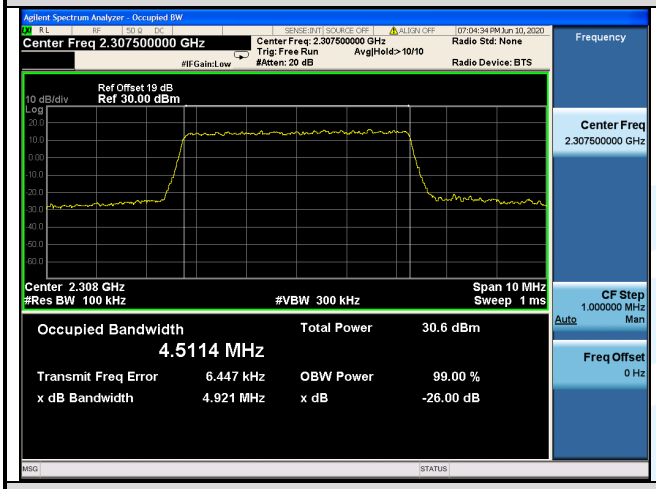
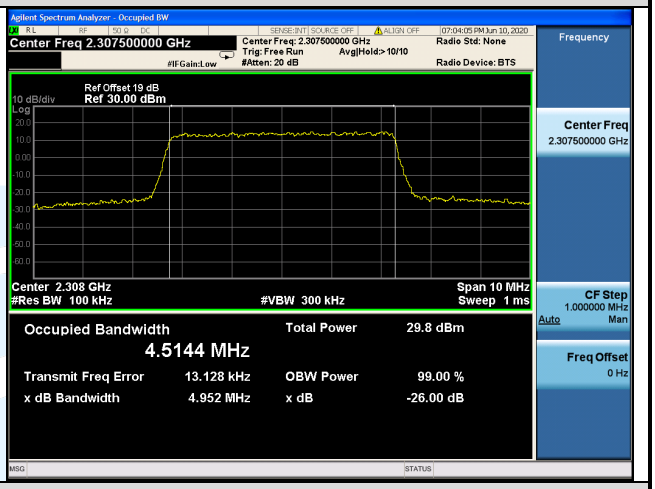
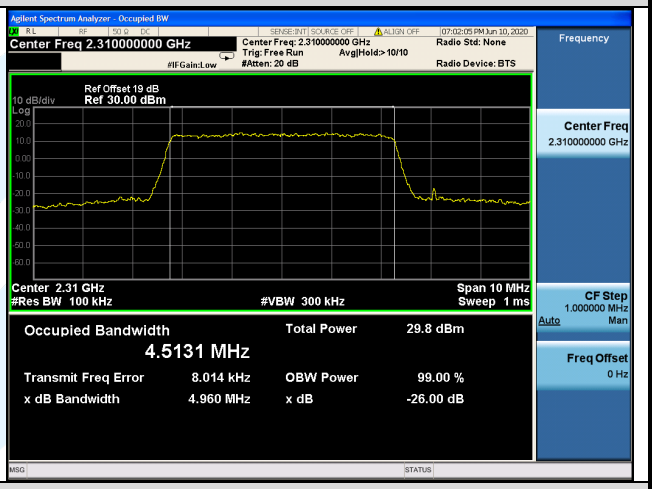
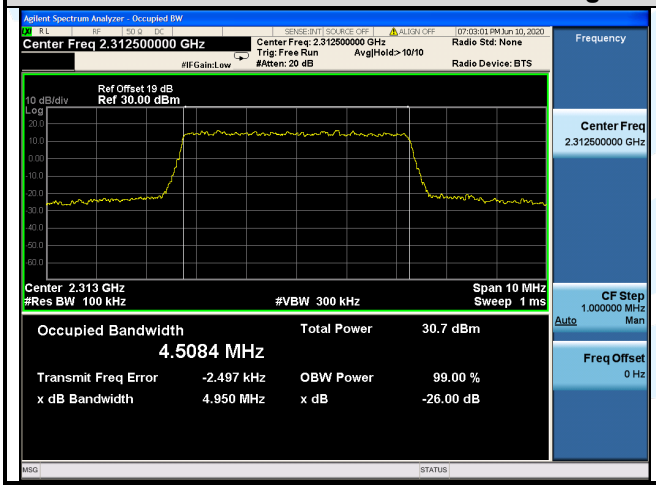
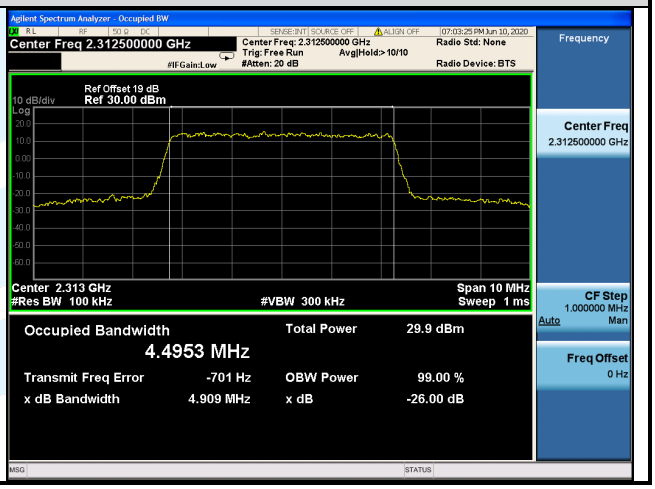
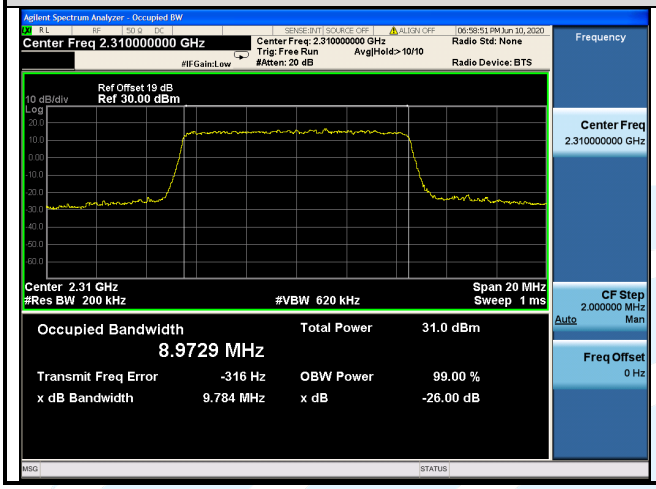
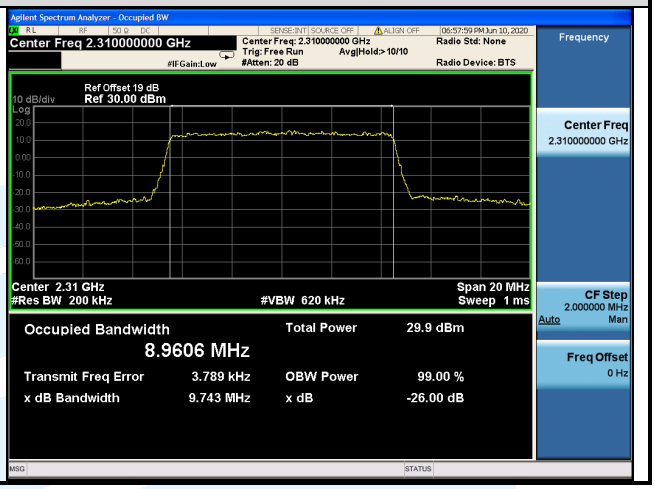
LTE Band 30_ Channel Bandwidth: 5 MHz	
QPSK	16QAM
Lowest Channel	
	
Middle Channel	
	
Highest Channel	
	

LTE Band 30_ Channel Bandwidth: 10 MHz	
QPSK	16QAM
Middle Channel	





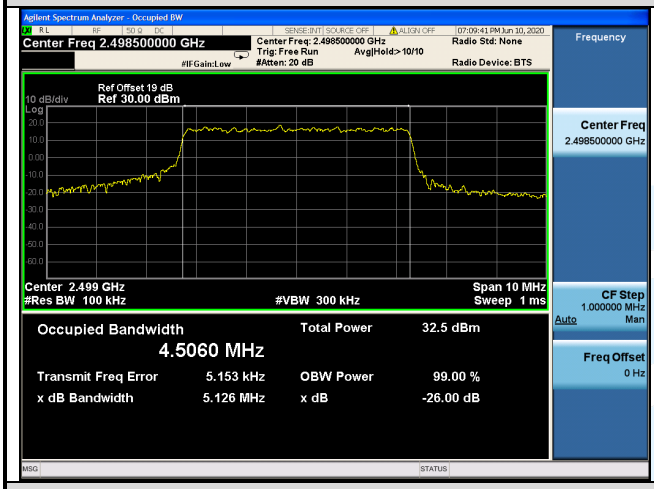
5.5.11 LTE Band 41

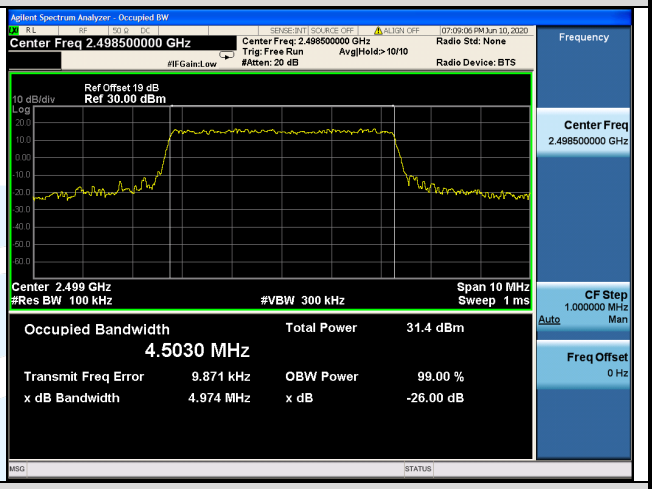
LTE Band 41								
Channel	RB Configuration		26 dB BW (MHz)			99% BW (MHz)		
	Size	Offset	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
Channel Bandwidth: 5 MHz								
Lowest	25	0	5.126	4.974	/	4.5060	4.5030	/
Middle	25	0	5.346	5.010	/	4.5115	4.5045	/
Highest	25	0	5.128	5.379	/	4.5021	4.4970	/
Channel Bandwidth: 10 MHz								
Lowest	50	0	10.73	9.953	/	8.9993	8.9969	/
Middle	50	0	10.53	10.82	/	9.0168	8.9956	/
Highest	50	0	10.11	10.19	/	8.9883	8.9775	/
Channel Bandwidth: 15 MHz								
Lowest	75	0	14.58	15.15	/	13.452	13.508	/
Middle	75	0	14.98	15.86	/	13.442	13.502	/
Highest	75	0	15.49	15.50	/	13.515	13.501	/
Channel Bandwidth: 20 MHz								
Lowest	100	0	19.83	19.87	/	17.958	17.921	/
Middle	100	0	19.40	20.16	/	17.940	17.950	/
Highest	100	0	20.01	19.88	/	18.016	17.968	/

LTE Band 41_ Channel Bandwidth: 5 MHz

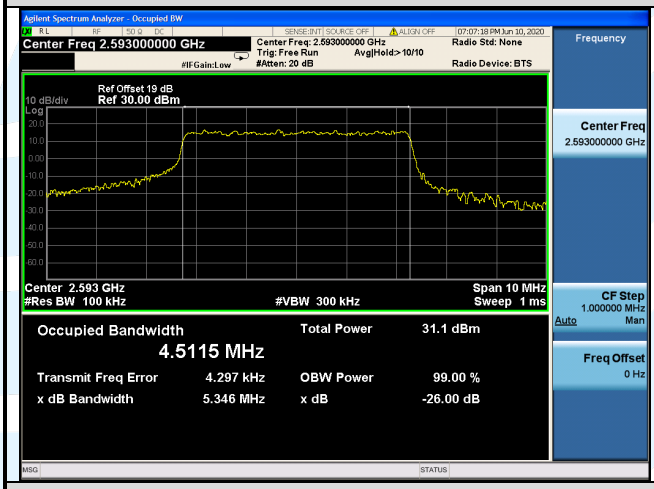
QPSK	16QAM

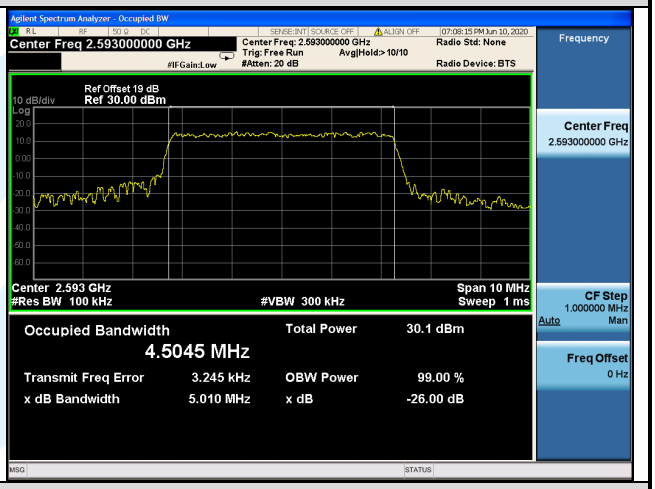
Lowest Channel



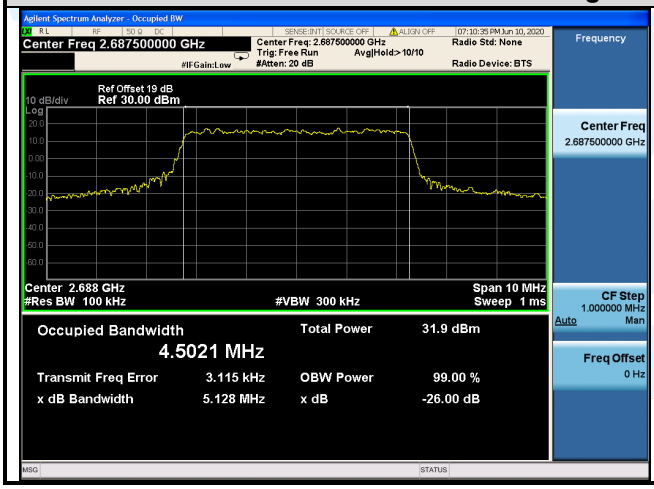


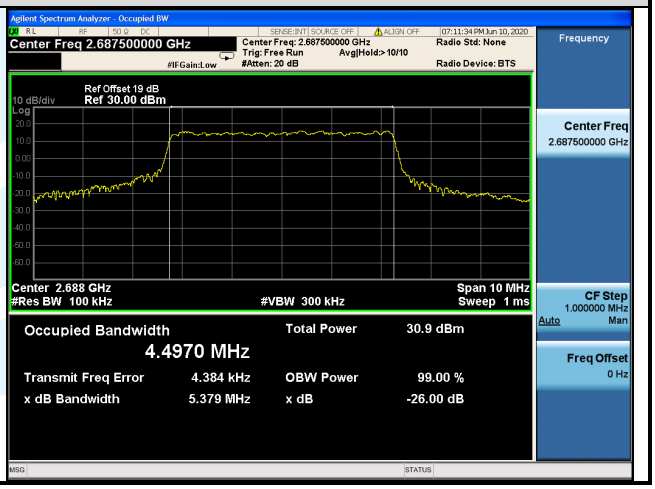
Middle Channel





Highest Channel

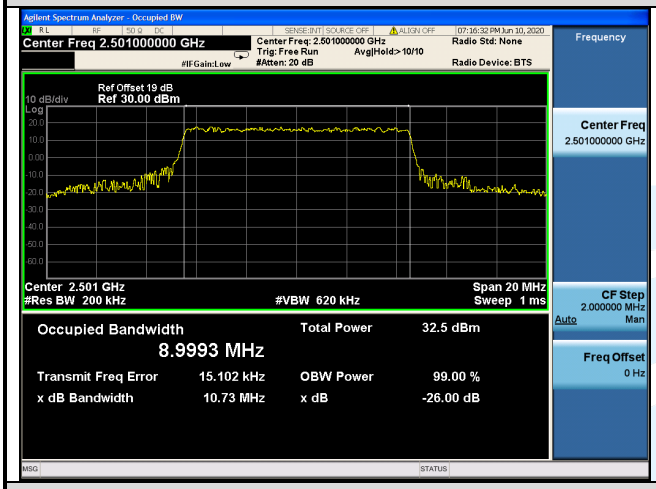


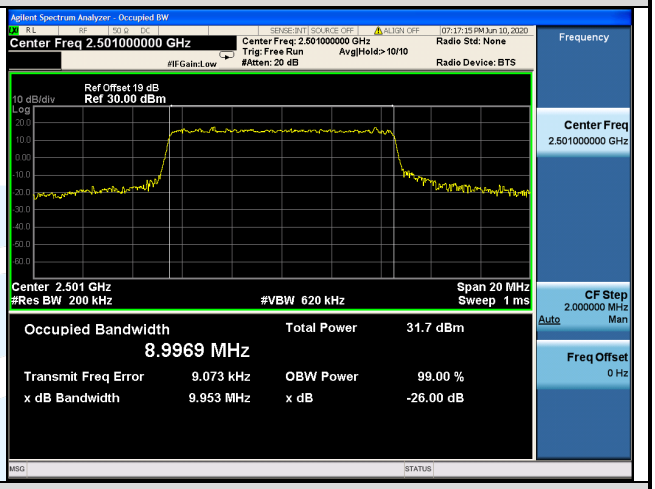


LTE Band 41_ Channel Bandwidth: 10 MHz

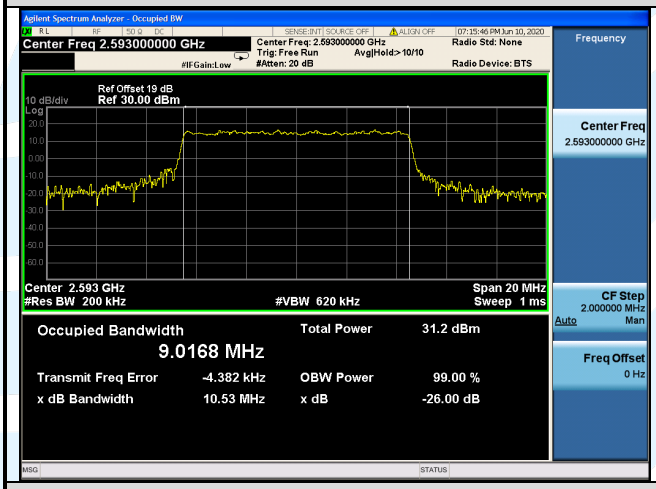
QPSK	16QAM

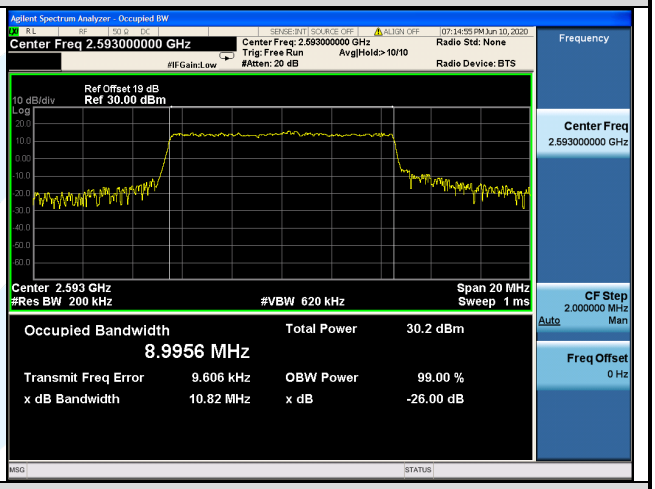
Lowest Channel



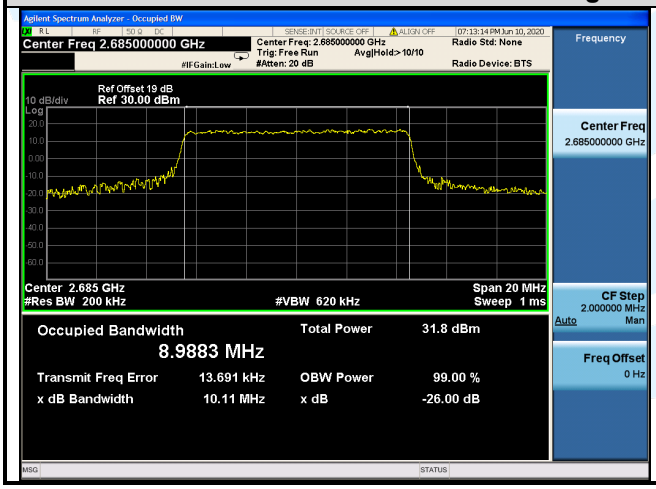


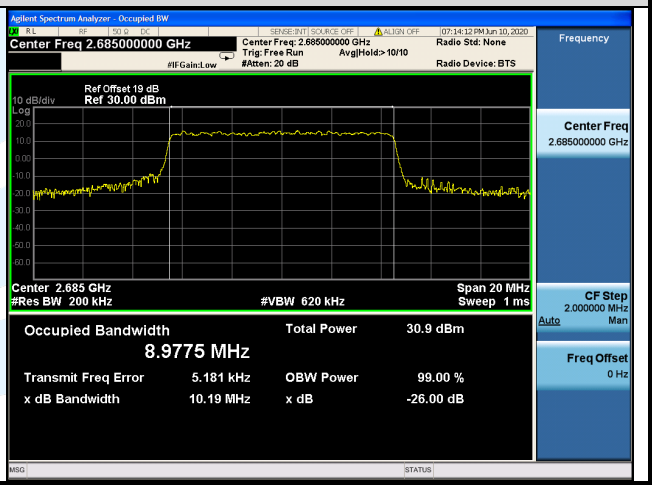
Middle Channel





Highest Channel

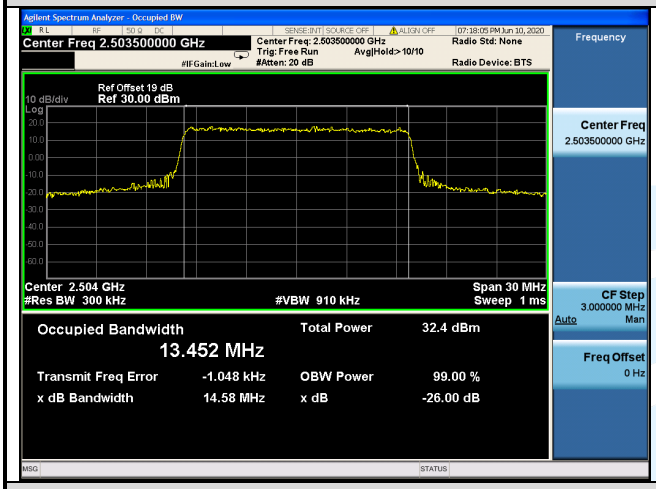


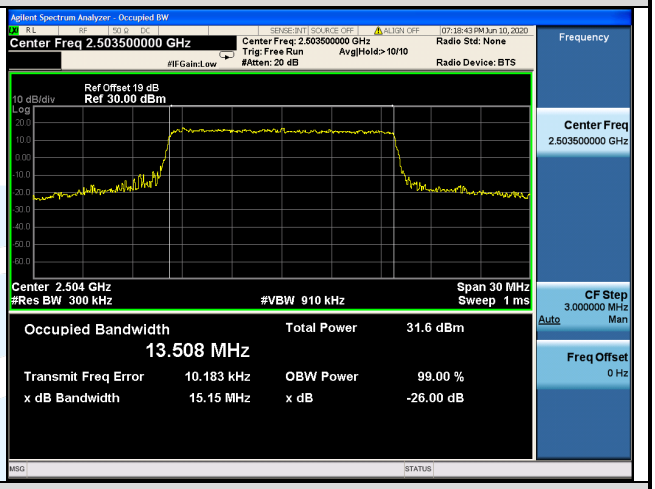


LTE Band 41_ Channel Bandwidth: 15 MHz

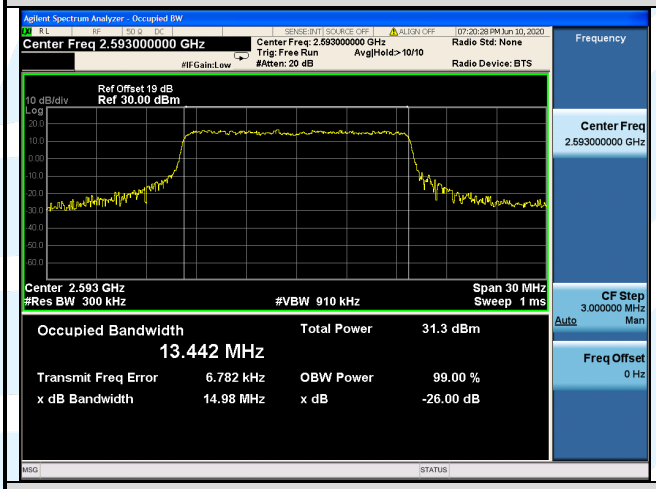
QPSK	16QAM

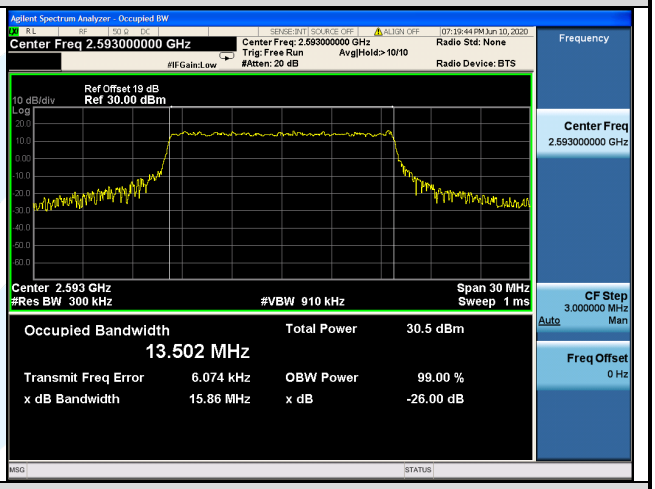
Lowest Channel



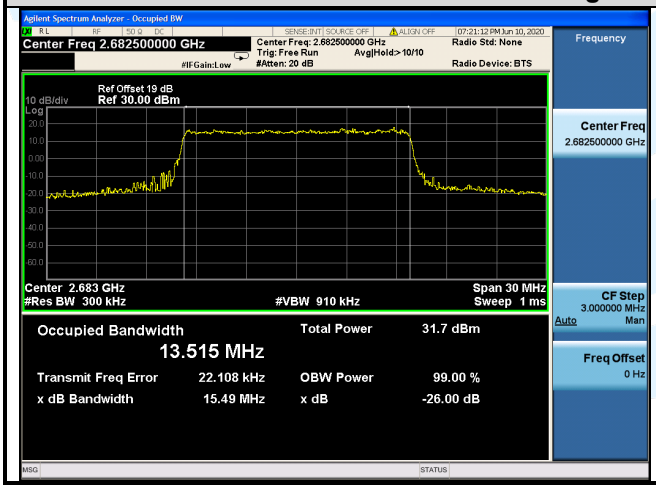


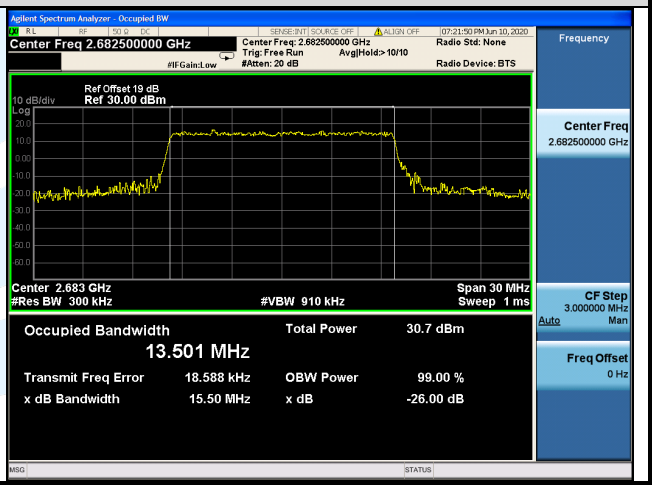
Middle Channel





Highest Channel

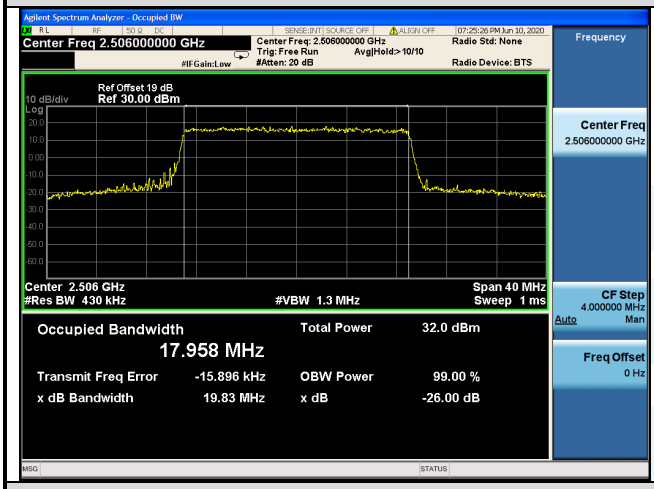


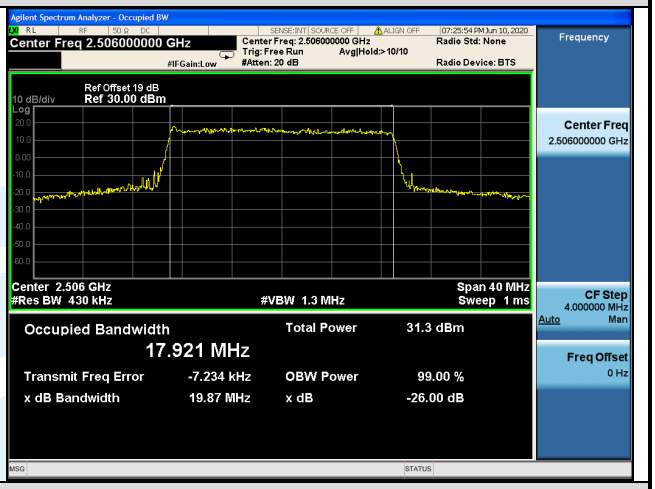


LTE Band 41_ Channel Bandwidth: 20 MHz

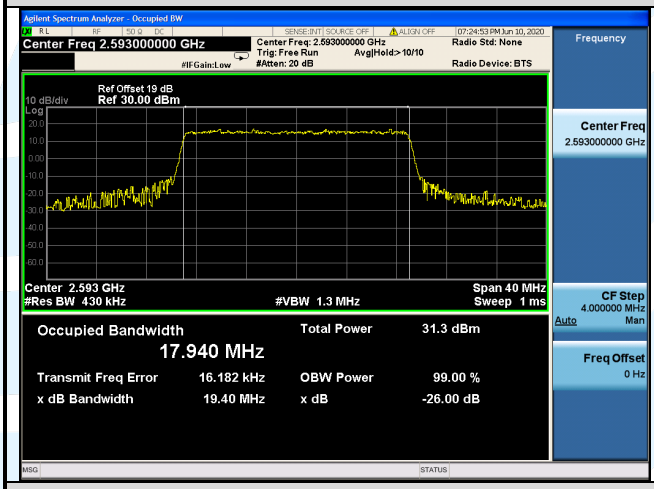
QPSK	16QAM

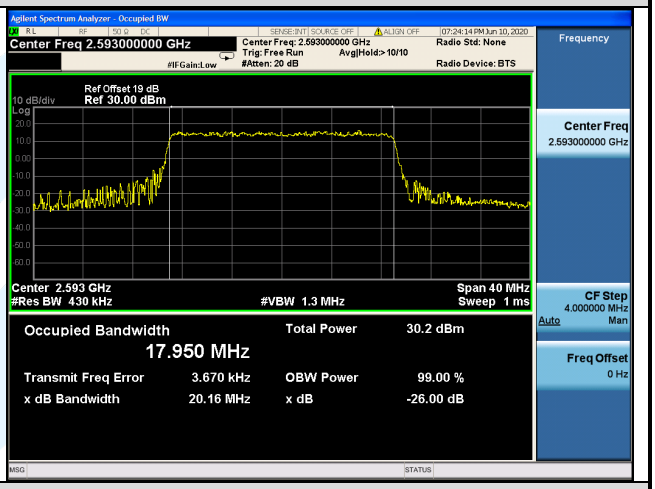
Lowest Channel



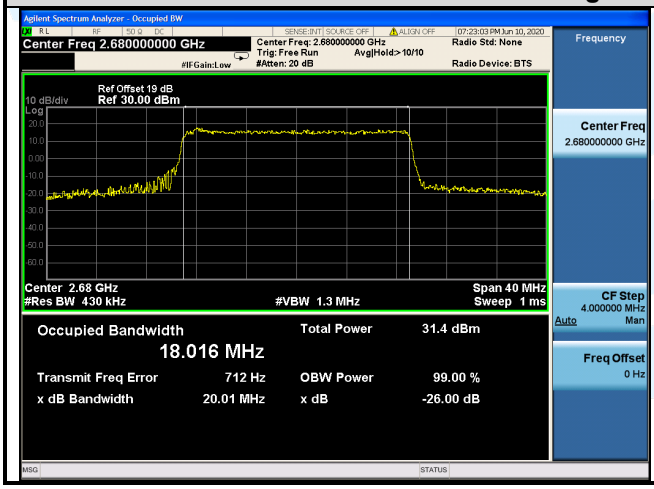


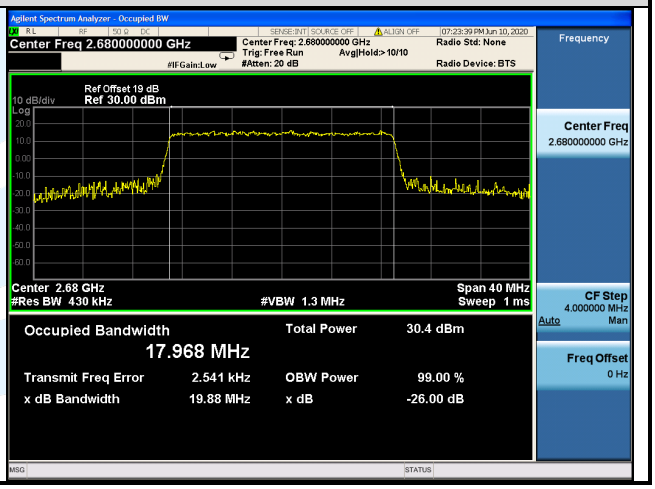
Middle Channel





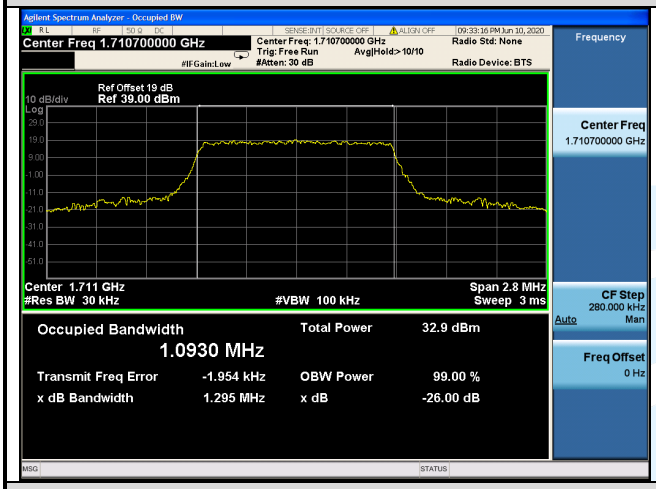
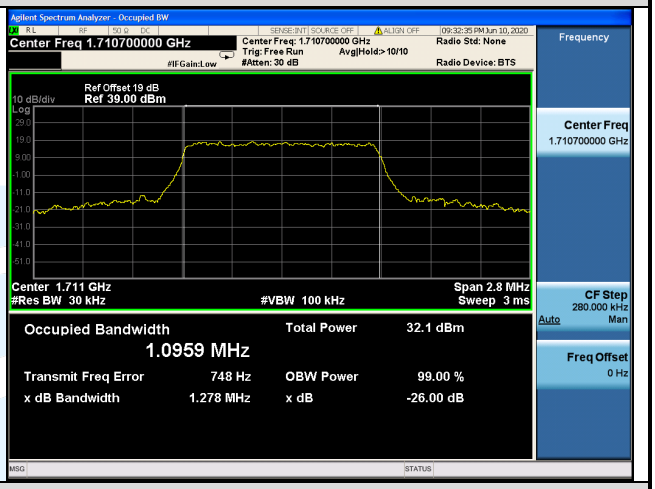
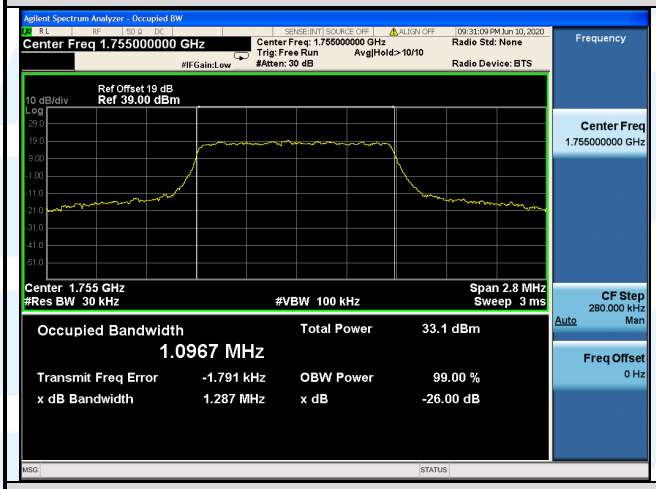
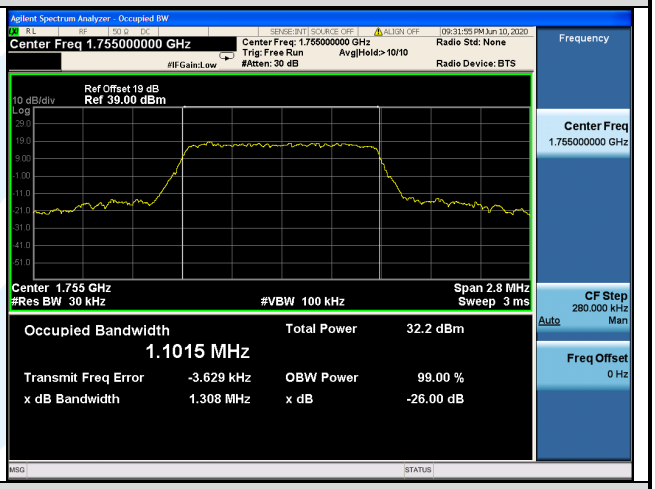
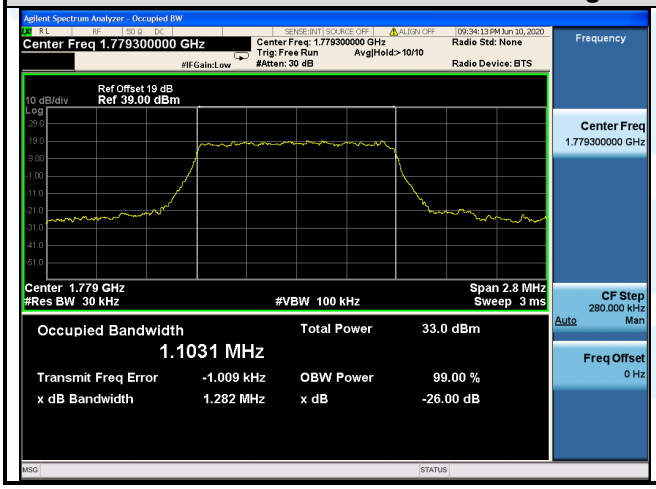
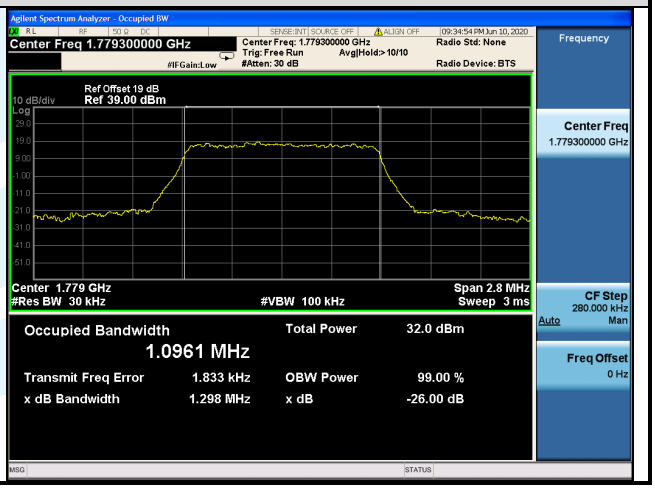
Highest Channel

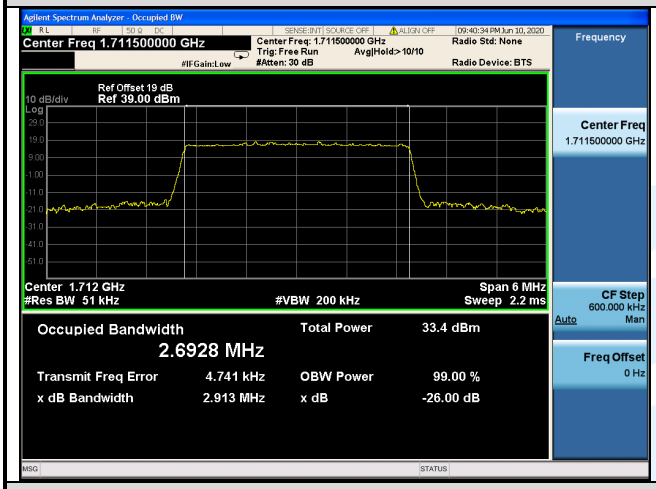
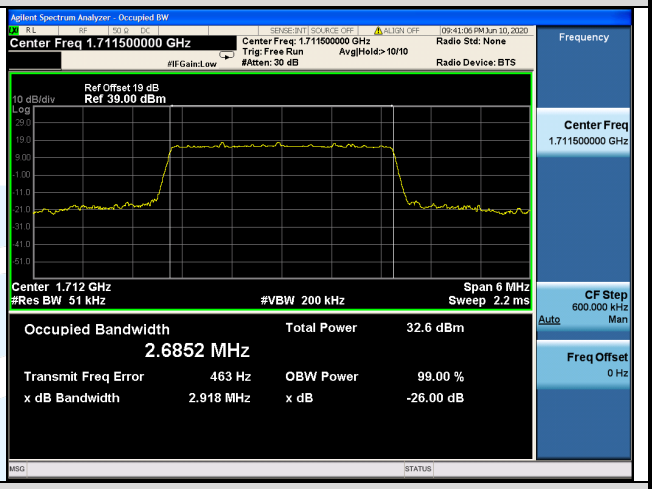
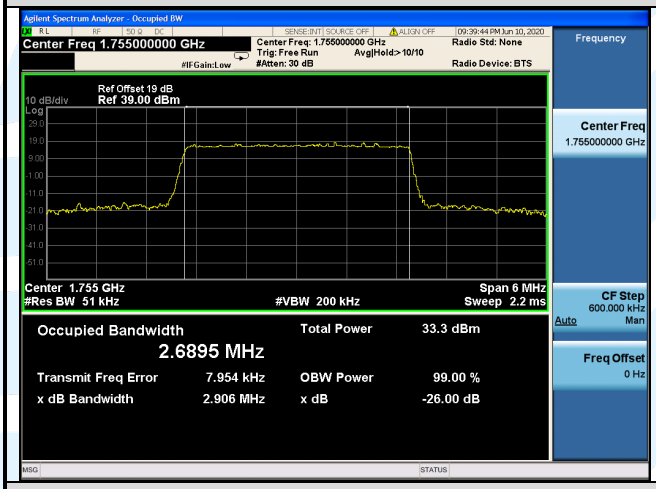
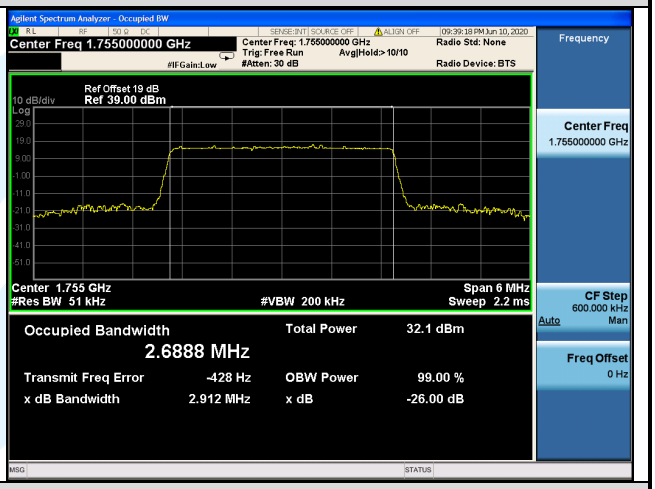
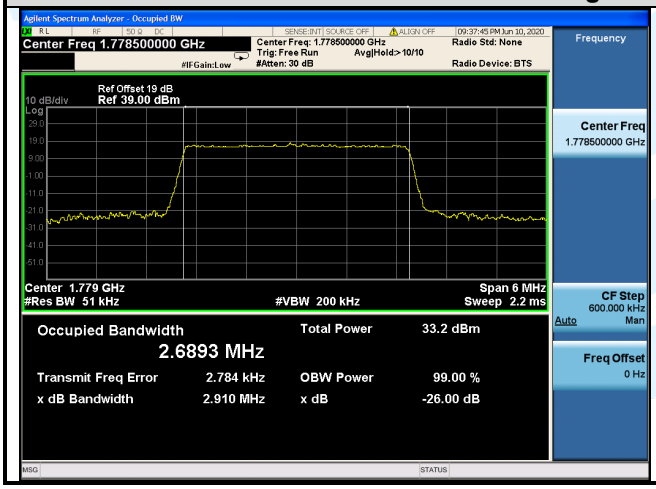
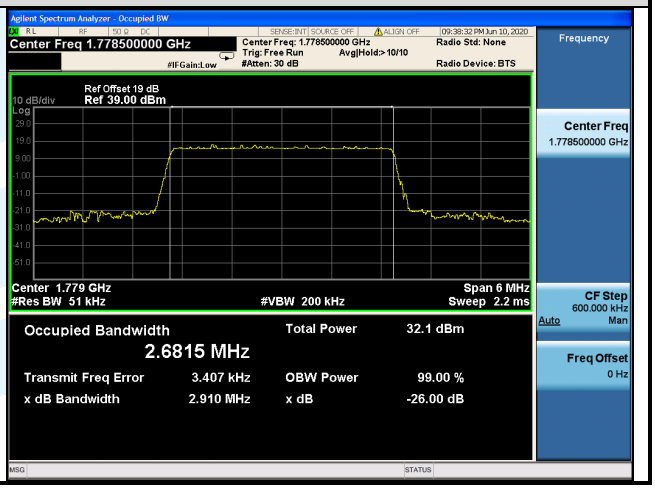


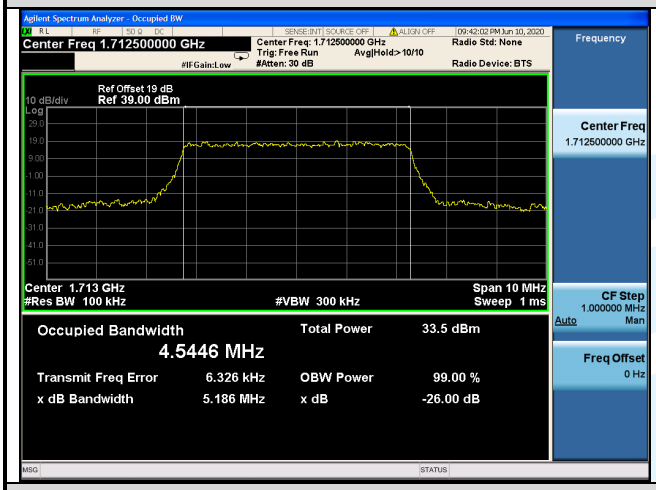
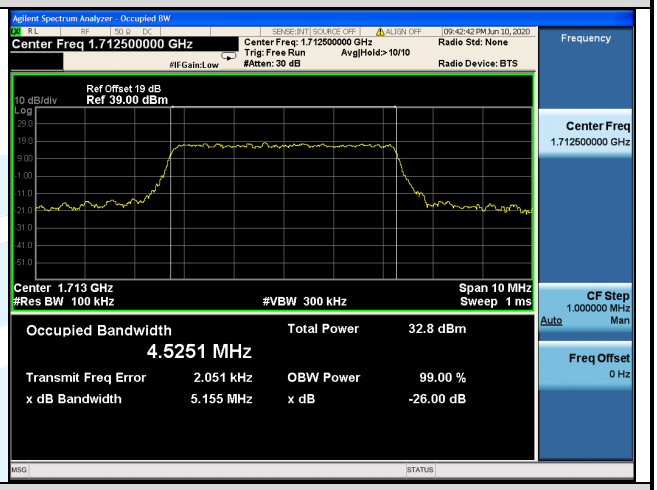
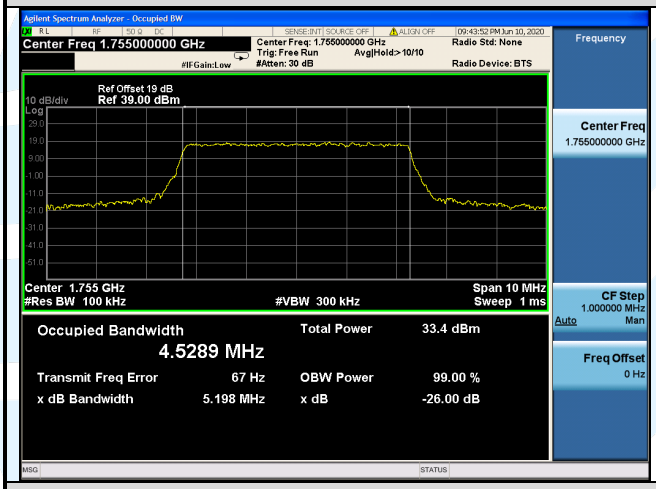
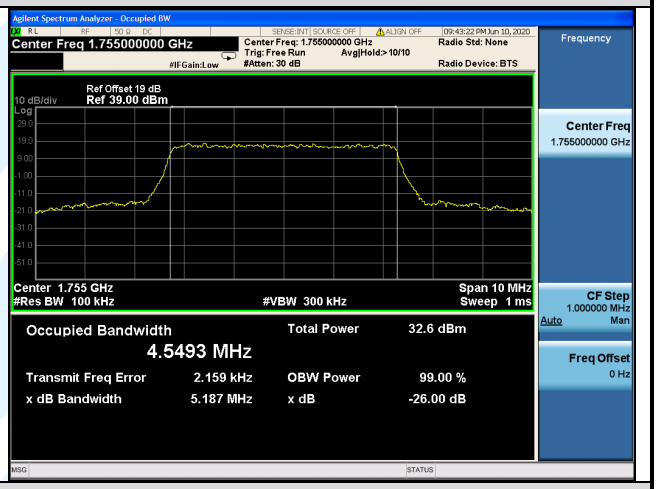
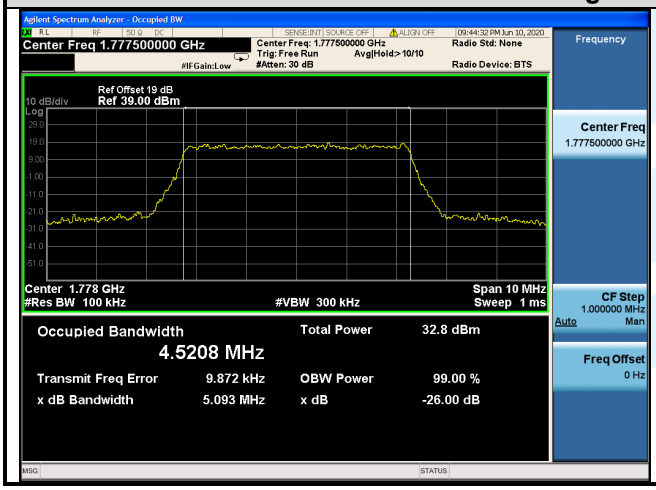
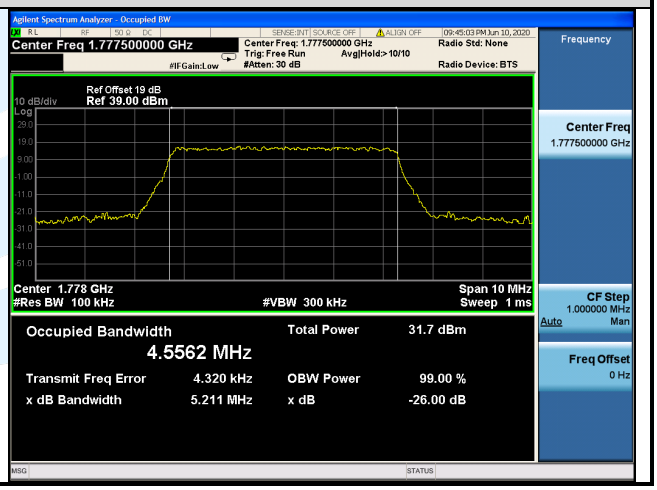


5.5.12 LTE Band 66

LTE Band 66								
Channel	RB Configuration		26 dB BW (MHz)			99% BW (MHz)		
	Size	Offset	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
Channel Bandwidth: 1.4 MHz								
Lowest	6	0	1.295	1.278	/	1.0930	1.0959	/
Middle	6	0	1.287	1.308	/	1.0967	1.1015	/
Highest	6	0	1.282	1.298	/	1.1031	1.0961	/
Channel Bandwidth: 3 MHz								
Lowest	15	0	2.913	2.918	/	2.6928	2.6852	/
Middle	15	0	2.906	2.912	/	2.6895	2.6888	/
Highest	15	0	2.910	2.910	/	2.6893	2.6815	/
Channel Bandwidth: 5 MHz								
Lowest	25	0	5.186	5.155	/	4.5446	4.5251	/
Middle	25	0	5.198	5.187	/	4.5289	4.5493	/
Highest	25	0	5.093	5.211	/	4.5208	4.5562	/
Channel Bandwidth: 10 MHz								
Lowest	50	0	9.999	10.12	/	9.0064	9.0292	/
Middle	50	0	10.30	9.984	/	9.0237	9.0259	/
Highest	50	0	10.09	10.12	/	9.0271	9.0105	/
Channel Bandwidth: 15 MHz								
Lowest	75	0	15.13	15.07	/	13.536	13.529	/
Middle	75	0	14.95	15.01	/	13.459	13.503	/
Highest	75	0	15.06	15.01	/	13.521	13.528	/
Channel Bandwidth: 20 MHz								
Lowest	100	0	20.09	19.85	/	18.042	18.031	/
Middle	100	0	19.66	19.96	/	17.977	17.975	/
Highest	100	0	19.64	19.76	/	17.999	18.060	/

LTE Band 66_ Channel Bandwidth: 1.4 MHz	
QPSK	16QAM
Lowest Channel	
	
Middle Channel	
	
Highest Channel	
	

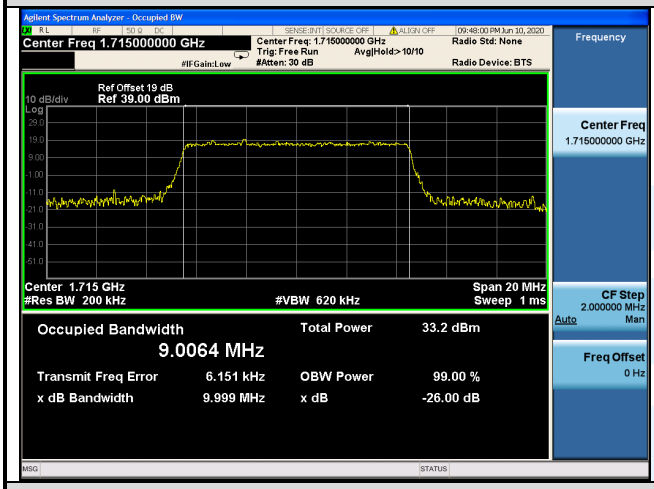
LTE Band 66_ Channel Bandwidth: 3 MHz	
QPSK	16QAM
Lowest Channel	
	
Middle Channel	
	
Highest Channel	
	

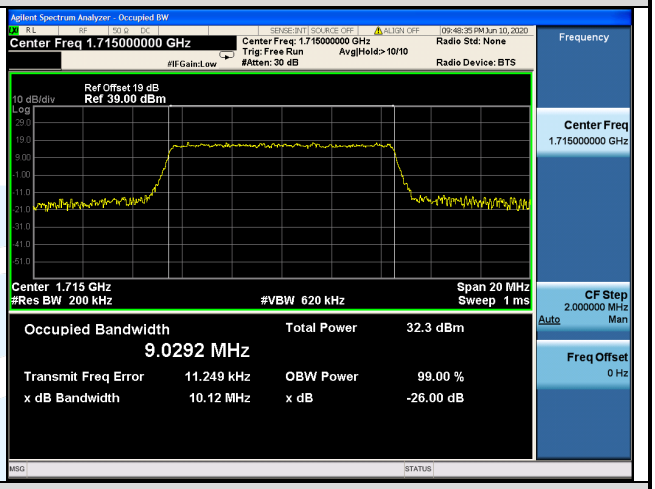
LTE Band 66_ Channel Bandwidth: 5 MHz	
QPSK	16QAM
Lowest Channel	
	
Middle Channel	
	
Highest Channel	
	

LTE Band 66_ Channel Bandwidth: 10 MHz

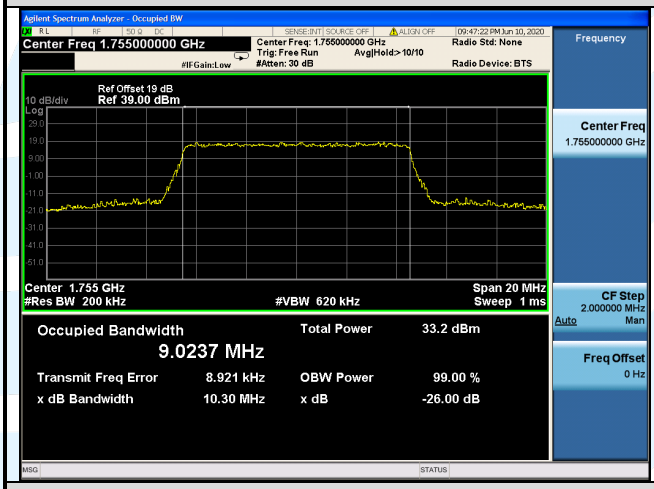
QPSK	16QAM

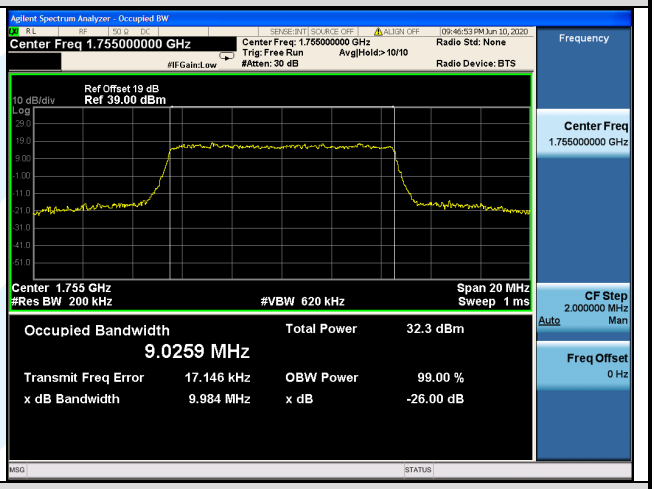
Lowest Channel



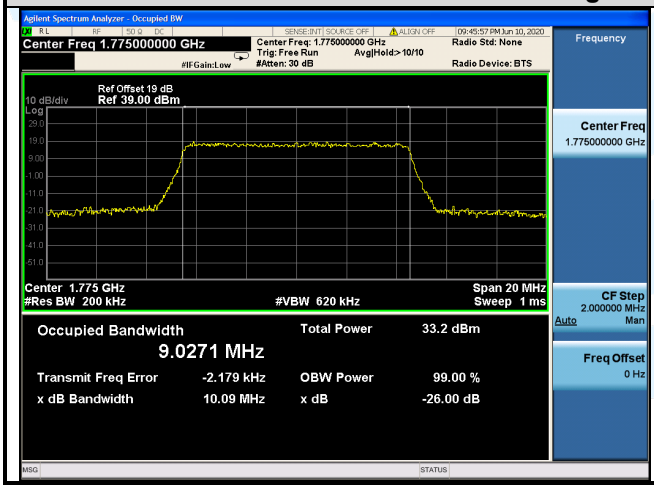


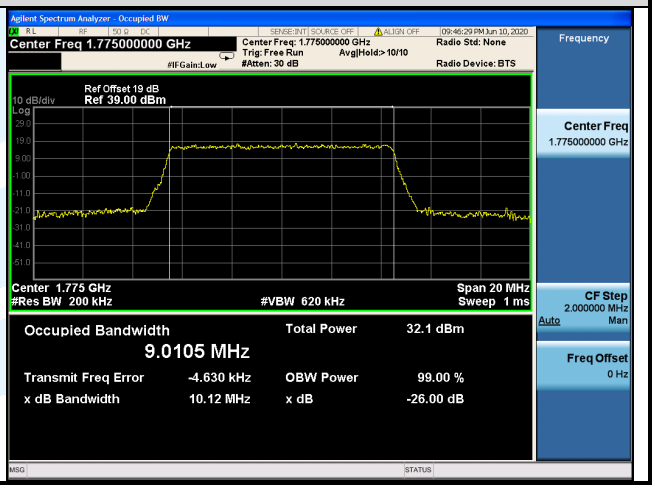
Middle Channel

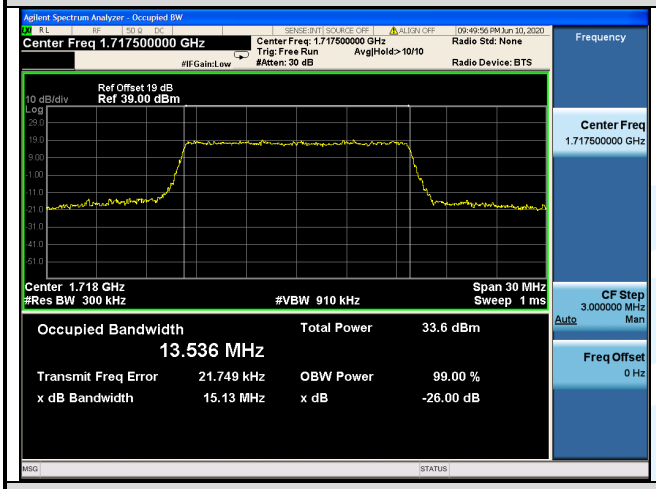
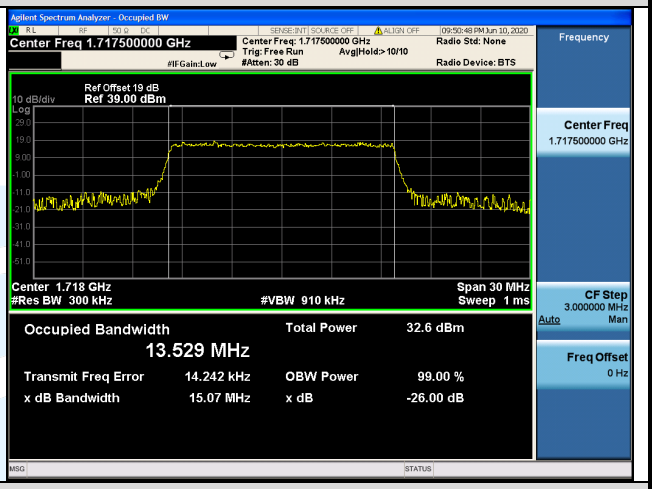
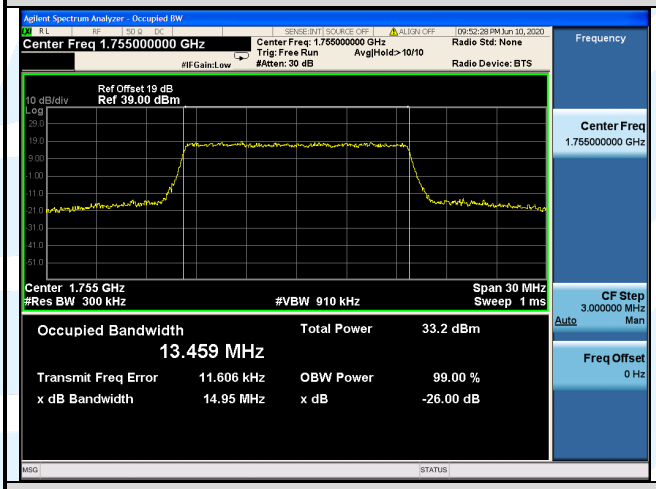
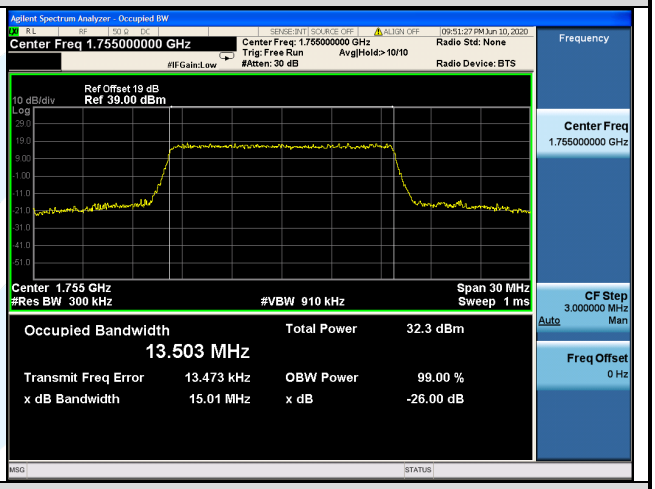
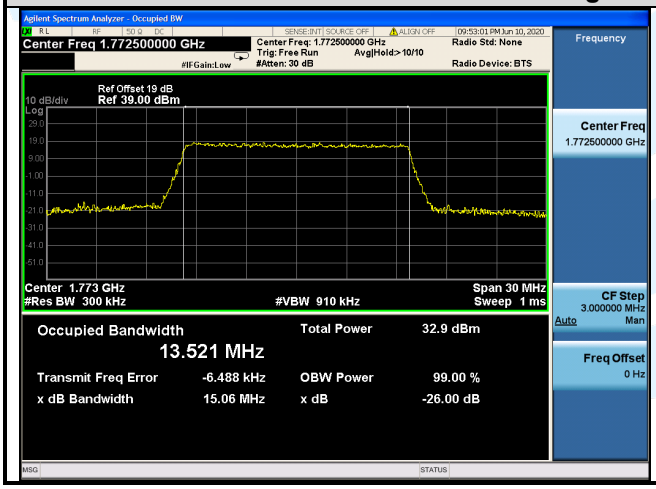
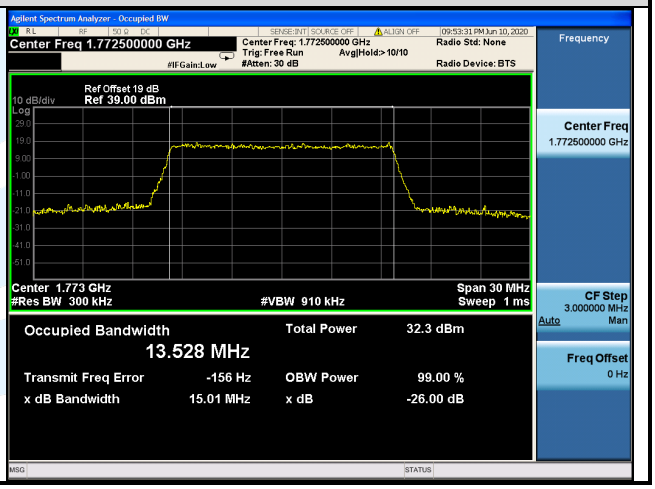


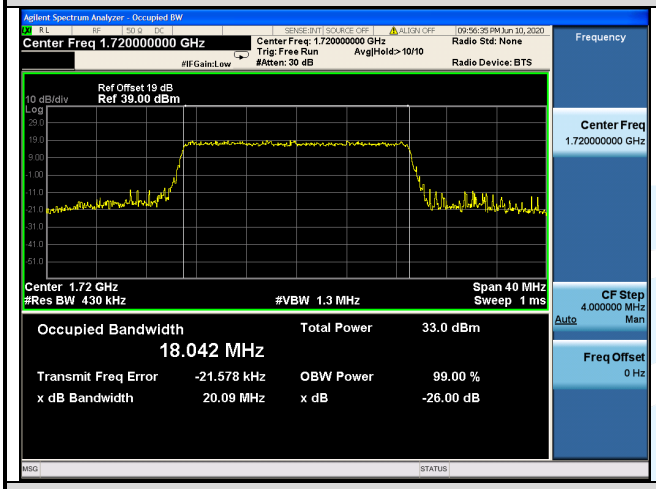
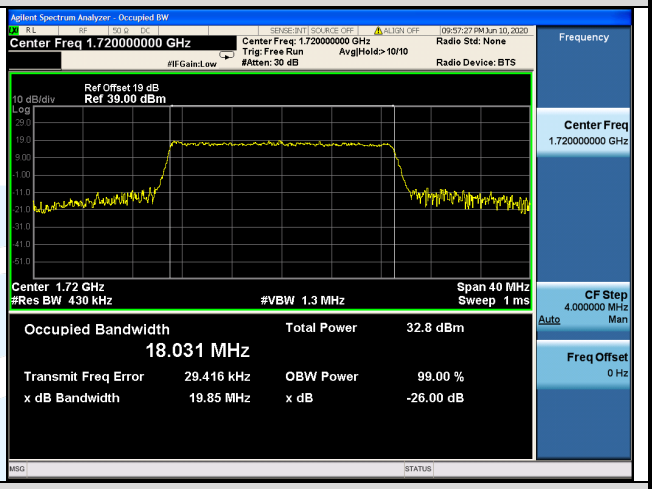
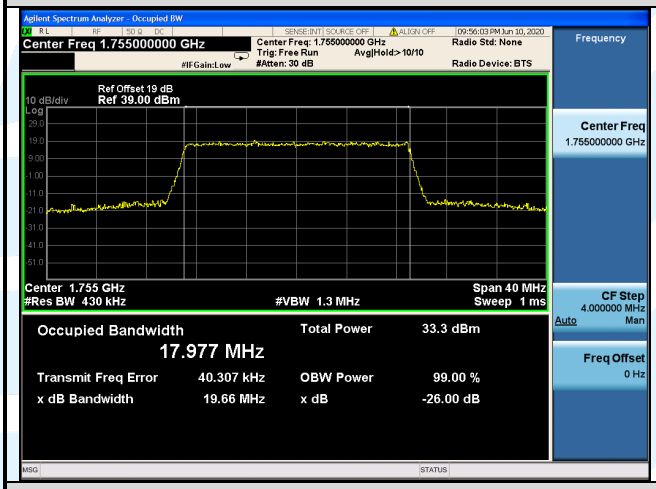
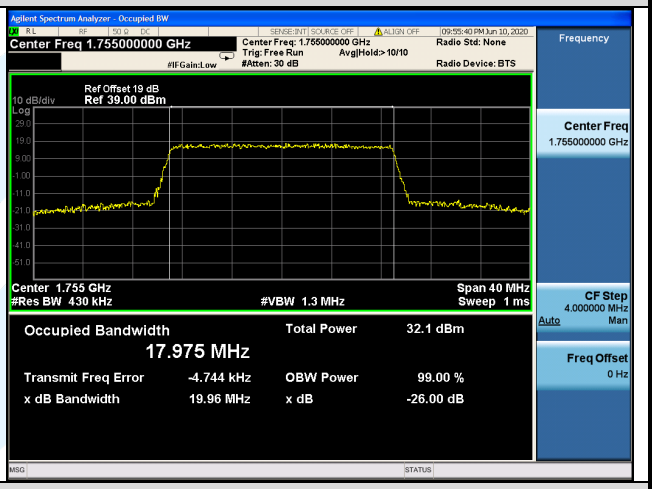
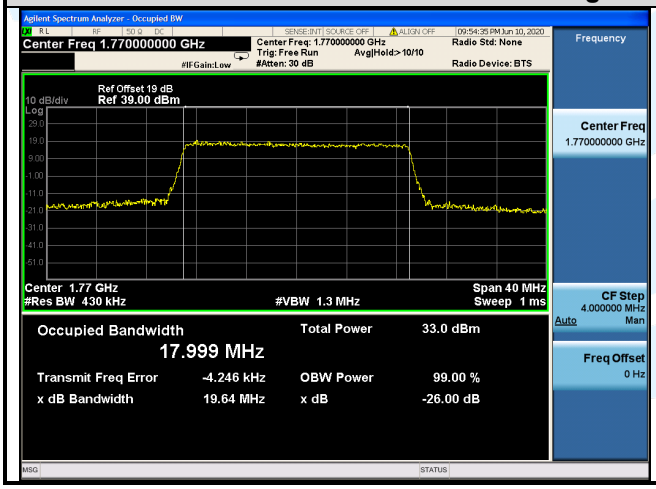
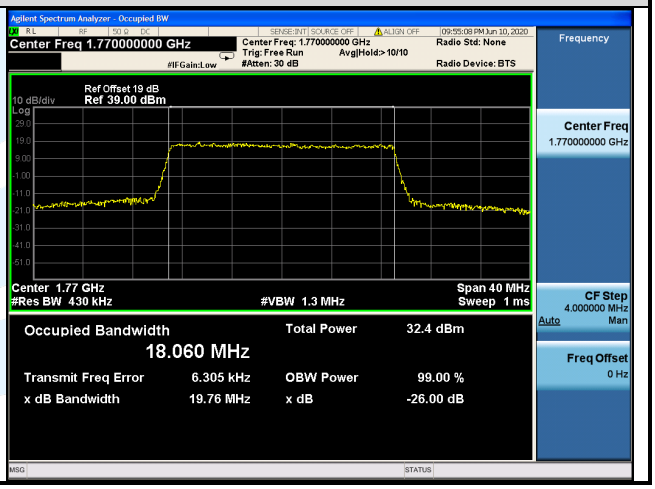


Highest Channel



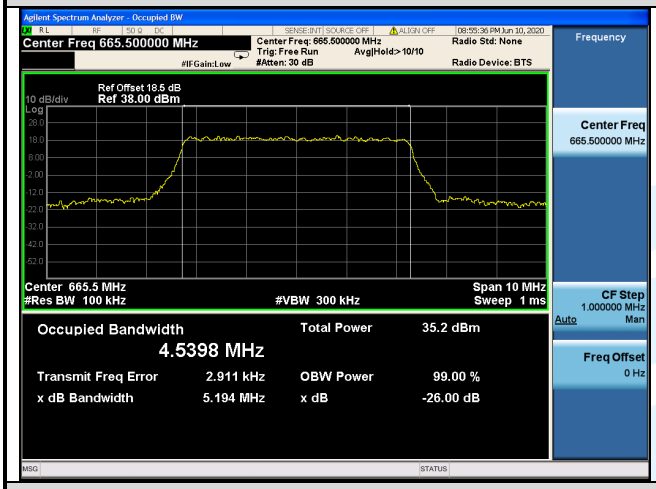
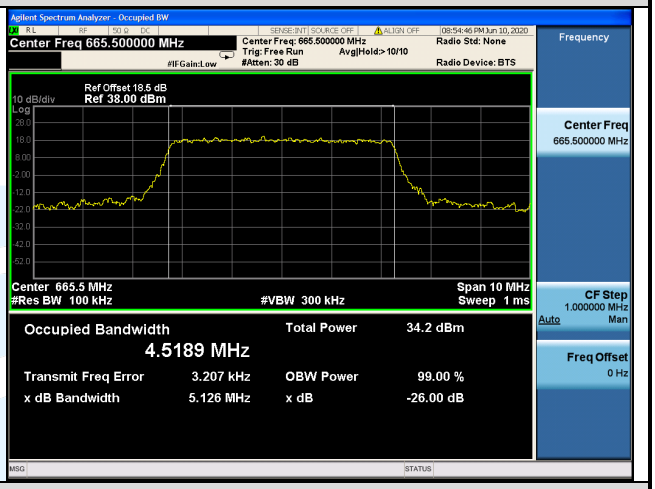
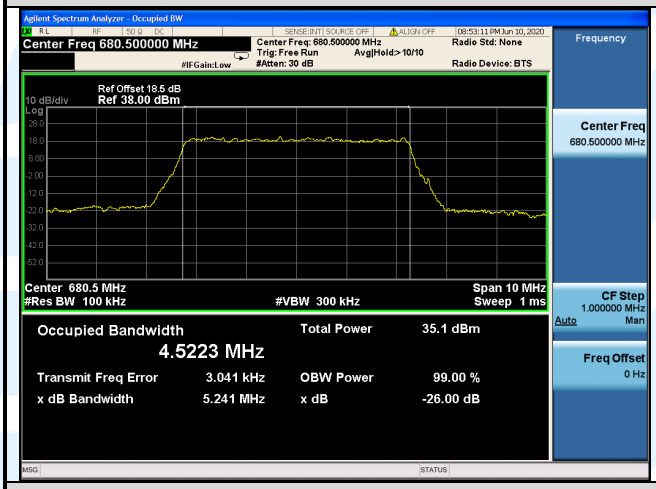
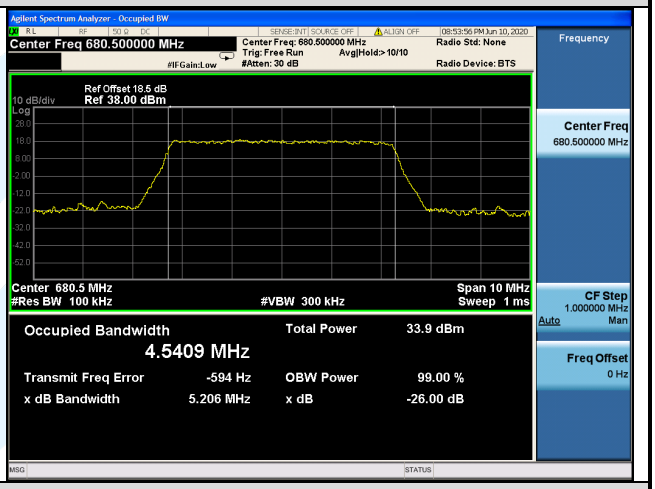
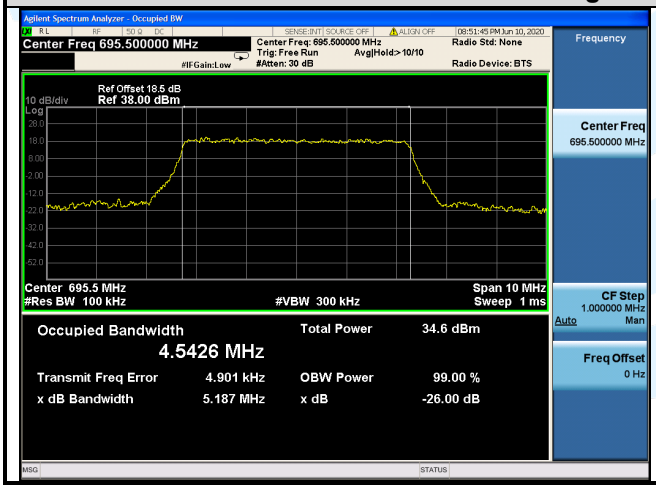
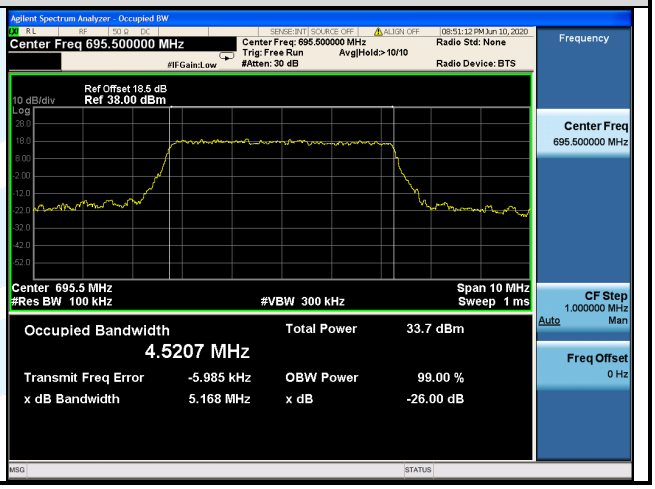


LTE Band 66_ Channel Bandwidth: 15 MHz	
QPSK	16QAM
Lowest Channel	
	
Middle Channel	
	
Highest Channel	
	

LTE Band 66_ Channel Bandwidth: 20 MHz	
QPSK	16QAM
Lowest Channel	
	
Middle Channel	
	
Highest Channel	
	

5.5.13 LTE Band 71

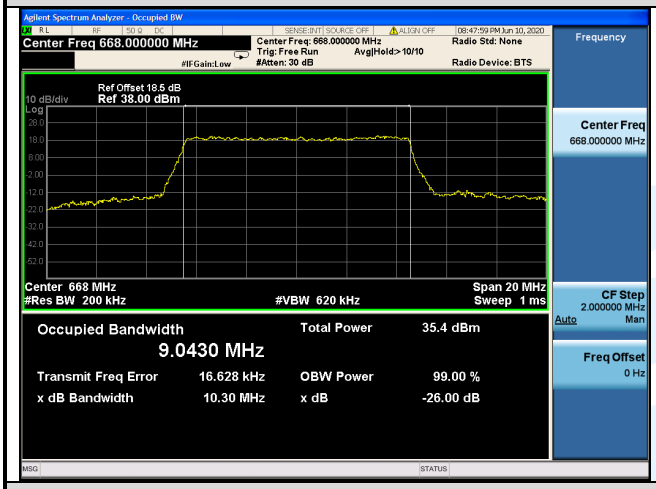
LTE Band 71								
Channel	RB Configuration		26 dB BW (MHz)			99% BW (MHz)		
	Size	Offset	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
Channel Bandwidth: 5 MHz								
Lowest	25	0	5.194	5.126	/	4.5398	4.5189	/
Middle	25	0	5.241	5.206	/	4.5223	4.5409	/
Highest	25	0	5.187	5.168	/	4.5426	4.5207	/
Channel Bandwidth: 10 MHz								
Lowest	50	0	10.30	10.00	/	9.0430	9.0264	/
Middle	50	0	10.11	10.20	/	8.9921	9.0236	/
Highest	50	0	10.12	10.07	/	9.0044	8.9913	/
Channel Bandwidth: 15 MHz								
Lowest	75	0	15.02	15.01	/	13.530	13.511	/
Middle	75	0	15.22	15.03	/	13.522	13.514	/
Highest	75	0	15.02	14.99	/	13.457	13.496	/
Channel Bandwidth: 20 MHz								
Lowest	100	0	19.65	20.06	/	17.983	17.985	/
Middle	100	0	20.10	19.91	/	18.055	18.026	/
Highest	100	0	19.74	19.78	/	17.991	18.060	/

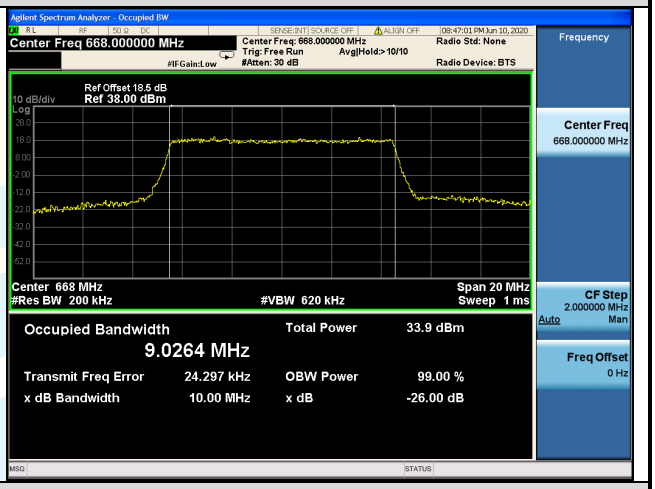
LTE Band 71_ Channel Bandwidth: 5 MHz	
QPSK	16QAM
Lowest Channel	
	
Middle Channel	
	
Highest Channel	
	

LTE Band 71_ Channel Bandwidth: 10 MHz

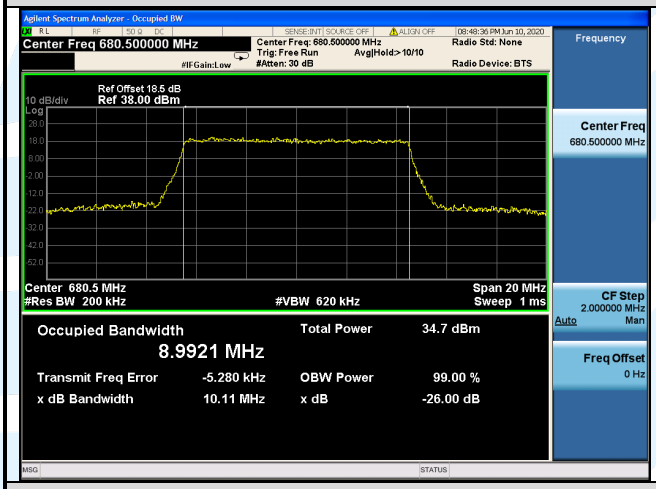
QPSK	16QAM

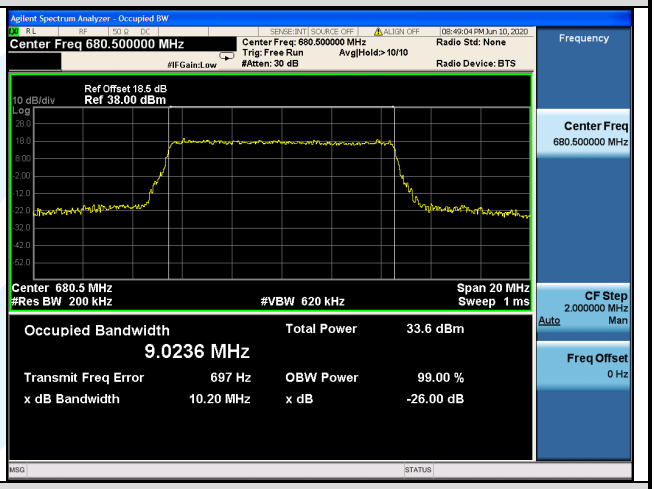
Lowest Channel



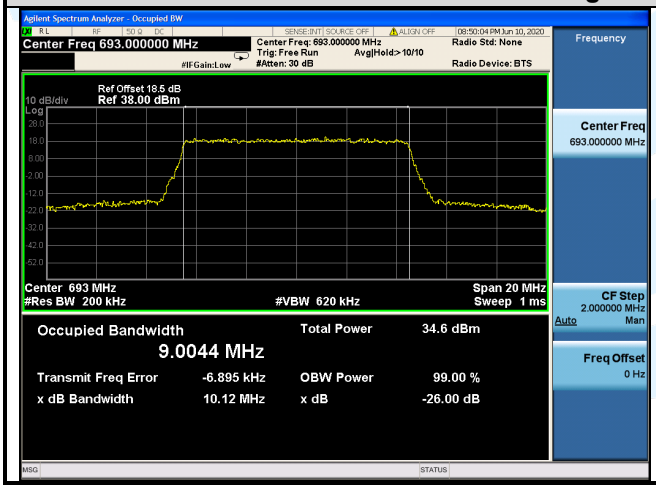


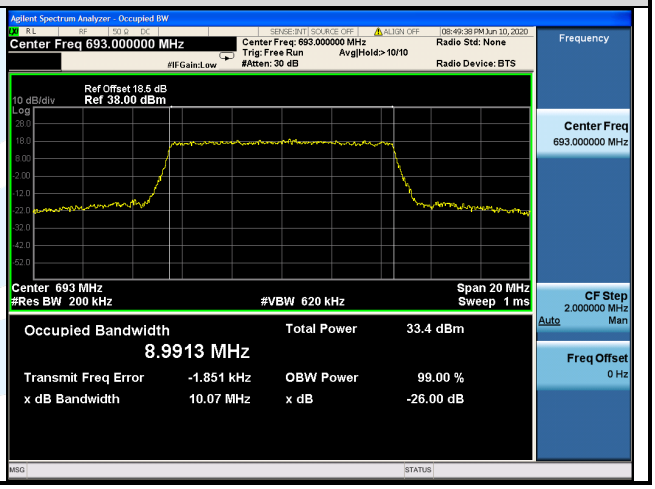
Middle Channel





Highest Channel

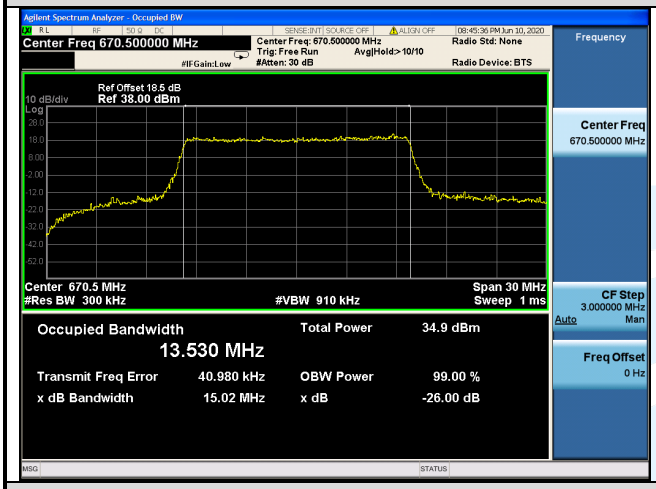


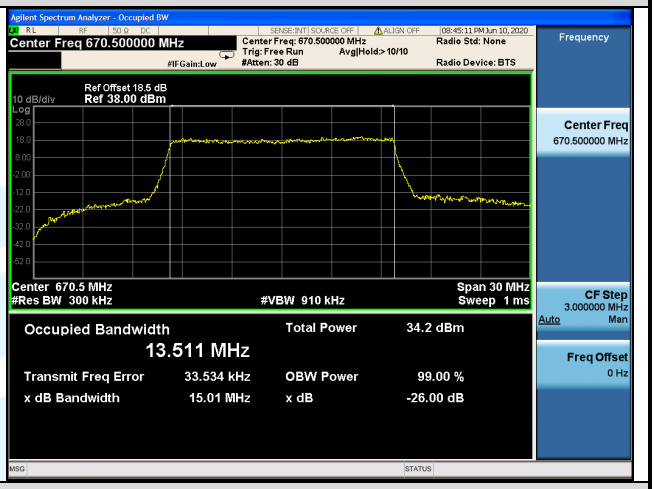


LTE Band 71_ Channel Bandwidth: 15 MHz

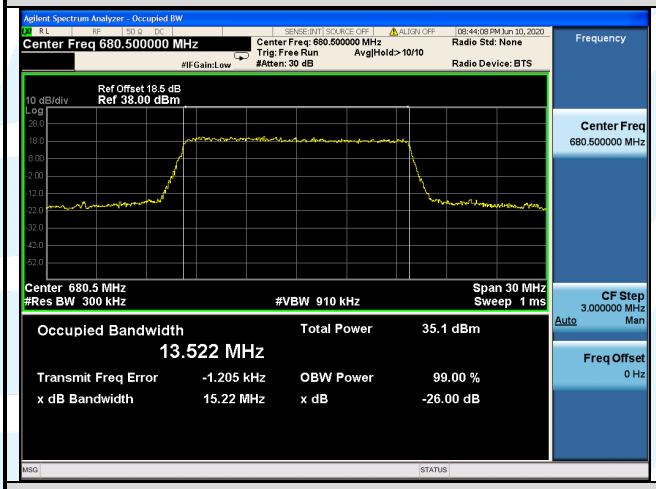
QPSK	16QAM

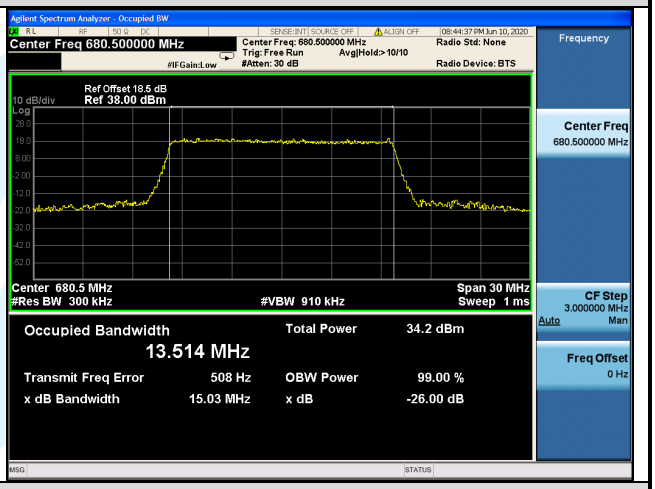
Lowest Channel



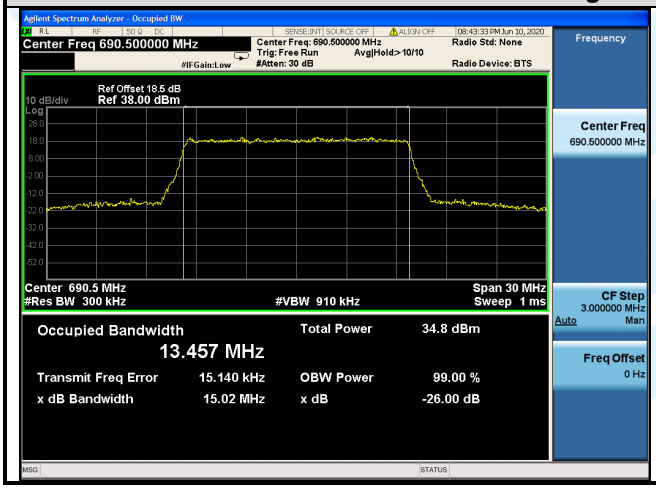


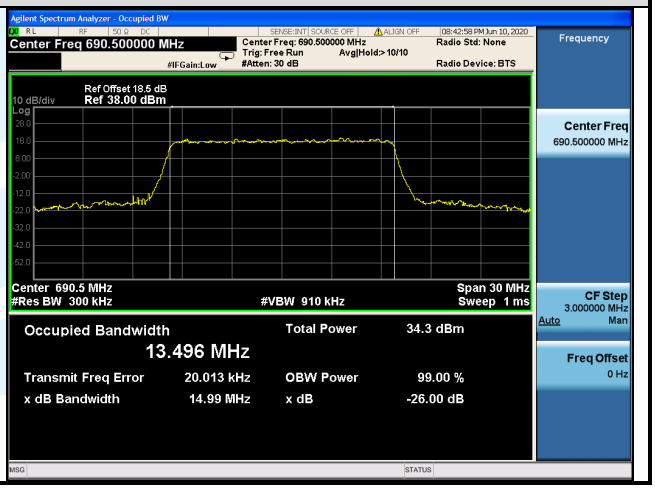
Middle Channel





Highest Channel

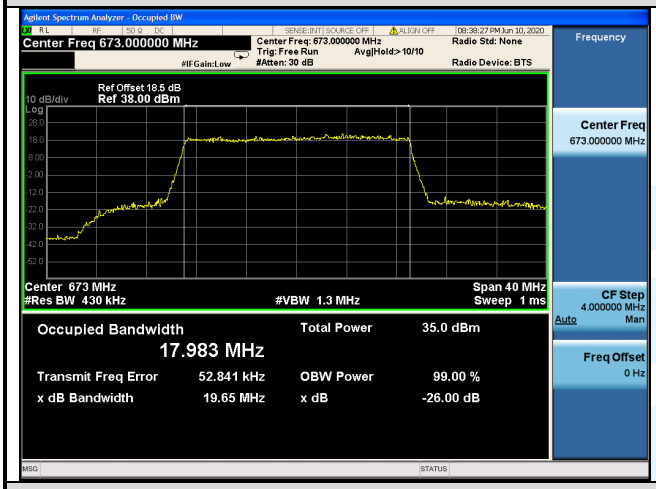


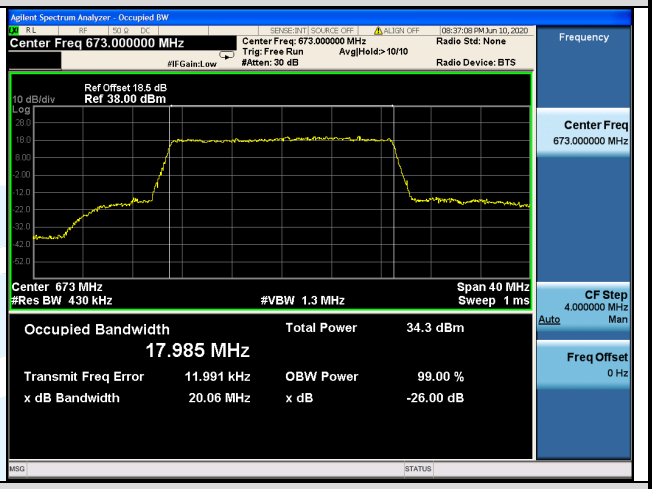


LTE Band 71_ Channel Bandwidth: 20 MHz

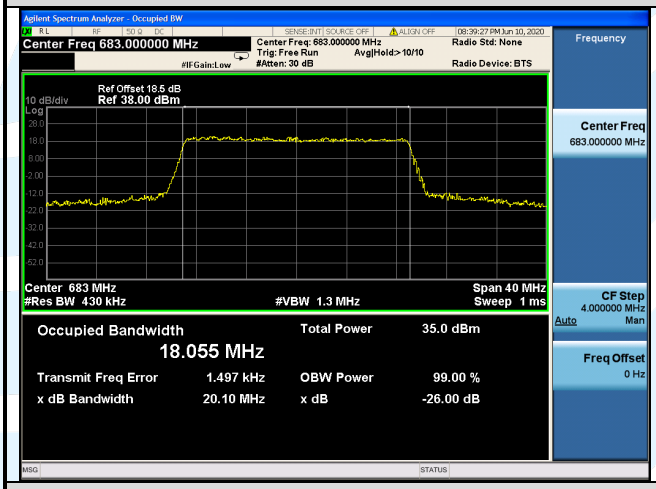
QPSK	16QAM

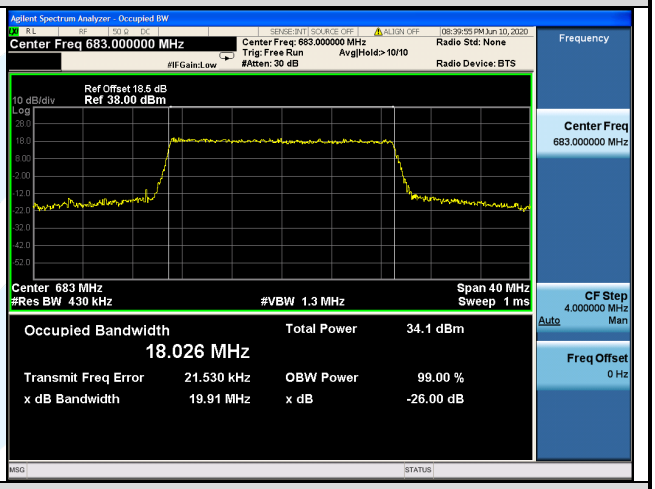
Lowest Channel



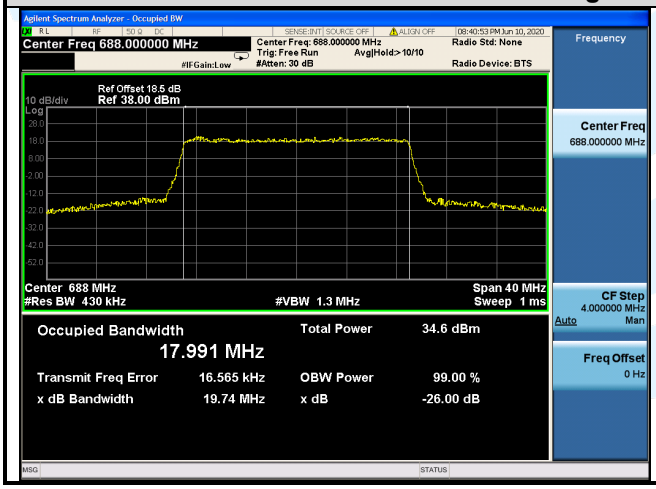


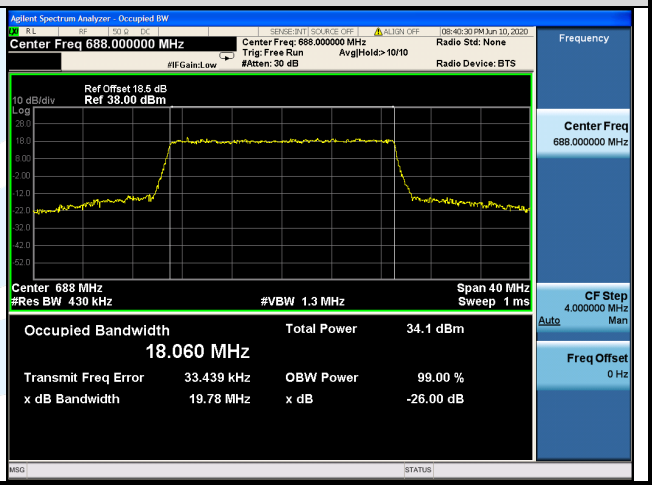
Middle Channel





Highest Channel





5.6 BAND EDGE AT ANTENNA TERMINALS

Test Requirement: **LTE Band 2 & LTE Band 25:** FCC 47 CFR Part 24.238(a)
LTE Band 4 & LTE Band 66: FCC 47 CFR Part 27.53(h)(1)
LTE Band 5 & LTE Band 26: FCC 47 CFR Part 22.917(a)
LTE Band 7 & Band 38 & Band 41: FCC 47 CFR Part 27.53(m)(4)
LTE Band 12& Band17 & Band 71: FCC 47 CFR Part 27.53(g)
LTE Band 30: FCC 47 CFR Part 27.53(a)(4)
LTE Band 26: FCC 47 CFR Part 90.691

Test Method: ANSI C63.26-2015 & KDB 971168 D01v03r01

Limit:

FCC 47 CFR Part 24.238(a), 27.53(h)(1), 22.917(a) :
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB. The emission limit equal to -13 dBm.

FCC 47 CFR Part 27.53(m)(4):
For mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

FCC 47 CFR Part 27.53(g):
For operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

FCC 47 CFR Part 27.53(a)(4): For mobile and portable stations operating in the 2305-2315 MHz and 2350-2360 MHz bands:
(i) By a factor of not less than: 43 + 10 log (P) dB on all frequencies between 2305 and 2320 MHz and on all frequencies between 2345 and 2360 MHz that are outside the licensed band(s) of operation, not less than 55 + 10 log (P) dB on all frequencies between 2320 and 2324 MHz and on all frequencies between 2341 and 2345 MHz, not less than 61 + 10 log (P) dB on all frequencies between 2324 and 2328 MHz and on all frequencies between 2337 and 2341 MHz, and not less than 67 + 10 log (P) dB on all frequencies between 2328 and 2337 MHz;
(ii) By a factor of not less than 43 + 10 log (P) dB on all frequencies between 2300 and 2305 MHz, 55 + 10 log (P) dB on all frequencies between 2296 and 2300 MHz, 61 + 10 log (P) dB on all frequencies between 2292 and 2296 MHz, 67 + 10 log (P) dB on all frequencies between 2288 and 2292 MHz, and 70 + 10 log (P) dB below 2288 MHz;
(iii) By a factor of not less than 43 + 10 log (P) dB on all frequencies between 2360 and 2365 MHz, and not less than 70 + 10 log (P) dB above 2365 MHz.

FCC 47 CFR Part 27.53(a)(5): Measurement procedure. Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the channel blocks at 2305, 2310, 2315, 2320, 2345, 2350, 2355, and 2360 MHz, a resolution bandwidth of at least 1 percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e., 1 MHz). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

FCC 47 CFR Part 90.691:

(a)(1) For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 116 Log10(f/6.1) decibels or 50 + 10 Log10(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.
(a)(2) For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 43 + 10Log10(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

Test Procedure:

The transmitter output was connected to a calibrated coaxial cable and coupler, the other end of which was connected to a spectrum analyzer.
For each band edge measurement:

1) Set the spectrum analyzer span to include the block edge frequency.
2) Set a marker to point the corresponding band edge frequency in each test case.
3) Set display line at -13 dBm
4) Set resolution bandwidth to at least 1% of emission bandwidth.
5) Set spectrum analyzer with RMS detector.
6) Record the max trace plot into the test report

Note: The cable loss and attenuator loss were offset into measure device as an amplitude offset.

Test Setup: Refer to section 4.2.2 for details.
Instruments Used: Refer to section 3 for details
Test Mode: Link mode
Test Results: Pass