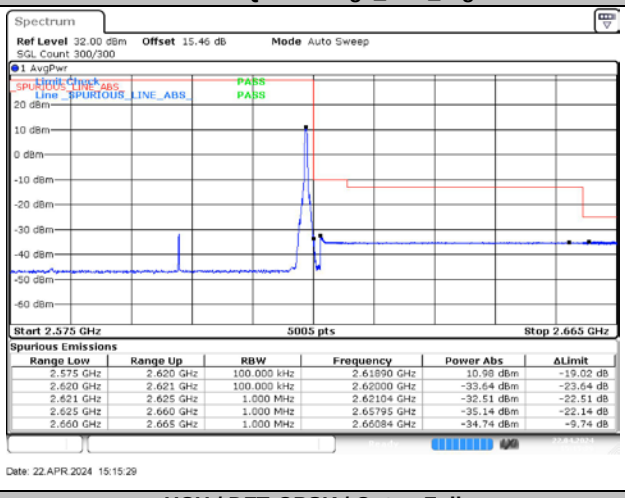
HCH / DFT-Pi2BPSK / Outer_Full



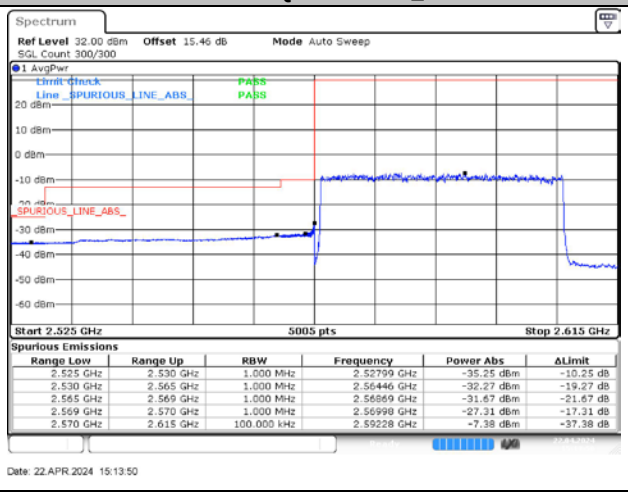
LCH / DFT-QPSK / Edge_1RB_Left



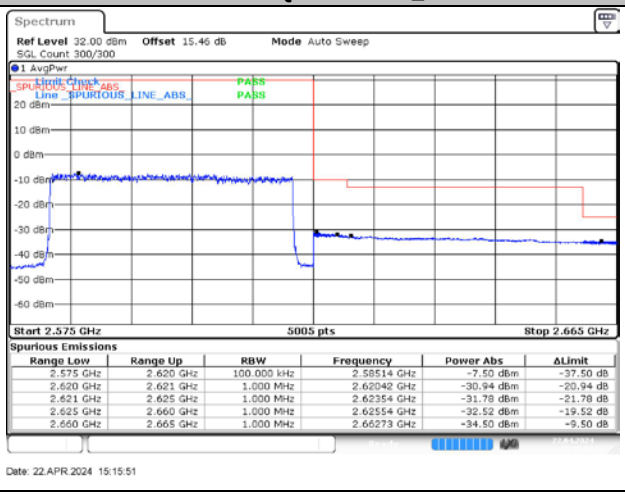
HCH / DFT-QPSK / Edge_1RB_Right



LCH / DFT-QPSK / Outer_Full



HCH / DFT-QPSK / Outer_Full

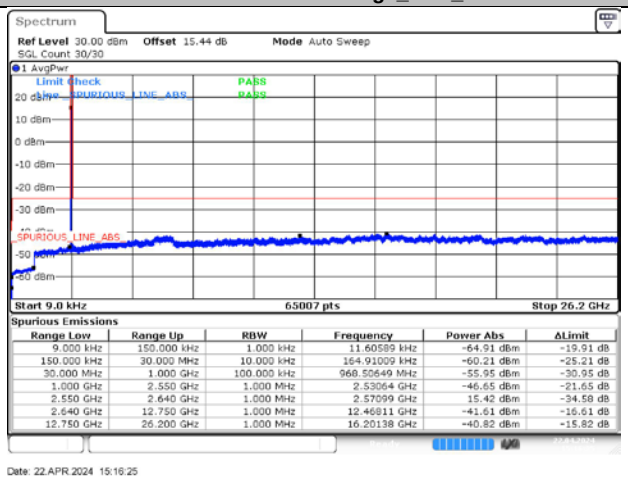


6. Conducted Spurious Emission

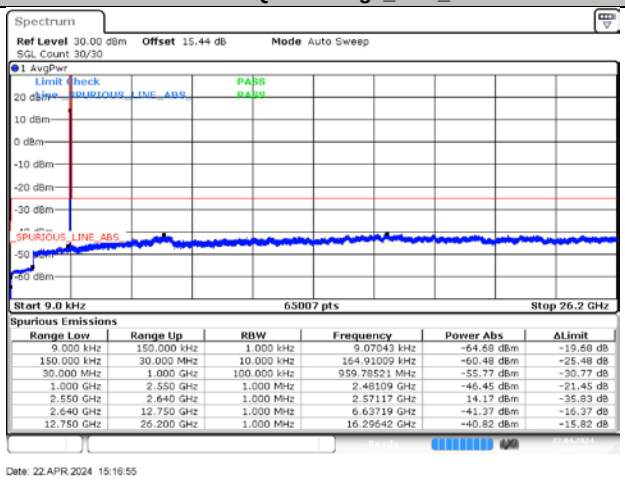
6.1. Test Plots

n38A / 30KHz / 20MHz

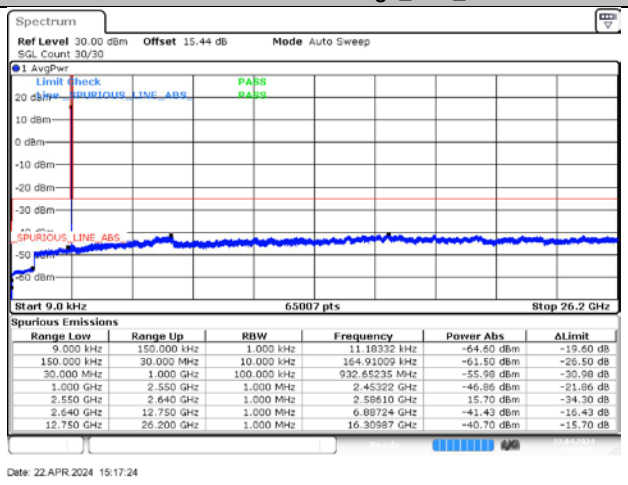
LCH / DFT-Pi2BPSK / Edge_1RB_Left



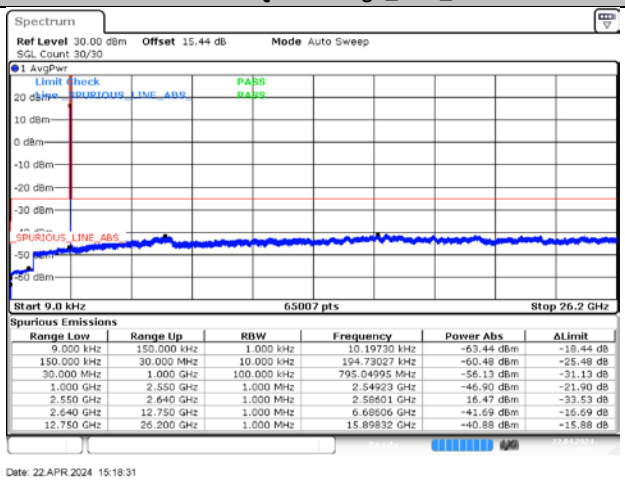
LCH / DFT-QPSK / Edge_1RB_Left



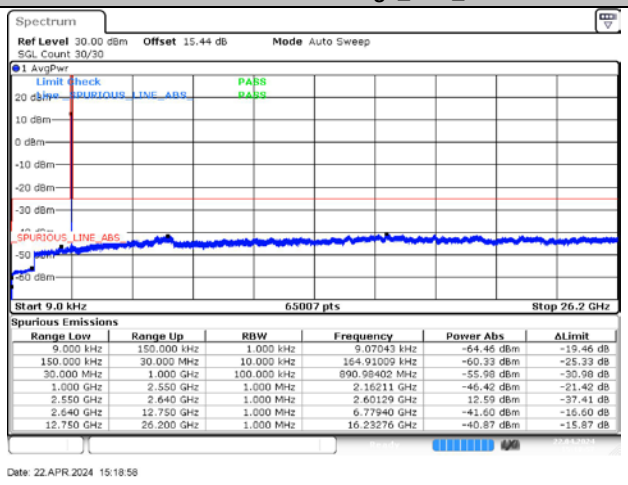
MCH / DFT-Pi2BPSK / Edge_1RB_Left



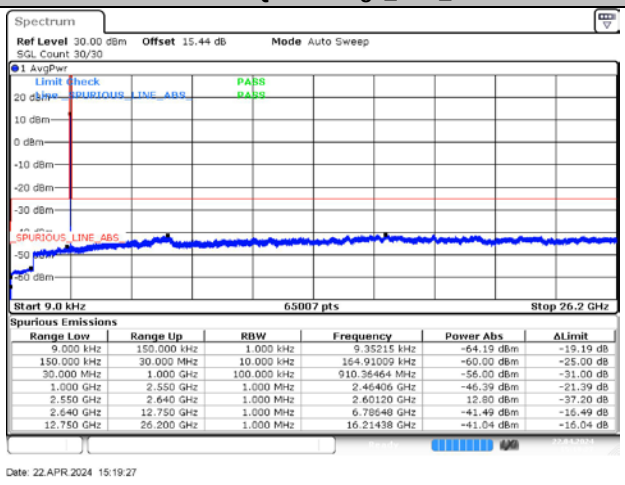
MCH / DFT-QPSK / Edge_1RB_Left



HCH / DFT-Pi2BPSK / Edge_1RB_Left

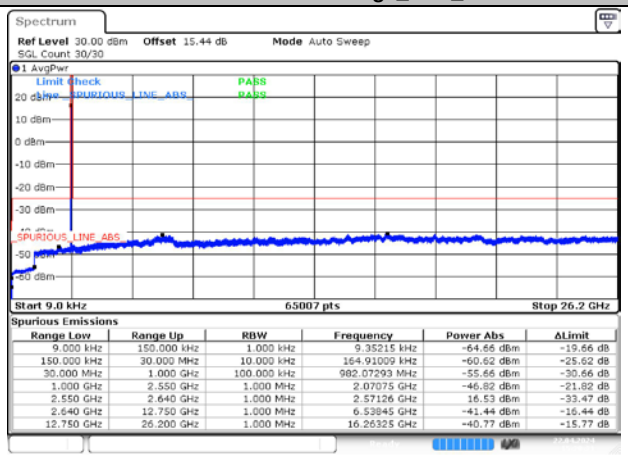


HCH / DFT-QPSK / Edge_1RB_Left

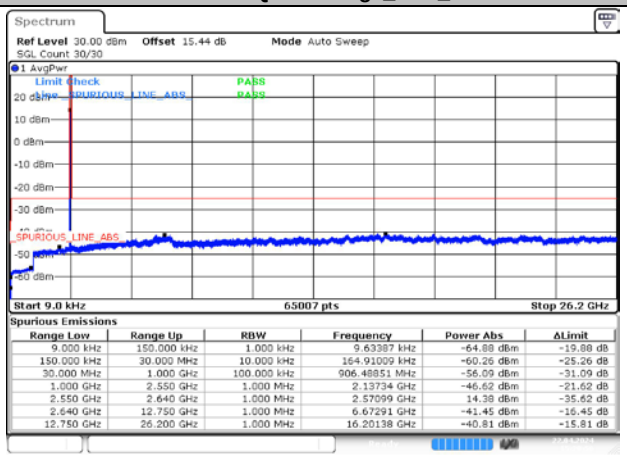


n38A / 30KHz / 30MHz

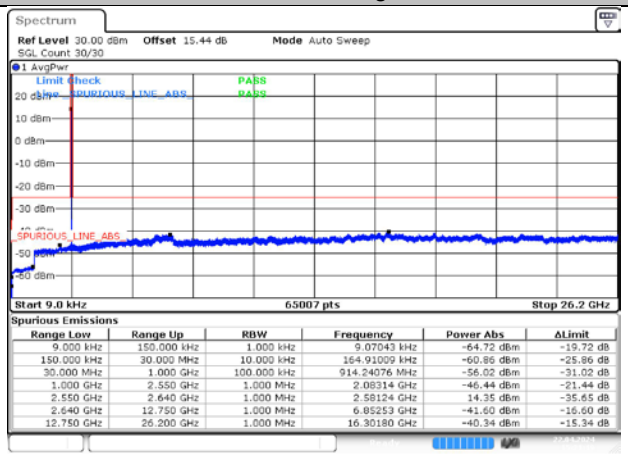
LCH / DFT-Pi2BPSK / Edge_1RB_Left



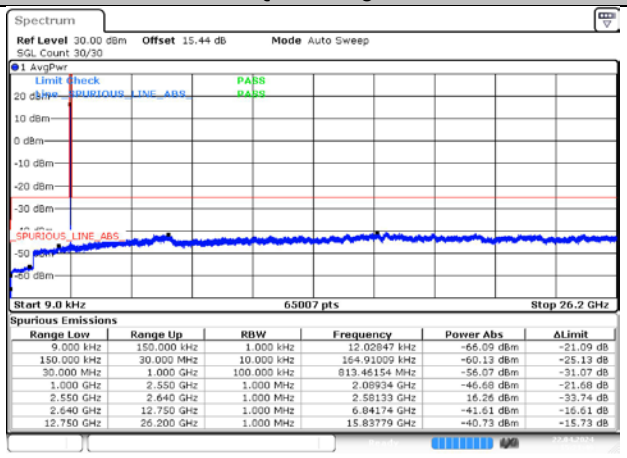
LCH / DFT-QPSK / Edge_1RB_Left



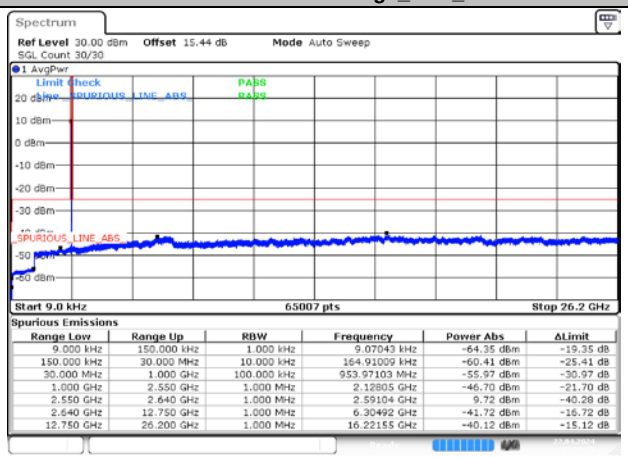
MCH / DFT-Pi2BPSK / Edge_1RB_Left



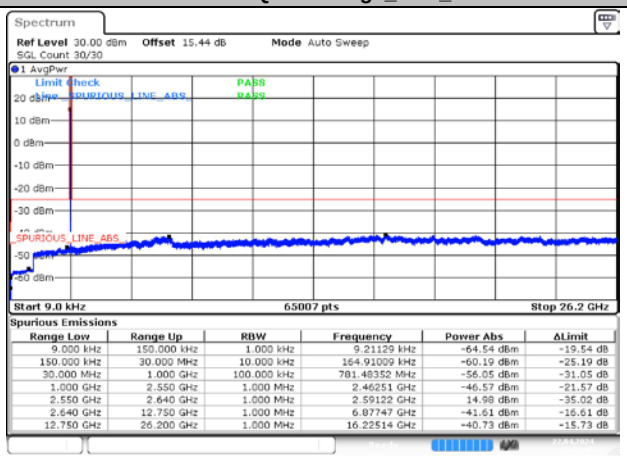
MCH / DFT-QPSK / Edge_1RB_Left



HCH / DFT-Pi2BPSK / Edge_1RB_Left

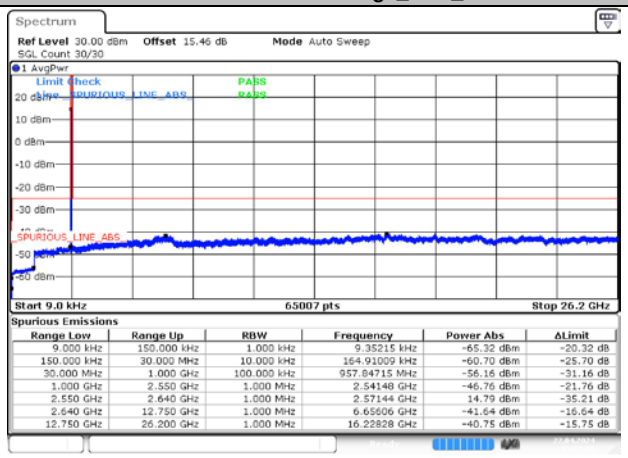


HCH / DFT-QPSK / Edge_1RB_Left

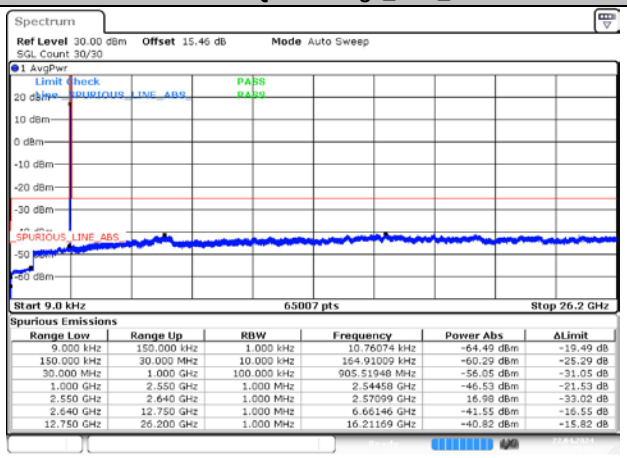


n38A / 30KHz / 40MHz

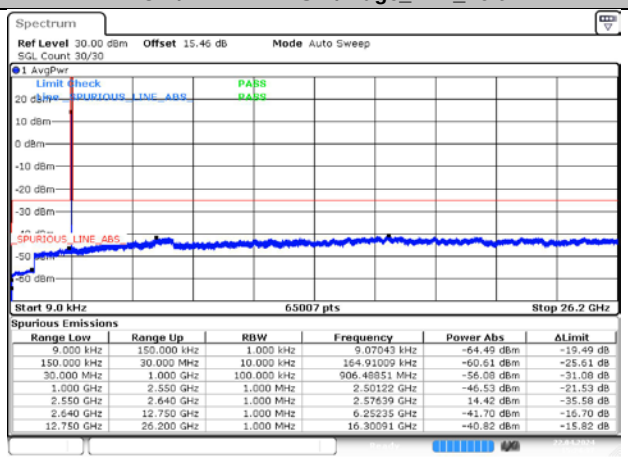
LCH / DFT-Pi2BPSK / Edge_1RB_Left



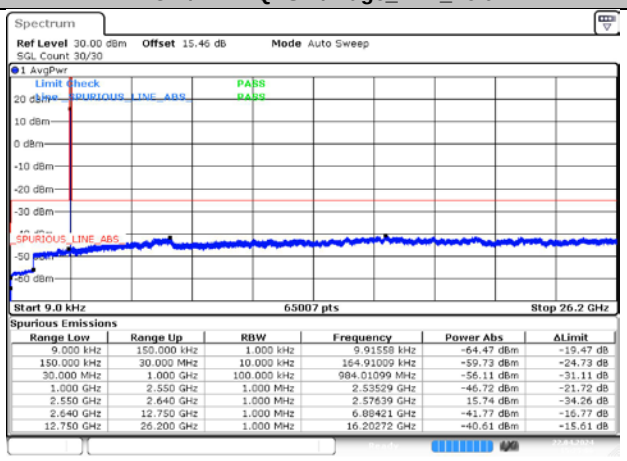
LCH / DFT-QPSK / Edge_1RB_Left



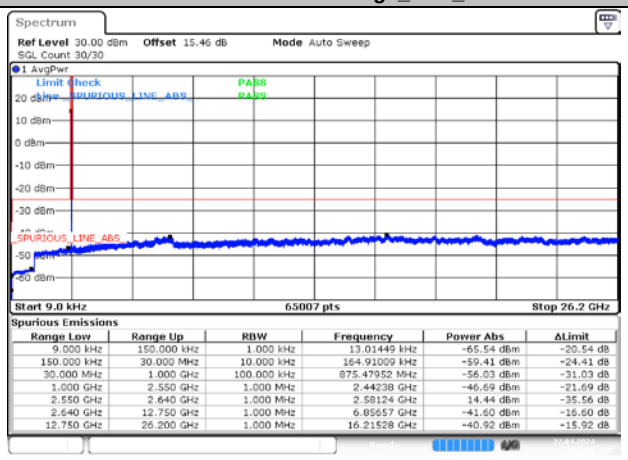
MCH / DFT-Pi2BPSK / Edge_1RB_Left



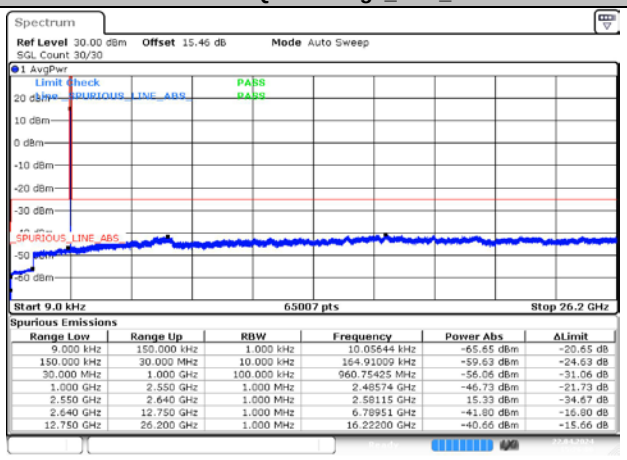
MCH / DFT-QPSK / Edge_1RB_Left



HCH / DFT-Pi2BPSK / Edge_1RB_Left



HCH / DFT-QPSK / Edge_1RB_Left



7. Frequency Stability

7.1. Test Results

7.1.1. Frequency Error Vs Voltage

SCS	Bandwidth	Channel	RB Config	Modulation	Temperature	Voltage	Deviation Result		Verdict
							(Hz)	(ppm)	
30KHz	40MHz	MCH	Outer_Full	DFT-QPSK	NT	LV	-16.20	-0.006243	Pass
30KHz	40MHz	MCH	Outer_Full	DFT-QPSK	NT	NV	-3.90	-0.001503	Pass
30KHz	40MHz	MCH	Outer_Full	DFT-QPSK	NT	HV	-1.10	-0.000424	Pass

7.1.2. Frequency Error Vs Temperature

SCS	Bandwidth	Channel	RB Config	Modulation	Temperature	Voltage	Deviation Result		Verdict
							(Hz)	(ppm)	
30KHz	40MHz	MCH	Outer_Full	DFT-QPSK	-30℃	NV	-4.60	-0.001773	Pass
30KHz	40MHz	MCH	Outer_Full	DFT-QPSK	-20℃	NV	-6.70	-0.002582	Pass
30KHz	40MHz	MCH	Outer_Full	DFT-QPSK	-10℃	NV	-9.60	-0.003699	Pass
30KHz	40MHz	MCH	Outer_Full	DFT-QPSK	0℃	NV	-4.20	-0.001618	Pass
30KHz	40MHz	MCH	Outer_Full	DFT-QPSK	10℃	NV	-16.20	-0.006243	Pass
30KHz	40MHz	MCH	Outer_Full	DFT-QPSK	20℃	NV	8.30	0.003198	Pass
30KHz	40MHz	MCH	Outer_Full	DFT-QPSK	30℃	NV	-5.90	-0.002274	Pass
30KHz	40MHz	MCH	Outer_Full	DFT-QPSK	40℃	NV	-4.80	-0.001850	Pass
30KHz	40MHz	MCH	Outer_Full	DFT-QPSK	50℃	NV	-2.00	-0.000771	Pass

The End