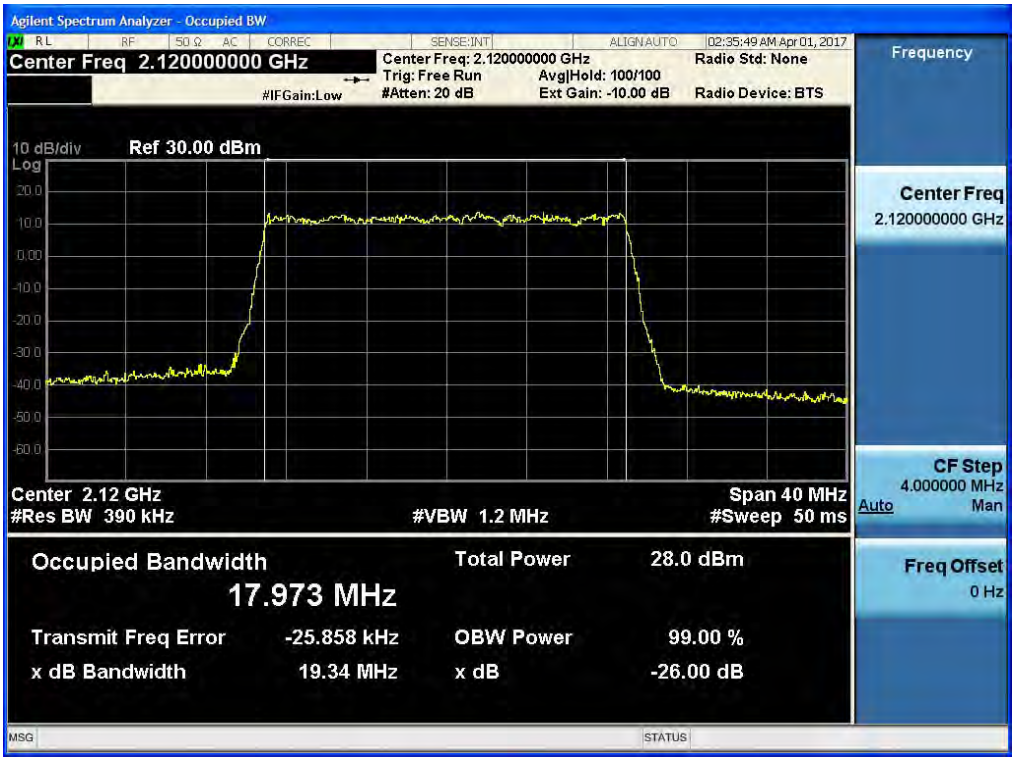
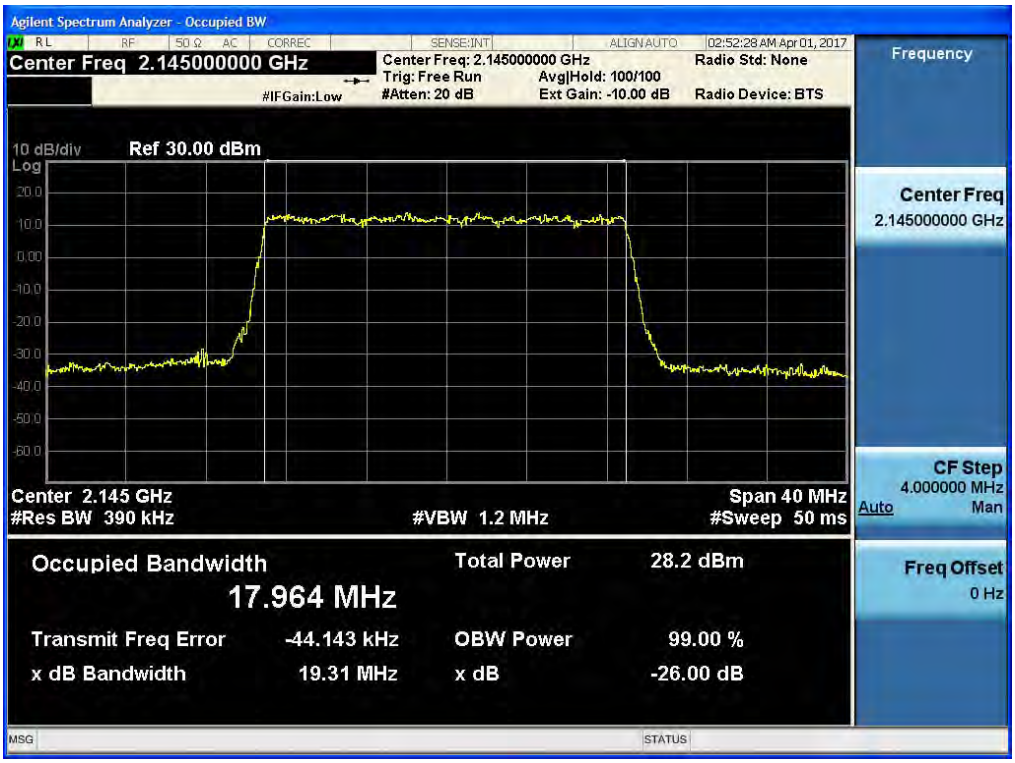
AWS 2100_LTE 20 MHz

Test Plot at Output Port 0

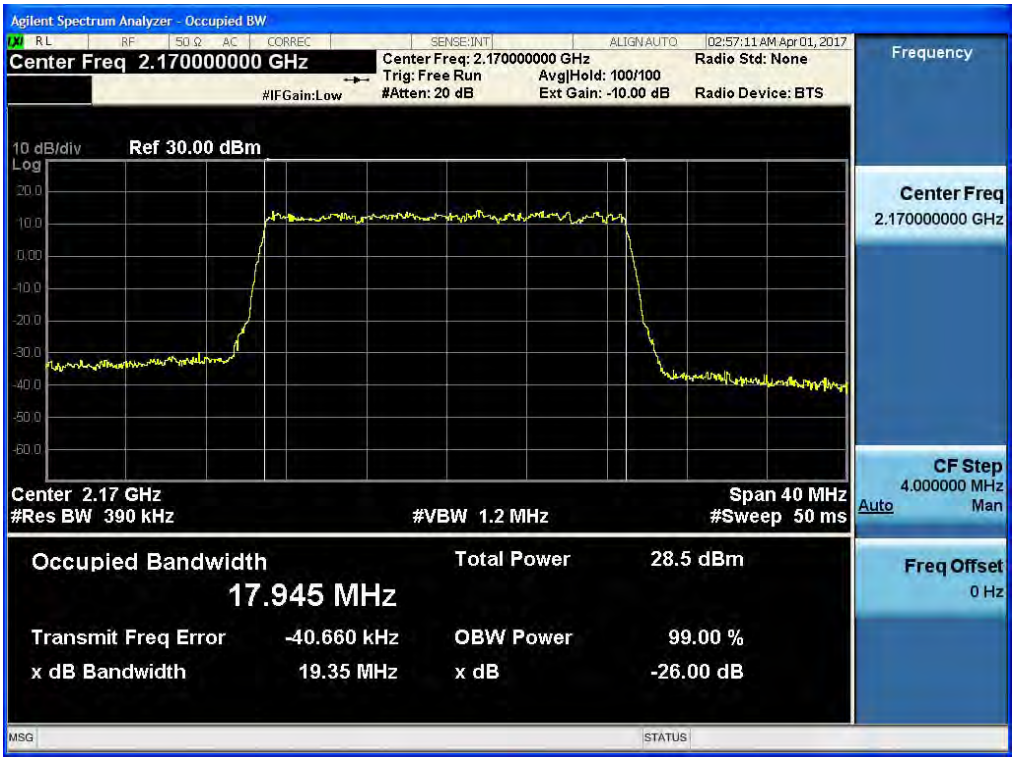
(QPSK Low Channel)



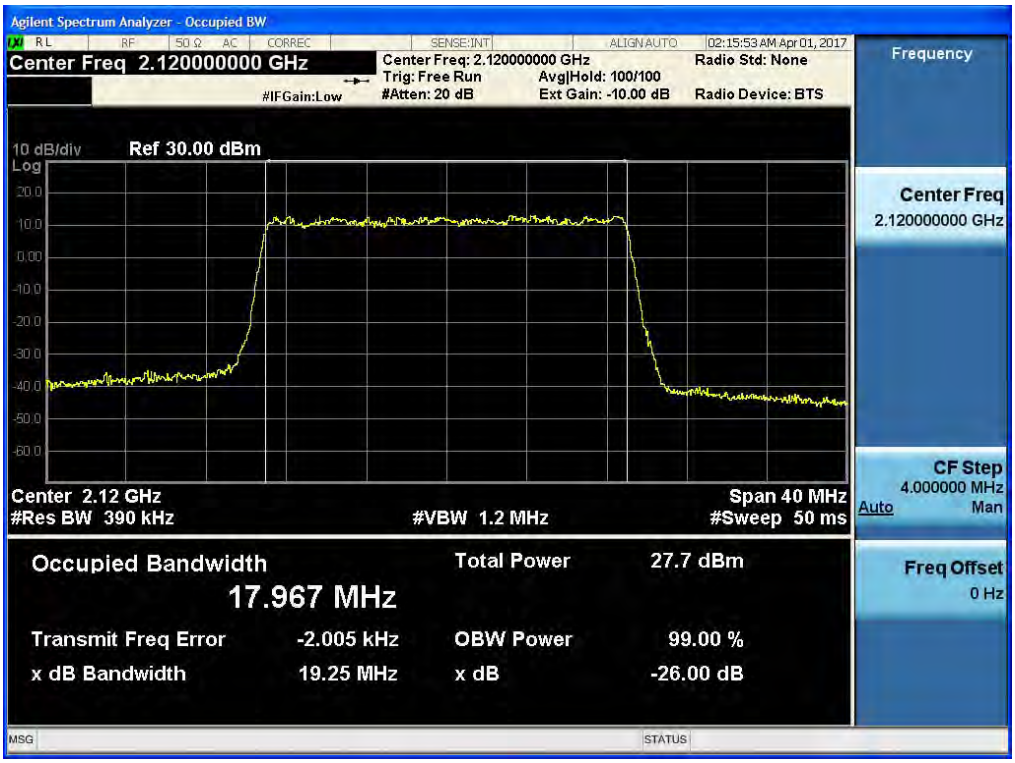
(QPSK Middle Channel)



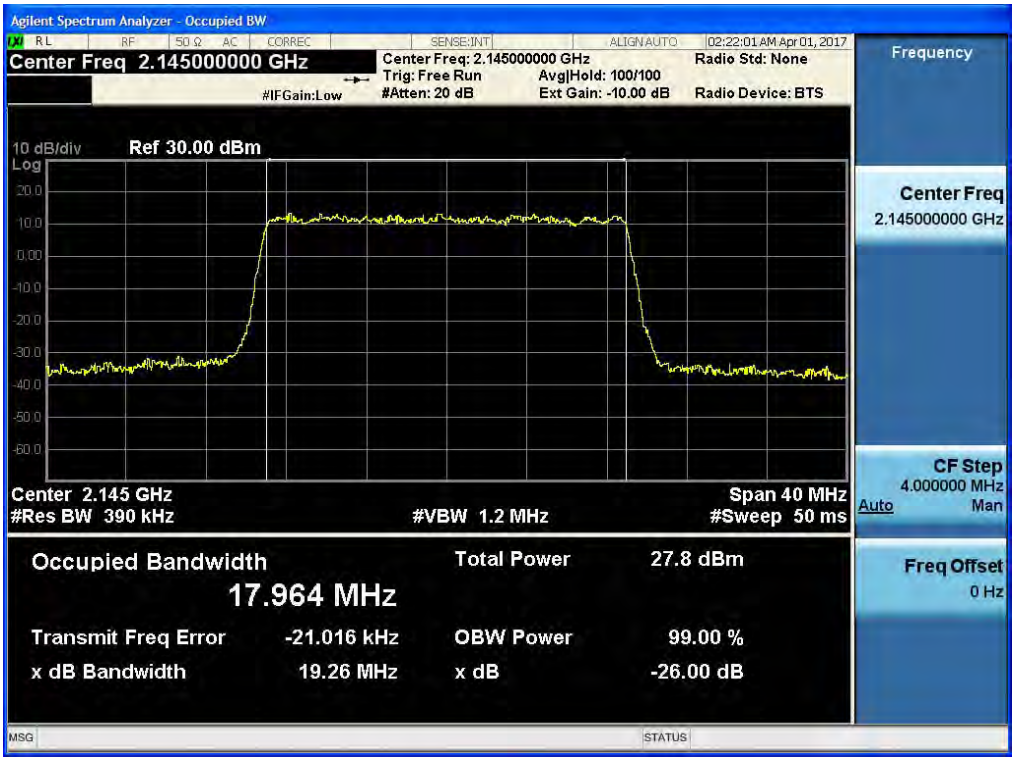
(QPSK High Channel)



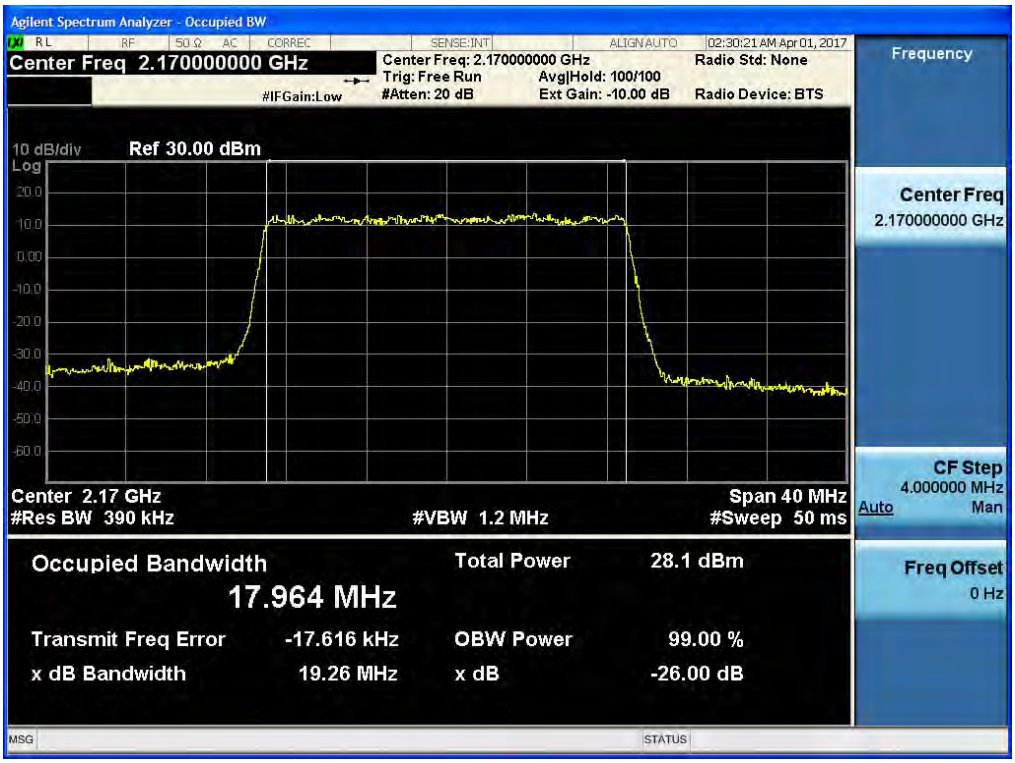
(16QAM Low Channel)



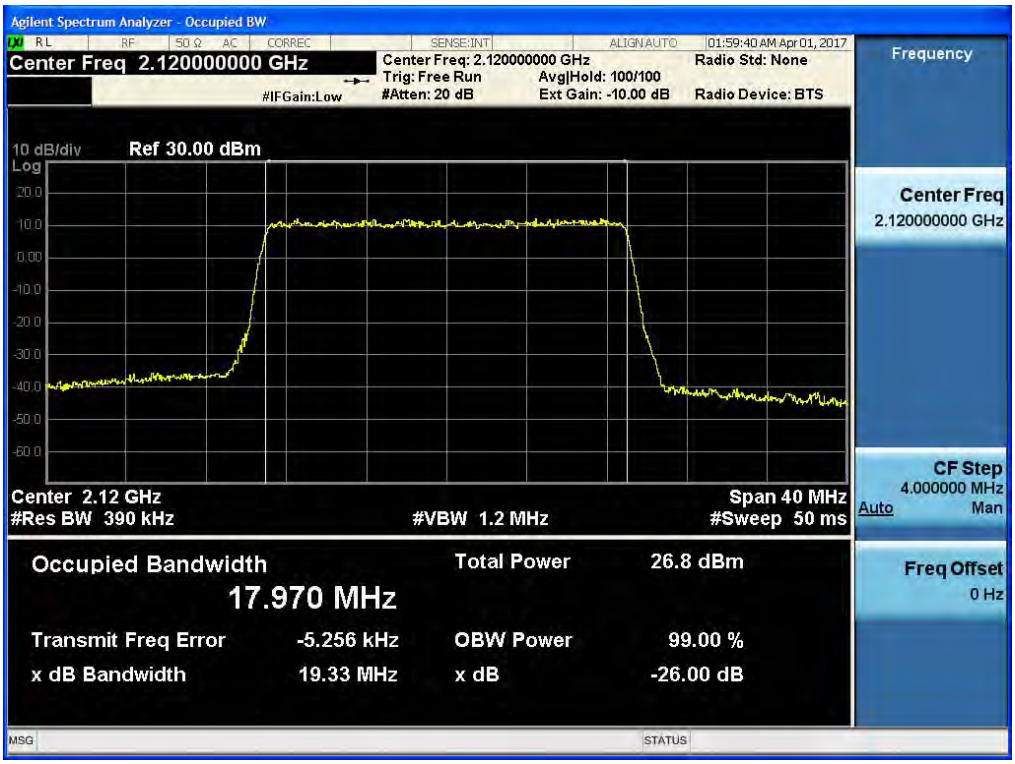
(16QAM Middle Channel)



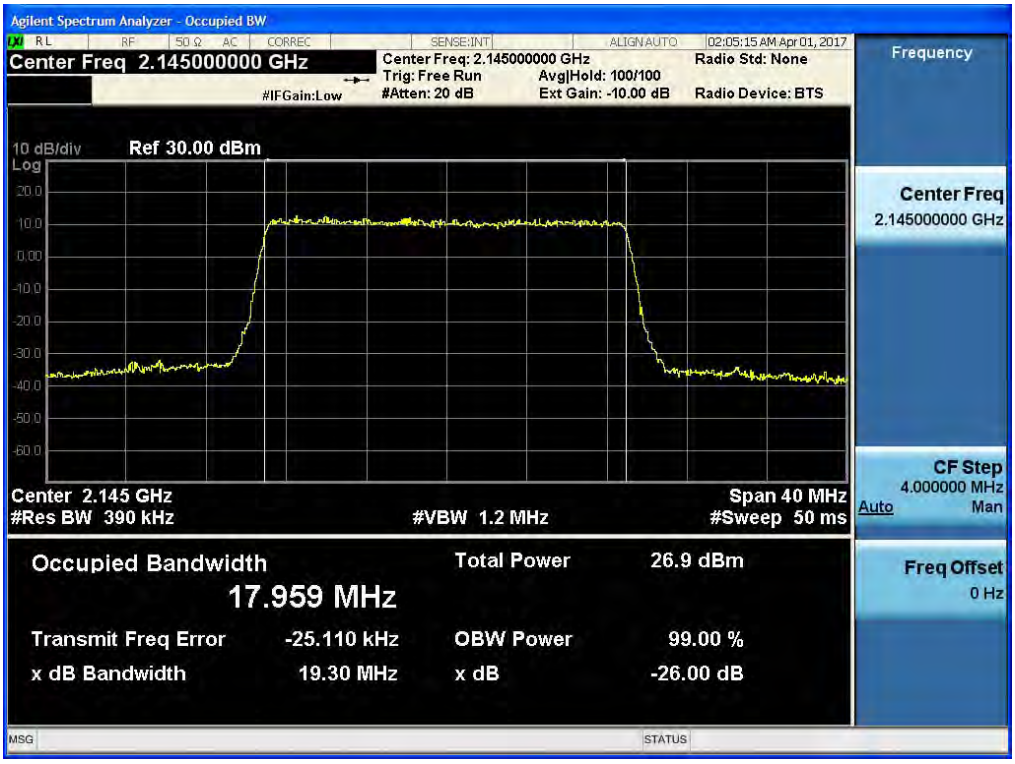
(16QAM High Channel)



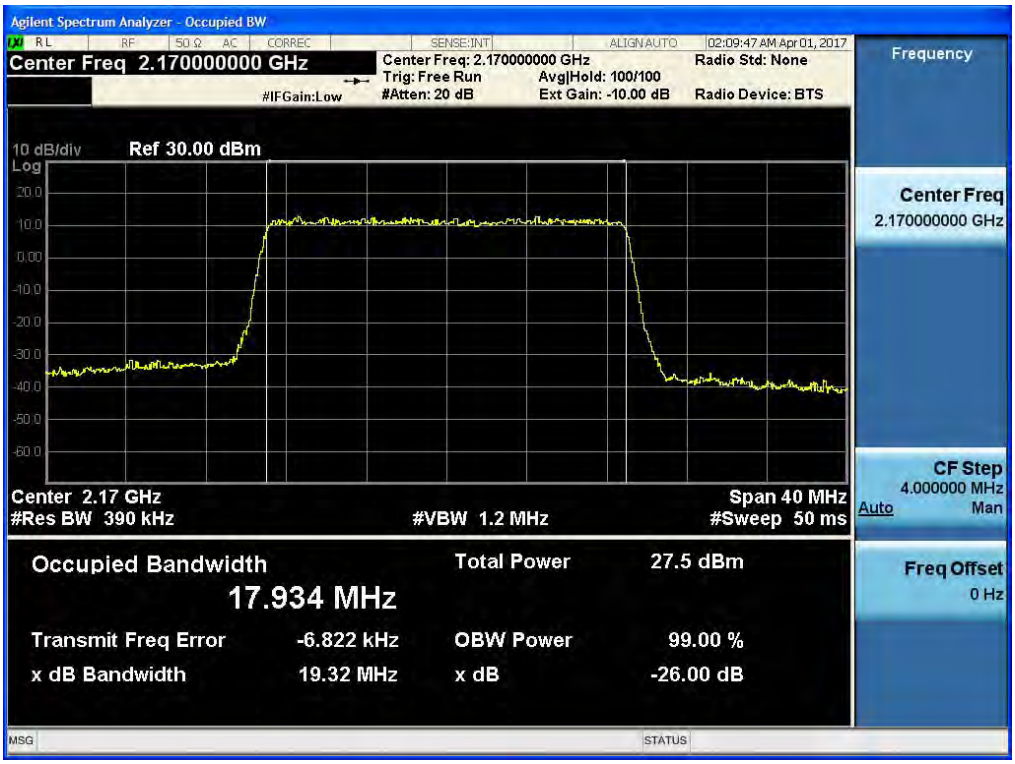
(64QAM Low Channel)



(64QAM Middle Channel)



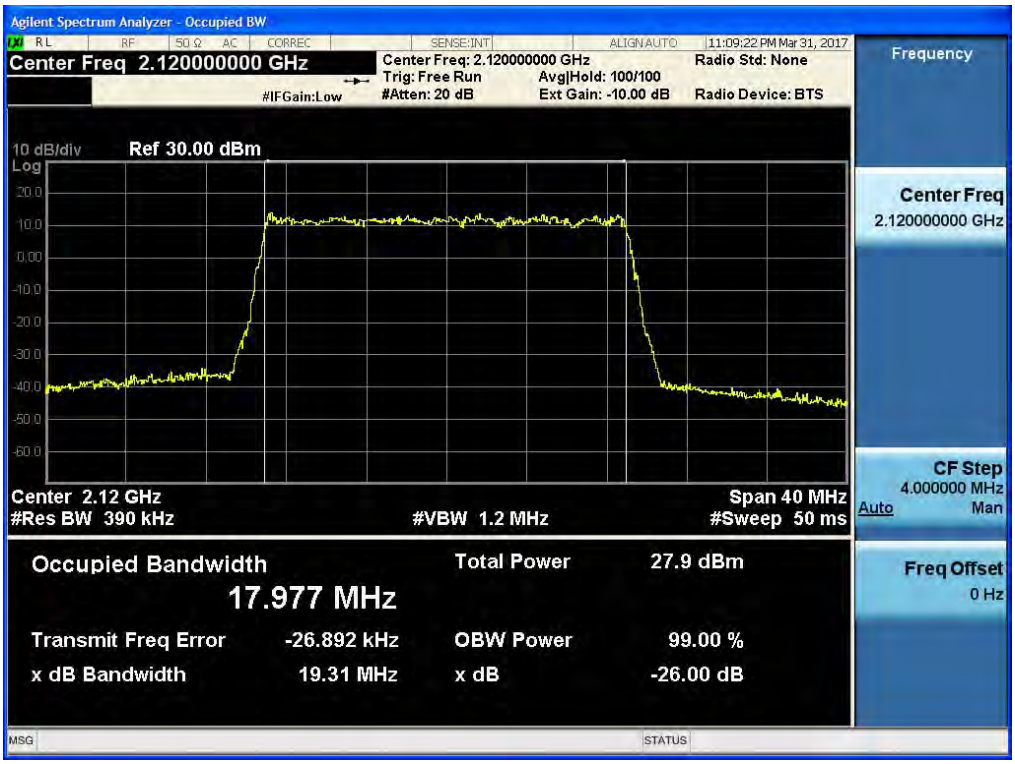
(64QAM High Channel)



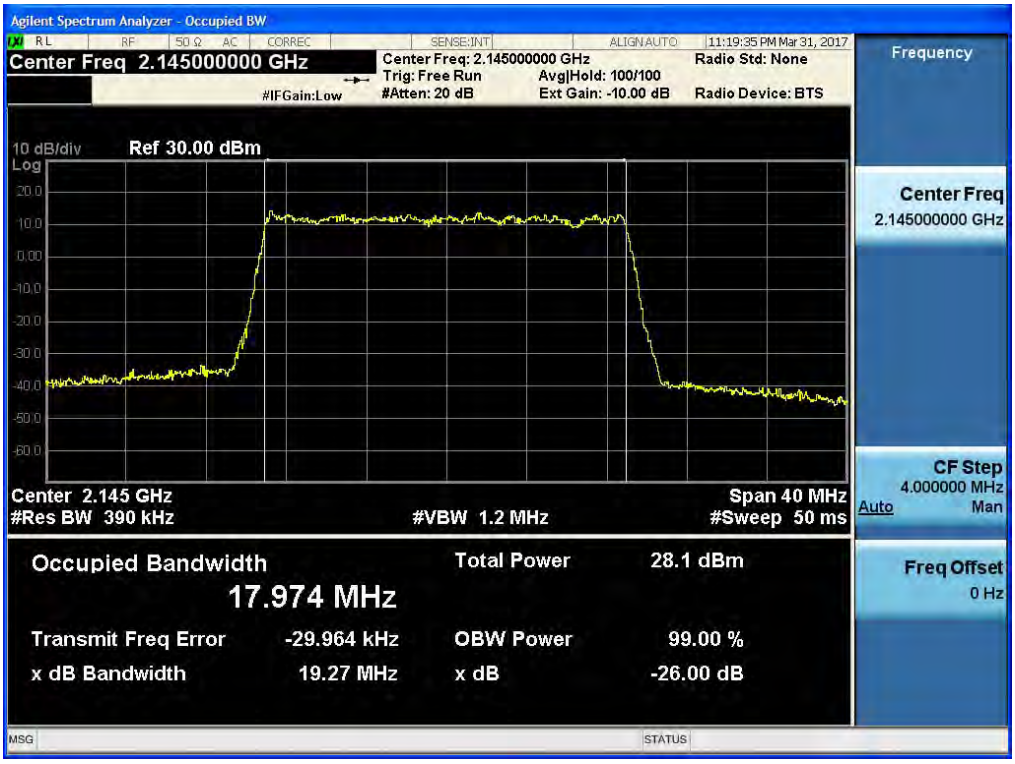
AWS 2100_LTE 20 MHz

Test Plot at Output Port 1

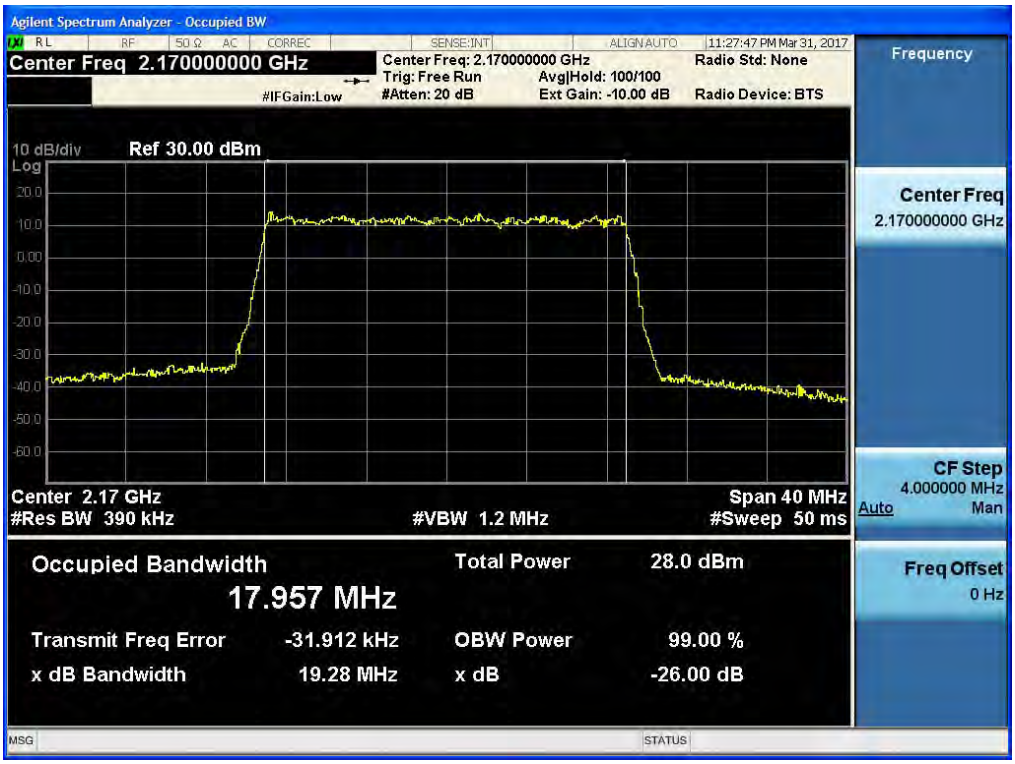
(QPSK Low Channel)



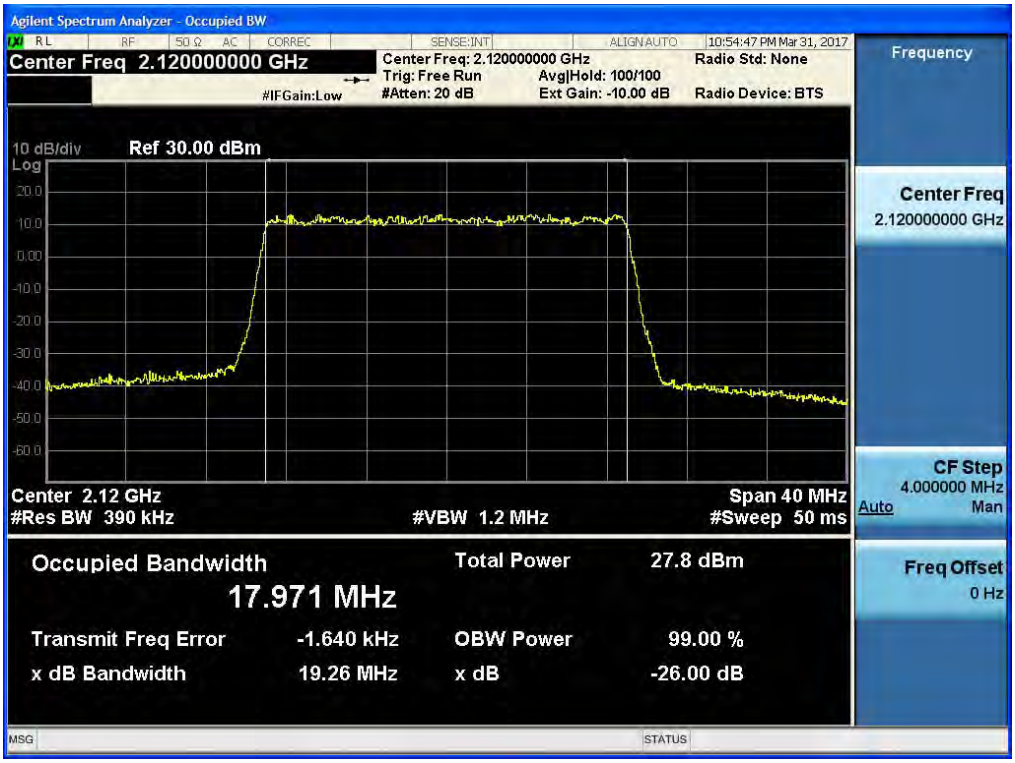
(QPSK Middle Channel)



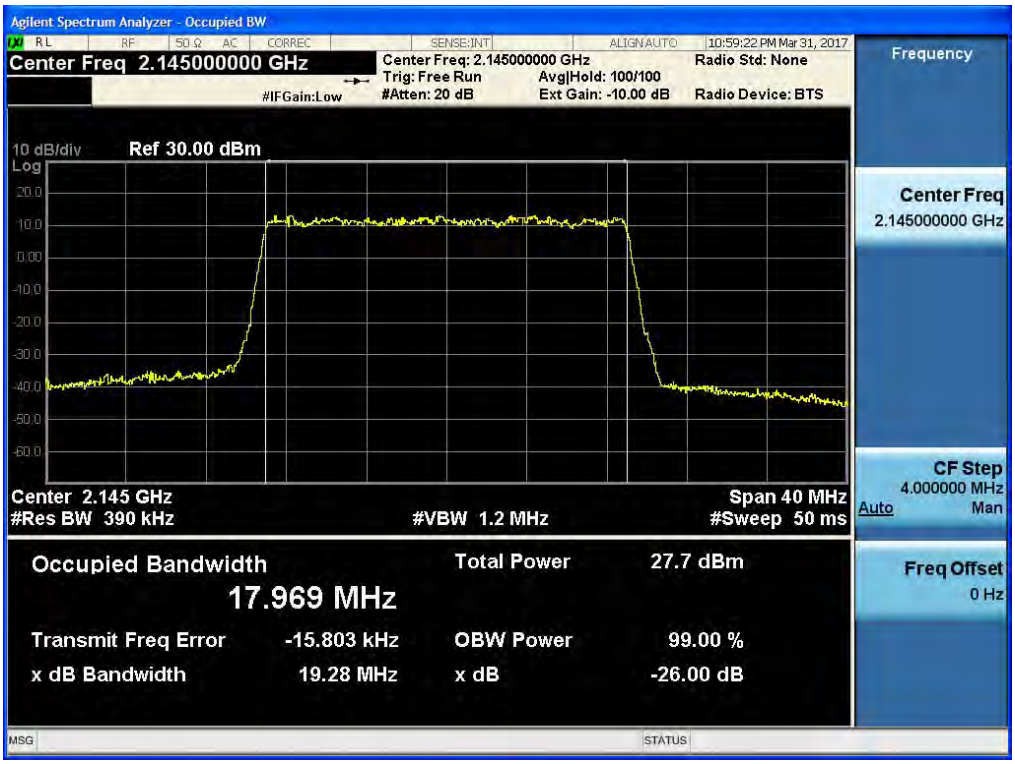
(QPSK High Channel)



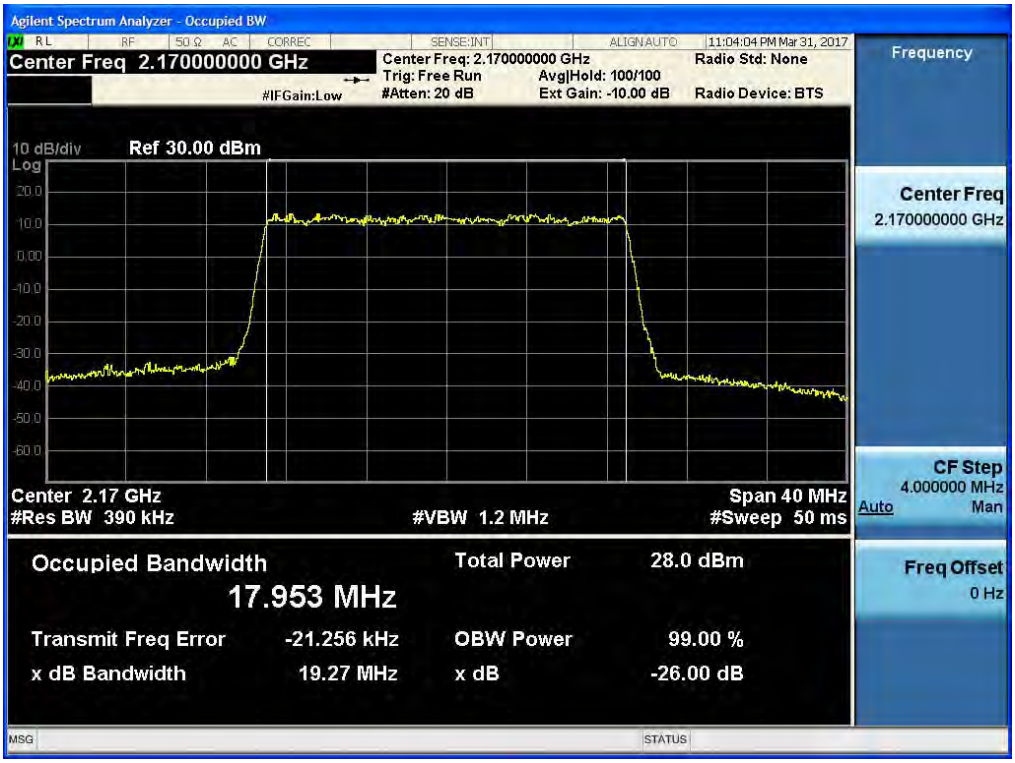
(16QAM Low Channel)



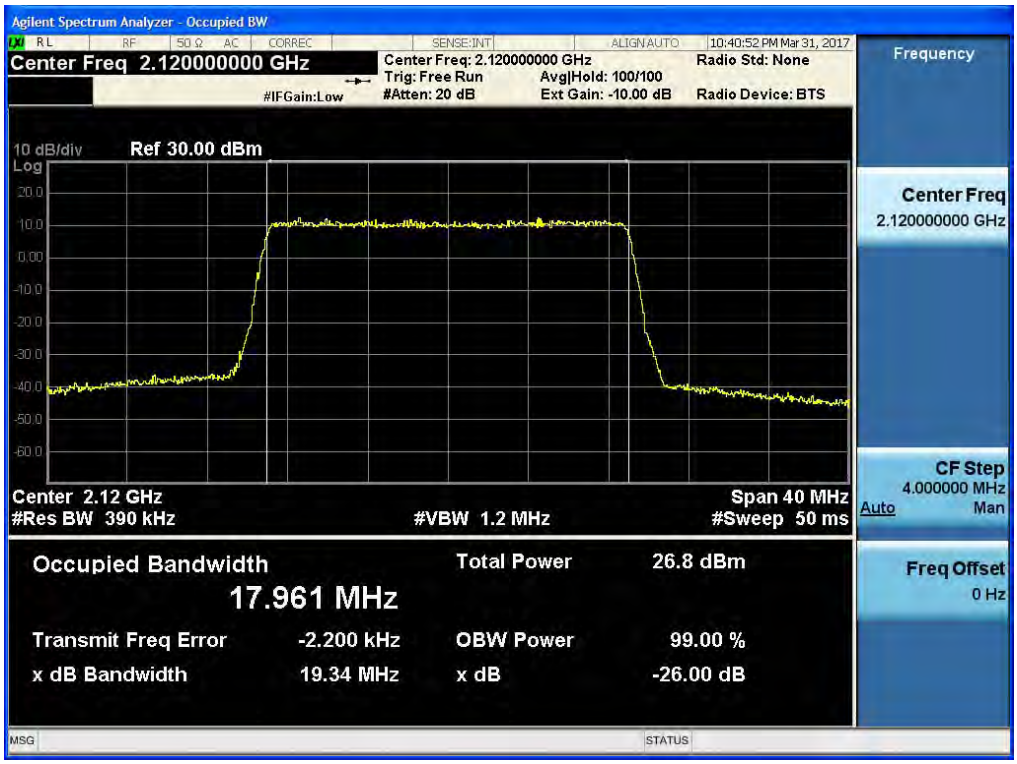
(16QAM Middle Channel)



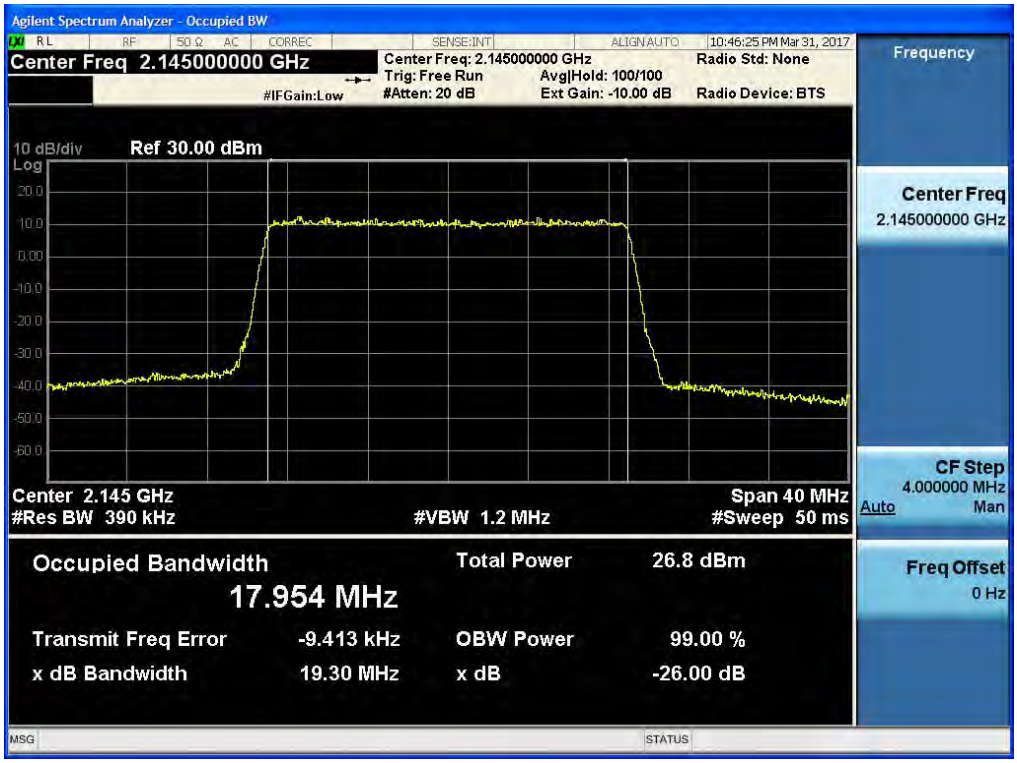
(16QAM High Channel)



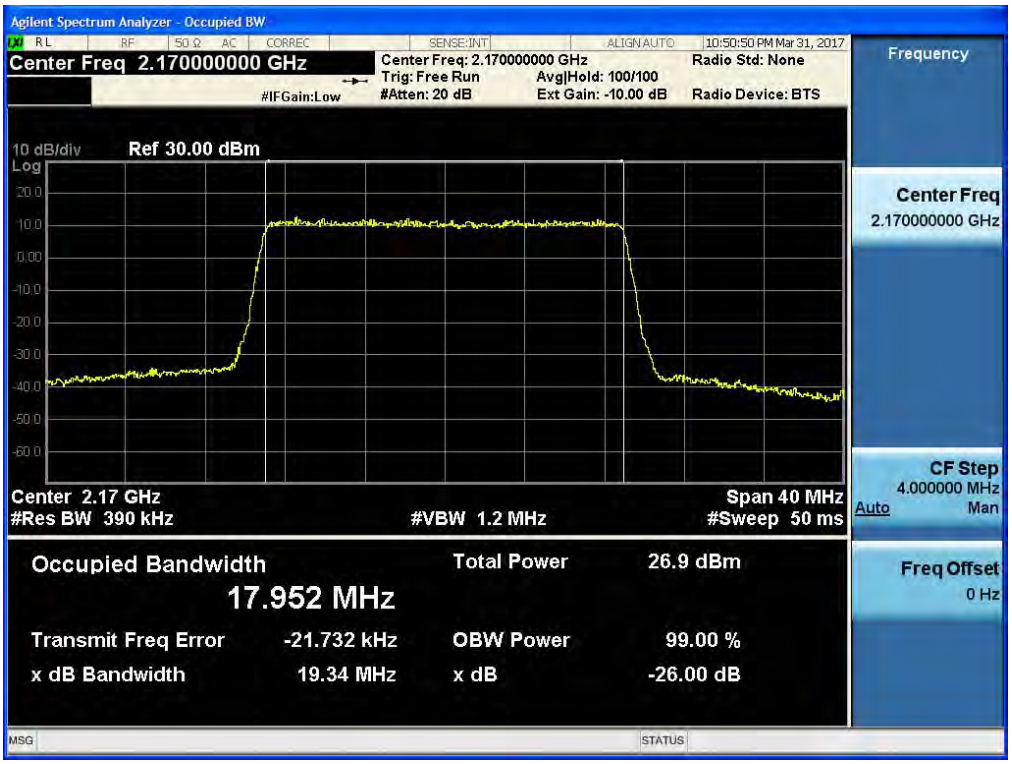
(64QAM Low Channel)



(64QAM Middle Channel)



(64QAM High Channel)



7. SPURIOUS EMISSION AT ANTENNA TERMINAL

Test Requirements:

§ 2.1051 Measurements required: Spurious emissions at antenna terminals:

The radio frequency voltage or powers generated within the equipment and appearing on a spurious frequency shall be checked at the equipment output terminals when properly loaded with a suitable artificial antenna. Curves or equivalent data shall show the magnitude of each harmonic and other spurious emission that can be detected when the equipment is operated under the conditions specified in § 2.1049 as appropriate. The magnitude of spurious emissions which are attenuated more than 20 dB below the permissible value need not be specified.

§27.53 Emission limits.

(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.

(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. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

(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.

Test Procedures:

The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation.

The resolution bandwidth of the spectrum analyzer was set at 100 KHz (Under 1 GHz), 1MHz (Above 1 GHz). Sufficient scans were taken to show any out of band emissions up to 10th harmonic.

Notes:

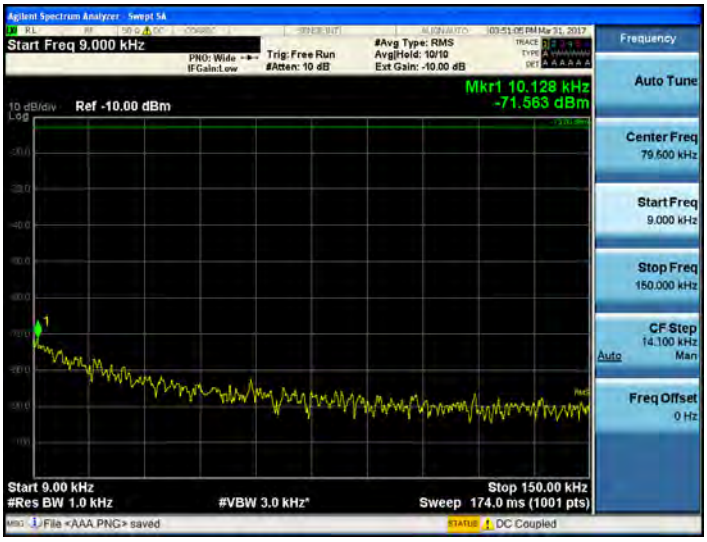
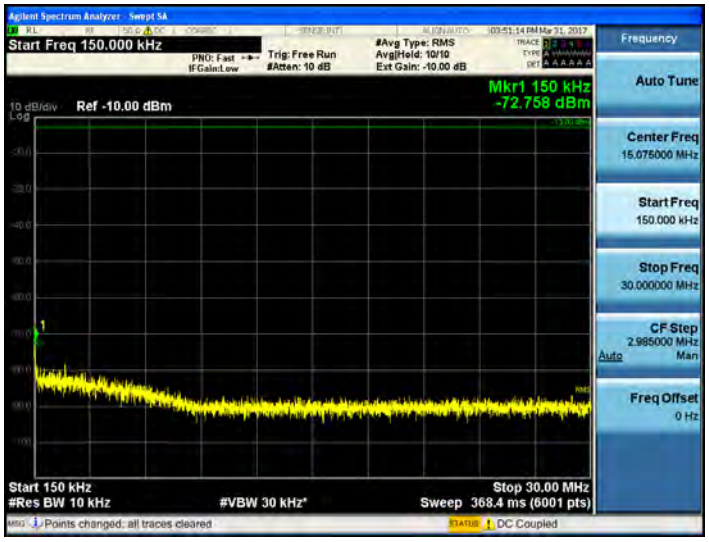
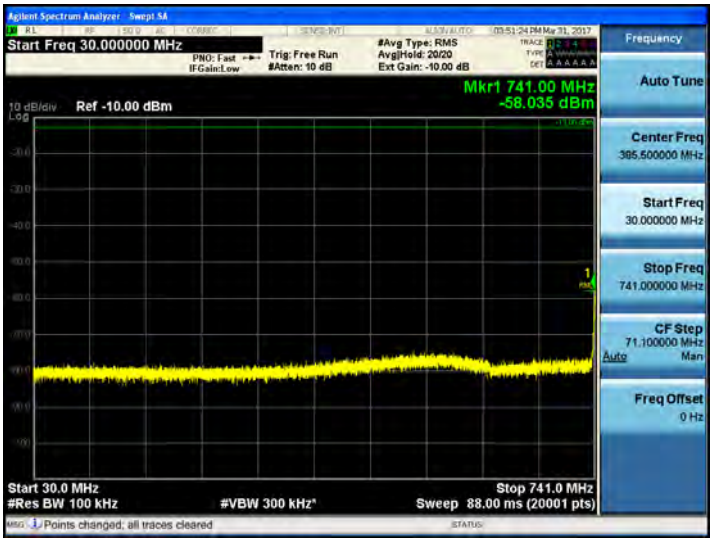
1. In 9 KHz-150 KHz and 150 KHz-30 MHz bands, RBW was reduced to 1% and 10% of the reference bandwidth for measuring unwanted emission level(typically, 100KHz if the authorized frequency band is below 1GHz) and power was integrated. (1% = +20 dB, 10% = +10 dB)
2. Because the test results are similer trend value for each port, attached plots were only the port0 test result.

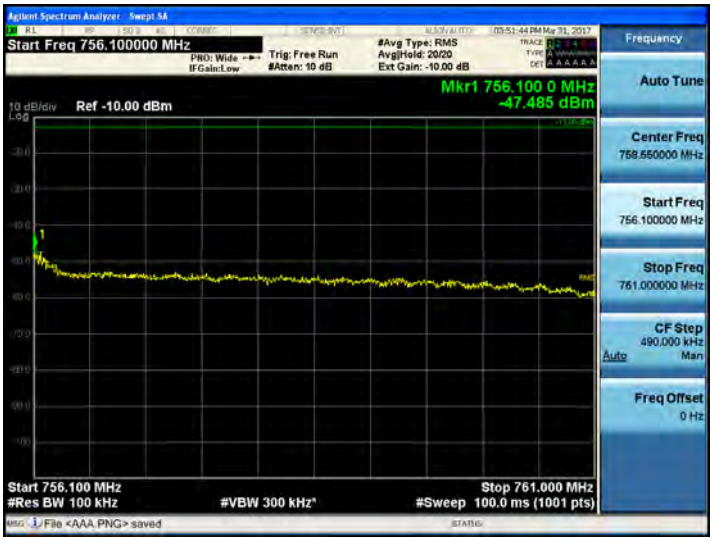
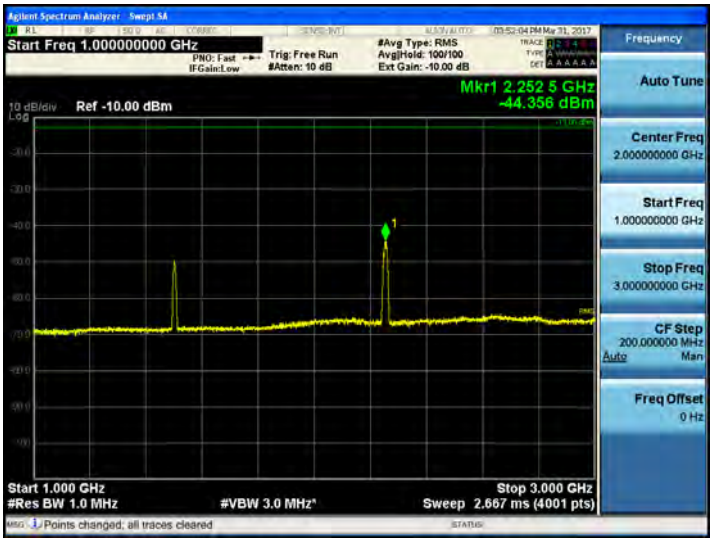
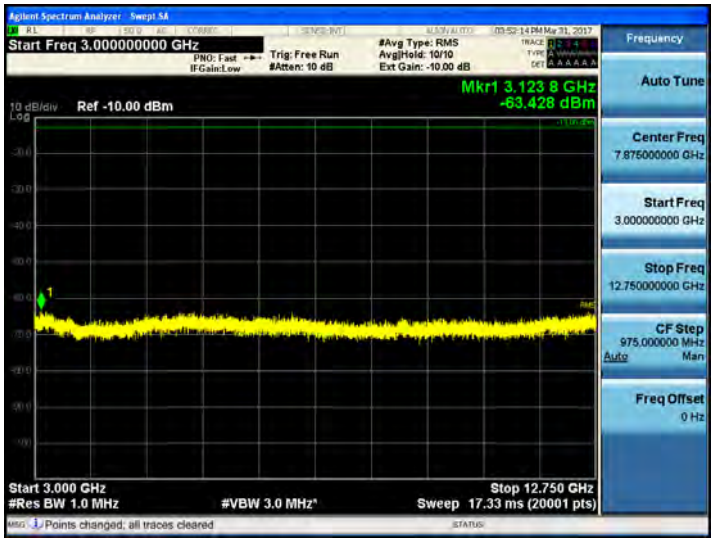
Conducted Spurious Emissions

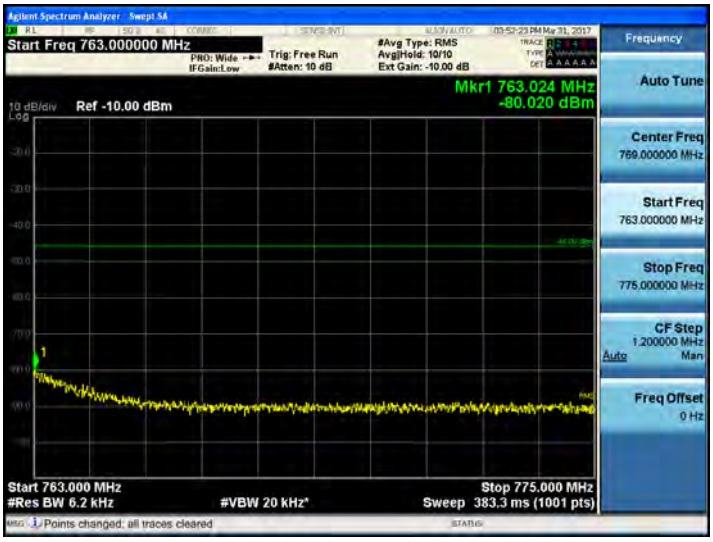
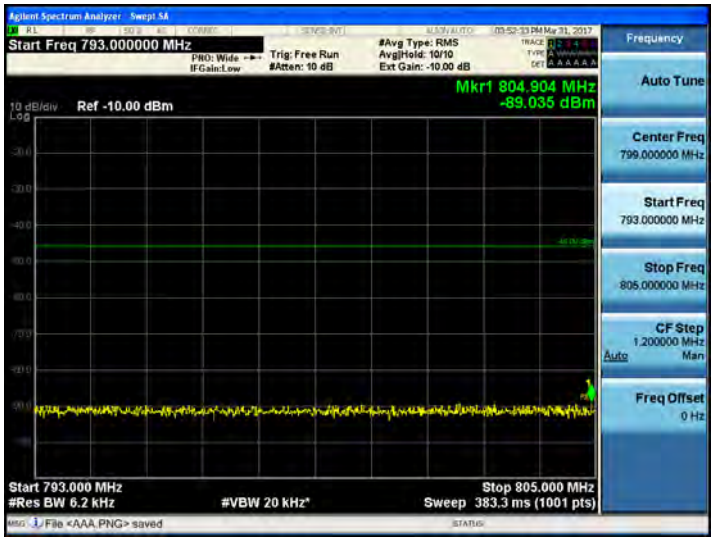
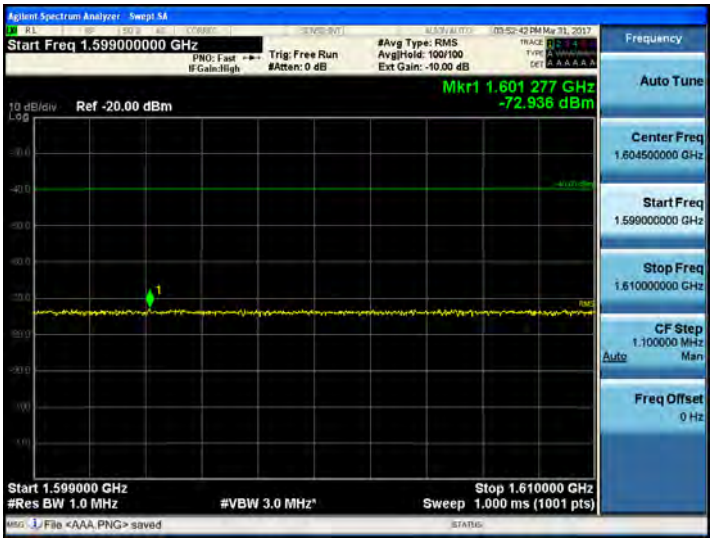
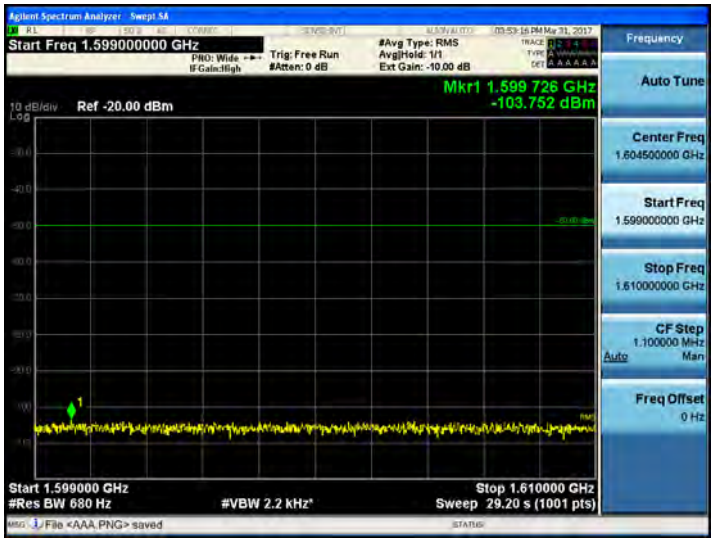
700 MHz_LTE 10M

Test Data at Output Port 0

(QPSK Middle channel)

9 ㎑ ~ 150 ㎑	150 ㎑ ~ 30 ㎒
	
30 ㎒ ~ 741 ㎒	**741 ㎒ ~ 745.9 ㎒**
	

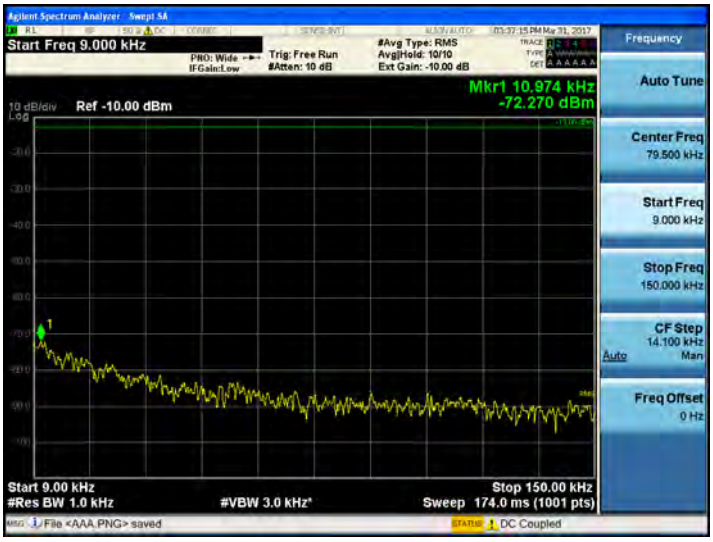
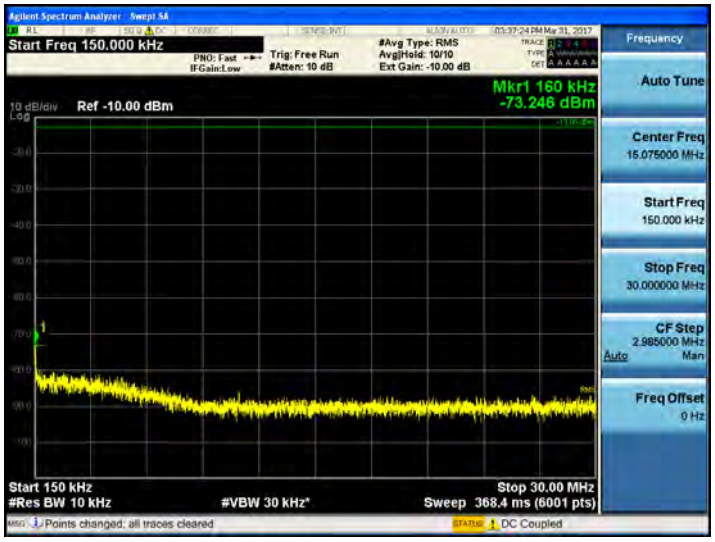
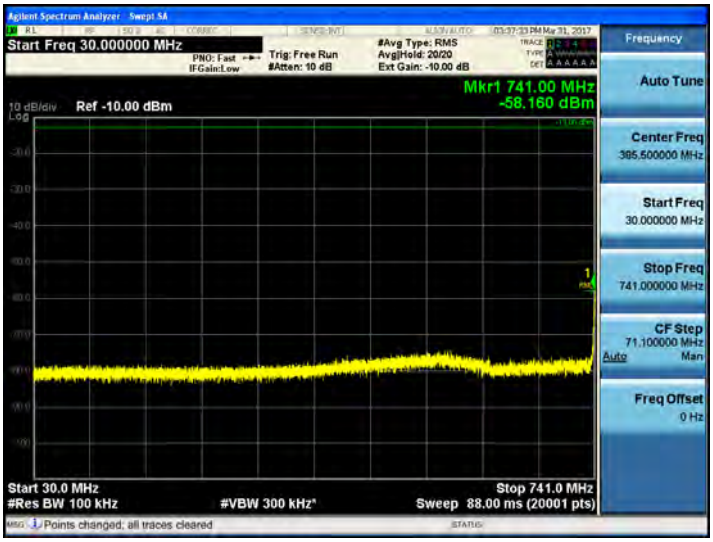
756.1 ㎒ ~ 761 ㎒	761 ㎒ ~ 1 ㎓
	
1 ㎓ ~ 3 ㎓	**3 ㎓ ~ 12.75 ㎓**
	

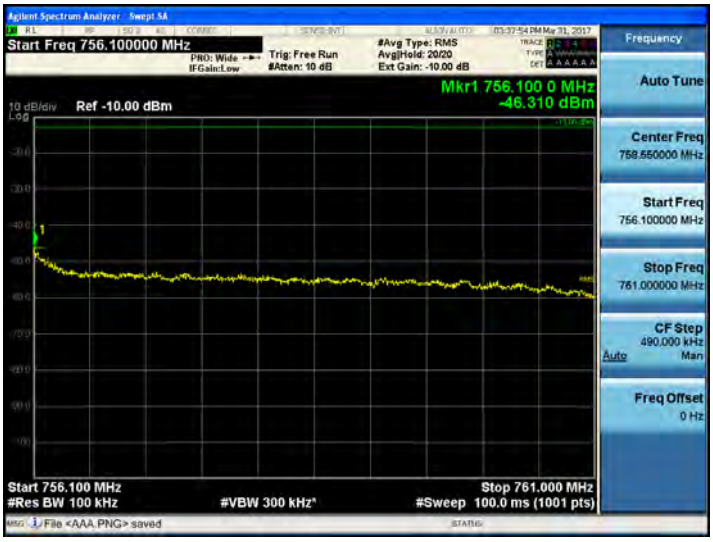
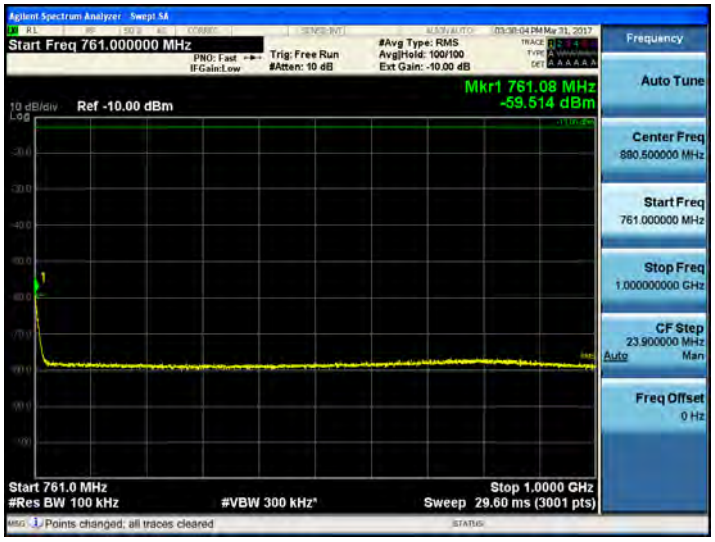
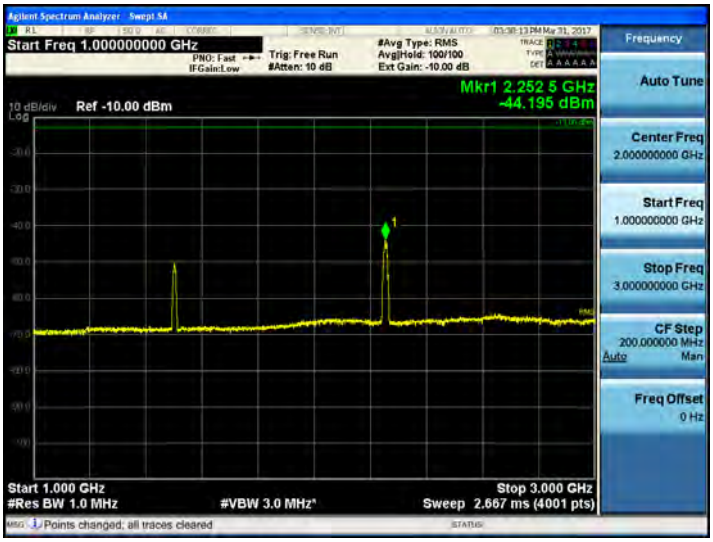
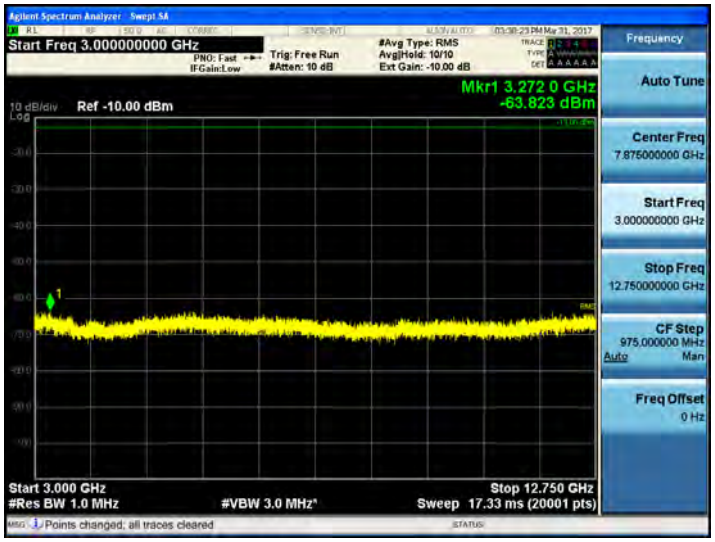
763 ㎒ ~ 775 ㎒	793 ㎒ ~ 805 ㎓
	
1599 ㎒ ~ 1610 ㎒ (1)	**1599 ㎒ ~ 1610 ㎒ (2)**
	

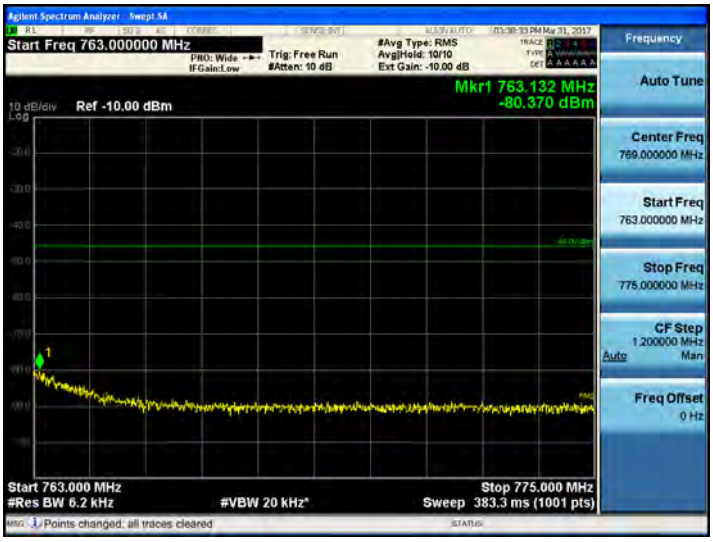
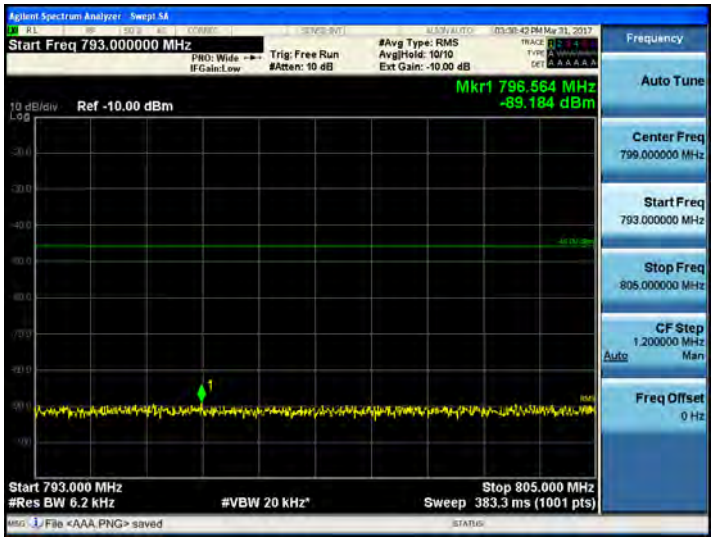
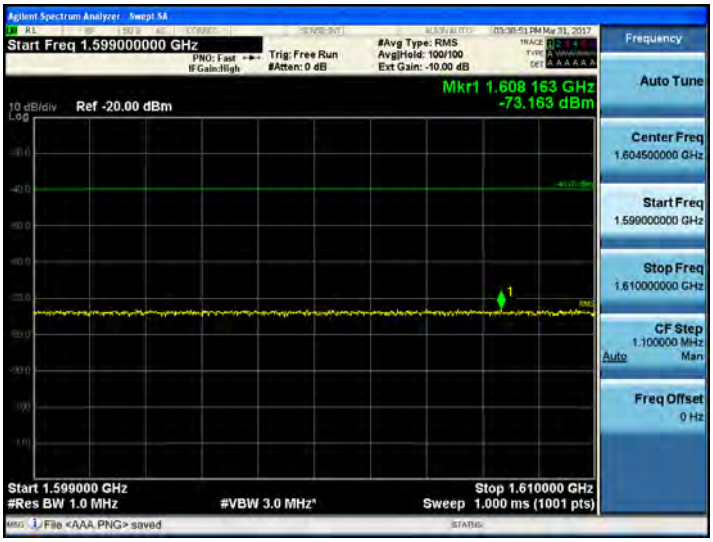
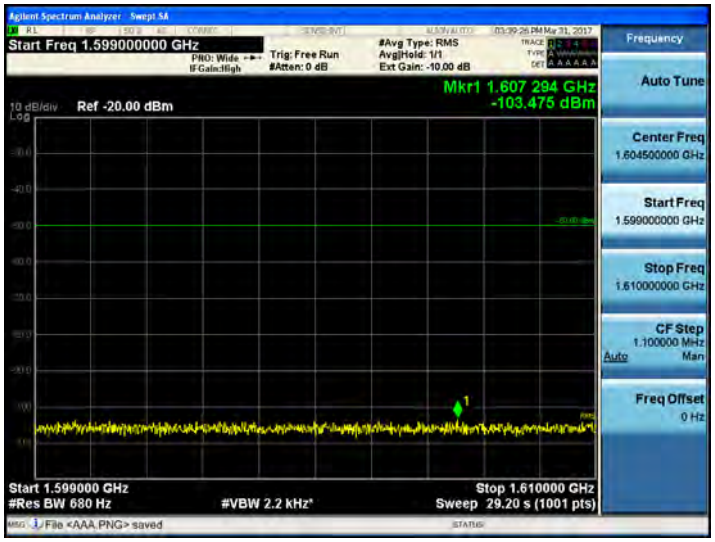
700 MHz_LTE 10M

Test Data at Output Port 0

(16QAM Middle channel)

9 ㎑ ~ 150 ㎑	150 ㎑ ~ 30 ㎒
	
30 ㎒ ~ 741 ㎒	**741 ㎒ ~ 745.9 ㎒**
	

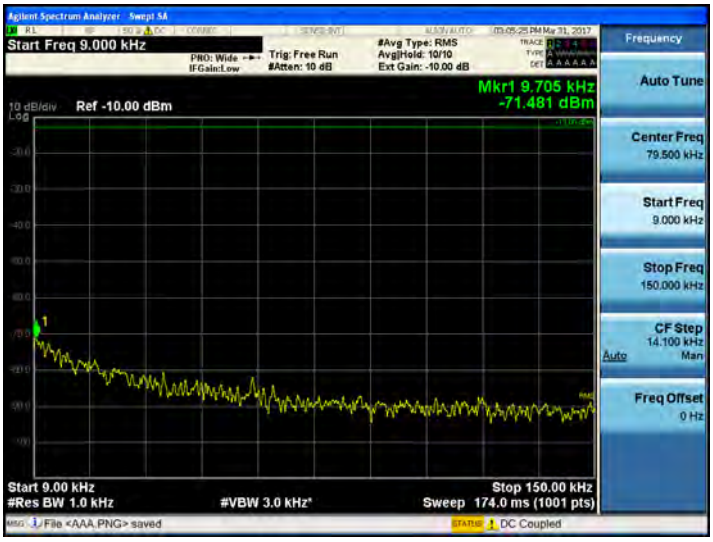
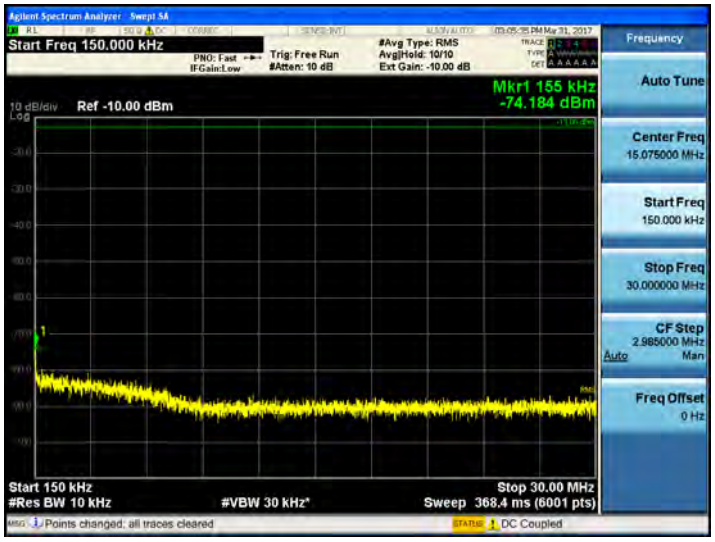
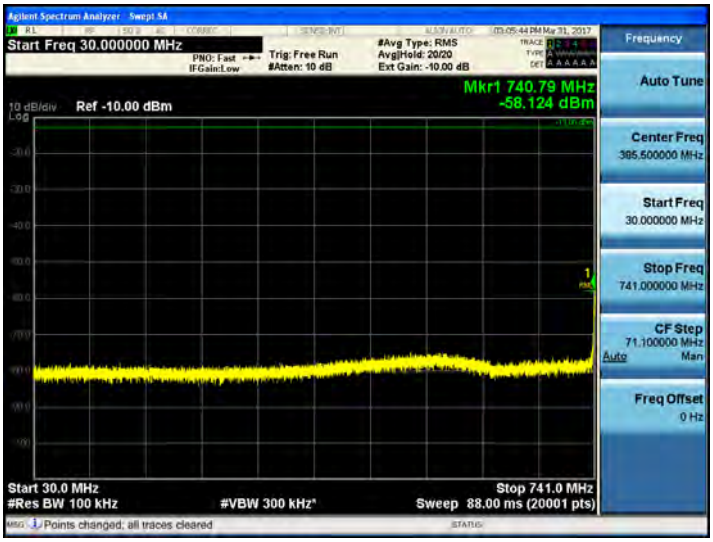
756.1 ㎒ ~ 761 ㎒	761 ㎒ ~ 1 ㎓
	
1 ㎓ ~ 3 ㎓	**3 ㎓ ~ 12.75 ㎓**
	

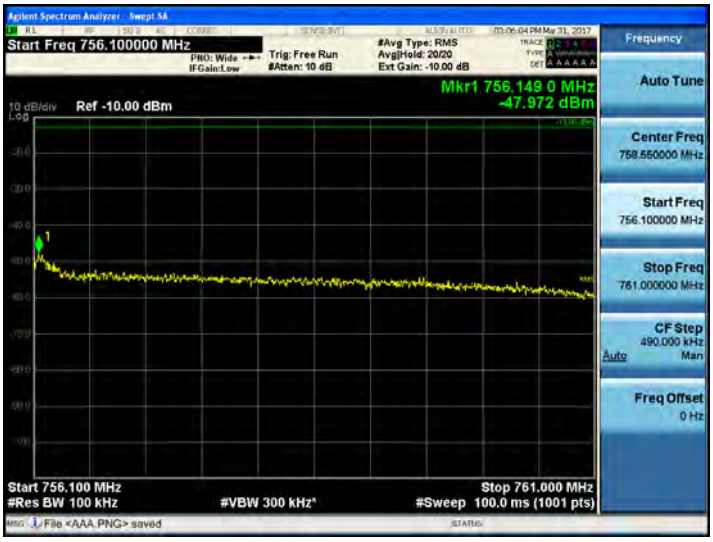
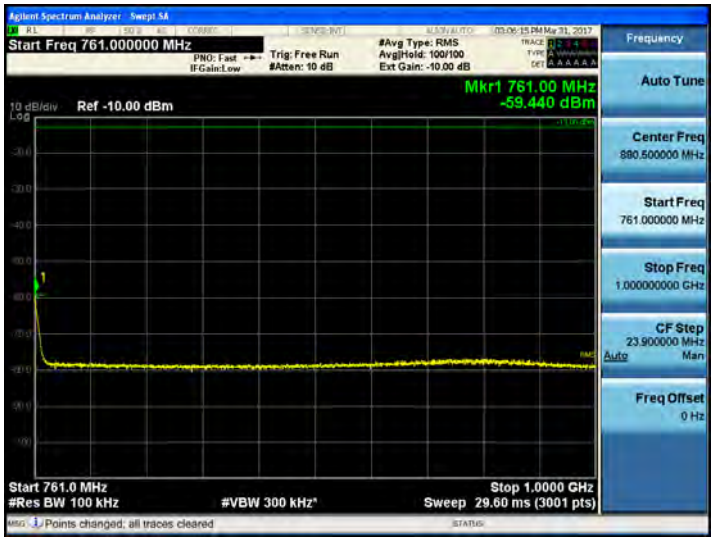
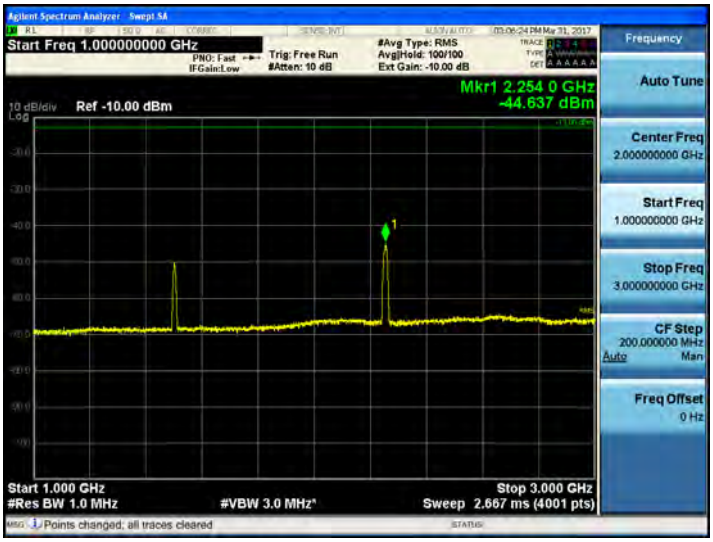
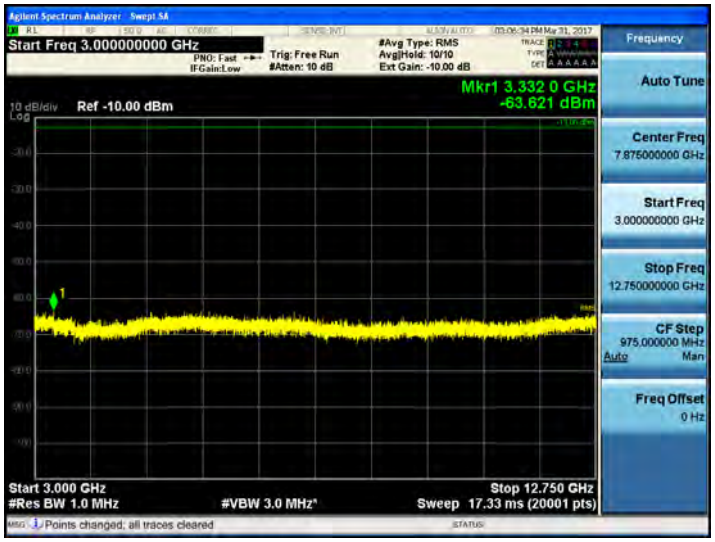
763 ㎒ ~ 775 ㎒	793 ㎒ ~ 805 ㎓
	
1599 ㎒ ~ 1610 ㎒ (1)	**1599 ㎒ ~ 1610 ㎒ (2)**
	

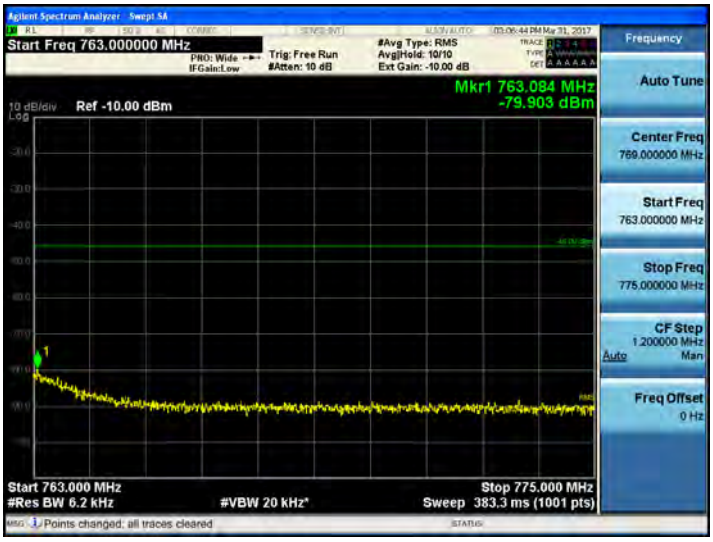
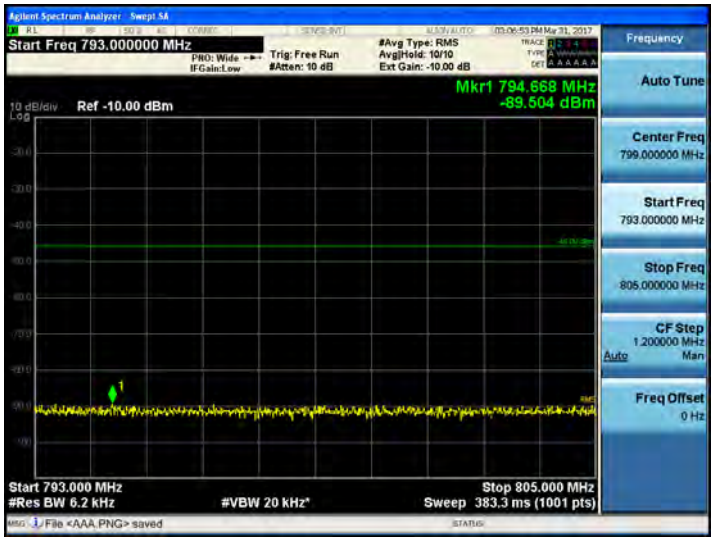
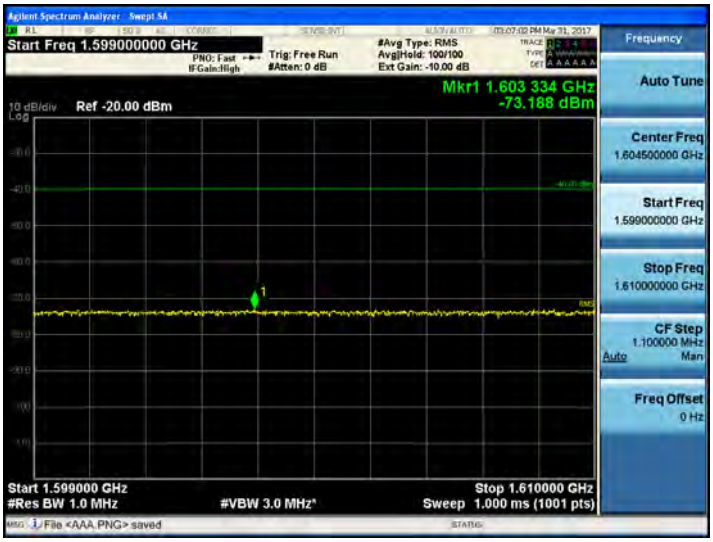
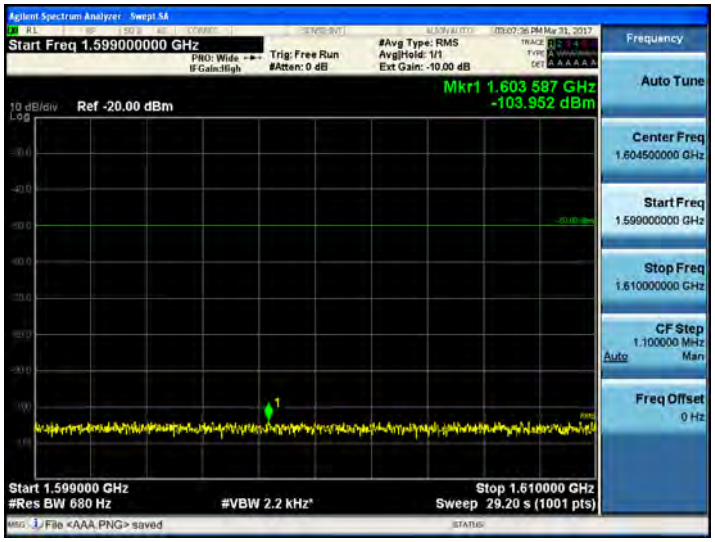
700 MHz_LTE 10M

Test Data at Output Port 0

(64QAM Middle channel)

9 ㎑ ~ 150 ㎑	150 ㎑ ~ 30 ㎒
	
30 ㎒ ~ 741 ㎒	**741 ㎒ ~ 745.9 ㎒**
	

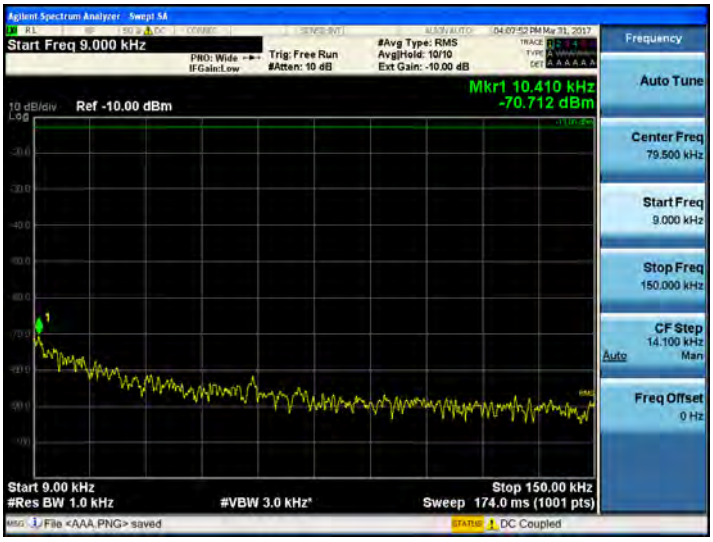
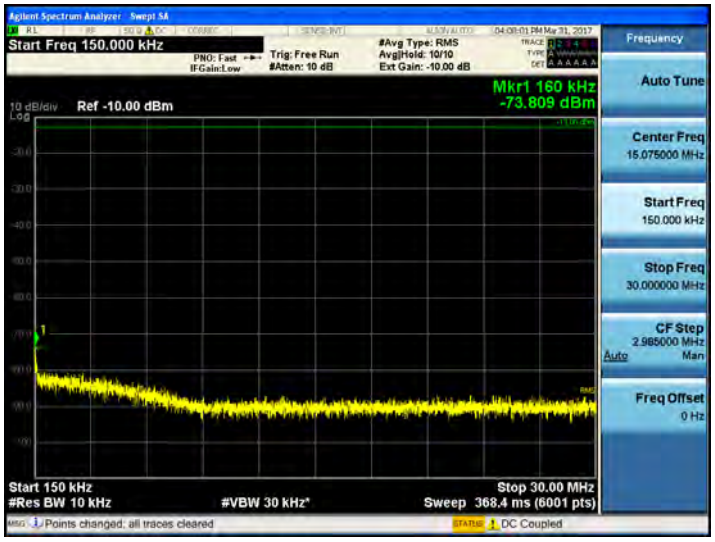
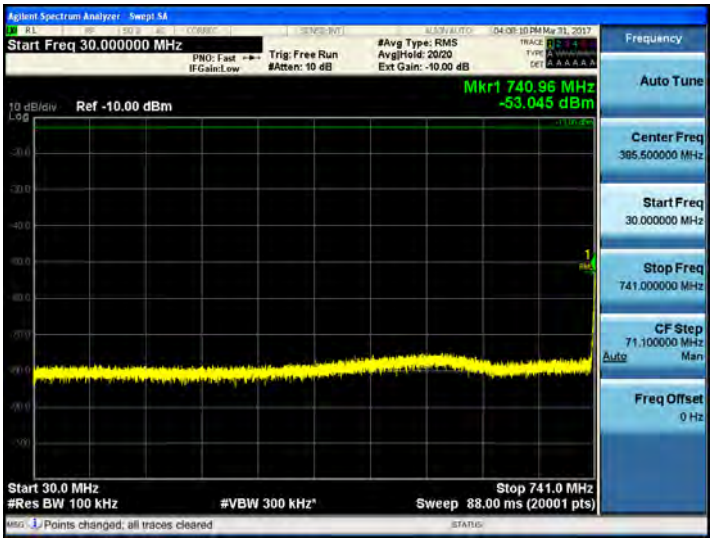
756.1 ㎒ ~ 761 ㎒	761 ㎒ ~ 1 ㎓
	
1 ㎓ ~ 3 ㎓	**3 ㎓ ~ 12.75 ㎓**
	

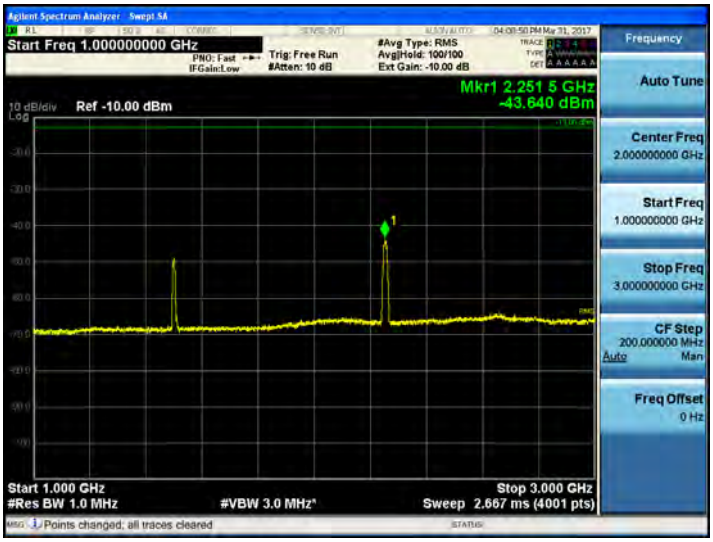
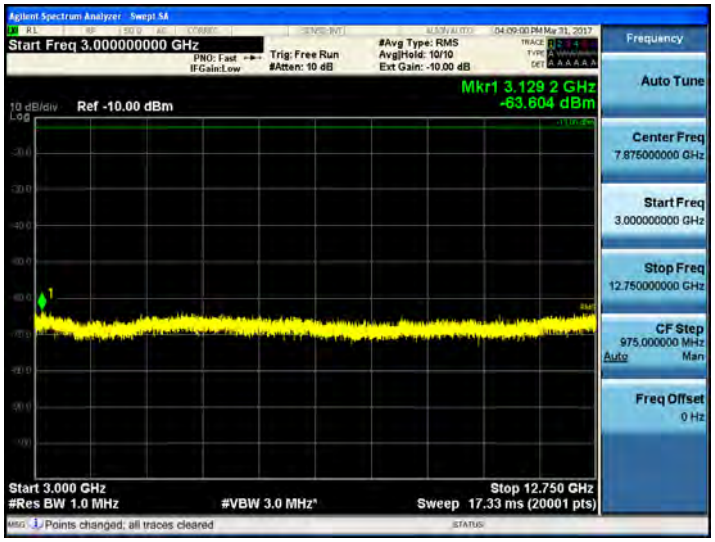
763 ㎒ ~ 775 ㎒	793 ㎒ ~ 805 ㎓
	
1599 ㎒ ~ 1610 ㎒ (1)	**1599 ㎒ ~ 1610 ㎒ (2)**
	

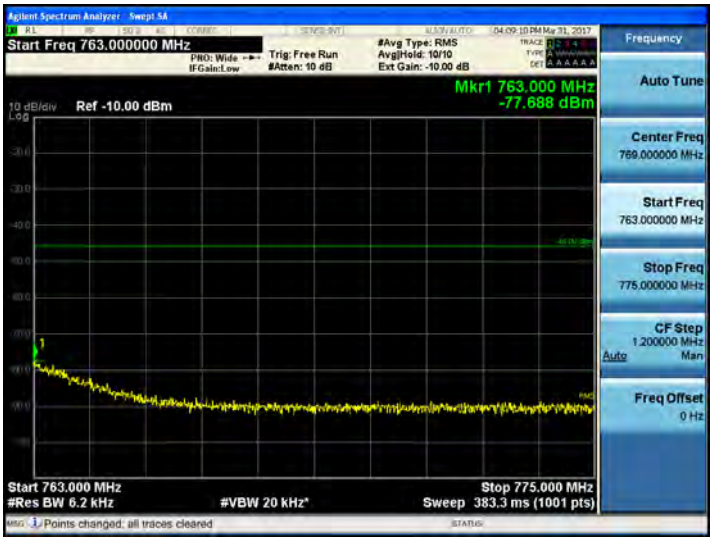
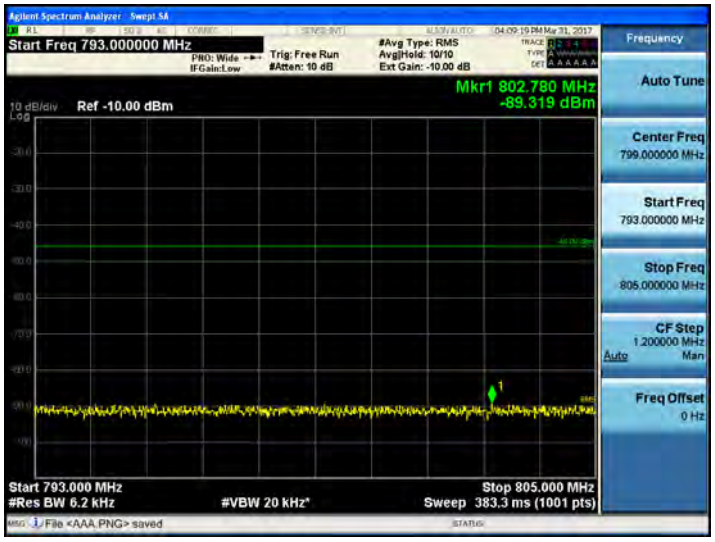
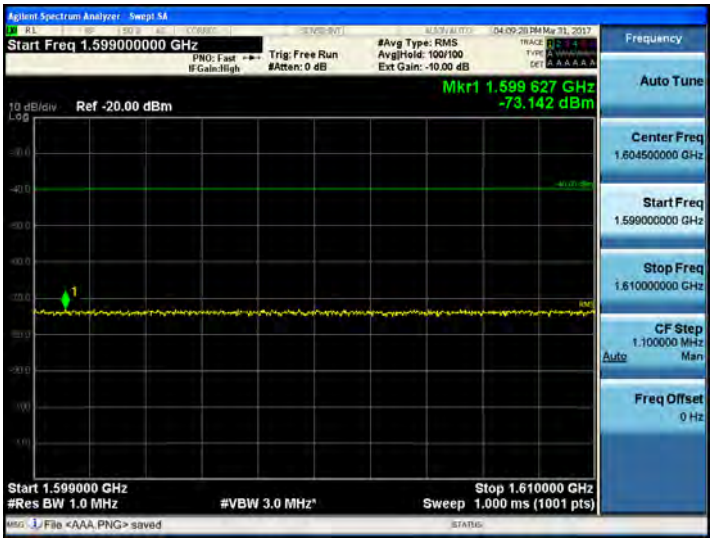
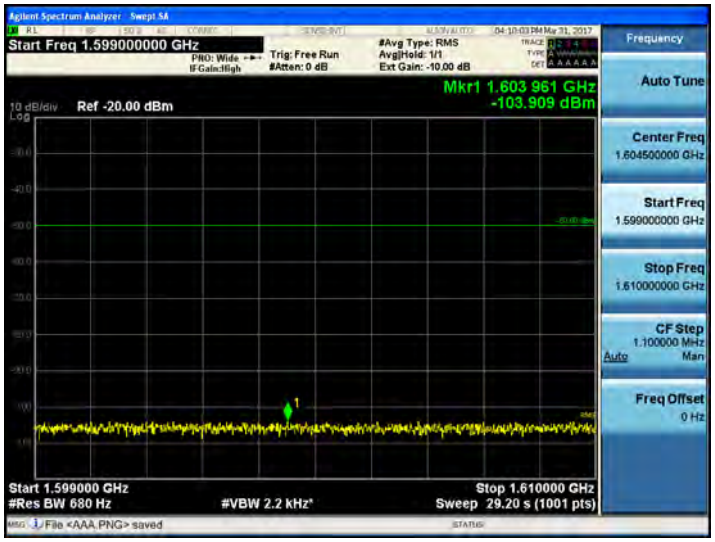
700 MHz_LTE 10M

Test Data at Output Port 1

(QPSK Middle channel)

9 ㎑ ~ 150 ㎑	150 ㎑ ~ 30 ㎒
	
30 ㎒ ~ 741 ㎒	**741 ㎒ ~ 745.9 ㎒**
	

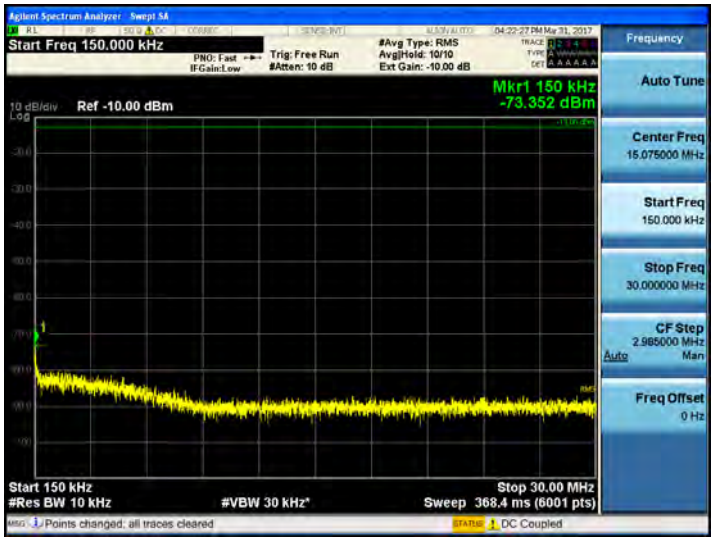
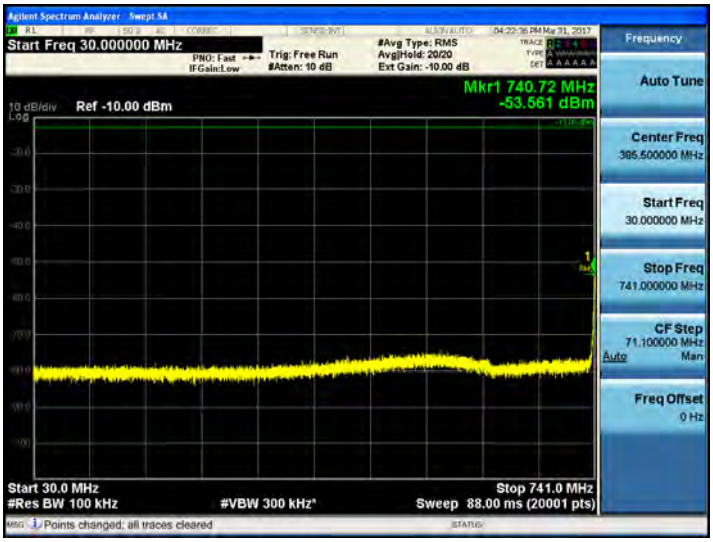
756.1 ㎒ ~ 761 ㎒	761 ㎒ ~ 1 ㎓
	
1 ㎓ ~ 3 ㎓	**3 ㎓ ~ 12.75 ㎓**
	

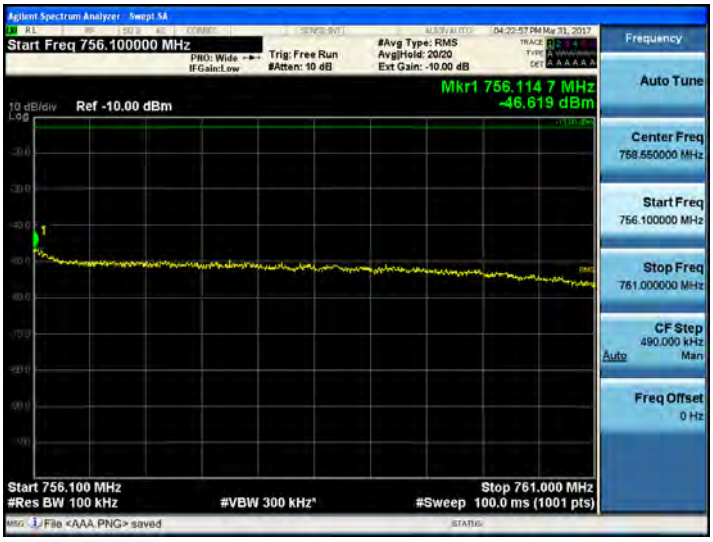
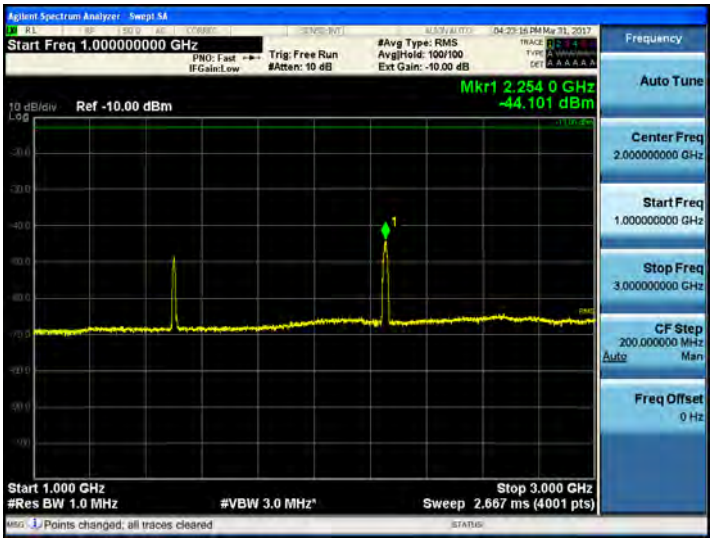
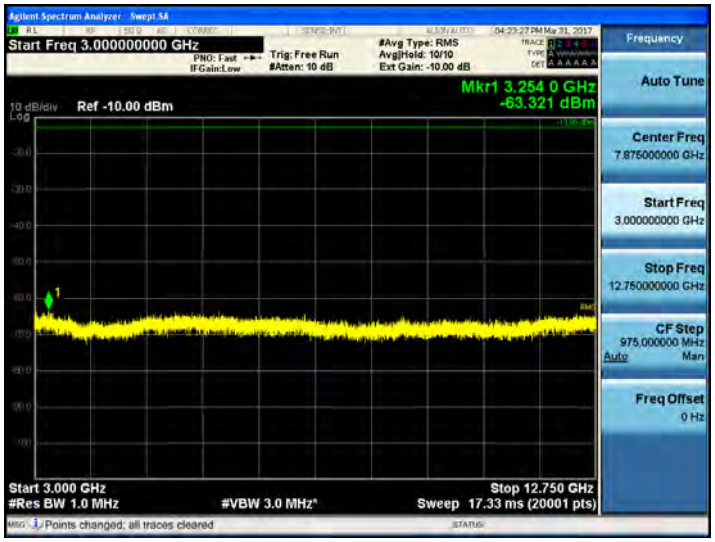
763 ㎒ ~ 775 ㎒	793 ㎒ ~ 805 ㎓
	
1599 ㎒ ~ 1610 ㎒ (1)	**1599 ㎒ ~ 1610 ㎒ (2)**
	

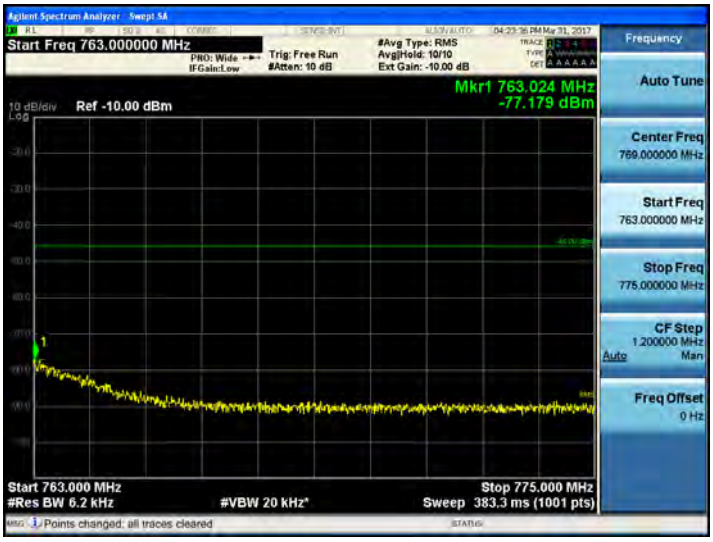
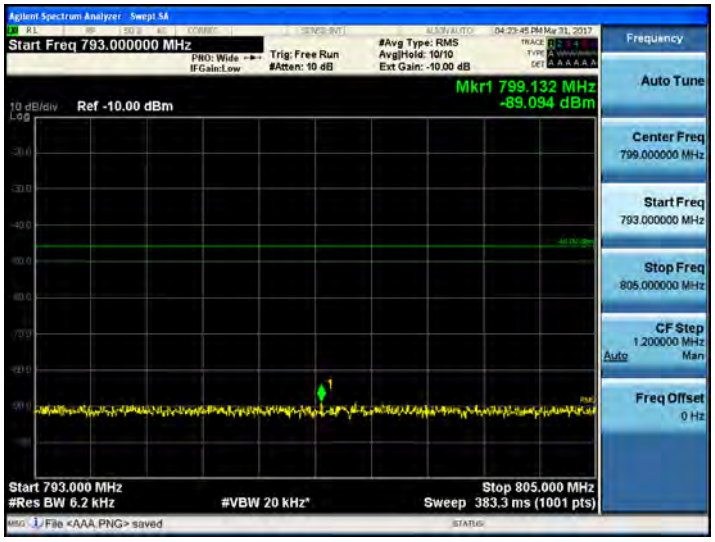
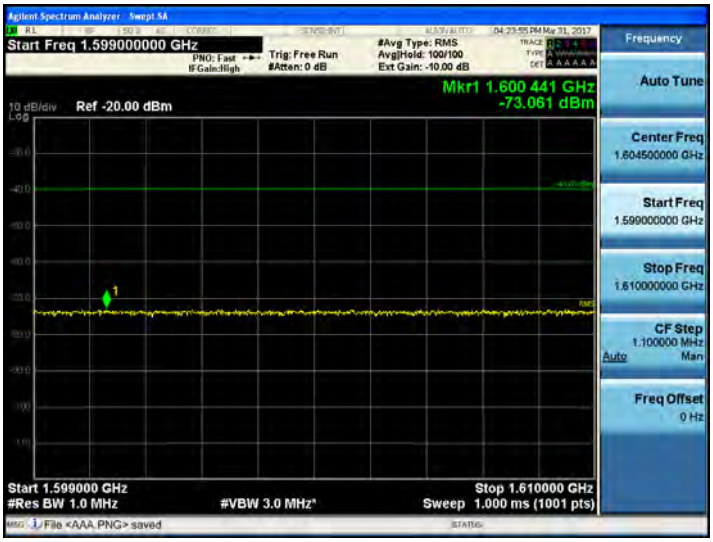
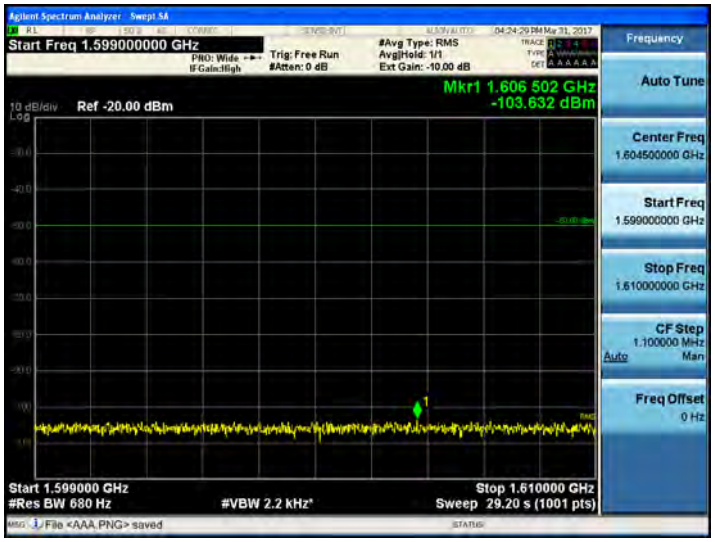
700 MHz_LTE 10M

Test Data at Output Port 1

(16QAM Middle channel)

9 ㎑ ~ 150 ㎑	150 ㎑ ~ 30 ㎒
	
30 ㎒ ~ 741 ㎒	**741 ㎒ ~ 745.9 ㎒**
	

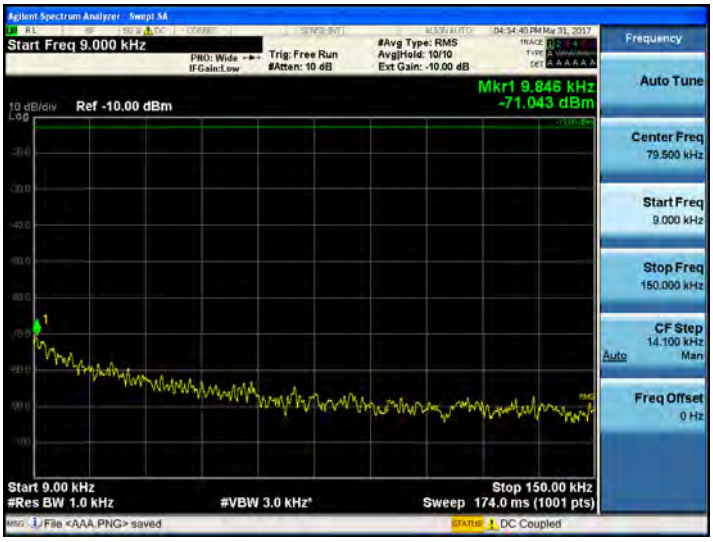
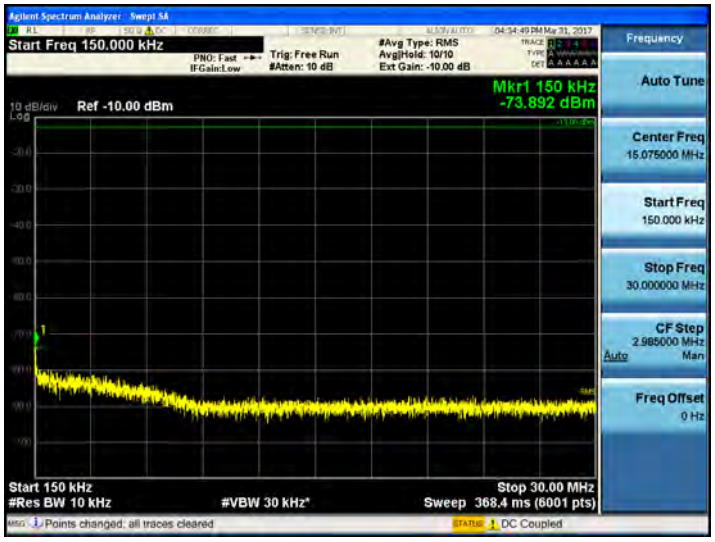
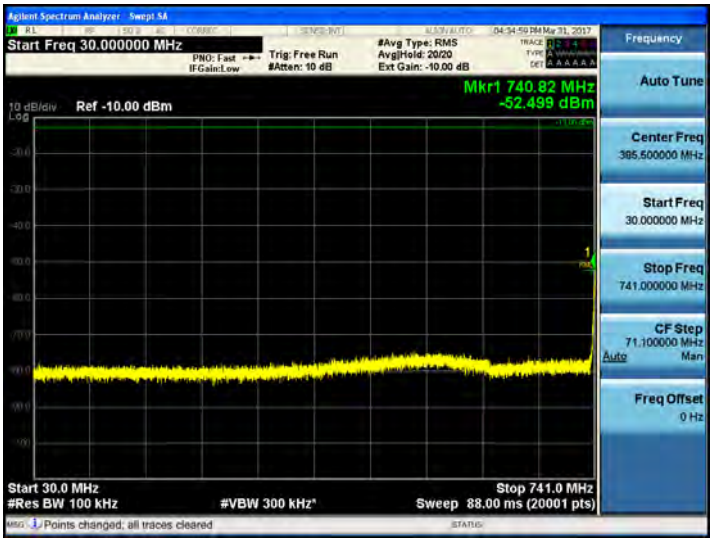
756.1 ㎒ ~ 761 ㎒	761 ㎒ ~ 1 ㎓
	
1 ㎓ ~ 3 ㎓	**3 ㎓ ~ 12.75 ㎓**
	

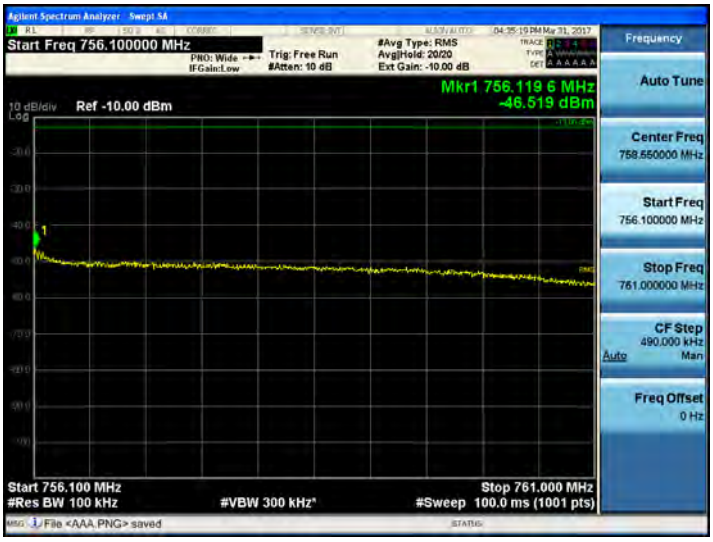
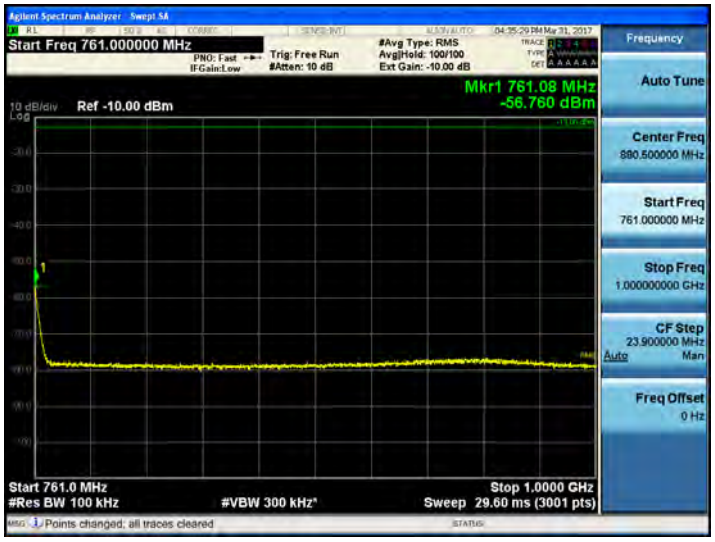
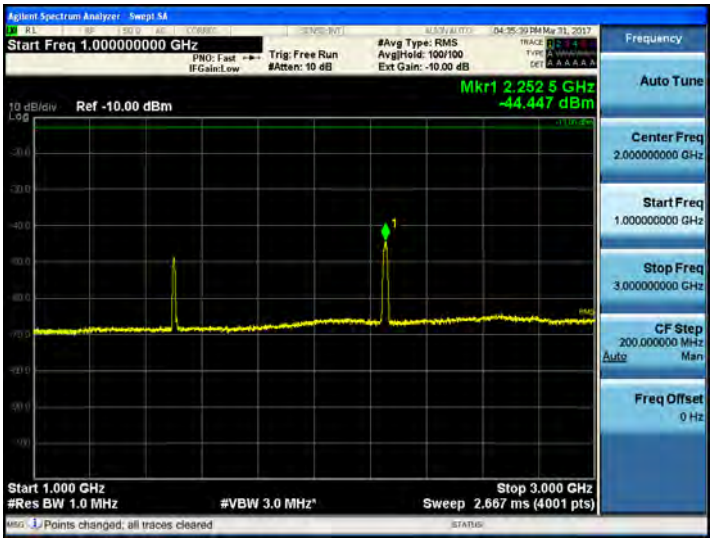
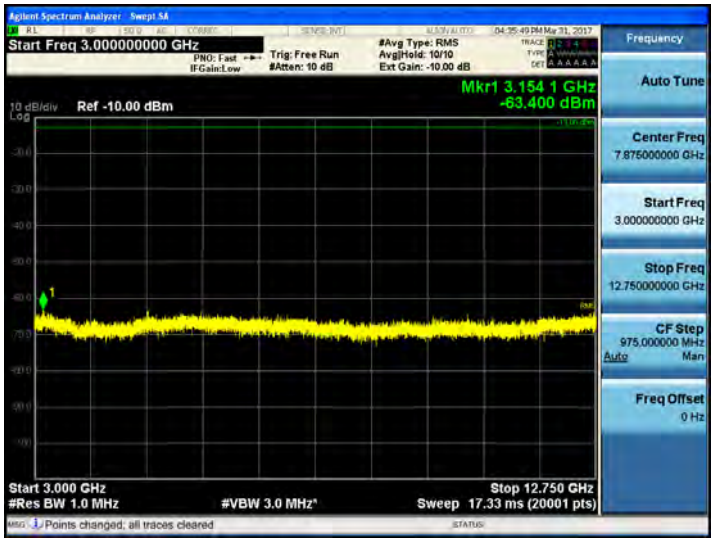
763 ㎒ ~ 775 ㎒	793 ㎒ ~ 805 ㎓
	
1599 ㎒ ~ 1610 ㎒ (1)	**1599 ㎒ ~ 1610 ㎒ (2)**
	

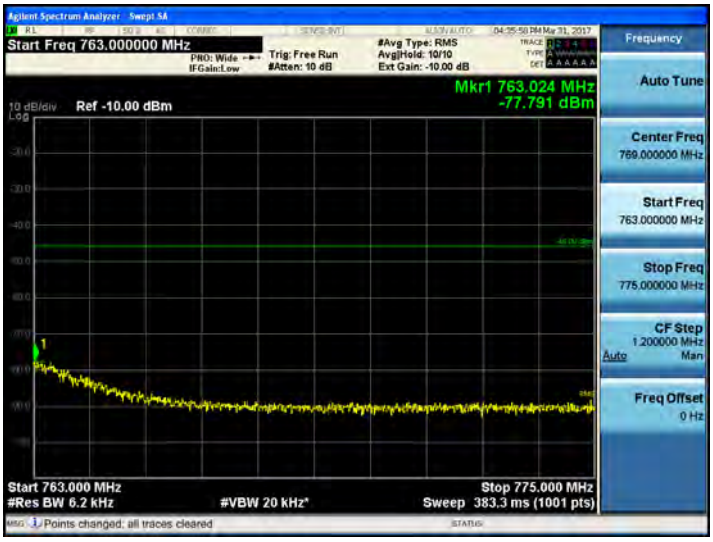
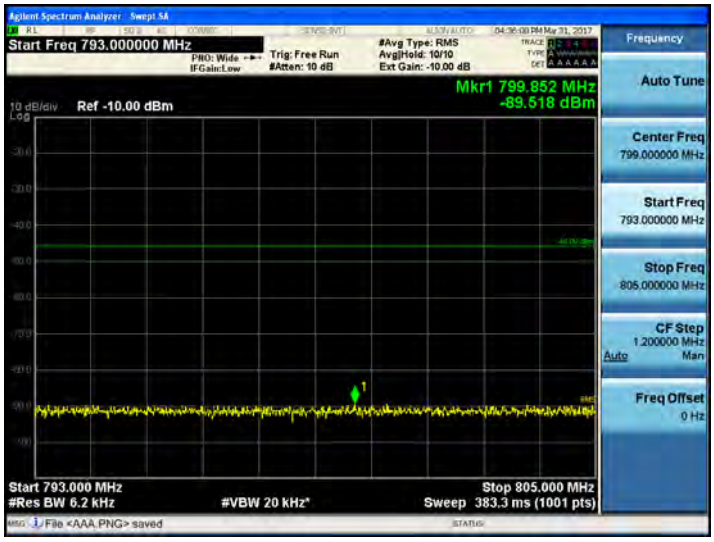
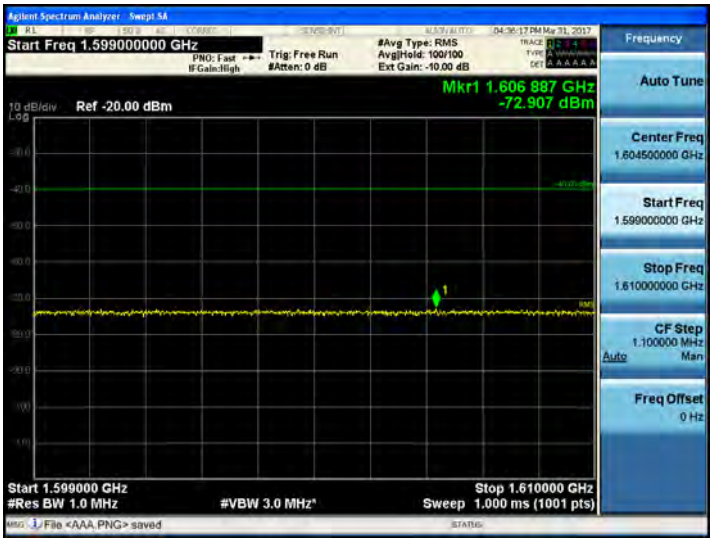
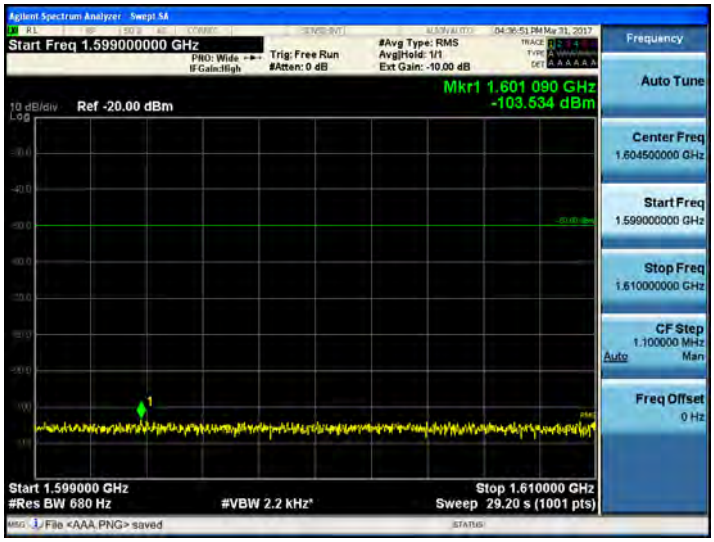
700 MHz_LTE 10M

Test Data at Output Port 1

(64QAM Middle channel)

9 ㎑ ~ 150 ㎑	150 ㎑ ~ 30 ㎒
	
30 ㎒ ~ 741 ㎒	**741 ㎒ ~ 745.9 ㎒**
	

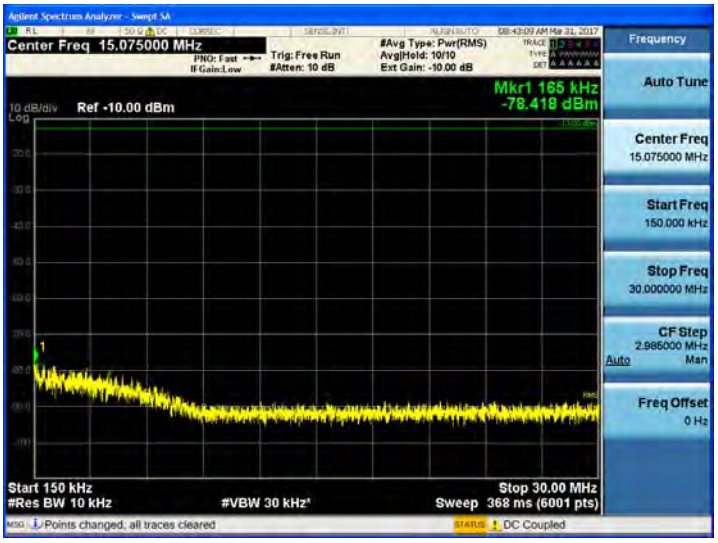
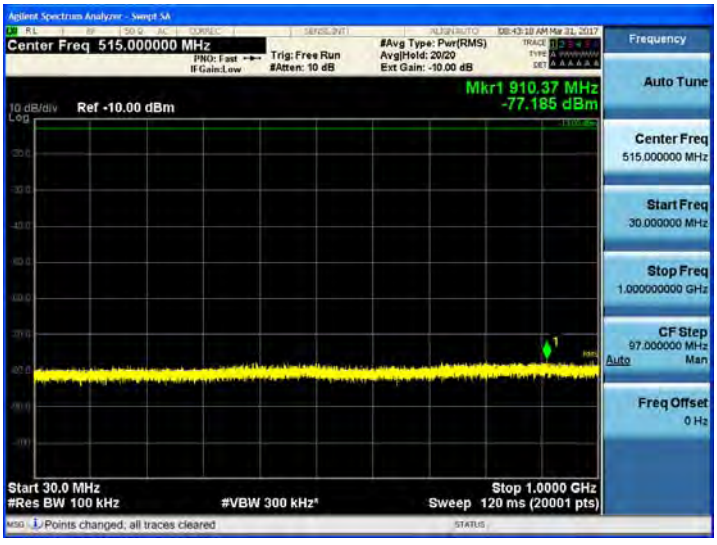
756.1 ㎒ ~ 761 ㎒	761 ㎒ ~ 1 ㎓
	
1 ㎓ ~ 3 ㎓	**3 ㎓ ~ 12.75 ㎓**
	

763 ㎒ ~ 775 ㎒	793 ㎒ ~ 805 ㎓
	
1599 ㎒ ~ 1610 ㎒ (1)	**1599 ㎒ ~ 1610 ㎒ (2)**
	

AWS 2100_LTE 10M

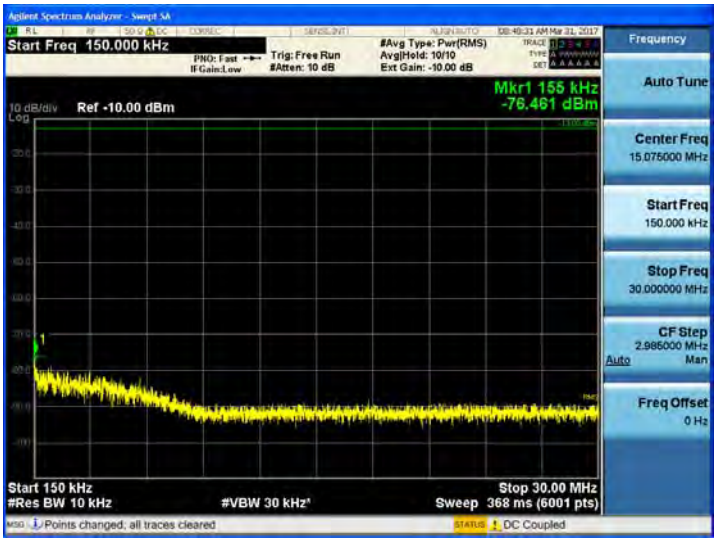
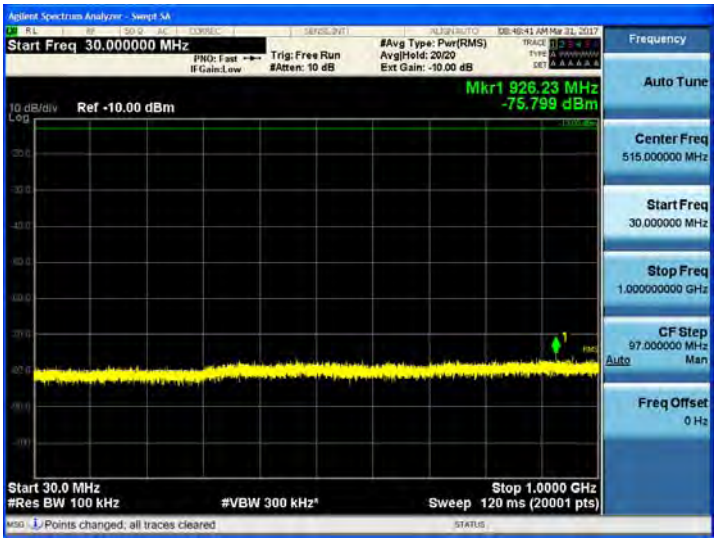
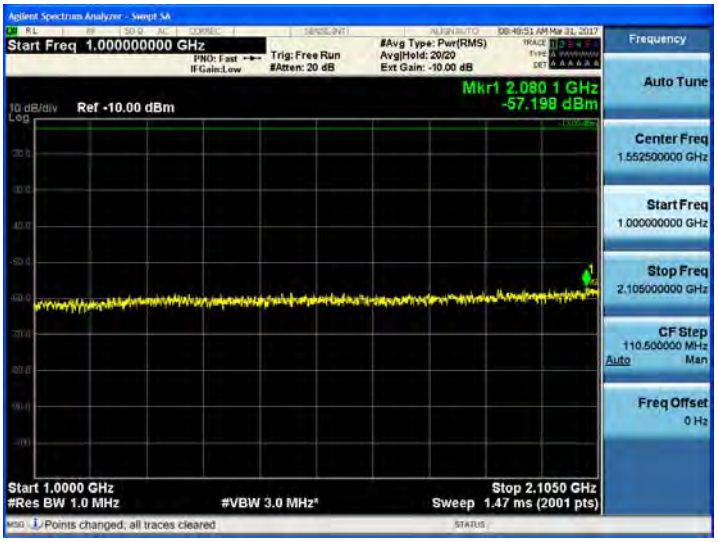
Test Data at Output Port 0

(QPSK Low channel)

9 ㎑ ~ 150 ㎑	150 ㎑ ~ 30 ㎒
	
30 ㎒ ~ 1 ㎓	**1 ㎓ ~ 2.105 ㎓**
	

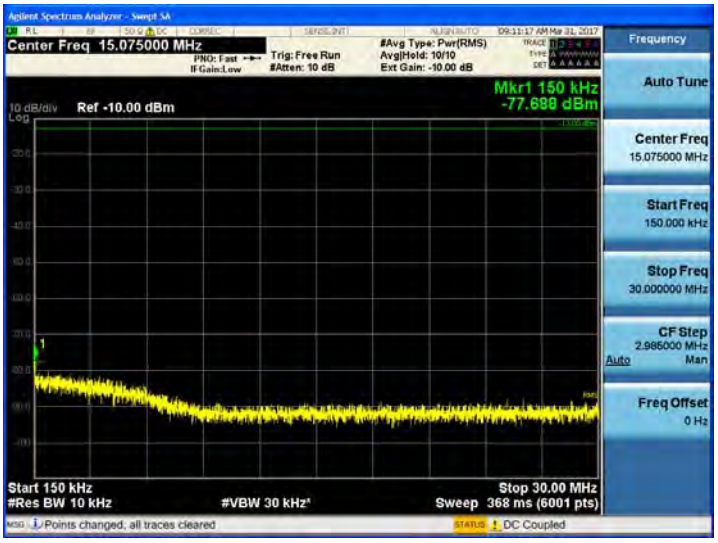
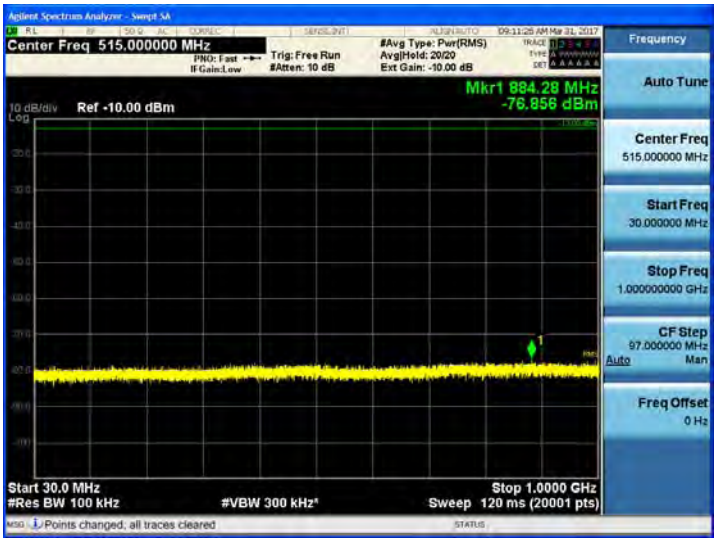
2.185 ㎓ ~ 12.75 ㎓	12.75 ㎓ ~ 26.5 ㎓
	

(QPSK Middle channel)

9 ㎑ ~ 150 ㎑	150 ㎑ ~ 30 ㎒
	
30 ㎒ ~ 1 ㎓	**1 ㎓ ~ 2.105 ㎓**
	

2.185 ㎓ ~ 12.75 ㎓	12.75 ㎓ ~ 26.5 ㎓
	

(QPSK High channel)

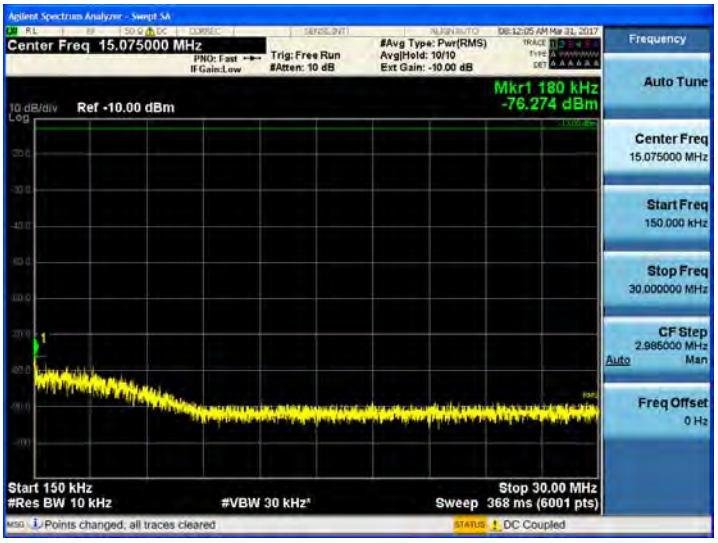
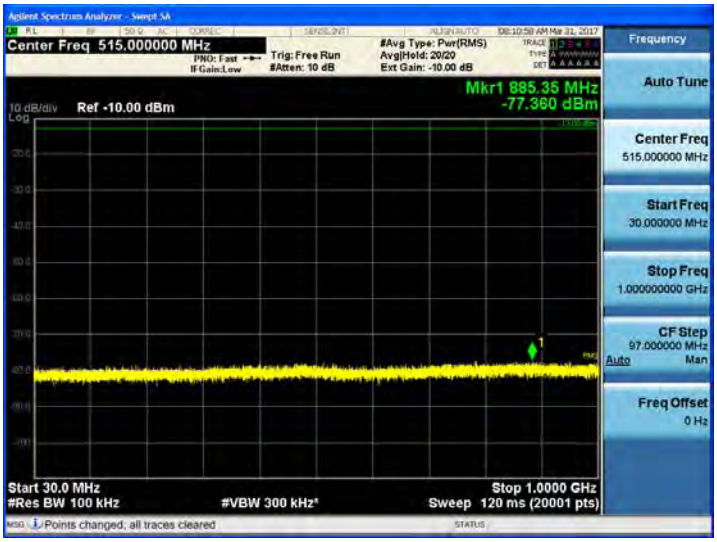
9 ㎑ ~ 150 ㎑	150 ㎑ ~ 30 ㎒
	
30 ㎒ ~ 1 ㎓	**1 ㎓ ~ 2.105 ㎓**
	

2.185 ㎓ ~ 12.75 ㎓	12.75 ㎓ ~ 26.5 ㎓
	

AWS 2100_LTE 10M

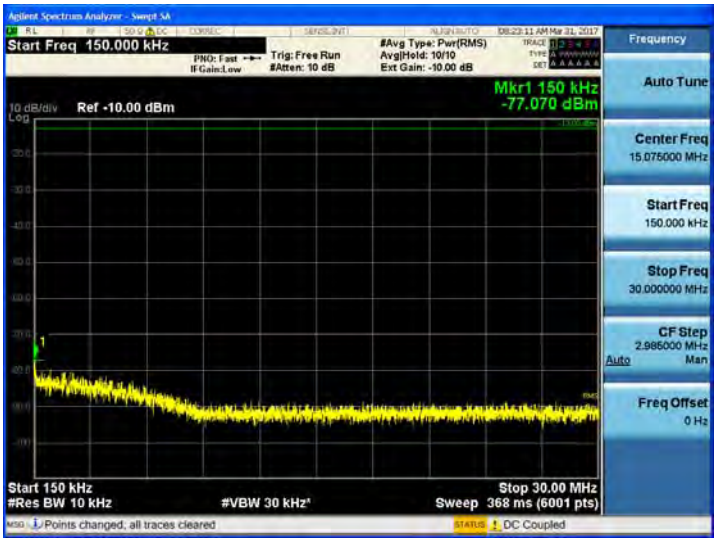
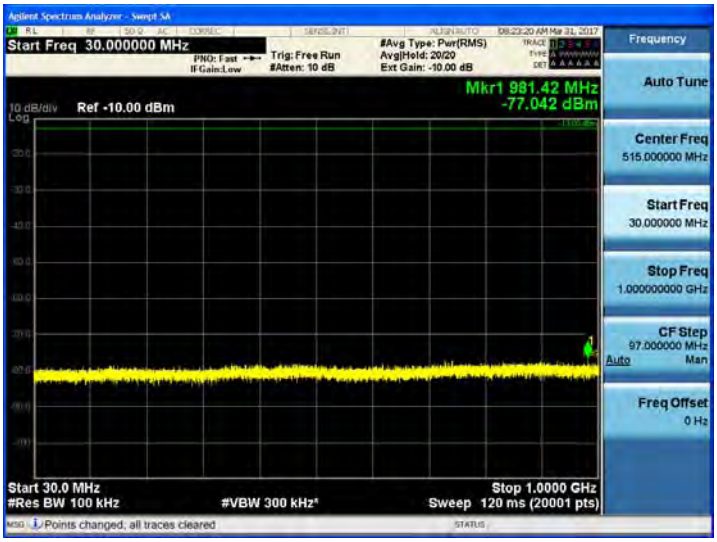
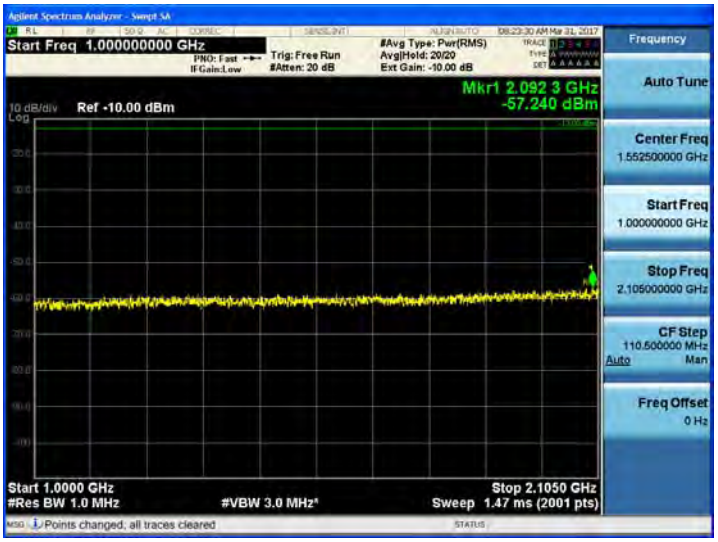
Test Data at Output Port 0

(16QAM Low channel)

9 ㎑ ~ 150 ㎑	150 ㎑ ~ 30 ㎒
	
30 ㎒ ~ 1 ㎓	**1 ㎓ ~ 2.105 ㎓**
	

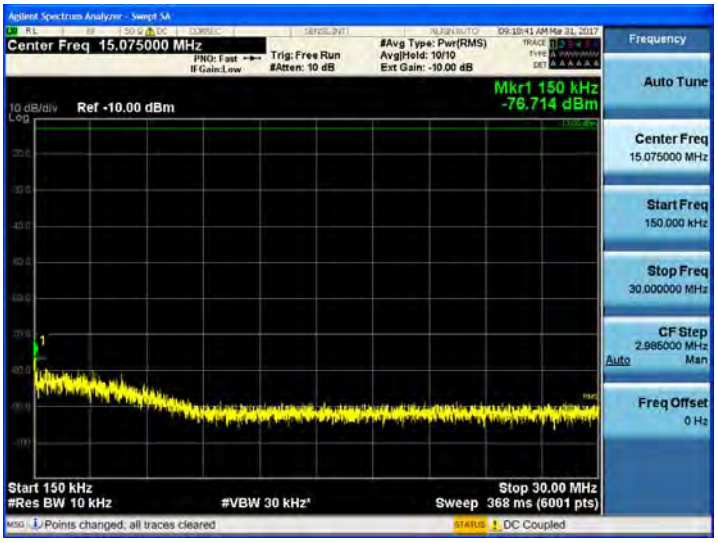
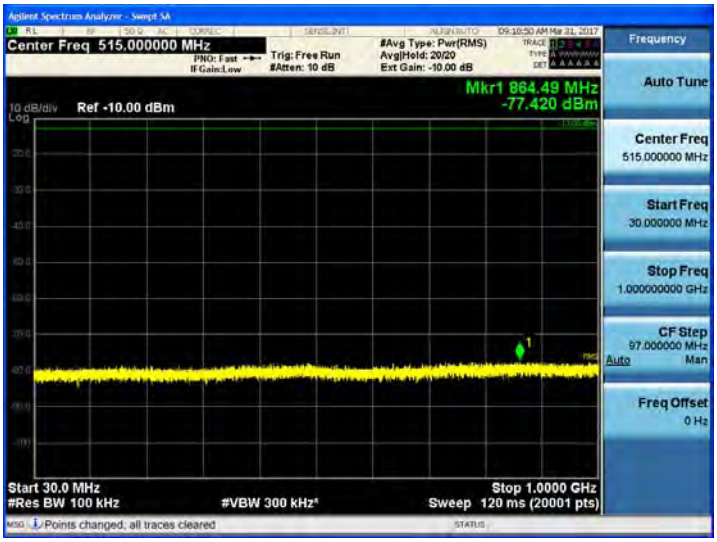
2.185 ㎓ ~ 12.75 ㎓	12.75 ㎓ ~ 26.5 ㎓
	

(16QAM Middle channel)

9 ㎑ ~ 150 ㎑	150 ㎑ ~ 30 ㎒
	
30 ㎒ ~ 1 ㎓	**1 ㎓ ~ 2.105 ㎓**
	

2.185 ㎓ ~ 12.75 ㎓	12.75 ㎓ ~ 26.5 ㎓
	

(16QAM High channel)

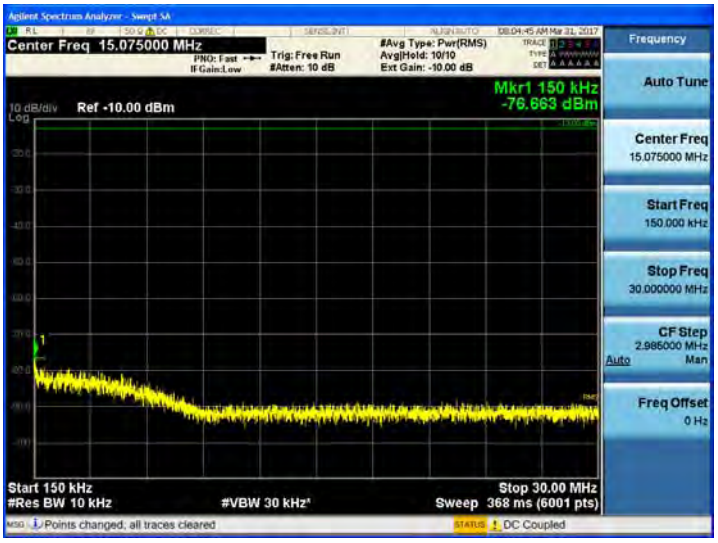
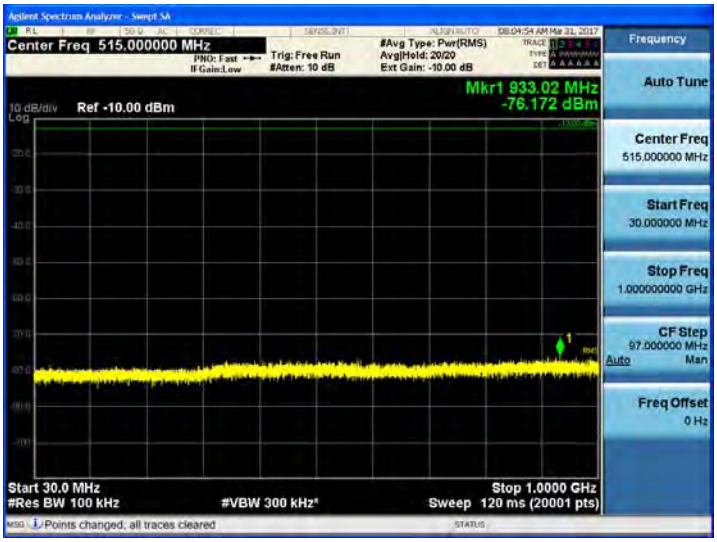
9 ㎑ ~ 150 ㎑	150 ㎑ ~ 30 ㎒
	
30 ㎒ ~ 1 ㎓	**1 ㎓ ~ 2.105 ㎓**
	

2.185 ㎓ ~ 12.75 ㎓	12.75 ㎓ ~ 26.5 ㎓
	

AWS 2100_LTE 10M

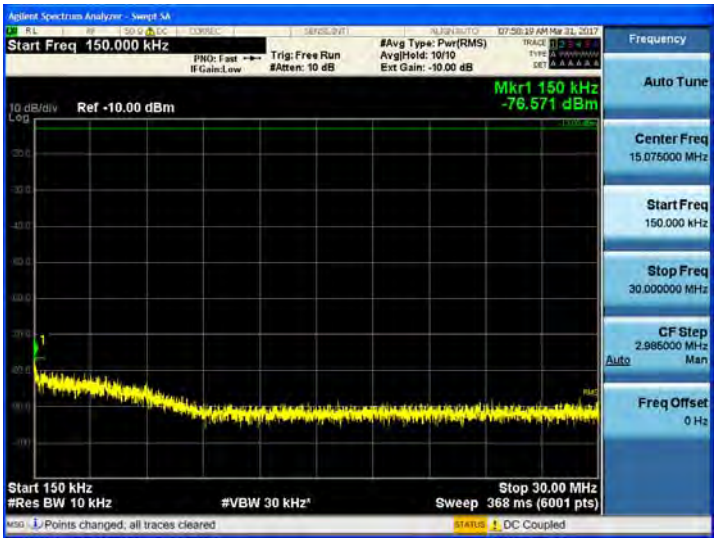
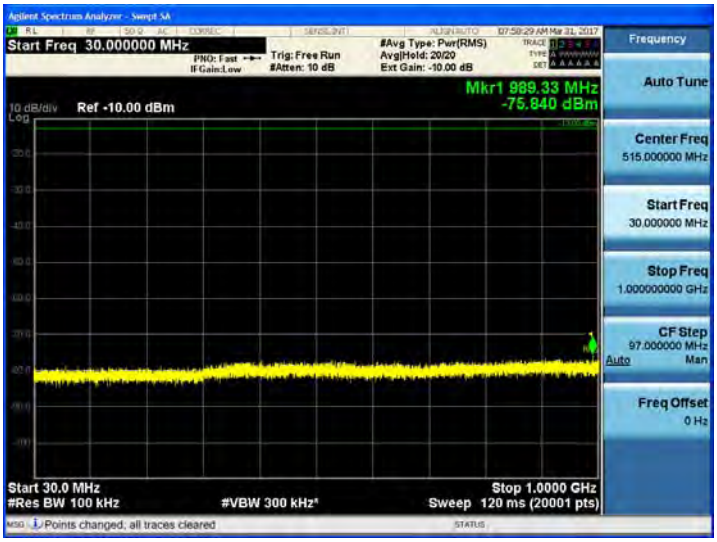
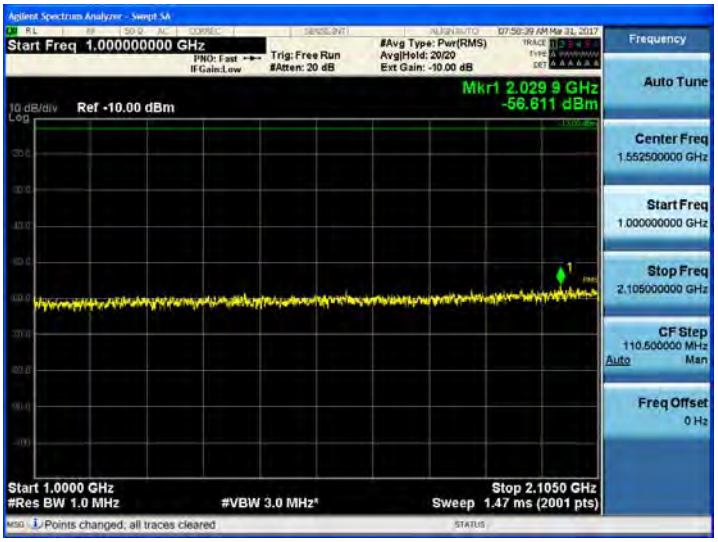
Test Data at Output Port 0

(64QAM Low channel)

9 ㎑ ~ 150 ㎑	150 ㎑ ~ 30 ㎒
	
30 ㎒ ~ 1 ㎓	**1 ㎓ ~ 2.105 ㎓**
	

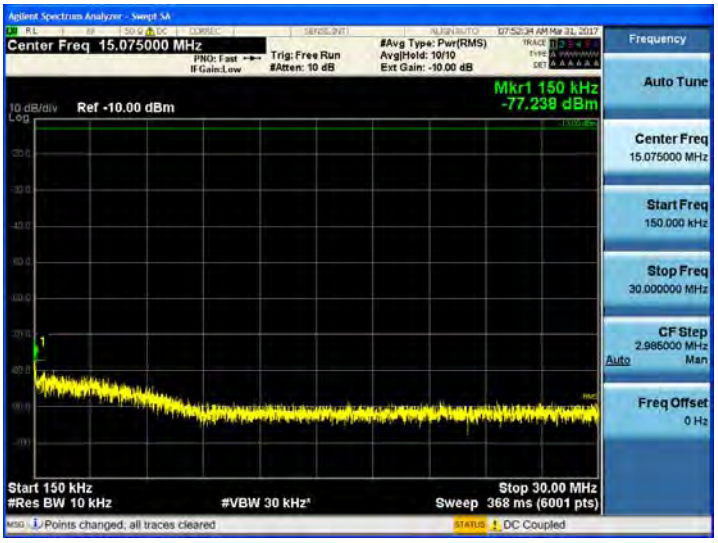
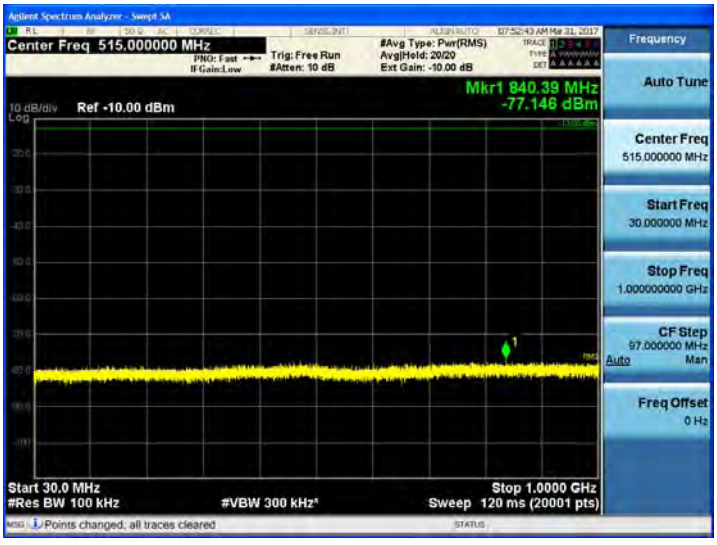
2.185 ㎓ ~ 12.75 ㎓	12.75 ㎓ ~ 26.5 ㎓
	

(64QAM Middle channel)

9 ㎑ ~ 150 ㎑	150 ㎑ ~ 30 ㎒
	
30 ㎒ ~ 1 ㎓	**1 ㎓ ~ 2.105 ㎓**
	

2.185 ㎓ ~ 12.75 ㎓	12.75 ㎓ ~ 26.5 ㎓
	

(64QAM High channel)

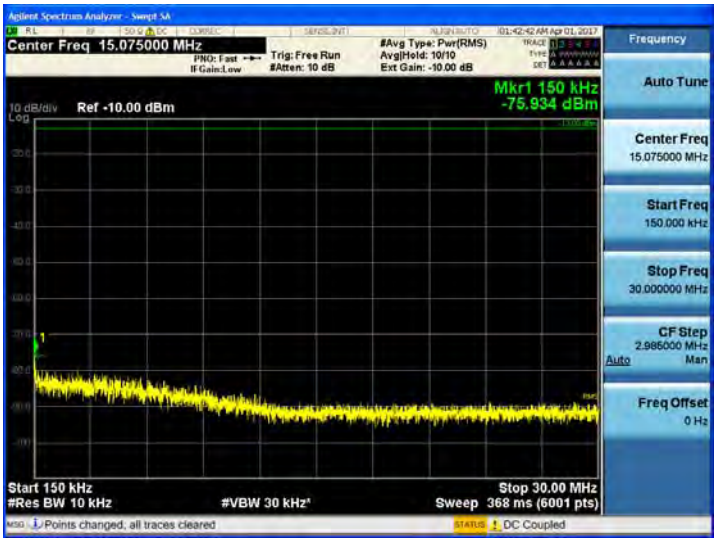
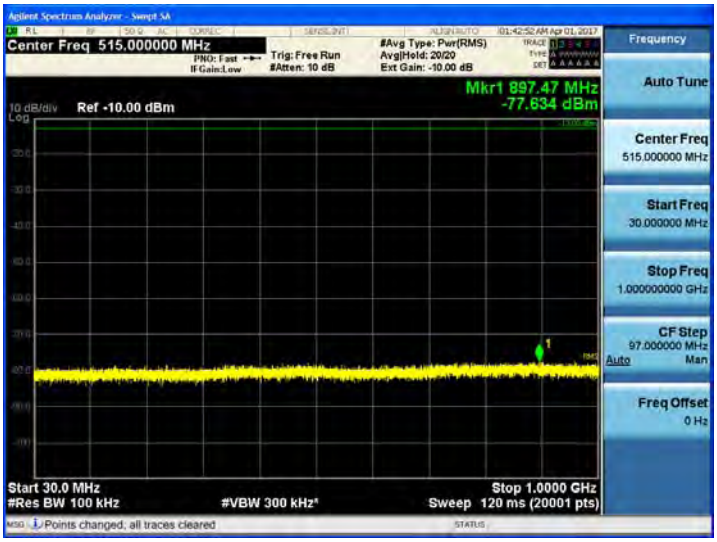
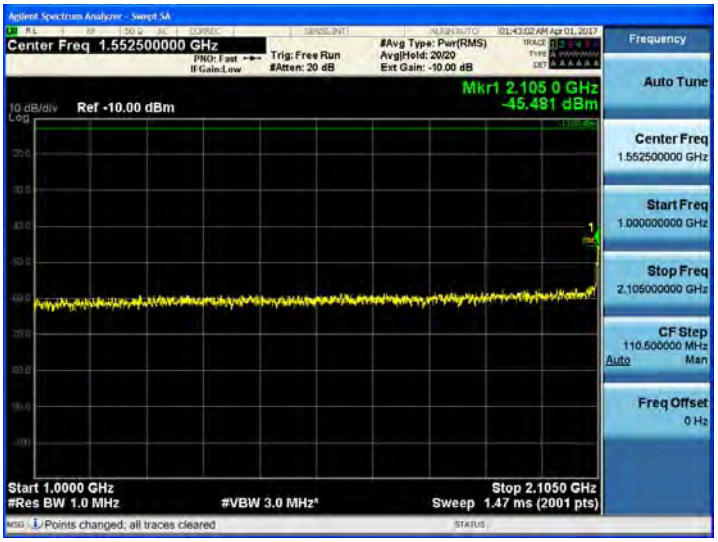
9 ㎑ ~ 150 ㎑	150 ㎑ ~ 30 ㎒
	
30 ㎒ ~ 1 ㎓	**1 ㎓ ~ 2.105 ㎓**
	

2.185 ㎓ ~ 12.75 ㎓	12.75 ㎓ ~ 26.5 ㎓
	

AWS 2100_LTE 15M

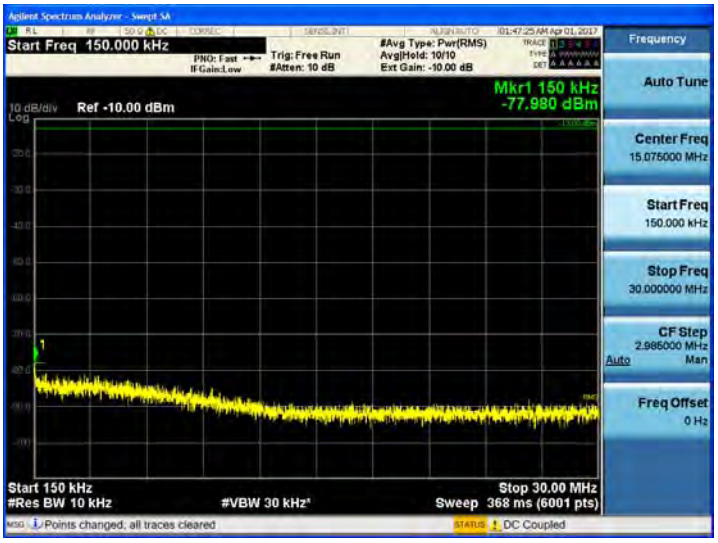
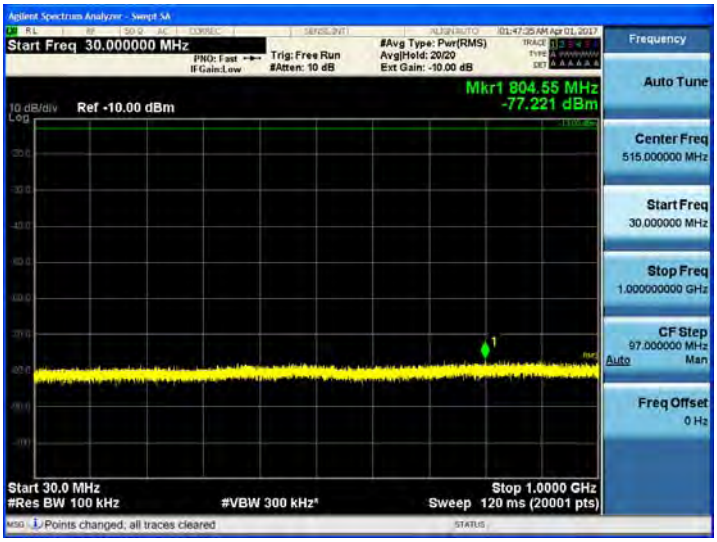
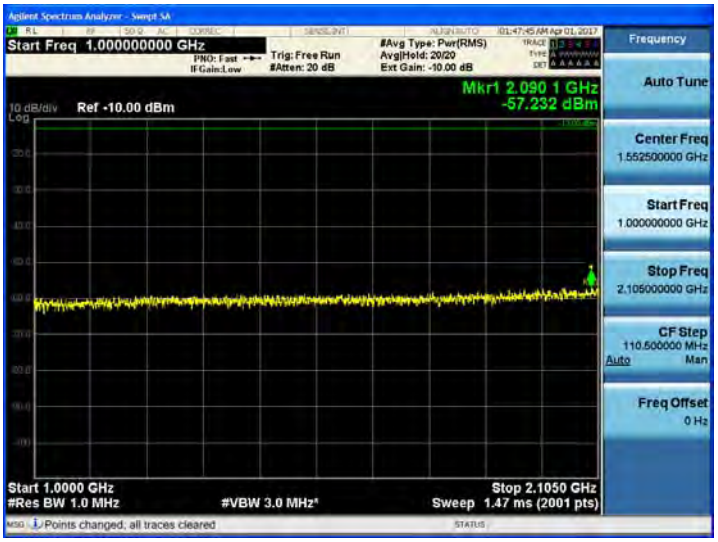
Test Data at Output Port 0

(QPSK Low channel)

9 ㎑ ~ 150 ㎑	150 ㎑ ~ 30 ㎒
	
30 ㎒ ~ 1 ㎓	**1 ㎓ ~ 2.105 ㎓**
	

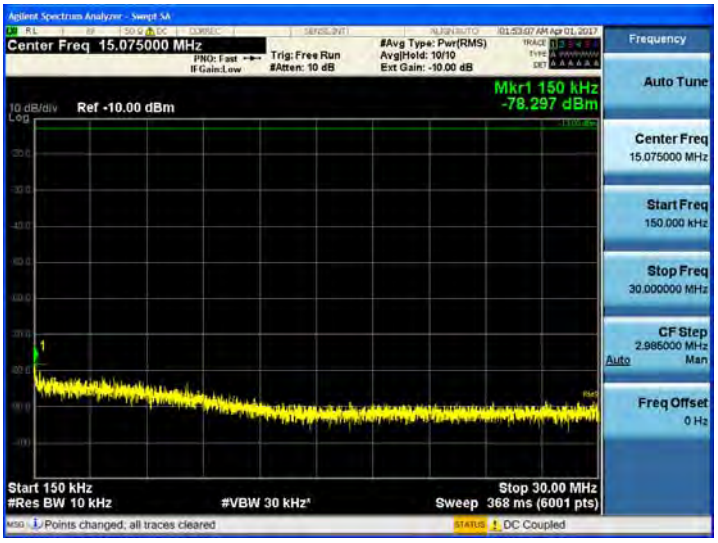
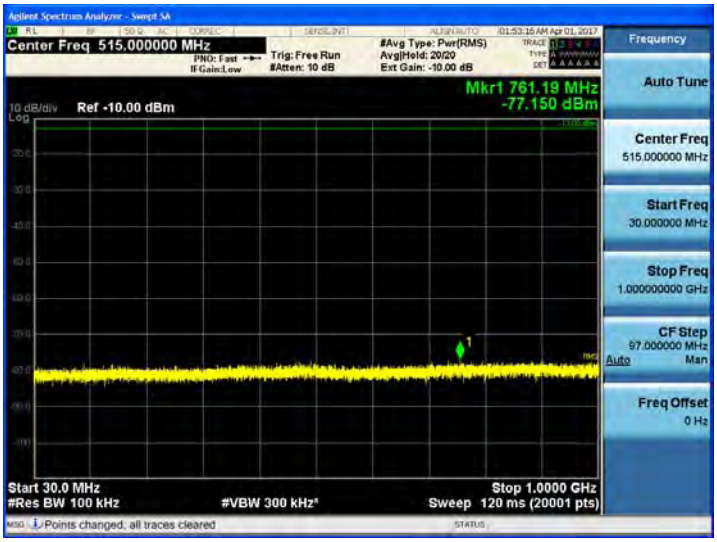
2.185 ㎓ ~ 12.75 ㎓	12.75 ㎓ ~ 26.5 ㎓
	

(QPSK Middle channel)

9 ㎑ ~ 150 ㎑	150 ㎑ ~ 30 ㎒
	
30 ㎒ ~ 1 ㎓	**1 ㎓ ~ 2.105 ㎓**
	

2.185 ㎓ ~ 12.75 ㎓	12.75 ㎓ ~ 26.5 ㎓
	

(QPSK High channel)

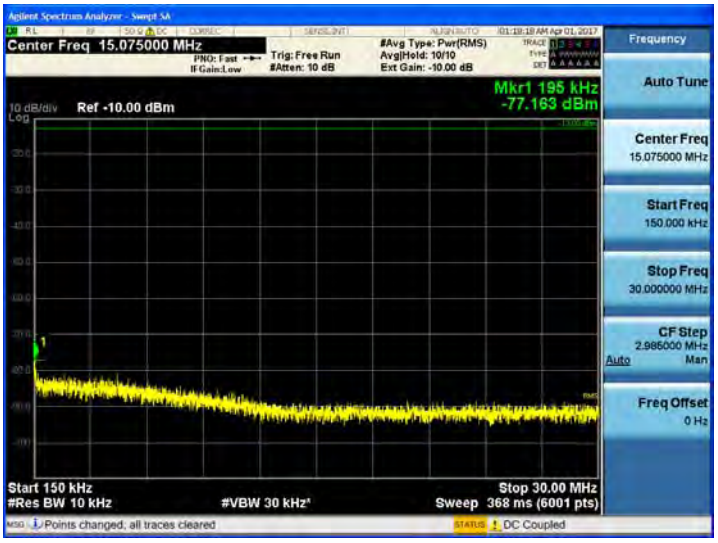
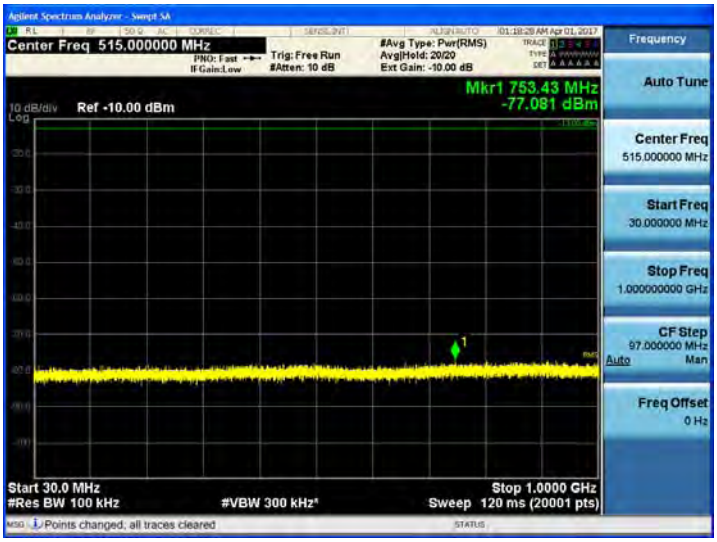
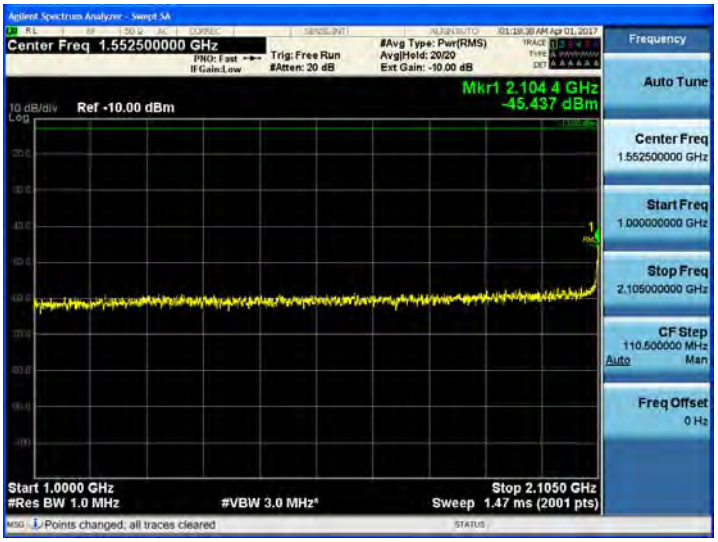
9 ㎑ ~ 150 ㎑	150 ㎑ ~ 30 ㎒
	
30 ㎒ ~ 1 ㎓	**1 ㎓ ~ 2.105 ㎓**
	

2.185 ㎓ ~ 12.75 ㎓	12.75 ㎓ ~ 26.5 ㎓
	

AWS 2100_LTE 15M

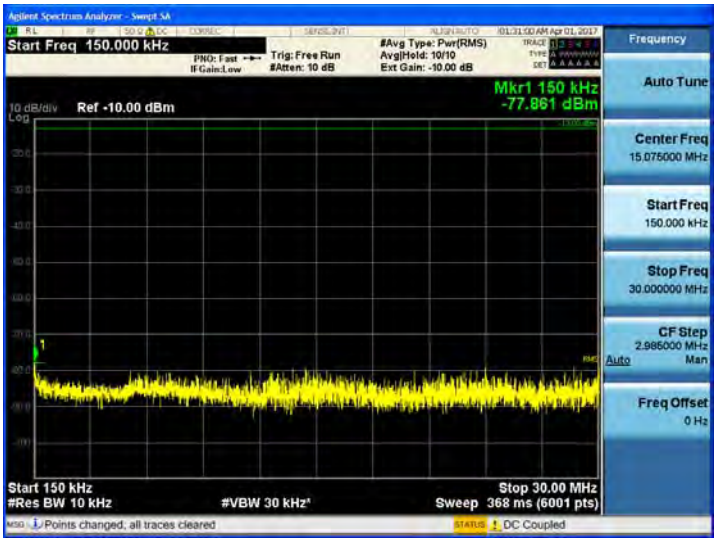
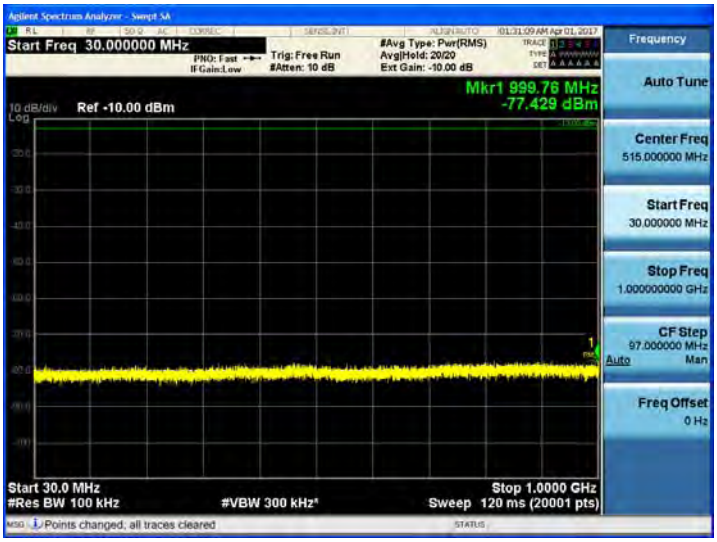
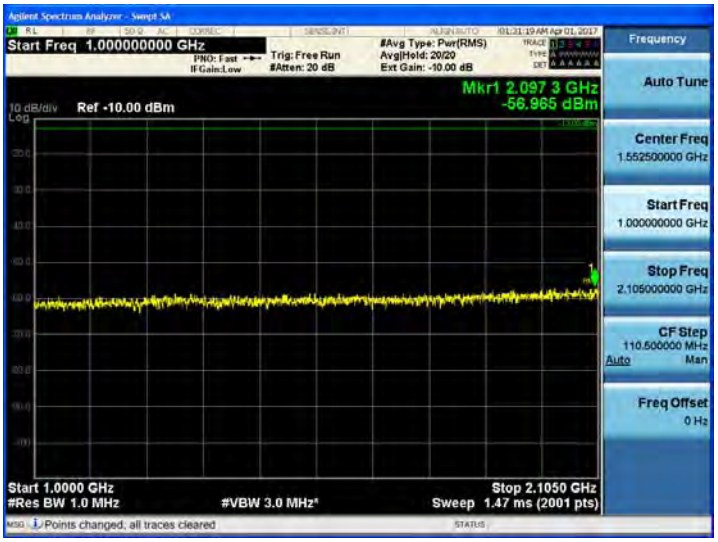
Test Data at Output Port 0

(16QAM Low channel)

9 ㎑ ~ 150 ㎑	150 ㎑ ~ 30 ㎒
	
30 ㎒ ~ 1 ㎓	**1 ㎓ ~ 2.105 ㎓**
	

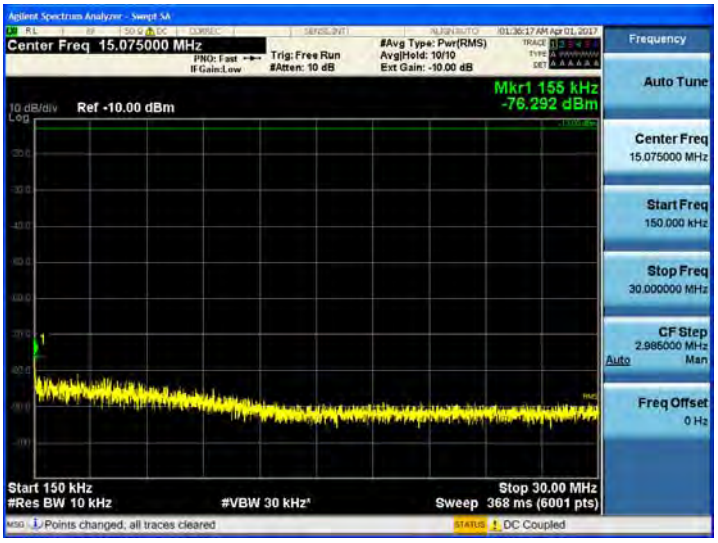
2.185 ㎓ ~ 12.75 ㎓	12.75 ㎓ ~ 26.5 ㎓
	

(16QAM Middle channel)

9 ㎑ ~ 150 ㎑	150 ㎑ ~ 30 ㎒
	
30 ㎒ ~ 1 ㎓	**1 ㎓ ~ 2.105 ㎓**
	

2.185 ㎓ ~ 12.75 ㎓	12.75 ㎓ ~ 26.5 ㎓
	

(16QAM High channel)

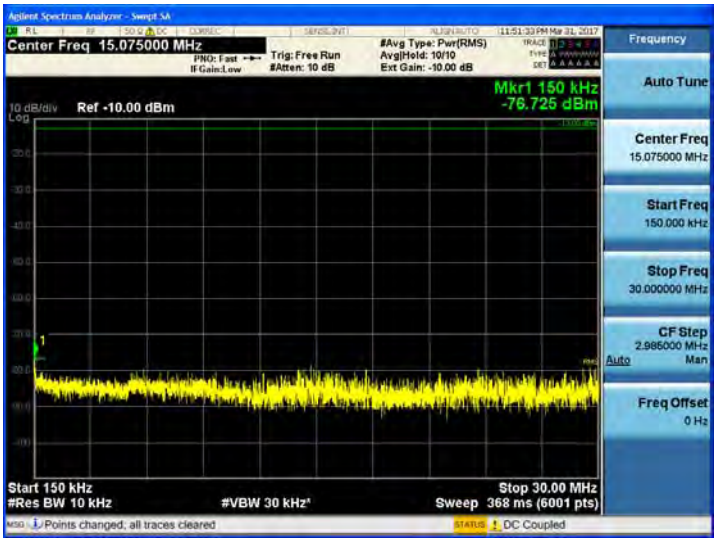
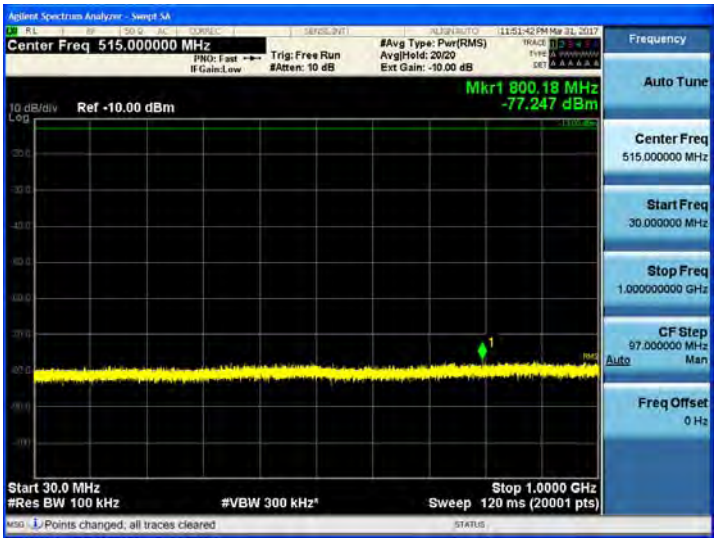
9 ㎑ ~ 150 ㎑	150 ㎑ ~ 30 ㎒
	
30 ㎒ ~ 1 ㎓	**1 ㎓ ~ 2.105 ㎓**
	

2.185 ㎓ ~ 12.75 ㎓	12.75 ㎓ ~ 26.5 ㎓
	

AWS 2100_LTE 15M

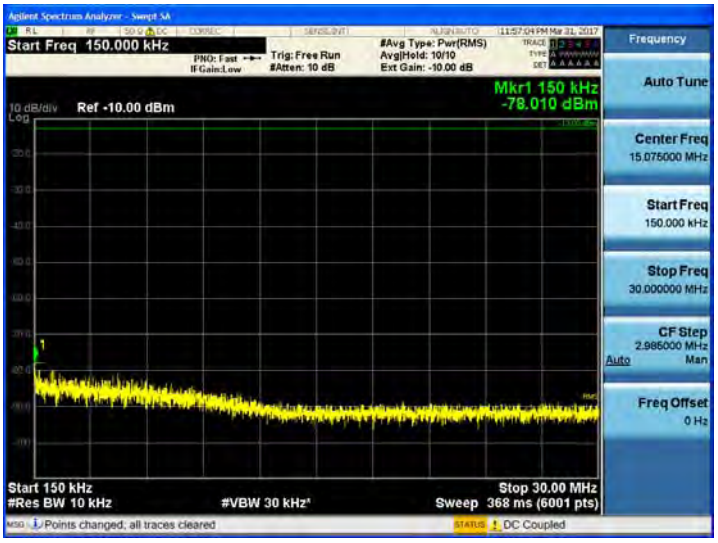
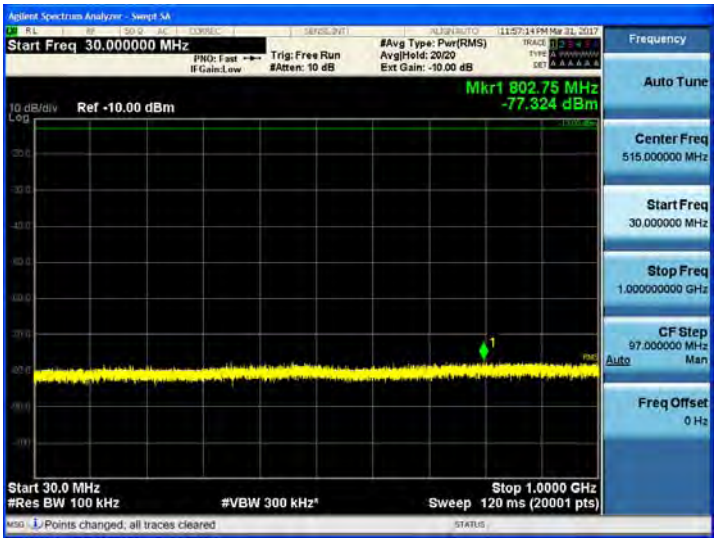
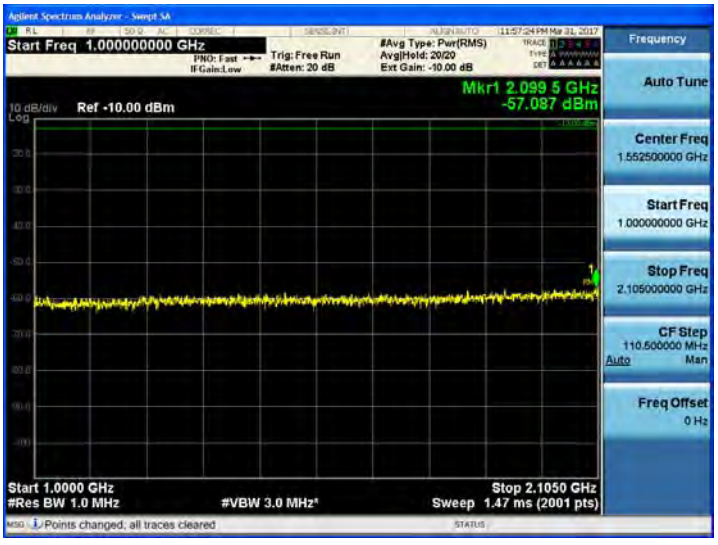
Test Data at Output Port 0

(64QAM Low channel)

9 ㎑ ~ 150 ㎑	150 ㎑ ~ 30 ㎒
	
30 ㎒ ~ 1 ㎓	**1 ㎓ ~ 2.105 ㎓**
	

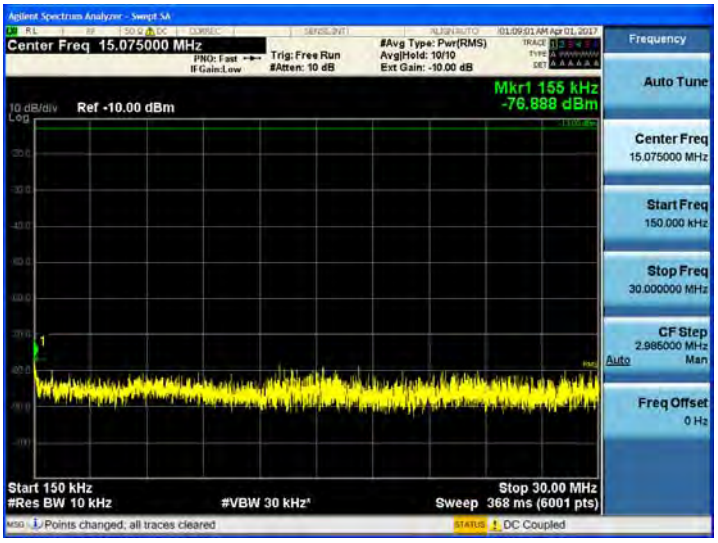
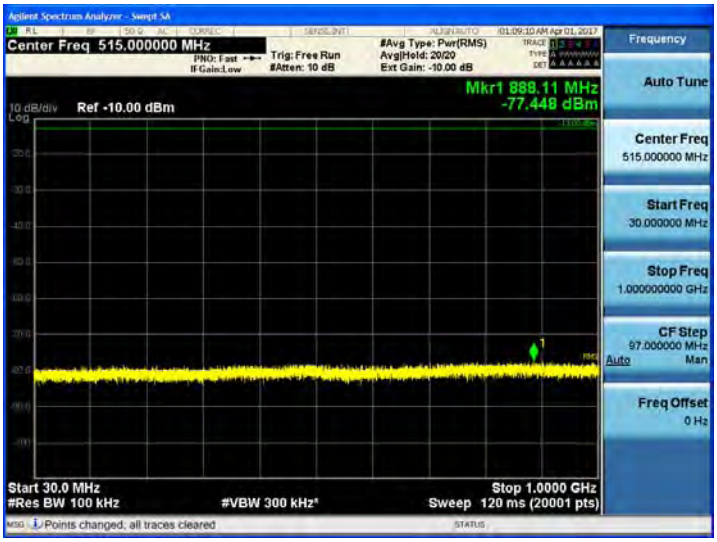
2.185 ㎓ ~ 12.75 ㎓	12.75 ㎓ ~ 26.5 ㎓
	

(64QAM Middle channel)

9 ㎑ ~ 150 ㎑	150 ㎑ ~ 30 ㎒
	
30 ㎒ ~ 1 ㎓	**1 ㎓ ~ 2.105 ㎓**
	

2.185 ㎓ ~ 12.75 ㎓	12.75 ㎓ ~ 26.5 ㎓
	

(64QAM High channel)

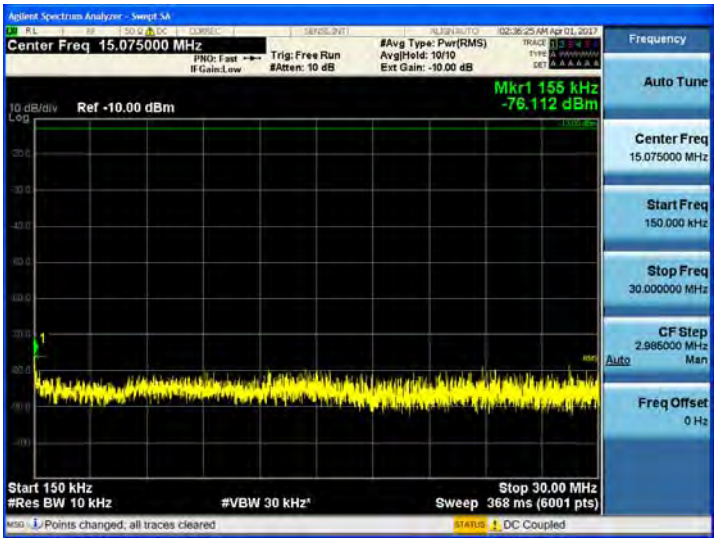
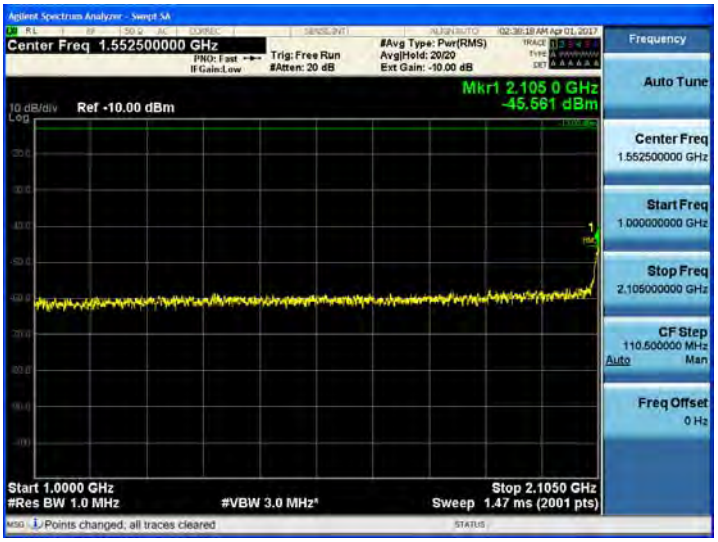
9 ㎑ ~ 150 ㎑	150 ㎑ ~ 30 ㎒
	
30 ㎒ ~ 1 ㎓	**1 ㎓ ~ 2.105 ㎓**
	

2.185 ㎓ ~ 12.75 ㎓	12.75 ㎓ ~ 26.5 ㎓
	

AWS 2100_LTE 20M

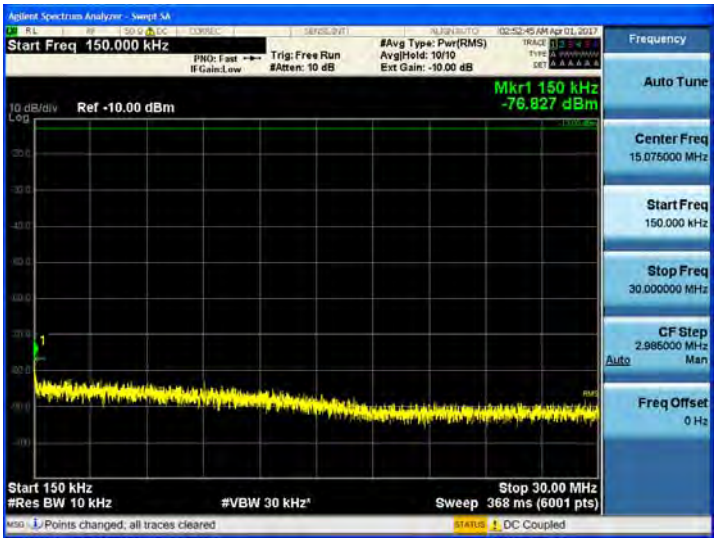
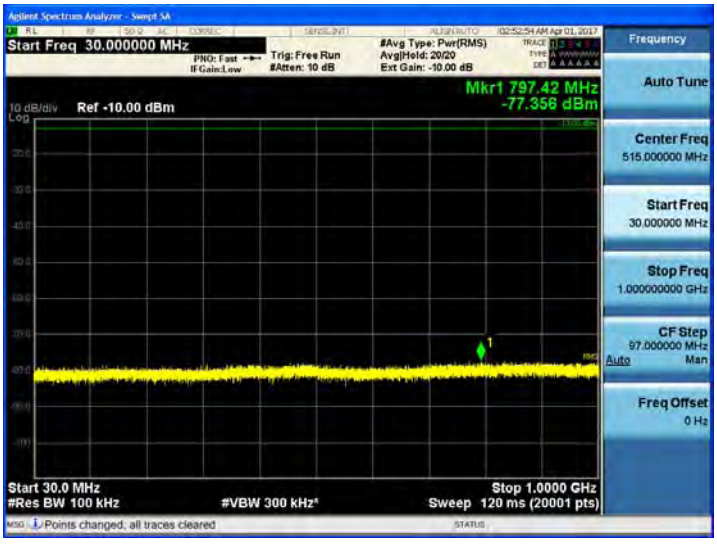
Test Data at Output Port 0

(QPSK Low channel)

9 ㎑ ~ 150 ㎑	150 ㎑ ~ 30 ㎒
	
30 ㎒ ~ 1 ㎓	**1 ㎓ ~ 2.105 ㎓**
	

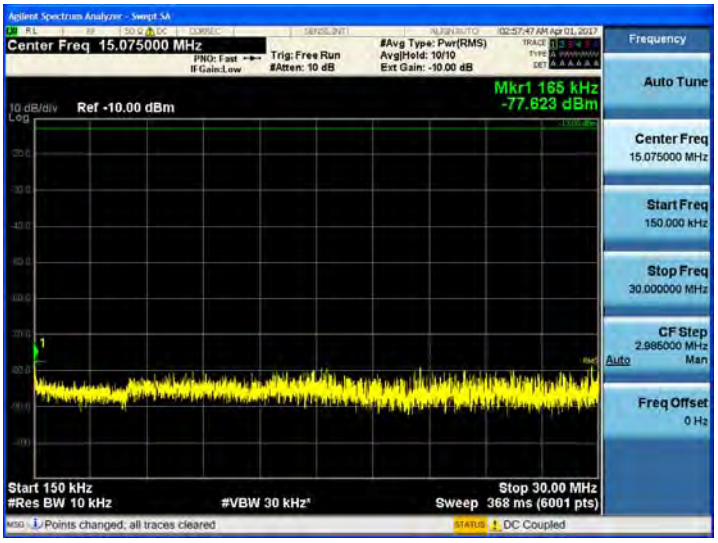
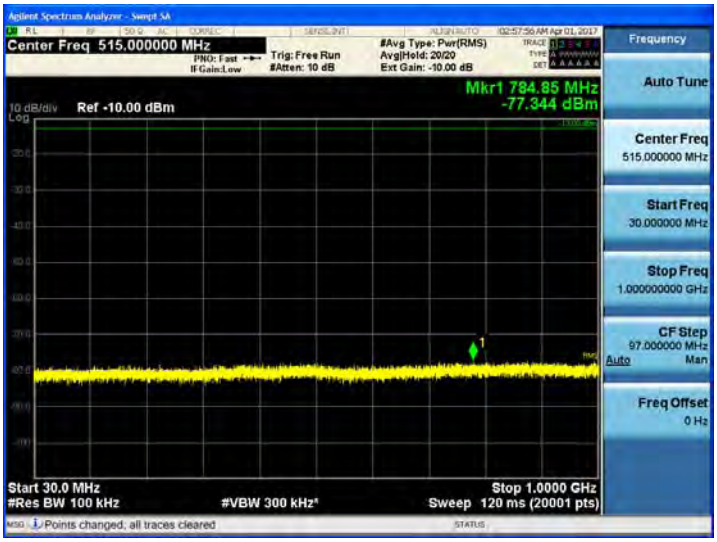
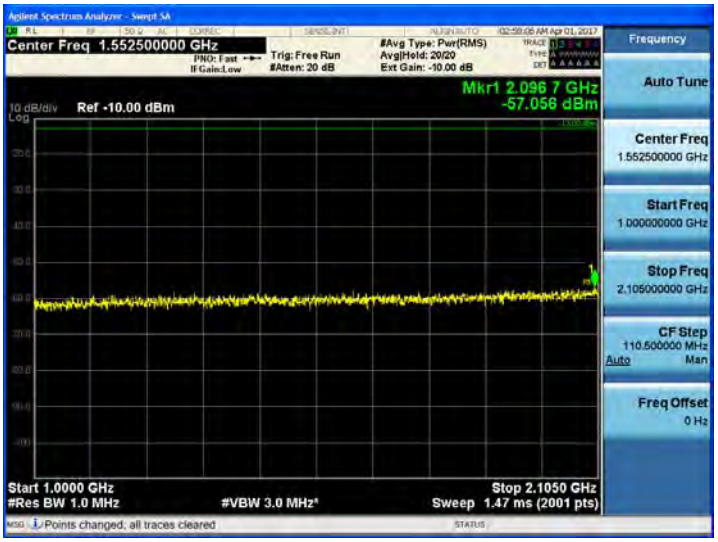
2.185 ㎓ ~ 12.75 ㎓	12.75 ㎓ ~ 26.5 ㎓
	

(QPSK Middle channel)

9 ㎑ ~ 150 ㎑	150 ㎑ ~ 30 ㎒
	
30 ㎒ ~ 1 ㎓	**1 ㎓ ~ 2.105 ㎓**
	

2.185 ㎓ ~ 12.75 ㎓	12.75 ㎓ ~ 26.5 ㎓
	

(QPSK High channel)

9 ㎑ ~ 150 ㎑	150 ㎑ ~ 30 ㎒
	
30 ㎒ ~ 1 ㎓	**1 ㎓ ~ 2.105 ㎓**
	

2.185 ㎓ ~ 12.75 ㎓	12.75 ㎓ ~ 26.5 ㎓