

# LTE Band12 Test Data

**Project No.** : ENS2111040057W00207R

**Company:** : Micro-Star Int'l Co.,Ltd.

**EUT** : Tablet

**Model Number** : MS-ND52-Gen2

**Number of Samples** : 1

**Sample Number** : 1#

**Tested By** : Tracy Hu

**Reviewed By** : Joe Xia

## Appendix A: Effective (Isotropic) Radiated Power Output Data

### Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dBm)	Verdict
Band12	1.4MHz	QPSK	23017	1RB#0	21.91	PASS
Band12	1.4MHz	QPSK	23017	1RB#2	22.02	PASS
Band12	1.4MHz	QPSK	23017	1RB#5	22.00	PASS
Band12	1.4MHz	QPSK	23017	3RB#0	22.04	PASS
Band12	1.4MHz	QPSK	23017	3RB#1	22.02	PASS
Band12	1.4MHz	QPSK	23017	3RB#3	22.02	PASS
Band12	1.4MHz	QPSK	23017	6RB#0	22.04	PASS
Band12	1.4MHz	QPSK	23095	1RB#0	22.09	PASS
Band12	1.4MHz	QPSK	23095	1RB#2	22.04	PASS
Band12	1.4MHz	QPSK	23095	1RB#5	22.00	PASS
Band12	1.4MHz	QPSK	23095	3RB#0	22.07	PASS
Band12	1.4MHz	QPSK	23095	3RB#1	22.08	PASS
Band12	1.4MHz	QPSK	23095	3RB#3	22.04	PASS
Band12	1.4MHz	QPSK	23095	6RB#0	22.13	PASS
Band12	1.4MHz	QPSK	23173	1RB#0	22.08	PASS
Band12	1.4MHz	QPSK	23173	1RB#2	22.03	PASS
Band12	1.4MHz	QPSK	23173	1RB#5	22.02	PASS
Band12	1.4MHz	QPSK	23173	3RB#0	22.14	PASS
Band12	1.4MHz	QPSK	23173	3RB#1	21.99	PASS
Band12	1.4MHz	QPSK	23173	3RB#3	21.91	PASS
Band12	1.4MHz	QPSK	23173	6RB#0	22.00	PASS
Band12	1.4MHz	16QAM	23017	1RB#0	21.77	PASS
Band12	1.4MHz	16QAM	23017	1RB#2	21.93	PASS
Band12	1.4MHz	16QAM	23017	1RB#5	21.81	PASS
Band12	1.4MHz	16QAM	23017	3RB#0	21.84	PASS
Band12	1.4MHz	16QAM	23017	3RB#1	21.77	PASS
Band12	1.4MHz	16QAM	23017	3RB#3	21.98	PASS
Band12	1.4MHz	16QAM	23017	6RB#0	21.99	PASS
Band12	1.4MHz	16QAM	23095	1RB#0	22.04	PASS
Band12	1.4MHz	16QAM	23095	1RB#2	22.04	PASS
Band12	1.4MHz	16QAM	23095	1RB#5	21.91	PASS
Band12	1.4MHz	16QAM	23095	3RB#0	21.95	PASS
Band12	1.4MHz	16QAM	23095	3RB#1	21.96	PASS

Band12	1.4MHz	16QAM	23095	3RB#3	21.92	PASS
Band12	1.4MHz	16QAM	23095	6RB#0	22.09	PASS
Band12	1.4MHz	16QAM	23173	1RB#0	22.10	PASS
Band12	1.4MHz	16QAM	23173	1RB#2	22.09	PASS
Band12	1.4MHz	16QAM	23173	1RB#5	21.99	PASS
Band12	1.4MHz	16QAM	23173	3RB#0	21.89	PASS
Band12	1.4MHz	16QAM	23173	3RB#1	21.91	PASS
Band12	1.4MHz	16QAM	23173	3RB#3	21.84	PASS
Band12	1.4MHz	16QAM	23173	6RB#0	21.98	PASS
Band12	3MHz	QPSK	23025	1RB#0	22.22	PASS
Band12	3MHz	QPSK	23025	1RB#8	22.24	PASS
Band12	3MHz	QPSK	23025	1RB#14	22.12	PASS
Band12	3MHz	QPSK	23025	8RB#0	22.20	PASS
Band12	3MHz	QPSK	23025	8RB#4	22.14	PASS
Band12	3MHz	QPSK	23025	8RB#7	22.09	PASS
Band12	3MHz	QPSK	23025	15RB#0	22.00	PASS
Band12	3MHz	QPSK	23095	1RB#0	22.11	PASS
Band12	3MHz	QPSK	23095	1RB#8	22.07	PASS
Band12	3MHz	QPSK	23095	1RB#14	22.02	PASS
Band12	3MHz	QPSK	23095	8RB#0	22.10	PASS
Band12	3MHz	QPSK	23095	8RB#4	22.08	PASS
Band12	3MHz	QPSK	23095	8RB#7	22.08	PASS
Band12	3MHz	QPSK	23095	15RB#0	22.11	PASS
Band12	3MHz	QPSK	23165	1RB#0	22.11	PASS
Band12	3MHz	QPSK	23165	1RB#8	22.10	PASS
Band12	3MHz	QPSK	23165	1RB#14	21.95	PASS
Band12	3MHz	QPSK	23165	8RB#0	22.09	PASS
Band12	3MHz	QPSK	23165	8RB#4	22.13	PASS
Band12	3MHz	QPSK	23165	8RB#7	22.12	PASS
Band12	3MHz	QPSK	23165	15RB#0	22.07	PASS
Band12	3MHz	16QAM	23025	1RB#0	22.39	PASS
Band12	3MHz	16QAM	23025	1RB#8	22.17	PASS
Band12	3MHz	16QAM	23025	1RB#14	22.10	PASS
Band12	3MHz	16QAM	23025	8RB#0	22.27	PASS
Band12	3MHz	16QAM	23025	8RB#4	22.08	PASS
Band12	3MHz	16QAM	23025	8RB#7	22.16	PASS
Band12	3MHz	16QAM	23025	15RB#0	22.20	PASS

Band12	3MHz	16QAM	23095	1RB#0	21.99	PASS
Band12	3MHz	16QAM	23095	1RB#8	21.93	PASS
Band12	3MHz	16QAM	23095	1RB#14	21.90	PASS
Band12	3MHz	16QAM	23095	8RB#0	22.11	PASS
Band12	3MHz	16QAM	23095	8RB#4	22.12	PASS
Band12	3MHz	16QAM	23095	8RB#7	22.11	PASS
Band12	3MHz	16QAM	23095	15RB#0	22.06	PASS
Band12	3MHz	16QAM	23165	1RB#0	21.89	PASS
Band12	3MHz	16QAM	23165	1RB#8	21.93	PASS
Band12	3MHz	16QAM	23165	1RB#14	21.68	PASS
Band12	3MHz	16QAM	23165	8RB#0	22.09	PASS
Band12	3MHz	16QAM	23165	8RB#4	22.12	PASS
Band12	3MHz	16QAM	23165	8RB#7	22.13	PASS
Band12	3MHz	16QAM	23165	15RB#0	21.99	PASS
Band12	5MHz	QPSK	23035	1RB#0	22.19	PASS
Band12	5MHz	QPSK	23035	1RB#12	22.44	PASS
Band12	5MHz	QPSK	23035	1RB#24	22.22	PASS
Band12	5MHz	QPSK	23035	12RB#0	22.24	PASS
Band12	5MHz	QPSK	23035	12RB#6	21.98	PASS
Band12	5MHz	QPSK	23035	12RB#13	22.16	PASS
Band12	5MHz	QPSK	23035	25RB#0	22.09	PASS
Band12	5MHz	QPSK	23095	1RB#0	21.91	PASS
Band12	5MHz	QPSK	23095	1RB#12	22.19	PASS
Band12	5MHz	QPSK	23095	1RB#24	22.14	PASS
Band12	5MHz	QPSK	23095	12RB#0	22.24	PASS
Band12	5MHz	QPSK	23095	12RB#6	22.20	PASS
Band12	5MHz	QPSK	23095	12RB#13	22.17	PASS
Band12	5MHz	QPSK	23095	25RB#0	22.14	PASS
Band12	5MHz	QPSK	23155	1RB#0	22.05	PASS
Band12	5MHz	QPSK	23155	1RB#12	22.20	PASS
Band12	5MHz	QPSK	23155	1RB#24	22.16	PASS
Band12	5MHz	QPSK	23155	12RB#0	22.12	PASS
Band12	5MHz	QPSK	23155	12RB#6	22.12	PASS
Band12	5MHz	QPSK	23155	12RB#13	22.15	PASS
Band12	5MHz	QPSK	23155	25RB#0	22.14	PASS
Band12	5MHz	16QAM	23035	1RB#0	22.33	PASS
Band12	5MHz	16QAM	23035	1RB#12	22.30	PASS

Band12	5MHz	16QAM	23035	1RB#24	22.23	PASS
Band12	5MHz	16QAM	23035	12RB#0	22.13	PASS
Band12	5MHz	16QAM	23035	12RB#6	22.16	PASS
Band12	5MHz	16QAM	23035	12RB#13	22.11	PASS
Band12	5MHz	16QAM	23035	25RB#0	22.15	PASS
Band12	5MHz	16QAM	23095	1RB#0	22.28	PASS
Band12	5MHz	16QAM	23095	1RB#12	22.27	PASS
Band12	5MHz	16QAM	23095	1RB#24	22.25	PASS
Band12	5MHz	16QAM	23095	12RB#0	22.25	PASS
Band12	5MHz	16QAM	23095	12RB#6	22.23	PASS
Band12	5MHz	16QAM	23095	12RB#13	22.15	PASS
Band12	5MHz	16QAM	23095	25RB#0	22.09	PASS
Band12	5MHz	16QAM	23155	1RB#0	21.95	PASS
Band12	5MHz	16QAM	23155	1RB#12	22.21	PASS
Band12	5MHz	16QAM	23155	1RB#24	22.07	PASS
Band12	5MHz	16QAM	23155	12RB#0	22.22	PASS
Band12	5MHz	16QAM	23155	12RB#6	22.19	PASS
Band12	5MHz	16QAM	23155	12RB#13	22.20	PASS
Band12	5MHz	16QAM	23155	25RB#0	22.08	PASS
Band12	10MHz	QPSK	23060	1RB#0	22.42	PASS
Band12	10MHz	QPSK	23060	1RB#24	22.29	PASS
Band12	10MHz	QPSK	23060	1RB#49	22.22	PASS
Band12	10MHz	QPSK	23060	25RB#0	22.24	PASS
Band12	10MHz	QPSK	23060	25RB#12	22.13	PASS
Band12	10MHz	QPSK	23060	25RB#25	22.28	PASS
Band12	10MHz	QPSK	23060	50RB#0	22.09	PASS
Band12	10MHz	QPSK	23095	1RB#0	22.11	PASS
Band12	10MHz	QPSK	23095	1RB#24	22.10	PASS
Band12	10MHz	QPSK	23095	1RB#49	22.10	PASS
Band12	10MHz	QPSK	23095	25RB#0	22.32	PASS
Band12	10MHz	QPSK	23095	25RB#12	22.04	PASS
Band12	10MHz	QPSK	23095	25RB#25	22.12	PASS
Band12	10MHz	QPSK	23095	50RB#0	22.17	PASS
Band12	10MHz	QPSK	23130	1RB#0	22.06	PASS
Band12	10MHz	QPSK	23130	1RB#24	22.04	PASS
Band12	10MHz	QPSK	23130	1RB#49	22.14	PASS
Band12	10MHz	QPSK	23130	25RB#0	22.18	PASS

Band12	10MHz	QPSK	23130	25RB#12	22.20	PASS
Band12	10MHz	QPSK	23130	25RB#25	22.18	PASS
Band12	10MHz	QPSK	23130	50RB#0	22.24	PASS
Band12	10MHz	16QAM	23060	1RB#0	22.29	PASS
Band12	10MHz	16QAM	23060	1RB#24	22.20	PASS
Band12	10MHz	16QAM	23060	1RB#49	22.24	PASS
Band12	10MHz	16QAM	23060	25RB#0	22.10	PASS
Band12	10MHz	16QAM	23060	25RB#12	22.07	PASS
Band12	10MHz	16QAM	23060	25RB#25	22.16	PASS
Band12	10MHz	16QAM	23060	50RB#0	22.11	PASS
Band12	10MHz	16QAM	23095	1RB#0	22.01	PASS
Band12	10MHz	16QAM	23095	1RB#24	21.91	PASS
Band12	10MHz	16QAM	23095	1RB#49	21.89	PASS
Band12	10MHz	16QAM	23095	25RB#0	22.16	PASS
Band12	10MHz	16QAM	23095	25RB#12	22.16	PASS
Band12	10MHz	16QAM	23095	25RB#25	22.22	PASS
Band12	10MHz	16QAM	23095	50RB#0	22.21	PASS
Band12	10MHz	16QAM	23130	1RB#0	21.79	PASS
Band12	10MHz	16QAM	23130	1RB#24	21.82	PASS
Band12	10MHz	16QAM	23130	1RB#49	21.88	PASS
Band12	10MHz	16QAM	23130	25RB#0	22.11	PASS
Band12	10MHz	16QAM	23130	25RB#12	22.15	PASS
Band12	10MHz	16QAM	23130	25RB#25	22.21	PASS
Band12	10MHz	16QAM	23130	50RB#0	22.22	PASS

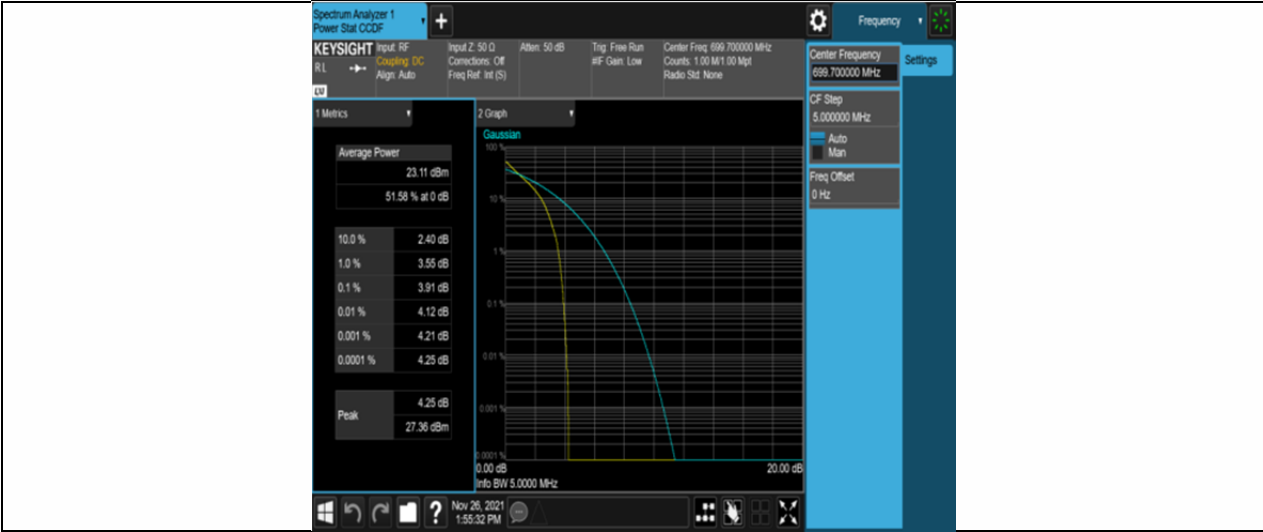
## Appendix B: Peak-to-Average Ratio(CCDF)

### Test Result

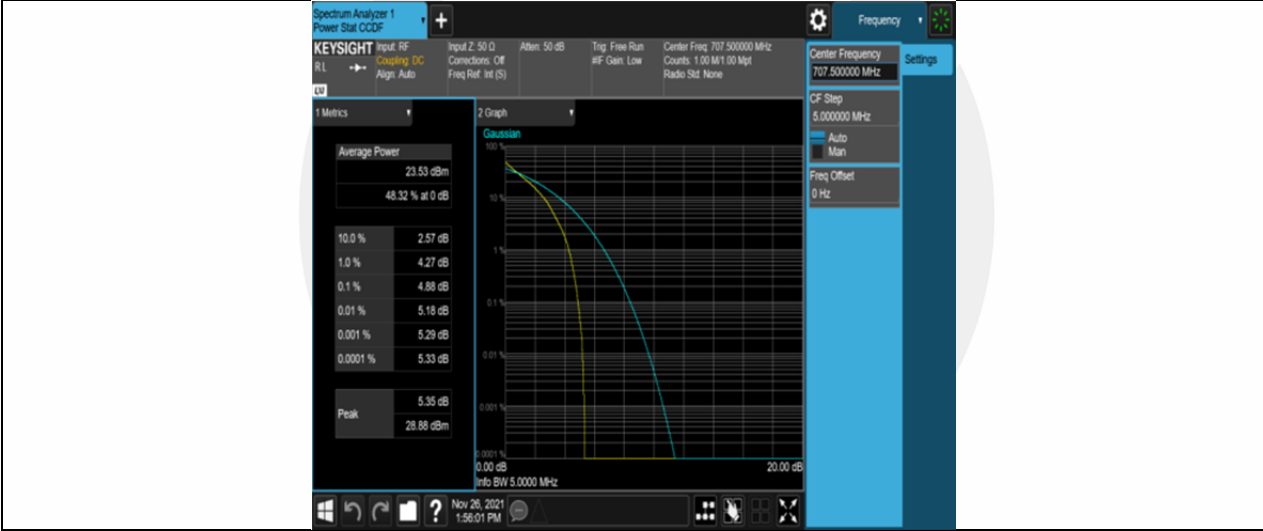
Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict
Band12	1.4MHz	QPSK	23017	6RB#0	3.91	13	PASS
Band12	1.4MHz	QPSK	23095	6RB#0	4.88	13	PASS
Band12	1.4MHz	QPSK	23173	6RB#0	4.89	13	PASS
Band12	1.4MHz	16QAM	23017	6RB#0	4.19	13	PASS
Band12	1.4MHz	16QAM	23095	6RB#0	5.32	13	PASS
Band12	1.4MHz	16QAM	23173	6RB#0	5.21	13	PASS
Band12	3MHz	QPSK	23025	15RB#0	4.37	13	PASS
Band12	3MHz	QPSK	23095	15RB#0	4.85	13	PASS
Band12	3MHz	QPSK	23165	15RB#0	4.94	13	PASS
Band12	3MHz	16QAM	23025	15RB#0	4.65	13	PASS
Band12	3MHz	16QAM	23095	15RB#0	5.30	13	PASS
Band12	3MHz	16QAM	23165	15RB#0	5.39	13	PASS
Band12	5MHz	QPSK	23035	25RB#0	4.97	13	PASS
Band12	5MHz	QPSK	23095	25RB#0	4.95	13	PASS
Band12	5MHz	QPSK	23155	25RB#0	5.05	13	PASS
Band12	5MHz	16QAM	23035	25RB#0	5.36	13	PASS
Band12	5MHz	16QAM	23095	25RB#0	5.42	13	PASS
Band12	5MHz	16QAM	23155	25RB#0	5.49	13	PASS
Band12	10MHz	QPSK	23060	50RB#0	4.77	13	PASS
Band12	10MHz	QPSK	23095	50RB#0	4.53	13	PASS
Band12	10MHz	QPSK	23130	50RB#0	4.58	13	PASS
Band12	10MHz	16QAM	23060	50RB#0	6.13	13	PASS
Band12	10MHz	16QAM	23095	50RB#0	5.84	13	PASS
Band12	10MHz	16QAM	23130	50RB#0	5.69	13	PASS



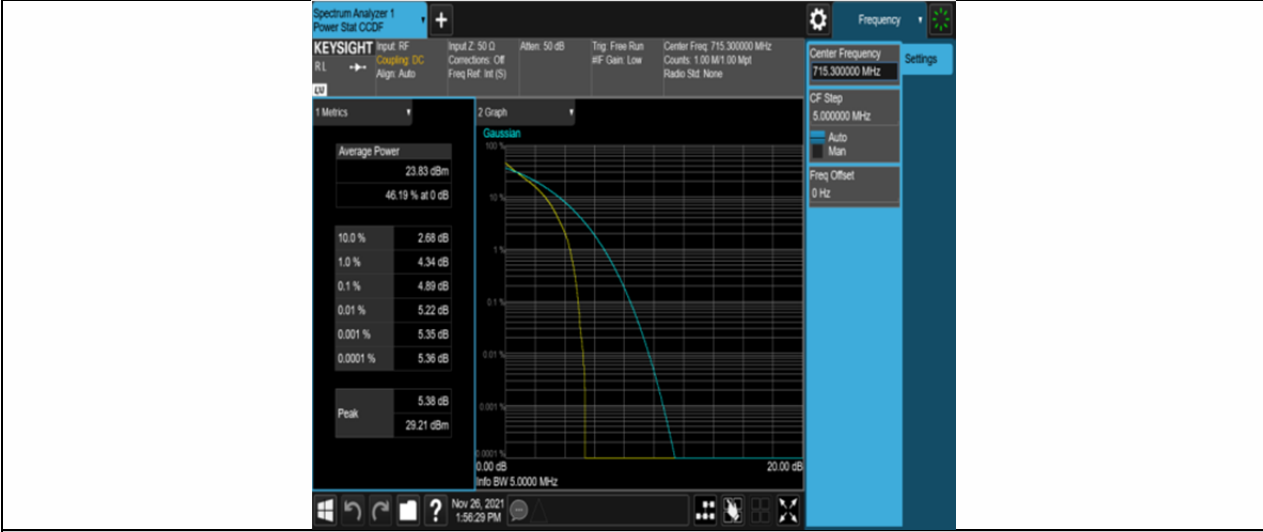
## Test Graphs



Band12-1.4MHz-QPSK-23017-6RB#0

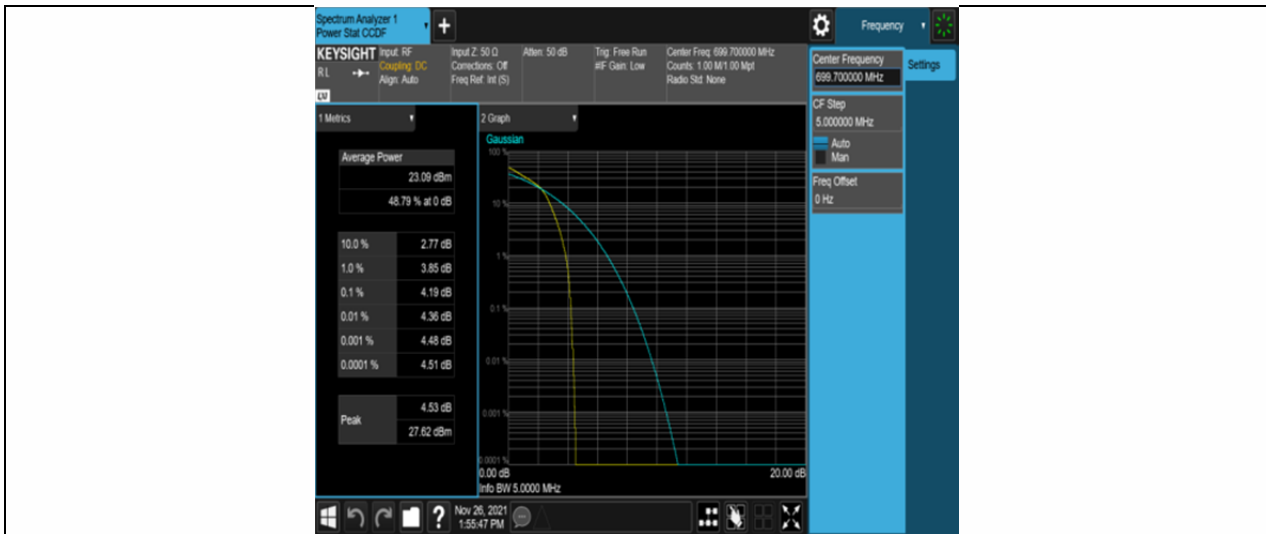


Band12-1.4MHz-QPSK-23095-6RB#0



Band12-1.4MHz-QPSK-23173-6RB#0

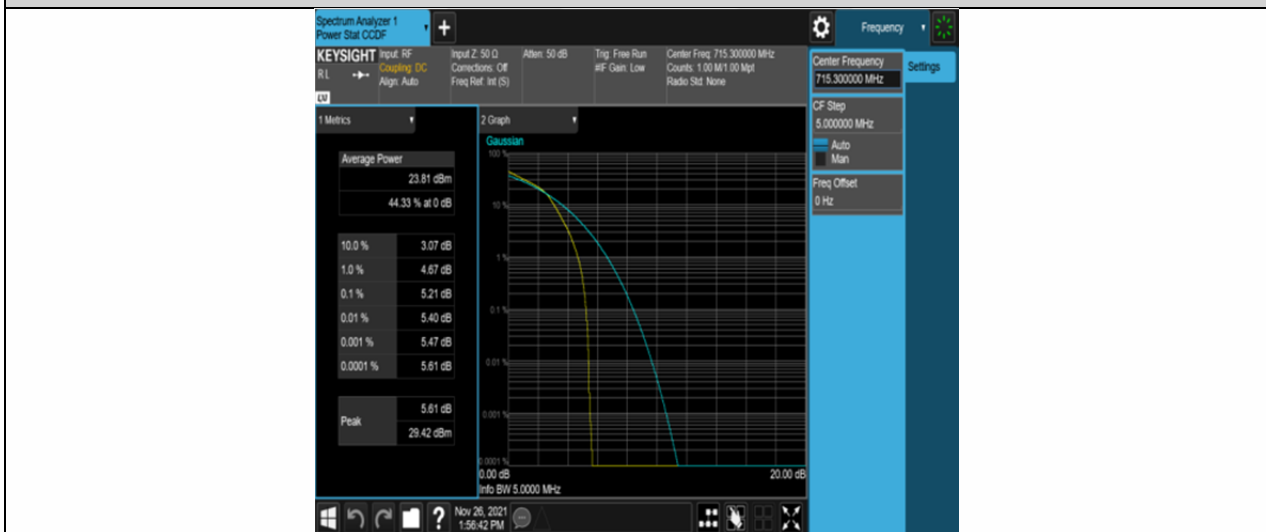




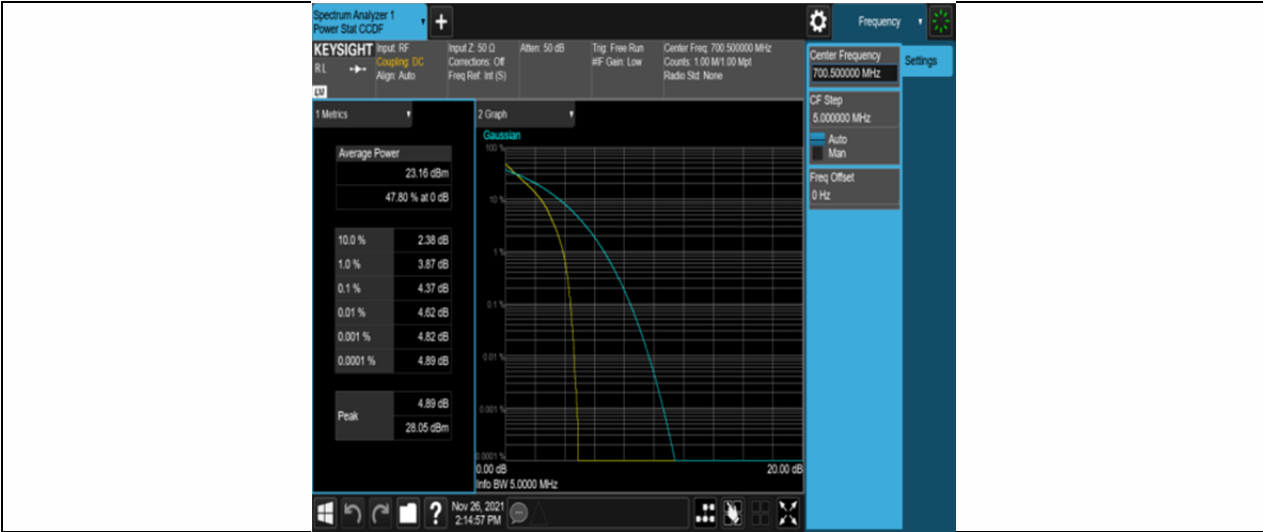
Band12-1.4MHz-16QAM-23017-6RB#0



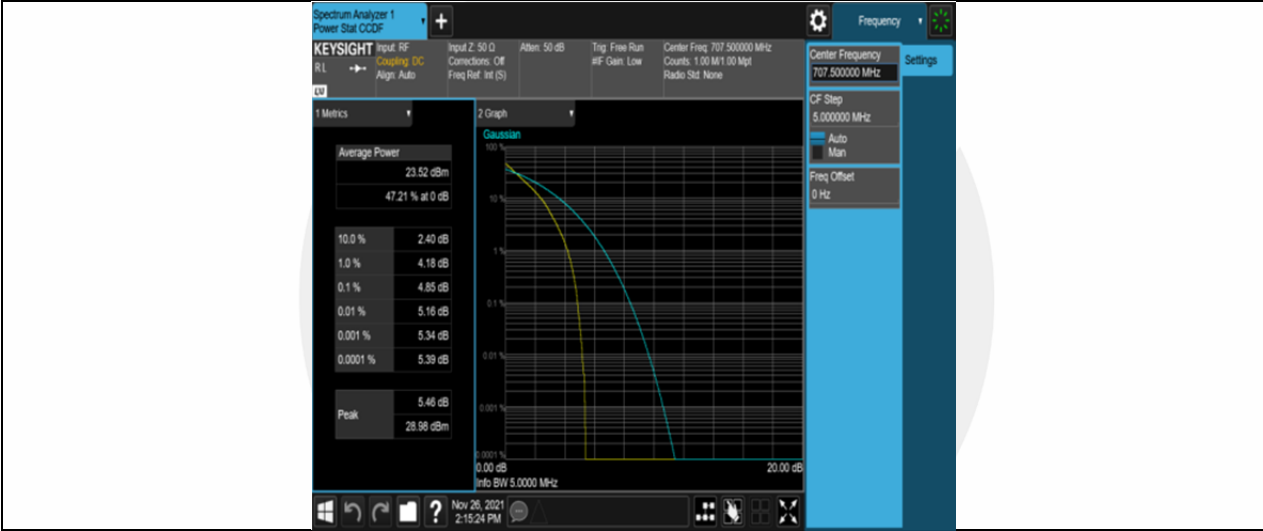
Band12-1.4MHz-16QAM-23095-6RB#0



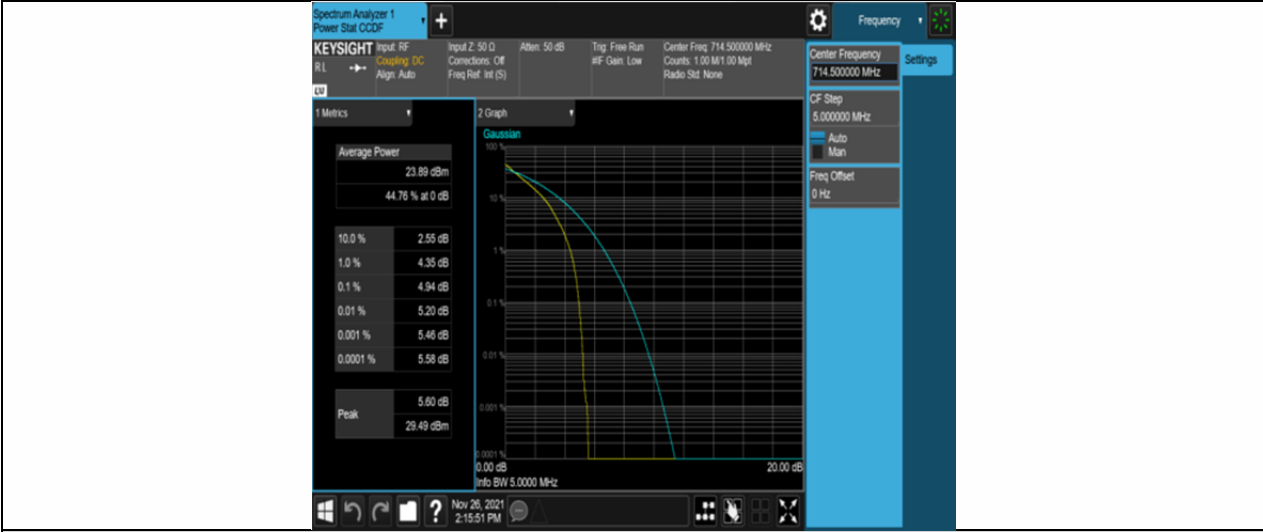
Band12-1.4MHz-16QAM-23173-6RB#0



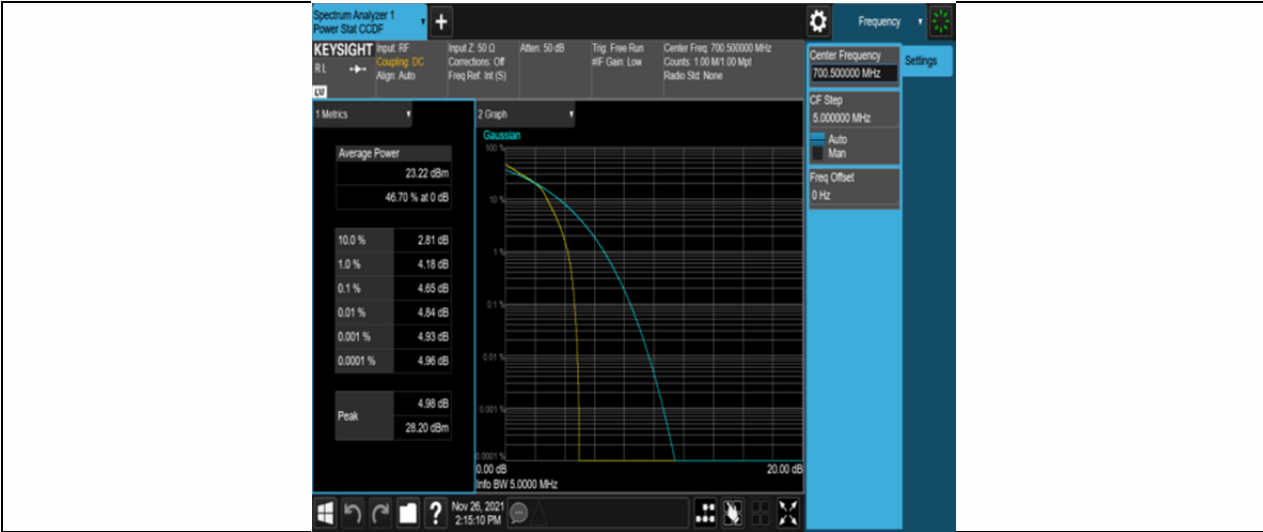
Band12-3MHz-QPSK-23025-15RB#0



Band12-3MHz-QPSK-23095-15RB#0



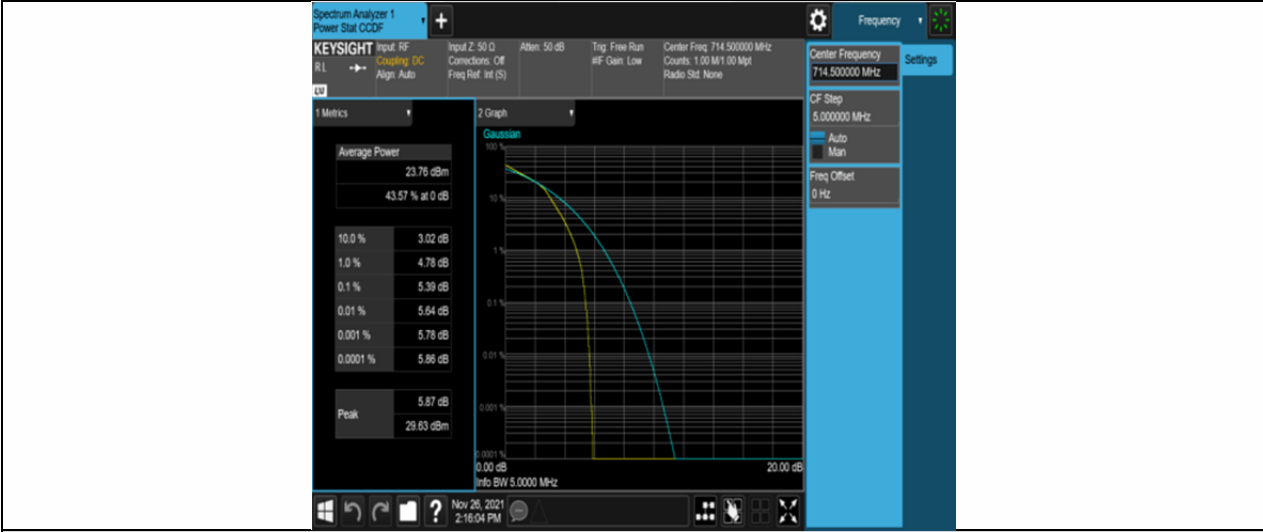
Band12-3MHz-QPSK-23165-15RB#0



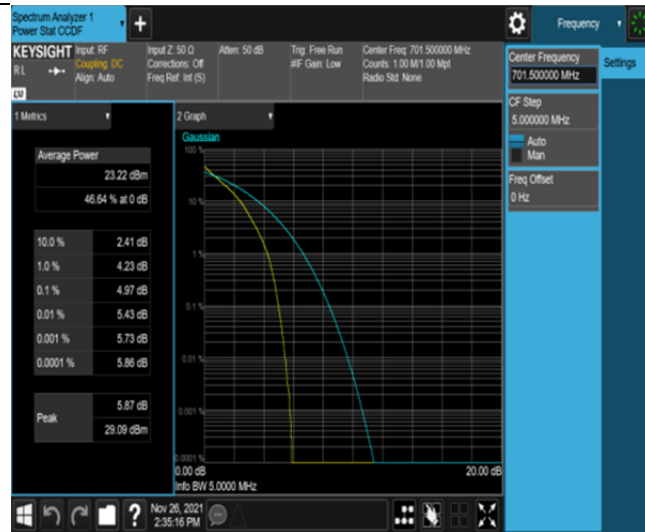
Band12-3MHz-16QAM-23025-15RB#0



Band12-3MHz-16QAM-23095-15RB#0



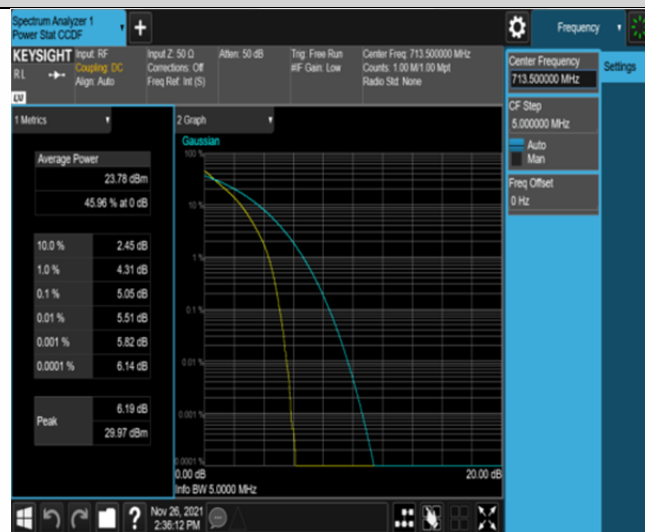
Band12-3MHz-16QAM-23165-15RB#0



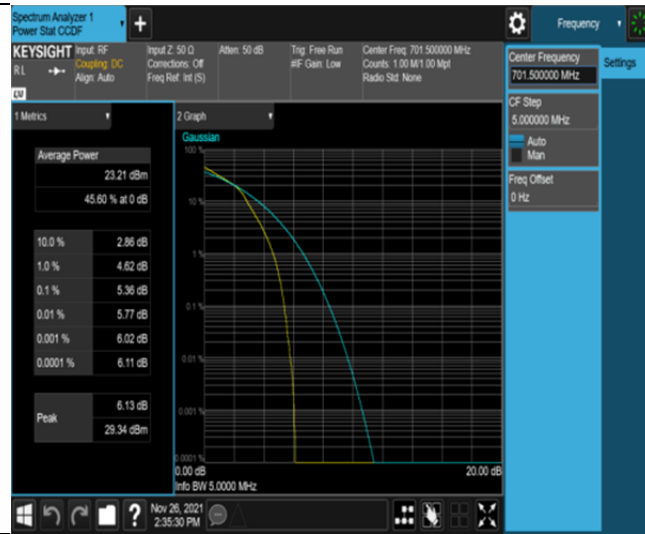
Band12-5MHz-QPSK-23035-25RB#0



Band12-5MHz-QPSK-23095-25RB#0



Band12-5MHz-QPSK-23155-25RB#0



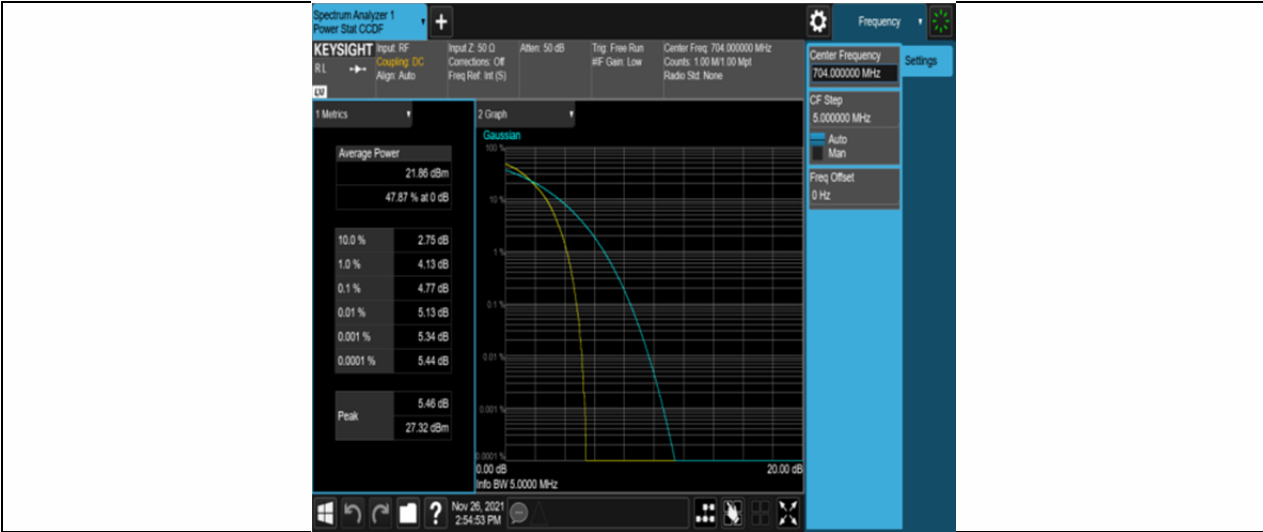
Band12-5MHz-16QAM-23035-25RB#0



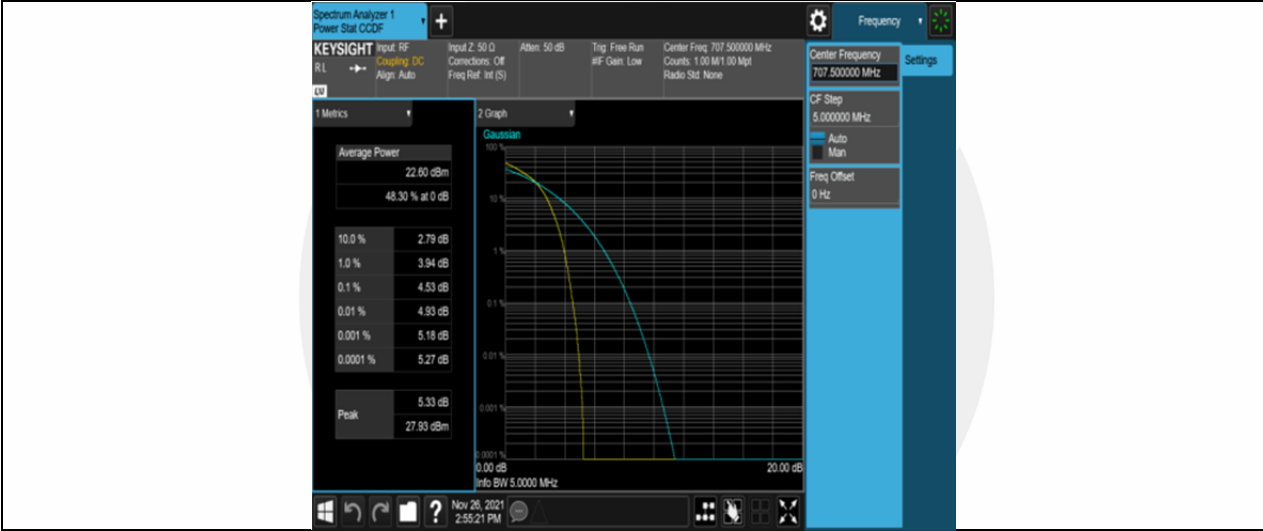
Band12-5MHz-16QAM-23095-25RB#0



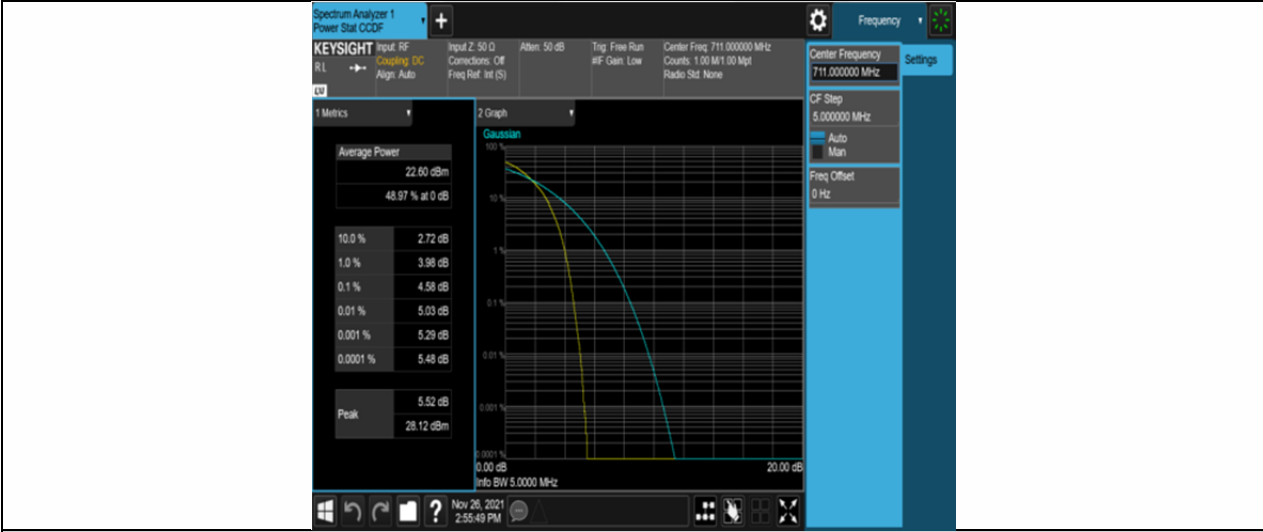
Band12-5MHz-16QAM-23155-25RB#0



Band12-10MHz-QPSK-23060-50RB#0



Band12-10MHz-QPSK-23095-50RB#0



Band12-10MHz-QPSK-23130-50RB#0



Band12-10MHz-16QAM-23060-50RB#0



Band12-10MHz-16QAM-23095-50RB#0



Band12-10MHz-16QAM-23130-50RB#0

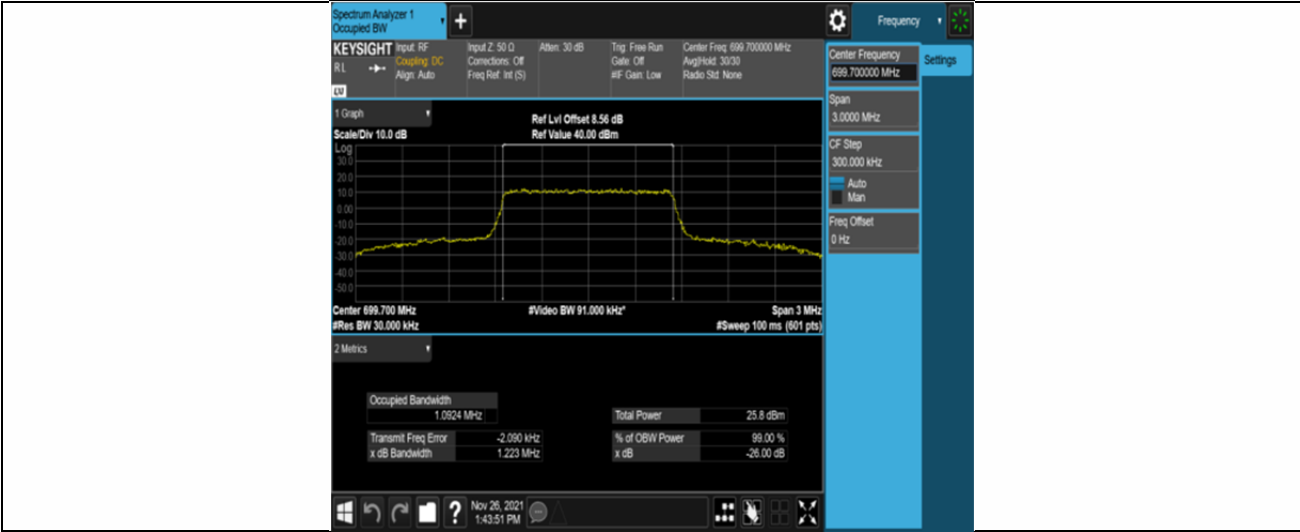


## Appendix C: 26dB Bandwidth and Occupied Bandwidth

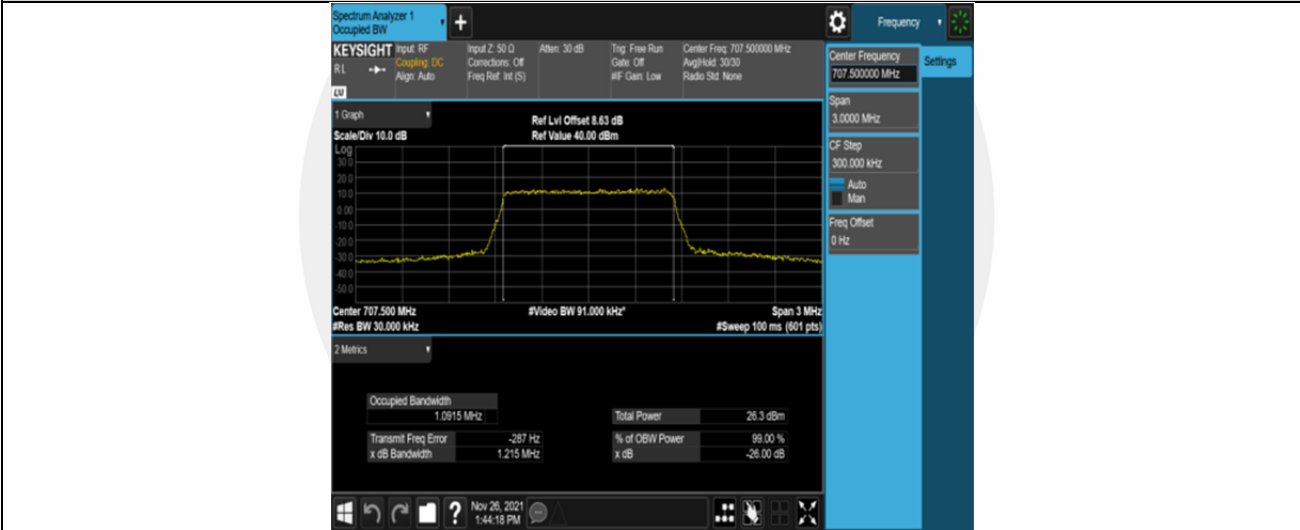
### Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
Band12	1.4MHz	QPSK	23017	6RB#0	1.0924	1.223	PASS
Band12	1.4MHz	QPSK	23095	6RB#0	1.0915	1.215	PASS
Band12	1.4MHz	QPSK	23173	6RB#0	1.0907	1.221	PASS
Band12	1.4MHz	16QAM	23017	6RB#0	1.0918	1.248	PASS
Band12	1.4MHz	16QAM	23095	6RB#0	1.0924	1.226	PASS
Band12	1.4MHz	16QAM	23173	6RB#0	1.0906	1.208	PASS
Band12	3MHz	QPSK	23025	15RB#0	2.6932	2.905	PASS
Band12	3MHz	QPSK	23095	15RB#0	2.6940	2.922	PASS
Band12	3MHz	QPSK	23165	15RB#0	2.7046	2.923	PASS
Band12	3MHz	16QAM	23025	15RB#0	2.6976	2.930	PASS
Band12	3MHz	16QAM	23095	15RB#0	2.6927	2.926	PASS
Band12	3MHz	16QAM	23165	15RB#0	2.7041	2.907	PASS
Band12	5MHz	QPSK	23035	25RB#0	4.5074	4.866	PASS
Band12	5MHz	QPSK	23095	25RB#0	4.4853	4.852	PASS
Band12	5MHz	QPSK	23155	25RB#0	4.5122	4.860	PASS
Band12	5MHz	16QAM	23035	25RB#0	4.5119	4.875	PASS
Band12	5MHz	16QAM	23095	25RB#0	4.4941	4.860	PASS
Band12	5MHz	16QAM	23155	25RB#0	4.5175	4.877	PASS
Band12	10MHz	QPSK	23060	50RB#0	9.0194	9.557	PASS
Band12	10MHz	QPSK	23095	50RB#0	8.9433	9.496	PASS
Band12	10MHz	QPSK	23130	50RB#0	8.9493	9.514	PASS
Band12	10MHz	16QAM	23060	50RB#0	9.0074	9.564	PASS
Band12	10MHz	16QAM	23095	50RB#0	8.9351	9.493	PASS
Band12	10MHz	16QAM	23130	50RB#0	8.9637	9.504	PASS

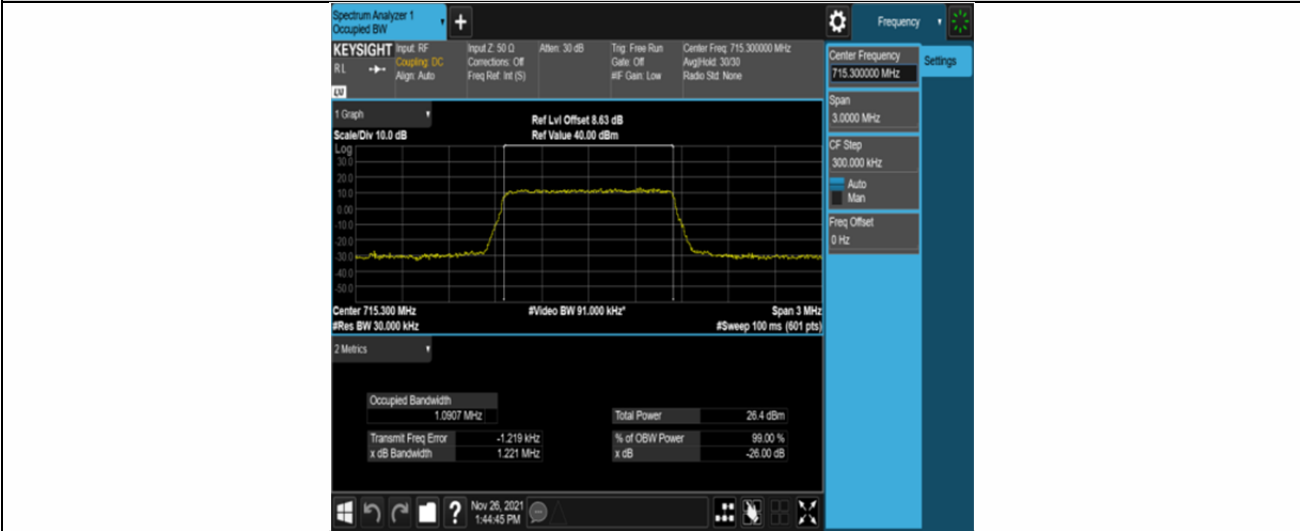
## Test Graphs



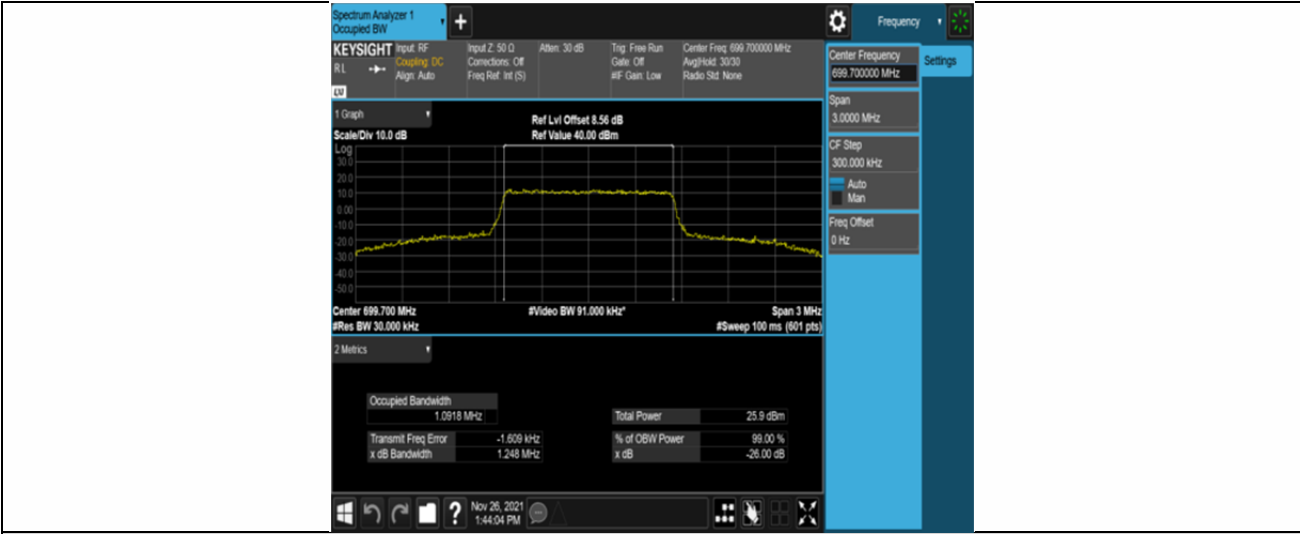
Band12-1.4MHz-QPSK-23017-6RB#0



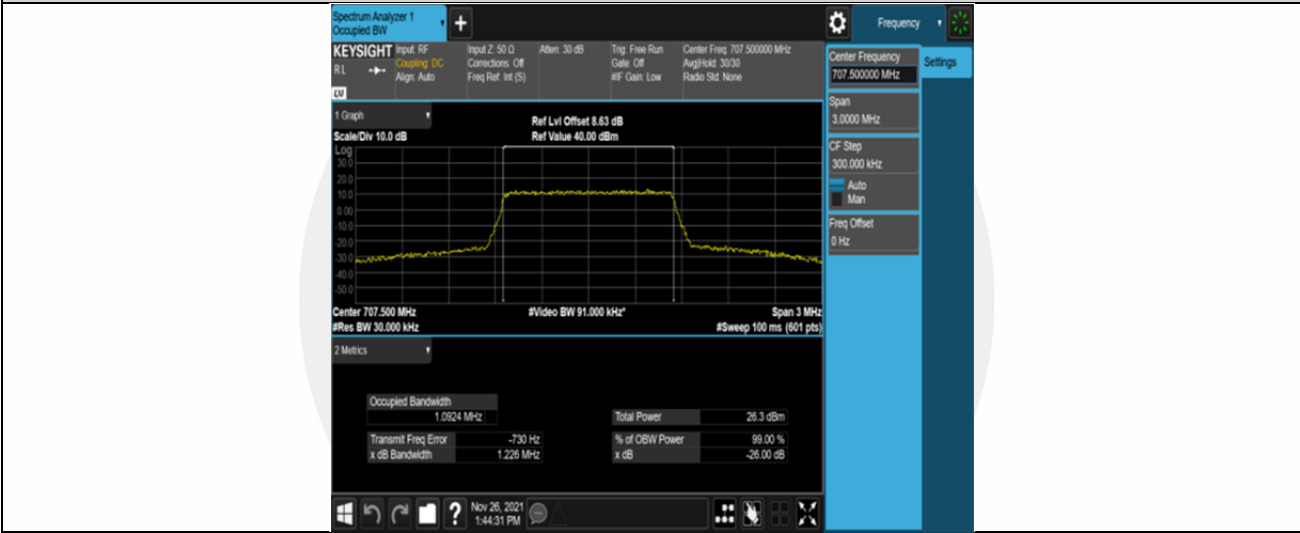
Band12-1.4MHz-QPSK-23095-6RB#0



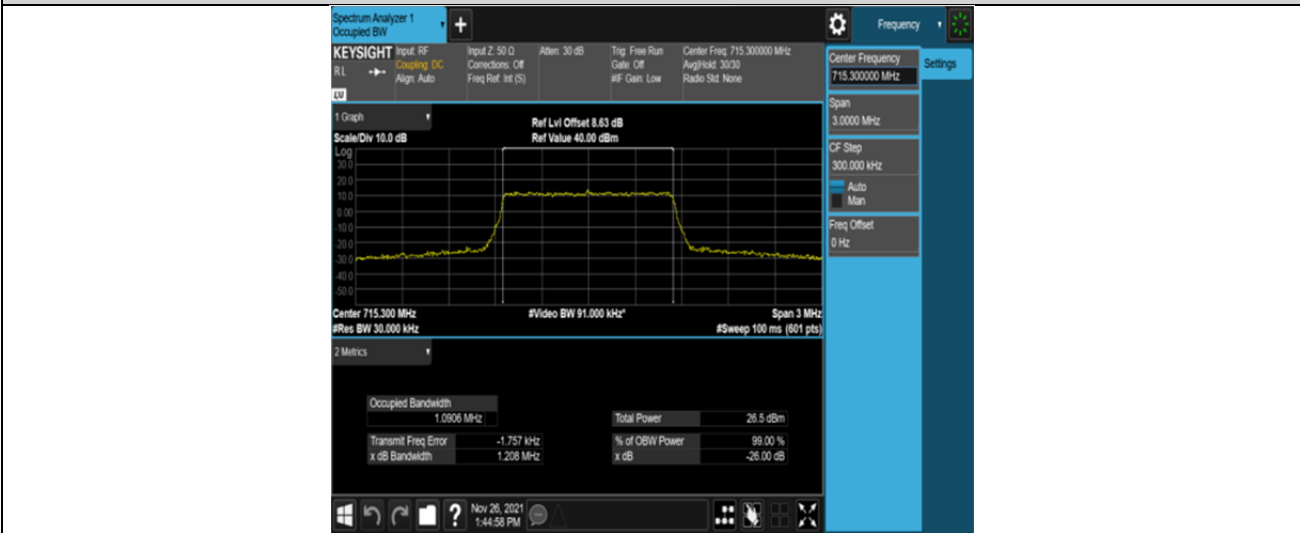
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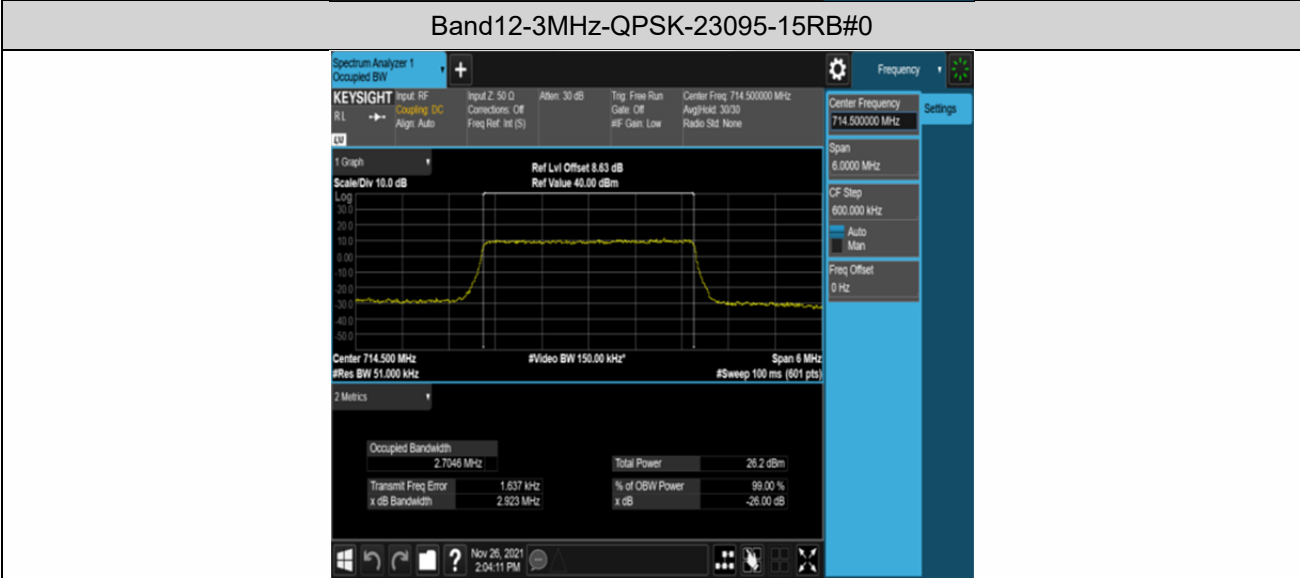
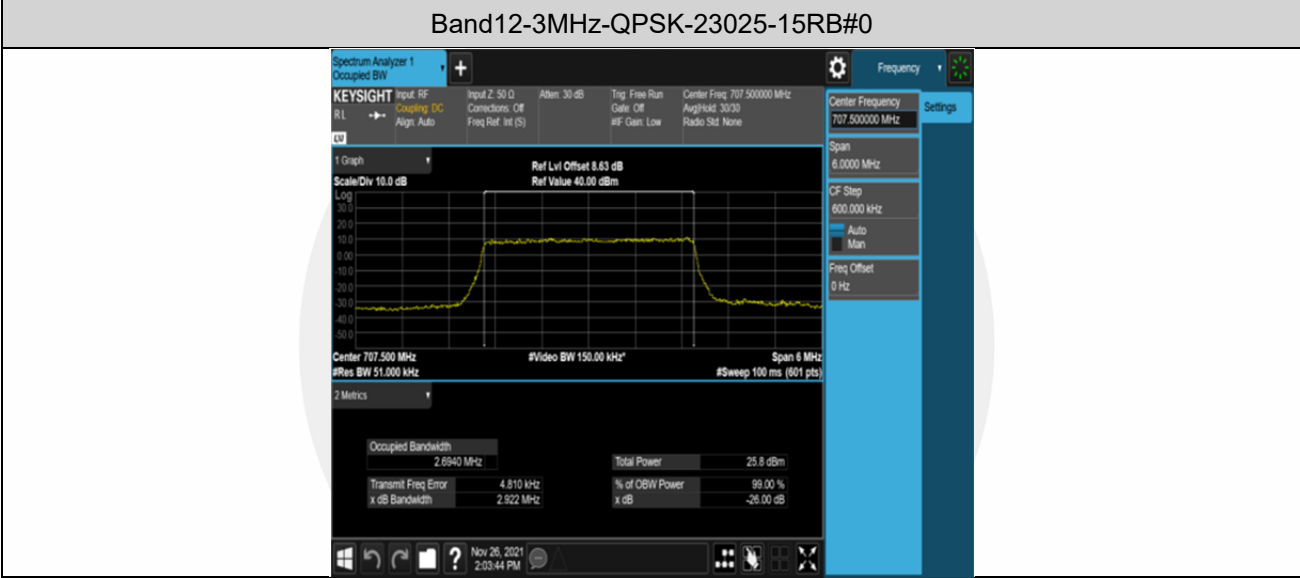
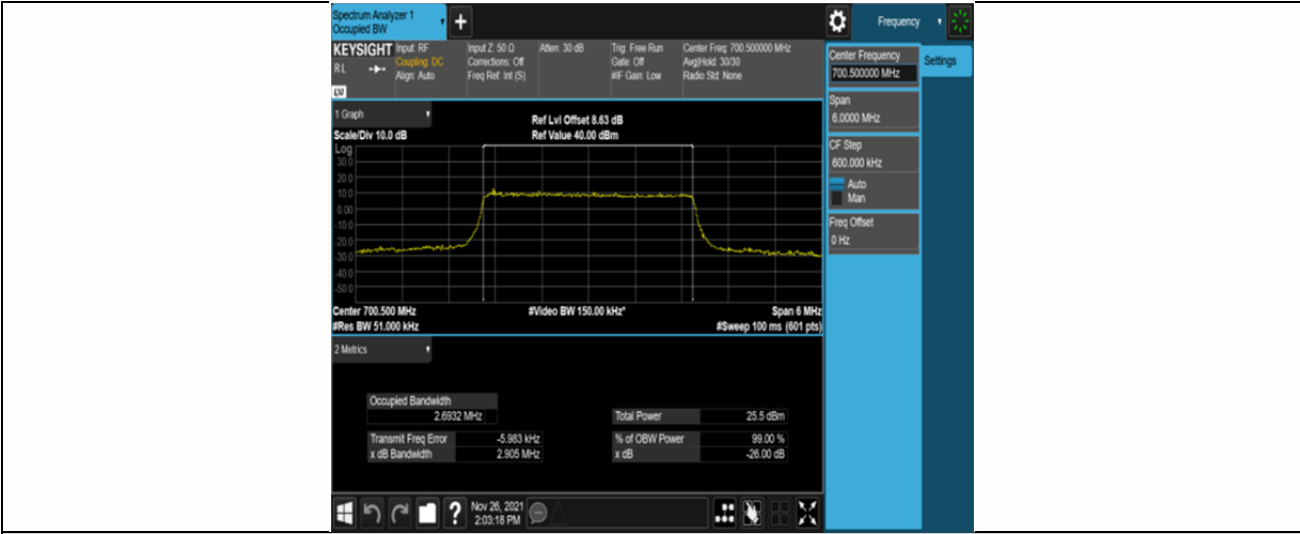
Band12-1.4MHz-16QAM-23017-6RB#0

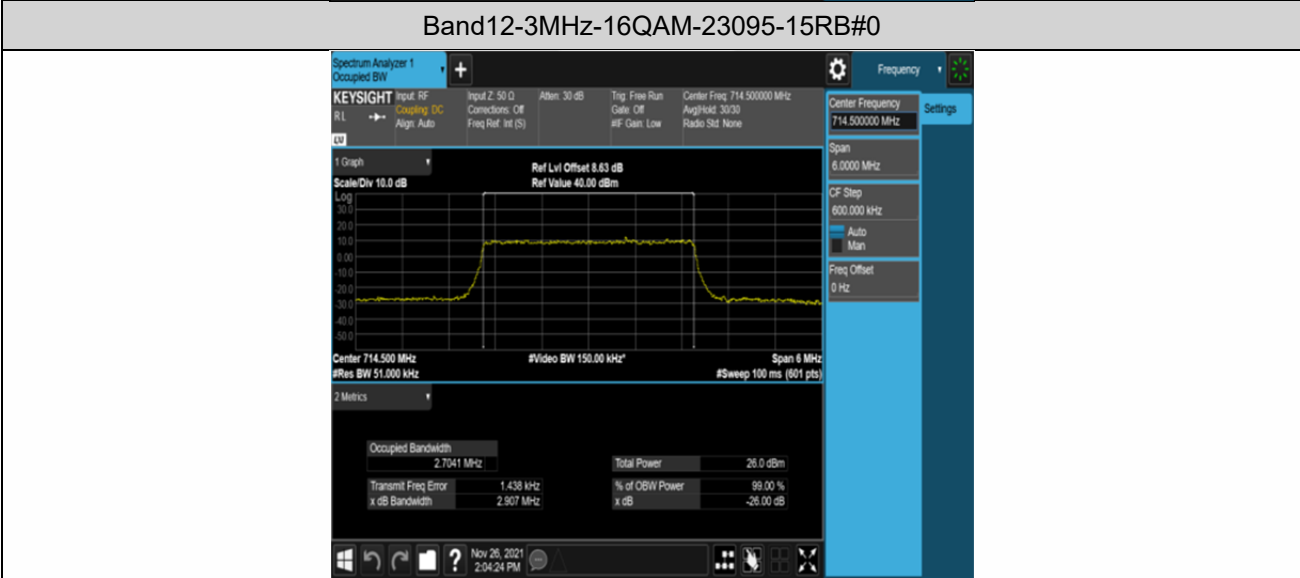
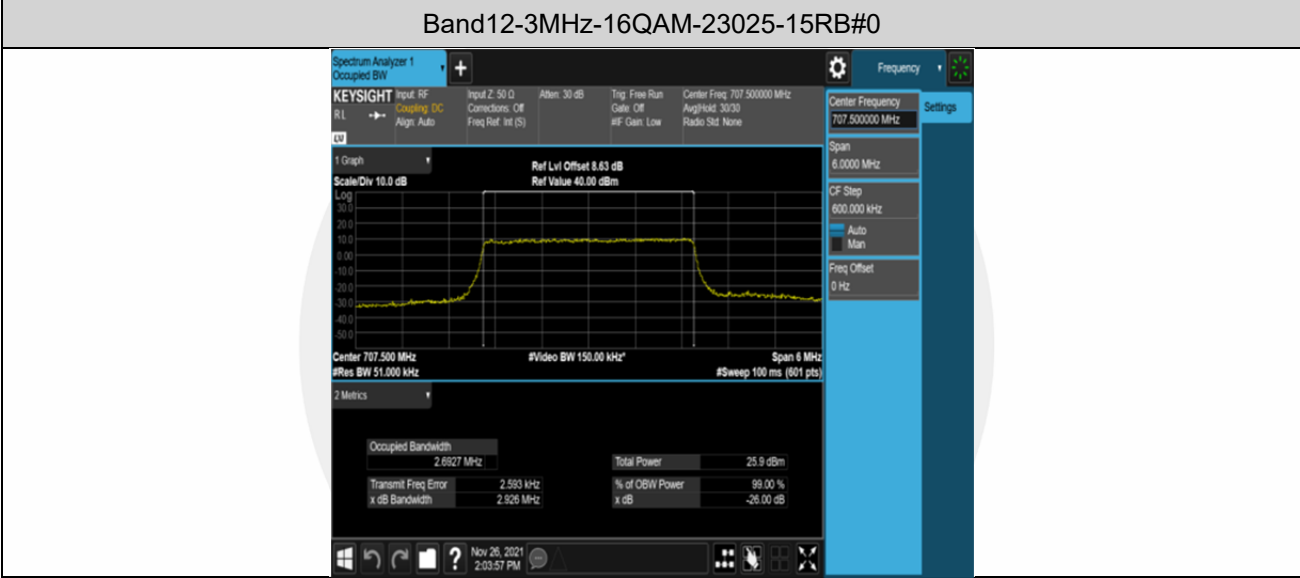
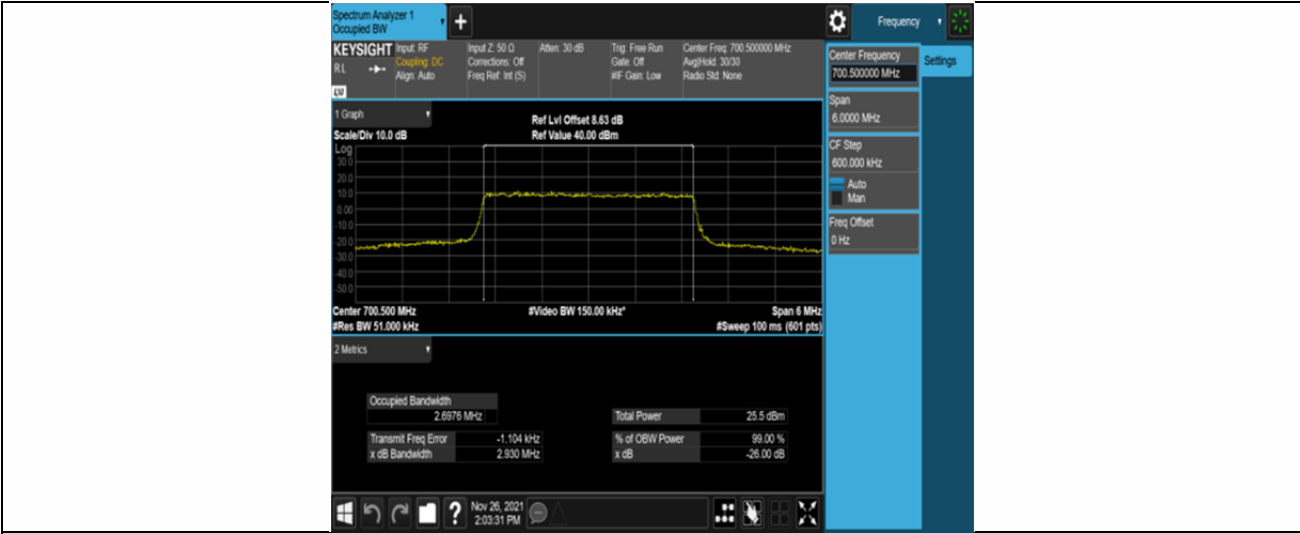


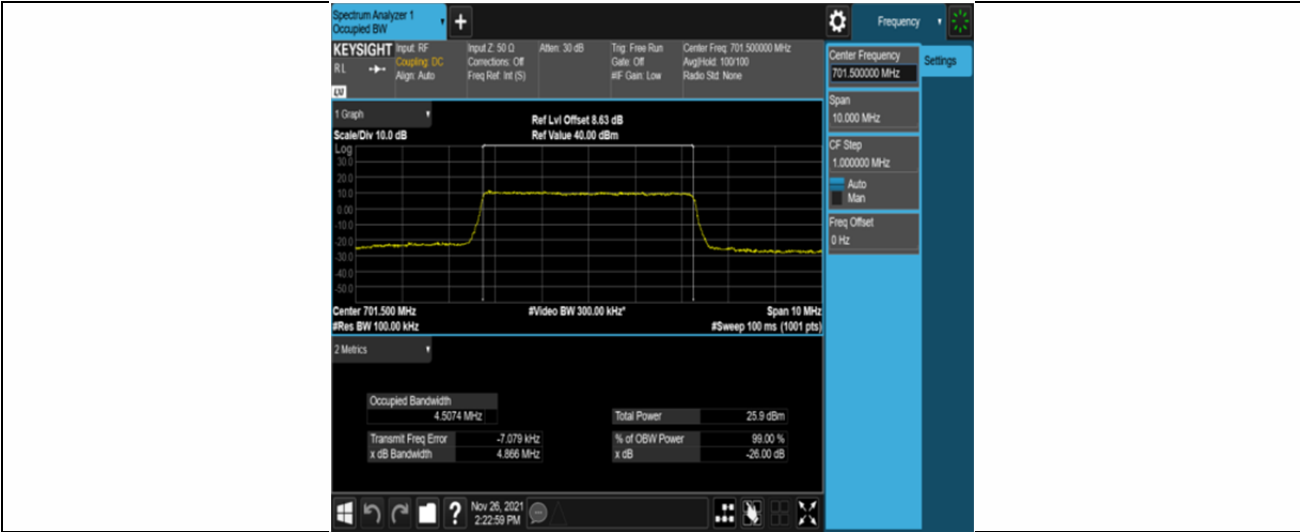
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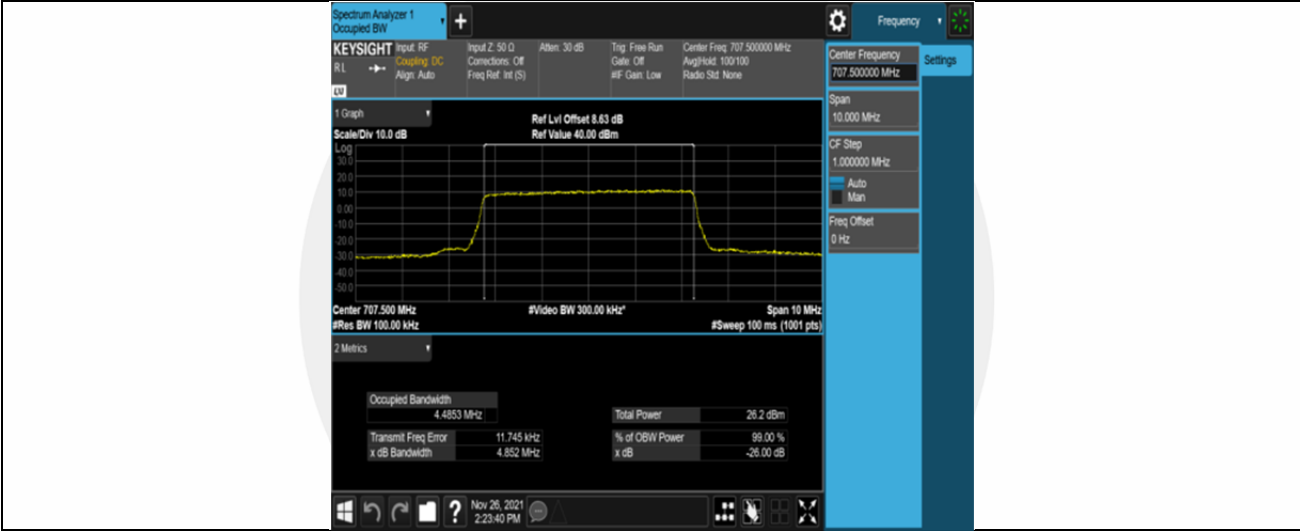
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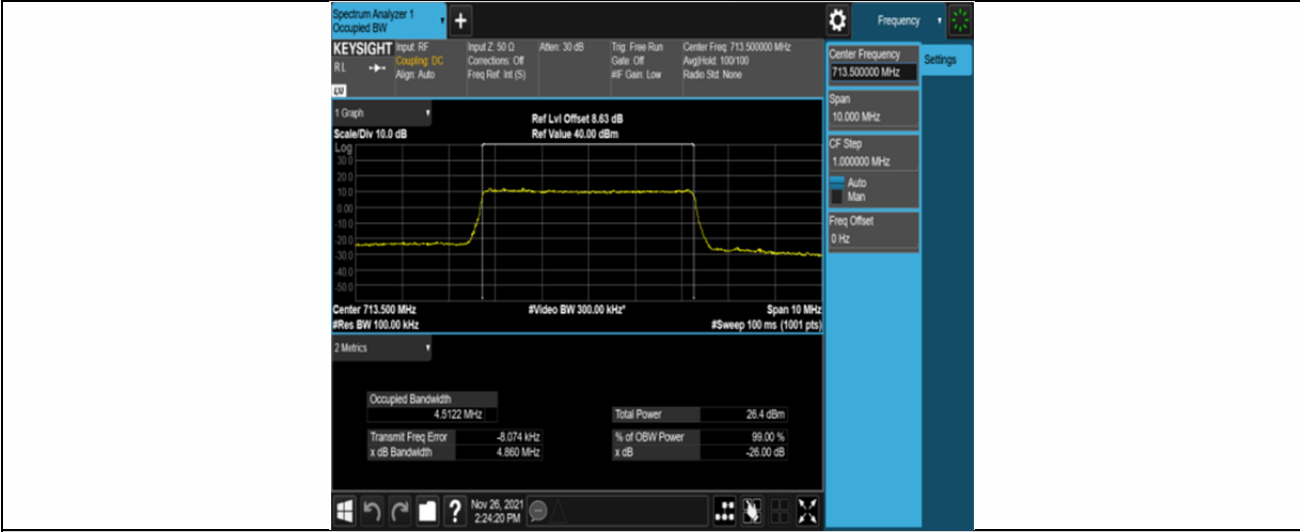




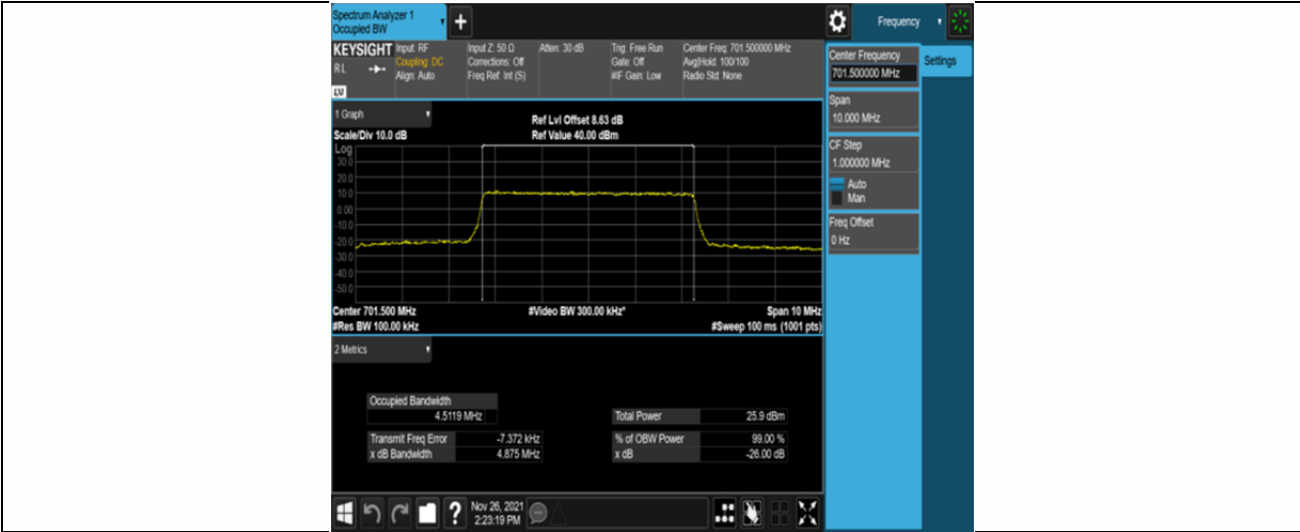
Band12-5MHz-QPSK-23035-25RB#0



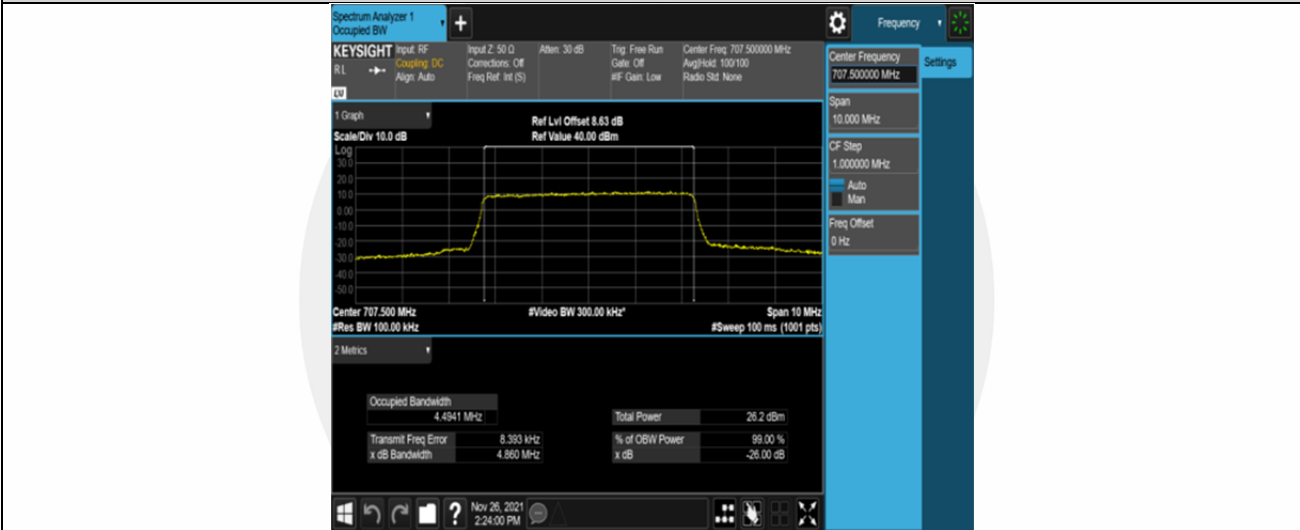
Band12-5MHz-QPSK-23095-25RB#0



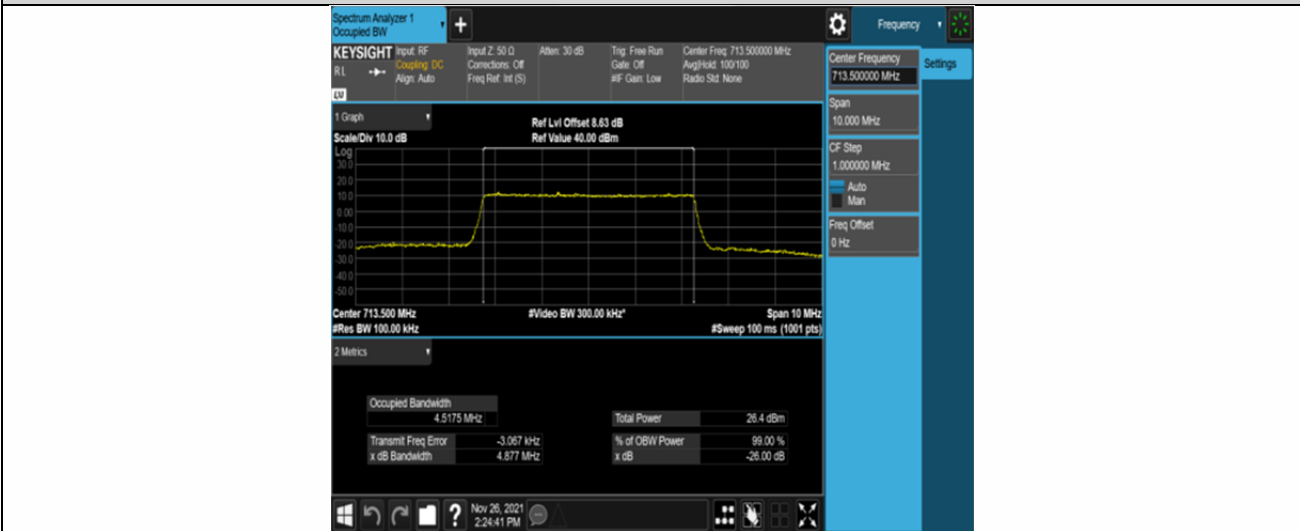
Band12-5MHz-QPSK-23155-25RB#0



Band12-5MHz-16QAM-23035-25RB#0

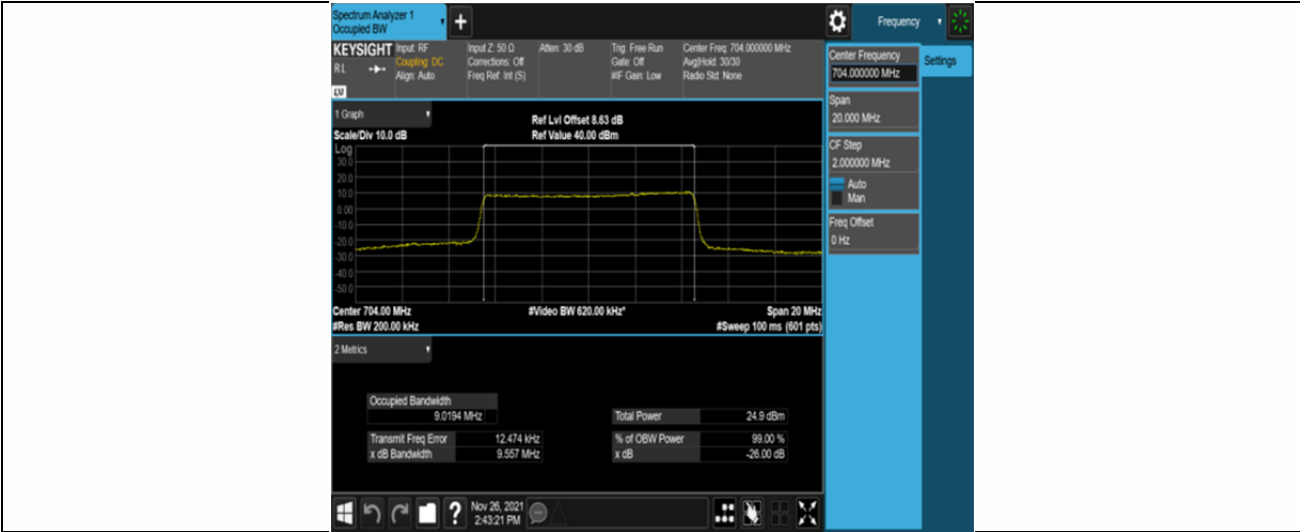


Band12-5MHz-16QAM-23095-25RB#0

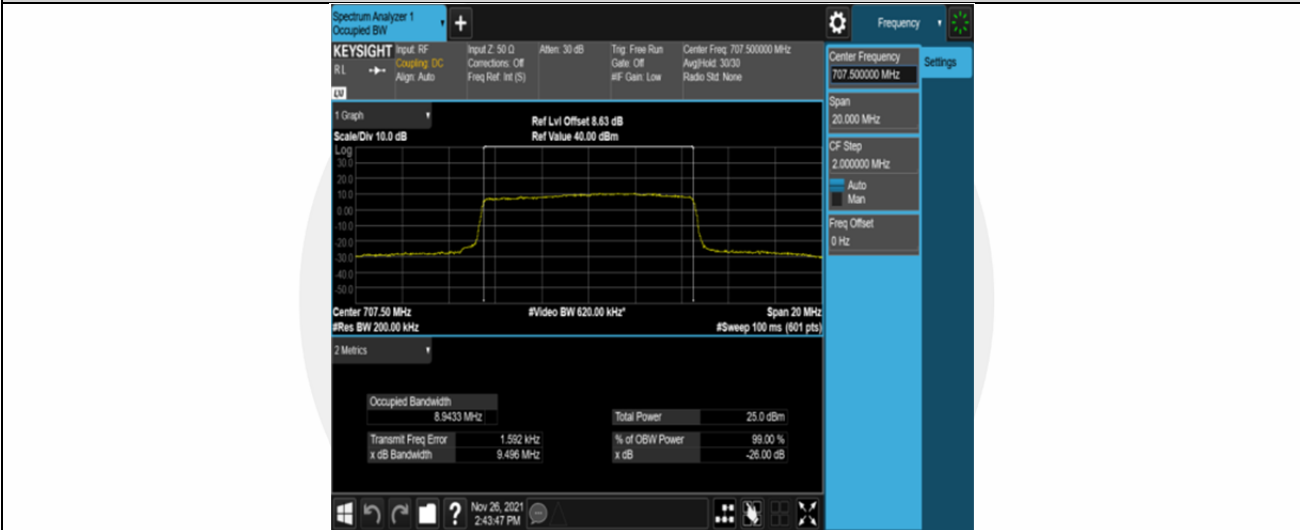


Band12-5MHz-16QAM-23155-25RB#0

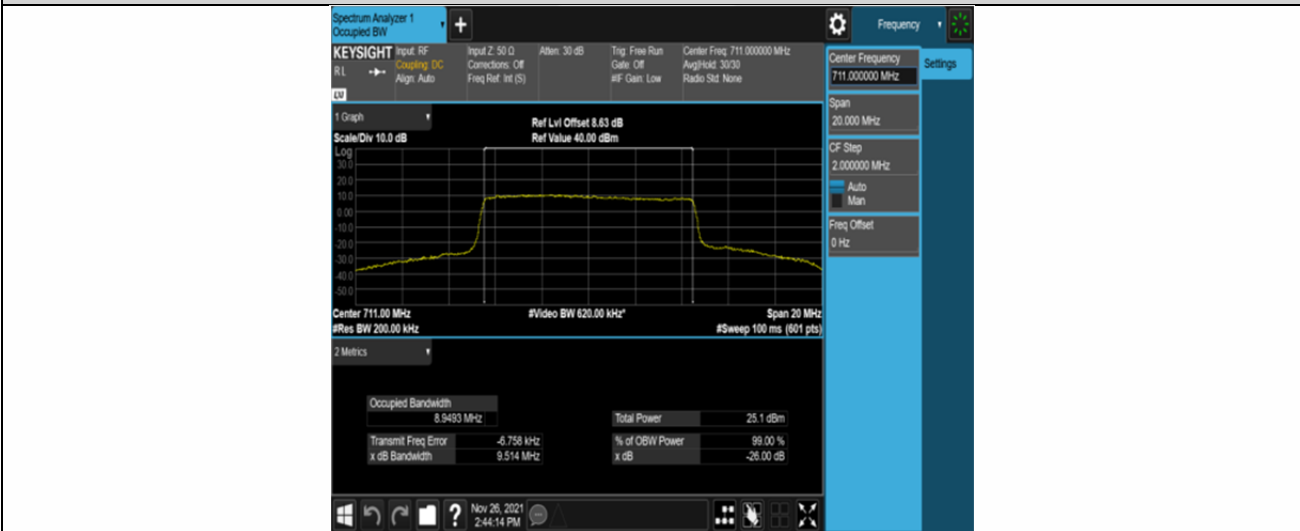




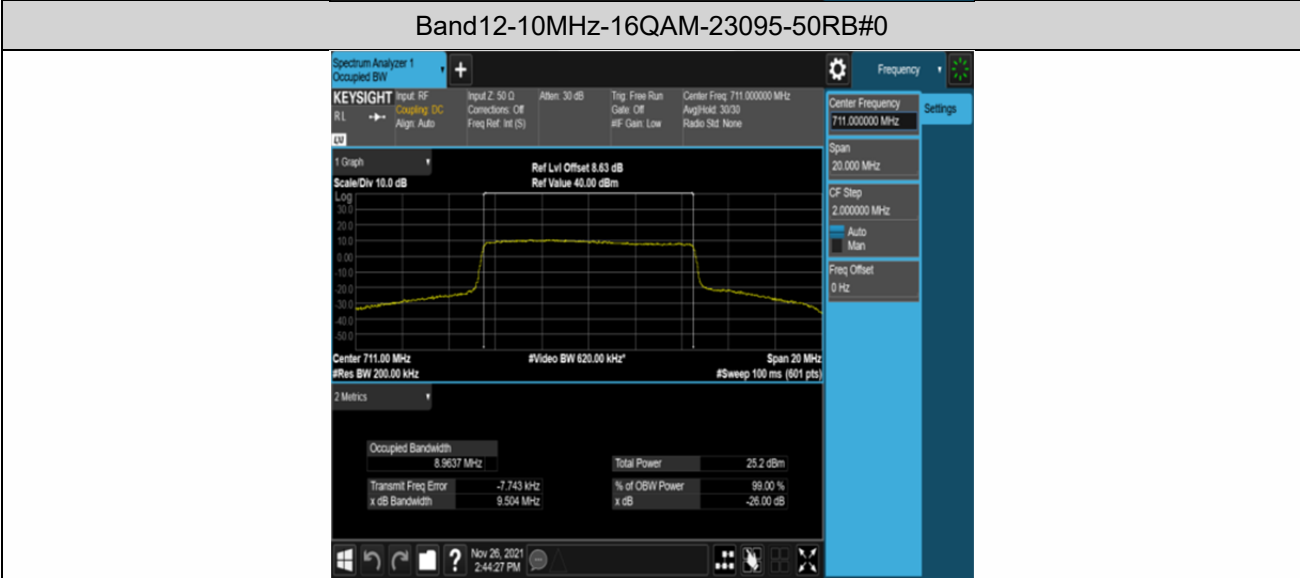
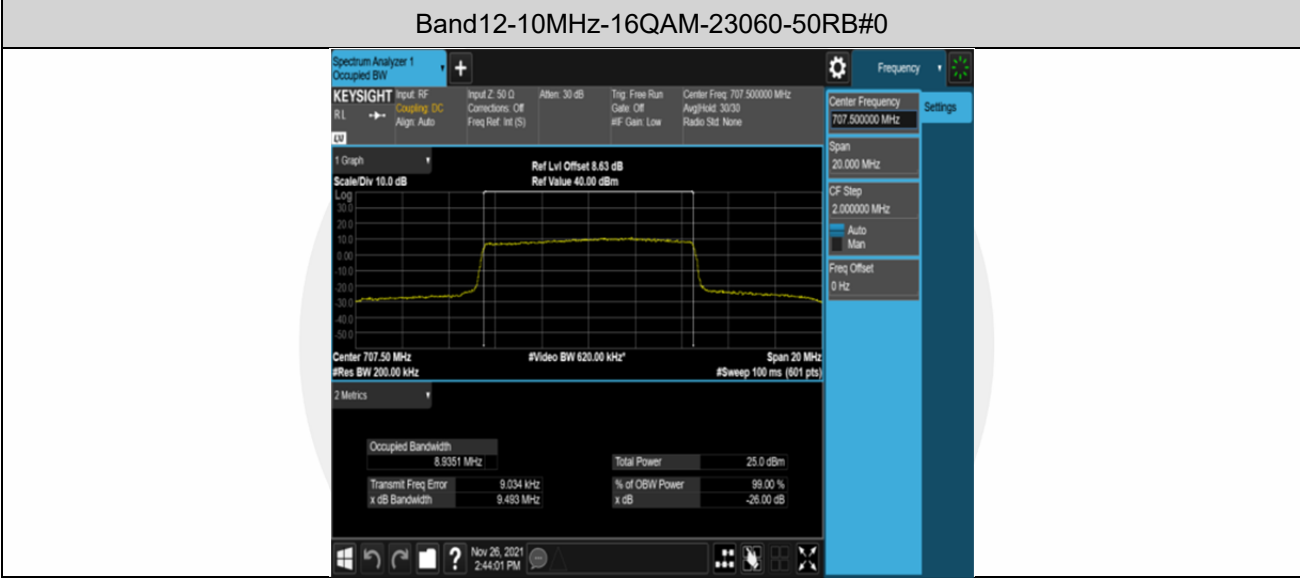
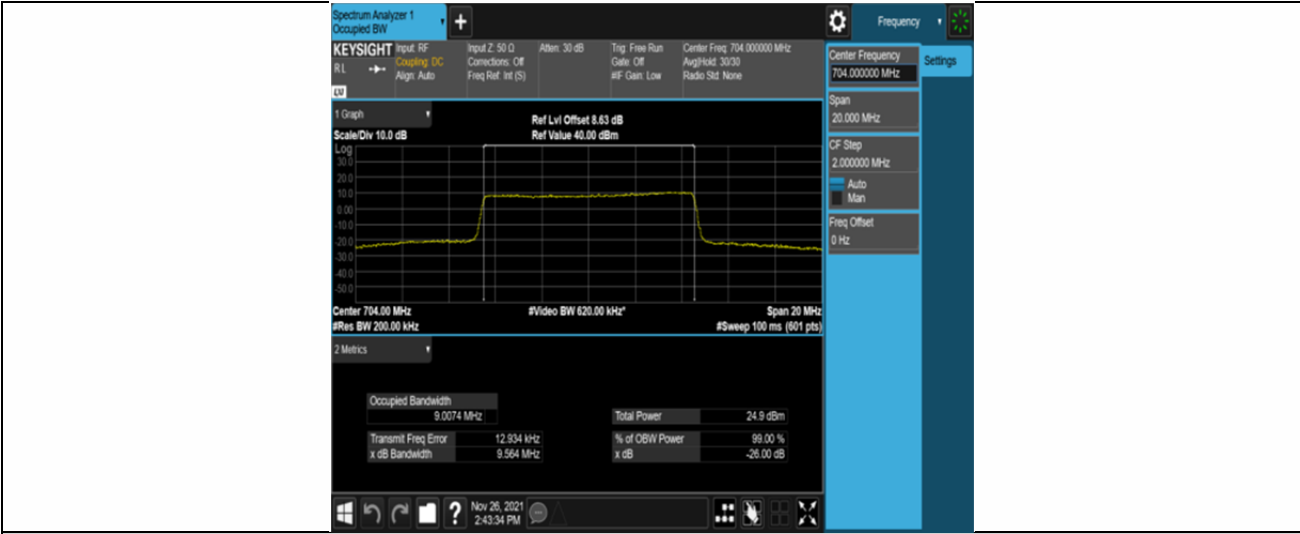
Band12-10MHz-QPSK-23060-50RB#0



Band12-10MHz-QPSK-23095-50RB#0



Band12-10MHz-QPSK-23130-50RB#0



## Appendix D: Band Edge

### Test Result

Band	Bandwidth	Modulation	Channel	RB Config.	Result (dBm)	Verdict
Band12	1.4MHz	QPSK	23017	6RB#0	-21.74,-21.79	PASS
Band12	1.4MHz	QPSK	23173	6RB#0	-31.57,-32.20	PASS
Band12	1.4MHz	16QAM	23017	6RB#0	-19.90,-19.55	PASS
Band12	1.4MHz	16QAM	23173	6RB#0	-28.02,-28.51	PASS
Band12	3MHz	QPSK	23025	15RB#0	-25.42,-20.58	PASS
Band12	3MHz	QPSK	23165	15RB#0	-21.62,-29.38	PASS
Band12	3MHz	16QAM	23025	15RB#0	-22.61,-20.28	PASS
Band12	3MHz	16QAM	23165	15RB#0	-22.62,-27.97	PASS
Band12	5MHz	QPSK	23035	25RB#0	-22.27	PASS
Band12	5MHz	QPSK	23155	25RB#0	-24.31	PASS
Band12	5MHz	16QAM	23035	25RB#0	-21.41	PASS
Band12	5MHz	16QAM	23155	25RB#0	-22.76	PASS
Band12	10MHz	QPSK	23060	50RB#0	-22.53,-21.88	PASS
Band12	10MHz	QPSK	23130	50RB#0	-23.28,-23.91	PASS
Band12	10MHz	16QAM	23060	50RB#0	-22.19,-21.89	PASS
Band12	10MHz	16QAM	23130	50RB#0	-22.01,-22.31	PASS