

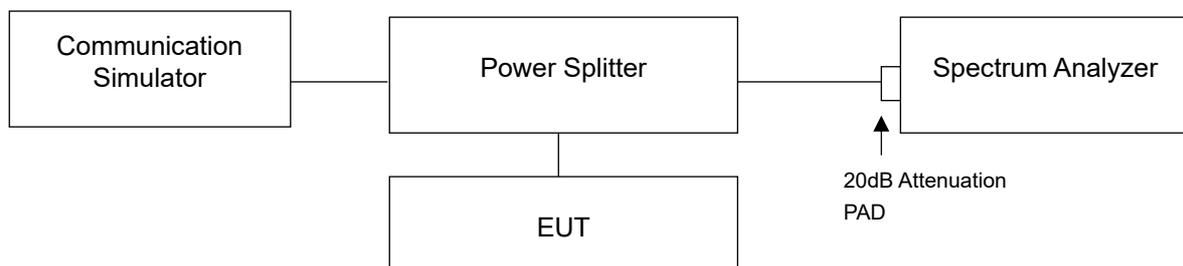
4.4 Occupied Bandwidth Measurement

4.4.1 Test Procedure

The EUT makes a call to the communication simulator. All measurements were done at low, middle and high operational frequency range. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. Measurement method, please refer to section 5.4.4 of ANSI C63.26. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.

For the 26dBc bandwidth measurement method, please refer to section 5.4.3 of ANSI C63.26.

4.4.2 Test Setup



4.4.3 Test Result

Occupied Bandwidth

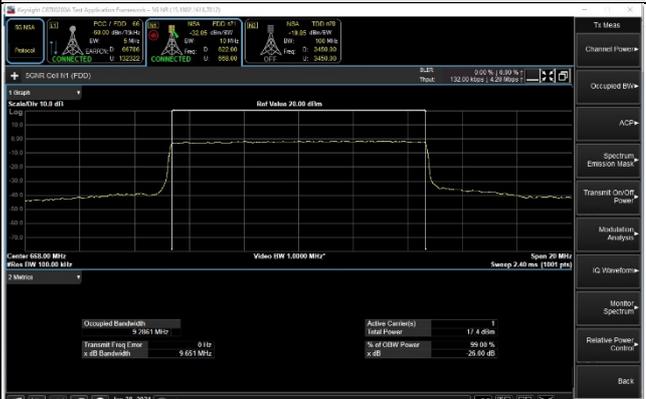
n71, Channel Bandwidth 5MHz						
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
133100	665.5	4.47	4.47	4.46	4.47	4.47
136100	680.5	4.47	4.47	4.47	4.47	4.47
139100	695.5	4.47	4.47	4.47	4.47	4.47
n71, Channel Bandwidth 10MHz						
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
133600	668.0	9.20	9.28	9.28	9.28	9.29
136100	680.5	9.16	9.28	9.28	9.28	9.28
138600	693.0	9.17	9.28	9.26	9.26	9.28
n71, Channel Bandwidth 15MHz						
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
134100	670.5	13.93	14.12	14.11	14.11	14.11
136100	680.5	13.93	14.07	14.07	14.10	14.10
138100	690.5	13.99	14.11	14.11	14.11	14.11
n71, Channel Bandwidth 20MHz						
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
134600	673.0	18.60	18.89	18.89	18.90	18.90
136100	680.5	18.52	18.89	18.89	18.89	18.88
137600	688.0	18.75	18.91	18.91	18.91	18.91

Spectrum Plot of Worst Value

5MHz / 64QAM



10MHz / 256QAM



15MHz / QPSK



20MHz / 256QAM



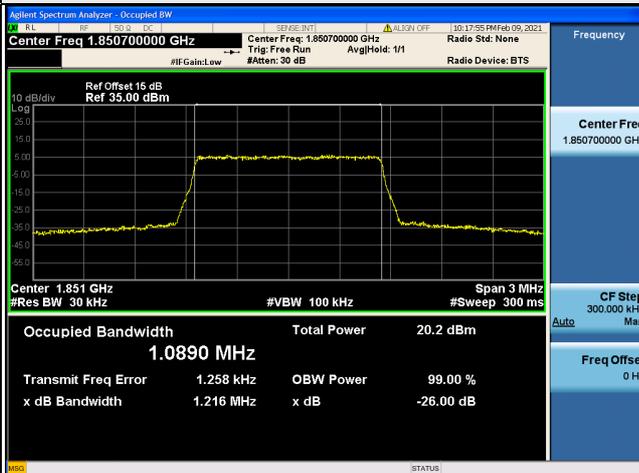
LTE Band 2, Channel Bandwidth 1.4MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
18607	1850.7	1.09	1.09	1.09	1.09
18900	1880.0	1.09	1.09	1.09	1.09
19193	1909.3	1.09	1.09	1.09	1.08
LTE Band 2, Channel Bandwidth 3MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
18615	1851.5	2.70	2.69	2.70	2.70
18900	1880.0	2.70	2.69	2.69	2.70
19185	1908.5	2.70	2.69	2.70	2.70
LTE Band 2, Channel Bandwidth 5MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
18625	1852.5	4.49	4.49	4.49	4.49
18900	1880.0	4.48	4.49	4.50	4.49
19175	1907.5	4.49	4.49	4.49	4.48
LTE Band 2, Channel Bandwidth 10MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
18650	1855.0	8.95	8.96	8.96	8.95
18900	1880.0	8.96	8.96	8.96	8.96
19150	1905.0	8.95	8.95	8.96	8.95
LTE Band 2, Channel Bandwidth 15MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
18675	1857.5	13.45	13.43	13.43	13.43
18900	1880.0	13.45	13.45	13.44	13.45
19125	1902.5	13.45	13.43	13.43	13.43

LTE Band 2, Channel Bandwidth 20MHz

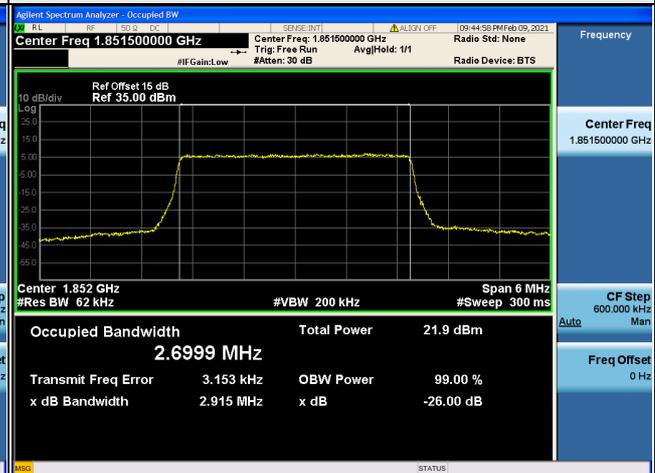
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
18700	1860.0	17.90	17.92	17.92	17.92
18900	1880.0	17.92	17.94	17.94	17.93
19100	1900.0	17.90	17.91	17.91	17.91

Spectrum Plot of Worst Value

1.4MHz / 64QAM



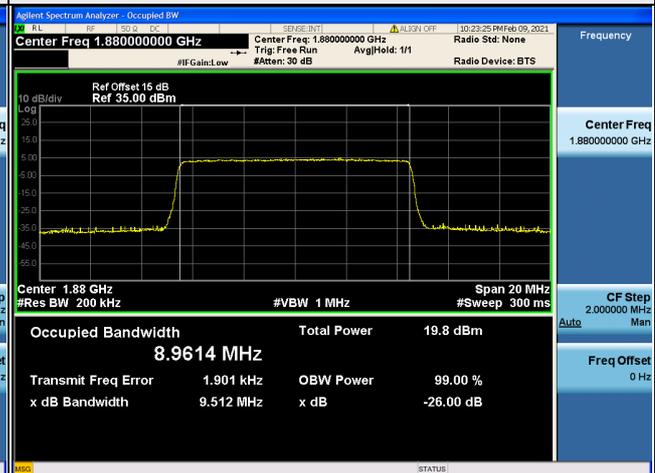
3MHz / QPSK



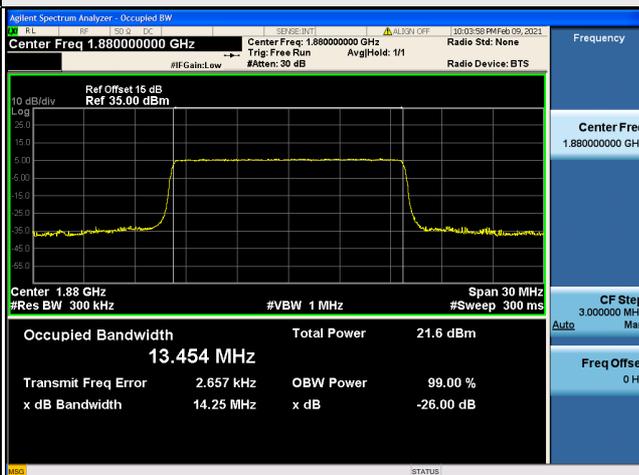
5MHz / 64QAM



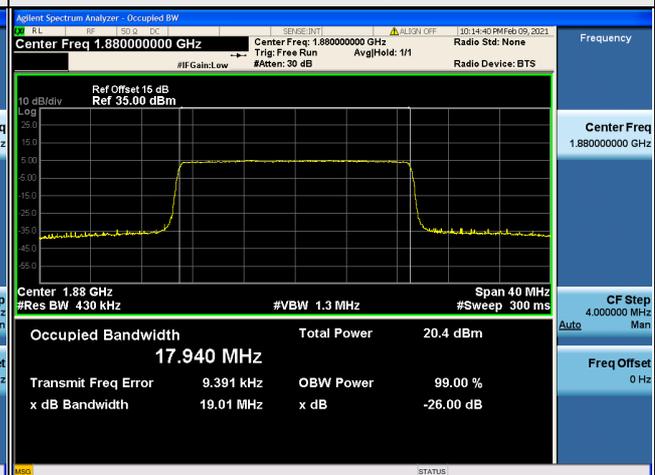
10MHz / 64QAM



15MHz / QPSK



20MHz / 16QAM



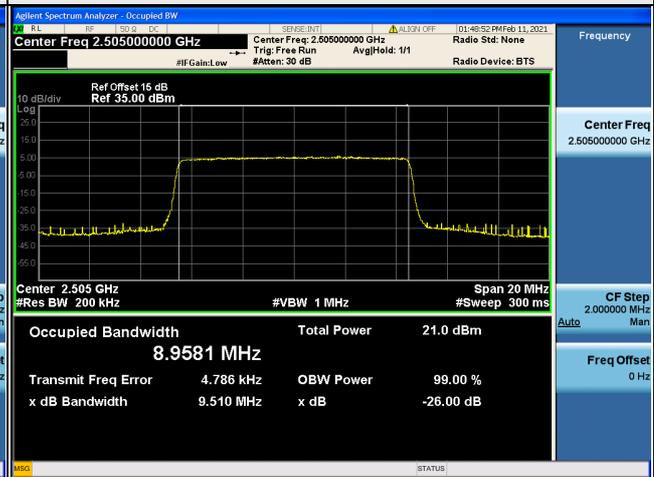
LTE Band 7, Channel Bandwidth 5MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
20775	2502.5	4.49	4.49	4.49	4.49
21100	2535.0	4.49	4.49	4.50	4.49
21425	2567.5	4.49	4.48	4.49	4.49
LTE Band 7, Channel Bandwidth 10MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
20800	2505.0	8.95	8.95	8.96	8.95
21100	2535.0	8.95	8.96	8.95	8.95
21400	2565.0	8.95	8.96	8.96	8.95
LTE Band 7, Channel Bandwidth 15MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
20825	2507.5	13.45	13.43	13.43	13.44
21100	2535.0	13.45	13.44	13.43	13.44
21375	2562.5	13.45	13.44	13.44	13.45
LTE Band 7, Channel Bandwidth 20MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
20850	2510.0	17.90	17.92	17.91	17.90
21100	2535.0	17.90	17.92	17.92	17.92
21350	2560.0	17.93	17.95	17.94	17.95

Spectrum Plot of Worst Value

5MHz / 64QAM



10MHz / 64QAM



15MHz / 256QAM



20MHz / 256QAM



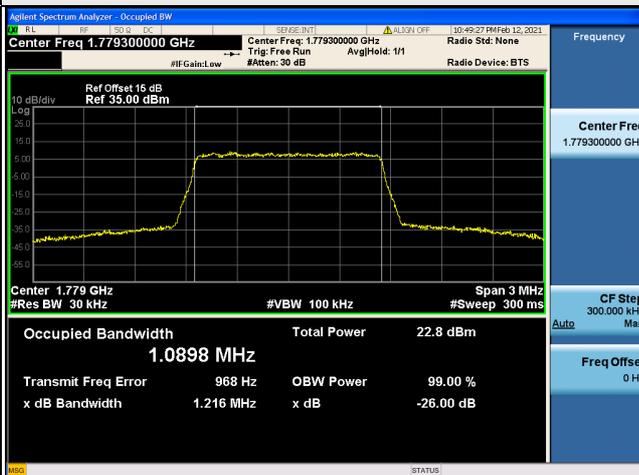
LTE Band 66, Channel Bandwidth 1.4MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
131979	1710.7	1.09	1.09	1.09	1.09
132322	1745.0	1.09	1.09	1.09	1.09
132665	1779.3	1.09	1.09	1.09	1.08
LTE Band 66, Channel Bandwidth 3MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
131987	1711.5	2.70	2.69	2.69	2.70
132322	1745.0	2.70	2.69	2.70	2.70
132657	1778.5	2.70	2.69	2.69	2.70
LTE Band 66, Channel Bandwidth 5MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
131997	1712.5	4.49	4.49	4.50	4.49
132322	1745.0	4.49	4.49	4.49	4.48
132647	1777.5	4.48	4.49	4.49	4.49
LTE Band 66, Channel Bandwidth 10MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
132022	1715.0	8.96	8.96	8.96	8.95
132322	1745.0	8.96	8.95	8.96	8.95
132622	1775.0	8.95	8.95	8.95	8.95
LTE Band 66, Channel Bandwidth 15MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
132047	1717.5	13.46	13.44	13.43	13.45
132322	1745.0	13.45	13.44	13.44	13.45
132597	1772.5	13.46	13.45	13.44	13.45

LTE Band 66, Channel Bandwidth 20MHz

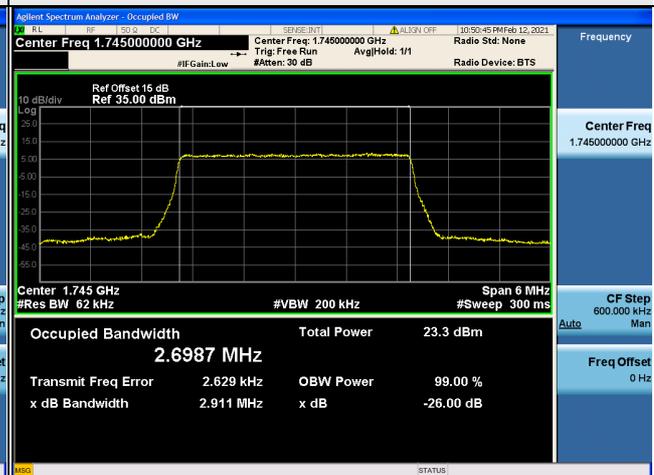
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
132072	1720.0	17.89	17.91	17.91	17.92
132322	1745.0	17.91	17.94	17.93	17.94
132572	1770.0	17.94	17.95	17.95	17.95

Spectrum Plot of Worst Value

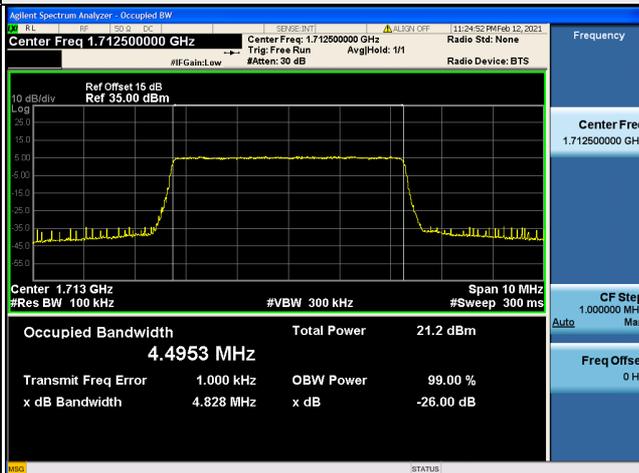
1.4MHz / 16QAM



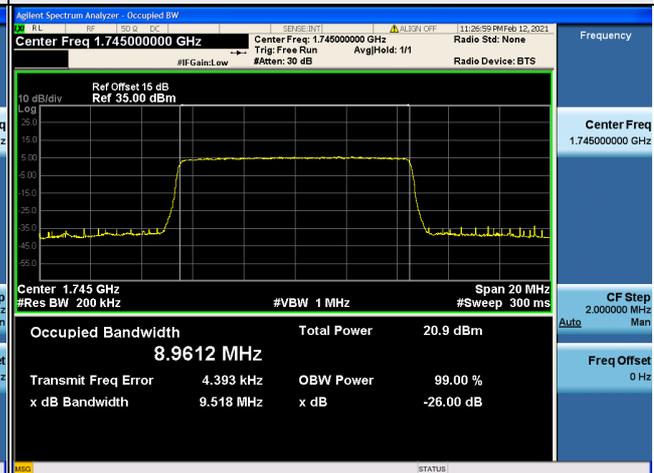
3MHz / QPSK



5MHz / 64QAM



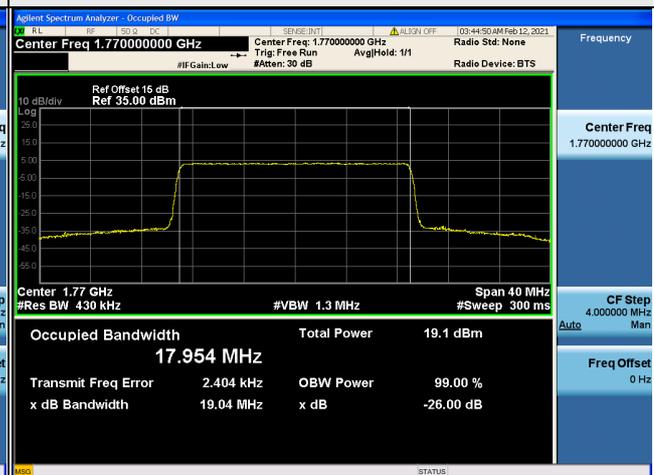
10MHz / 64QAM



15MHz / QPSK



20MHz / 256QAM



26dB Bandwidth

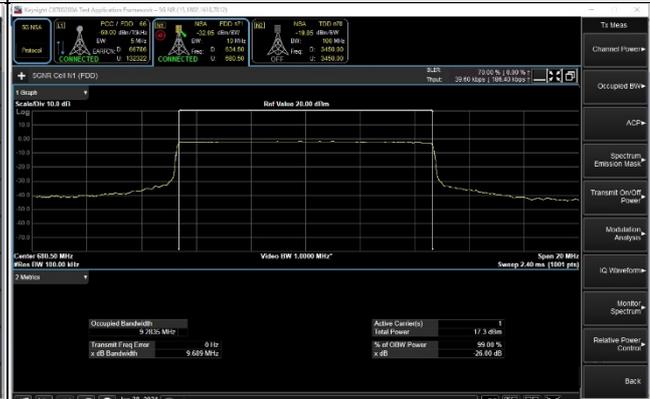
n71, Channel Bandwidth 5MHz						
Channel	Frequency (MHz)	26dB Bandwidth (MHz)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
133100	665.5	4.70	4.72	4.74	4.76	4.72
136100	680.5	4.71	4.77	4.75	4.75	4.71
139100	695.5	4.73	4.77	4.73	4.73	4.69
n71, Channel Bandwidth 10MHz						
Channel	Frequency (MHz)	26dB Bandwidth (MHz)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
133600	668.0	9.27	9.69	9.64	9.65	9.65
136100	680.5	9.28	9.69	9.69	9.65	9.65
138600	693.0	9.28	9.65	9.63	9.65	9.64
n71, Channel Bandwidth 15MHz						
Channel	Frequency (MHz)	26dB Bandwidth (MHz)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
134100	670.5	13.87	14.62	14.61	14.60	14.59
136100	680.5	13.87	14.62	14.61	14.61	14.60
138100	690.5	13.88	14.62	14.62	14.61	14.59
n71, Channel Bandwidth 20MHz						
Channel	Frequency (MHz)	26dB Bandwidth (MHz)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
134600	673.0	18.47	19.57	19.57	19.55	19.54
136100	680.5	18.47	19.57	19.57	19.55	19.51
137600	688.0	18.48	19.58	19.59	19.57	19.56

Spectrum Plot of Worst Value

5MHz / QPSK



10MHz / 16QAM



15MHz / QPSK



20MHz / 16QAM



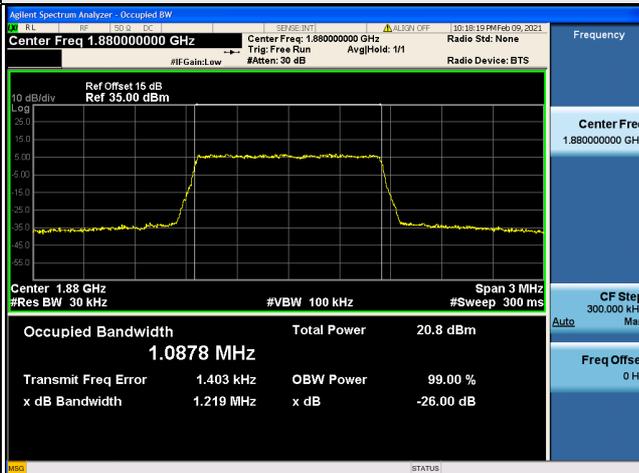
LTE Band 2, Channel Bandwidth 1.4MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
18607	1850.7	1.22	1.22	1.22	1.21
18900	1880.0	1.21	1.21	1.22	1.20
19193	1909.3	1.22	1.21	1.21	1.21
LTE Band 2, Channel Bandwidth 3MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
18615	1851.5	2.92	2.92	2.91	2.91
18900	1880.0	2.91	2.92	2.90	2.92
19185	1908.5	2.91	2.92	2.91	2.92
LTE Band 2, Channel Bandwidth 5MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
18625	1852.5	4.80	4.79	4.82	4.80
18900	1880.0	4.80	4.80	4.82	4.80
19175	1907.5	4.80	4.80	4.82	4.80
LTE Band 2, Channel Bandwidth 10MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
18650	1855.0	9.49	9.50	9.51	9.49
18900	1880.0	9.50	9.51	9.51	9.51
19150	1905.0	9.49	9.51	9.51	9.48
LTE Band 2, Channel Bandwidth 15MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
18675	1857.5	14.25	14.25	14.23	14.22
18900	1880.0	14.25	14.25	14.26	14.22
19125	1902.5	14.24	14.23	14.24	14.23

LTE Band 2, Channel Bandwidth 20MHz

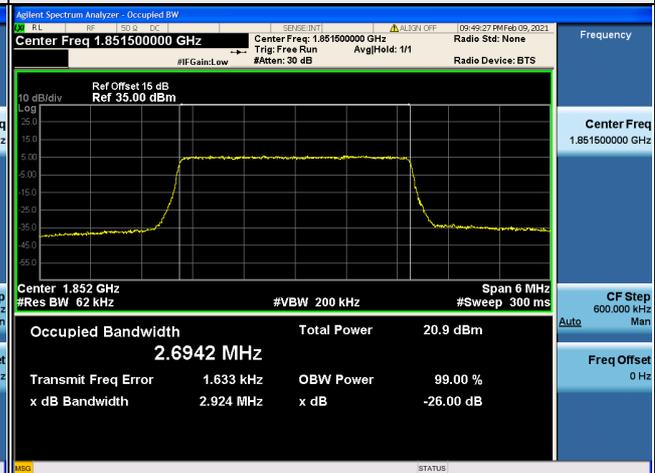
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
18700	1860.0	19.00	18.99	19.01	19.01
18900	1880.0	19.01	19.01	19.02	19.02
19100	1900.0	19.00	19.01	19.01	19.00

Spectrum Plot of Worst Value

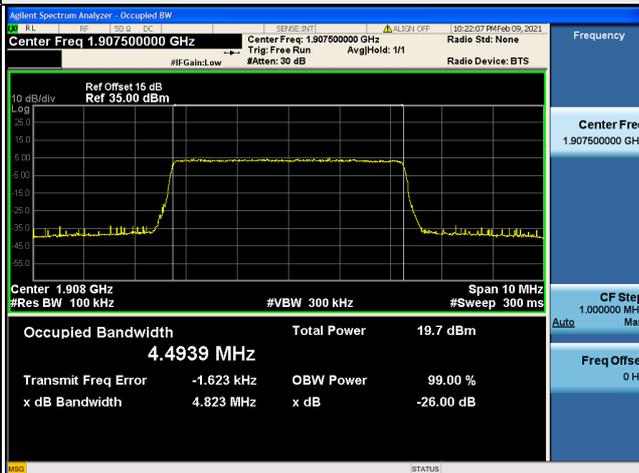
1.4MHz / 64QAM



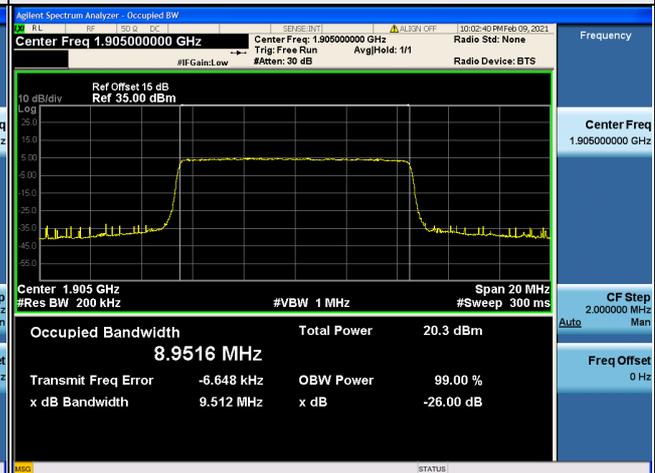
3MHz / 16QAM



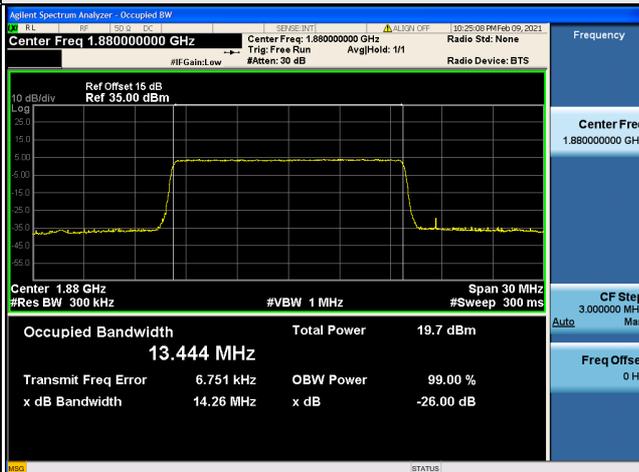
5MHz / 64QAM



10MHz / 16QAM



15MHz / 64QAM



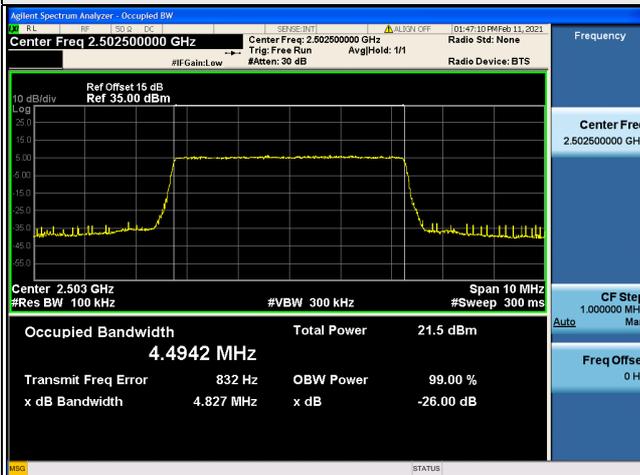
20MHz / 64QAM



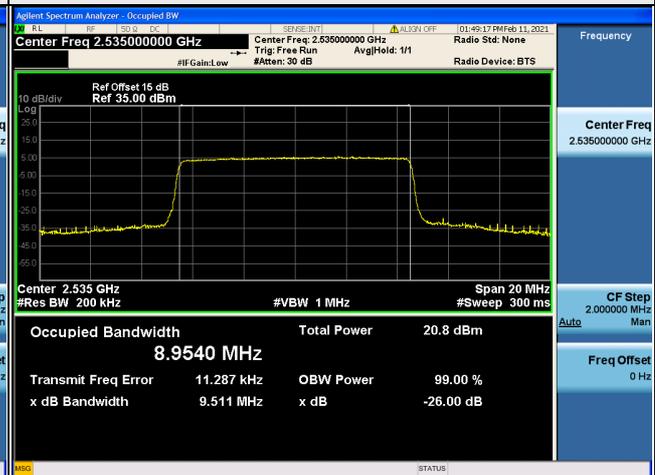
LTE Band 7, Channel Bandwidth 5MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
20775	2502.5	4.79	4.80	4.83	4.80
21100	2535.0	4.80	4.79	4.83	4.79
21425	2567.5	4.81	4.80	4.81	4.80
LTE Band 7, Channel Bandwidth 10MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
20800	2505.0	9.50	9.50	9.51	9.50
21100	2535.0	9.50	9.50	9.51	9.50
21400	2565.0	9.49	9.50	9.50	9.50
LTE Band 7, Channel Bandwidth 15MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
20825	2507.5	14.25	14.24	14.23	14.23
21100	2535.0	14.24	14.24	14.25	14.23
21375	2562.5	14.23	14.24	14.23	14.23
LTE Band 7, Channel Bandwidth 20MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
20850	2510.0	19.00	19.00	19.01	19.00
21100	2535.0	19.01	19.01	19.01	19.00
21350	2560.0	19.02	19.02	19.02	19.03

Spectrum Plot of Worst Value

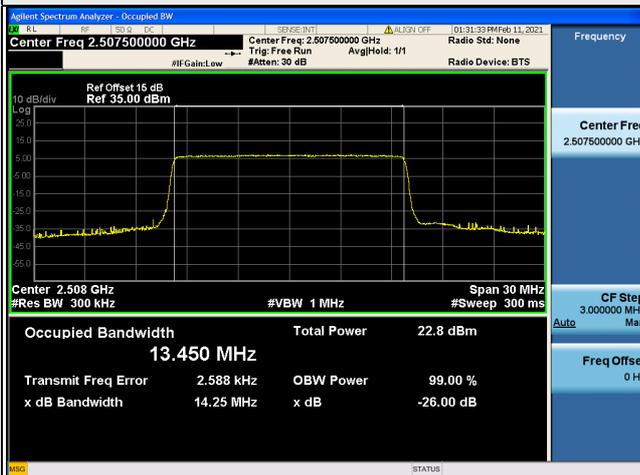
5MHz / 64QAM



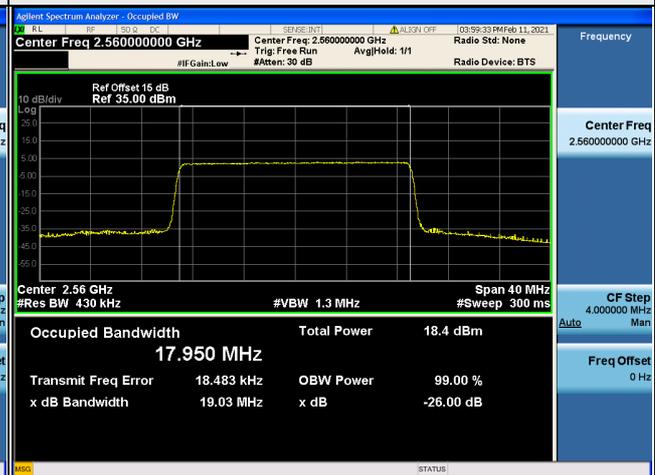
10MHz / 64QAM



15MHz / QPSK



20MHz / 256QAM



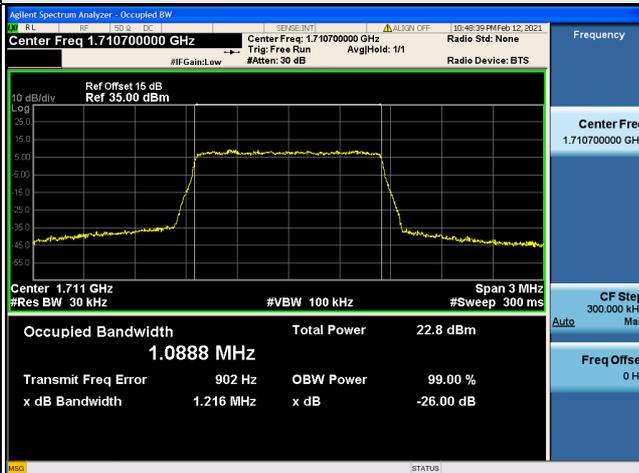
LTE Band 66, Channel Bandwidth 1.4MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
131979	1710.7	1.17	1.22	1.21	1.21
132322	1745.0	1.21	1.21	1.21	1.21
132665	1779.3	1.21	1.22	1.21	1.21
LTE Band 66, Channel Bandwidth 3MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
131987	1711.5	2.92	2.91	2.90	2.92
132322	1745.0	2.91	2.92	2.90	2.90
132657	1778.5	2.92	2.92	2.90	2.92
LTE Band 66, Channel Bandwidth 5MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
131997	1712.5	4.80	4.79	4.83	4.81
132322	1745.0	4.79	4.79	4.82	4.79
132647	1777.5	4.79	4.79	4.84	4.80
LTE Band 66, Channel Bandwidth 10MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
132022	1715.0	9.50	9.50	9.49	9.49
132322	1745.0	9.50	9.50	9.52	9.50
132622	1775.0	9.50	9.51	9.51	9.49
LTE Band 66, Channel Bandwidth 15MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
132047	1717.5	14.23	14.25	14.25	14.24
132322	1745.0	14.23	14.25	14.24	14.24
132597	1772.5	14.25	14.25	14.25	14.23

LTE Band 66, Channel Bandwidth 20MHz

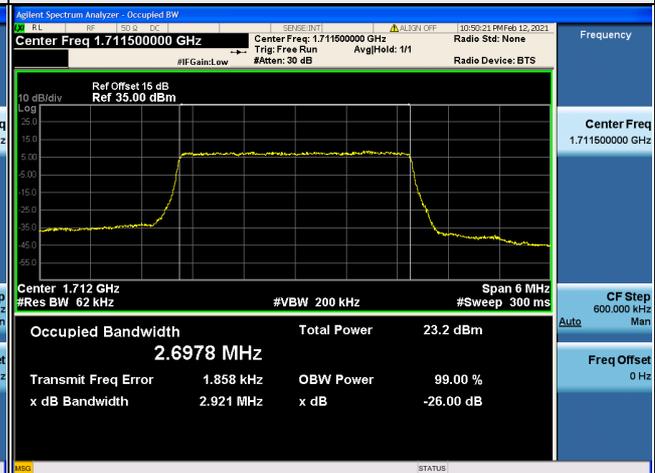
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
132072	1720.0	19.00	19.01	19.00	19.01
132322	1745.0	19.00	19.01	19.02	19.01
132572	1770.0	19.03	19.03	19.03	19.04

Spectrum Plot of Worst Value

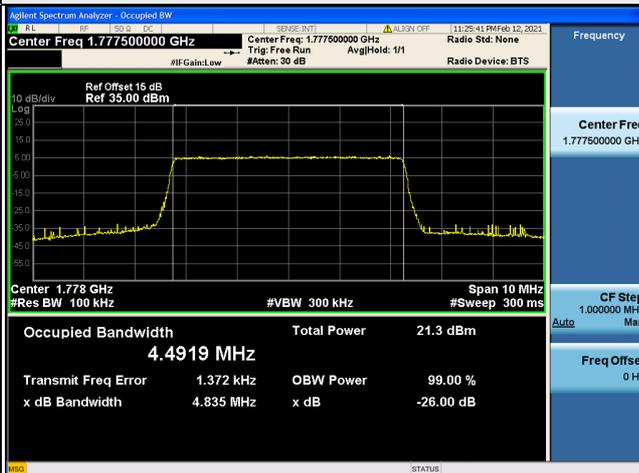
1.4MHz / 16QAM



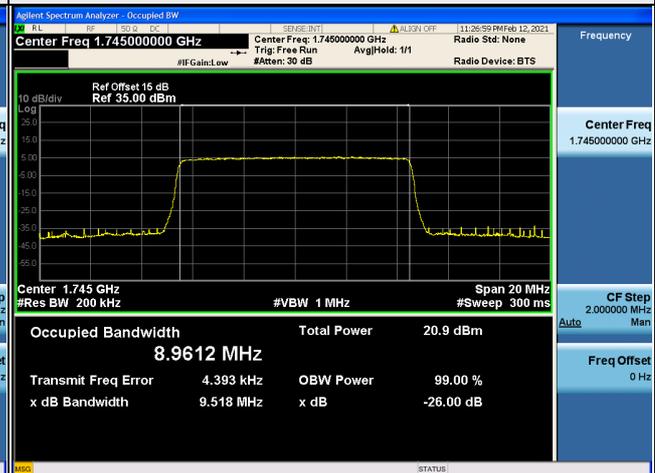
3MHz / QPSK



5MHz / 64QAM



10MHz / 64QAM



15MHz / QPSK



20MHz / 256QAM

