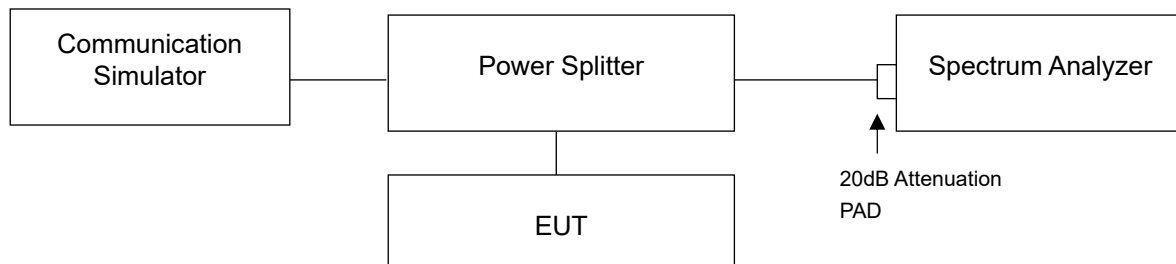


4.6 Peak to Average Ratio

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

- Set resolution/measurement bandwidth $\geq$ signal's occupied bandwidth;
- Set the number of counts to a value that stabilizes the measured CCDF curve;
- Record the maximum PAPR level associated with a probability of 0.1%.

4.6.4 Test Results

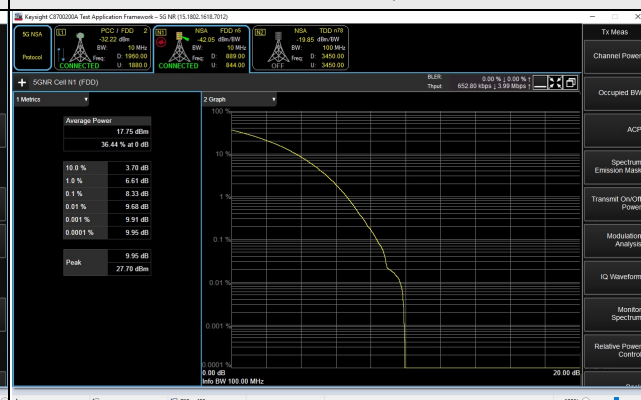
n5, Channel Bandwidth 5MHz						
Channel	Frequency (MHz)	Peak To Average Ratio (dB)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
165300	826.5	3.84	4.42	5.55	6.04	8.46
167300	836.5	3.86	6.46	6.62	7.07	8.28
169300	846.5	3.82	4.42	5.60	6.08	8.24
n5, Channel Bandwidth 10MHz						
Channel	Frequency (MHz)	Peak To Average Ratio (dB)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
165800	829.0	3.90	6.50	6.23	6.95	8.09
167300	836.5	3.85	4.52	5.47	5.84	8.12
168800	844.0	3.89	4.60	5.48	5.83	8.33
n5, Channel Bandwidth 15MHz						
Channel	Frequency (MHz)	Peak To Average Ratio (dB)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
166300	831.5	3.91	6.56	6.59	6.94	8.25
167300	836.5	3.87	4.57	5.59	6.05	8.38
168300	841.5	3.94	6.85	6.85	7.14	8.24
n5, Channel Bandwidth 20MHz						
Channel	Frequency (MHz)	Peak To Average Ratio (dB)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
166800	834.0	3.61	6.67	6.60	6.97	8.45
167300	836.5	3.65	4.51	5.55	5.98	8.59
167800	839.0	3.84	6.86	6.92	7.20	8.47

Spectrum Plot of Worst Value

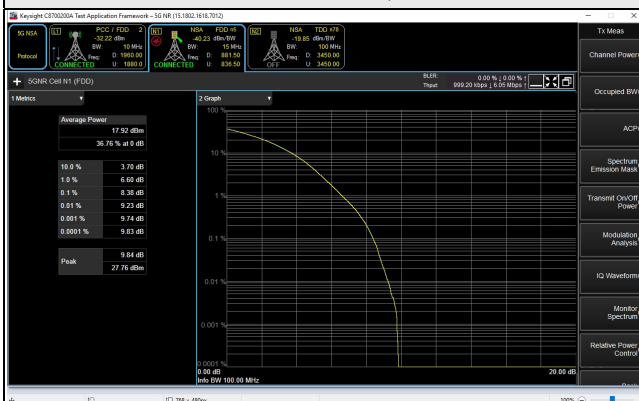
5MHz / 256QAM



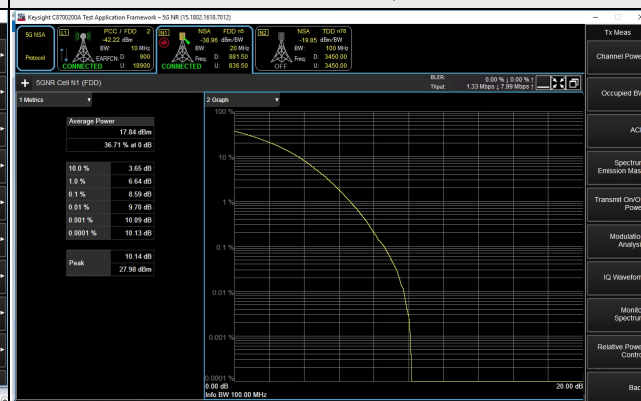
10MHz / 256QAM



15MHz / 256QAM



20MHz / 256QAM

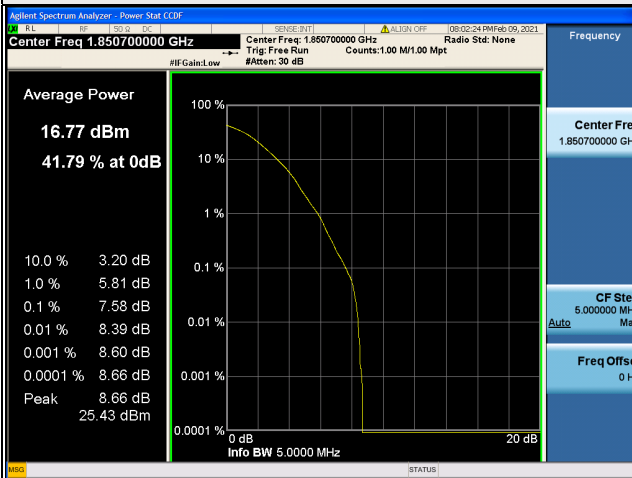


LTE Band 2, Channel Bandwidth 1.4MHz					
Channel	Frequency (MHz)	Peak To Average Ratio (dB)			
		QPSK	16QAM	64QAM	256QAM
18607	1850.7	2.68	5.53	7.09	7.58
18900	1880.0	3.85	4.51	7.14	7.42
19193	1909.3	3.36	5.58	6.91	6.81
LTE Band 2, Channel Bandwidth 3MHz					
Channel	Frequency (MHz)	Peak To Average Ratio (dB)			
		QPSK	16QAM	64QAM	256QAM
18615	1851.5	3.66	5.39	6.46	7.58
18900	1880.0	3.65	4.41	6.40	7.72
19185	1908.5	3.27	5.41	7.16	6.82
LTE Band 2, Channel Bandwidth 5MHz					
Channel	Frequency (MHz)	Peak To Average Ratio (dB)			
		QPSK	16QAM	64QAM	256QAM
18625	1852.5	3.81	5.36	6.49	7.79
18900	1880.0	3.59	5.85	7.43	7.45
19175	1907.5	3.33	5.40	7.03	7.14
LTE Band 2, Channel Bandwidth 10MHz					
Channel	Frequency (MHz)	Peak To Average Ratio (dB)			
		QPSK	16QAM	64QAM	256QAM
18650	1855.0	3.98	5.18	7.84	8.03
18900	1880.0	3.96	5.93	7.54	8.06
19150	1905.0	3.60	4.34	6.97	7.72
LTE Band 2, Channel Bandwidth 15MHz					
Channel	Frequency (MHz)	Peak To Average Ratio (dB)			
		QPSK	16QAM	64QAM	256QAM
18675	1857.5	3.81	5.34	6.83	7.75
18900	1880.0	3.56	4.55	7.19	7.36
19125	1902.5	3.65	4.60	6.79	7.57

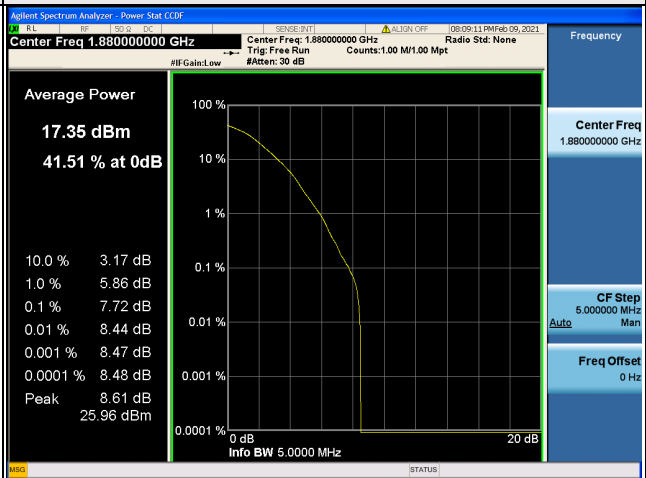
LTE Band 2, Channel Bandwidth 20MHz					
Channel	Frequency (MHz)	Peak To Average Ratio (dB)			
		QPSK	16QAM	64QAM	256QAM
18700	1860.0	3.73	5.36	6.40	8.17
18900	1880.0	3.56	4.63	7.05	7.80
19100	1900.0	3.64	4.63	6.72	7.86

Spectrum Plot of Worst Value

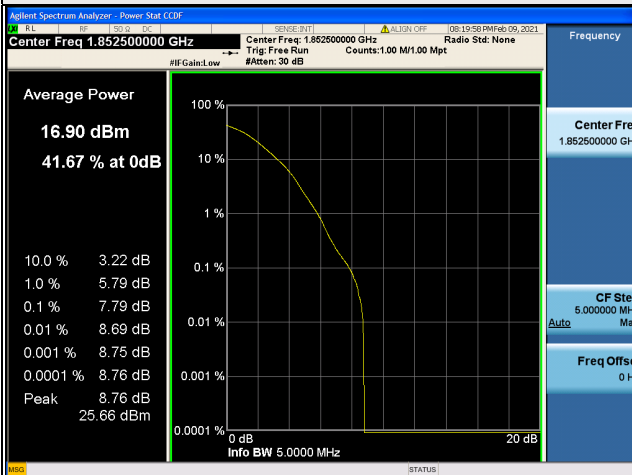
1.4MHz / 256QAM



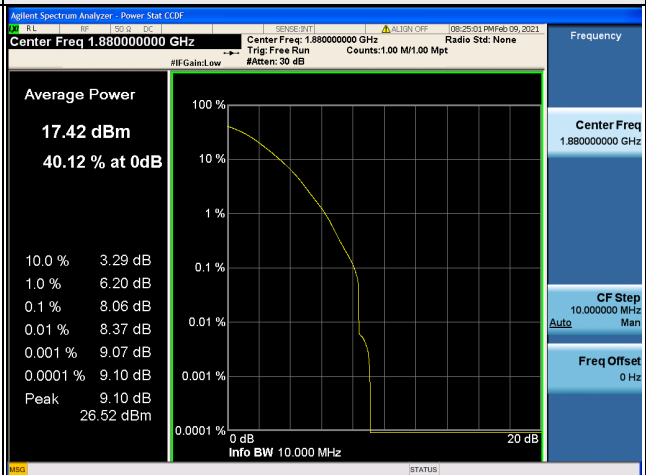
3MHz / 256QAM



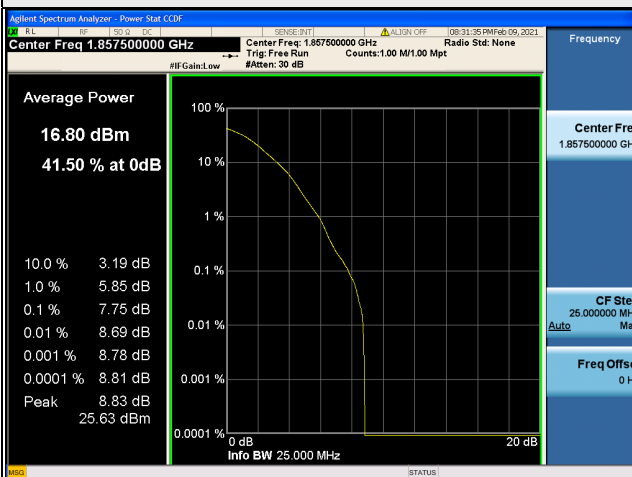
5MHz / 256QAM



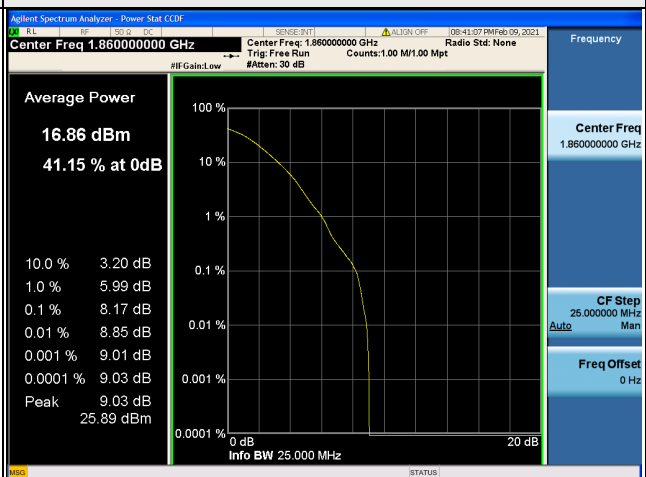
10MHz / 256QAM



15MHz / 256QAM



20MHz / 256QAM

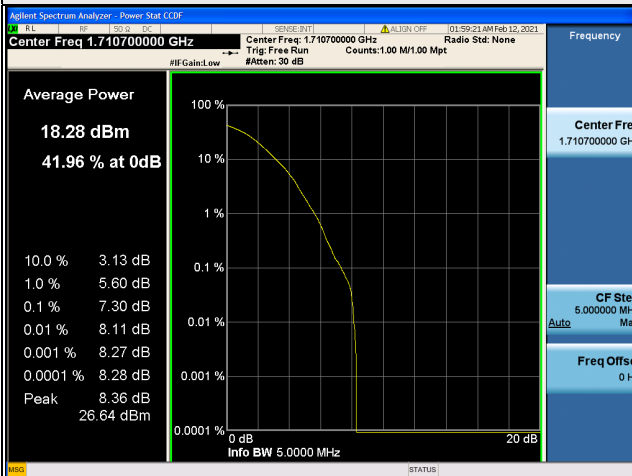


LTE Band 66, Channel Bandwidth 1.4MHz					
Channel	Frequency (MHz)	Peak To Average Ratio (dB)			
		QPSK	16QAM	64QAM	256QAM
131979	1710.7	3.95	4.99	6.30	7.30
132322	1745.0	4.04	5.80	7.08	7.13
132665	1779.3	3.89	5.52	6.73	7.08
LTE Band 66, Channel Bandwidth 3MHz					
Channel	Frequency (MHz)	Peak To Average Ratio (dB)			
		QPSK	16QAM	64QAM	256QAM
131987	1711.5	3.68	5.13	6.22	6.95
132322	1745.0	3.78	5.58	7.17	7.41
132657	1778.5	3.67	5.40	6.91	6.93
LTE Band 66, Channel Bandwidth 5MHz					
Channel	Frequency (MHz)	Peak To Average Ratio (dB)			
		QPSK	16QAM	64QAM	256QAM
131997	1712.5	3.68	5.01	6.23	7.38
132322	1745.0	3.81	5.64	7.11	7.72
132647	1777.5	3.73	5.54	6.83	7.53
LTE Band 66, Channel Bandwidth 10MHz					
Channel	Frequency (MHz)	Peak To Average Ratio (dB)			
		QPSK	16QAM	64QAM	256QAM
132022	1715.0	3.70	4.91	6.28	7.80
132322	1745.0	3.86	5.36	6.58	7.66
132622	1775.0	3.87	5.33	6.37	7.62
LTE Band 66, Channel Bandwidth 15MHz					
Channel	Frequency (MHz)	Peak To Average Ratio (dB)			
		QPSK	16QAM	64QAM	256QAM
132047	1717.5	3.57	5.19	6.56	6.55
132322	1745.0	3.81	5.45	6.64	7.44
132597	1772.5	3.61	5.23	6.31	7.47

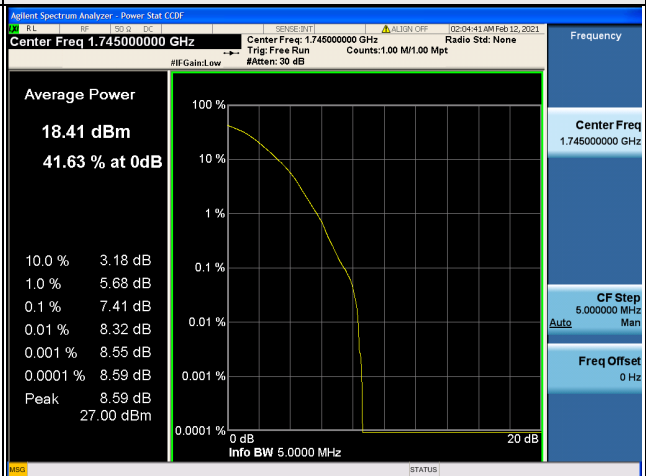
LTE Band 66, Channel Bandwidth 20MHz					
Channel	Frequency (MHz)	Peak To Average Ratio (dB)			
		QPSK	16QAM	64QAM	256QAM
132072	1720.0	3.70	5.17	6.36	7.60
132322	1745.0	3.80	5.14	6.45	7.51
132572	1770.0	3.50	5.09	6.62	7.34

Spectrum Plot of Worst Value

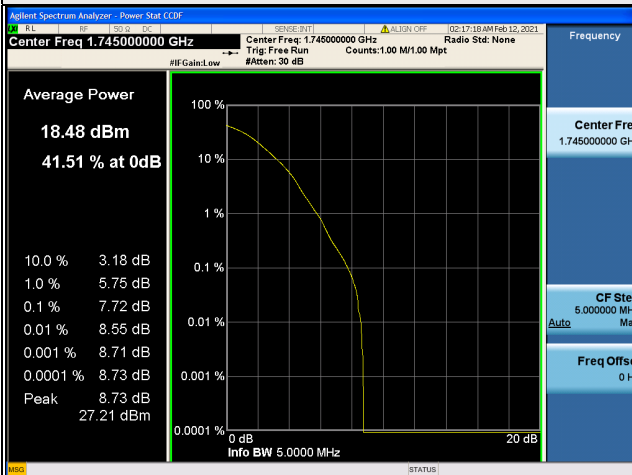
1.4MHz / 256QAM



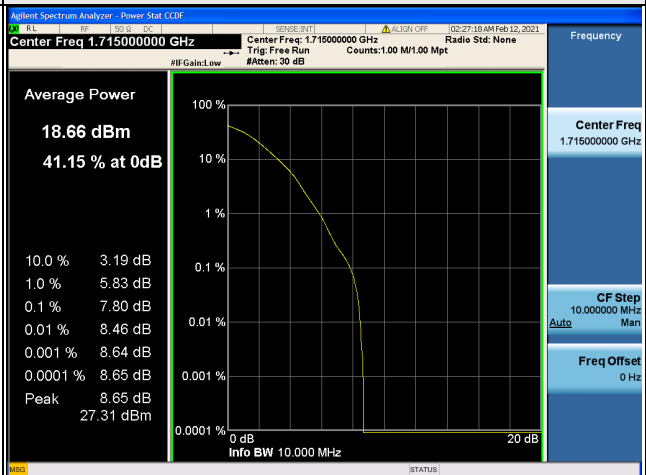
3MHz / 256QAM



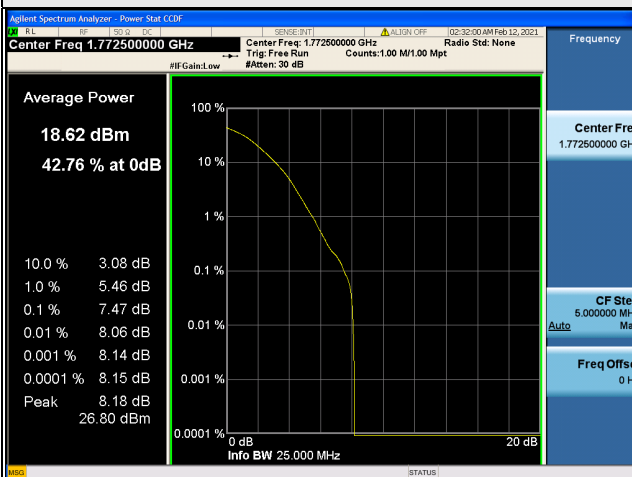
5MHz / 256QAM



10MHz / 256QAM



15MHz / 256QAM



20MHz / 256QAM

