

Appendix A for KSCR240500096901

1. AGC threshold

Signal Level	Modulation	Input Power (dBm)	Frequency (MHz)	RF output Power (dBm)	ERP (dBm)	PAR (dB)	Booster gain (dB)
AGC	AWGN (LTE, 5MHz)	-9.64	763.0	40.28	38.13	9.66	49.92
3dB Above AGC	AWGN (LTE, 5MHz)	-6.64	763.0	40.41	38.26	9.45	/

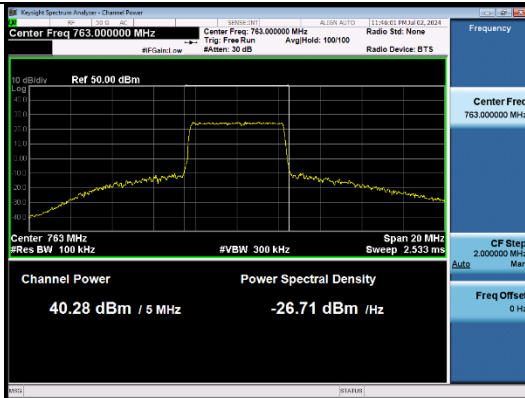
Remark:

The normal power is 40dBm and the measured output power which show in above table is within ± 2.0 dB tolerance.

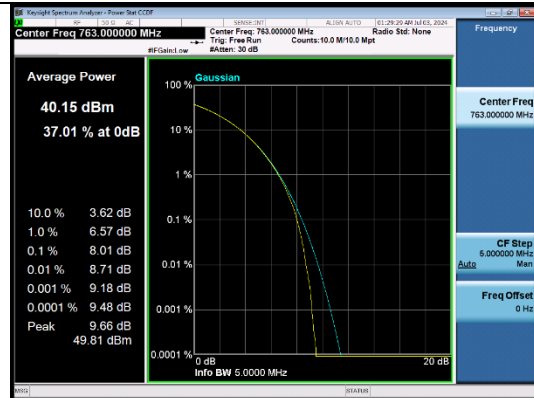
$ERP(dBm) = \text{Total Output Power}(dBm) + \text{Antenna Gain}(dBi) - 2.15dB$. Antenna Gain is 0.0dBi

5MHz

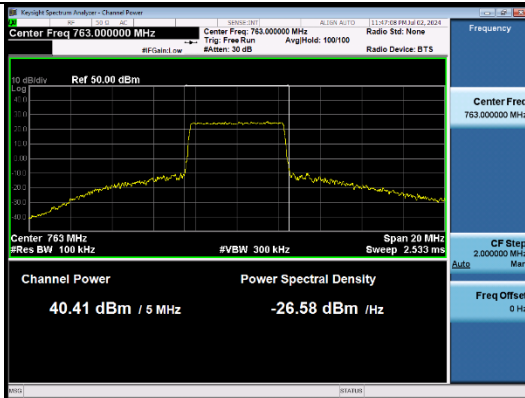
AGC-Power



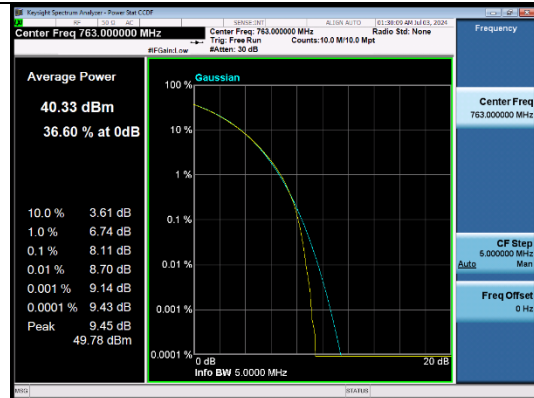
AGC-PAR



3dB Above AGC-Power

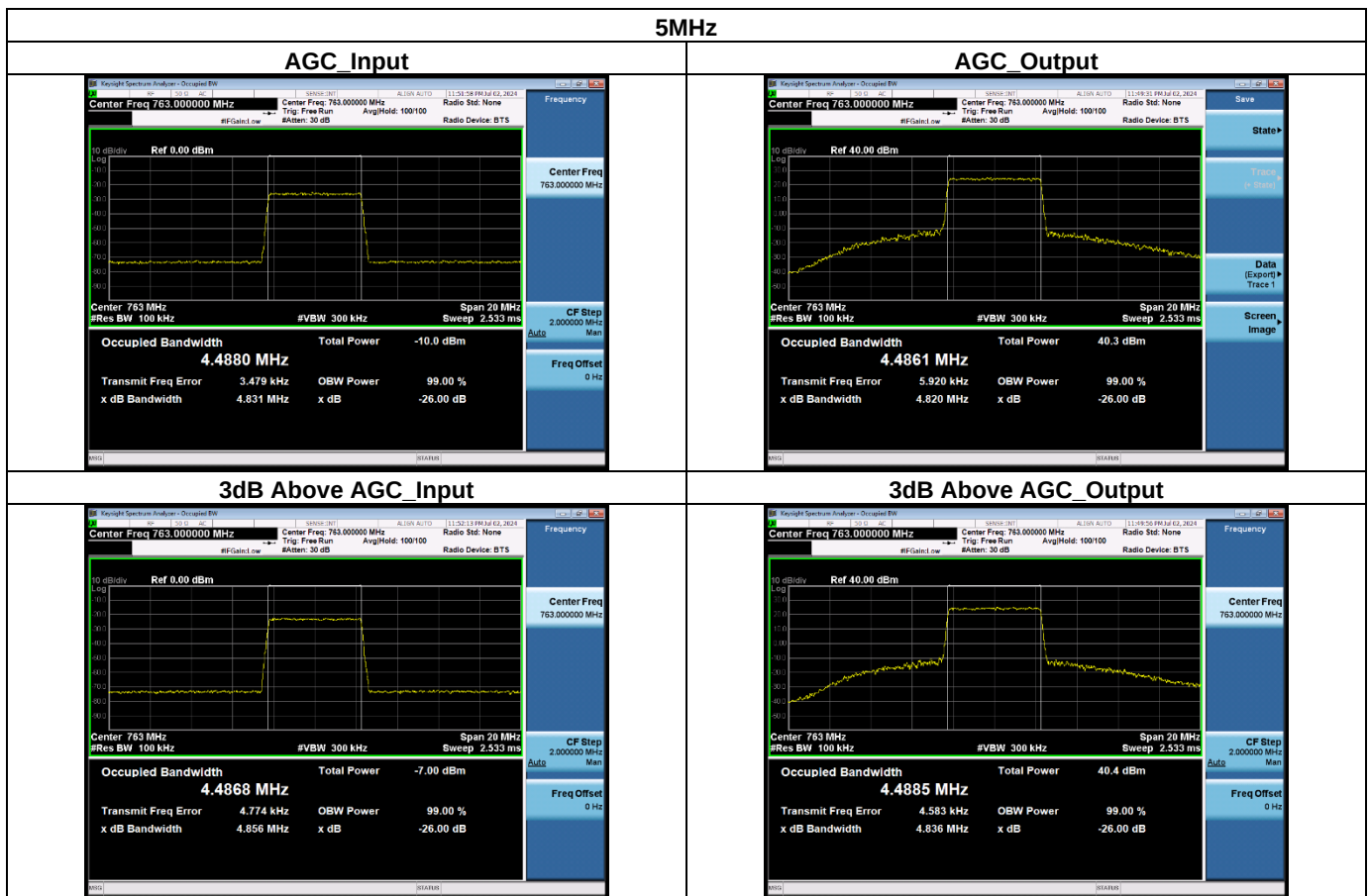


3dB Above AGC-PAR



2. Occupied bandwidth

Channel Spacing (MHz)	Test Frequency F0(MHz)	Signal Level	Signal Type	99%Occupied Channel Bandwidth (MHz)
5MHz	763.000	Pre-AGC	Input	4.4880
	763.000		Output	4.4861
	763.000	3dB Above AGC	Input	4.4868
	763.000		Output	4.4885



3 Output power at RF antenna connector

Signal Level	Modulation	Frequency (MHz)	RF output Power (dBm)	ERP (dBm)	PAR (dB)
AGC	AWGN (LTE, 5MHz)	763.0	40.28	38.13	9.66
3dB Above AGC	AWGN (LTE, 5MHz)	763.0	40.41	38.26	9.45

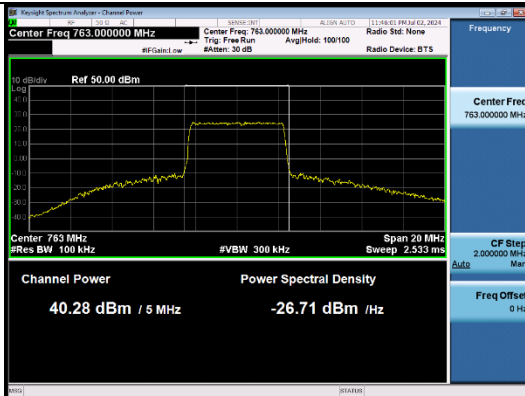
Remark:

- The normal power is 40dBm and the measured output power which show in above table is within ± 2.0 dB tolerance.

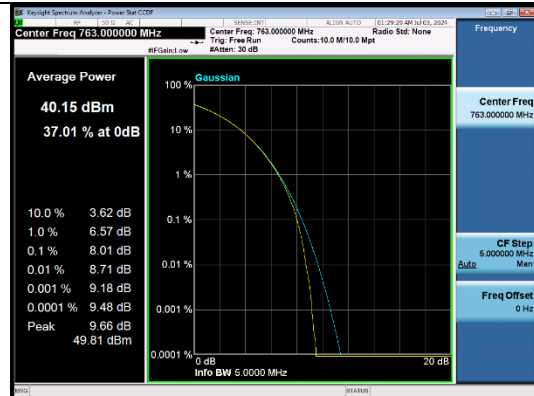
ERP(dBm)=Total Output Power(dBm)+Antenna Gain(dBi)-2.15dB.Antenna Gain is 0.0dBi

5MHz

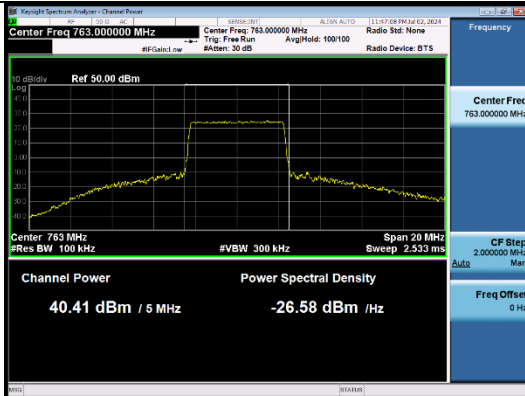
AGC-Power



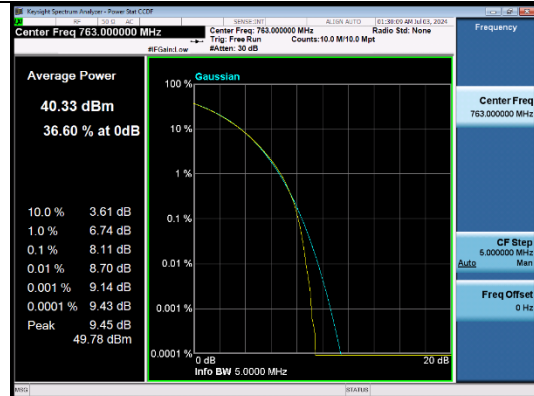
AGC-PAR



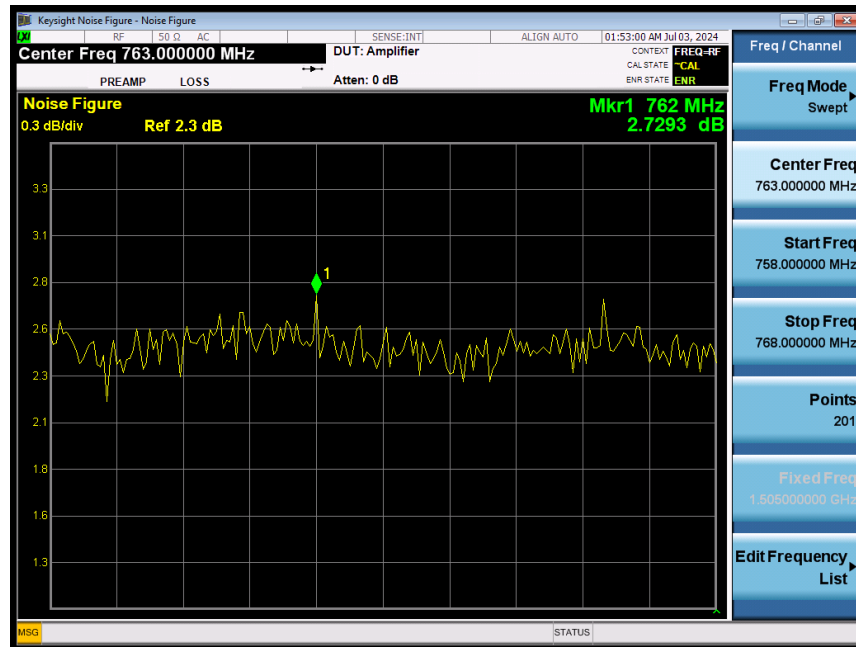
3dB Above AGC-Power



3dB Above AGC-PAR



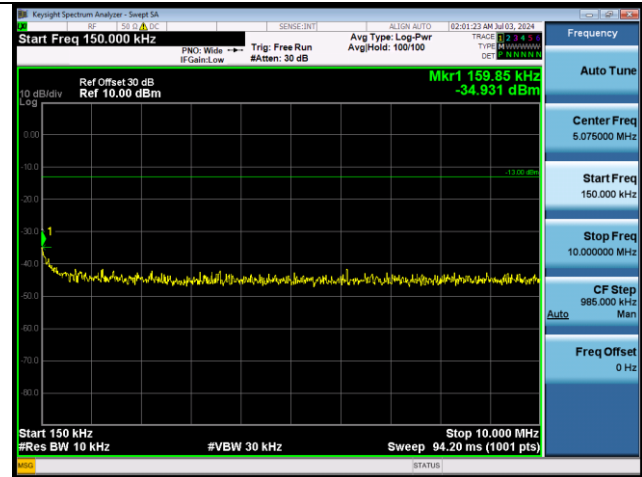
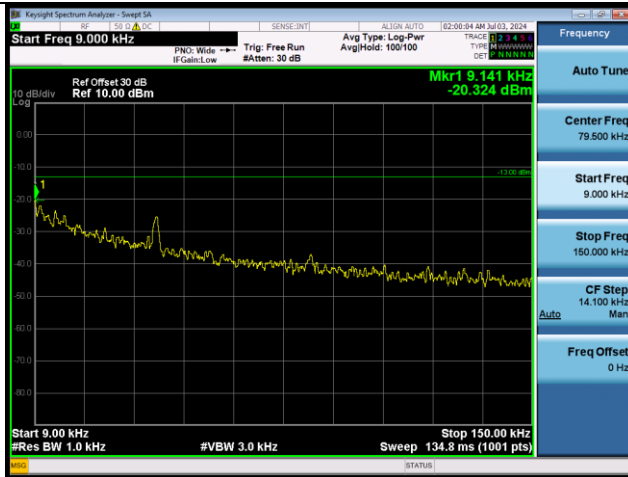
4. Noise Figure



5. Spurious emissions at RF antenna connector

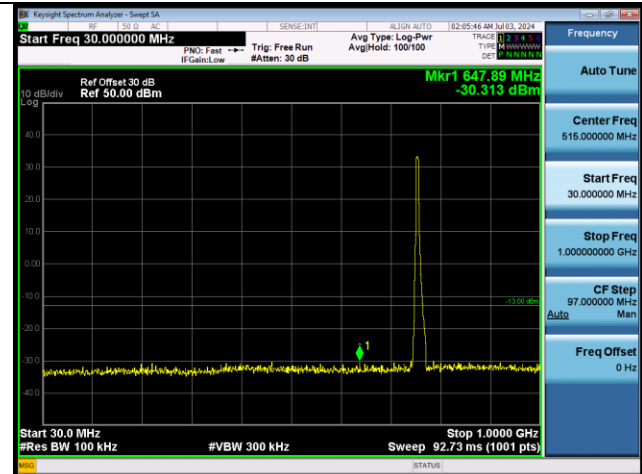
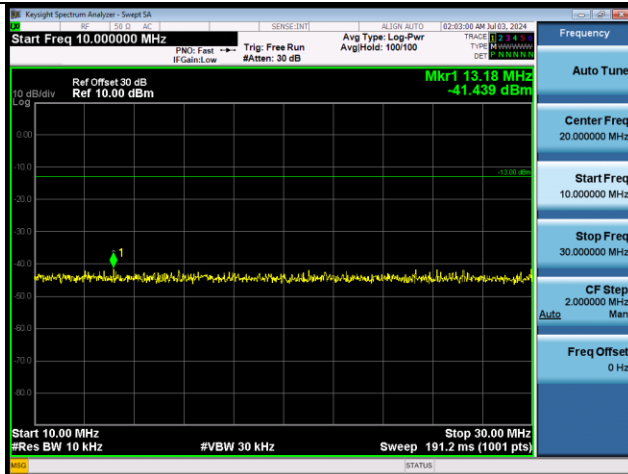
Channel	Frequency Range (MHz)	Worst Test Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
LCH	0.009~0.15	-20.32	-13.00	-7.32	Pass
	0.15~10	-34.93	-13.00	-21.93	Pass
	10~30	-41.44	-13.00	-28.44	Pass
	30~1000	-30.31	-13.00	-17.31	Pass
	1000~10000	-23.51	-13.00	-10.51	Pass
MCH	0.009~0.15	-22.03	-13.00	-9.03	Pass
	0.15~10	-34.52	-13.00	-21.52	Pass
	10~30	-41.51	-13.00	-28.51	Pass
	30~1000	-29.17	-13.00	-16.17	Pass
	1000~10000	-23.42	-13.00	-10.42	Pass
HCH	0.009~0.15	-22.09	-13.00	-9.09	Pass
	0.15~10	-35.55	-13.00	-22.55	Pass
	10 - 30	-41.61	-13.00	-28.61	Pass
	30 - 1000	-29.61	-13.00	-16.61	Pass
	1000 - 10000	-23.37	-13.00	-10.37	Pass

LCH



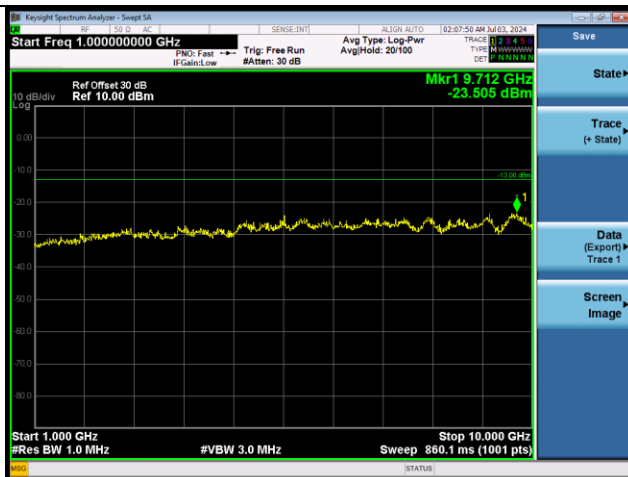
9KHz-150KHz

15KHz-10MHz



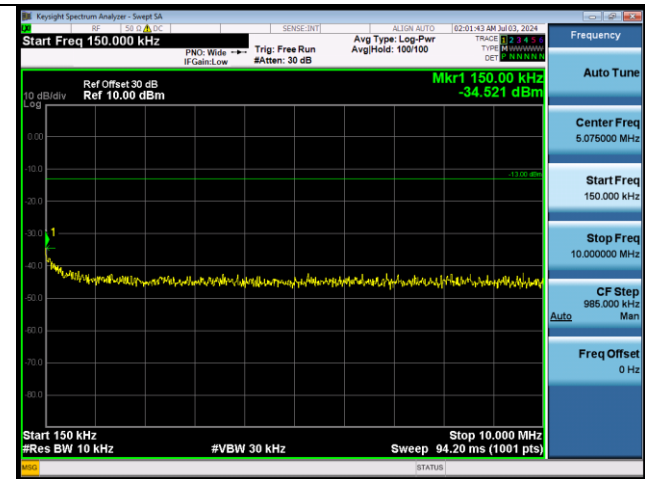
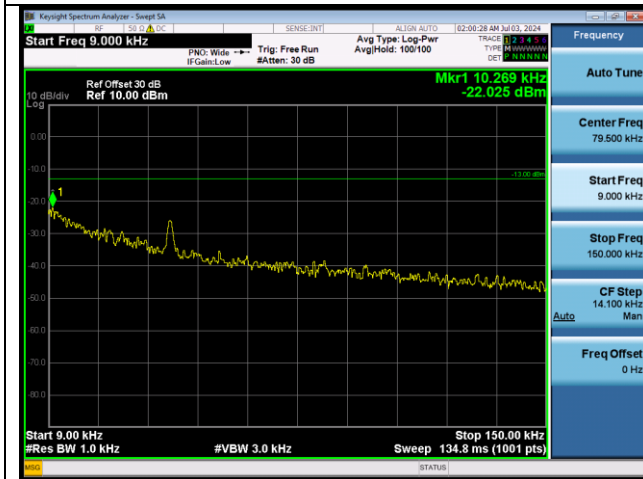
10MHz-30MHz

30MHz-1000MHz

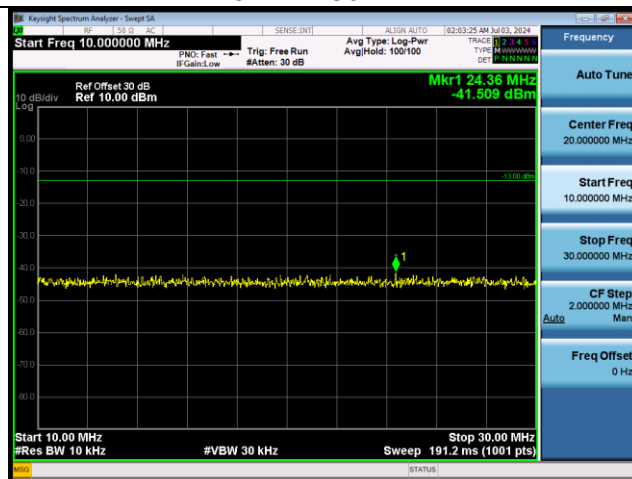


1000MHz-6000MHz

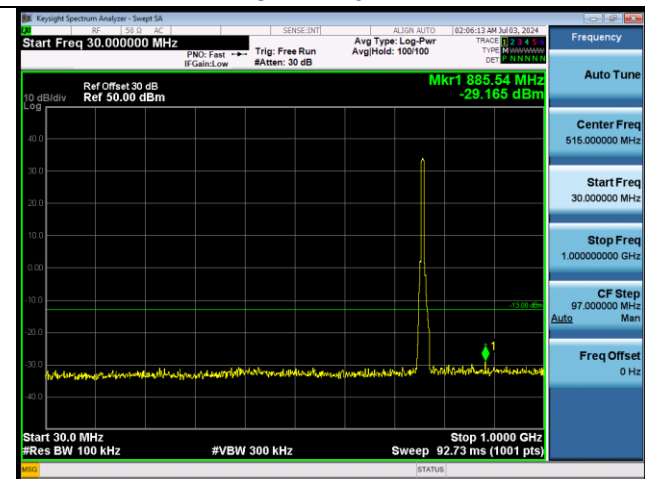
MCH



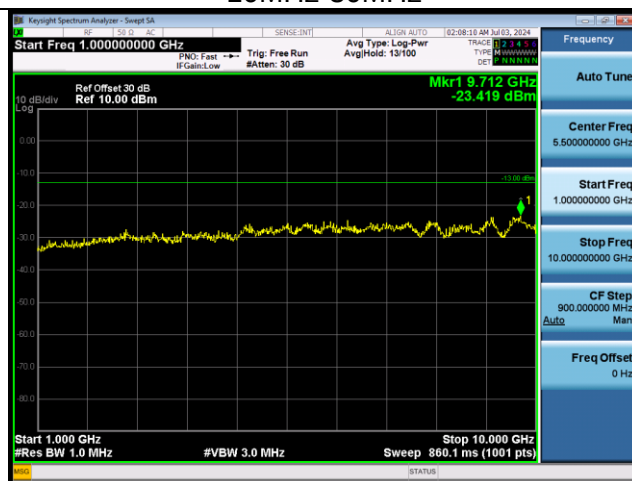
9KHz-150KHz



15KHz-10MHz



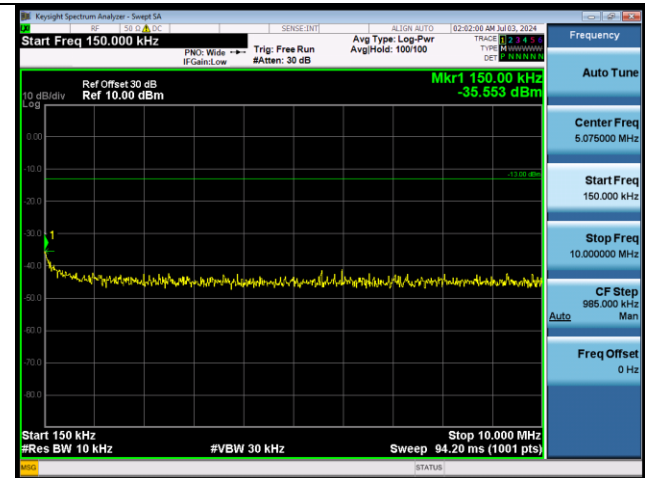
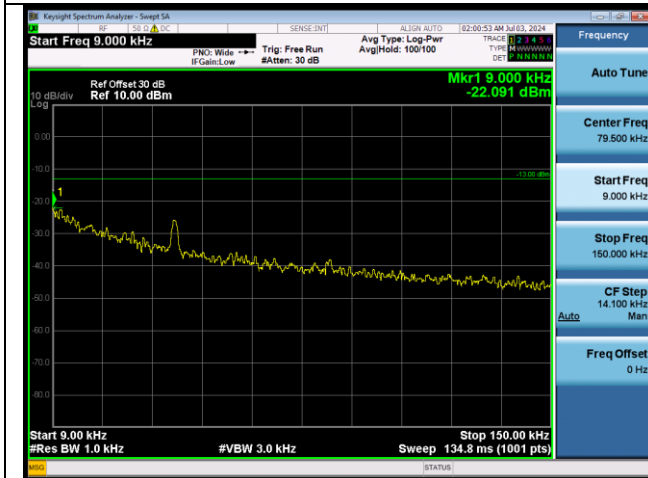
10MHz-30MHz



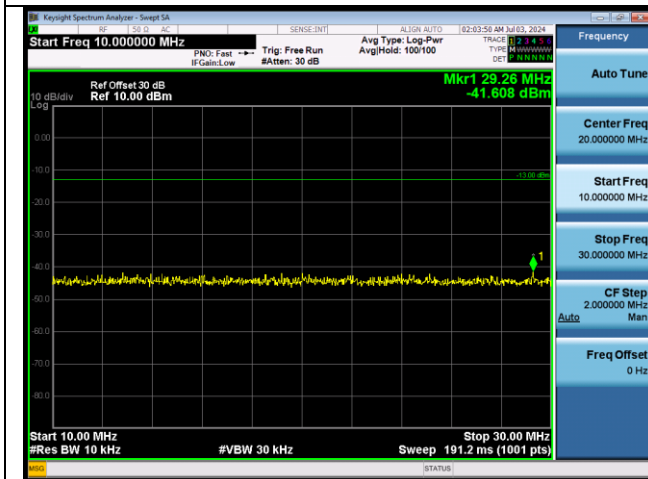
30MHz-1000MHz

1000MHz-6000MHz

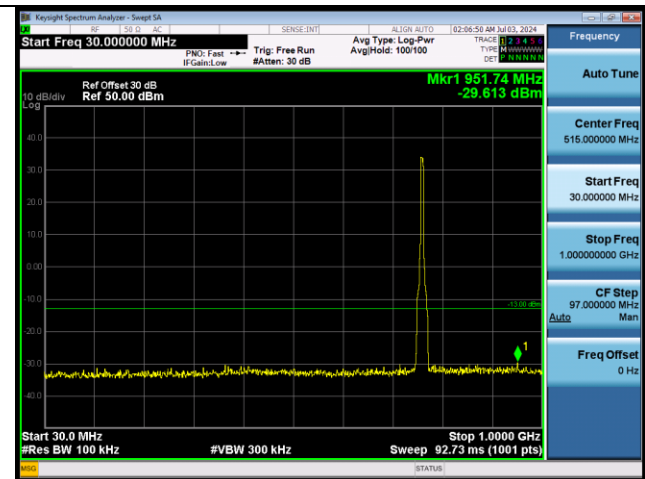
HCH



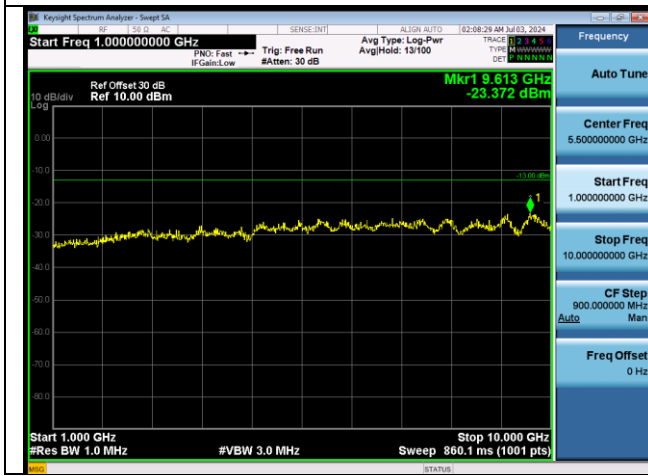
9KHz-150KHz



150KHz-10MHz



10MHz-30MHz



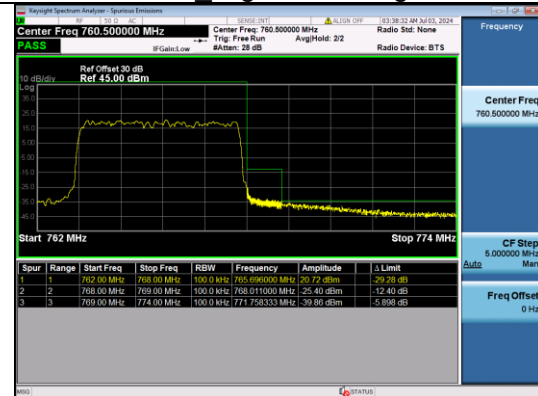
30MHz-1000MHz



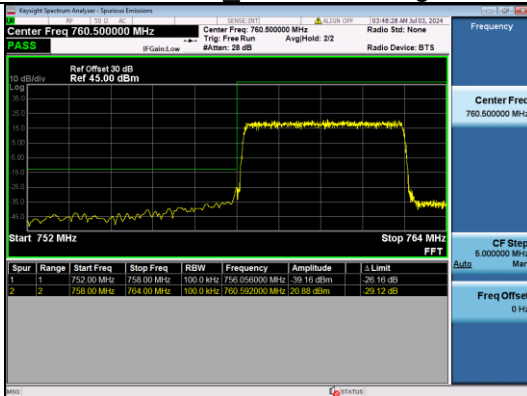
AGC Low Band Edge



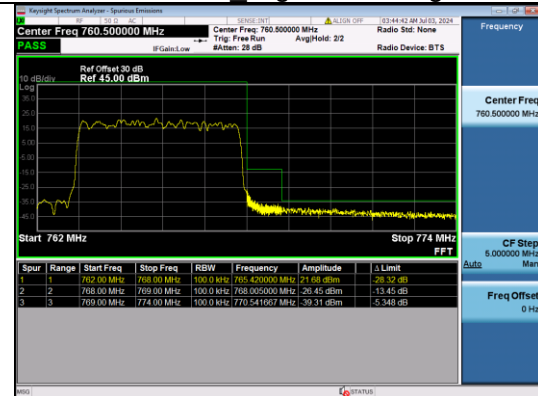
AGC High Band Edge



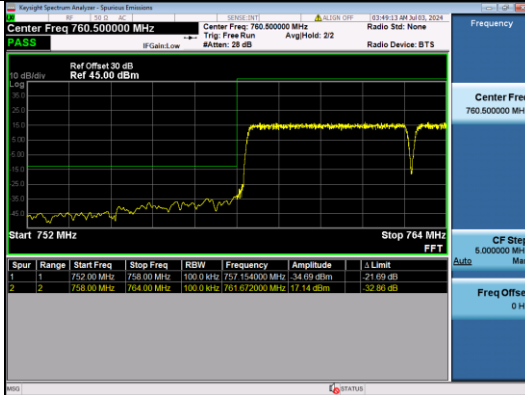
3dB+AGC Low Band Edge



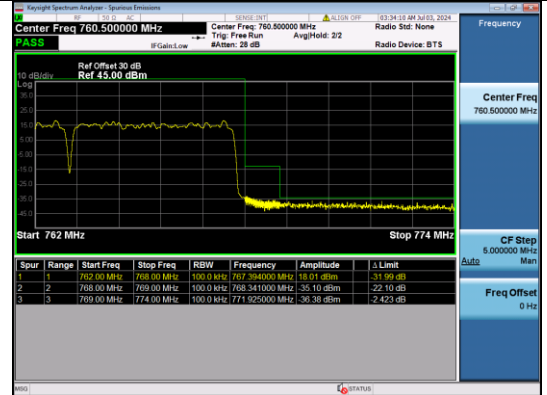
3dB+AGC High Band Edge



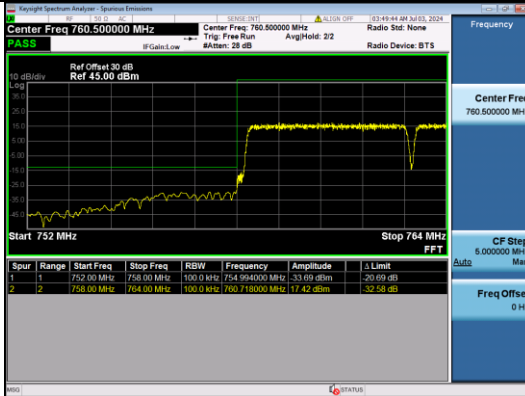
AGC Low Band Edge



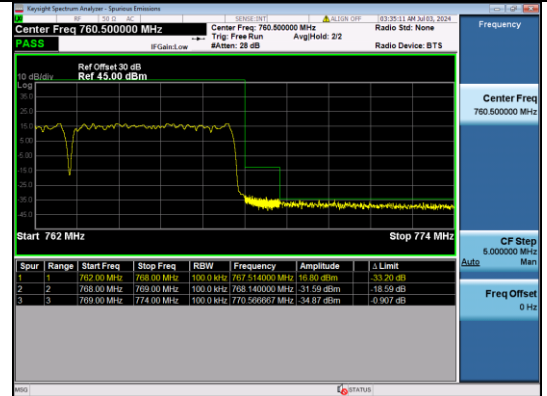
AGC High Band Edge



3dB+AGC Low Band Edge

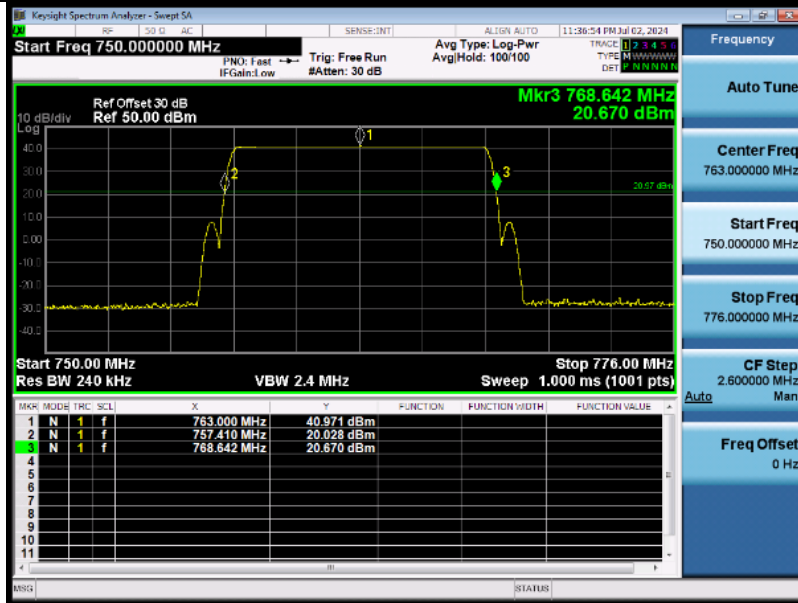


3dB+AGC High Band Edge



6. Out of Band Rejection

Downlink:758MHz to 768MHz



7. Radiated Spurious Emissions

758MHz-768MHz-Low Channel					
Frequency	Spurious Emission Polarization and Level		Limit	Over Limit	Verdict
MHz	Polarization	dBm	dBm	dB	
129.42	Horizontal	-61.71	-13	-48.71	Pass
447.95	Horizontal	-58.20	-13	-45.20	Pass
624.62	Horizontal	-52.42	-13	-39.42	Pass
3091.72	Horizontal	-39.71	-13	-26.71	Pass
4982.18	Horizontal	-42.55	-13	-29.55	Pass
9709.45	Horizontal	-44.50	-13	-31.50	Pass
126.74	Vertical	-59.42	-13	-46.42	Pass
329.65	Vertical	-61.65	-13	-48.65	Pass
894.09	Vertical	-61.11	-13	-48.11	Pass
2566.42	Vertical	-45.51	-13	-32.51	Pass
4266.38	Vertical	-45.64	-13	-32.64	Pass
8144.48	Vertical	-34.23	-13	-21.23	Pass

758MHz-768MHz-Middle Channel					
Frequency	Spurious Emission Polarization and Level		Limit	Over Limit	Verdict
MHz	Polarization	dBm	dBm	dB	
148.69	Horizontal	-54.24	-13	-41.24	Pass
220.88	Horizontal	-61.19	-13	-48.19	Pass
931.91	Horizontal	-55.05	-13	-42.05	Pass
2379.78	Horizontal	-38.98	-13	-25.98	Pass
4148.79	Horizontal	-43.46	-13	-30.46	Pass
8024.77	Horizontal	-43.83	-13	-30.83	Pass
82.57	Vertical	-54.32	-13	-41.32	Pass
522.08	Vertical	-50.69	-13	-37.69	Pass
658.93	Vertical	-60.56	-13	-47.56	Pass
1139.59	Vertical	-43.09	-13	-30.09	Pass
4762.24	Vertical	-46.52	-13	-33.52	Pass
7160.86	Vertical	-44.68	-13	-31.68	Pass

758MHz-768MHz-High Channel					
Frequency	Spurious Emission Polarization and Level		Limit	Over Limit	Verdict
MHz	Polarization	dBm	dBm	dB	
139.23	Horizontal	-54.82	-13	-41.82	Pass
377.59	Horizontal	-56.25	-13	-43.25	Pass
950.31	Horizontal	-53.31	-13	-40.31	Pass
2251.60	Horizontal	-35.88	-13	-22.88	Pass
3772.49	Horizontal	-39.43	-13	-26.43	Pass
7725.82	Horizontal	-47.87	-13	-34.87	Pass
83.38	Vertical	-58.09	-13	-45.09	Pass
536.18	Vertical	-61.34	-13	-48.34	Pass
702.45	Vertical	-56.24	-13	-43.24	Pass
3075.29	Vertical	-35.15	-13	-22.15	Pass
5859.96	Vertical	-35.35	-13	-22.35	Pass
7542.87	Vertical	-40.37	-13	-27.37	Pass

1559MHz-1610MHz					
Channel	Spurious Emission Polarization and Level		Limit	Over Limit	Verdict
	Polarization	dBm	dBm	dB	
Low	Horizontal	-56.68	-50	-6.68	Pass
	Vertical	-59.18	-50	-9.18	Pass
Middle	Horizontal	-59.42	-50	-9.42	Pass
	Vertical	-56.91	-50	-6.91	Pass
High	Horizontal	-58.76	-50	-8.76	Pass
	Vertical	-59.79	-50	-9.79	Pass

8. Frequency Stability

Frequency Stability vs temperature:

Test for 758MHz to 768MHz (middle channel=763MHz)

Channel (MHz)	Temperature (°C)	Voltage (V ac)	Frequency Error (Hz)	Tolerance (ppm)	Limit (ppm)
Middle	55	120	48.08	0.0630	0.1
	50	120	42.08	0.0552	0.1
	40	120	27.98	0.0367	0.1
	30	120	30.73	0.0403	0.1
	20	120	47.95	0.0628	0.1
	10	120	39.70	0.0520	0.1
	0	120	49.70	0.0651	0.1
	-10	120	58.82	0.0771	0.1
	-20	120	40.61	0.0532	0.1
	-30	120	28.54	0.0374	0.1
	-40	120	43.15	0.0566	0.1

Frequency Stability vs voltage:

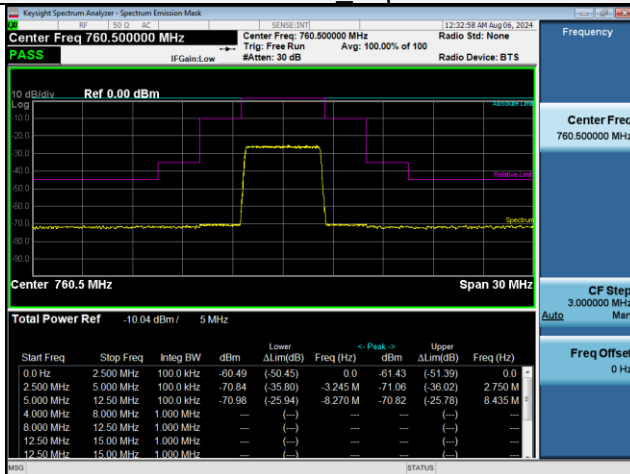
Channel Bandwidth (kHz)	Voltage (V ac)	Temperature (°C)	Frequency Error (Hz)	Tolerance (ppm)	Limit (ppm)
Middle	102	20	32.79	0.0430	0.1
	120	20	47.81	0.0627	0.1
	138	20	30.63	0.0401	0.1

9. Emissions mask

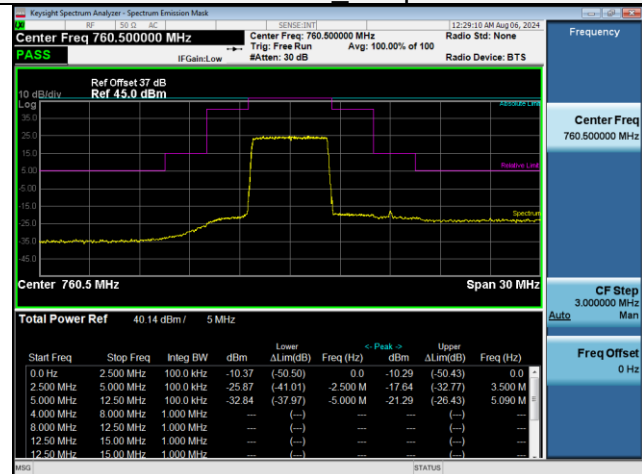
Channel Spacing (kHz)	Signal Level	Test Channel	Signal Type	Result
LTE 5MHz	Pre-AGC	760.5MHz	Input	Pass
			Output	Pass
	3dB Above AGC	760.5MHz	Input	Pass
			Output	Pass
	Pre-AGC	763MHz	Input	Pass
			Output	Pass
	3dB Above AGC	763MHz	Input	Pass
			Output	Pass
	Pre-AGC	765.5MHz	Input	Pass
			Output	Pass
	3dB Above AGC	765.5MHz	Input	Pass
			Output	Pass

LTE 5MHz Low Channel

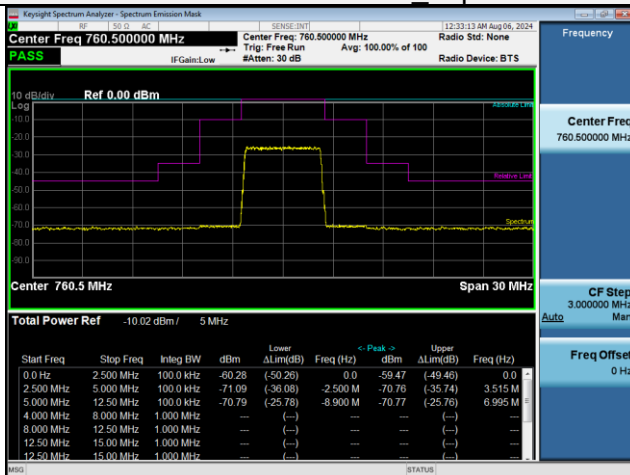
Pre-AGC Input



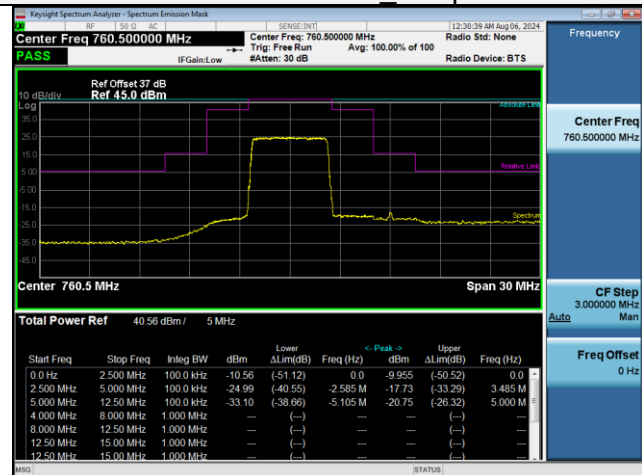
Pre-AGC Output



3dB Above Pre-AGC Input

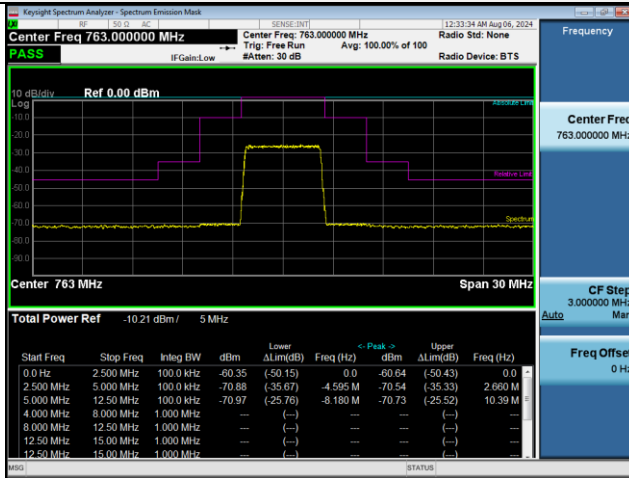


3dB Above AGC Output

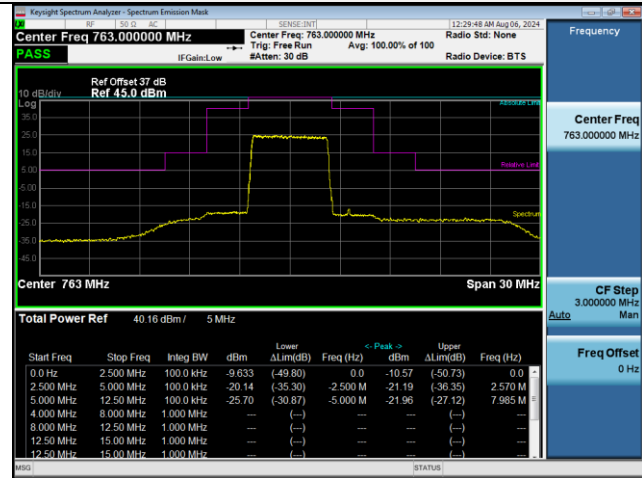


LTE_5MHz_Middle Channel

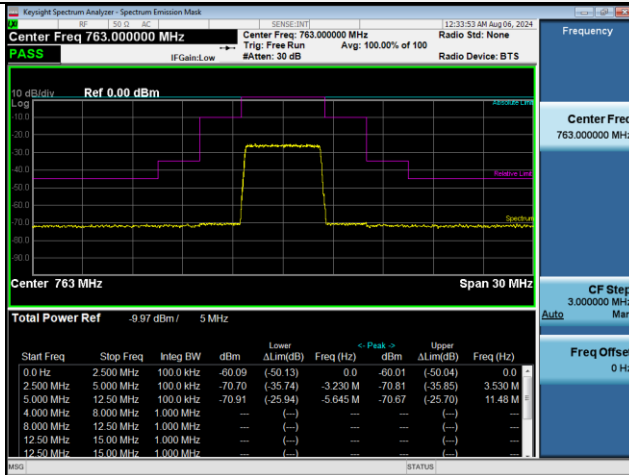
Pre-AGC_Input



Pre-AGC_Output



3dB Above Pre-AGC_Input

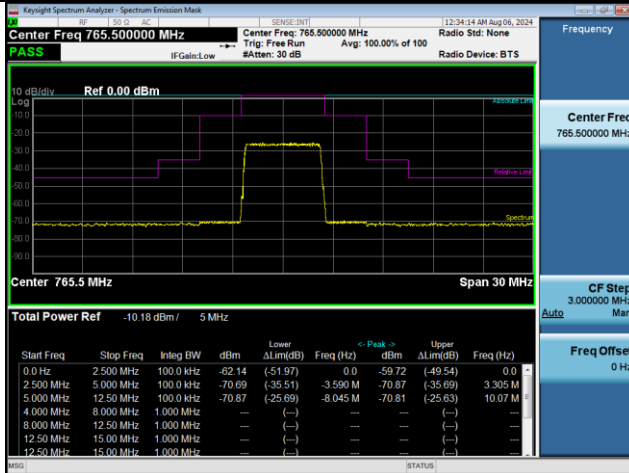


3dB Above AGC_Output



LTE_5MHz_High Channel

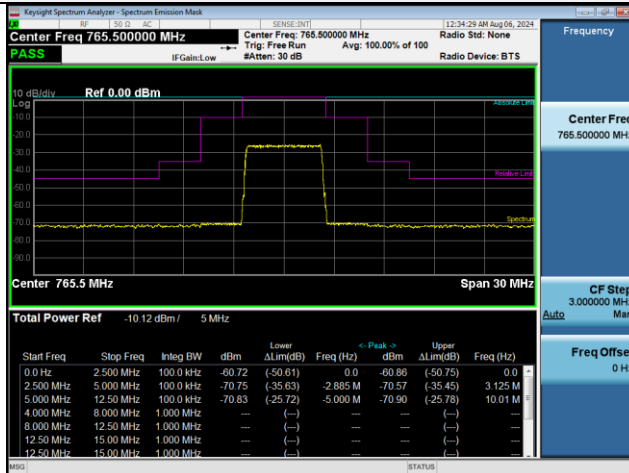
Pre-AGC_ Input



Pre-AGC_ Output



3dB Above Pre-AGC_ Input



3dB Above AGC_ Output

