Appendix-A LTE Band 13

Effective (Isotropic) Radiated Power Output Data

Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result (dBm)	ERP (dBm)	Limit (dBm)	Verdict
Band13	5MHz	QPSK	23205	1RB#0	23.19	20.34	44.77	PASS
Band13	5MHz	QPSK	23205	1RB#12	23.06	20.21	44.77	PASS
Band13	5MHz	QPSK	23205	1RB#24	23.02	20.17	44.77	PASS
Band13	5MHz	QPSK	23205	25RB#0	22.15	19.3	44.77	PASS
Band13	5MHz	QPSK	23230	1RB#0	22.3	19.45	44.77	PASS
Band13	5MHz	QPSK	23230	1RB#12	22.5	19.65	44.77	PASS
Band13	5MHz	QPSK	23230	1RB#24	22.31	19.46	44.77	PASS
Band13	5MHz	QPSK	23230	25RB#0	21.13	18.28	44.77	PASS
Band13	5MHz	QPSK	23255	1RB#0	21.39	18.54	44.77	PASS
Band13	5MHz	QPSK	23255	1RB#12	21.54	18.69	44.77	PASS
Band13	5MHz	QPSK	23255	1RB#24	21.43	18.58	44.77	PASS
Band13	5MHz	QPSK	23255	25RB#0	20.09	17.24	44.77	PASS
Band13	5MHz	16QAM	23205	1RB#0	23.06	20.21	44.77	PASS
Band13	5MHz	16QAM	23205	1RB#12	23.06	20.21	44.77	PASS
Band13	5MHz	16QAM	23205	1RB#24	23.05	20.2	44.77	PASS
Band13	5MHz	16QAM	23205	25RB#0	22.19	19.34	44.77	PASS
Band13	5MHz	16QAM	23230	1RB#0	22.43	19.58	44.77	PASS
Band13	5MHz	16QAM	23230	1RB#12	22.41	19.56	44.77	PASS
Band13	5MHz	16QAM	23230	1RB#24	22.3	19.45	44.77	PASS
Band13	5MHz	16QAM	23230	25RB#0	21.17	18.32	44.77	PASS
Band13	5MHz	16QAM	23255	1RB#0	21.24	18.39	44.77	PASS
Band13	5MHz	16QAM	23255	1RB#12	21.36	18.51	44.77	PASS
Band13	5MHz	16QAM	23255	1RB#24	21.25	18.4	44.77	PASS
Band13	5MHz	16QAM	23255	25RB#0	20.15	17.3	44.77	PASS
Band13	5MHz	64QAM	23205	1RB#0	23.25	20.4	44.77	PASS
Band13	5MHz	64QAM	23205	1RB#12	22.99	20.14	44.77	PASS
Band13	5MHz	64QAM	23205	1RB#24	23.1	20.25	44.77	PASS
Band13	5MHz	64QAM	23205	25RB#0	22.11	19.26	44.77	PASS
Band13	5MHz	64QAM	23230	1RB#0	22.41	19.56	44.77	PASS
Band13	5MHz	64QAM	23230	1RB#12	22.06	19.21	44.77	PASS
Band13	5MHz	64QAM	23230	1RB#24	22.57	19.72	44.77	PASS
Band13	5MHz	64QAM	23230	25RB#0	21.13	18.28	44.77	PASS
Band13	5MHz	64QAM	23255	1RB#0	21.47	18.62	44.77	PASS
Band13	5MHz	64QAM	23255	1RB#12	21.01	18.16	44.77	PASS
Band13	5MHz	64QAM	23255	1RB#24	21.34	18.49	44.77	PASS
Band13	5MHz	64QAM	23255	25RB#0	20.16	17.31	44.77	PASS

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Band13	10MHz	QPSK	23230	1RB#0	23.25	20.4	44.77	PASS
Band13	10MHz	QPSK	23230	1RB#24	23.14	20.29	44.77	PASS
Band13	10MHz	QPSK	23230	1RB#49	23.03	20.18	44.77	PASS
Band13	10MHz	QPSK	23230	50RB#0	22.12	19.27	44.77	PASS
Band13	10MHz	16QAM	23230	1RB#0	22.62	19.77	44.77	PASS
Band13	10MHz	16QAM	23230	1RB#24	22.29	19.44	44.77	PASS
Band13	10MHz	16QAM	23230	1RB#49	22.54	19.69	44.77	PASS
Band13	10MHz	16QAM	23230	50RB#0	21.15	18.3	44.77	PASS
Band13	10MHz	64QAM	23230	1RB#0	21.42	18.57	44.77	PASS
Band13	10MHz	64QAM	23230	1RB#24	21.4	18.55	44.77	PASS
Band13	10MHz	64QAM	23230	1RB#49	21	18.15	44.77	PASS
Band13	10MHz	64QAM	23230	50RB#0	20.09	17.24	44.77	PASS

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Peak-to-Average Ratio(CCDF)

Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result (dB)	Limit (dB)	Verdict
Band13	5MHz	QPSK	23205	25RB#0	5.24	13	PASS
Band13	5MHz	QPSK	23230	25RB#0	5.13	13	PASS
Band13	5MHz	QPSK	23255	25RB#0	5.26	13	PASS
Band13	5MHz	64QAM	23205	25RB#0	6.32	13	PASS
Band13	5MHz	64QAM	23230	25RB#0	6.30	13	PASS
Band13	5MHz	64QAM	23255	25RB#0	6.42	13	PASS
Band13	5MHz	16QAM	23205	25RB#0	5.85	13	PASS
Band13	5MHz	16QAM	23230	25RB#0	5.81	13	PASS
Band13	5MHz	16QAM	23255	25RB#0	5.93	13	PASS
Band13	10MHz	QPSK	23230	50RB#0	5.18	13	PASS
Band13	10MHz	64QAM	23230	50RB#0	6.39	13	PASS
Band13	10MHz	16QAM	23230	50RB#0	5.97	13	PASS

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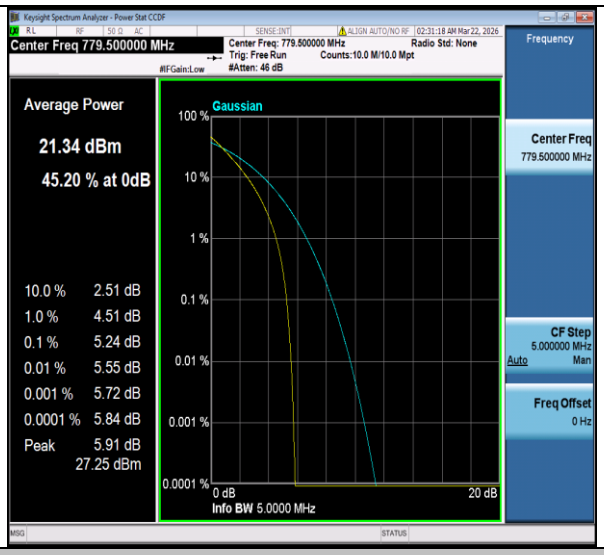
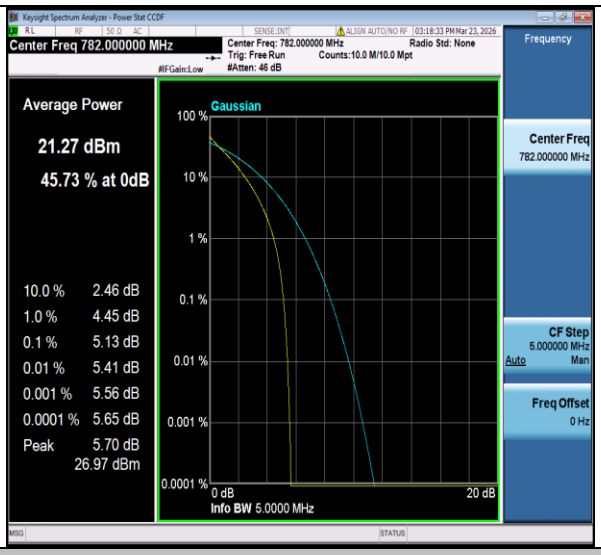
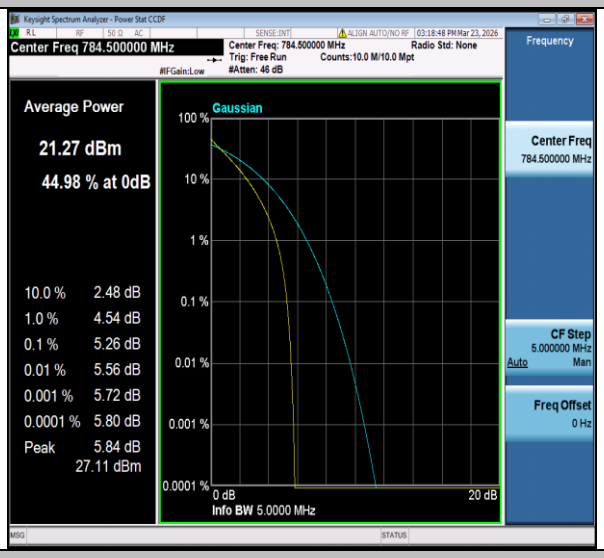
Test Graphs



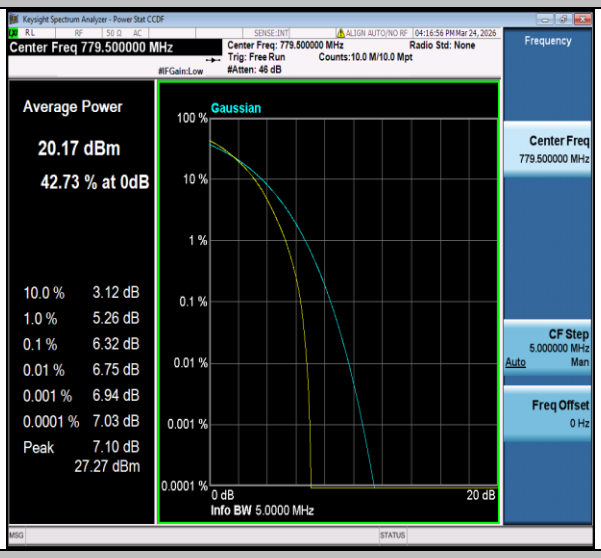
Band13-5MHz-QPSK-23205-25RB#0-PASS



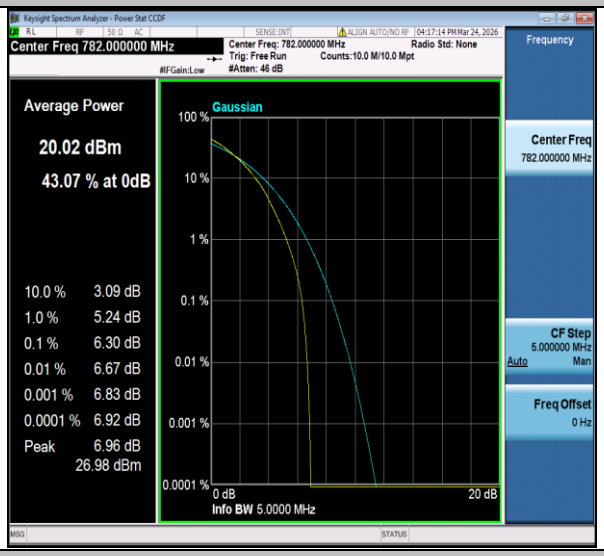
Band13-5MHz-QPSK-23230-25RB#0-PASS



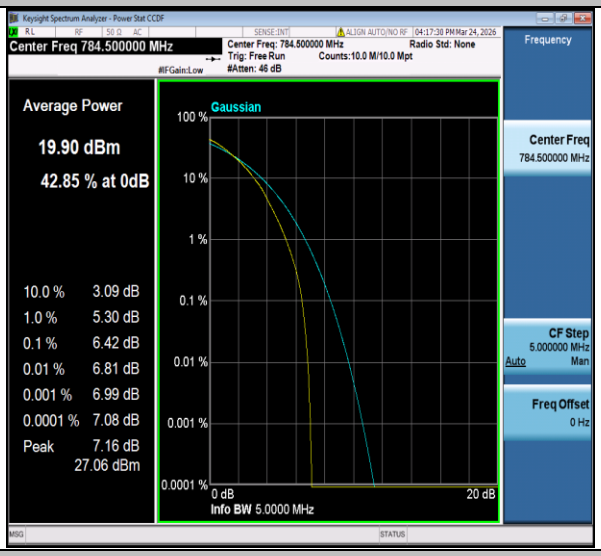
Band13-5MHz-QPSK-23255-25RB#0-PASS



Band13-5MHz-64QAM-23205-25RB#0-PASS



Band13-5MHz-64QAM-23230-25RB#0-PASS



Band13-5MHz-64QAM-23255-25RB#0-PASS

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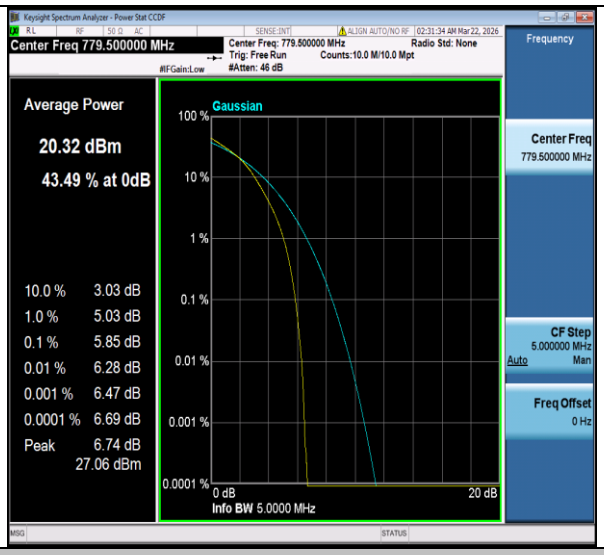
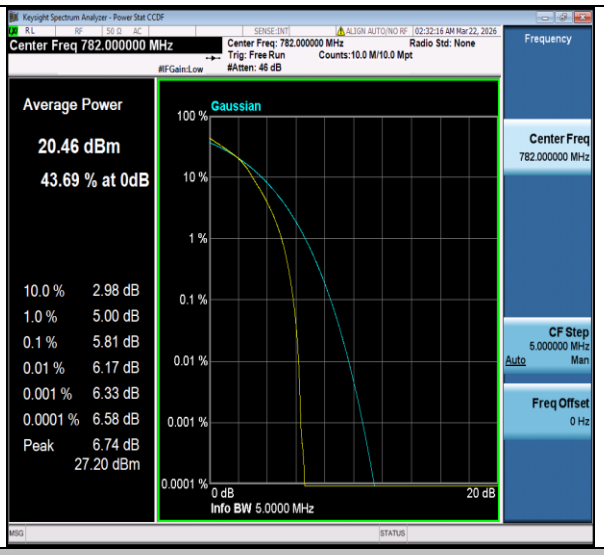
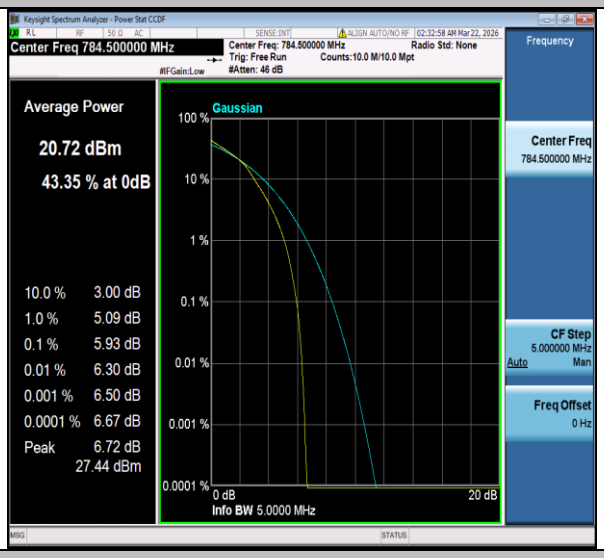


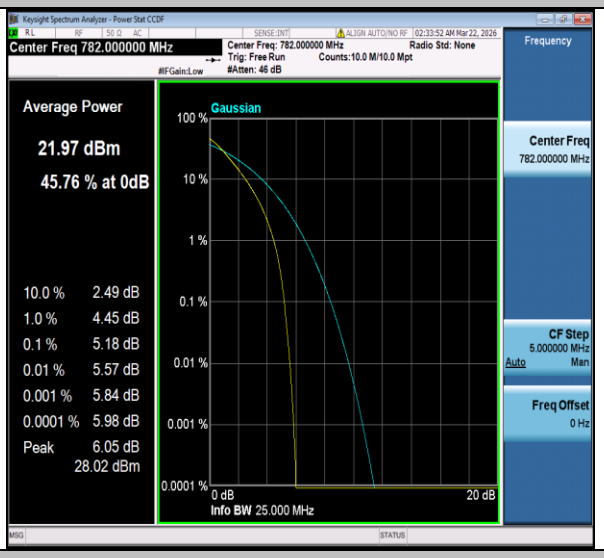
Band13-5MHz-16QAM-23205-25RB#0-PASS



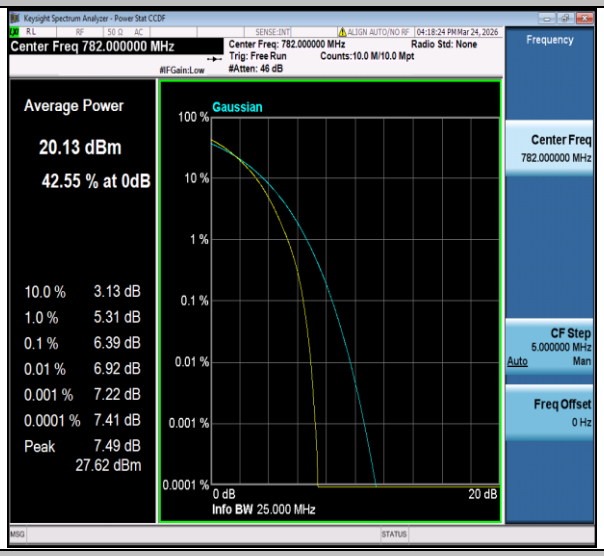
Band13-5MHz-16QAM-23230-25RB#0-PASS



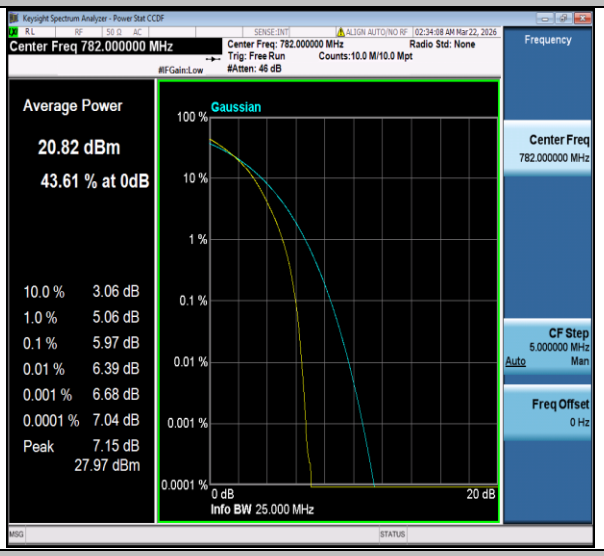
Band13-5MHz-16QAM-23255-25RB#0-PASS



Band13-10MHz-QPSK-23230-50RB#0-PASS



Band13-10MHz-64QAM-23230-50RB#0-PASS



Band13-10MHz-16QAM-23230-50RB#0-PASS

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26dB Bandwidth and Occupied Bandwidth

Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	OBW (MHz)	26dB EBW (MHz)	Verdict
Band13	5MHz	QPSK	23205	25RB#0	4.4840	4.998	PASS
Band13	5MHz	QPSK	23230	25RB#0	4.4804	4.952	PASS
Band13	5MHz	QPSK	23255	25RB#0	4.4877	4.960	PASS
Band13	5MHz	64QAM	23205	25RB#0	4.4955	4.963	PASS
Band13	5MHz	64QAM	23230	25RB#0	4.4908	4.964	PASS
Band13	5MHz	64QAM	23255	25RB#0	4.4997	4.965	PASS
Band13	5MHz	16QAM	23205	25RB#0	4.4902	4.956	PASS
Band13	5MHz	16QAM	23230	25RB#0	4.4850	4.961	PASS
Band13	5MHz	16QAM	23255	25RB#0	4.4898	4.983	PASS
Band13	10MHz	QPSK	23230	50RB#0	8.9853	9.772	PASS
Band13	10MHz	64QAM	23230	50RB#0	8.9568	9.832	PASS
Band13	10MHz	16QAM	23230	50RB#0	8.9385	9.724	PASS

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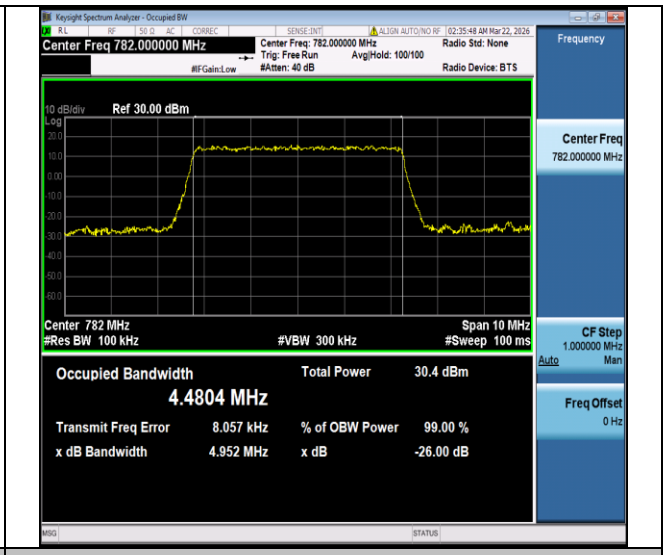
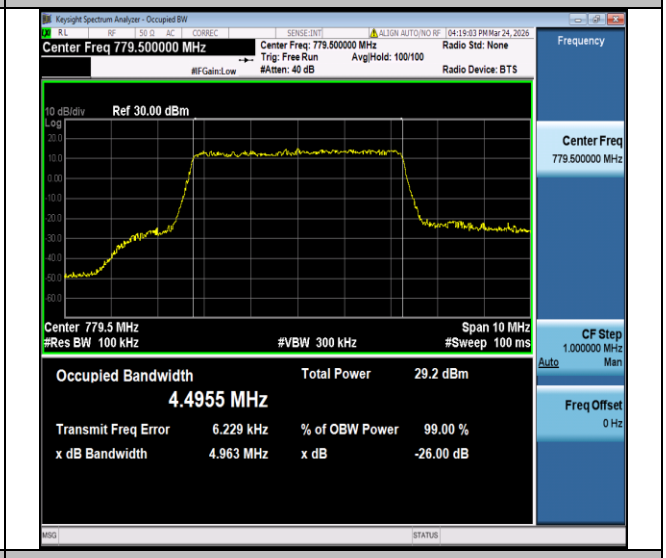
Test Graphs

Band13-5MHz-QPSK-23205-25RB#0-PASS



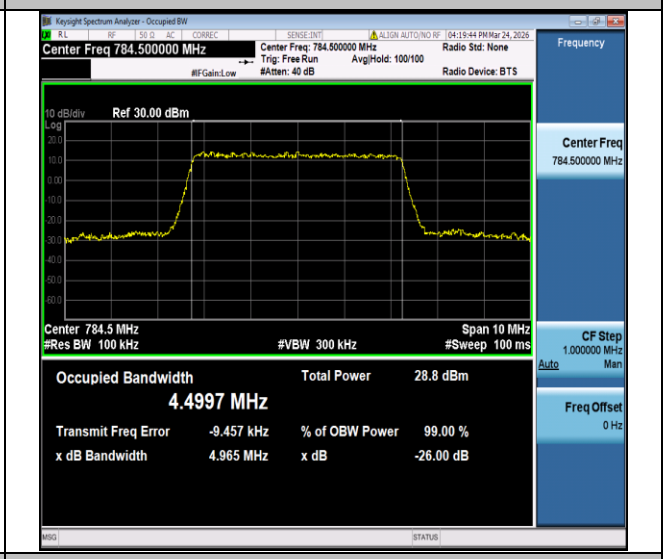
Band13-5MHz-QPSK-23230-25RB#0-PASS

Band13-5MHz-QPSK-23255-25RB#0-PASS



Band13-5MHz-64QAM-23205-25RB#0-PASS

Band13-5MHz-64QAM-23230-25RB#0-PASS



Band13-5MHz-64QAM-23255-25RB#0-PASS

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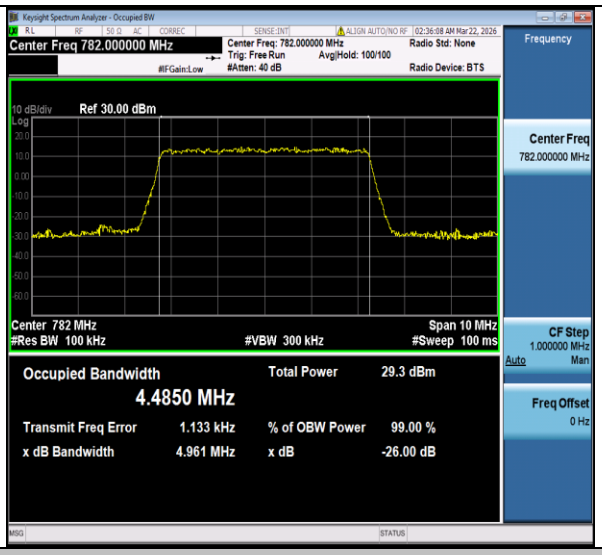
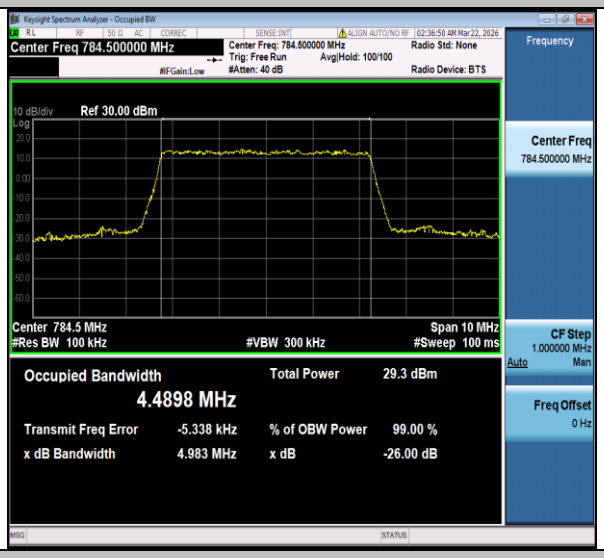
Band13-5MHz-16QAM-23205-25RB#0-PASS



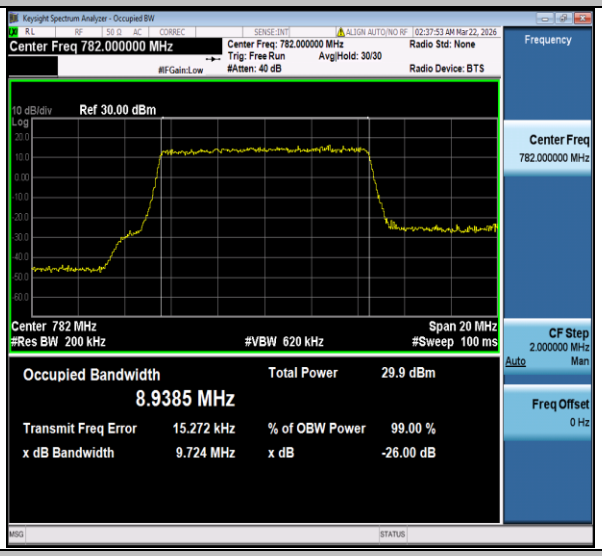
Band13-5MHz-16QAM-23230-25RB#0-PASS



Band13-5MHz-16QAM-23255-25RB#0-PASS

Band13-10MHz-QPSK-23230-50RB#0-PASS

Band13-10MHz-64QAM-23230-50RB#0-PASS



Band13-10MHz-16QAM-23230-50RB#0-PASS

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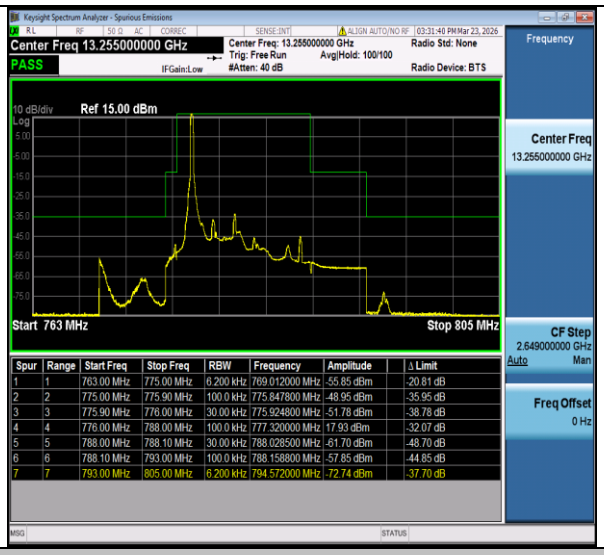
Band Edge

Test Graphs



Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	763.00 MHz	775.00 MHz	6.200 kHz	769.012000 MHz	-55.85 dBm	-20.81 dB
2	2	775.00 MHz	775.90 MHz	100.0 kHz	775.847800 MHz	-48.95 dBm	-35.95 dB
3	3	775.90 MHz	776.00 MHz	30.00 kHz	775.924800 MHz	-51.78 dBm	-38.78 dB
4	4	776.00 MHz	788.00 MHz	100.0 kHz	777.320000 MHz	17.93 dBm	-32.07 dB
5	5	788.00 MHz	788.10 MHz	30.00 kHz	788.028500 MHz	-61.70 dBm	-48.70 dB
6	6	788.10 MHz	793.00 MHz	100.0 kHz	788.158800 MHz	-57.85 dBm	-44.85 dB
7	7	793.00 MHz	805.00 MHz	6.200 kHz	794.572000 MHz	-72.74 dBm	-37.70 dB

Band13-5MHz-QPSK-23205-1RB#0-PASS

Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	763.00 MHz	775.00 MHz	6.200 kHz	774.988000 MHz	-72.43 dBm	-37.39 dB
2	2	775.00 MHz	775.90 MHz	100.0 kHz	775.890100 MHz	-41.50 dBm	-28.50 dB
3	3	775.90 MHz	776.00 MHz	30.00 kHz	775.993500 MHz	-45.12 dBm	-32.12 dB
4	4	776.00 MHz	788.00 MHz	100.0 kHz	781.556000 MHz	3.783 dBm	-46.22 dB
5	5	788.00 MHz	788.10 MHz	30.00 kHz	788.068600 MHz	-48.88 dBm	-35.88 dB
6	6	788.10 MHz	793.00 MHz	100.0 kHz	788.129400 MHz	-44.78 dBm	-31.78 dB
7	7	793.00 MHz	805.00 MHz	6.200 kHz	793.060000 MHz	-70.46 dBm	-35.42 dB

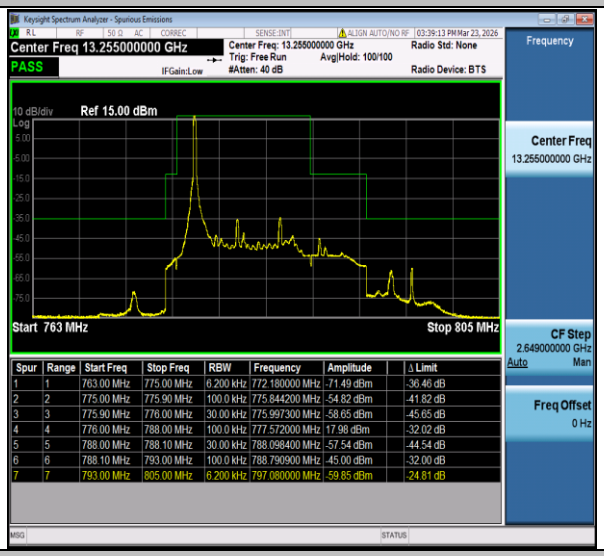
Band13-5MHz-QPSK-23205-25RB#0-PASS

Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	763.00 MHz	775.00 MHz	6.200 kHz	770.356000 MHz	-83.44 dBm	-48.40 dB
2	2	775.00 MHz	775.90 MHz	100.0 kHz	775.858600 MHz	-59.66 dBm	-46.66 dB
3	3	775.90 MHz	776.00 MHz	30.00 kHz	775.967900 MHz	-63.89 dBm	-50.89 dB
4	4	776.00 MHz	788.00 MHz	100.0 kHz	786.644000 MHz	17.90 dBm	-32.10 dB
5	5	788.00 MHz	788.10 MHz	30.00 kHz	788.095500 MHz	-51.59 dBm	-38.59 dB
6	6	788.10 MHz	793.00 MHz	100.0 kHz	788.168600 MHz	-46.95 dBm	-33.95 dB
7	7	793.00 MHz	805.00 MHz	6.200 kHz	793.168000 MHz	-72.60 dBm	-37.56 dB

Band13-5MHz-QPSK-23255-1RB#24-PASS

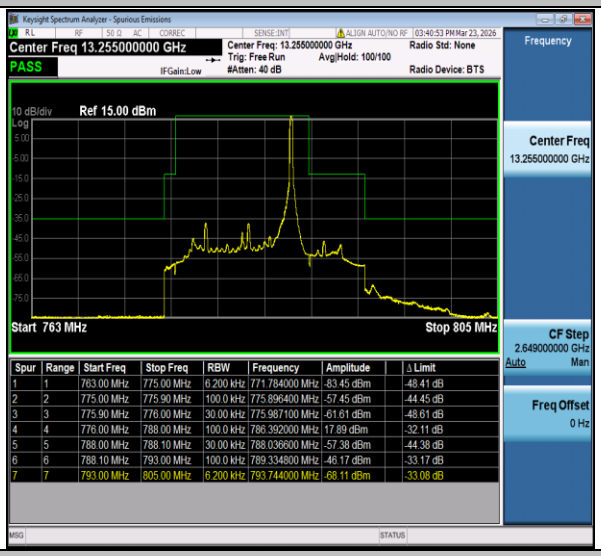
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	763.00 MHz	775.00 MHz	6.200 kHz	774.568000 MHz	-83.69 dBm	-48.66 dB
2	2	775.00 MHz	775.90 MHz	100.0 kHz	775.882000 MHz	-53.40 dBm	-40.40 dB
3	3	775.90 MHz	776.00 MHz	30.00 kHz	775.995500 MHz	-56.84 dBm	-43.84 dB
4	4	776.00 MHz	788.00 MHz	100.0 kHz	782.960000 MHz	3.476 dBm	-46.52 dB
5	5	788.00 MHz	788.10 MHz	30.00 kHz	788.067200 MHz	-43.75 dBm	-30.75 dB
6	6	788.10 MHz	793.00 MHz	100.0 kHz	788.173500 MHz	-39.83 dBm	-26.83 dB
7	7	793.00 MHz	805.00 MHz	6.200 kHz	793.108000 MHz	-59.92 dBm	-24.89 dB

Band13-5MHz-QPSK-23255-25RB#0-PASS



Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	763.00 MHz	775.00 MHz	6.200 kHz	772.180000 MHz	-71.49 dBm	-36.46 dB
2	2	775.00 MHz	775.90 MHz	100.0 kHz	775.844200 MHz	-54.82 dBm	-41.82 dB
3	3	775.90 MHz	776.00 MHz	30.00 kHz	775.997300 MHz	-58.65 dBm	-45.65 dB
4	4	776.00 MHz	788.00 MHz	100.0 kHz	777.572000 MHz	17.98 dBm	-32.02 dB
5	5	788.00 MHz	788.10 MHz	30.00 kHz	788.098400 MHz	-57.54 dBm	-44.54 dB
6	6	788.10 MHz	793.00 MHz	100.0 kHz	788.790900 MHz	-45.00 dBm	-32.00 dB
7	7	793.00 MHz	805.00 MHz	6.200 kHz	797.080000 MHz	-59.85 dBm	-24.81 dB

Band13-10MHz-QPSK-23230-1RB#0-PASS



Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	763.00 MHz	775.00 MHz	6.200 kHz	771.784000 MHz	-83.45 dBm	-48.41 dB
2	2	775.00 MHz	775.90 MHz	100.0 kHz	775.896400 MHz	-57.45 dBm	-44.45 dB
3	3	775.90 MHz	776.00 MHz	30.00 kHz	775.987100 MHz	-61.61 dBm	-48.61 dB
4	4	776.00 MHz	788.00 MHz	100.0 kHz	786.392000 MHz	17.89 dBm	-32.11 dB
5	5	788.00 MHz	788.10 MHz	30.00 kHz	788.036600 MHz	-57.38 dBm	-44.38 dB
6	6	788.10 MHz	793.00 MHz	100.0 kHz	789.334800 MHz	-46.17 dBm	-33.17 dB
7	7	793.00 MHz	805.00 MHz	6.200 kHz	793.744000 MHz	-68.11 dBm	-33.08 dB

Band13-10MHz-QPSK-23230-1RB#49-PASS

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Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	763.00 MHz	775.00 MHz	6.200 kHz	774.988000 MHz	-68.96 dBm	-33.92 dB
2	2	775.00 MHz	775.90 MHz	100.0 kHz	775.891900 MHz	-44.54 dBm	-31.54 dB
3	3	775.90 MHz	776.00 MHz	30.00 kHz	775.981400 MHz	-48.24 dBm	-35.24 dB
4	4	776.00 MHz	788.00 MHz	100.0 kHz	783.452000 MHz	0.649 dBm	-49.35 dB
5	5	788.00 MHz	788.10 MHz	30.00 kHz	788.023300 MHz	-45.83 dBm	-32.83 dB
6	6	788.10 MHz	793.00 MHz	100.0 kHz	788.428300 MHz	-41.48 dBm	-28.48 dB
7	7	793.00 MHz	805.00 MHz	6.200 kHz	793.300000 MHz	-55.97 dBm	-20.94 dB

Band13-10MHz-QPSK-23230-50RB#0-PASS

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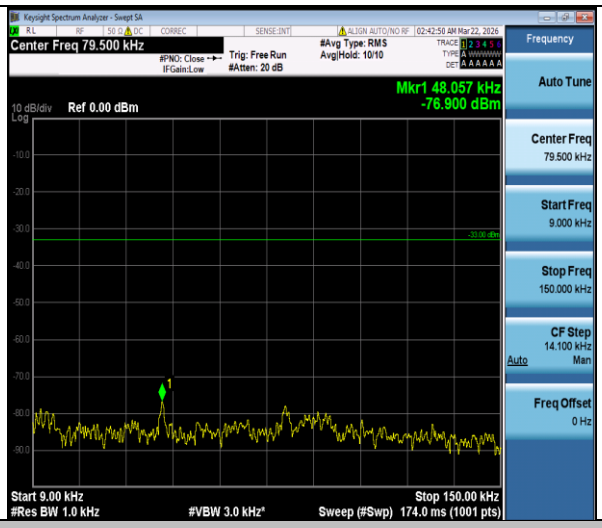
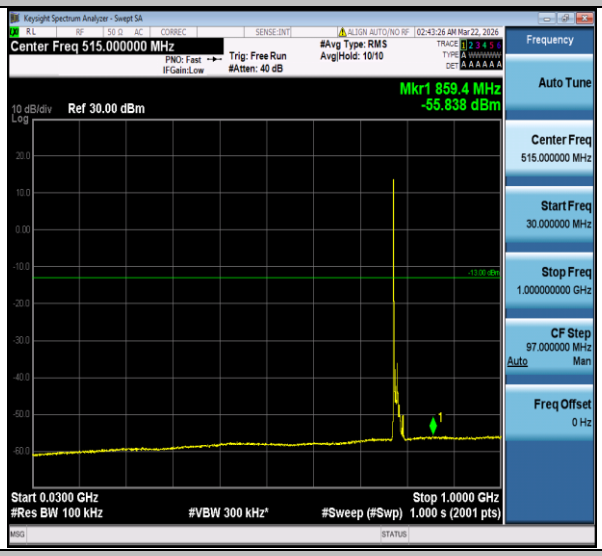
Conducted Spurious Emission

Test Graphs



Band13-10MHz-QPSK-23230-1RB#0-0.009~0.15-PASS

Band13-10MHz-QPSK-23230-1RB#0-0.15~30-PASS



Band13-10MHz-QPSK-23230-1RB#0-30~1000-PASS

Band13-10MHz-QPSK-23230-1RB#0-1000~3000-PASS

Band13-10MHz-QPSK-23230-1RB#0-3000~10000-PASS

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Frequency Stability

Test Result

Voltage									
Band	Bandwidth	Modulation	Channel	RB Configure	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Verdict
Band13	10MHz	QPSK	23230	50RB#0	VN	NT	-3.50	-0.004476	PASS
Band13	10MHz	QPSK	23230	50RB#0	VL	NT	-3.00	-0.003836	PASS
Band13	10MHz	QPSK	23230	50RB#0	VH	NT	-2.30	-0.002941	PASS

Temperature									
Band	Bandwidth	Modulation	Channel	RB Configure	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Verdict
Band13	10MHz	QPSK	23230	50RB#0	NV	-30	1.90	0.002430	PASS
Band13	10MHz	QPSK	23230	50RB#0	NV	-20	4.80	0.006138	PASS
Band13	10MHz	QPSK	23230	50RB#0	NV	-10	-4.80	-0.006138	PASS
Band13	10MHz	QPSK	23230	50RB#0	NV	0	0.10	0.000128	PASS
Band13	10MHz	QPSK	23230	50RB#0	NV	10	-10.60	-0.013555	PASS
Band13	10MHz	QPSK	23230	50RB#0	NV	20	-4.00	-0.005115	PASS
Band13	10MHz	QPSK	23230	50RB#0	NV	30	-11.10	-0.014194	PASS
Band13	10MHz	QPSK	23230	50RB#0	NV	40	-4.90	-0.006266	PASS
Band13	10MHz	QPSK	23230	50RB#0	NV	50	-4.60	-0.005882	PASS

~The End~

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