

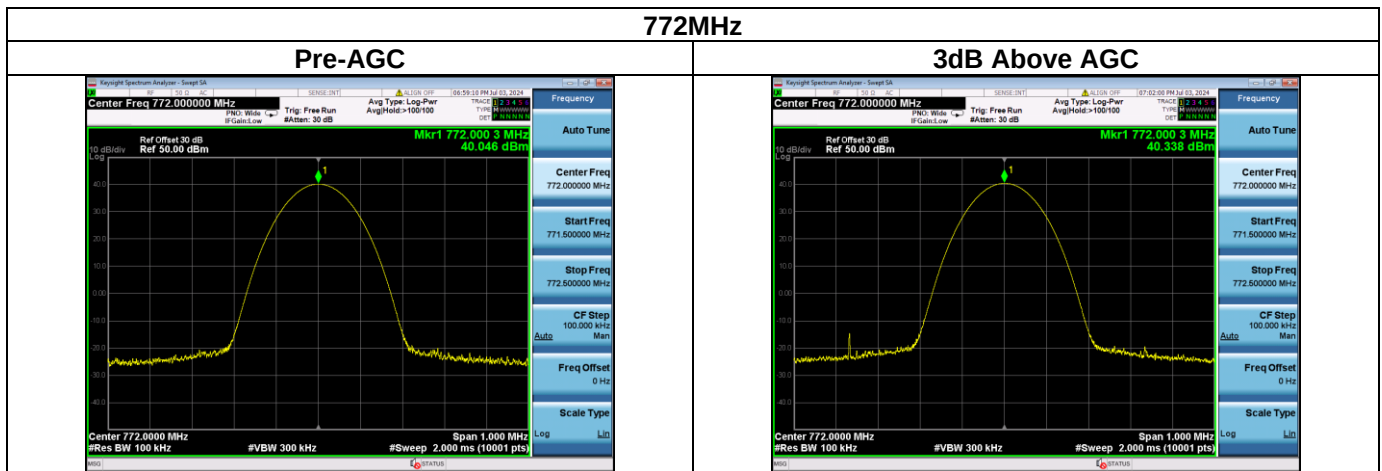
Appendix B for KSCR240500096902

1. AGC threshold

Mode	Operation Band	Frequency F0 (MHz)	Signal Type	Signal Level (dBm)	Input Power (dBm)	Output Power (dBm)	ERP (dBm)	Booster gain (dB)
Down link	769~775MHz	772.000	CW	Pre-AGC	-9.81	40.05	37.90	49.86
				3dB Above AGC	-6.81	40.34	38.19	/

Remark:

- The normal power is 40dBm and the measured output power which show in above table is within±2.0dB tolerance.
- ERP(dBm)=Total Output Power(dBm)+Antenna Gain(dBi)-2.15dB.Antenna Gain is 0.0dBi.

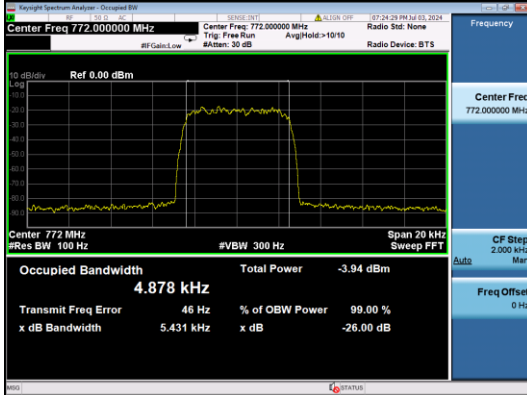


2. Occupied bandwidth

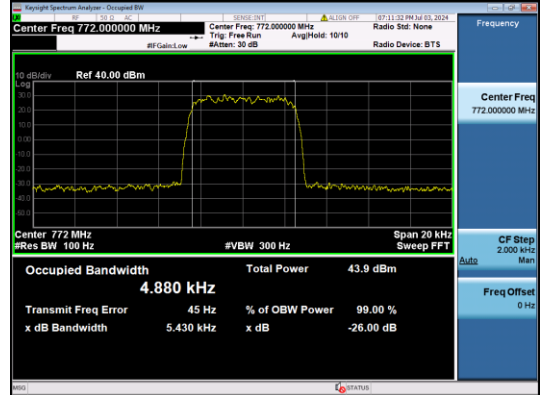
Occupied Bandwidth				
Channel Spacing (KHz)	Test Frequency F0(MHz)	Signal Level	Signal Type	99%Occupied Channel Bandwidth (KHz)
6.25KHz (CQPSK)	772.000	Pre-AGC	Input	4.878
	772.000		Output	4.880
	772.000	3dB Above AGC	Input	4.882
	772.000		Output	4.881
12.5KHz (FM)	772.000	Pre-AGC	Input	9.787
	772.000		Output	9.791
	772.000	3dB Above AGC	Input	9.789
	772.000		Output	9.789
25KHz (TETRA)	772.000	Pre-AGC	Input	20.946
	772.000		Output	20.978
	772.000	3dB Above AGC	Input	20.940
	772.000		Output	20.913

6.25KHz CQPSK

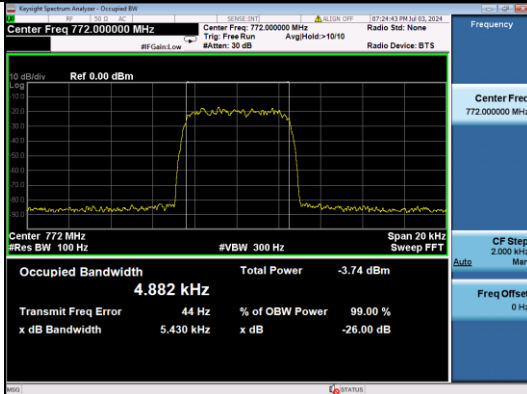
Pre-AGC Input



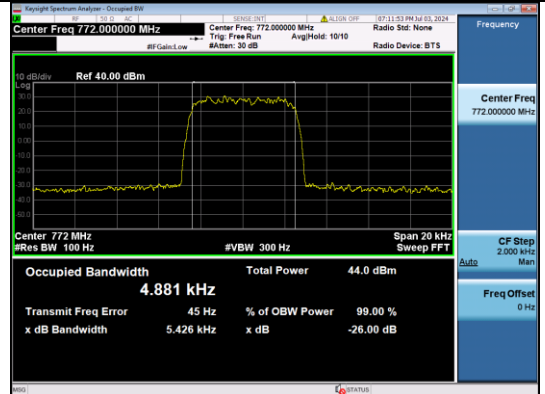
Pre-AGC Output



3dB Above Pre-AGC Input

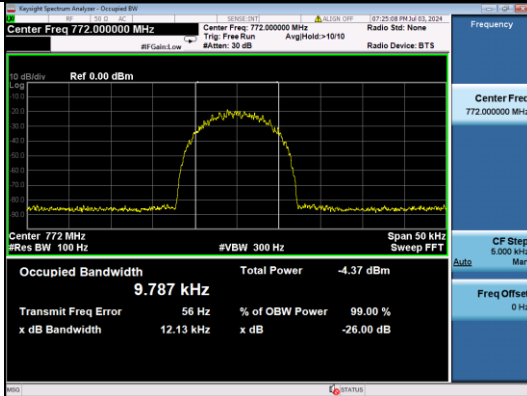


3dB Above Pre-AGC Output

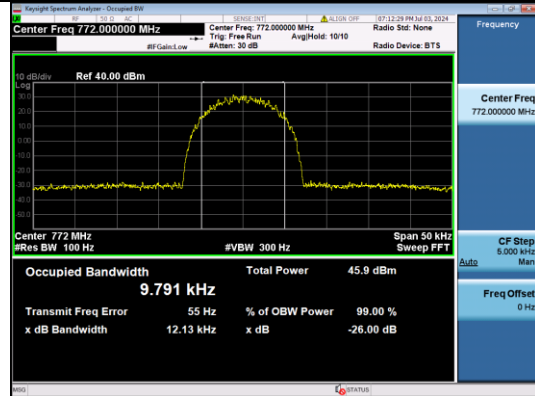


12.5KHz FM

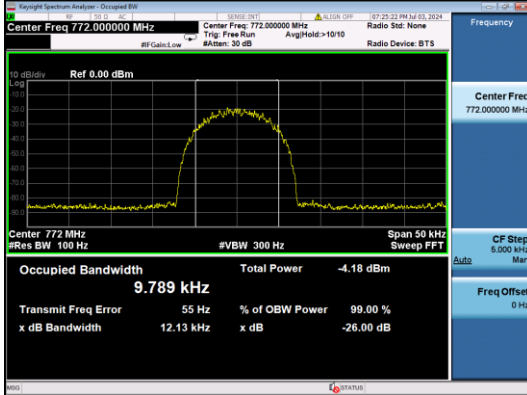
Pre-AGC Input



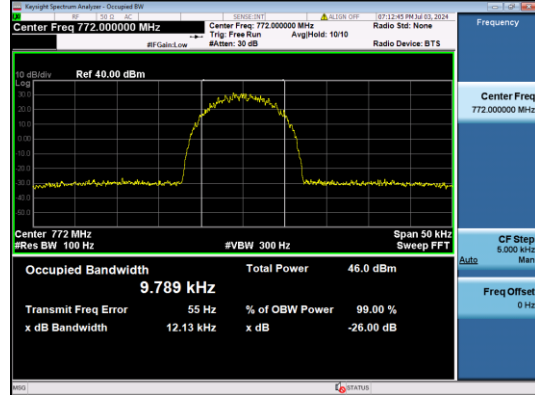
Pre-AGC Output



3dB Above Pre-AGC Input

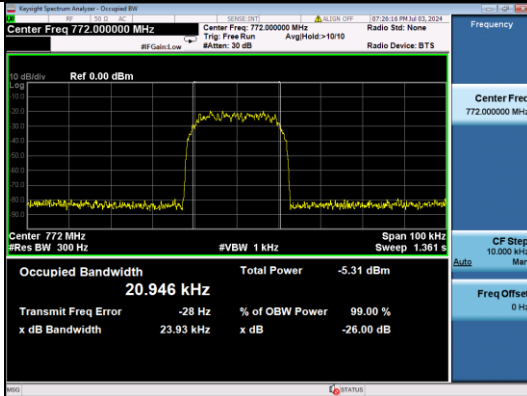


3dB Above Pre-AGC Output

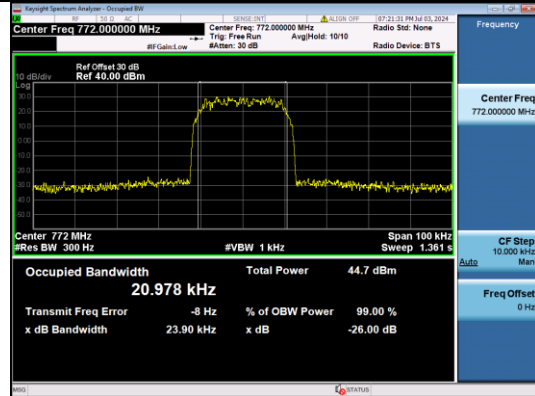


25KHz TETRA

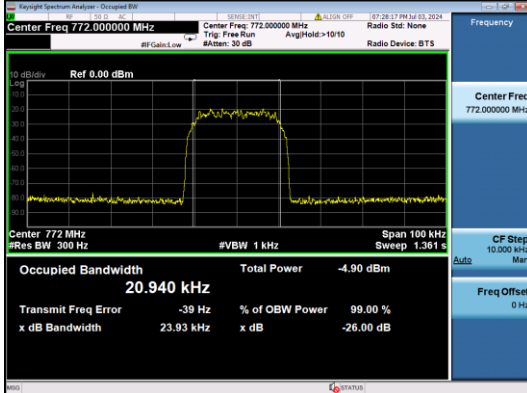
Pre-AGC Input



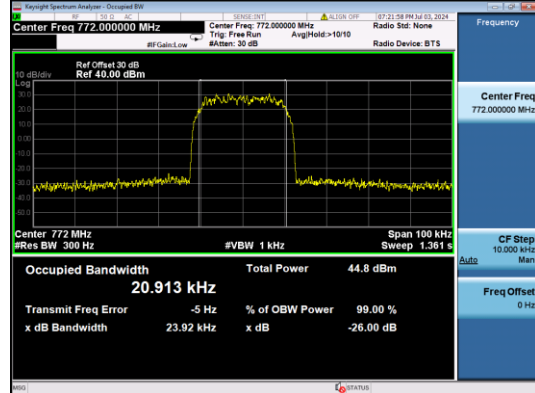
Pre-AGC Output



3dB Above Pre-AGC Input



3dB Above Pre-AGC Output

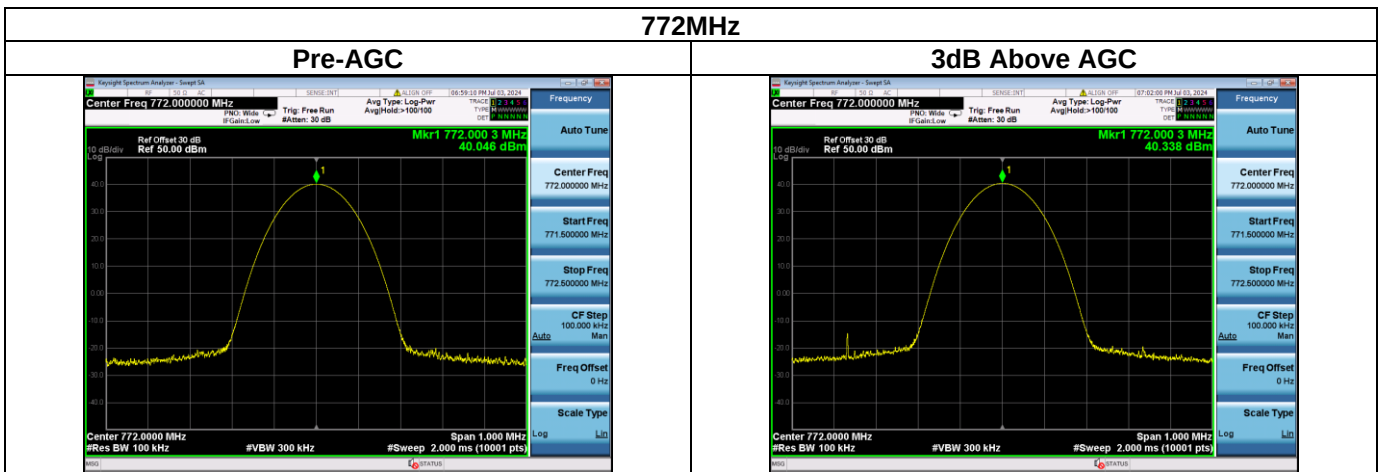


3 Output power at RF antenna connector

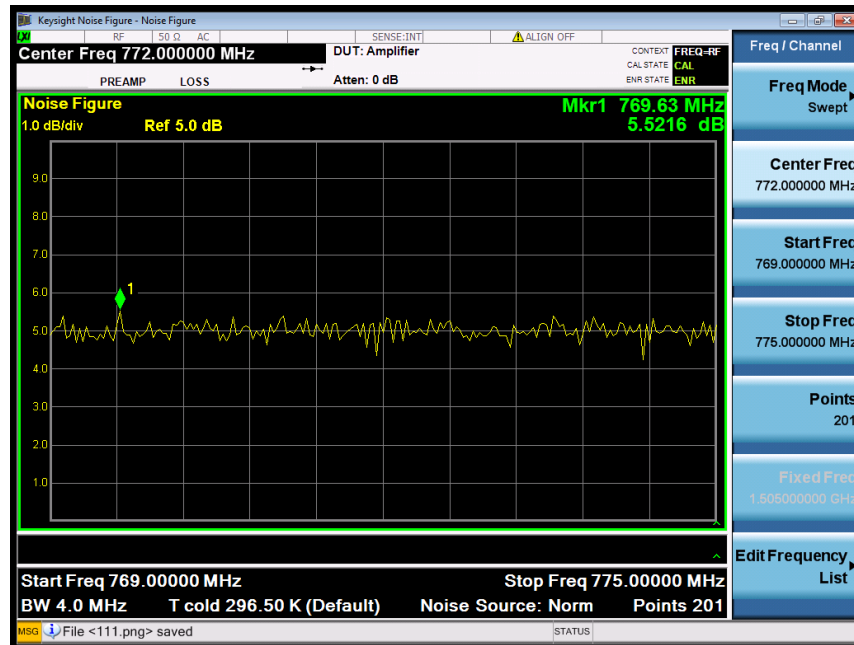
Mode	Operation Band	Frequency F0 (MHz)	Signal Type	Signal Level (dBm)	Output Power (dBm)	ERP (dBm)
Down link	769~775MHz	772.000	CW	Pre-AGC	40.05	37.90
				3dB Above AGC	40.34	38.19

Remake:

- The normal power is 40dBm and the measured output power which show in above table is within±2.0dB tolerance.
- ERP(dBm)=Total Output Power(dBm)+Antenna Gain(dBi)-2.15dB.Antenna Gain is 0.0dBi.



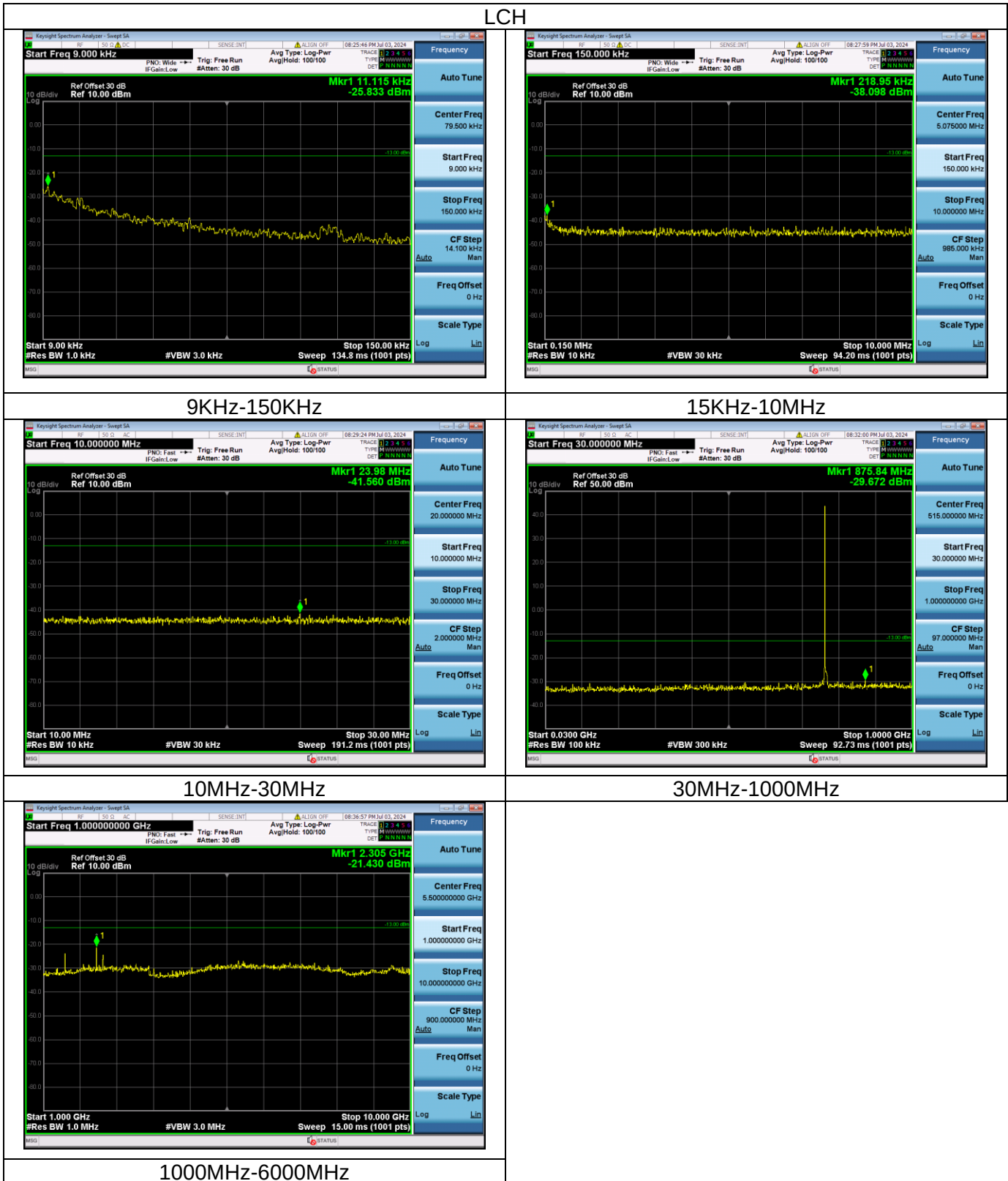
4. Noise Figure



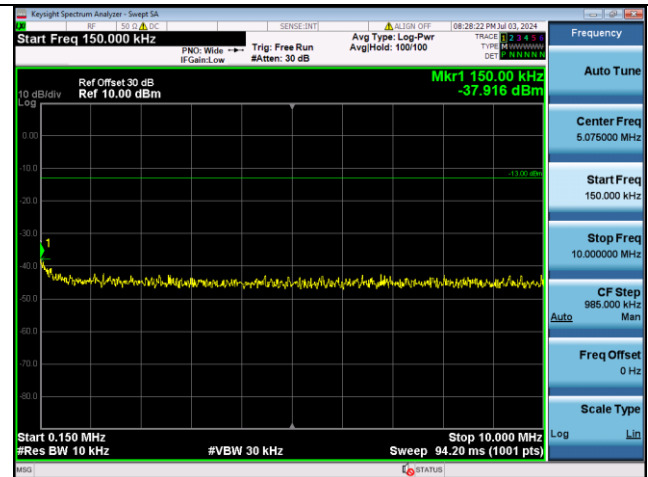
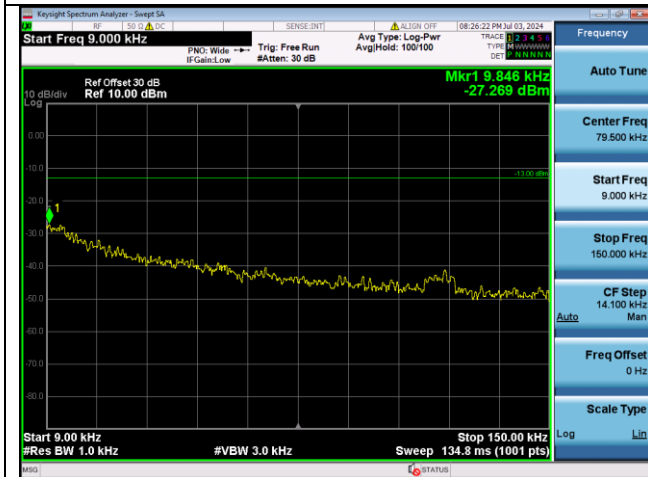
5. Spurious emissions at RF antenna connector

Channel	Frequency Range (MHz)	Worst Test Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
LCH	0.009~0.15	-25.83	-13.00	-12.83	Pass
	0.15~10	-38.10	-13.00	-25.10	Pass
	10~30	-41.56	-13.00	-28.56	Pass
	30~1000	-29.67	-13.00	-16.67	Pass
	1000~10000	-21.43	-13.00	-8.43	Pass
MCH	0.009~0.15	-27.27	-13.00	-14.27	Pass
	0.15~10	-37.92	-13.00	-24.92	Pass
	10~30	-41.93	-13.00	-28.93	Pass
	30~1000	-30.31	-13.00	-17.31	Pass
	1000~10000	-22.40	-13.00	-9.40	Pass
HCH	0.009~0.15	-25.03	-13.00	-12.03	Pass
	0.15~10	-38.02	-13.00	-25.02	Pass
	10 - 30	-41.44	-13.00	-28.44	Pass
	30 - 1000	-29.78	-13.00	-16.78	Pass
	1000 - 10000	-24.95	-13.00	-11.95	Pass

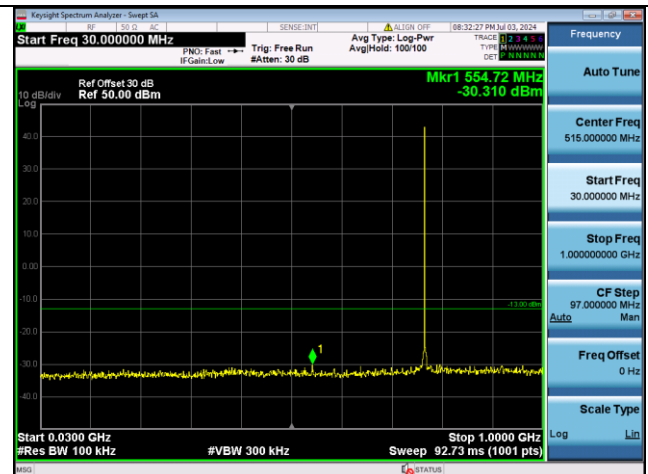
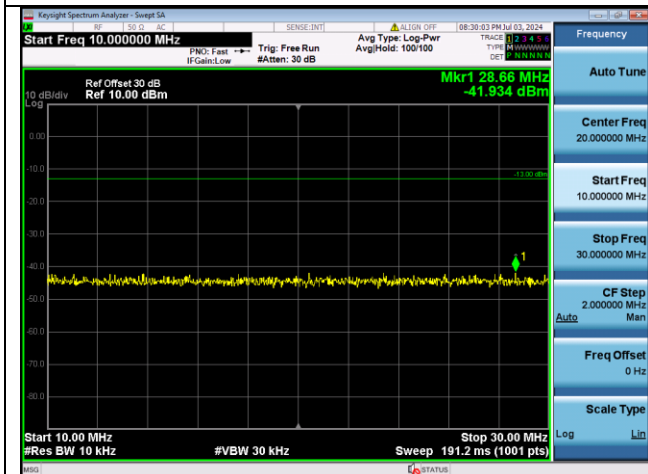
LCH



MCH

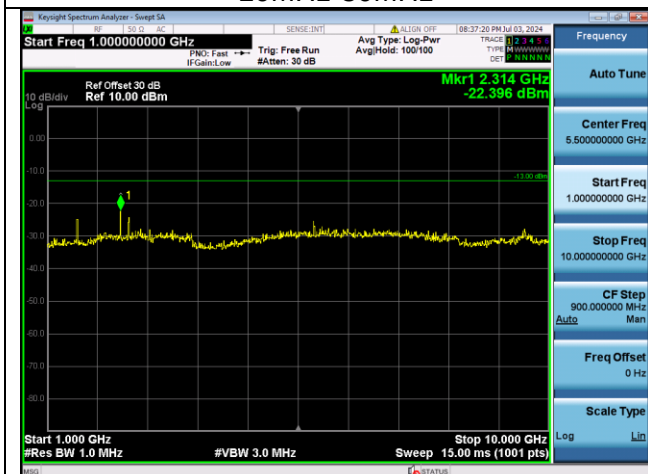


9KHz-150KHz



15KHz-10MHz

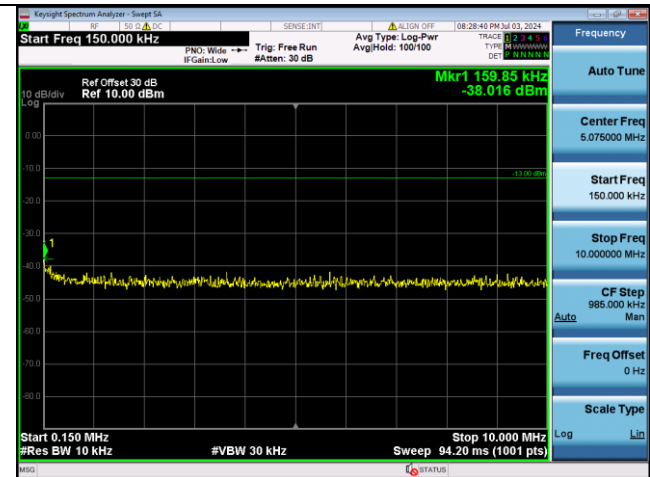
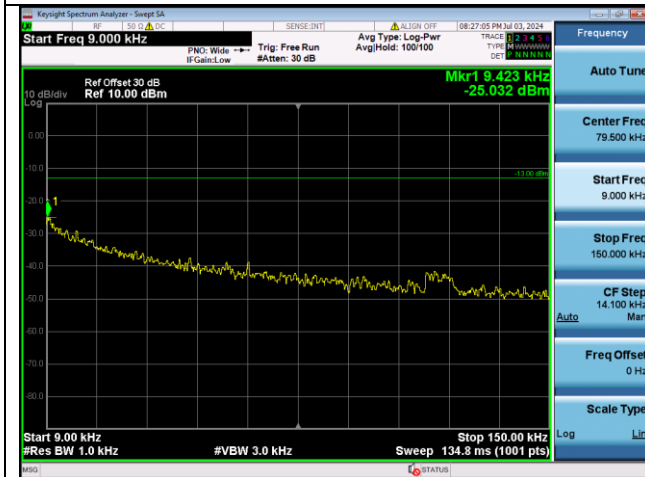
10MHz-30MHz



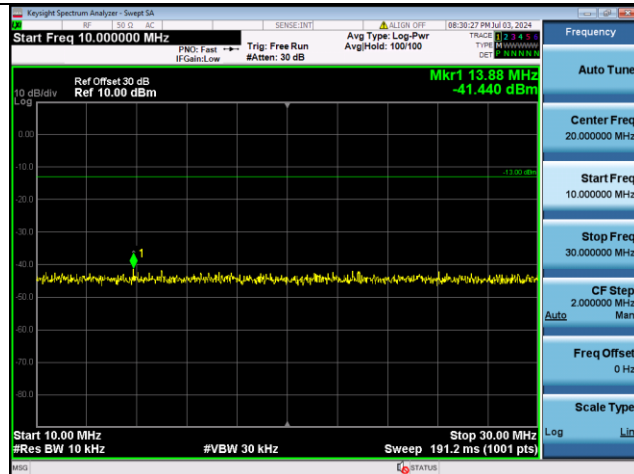
30MHz-1000MHz

1000MHz-6000MHz

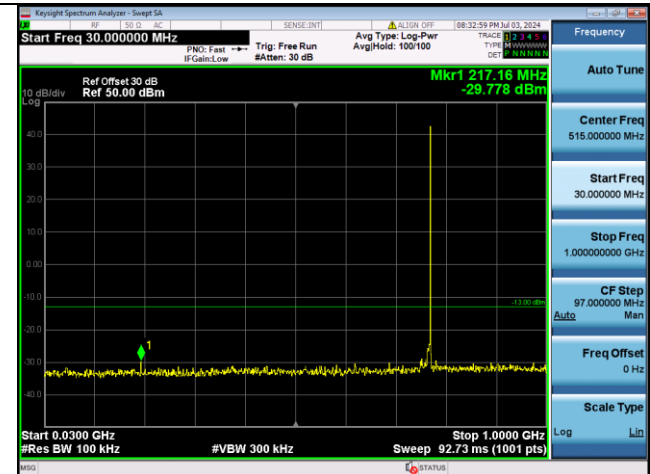
HCH



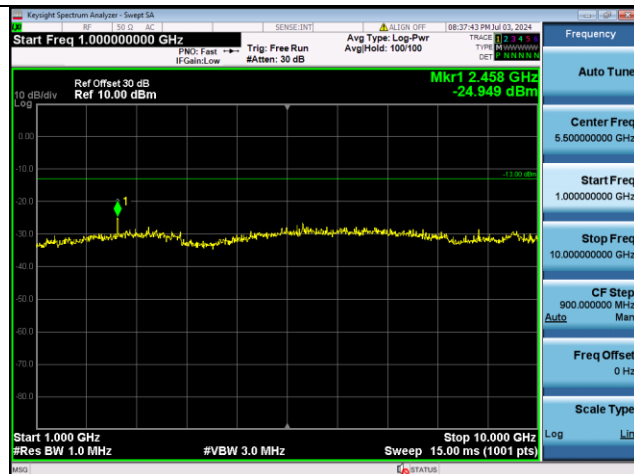
9KHz-150KHz



150KHz-10MHz



10MHz-30MHz



30MHz-1000MHz

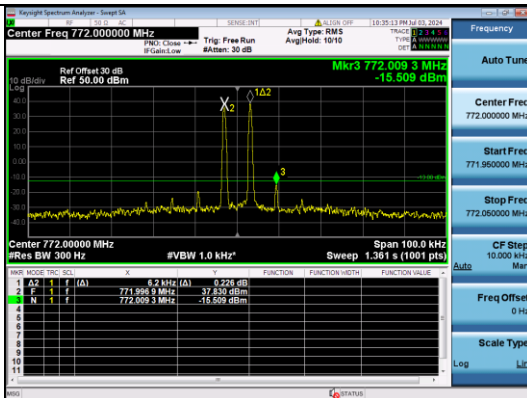
1000MHz-6000MHz

6. Spurious emissions at RF antenna connector: (Intermodulation)

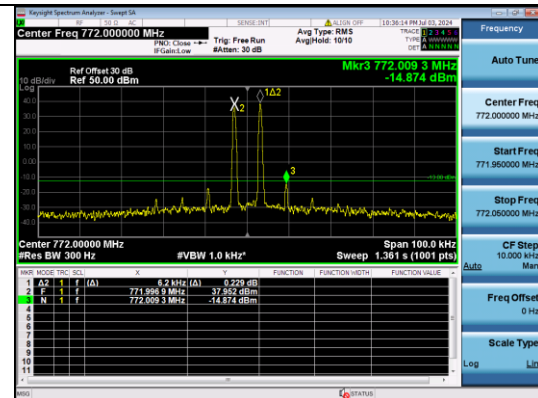
Channel Spacing (KHz)	Signal Level	Worst Test Level (dBm)	Limit (dBm)	Result
6.25KHz	Pre-AGC	-15.509	-13	Pass
	3dB Above AGC	-14.874	-13	Pass
12.5KHz	Pre-AGC	-14.519	-13	Pass
	3dB Above AGC	-14.745	-13	Pass
25KHz	Pre-AGC	-19.161	-13	Pass
	3dB Above AGC	-18.118	-13	Pass

Channel Spacing: 6.25KHz

Pre-AGC

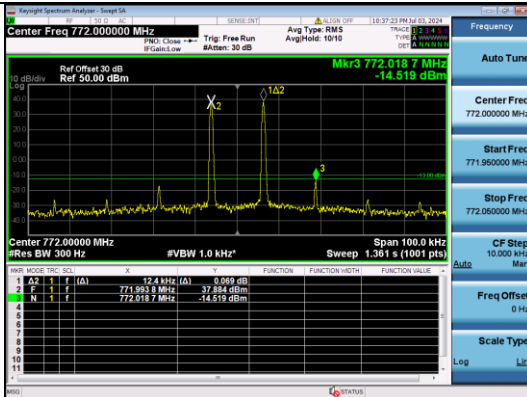


3dB Above AGC

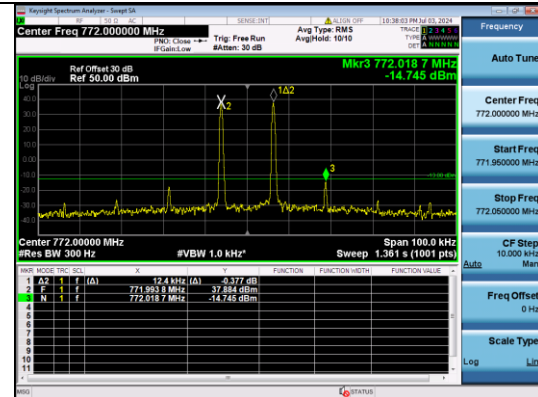


Channel Spacing: 12.5KHz

Pre-AGC

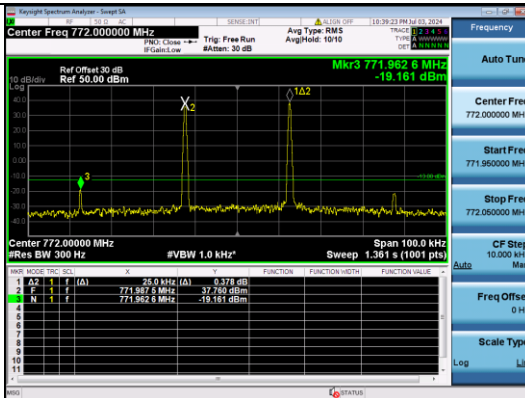


3dB Above AGC

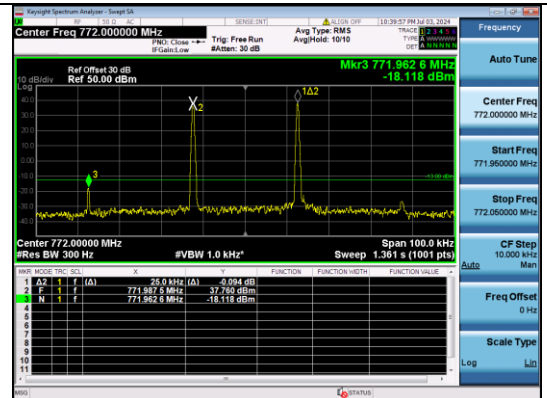


Channel Spacing: 25KHz

Pre-AGC

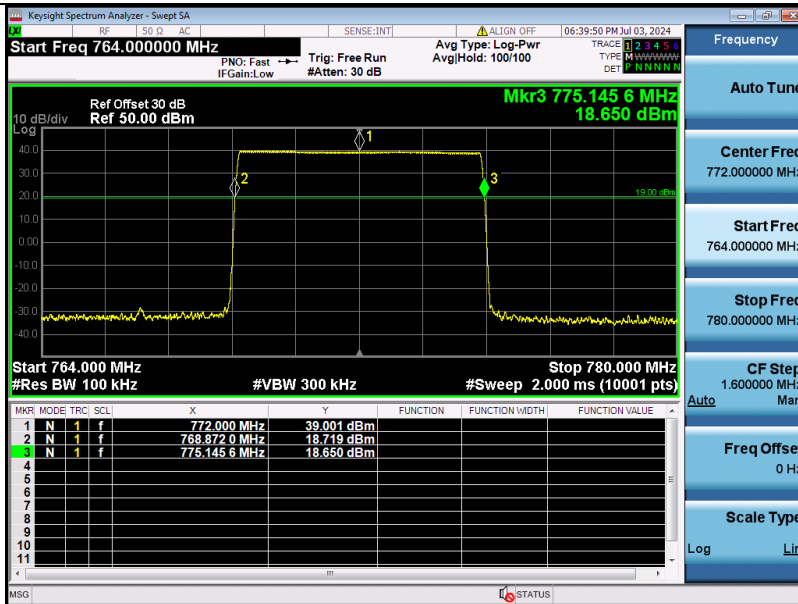


3dB Above AGC



7. Out of Band Rejection

Downlink:769MHz to 775MHz



8. Radiated Spurious Emissions

769MHz-775MHz-Low Channel					
Frequency	Spurious Emission Polarization and Level		Limit	Over Limit	Verdict
MHz	Polarization	dBm	dBm	dB	
52.19	Horizontal	-60.10	-13	-47.10	Pass
477.07	Horizontal	-54.98	-13	-41.98	Pass
784.69	Horizontal	-51.24	-13	-38.24	Pass
1216.45	Horizontal	-47.00	-13	-34.00	Pass
5681.16	Horizontal	-40.41	-13	-27.41	Pass
8986.24	Horizontal	-43.21	-13	-30.21	Pass
50.79	Vertical	-53.56	-13	-40.56	Pass
394.55	Vertical	-61.48	-13	-48.48	Pass
764.54	Vertical	-59.61	-13	-46.61	Pass
2905.54	Vertical	-42.03	-13	-29.03	Pass
4703.71	Vertical	-41.29	-13	-28.29	Pass
6670.62	Vertical	-46.69	-13	-33.69	Pass

769MHz-775MHz-Middle Channel					
Frequency	Spurious Emission Polarization and Level		Limit	Over Limit	Verdict
MHz	Polarization	dBm	dBm	dB	
94.24	Horizontal	-56.46	-13	-43.46	Pass
164.96	Horizontal	-59.73	-13	-46.73	Pass
826.35	Horizontal	-58.75	-13	-45.75	Pass
1409.03	Horizontal	-43.06	-13	-30.06	Pass
5486.34	Horizontal	-43.19	-13	-30.19	Pass
9907.54	Horizontal	-40.34	-13	-27.34	Pass
119.65	Vertical	-52.98	-13	-39.98	Pass
388.41	Vertical	-61.22	-13	-48.22	Pass
773.89	Vertical	-60.36	-13	-47.36	Pass
1159.81	Vertical	-35.50	-13	-22.50	Pass
5044.37	Vertical	-39.15	-13	-26.15	Pass
7487.42	Vertical	-46.10	-13	-33.10	Pass

769MHz-775MHz-High Channel					
Frequency	Spurious Emission Polarization and Level		Limit	Over Limit	Verdict
MHz	Polarization	dBm	dBm	dB	
74.19	Horizontal	-56.84	-13	-43.84	Pass
431.51	Horizontal	-53.75	-13	-40.75	Pass
644.03	Horizontal	-55.65	-13	-42.65	Pass
1763.52	Horizontal	-41.06	-13	-28.06	Pass
4707.26	Horizontal	-45.63	-13	-32.63	Pass
6554.95	Horizontal	-47.95	-13	-34.95	Pass
54.50	Vertical	-56.56	-13	-43.56	Pass
389.24	Vertical	-60.60	-13	-47.60	Pass
757.78	Vertical	-58.12	-13	-45.12	Pass
1204.05	Vertical	-39.84	-13	-26.84	Pass
5310.54	Vertical	-37.54	-13	-24.54	Pass
9179.75	Vertical	-36.48	-13	-23.48	Pass

1559MHz-1610MHz					
Channel	Spurious Emission Polarization and Level		Limit	Over Limit	Verdict
	Polarization	dBm	dBm	dB	
Low	Horizontal	-57.49	-50	-7.49	Pass
	Vertical	-58.38	-50	-8.38	Pass
Middle	Horizontal	-59.77	-50	-9.77	Pass
	Vertical	-57.02	-50	-7.02	Pass
High	Horizontal	-57.09	-50	-7.09	Pass
	Vertical	-58.93	-50	-8.93	Pass

8. Frequency Stability

Frequency Stability vs temperature:

Test for 769MHz to 775MHz (middle channel=772MHz)

Channel (MHz)	Temperature (°C)	Voltage (V ac)	Frequency Error (Hz)	Tolerance (ppm)	Limit (ppm)
Middle	55	120	50.11	0.0649	0.1
	50	120	44.31	0.0574	0.1
	40	120	29.45	0.0381	0.1
	30	120	32.07	0.0415	0.1
	20	120	48.40	0.0627	0.1
	10	120	44.40	0.0575	0.1
	0	120	53.22	0.0689	0.1
	-10	120	59.87	0.0776	0.1
	-20	120	40.20	0.0521	0.1
	-30	120	30.63	0.0397	0.1
	-40	120	42.85	0.0555	0.1

Frequency Stability vs voltage:

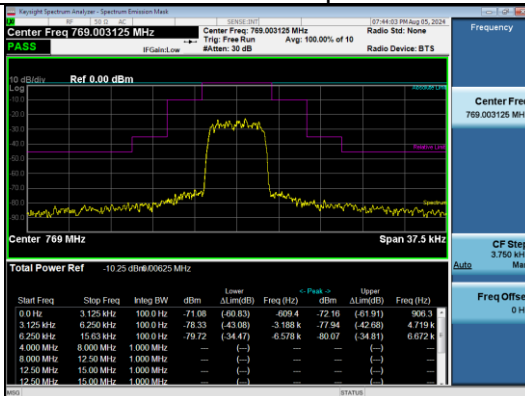
Channel Bandwidth (kHz)	Voltage (V ac)	Temperature (°C)	Frequency Error (Hz)	Tolerance (ppm)	Limit (ppm)
Middle	102	20	40.58	0.0526	0.1
	120	20	55.72	0.0722	0.1
	138	20	31.64	0.0410	0.1

9. Emissions mask

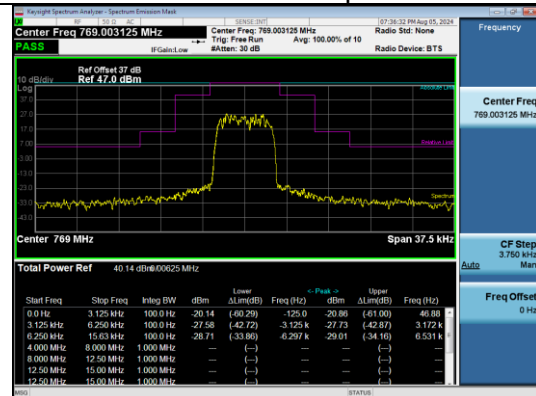
Channel Spacing (KHz)	Signal Level	Test Channel (MHz)	Signal Type	Result
6.25KHz	Pre-AGC	769.003125	Input	Pass
			Output	
	3dB Above AGC		Input	Pass
			Output	
	Pre-AGC	772	Output	Pass
			Input	
	3dB Above AGC		Output	Pass
			Output	
	Pre-AGC	774.996875	Input	Pass
			Output	
	3dB Above AGC		Output	Pass
			Input	
12.5KHz	Pre-AGC	769.00625	Output	Pass
			Output	
	3dB Above AGC		Input	Pass
			Output	
	Pre-AGC	772	Output	Pass
			Input	
	3dB Above AGC		Output	Pass
			Output	
	Pre-AGC	774.99375	Input	Pass
			Output	
	3dB Above AGC		Output	Pass
			Input	
25KHz	Pre-AGC	769.0125	Output	Pass
			Output	
	3dB Above AGC		Input	Pass
			Output	
	Pre-AGC	772	Output	Pass
			Input	
	3dB Above AGC		Output	Pass
			Output	
	Pre-AGC	774.9875	Input	Pass
			Output	
	3dB Above AGC		Output	Pass
			Input	

Channel Spacing: 6.25KHz Channel: 769.003125MHz

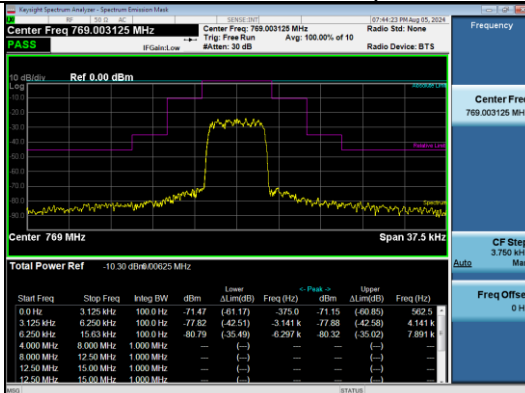
Pre-AGC-Input



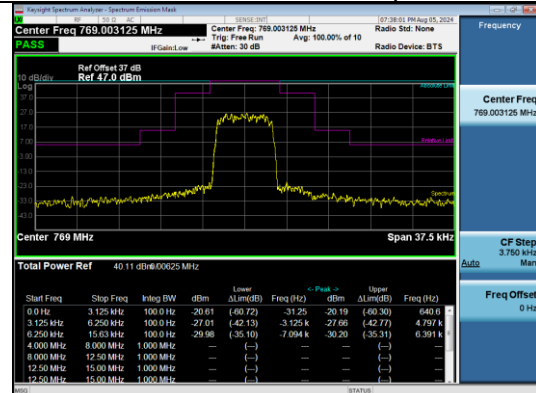
Pre-AGC-Output



3dB Above AGC-Input

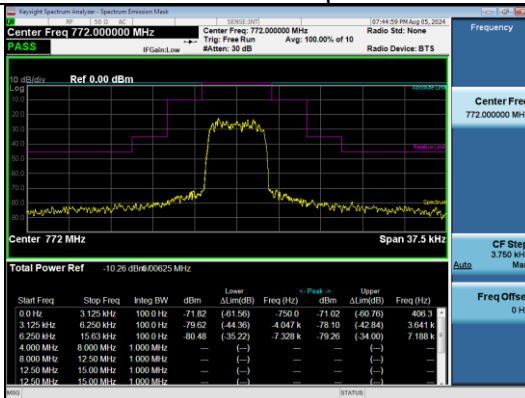


3dB Above AGC-Output

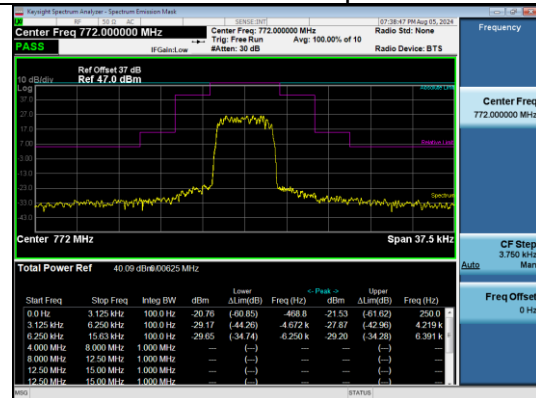


Channel Spacing: 6.25KHz Channel: 772MHz

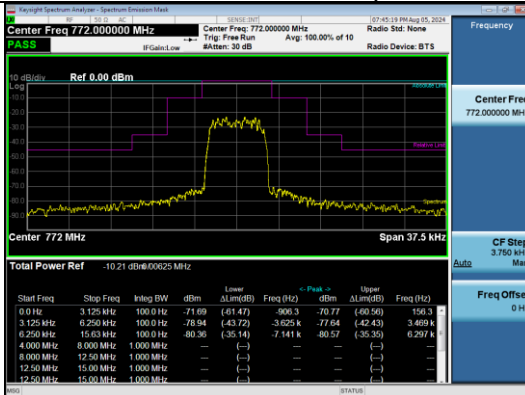
Pre-AGC-Input



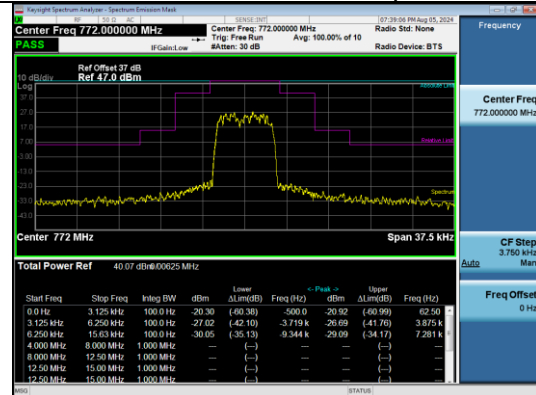
Pre-AGC-Output



3dB Above AGC-Input

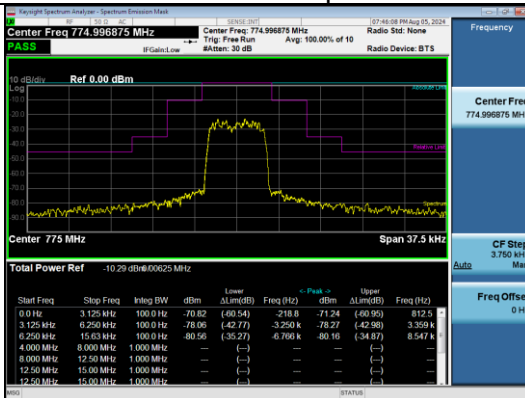


3dB Above AGC-Output

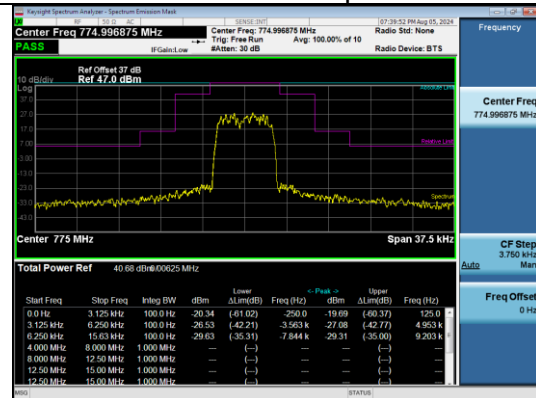


Channel Spacing: 6.25KHz Channel: 774.996875MHz

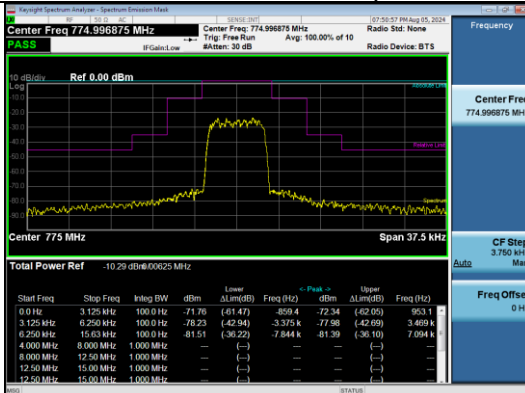
Pre-AGC-Input



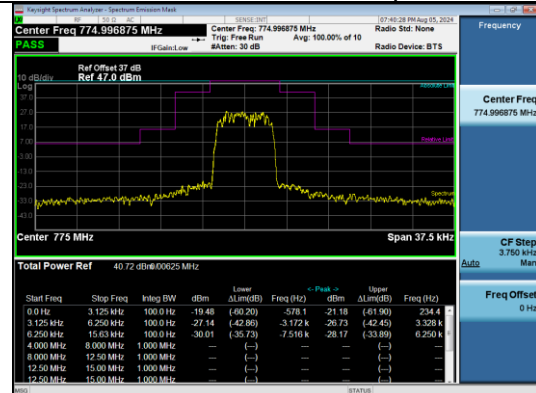
Pre-AGC-Output



3dB Above AGC-Input

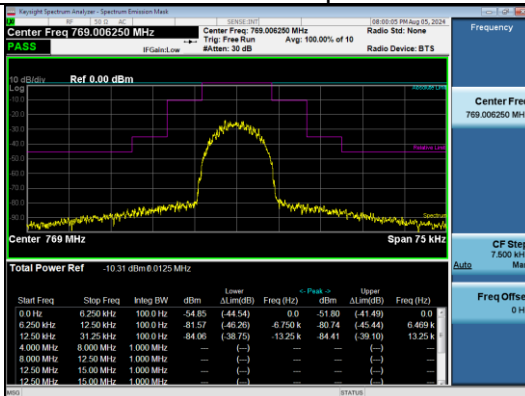


3dB Above AGC-Output

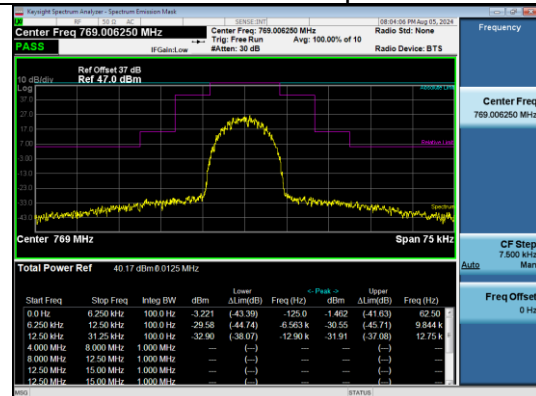


Channel Spacing: 12.5 KHz Channel: 769.00625 MHz

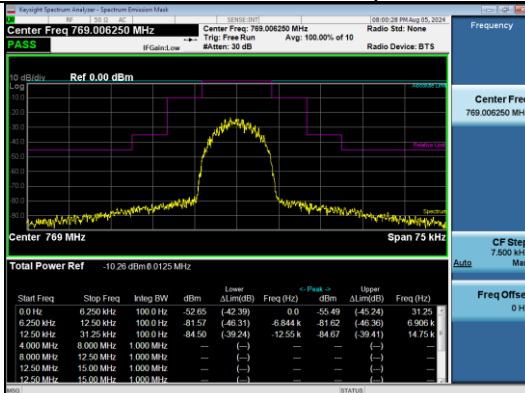
Pre-AGC-Input



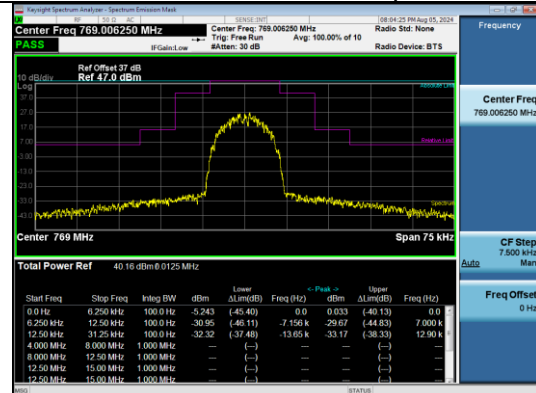
Pre-AGC-Output



3dB Above AGC-Input

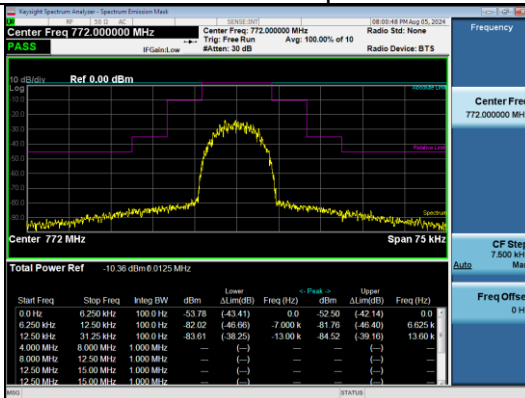


3dB Above AGC-Output



Channel Spacing: 12.5KHz Channel: 772MHz

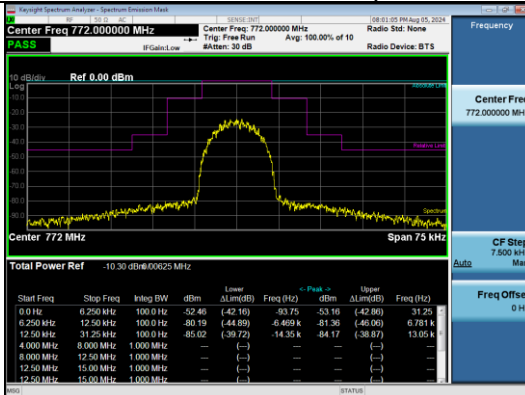
Pre-AGC-Input



Pre-AGC-Output



3dB Above AGC-Input

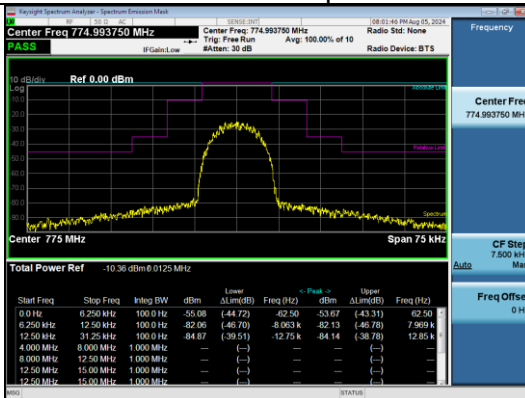


3dB Above AGC-Output



Channel Spacing: 12.5KHz Channel: 774.99375MHz

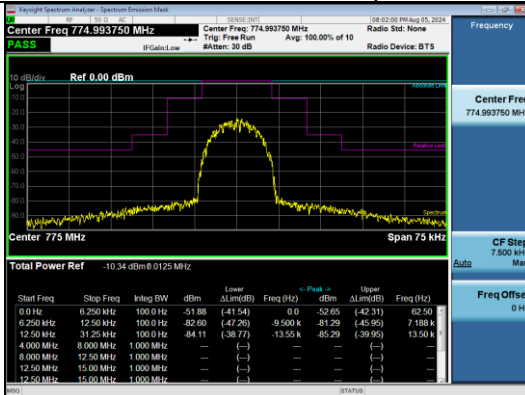
Pre-AGC-Input



Pre-AGC-Output



3dB Above AGC-Input

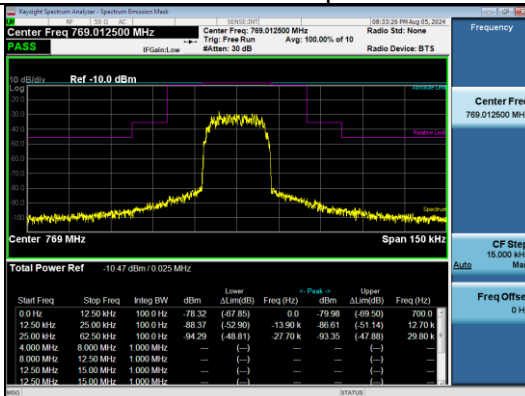


3dB Above AGC-Output

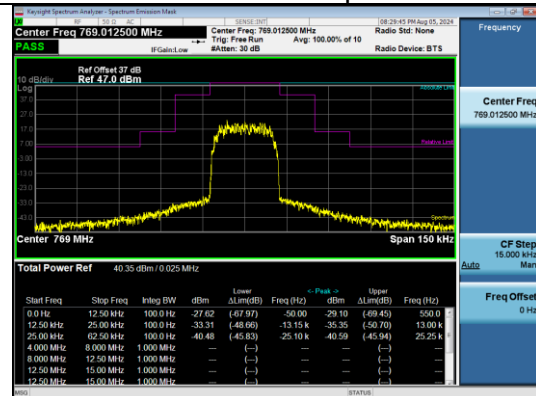


Channel Spacing: 25KHz Channel: 769.0125MHz

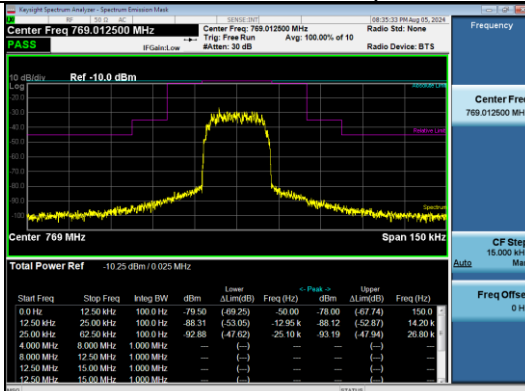
Pre-AGC-Input



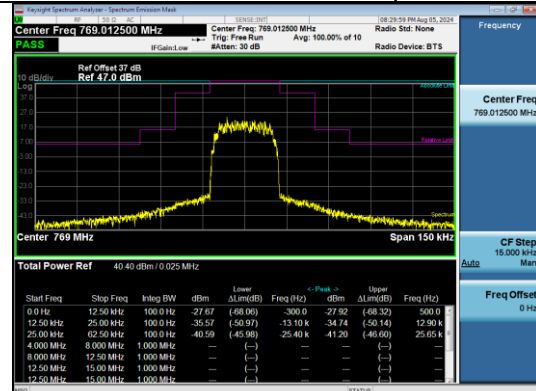
Pre-AGC-Output



3dB Above AGC-Input

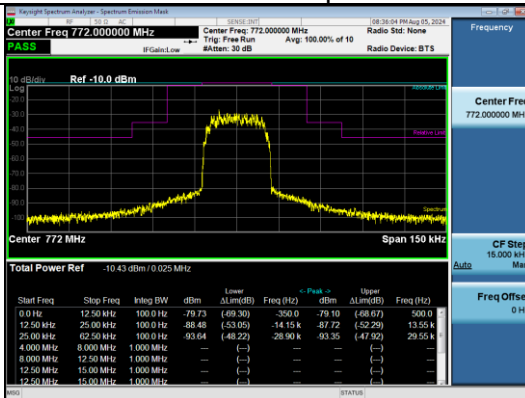


3dB Above AGC-Output

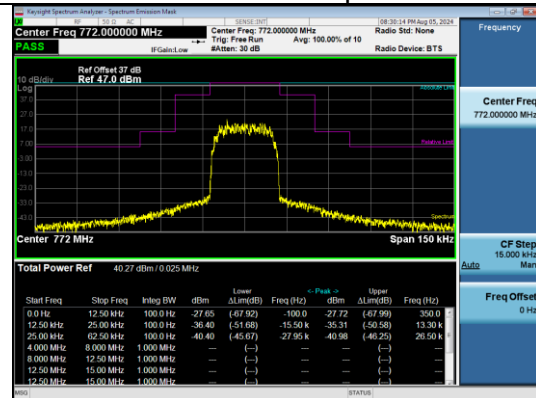


Channel Spacing: 25KHz Channel: 772MHz

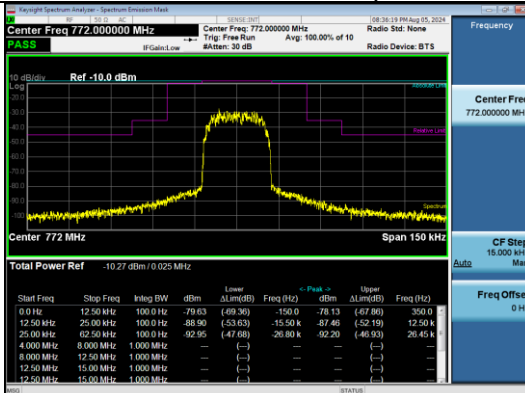
Pre-AGC-Input



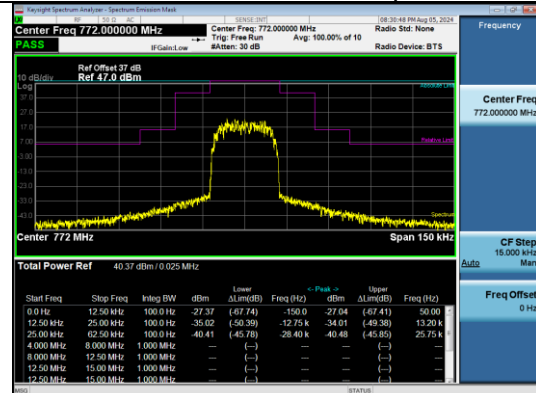
Pre-AGC-Output



3dB Above AGC-Input

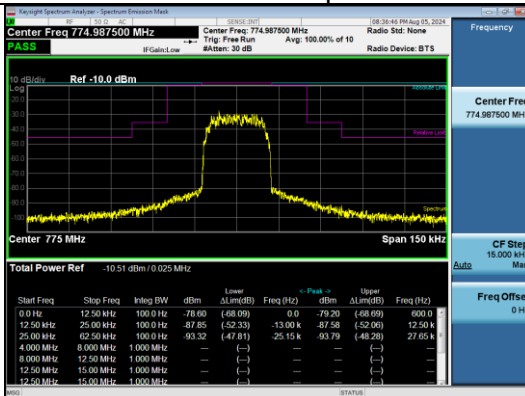


3dB Above AGC-Output

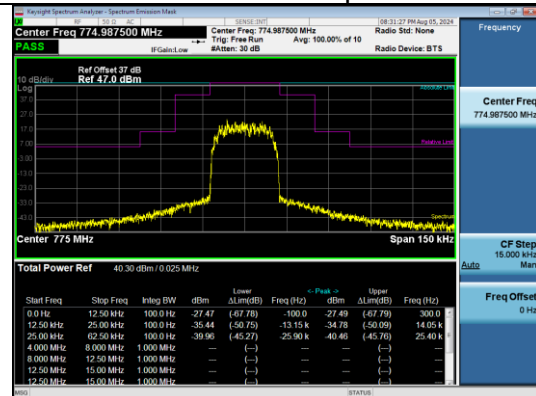


Channel Spacing: 25KHz Channel: 774.9875MHz

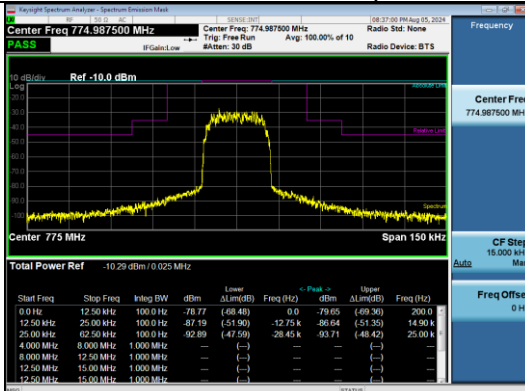
Pre-AGC-Input



Pre-AGC-Output



3dB Above AGC-Input



3dB Above AGC-Output

