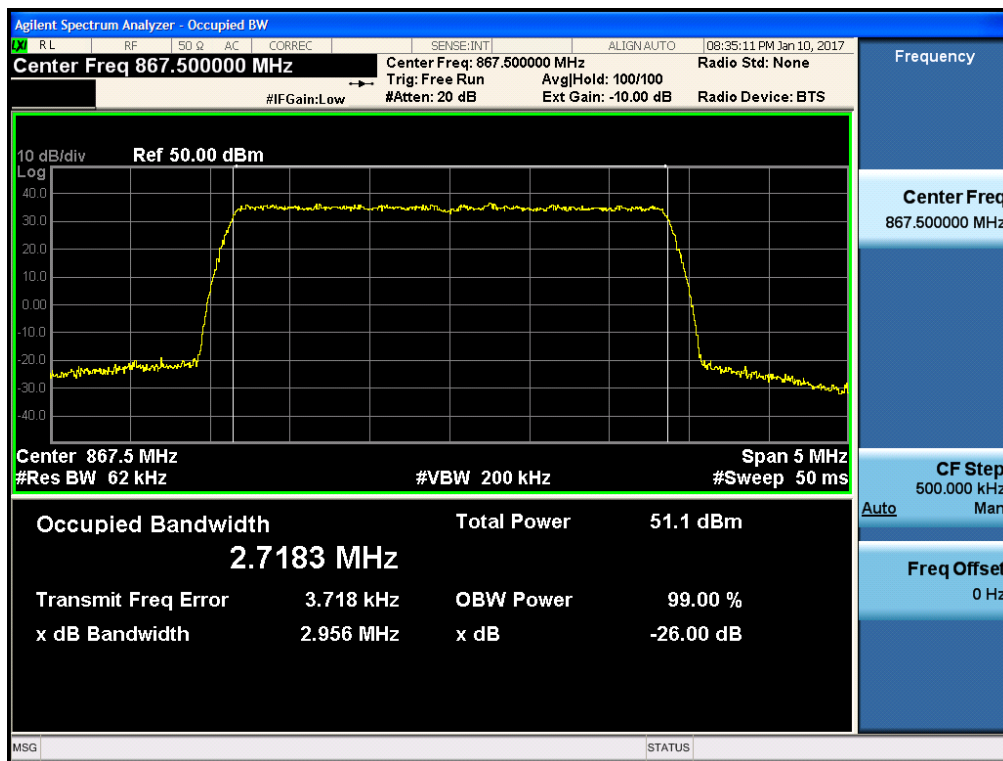


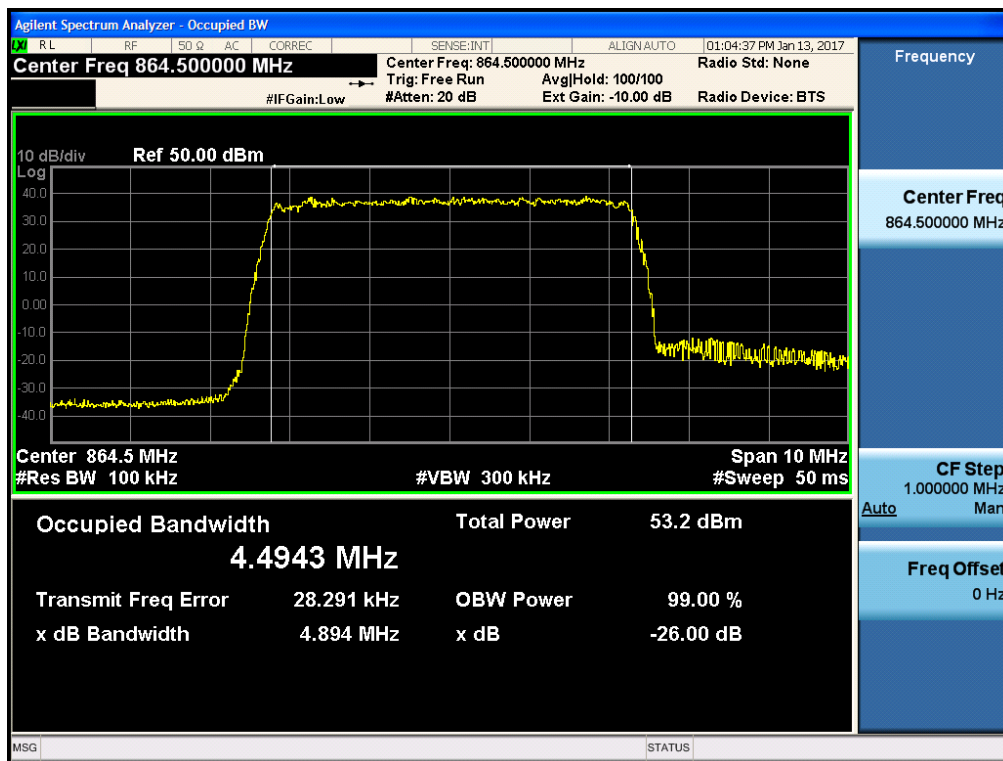
(64QAM High Channel)



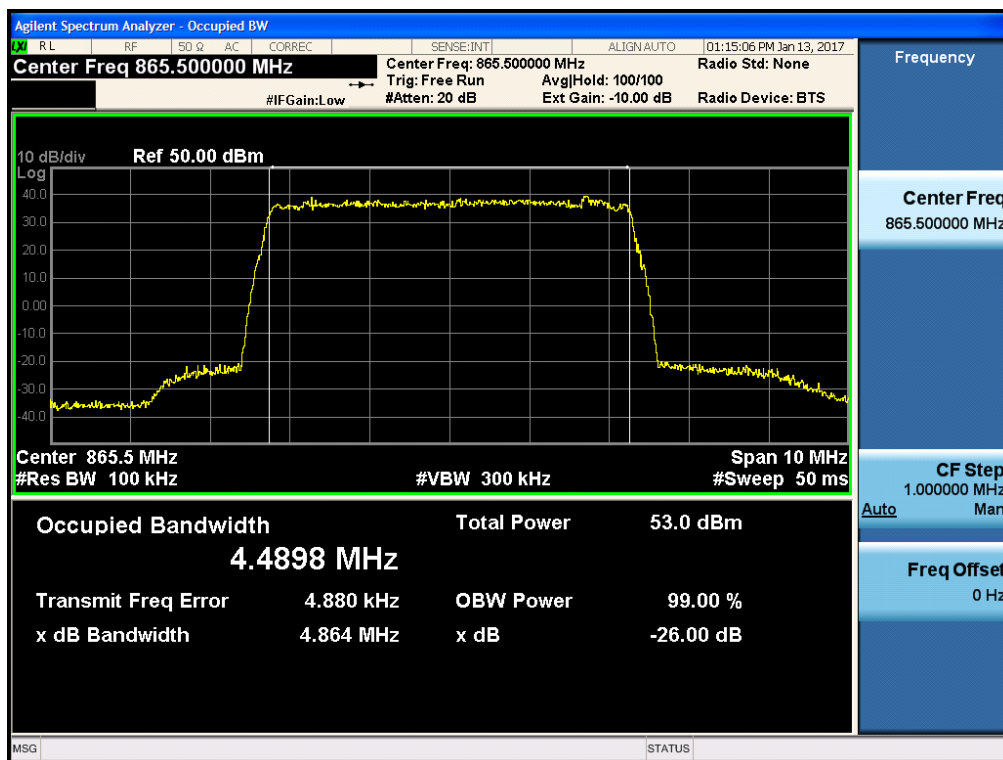
LTE 5 MHz

Test Plot at Output Port 0

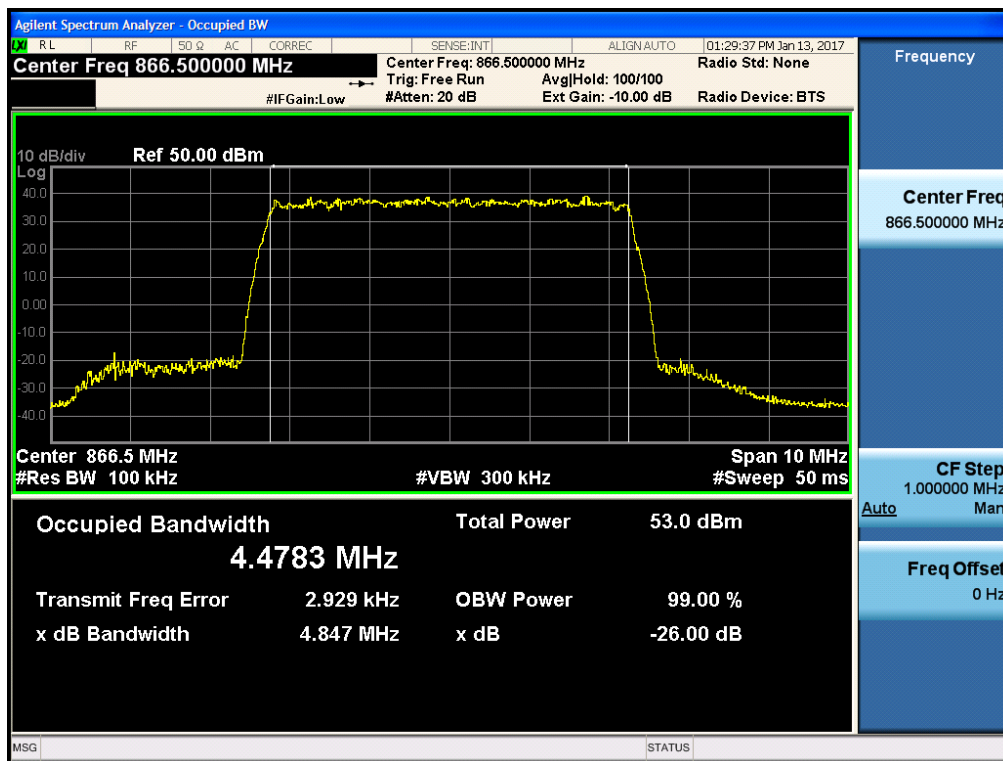
(QPSK Low Channel)



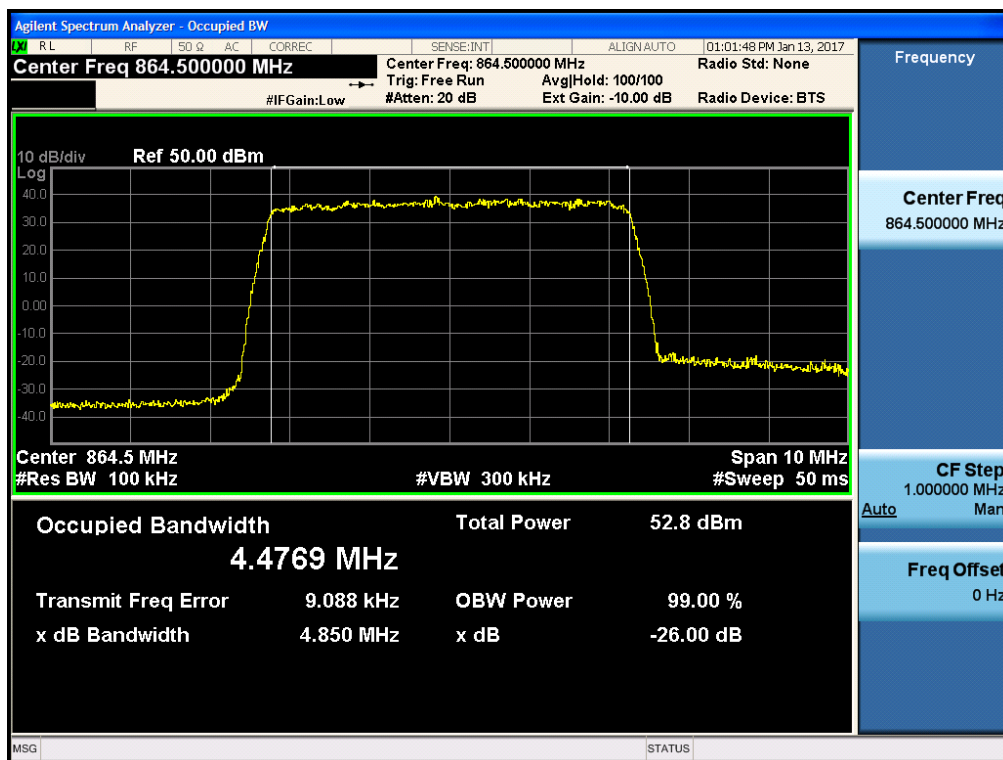
(QPSK Middle Channel)



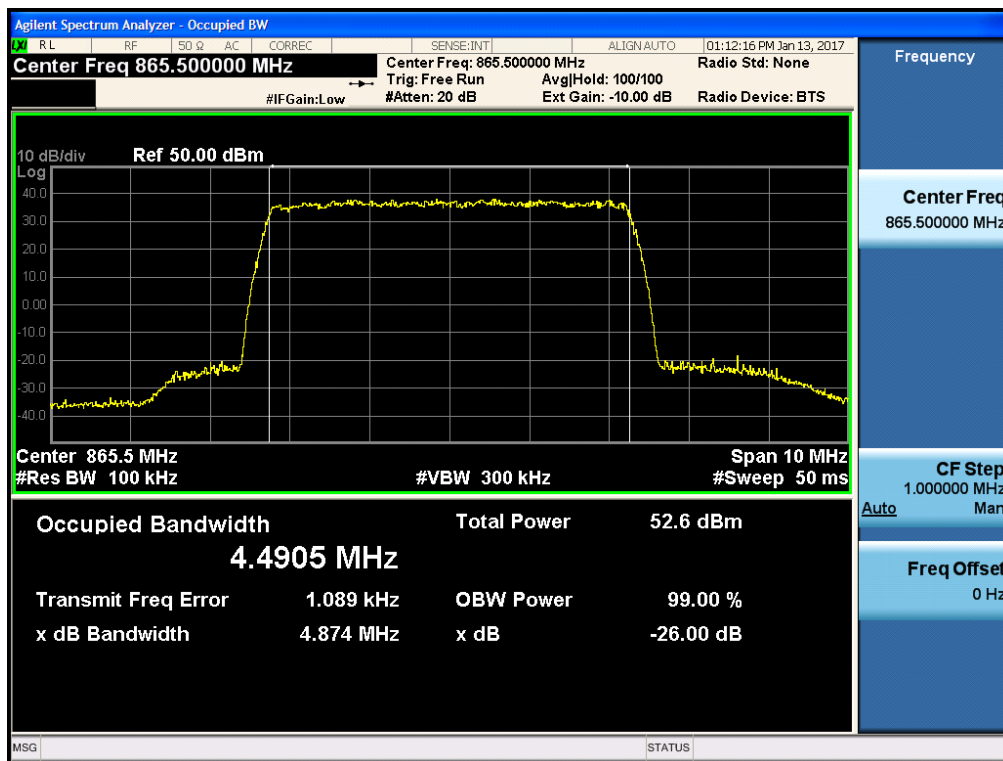
(QPSK High Channel)



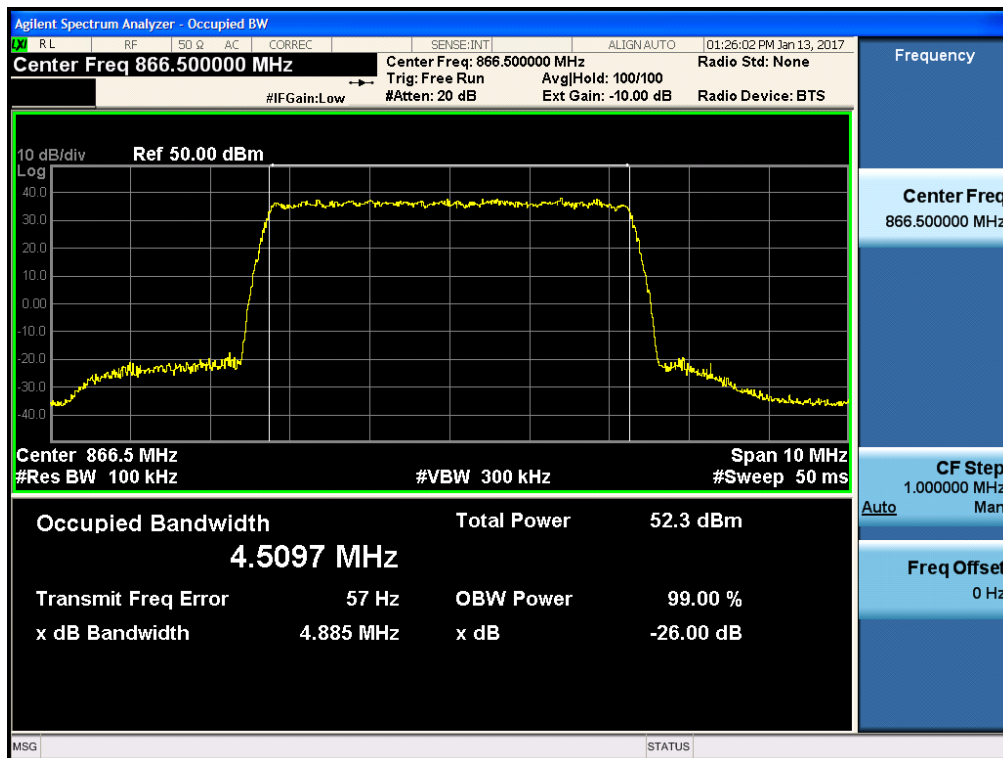
(16QAM Low Channel)



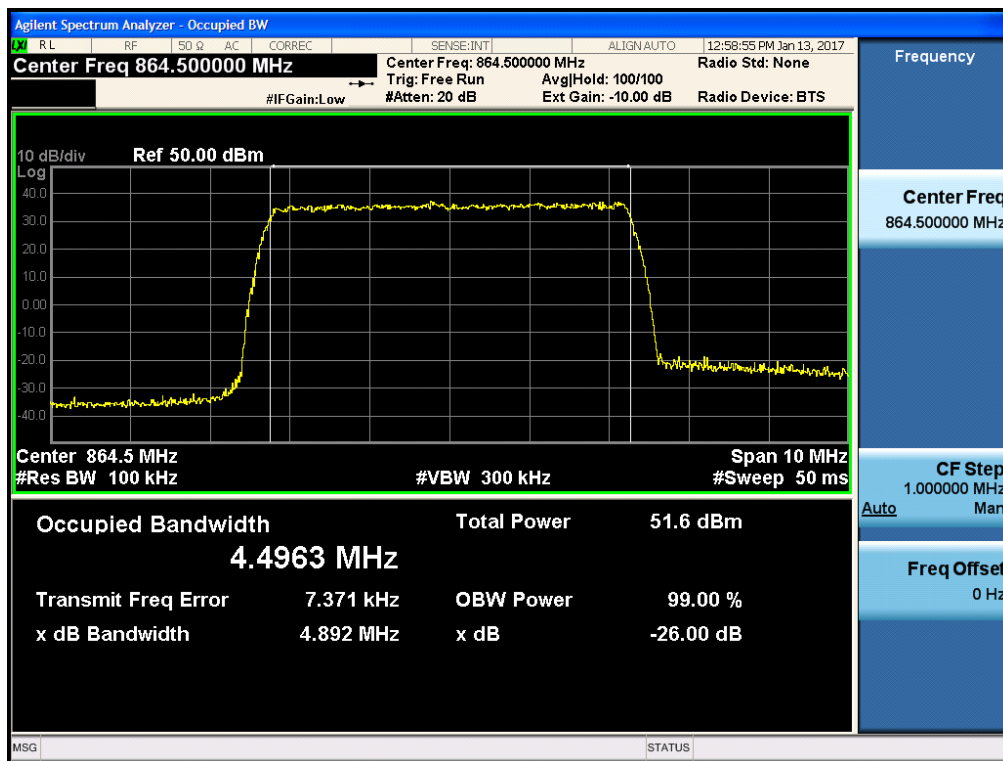
(16QAM Middle Channel)



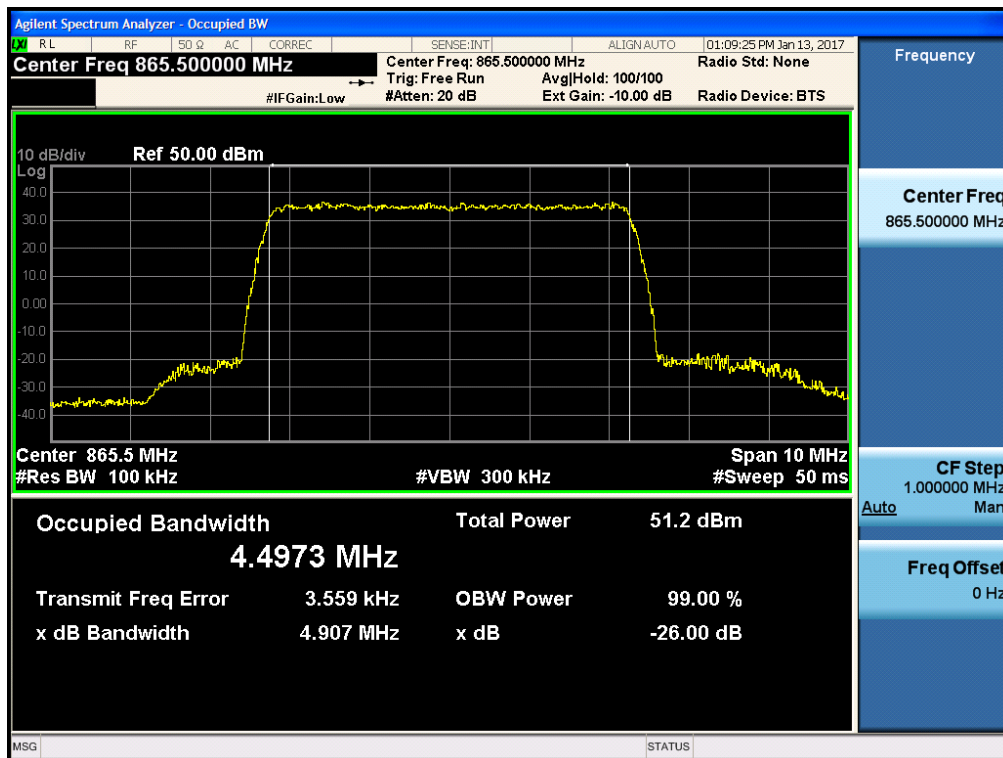
(16QAM High Channel)



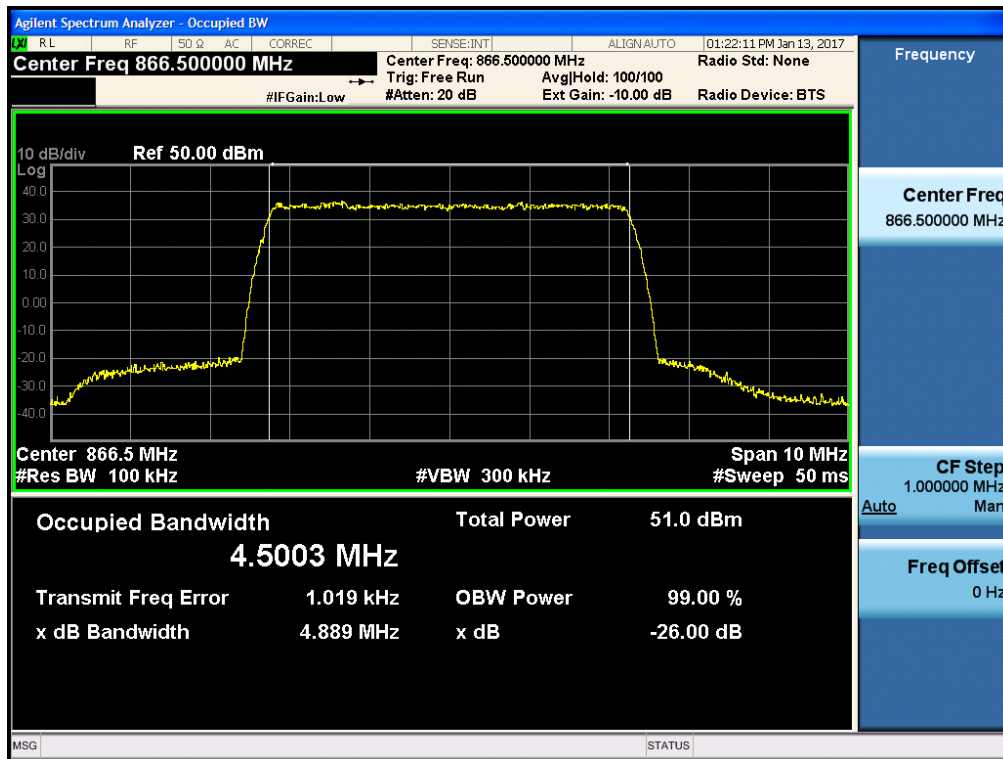
(64QAM Low Channel)



(64QAM Middle Channel)

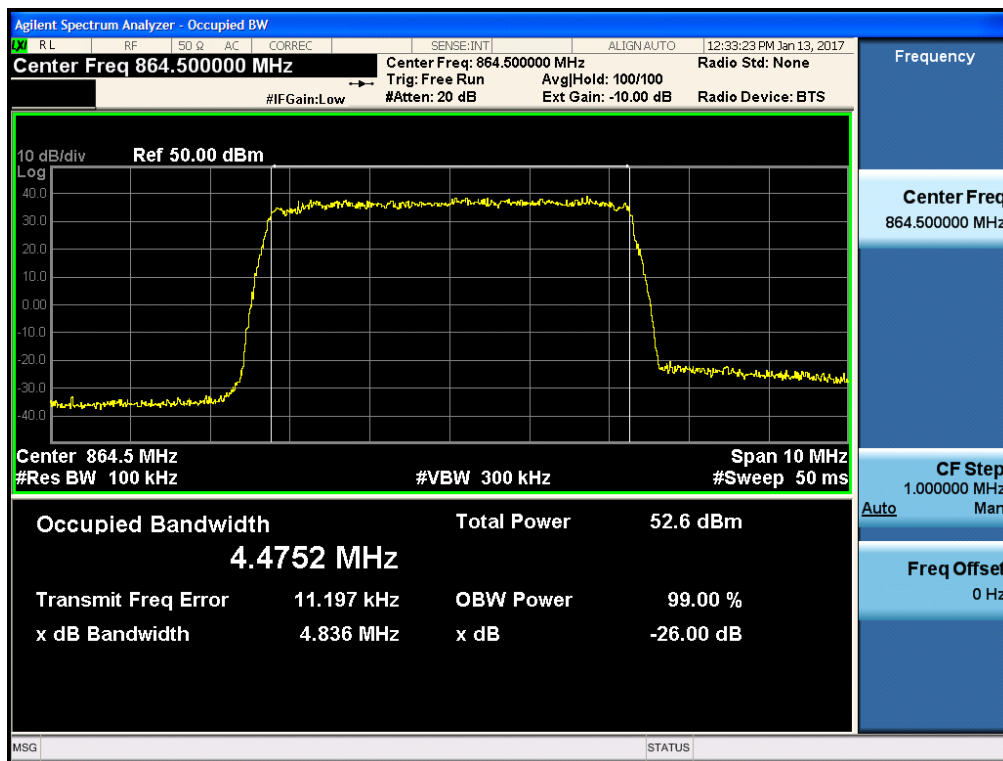


(64QAM High Channel)

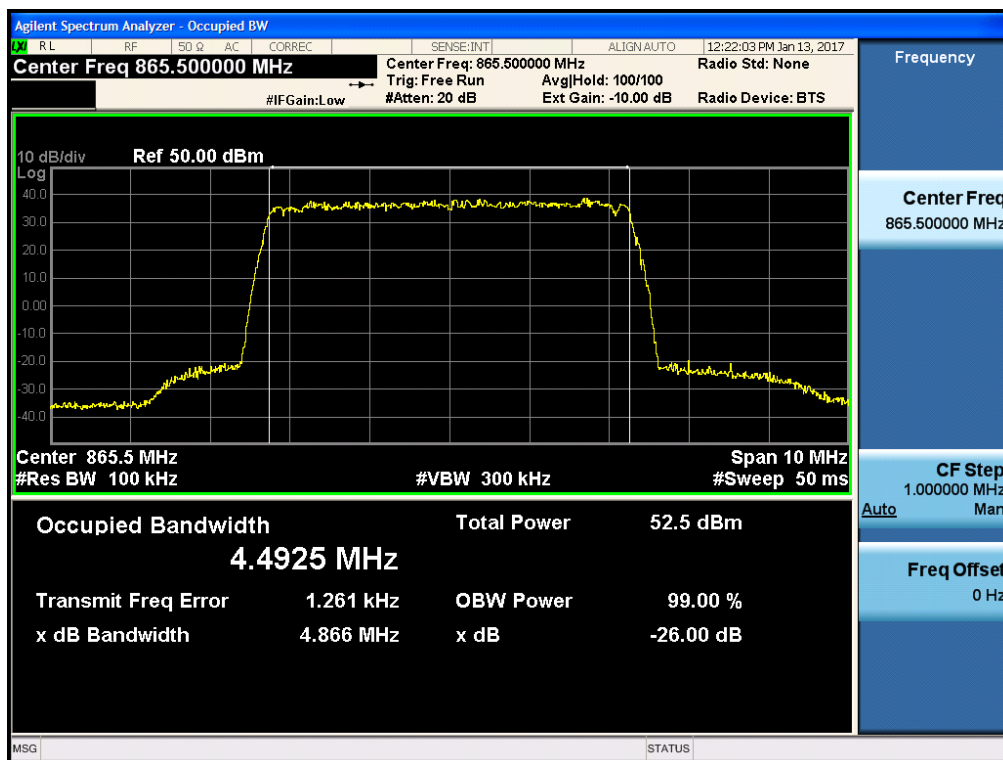


Test Plot at Output Port 1

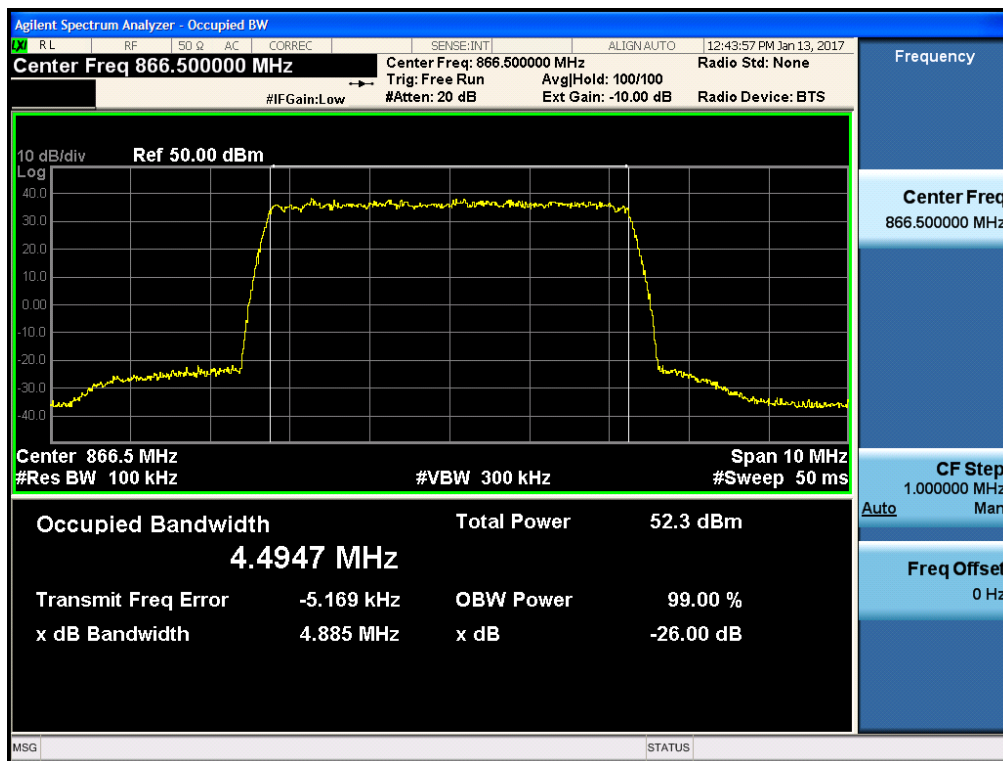
(QPSK Low Channel)



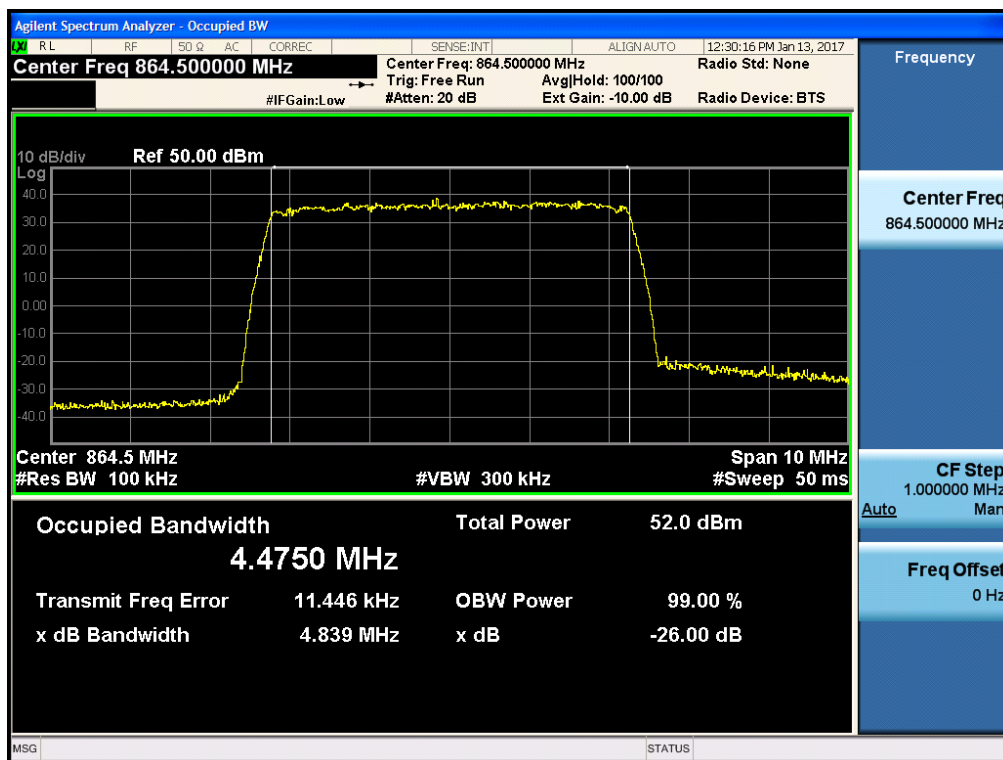
(QPSK Middle Channel)



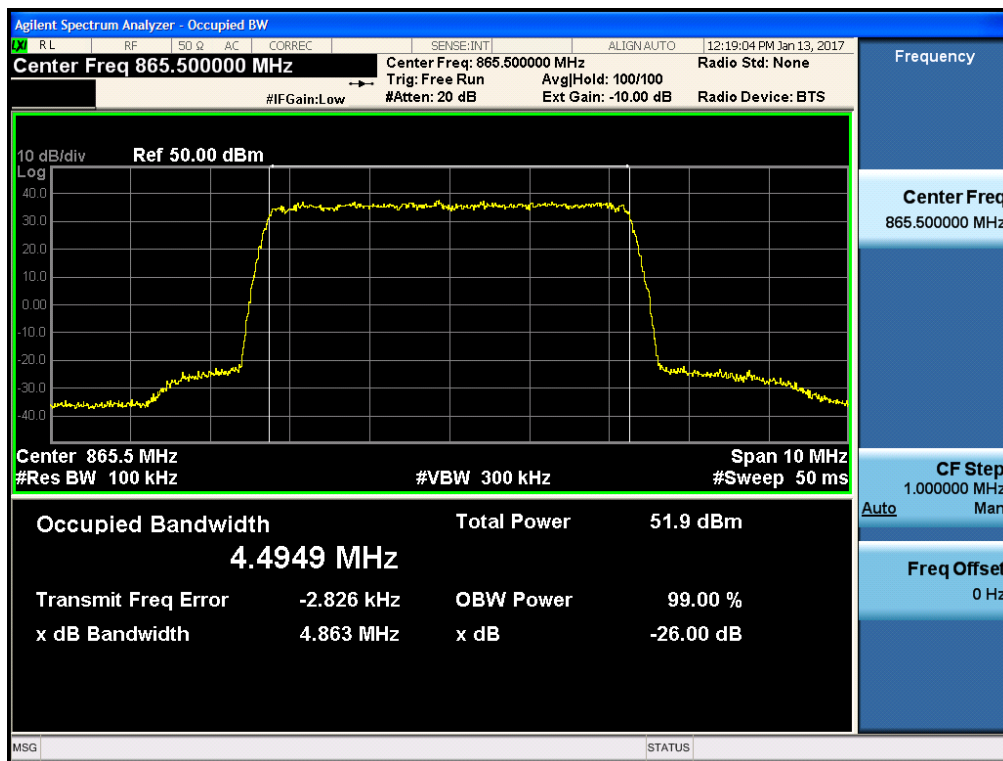
(QPSK High Channel)



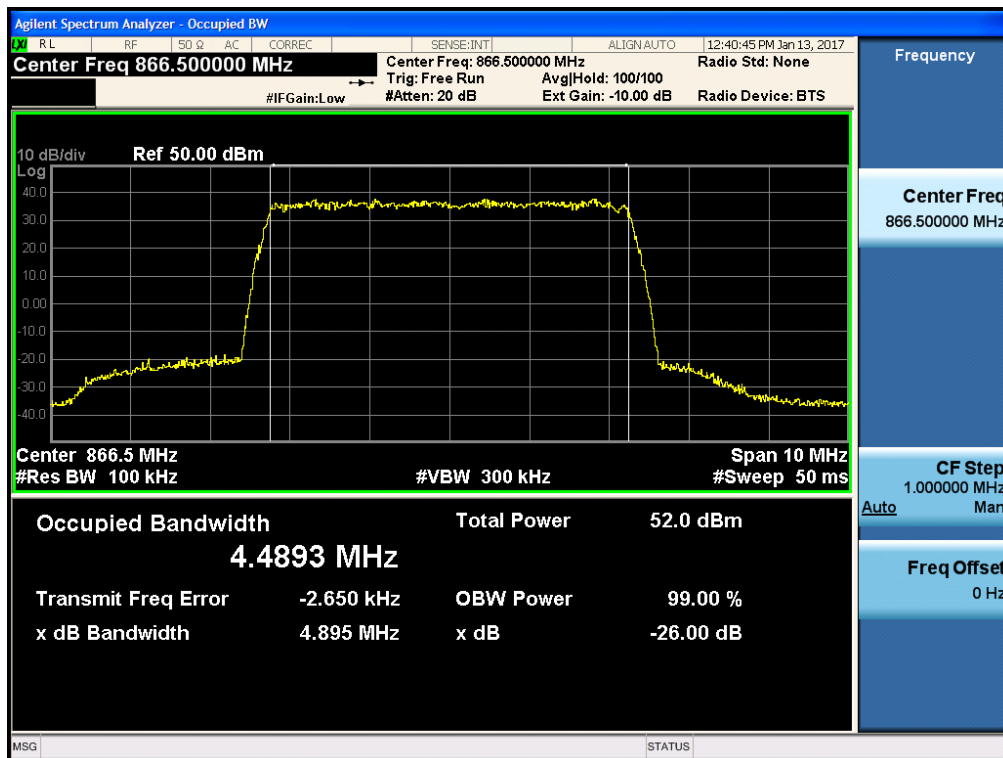
(16QAM Low Channel)



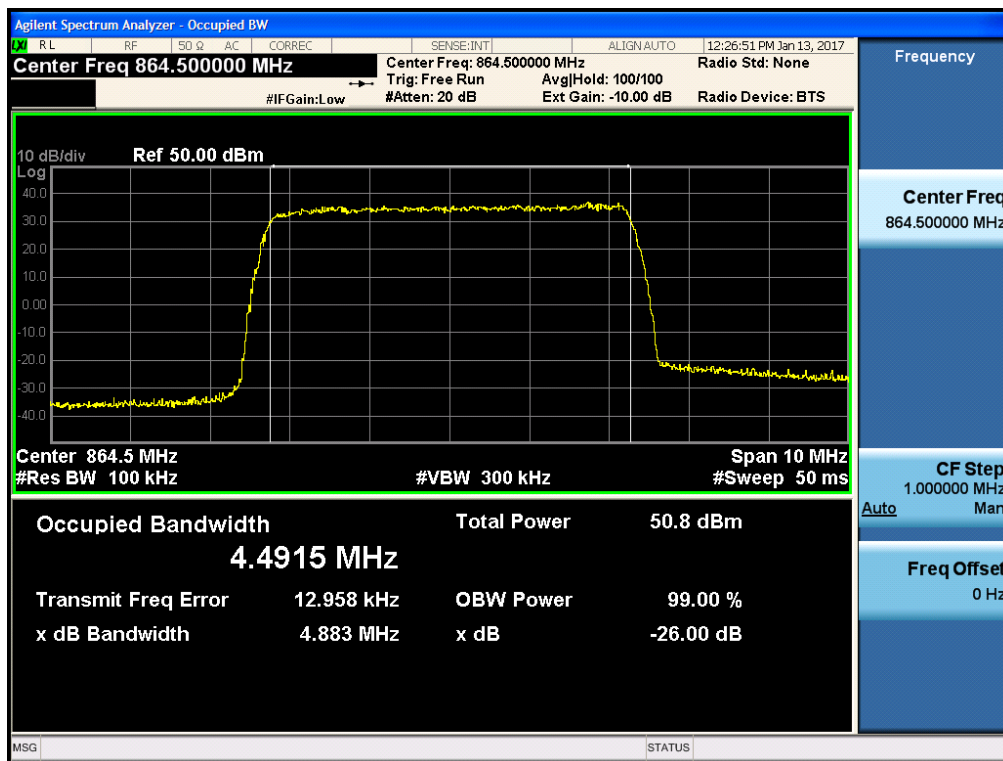
(16QAM Middle Channel)



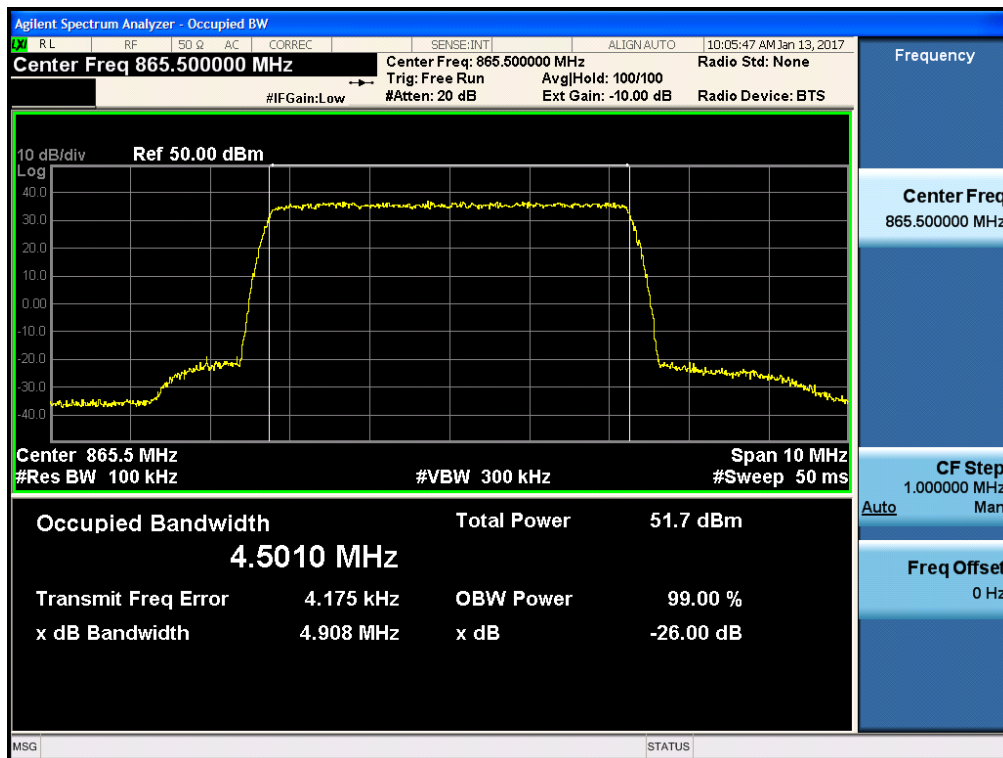
(16QAM High Channel)



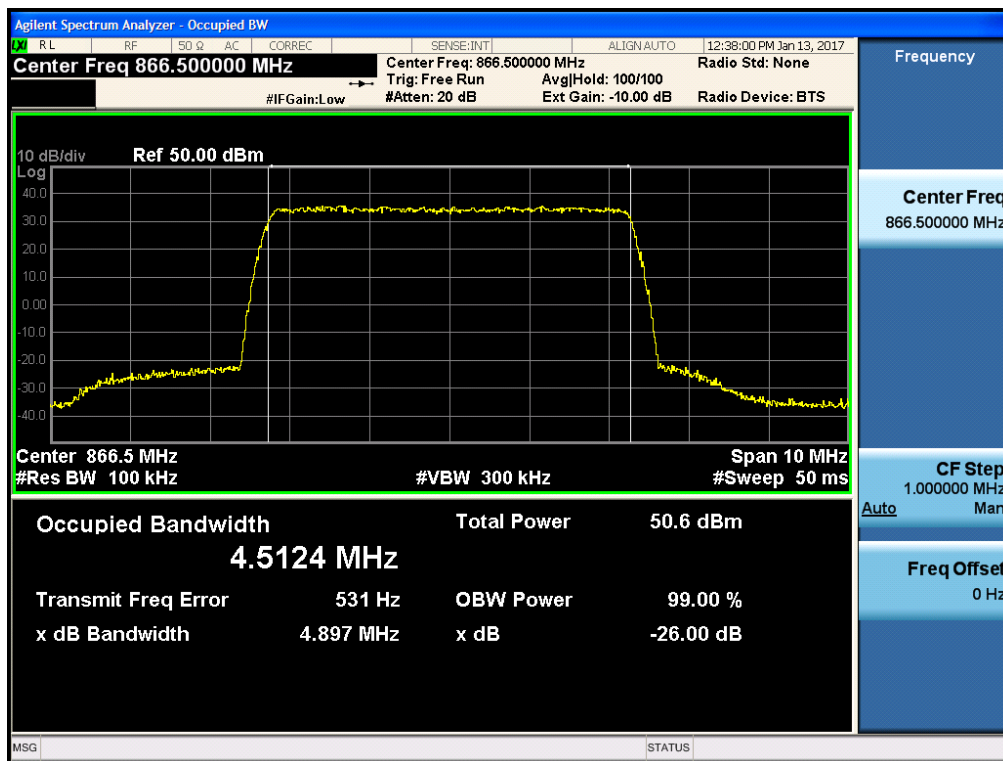
(64QAM Low Channel)



(64QAM Middle Channel)

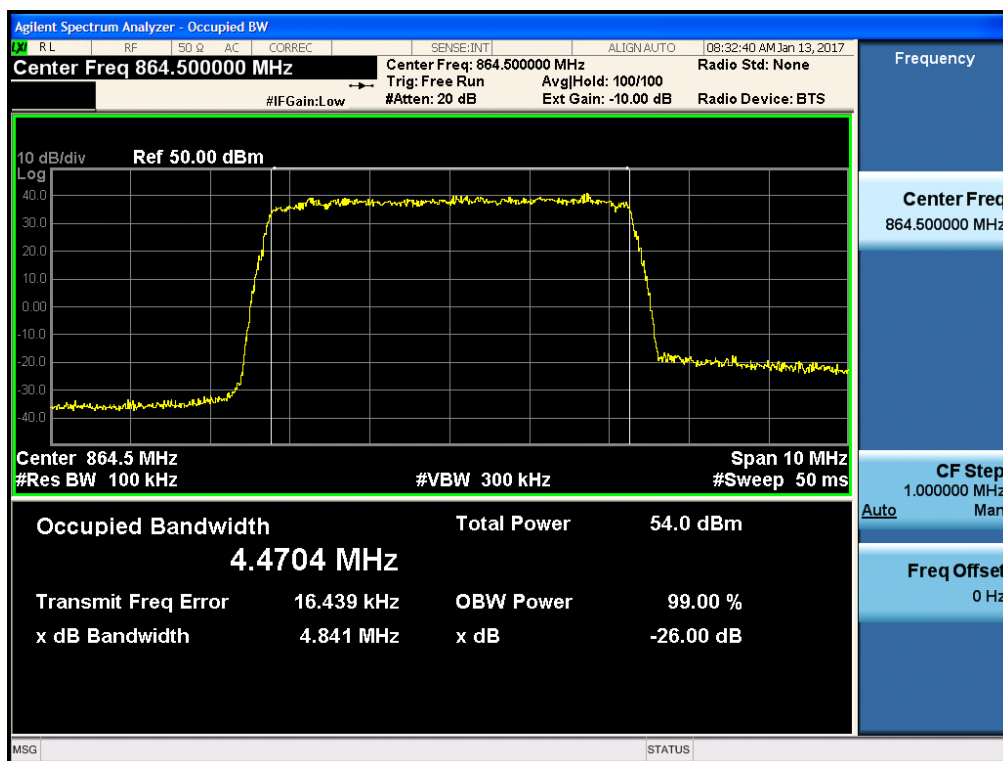


(64QAM High Channel)

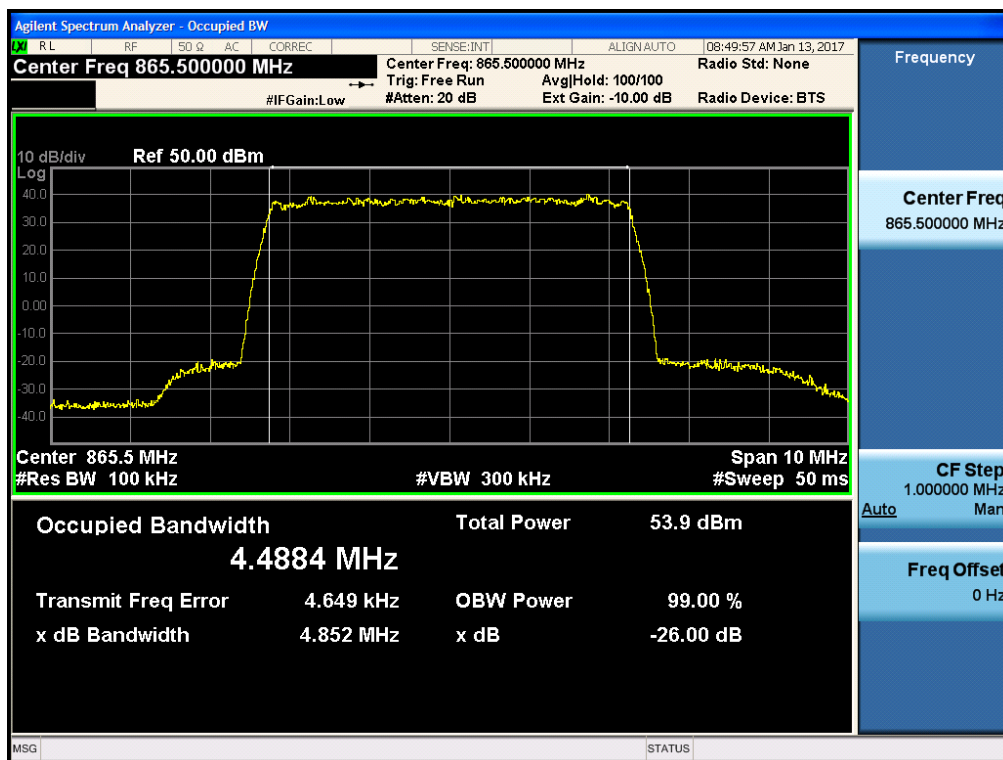


Test Plot at Output Port 2

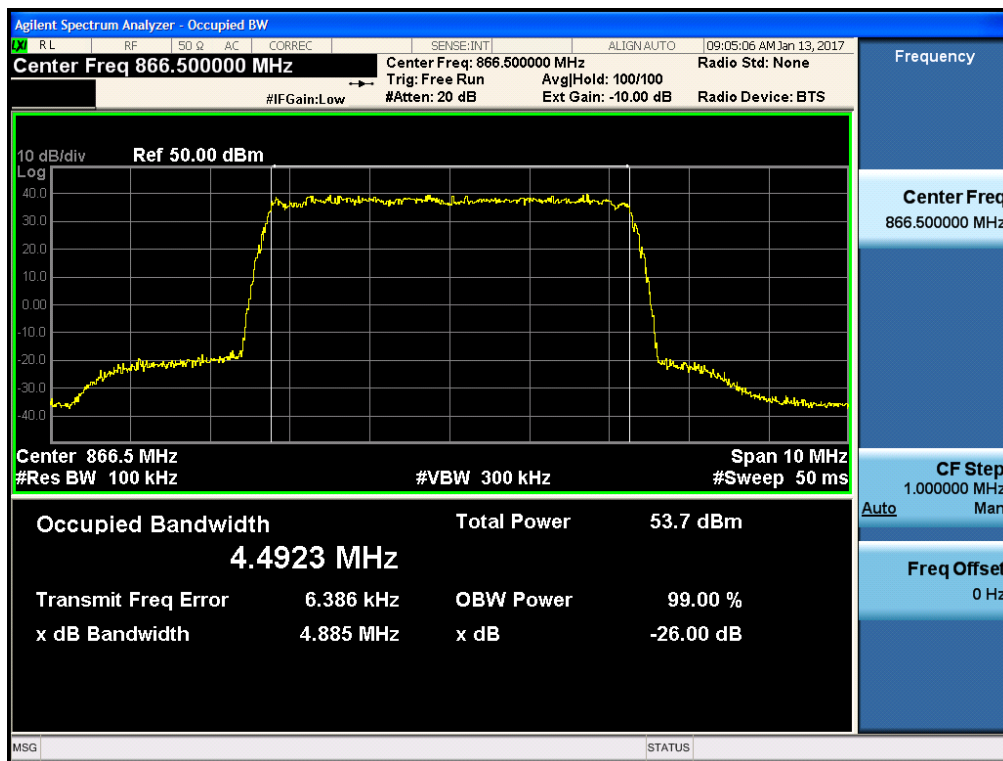
(QPSK Low Channel)



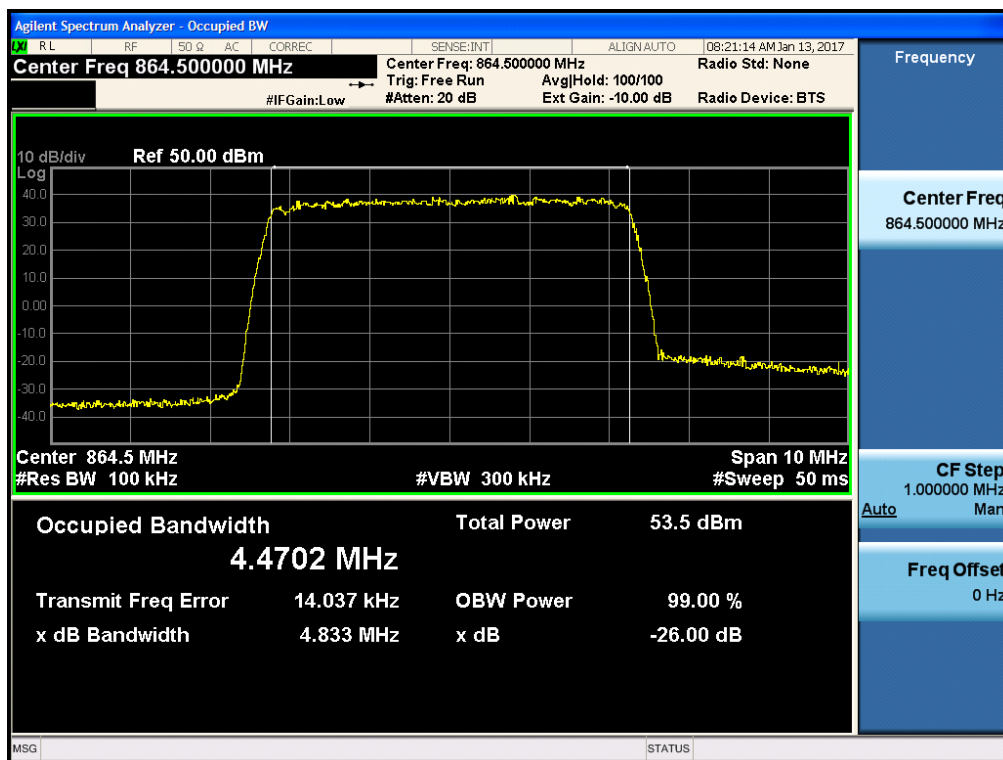
(QPSK Middle Channel)



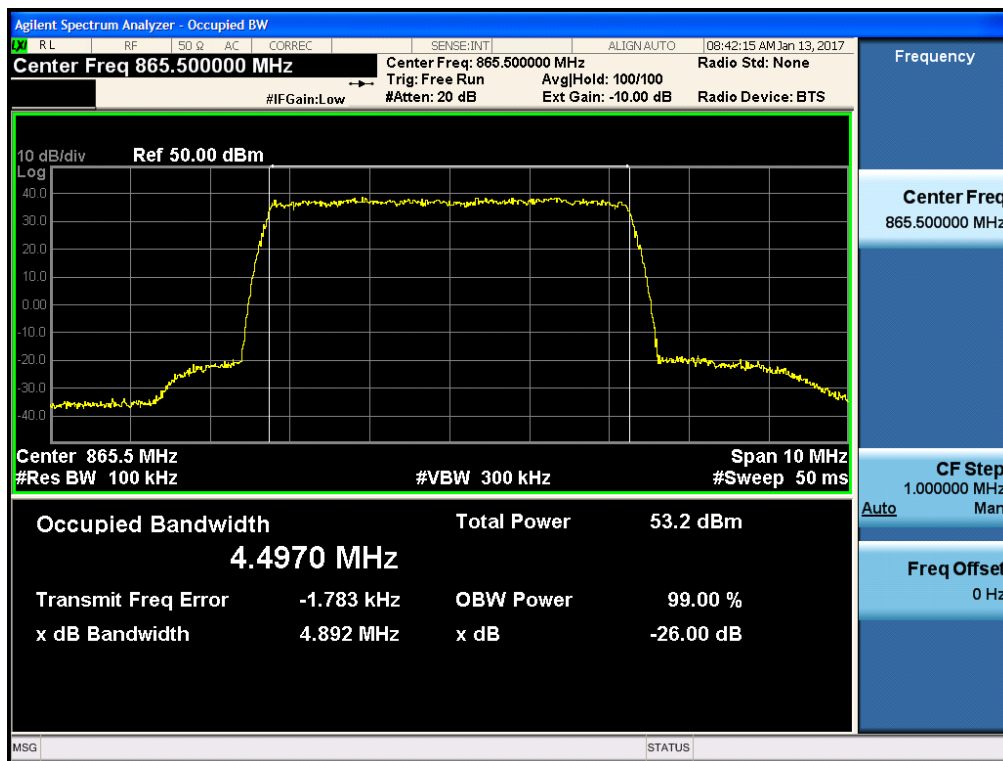
(QPSK High Channel)



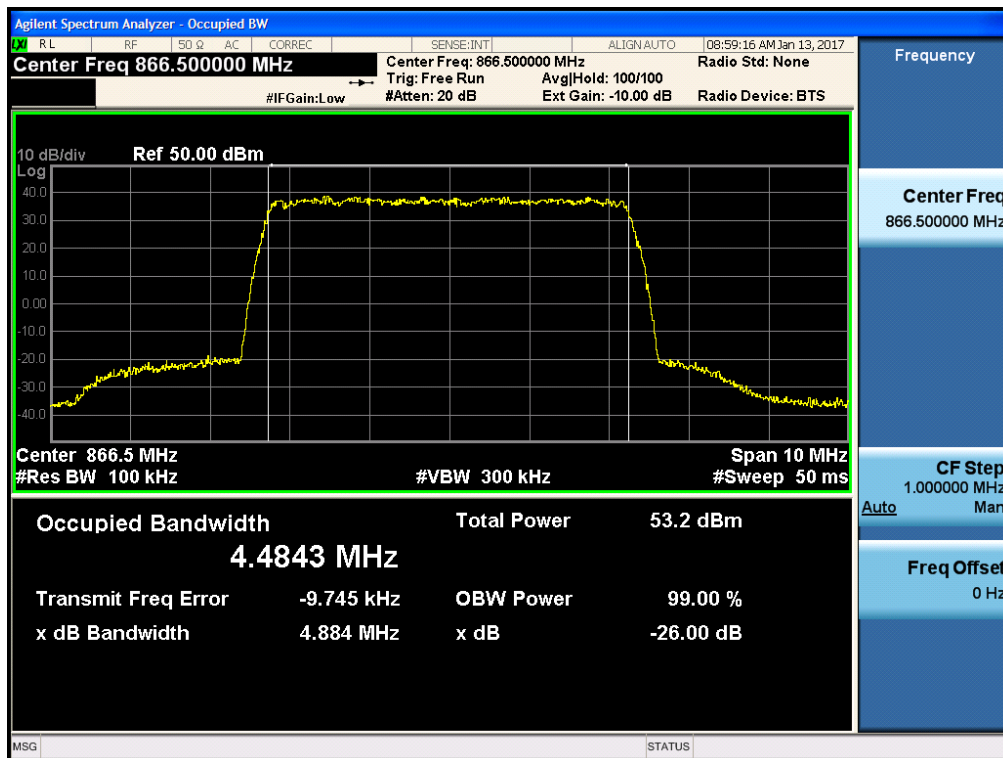
(16QAM Low Channel)



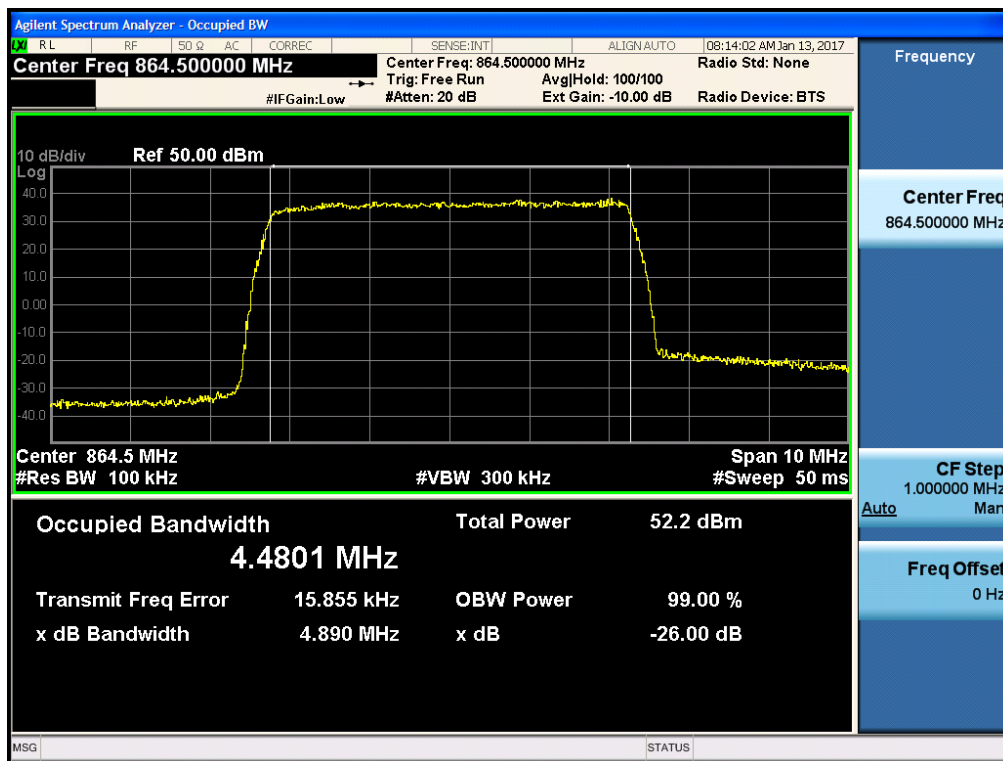
(16QAM Middle Channel)



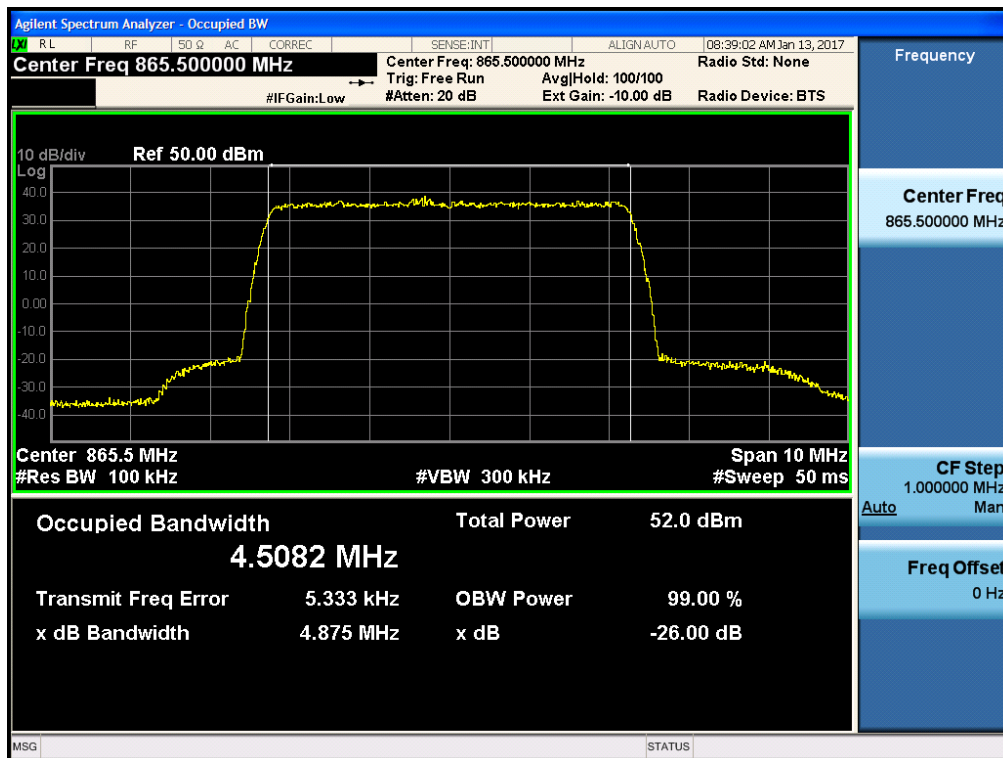
(16QAM High Channel)



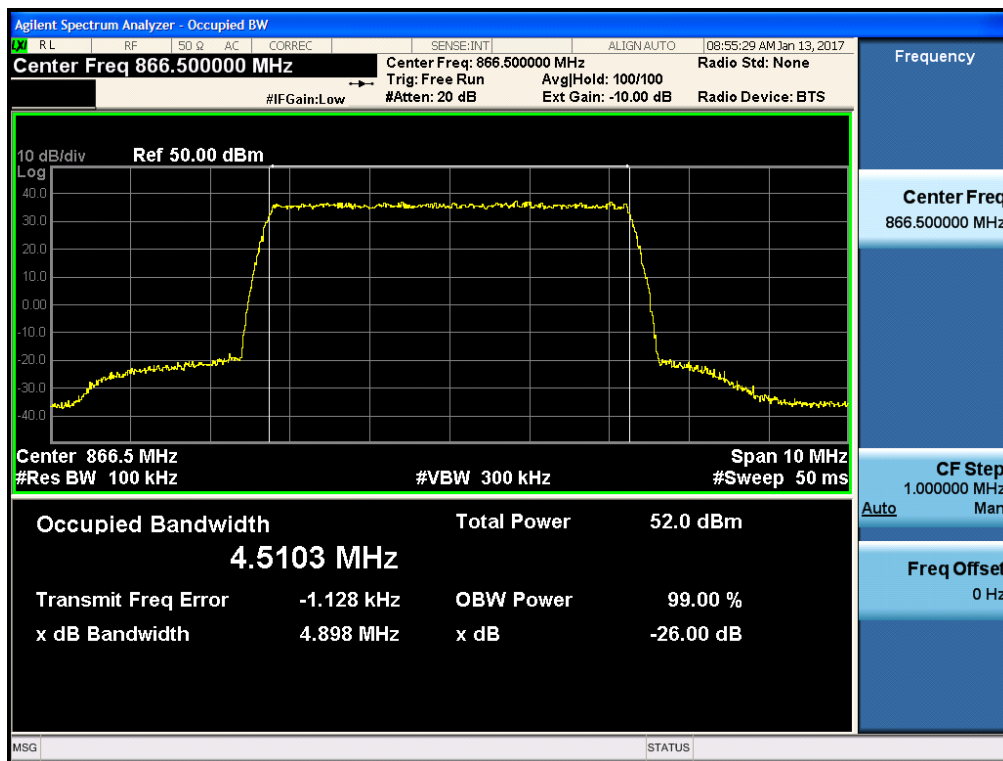
(64QAM Low Channel)



(64QAM Middle Channel)

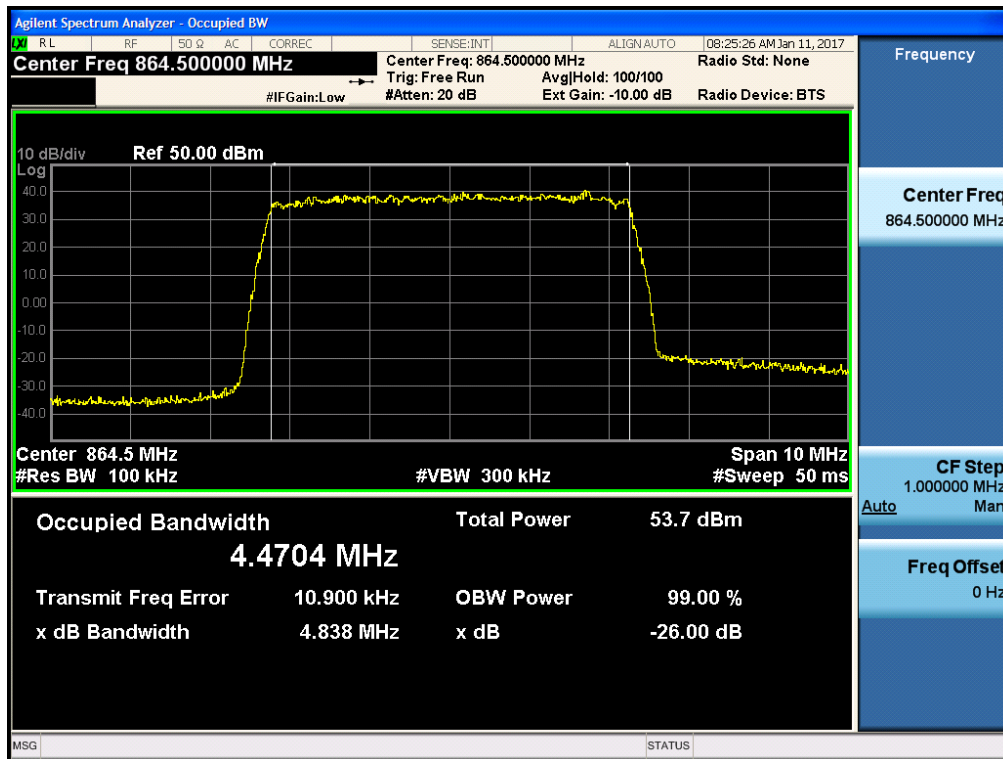


(64QAM High Channel)

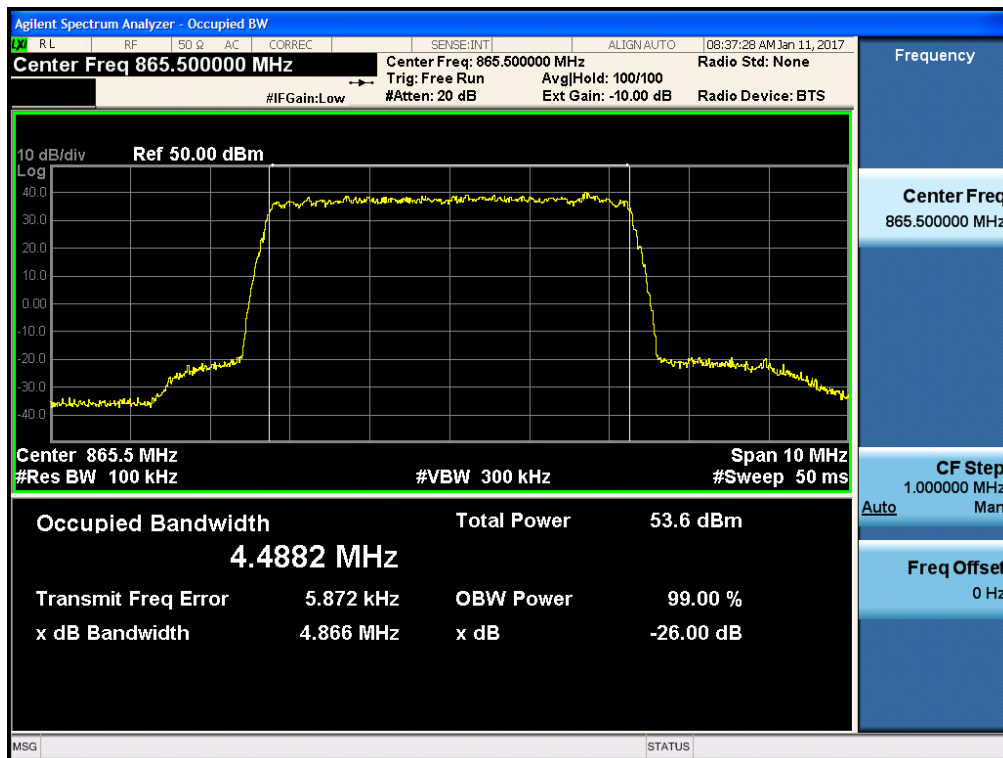


Test Plot at Output Port 3

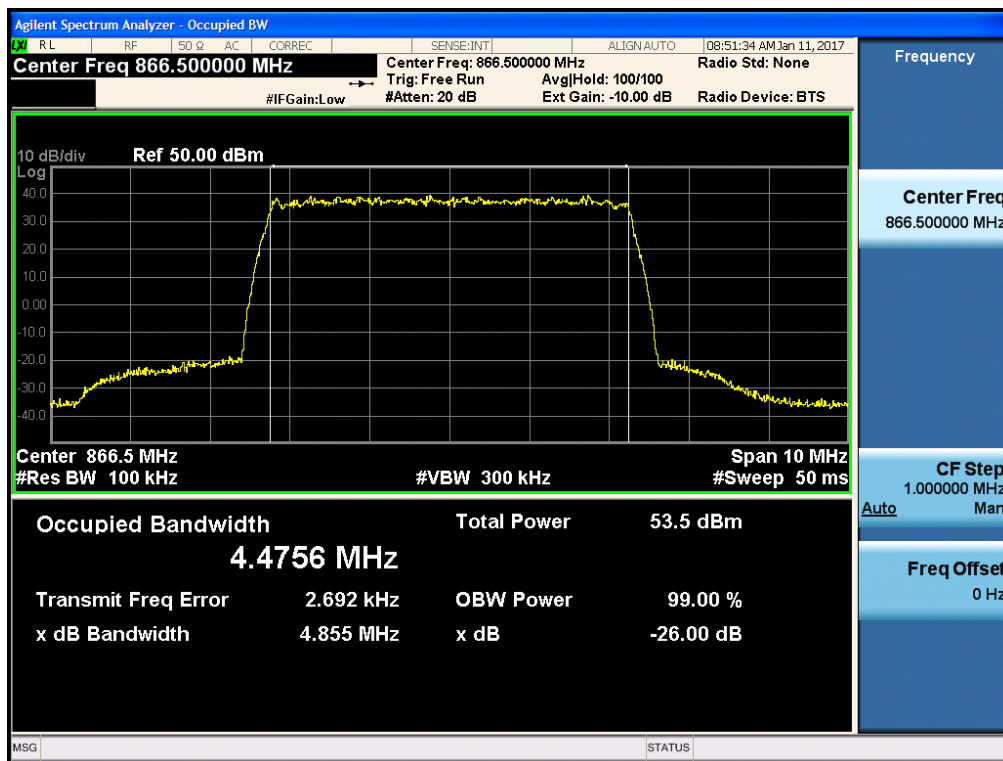
(QPSK Low Channel)



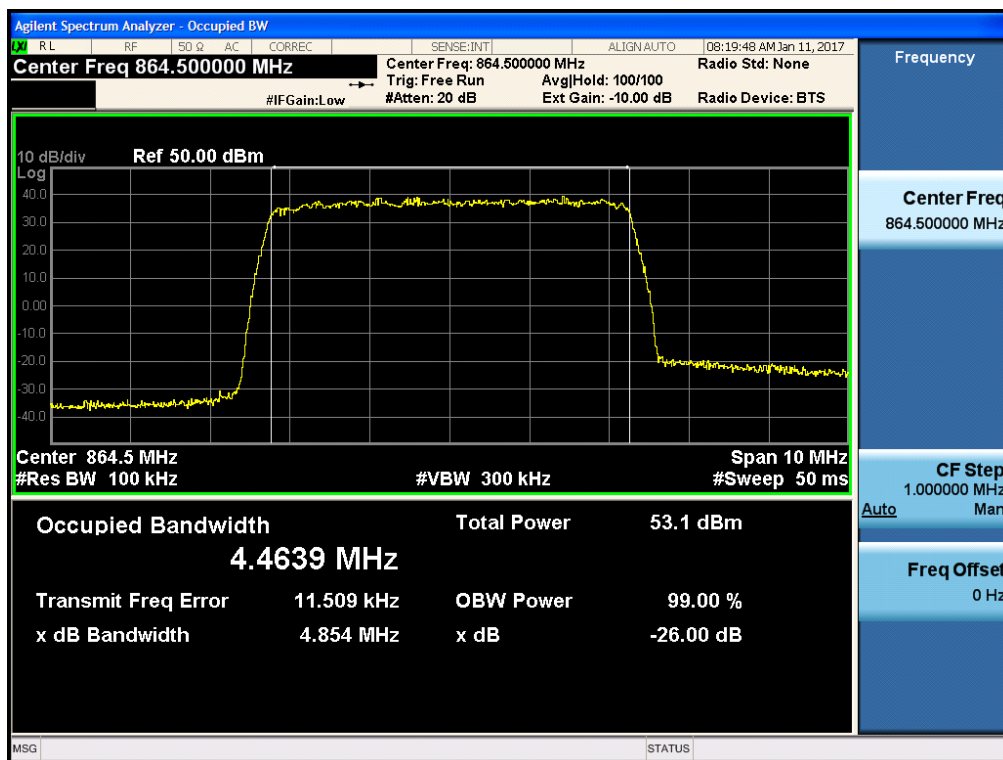
(QPSK Middle Channel)



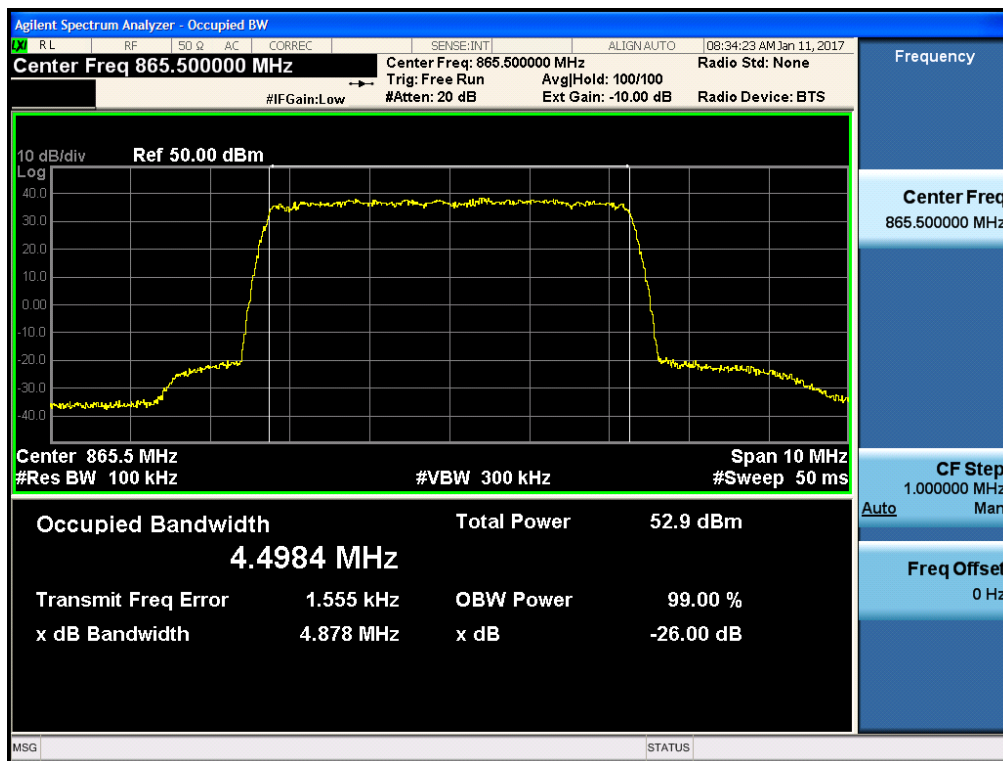
(QPSK High Channel)



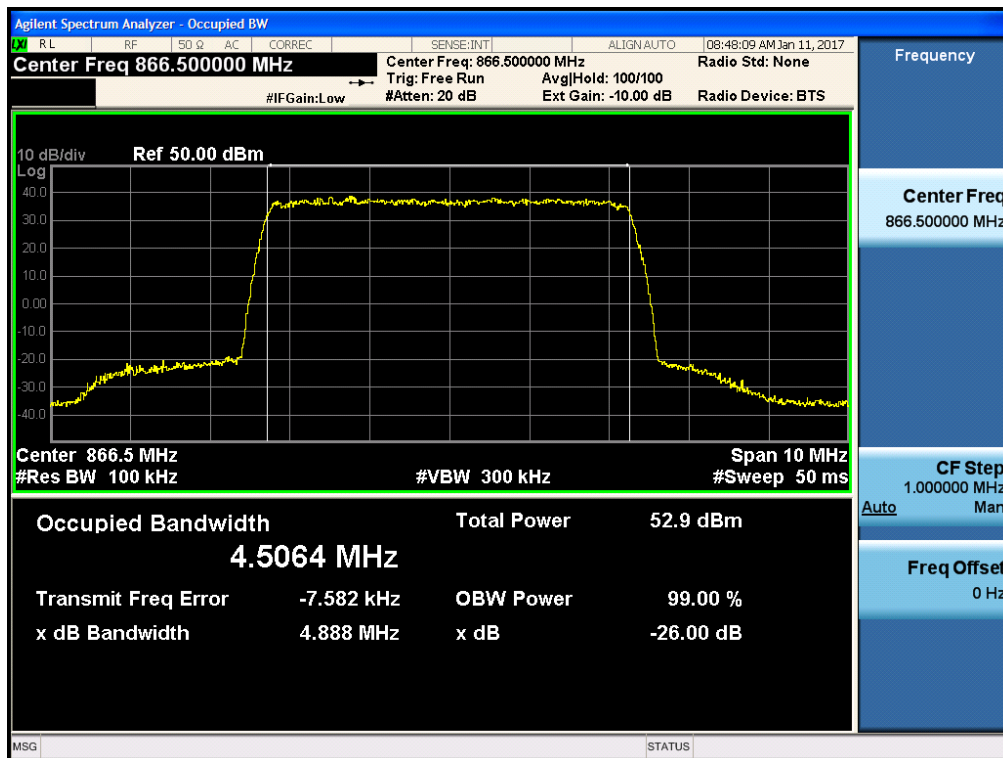
(16QAM Low Channel)



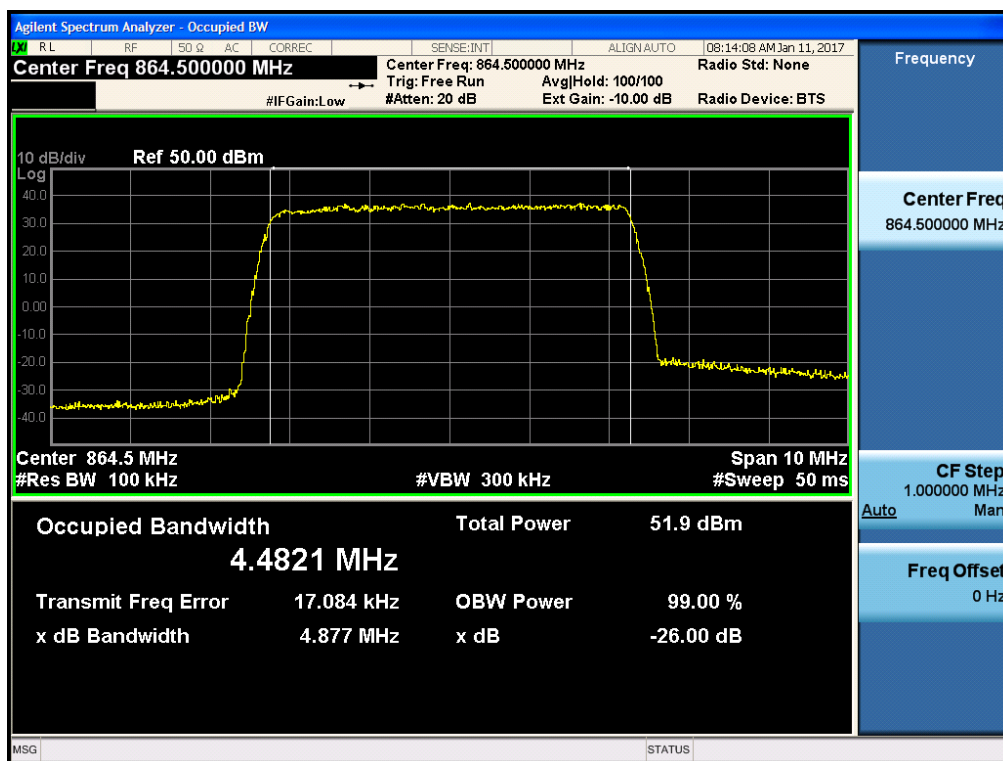
(16QAM Middle Channel)



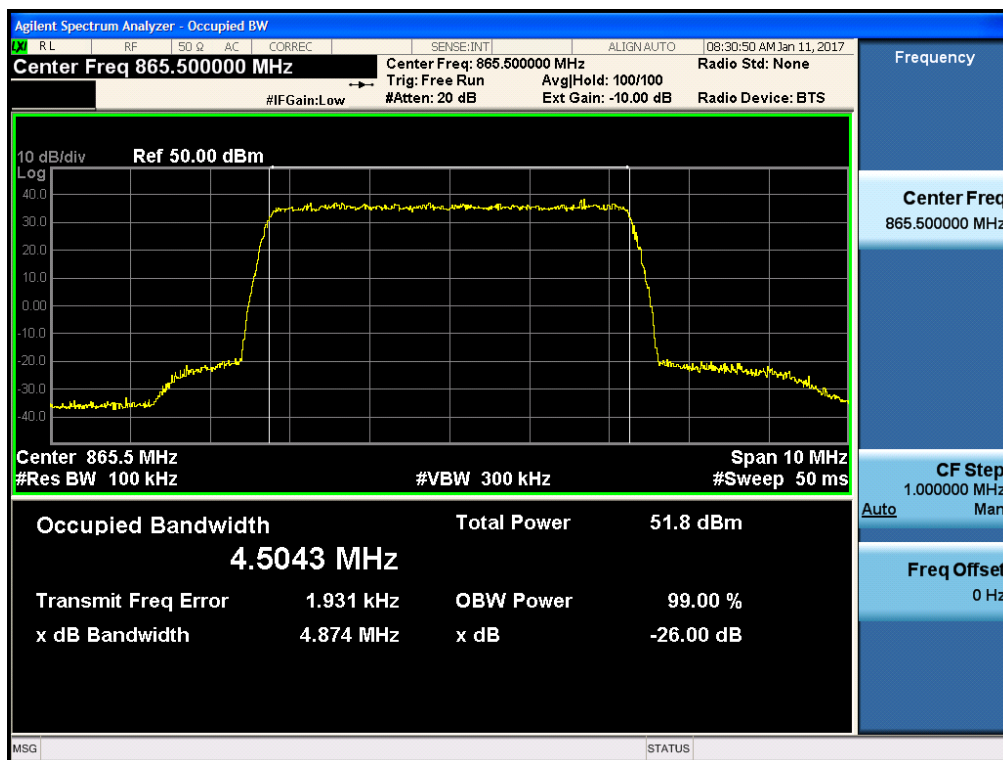
(16QAM High Channel)



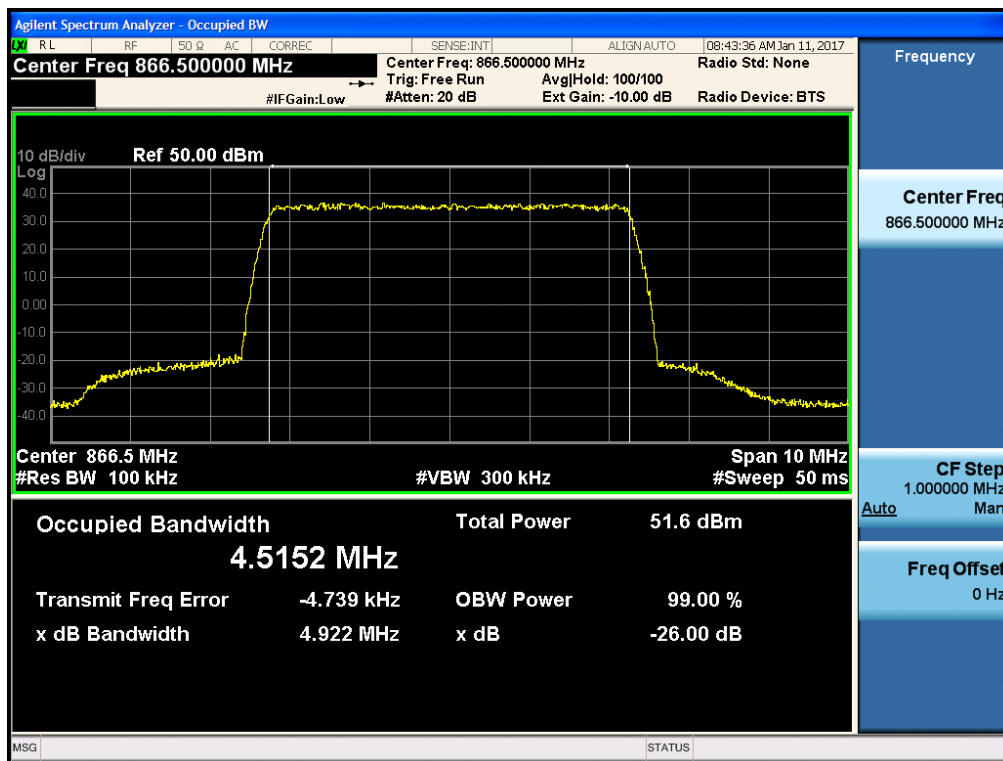
(64QAM Low Channel)



(64QAM Middle Channel)



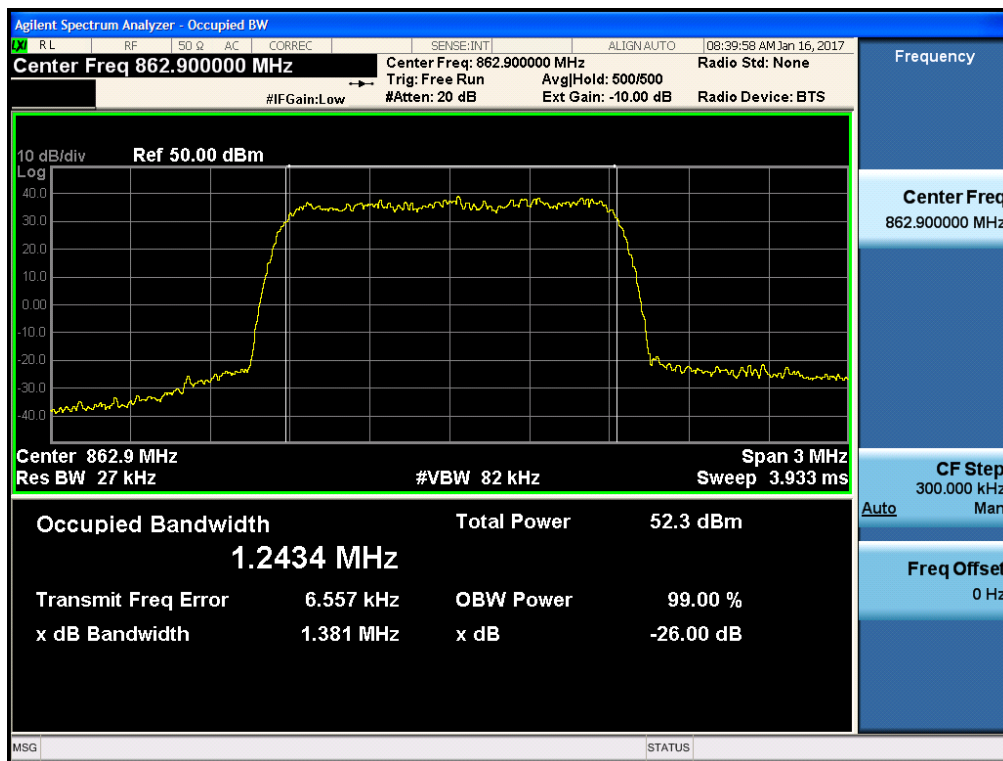
(64QAM High Channel)



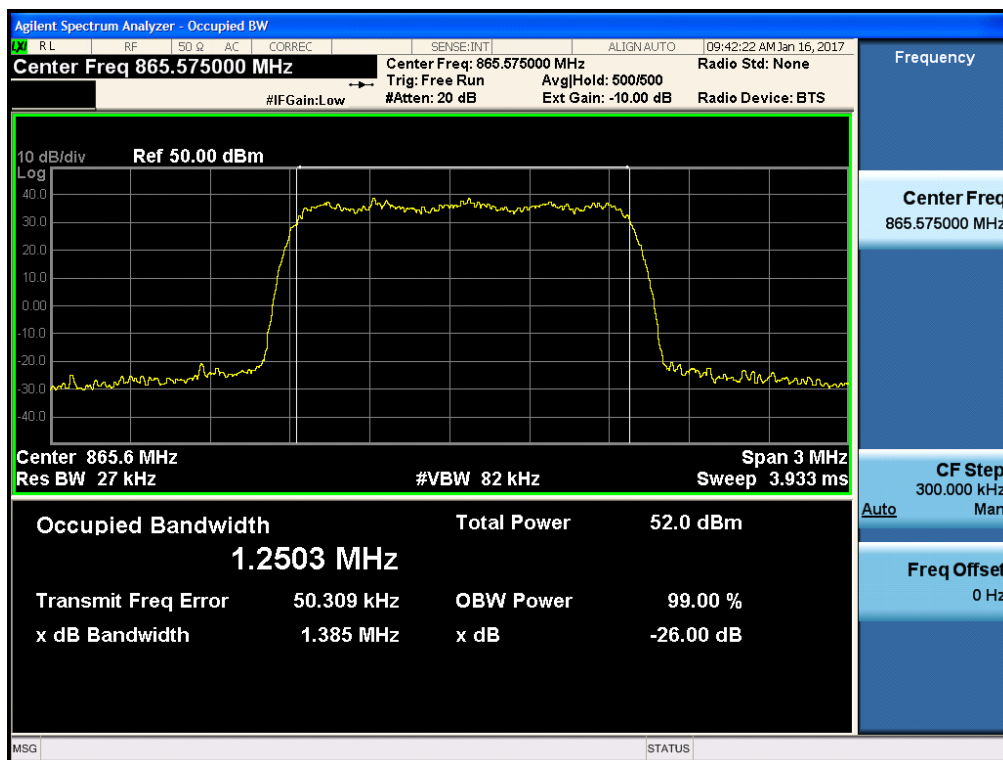
CDMA

Test Plot at Output Port 0

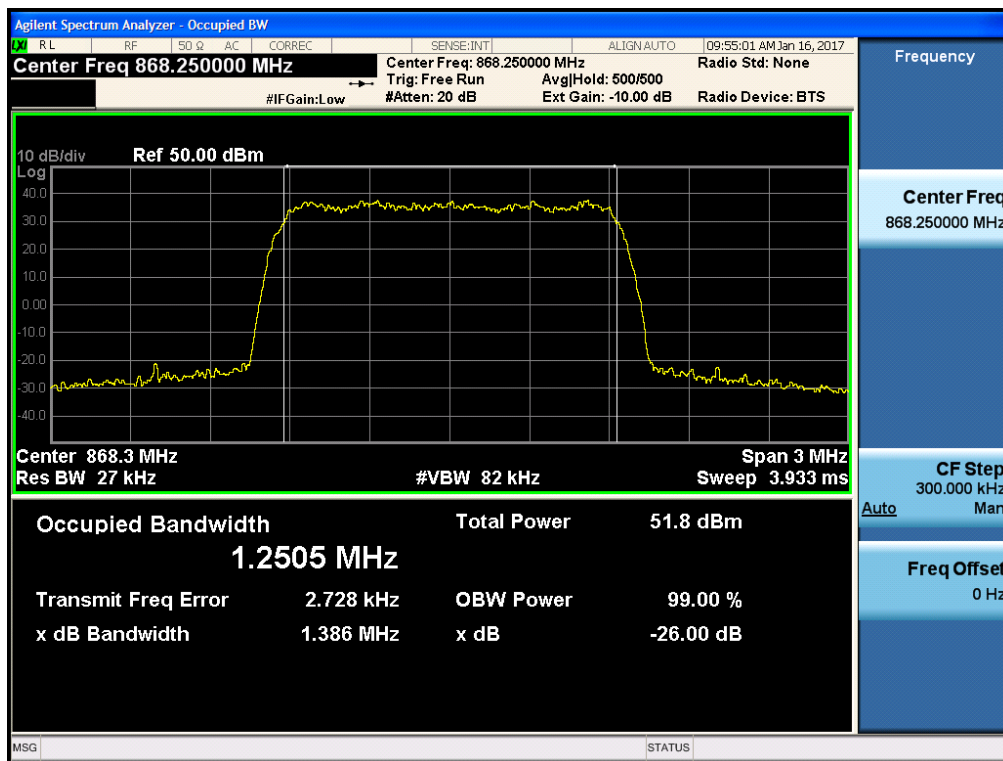
(QPSK Low Channel)



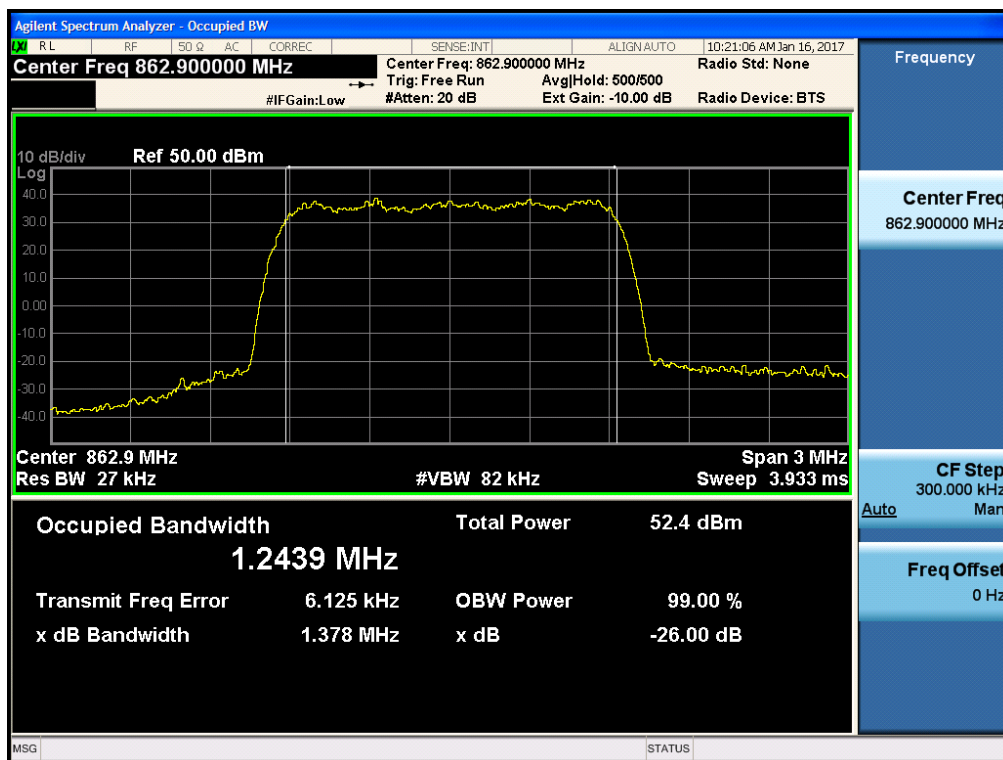
(QPSK Middle Channel)



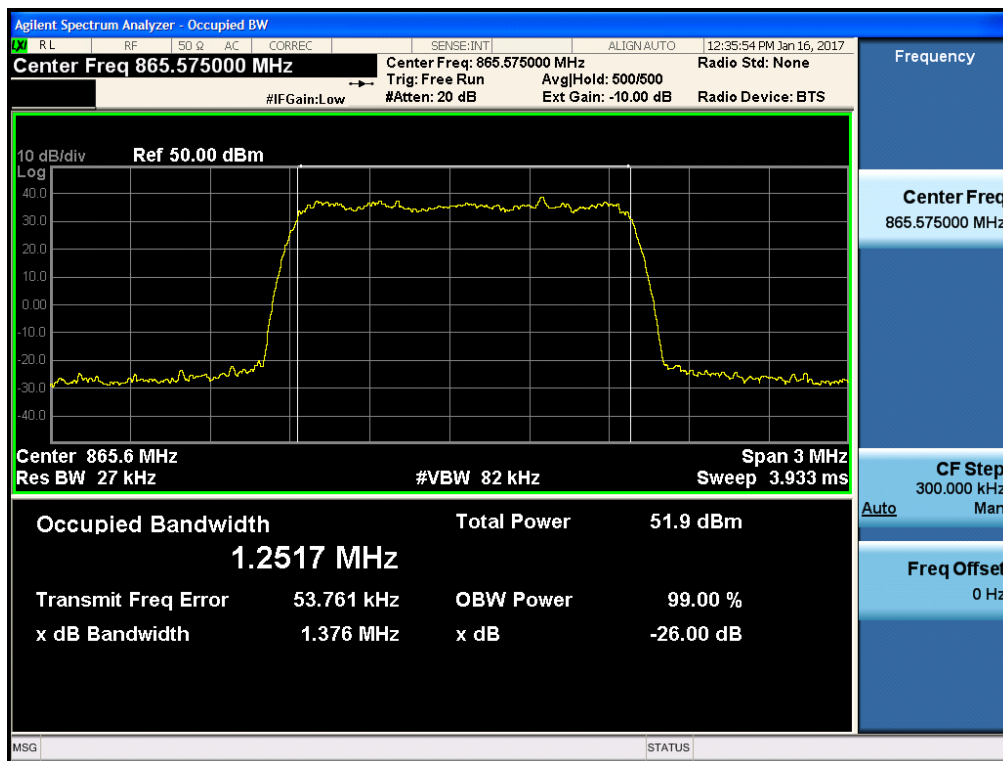
(QPSK High Channel)



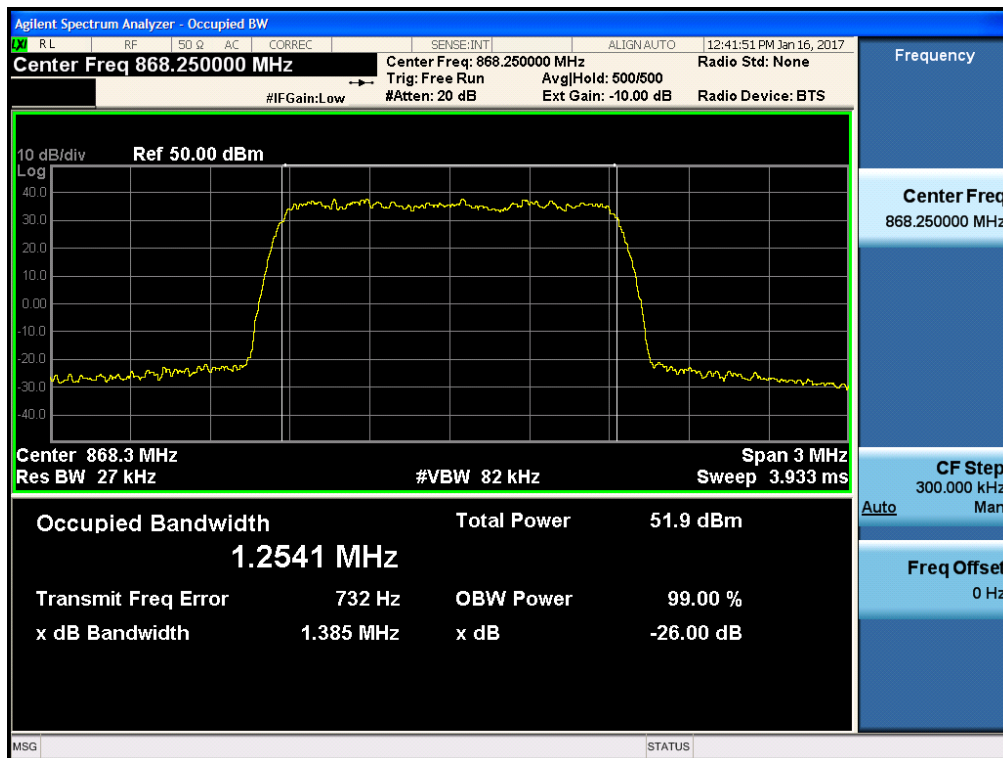
(16QAM Low Channel)



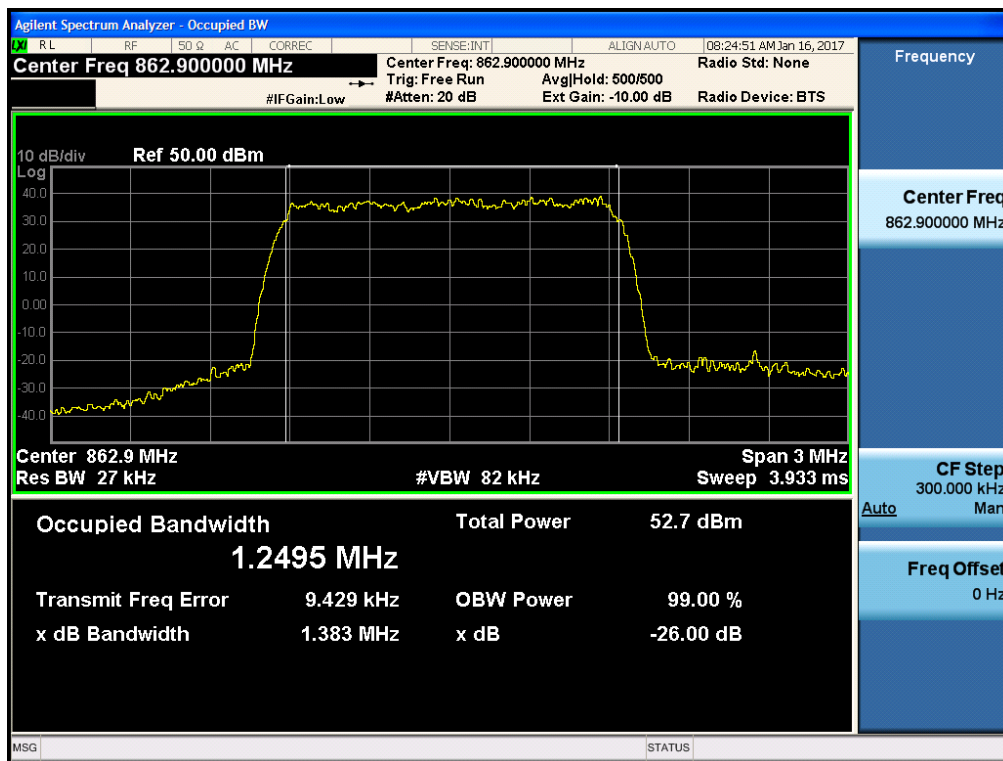
(16QAM Middle Channel)



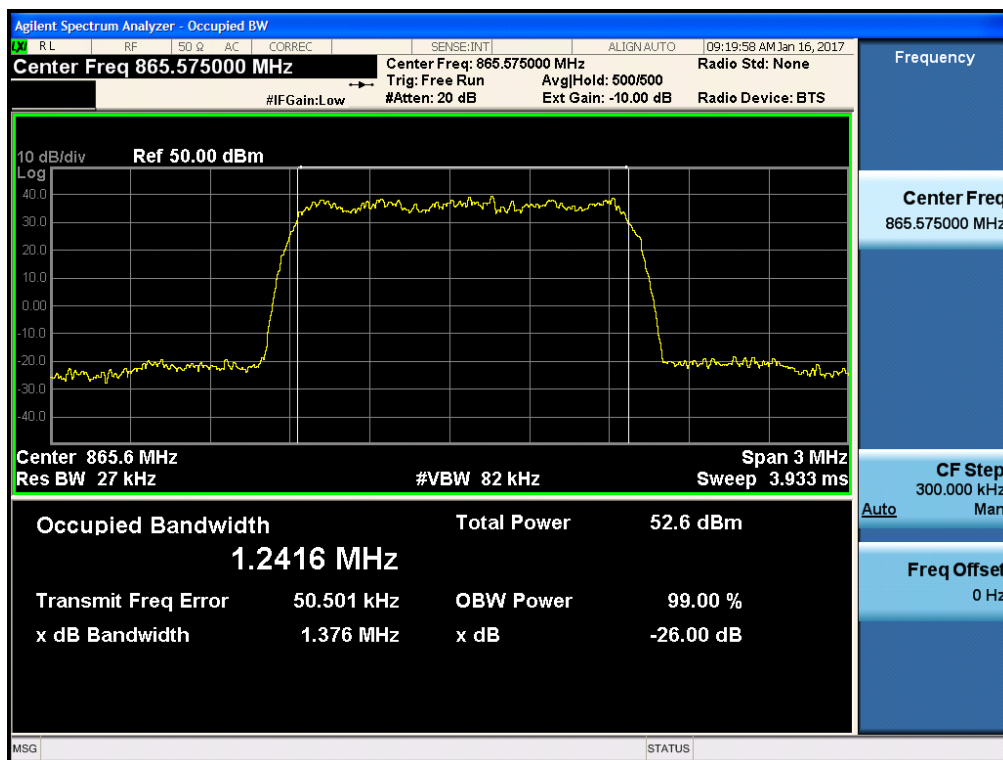
(16QAM High Channel)



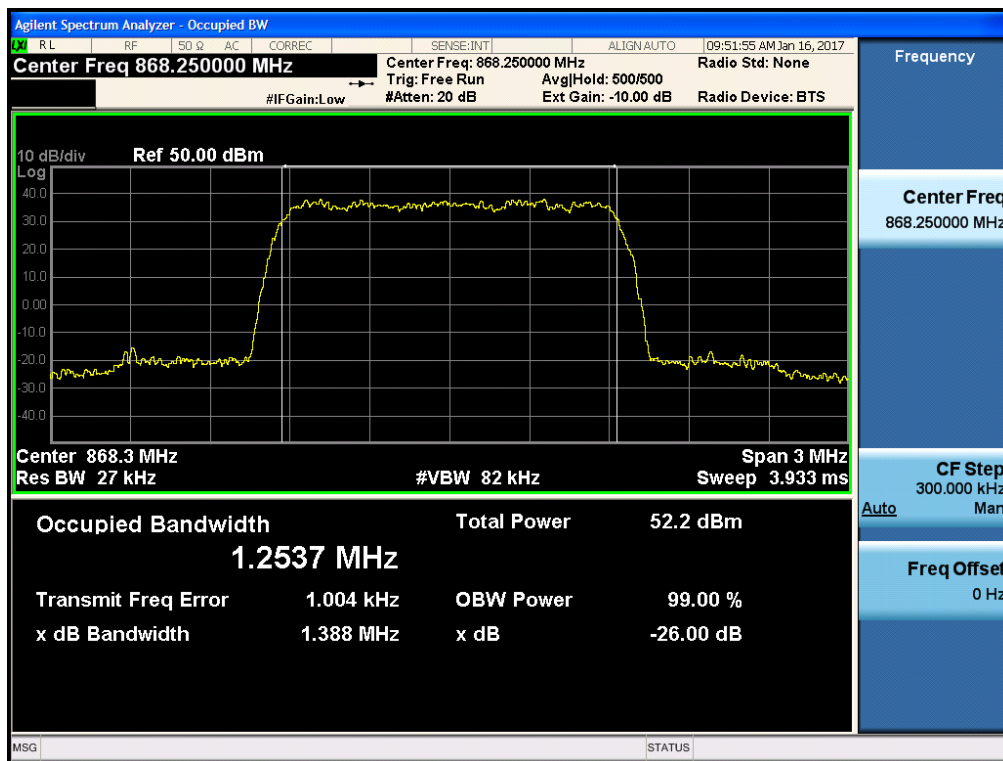
(BPSK Low Channel)



(BPSK Middle Channel)



(BPSK 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.

§90.691 Emission mask requirements for EA-based systems.

(a) Out-of-band emission requirement shall apply only to the “outer” channels included in an EA license and to spectrum adjacent to interior channels used by incumbent licensees. The emission limits are as follows:

(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 $116 \log_{10}(f/6.1)$ decibels or $50 + 10 \log_{10}(P)$ 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.

(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 $43 + 10 \log_{10}(P)$ 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.

(b) When an emission outside of the authorized bandwidth causes harmful interference, the Commission may, at its discretion, require greater attenuation than specified in this section.

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 similar trend value for each port, attached plots were only the port0 test result.

Conducted Spurious Emissions

LTE 3 MHz

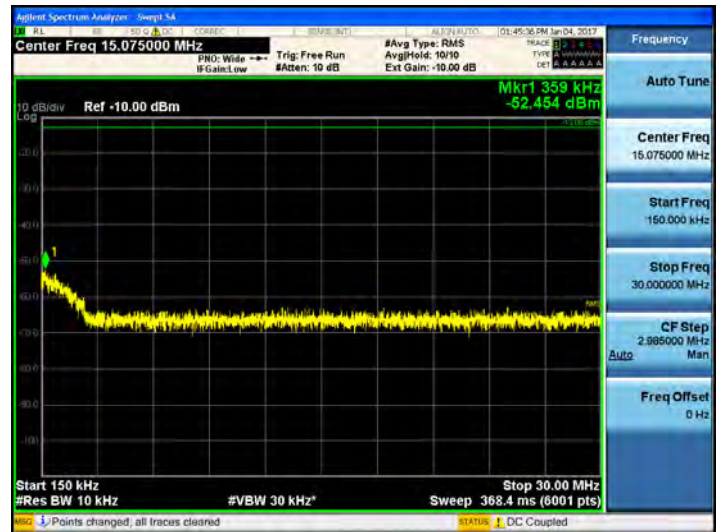
Test Data at Output Port 0

(QPSK Low channel)

9 kHz ~ 150 kHz



150 kHz ~ 30 MHz



30 MHz ~ 857 MHz



857 MHz ~ 861.9 MHz



869.1 MHz ~ 874 MHz



874 MHz ~ 1 GHz



1 GHz ~ 3 GHz

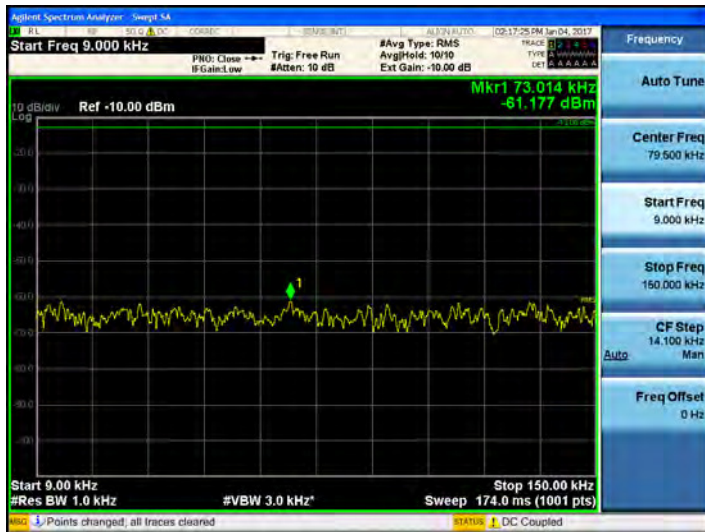


3 GHz ~ 12.75 GHz

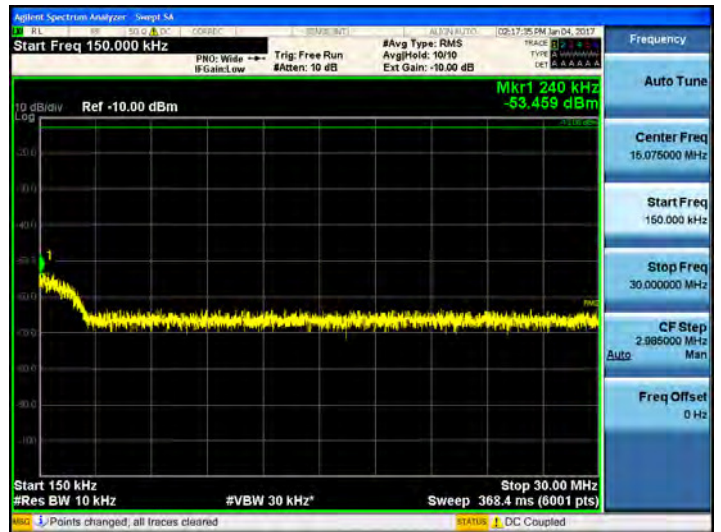


(QPSK Middle channel)

9 kHz ~ 150 kHz



150 kHz ~ 30 MHz



30 MHz ~ 857 MHz



857 MHz ~ 861.9 MHz



869.1 MHz ~ 874 MHz



874 MHz ~ 1 GHz



1 GHz ~ 3 GHz



3 GHz ~ 12.75 GHz

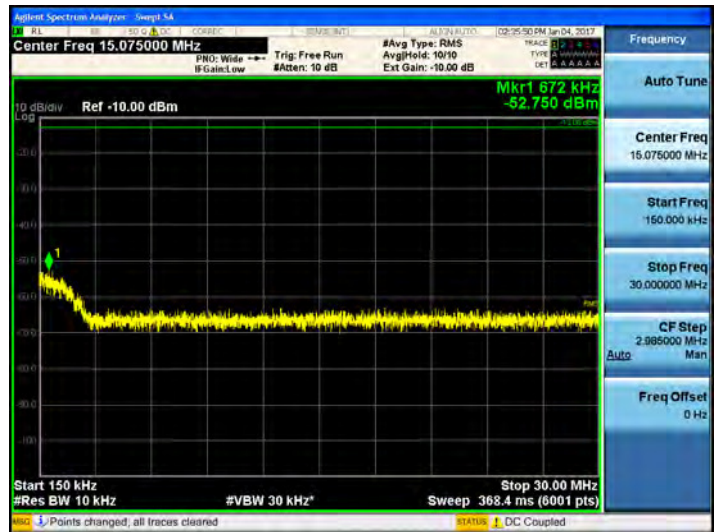


(QPSK High channel)

9 kHz ~ 150 kHz



150 kHz ~ 30 MHz



30 MHz ~ 857 MHz



857 MHz ~ 861.9 MHz



869.1 MHz ~ 874 MHz



874 MHz ~ 1 GHz



1 GHz ~ 3 GHz

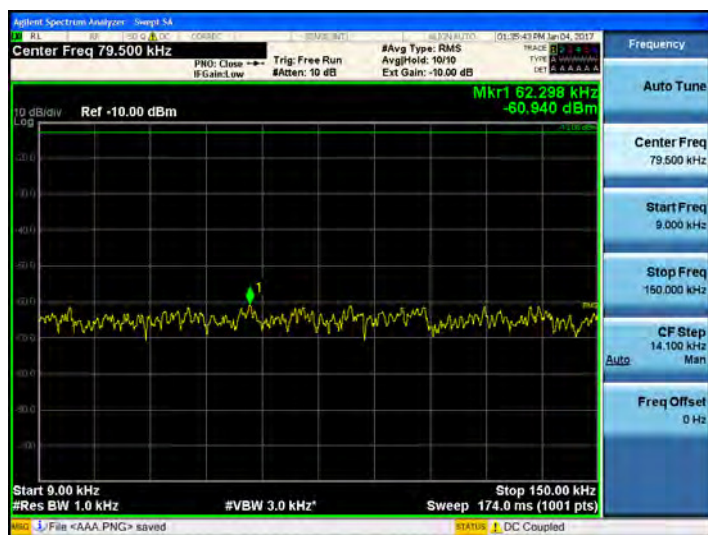


3 GHz ~ 12.75 GHz

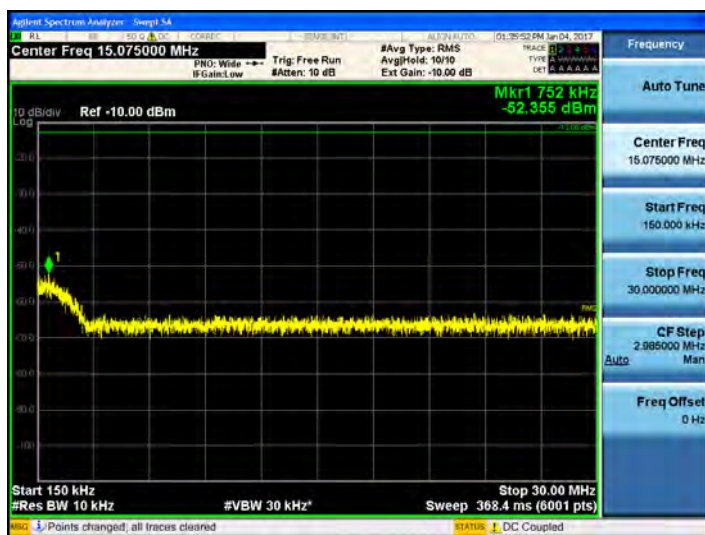


(16QAM Low channel)

9 kHz ~ 150 kHz



150 kHz ~ 30 MHz



30 MHz ~ 857 MHz



857 MHz ~ 861.9 MHz



869.1 MHz ~ 874 MHz



874 MHz ~ 1 GHz



1 GHz ~ 3 GHz



3 GHz ~ 12.75 GHz

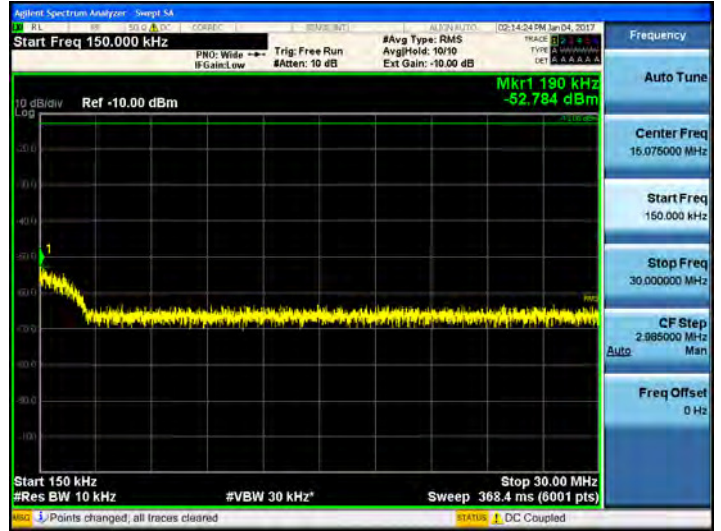


(16QAM Middle channel)

9 kHz ~ 150 kHz



150 kHz ~ 30 MHz



30 MHz ~ 857 MHz



857 MHz ~ 861.9 MHz



869.1 MHz ~ 874 MHz



874 MHz ~ 1 GHz



1 GHz ~ 3 GHz



3 GHz ~ 12.75 GHz

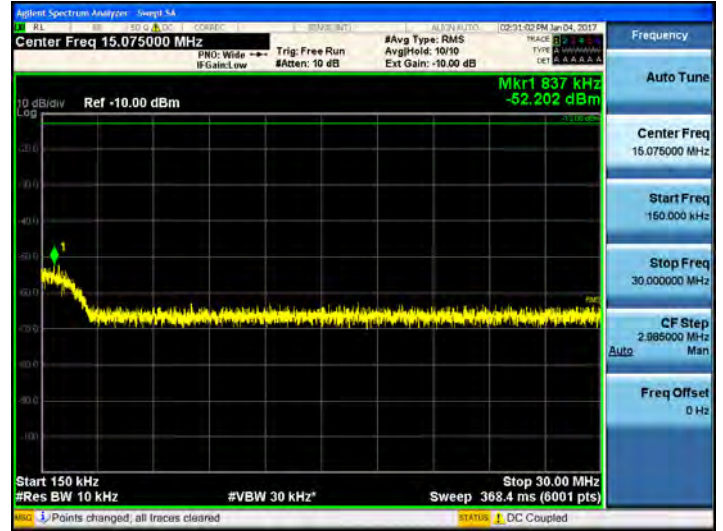


(16QAM High channel)

9 kHz ~ 150 kHz



150 kHz ~ 30 MHz



30 MHz ~ 857 MHz



857 MHz ~ 861.9 MHz



869.1 MHz ~ 874 MHz



874 MHz ~ 1 GHz



1 GHz ~ 3 GHz

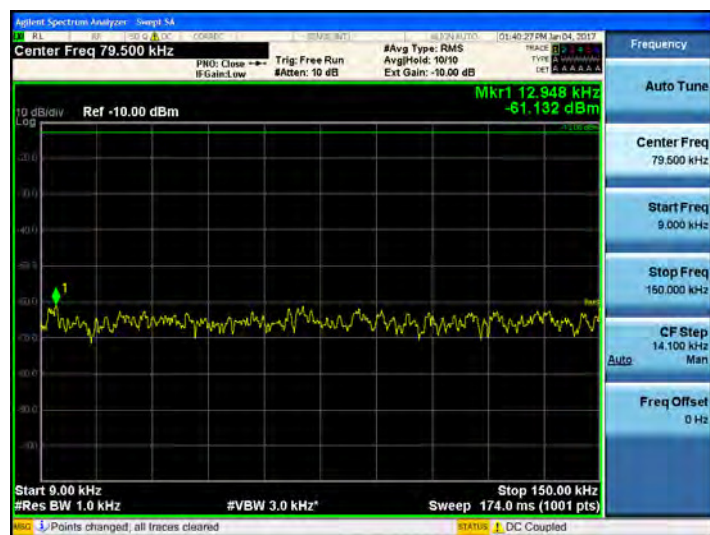


3 GHz ~ 12.75 GHz



(64QAM Low channel)

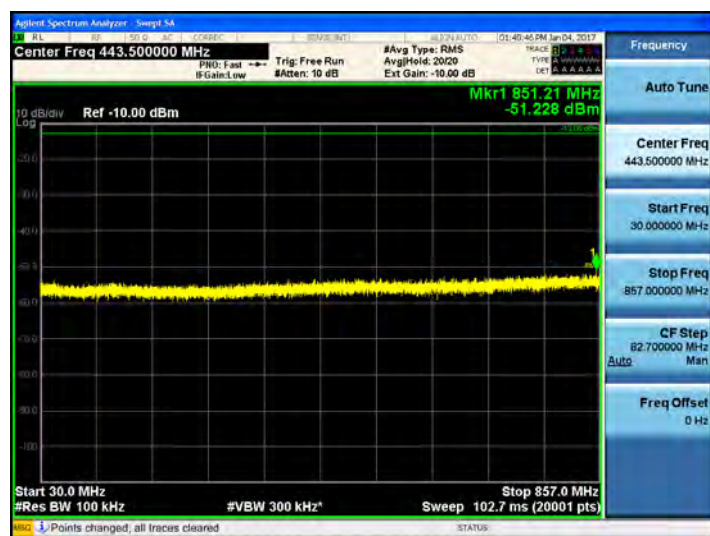
9 kHz ~ 150 kHz



150 kHz ~ 30 MHz



30 MHz ~ 857 MHz



857 MHz ~ 861.9 MHz



869.1 MHz ~ 874 MHz



874 MHz ~ 1 GHz



1 GHz ~ 3 GHz

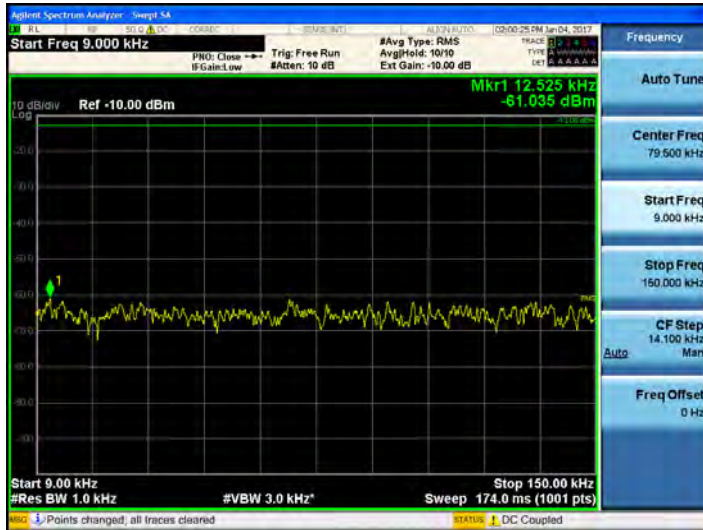


3 GHz ~ 12.75 GHz

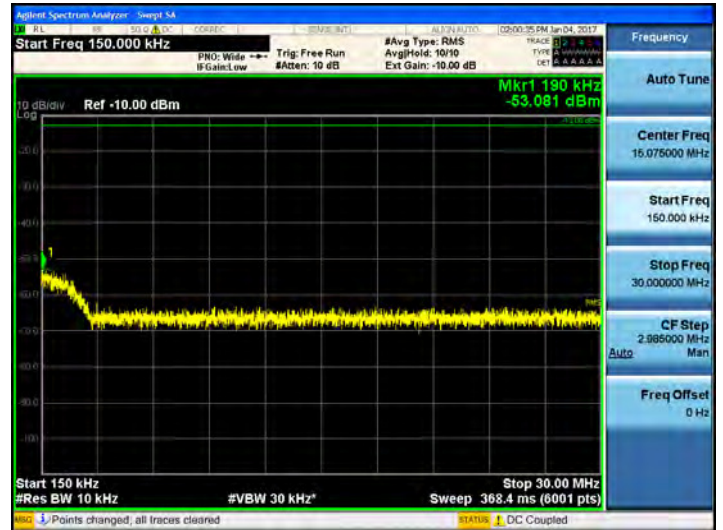


(64QAM Middle channel)

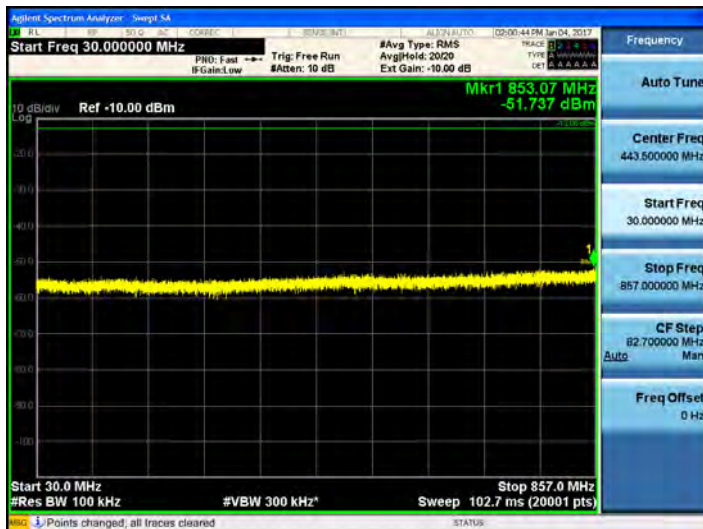
9 kHz ~ 150 kHz



150 kHz ~ 30 MHz



30 MHz ~ 857 MHz



857 MHz ~ 861.9 MHz



869.1 MHz ~ 874 MHz



874 MHz ~ 1 GHz



1 GHz ~ 3 GHz



3 GHz ~ 12.75 GHz

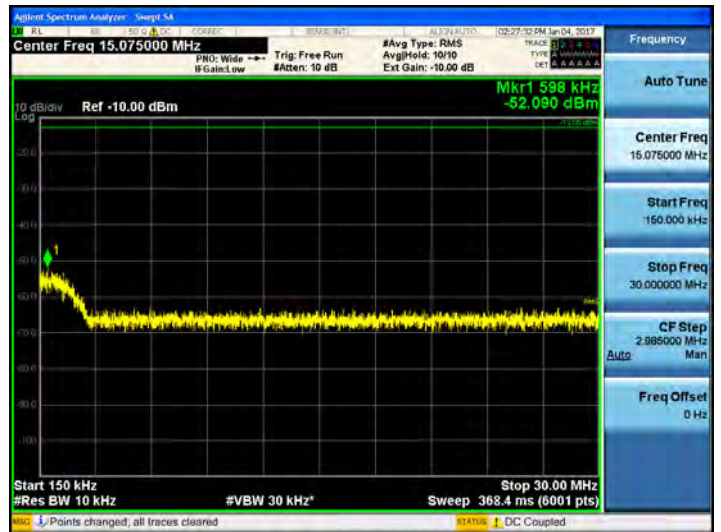


(64QAM High channel)

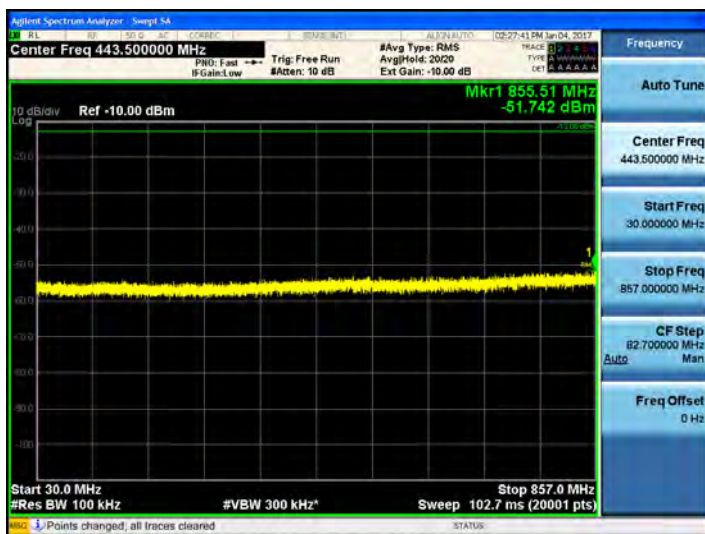
9 kHz ~ 150 kHz



150 kHz ~ 30 MHz



30 MHz ~ 857 MHz



857 MHz ~ 861.9 MHz



869.1 MHz ~ 874 MHz



874 MHz ~ 1 GHz



1 GHz ~ 3 GHz



3 GHz ~ 12.75 GHz

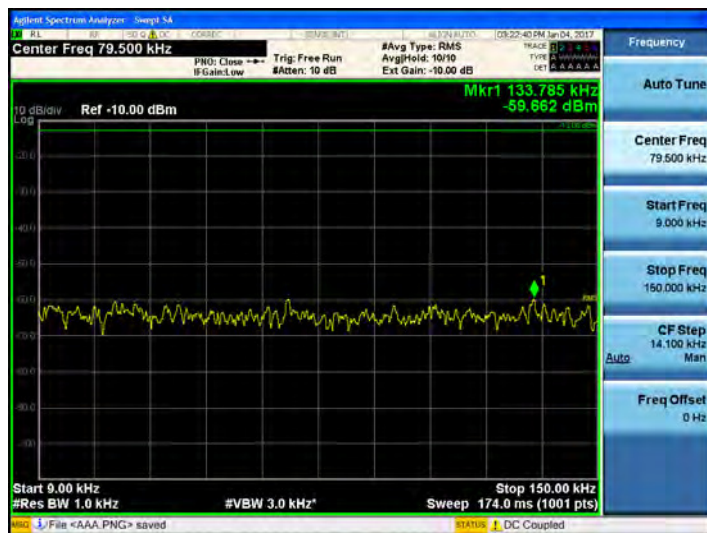


LTE 3 MHz

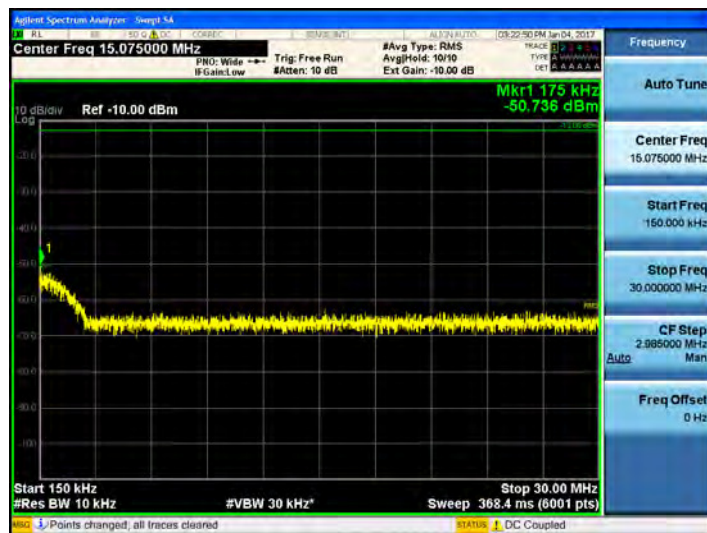
Test Data at Output Port 1

(QPSK Low channel)

9 kHz ~ 150 kHz



150 kHz ~ 30 MHz



30 MHz ~ 857 MHz



857 MHz ~ 861.9 MHz



869.1 MHz ~ 874 MHz



874 MHz ~ 1 GHz



1 GHz ~ 3 GHz



3 GHz ~ 12.75 GHz

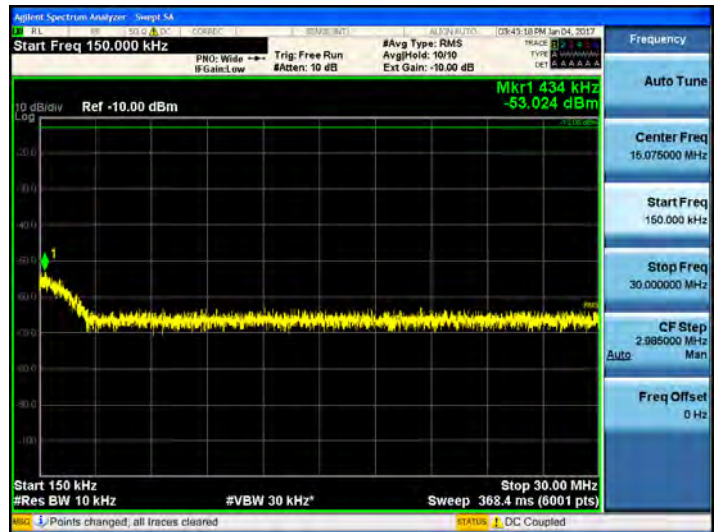


(QPSK Middle channel)

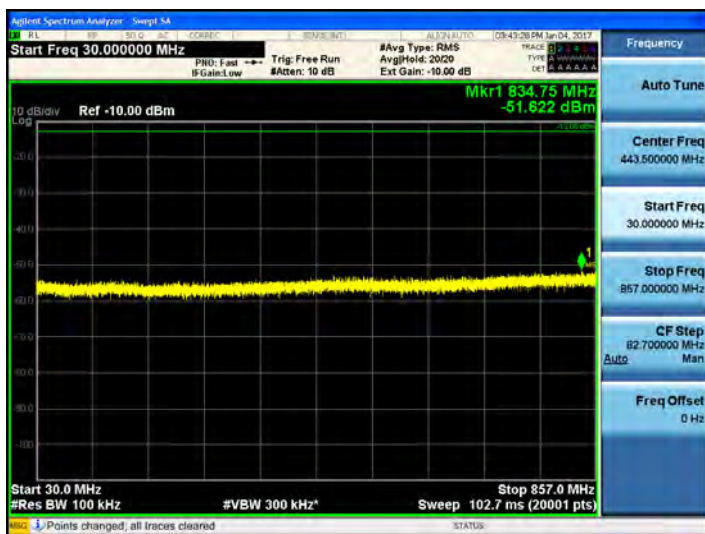
9 kHz ~ 150 kHz



150 kHz ~ 30 MHz



30 MHz ~ 857 MHz



857 MHz ~ 861.9 MHz



869.1 MHz ~ 874 MHz



874 MHz ~ 1 GHz



1 GHz ~ 3 GHz



3 GHz ~ 12.75 GHz

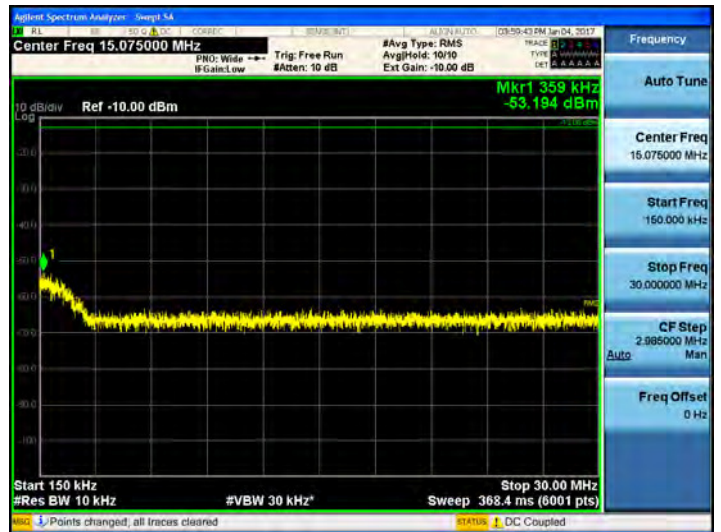


(QPSK High channel)

9 kHz ~ 150 kHz



150 kHz ~ 30 MHz



30 MHz ~ 857 MHz



857 MHz ~ 861.9 MHz



869.1 MHz ~ 874 MHz



874 MHz ~ 1 GHz



1 GHz ~ 3 GHz



3 GHz ~ 12.75 GHz

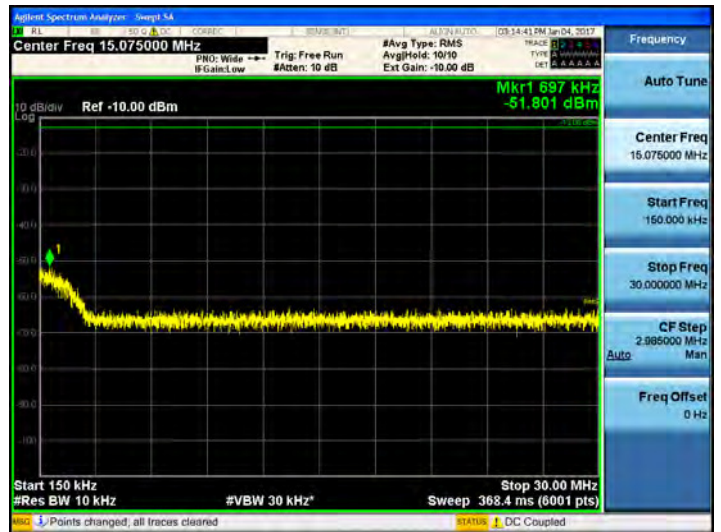


(16QAM Low channel)

9 kHz ~ 150 kHz



150 kHz ~ 30 MHz



30 MHz ~ 857 MHz



857 MHz ~ 861.9 MHz



869.1 MHz ~ 874 MHz



874 MHz ~ 1 GHz



1 GHz ~ 3 GHz

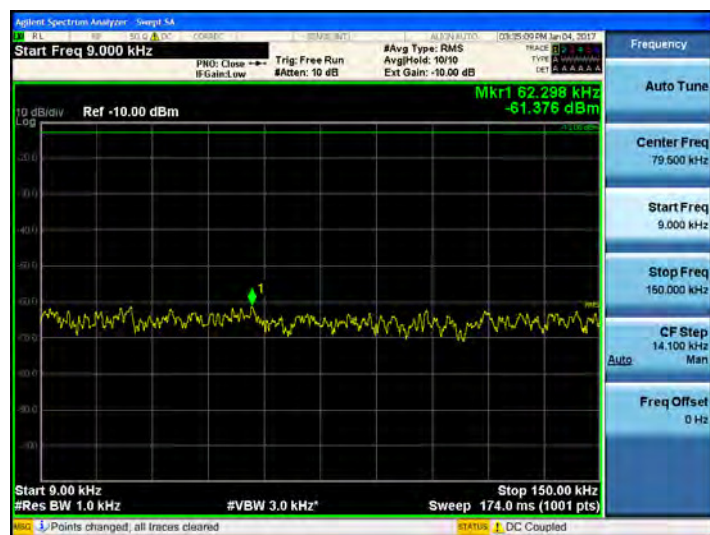


3 GHz ~ 12.75 GHz

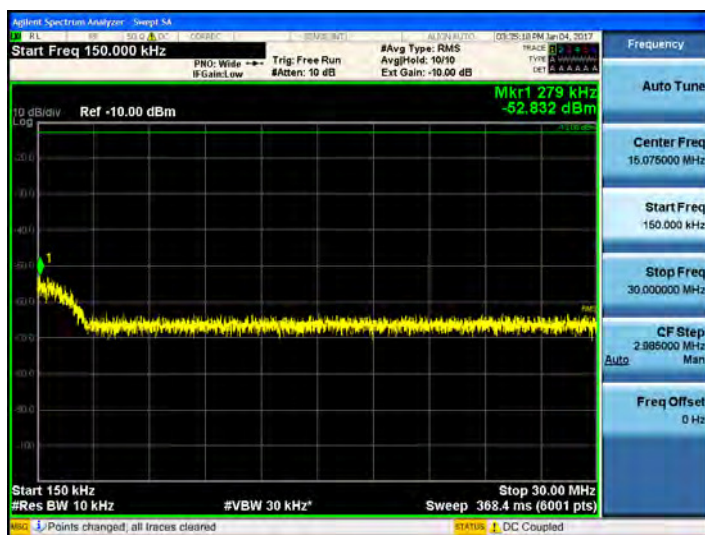


(16QAM Middle channel)

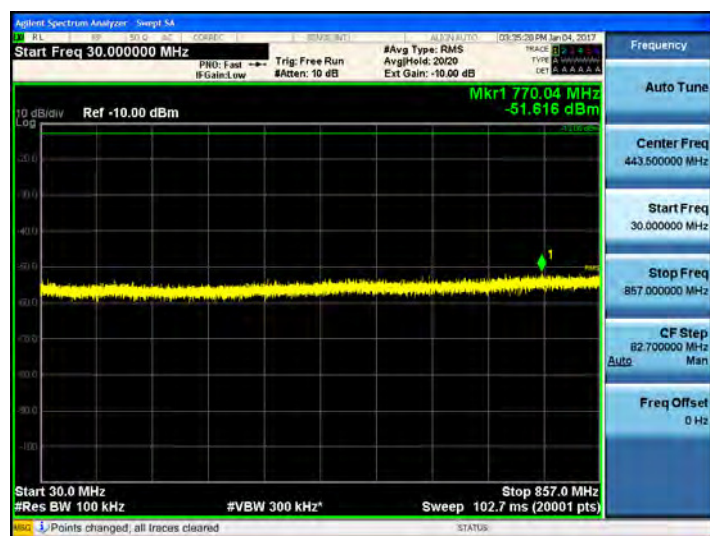
9 kHz ~ 150 kHz



150 kHz ~ 30 MHz



30 MHz ~ 857 MHz



857 MHz ~ 861.9 MHz



869.1 MHz ~ 874 MHz



874 MHz ~ 1 GHz



1 GHz ~ 3 GHz

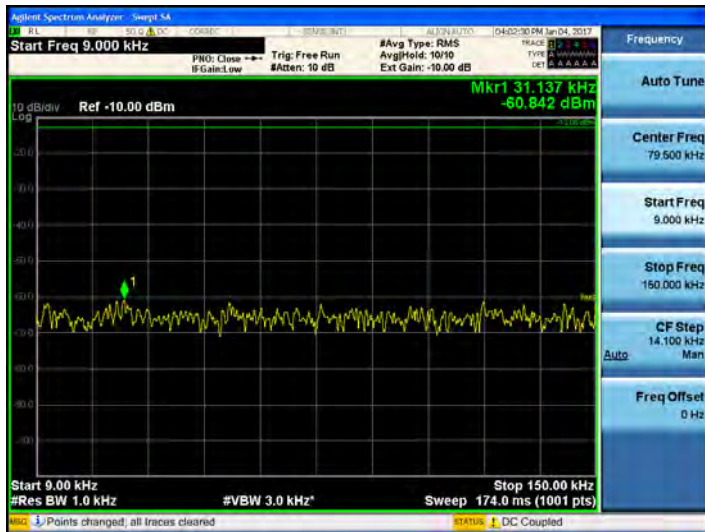


3 GHz ~ 12.75 GHz

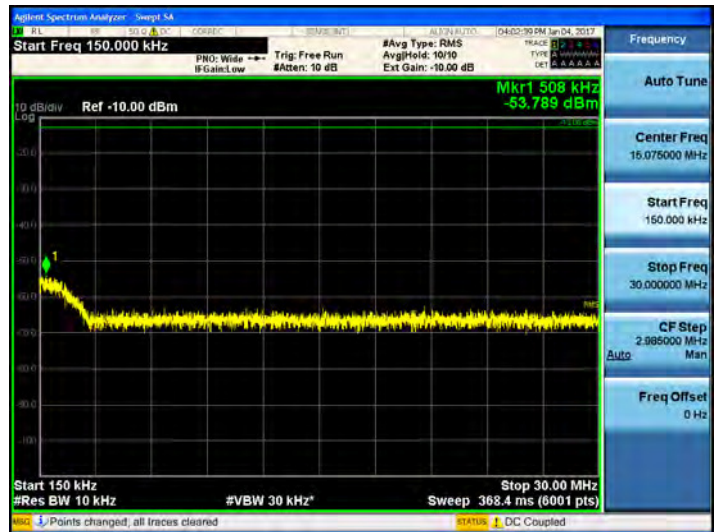


(16QAM High channel)

9 kHz ~ 150 kHz



150 kHz ~ 30 MHz



30 MHz ~ 857 MHz



857 MHz ~ 861.9 MHz



869.1 MHz ~ 874 MHz



874 MHz ~ 1 GHz



1 GHz ~ 3 GHz



3 GHz ~ 12.75 GHz

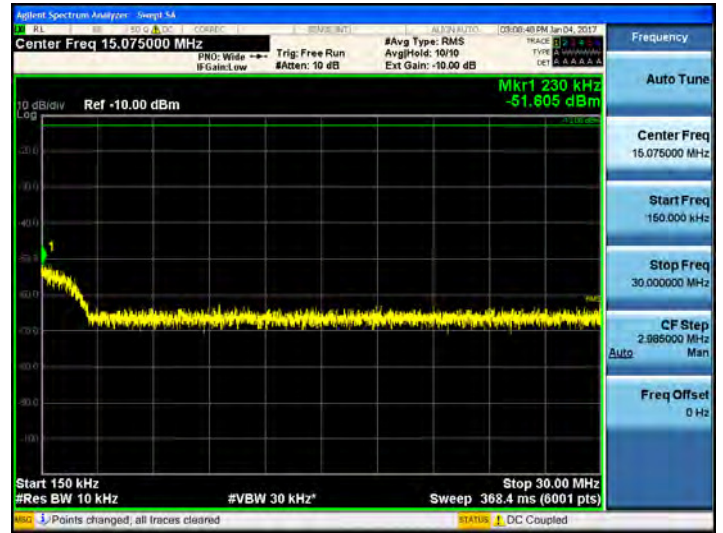


(64QAM Low channel)

9 kHz ~ 150 kHz



150 kHz ~ 30 MHz



30 MHz ~ 857 MHz



857 MHz ~ 861.9 MHz



869.1 MHz ~ 874 MHz



874 MHz ~ 1 GHz



1 GHz ~ 3 GHz

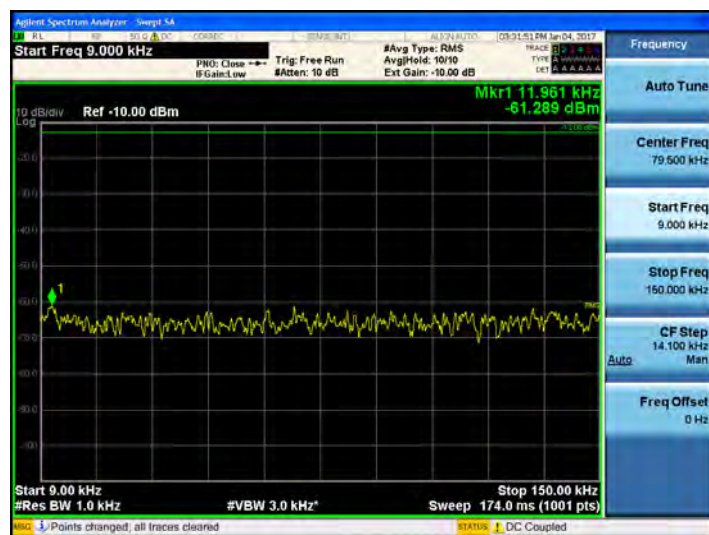


3 GHz ~ 12.75 GHz

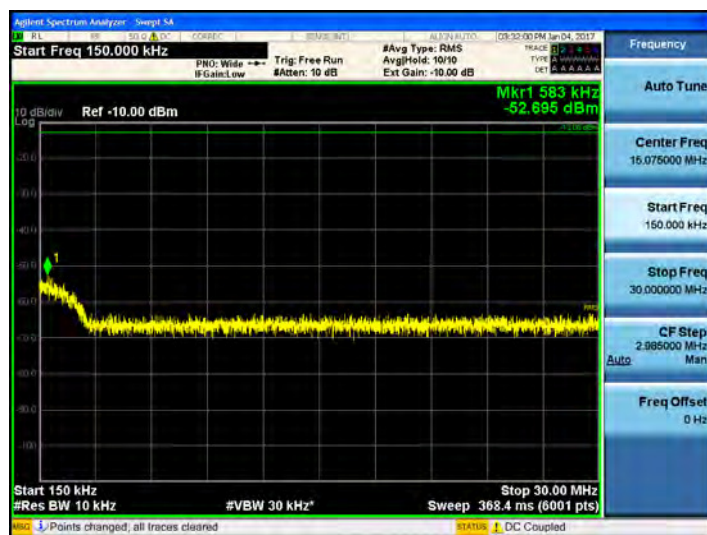


(64QAM Middle channel)

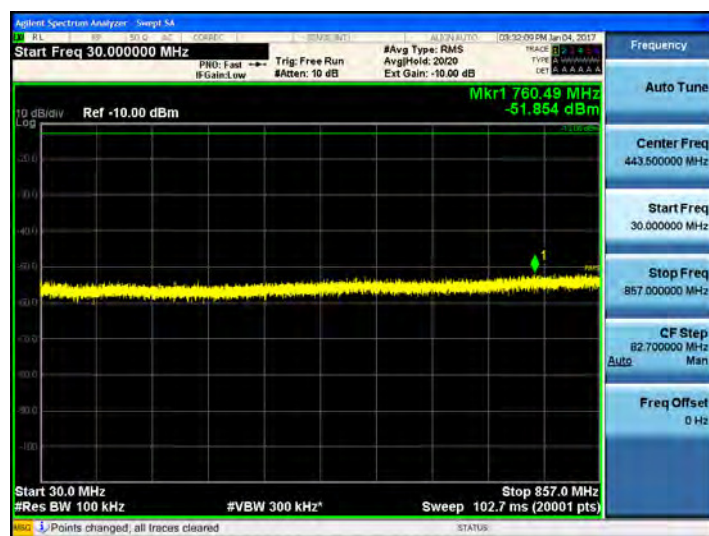
9 kHz ~ 150 kHz



150 kHz ~ 30 MHz



30 MHz ~ 857 MHz



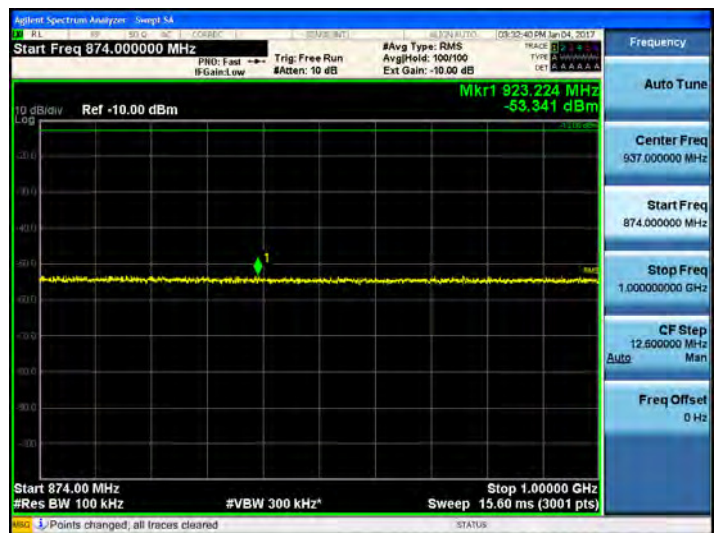
857 MHz ~ 861.9 MHz



869.1 MHz ~ 874 MHz



874 MHz ~ 1 GHz



1 GHz ~ 3 GHz

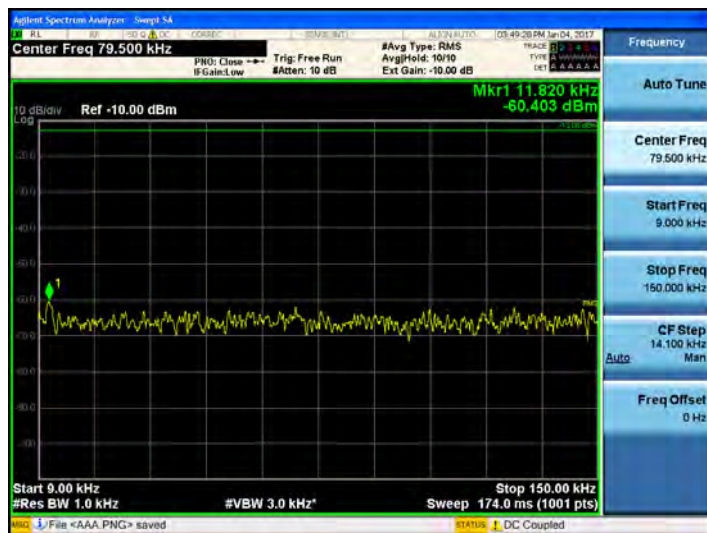


3 GHz ~ 12.75 GHz



(64QAM High channel)

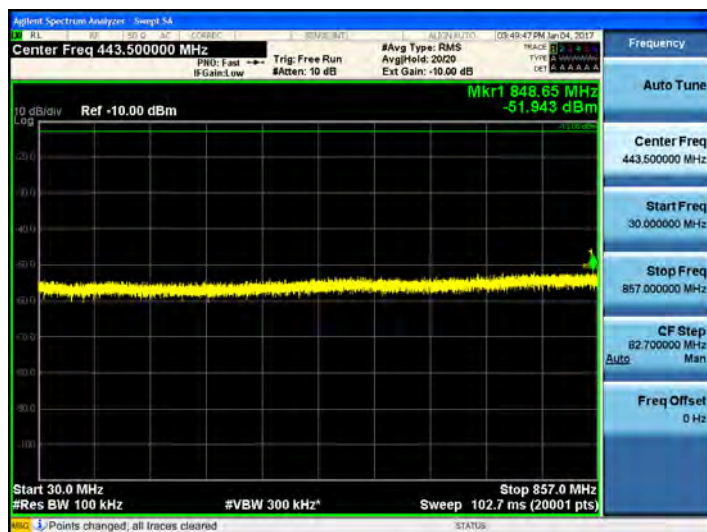
9 kHz ~ 150 kHz



150 kHz ~ 30 MHz



30 MHz ~ 857 MHz



857 MHz ~ 861.9 MHz



869.1 MHz ~ 874 MHz



874 MHz ~ 1 GHz



1 GHz ~ 3 GHz



3 GHz ~ 12.75 GHz



LTE 3 MHz

Test Data at Output Port 2

(QPSK Low channel)

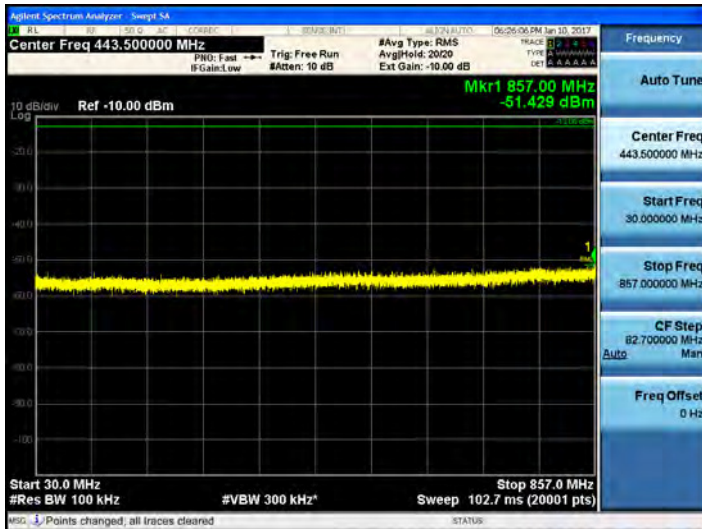
9 kHz ~ 150 kHz



150 kHz ~ 30 MHz



30 MHz ~ 857 MHz



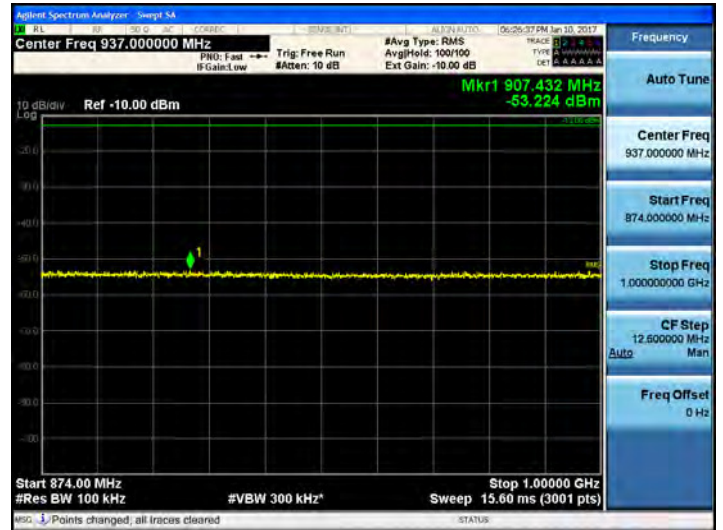
857 MHz ~ 861.9 MHz



869.1 MHz ~ 874 MHz



874 MHz ~ 1 GHz



1 GHz ~ 3 GHz

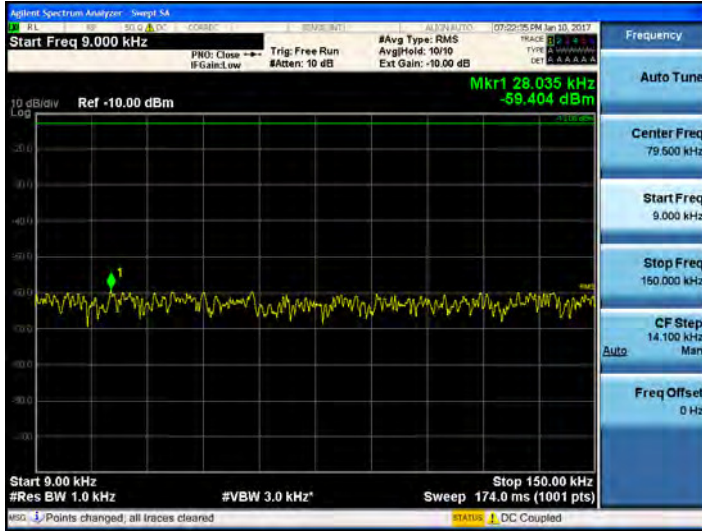


3 GHz ~ 12.75 GHz

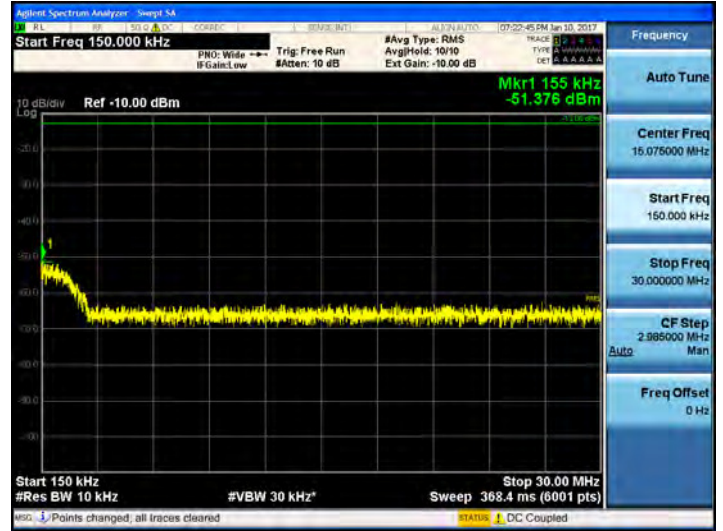


(QPSK Middle channel)

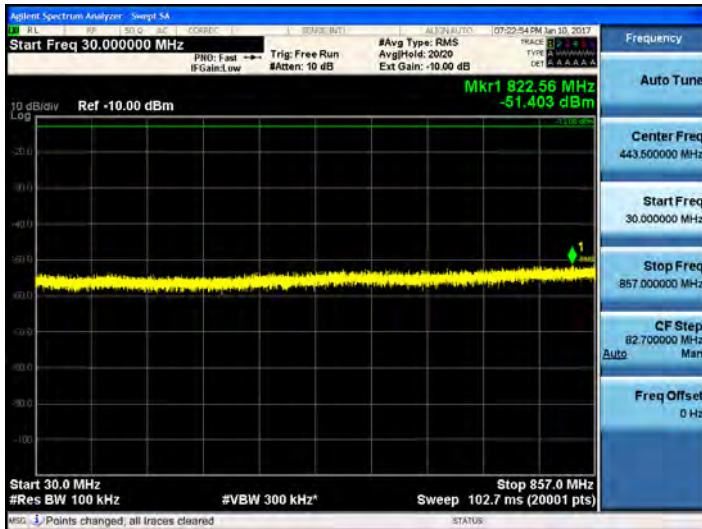
9 kHz ~ 150 kHz



150 kHz ~ 30 MHz



30 MHz ~ 857 MHz



857 MHz ~ 861.9 MHz

