Appendix for Band 12

Product Name: Rugged Phone
Model No: MDT661

Appendix A: Average Power Output Data

Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dBm)	Verdict
Band12	1.4MHz	QPSK	23017	1RB#0	22.92	PASS
Band12	1.4MHz	QPSK	23017	1RB#2	23.09	PASS
Band12	1.4MHz	QPSK	23017	1RB#5	22.93	PASS
Band12	1.4MHz	QPSK	23017	3RB#0	23.12	PASS
Band12	1.4MHz	QPSK	23017	3RB#1	23.11	PASS
Band12	1.4MHz	QPSK	23017	3RB#3	23.15	PASS
Band12	1.4MHz	QPSK	23017	6RB#0	22.08	PASS
Band12	1.4MHz	QPSK	23095	1RB#0	22.90	PASS
Band12	1.4MHz	QPSK	23095	1RB#2	23.10	PASS
Band12	1.4MHz	QPSK	23095	1RB#5	22.85	PASS
Band12	1.4MHz	QPSK	23095	3RB#0	23.04	PASS
Band12	1.4MHz	QPSK	23095	3RB#1	23.05	PASS
Band12	1.4MHz	QPSK	23095	3RB#3	23.06	PASS
Band12	1.4MHz	QPSK	23095	6RB#0	21.87	PASS
Band12	1.4MHz	QPSK	23173	1RB#0	22.71	PASS
Band12	1.4MHz	QPSK	23173	1RB#2	22.88	PASS
Band12	1.4MHz	QPSK	23173	1RB#5	22.76	PASS
Band12	1.4MHz	QPSK	23173	3RB#0	22.88	PASS
Band12	1.4MHz	QPSK	23173	3RB#1	22.90	PASS
Band12	1.4MHz	QPSK	23173	3RB#3	22.91	PASS
Band12	1.4MHz	QPSK	23173	6RB#0	21.78	PASS
Band12	1.4MHz	16QAM	23017	1RB#0	21.92	PASS
Band12	1.4MHz	16QAM	23017	1RB#2	22.15	PASS
Band12	1.4MHz	16QAM	23017	1RB#5	21.92	PASS
Band12	1.4MHz	16QAM	23017	3RB#0	21.91	PASS
Band12	1.4MHz	16QAM	23017	3RB#1	21.90	PASS
Band12	1.4MHz	16QAM	23017	3RB#3	21.93	PASS
Band12	1.4MHz	16QAM	23017	6RB#0	21.05	PASS
Band12	1.4MHz	16QAM	23095	1RB#0	21.84	PASS
Band12	1.4MHz	16QAM	23095	1RB#2	21.92	PASS
Band12	1.4MHz	16QAM	23095	1RB#5	21.83	PASS

Band12	1.4MHz	16QAM	23095	3RB#0	21.91	PASS
Band12	1.4MHz	16QAM	23095	3RB#1	21.90	PASS
Band12	1.4MHz	16QAM	23095	3RB#3	21.88	PASS
Band12	1.4MHz	16QAM	23095	6RB#0	20.86	PASS
Band12	1.4MHz	16QAM	23173	1RB#0	21.56	PASS
Band12	1.4MHz	16QAM	23173	1RB#2	21.67	PASS
Band12	1.4MHz	16QAM	23173	1RB#5	21.51	PASS
Band12	1.4MHz	16QAM	23173	3RB#0	21.63	PASS
Band12	1.4MHz	16QAM	23173	3RB#1	21.66	PASS
Band12	1.4MHz	16QAM	23173	3RB#3	21.62	PASS
Band12	1.4MHz	16QAM	23173	6RB#0	20.76	PASS
Band12	3MHz	QPSK	23025	1RB#0	23.53	PASS
Band12	3MHz	QPSK	23025	1RB#8	23.52	PASS
Band12	3MHz	QPSK	23025	1RB#14	23.53	PASS
Band12	3MHz	QPSK	23025	8RB#0	22.52	PASS
Band12	3MHz	QPSK	23025	8RB#4	22.03	PASS
Band12	3MHz	QPSK	23025	8RB#7	22.07	PASS
Band12	3MHz	QPSK	23025	15RB#0	22.05	PASS
Band12	3MHz	QPSK	23095	1RB#0	23.03	PASS
Band12	3MHz	QPSK	23095	1RB#8	22.97	PASS
Band12	3MHz	QPSK	23095	1RB#14	22.89	PASS
Band12	3MHz	QPSK	23095	8RB#0	21.90	PASS
Band12	3MHz	QPSK	23095	8RB#4	21.90	PASS
Band12	3MHz	QPSK	23095	8RB#7	21.88	PASS
Band12	3MHz	QPSK	23095	15RB#0	21.94	PASS
Band12	3MHz	QPSK	23165	1RB#0	22.82	PASS
Band12	3MHz	QPSK	23165	1RB#8	22.82	PASS
Band12	3MHz	QPSK	23165	1RB#14	22.78	PASS
Band12	3MHz	QPSK	23165	8RB#0	21.87	PASS
Band12	3MHz	QPSK	23165	8RB#4	21.85	PASS
Band12	3MHz	QPSK	23165	8RB#7	21.78	PASS
Band12	3MHz	QPSK	23165	15RB#0	21.79	PASS
Band12	3MHz	16QAM	23025	1RB#0	22.65	PASS
Band12	3MHz	16QAM	23025	1RB#8	22.66	PASS
Band12	3MHz	16QAM	23025	1RB#14	22.40	PASS
Band12	3MHz	16QAM	23025	8RB#0	21.21	PASS
Band12	3MHz	16QAM	23025	8RB#4	21.09	PASS

Band12	3MHz	16QAM	23025	8RB#7	21.10	PASS
Band12	3MHz	16QAM	23025	15RB#0	21.02	PASS
Band12	3MHz	16QAM	23095	1RB#0	21.99	PASS
Band12	3MHz	16QAM	23095	1RB#8	21.83	PASS
Band12	3MHz	16QAM	23095	1RB#14	21.82	PASS
Band12	3MHz	16QAM	23095	8RB#0	20.94	PASS
Band12	3MHz	16QAM	23095	8RB#4	20.93	PASS
Band12	3MHz	16QAM	23095	8RB#7	20.94	PASS
Band12	3MHz	16QAM	23095	15RB#0	20.89	PASS
Band12	3MHz	16QAM	23165	1RB#0	21.56	PASS
Band12	3MHz	16QAM	23165	1RB#8	21.63	PASS
Band12	3MHz	16QAM	23165	1RB#14	21.61	PASS
Band12	3MHz	16QAM	23165	8RB#0	20.83	PASS
Band12	3MHz	16QAM	23165	8RB#4	20.83	PASS
Band12	3MHz	16QAM	23165	8RB#7	20.75	PASS
Band12	3MHz	16QAM	23165	15RB#0	20.67	PASS
Band12	5MHz	QPSK	23035	1RB#0	23.49	PASS
Band12	5MHz	QPSK	23035	1RB#12	23.61	PASS
Band12	5MHz	QPSK	23035	1RB#24	23.40	PASS
Band12	5MHz	QPSK	23035	12RB#0	22.05	PASS
Band12	5MHz	QPSK	23035	12RB#6	22.09	PASS
Band12	5MHz	QPSK	23035	12RB#13	22.03	PASS
Band12	5MHz	QPSK	23035	25RB#0	22.12	PASS
Band12	5MHz	QPSK	23095	1RB#0	22.92	PASS
Band12	5MHz	QPSK	23095	1RB#12	22.95	PASS
Band12	5MHz	QPSK	23095	1RB#24	22.80	PASS
Band12	5MHz	QPSK	23095	12RB#0	21.96	PASS
Band12	5MHz	QPSK	23095	12RB#6	21.99	PASS
Band12	5MHz	QPSK	23095	12RB#13	22.01	PASS
Band12	5MHz	QPSK	23095	25RB#0	22.04	PASS
Band12	5MHz	QPSK	23155	1RB#0	22.76	PASS
Band12	5MHz	QPSK	23155	1RB#12	22.88	PASS
Band12	5MHz	QPSK	23155	1RB#24	22.68	PASS
Band12	5MHz	QPSK	23155	12RB#0	21.87	PASS
Band12	5MHz	QPSK	23155	12RB#6	21.85	PASS
Band12	5MHz	QPSK	23155	12RB#13	21.72	PASS
Band12	5MHz	QPSK	23155	25RB#0	21.83	PASS

Band12	5MHz	16QAM	23035	1RB#0	22.51	PASS
Band12	5MHz	16QAM	23035	1RB#12	22.62	PASS
Band12	5MHz	16QAM	23035	1RB#24	22.07	PASS
Band12	5MHz	16QAM	23035	12RB#0	21.01	PASS
Band12	5MHz	16QAM	23035	12RB#6	21.04	PASS
Band12	5MHz	16QAM	23035	12RB#13	20.96	PASS
Band12	5MHz	16QAM	23035	25RB#0	21.12	PASS
Band12	5MHz	16QAM	23095	1RB#0	22.06	PASS
Band12	5MHz	16QAM	23095	1RB#12	22.06	PASS
Band12	5MHz	16QAM	23095	1RB#24	21.91	PASS
Band12	5MHz	16QAM	23095	12RB#0	21.05	PASS
Band12	5MHz	16QAM	23095	12RB#6	21.02	PASS
Band12	5MHz	16QAM	23095	12RB#13	21.04	PASS
Band12	5MHz	16QAM	23095	25RB#0	20.99	PASS
Band12	5MHz	16QAM	23155	1RB#0	21.71	PASS
Band12	5MHz	16QAM	23155	1RB#12	21.80	PASS
Band12	5MHz	16QAM	23155	1RB#24	21.62	PASS
Band12	5MHz	16QAM	23155	12RB#0	20.84	PASS
Band12	5MHz	16QAM	23155	12RB#6	20.86	PASS
Band12	5MHz	16QAM	23155	12RB#13	20.70	PASS
Band12	5MHz	16QAM	23155	25RB#0	20.81	PASS
Band12	10MHz	QPSK	23060	1RB#0	23.52	PASS
Band12	10MHz	QPSK	23060	1RB#24	23.65	PASS
Band12	10MHz	QPSK	23060	1RB#49	23.32	PASS
Band12	10MHz	QPSK	23060	25RB#0	22.20	PASS
Band12	10MHz	QPSK	23060	25RB#12	22.24	PASS
Band12	10MHz	QPSK	23060	25RB#25	22.12	PASS
Band12	10MHz	QPSK	23060	50RB#0	22.23	PASS
Band12	10MHz	QPSK	23095	1RB#0	23.10	PASS
Band12	10MHz	QPSK	23095	1RB#24	22.91	PASS
Band12	10MHz	QPSK	23095	1RB#49	22.86	PASS
Band12	10MHz	QPSK	23095	25RB#0	22.13	PASS
Band12	10MHz	QPSK	23095	25RB#12	22.15	PASS
Band12	10MHz	QPSK	23095	25RB#25	22.16	PASS
Band12	10MHz	QPSK	23095	50RB#0	22.10	PASS
Band12	10MHz	QPSK	23130	1RB#0	22.99	PASS
Band12	10MHz	QPSK	23130	1RB#24	22.95	PASS

Band12	10MHz	QPSK	23130	1RB#49	22.79	PASS
Band12	10MHz	QPSK	23130	25RB#0	21.83	PASS
Band12	10MHz	QPSK	23130	25RB#12	21.85	PASS
Band12	10MHz	QPSK	23130	25RB#25	21.79	PASS
Band12	10MHz	QPSK	23130	50RB#0	21.80	PASS
Band12	10MHz	16QAM	23060	1RB#0	22.66	PASS
Band12	10MHz	16QAM	23060	1RB#24	22.74	PASS
Band12	10MHz	16QAM	23060	1RB#49	21.99	PASS
Band12	10MHz	16QAM	23060	25RB#0	21.22	PASS
Band12	10MHz	16QAM	23060	25RB#12	21.19	PASS
Band12	10MHz	16QAM	23060	25RB#25	21.19	PASS
Band12	10MHz	16QAM	23060	50RB#0	21.19	PASS
Band12	10MHz	16QAM	23095	1RB#0	21.99	PASS
Band12	10MHz	16QAM	23095	1RB#24	21.97	PASS
Band12	10MHz	16QAM	23095	1RB#49	21.69	PASS
Band12	10MHz	16QAM	23095	25RB#0	21.20	PASS
Band12	10MHz	16QAM	23095	25RB#12	21.21	PASS
Band12	10MHz	16QAM	23095	25RB#25	21.13	PASS
Band12	10MHz	16QAM	23095	50RB#0	21.12	PASS
Band12	10MHz	16QAM	23130	1RB#0	21.80	PASS
Band12	10MHz	16QAM	23130	1RB#24	21.81	PASS
Band12	10MHz	16QAM	23130	1RB#49	21.60	PASS
Band12	10MHz	16QAM	23130	25RB#0	20.89	PASS
Band12	10MHz	16QAM	23130	25RB#12	20.89	PASS
Band12	10MHz	16QAM	23130	25RB#25	20.73	PASS
Band12	10MHz	16QAM	23130	50RB#0	20.82	PASS

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

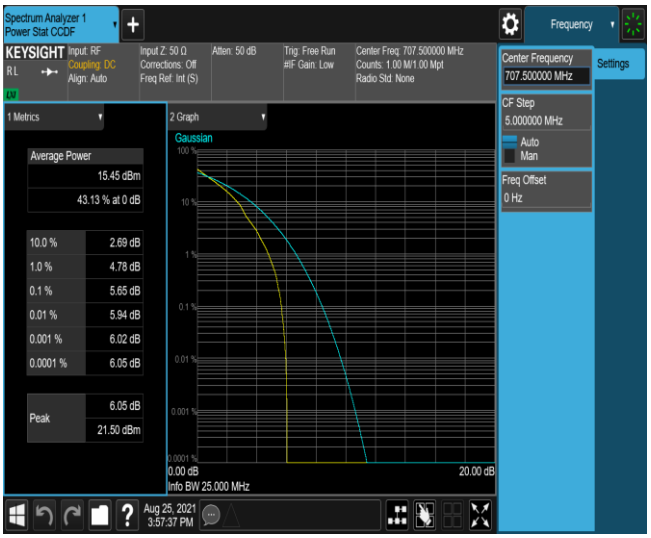
Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict
Band12	1.4MHz	QPSK	23017	1RB#0	5.08	13	PASS
Band12	1.4MHz	QPSK	23017	6RB#0	5.55	13	PASS
Band12	1.4MHz	QPSK	23095	1RB#0	5.65	13	PASS
Band12	1.4MHz	QPSK	23095	6RB#0	6.02	13	PASS
Band12	1.4MHz	QPSK	23173	1RB#0	4.66	13	PASS
Band12	1.4MHz	QPSK	23173	6RB#0	5.15	13	PASS
Band12	1.4MHz	16QAM	23017	1RB#0	6.14	13	PASS
Band12	1.4MHz	16QAM	23017	6RB#0	6.34	13	PASS
Band12	1.4MHz	16QAM	23095	1RB#0	6.40	13	PASS
Band12	1.4MHz	16QAM	23095	6RB#0	6.78	13	PASS
Band12	1.4MHz	16QAM	23173	1RB#0	5.69	13	PASS
Band12	1.4MHz	16QAM	23173	6RB#0	5.97	13	PASS
Band12	3MHz	QPSK	23025	1RB#0	5.14	13	PASS
Band12	3MHz	QPSK	23025	15RB#0	5.64	13	PASS
Band12	3MHz	QPSK	23095	1RB#0	5.70	13	PASS
Band12	3MHz	QPSK	23095	15RB#0	6.03	13	PASS
Band12	3MHz	QPSK	23165	1RB#0	4.77	13	PASS
Band12	3MHz	QPSK	23165	15RB#0	5.32	13	PASS
Band12	3MHz	16QAM	23025	1RB#0	5.94	13	PASS
Band12	3MHz	16QAM	23025	15RB#0	6.39	13	PASS
Band12	3MHz	16QAM	23095	1RB#0	6.36	13	PASS
Band12	3MHz	16QAM	23095	15RB#0	6.84	13	PASS
Band12	3MHz	16QAM	23165	1RB#0	5.74	13	PASS
Band12	3MHz	16QAM	23165	15RB#0	6.11	13	PASS
Band12	5MHz	QPSK	23035	1RB#0	5.28	13	PASS
Band12	5MHz	QPSK	23035	25RB#0	5.85	13	PASS
Band12	5MHz	QPSK	23095	1RB#0	5.76	13	PASS
Band12	5MHz	QPSK	23095	25RB#0	6.01	13	PASS
Band12	5MHz	QPSK	23155	1RB#0	5.10	13	PASS
Band12	5MHz	QPSK	23155	25RB#0	5.45	13	PASS
Band12	5MHz	16QAM	23035	1RB#0	5.80	13	PASS
Band12	5MHz	16QAM	23035	25RB#0	6.52	13	PASS
Band12	5MHz	16QAM	23095	1RB#0	6.39	13	PASS
Band12	5MHz	16QAM	23095	25RB#0	6.74	13	PASS
Band12	5MHz	16QAM	23155	1RB#0	5.69	13	PASS

Band12	5MHz	16QAM	23155	25RB#0	6.19	13	PASS
Band12	10MHz	QPSK	23060	1RB#0	5.16	13	PASS
Band12	10MHz	QPSK	23060	50RB#0	5.96	13	PASS
Band12	10MHz	QPSK	23095	1RB#0	5.31	13	PASS
Band12	10MHz	QPSK	23095	50RB#0	5.85	13	PASS
Band12	10MHz	QPSK	23130	1RB#0	5.67	13	PASS
Band12	10MHz	QPSK	23130	50RB#0	5.69	13	PASS
Band12	10MHz	16QAM	23060	1RB#0	5.93	13	PASS
Band12	10MHz	16QAM	23060	50RB#0	6.72	13	PASS
Band12	10MHz	16QAM	23095	1RB#0	6.08	13	PASS
Band12	10MHz	16QAM	23095	50RB#0	6.69	13	PASS
Band12	10MHz	16QAM	23130	1RB#0	6.56	13	PASS
Band12	10MHz	16QAM	23130	50RB#0	6.47	13	PASS

Test Graphs

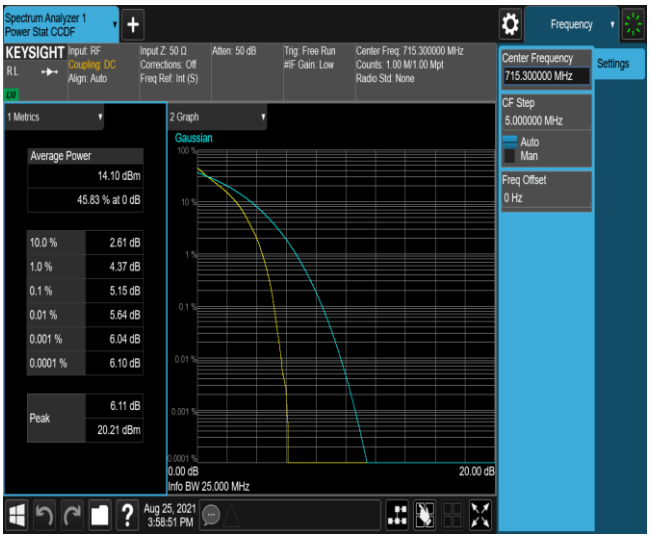
Band12-1.4MHz-QPSK-23017-1RB#0
Band12-1.4MHz-QPSK-23017-6RB#0
Band12-1.4MHz-QPSK-23095-1RB#0



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

Band12-1.4MHz-QPSK-23173-1RB#0

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

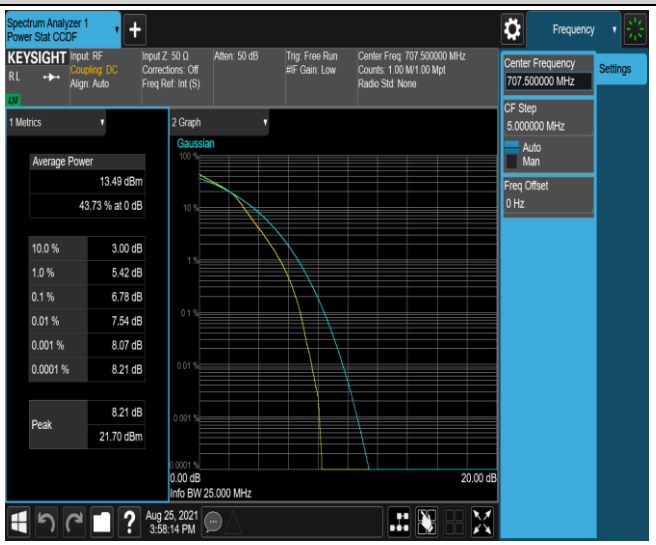


Band12-1.4MHz-16QAM-23017-1RB#0

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

Band12-1.4MHz-16QAM-23095-1RB#0

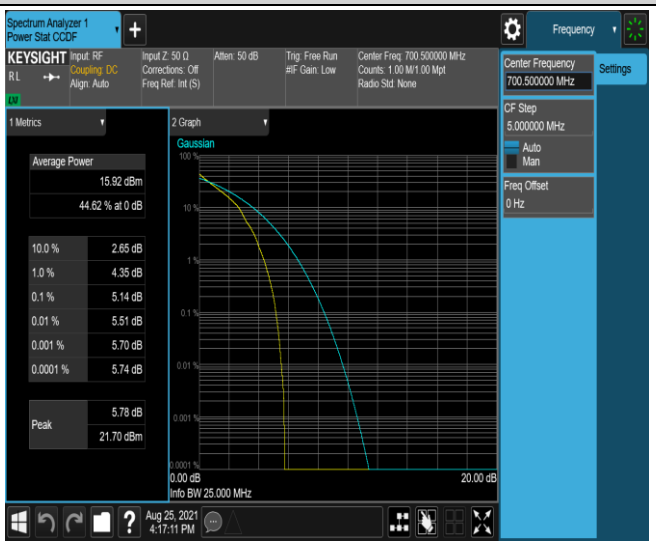
Band12-1.4MHz-16QAM-23095-6RB#0



Band12-1.4MHz-16QAM-23173-1RB#0

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

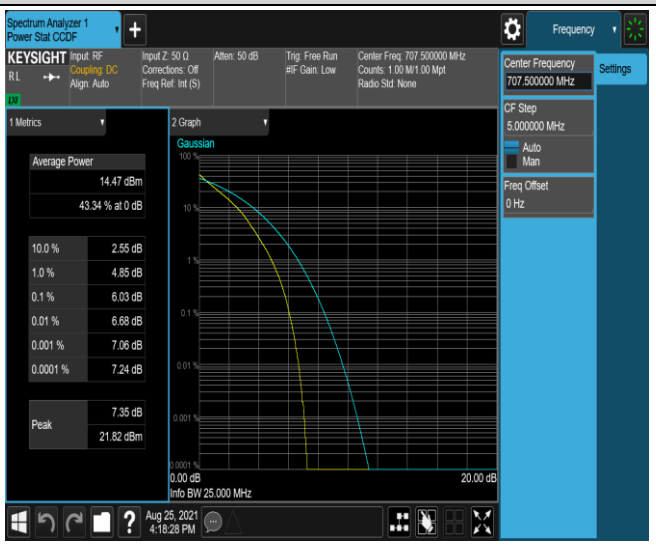
Band12-3MHz-QPSK-23025-1RB#0



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

Band12-3MHz-QPSK-23095-1RB#0

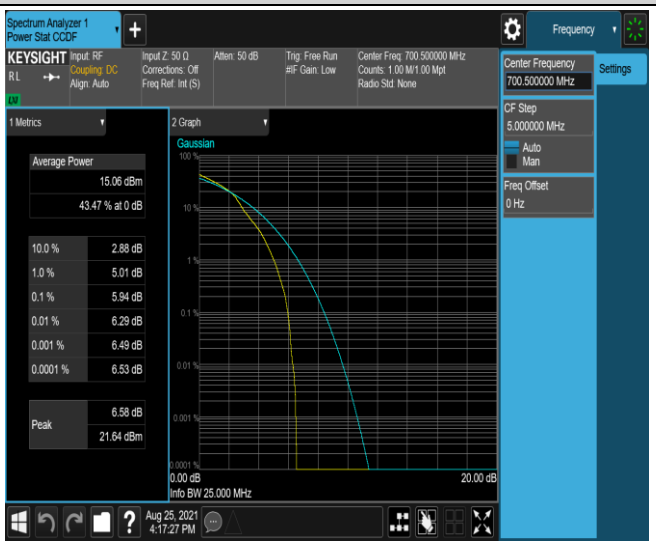
Band12-3MHz-QPSK-23095-15RB#0



Band12-3MHz-QPSK-23165-1RB#0

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

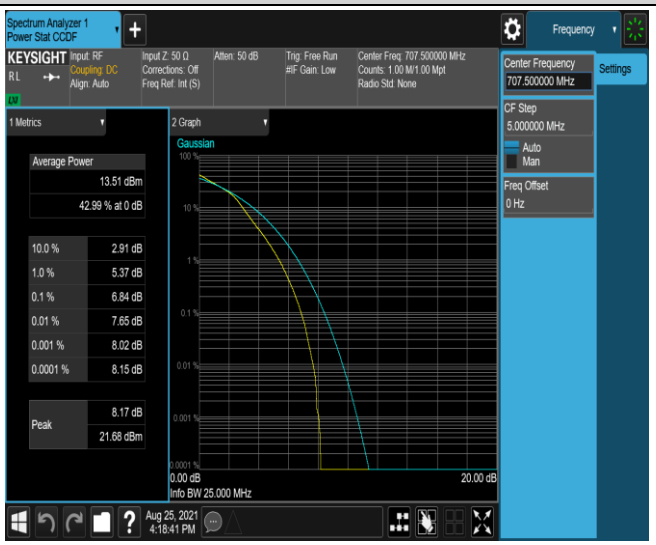
Band12-3MHz-16QAM-23025-1RB#0



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

Band12-3MHz-16QAM-23095-1RB#0

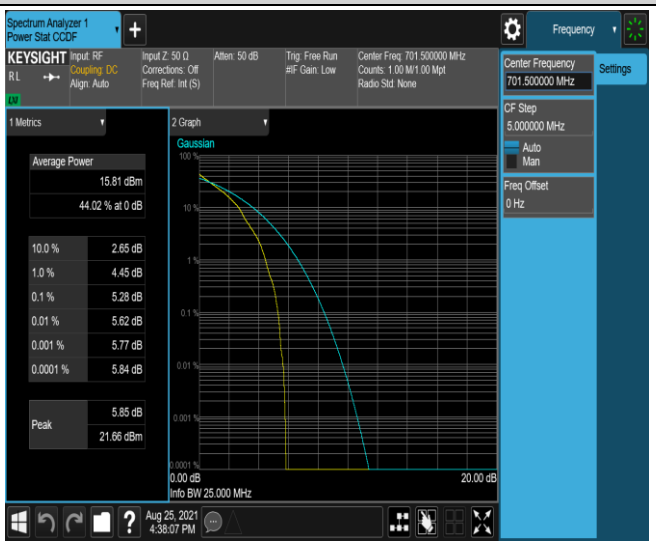
Band12-3MHz-16QAM-23095-15RB#0



Band12-3MHz-16QAM-23165-1RB#0

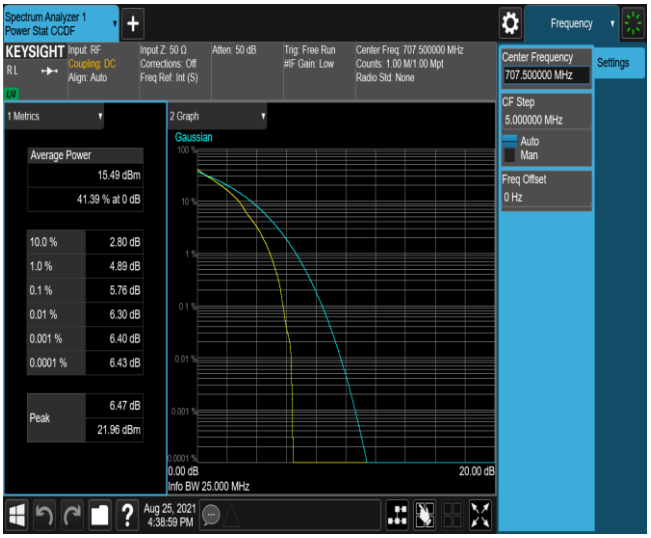
Band12-3MHz-16QAM-23165-15RB#0

Band12-5MHz-QPSK-23035-1RB#0

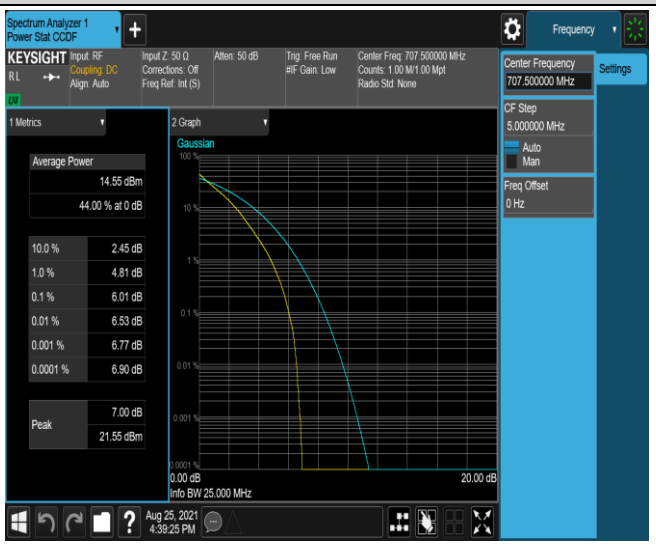


Band12-5MHz-QPSK-23035-25RB#0

Band12-5MHz-QPSK-23095-1RB#0



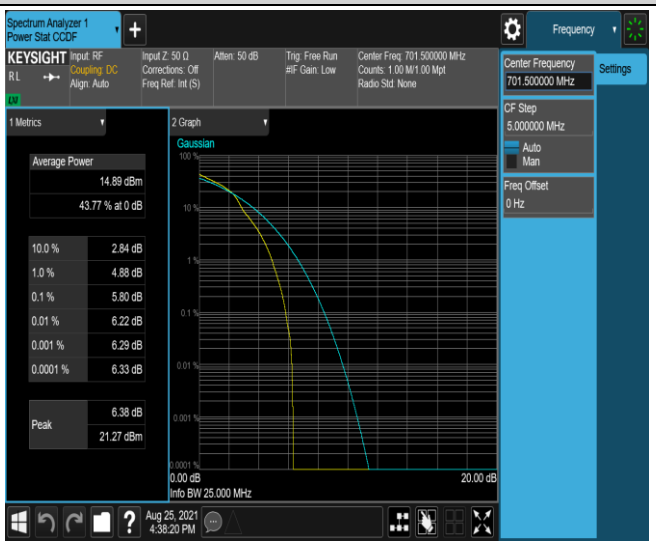
Band12-5MHz-QPSK-23095-25RB#0



Band12-5MHz-QPSK-23155-1RB#0

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

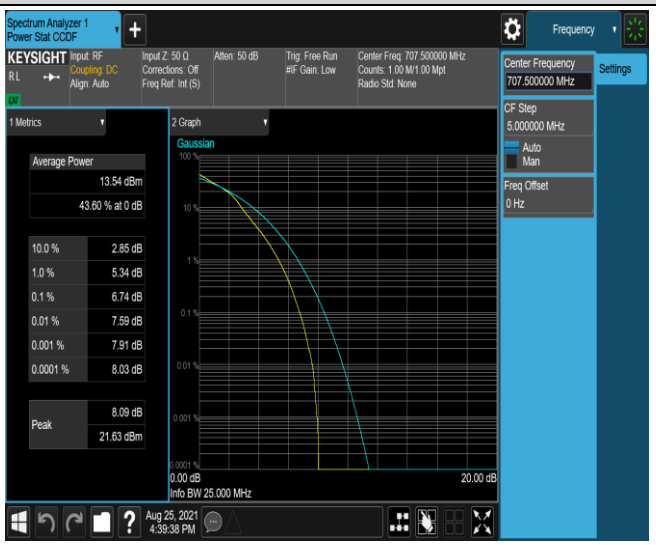
Band12-5MHz-16QAM-23035-1RB#0



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

Band12-5MHz-16QAM-23095-1RB#0

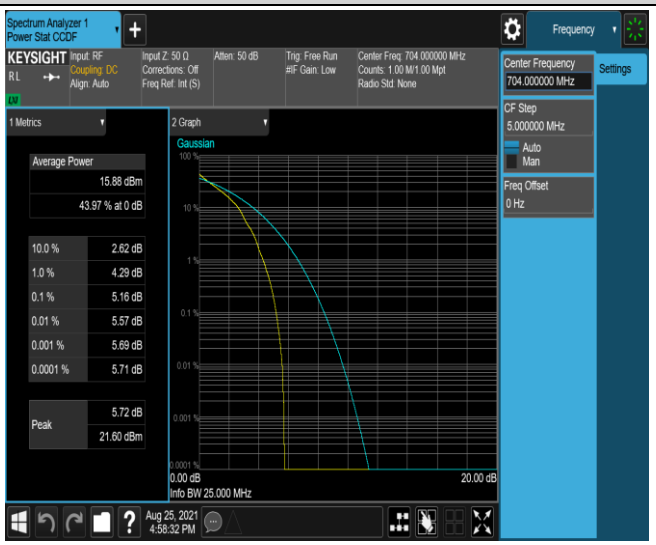
Band12-5MHz-16QAM-23095-25RB#0



Band12-5MHz-16QAM-23155-1RB#0

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

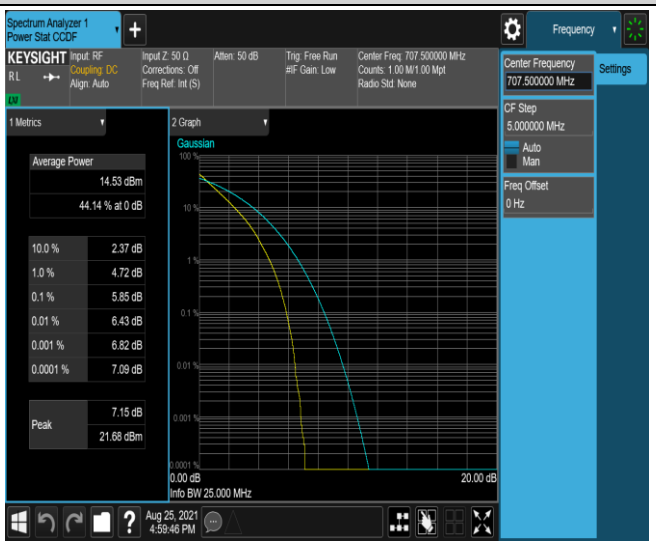
Band12-10MHz-QPSK-23060-1RB#0



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

Band12-10MHz-QPSK-23095-1RB#0

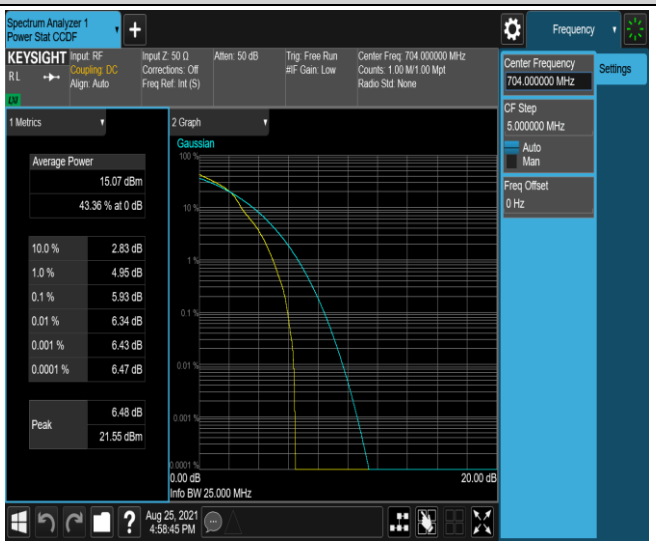
Band12-10MHz-QPSK-23095-50RB#0



Band12-10MHz-QPSK-23130-1RB#0

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

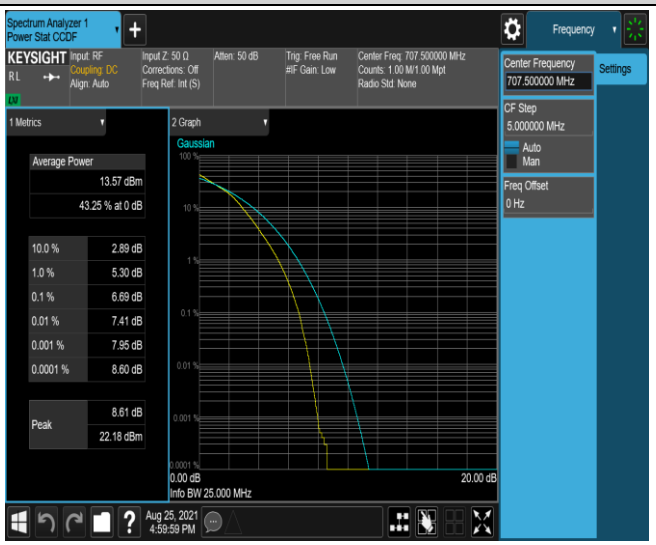
Band12-10MHz-16QAM-23060-1RB#0



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

Band12-10MHz-16QAM-23095-1RB#0

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



Band12-10MHz-16QAM-23130-1RB#0

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

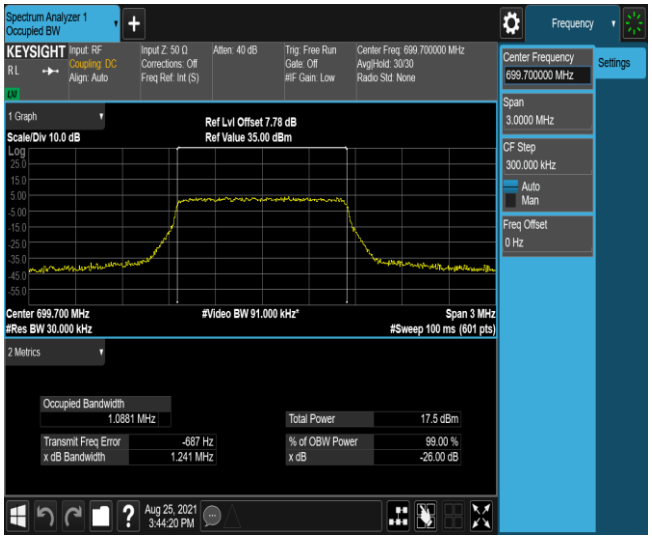
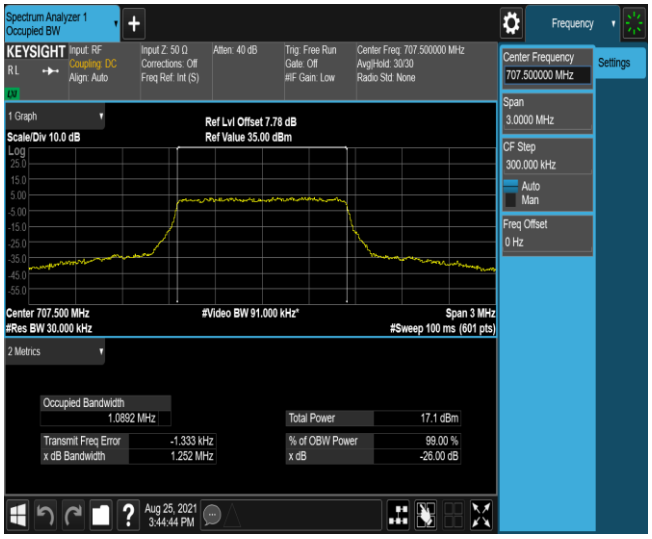
Spectrum Analyzer 1
Power Stat CCDF
KEYSIGHT
Input: RF
Coupling: DC
Align: Auto
Input Z: 50 Ω
Corrections: Off
Freq Ref: Int (S)
Atten: 50 dB
Trig: Free Run
#IF Gain: Low
Center Freq: 711.000000 MHz
Counts: 1.00 M/1.00 Mpt
Radio Std: None
Frequency
Center Frequency
711.000000 MHz
Settings
CF Step
5.000000 MHz
Auto
Man
Freq Offset
0 Hz
1 Metrics
Average Power
13.24 dBm
44.84 % at 0 dB
10.0 % 2.85 dB
1.0 % 5.13 dB
0.1 % 6.47 dB
0.01 % 7.31 dB
0.001 % 7.67 dB
0.0001 % 7.72 dB
Peak
7.73 dB
20.97 dBm
2 Graph
Gaussian
100 %
10 %
1 %
0.1 %
0.01 %
0.001 %
0.0001 %
0.00 dB
20.00 dB
Info BW 25.000 MHz
Aug 25, 2021
5:00:50 PM

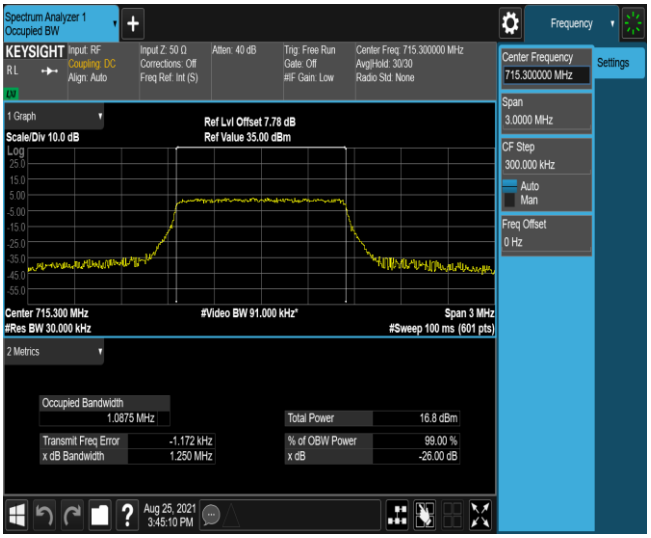
Appendix C: 26dB Bandwidth and Occupied Bandwidth

Test Result

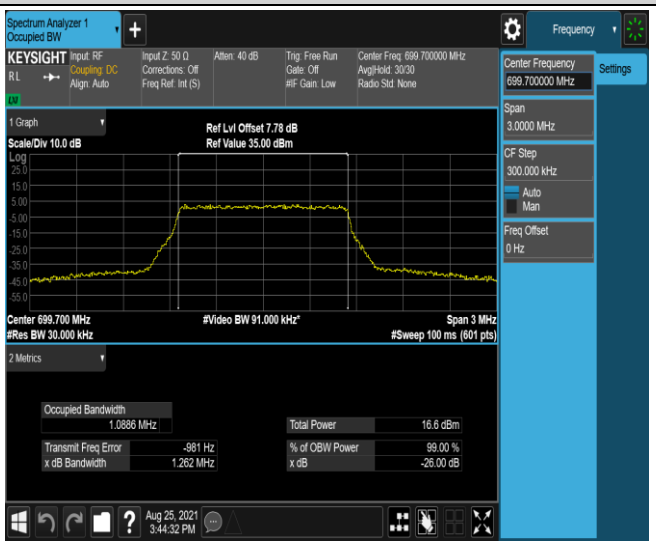
Band	Bandwidth	Modulation	Channel	RB Configuration	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
Band12	1.4MHz	QPSK	23017	6RB#0	1.0881	1.241	PASS
Band12	1.4MHz	QPSK	23095	6RB#0	1.0892	1.252	PASS
Band12	1.4MHz	QPSK	23173	6RB#0	1.0875	1.250	PASS
Band12	1.4MHz	16QAM	23017	6RB#0	1.0886	1.262	PASS
Band12	1.4MHz	16QAM	23095	6RB#0	1.0920	1.274	PASS
Band12	1.4MHz	16QAM	23173	6RB#0	1.0889	1.264	PASS
Band12	3MHz	QPSK	23025	15RB#0	2.6863	2.847	PASS
Band12	3MHz	QPSK	23095	15RB#0	2.6930	2.868	PASS
Band12	3MHz	QPSK	23165	15RB#0	2.6917	2.853	PASS
Band12	3MHz	16QAM	23025	15RB#0	2.6835	2.842	PASS
Band12	3MHz	16QAM	23095	15RB#0	2.6854	2.865	PASS
Band12	3MHz	16QAM	23165	15RB#0	2.6864	2.834	PASS
Band12	5MHz	QPSK	23035	25RB#0	4.5026	4.954	PASS
Band12	5MHz	QPSK	23095	25RB#0	4.5011	4.932	PASS
Band12	5MHz	QPSK	23155	25RB#0	4.5030	4.975	PASS
Band12	5MHz	16QAM	23035	25RB#0	4.5058	4.940	PASS
Band12	5MHz	16QAM	23095	25RB#0	4.5066	4.979	PASS
Band12	5MHz	16QAM	23155	25RB#0	4.5065	4.907	PASS
Band12	10MHz	QPSK	23060	50RB#0	9.0158	9.646	PASS
Band12	10MHz	QPSK	23095	50RB#0	9.0010	9.579	PASS
Band12	10MHz	QPSK	23130	50RB#0	8.9747	9.566	PASS
Band12	10MHz	16QAM	23060	50RB#0	9.0032	9.587	PASS
Band12	10MHz	16QAM	23095	50RB#0	8.9978	9.567	PASS
Band12	10MHz	16QAM	23130	50RB#0	8.9637	9.555	PASS

Test Graphs

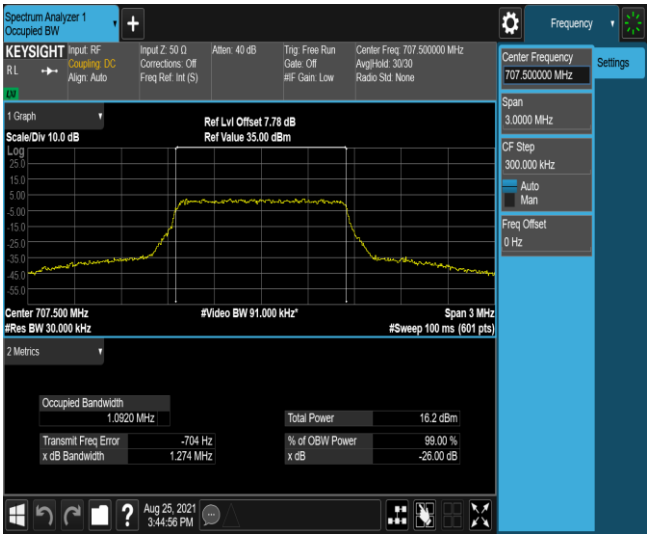
Band12-1.4MHz-QPSK-23017-6RB#0

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

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



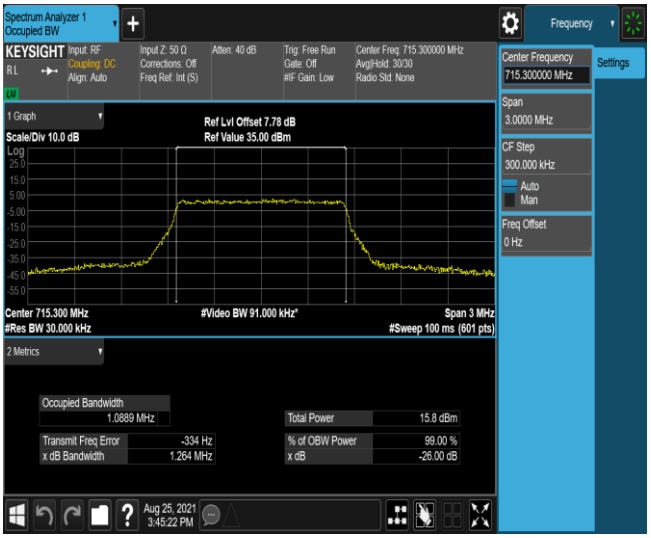
Band12-1.4MHz-16QAM-23017-6RB#0



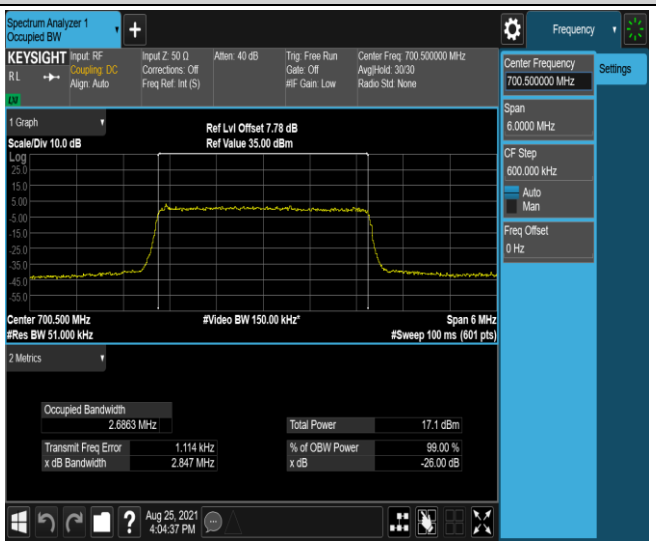
Band12-1.4MHz-16QAM-23095-6RB#0



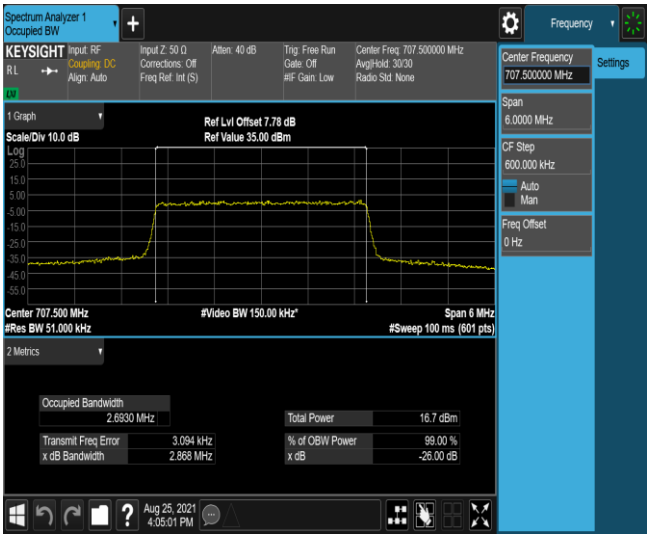
Band12-1.4MHz-16QAM-23173-6RB#0



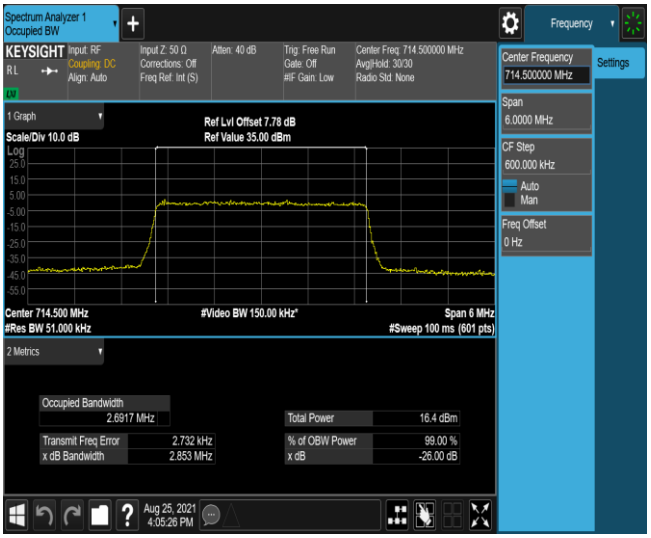
Band12-3MHz-QPSK-23025-15RB#0



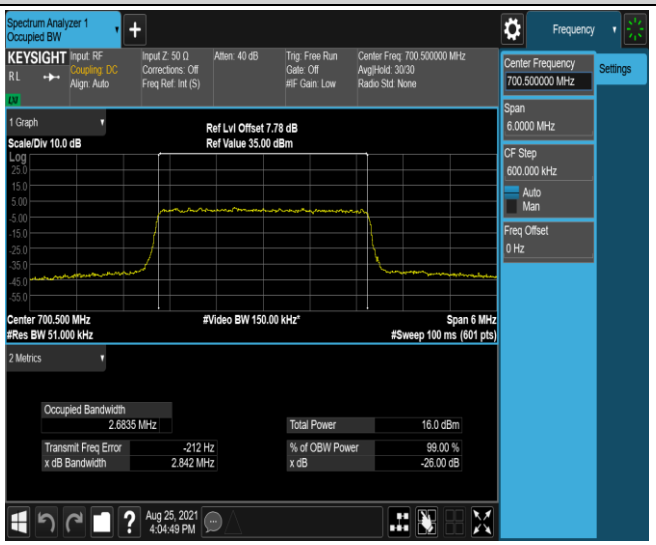
Band12-3MHz-QPSK-23095-15RB#0



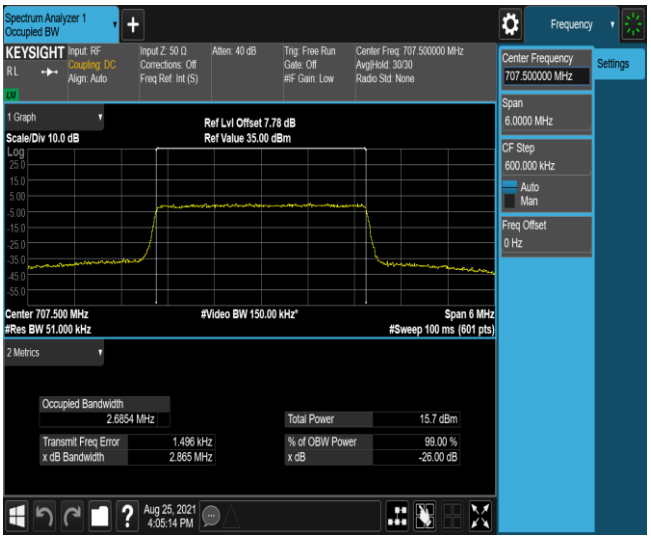
Band12-3MHz-QPSK-23165-15RB#0



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



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



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