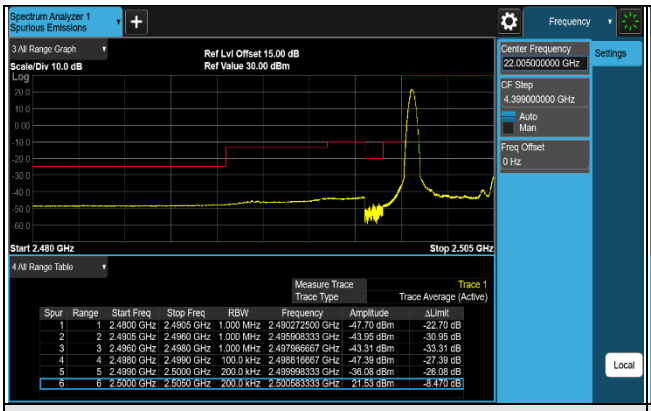
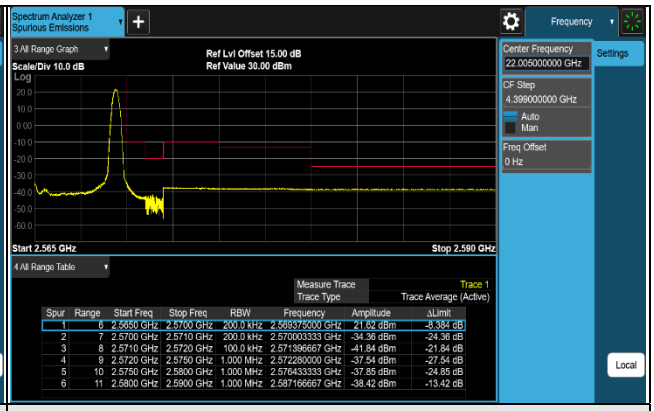
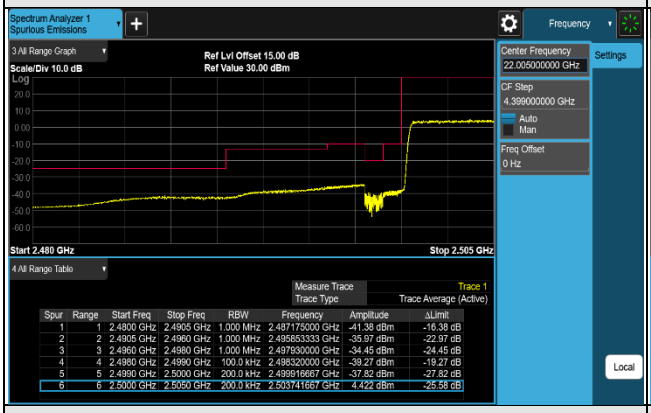
LTE Band 7 (Channel Bandwidth 10MHz)



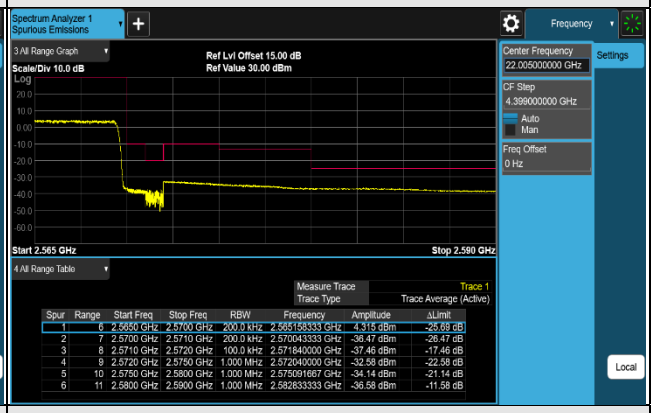
1RB (2505MHz)



1RB (2565MHz)

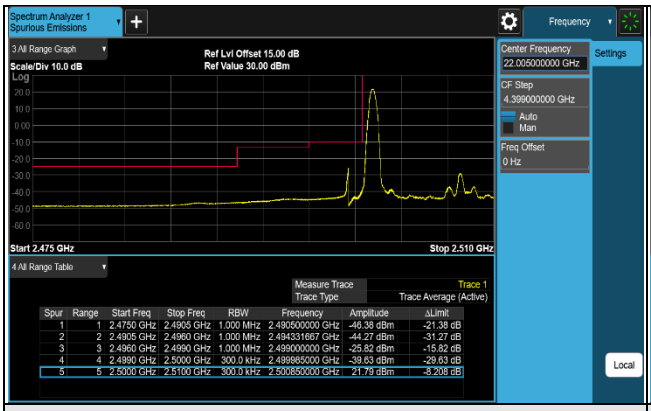


Full (2505MHz)

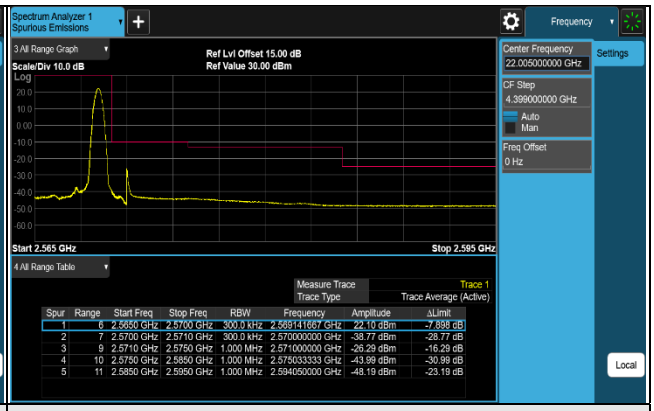


Full (2565MHz)

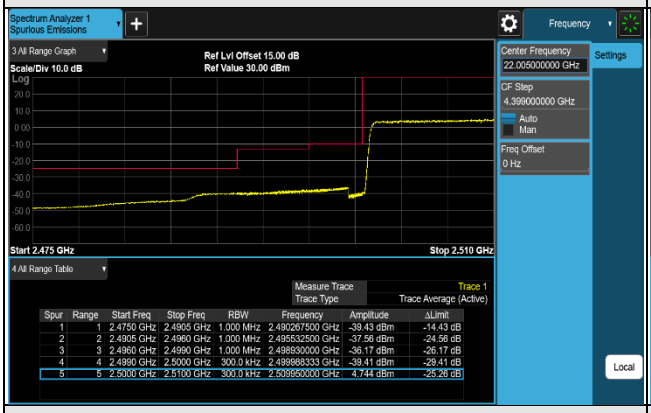
LTE Band 7 (Channel Bandwidth 15MHz)



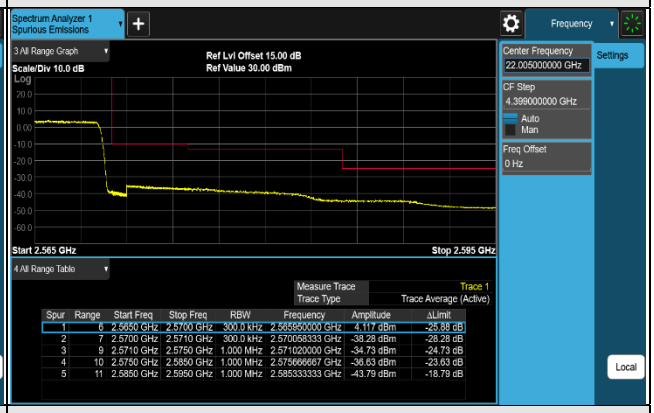
1RB (2507.5MHz)



1RB (2562.5MHz)

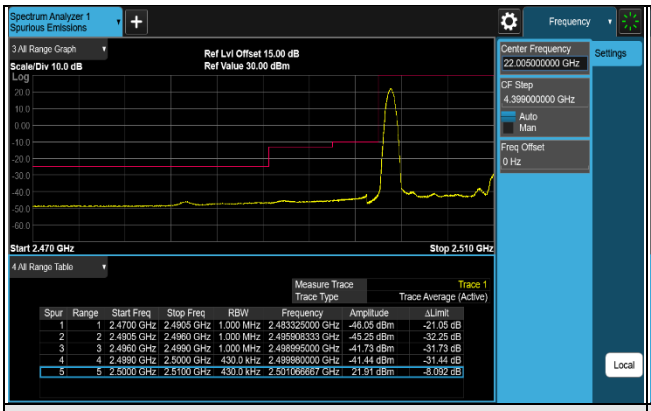


Full (2507.5MHz)

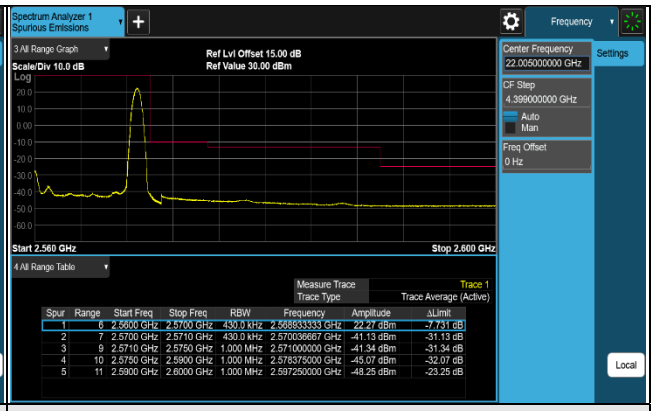


Full (2562.5MHz)

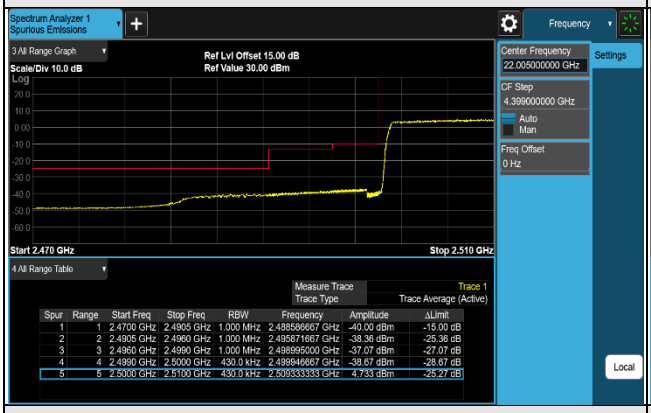
LTE Band 7 (Channel Bandwidth 20MHz)



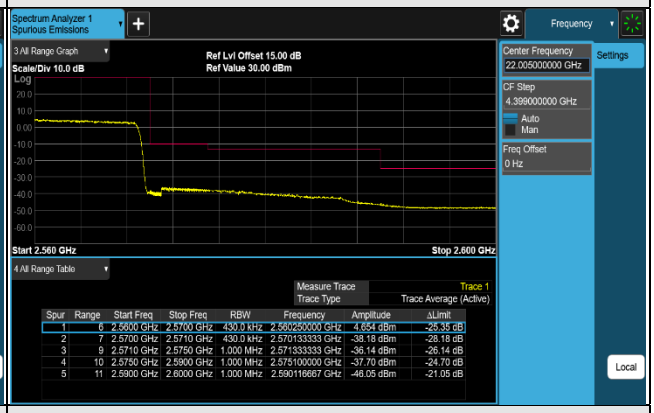
1RB (2510MHz)



1RB (2560MHz)

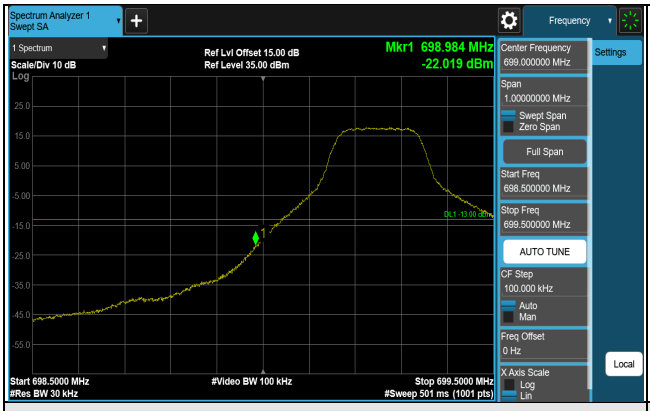


Full (2510MHz)

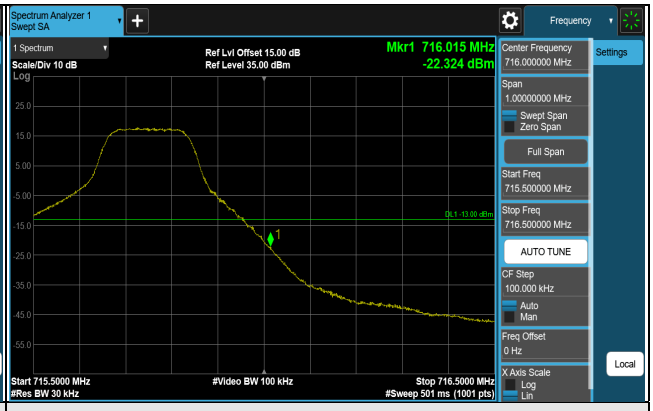


Full (2560MHz)

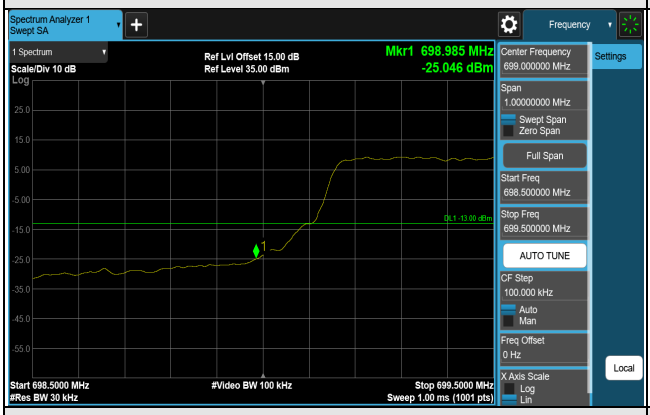
LTE Band 12 (Channel Bandwidth 1.4MHz)



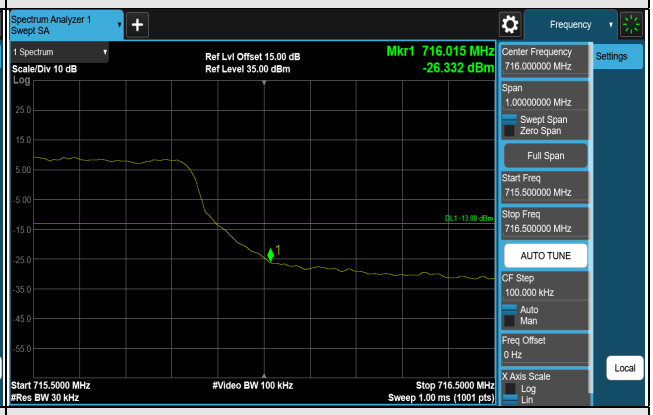
1RB (699.7MHz)



1RB (715.3MHz)

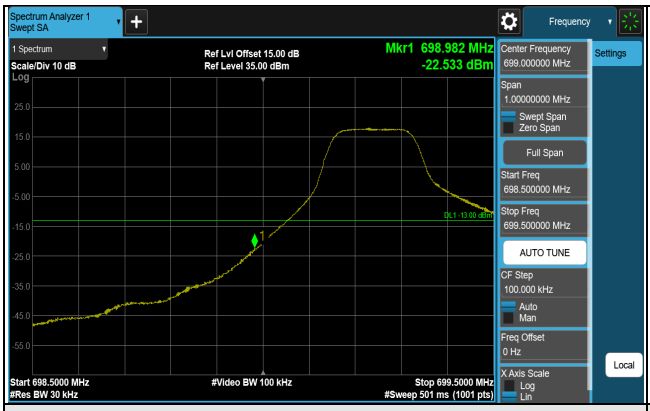


Full (699.7MHz)

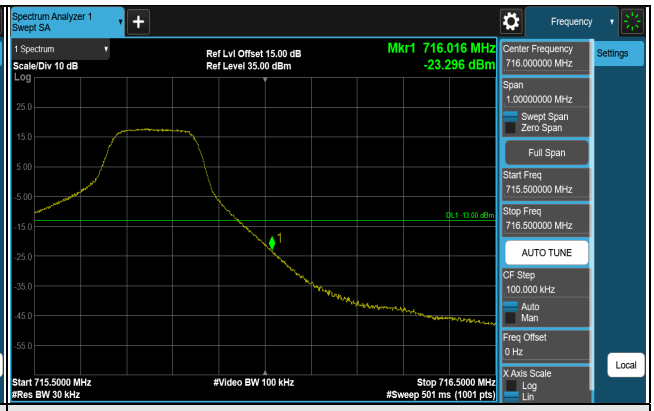


Full (715.3MHz)

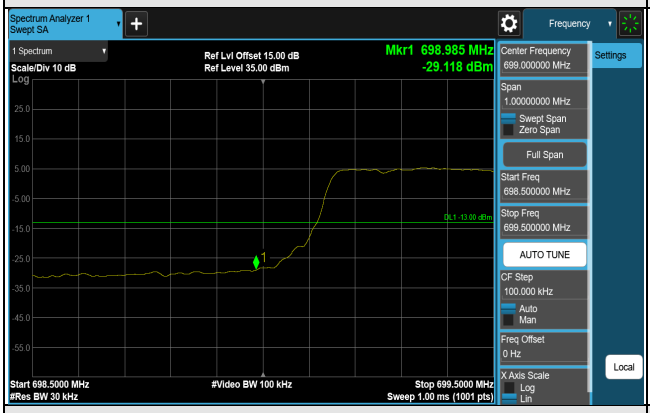
LTE Band 12 (Channel Bandwidth 3MHz)



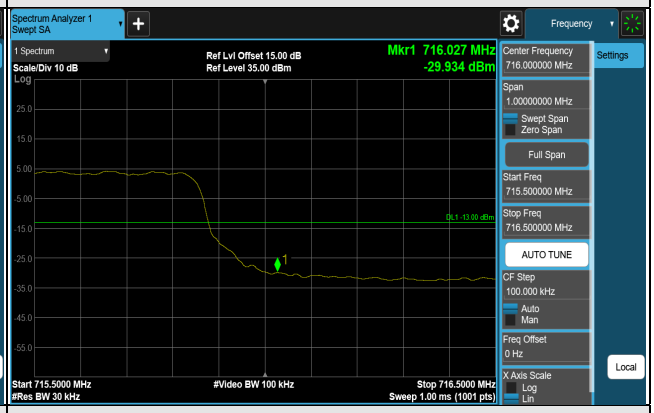
1RB (700.5MHz)



1RB (714.5MHz)

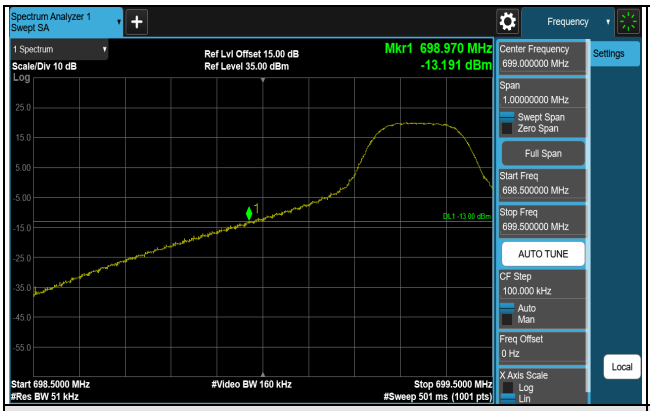


Full (700.5MHz)

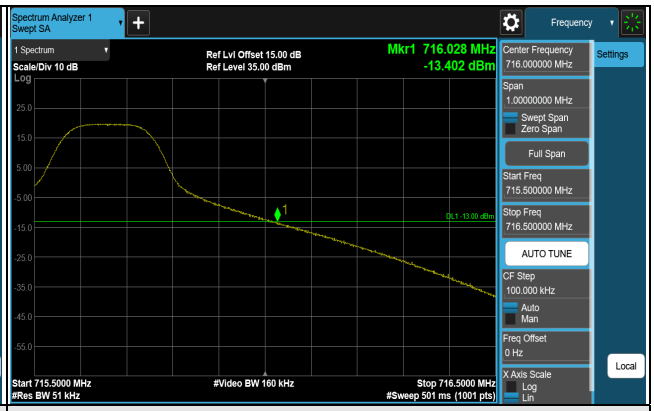


Full (714.5MHz)

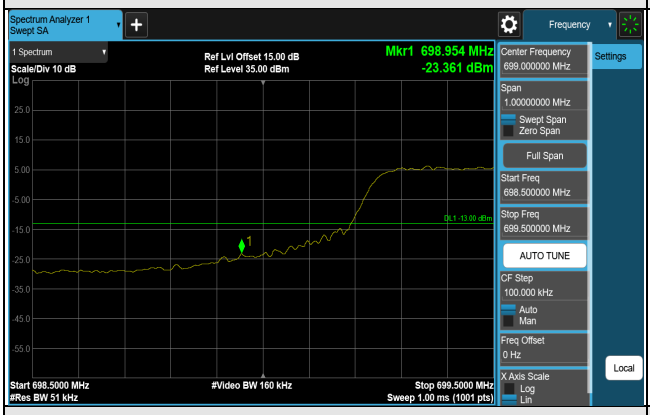
LTE Band 12 (Channel Bandwidth 5MHz)



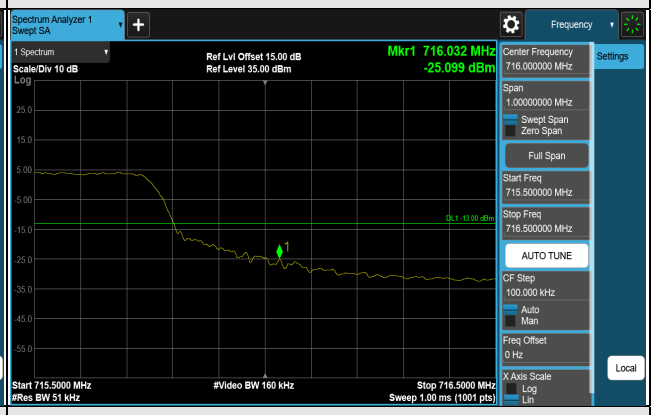
1RB (701.5MHz)



1RB (713.5MHz)

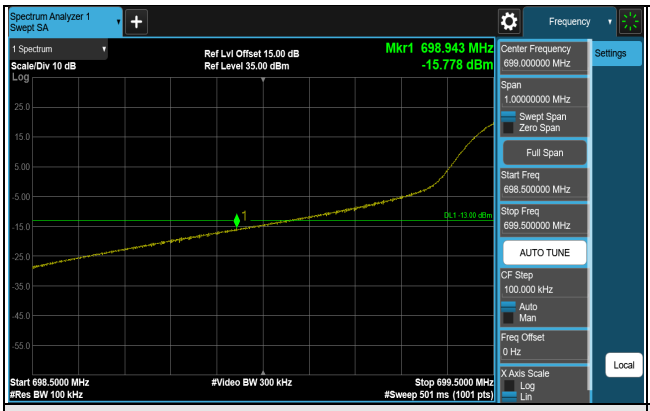


Full (701.5MHz)

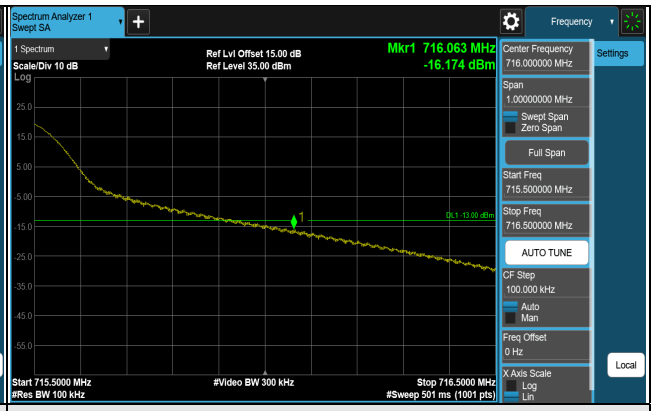


Full (713.5MHz)

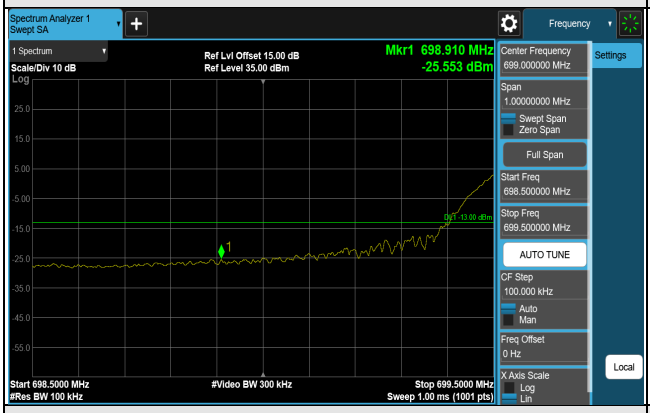
LTE Band 12 (Channel Bandwidth 10MHz)



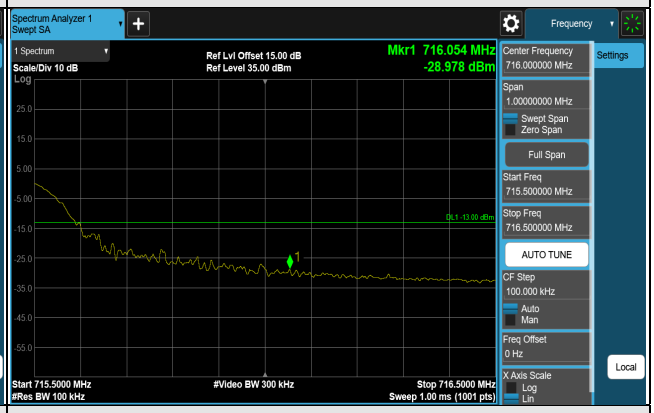
1RB (704MHz)



1RB (711MHz)

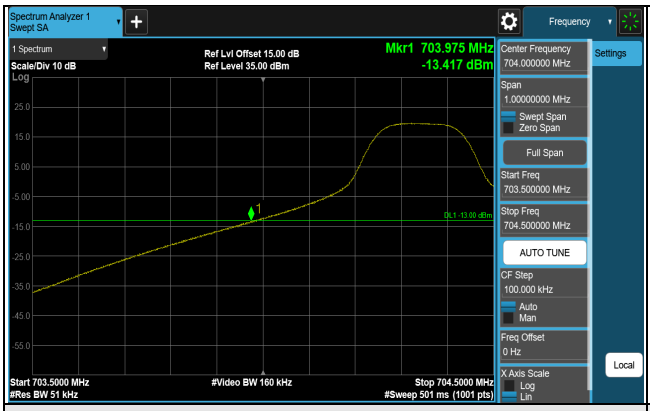


Full (704MHz)

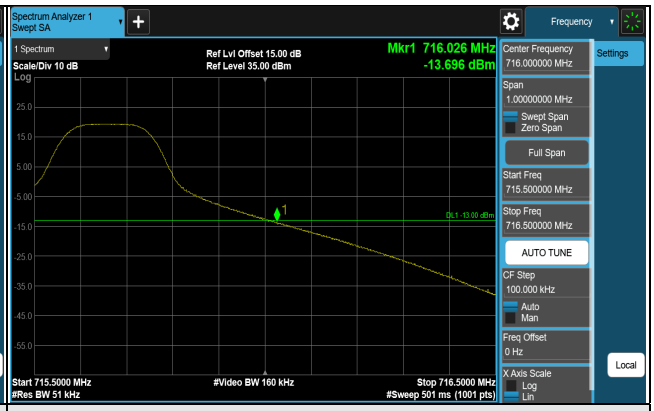


Full (711MHz)

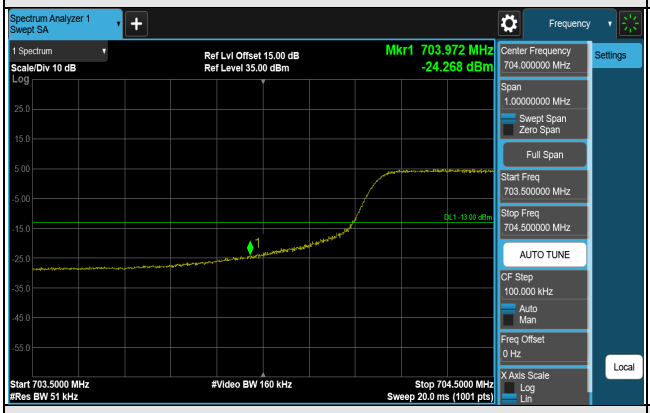
LTE Band 17 (Channel Bandwidth 5MHz)



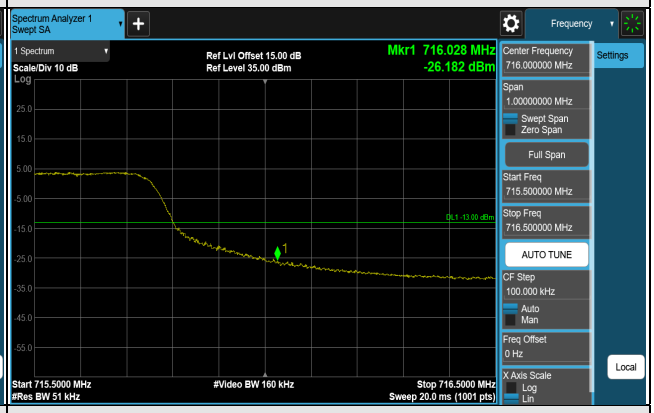
1RB (706.5MHz)



1RB (713.5MHz)

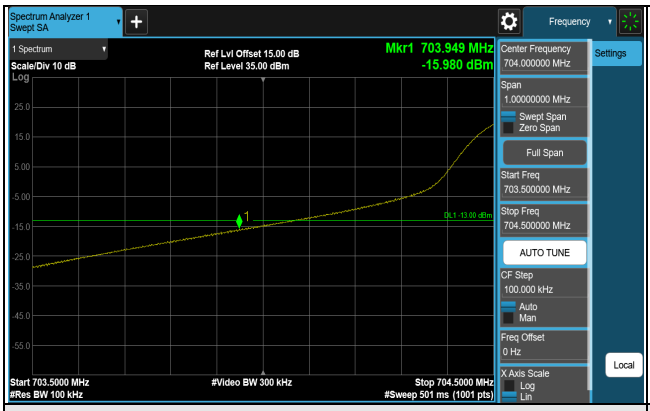


Full (706.5MHz)

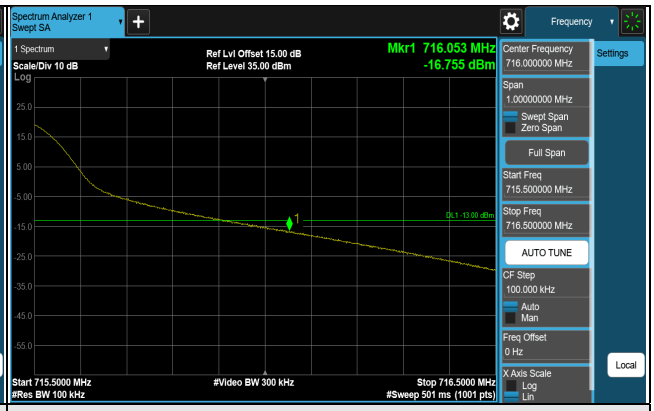


Full (713.5MHz)

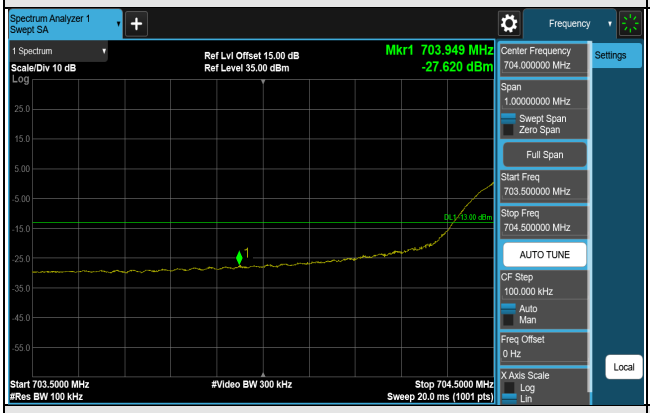
LTE Band 17 (Channel Bandwidth 10MHz)



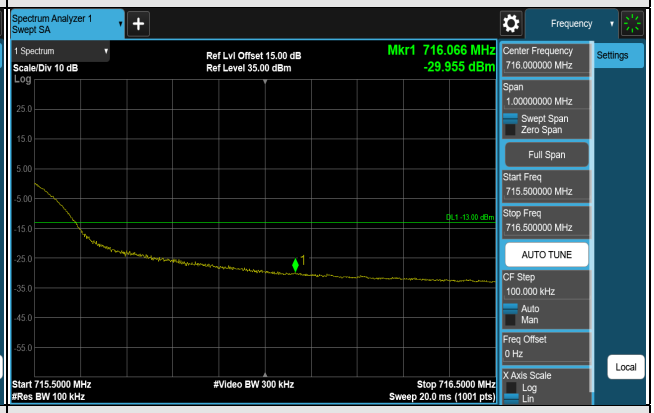
1RB (709MHz)



1RB (711MHz)

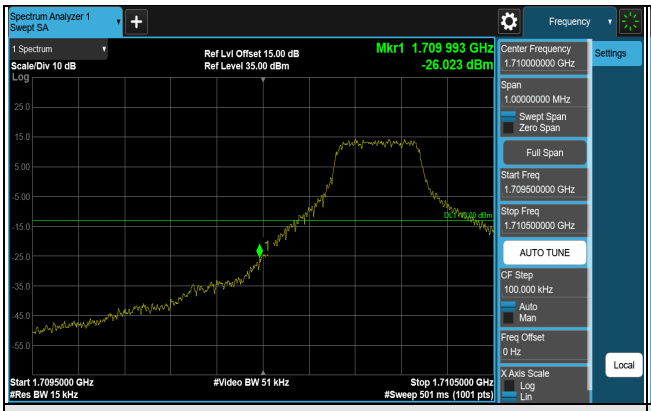


Full (709MHz)

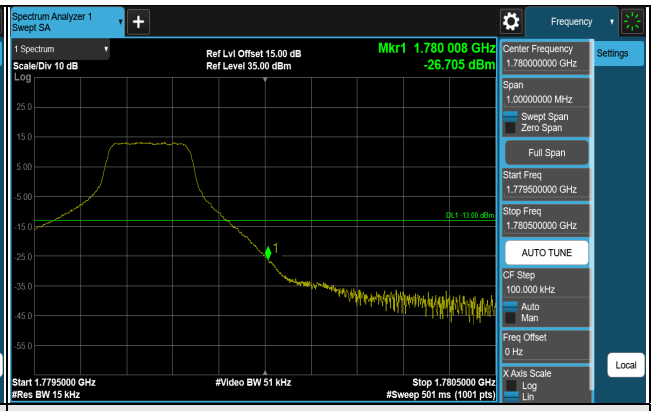


Full (711MHz)

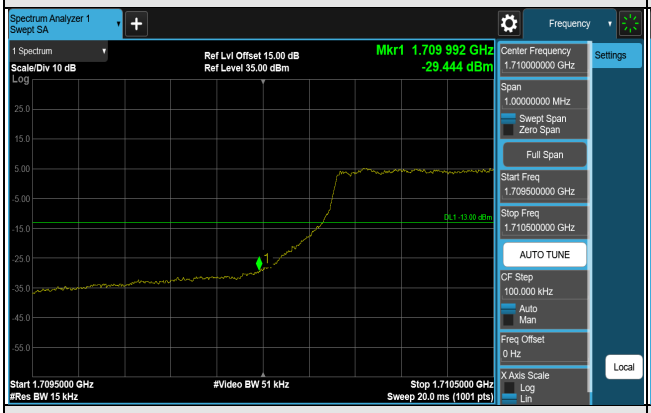
LTE Band 66 (Channel Bandwidth 1.4MHz)



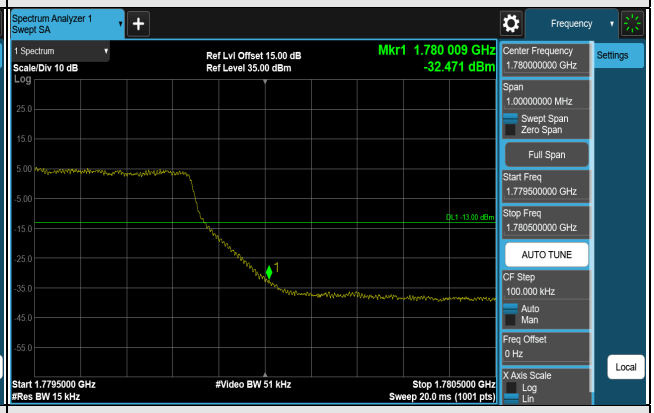
1RB (1710.7MHz)



1RB (1779.3MHz)

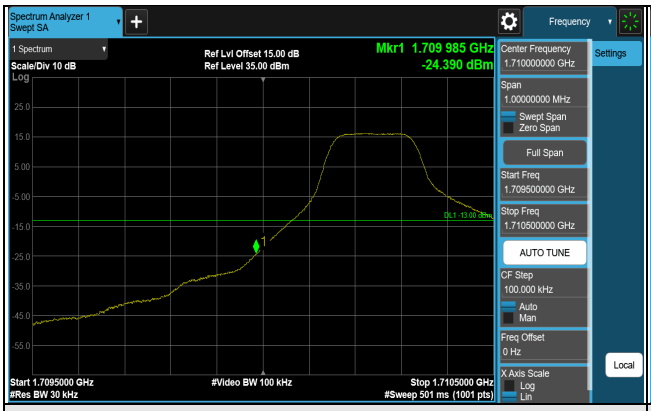


Full (1710.7MHz)

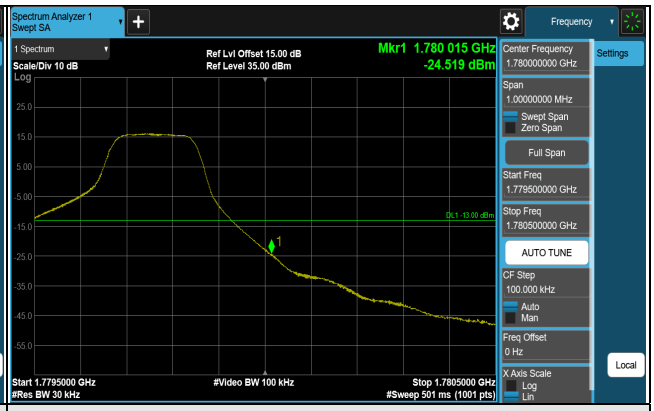


Full (1779.3MHz)

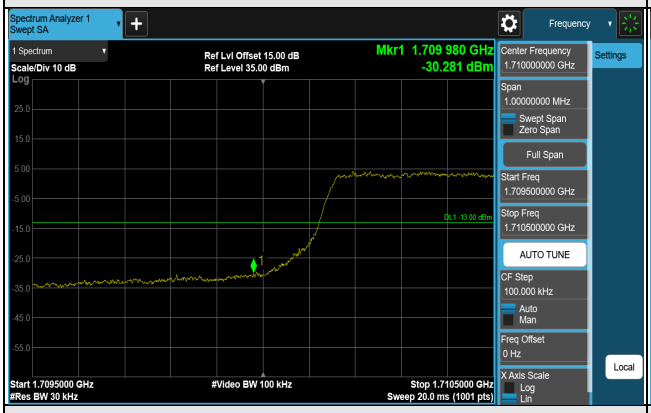
LTE Band 66 (Channel Bandwidth 3MHz)



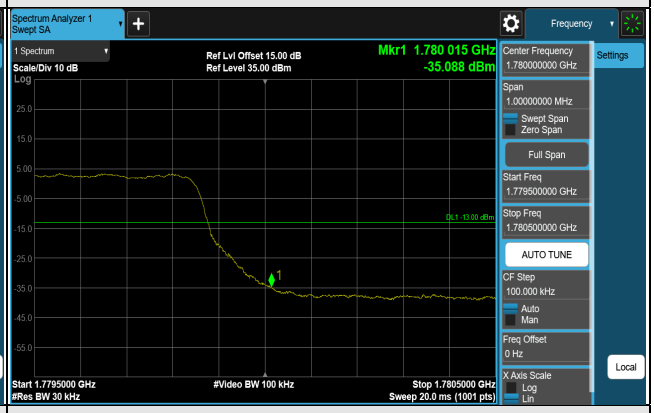
1RB (1711.5MHz)



1RB (1778.5MHz)

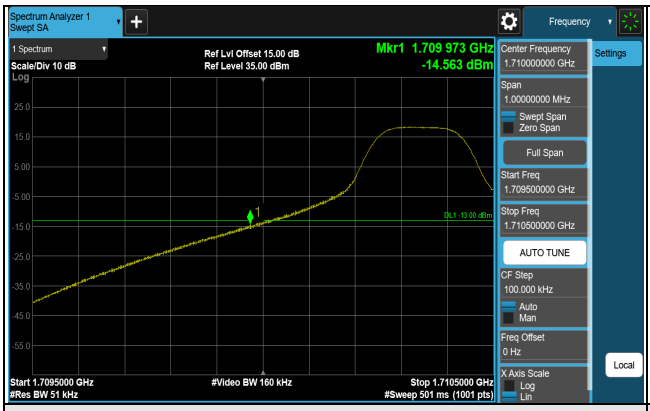


Full (1711.5MHz)

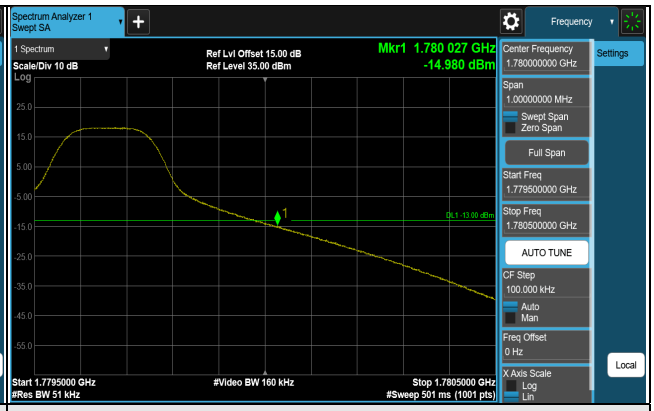


Full (1778.5MHz)

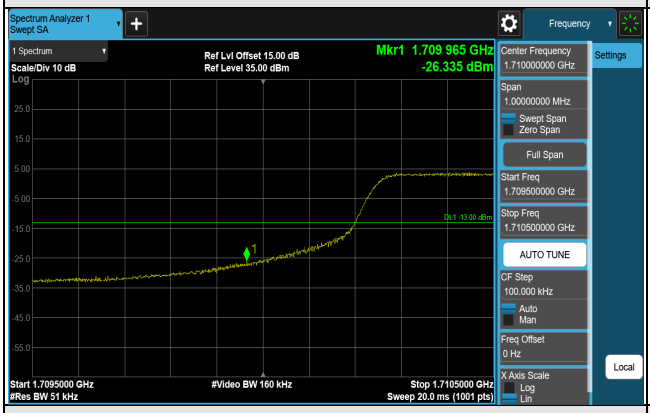
LTE Band 66 (Channel Bandwidth 5MHz)



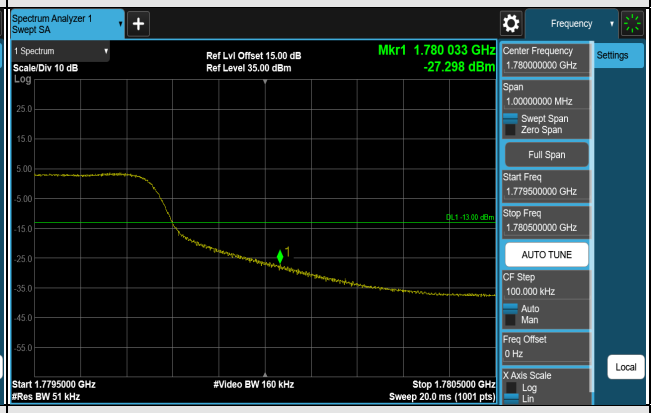
1RB (1712.5MHz)



1RB (1777.5MHz)

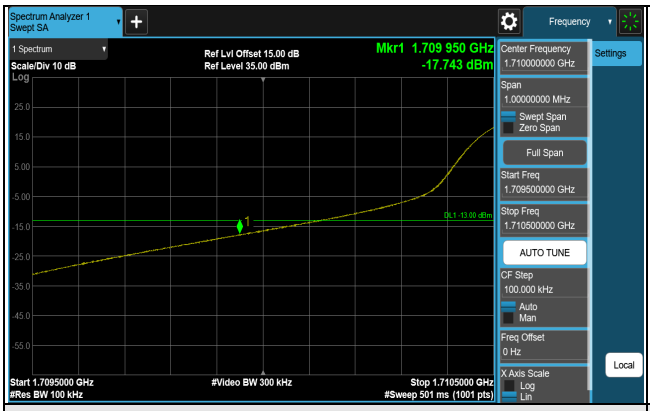


Full (1712.5MHz)

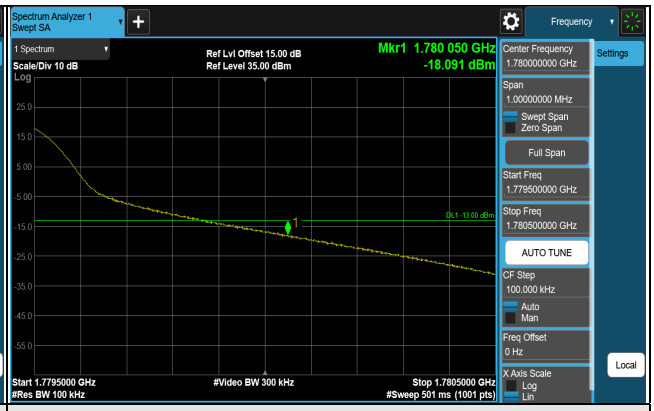


Full (1777.5MHz)

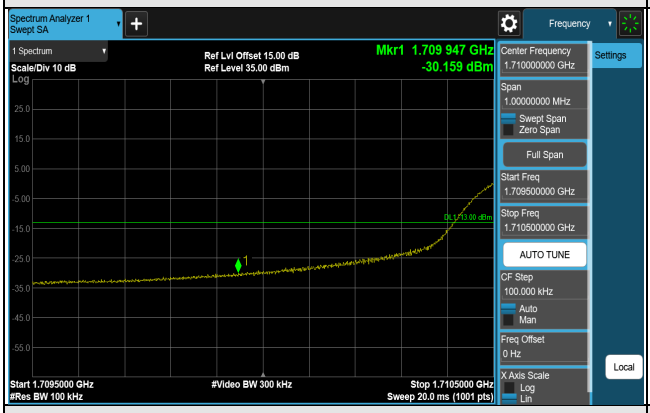
LTE Band 66 (Channel Bandwidth 10MHz)



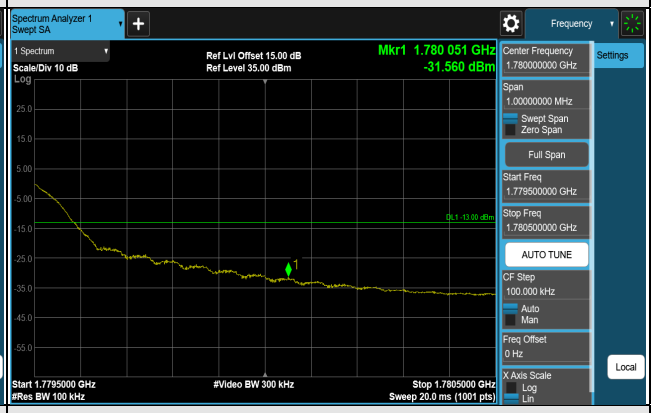
1RB (1715MHz)



1RB (1775MHz)

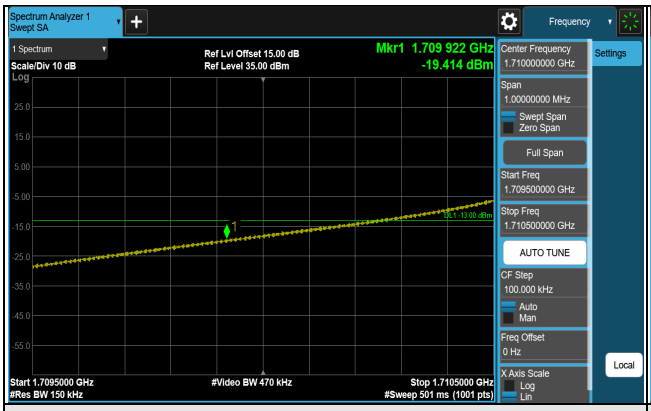


Full (1715MHz)

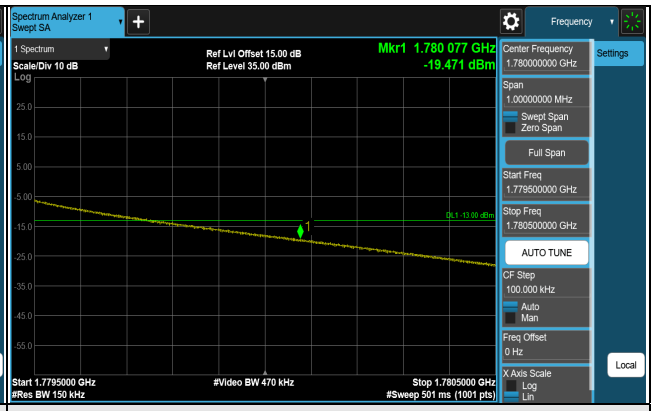


Full (1775MHz)

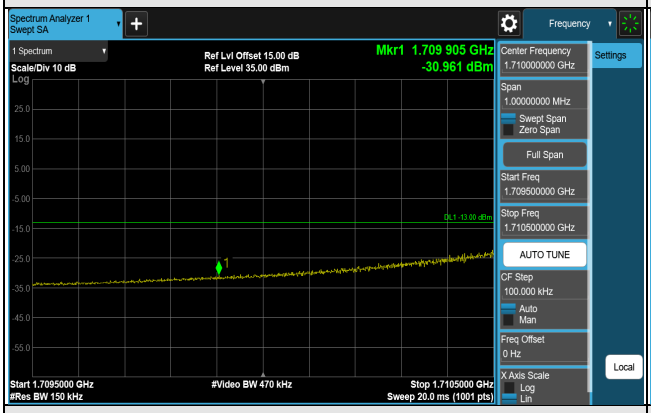
LTE Band 66 (Channel Bandwidth 15MHz)



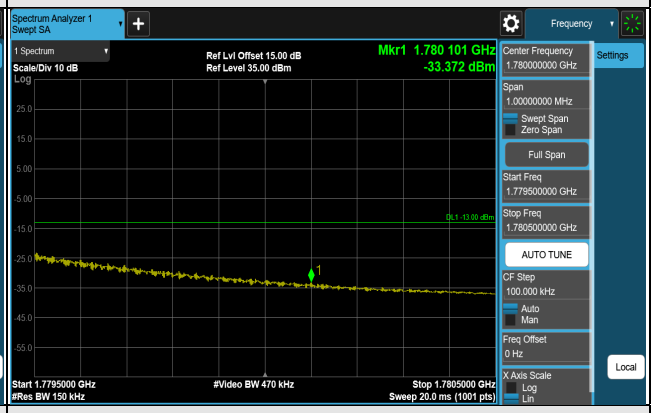
1RB (1717.5MHz)



1RB (1772.5MHz)

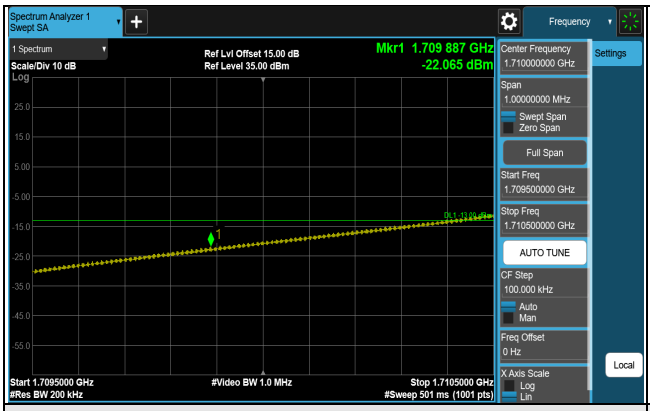


Full (1717.5MHz)

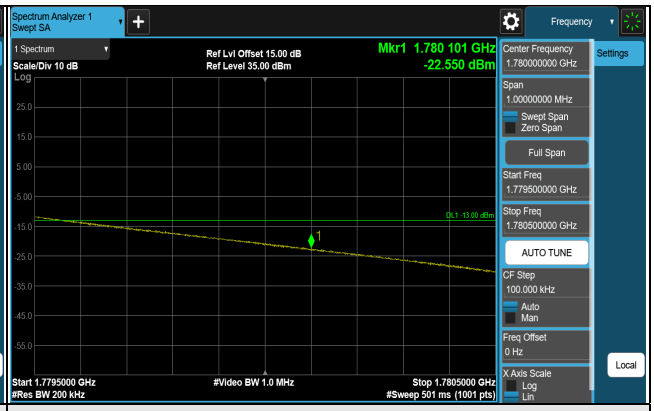


Full (1772.5MHz)

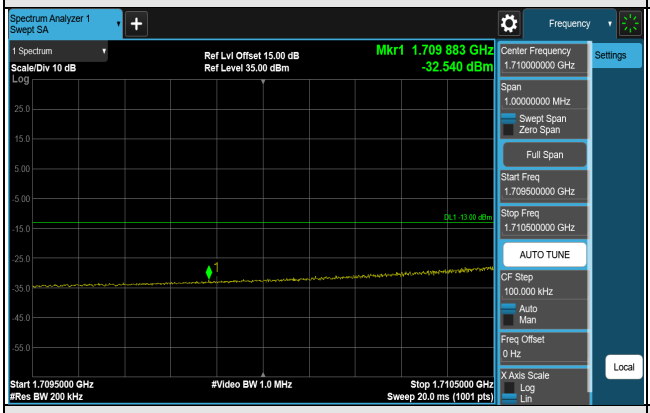
LTE Band 66 (Channel Bandwidth 20MHz)



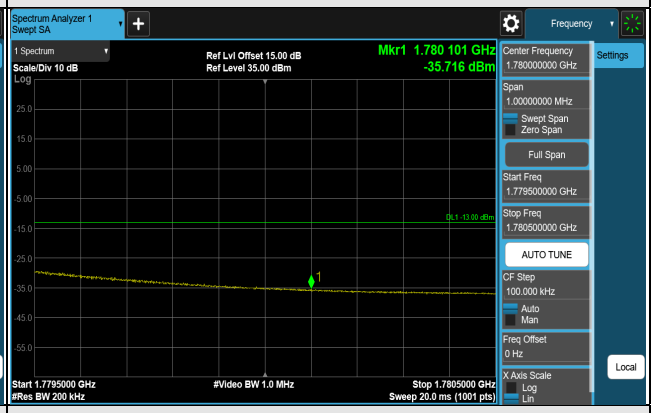
1RB (1720MHz)



1RB (1770MHz)

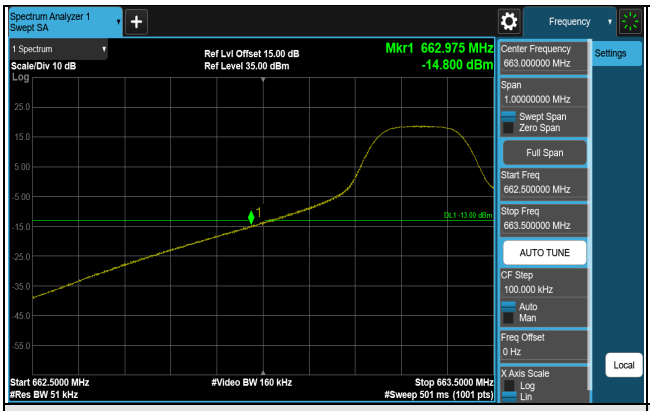


Full (1720MHz)

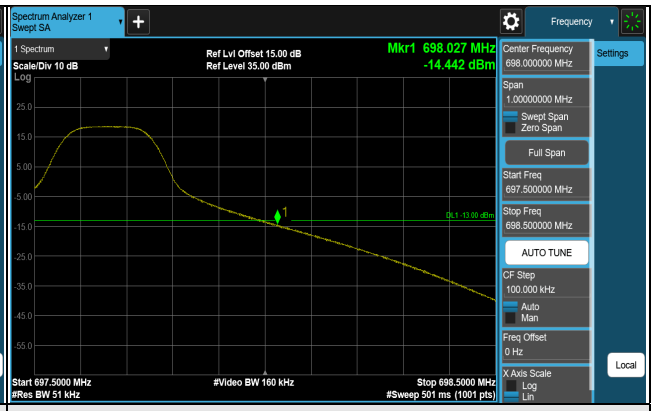


Full (1770MHz)

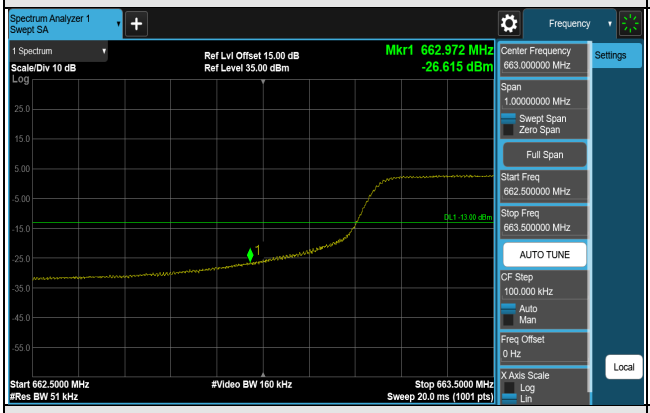
LTE Band 71 (Channel Bandwidth 5MHz)



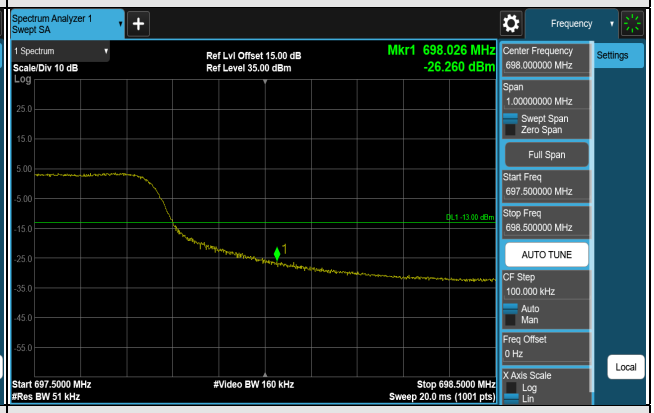
1RB (665.5MHz)



1RB (695.5MHz)

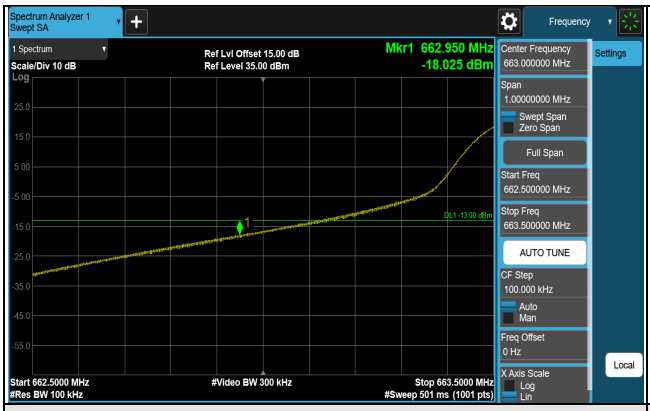


Full (665.5MHz)

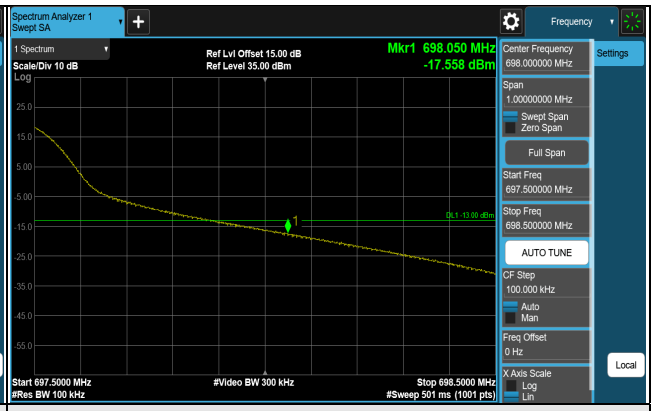


Full (695.5MHz)

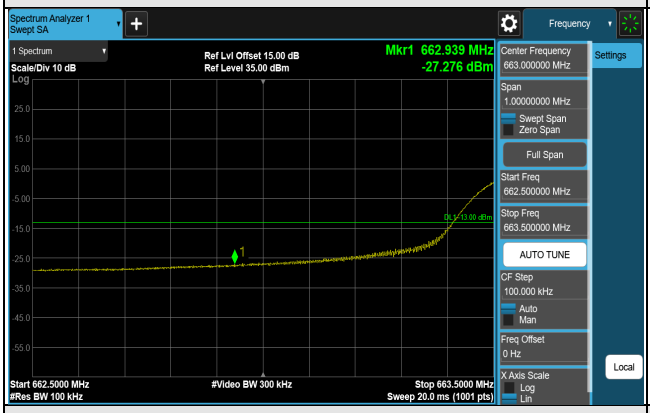
LTE Band 71 (Channel Bandwidth 10MHz)



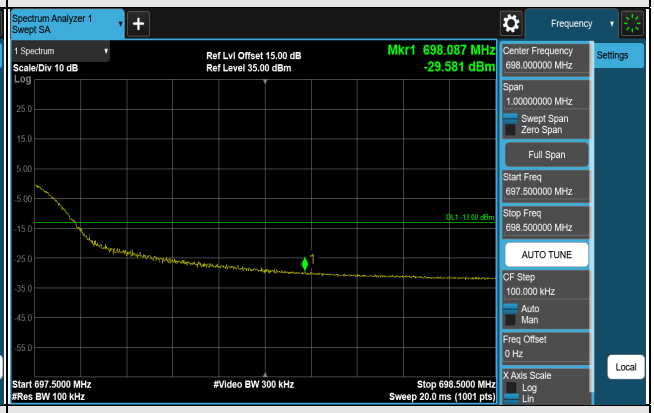
1RB (668MHz)



1RB (693MHz)

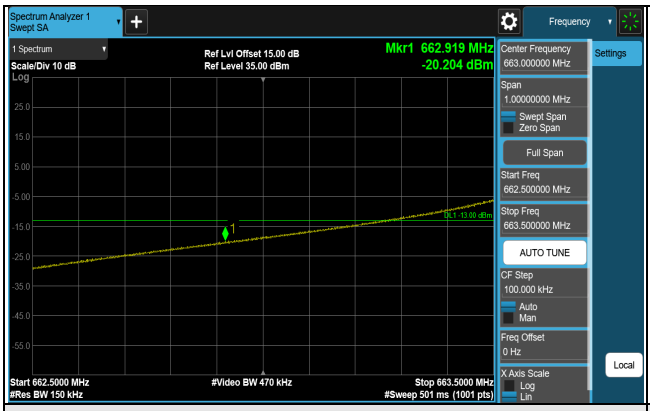


Full (668MHz)

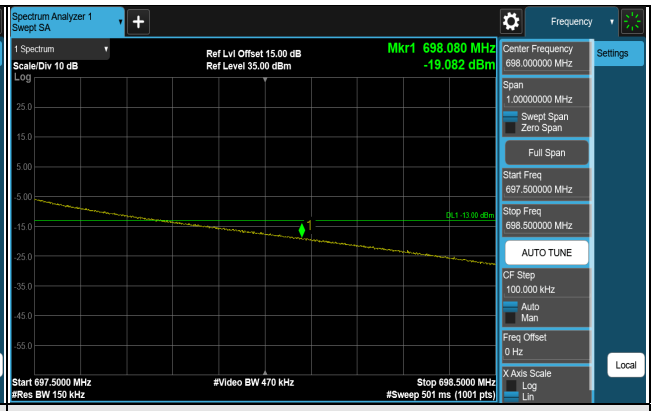


Full (693MHz)

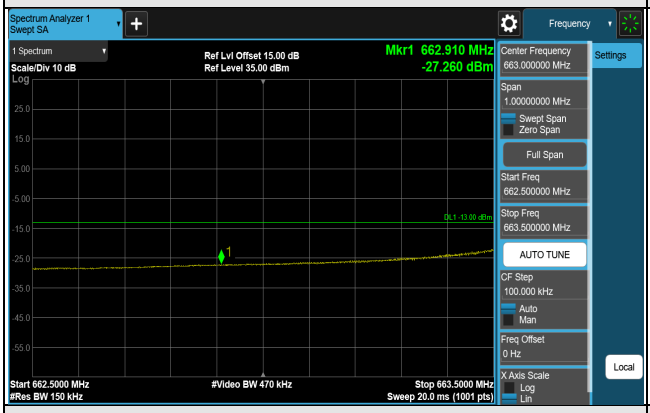
LTE Band 71 (Channel Bandwidth 15MHz)



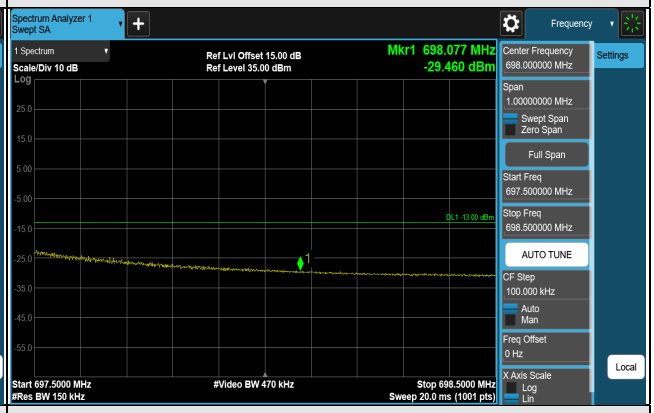
1RB (670.5MHz)



1RB (690.5MHz)

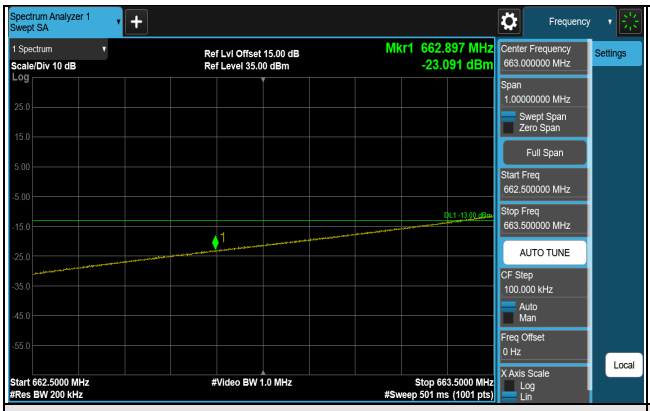


Full (670.5MHz)

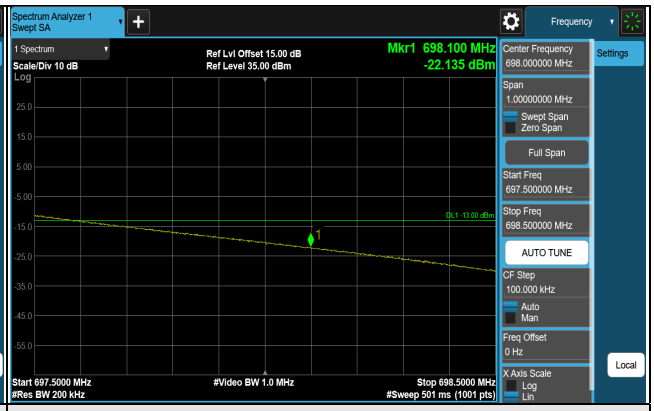


Full (690.5MHz)

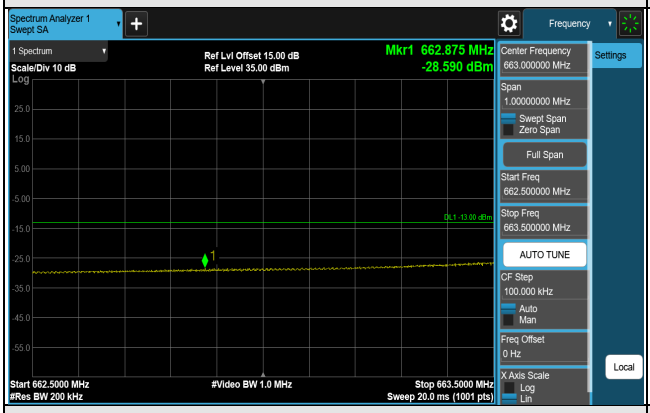
LTE Band 71 (Channel Bandwidth 20MHz)



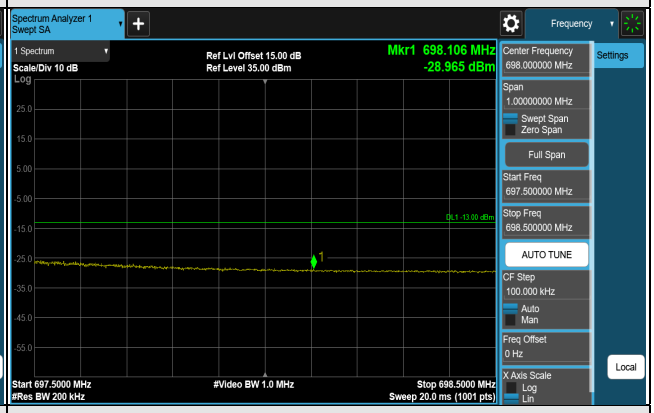
1RB (673MHz)



1RB (688MHz)



Full (673MHz)



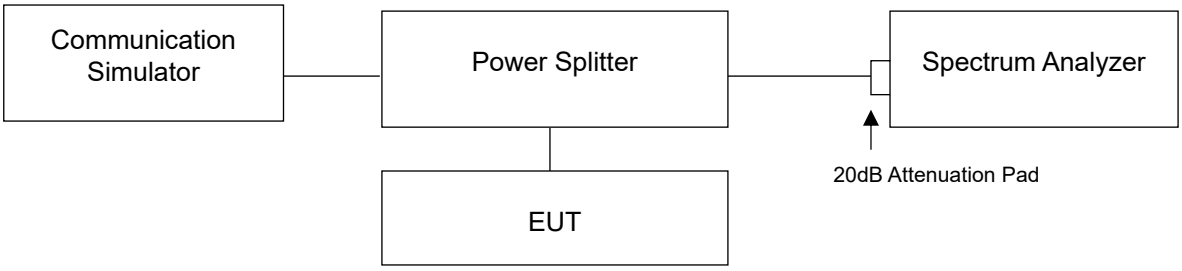
Full (688MHz)

4.6 Peak to Average Ratio

4.6.1 Limits of Peak to Average Ratio Measurement

In measuring transmissions in this band using an average power technique, the peak to-average ratio (PAR) of the transmission may not exceed 13 dB

4.6.2 Test Setup



4.6.3 Test Procedures

a. Set resolution/measurement bandwidth ≥ signal's occupied bandwidth;

b. Set the number of counts to a value that stabilizes the measured CCDF curve;

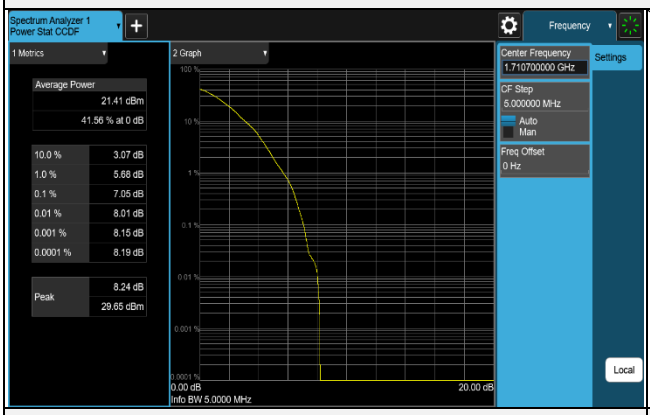
c. Record the maximum PAPR level associated with a probability of 0.1%.

4.6.4 Test Results

LTE Band 4 (Channel Bandwidth 1.4MHz)

Test Condition	Channel	Frequency (MHz)	Measure. Value (dB)	Limit (dB)	Result
QPSK	19957	1710.7	5.86	13	Pass
QPSK	20175	1732.5	5.82	13	Pass
QPSK	20393	1754.3	5.46	13	Pass
16QAM	19957	1710.7	6.88	13	Pass
16QAM	20175	1732.5	6.92	13	Pass
16QAM	20393	1754.3	6.61	13	Pass
64QAM	19957	1710.7	7.05	13	Pass
64QAM	20175	1732.5	7.01	13	Pass
64QAM	20393	1754.3	6.68	13	Pass

Spectrum Plot of Worst Value

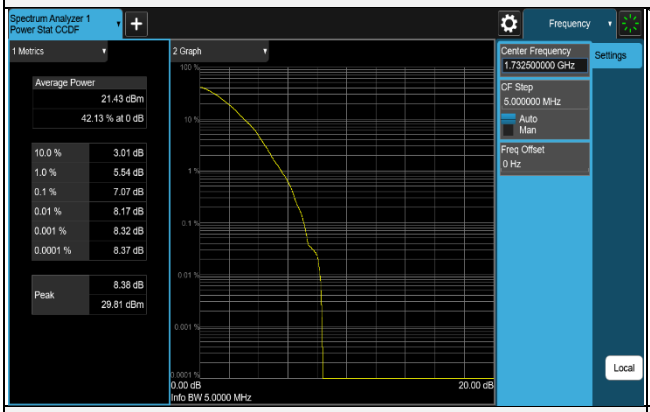


64QAM CH 19957 (1710.7MHz)

LTE Band 4 (Channel Bandwidth 3MHz)

Test Condition	Channel	Frequency (MHz)	Measure. Value (dB)	Limit (dB)	Result
QPSK	19965	1711.5	5.64	13	Pass
QPSK	20175	1732.5	5.78	13	Pass
QPSK	20385	1753.5	5.48	13	Pass
16QAM	19965	1711.5	6.74	13	Pass
16QAM	20175	1732.5	7.01	13	Pass
16QAM	20385	1753.5	6.49	13	Pass
64QAM	19965	1711.5	7.02	13	Pass
64QAM	20175	1732.5	7.07	13	Pass
64QAM	20385	1753.5	6.70	13	Pass

Spectrum Plot of Worst Value

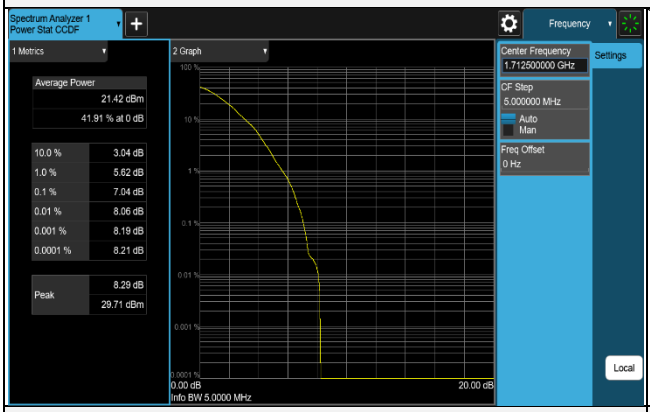


64QAM CH 20175 (1732.5MHz)

LTE Band 4 (Channel Bandwidth 5MHz)

Test Condition	Channel	Frequency (MHz)	Measure. Value (dB)	Limit (dB)	Result
QPSK	19975	1712.5	5.71	13	Pass
QPSK	20175	1732.5	5.84	13	Pass
QPSK	20375	1752.5	5.55	13	Pass
16QAM	19975	1712.5	6.86	13	Pass
16QAM	20175	1732.5	6.98	13	Pass
16QAM	20375	1752.5	6.82	13	Pass
64QAM	19975	1712.5	7.04	13	Pass
64QAM	20175	1732.5	6.99	13	Pass
64QAM	20375	1752.5	6.73	13	Pass

Spectrum Plot of Worst Value

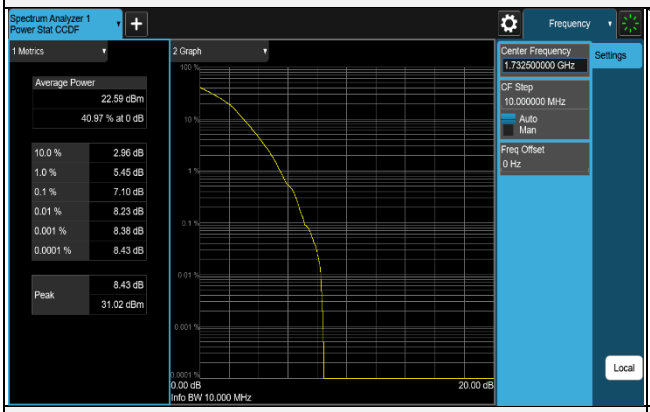


64QAM CH 19975 (1712.5MHz)

LTE Band 4 (Channel Bandwidth 10MHz)

Test Condition	Channel	Frequency (MHz)	Measure. Value (dB)	Limit (dB)	Result
QPSK	20000	1715	5.74	13	Pass
QPSK	20175	1732.5	5.74	13	Pass
QPSK	20350	1750	5.61	13	Pass
16QAM	20000	1715	6.62	13	Pass
16QAM	20175	1732.5	7.10	13	Pass
16QAM	20350	1750	6.84	13	Pass
64QAM	20000	1715	7.01	13	Pass
64QAM	20175	1732.5	6.97	13	Pass
64QAM	20350	1750	6.77	13	Pass

Spectrum Plot of Worst Value

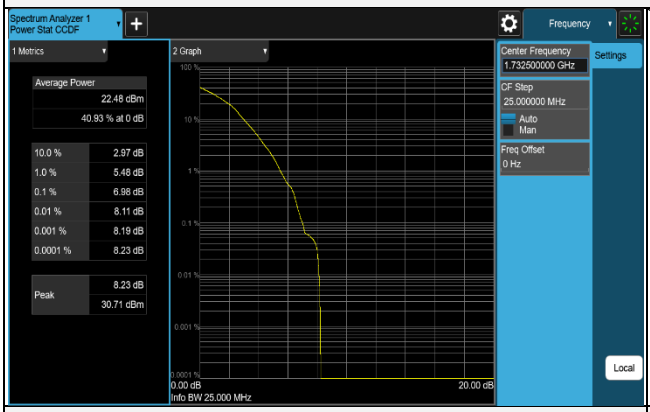


16QAM CH 20175 (1732.5MHz)

LTE Band 4 (Channel Bandwidth 15MHz)

Test Condition	Channel	Frequency (MHz)	Measure. Value (dB)	Limit (dB)	Result
QPSK	20025	1717.5	5.73	13	Pass
QPSK	20175	1732.5	5.66	13	Pass
QPSK	20325	1747.5	5.79	13	Pass
16QAM	20025	1717.5	6.84	13	Pass
16QAM	20175	1732.5	6.98	13	Pass
16QAM	20325	1747.5	6.71	13	Pass
64QAM	20025	1717.5	6.81	13	Pass
64QAM	20175	1732.5	6.87	13	Pass
64QAM	20325	1747.5	6.83	13	Pass

Spectrum Plot of Worst Value

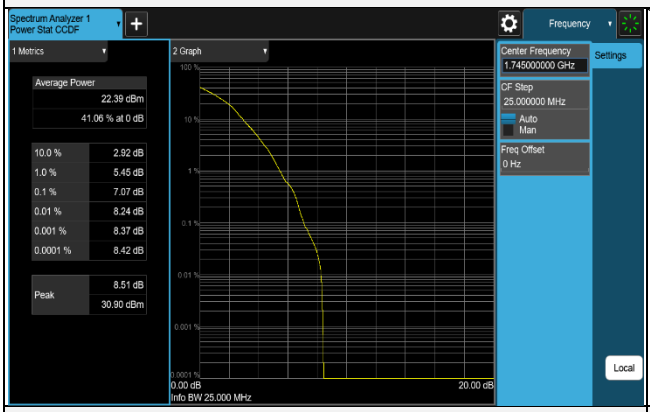


16QAM CH 20175 (1732.5MHz)

LTE Band 4 (Channel Bandwidth 20MHz)

Test Condition	Channel	Frequency (MHz)	Measure. Value (dB)	Limit (dB)	Result
QPSK	20050	1720	5.66	13	Pass
QPSK	20175	1732.5	5.83	13	Pass
QPSK	20300	1745	5.67	13	Pass
16QAM	20050	1720	6.98	13	Pass
16QAM	20175	1732.5	7.02	13	Pass
16QAM	20300	1745	7.07	13	Pass
64QAM	20050	1720	6.97	13	Pass
64QAM	20175	1732.5	6.99	13	Pass
64QAM	20300	1745	6.89	13	Pass

Spectrum Plot of Worst Value

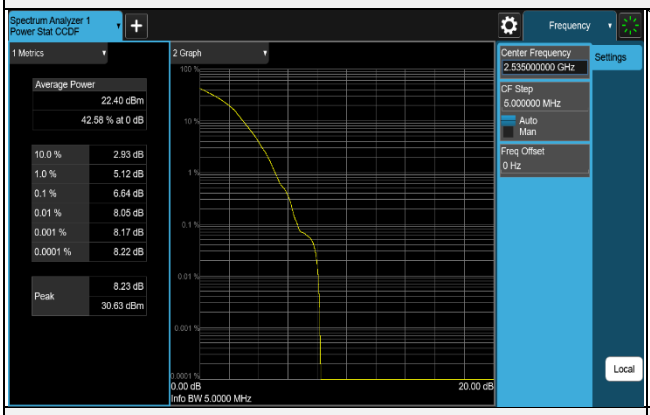


16QAM CH 20300 (1745MHz)

LTE Band 7 (Channel Bandwidth 5MHz)

Test Condition	Channel	Frequency (MHz)	Measure. Value (dB)	Limit (dB)	Result
QPSK	20775	2502.5	5.48	13	Pass
QPSK	21100	2535	5.33	13	Pass
QPSK	21425	2567.5	5.19	13	Pass
16QAM	20775	2502.5	6.63	13	Pass
16QAM	21100	2535	6.64	13	Pass
16QAM	21425	2567.5	6.47	13	Pass
64QAM	20775	2502.5	6.61	13	Pass
64QAM	21100	2535	6.54	13	Pass
64QAM	21425	2567.5	6.46	13	Pass

Spectrum Plot of Worst Value

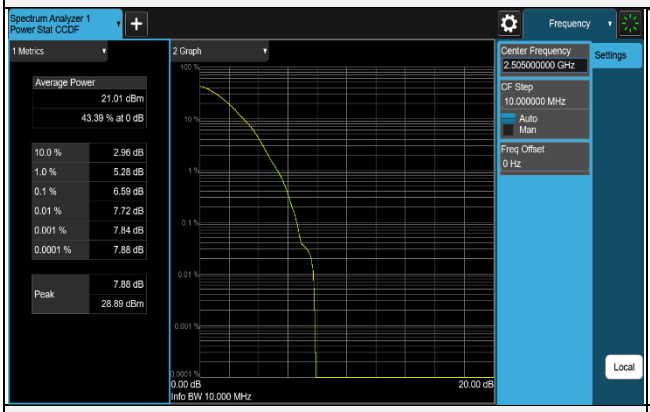


16QAM CH 21100 (2535MHz)

LTE Band 7 (Channel Bandwidth 10MHz)

Test Condition	Channel	Frequency (MHz)	Measure. Value (dB)	Limit (dB)	Result
QPSK	20800	2505	5.28	13	Pass
QPSK	21100	2535	5.36	13	Pass
QPSK	21400	2565	5.26	13	Pass
16QAM	20800	2505	6.39	13	Pass
16QAM	21100	2535	6.55	13	Pass
16QAM	21400	2565	6.24	13	Pass
64QAM	20800	2505	6.59	13	Pass
64QAM	21100	2535	6.57	13	Pass
64QAM	21400	2565	6.40	13	Pass

Spectrum Plot of Worst Value

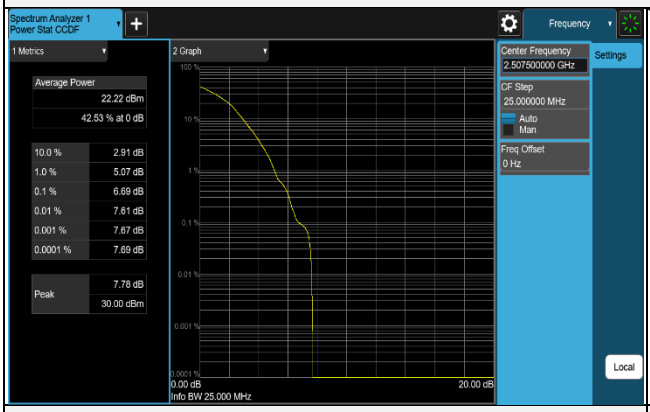


64QAM CH 20800 (2505MHz)

LTE Band 7 (Channel Bandwidth 15MHz)

Test Condition	Channel	Frequency (MHz)	Measure. Value (dB)	Limit (dB)	Result
QPSK	20825	2507.5	5.17	13	Pass
QPSK	21100	2535	5.35	13	Pass
QPSK	21375	2562.5	5.30	13	Pass
16QAM	20825	2507.5	6.69	13	Pass
16QAM	21100	2535	6.32	13	Pass
16QAM	21375	2562.5	6.34	13	Pass
64QAM	20825	2507.5	6.54	13	Pass
64QAM	21100	2535	6.50	13	Pass
64QAM	21375	2562.5	6.37	13	Pass

Spectrum Plot of Worst Value

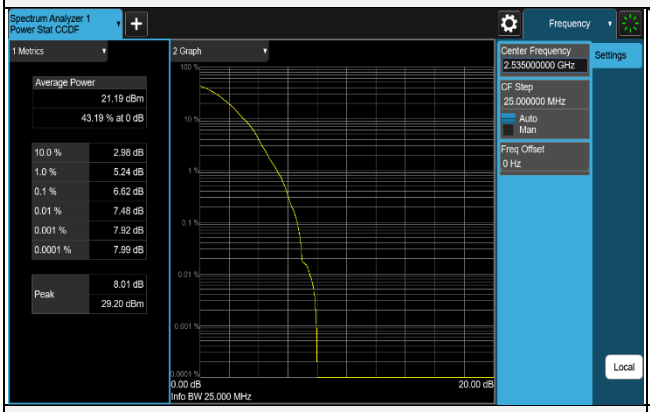


16QAM CH 20825 (2507.5MHz)

LTE Band 7 (Channel Bandwidth 20MHz)

Test Condition	Channel	Frequency (MHz)	Measure. Value (dB)	Limit (dB)	Result
QPSK	20850	2510	5.42	13	Pass
QPSK	21100	2535	5.33	13	Pass
QPSK	21350	2560	5.35	13	Pass
16QAM	20850	2510	6.39	13	Pass
16QAM	21100	2535	6.48	13	Pass
16QAM	21350	2560	6.31	13	Pass
64QAM	20850	2510	6.38	13	Pass
64QAM	21100	2535	6.62	13	Pass
64QAM	21350	2560	6.53	13	Pass

Spectrum Plot of Worst Value

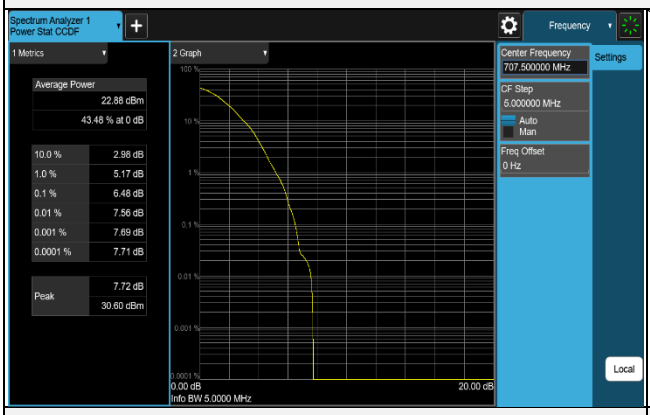


64QAM CH 21100 (2535MHz)

LTE Band 12 (Channel Bandwidth 1.4MHz)

Test Condition	Channel	Frequency (MHz)	Measure. Value (dB)	Limit (dB)	Result
QPSK	23017	699.7	4.83	13	Pass
QPSK	23095	707.5	5.22	13	Pass
QPSK	23173	715.3	4.79	13	Pass
16QAM	23017	699.7	5.85	13	Pass
16QAM	23095	707.5	6.45	13	Pass
16QAM	23173	715.3	5.84	13	Pass
64QAM	23017	699.7	6.27	13	Pass
64QAM	23095	707.5	6.48	13	Pass
64QAM	23173	715.3	6.18	13	Pass

Spectrum Plot of Worst Value

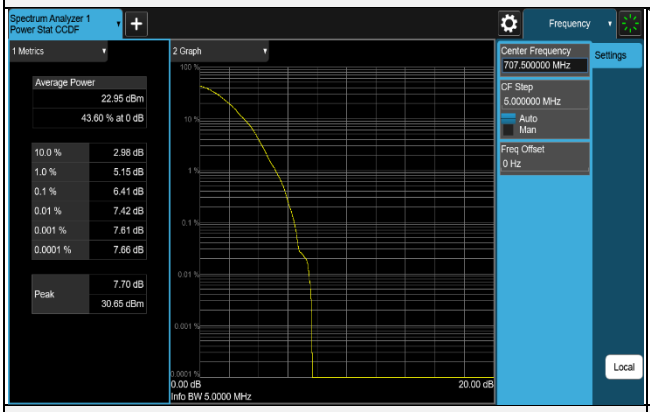


64QAM CH 23095 (707.5MHz)

LTE Band 12 (Channel Bandwidth 3MHz)

Test Condition	Channel	Frequency (MHz)	Measure. Value (dB)	Limit (dB)	Result
QPSK	23025	700.5	4.78	13	Pass
QPSK	23095	707.5	5.13	13	Pass
QPSK	23165	714.5	4.67	13	Pass
16QAM	23025	700.5	5.81	13	Pass
16QAM	23095	707.5	6.27	13	Pass
16QAM	23165	714.5	5.75	13	Pass
64QAM	23025	700.5	6.25	13	Pass
64QAM	23095	707.5	6.41	13	Pass
64QAM	23165	714.5	6.11	13	Pass

Spectrum Plot of Worst Value

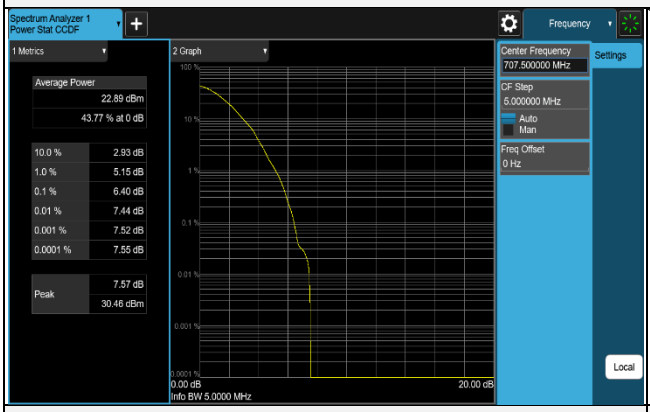


64QAM CH 23095 (707.5MHz)

LTE Band 12 (Channel Bandwidth 5MHz)

Test Condition	Channel	Frequency (MHz)	Measure. Value (dB)	Limit (dB)	Result
QPSK	23035	701.5	4.81	13	Pass
QPSK	23095	707.5	5.08	13	Pass
QPSK	23155	713.5	4.91	13	Pass
16QAM	23035	701.5	5.92	13	Pass
16QAM	23095	707.5	6.31	13	Pass
16QAM	23155	713.5	6.03	13	Pass
64QAM	23035	701.5	6.24	13	Pass
64QAM	23095	707.5	6.40	13	Pass
64QAM	23155	713.5	6.31	13	Pass

Spectrum Plot of Worst Value

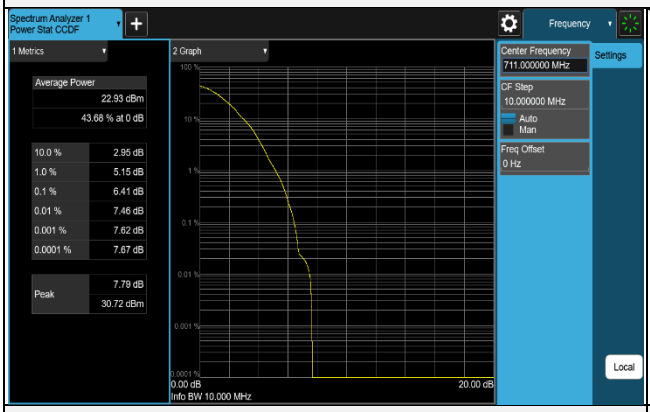


64QAM CH 23095 (707.5MHz)

LTE Band 12 (Channel Bandwidth 10MHz)

Test Condition	Channel	Frequency (MHz)	Measure. Value (dB)	Limit (dB)	Result
QPSK	23060	704	4.74	13	Pass
QPSK	23095	707.5	4.80	13	Pass
QPSK	23130	711	5.16	13	Pass
16QAM	23060	704	5.78	13	Pass
16QAM	23095	707.5	5.88	13	Pass
16QAM	23130	711	6.18	13	Pass
64QAM	23060	704	6.19	13	Pass
64QAM	23095	707.5	6.16	13	Pass
64QAM	23130	711	6.41	13	Pass

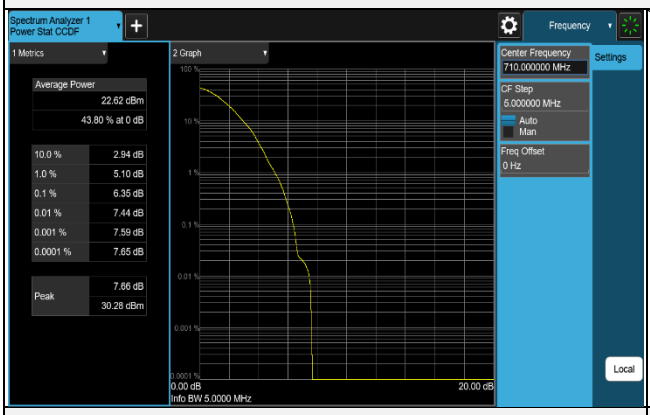
Spectrum Plot of Worst Value



64QAM CH 23130 (711MHz)

LTE Band 17 (Channel Bandwidth 5MHz)

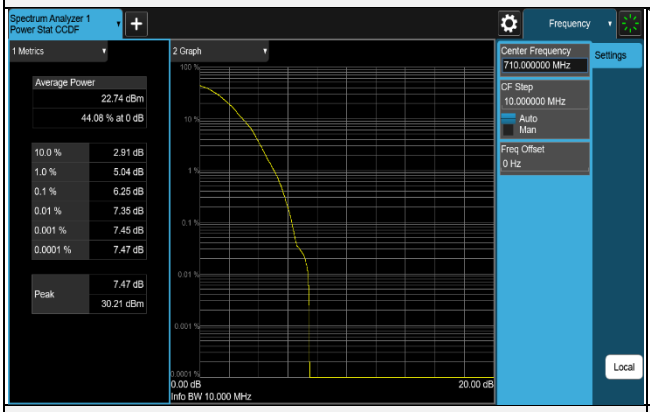
Test Condition	Channel	Frequency (MHz)	Measure. Value (dB)	Limit (dB)	Result
QPSK	23755	706.5	5.12	13	Pass
QPSK	23790	710	5.15	13	Pass
QPSK	23825	713.5	4.89	13	Pass
16QAM	23755	706.5	6.03	13	Pass
16QAM	23790	710	6.30	13	Pass
16QAM	23825	713.5	6.00	13	Pass
64QAM	23755	706.5	6.16	13	Pass
64QAM	23790	710	6.35	13	Pass
64QAM	23825	713.5	6.23	13	Pass

Spectrum Plot of Worst Value	
	
64QAM CH 23790 (710MHz)	

LTE Band 17 (Channel Bandwidth 10MHz)

Test Condition	Channel	Frequency (MHz)	Measure. Value (dB)	Limit (dB)	Result
QPSK	23780	709	4.88	13	Pass
QPSK	23790	710	5.03	13	Pass
QPSK	23800	711	5.08	13	Pass
16QAM	23780	709	6.08	13	Pass
16QAM	23790	710	6.19	13	Pass
16QAM	23800	711	6.16	13	Pass
64QAM	23780	709	6.21	13	Pass
64QAM	23790	710	6.25	13	Pass
64QAM	23800	711	6.21	13	Pass

Spectrum Plot of Worst Value

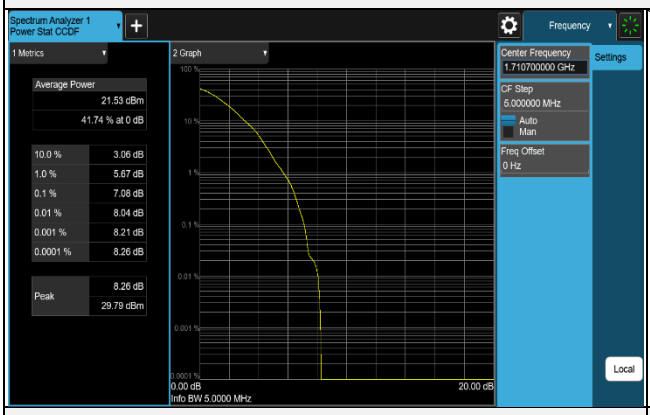


64QAM CH 23790 (710MHz)

LTE Band 66 (Channel Bandwidth 1.4MHz)

Test Condition	Channel	Frequency (MHz)	Measure. Value (dB)	Limit (dB)	Result
QPSK	131979	1710.7	5.77	13	Pass
QPSK	132322	1745	5.64	13	Pass
QPSK	132665	1779.3	5.25	13	Pass
16QAM	131979	1710.7	6.82	13	Pass
16QAM	132322	1745	6.79	13	Pass
16QAM	132665	1779.3	6.42	13	Pass
64QAM	131979	1710.7	7.08	13	Pass
64QAM	132322	1745	6.86	13	Pass
64QAM	132665	1779.3	6.59	13	Pass

Spectrum Plot of Worst Value

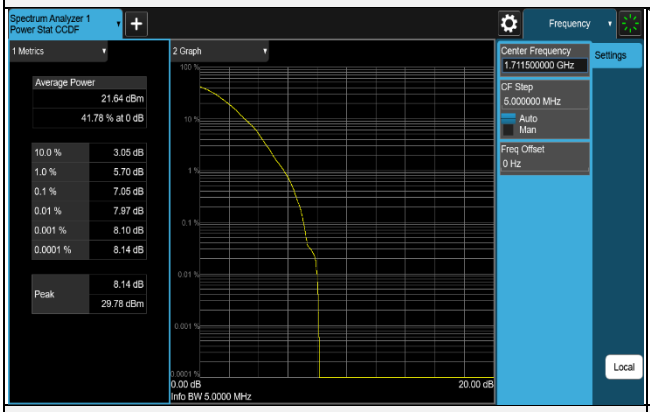


64QAM CH 131979 (1710.7MHz)

LTE Band 66 (Channel Bandwidth 3MHz)

Test Condition	Channel	Frequency (MHz)	Measure. Value (dB)	Limit (dB)	Result
QPSK	131987	1711.5	5.71	13	Pass
QPSK	132322	1745	5.65	13	Pass
QPSK	132657	1778.5	5.18	13	Pass
16QAM	131987	1711.5	6.72	13	Pass
16QAM	132322	1745	6.78	13	Pass
16QAM	132657	1778.5	6.28	13	Pass
64QAM	131987	1711.5	7.05	13	Pass
64QAM	132322	1745	6.88	13	Pass
64QAM	132657	1778.5	6.57	13	Pass

Spectrum Plot of Worst Value

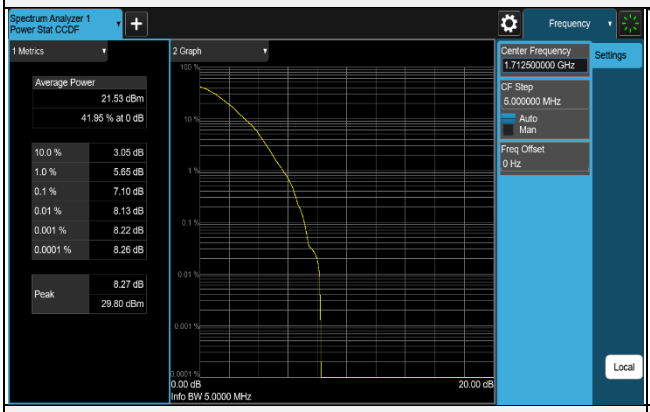


64QAM CH 131987 (1711.5MHz)

LTE Band 66 (Channel Bandwidth 5MHz)

Test Condition	Channel	Frequency (MHz)	Measure. Value (dB)	Limit (dB)	Result
QPSK	131997	1712.5	5.73	13	Pass
QPSK	132322	1745	5.66	13	Pass
QPSK	132647	1777.5	5.22	13	Pass
16QAM	131997	1712.5	6.75	13	Pass
16QAM	132322	1745	6.93	13	Pass
16QAM	132647	1777.5	6.38	13	Pass
64QAM	131997	1712.5	7.10	13	Pass
64QAM	132322	1745	6.89	13	Pass
64QAM	132647	1777.5	6.48	13	Pass

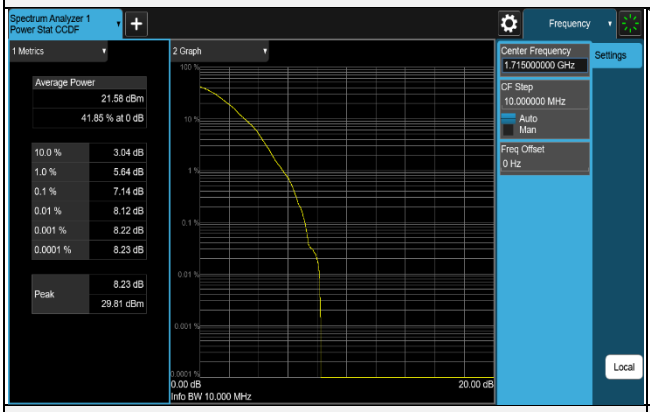
Spectrum Plot of Worst Value



64QAM CH 131997 (1712.5MHz)

LTE Band 66 (Channel Bandwidth 10MHz)

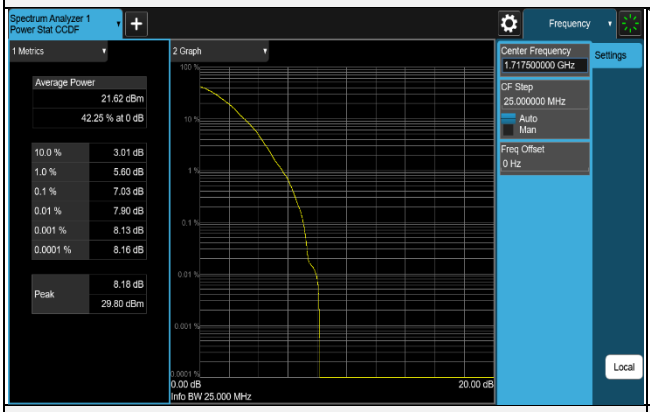
Test Condition	Channel	Frequency (MHz)	Measure. Value (dB)	Limit (dB)	Result
QPSK	132022	1715	5.70	13	Pass
QPSK	132322	1745	5.72	13	Pass
QPSK	132622	1775	5.10	13	Pass
16QAM	132022	1715	6.90	13	Pass
16QAM	132322	1745	7.00	13	Pass
16QAM	132622	1775	6.12	13	Pass
64QAM	132022	1715	7.14	13	Pass
64QAM	132322	1745	6.93	13	Pass
64QAM	132622	1775	6.37	13	Pass

Spectrum Plot of Worst Value	
	
64QAM CH 132022 (1715MHz)	

LTE Band 66 (Channel Bandwidth 15MHz)

Test Condition	Channel	Frequency (MHz)	Measure. Value (dB)	Limit (dB)	Result
QPSK	132047	1717.5	5.58	13	Pass
QPSK	132322	1745	5.71	13	Pass
QPSK	132597	1772.5	5.22	13	Pass
16QAM	132047	1717.5	6.97	13	Pass
16QAM	132322	1745	6.95	13	Pass
16QAM	132597	1772.5	6.30	13	Pass
64QAM	132047	1717.5	7.03	13	Pass
64QAM	132322	1745	6.90	13	Pass
64QAM	132597	1772.5	6.42	13	Pass

Spectrum Plot of Worst Value



64QAM CH 132047 (1717.5MHz)