Appendix for LTE B7 test report

Appendix A: Effective (Isotropic) Radiated Power Output Data

Test Results:

Band	Bandwidth	Modulation	Channel	RB Configuration	Conducted Power[dBm]	EIRP (dBm)	Limit (dBm)	Verdict
Band7	5MHz	QPSK	20775	1RB#0	24.71	27.71	33	PASS
Band7	5MHz	QPSK	20775	1RB#12	24.50	27.50	33	PASS
Band7	5MHz	QPSK	20775	1RB#24	24.51	27.51	33	PASS
Band7	5MHz	QPSK	20775	12RB#0	23.50	26.50	33	PASS
Band7	5MHz	QPSK	20775	12RB#6	23.52	26.52	33	PASS
Band7	5MHz	QPSK	20775	12RB#13	23.49	26.49	33	PASS
Band7	5MHz	QPSK	20775	25RB#0	23.37	26.37	33	PASS
Band7	5MHz	QPSK	21100	1RB#0	24.33	27.33	33	PASS
Band7	5MHz	QPSK	21100	1RB#12	24.42	27.42	33	PASS
Band7	5MHz	QPSK	21100	1RB#24	24.49	27.49	33	PASS
Band7	5MHz	QPSK	21100	12RB#0	23.24	26.24	33	PASS
Band7	5MHz	QPSK	21100	12RB#6	23.45	26.45	33	PASS
Band7	5MHz	QPSK	21100	12RB#13	23.44	26.44	33	PASS
Band7	5MHz	QPSK	21100	25RB#0	23.40	26.40	33	PASS
Band7	5MHz	QPSK	21425	1RB#0	24.23	27.23	33	PASS
Band7	5MHz	QPSK	21425	1RB#12	24.31	27.31	33	PASS
Band7	5MHz	QPSK	21425	1RB#24	24.44	27.44	33	PASS
Band7	5MHz	QPSK	21425	12RB#0	23.20	26.20	33	PASS
Band7	5MHz	QPSK	21425	12RB#6	23.35	26.35	33	PASS
Band7	5MHz	QPSK	21425	12RB#13	23.38	26.38	33	PASS
Band7	5MHz	QPSK	21425	25RB#0	23.28	26.28	33	PASS
Band7	5MHz	16QAM	20775	1RB#0	23.95	26.95	33	PASS
Band7	5MHz	16QAM	20775	1RB#12	23.67	26.67	33	PASS
Band7	5MHz	16QAM	20775	1RB#24	23.70	26.70	33	PASS
Band7	5MHz	16QAM	20775	12RB#0	22.42	25.42	33	PASS
Band7	5MHz	16QAM	20775	12RB#6	22.48	25.48	33	PASS

Band7	5MHz	16QAM	20775	12RB#13	22.44	25.44	33	PASS
Band7	5MHz	16QAM	20775	25RB#0	22.34	25.34	33	PASS
Band7	5MHz	16QAM	21100	1RB#0	23.68	26.68	33	PASS
Band7	5MHz	16QAM	21100	1RB#12	23.61	26.61	33	PASS
Band7	5MHz	16QAM	21100	1RB#24	23.59	26.59	33	PASS
Band7	5MHz	16QAM	21100	12RB#0	22.35	25.35	33	PASS
Band7	5MHz	16QAM	21100	12RB#6	22.44	25.44	33	PASS
Band7	5MHz	16QAM	21100	12RB#13	22.50	25.50	33	PASS
Band7	5MHz	16QAM	21100	25RB#0	22.41	25.41	33	PASS
Band7	5MHz	16QAM	21425	1RB#0	23.58	26.58	33	PASS
Band7	5MHz	16QAM	21425	1RB#12	23.74	26.74	33	PASS
Band7	5MHz	16QAM	21425	1RB#24	23.62	26.62	33	PASS
Band7	5MHz	16QAM	21425	12RB#0	22.19	25.19	33	PASS
Band7	5MHz	16QAM	21425	12RB#6	22.36	25.36	33	PASS
Band7	5MHz	16QAM	21425	12RB#13	22.35	25.35	33	PASS
Band7	5MHz	16QAM	21425	25RB#0	22.25	25.25	33	PASS
Band7	10MHz	QPSK	20800	1RB#0	24.90	27.90	33	PASS
Band7	10MHz	QPSK	20800	1RB#24	24.46	27.46	33	PASS
Band7	10MHz	QPSK	20800	1RB#49	24.51	27.51	33	PASS
Band7	10MHz	QPSK	20800	25RB#0	23.41	26.41	33	PASS
Band7	10MHz	QPSK	20800	25RB#12	23.53	26.53	33	PASS
Band7	10MHz	QPSK	20800	25RB#25	23.43	26.43	33	PASS
Band7	10MHz	QPSK	20800	50RB#0	23.41	26.41	33	PASS
Band7	10MHz	QPSK	21100	1RB#0	24.55	27.55	33	PASS
Band7	10MHz	QPSK	21100	1RB#24	24.56	27.56	33	PASS
Band7	10MHz	QPSK	21100	1RB#49	24.68	27.68	33	PASS
Band7	10MHz	QPSK	21100	25RB#0	23.31	26.31	33	PASS
Band7	10MHz	QPSK	21100	25RB#12	23.60	26.60	33	PASS
Band7	10MHz	QPSK	21100	25RB#25	23.52	26.52	33	PASS
Band7	10MHz	QPSK	21100	50RB#0	23.44	26.44	33	PASS
Band7	10MHz	QPSK	21400	1RB#0	24.21	27.21	33	PASS
Band7	10MHz	QPSK	21400	1RB#24	24.26	27.26	33	PASS
Band7	10MHz	QPSK	21400	1RB#49	24.66	27.66	33	PASS
Band7	10MHz	QPSK	21400	25RB#0	22.98	25.98	33	PASS

Band7	10MHz	QPSK	21400	25RB#12	23.21	26.21	33	PASS
Band7	10MHz	QPSK	21400	25RB#25	23.20	26.20	33	PASS
Band7	10MHz	QPSK	21400	50RB#0	23.06	26.06	33	PASS
Band7	10MHz	16QAM	20800	1RB#0	23.75	26.75	33	PASS
Band7	10MHz	16QAM	20800	1RB#24	23.85	26.85	33	PASS
Band7	10MHz	16QAM	20800	1RB#49	24.04	27.04	33	PASS
Band7	10MHz	16QAM	20800	25RB#0	22.40	25.40	33	PASS
Band7	10MHz	16QAM	20800	25RB#12	22.56	25.56	33	PASS
Band7	10MHz	16QAM	20800	25RB#25	22.45	25.45	33	PASS
Band7	10MHz	16QAM	21100	1RB#0	23.57	26.57	33	PASS
Band7	10MHz	16QAM	21100	1RB#24	23.71	26.71	33	PASS
Band7	10MHz	16QAM	21100	1RB#49	24.16	27.16	33	PASS
Band7	10MHz	16QAM	21100	25RB#0	22.34	25.34	33	PASS
Band7	10MHz	16QAM	21100	25RB#12	22.51	25.51	33	PASS
Band7	10MHz	16QAM	21100	25RB#25	22.46	25.46	33	PASS
Band7	10MHz	16QAM	21400	1RB#0	23.53	26.53	33	PASS
Band7	10MHz	16QAM	21400	1RB#24	23.29	26.29	33	PASS
Band7	10MHz	16QAM	21400	1RB#49	23.50	26.50	33	PASS
Band7	10MHz	16QAM	21400	25RB#0	22.00	25.00	33	PASS
Band7	10MHz	16QAM	21400	25RB#12	22.18	25.18	33	PASS
Band7	10MHz	16QAM	21400	25RB#25	22.02	25.02	33	PASS
Band7	15MHz	QPSK	20825	1RB#0	24.52	27.52	33	PASS
Band7	15MHz	QPSK	20825	1RB#38	24.40	27.40	33	PASS
Band7	15MHz	QPSK	20825	1RB#74	24.30	27.30	33	PASS
Band7	15MHz	QPSK	20825	38RB#0	23.28	26.28	33	PASS
Band7	15MHz	QPSK	20825	38RB#18	23.38	26.38	33	PASS
Band7	15MHz	QPSK	20825	38RB#37	23.23	26.23	33	PASS
Band7	15MHz	QPSK	20825	75RB#0	23.20	26.20	33	PASS
Band7	15MHz	QPSK	21100	1RB#0	24.17	27.17	33	PASS
Band7	15MHz	QPSK	21100	1RB#38	24.30	27.30	33	PASS
Band7	15MHz	QPSK	21100	1RB#74	24.30	27.30	33	PASS
Band7	15MHz	QPSK	21100	38RB#0	23.08	26.08	33	PASS
Band7	15MHz	QPSK	21100	38RB#18	23.32	26.32	33	PASS
Band7	15MHz	QPSK	21100	38RB#37	23.35	26.35	33	PASS

Band7	15MHz	QPSK	21100	75RB#0	23.27	26.27	33	PASS
Band7	15MHz	QPSK	21375	1RB#0	24.01	27.01	33	PASS
Band7	15MHz	QPSK	21375	1RB#38	23.98	26.98	33	PASS
Band7	15MHz	QPSK	21375	1RB#74	24.30	27.30	33	PASS
Band7	15MHz	QPSK	21375	38RB#0	22.81	25.81	33	PASS
Band7	15MHz	QPSK	21375	38RB#18	22.95	25.95	33	PASS
Band7	15MHz	QPSK	21375	38RB#37	23.08	26.08	33	PASS
Band7	15MHz	QPSK	21375	75RB#0	22.84	25.84	33	PASS
Band7	15MHz	16QAM	20825	1RB#0	23.59	26.59	33	PASS
Band7	15MHz	16QAM	20825	1RB#38	23.70	26.70	33	PASS
Band7	15MHz	16QAM	20825	1RB#74	23.35	26.35	33	PASS
Band7	15MHz	16QAM	21100	1RB#0	23.52	26.52	33	PASS
Band7	15MHz	16QAM	21100	1RB#38	23.62	26.62	33	PASS
Band7	15MHz	16QAM	21100	1RB#74	23.87	26.87	33	PASS
Band7	15MHz	16QAM	21375	1RB#0	23.16	26.16	33	PASS
Band7	15MHz	16QAM	21375	1RB#38	23.20	26.20	33	PASS
Band7	15MHz	16QAM	21375	1RB#74	23.45	26.45	33	PASS
Band7	20MHz	QPSK	20850	1RB#0	24.45	24.45	33	PASS
Band7	20MHz	QPSK	20850	1RB#49	24.29	24.29	33	PASS
Band7	20MHz	QPSK	20850	1RB#99	24.15	24.15	33	PASS
Band7	20MHz	QPSK	20850	50RB#0	23.17	23.17	33	PASS
Band7	20MHz	QPSK	20850	50RB#25	23.27	23.27	33	PASS
Band7	20MHz	QPSK	20850	50RB#50	23.10	23.10	33	PASS
Band7	20MHz	QPSK	20850	100RB#0	23.11	23.11	33	PASS
Band7	20MHz	QPSK	21100	1RB#0	24.01	27.01	33	PASS
Band7	20MHz	QPSK	21100	1RB#49	24.30	27.30	33	PASS
Band7	20MHz	QPSK	21100	1RB#99	24.29	27.29	33	PASS
Band7	20MHz	QPSK	21100	50RB#0	22.98	25.98	33	PASS
Band7	20MHz	QPSK	21100	50RB#25	23.30	26.30	33	PASS
Band7	20MHz	QPSK	21100	50RB#50	23.34	26.34	33	PASS
Band7	20MHz	QPSK	21100	100RB#0	23.22	26.22	33	PASS
Band7	20MHz	QPSK	21350	1RB#0	23.95	26.95	33	PASS
Band7	20MHz	QPSK	21350	1RB#49	23.89	26.89	33	PASS
Band7	20MHz	QPSK	21350	1RB#99	24.30	27.30	33	PASS

Band7	20MHz	QPSK	21350	50RB#0	22.74	25.74	33	PASS
Band7	20MHz	QPSK	21350	50RB#25	22.82	25.82	33	PASS
Band7	20MHz	QPSK	21350	50RB#50	22.91	25.91	33	PASS
Band7	20MHz	QPSK	21350	100RB#0	22.66	25.66	33	PASS
Band7	20MHz	16QAM	20850	1RB#0	23.41	26.41	33	PASS
Band7	20MHz	16QAM	20850	1RB#49	23.39	26.39	33	PASS
Band7	20MHz	16QAM	20850	1RB#99	23.26	26.26	33	PASS
Band7	20MHz	16QAM	21100	1RB#0	23.11	26.11	33	PASS
Band7	20MHz	16QAM	21100	1RB#49	23.41	26.41	33	PASS
Band7	20MHz	16QAM	21100	1RB#99	23.52	26.52	33	PASS
Band7	20MHz	16QAM	21350	1RB#0	23.06	26.06	33	PASS
Band7	20MHz	16QAM	21350	1RB#49	23.26	26.26	33	PASS
Band7	20MHz	16QAM	21350	1RB#99	23.55	26.55	33	PASS

Note1:

a, For getting the ERP (Efficient Radiated Power) or EIRP (Efficient Isotropic Radiated Power) in substitution method, the following formula should be taken to calculate it,

ERP [dBm] = SGP [dBm] - Cable Loss [dB] + Gain [dBd]

EIRP [dBm] = SGP [dBm] - Cable Loss [dB] + Gain [dBi]

b, SGP=Signal Generator Level

c, Antenna gain of LTE Band 7 is 3dBi.

Note2: SET Span=1.5*OBW

SET RBW=1%of the OBW, not to exceed 1MHz

SET VBW>= 3*RBW

SET Sweep time=auto-couple.

Detector: RMS

Appendix B: Peak-to-Average Ratio

Test Results

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict
Band7	5MHz	QPSK	20775	25RB#0	4.10	13	PASS
Band7	5MHz	QPSK	21100	25RB#0	4.26	13	PASS
Band7	5MHz	QPSK	21425	25RB#0	4.33	13	PASS
Band7	5MHz	16QAM	20775	25RB#0	4.68	13	PASS
Band7	5MHz	16QAM	21100	25RB#0	5.22	13	PASS
Band7	5MHz	16QAM	21425	25RB#0	5.29	13	PASS
Band7	10MHz	QPSK	20800	50RB#0	3.66	13	PASS
Band7	10MHz	QPSK	21100	50RB#0	4.26	13	PASS
Band7	10MHz	QPSK	21400	50RB#0	4.29	13	PASS
Band7	15MHz	QPSK	20825	75RB#0	3.99	13	PASS
Band7	15MHz	QPSK	21100	75RB#0	4.30	13	PASS
Band7	15MHz	QPSK	21375	75RB#0	4.26	13	PASS
Band7	20MHz	QPSK	20850	100RB#0	3.90	13	PASS
Band7	20MHz	QPSK	21100	100RB#0	4.37	13	PASS
Band7	20MHz	QPSK	21350	100RB#0	4.30	13	PASS

Appendix C: Modulation Characteristics

Band	Bandwidth	Modulation	Channel	RB Configuration	Result	Verdict
Band7	5MHz	QPSK	20775	25RB#0	PASS	PASS
Band7	5MHz	QPSK	21100	25RB#0	PASS	PASS
Band7	5MHz	QPSK	21425	25RB#0	PASS	PASS
Band7	5MHz	16QAM	20775	25RB#0	PASS	PASS
Band7	5MHz	16QAM	21100	25RB#0	PASS	PASS
Band7	5MHz	16QAM	21425	25RB#0	PASS	PASS
Band7	10MHz	QPSK	20800	50RB#0	PASS	PASS
Band7	10MHz	QPSK	21100	50RB#0	PASS	PASS
Band7	10MHz	QPSK	21400	50RB#0	PASS	PASS
Band7	15MHz	QPSK	20825	75RB#0	PASS	PASS
Band7	15MHz	QPSK	21100	75RB#0	PASS	PASS
Band7	15MHz	QPSK	21375	75RB#0	PASS	PASS
Band7	20MHz	QPSK	20850	100RB#0	PASS	PASS
Band7	20MHz	QPSK	21100	100RB#0	PASS	PASS
Band7	20MHz	QPSK	21350	100RB#0	PASS	PASS

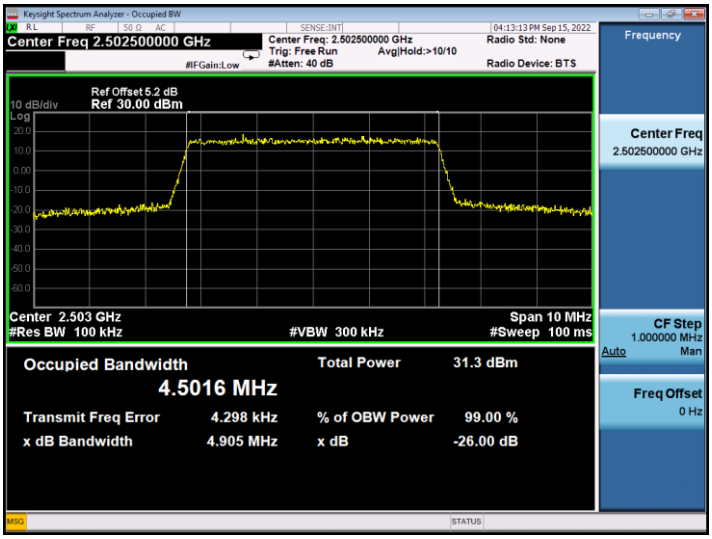
Appendix D: Bandwidth

Test Results

Band	Bandwidth	Modulation	Channel	RB Configuration	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
Band7	5MHz	QPSK	20775	25RB#0	4.5016	4.905	PASS
Band7	5MHz	QPSK	21100	25RB#0	4.5077	4.922	PASS
Band7	5MHz	QPSK	21425	25RB#0	4.5135	4.986	PASS
Band7	5MHz	16QAM	20775	25RB#0	4.4925	4.986	PASS
Band7	5MHz	16QAM	21100	25RB#0	4.4889	4.919	PASS
Band7	5MHz	16QAM	21425	25RB#0	4.5002	5.009	PASS
Band7	10MHz	QPSK	20800	50RB#0	8.9783	9.514	PASS
Band7	10MHz	QPSK	21100	50RB#0	8.9777	9.472	PASS
Band7	10MHz	QPSK	21400	50RB#0	8.9776	9.518	PASS
Band7	10MHz	16QAM	20800	50RB#0	4.5556	4.993	PASS
Band7	10MHz	16QAM	21100	50RB#0	4.5560	4.990	PASS
Band7	10MHz	16QAM	21400	50RB#0	4.5546	4.990	PASS
Band7	15MHz	QPSK	20825	75RB#0	13.497	14.27	PASS
Band7	15MHz	QPSK	21100	75RB#0	13.506	14.26	PASS
Band7	15MHz	QPSK	21375	75RB#0	13.482	14.25	PASS
Band7	15MHz	16QAM	20825	75RB#0	4.6461	5.210	PASS
Band7	15MHz	16QAM	21100	75RB#0	4.6546	5.208	PASS
Band7	15MHz	16QAM	21375	75RB#0	4.6545	5.215	PASS
Band7	20MHz	QPSK	20850	100RB#0	17.932	18.95	PASS
Band7	20MHz	QPSK	21100	100RB#0	17.951	18.96	PASS
Band7	20MHz	QPSK	21350	100RB#0	17.925	18.95	PASS
Band7	20MHz	16QAM	20850	100RB#0	4.7466	5.411	PASS
Band7	20MHz	16QAM	21100	100RB#0	4.7471	5.415	PASS
Band7	20MHz	16QAM	21350	100RB#0	4.7455	5.415	PASS

Test Plots

Band7-5MHz-QPSK-20775-25RB#0



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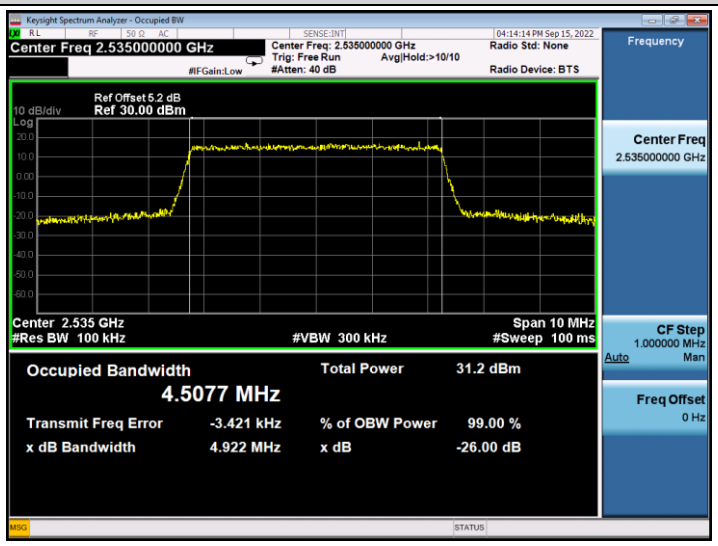

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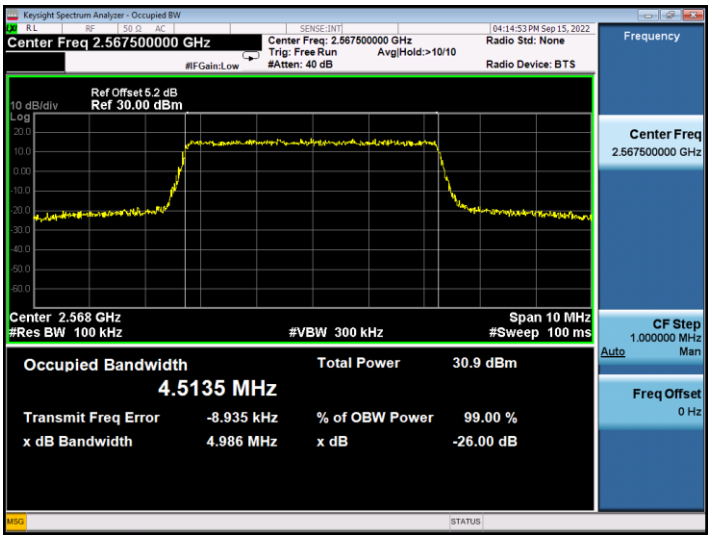
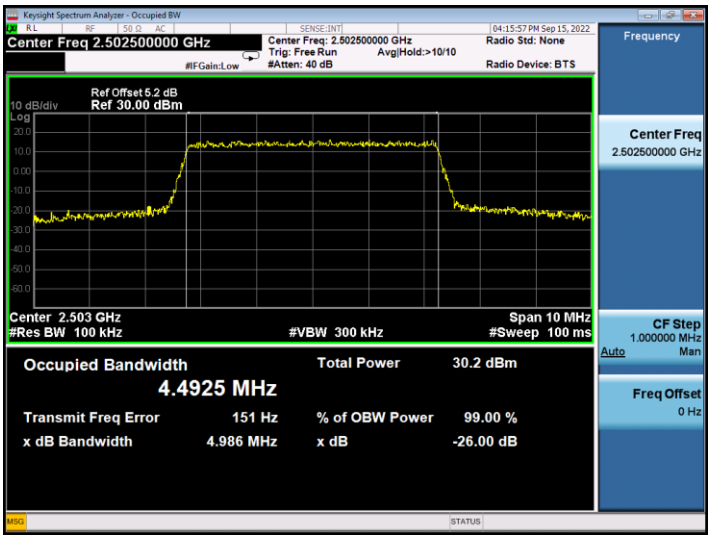


Band7-5MHz-16QAM-20775-25RB#0



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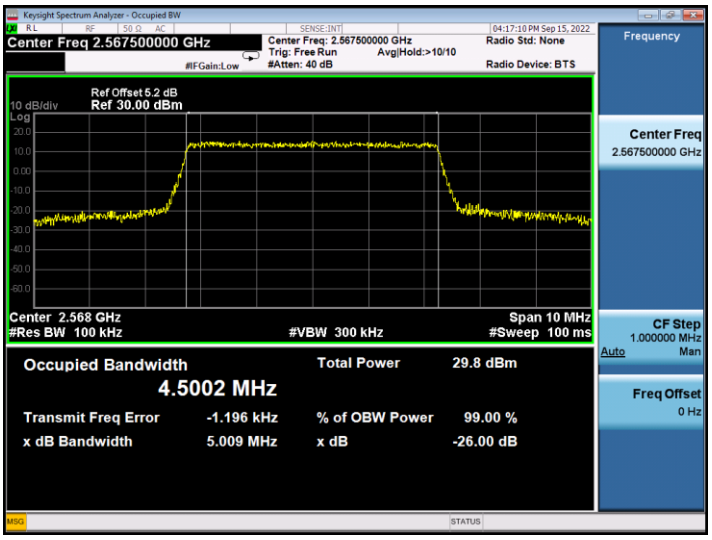
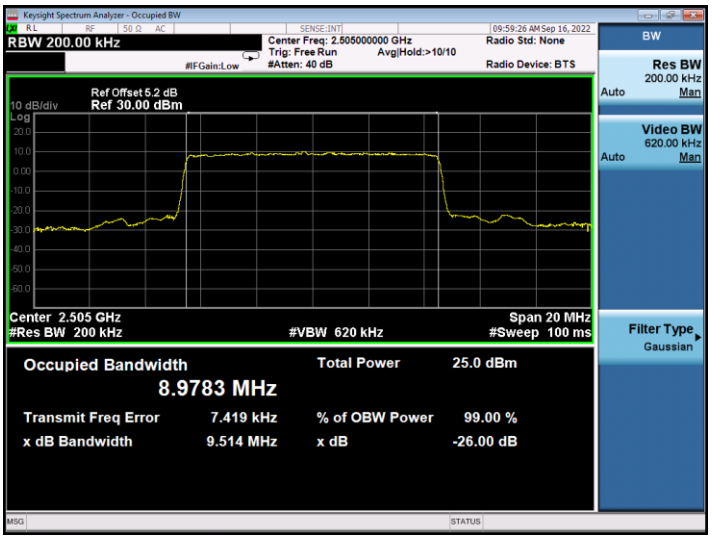
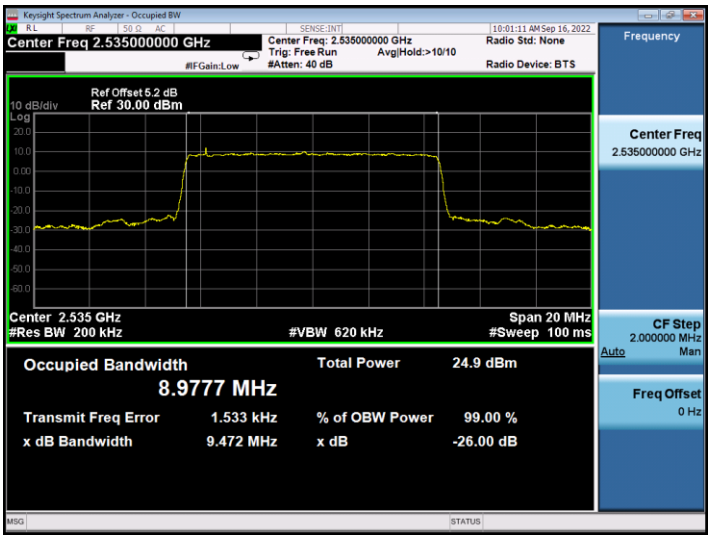
Band7-5MHz-16QAM-21425-25RB#0



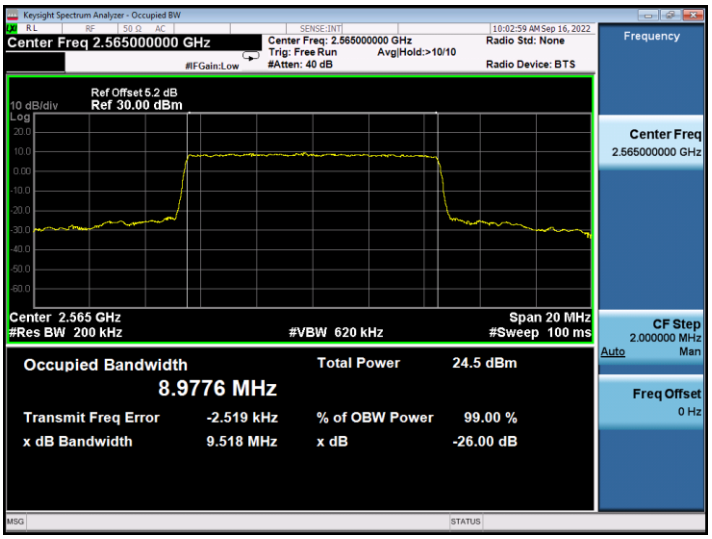
Band7-10MHz-QPSK-20800-50RB#0



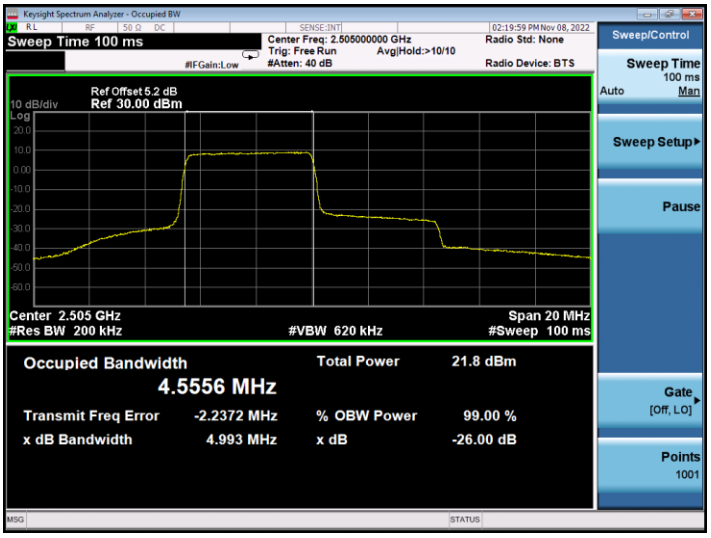
Band7-10MHz-QPSK-21100-50RB#0



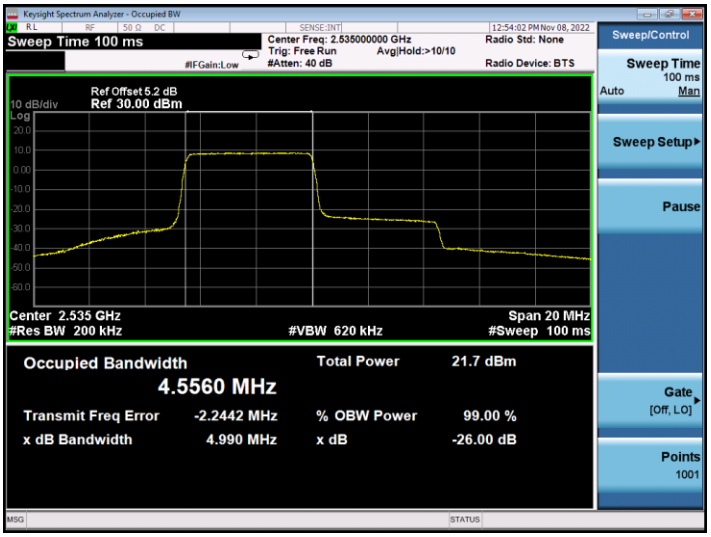
Band7-10MHz-QPSK-21400-50RB#0



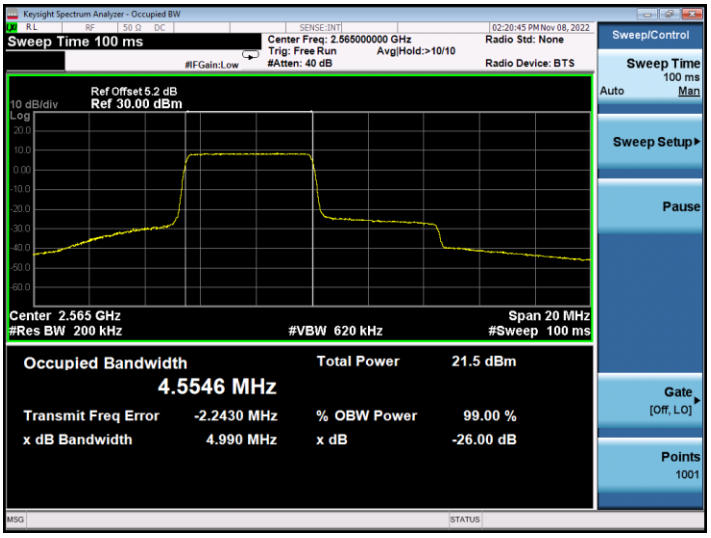
Band7-10MHz-16QAM-20800-50RB#0



Band7-10MHz-16QAM-21100-50RB#0

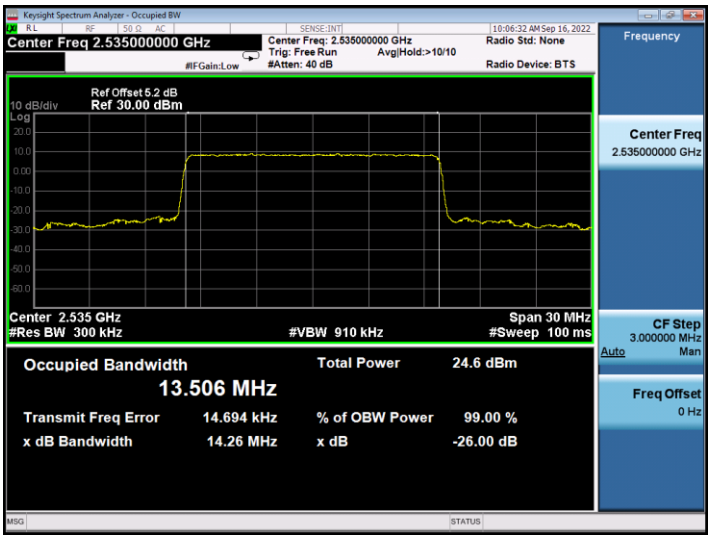


Band7-10MHz-16QAM-21400-50RB#0

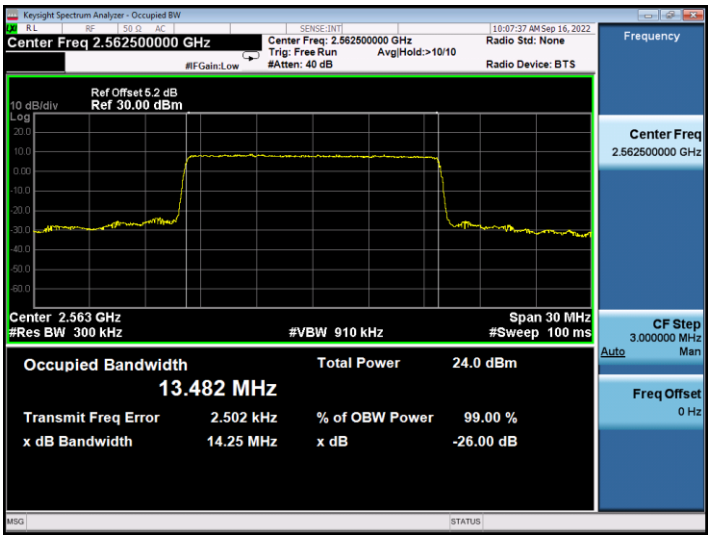


Band7-15MHz-QPSK-20825-75RB#0

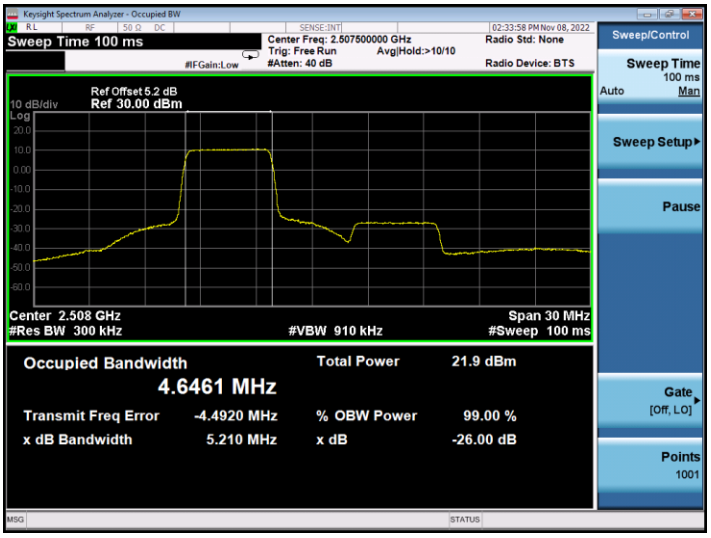
Band7-15MHz-QPSK-21100-75RB#0



Band7-15MHz-QPSK-21375-75RB#0



Band7-15MHz-16QAM-20825-75RB#0



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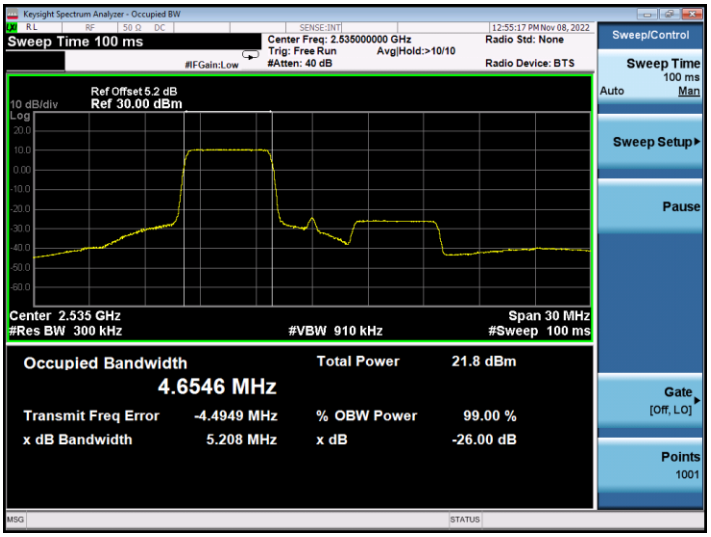

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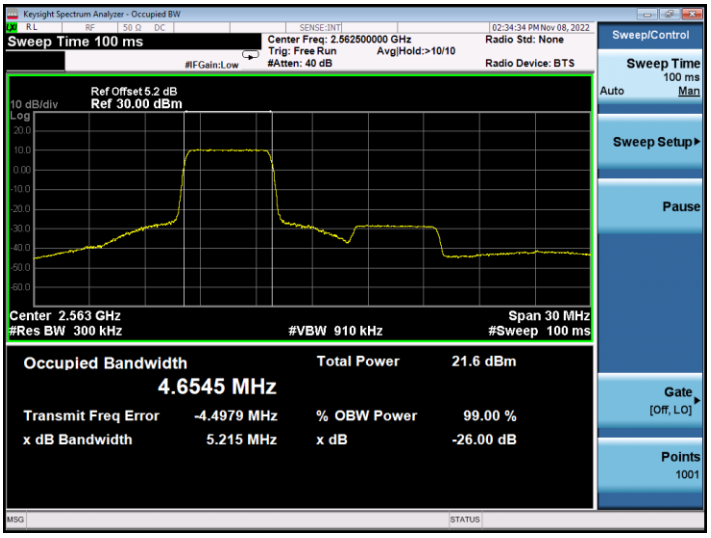
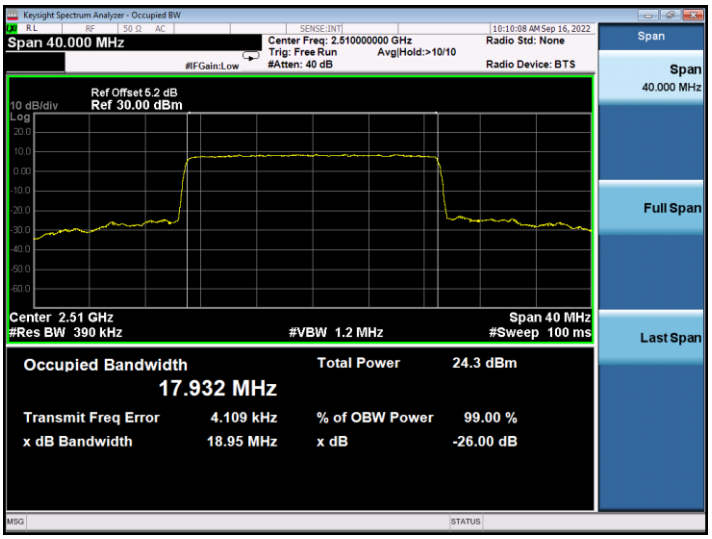


Band7-20MHz-QPSK-20850-100RB#0



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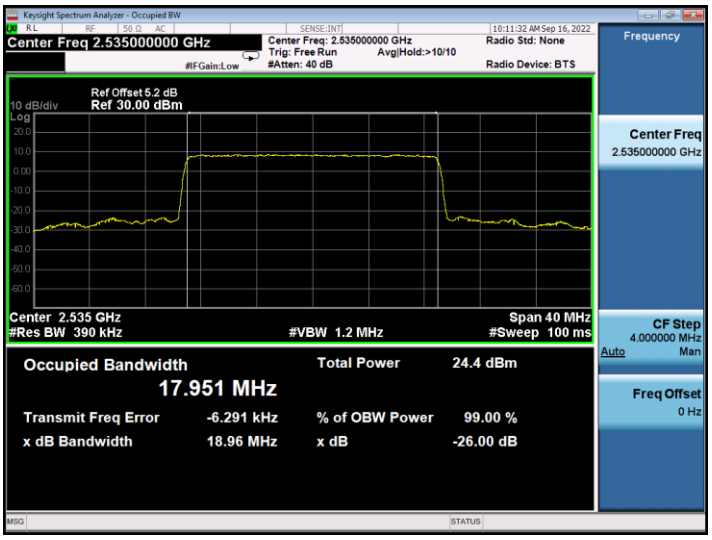

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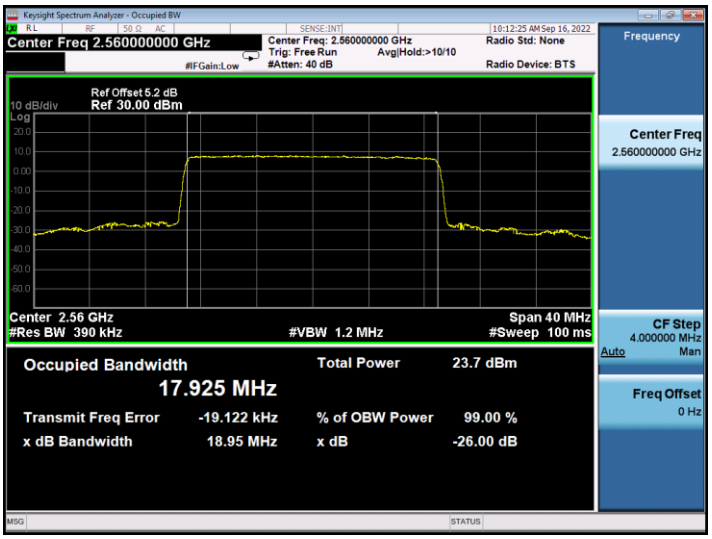

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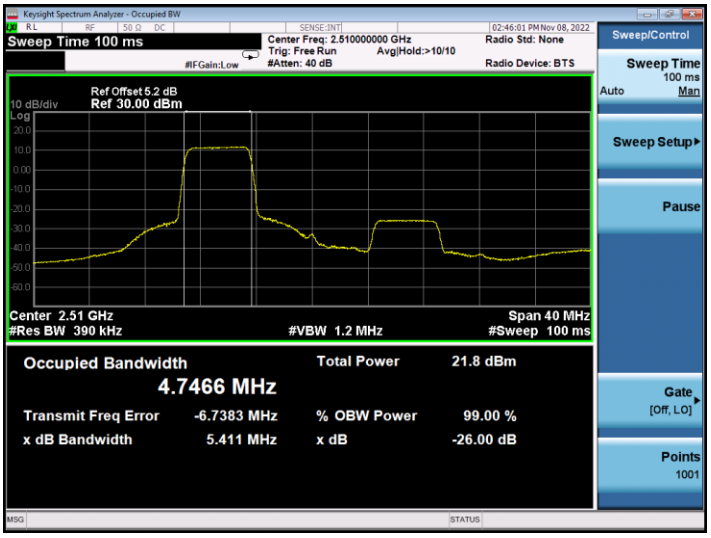

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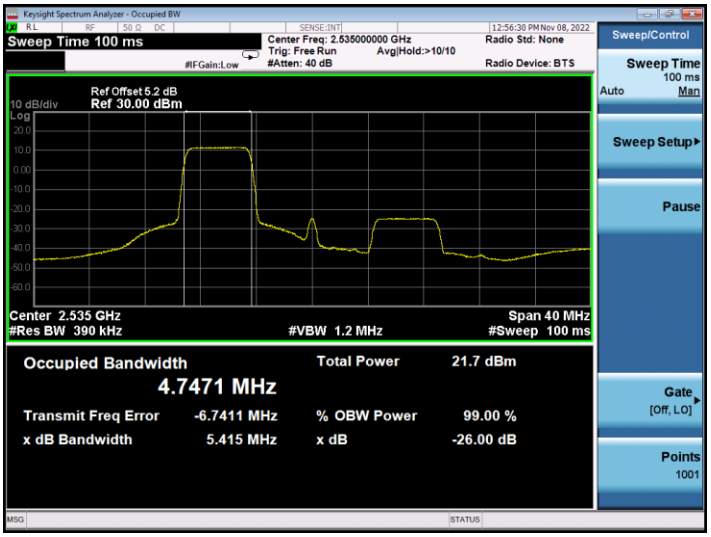

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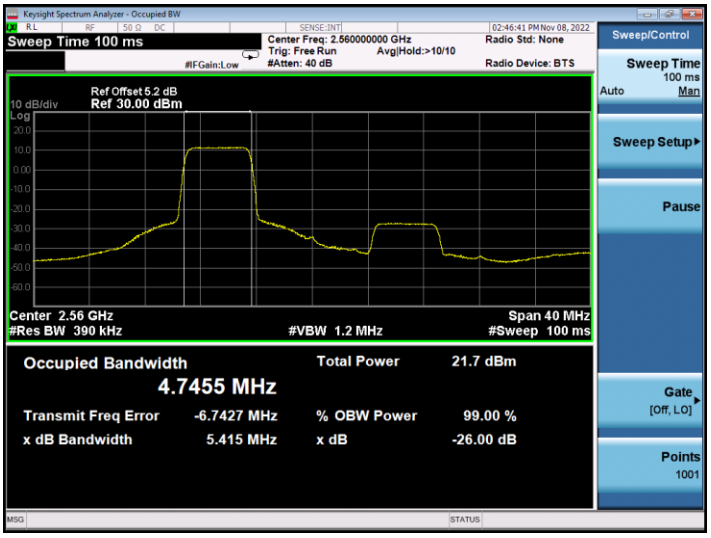


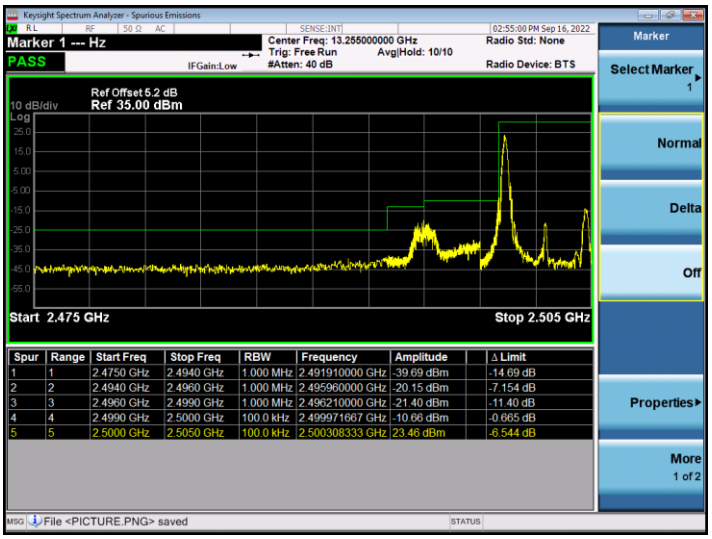
Appendix E: Band Edges Compliance

Test Results

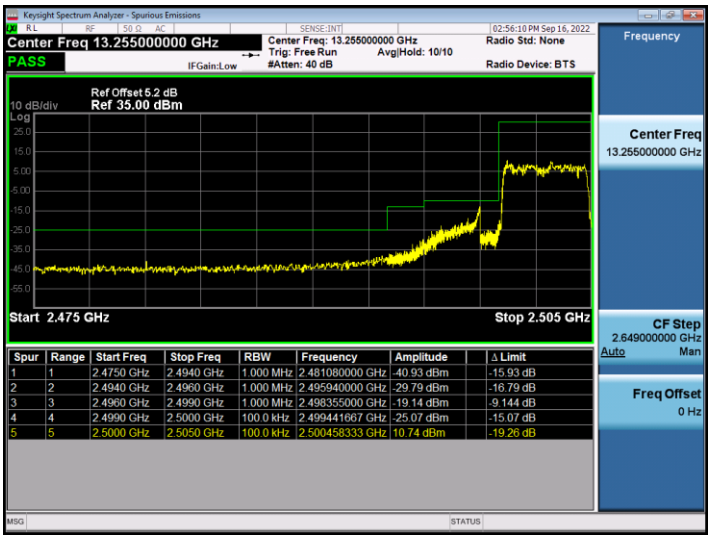
Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dBm)	Verdict
Band7	5MHz	QPSK	20775	1RB#0	see graph below	PASS
Band7	5MHz	QPSK	20775	25RB#0	see graph below	PASS
Band7	5MHz	QPSK	21425	1RB#24	see graph below	PASS
Band7	5MHz	QPSK	21425	25RB#0	see graph below	PASS
Band7	10MHz	QPSK	20800	1RB#0	see graph below	PASS
Band7	10MHz	QPSK	20800	50RB#0	see graph below	PASS
Band7	10MHz	QPSK	21400	1RB#49	see graph below	PASS
Band7	10MHz	QPSK	21400	50RB#0	see graph below	PASS
Band7	15MHz	QPSK	20825	1RB#0	see graph below	PASS
Band7	15MHz	QPSK	20825	75RB#0	see graph below	PASS
Band7	15MHz	QPSK	21375	1RB#74	see graph below	PASS
Band7	15MHz	QPSK	21375	75RB#0	see graph below	PASS
Band7	20MHz	QPSK	20850	1RB#0	see graph below	PASS
Band7	20MHz	QPSK	20850	100RB#0	see graph below	PASS
Band7	20MHz	QPSK	21350	1RB#99	see graph below	PASS
Band7	20MHz	QPSK	21350	100RB#0	see graph below	PASS

Test Plots

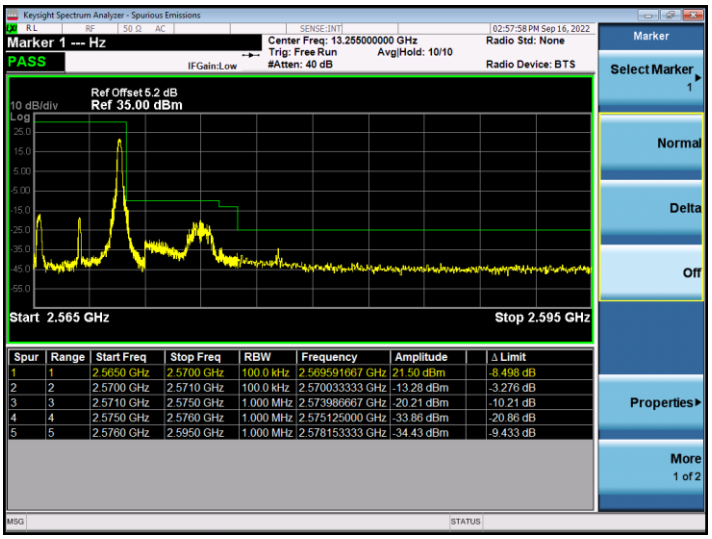
Band7-5MHz-QPSK-20775-1RB#0



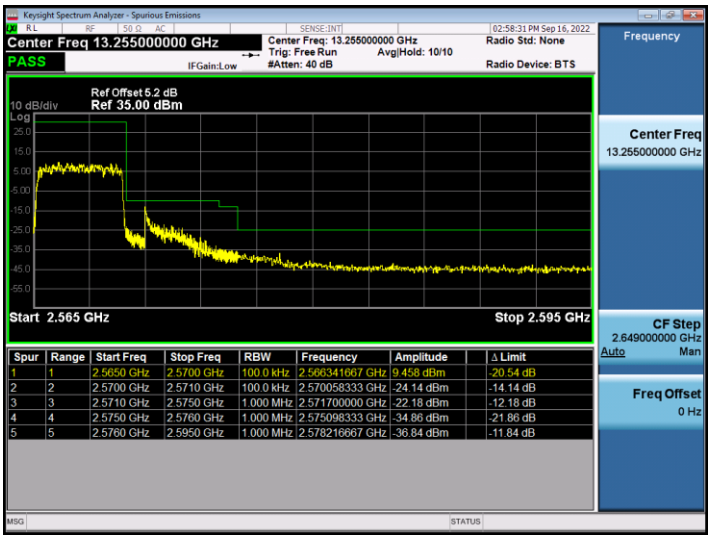
Band7-5MHz-QPSK-20775-25RB#0



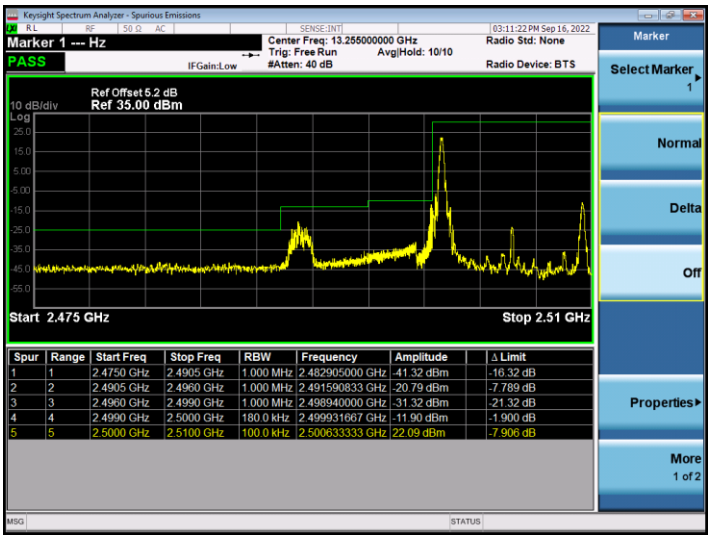
Band7-5MHz-QPSK-21425-1RB#24



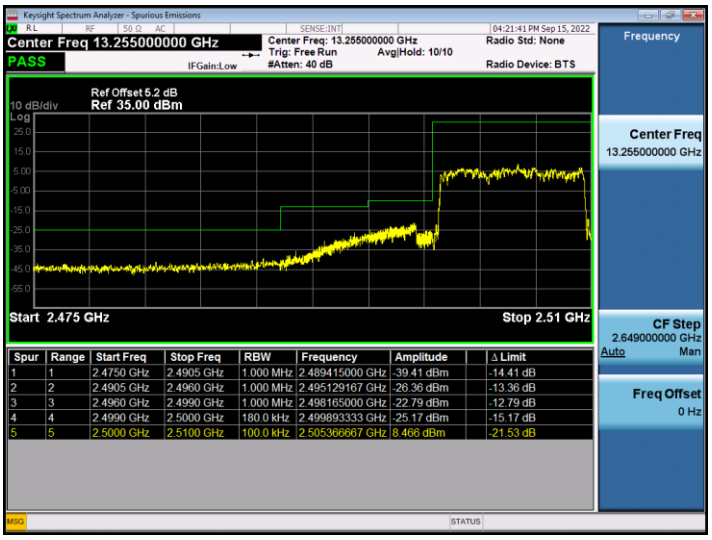
Band7-5MHz-QPSK-21425-25RB#0



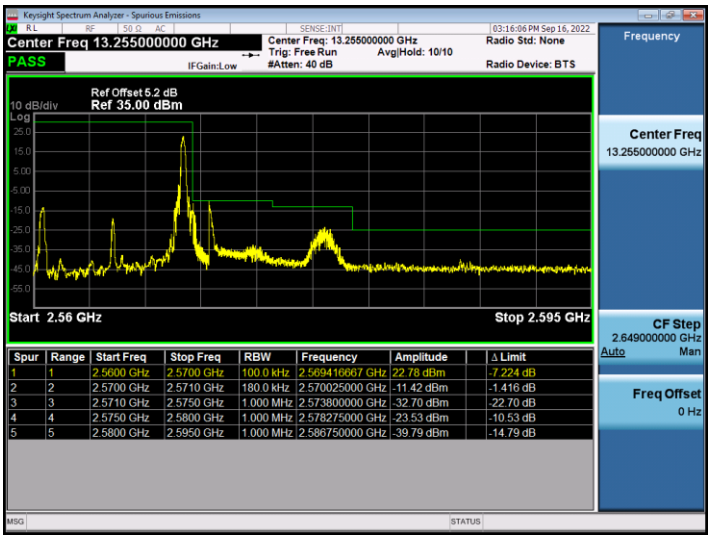
Band7-10MHz-QPSK-20800-1RB#0



Band7-10MHz-QPSK-20800-50RB#0

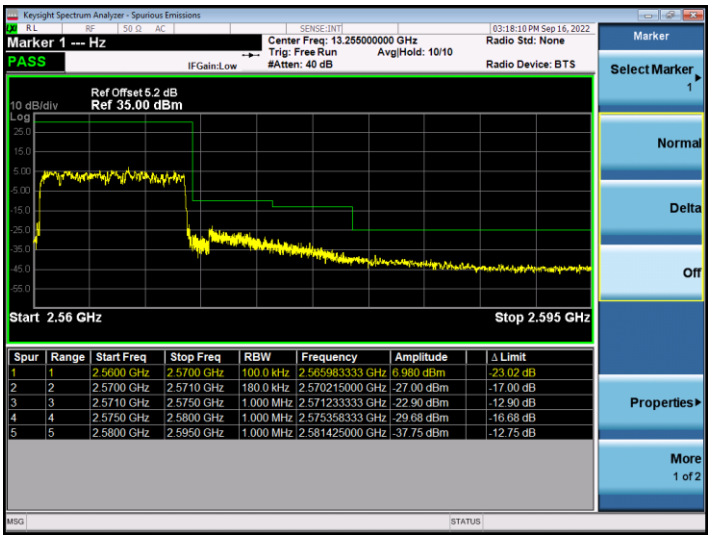


Band7-10MHz-QPSK-21400-1RB#49



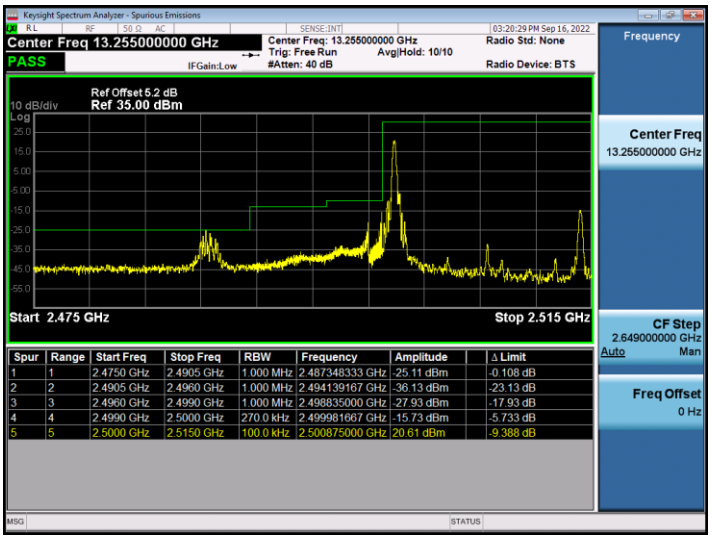
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.5600 GHz	2.5700 GHz	100.0 kHz	2.569416667 GHz	22.78 dBm	-7.224 dB
2	2	2.5700 GHz	2.5710 GHz	180.0 kHz	2.570025000 GHz	-11.42 dBm	-1.416 dB
3	3	2.5710 GHz	2.5750 GHz	1.000 MHz	2.573800000 GHz	-32.70 dBm	-22.70 dB
4	4	2.5750 GHz	2.5800 GHz	1.000 MHz	2.578275000 GHz	-23.53 dBm	-10.53 dB
5	5	2.5800 GHz	2.5950 GHz	1.000 MHz	2.586750000 GHz	-39.79 dBm	-14.79 dB

Band7-10MHz-QPSK-21400-50RB#0

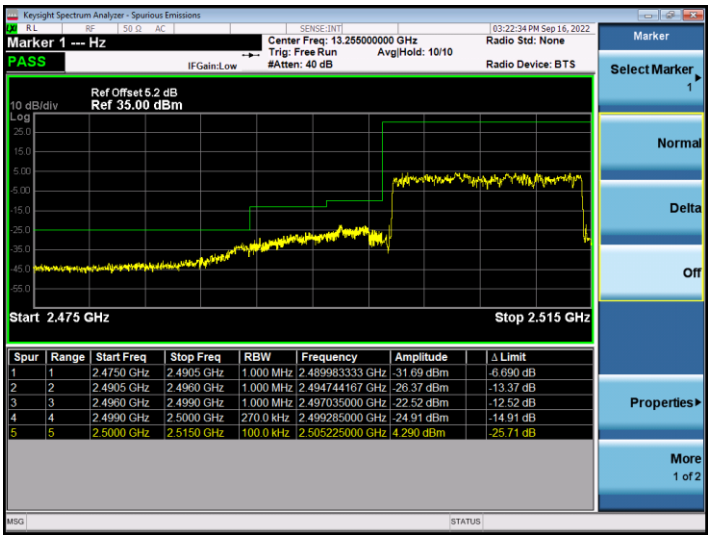


Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.5600 GHz	2.5700 GHz	100.0 kHz	2.565983333 GHz	6.980 dBm	-23.02 dB
2	2	2.5700 GHz	2.5710 GHz	180.0 kHz	2.570215000 GHz	-27.00 dBm	-17.00 dB
3	3	2.5710 GHz	2.5750 GHz	1.000 MHz	2.571233333 GHz	-22.90 dBm	-12.90 dB
4	4	2.5750 GHz	2.5800 GHz	1.000 MHz	2.575358333 GHz	-29.68 dBm	-16.68 dB
5	5	2.5800 GHz	2.5950 GHz	1.000 MHz	2.581425000 GHz	-37.75 dBm	-12.75 dB

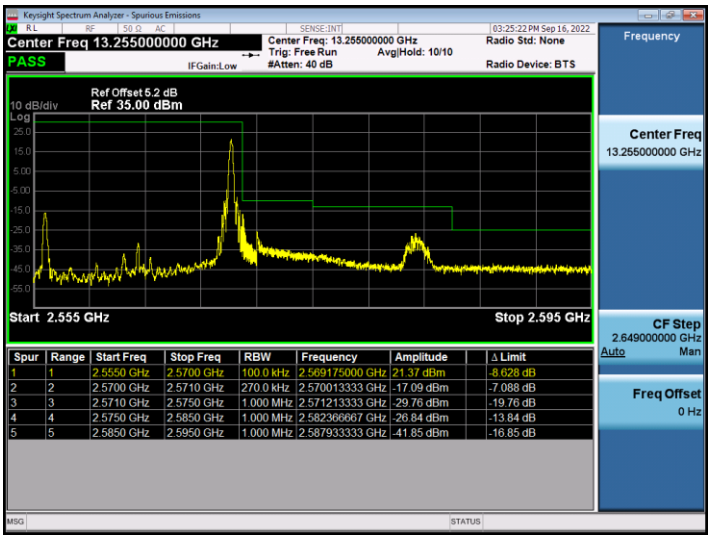
Band7-15MHz-QPSK-20825-1RB#0



Band7-15MHz-QPSK-20825-75RB#0



Band7-15MHz-QPSK-21375-1RB#74



Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.5550 GHz	2.5700 GHz	100.0 kHz	2.569175000 GHz	21.37 dBm	-8.628 dB
2	2	2.5700 GHz	2.5710 GHz	270.0 kHz	2.570013333 GHz	-17.09 dBm	-7.088 dB
3	3	2.5710 GHz	2.5750 GHz	1.000 MHz	2.571213333 GHz	-29.76 dBm	-19.76 dB
4	4	2.5750 GHz	2.5850 GHz	1.000 MHz	2.582366667 GHz	-26.84 dBm	-13.84 dB
5	5	2.5850 GHz	2.5950 GHz	1.000 MHz	2.587933333 GHz	-41.85 dBm	-16.85 dB

Band7-15MHz-QPSK-21375-75RB#0

Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.5550 GHz	2.5700 GHz	100.0 kHz	2.563850000 GHz	-50.60 dBm	-80.60 dB
2	2	2.5700 GHz	2.5710 GHz	270.0 kHz	2.570743333 GHz	-46.89 dBm	-36.89 dB
3	3	2.5710 GHz	2.5750 GHz	1.000 MHz	2.571853333 GHz	-41.85 dBm	-31.85 dB

Band7-20MHz-QPSK-20850-1RB#0