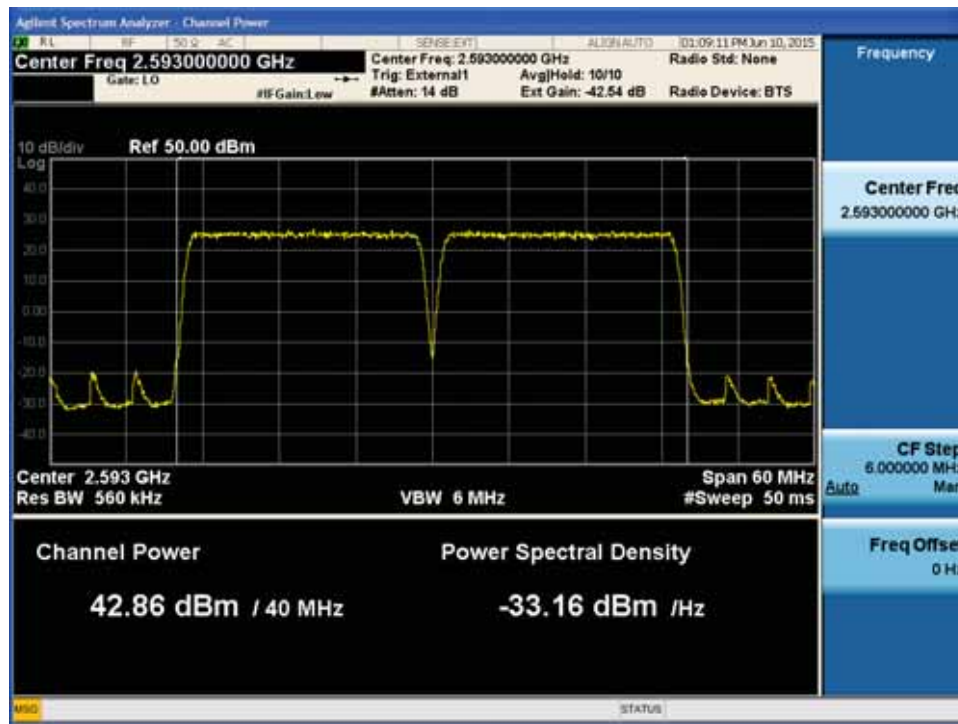


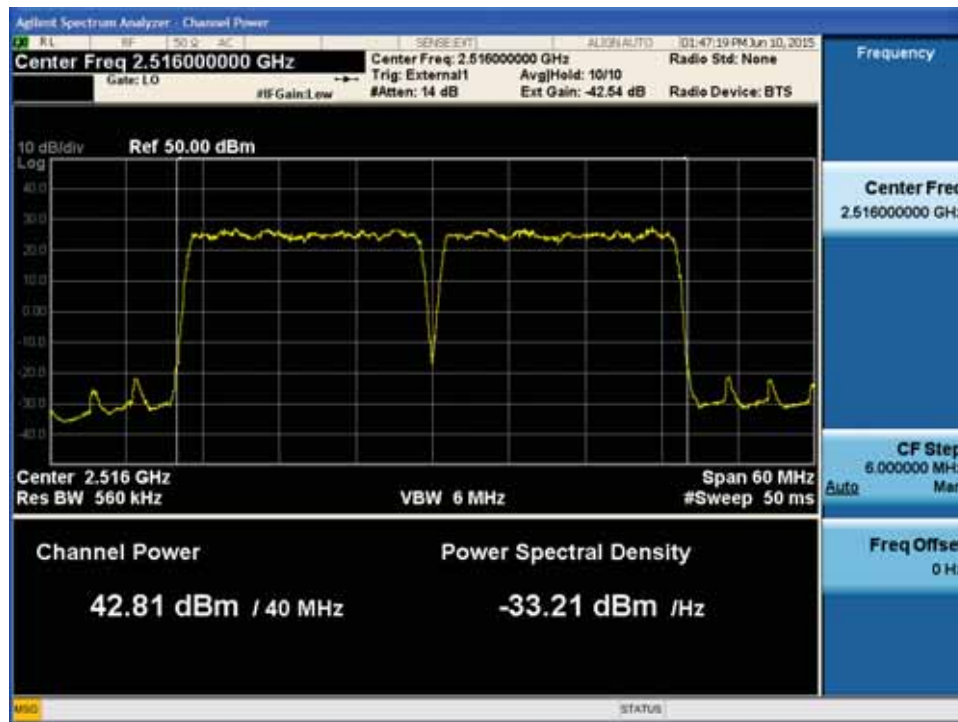
(QPSK Middle Channel)



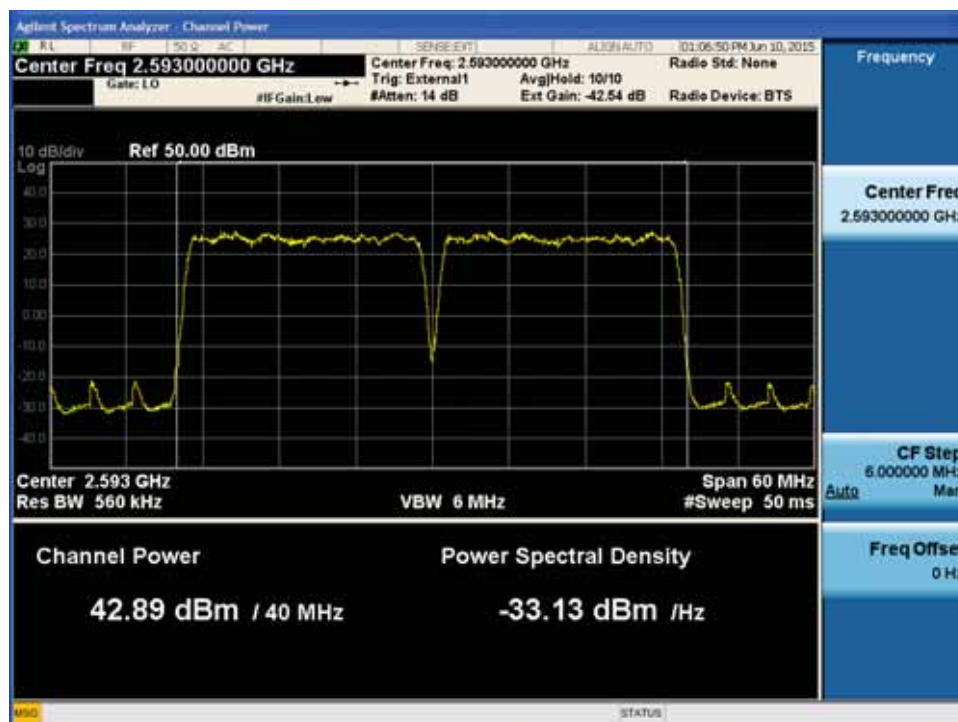
(QPSK High Channel)



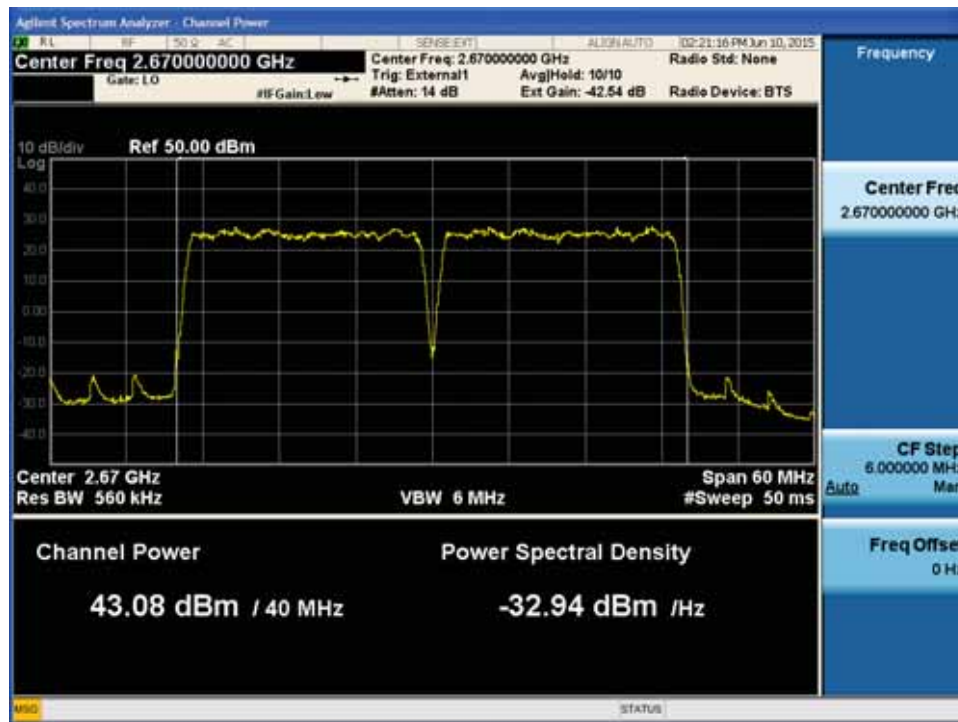
(16QAM Low Channel)



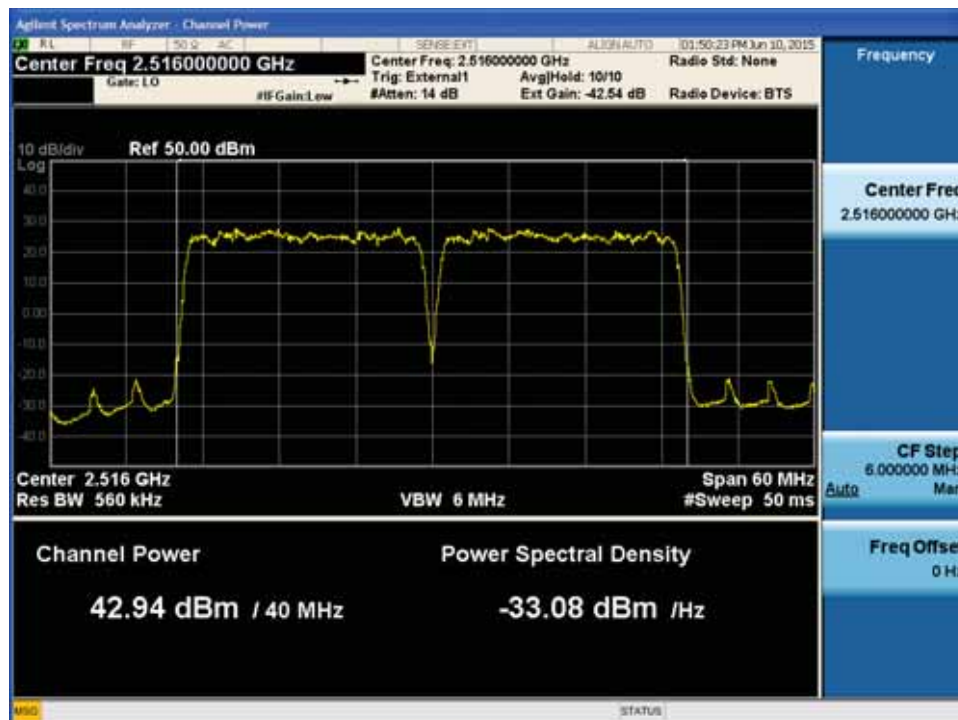
(16QAM Middle Channel)



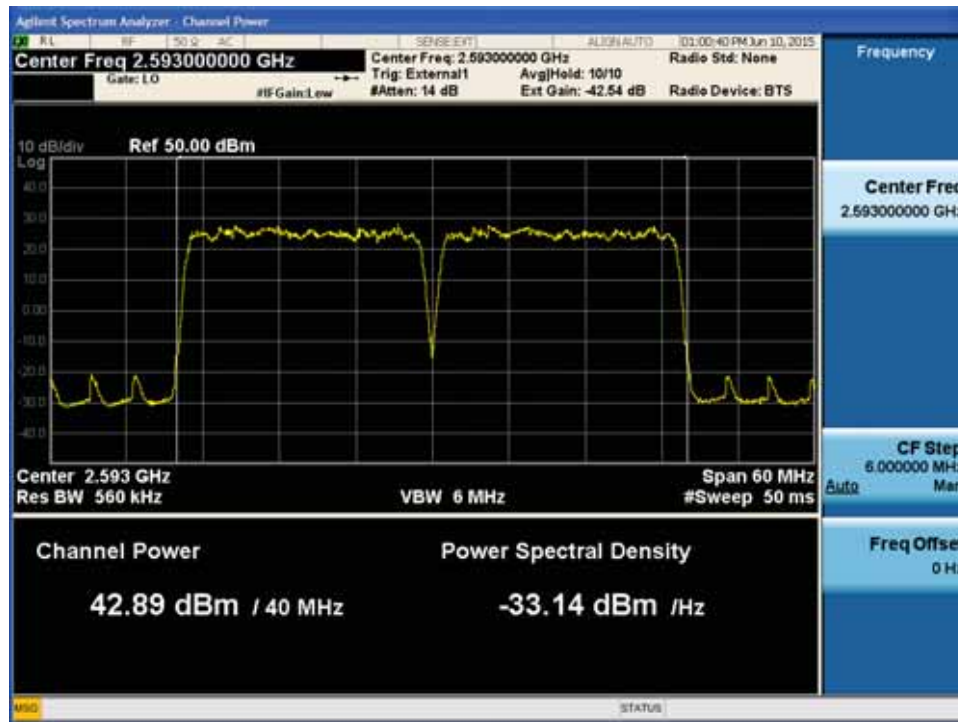
(16QAM High Channel)



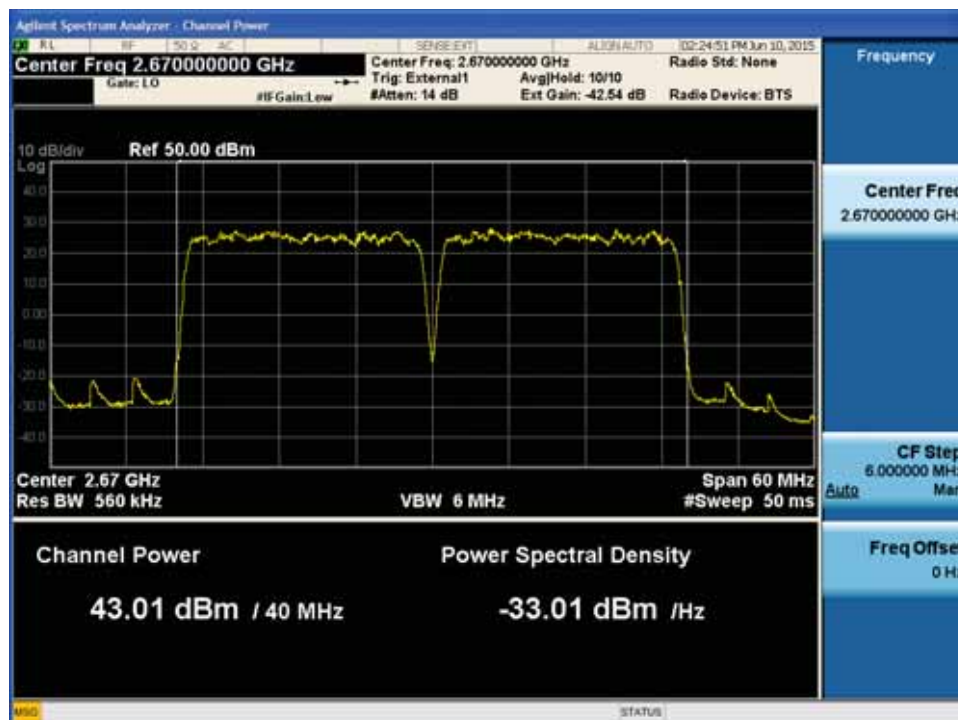
(64QAM Low Channel)



(64QAM Middle Channel)

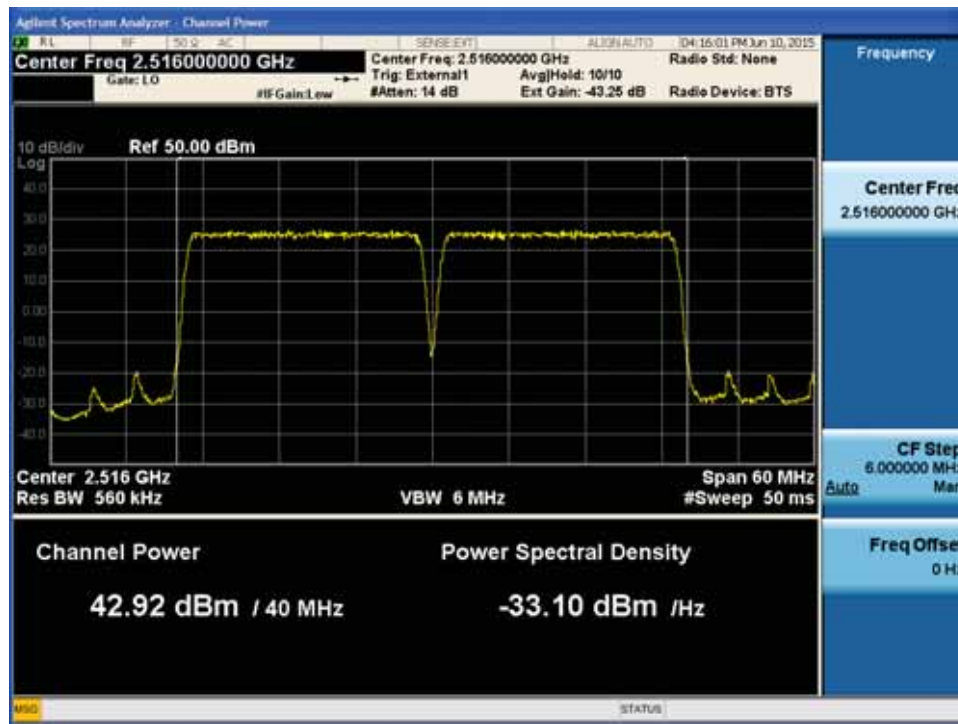


(64QAM High Channel)



5.7.29. Plot Data for Output Port 8 (Conducted Output Power)

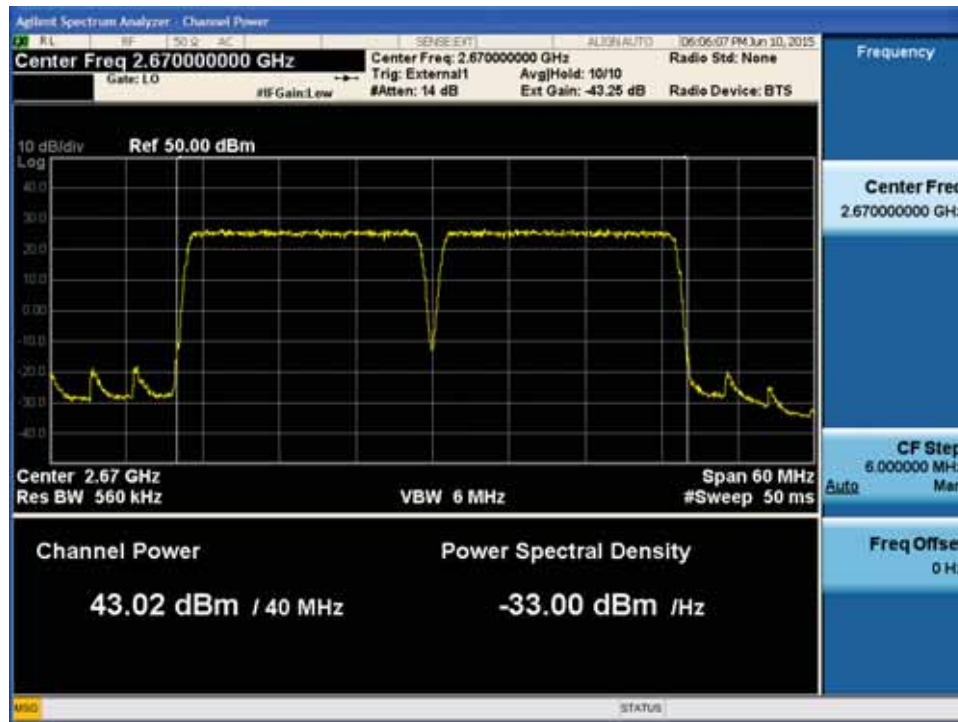
(QPSK Low Channel)



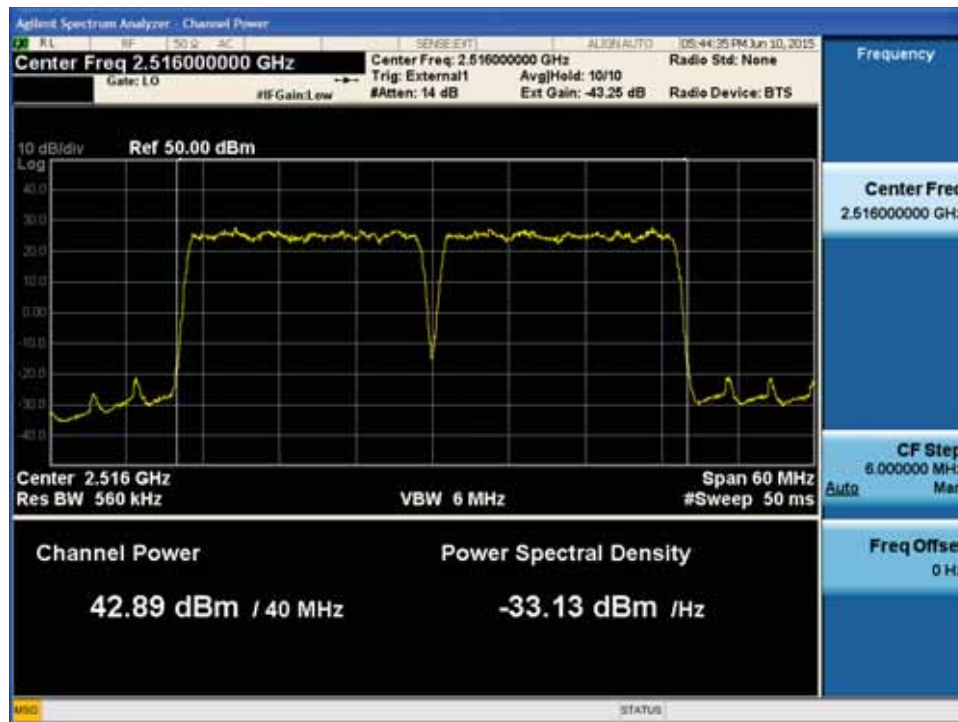
(QPSK Middle Channel)



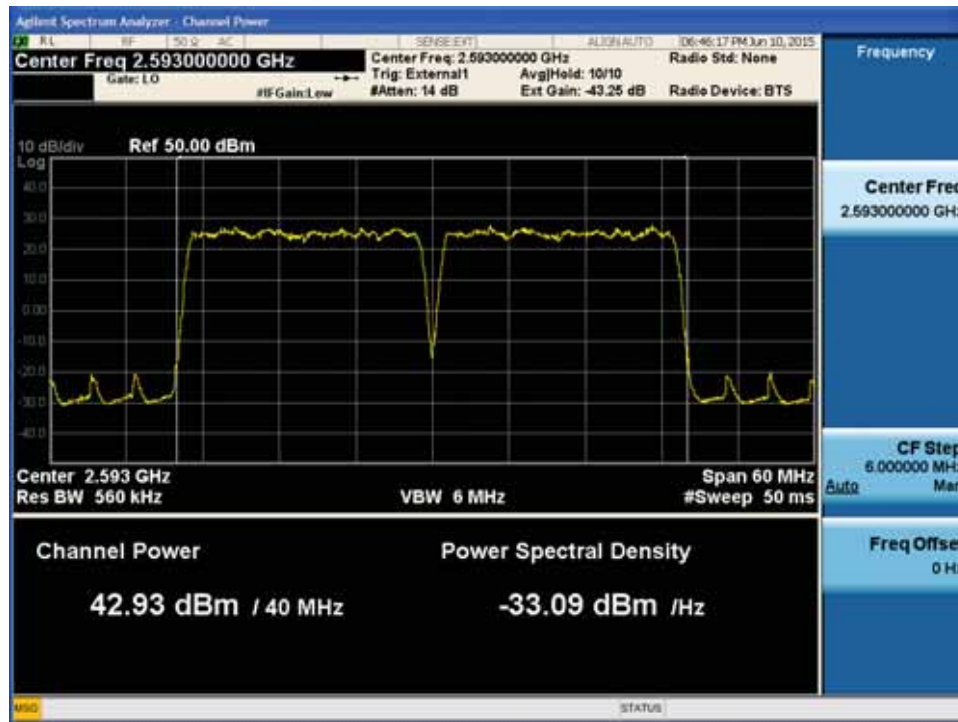
(QPSK High Channel)



(16QAM Low Channel)



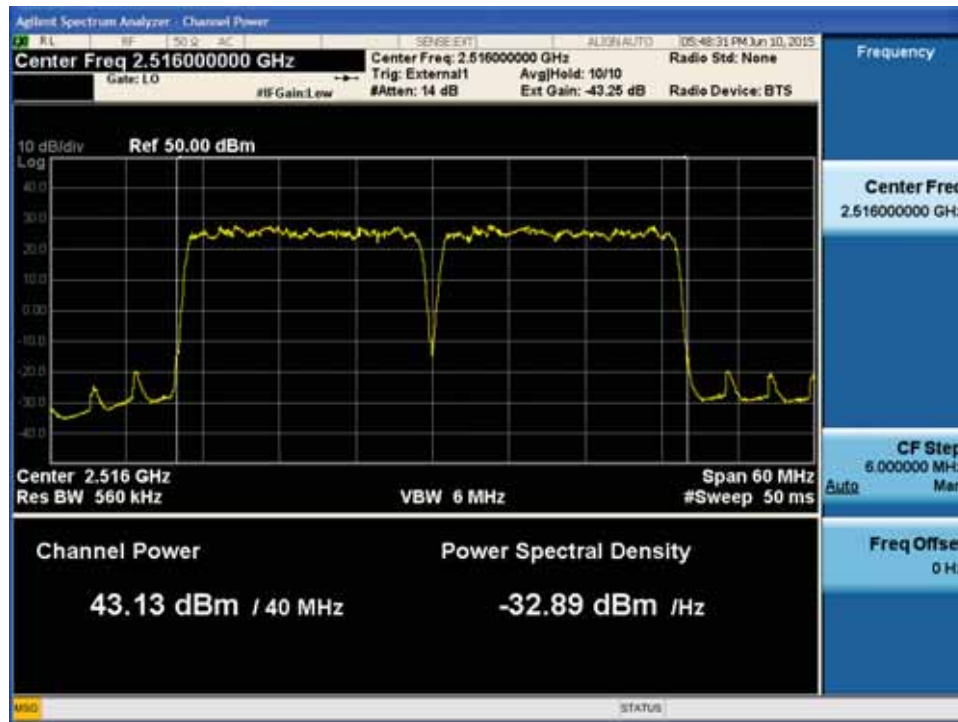
(16QAM Middle Channel)



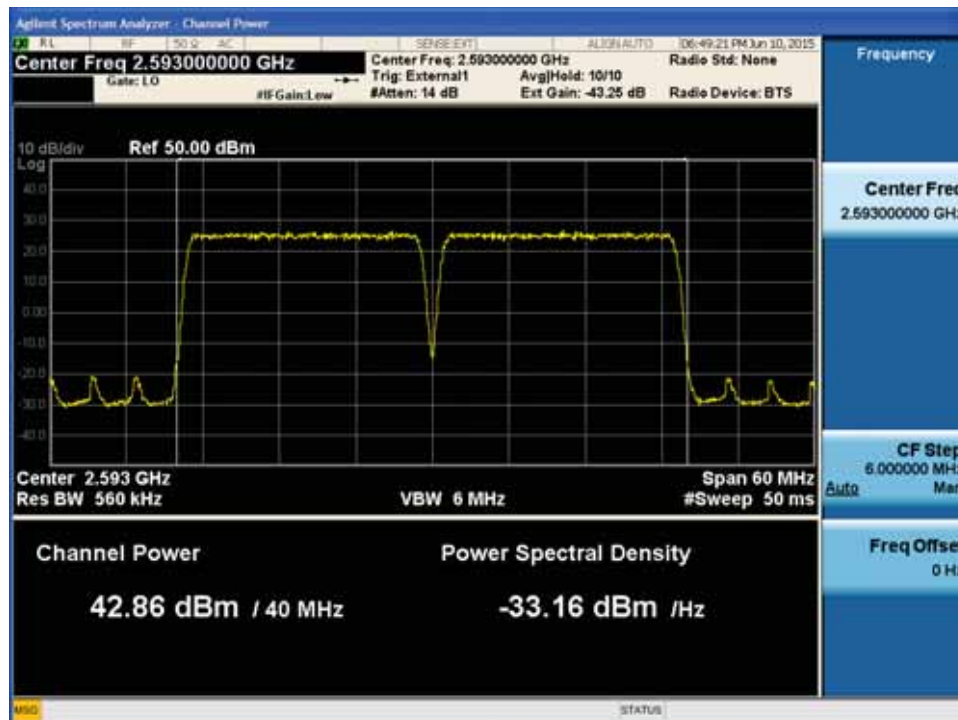
(16QAM High Channel)



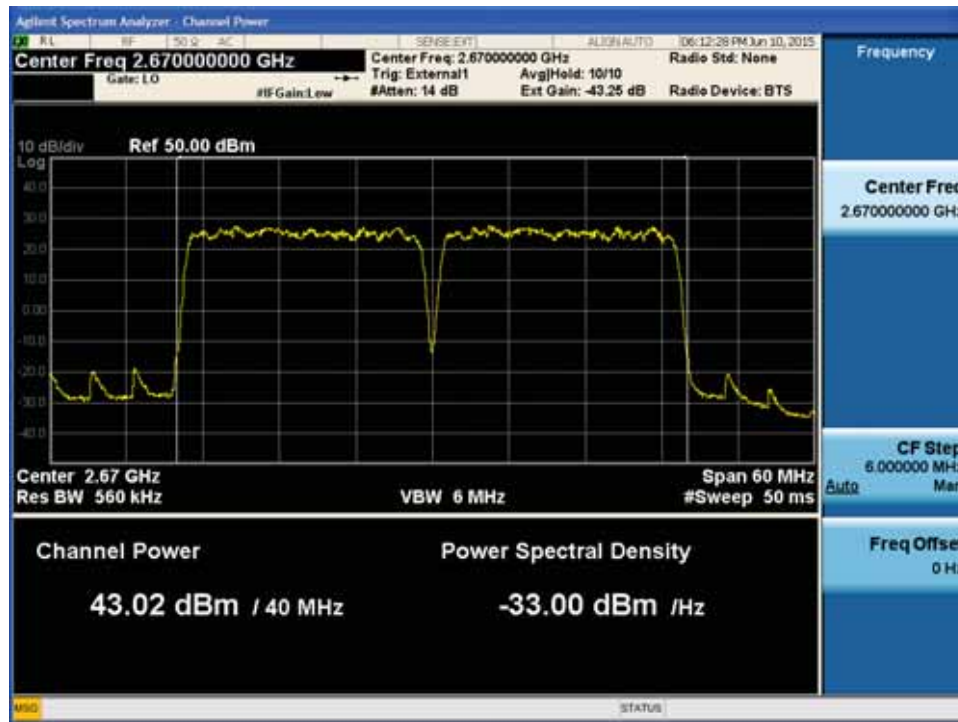
(64QAM Low Channel)



(64QAM Middle Channel)



(64QAM High Channel)



6. OCCUPIED BANDWIDTH

6.1. Applicable Standard

Requirements: CFR 47, Section 27.53(m)(6) 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 frequency block a resolution bandwidth of at least one 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 or 1 percent of emission bandwidth, as specified). 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. With respect to television operations, measurements must be made of the separate visual and aural operating powers at sufficiently frequent intervals to ensure compliance with the rules.

6.2. Test Equipment List and Details

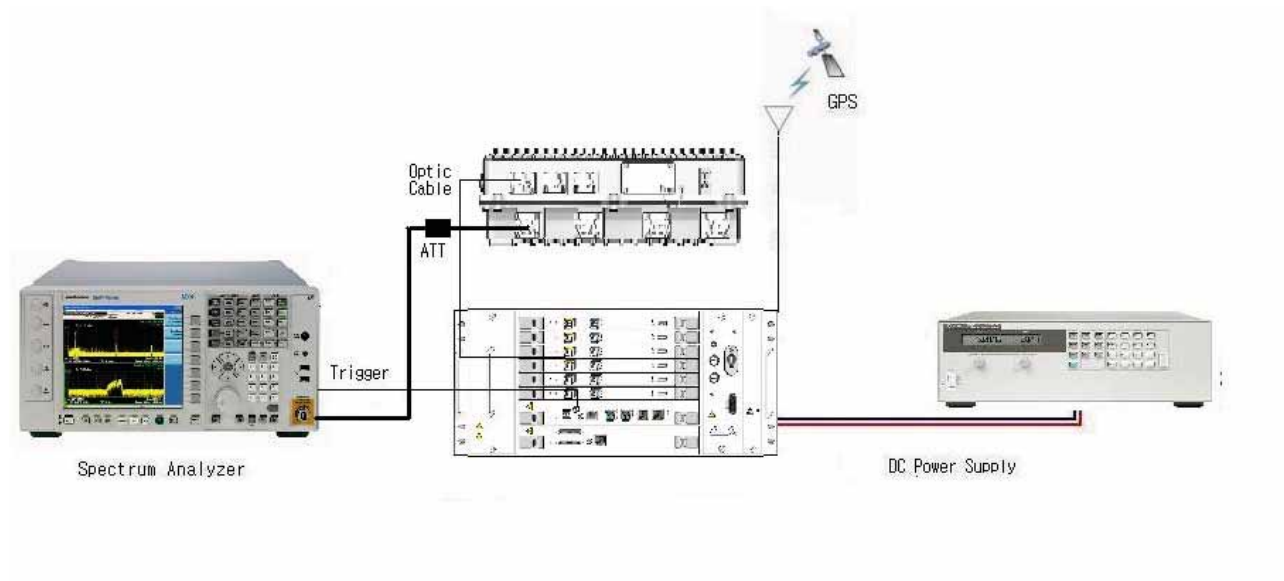
Manufacturer	Model / Equipment	Serial No.	Calibration Interval	Calibration Due
Agilent	N9020A /Signal Analyzer	MY51110068	Annual	07/21/2014
Agilent	6674A / DC Power Supply	3501A00901	Annual	07/24/2014
WEINSCHEL	67-30-33 / Attenuator	CC7264	Annual	08/25/2014
WEINSCHEL	67-30-33 / Attenuator	CC7265	Annual	08/26/2014
WEINSCHEL	AF9003-69-31 / Attenuator	11787	Annual	10/24/2014
DYENT	DFSS60 / DC Power Supply	1003030-1	Annual	04/01/2014

6.3. Test Procedure

The RF output of the transmitter was connected to the input of the spectrum analyzer through sufficient attenuation. The EUT was connected to a spectrum analyzer enabled with an occupied bandwidth function via its antenna

port. Measurements were performed to determine the occupied bandwidth in accordance with FCC Part 2.1049. The occupied bandwidth was measured from the fundamental emission at the bottom, middle and top channels. The occupied bandwidth was measured using the built in occupied bandwidth function of the spectrum analyzer. It was set to measure the bandwidth where 99% of the signal power was contained. The

analyzer automatically configures the measurement bandwidths to make an accurate measurement based on the channel bandwidth and channel spacing of the EUT.



6.4. Test Result

: PASS

LTE20M(6.67W)

6.4.1. Test Data at Output Port 1

Frequency (MHz)	Occupied Bandwidth (MHz)		
	QPSK	16QAM	64QAM
2506	17.884	17.927	17.917
2593	17.956	17.941	17.962
2680	17.970	17.971	17.855

6.4.2. Test Data at Output Port 5

Frequency (MHz)	Occupied Bandwidth (MHz)		
	QPSK	16QAM	64QAM
2506	17.910	17.909	17.944
2593	17.948	17.989	17.963
2680	17.946	17.941	17.969

LTE20M(6.67W) 3 Carrier

6.5.1. Test Data at Output Port 1

Frequency (MHz)	Occupied Bandwidth (MHz)		
	QPSK	16QAM	64QAM
2526	57.680	57.711	57.679
2593	57.652	57.711	57.673
2660	57.506	57.678	57.748

6.5.2. Test Data at Output Port 5

Frequency (MHz)	Occupied Bandwidth (MHz)		
	QPSK	16QAM	64QAM
2526	57.743	57.581	57.429
2593	57.884	57.690	57.669
2660	57.640	57.613	57.601

LTE20M(10W)

6.6.1. Test Data at Output Port 1

Frequency (MHz)	Occupied Bandwidth (MHz)		
	QPSK	16QAM	64QAM
2506	17.948	17.969	17.957
2593	17.963	17.983	17.953
2680	17.940	17.977	18.007

6.6.2. Test Data at Output Port 2

Frequency (MHz)	Occupied Bandwidth (MHz)		
	QPSK	16QAM	64QAM
2506	17.948	17.983	17.968
2593	17.938	17.995	17.960
2680	17.943	17.992	18.014

6.6.3. Test Data at Output Port 3

Frequency (MHz)	Occupied Bandwidth (MHz)		
	QPSK	16QAM	64QAM
2506	17.950	17.967	17.955
2593	17.947	17.983	17.961
2680	17.963	17.977	17.996

6.6.4. Test Data at Output Port 4

Frequency (MHz)	Occupied Bandwidth (MHz)		
	QPSK	16QAM	64QAM
2506	17.942	17.981	17.972
2593	17.961	17.983	17.960
2680	17.959	17.974	17.980

6.6.5. Test Data at Output Port 5

Frequency (MHz)	Occupied Bandwidth (MHz)		
	QPSK	16QAM	64QAM
2506	17.968	17.965	17.960
2593	17.981	17.989	17.952
2680	17.955	17.959	17.929

6.6.6. Test Data at Output Port 6

Frequency (MHz)	Occupied Bandwidth (MHz)		
	QPSK	16QAM	64QAM
2506	17.928	17.932	17.952
2593	17.989	17.998	17.945
2680	17.997	17.987	17.941

6.6.7. Test Data at Output Port 7

Frequency (MHz)	Occupied Bandwidth (MHz)		
	QPSK	16QAM	64QAM
2506	17.925	17.961	17.977
2593	17.963	17.955	17.925
2680	17.995	17.983	17.952

6.6.8. Test Data at Output Port 8

Frequency (MHz)	Occupied Bandwidth (MHz)		
	QPSK	16QAM	64QAM
2506	17.916	17.947	17.985
2593	18.004	17.963	18.021
2680	17.971	17.971	17.959

LTE20M(10W) 2 Carrier

6.7.1. Test Data at Output Port 1

Frequency (MHz)	Occupied Bandwidth (MHz)		
	QPSK	16QAM	64QAM
2516	37.809	37.902	37.803
2593	37.810	37.885	37.862
2670	37.800	37.865	37.943

6.7.2. Test Data at Output Port 2

Frequency (MHz)	Occupied Bandwidth (MHz)		
	QPSK	16QAM	64QAM
2516	37.808	37.931	37.843
2593	37.819	37.883	37.844
2670	37.802	37.850	37.828

6.7.3. Test Data at Output Port 3

Frequency (MHz)	Occupied Bandwidth (MHz)		
	QPSK	16QAM	64QAM
2516	37.810	37.863	37.834
2593	37.840	37.939	37.841
2670	37.828	37.854	37.859

6.7.4. Test Data at Output Port 4

Frequency (MHz)	Occupied Bandwidth (MHz)		
	QPSK	16QAM	64QAM
2516	37.805	37.908	37.800
2593	37.819	37.839	37.885
2670	37.822	37.791	37.871

6.7.5. Test Data at Output Port 5

Frequency (MHz)	Occupied Bandwidth (MHz)		
	QPSK	16QAM	64QAM
2516	37.806	37.832	37.841
2593	37.837	37.840	37.845
2670	37.850	37.803	37.829

6.7.6. Test Data at Output Port 6

Frequency (MHz)	Occupied Bandwidth (MHz)		
	QPSK	16QAM	64QAM
2516	37.770	37.859	37.841
2593	37.750	37.820	37.888
2670	37.864	37.818	37.798

6.7.7. Test Data at Output Port 7

Frequency (MHz)	Occupied Bandwidth (MHz)		
	QPSK	16QAM	64QAM
2516	37.756	37.885	37.849
2593	37.821	37.849	37.862
2670	37.835	37.815	37.824

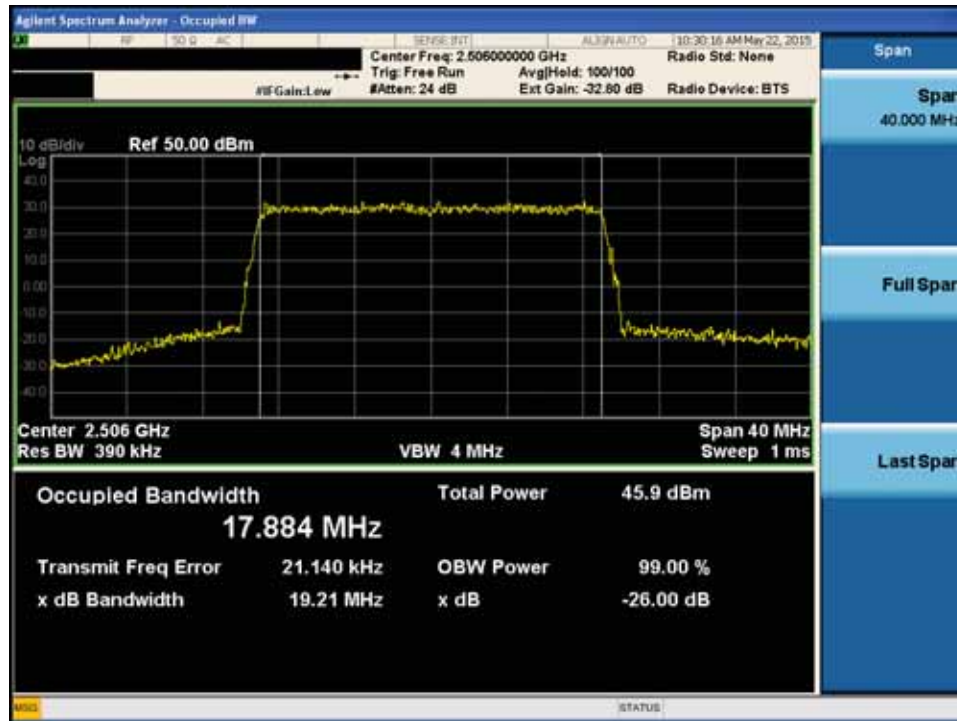
6.7.8. Test Data at Output Port 8

Frequency (MHz)	Occupied Bandwidth (MHz)		
	QPSK	16QAM	64QAM
2516	37.841	37.862	37.843
2593	37.788	37.877	37.780
2670	37.798	37.852	37.860

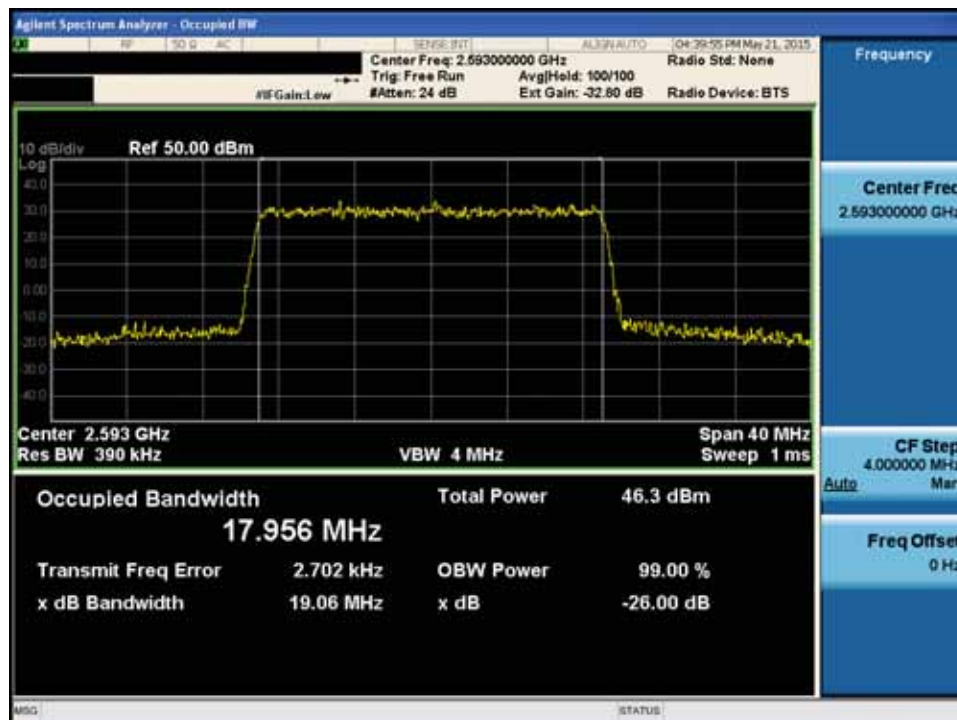
LTE20M(6.67W)

6.7.9. Test Plot at Output Port 1

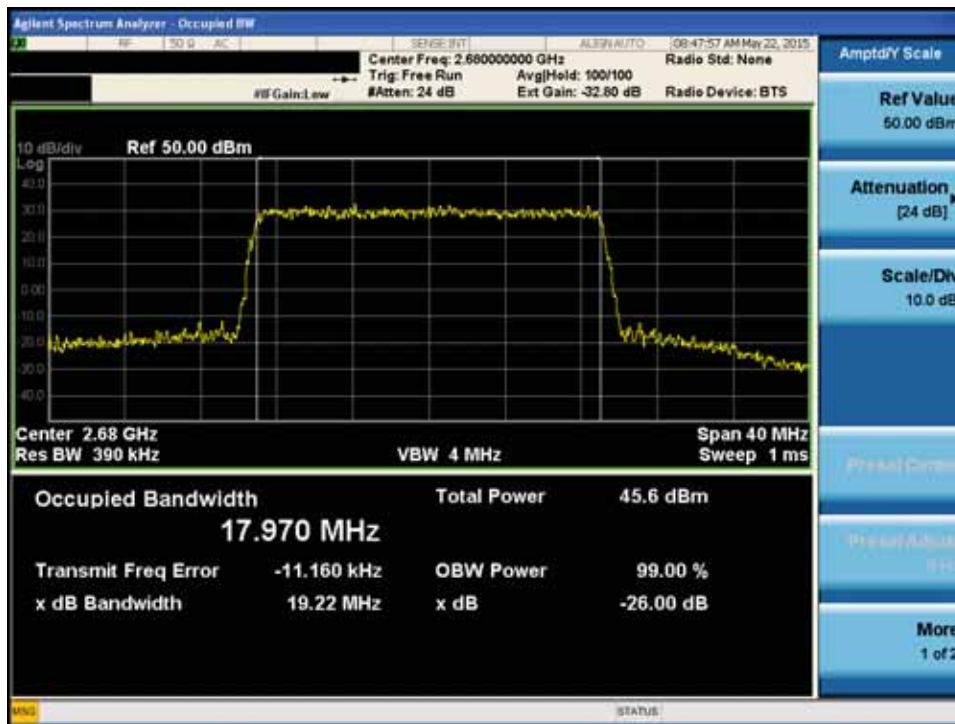
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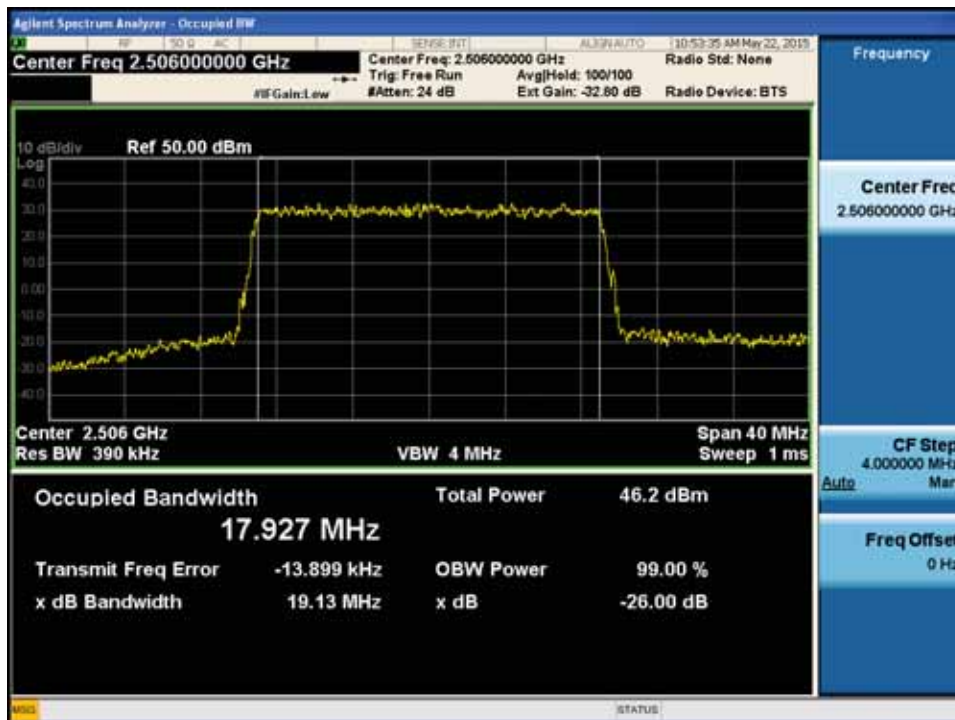
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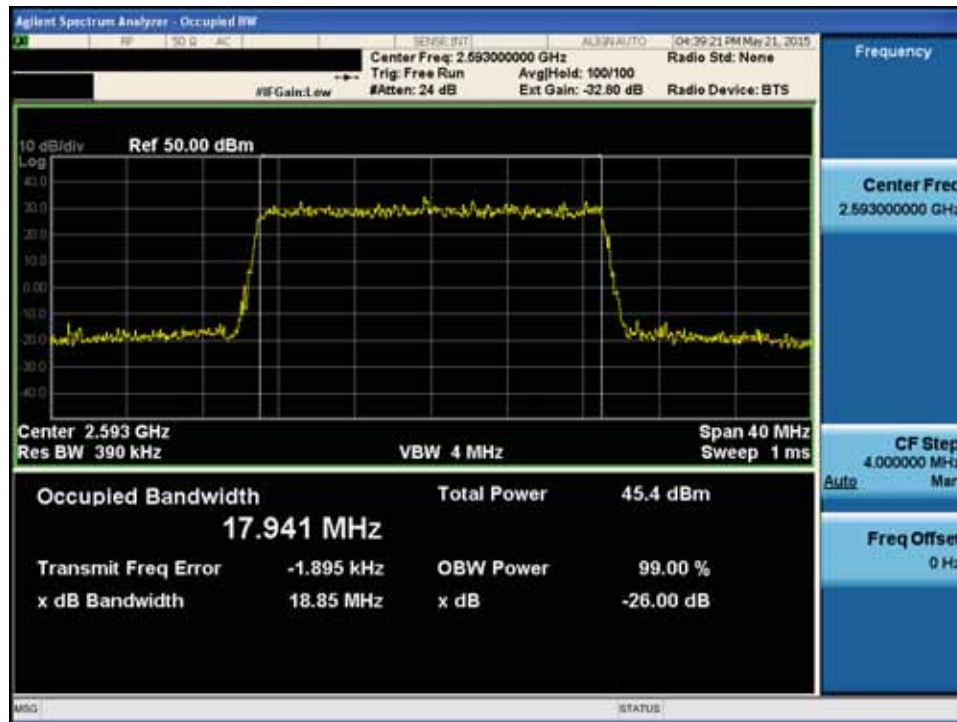
(QPSK High Channel)



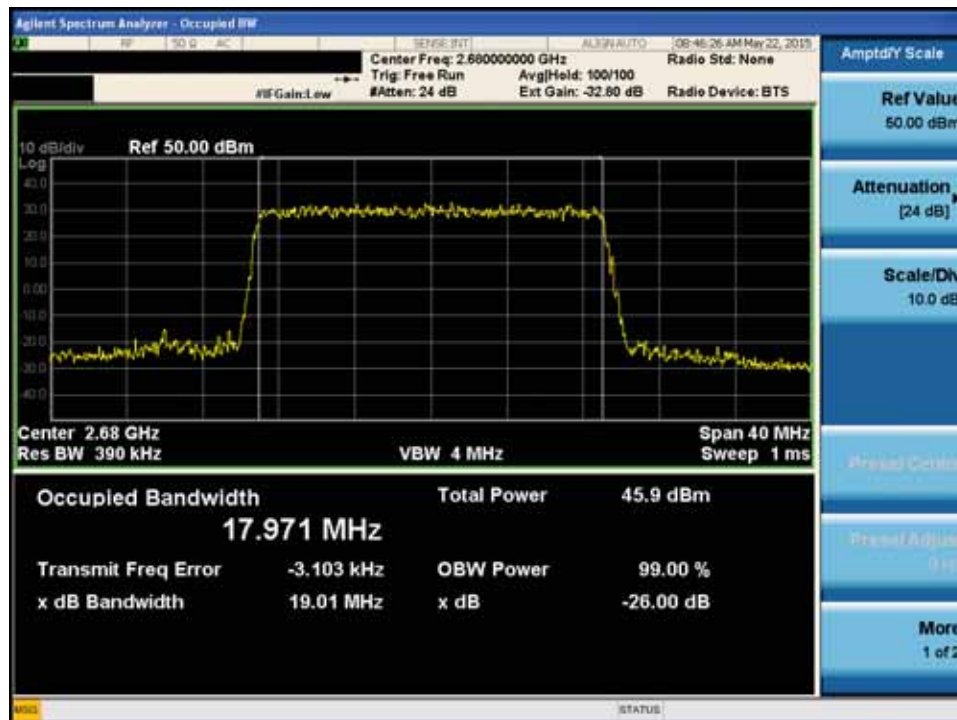
(16QAM Low Channel)



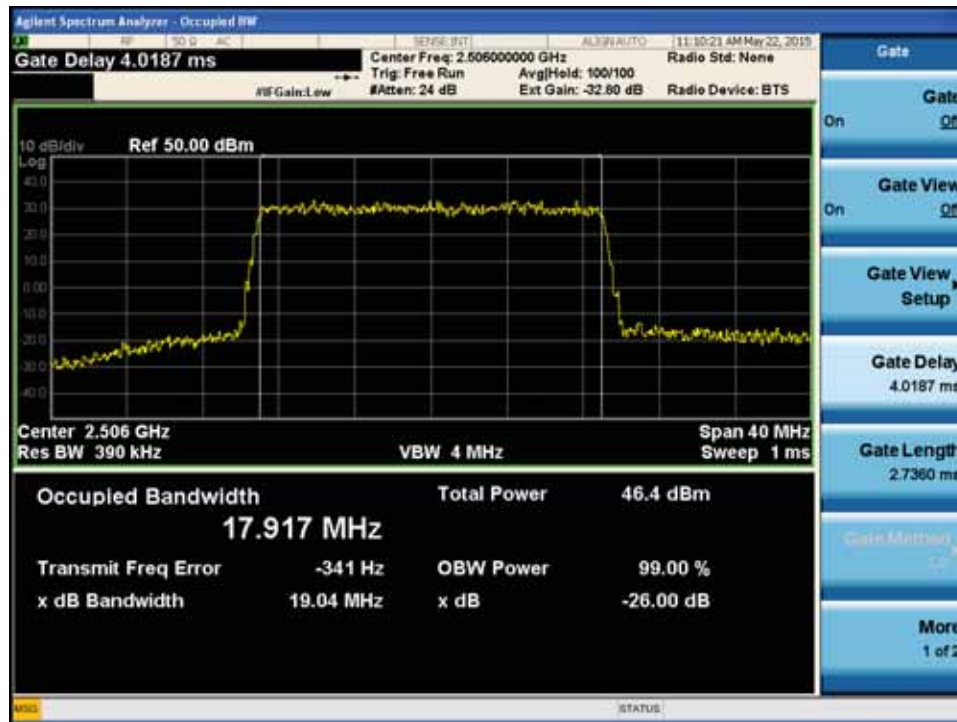
(16QAM Middle Channel)



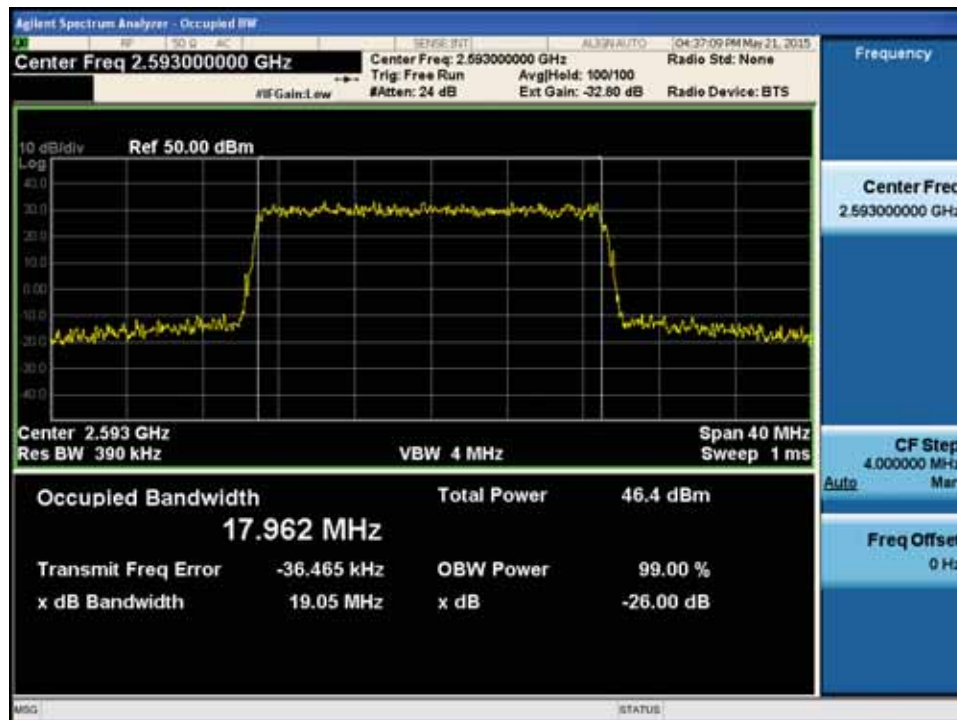
(16QAM High Channel)



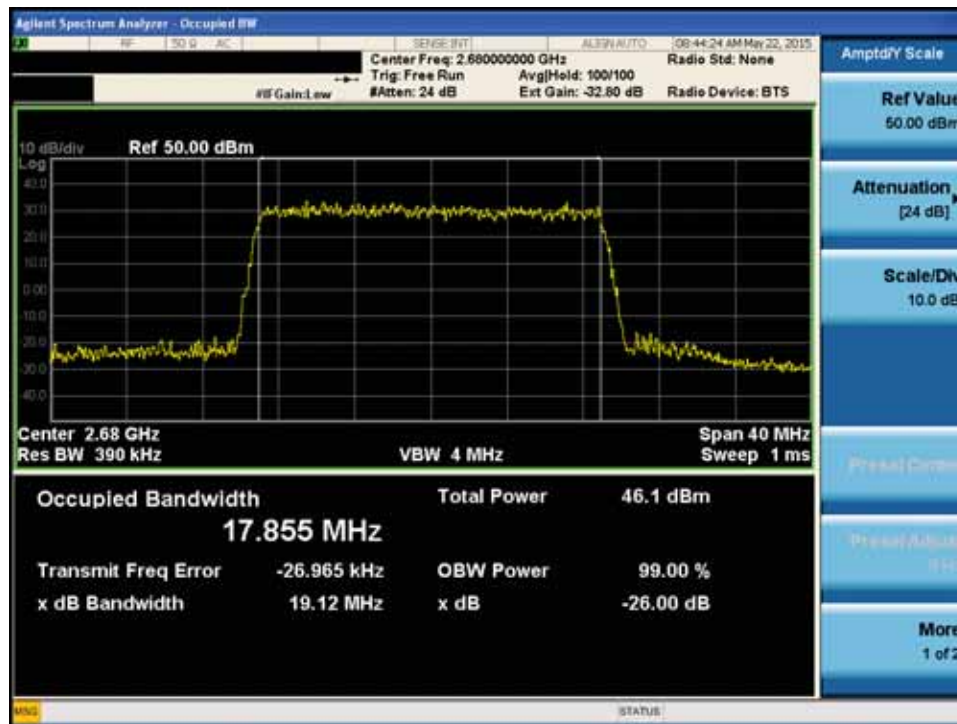
(64QAM Low Channel)



(64QAM Middle Channel)

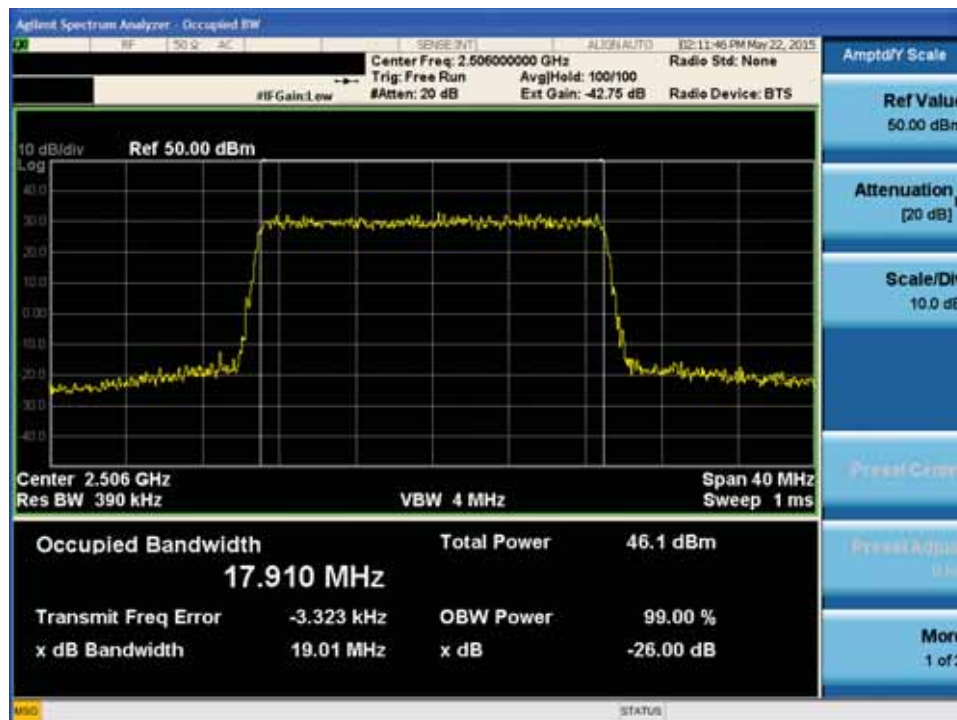


(64QAM High Channel)

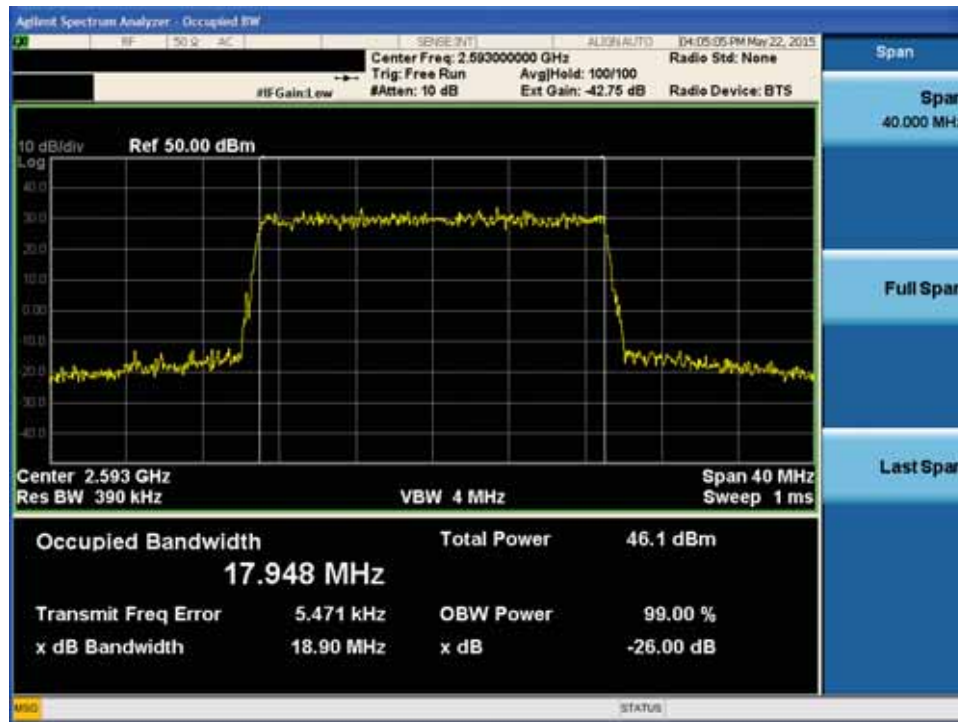


6.7.10. Test Plot at Output Port 5

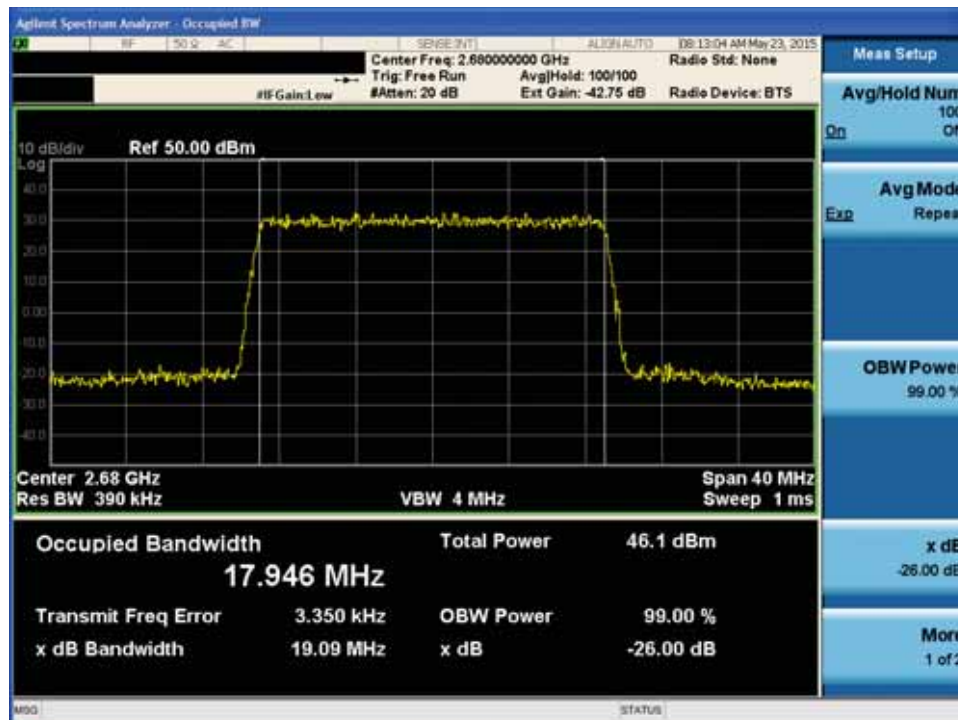
(QPSK Low Channel)



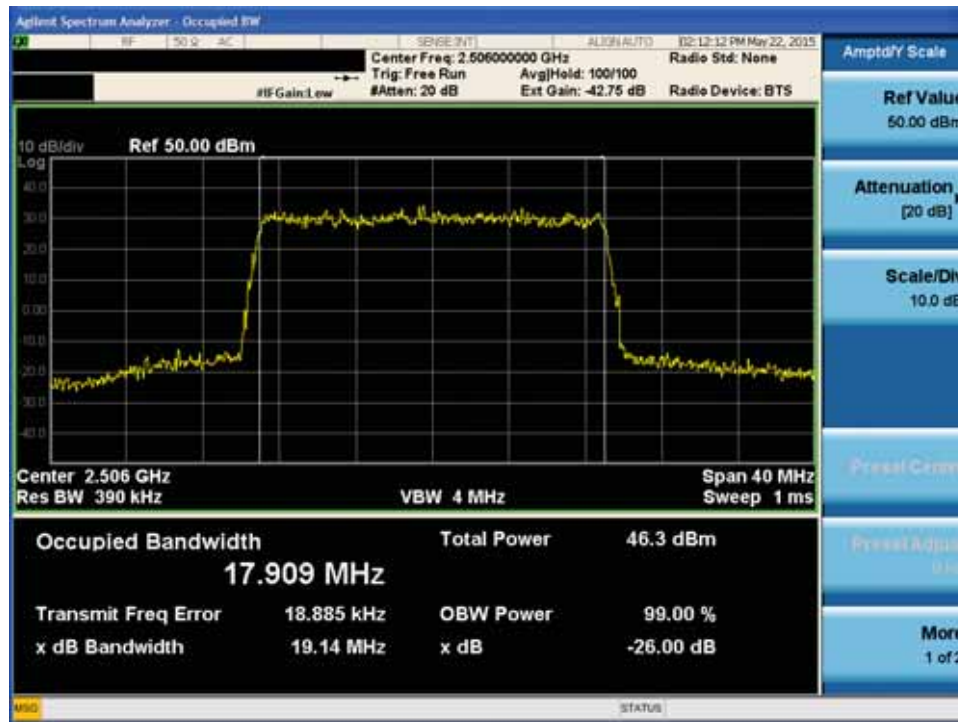
(QPSK Middle Channel)



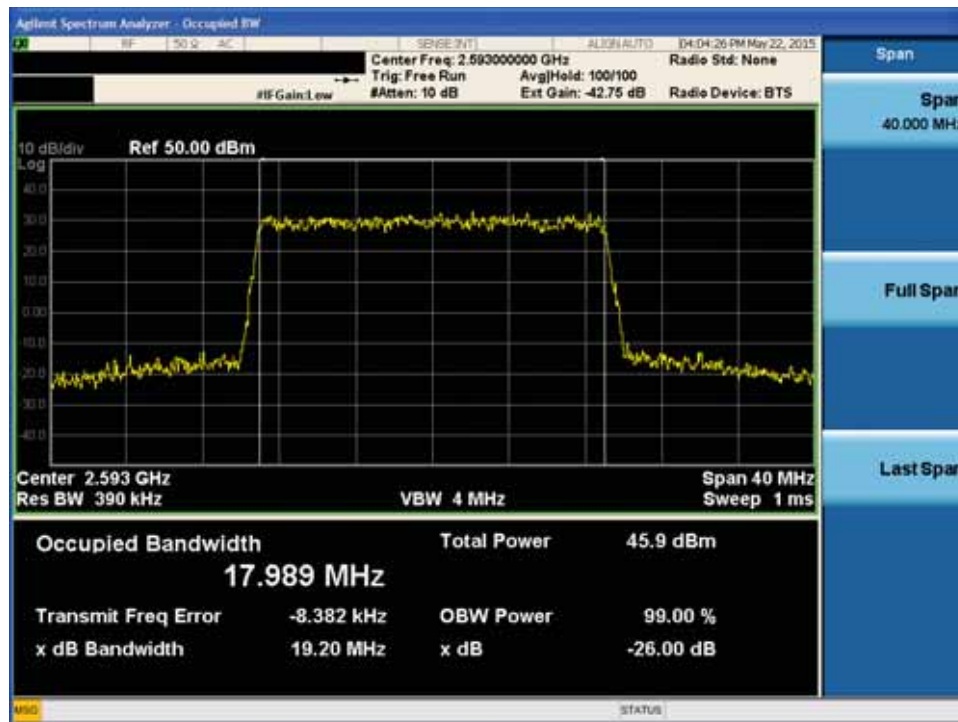
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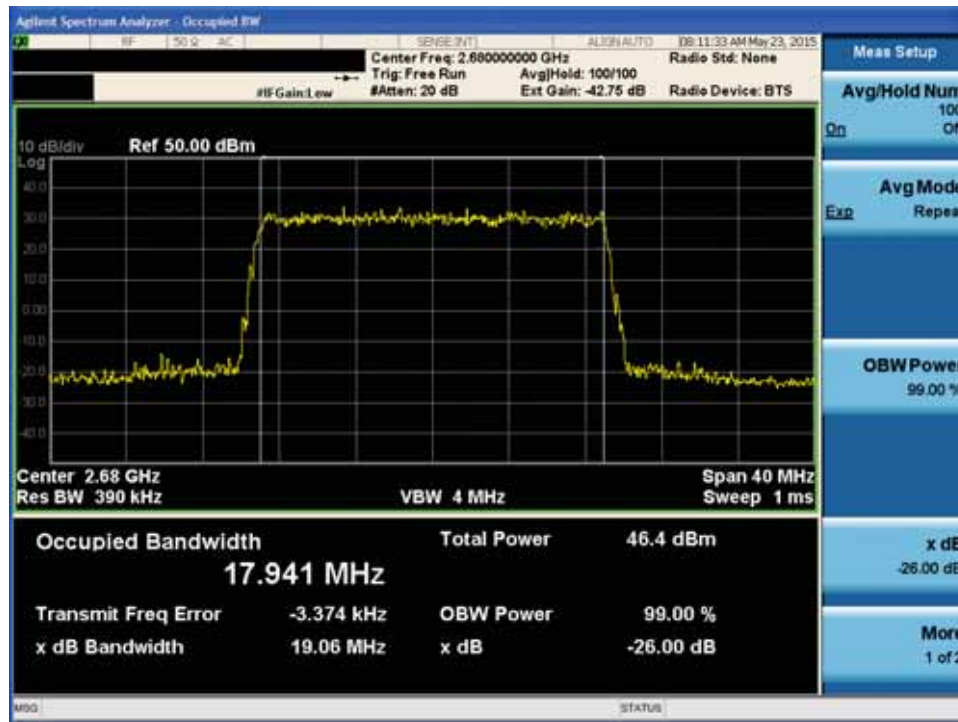
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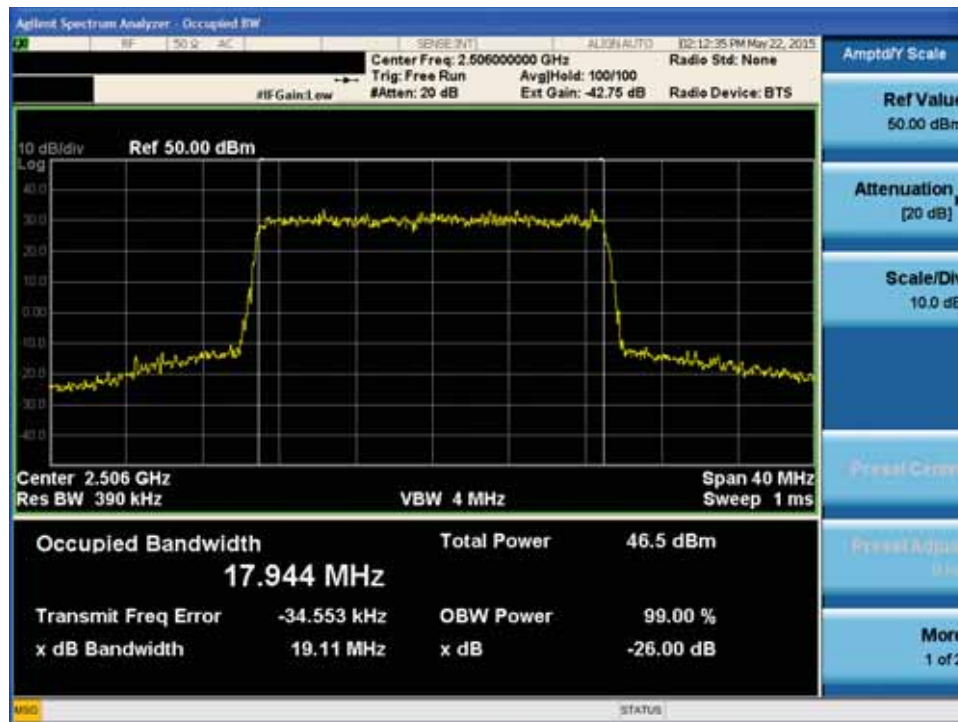
(16QAM Middle Channel)



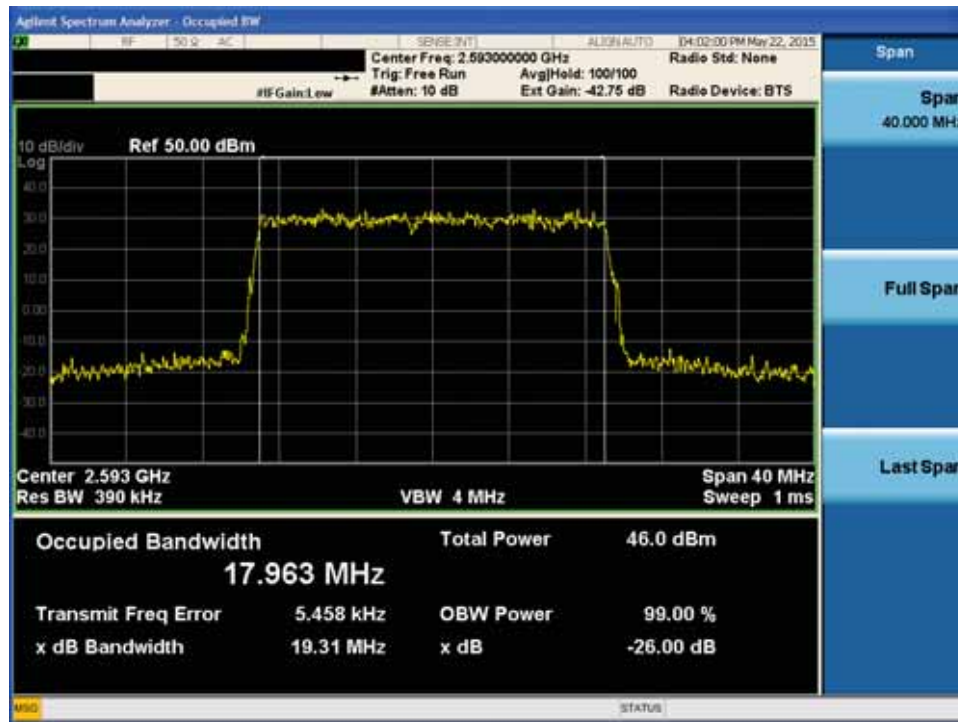
(16QAM High Channel)



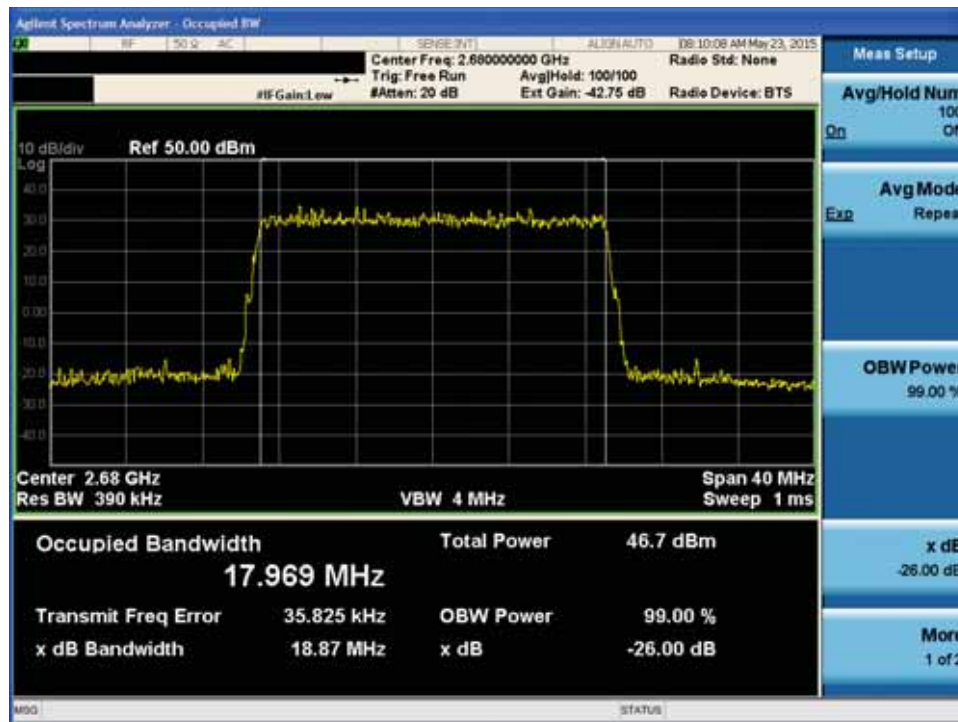
(64QAM Low Channel)



(64QAM Middle Channel)



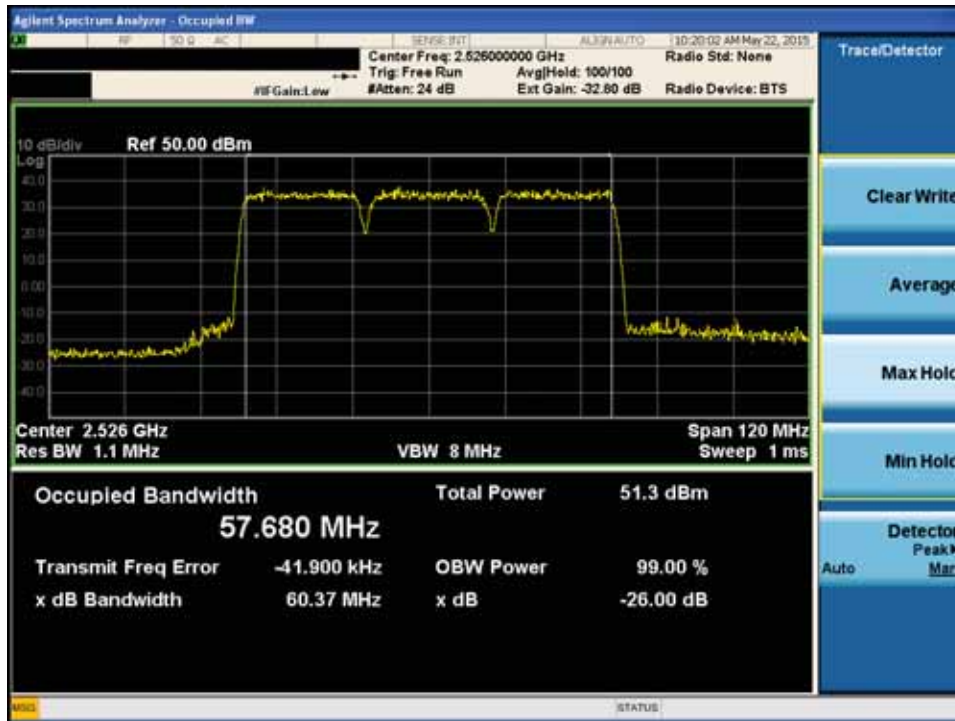
(64QAM High Channel)



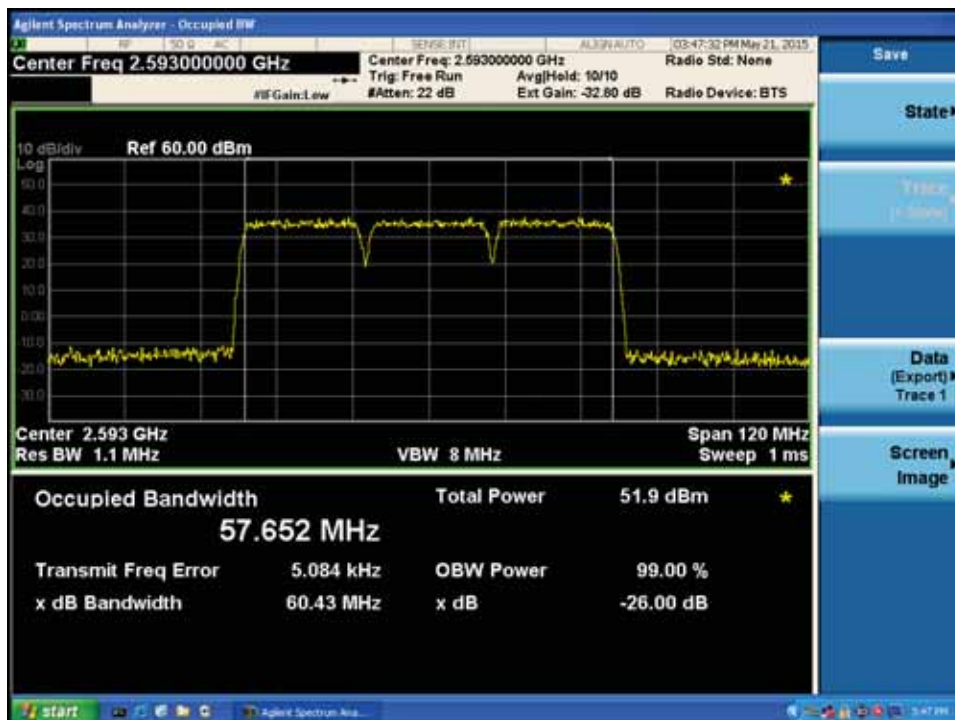
LTE20M(6.67W) 3 Carrier

6.7.11. Test Plot at Output Port 1

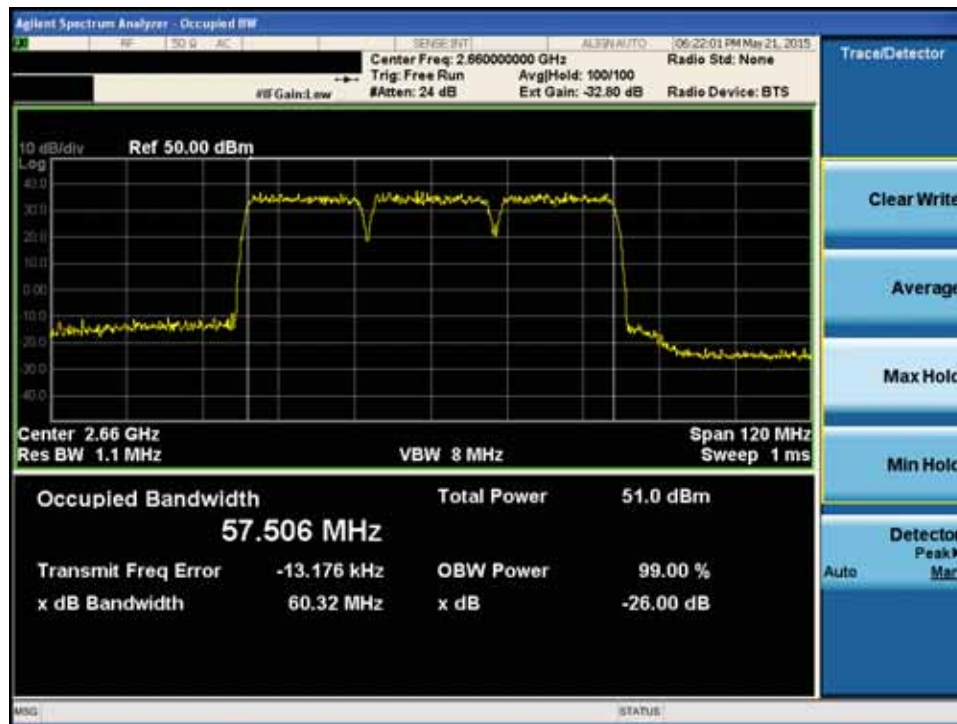
(QPSK Low Channel)



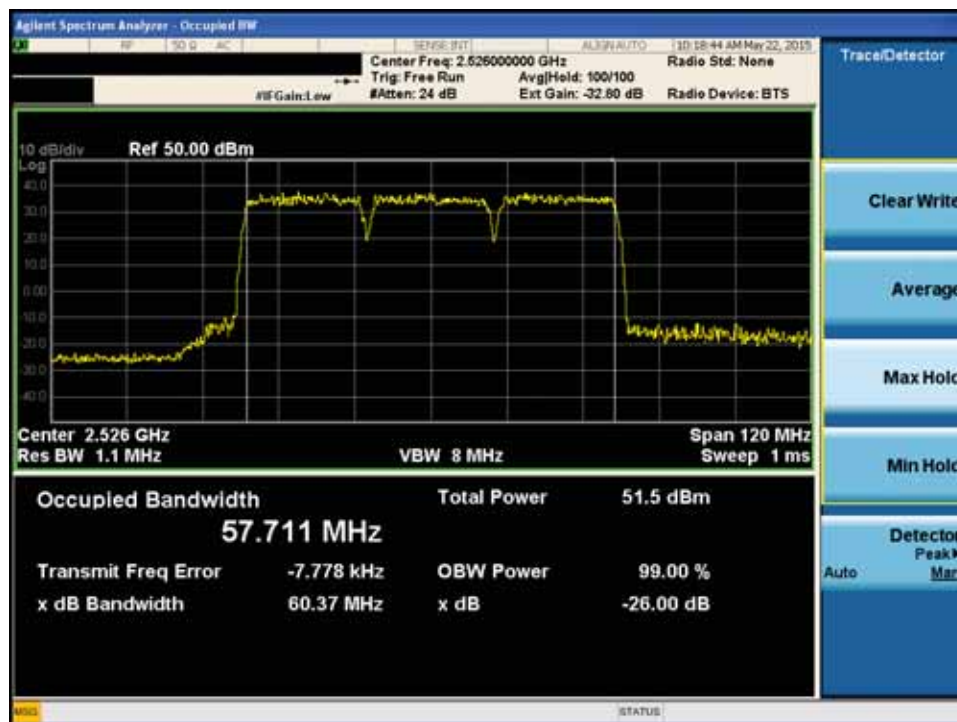
(QPSK Middle Channel)



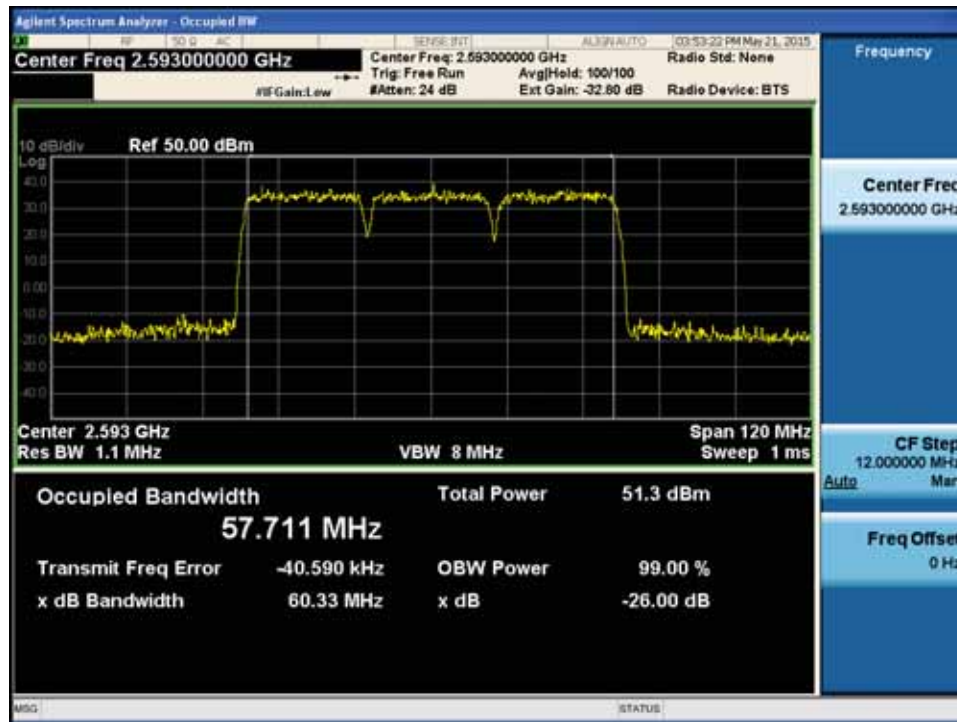
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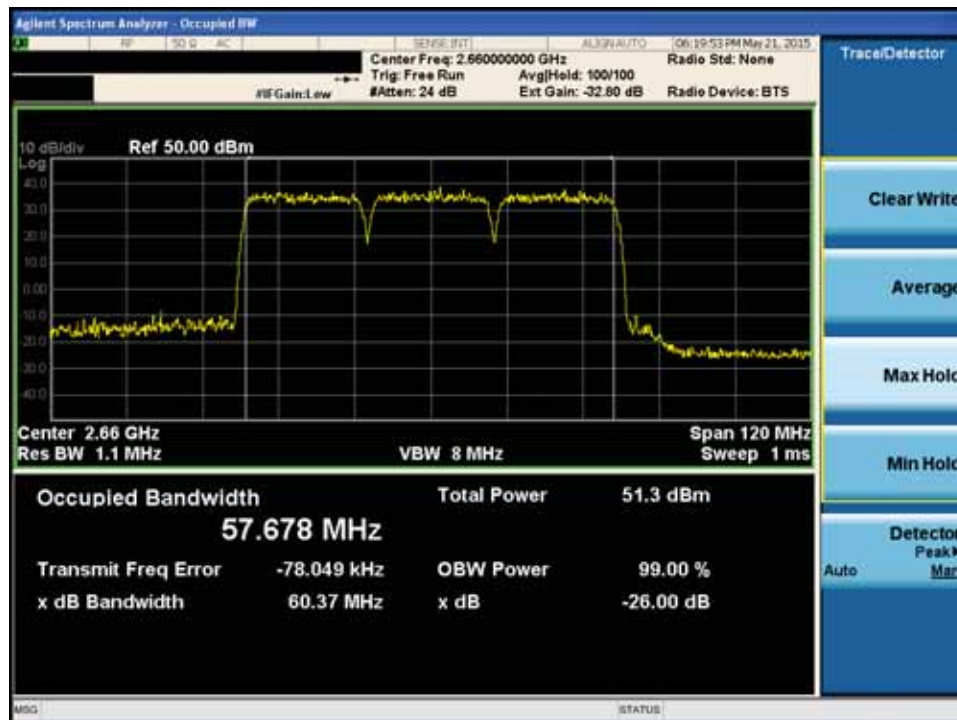
(16QAM Low Channel)



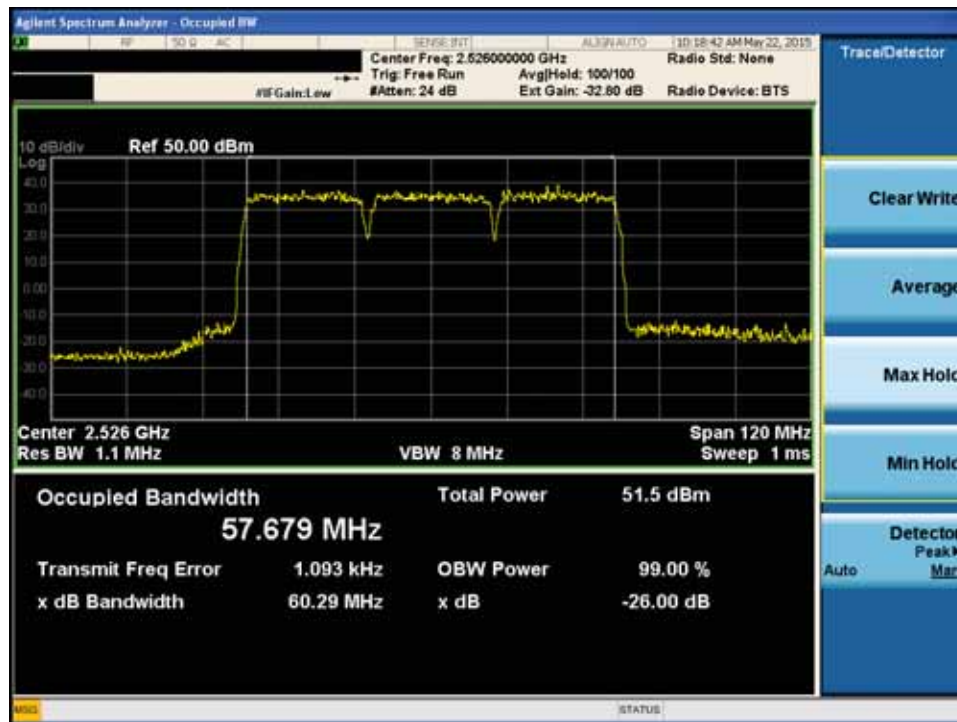
(16QAM Middle Channel)



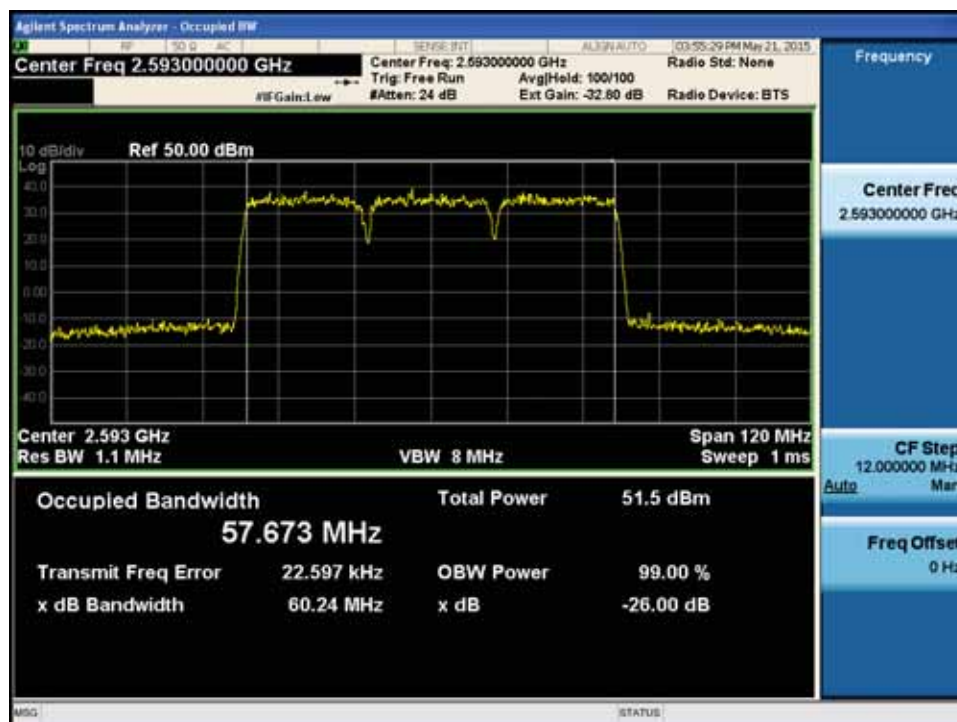
(16QAM High Channel)



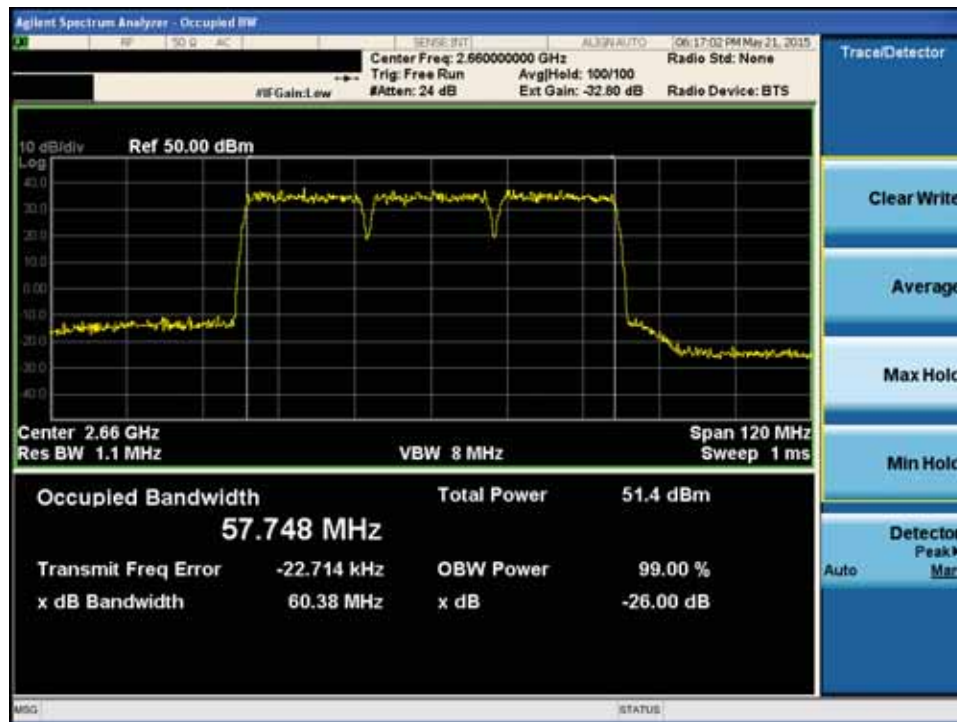
(64QAM Low Channel)



(64QAM Middle Channel)

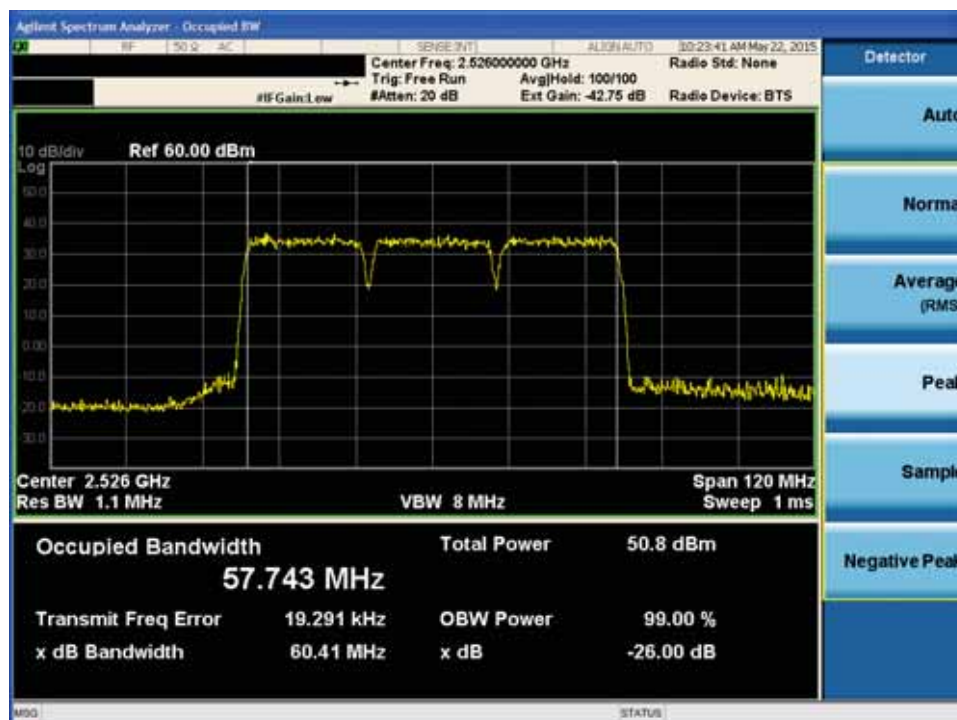


(64QAM High Channel)

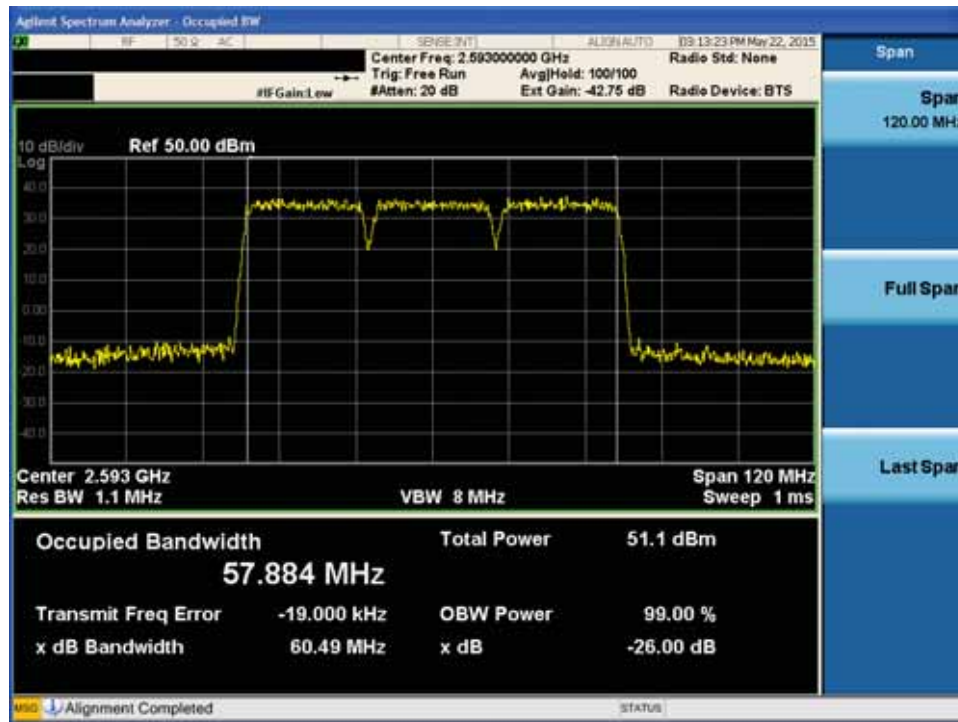


6.7.12. Test Plot at Output Port 5

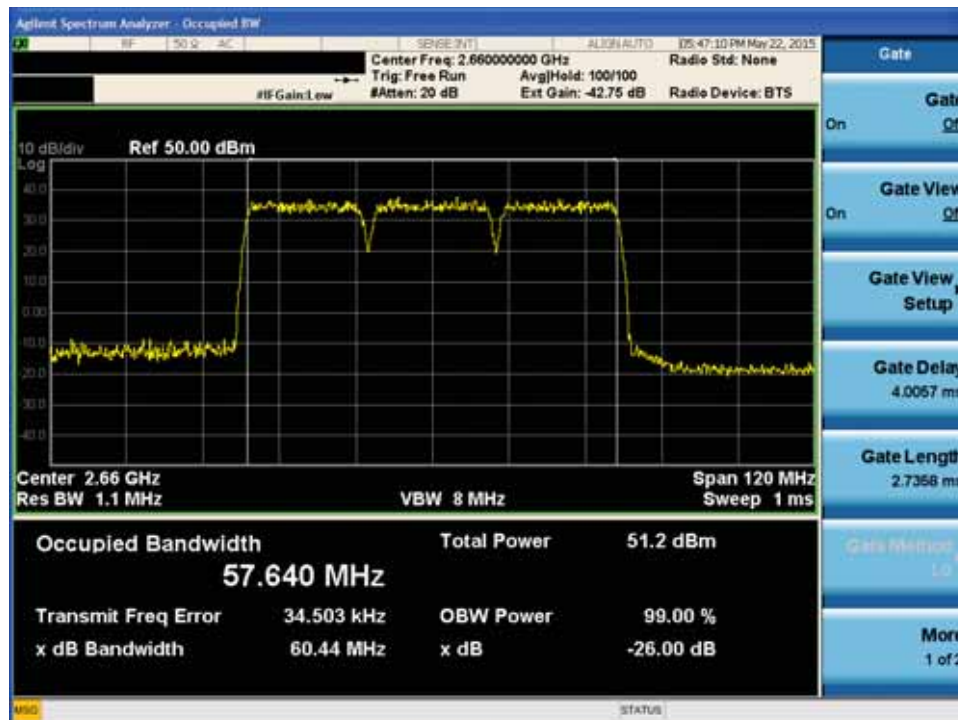
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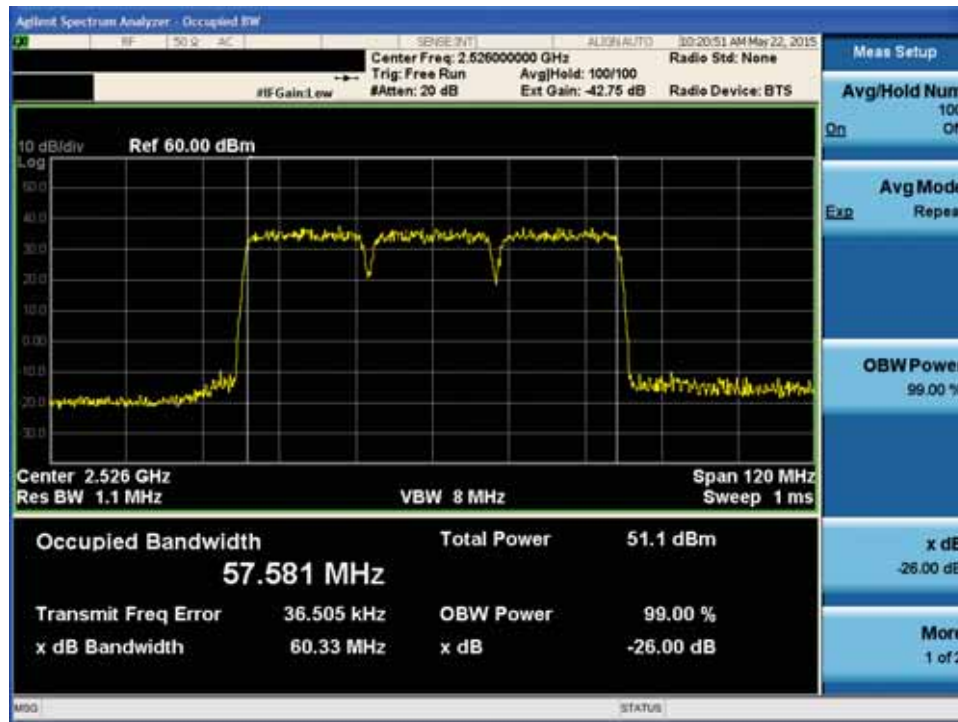
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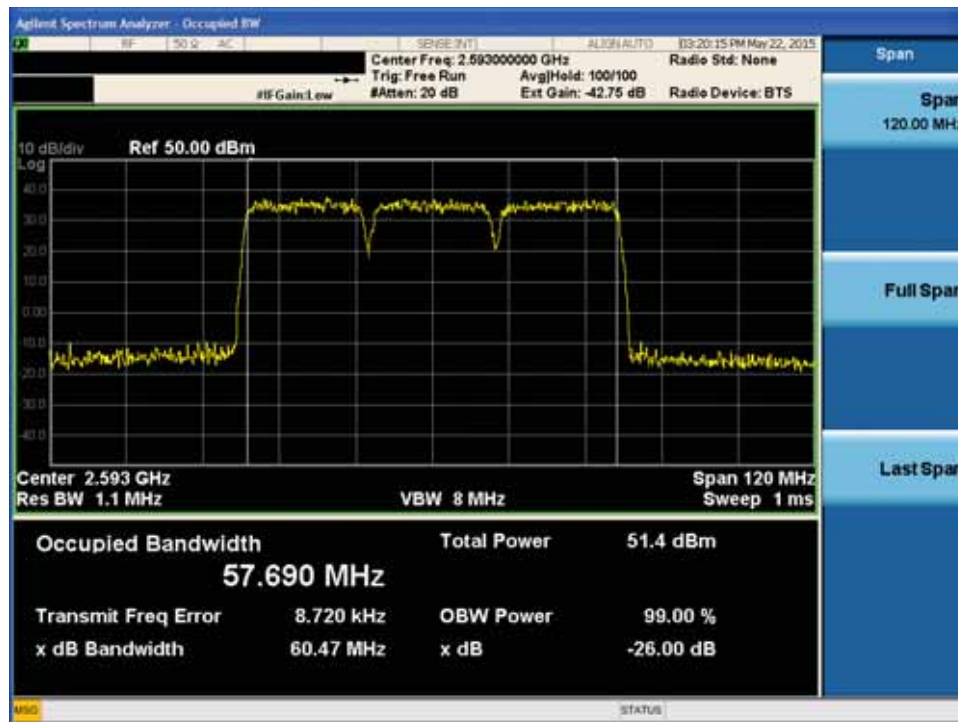
(QPSK High Channel)



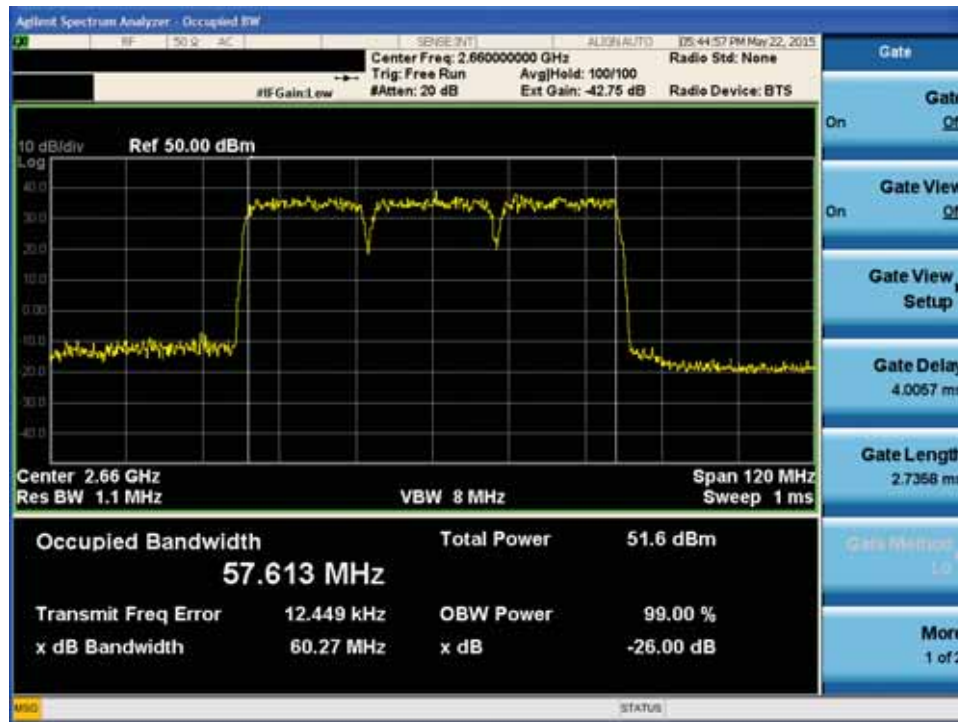
(16QAM Low Channel)



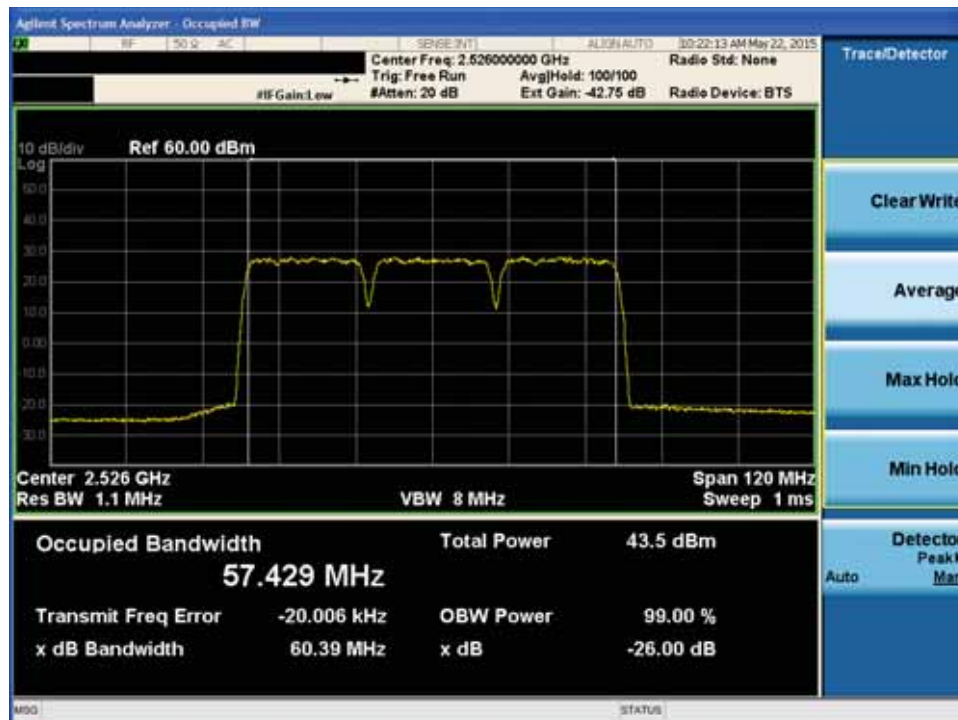
(16QAM Middle Channel)



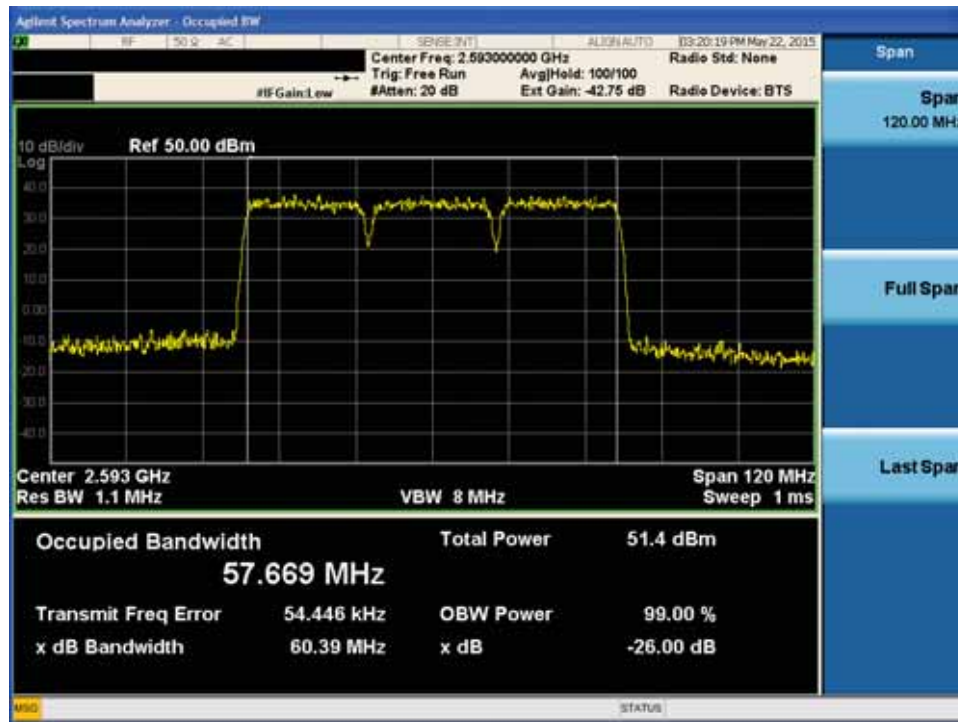
(16QAM High Channel)



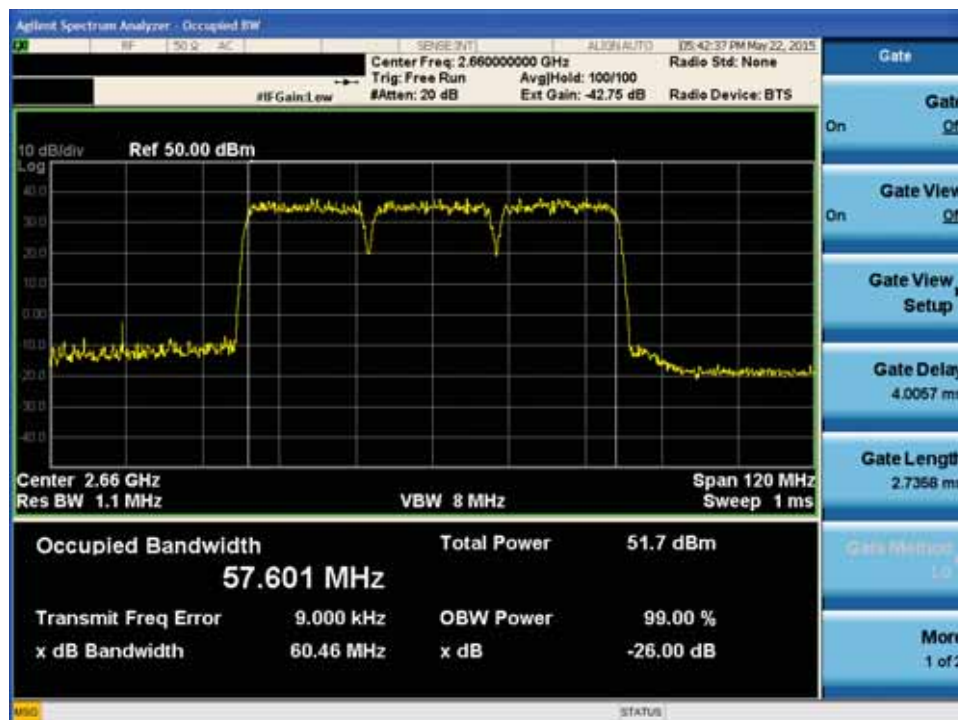
(64QAM Low Channel)



(64QAM Middle Channel)



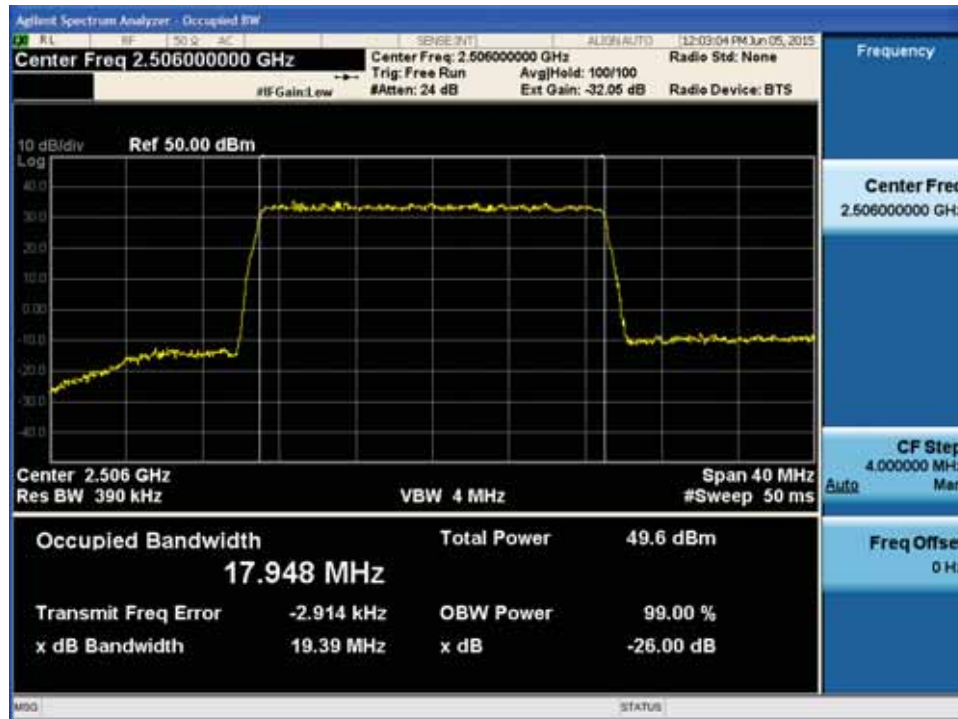
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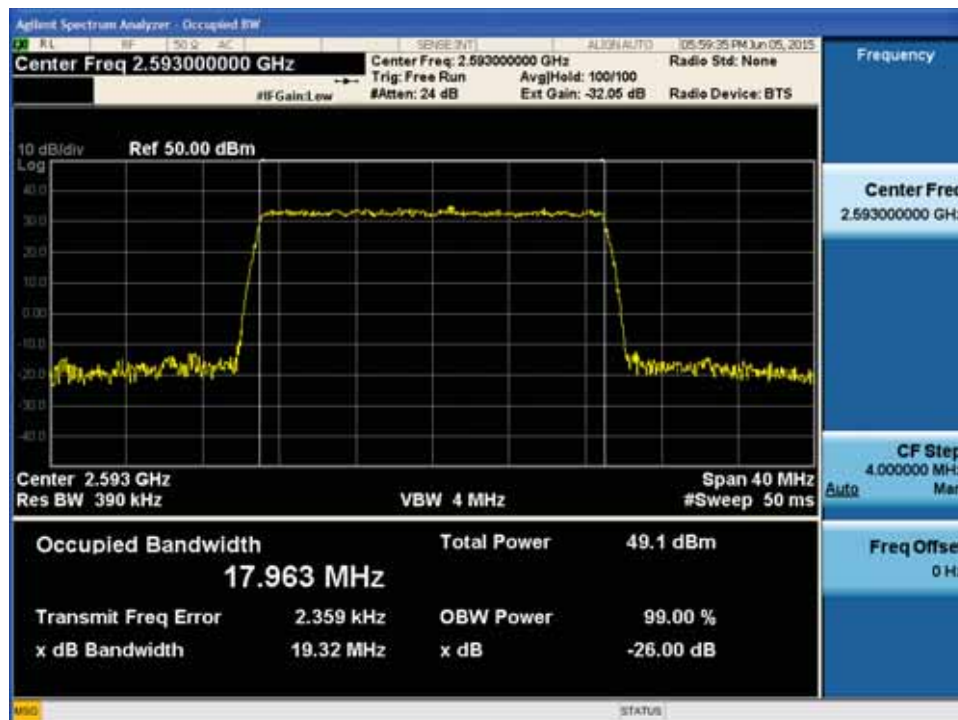
LTE20M(10W)

6.7.13. Test Plot at Output Port 1

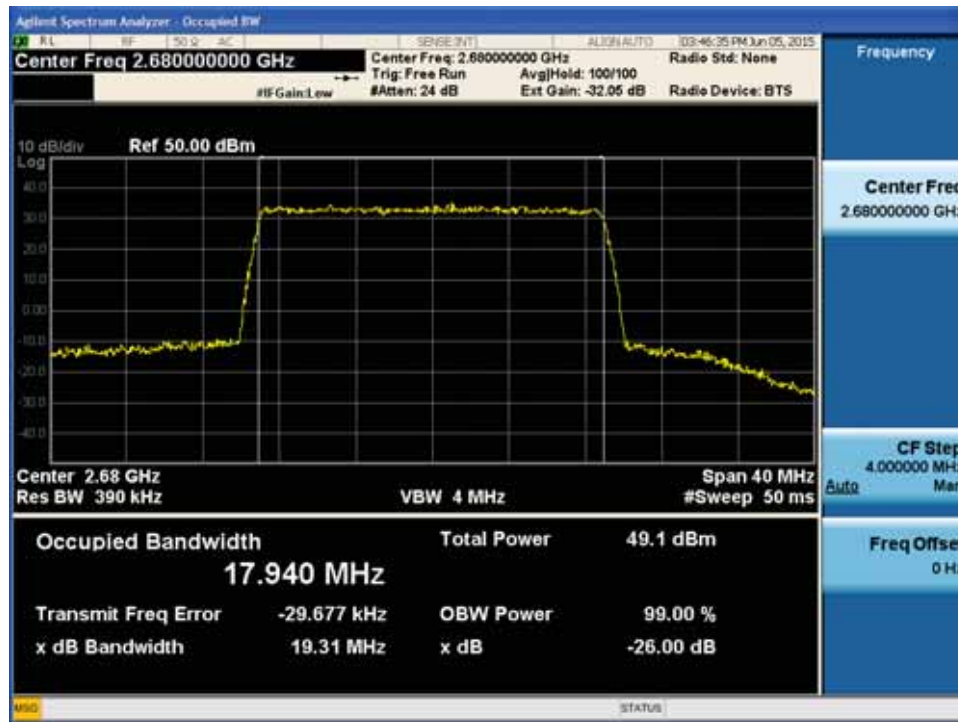
(QPSK Low Channel)



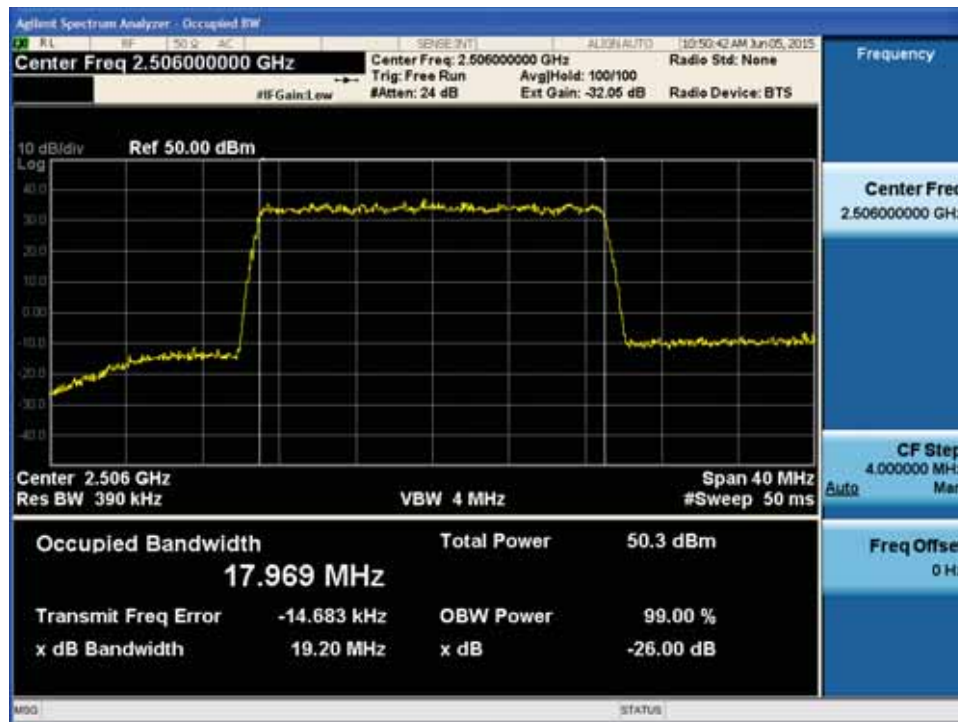
(QPSK Middle Channel)



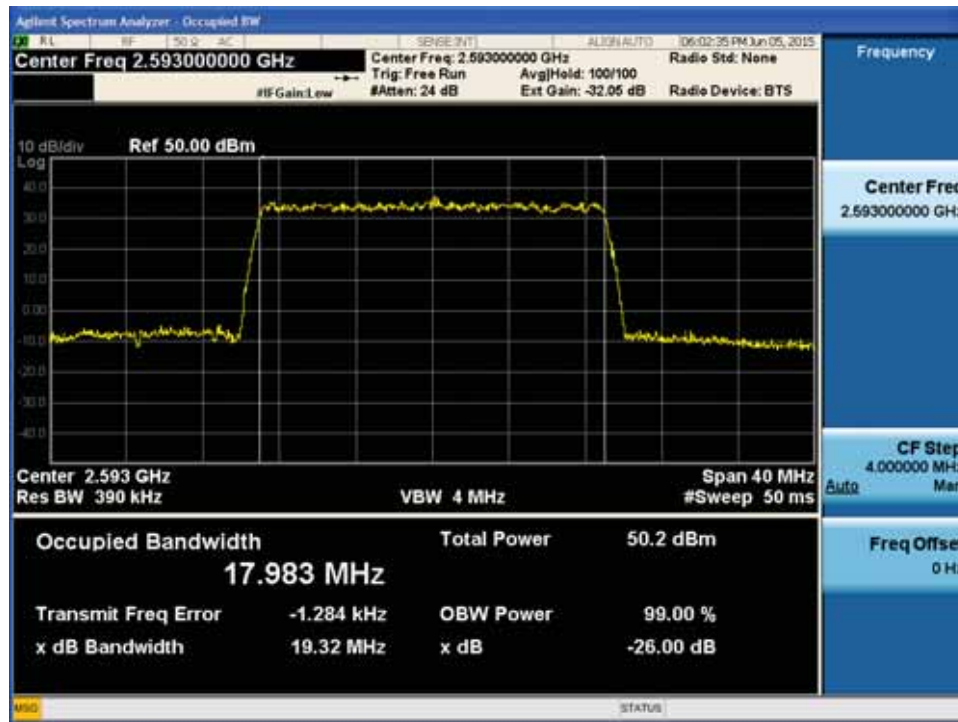
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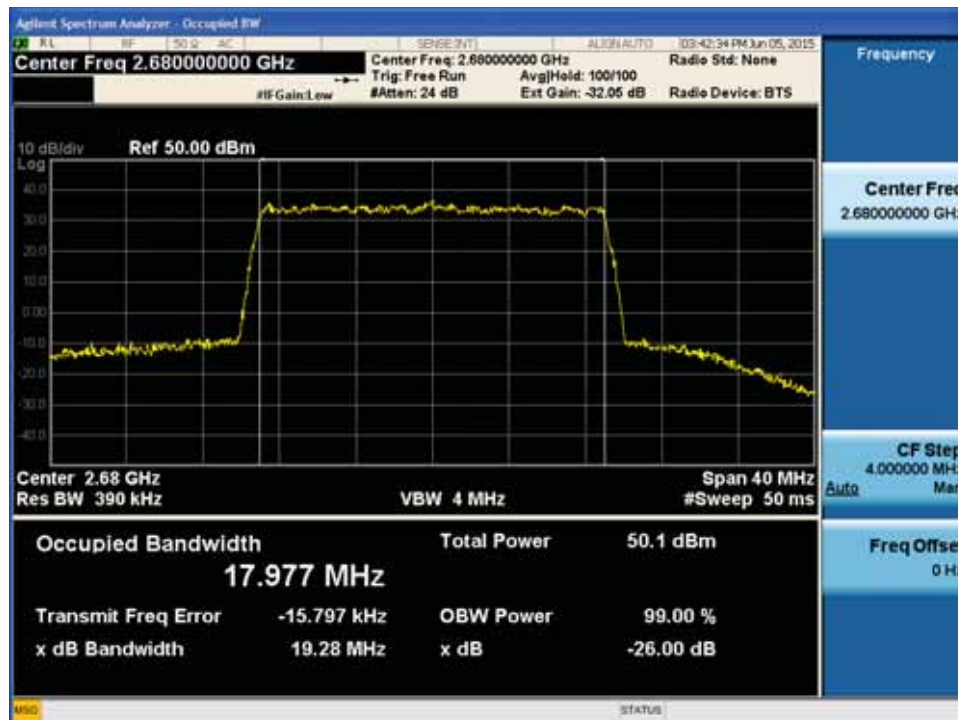
(16QAM Low Channel)



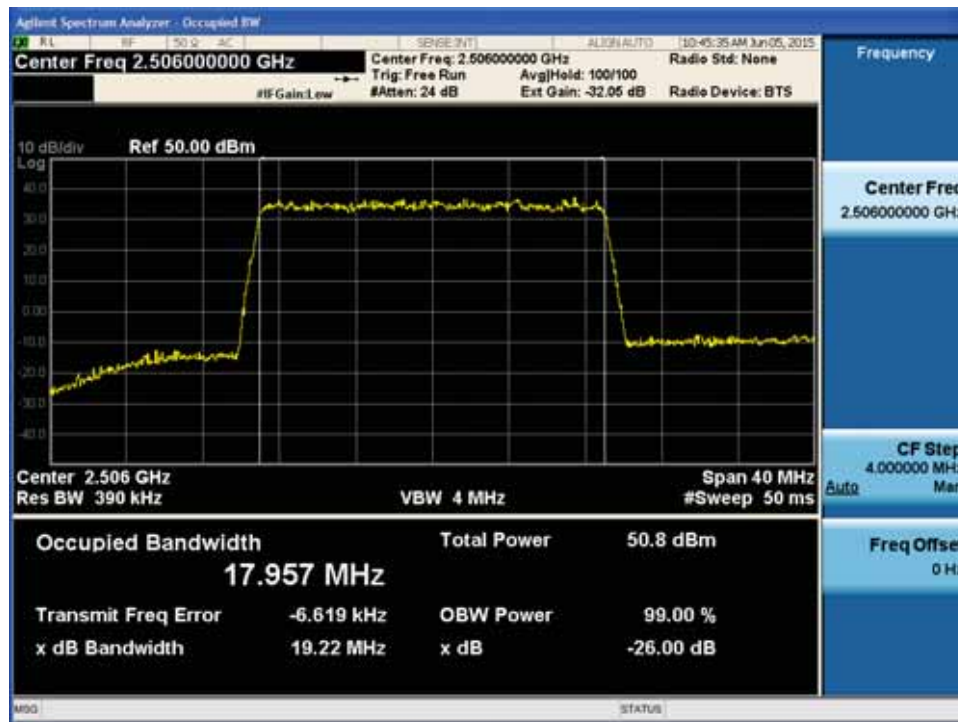
(16QAM Middle Channel)



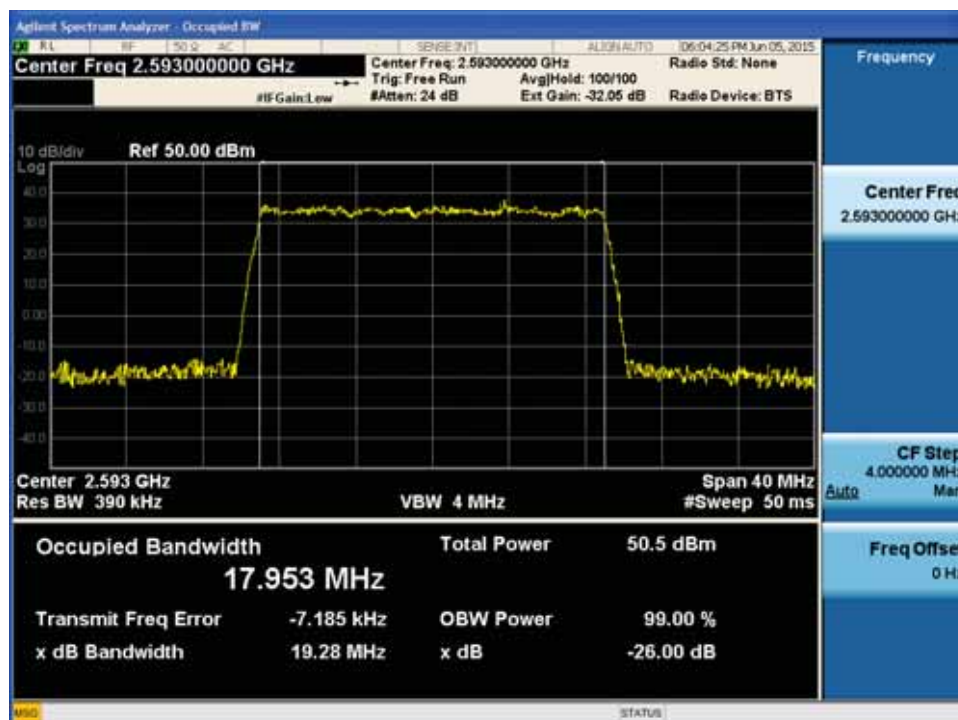
(16QAM High Channel)



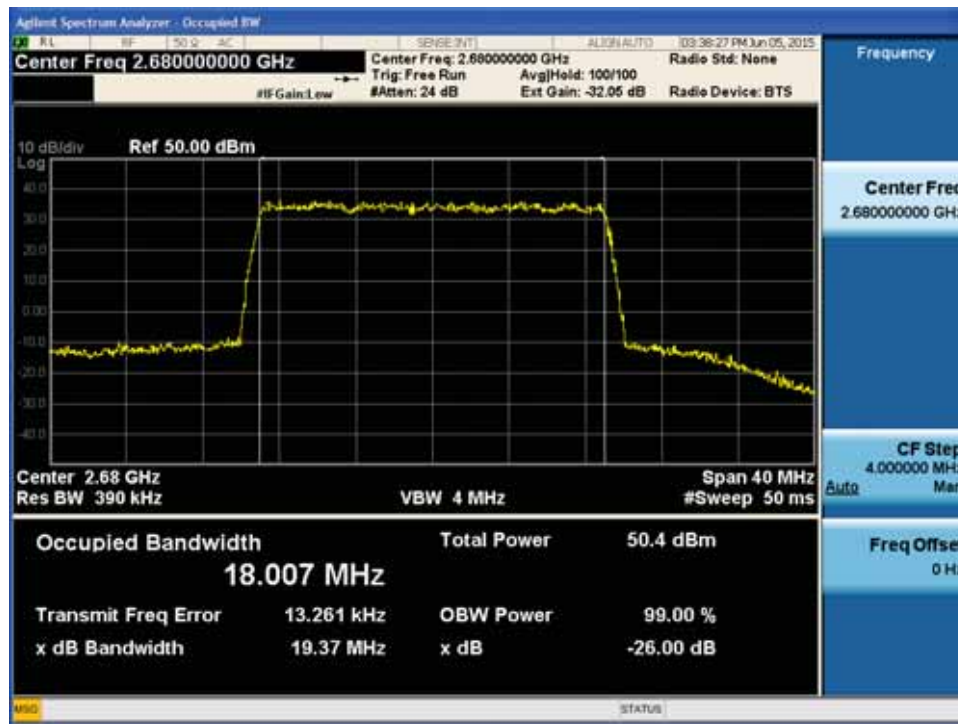
(64QAM Low Channel)



(64QAM Middle Channel)

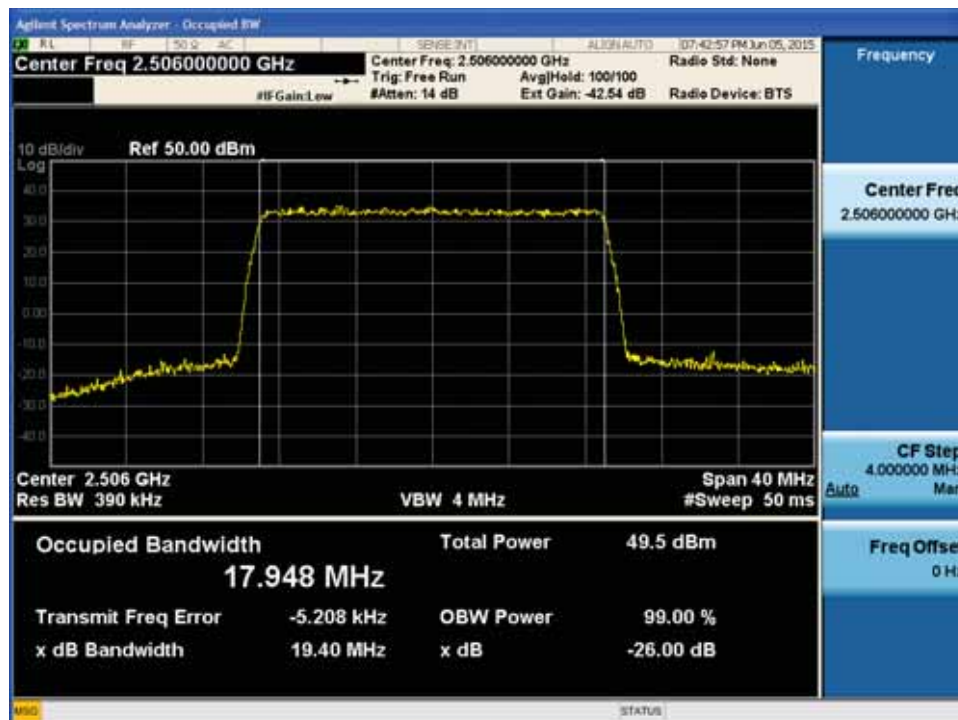


(64QAM High Channel)

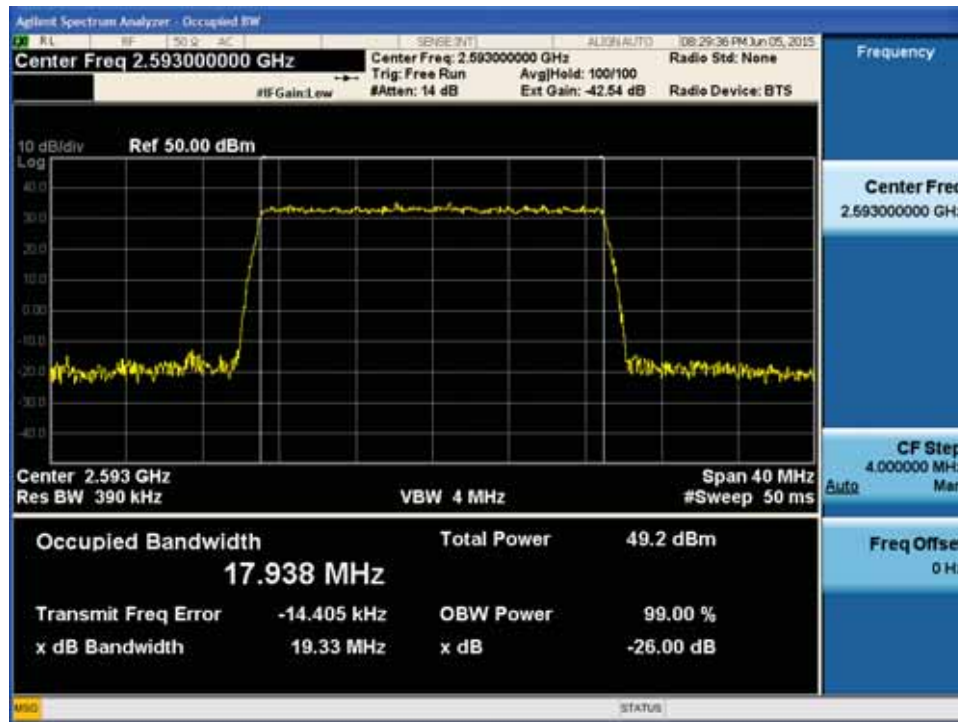


6.7.14. Test Plot at Output Port 2

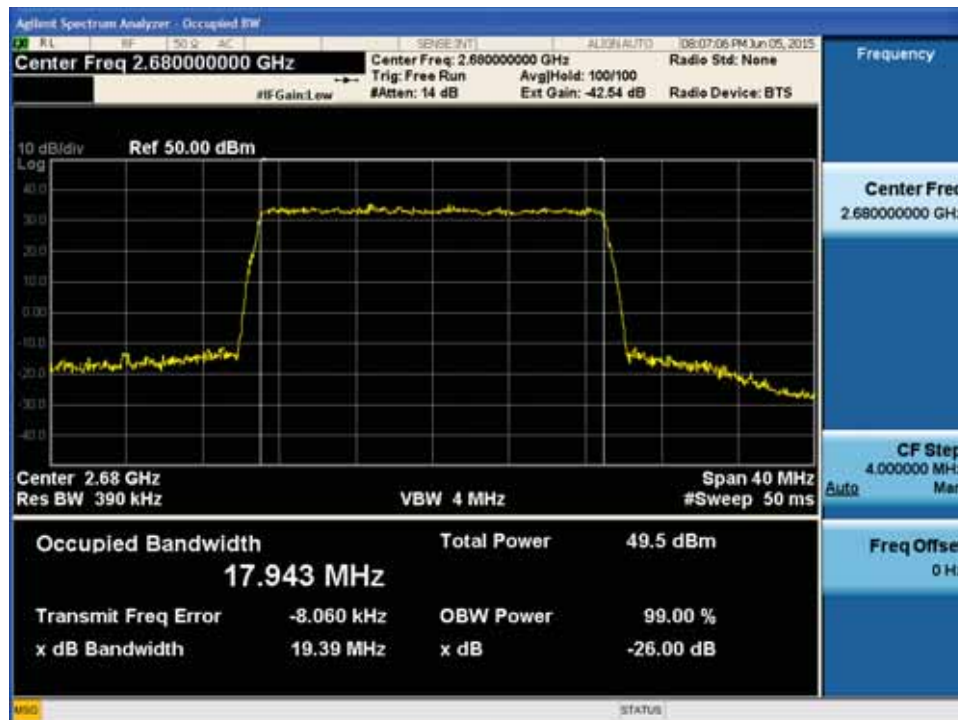
(QPSK Low Channel)



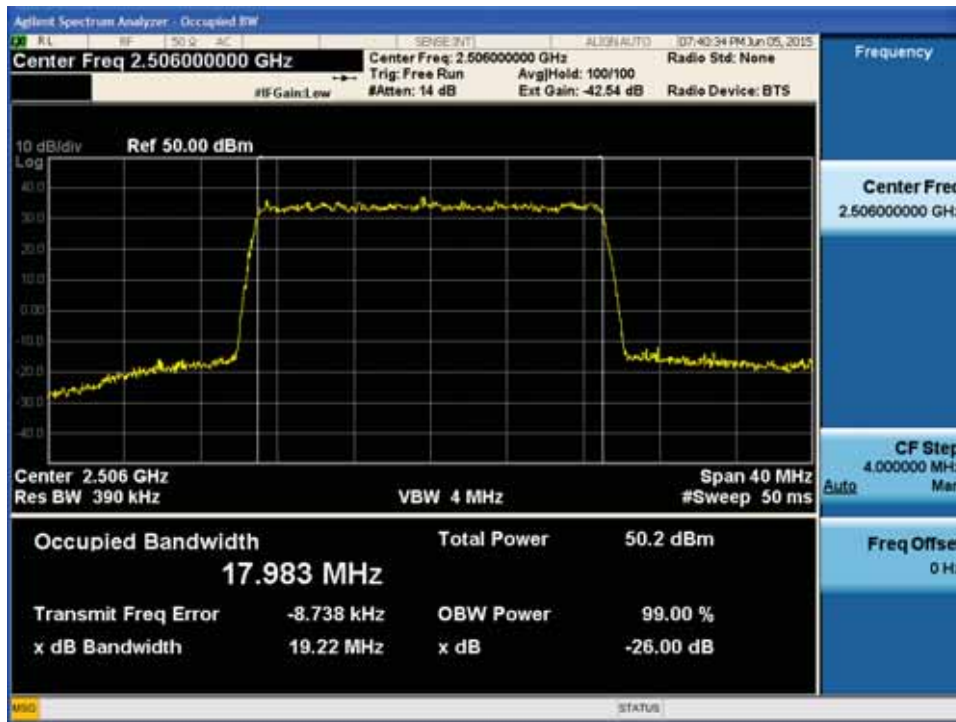
(QPSK Middle Channel)



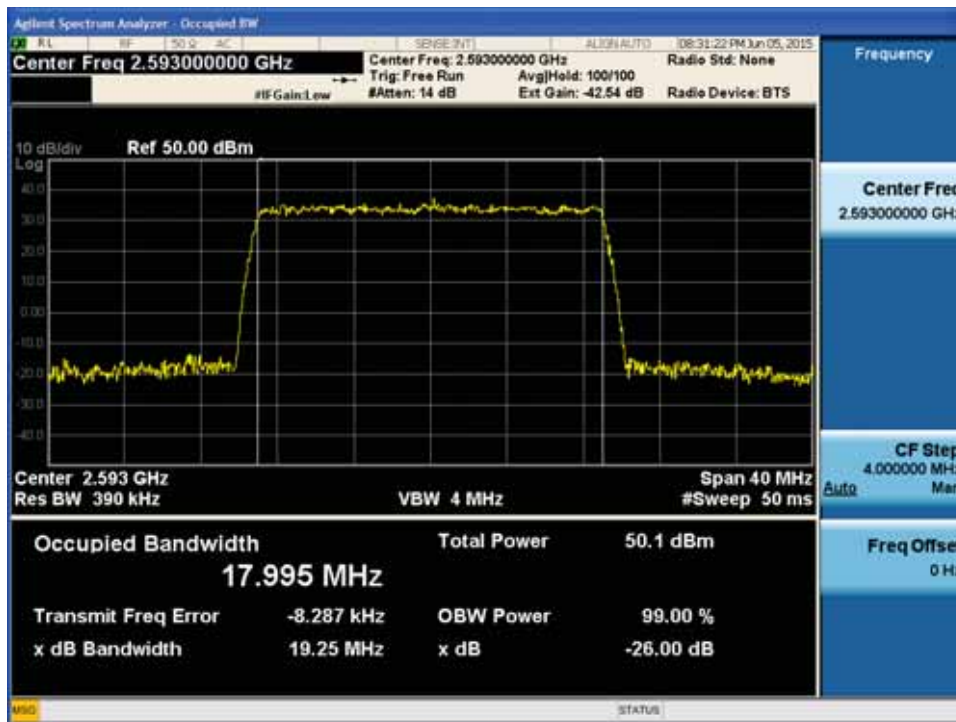
(QPSK High Channel)



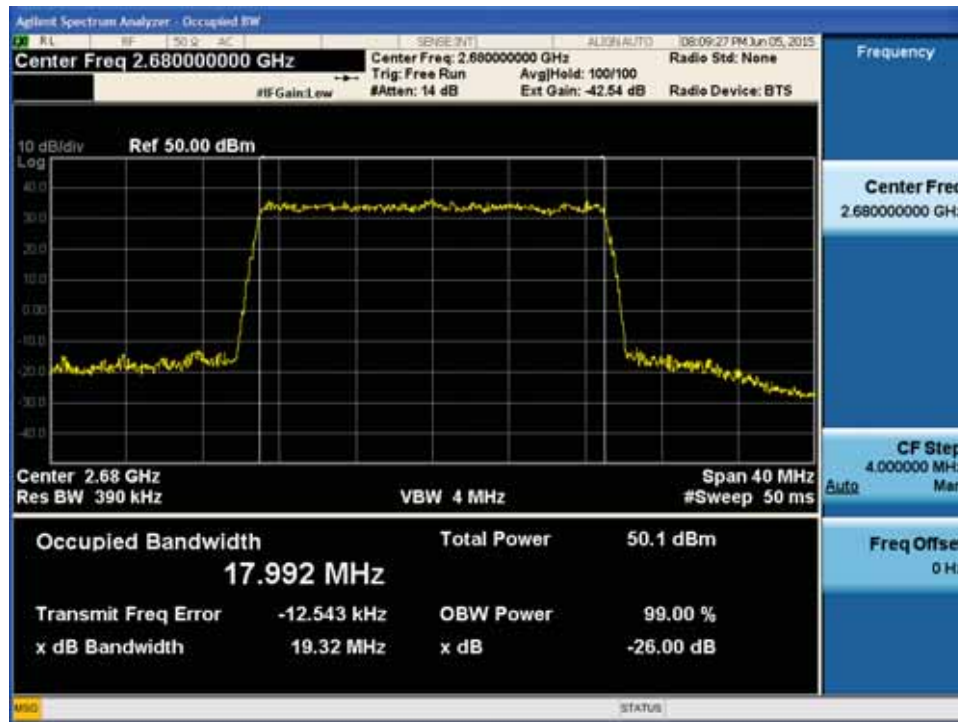
(16QAM Low Channel)



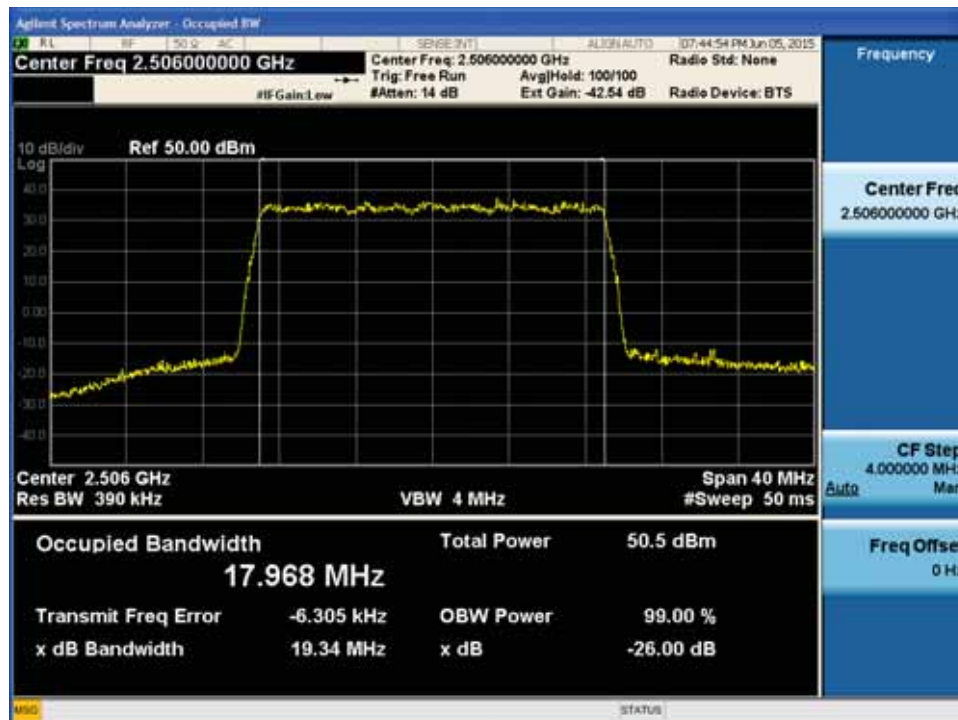
(16QAM Middle Channel)



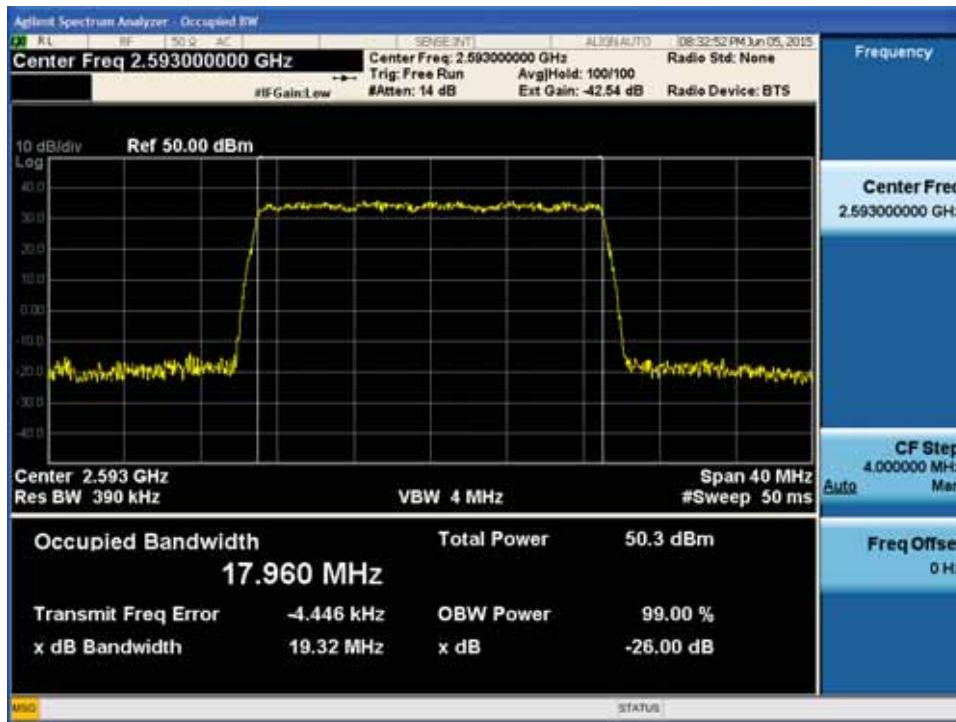
(16QAM High Channel)



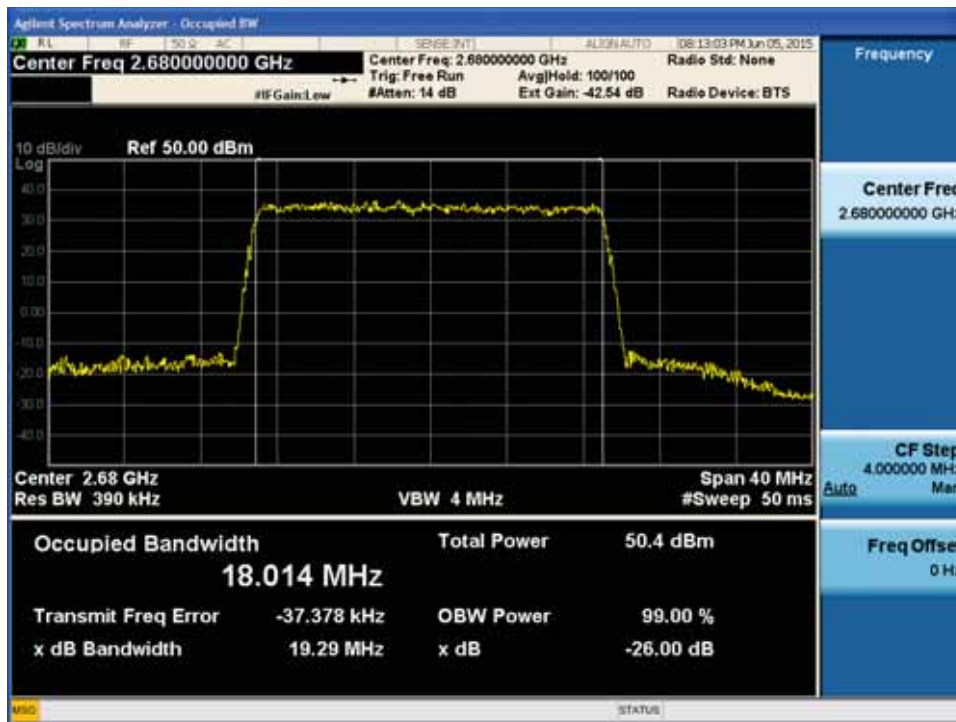
(64QAM Low Channel)



(64QAM Middle Channel)

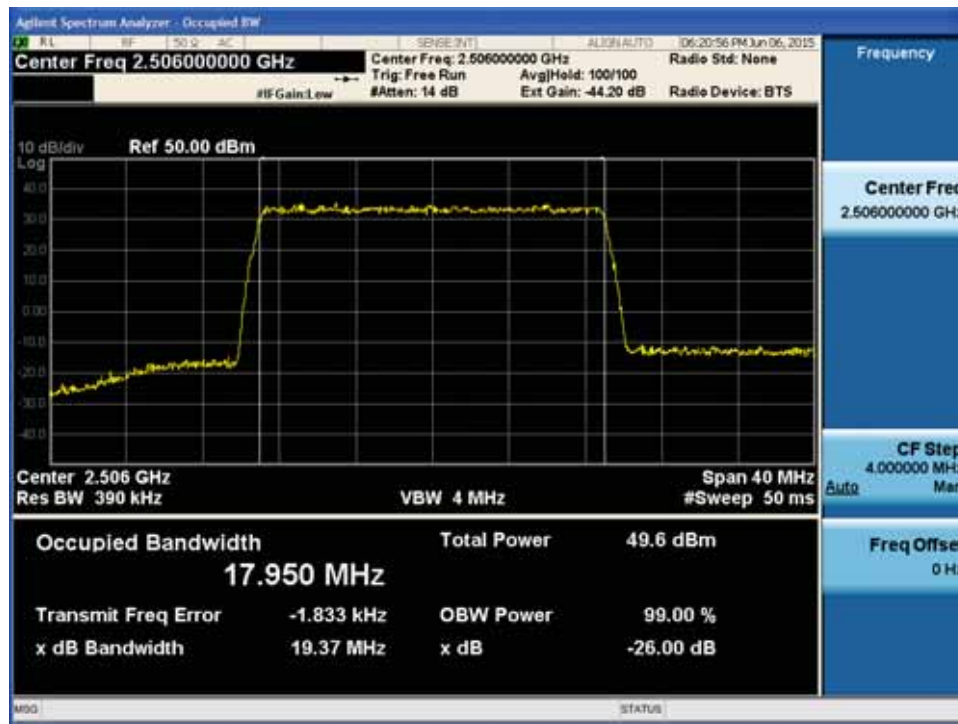


(64QAM High Channel)

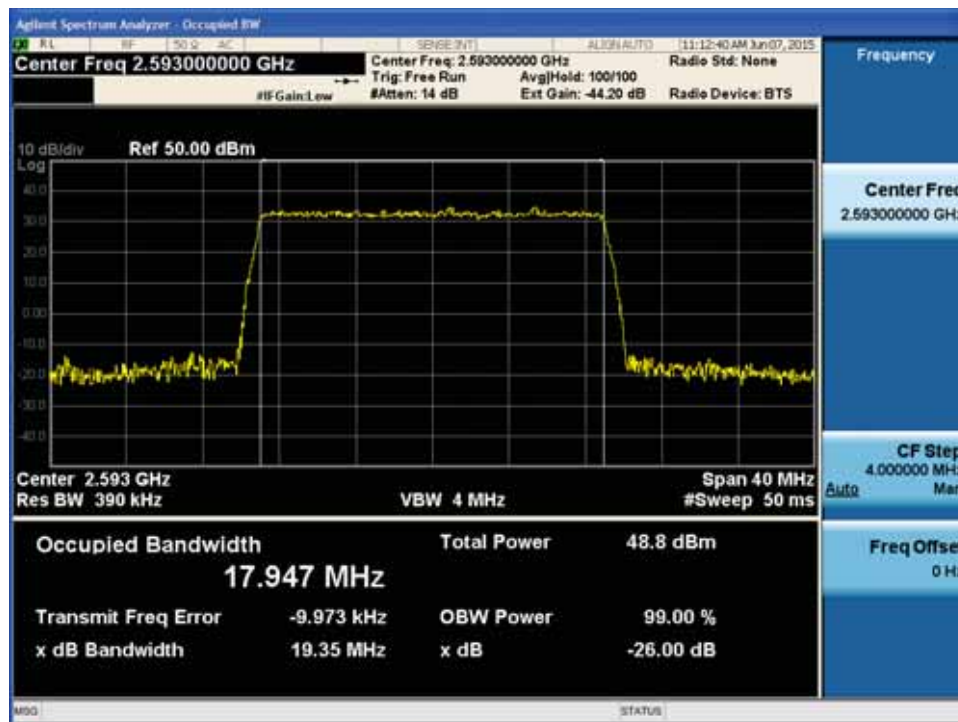


6.7.15. Test Plot at Output Port 3

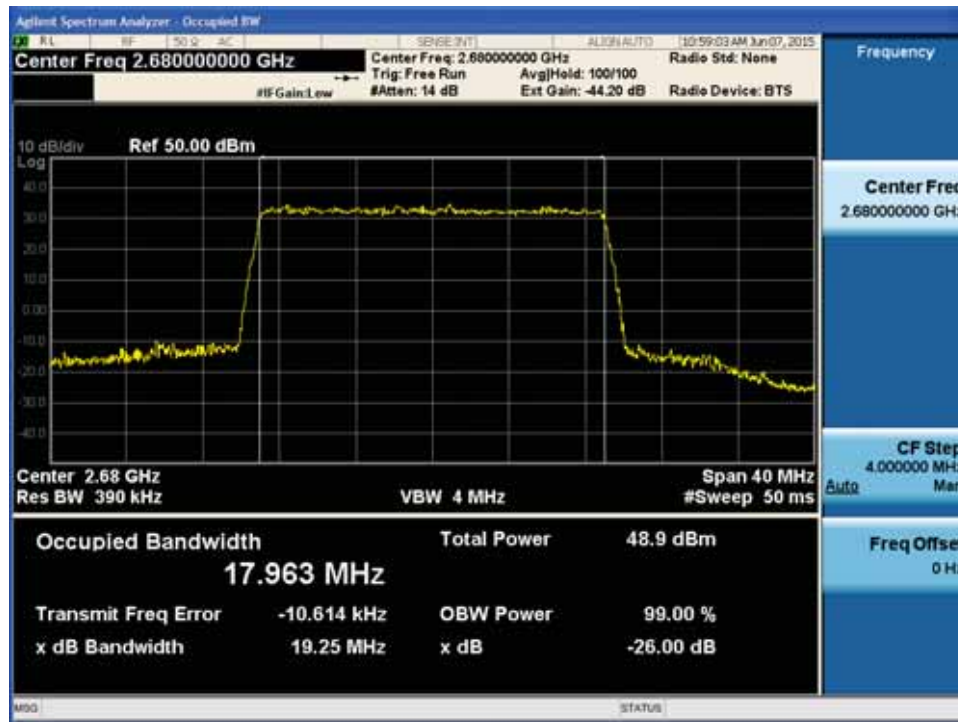
(QPSK Low Channel)



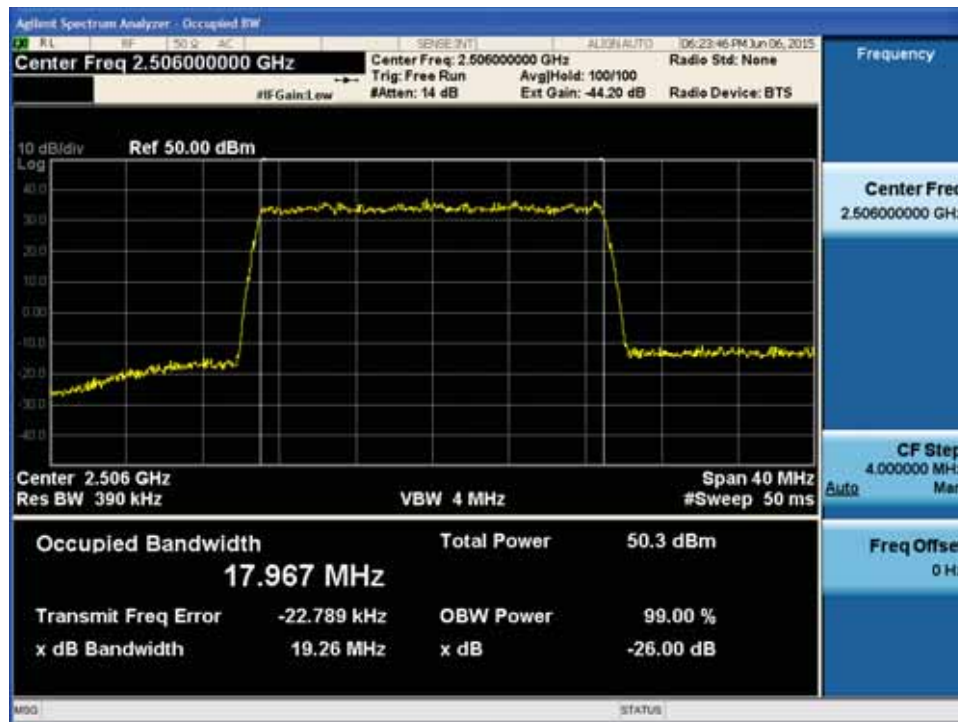
(QPSK Middle Channel)



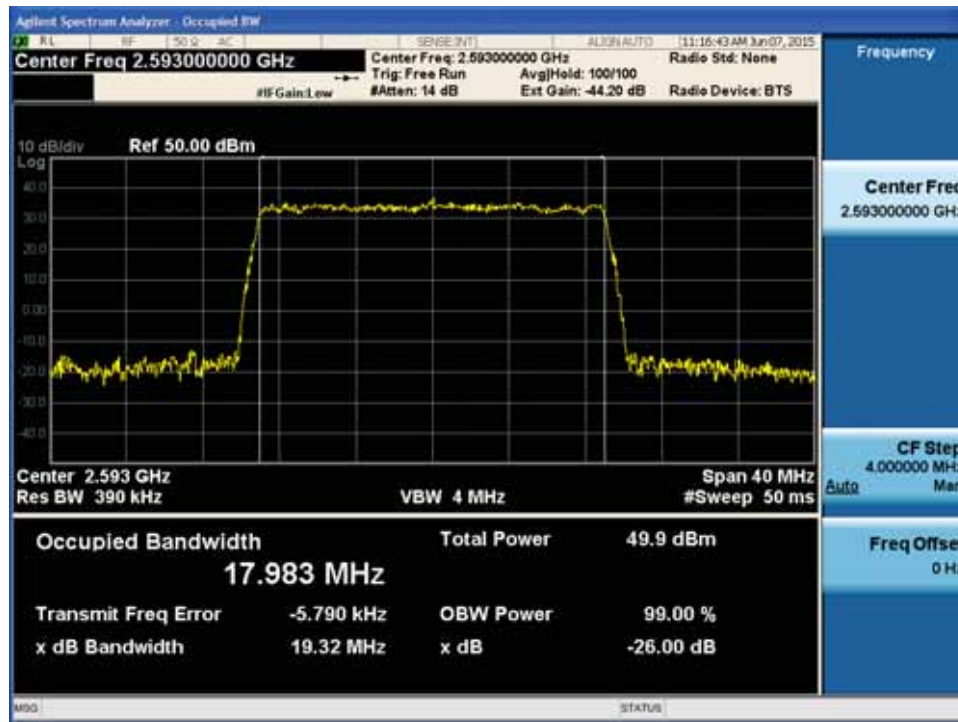
(QPSK High Channel)



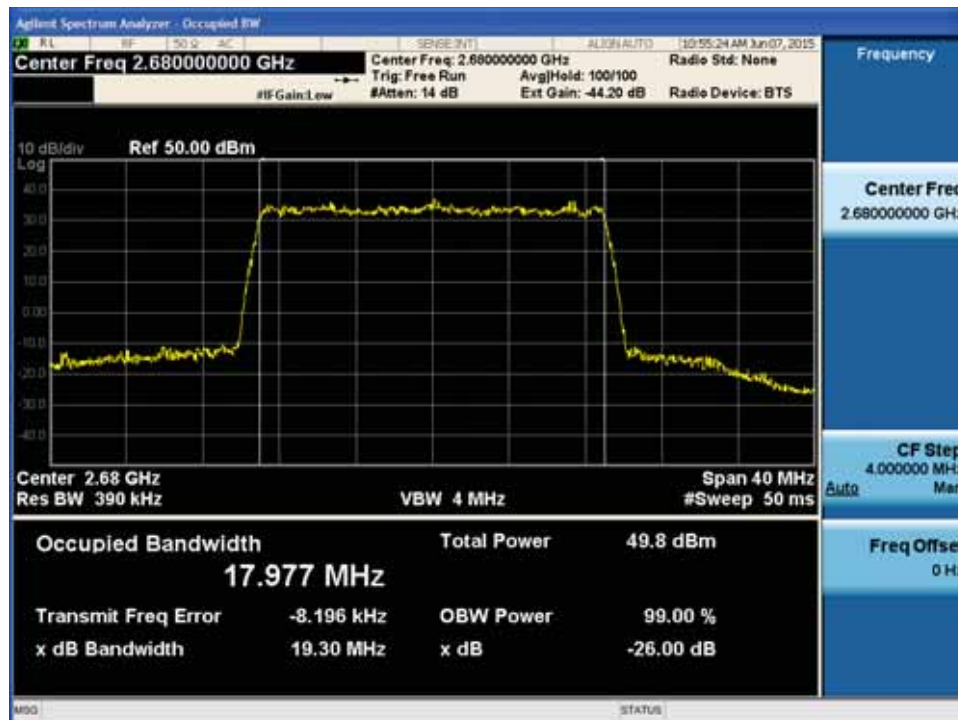
(16QAM Low Channel)



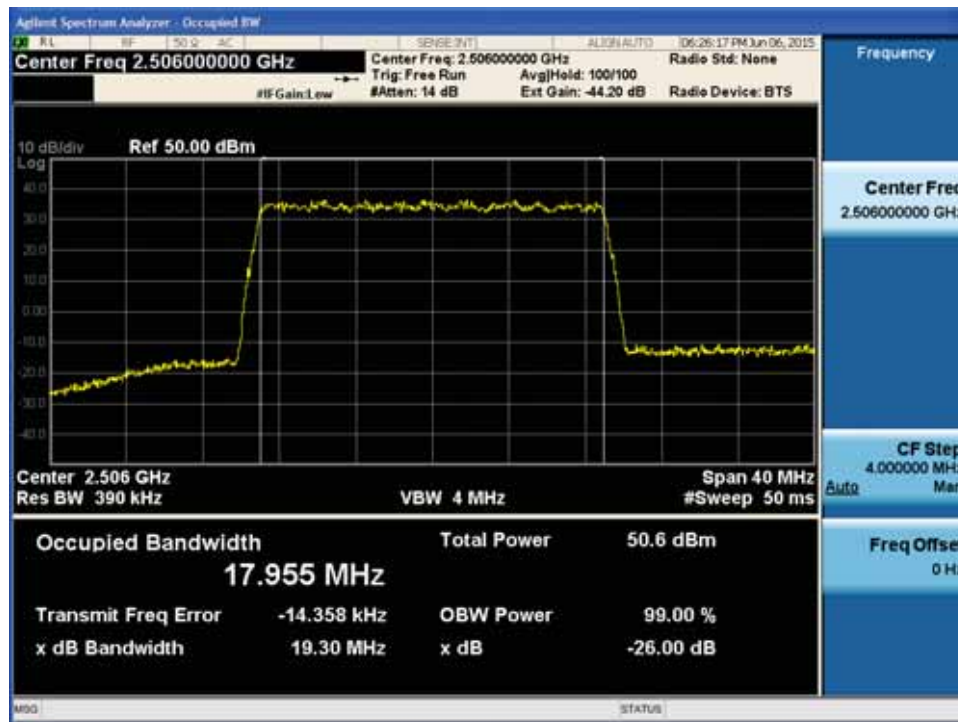
(16QAM Middle Channel)



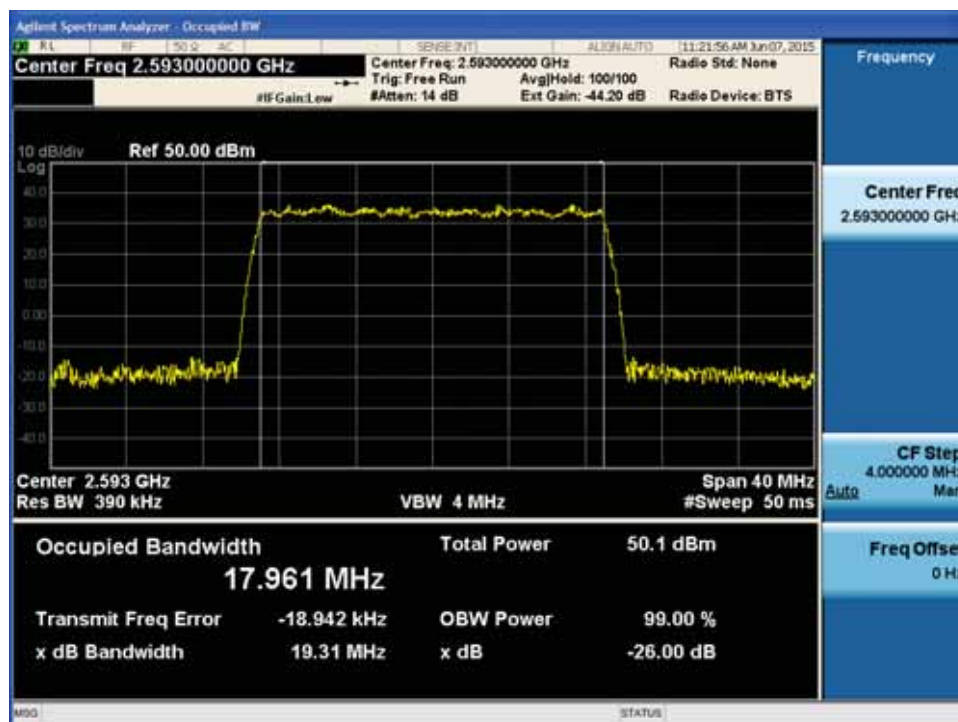
(16QAM High Channel)



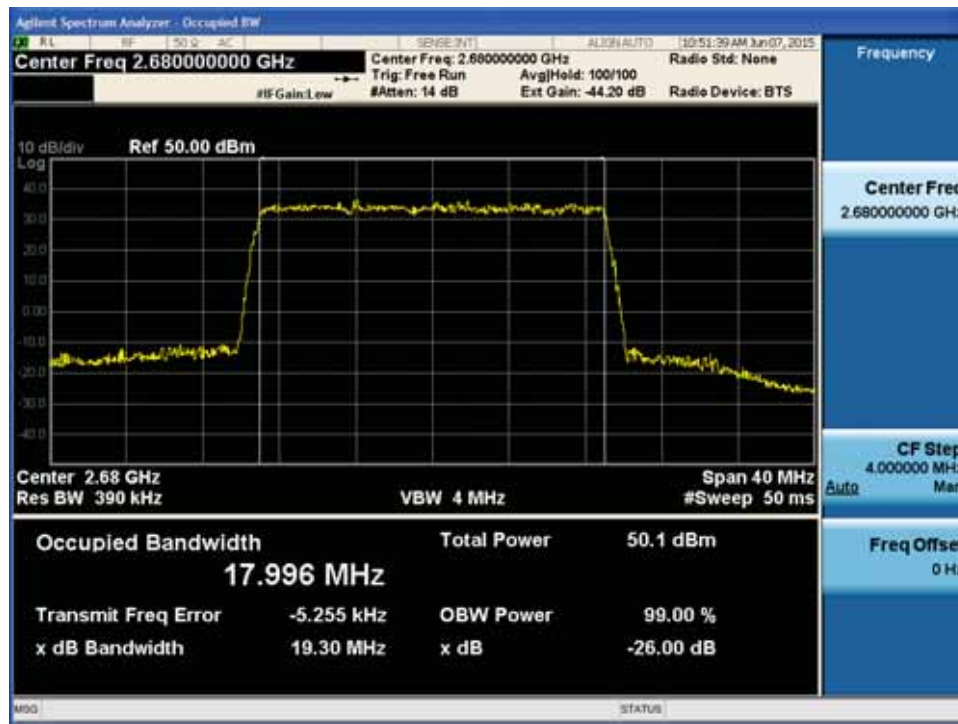
(64QAM Low Channel)



(64QAM Middle Channel)

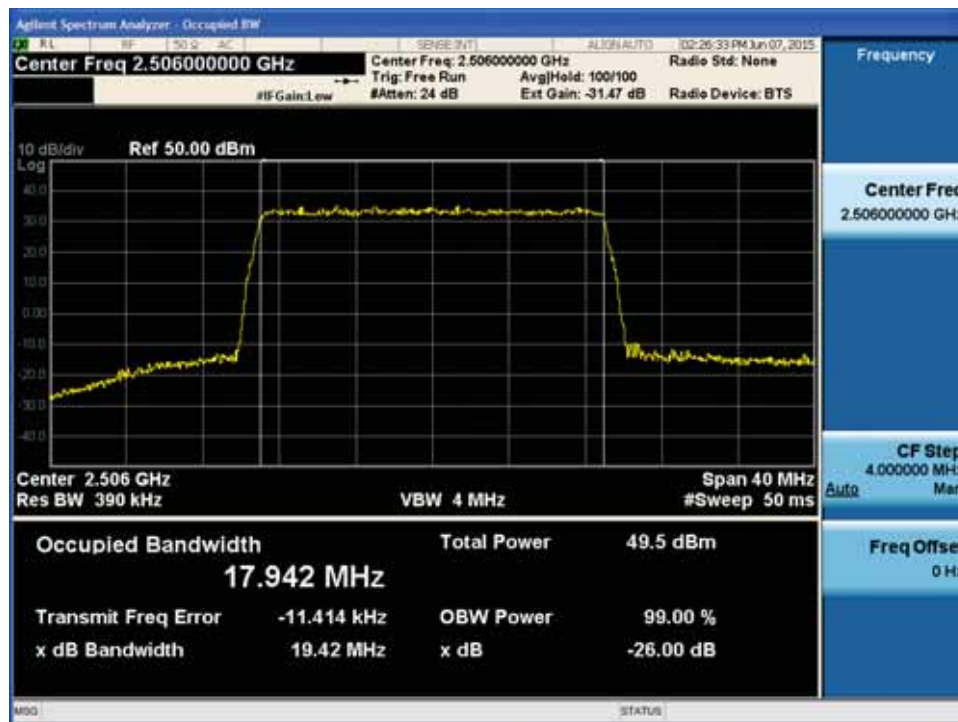


(64QAM High Channel)

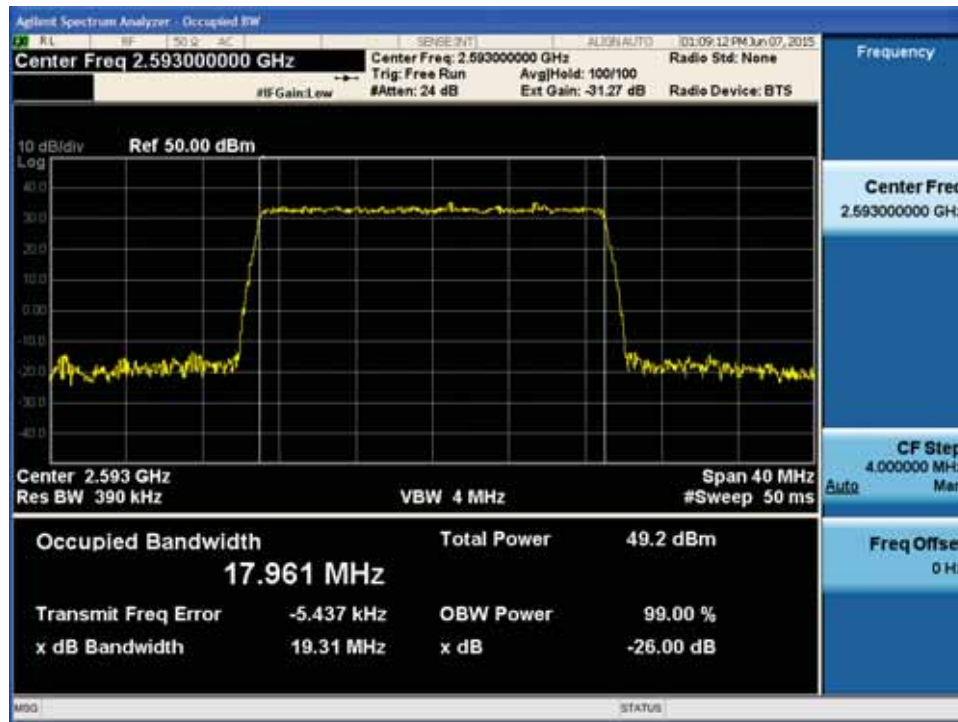


6.7.16. Test Plot at Output Port 4

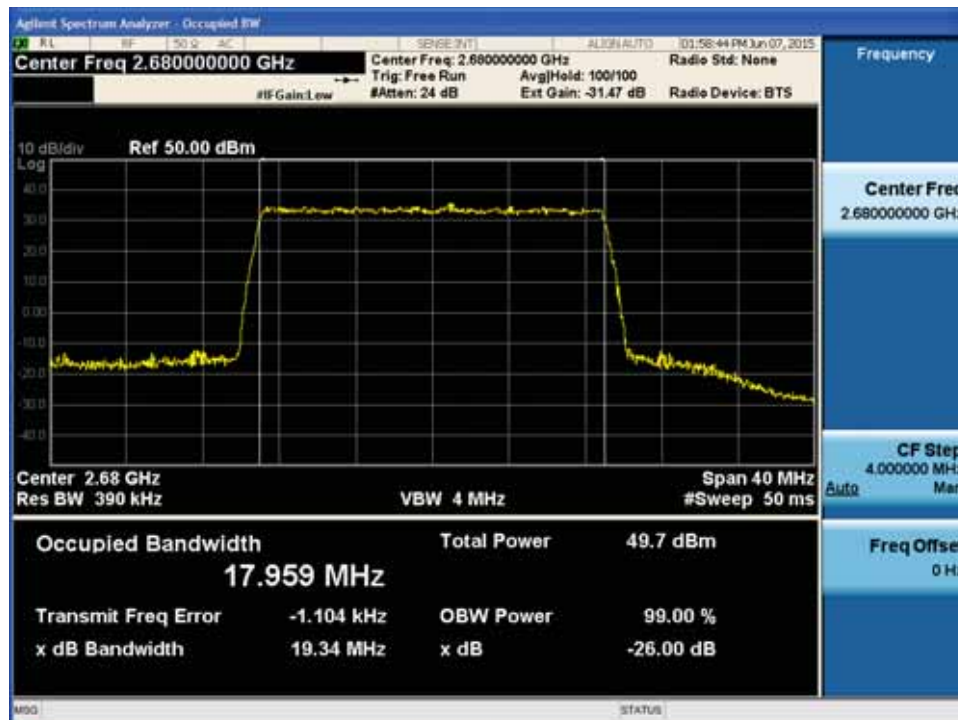
(QPSK Low Channel)



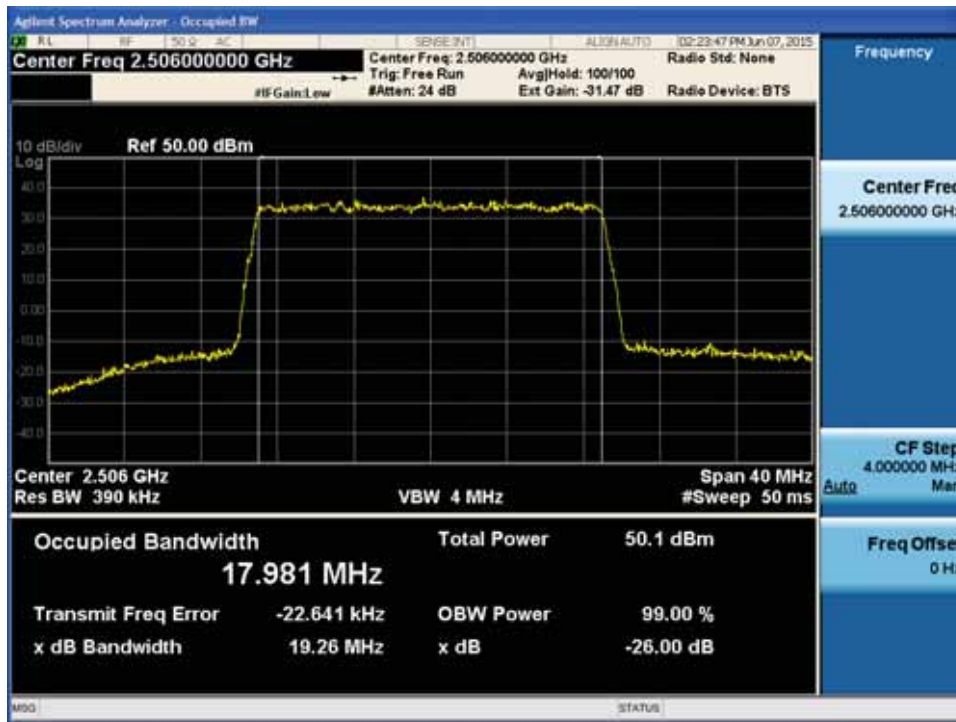
(QPSK Middle Channel)



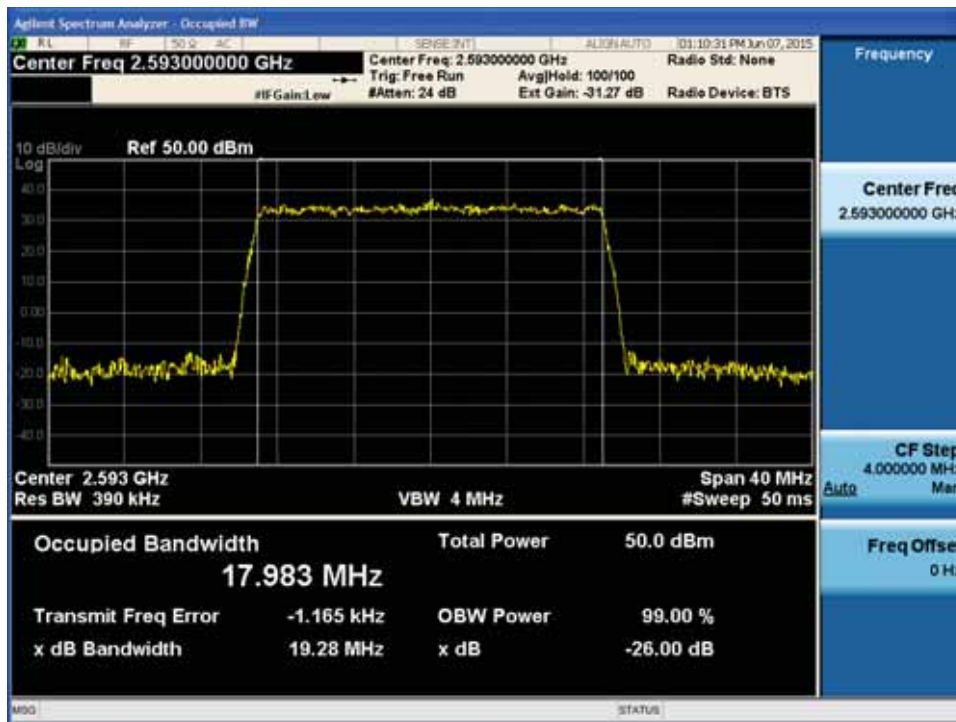
(QPSK High Channel)



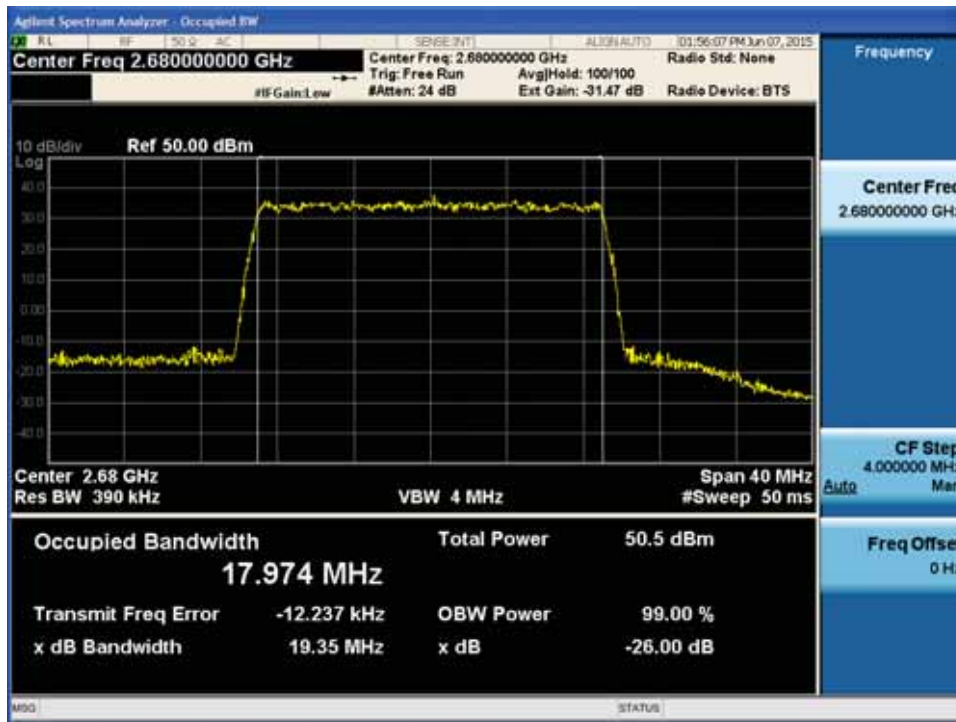
(16QAM Low Channel)



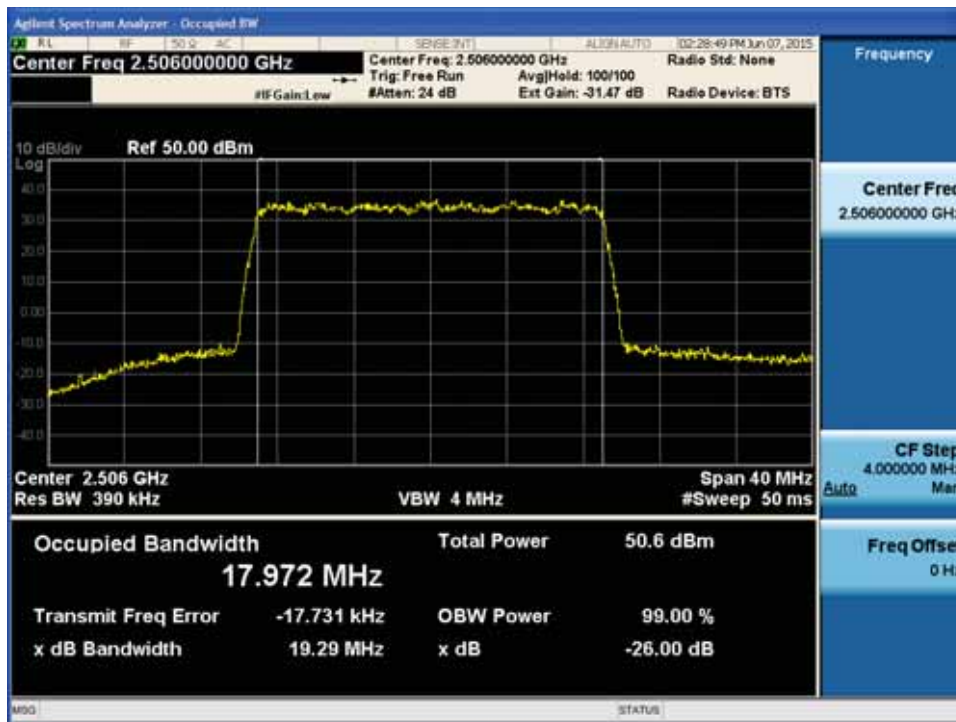
(16QAM Middle Channel)



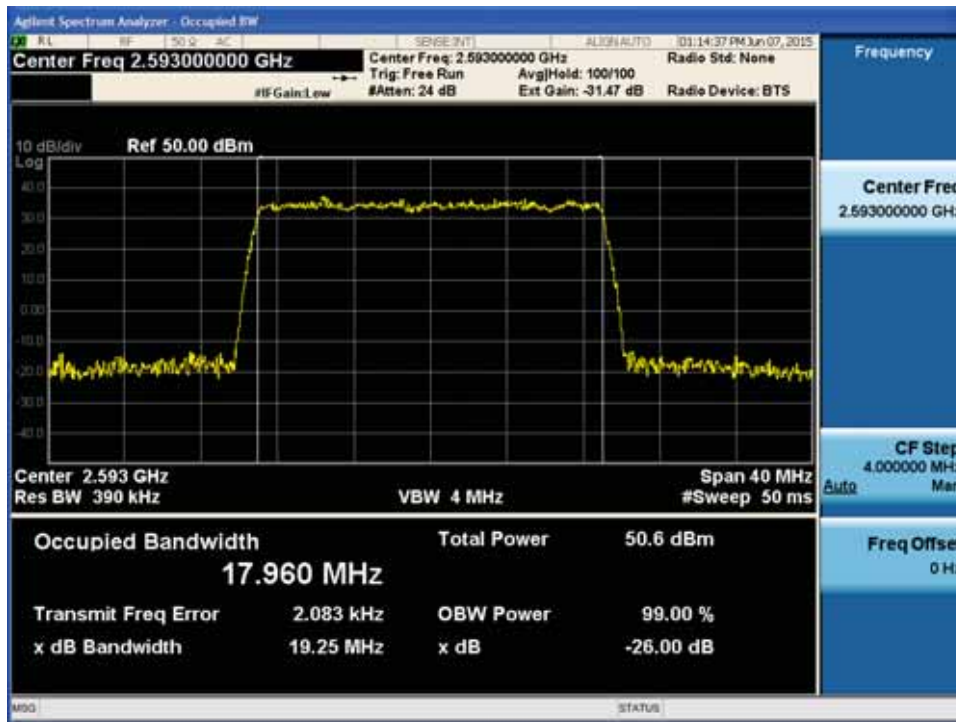
(16QAM High Channel)



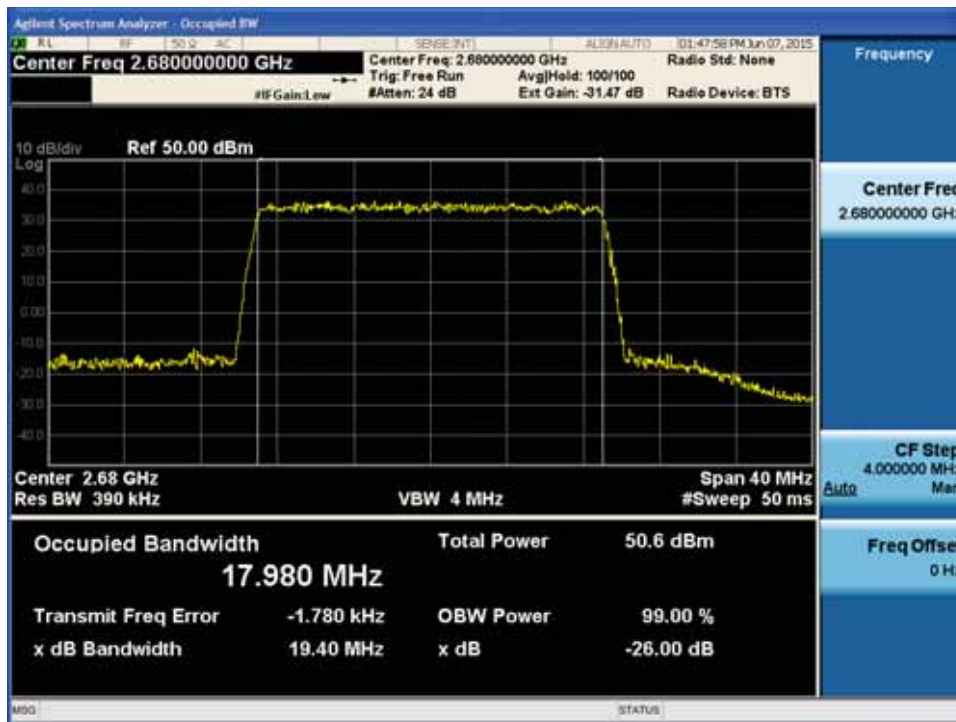
(64QAM Low Channel)



(64QAM Middle Channel)

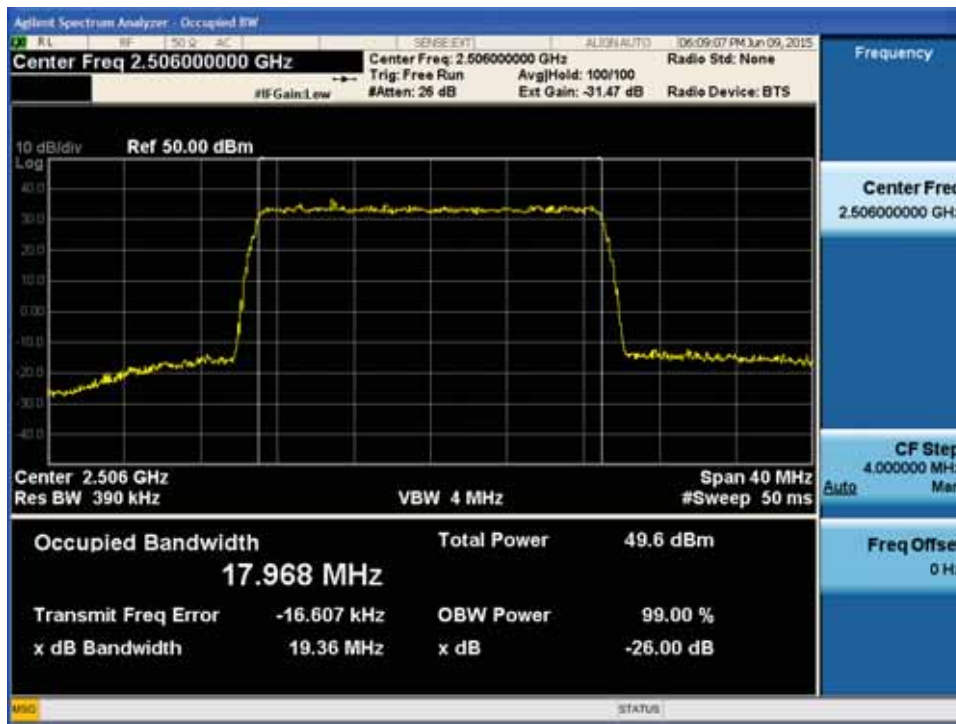


(64QAM High Channel)

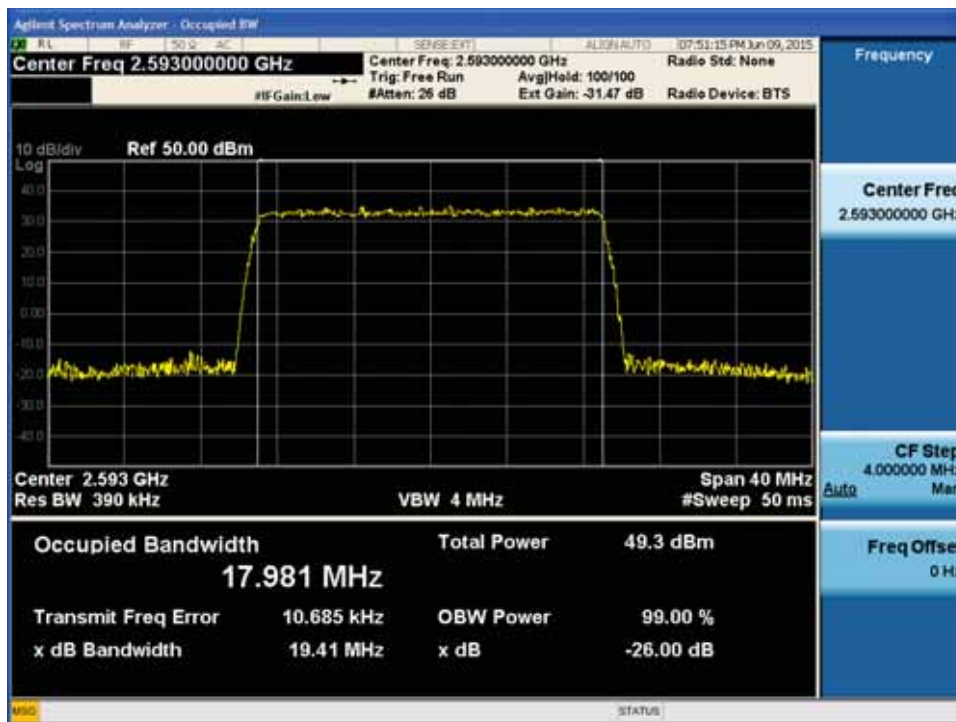


6.7.17. Test Plot at Output Port 5

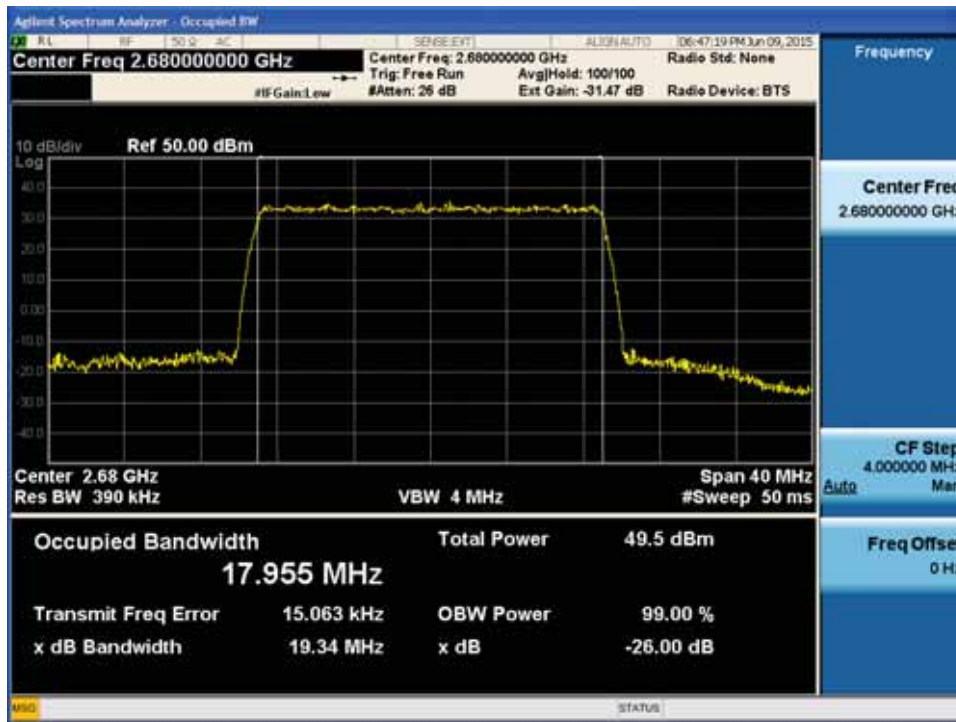
(QPSK Low Channel)



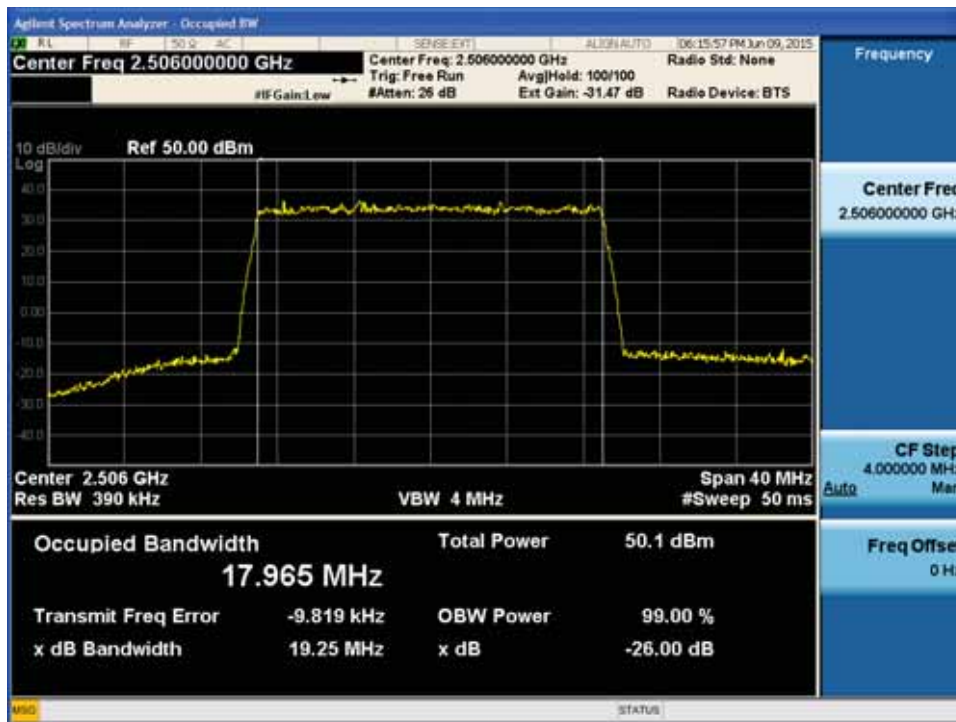
(QPSK Middle Channel)



(QPSK High Channel)



(16QAM Low Channel)



Agilent Spectrum Analyzer - Occupied BW

Center Freq 2.593000000 GHz

Trig: Free Run AvgHld: 100/100

#IF Gain: Low #Atten: 26 dB Ext Gain: -31.47 dB

Radio Std: None Radio Device: BTS

10 dB/div Ref 50.00 dBm

Center 2.593 GHz

Res BW 390 kHz

VBW 4 MHz

Span 40 MHz

#Sweep 50 ms

Occupied Bandwidth 17.989 MHz

Total Power 50.2 dBm

Transmit Freq Error -7.852 kHz

OBW Power 99.00 %

x dB Bandwidth 19.34 MHz

x dB -26.00 dB

Agilent Spectrum Analyzer - Occupied BW

Center Freq 2.680000000 GHz

Trig: Free Run AvgHld: 100/100

#IF Gain: Low #Atten: 26 dB Ext Gain: -31.47 dB

Radio Std: None Radio Device: BTS

10 dB/div Ref 50.00 dBm

Center 2.68 GHz

Res BW 390 kHz

VBW 4 MHz

Span 40 MHz

#Sweep 50 ms

Occupied Bandwidth 17.959 MHz

Total Power 50.1 dBm

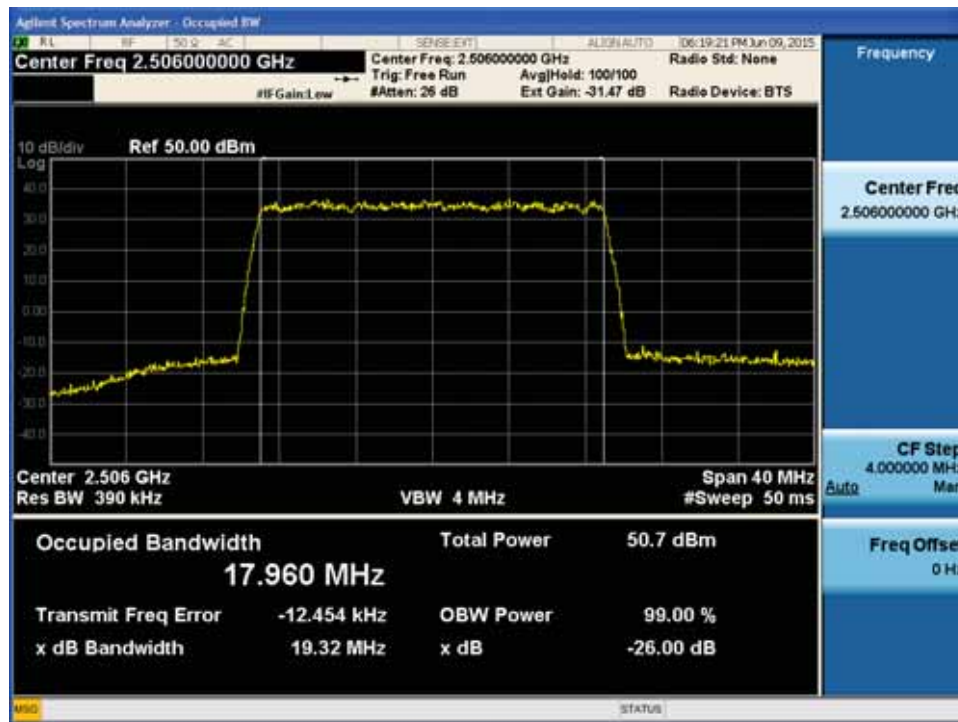
Transmit Freq Error -4.106 kHz

OBW Power 99.00 %

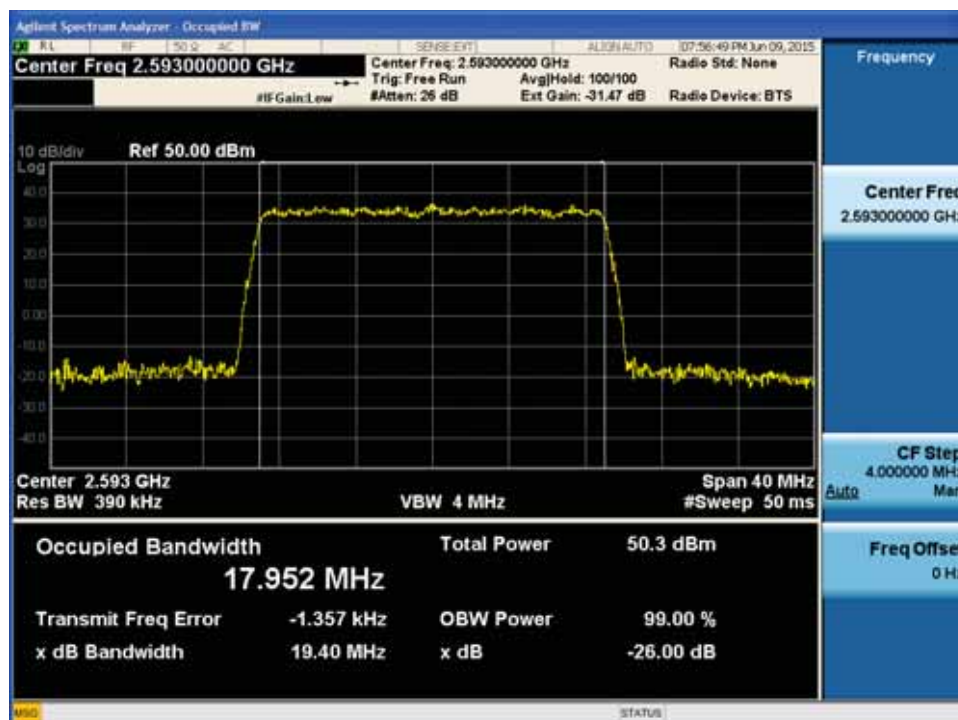
x dB Bandwidth 19.34 MHz

x dB -26.00 dB

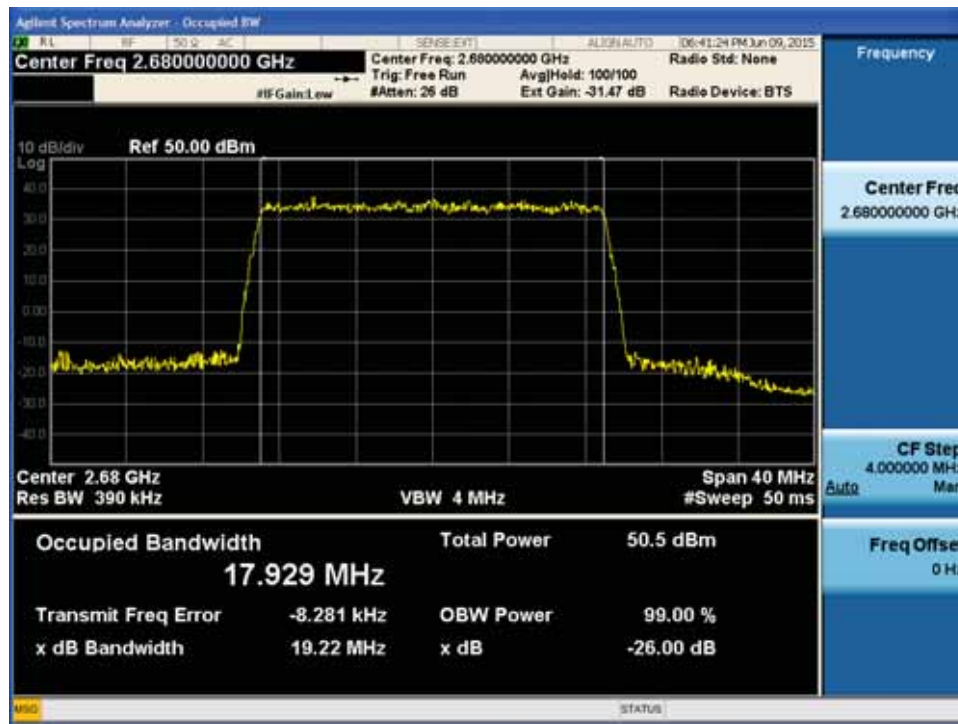
(64QAM Low Channel)



(64QAM Middle Channel)

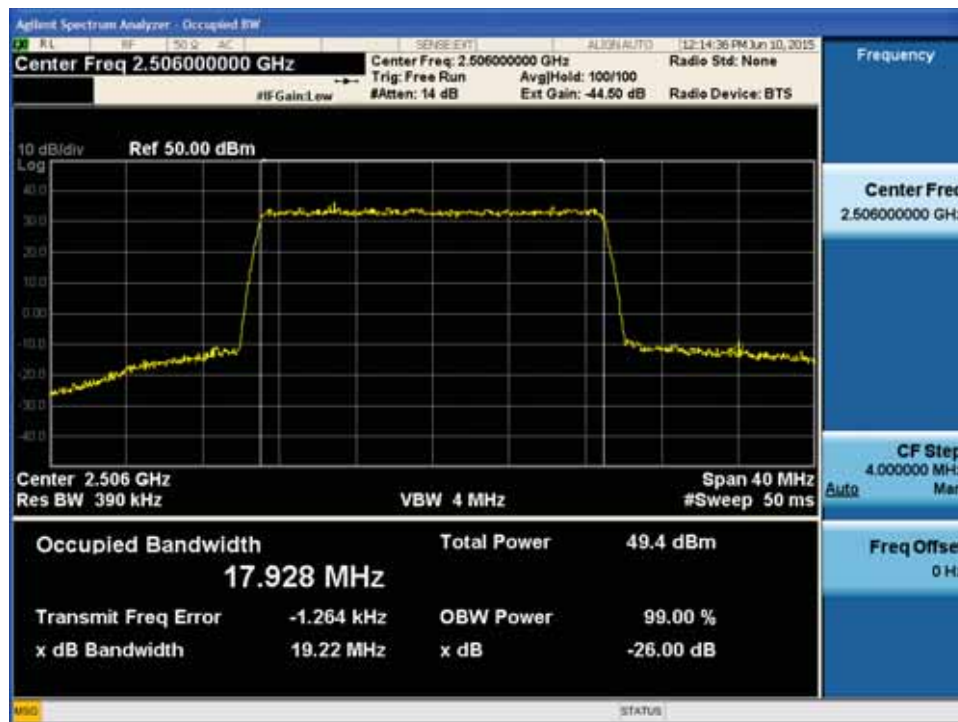


(64QAM High Channel)

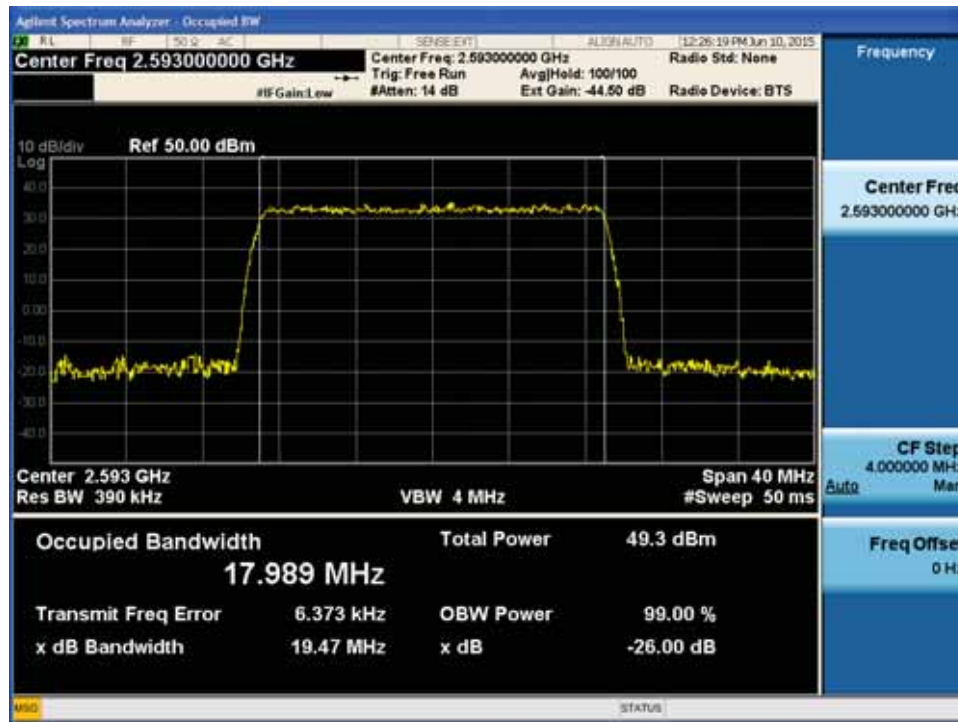


6.7.18. Test Plot at Output Port 6

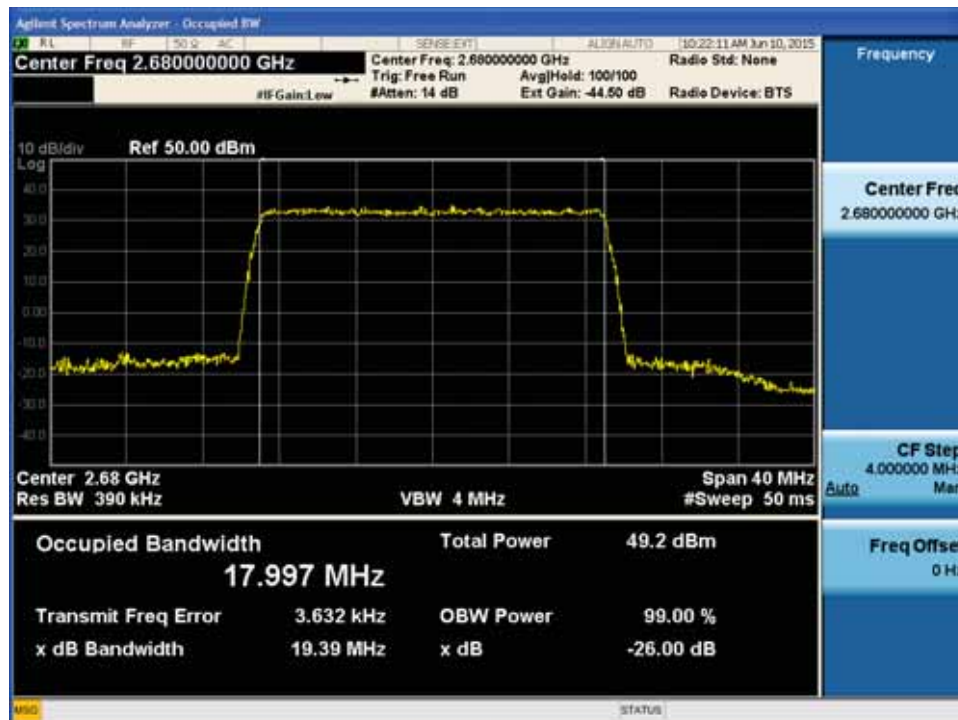
(QPSK Low Channel)



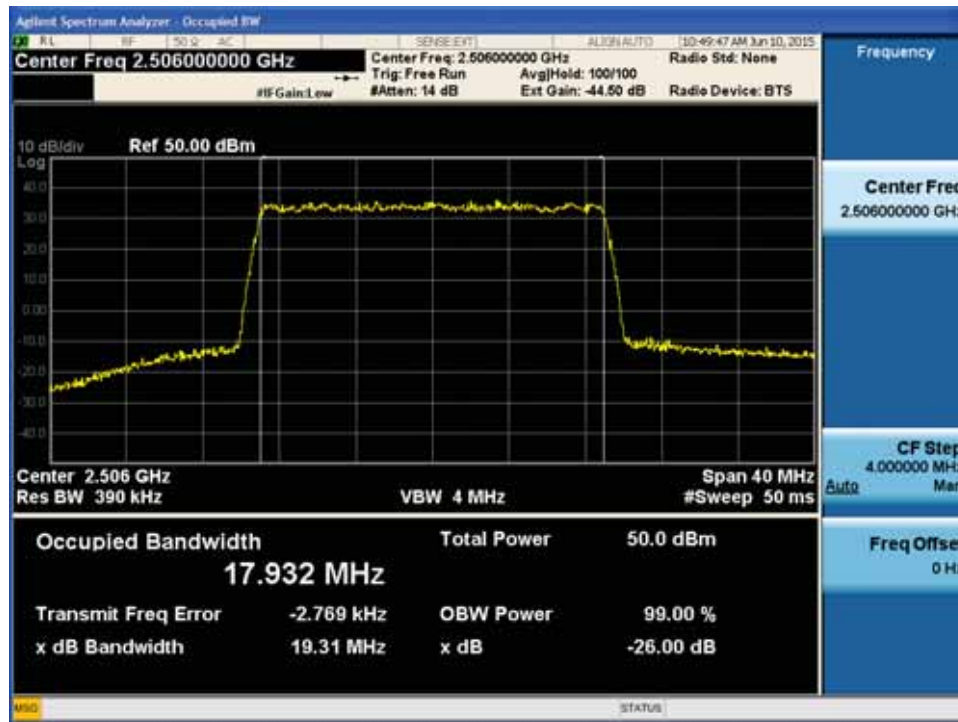
(QPSK Middle Channel)



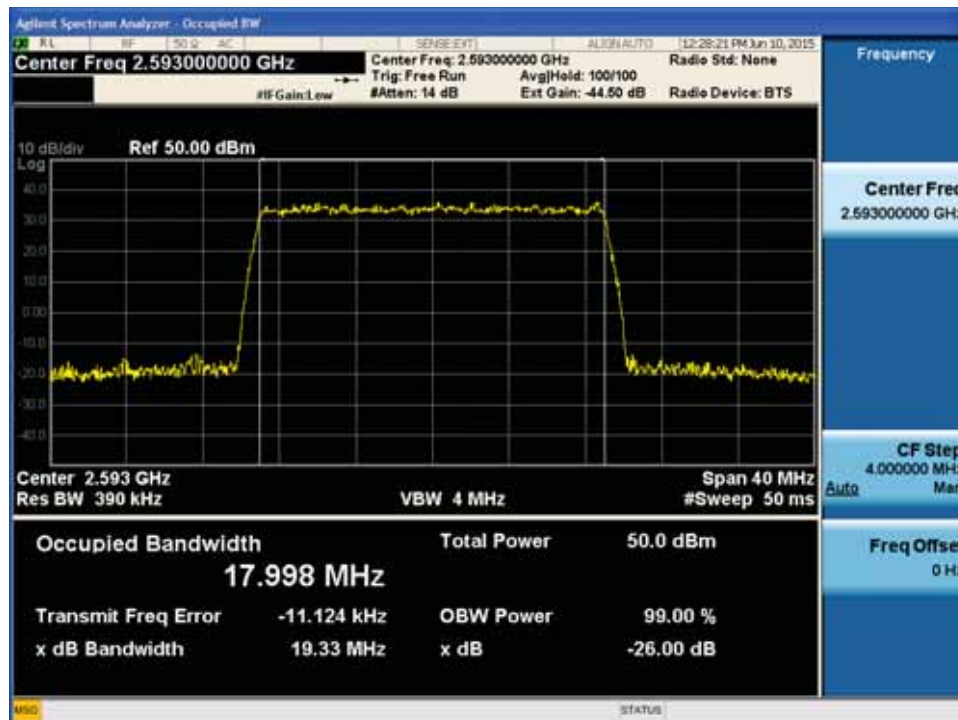
(QPSK High Channel)



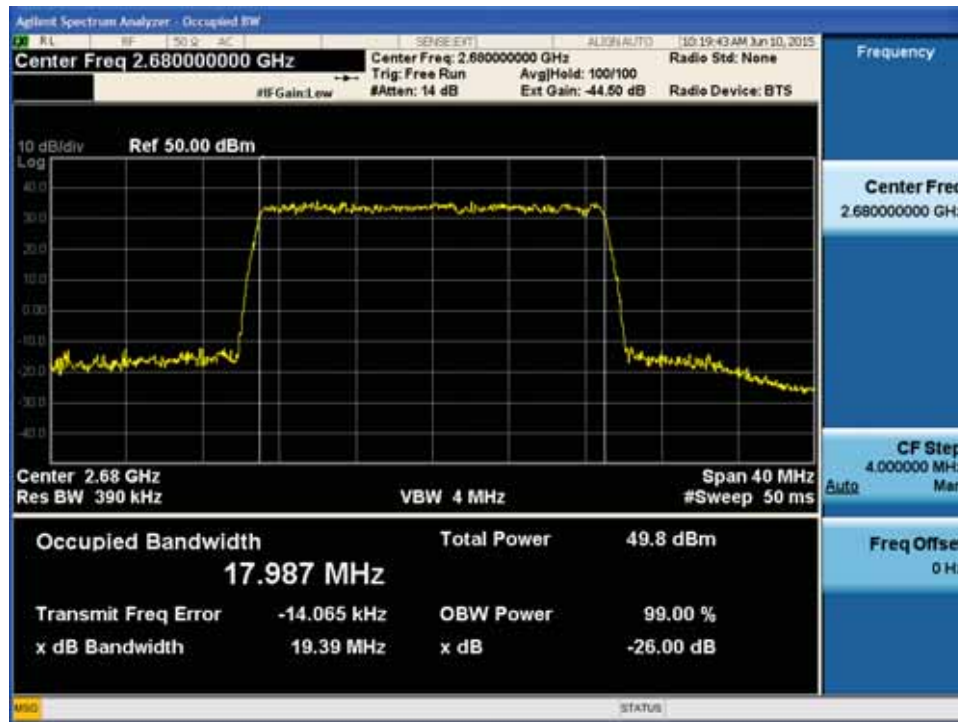
(16QAM Low Channel)



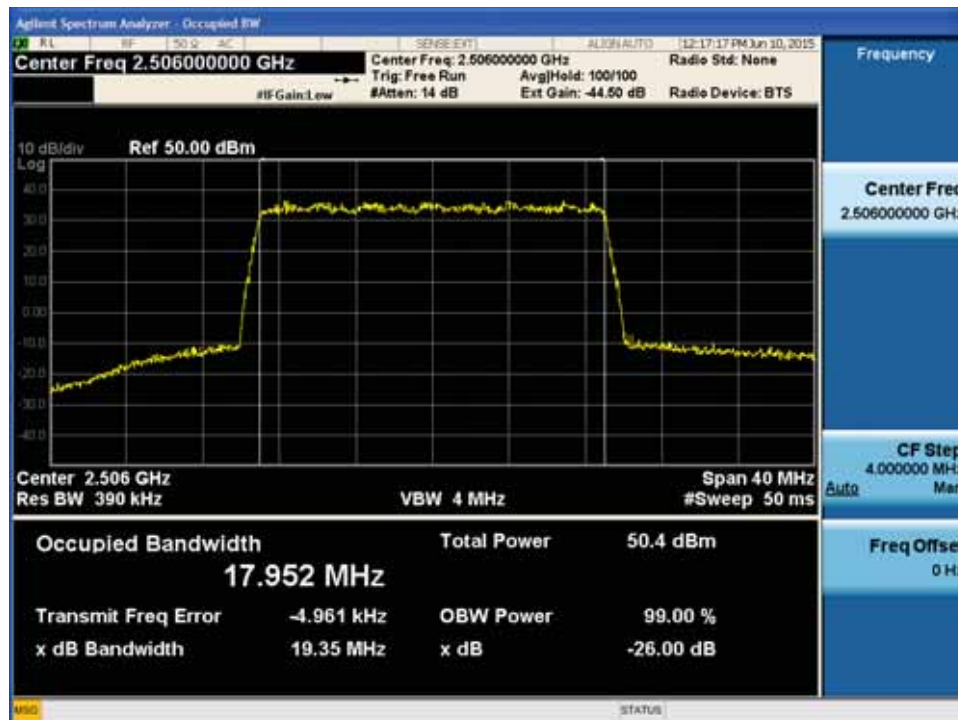
(16QAM Middle Channel)



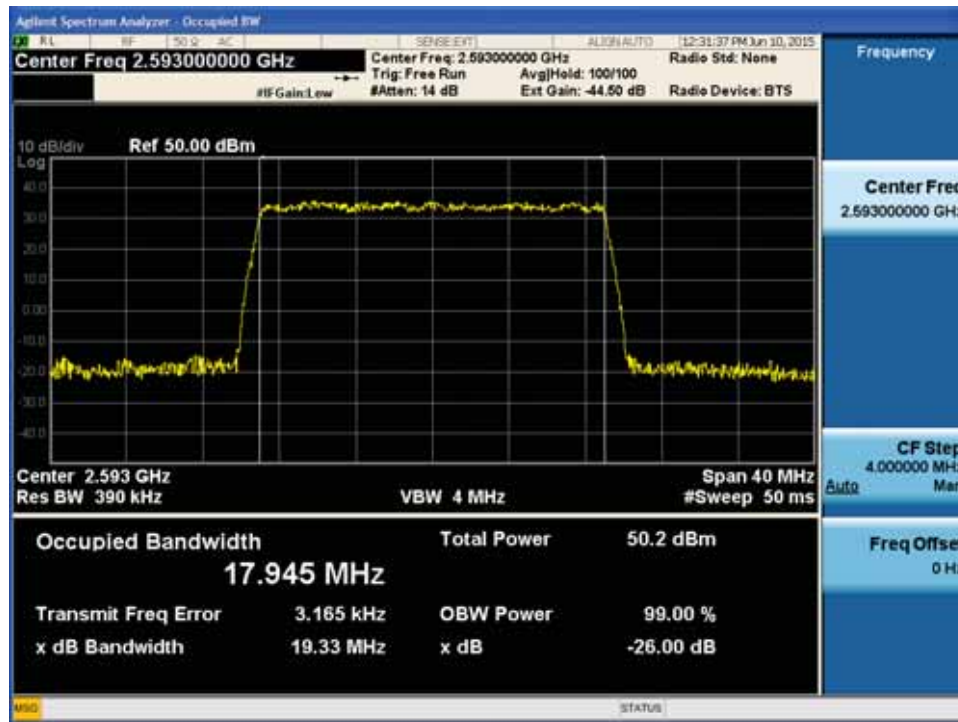
(16QAM High Channel)



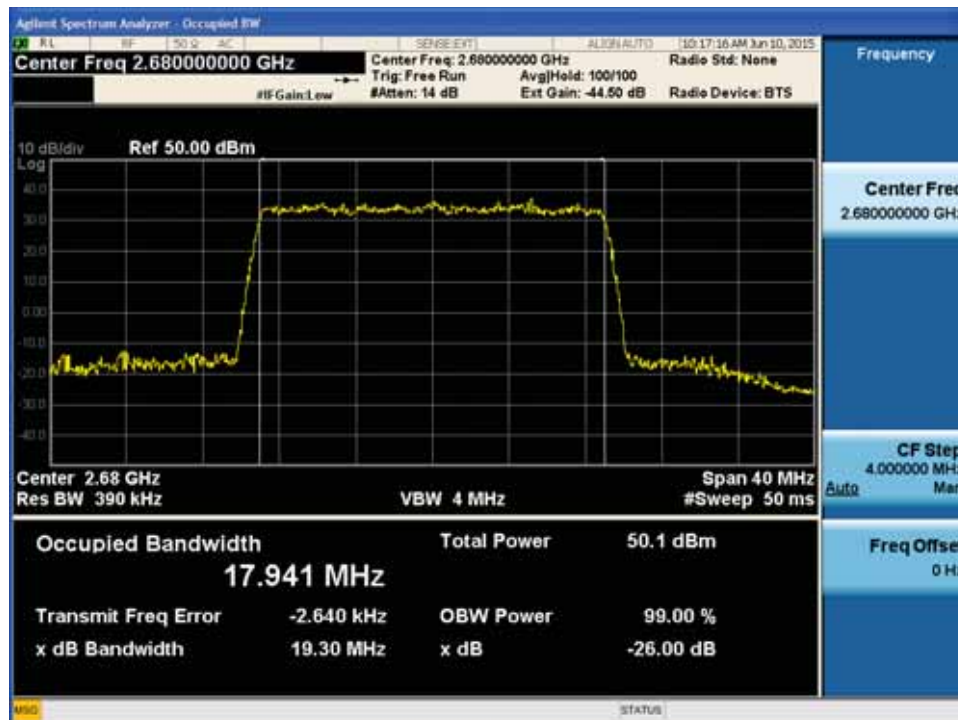
(64QAM Low Channel)



(64QAM Middle Channel)

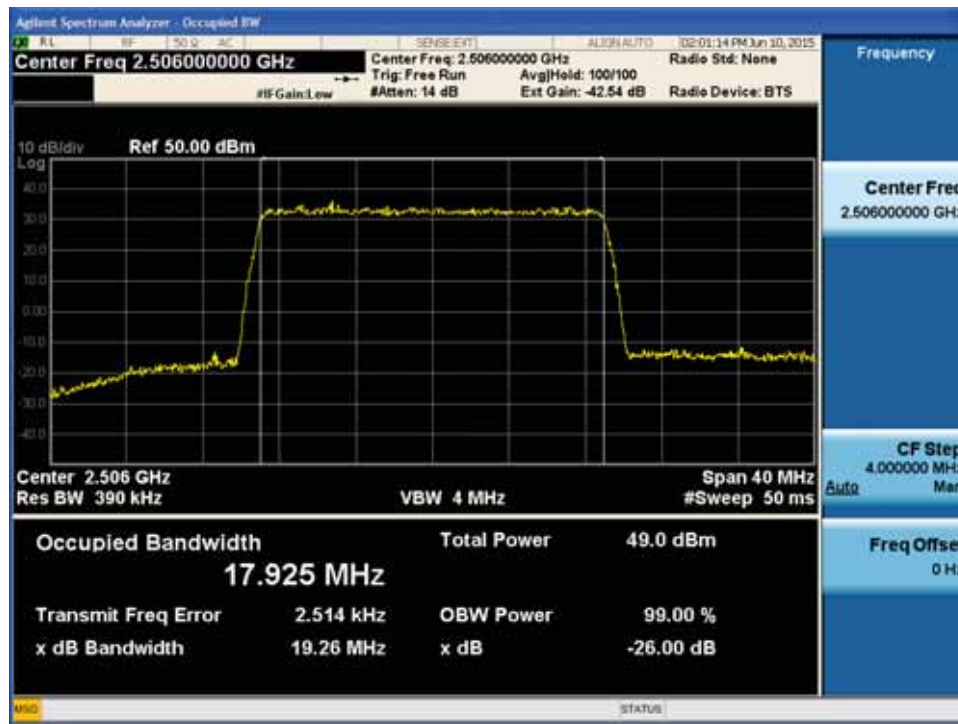


(64QAM High Channel)

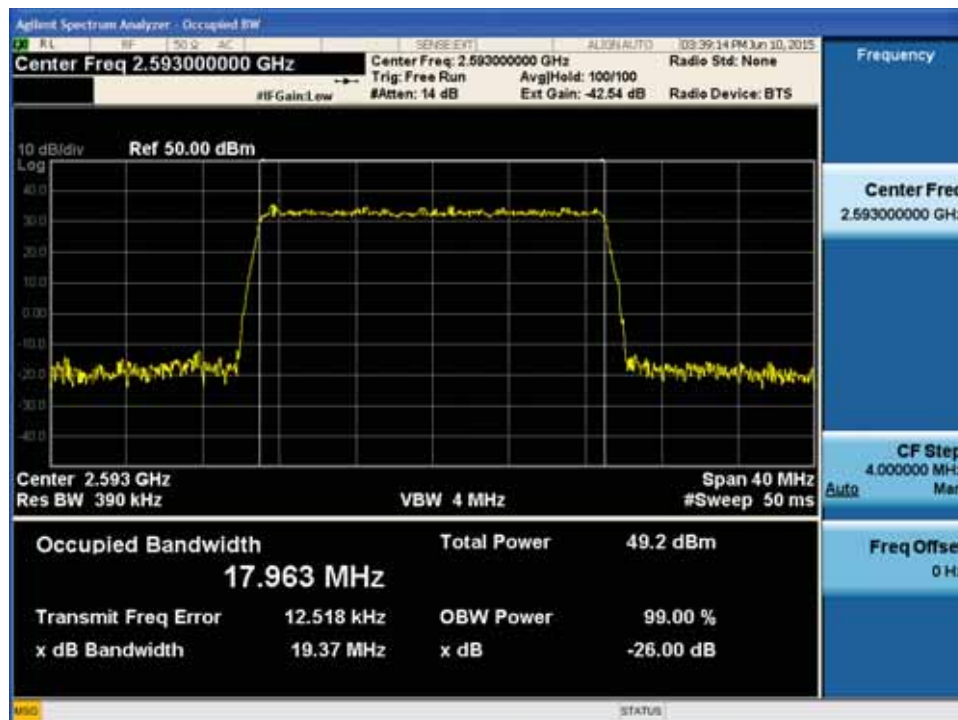


6.7.19. Test Plot at Output Port 7

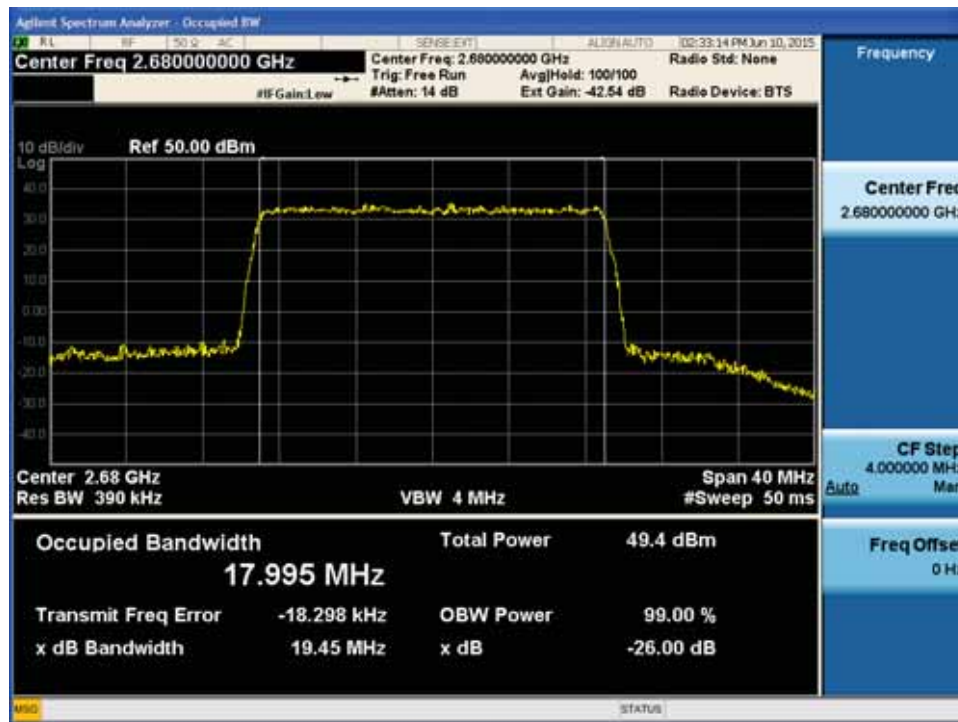
(QPSK Low Channel)



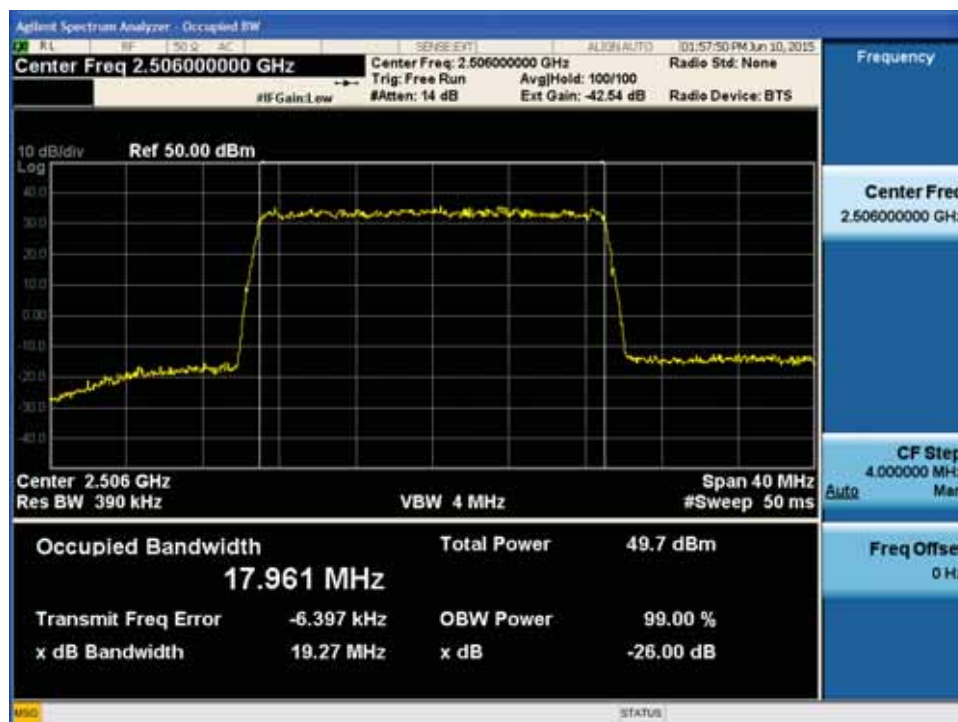
(QPSK Middle Channel)



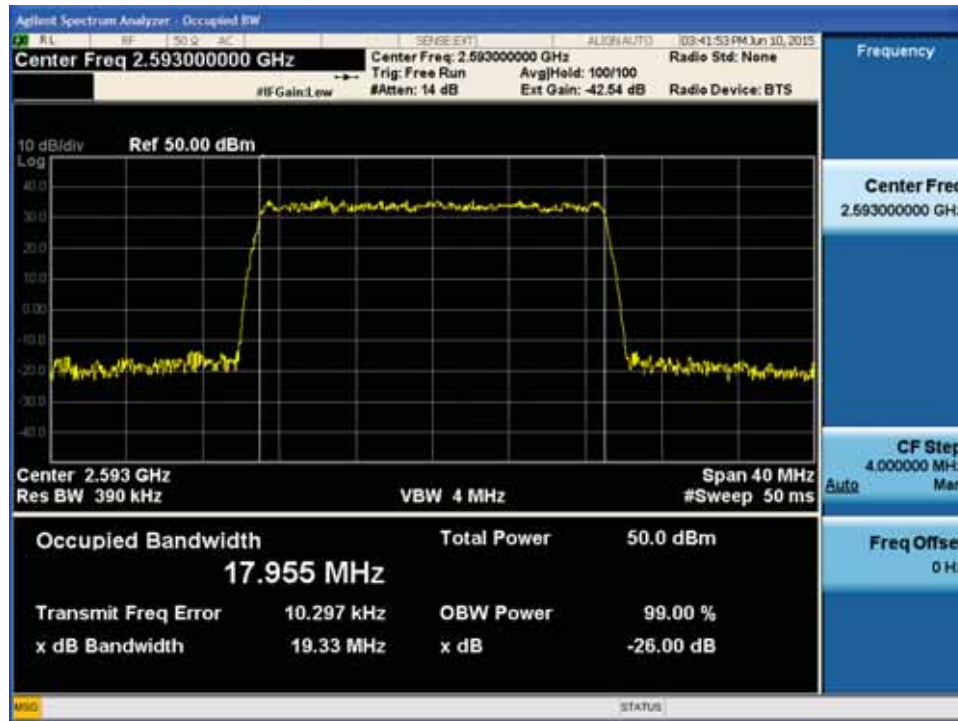
(QPSK High Channel)



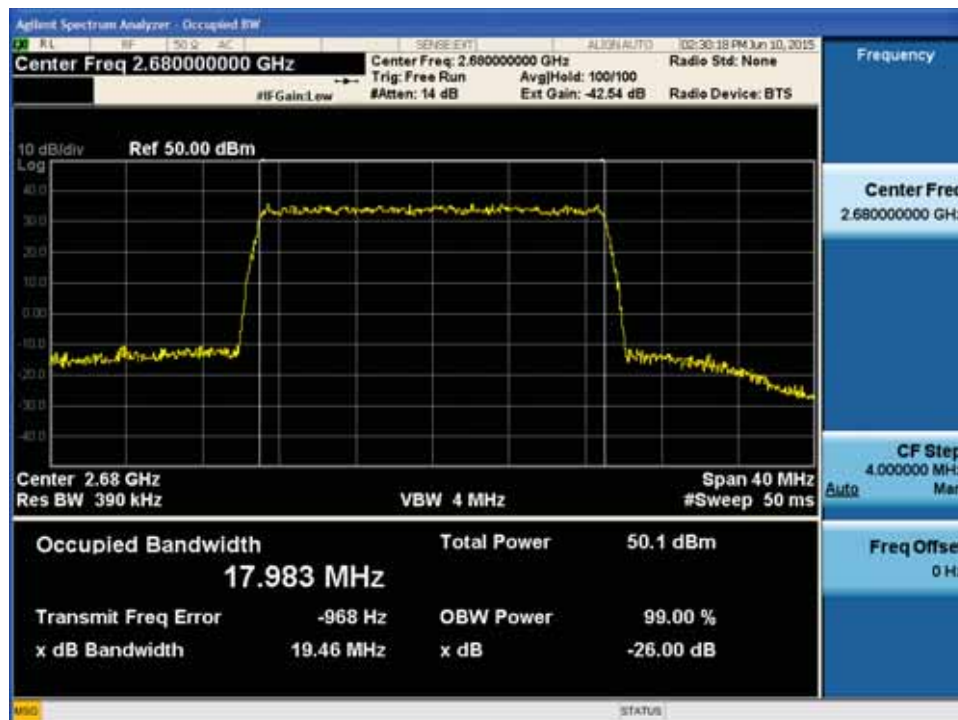
(16QAM Low Channel)



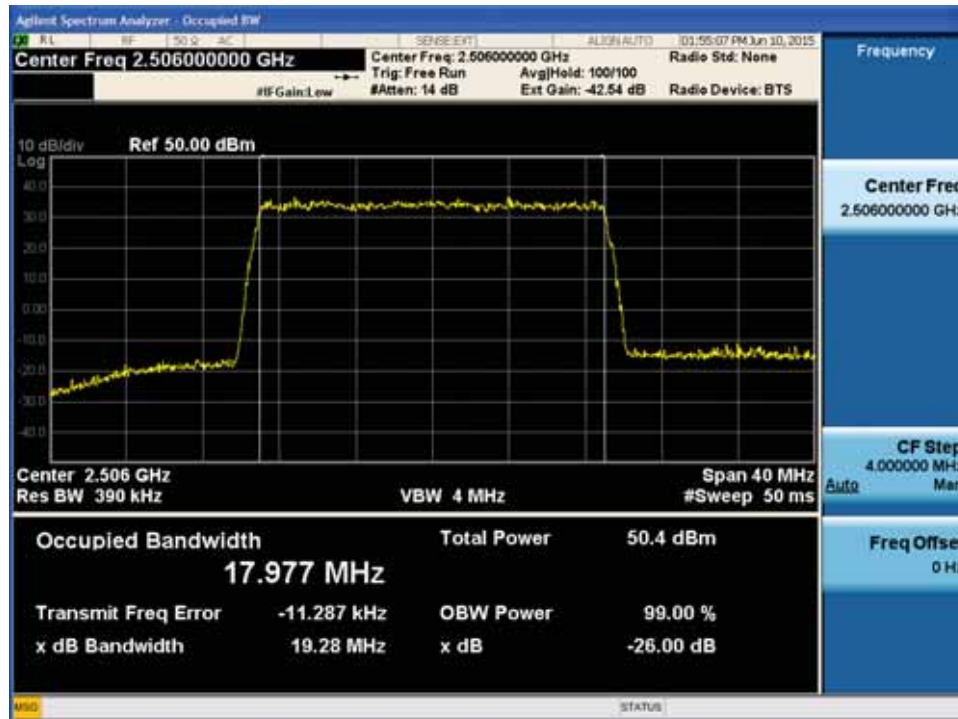
(16QAM Middle Channel)



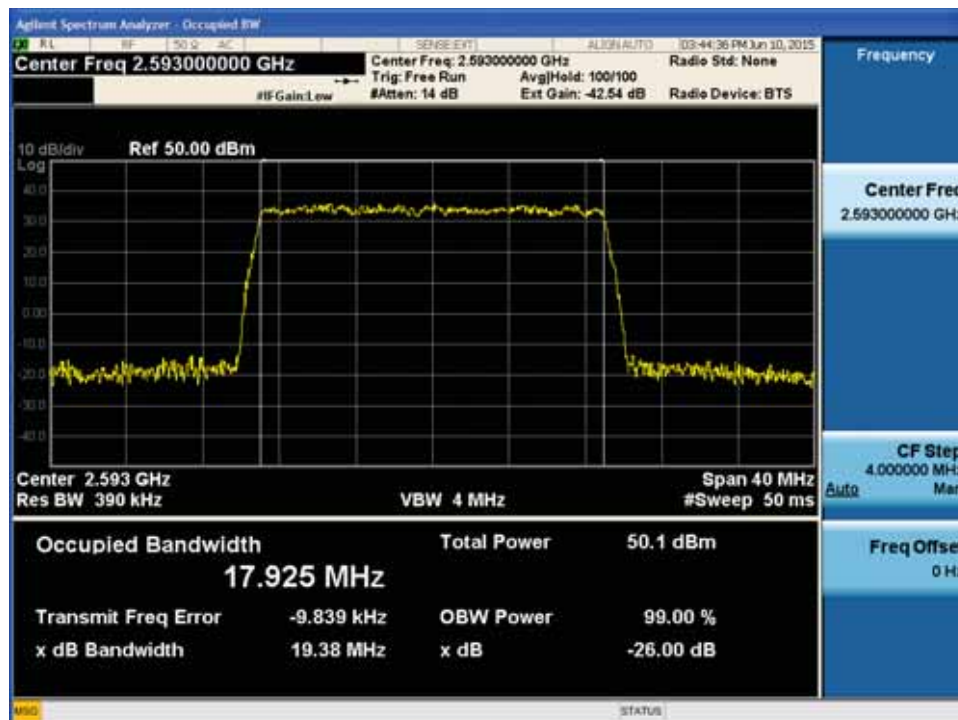
(16QAM High Channel)



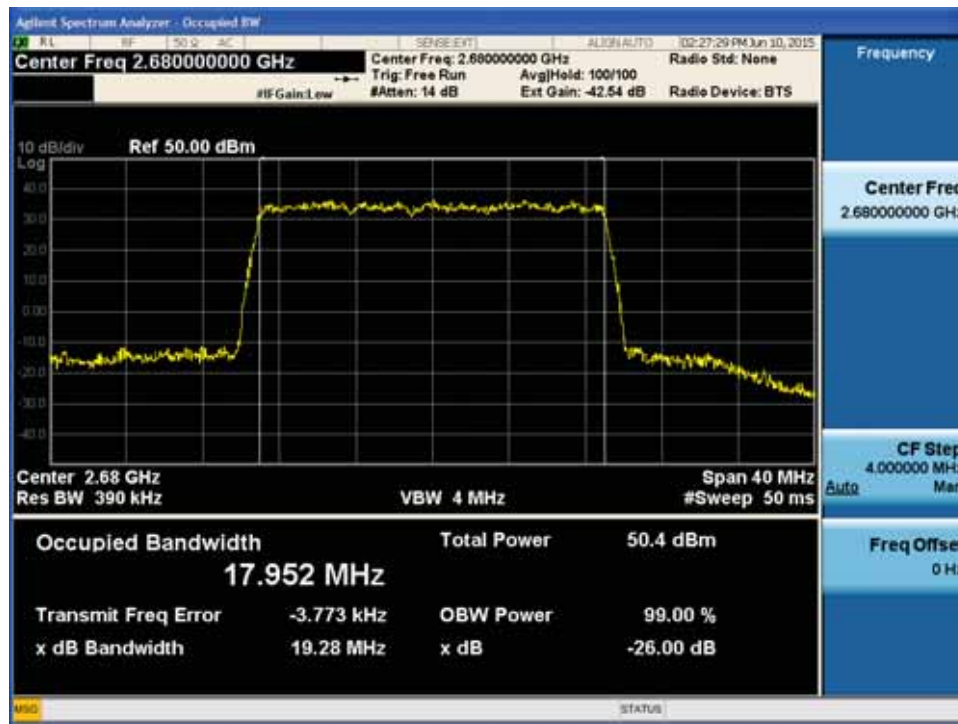
(64QAM Low Channel)



(64QAM Middle Channel)

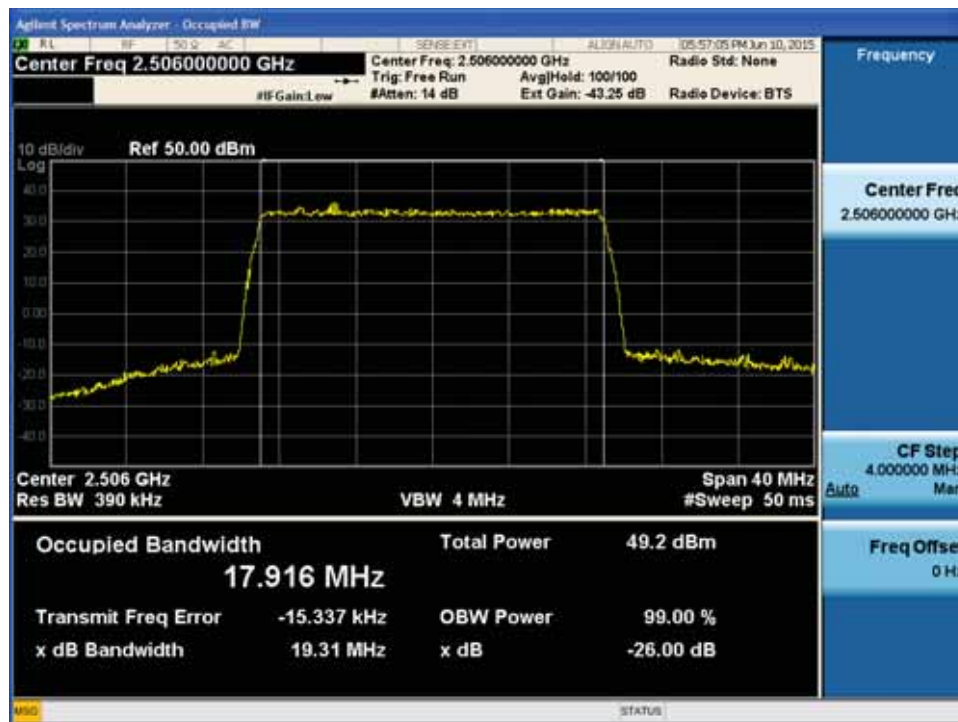


(64QAM High Channel)

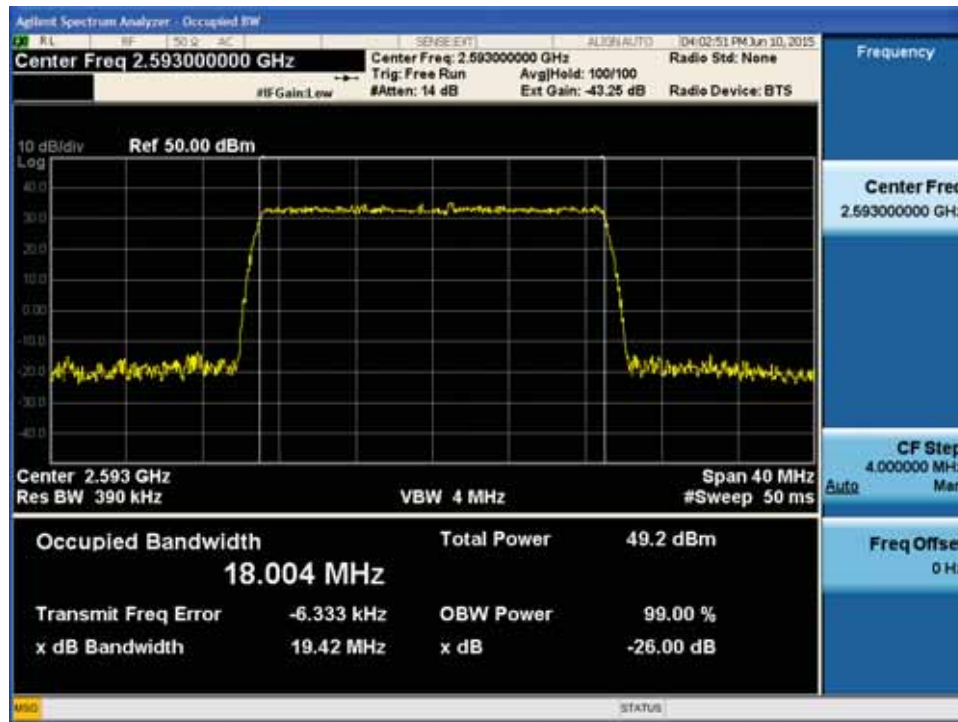


6.7.20. Test Plot at Output Port 8

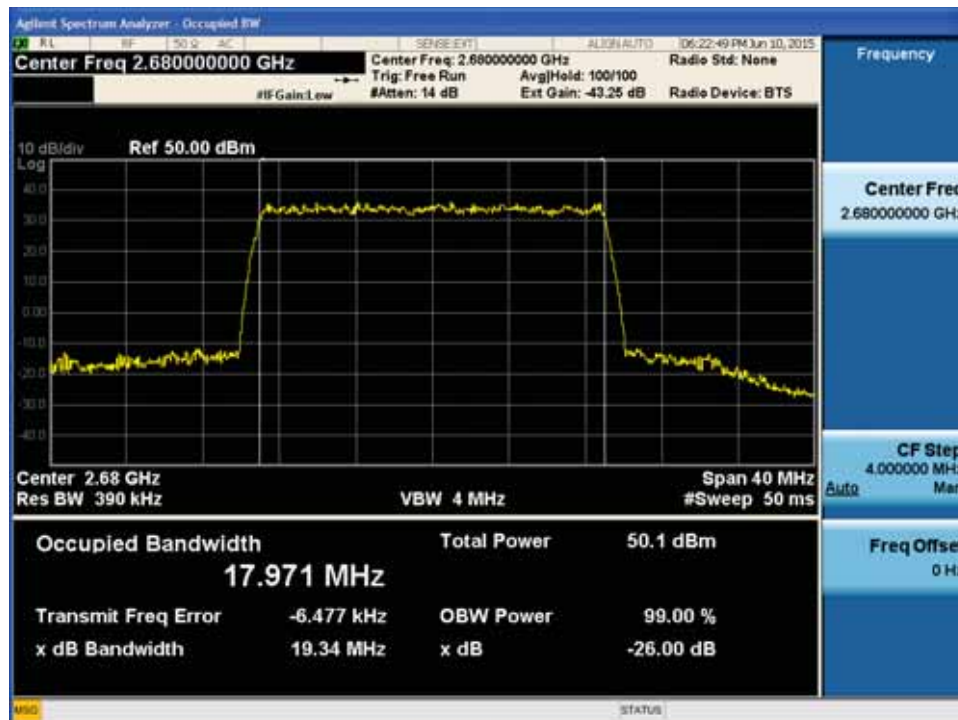
(QPSK Low Channel)



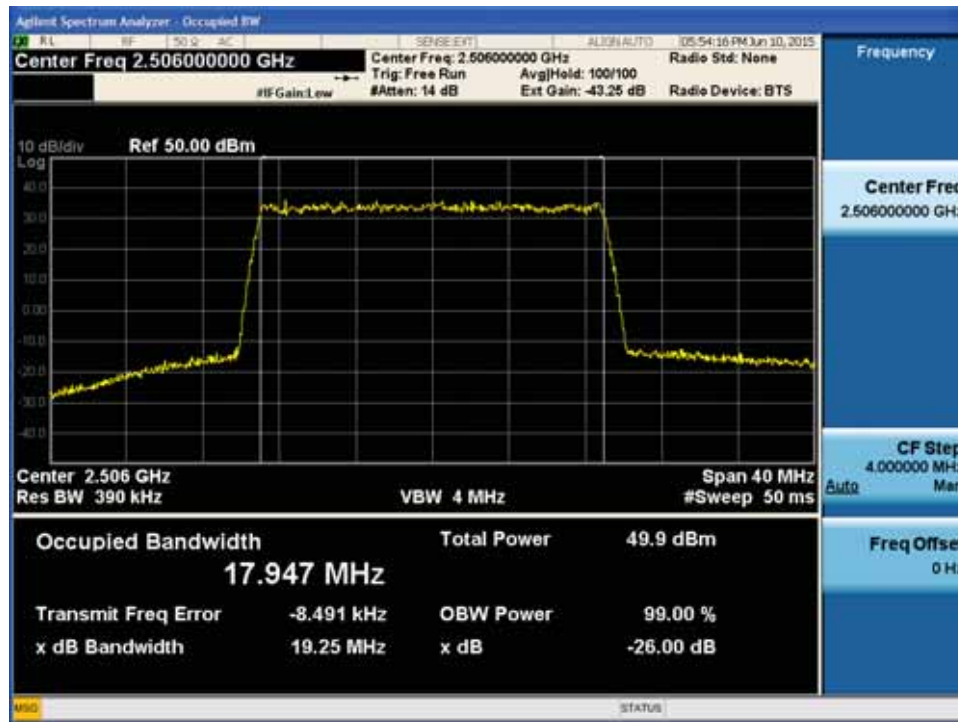
(QPSK Middle Channel)



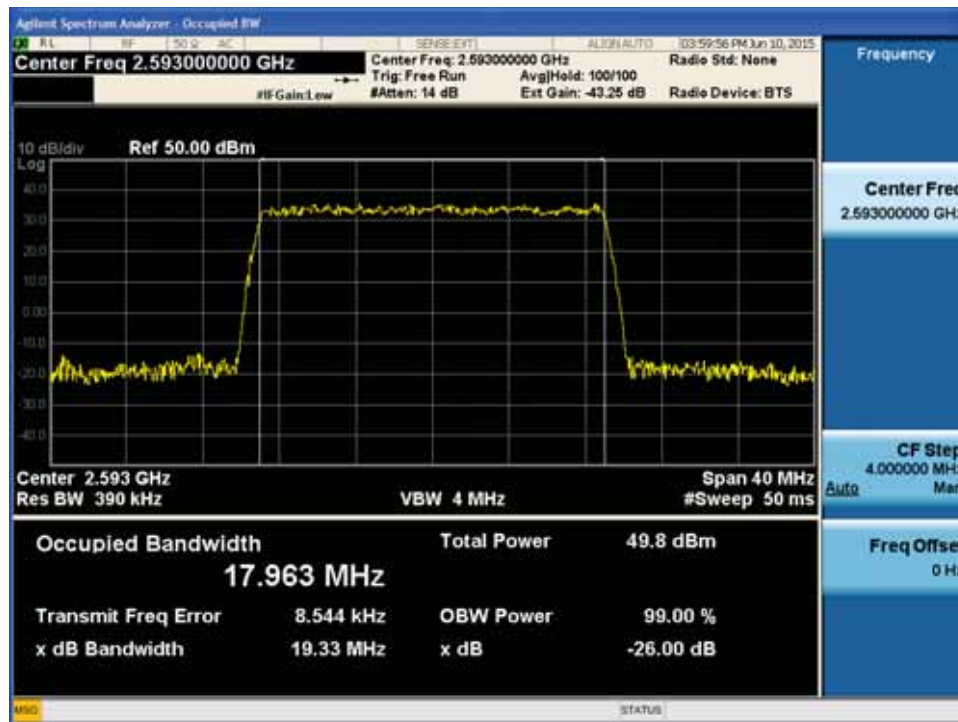
(QPSK High Channel)



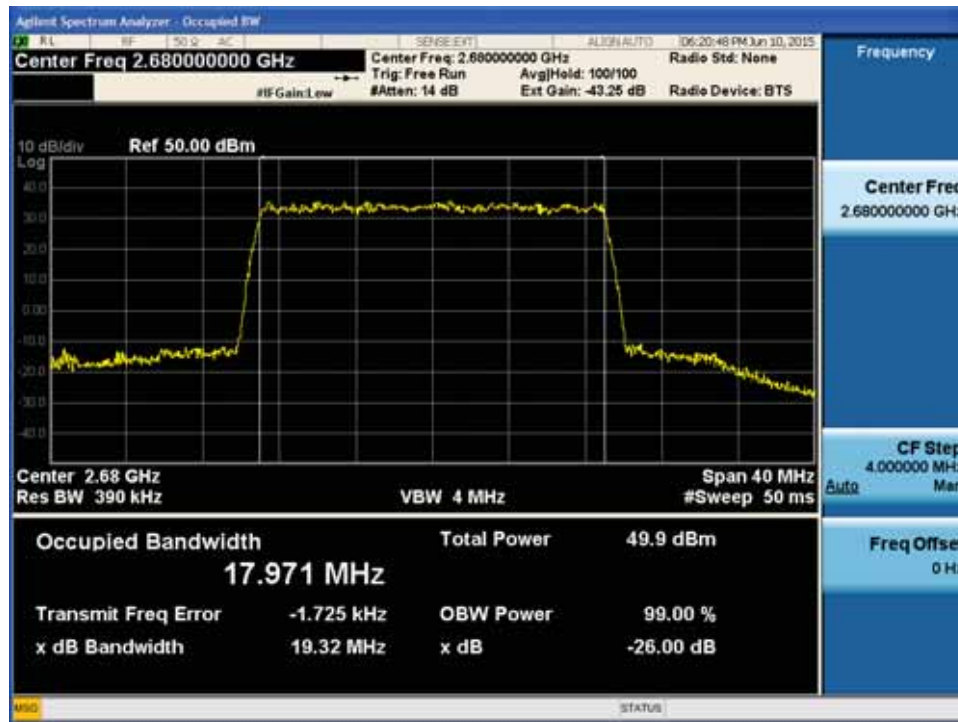
(16QAM Low Channel)



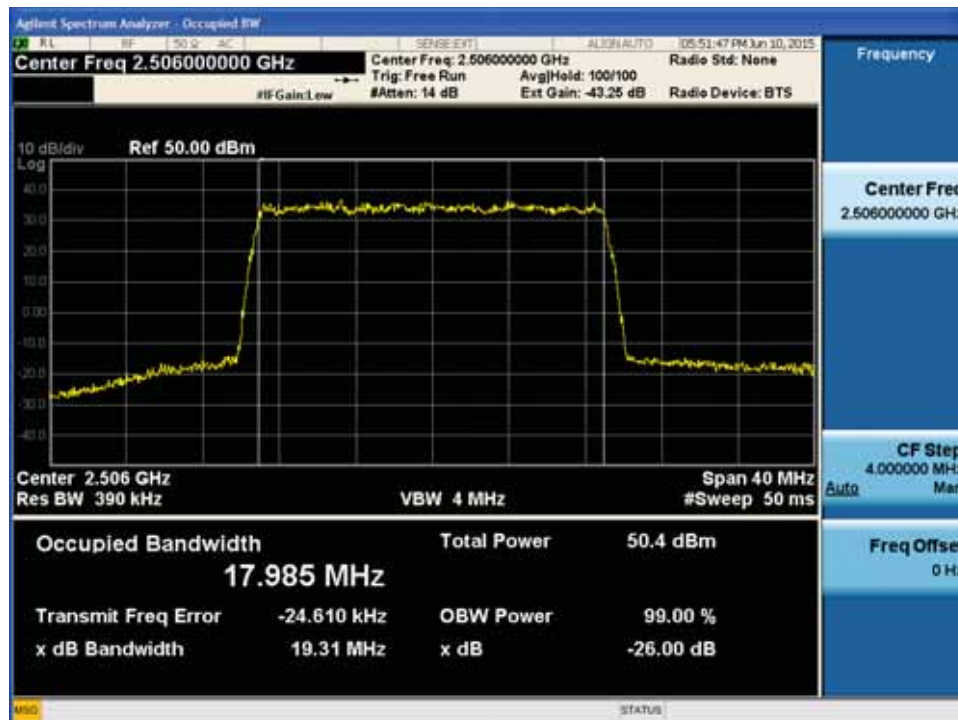
(16QAM Middle Channel)



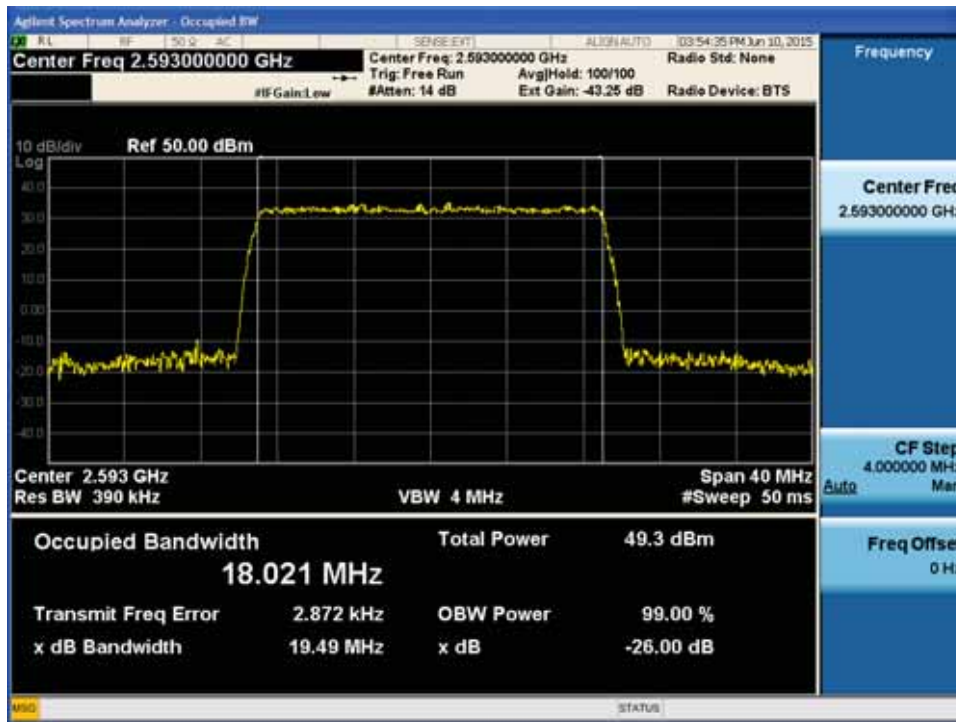
(16QAM High Channel)



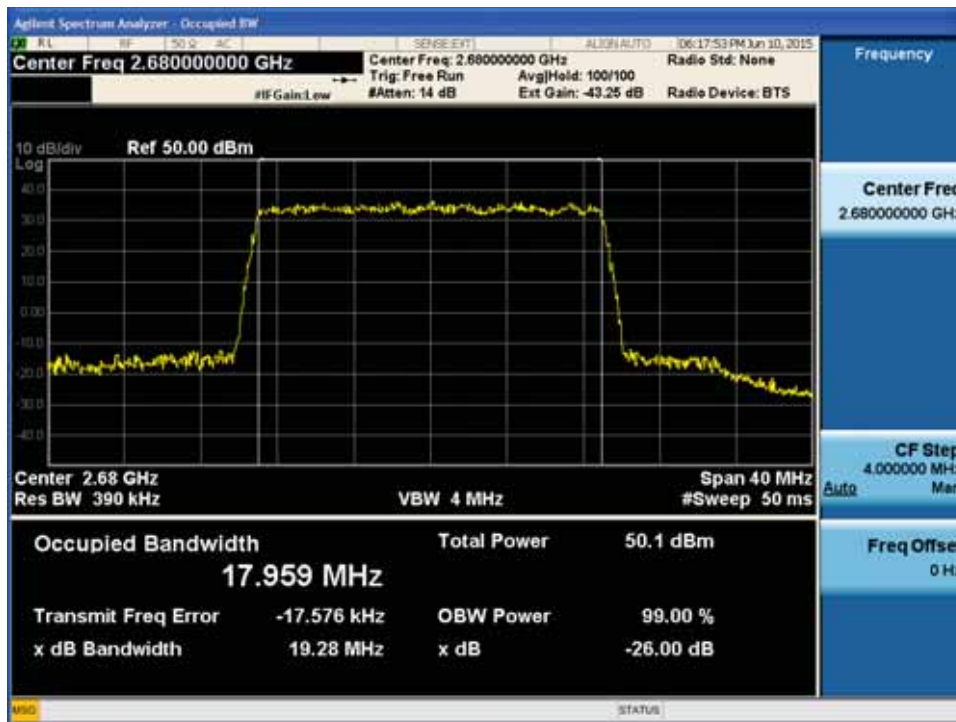
(64QAM Low Channel)



(64QAM Middle Channel)



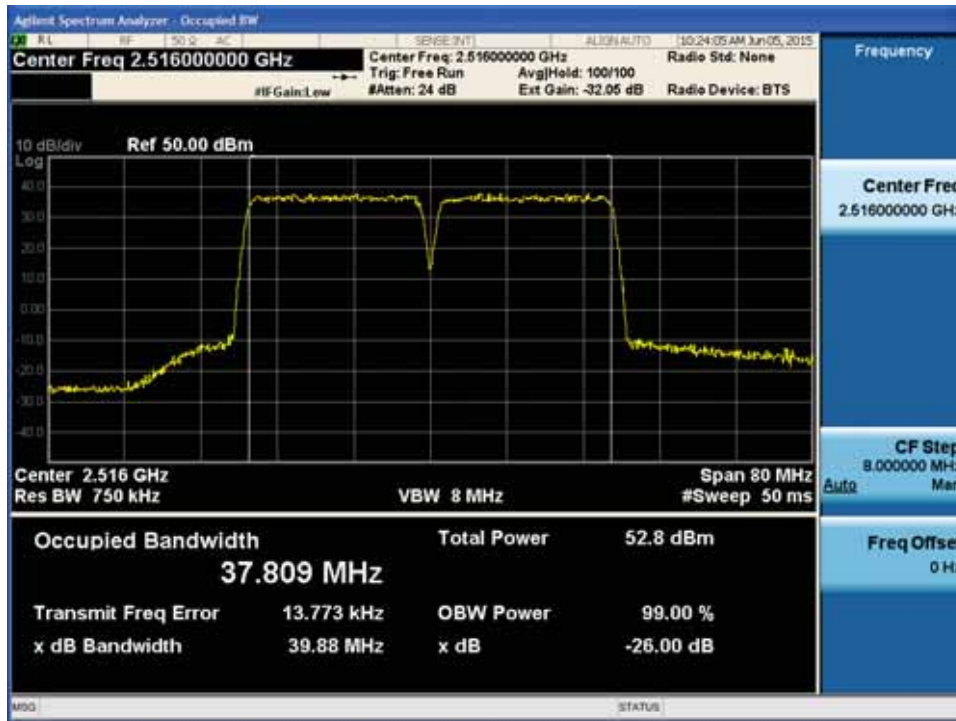
(64QAM High Channel)



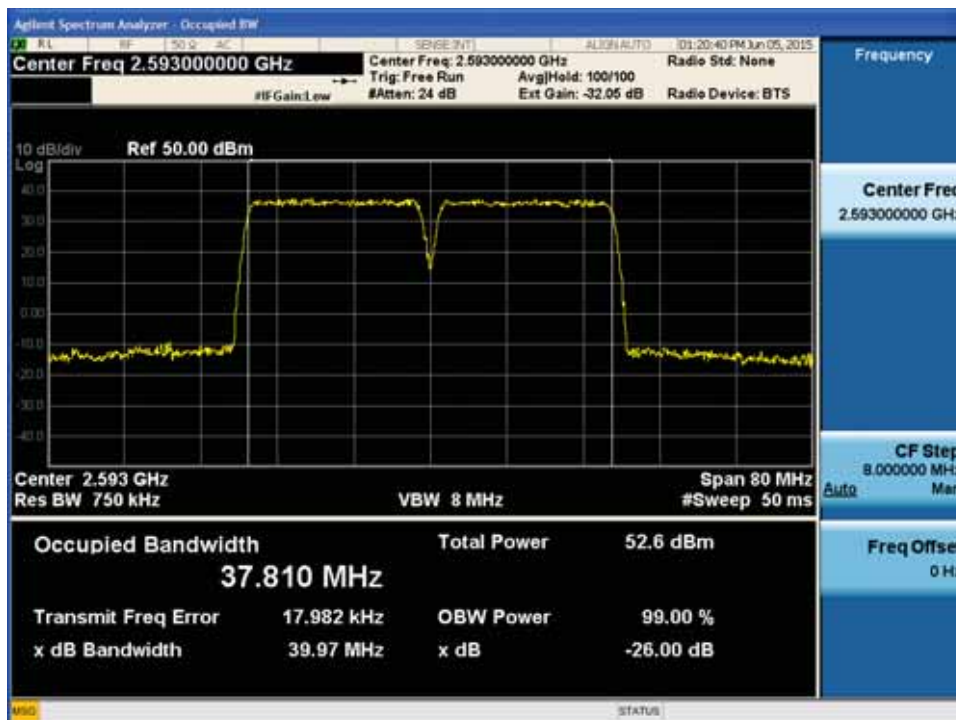
LTE20M(10W) 2 Carrier

6.7.21. Test Plot at Output Port 1

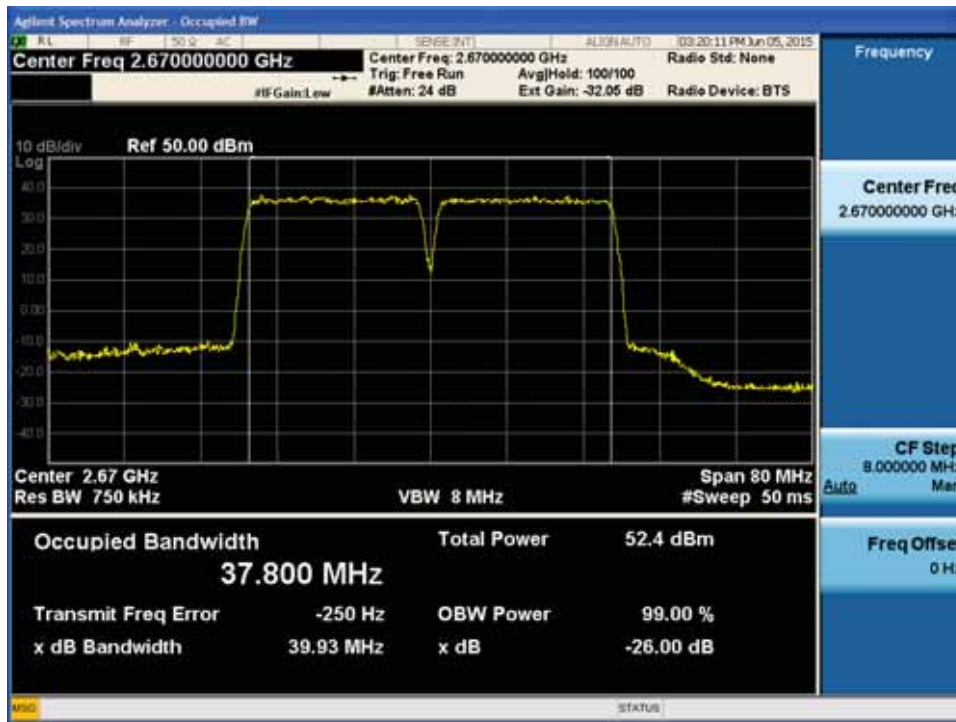
(QPSK Low Channel)



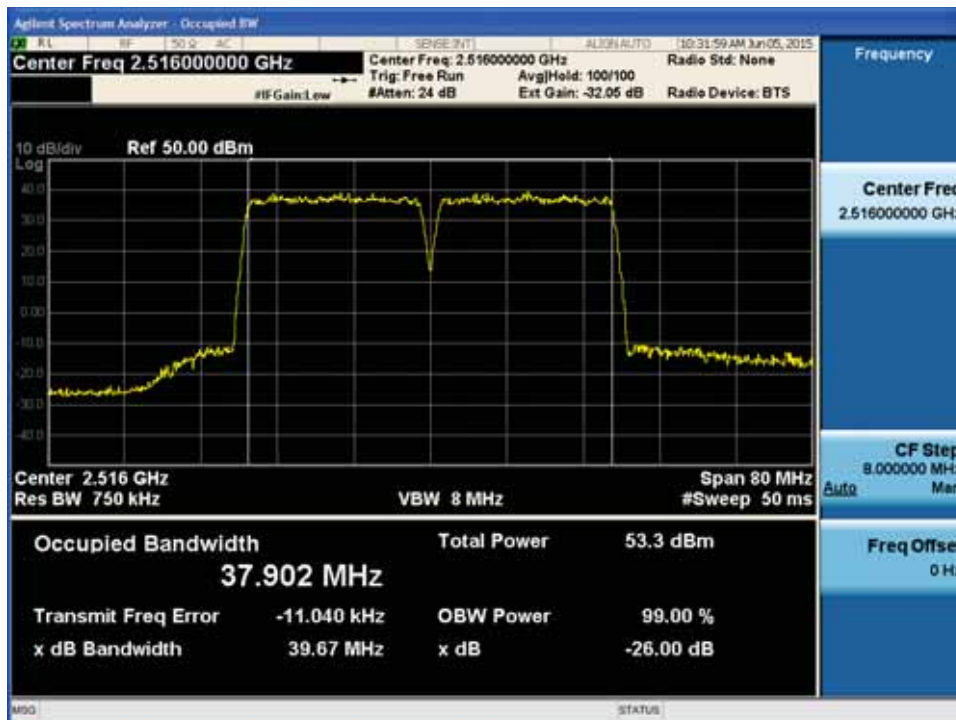
(QPSK Middle Channel)



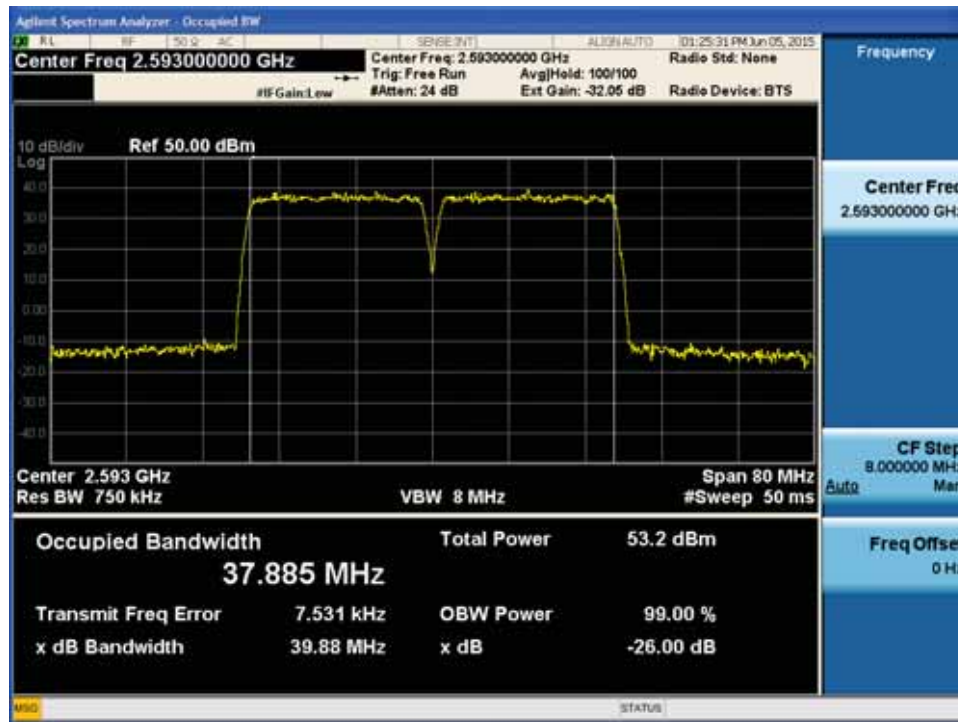
(QPSK High Channel)



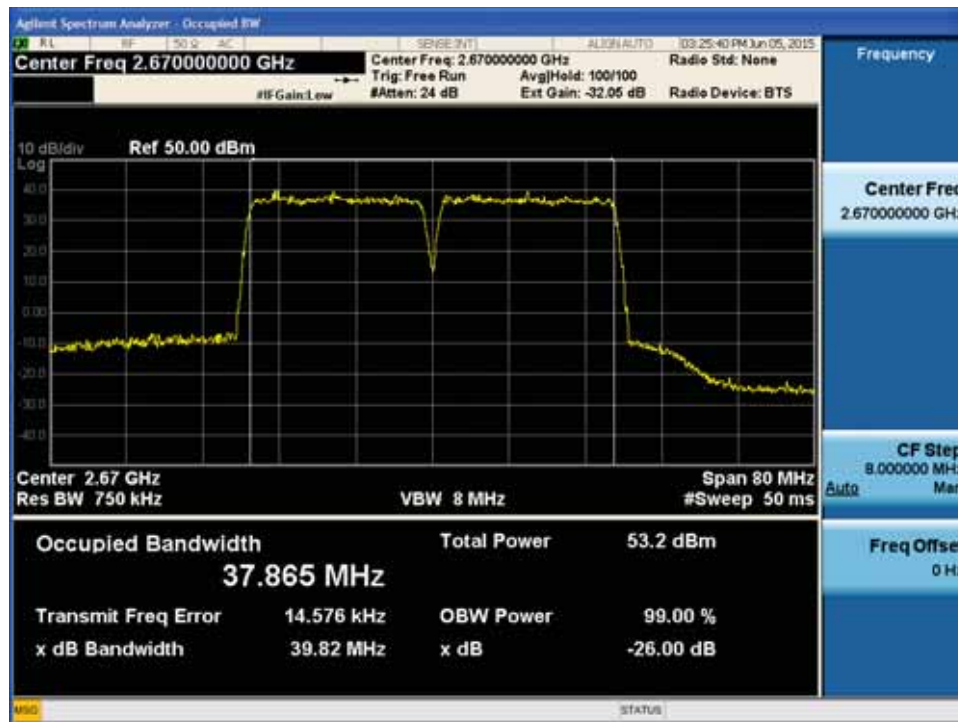
(16QAM Low Channel)



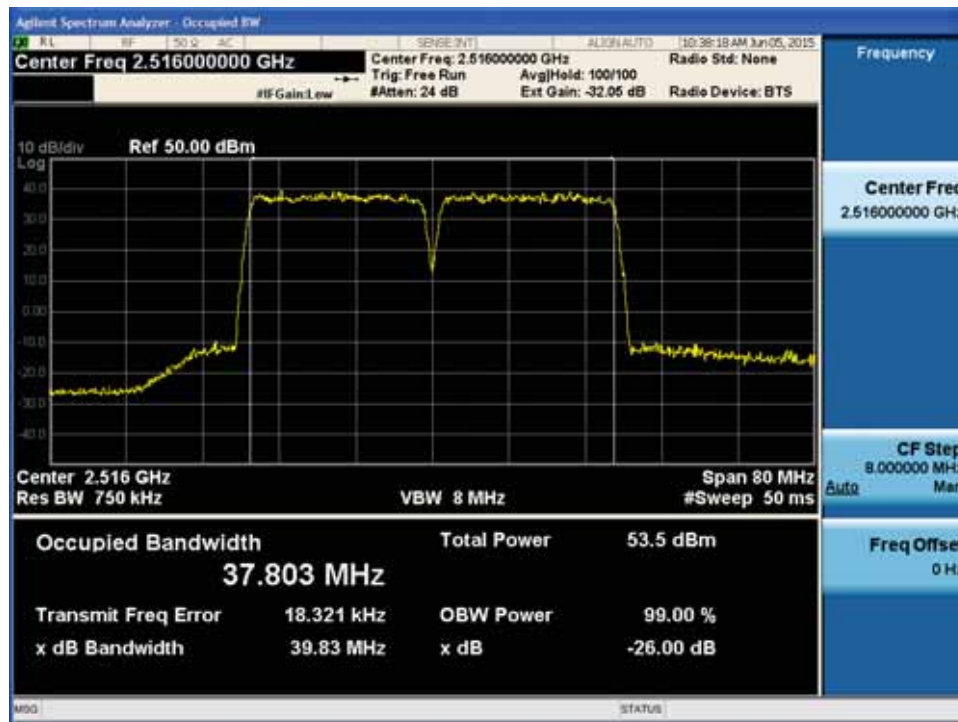
(16QAM Middle Channel)



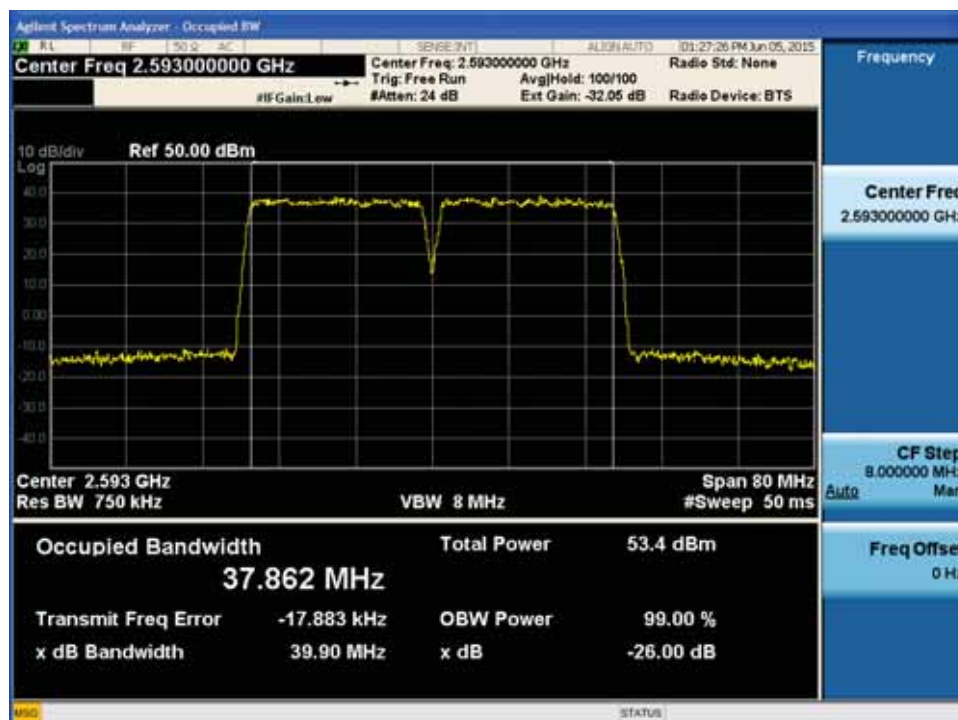
(16QAM High Channel)



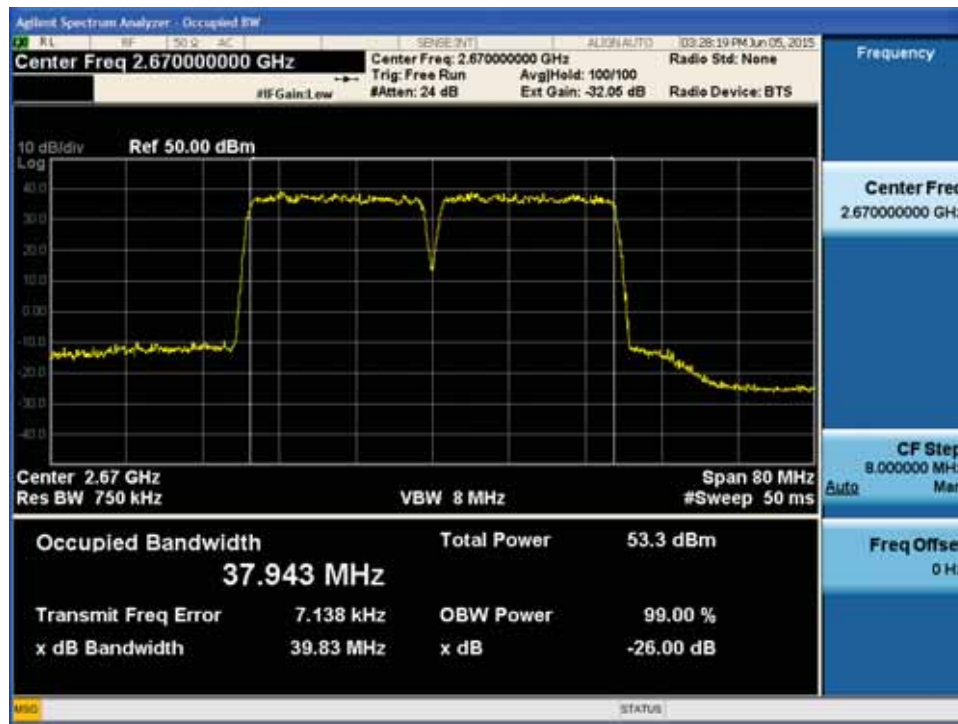
(64QAM Low Channel)



(64QAM Middle Channel)

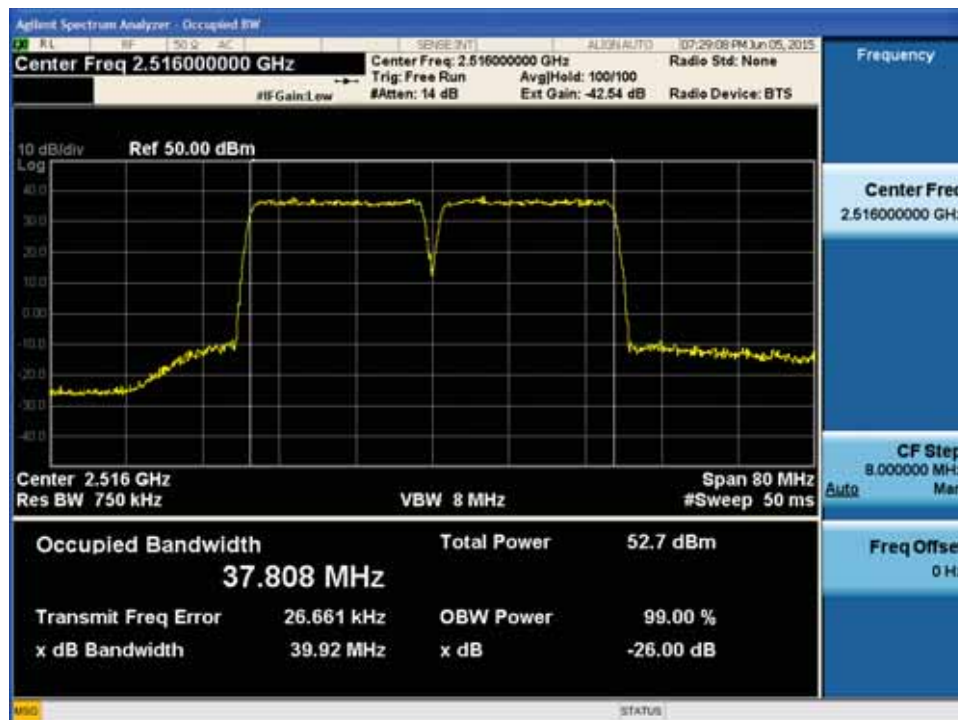


(64QAM High Channel)

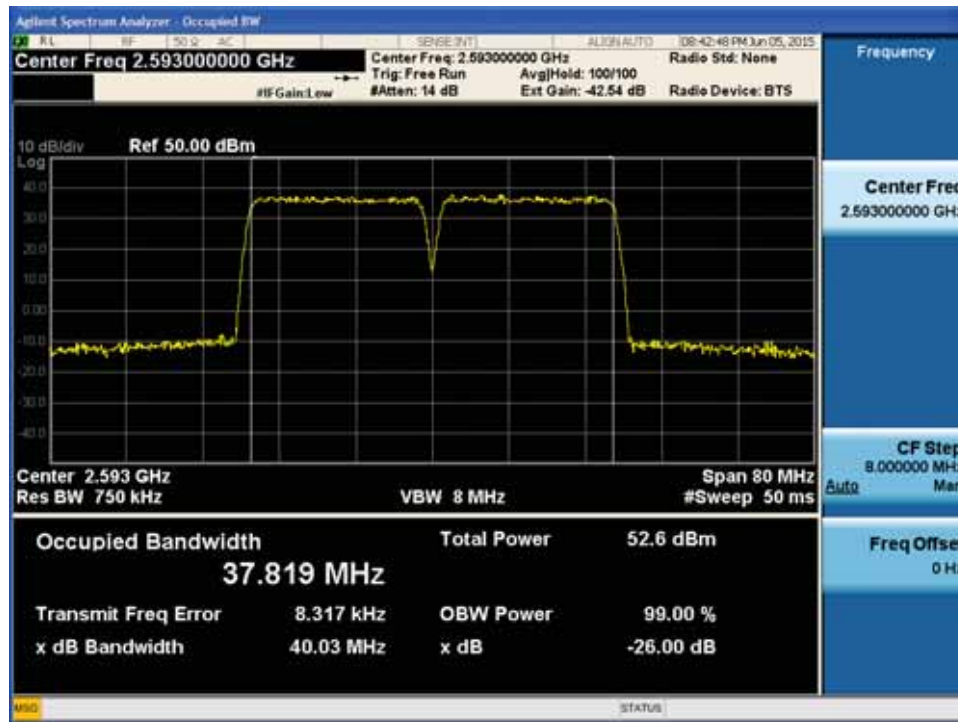


6.7.22. Test Plot at Output Port 2

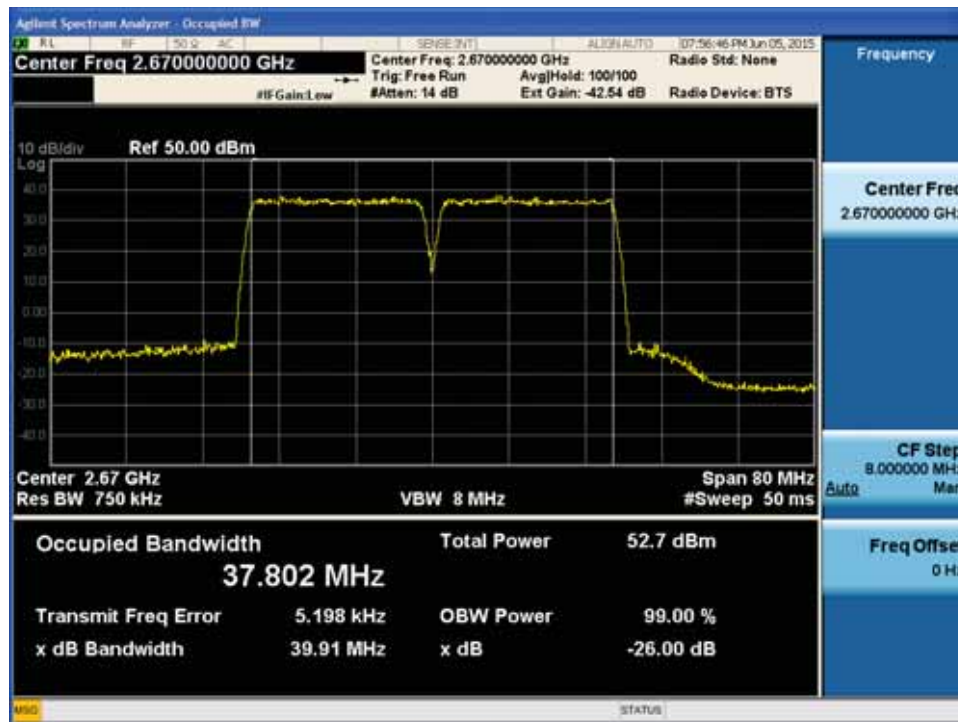
(QPSK Low Channel)



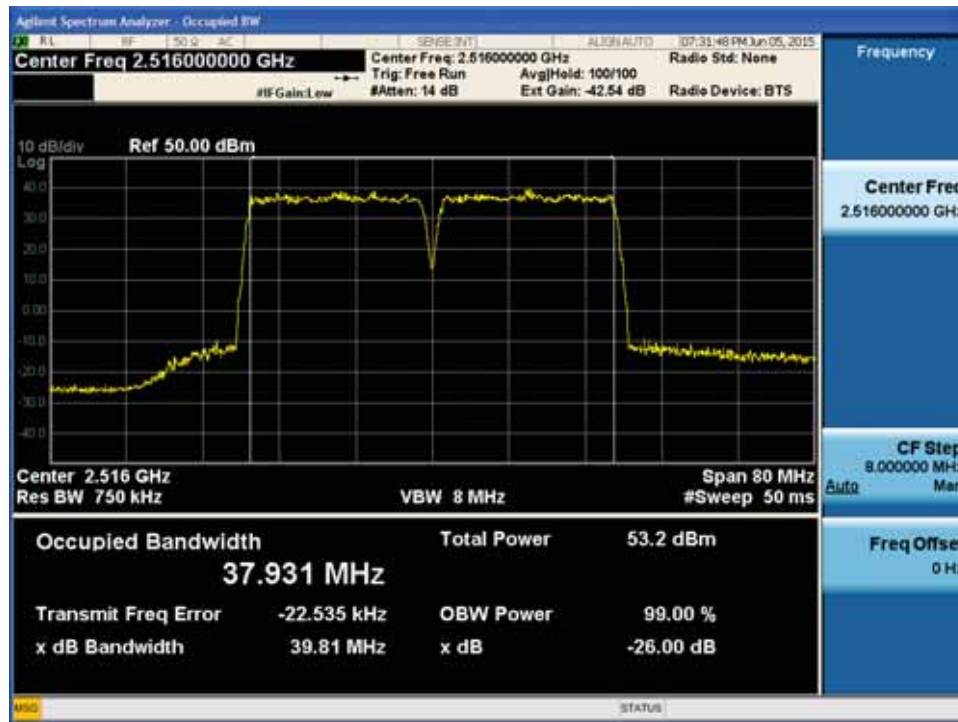
(QPSK Middle Channel)



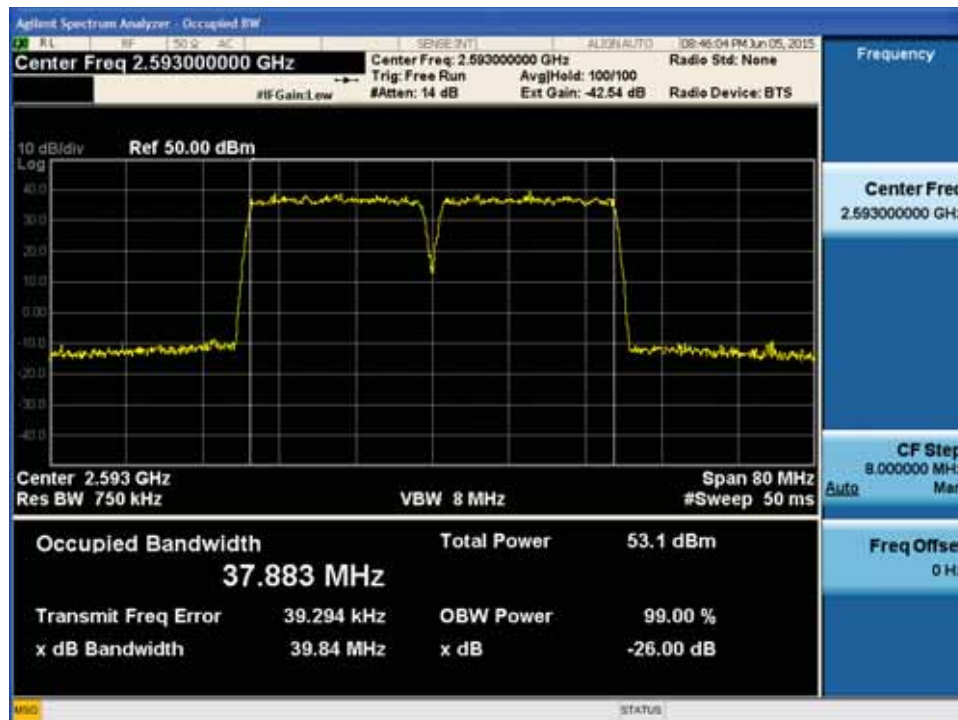
(QPSK High Channel)



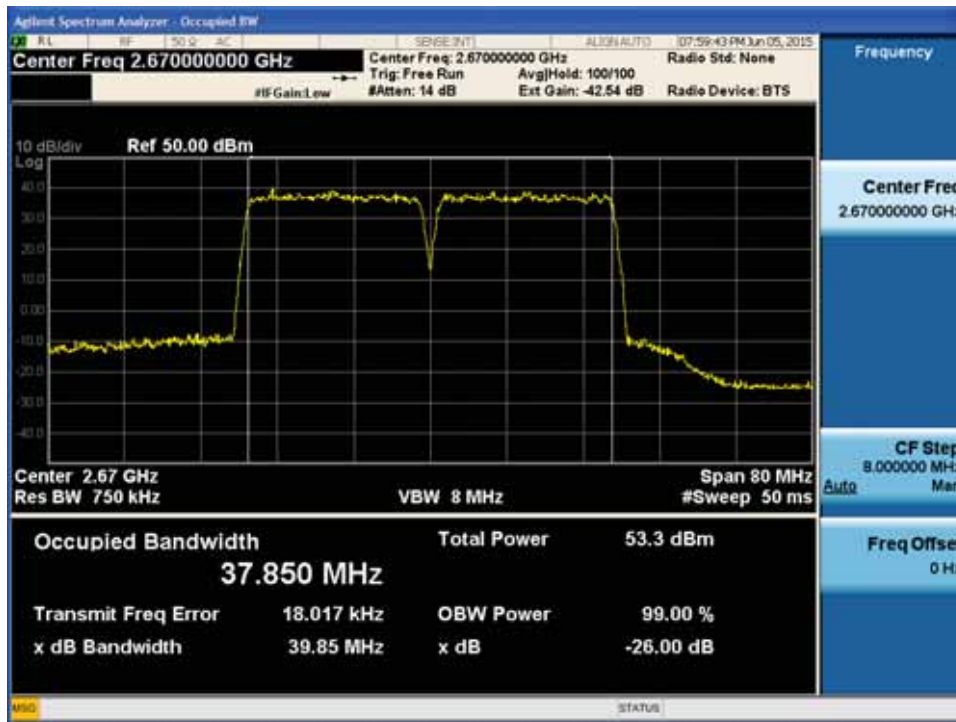
(16QAM Low Channel)



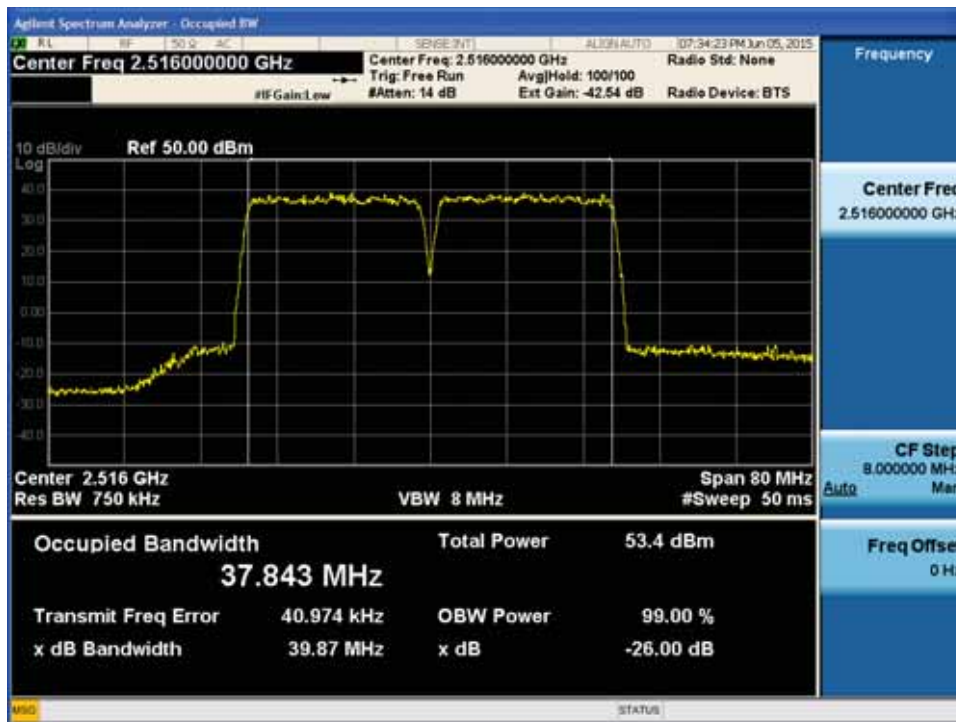
(16QAM Middle Channel)



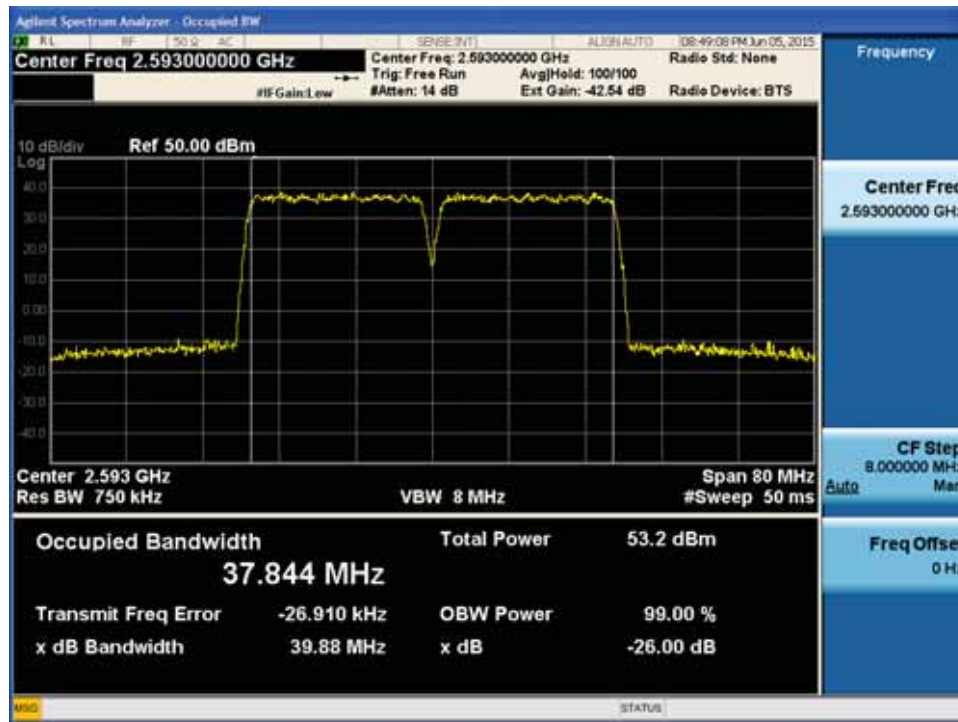
(16QAM High Channel)



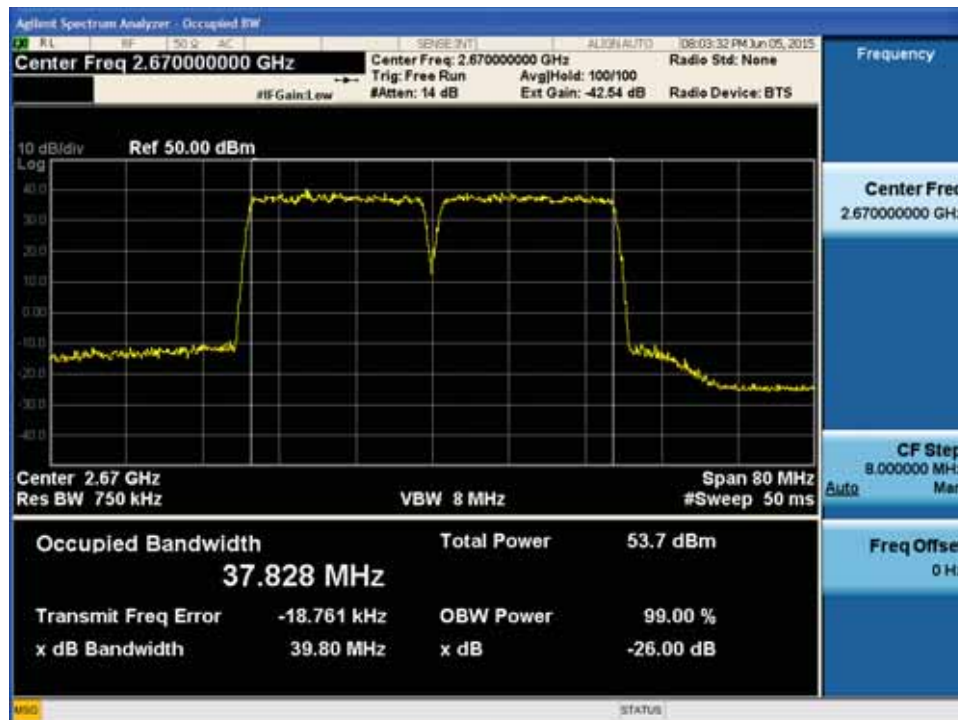
(64QAM Low Channel)



(64QAM Middle Channel)

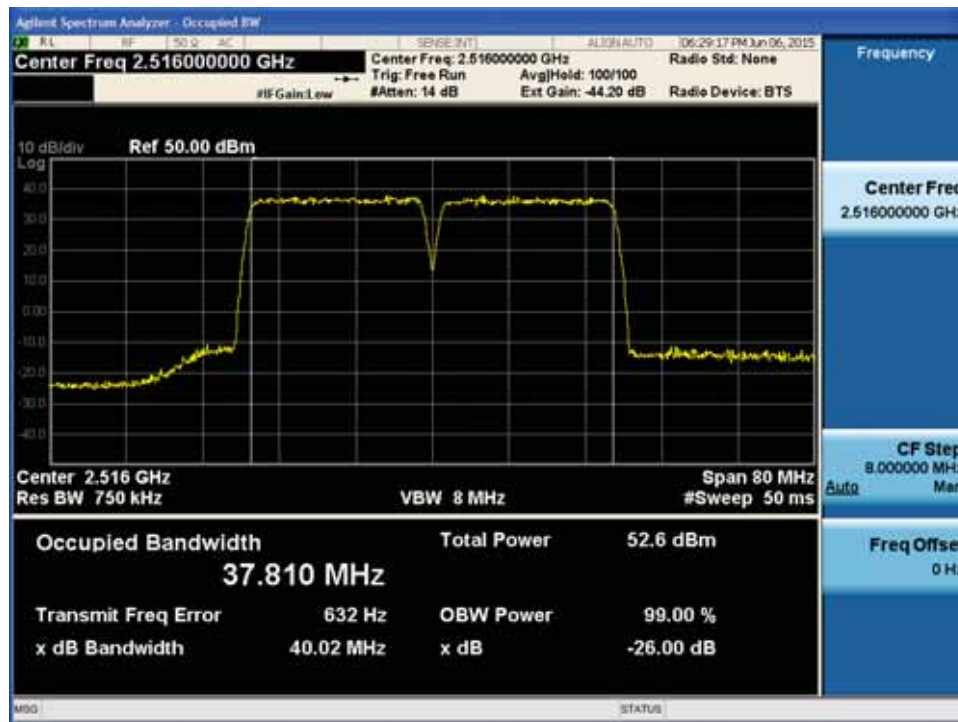


(64QAM High Channel)

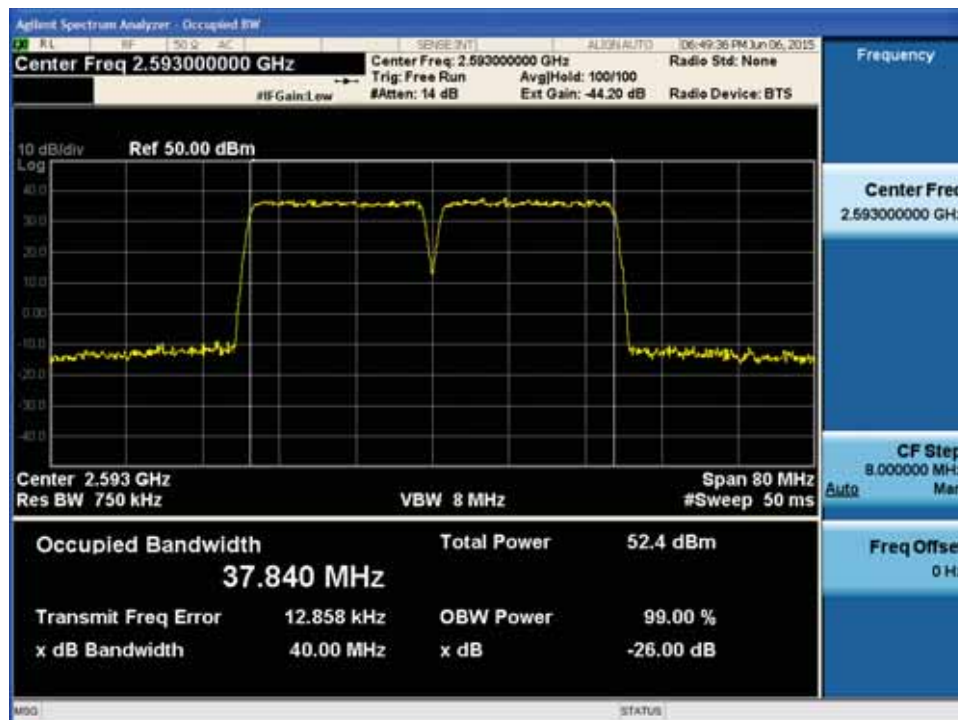


6.7.23. Test Plot at Output Port 3

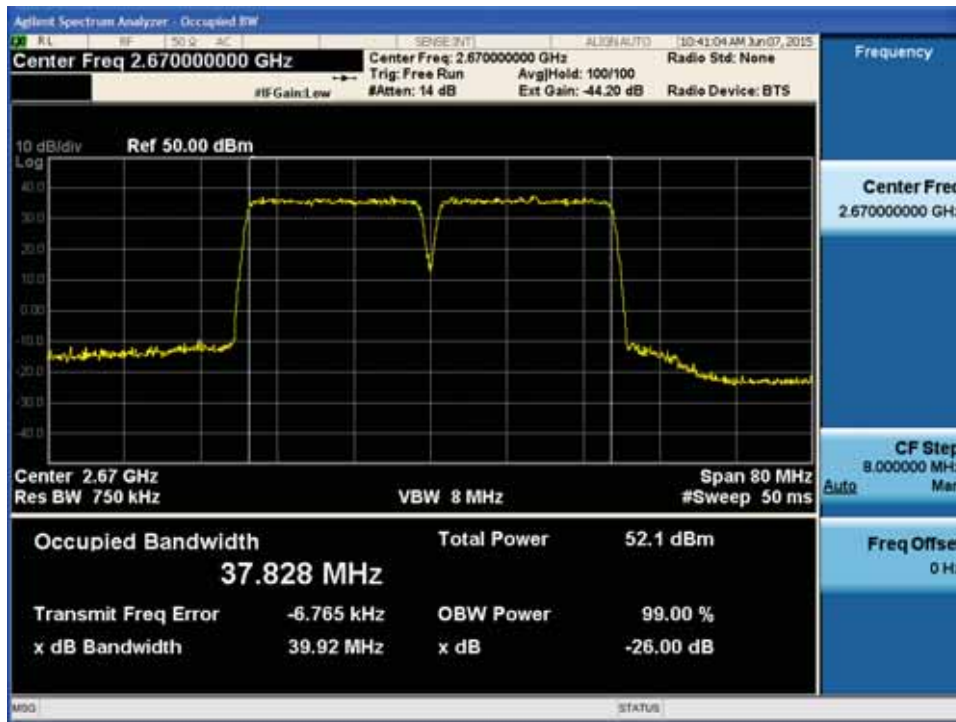
(QPSK Low Channel)



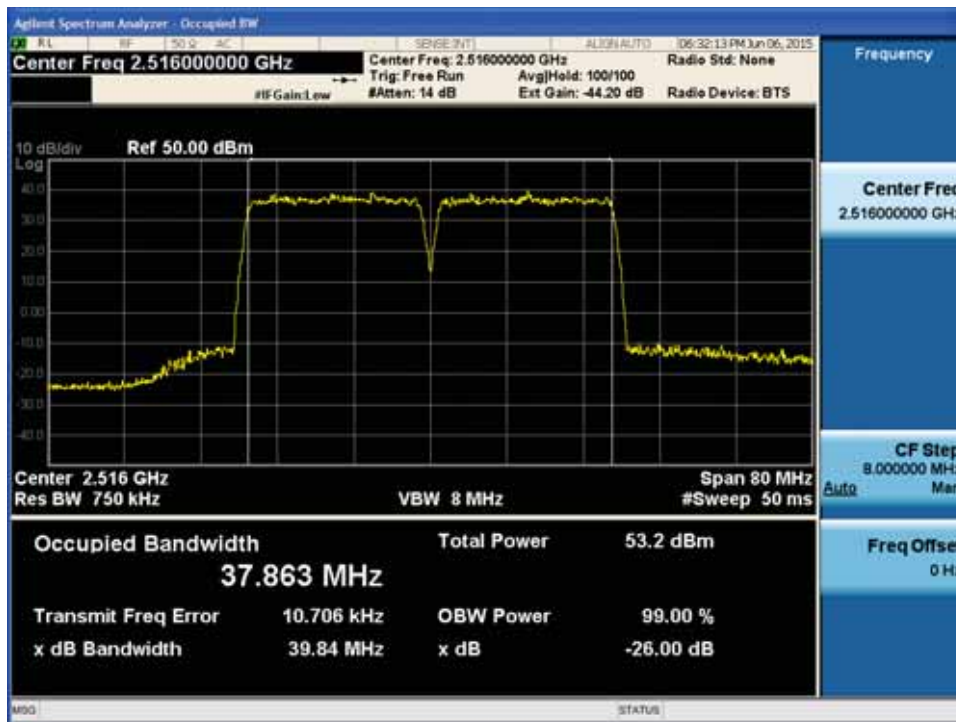
(QPSK Middle Channel)



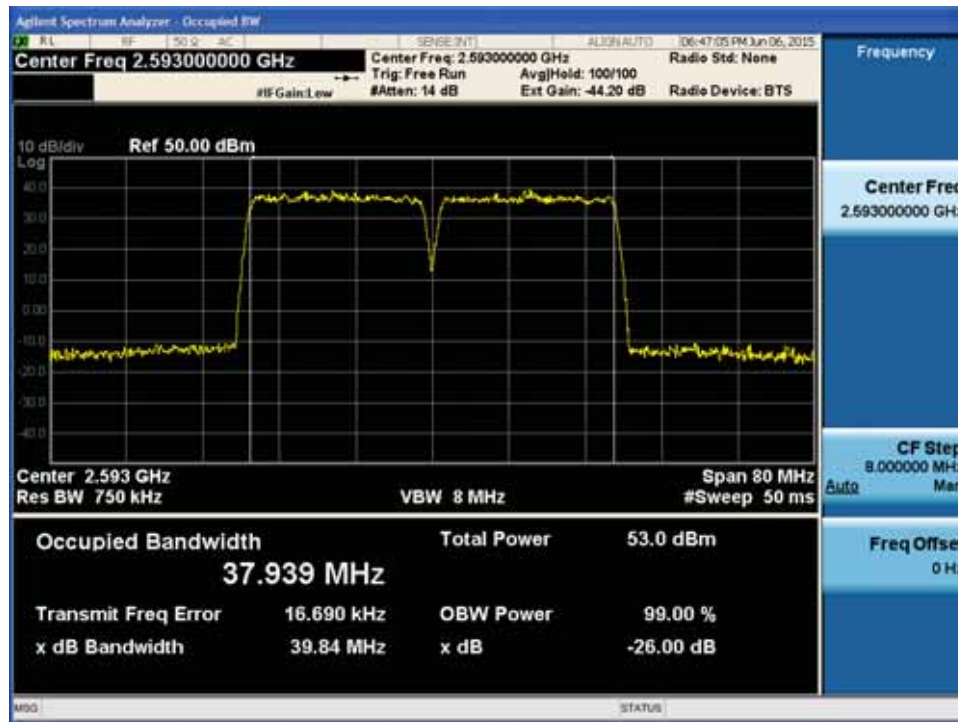
(QPSK High Channel)



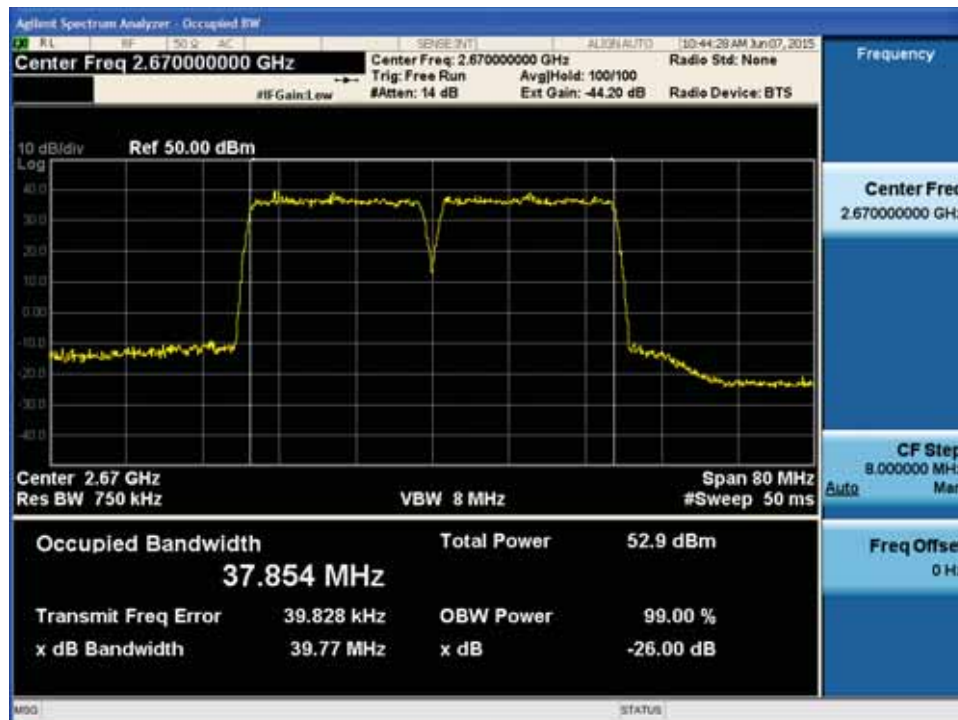
(16QAM Low Channel)



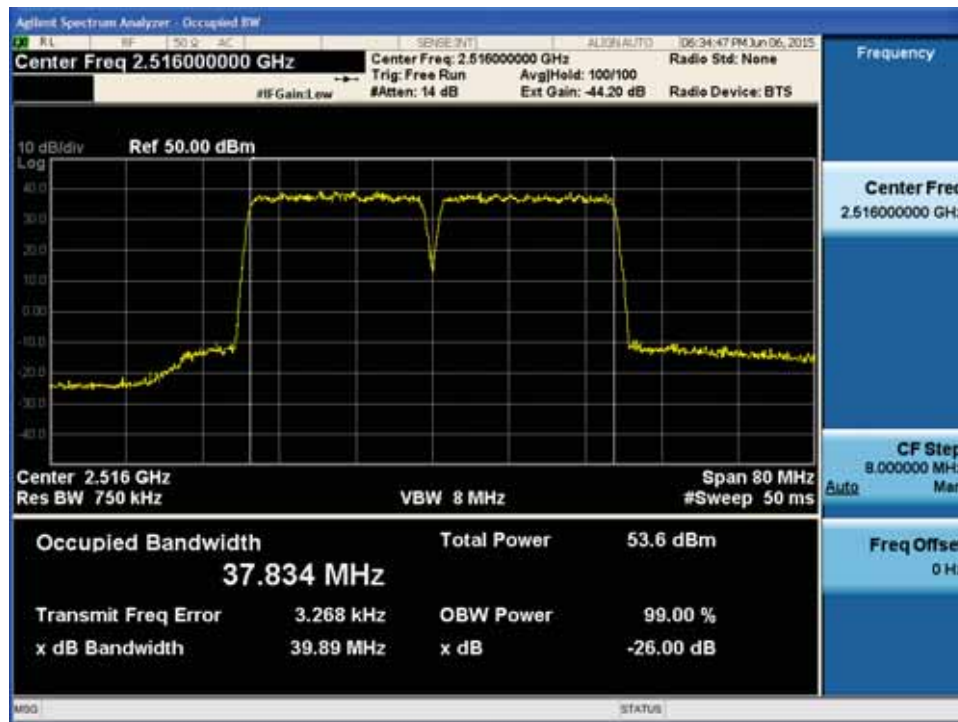
(16QAM Middle Channel)



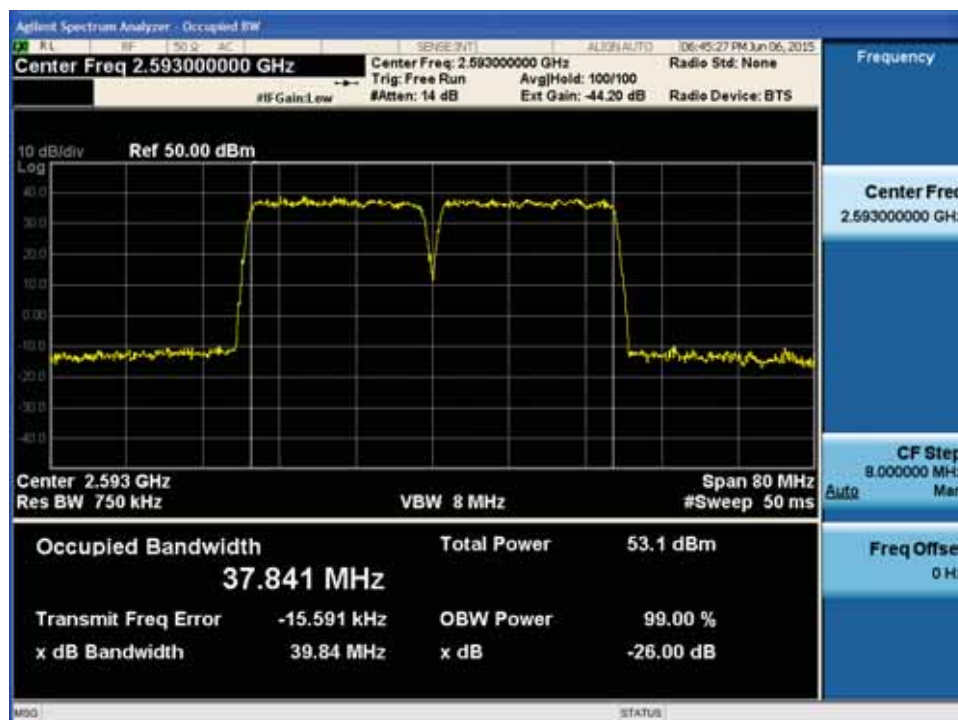
(16QAM High Channel)



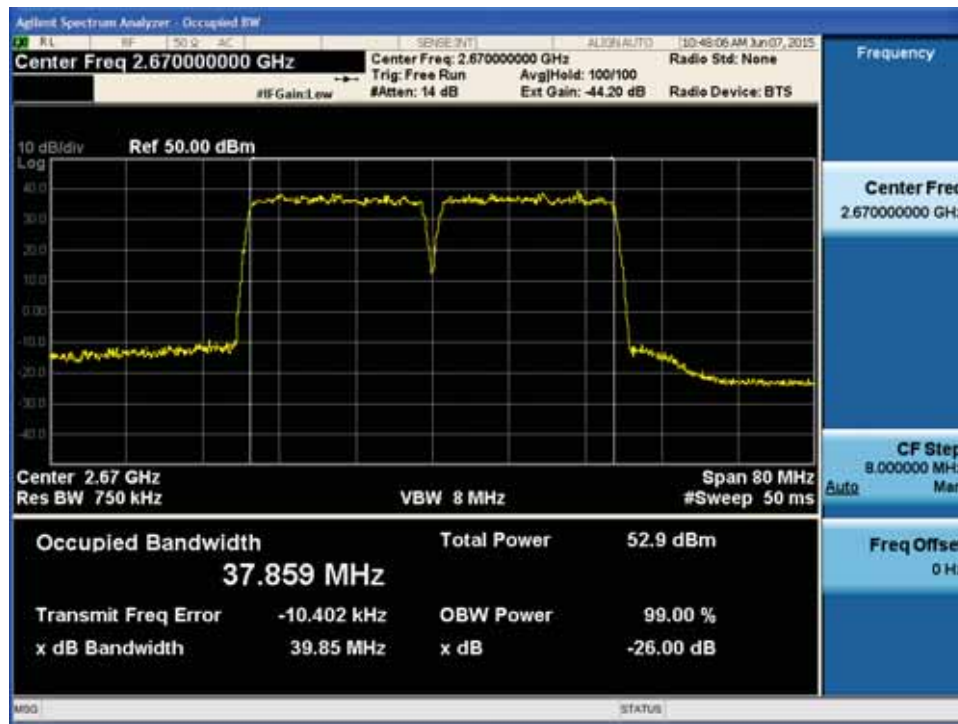
(64QAM Low Channel)



(64QAM Middle Channel)

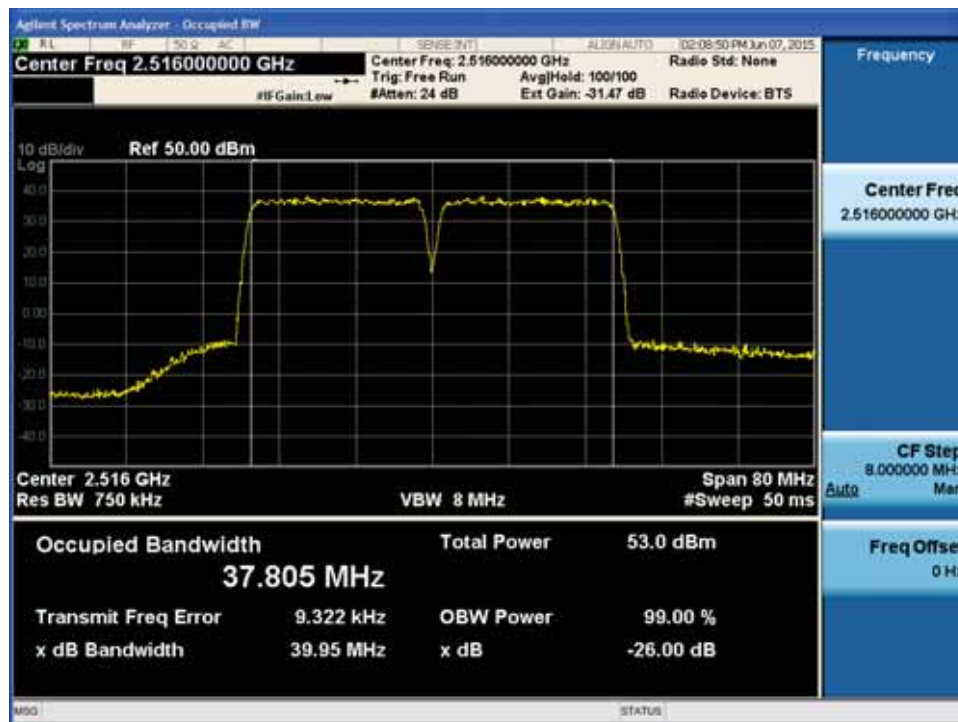


(64QAM High Channel)

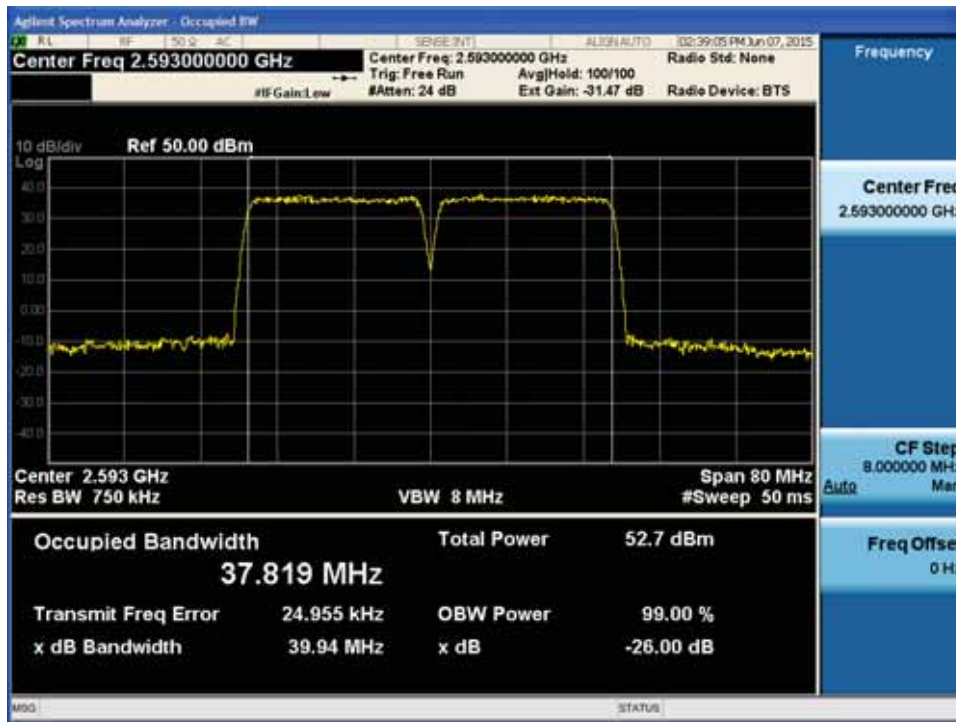


6.7.24. Test Plot at Output Port 4

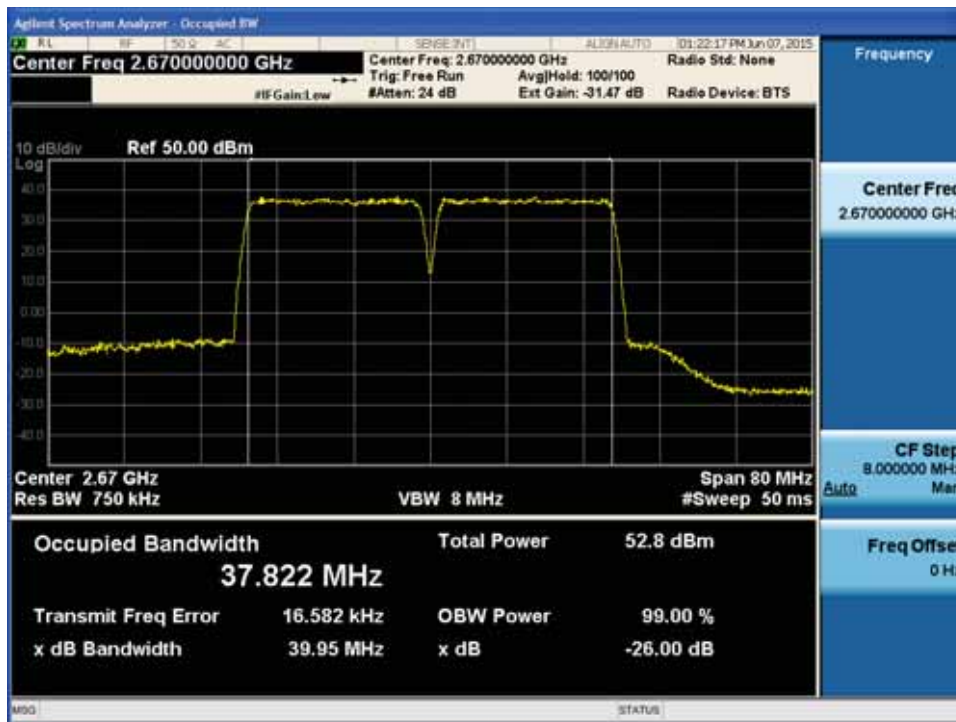
(QPSK Low Channel)



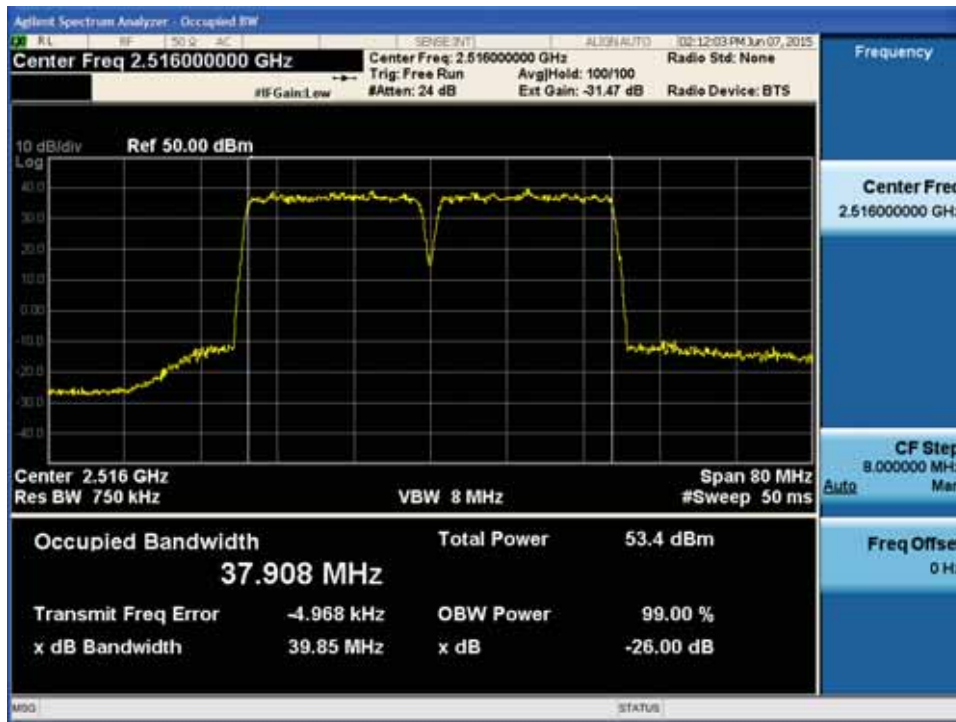
(QPSK Middle Channel)



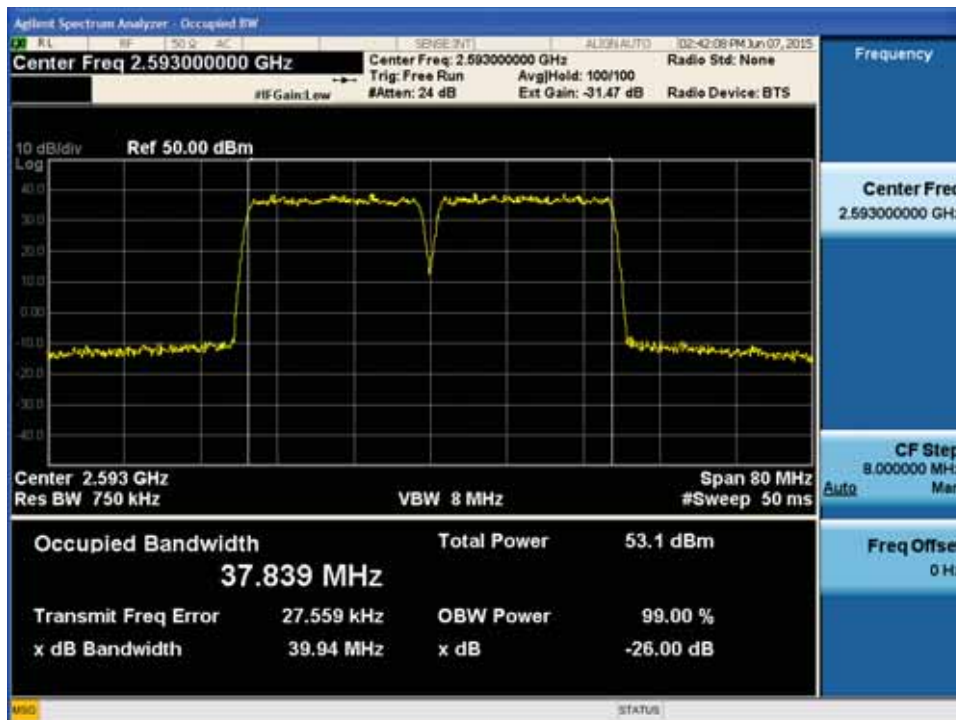
(QPSK High Channel)



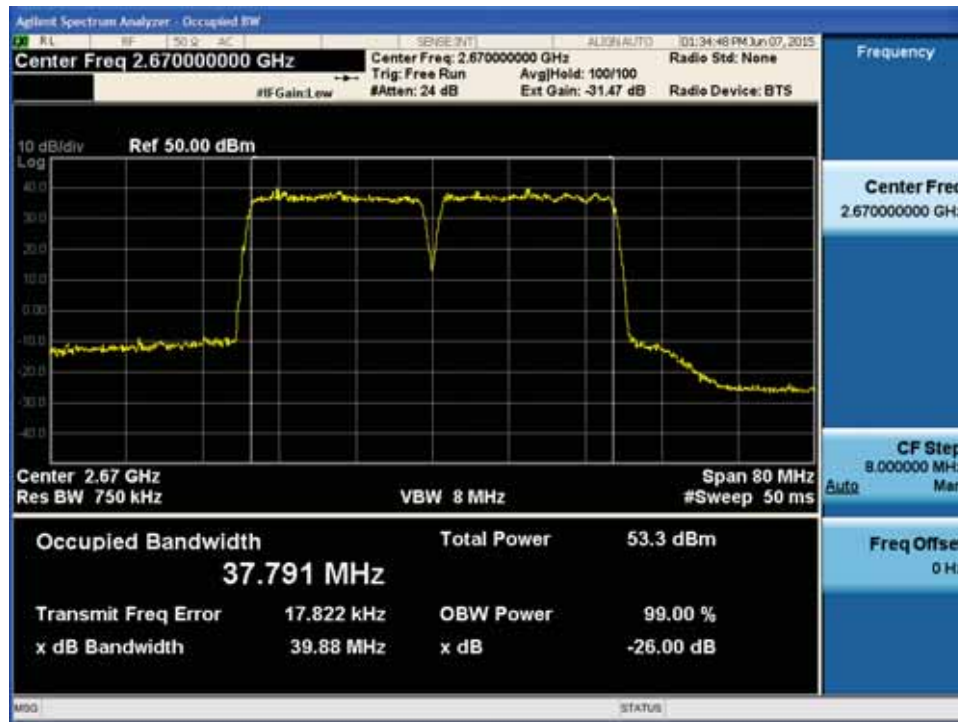
(16QAM Low Channel)



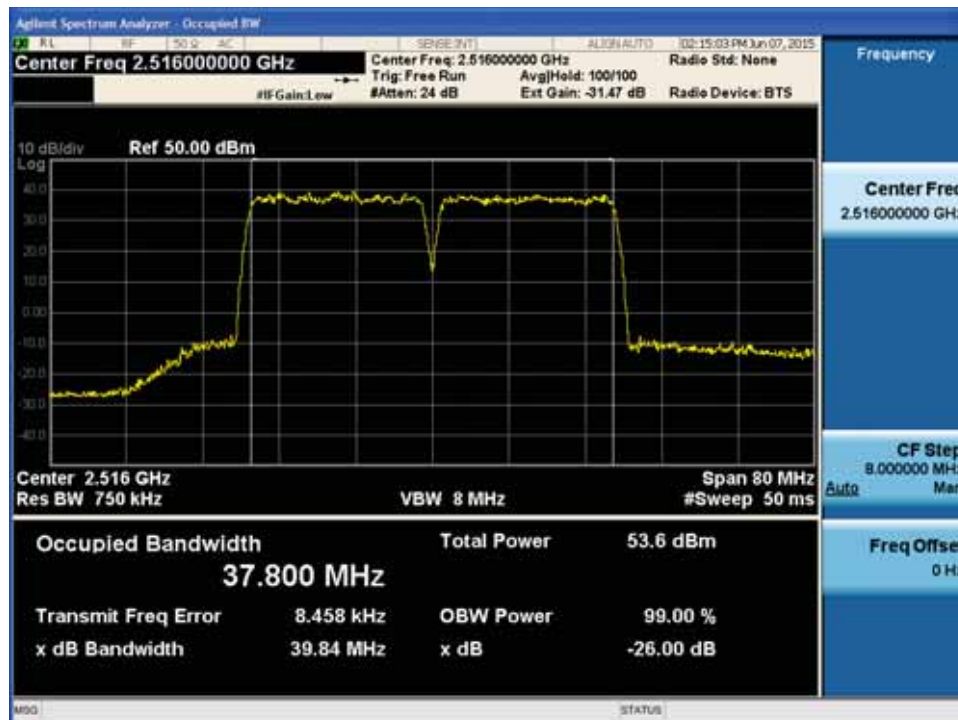
(16QAM Middle Channel)



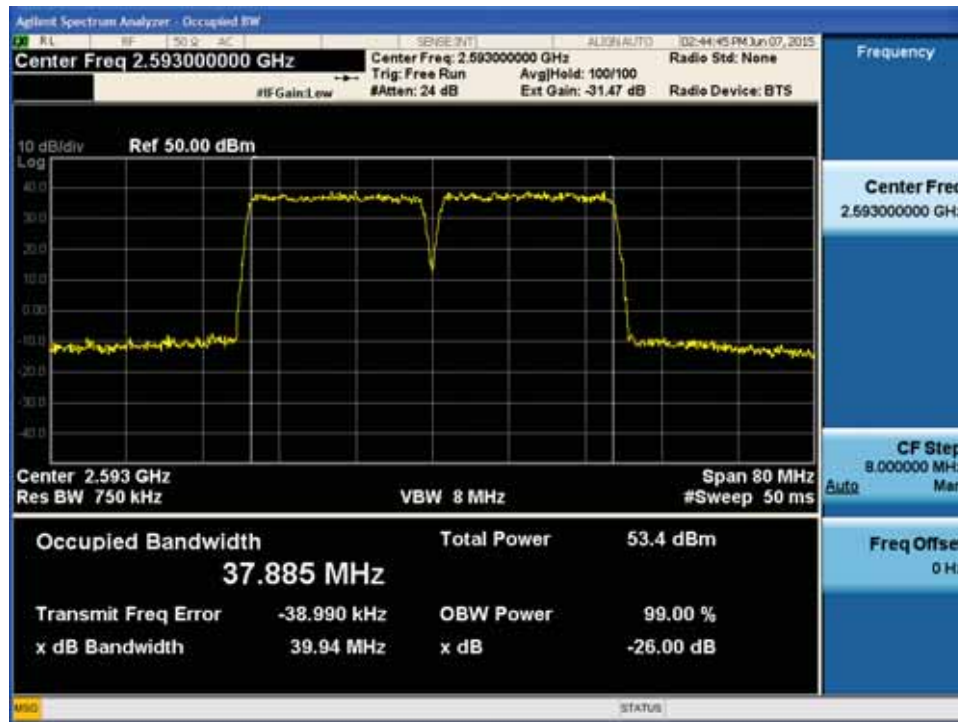
(16QAM High Channel)



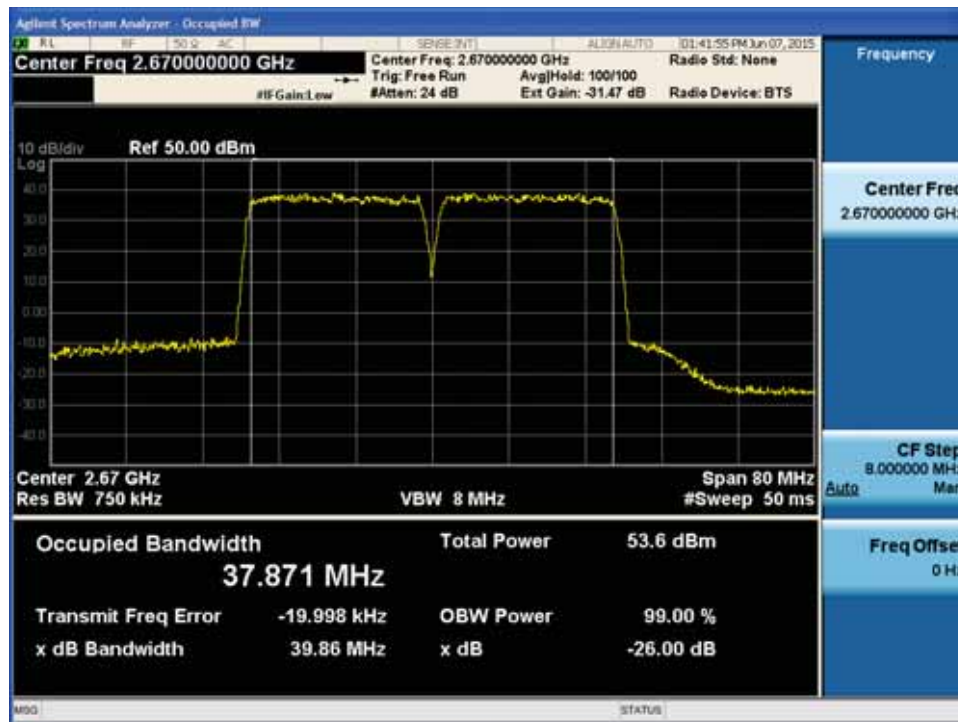
(64QAM Low Channel)



(64QAM Middle Channel)

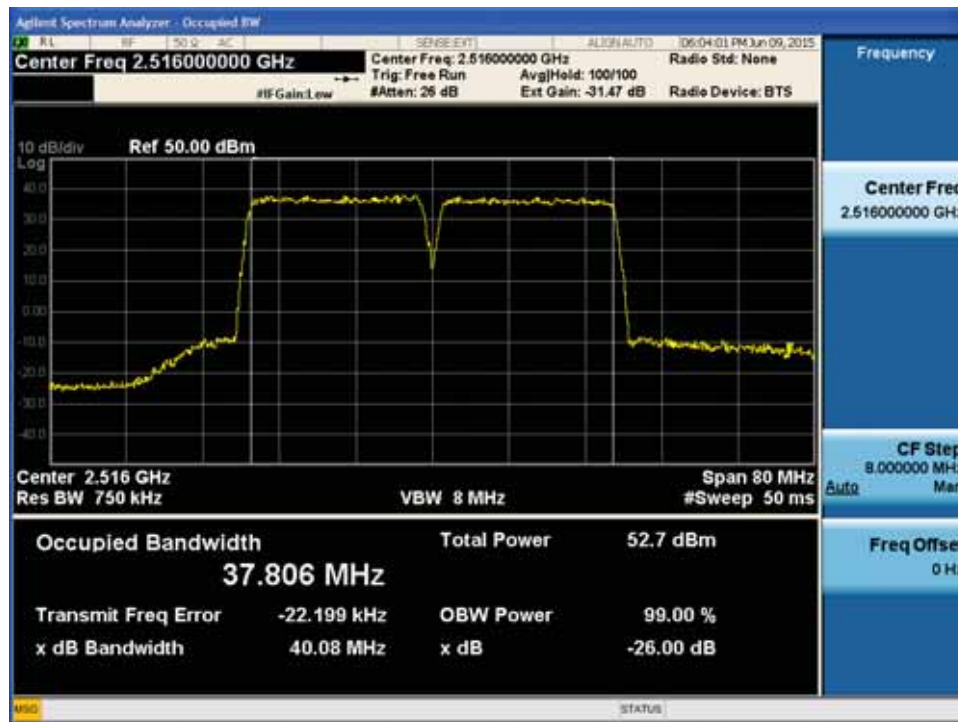


(64QAM High Channel)

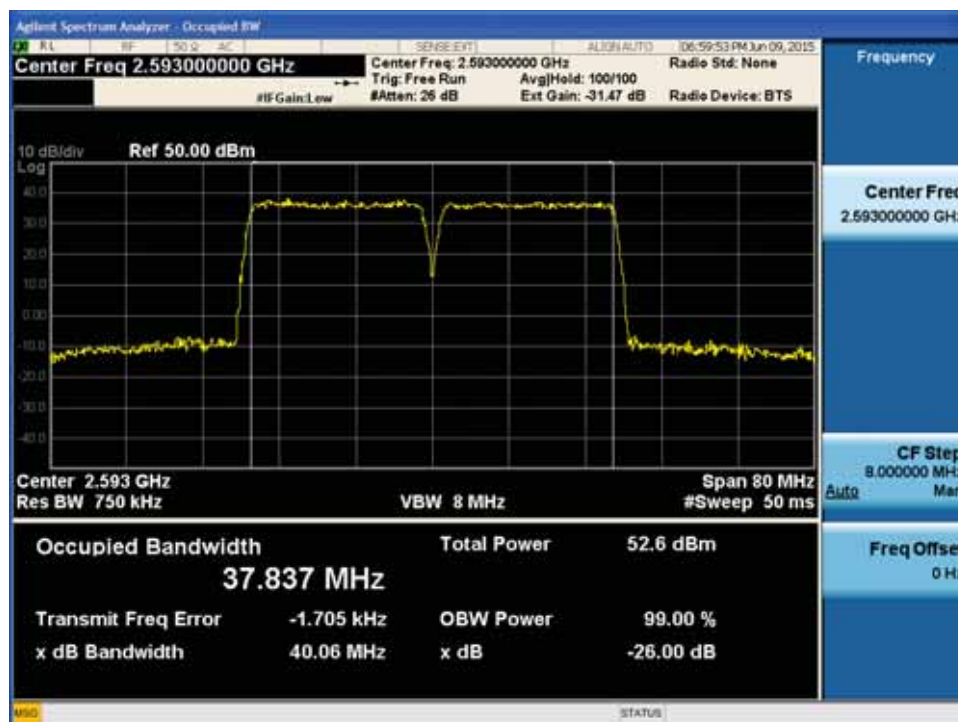


6.7.25. Test Plot at Output Port 5

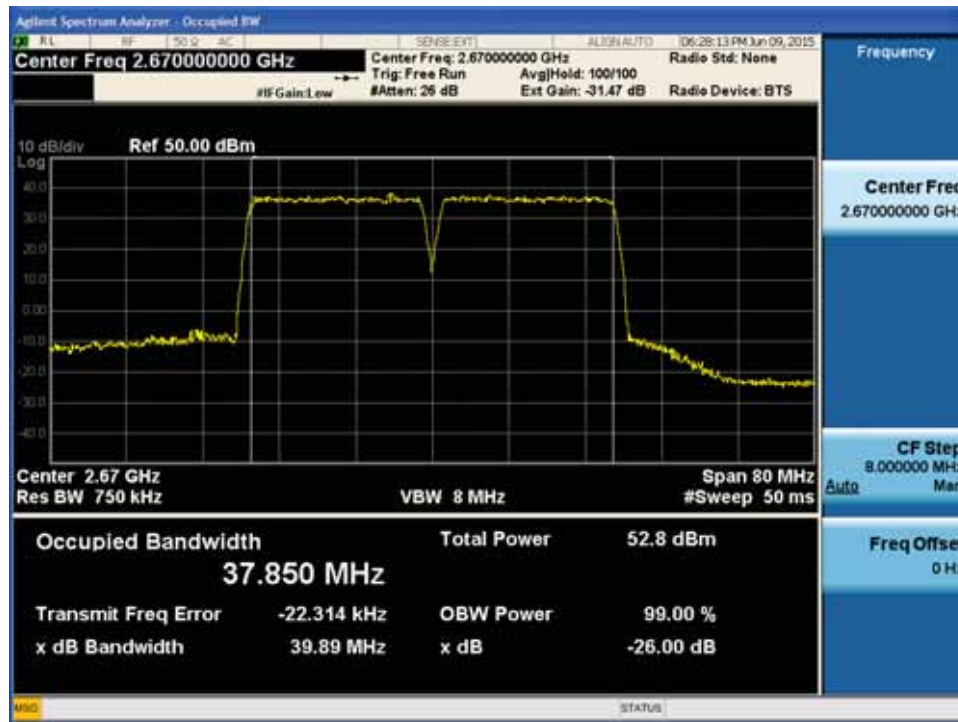
(QPSK Low Channel)



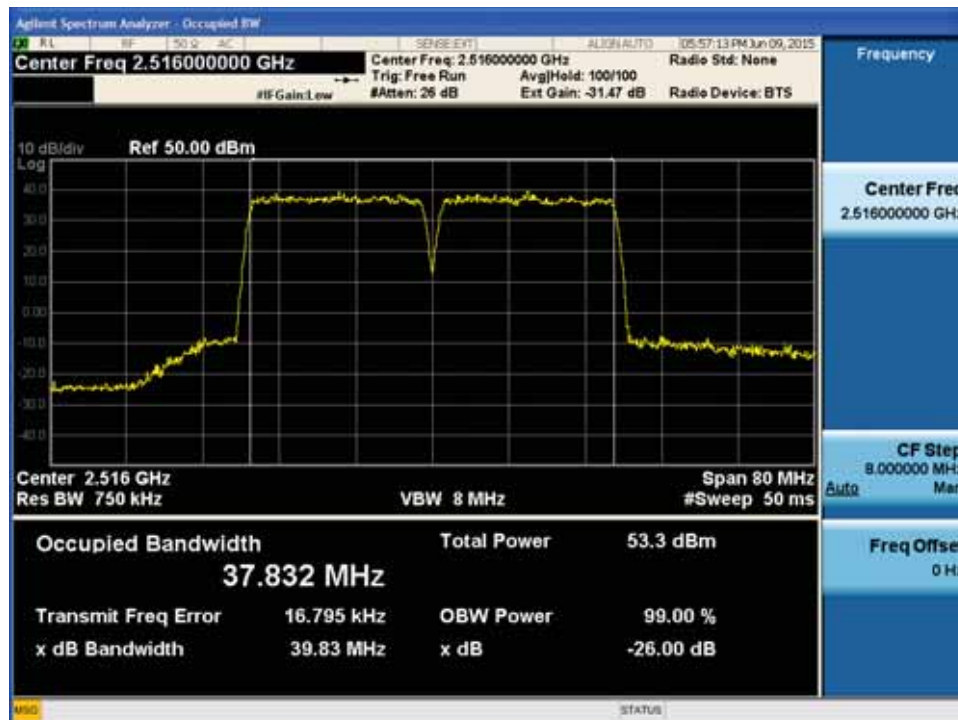
(QPSK Middle Channel)



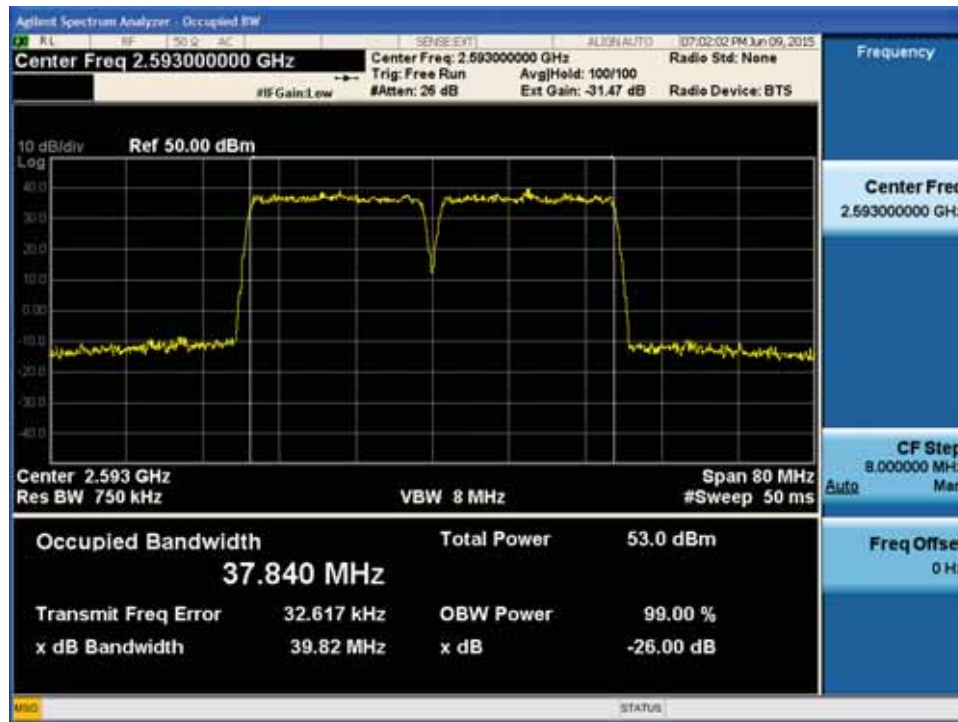
(QPSK High Channel)



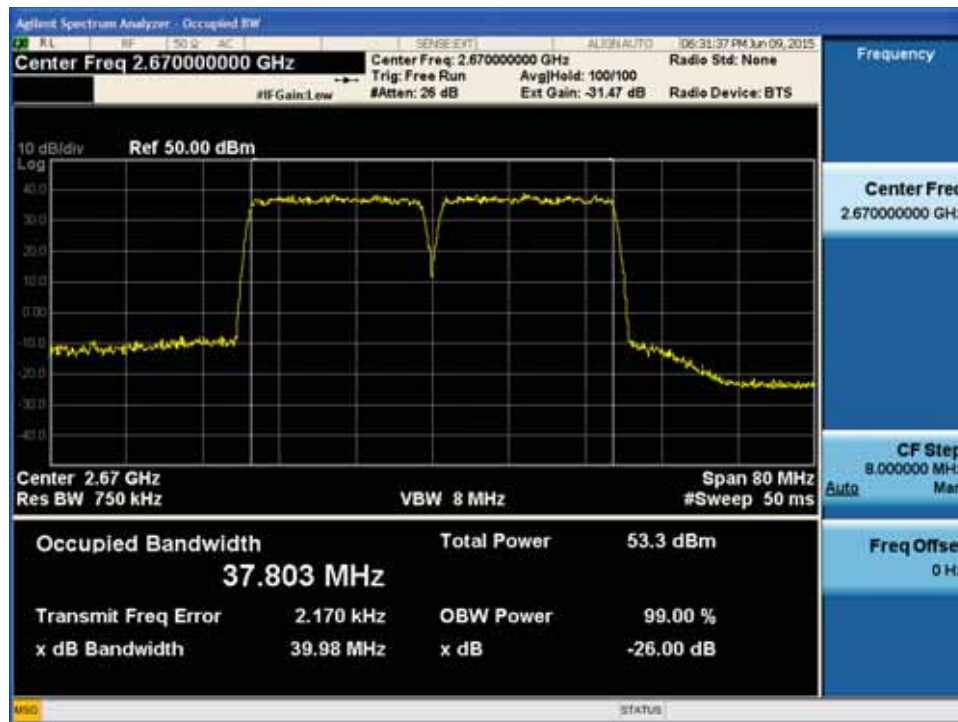
(16QAM Low Channel)



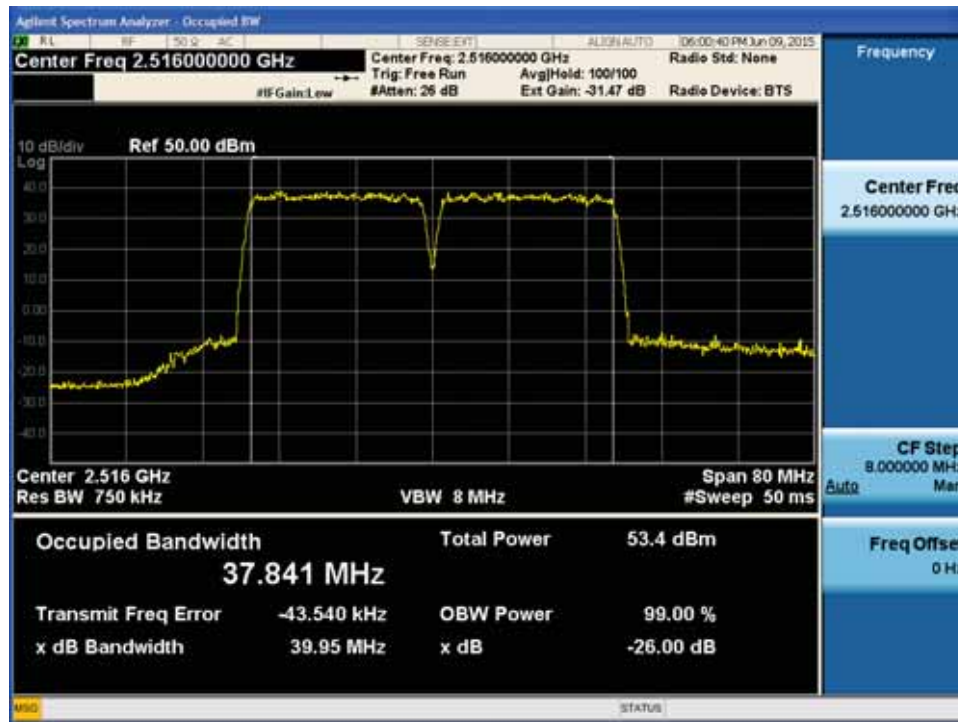
(16QAM Middle Channel)



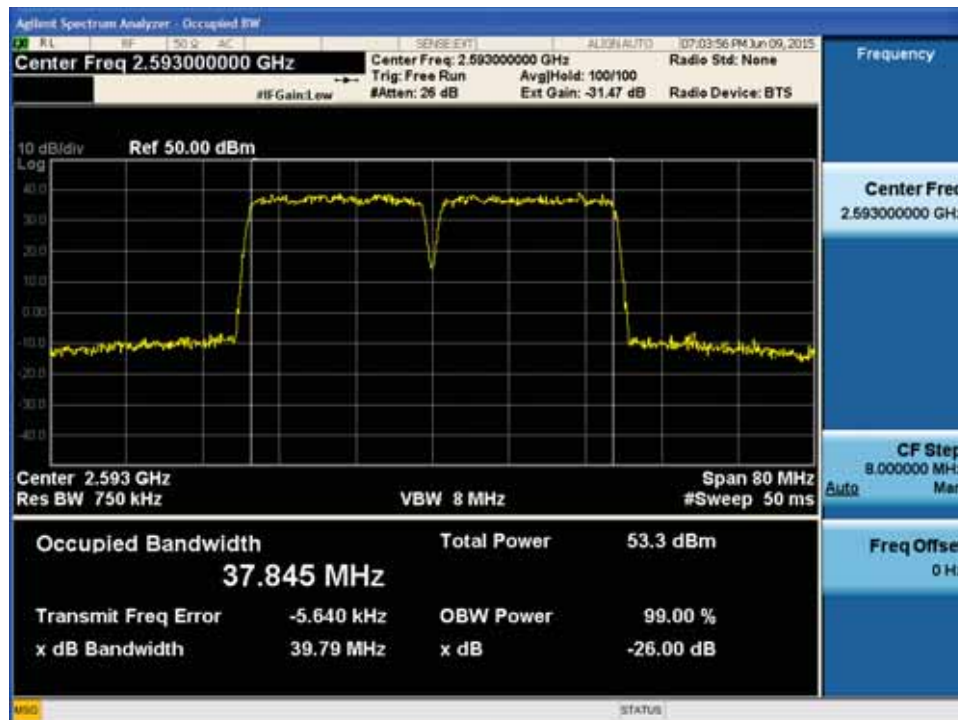
(16QAM High Channel)



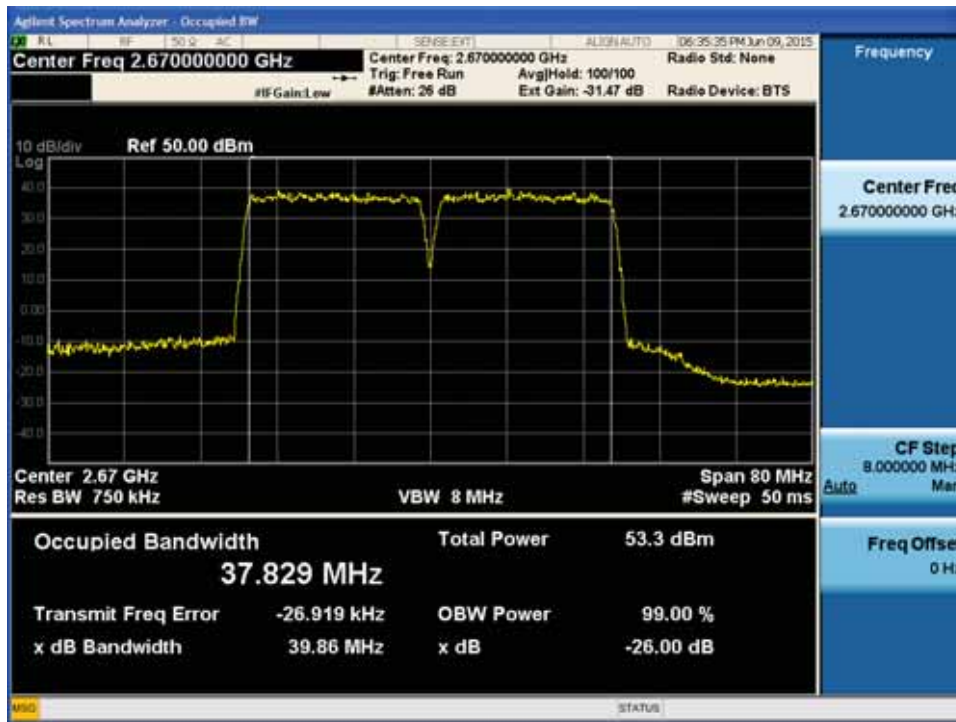
(64QAM Low Channel)



(64QAM Middle Channel)

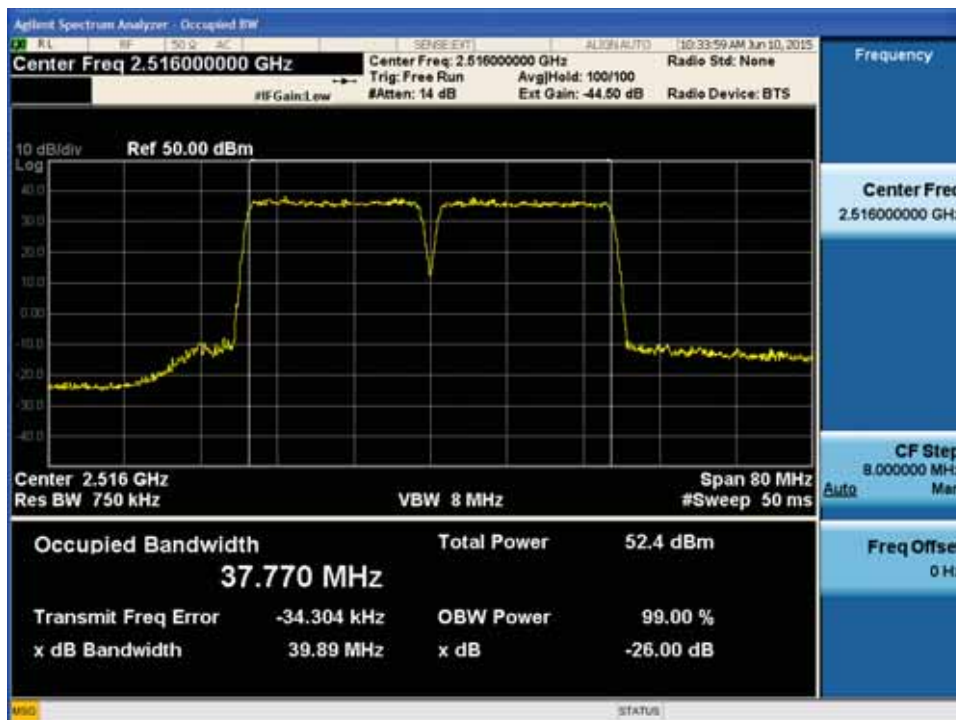


(64QAM High Channel)

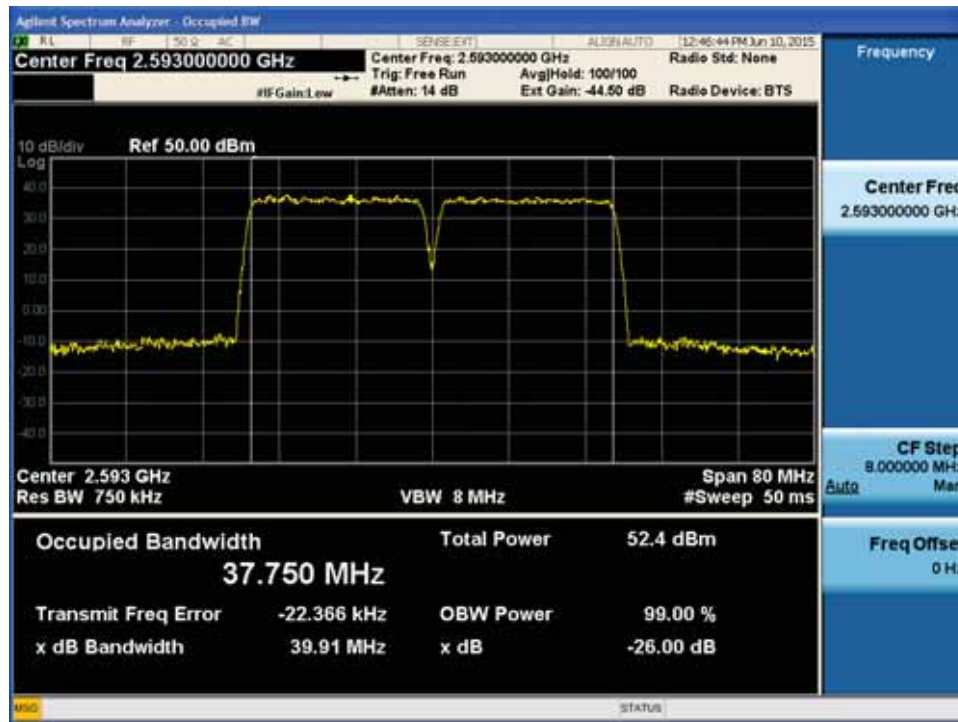


6.7.26. Test Plot at Output Port 6

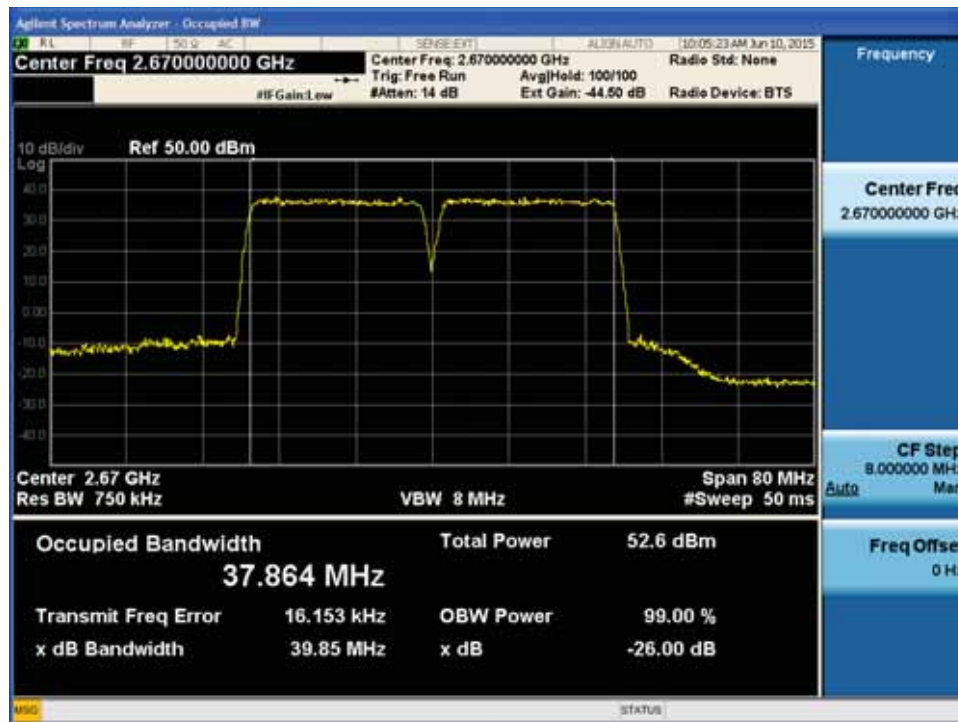
(QPSK Low Channel)



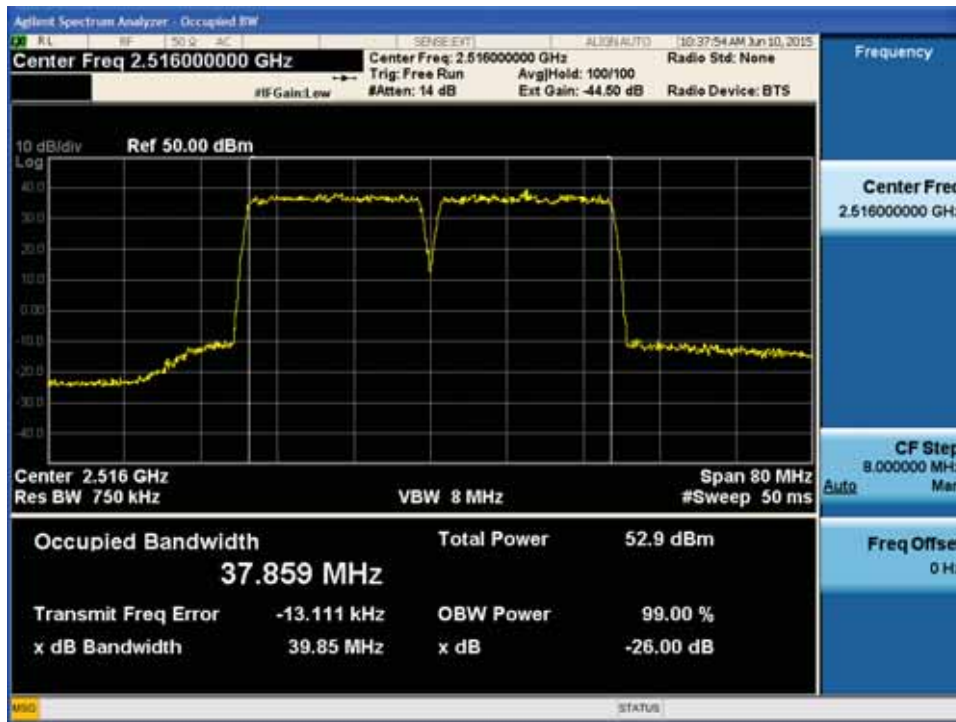
(QPSK Middle Channel)



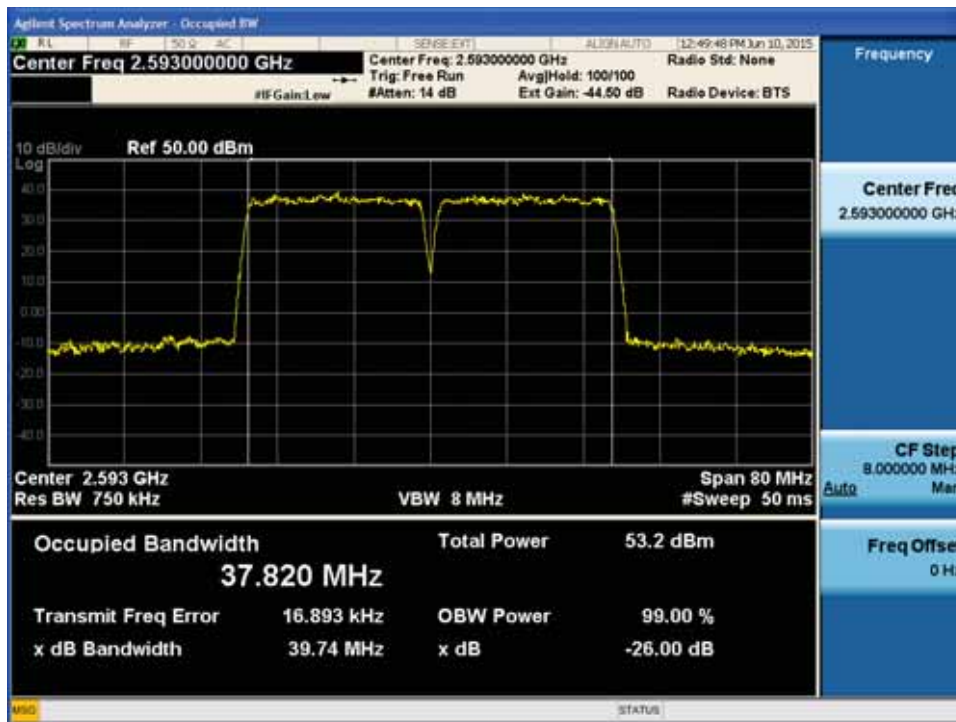
(QPSK High Channel)



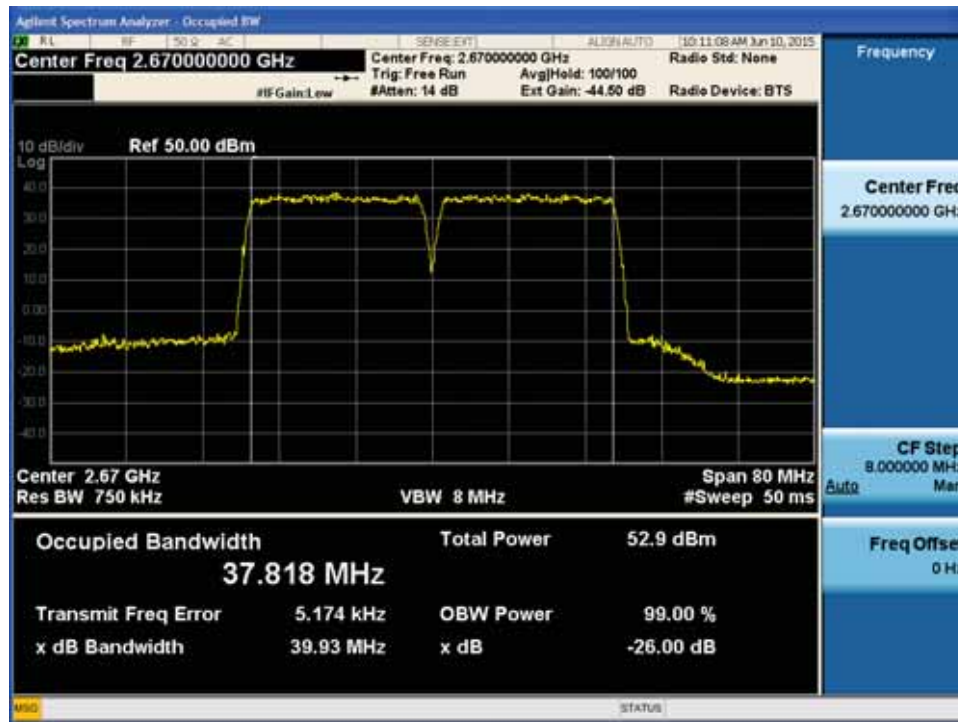
(16QAM Low Channel)



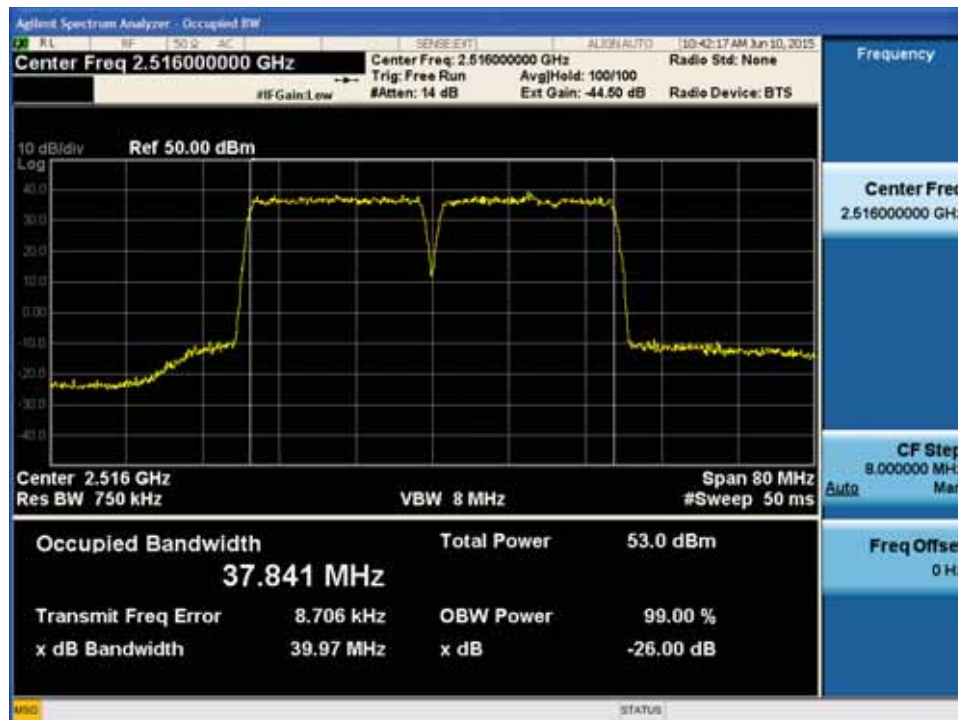
(16QAM Middle Channel)



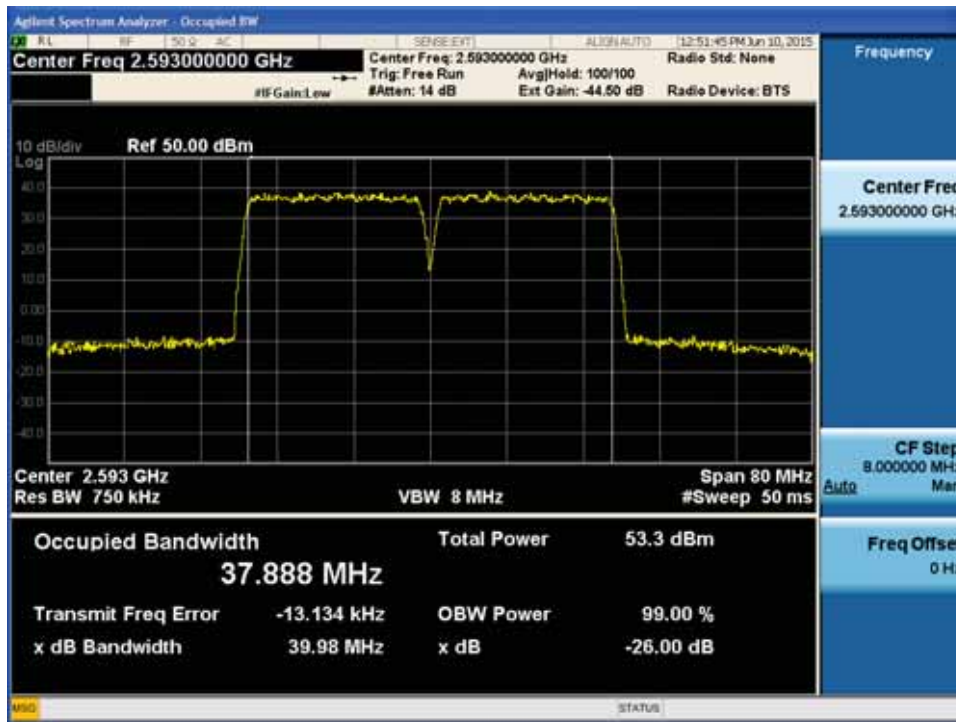
(16QAM High Channel)



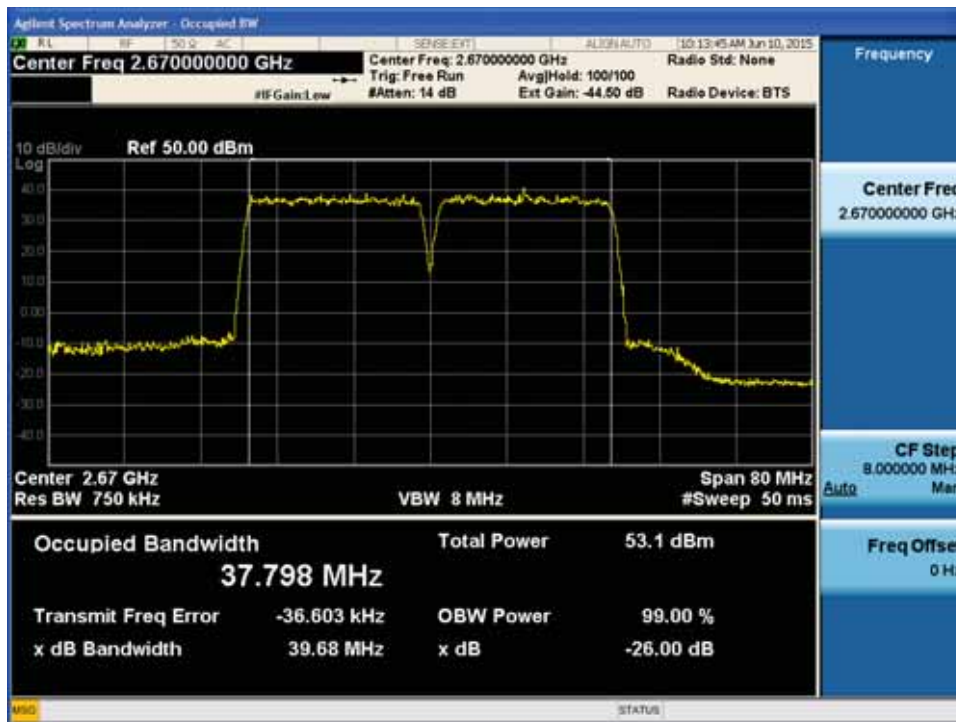
(64QAM Low Channel)



(64QAM Middle Channel)

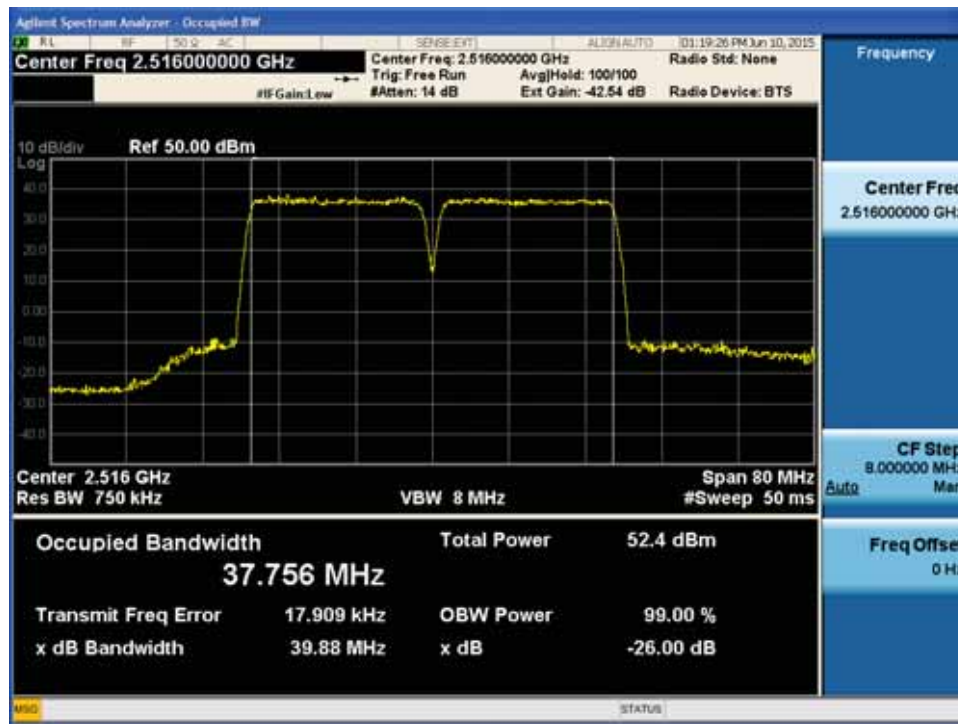


(64QAM High Channel)

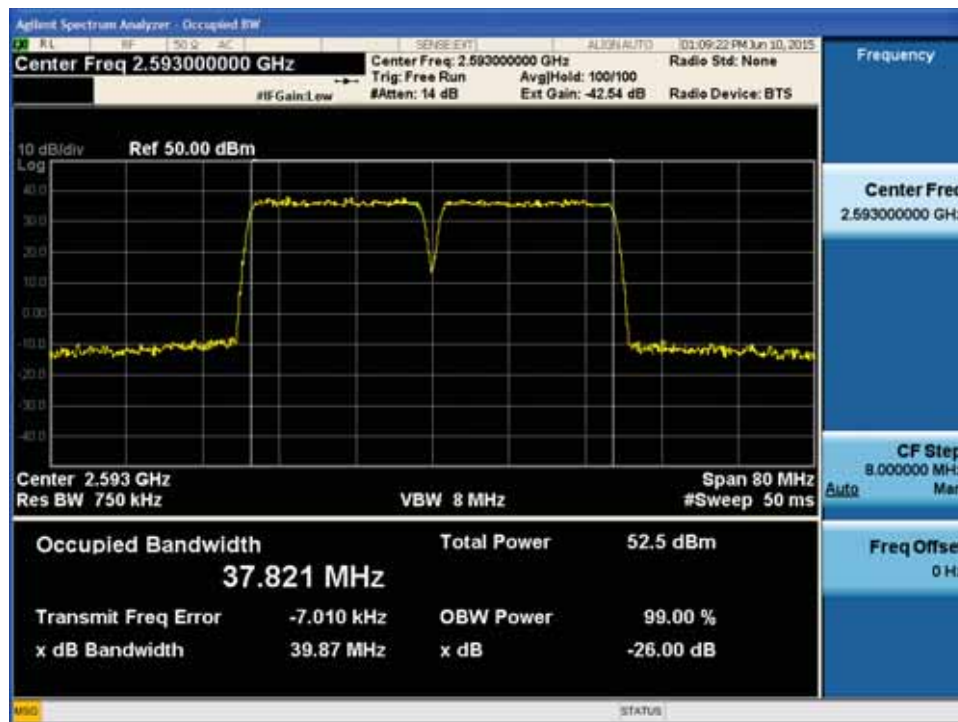


6.7.27. Test Plot at Output Port 7

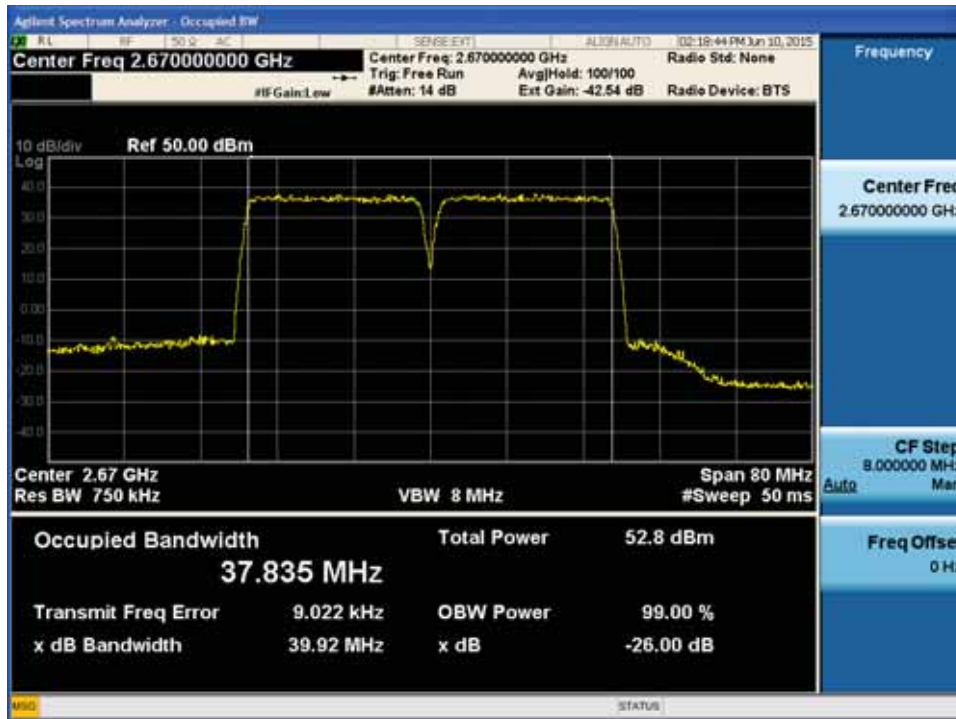
(QPSK Low Channel)



(QPSK Middle Channel)



(QPSK High Channel)



(16QAM Low Channel)

