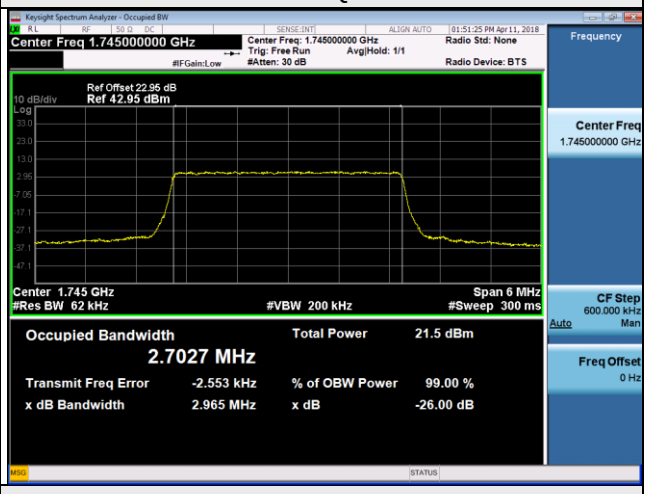
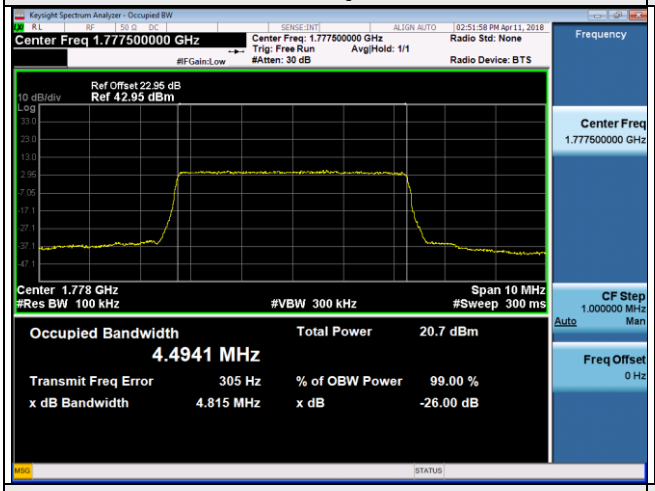
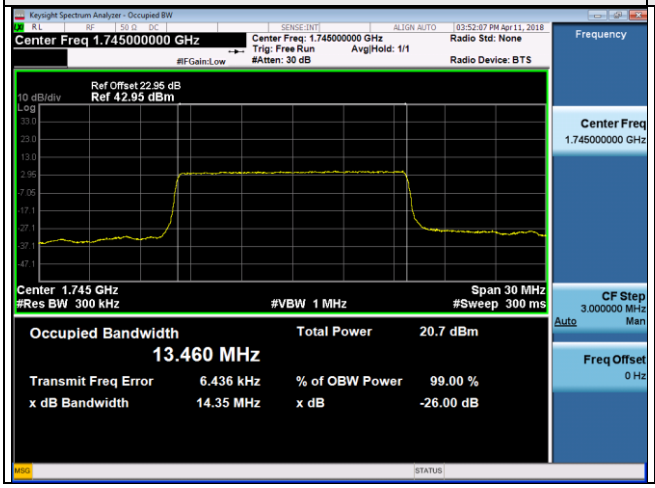
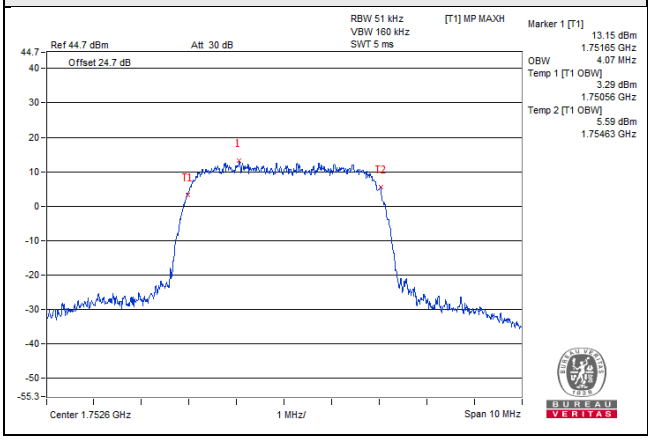
Spectrum Plot of Worst Value	
1.4MHz / QPSK	3MHz / QPSK
	
5MHz / QPSK	10MHz / QPSK
	
15MHz / QPSK	20MHz / QPSK
	

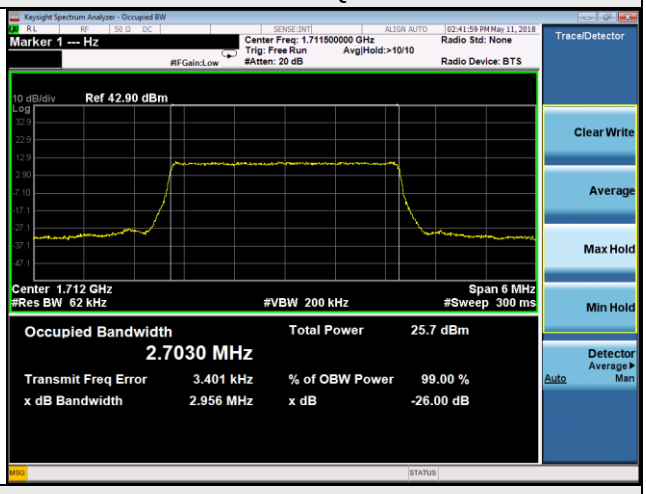
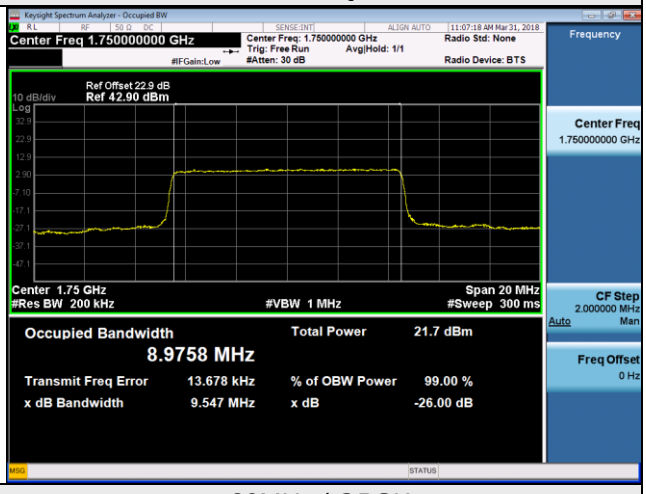
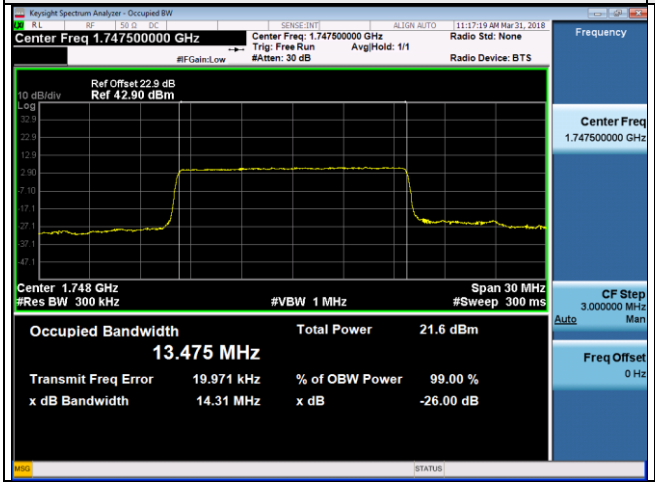
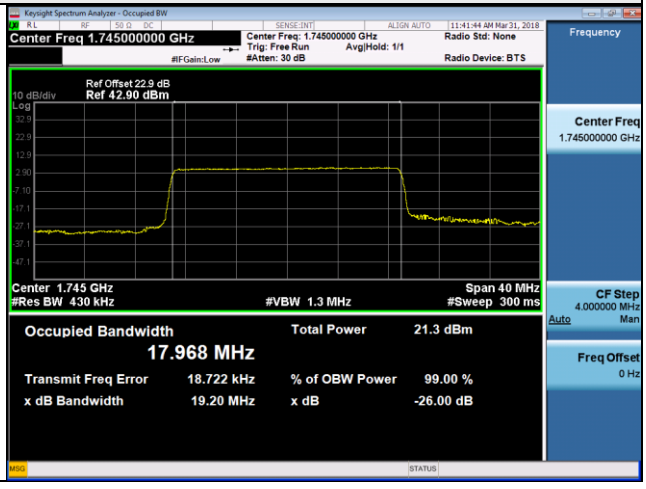
4.4.5 Test Results (Occupied Bandwidth)

Channel	FREQ. (MHz)	Occupied Bandwidth (MHz)
		WCDMA
1312	1712.4	4.12
1413	1732.6	4.13
1513	1752.6	4.15

Spectrum Plot of Worst Value
WCDMA



LTE Band 4									
Channel Bandwidth 1.4MHz					Channel Bandwidth 3MHz				
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			Channel	Frequency (MHz)	Occupied Bandwidth (MHz)		
		QPSK	16QAM	64QAM			QPSK	16QAM	64QAM
19957	1710.7	1.09	1.09	1.09	19965	1711.5	2.70	2.70	2.70
20175	1732.5	1.09	1.09	1.09	20175	1732.5	2.70	2.70	2.70
20393	1754.3	1.09	1.09	1.09	20385	1753.5	2.70	2.70	2.70
Channel Bandwidth 5MHz					Channel Bandwidth 10MHz				
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			Channel	Frequency (MHz)	Occupied Bandwidth (MHz)		
		QPSK	16QAM	64QAM			QPSK	16QAM	64QAM
19975	1712.5	4.49	4.49	4.50	20000	1715	8.97	8.97	8.97
20175	1732.5	4.49	4.49	4.49	20175	1732.5	8.97	8.97	8.96
20375	1752.5	4.49	4.50	4.50	20350	1750	8.98	8.98	8.98
Channel Bandwidth 15MHz					Channel Bandwidth 20MHz				
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			Channel	Frequency (MHz)	Occupied Bandwidth (MHz)		
		QPSK	16QAM	64QAM			QPSK	16QAM	64QAM
20025	1717.5	13.44	13.44	13.43	20050	1720	17.88	17.91	17.91
20175	1732.5	13.46	13.45	13.45	20175	1732.5	17.94	17.96	17.96
20325	1747.5	13.48	13.48	13.47	20300	1745	17.97	17.96	17.96

Spectrum Plot of Worst Value	
1.4MHz / QPSK	3MHz / QPSK
	
5MHz / 16QAM	10MHz / QPSK
	
15MHz / QPSK	20MHz / QPSK
	

LTE Band 7									
Channel Bandwidth 5MHz					Channel Bandwidth 10MHz				
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			Channel	Frequency (MHz)	Occupied Bandwidth (MHz)		
		QPSK	16QAM	64QAM			QPSK	16QAM	64QAM
20775	2502.5	4.49	4.49	4.49	20800	2505	8.97	8.98	8.97
21100	2535	4.49	4.49	4.49	21100	2535	8.97	8.97	8.96
21425	2567.5	4.49	4.48	4.49	21400	2565	8.95	8.95	8.95
Channel Bandwidth 15MHz					Channel Bandwidth 20MHz				
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			Channel	Frequency (MHz)	Occupied Bandwidth (MHz)		
		QPSK	16QAM	64QAM			QPSK	16QAM	64QAM
20825	2507.5	13.50	13.46	13.49	20850	2510	17.99	17.98	18.02
21100	2535	13.47	13.45	13.45	21100	2535	17.93	17.95	17.95
21375	2562.5	13.42	13.41	13.40	21350	2560	17.86	17.89	17.89

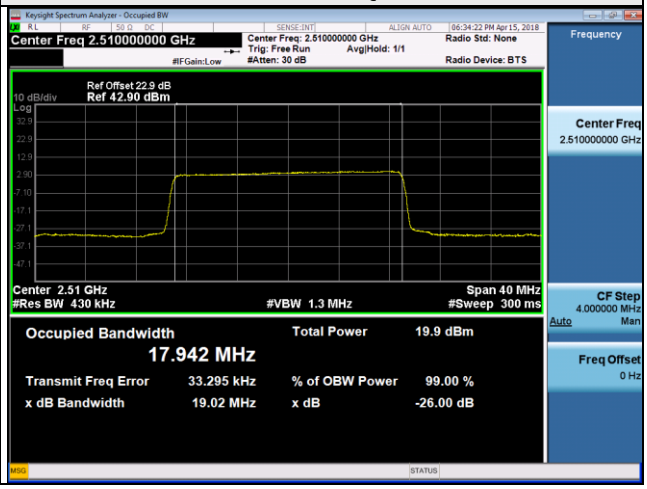
Spectrum Plot of Worst Value

5MHz / QPSK

10MHz / 16QAM

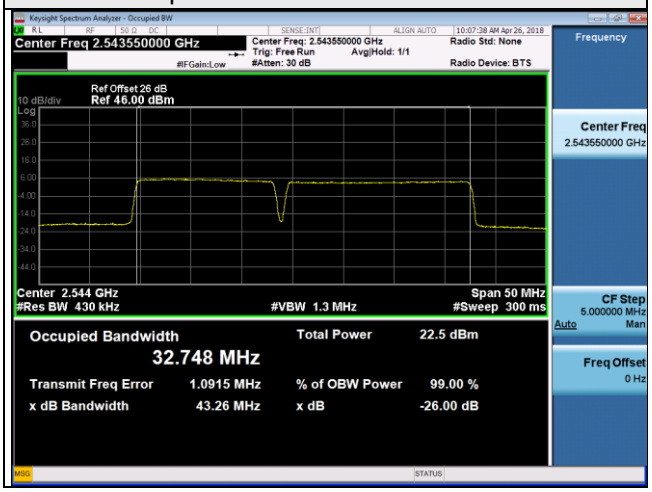
15MHz / QPSK

20MHz / 64QAM



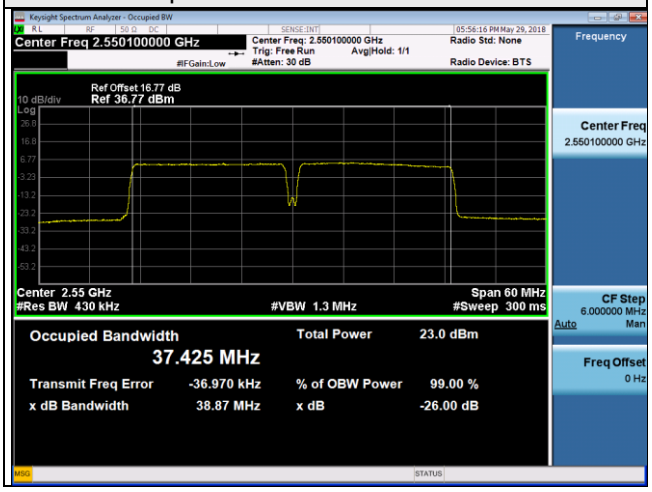
LTE CA_7C (15+20MHz)		
Channel	FREQ. (MHz)	Occupied Bandwidth (MHz)
		QPSK
21100+21271	2535+2552.1	32.75

Spectrum Plot of Worst Value



LTE CA_7C (20+20MHz)		
Channel	FREQ. (MHz)	Occupied Bandwidth (MHz)
		QPSK
21152+21350	2540.2+2560	37.43

Spectrum Plot of Worst Value

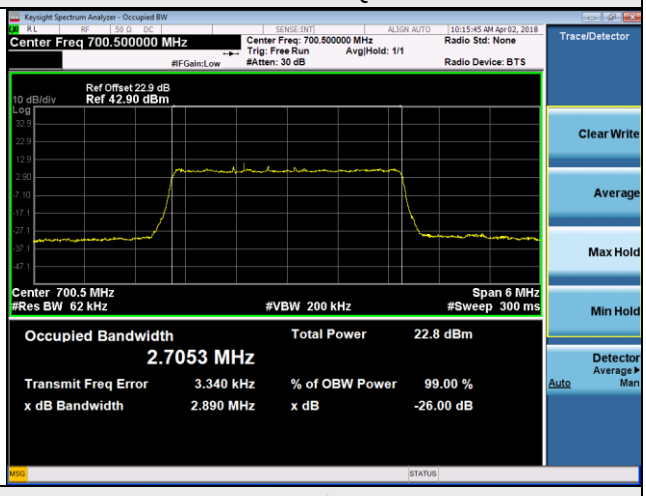


LTE Band 12									
Channel Bandwidth 1.4MHz					Channel Bandwidth 3MHz				
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			Channel	Frequency (MHz)	Occupied Bandwidth (MHz)		
		QPSK	16QAM	64QAM			QPSK	16QAM	64QAM
23017	699.7	1.09	1.09	1.09	23025	700.5	2.70	2.70	2.71
23095	707.5	1.09	1.09	1.09	23095	707.5	2.70	2.70	2.70
23173	715.3	1.09	1.09	1.09	23165	714.5	2.70	2.69	2.70
Channel Bandwidth 5MHz					Channel Bandwidth 10MHz				
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			Channel	Frequency (MHz)	Occupied Bandwidth (MHz)		
		QPSK	16QAM	64QAM			QPSK	16QAM	64QAM
23035	701.5	4.48	4.49	4.49	23060	704	8.95	8.96	8.95
23095	707.5	4.49	4.49	4.49	23095	707.5	8.98	8.98	8.98
23155	713.5	4.48	4.48	4.48	23130	711	8.97	8.97	8.97

Spectrum Plot of Worst Value

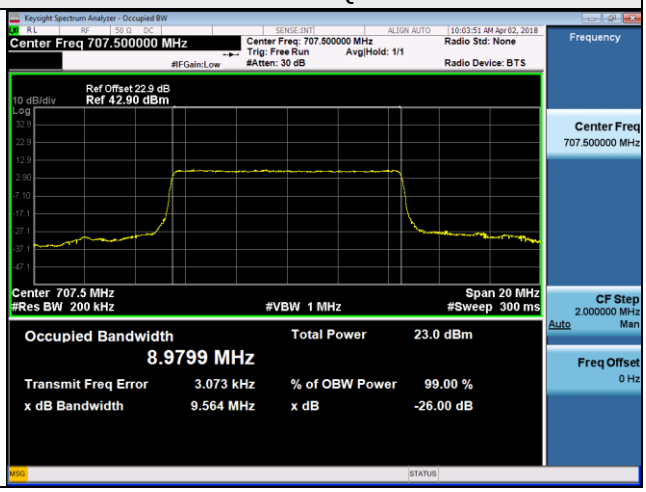
1.4MHz / QPSK

3MHz / 64QAM

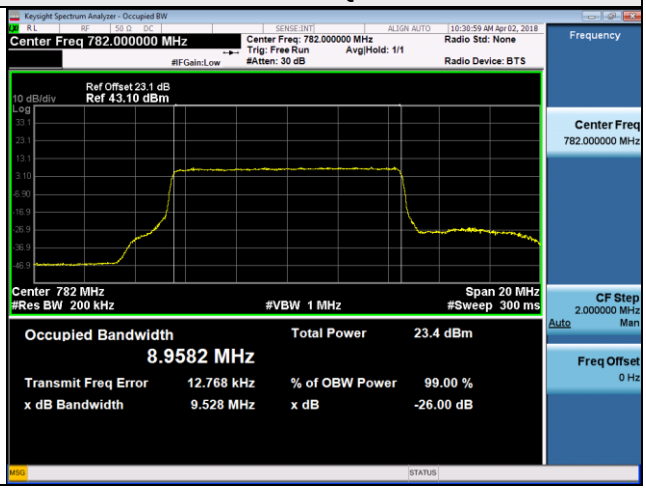


5MHz / QPSK

10MHz / QPSK



LTE Band 13									
Channel Bandwidth 5MHz					Channel Bandwidth 10MHz				
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			Channel	Frequency (MHz)	Occupied Bandwidth (MHz)		
		QPSK	16QAM	64QAM			QPSK	16QAM	64QAM
23205	779.5	4.48	4.48	4.49	23230	782	8.96	8.96	8.95
23230	782	4.49	4.49	4.49					
23255	784.5	4.48	4.49	4.49					

Spectrum Plot of Worst Value	
5MHz / QPSK	10MHz / QPSK
	

LTE Band 17									
Channel Bandwidth 5MHz					Channel Bandwidth 10MHz				
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			Channel	Frequency (MHz)	Occupied Bandwidth (MHz)		
		QPSK	16QAM	64QAM			QPSK	16QAM	64QAM
23755	706.5	4.49	4.49	4.49	23780	709	8.98	8.99	8.98
23790	710	4.49	4.49	4.50	23790	710	8.98	8.98	8.98
23825	713.5	4.48	4.48	4.48	23800	711	8.97	8.97	8.97

Spectrum Plot of Worst Value	
5MHz / 64QAM	10MHz / 16QAM
	

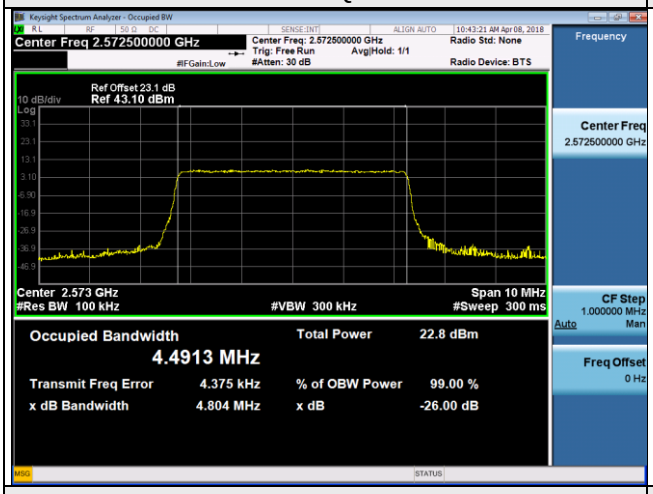
LTE Band 30									
Channel Bandwidth 5MHz					Channel Bandwidth 10MHz				
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			Channel	Frequency (MHz)	Occupied Bandwidth (MHz)		
		QPSK	16QAM	64QAM			QPSK	16QAM	64QAM
27685	2307.5	4.49	4.49	4.48	27710	2310	8.97	8.96	8.97
27710	2310	4.49	4.49	4.49					
27735	2312.5	4.48	4.49	4.49					

Spectrum Plot of Worst Value	
5MHz / QPSK	10MHz / QPSK
	

LTE Band 38									
Channel Bandwidth 5MHz					Channel Bandwidth 10MHz				
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			Channel	Frequency (MHz)	Occupied Bandwidth (MHz)		
		QPSK	16QAM	64QAM			QPSK	16QAM	64QAM
37775	2572.5	4.49	4.48	4.48	37800	2575	8.95	8.97	8.96
38000	2595	4.49	4.49	4.48	38000	2595	8.95	8.96	8.96
38225	2617.5	4.49	4.49	4.48	38200	2615	8.95	8.96	8.96
Channel Bandwidth 15MHz					Channel Bandwidth 20MHz				
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			Channel	Frequency (MHz)	Occupied Bandwidth (MHz)		
		QPSK	16QAM	64QAM			QPSK	16QAM	64QAM
37825	2577.5	13.44	13.43	13.43	37850	2580	17.91	17.90	17.91
38000	2595	13.44	13.43	13.43	38000	2595	17.91	17.90	17.91
38175	2612.5	13.44	13.43	13.43	38150	2610	17.90	17.90	17.91

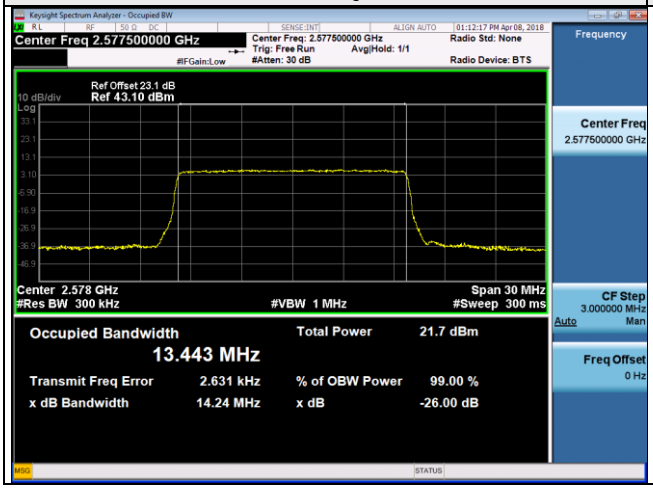
Spectrum Plot of Worst Value

5MHz / QPSK



10MHz / 16QAM

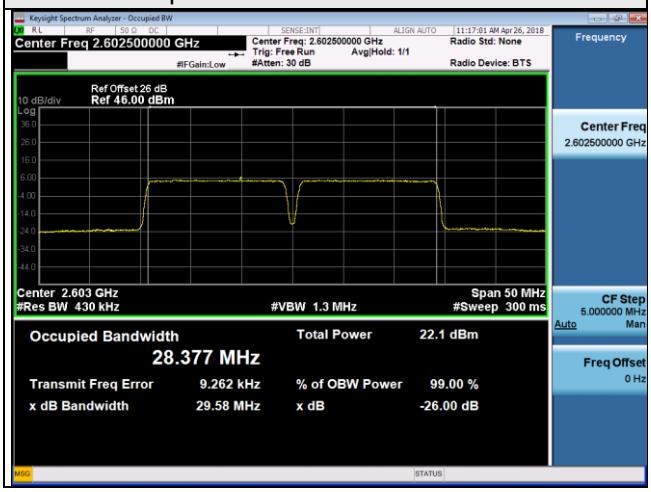
15MHz / QPSK



20MHz / 16QAM

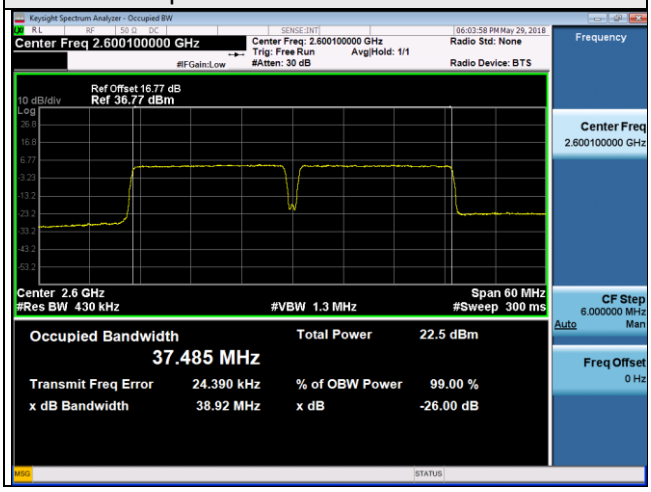
LTE CA_38C (15+15MHz)		
Channel	FREQ. (MHz)	Occupied Bandwidth (MHz)
		QPSK
38000+38150	2595+2610	28.38

Spectrum Plot of Worst Value



LTE CA_38C(20+20MHz)		
Channel	FREQ. (MHz)	Occupied Bandwidth (MHz)
		QPSK
37952+38150	2590.2+2610	37.49

Spectrum Plot of Worst Value



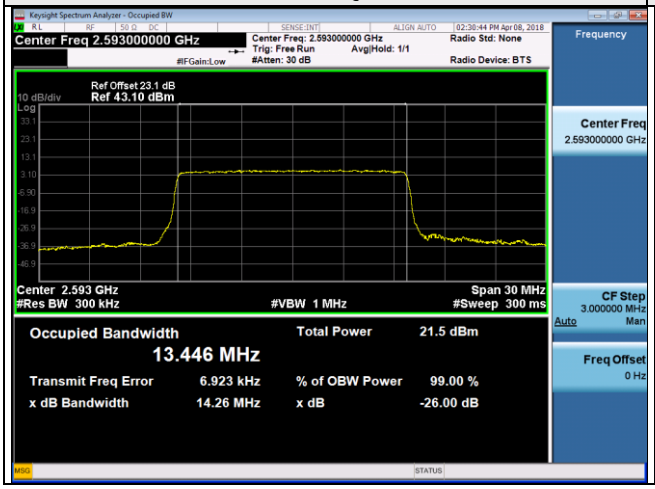
LTE Band 41									
Channel Bandwidth 5MHz					Channel Bandwidth 10MHz				
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			Channel	Frequency (MHz)	Occupied Bandwidth (MHz)		
		QPSK	16QAM	64QAM			QPSK	16QAM	64QAM
39675	2498.5	4.49	4.49	4.48	39700	2501	8.95	8.96	8.96
40620	2593	4.49	4.48	4.48	50620	2593	8.95	8.96	8.96
41565	2687.5	4.49	4.49	4.48	41540	2685	8.95	8.96	8.96
Channel Bandwidth 15MHz					Channel Bandwidth 20MHz				
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			Channel	Frequency (MHz)	Occupied Bandwidth (MHz)		
		QPSK	16QAM	64QAM			QPSK	16QAM	64QAM
39725	2503.5	13.43	13.42	13.42	39750	2506	17.90	17.89	17.88
40620	2593	13.45	13.43	13.43	40620	2593	17.91	17.90	17.91
41515	2682.5	13.45	13.43	13.44	41490	2680	17.88	17.86	17.88

Spectrum Plot of Worst Value

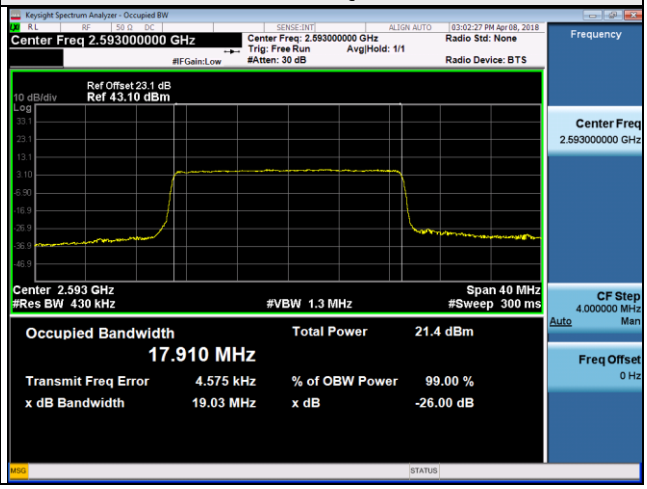
5MHz / QPSK

10MHz / 16QAM

15MHz / QPSK

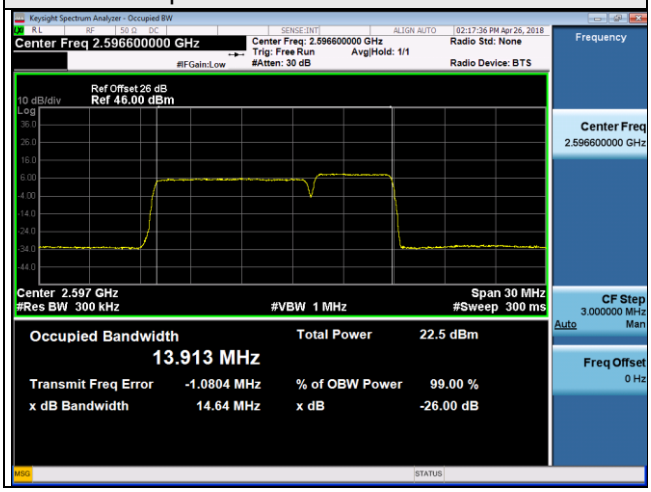


20MHz / QPSK



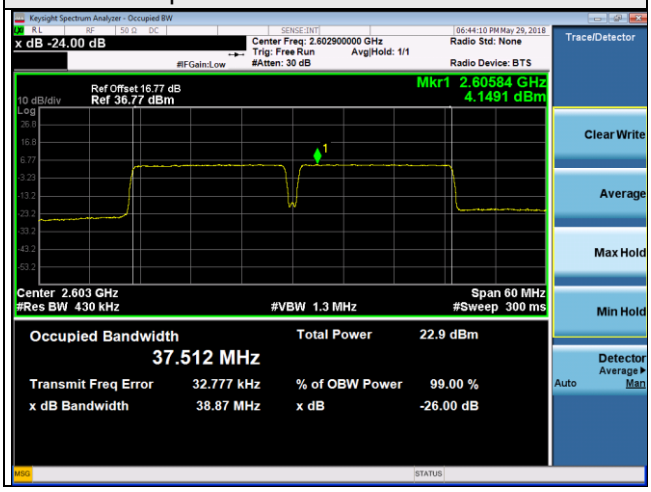
LTE CA_41C (10+5MHz)		
Channel	FREQ. (MHz)	Occupied Bandwidth (MHz)
		QPSK
40620+40692	2593+2600.2	13.91

Spectrum Plot of Worst Value

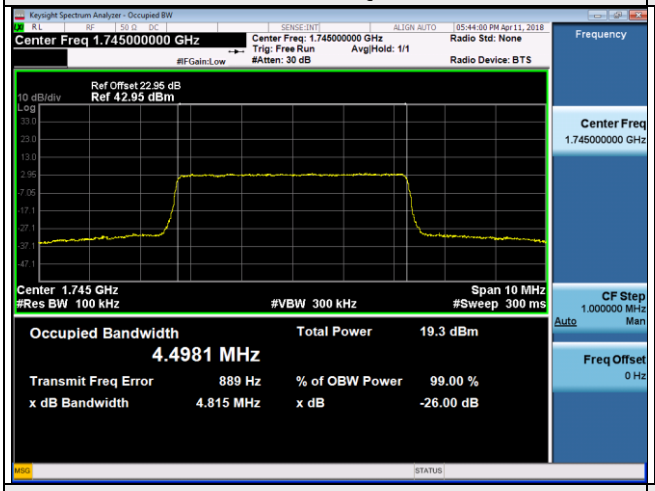
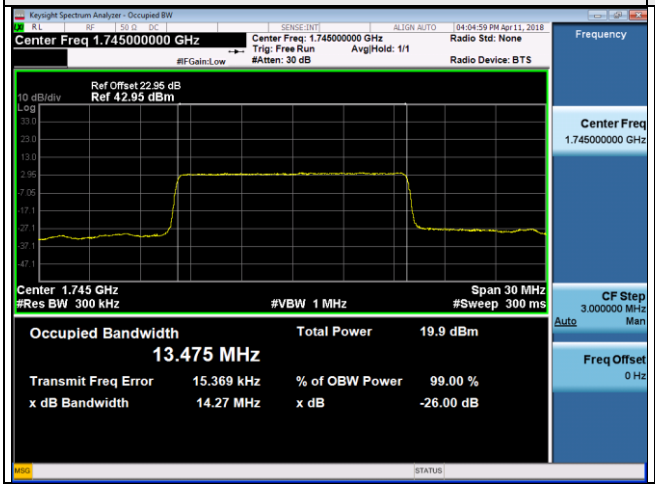
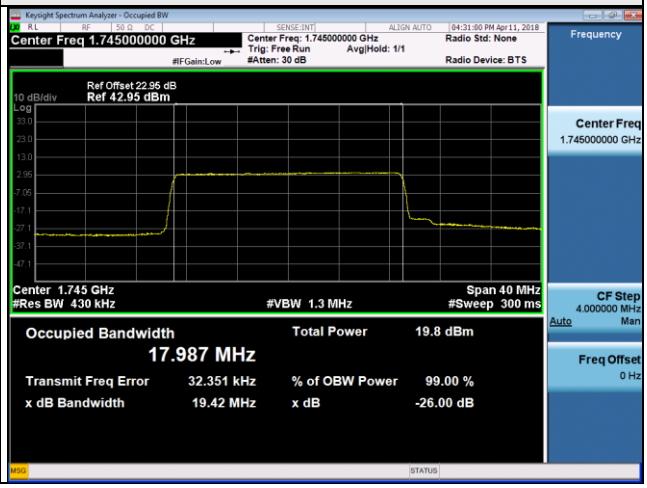


TE CA_41C (20+20MHz)		
Channel	FREQ. (MHz)	Occupied Bandwidth (MHz)
		QPSK
40620+40818	2593+2612.8	37.51

Spectrum Plot of Worst Value



LTE Band 66									
Channel Bandwidth 1.4MHz					Channel Bandwidth 3MHz				
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			Channel	Frequency (MHz)	Occupied Bandwidth (MHz)		
		QPSK	16QAM	64QAM			QPSK	16QAM	64QAM
131979	1710.7	1.08	1.09	1.09	131987	1711.5	2.70	2.69	2.70
132322	1745	1.09	1.09	1.09	132322	1745	2.70	2.69	2.70
132665	1779.3	1.08	1.09	1.09	132657	1778.5	2.70	2.69	2.70
Channel Bandwidth 5MHz					Channel Bandwidth 10MHz				
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			Channel	Frequency (MHz)	Occupied Bandwidth (MHz)		
		QPSK	16QAM	64QAM			QPSK	16QAM	64QAM
131997	1712.5	4.49	4.49	4.49	132022	1715	8.96	8.96	8.98
132322	1745	4.49	4.49	4.50	132322	1745	8.97	8.98	8.99
132647	1777.5	4.49	4.49	4.50	132622	1775	8.97	8.97	8.98
Channel Bandwidth 15MHz					Channel Bandwidth 20MHz				
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			Channel	Frequency (MHz)	Occupied Bandwidth (MHz)		
		QPSK	16QAM	64QAM			QPSK	16QAM	64QAM
132047	1717.5	13.43	13.44	13.43	132072	1720	17.89	17.89	17.88
132322	1745	13.46	13.47	13.47	132322	1745	17.97	17.99	17.98
132597	1722.5	13.44	13.45	13.45	132572	1770	17.91	17.91	17.90

Spectrum Plot of Worst Value	
1.4MHz / QPSK	3MHz / QPSK
	
5MHz / 64QAM	10MHz / 64QAM
	
15MHz / 16QAM	20MHz / 16QAM
	

4.5 Channel Edge Measurement

4.5.1 Limits of Channel Edge Measurement

According to FCC 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.

According to FCC 27.53 (c) For operations in the 746-758 MHz band and the 776-788 MHz band, the power of any emission outside the 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, in accordance with the following:
(1) On any frequency outside the 746-758 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB;
(2) On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB;
(3) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than 76 + 10 log (P) dB in a 6.25 kHz band segment, for base and fixed stations;
(4) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than 65 + 10 log (P) dB in a 6.25 kHz band segment, for mobile and portable stations;
(5) Compliance with the provisions of paragraphs (c)(1) and (c)(2) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed;
(6) Compliance with the provisions of paragraphs (c)(3) and (c)(4) of this section is based on the use of measurement instrumentation such that the reading taken with any resolution bandwidth setting should be adjusted to indicate spectral energy in a 6.25 kHz segment.

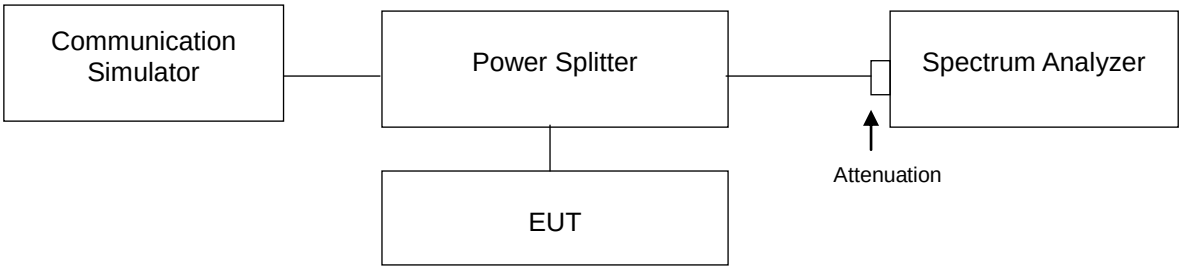
According to FCC 27.53(f) For operations in the 746–758 MHz, 775–788 MHz, and 805–806 MHz bands, emissions in the band 1559–1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth.

According to FCC 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.

According to FCC 27.53(h) AWS emission limits— General protection levels. Except as otherwise specified below, for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 log10 (P) dB.

According to FCC 27.53(v)(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.

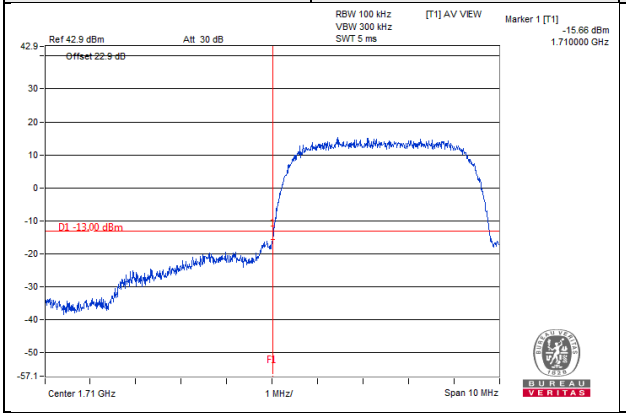
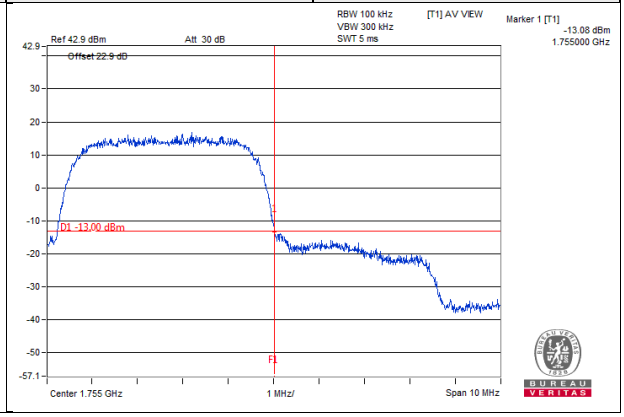
4.5.2 Test Setup



4.5.3 Test Procedures

a. All measurements were done at low and high operational frequency range.
b. The center frequency of spectrum is the band edge frequency and s RB of the spectrum is >1% emission bandwidth and VB of the spectrum is ≧ 3*RB.
c. Record the max trace plot into the test report.

4.5.4 Test Results

WCDMA Band 4			
Channel	1312	Channel	1513
			

LTE Band 4					
Channel Bandwidth 1.4MHz					
Channel	19957	1 RB	Channel	20393	1 RB
					
Channel	19957	6 RB	Channel	20393	6 RB
					

LTE Band 4					
Channel Bandwidth 3MHz					
Channel	19965	1 RB	Channel	20385	1 RB
					
Channel	19965	15 RB	Channel	20385	15 RB
					

LTE Band 4					
Channel Bandwidth 5MHz					
Channel	19975	1 RB	Channel	20375	1 RB
					
Channel	19975	25 RB	Channel	20375	25 RB