

FCC REPORT

Certification

Applicant Name:
SAMSUNG Electronics Co.,Ltd.**Date of Issue:**
February 09, 2017**Address:**
129, Samsung-ro, Yeongtong-gu, Suwon-si,
Gyeonggi-do, 16677, Rep. of Korea**Test Site/Location:**
HCT CO., LTD.,
74, Seoicheon-ro 578beon-gil, Majang-myeon,
Icheon-si, Gyeonggi-do, 17383, Rep. of KOREA**Report No.:** HCT-R-1702-F001-2**HCT FRN:** 0005866421**FCC ID:** A3LRFD01F-26A**APPLICANT:** SAMSUNG Electronics Co.,Ltd.**FCC Model(s):** RFD01F-26A**EUT Type:** RRU (RFD01F)**Frequency of Operation:** 862 – 869 MHz (Tx) / 817 – 824 MHz (Rx)**TX Output Power :** CDMA 20 W / LTE 20 W**Emission Designator:**

Mode	Tx Frequency (MHz)	Emission Designator		
		BPSK (F9W)	QPSK (G7D)	16QAM/64QAM (W7D)
CDMA	862.90 ~ 868.25	1M25F9W	1M25G7D	1M25W7D
LTE - 3MHz Bandwidth	863.50 ~ 867.50	-	2M72G7D	2M72W7D
LTE - 5MHz Bandwidth	864.50 ~ 866.50	-	4M49G7D	4M52W7D

FCC Rule Part(s): FCC CFR 47 Part 2, 90**Data of Test:** December 29, 2016 ~ January 20, 2017**Engineering Statement:**

The measurements shown in this report were made in accordance with the procedures indicated, and the emissions from this equipment were found to be within the limits applicable. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them. It is further stated that upon the basis of the measurements made, the equipment tested is capable of operation in accordance with the requirements of FCC Part 27 of the FCC Rules under normal use and maintenance.



Report prepared by
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Test engineer of RF Team



Approved by
: Jong Seok Lee
Manager of RF Team

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Version

TEST REPORT NO.	DATE	DESCRIPTION
HCT-R-1702-F001	February 01, 2017	- First Approval Report
HCT-R-1702-F001-1	February 06, 2017	- Revise the test equipment calibration due date. - Add the MIMO conducted power data.
HCT-R-1702-F001-2	February 09, 2017	- Revise the MIMO conducted power table.

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1. GENERAL INFORMATION

1.1. CLIENT INFORMATION

Company	Samsung Electronics Co., Ltd.
Contact Point	129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea
Contact person	Name: Hwan Youl Kim / Principal Research Engineer E-mail : hwanyoul.kim@samsung.com

1.2. PRODUCT INFORMATION

EUT TYPE	RRU (RFD01F)				
SYSEY INPUT VOLTAGE	DC - 48 V				
EMISSION DESIGNATOR	Mode	Tx Frequency (MHz)	Emission Designator		
			BPSK (F9W)	QPSK (G7D)	16QAM/64QAM (W7D)
	CDMA	862.90 ~ 868.25	1M25F9W	1M25G7D	1M25W7D
	LTE 3MHz Bandwidth	863.50 ~ 867.50	-	2M72G7D	2M72W7D
	LTE 5MHz Bandwidth	864.50 ~ 866.50	-	4M49G7D	4M52W7D
OPERATING FREQUENCY	862 – 869 MHz (Tx) / 817 – 824 MHz (Rx)				
TX OUTPUT POWER	CDMA 20 W / LTE 20 W				
CHANNEL BANDWIDTH	Port 0 : LTE 3 MHz, LTE 5 MHz, CDMA Port 1, 2, 3 : LTE 3 MHz, LTE 5 MHz				
MEASUREMENT STANDARDS	ANSI/TIA-603-C-2004, KDB 971168 D01 v02r02, KDB 935210 D02 v03r02, KDB 935210 D05 v01r01				
MODULATION TYPE	BPSK, QPSK, 16QAM, 64QAM				
ANTENNA SPECIFICATION	Manufacturer: KMW Peak Gain : 8.2 dBd				

2. FACILITIES AND ACCREDITATIONS

2.1. FACILITIES

The SAC(Semi-Anechoic Chamber) and conducted measurement facility used to collect the radiated data are located at the 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383, Rep. of KOREA. The site is constructed in conformance with the requirements of ANSI C63.4. (Version :2014) and CISPR Publication 22. Detailed description of test facility was submitted to the Commission and accepted dated July 07, 2015 (Registration Number: 90661).

2.2. EQUIPMENT

Radiated emissions are measured with one or more of the following types of Linearly polarized antennas: tuned dipole, bi-conical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with pre-selectors and quasi-peak detectors are used to perform radiated measurements.

Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.

All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

3. TEST SPECIFICATIONS

3.1. STANDARDS

The following tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with FCC Part 2, Part 90

SECTION	TEST ITEMS	RESULTS
§2.1046, §90.635	Conducted Output Power	Compliant
§2.1049	Occupied Bandwidth	Compliant
§2.1051, §90.691	Spurious Emissions at Antenna Terminals	Compliant
§2.1051, §90.691	Band edge	Compliant
§2.1053, §90.691	Radiated Spurious Emissions.	Compliant
§2.1055(a)(1), §90.213	Frequency Stability over Temperature variation	Compliant
§2.1055(d), §90.213	Frequency Stability over Voltage variation	Compliant

3.2. MODE OF OPERATION DURING THE TEST

The EUT is operated in a manner representative of the typical usage of the equipment.

During all testing, system components were manipulated within the confines of typical usage to maximize each emission. All Modulation (BPSK, QPSK, 16QAM and 64QAM) modes were tested.

3.3. MAXIMUM MEASUREMENT UNCERTAINTY

The value of the measurement uncertainty for the measurement of each parameter.

Coverage factor $k = 2$, Confidence levels of 95 %

Description	Condition	Uncertainty
Conducted RF Output Power	-	± 0.72 dB
Occupied Bandwidth	OBW ≤ 20 MHz	± 52 kHz
Passband Gain and Bandwidth & Out of Band Rejection	Gain 20 dB bandwidth	± 0.89 dB ± 0.58 MHz
Spurious Emissions at Antenna Terminals	-	± 1.08 dB
Radiated Spurious Emissions	$f \leq 1$ GHz $f > 1$ GHz	± 4.80 dB ± 6.07 dB
Frequency Stability	-	$\pm 1.22 \times 10^{-6}$

3.4. STANDARDS ENVIRONMENTAL TEST CONDITIONS

Temperature :	+ 15 °C to + 35 °C
Relative humidity:	30 % to 60 %
Air pressure	860 mbar to 1 060 mbar

4. TEST EQUIPMENT

Manufacturer	Model / Equipment	Calibration Date	Calibration Interval	Serial No.
Agilent	N9030A / Signal Analyzer	11/30/2016	Annual	MY49431210
Weinschel	67-30-33 / Fixed Attenuator	02/16/2016	Annual	CC7264
Weinschel	67-30-33 / Fixed Attenuator	02/16/2016	Annual	BU5347
Weinschel	67-30-33 / Fixed Attenuator	09/22/2016	Annual	N/A
Weinschel	67-30-33 / Fixed Attenuator	09/22/2016	Annual	N/A
Rohde&Schwarz	ATT / 10dB Attenuator	05/17/2016	Annual	N/A
KIKUSUI	DC Power Supply / PWR800L	12/29/2016	Annual	ML002296
Sorensen	DC Power Supply / XFR 60-20	02/27/2016	Annual	1045A1016
NANGYEUL CO., LTD.	NY-THR18750 / Temperature and Humidity Chamber	10/21/2016	Annual	NY-2009012201A
Audix	AM4000 / Antenna Position Tower	N/A	N/A	N/A
Audix	Turn Table	N/A	N/A	N/A
Audix	EM1000 / Controller	N/A	N/A	060520
Rohde & Schwarz	Loop Antenna	02/23/2016	Biennial	1513-175
Rohde&Schwarz	Loop Antenna	02/23/2016	Biennial	1513-175
Schwarzbeck	VULB 9168 / Hybrid Antenna	04/15/2015	Biennial	255
Schwarzbeck	BBHA 9120D / Horn Antenna	05/07/2015	Biennial	937
Rohde & Schwarz	FSP / Spectrum Analyzer	09/10/2016	Annual	100688
Rohde & Schwarz	FSV40-N / Spectrum Analyzer	09/23/2016	Annual	101068-SZ
Wainwright Instruments	WHKX10-900-1000-15000-40SS	08/04/2016	Annual	5
CERNEX	CBLU1183540 / Power Amplifier	02/01/2016	Annual	24614
CERNEX	CBL06185030 / Power Amplifier	02/01/2016	Annual	24615

5. CONDUCTED OUTPUT POWER

Test Requirements:

§ 2.1046 Measurements required: RF power output:

- (a) For transmitters other than single sideband, independent sideband and controlled carrier radiotelephone, power output shall be measured at the RF output terminals when the transmitter is adjusted in accordance with the tune-up procedure to give the values of current and voltage on the circuit elements specified in § 2.1033(c)(8). The electrical characteristics of the radio frequency load attached to the output terminals when this test is made shall be stated.
- (b) For single sideband, independent sideband, and single channel, controlled carrier radio telephone transmitters, the procedure specified in paragraph (a) of this section shall be employed and, in addition, the transmitter shall be modulated during the test as specified and as applicable in § 2.1046 (b) (1-5). In all tests, the input level of the modulating signal shall be such as to develop rated peak envelope power or carrier power, as appropriate, for the transmitter.
- (c) For measurements conducted pursuant to paragraphs (a) and (b) of this section, all calculations and methods used by the applicant for determining carrier power or peak envelope power, as appropriate, on the basis of measured power in the radio frequency load attached to the transmitter output terminals shall be shown. Under the test conditions specified, no components of the emission spectrum shall exceed the limits specified in the applicable rule parts as necessary for meeting occupied bandwidth or emission limitations.

§90.635 Limitations on power and antenna height.

- (a) The effective radiated power and antenna height for base stations may not exceed 1 kilowatt (30 dBw) and 304 m. (1,000 ft.) above average terrain (AAT), respectively, or the equivalent thereof as determined from the Table. These are maximum values, and applicants will be required to justify power levels and antenna heights requested.
- (b) The maximum output power of the transmitter for mobile stations is 100 watts (20 dBw).

Table—Equivalent Power and Antenna Heights for Base Stations in the 851-869 MHz and 935-940 MHz Bands Which Have a Requirement for a 32 km (20 mi) Service Area Radius

Antenna height (ATT) meters (feet)	Effective radiated power (watts) ^{1 2 4}
Above 1,372 (4,500)	65
Above 1,220 (4,000) to 1,372 (4,500)	70
Above 1,067 (3,500) to 1,220 (4,000)	75
Above 915 (3,000) to 1,067 (3,500)	100
Above 763 (2,500) to 915 (3,000)	140

Above 610 (2,000) to 763 (2,500)	200
Above 458 (1,500) to 610 (2,000)	350
Above 305 (1,000) to 458 (1,500)	600
Up to 305 (1,000)	³ 1,000

Test Procedures:

According to FCC §2.1046 (a), for transmitters other than single sideband, independent sideband and controlled carrier radiotelephone, power output shall be measured at the RF output terminals when the transmitter is adjusted in accordance with the tune-up procedure to give the values of current and voltage on the circuit elements specified in § 2.1033(c). The electrical characteristics of the radio frequency load attached to the output terminals when this test is made shall be stated.

- 1) The radio frequency load attached to the EUT antenna terminal was 50 Ohm. The loss of the cables the test system is calibrated to correct the reading.
- 2) The spectrum analyzer was set to RMS Detector function and Average mode.
- 3) The resolution bandwidth of the spectrum analyzer was comparable to the emission bandwidth.
- 4) The conducted emission level is measured at each antenna port and then summed mathematically to determine the total emission level from the device. (500m W = 250mW x 2 Ports)

Note:

Maximum ERP(= 44.01 dBm + 8.20 dBd = 52.21 dBm) is sufficient level to pass the limit.

Test Results:

LTE 3 MHz

Test Data at Downlink Port 0

Frequency (MHz)	Output Power					
	QPSK		16QAM		64QAM	
	dBm	W	dBm	W	dBm	W
863.50	42.39	17.338	42.24	16.768	42.34	17.142
865.50	42.37	17.260	42.46	17.626	42.52	17.879
867.50	42.65	18.403	42.68	18.527	42.67	18.488

Test Data at Downlink Port 1

Frequency (MHz)	Output Power					
	QPSK		16QAM		64QAM	
	dBm	W	dBm	W	dBm	W
863.50	42.85	19.280	43.10	20.418	43.21	20.941
865.50	42.39	17.321	42.42	17.439	42.40	17.381
867.50	42.21	16.644	42.32	17.064	42.26	16.834

Test Data at Downlink Port 2

Frequency (MHz)	Output Power					
	QPSK		16QAM		64QAM	
	dBm	W	dBm	W	dBm	W
863.50	44.01	25.173	43.83	24.171	43.76	23.763
865.50	43.59	22.871	43.56	22.686	43.56	22.688
867.50	43.42	21.967	43.43	22.034	43.41	21.952

Test Data at Downlink Port 3

Frequency (MHz)	Output Power					
	QPSK		16QAM		64QAM	
	dBm	W	dBm	W	dBm	W
863.50	43.52	22.510	43.46	22.185	43.46	22.204
865.50	43.29	21.327	43.21	20.949	43.23	21.043
867.50	42.94	19.669	43.02	20.041	43.03	20.097

Sum Data of Port 0, Port 1, Port 2 and Port 3

Frequency (MHz)	Output Power		
	QPSK	16QAM	64QAM
	W	W	W
863.50	84.301	83.542	84.050
865.50	78.779	78.700	78.991
867.50	76.683	77.666	77.371

LTE 5 MHz

Test Data at Downlink Port 0

Frequency (MHz)	Output Power					
	QPSK		16QAM		64QAM	
	dBm	W	dBm	W	dBm	W
864.50	43.00	19.956	42.97	19.837	42.91	19.563
865.50	42.73	18.757	42.74	18.812	42.74	18.781
866.50	42.57	18.054	42.60	18.177	42.46	17.620

Test Data at Downlink Port 1

Frequency (MHz)	Output Power					
	QPSK		16QAM		64QAM	
	dBm	W	dBm	W	dBm	W
864.50	42.52	17.881	42.46	17.627	42.34	17.132
865.50	42.16	16.434	42.14	16.355	43.22	20.991
866.50	42.16	16.449	42.18	16.514	42.17	16.489

Test Data at Downlink Port 2

Frequency (MHz)	Output Power					
	QPSK		16QAM		64QAM	
	dBm	W	dBm	W	dBm	W
864.50	43.77	23.843	43.68	23.328	43.60	22.884
865.50	43.57	22.774	43.57	22.752	43.51	22.459
866.50	43.42	21.953	43.33	21.516	43.36	21.667

Test Data at Downlink Port 3

Frequency (MHz)	Output Power					
	QPSK		16QAM		64QAM	
	dBm	W	dBm	W	dBm	W
864.50	43.39	21.810	43.38	21.754	43.31	21.428
865.50	43.25	21.154	43.22	20.995	43.23	21.049
866.50	43.16	20.704	43.16	20.710	43.12	20.498

Sum Data of Port 0, Port 1, Port 2 and Port 3

Frequency (MHz)	Output Power		
	QPSK	16QAM	64QAM
	W	W	W
863.50	83.490	82.546	81.007
865.50	79.119	78.914	83.280
867.50	77.160	76.917	76.274

CDMA

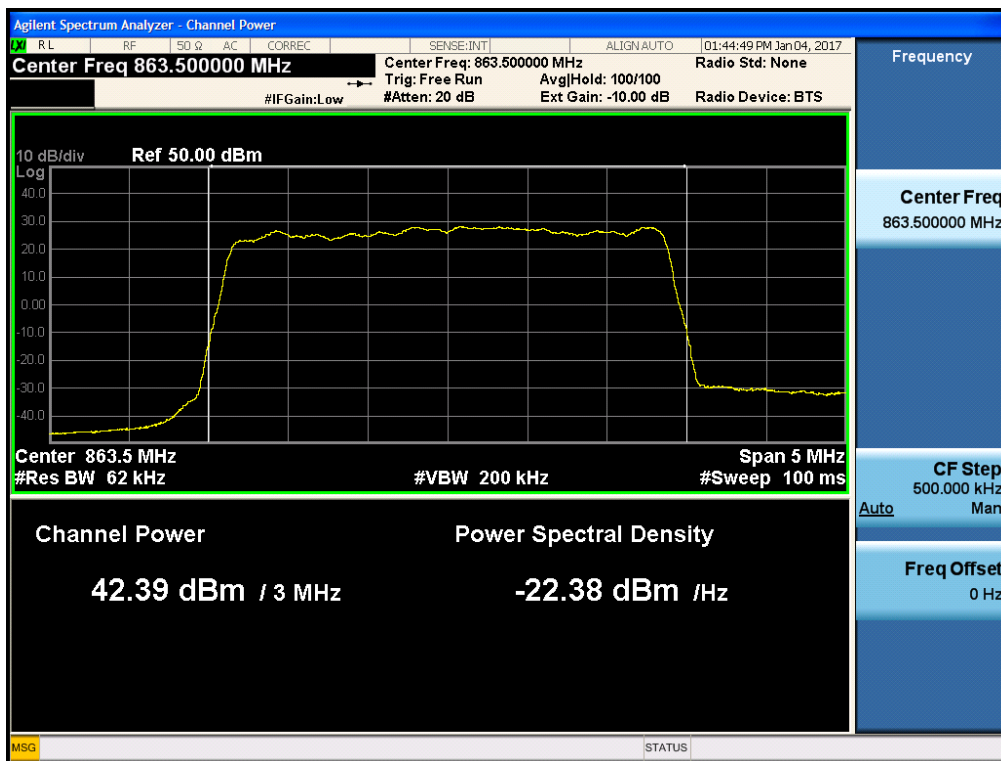
Test Data at Downlink Port 0

Frequency (MHz)	Output Power					
	QPSK		16QAM		BPSK	
	dBm	W	dBm	W	dBm	W
862.900	42.94	19.671	43.66	23.201	42.90	19.494
865.575	42.49	17.753	43.23	21.060	42.51	17.826
868.250	42.47	17.651	43.25	21.133	42.43	17.517

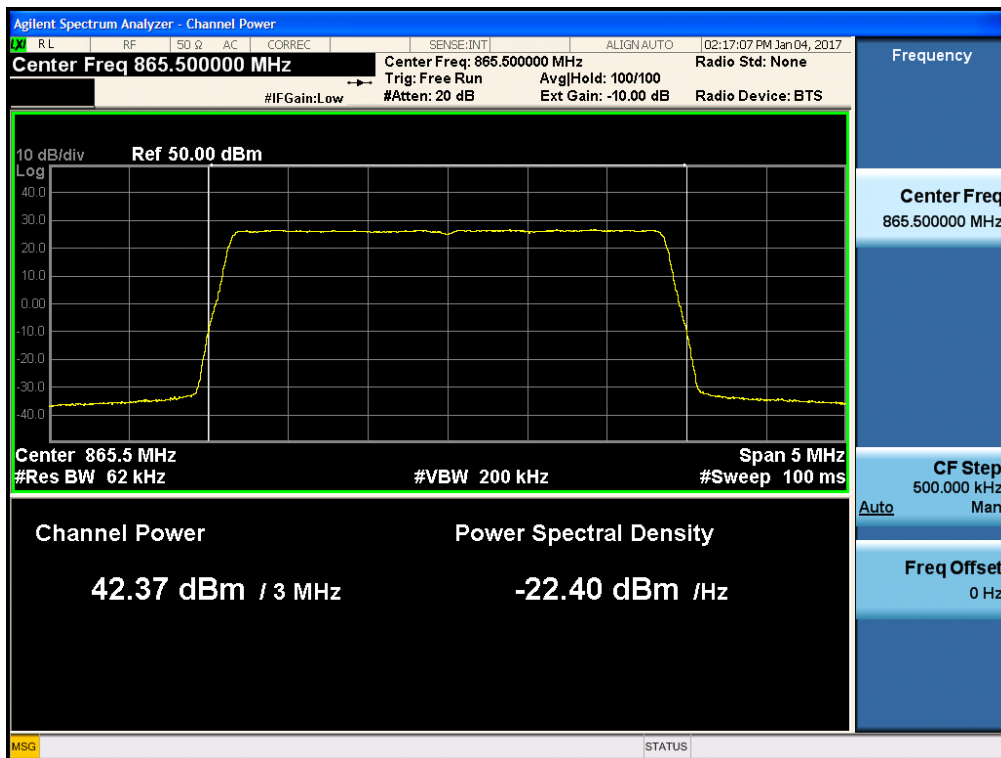
LTE 3 MHz

Plot Data for Output Port 0 (Conducted Output Power)

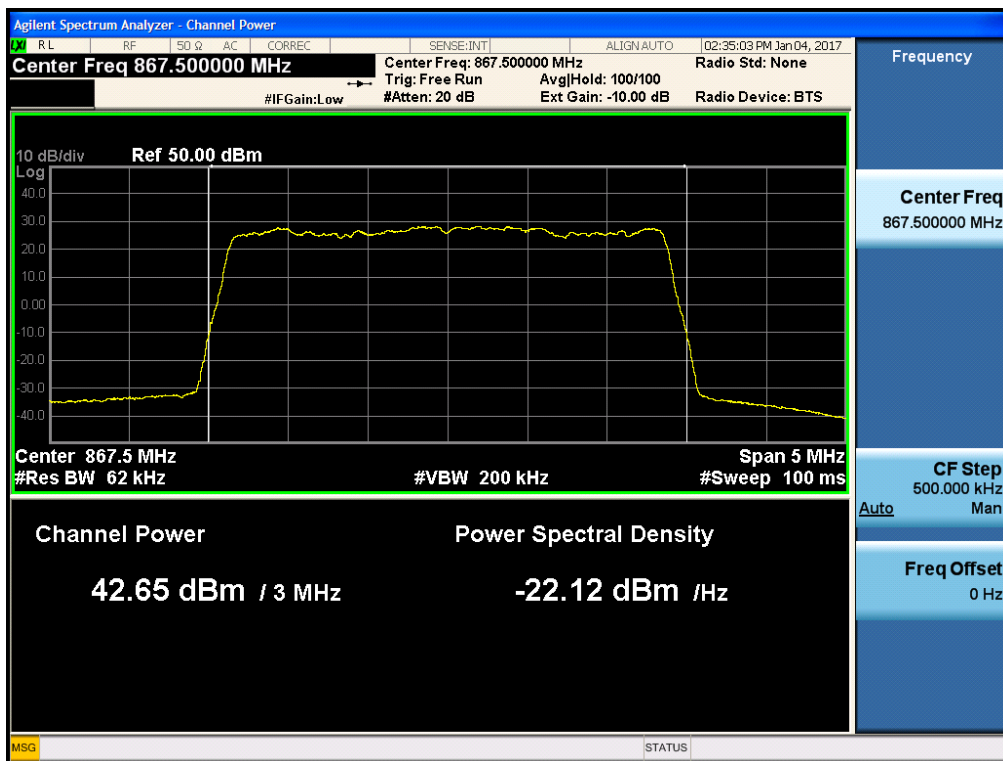
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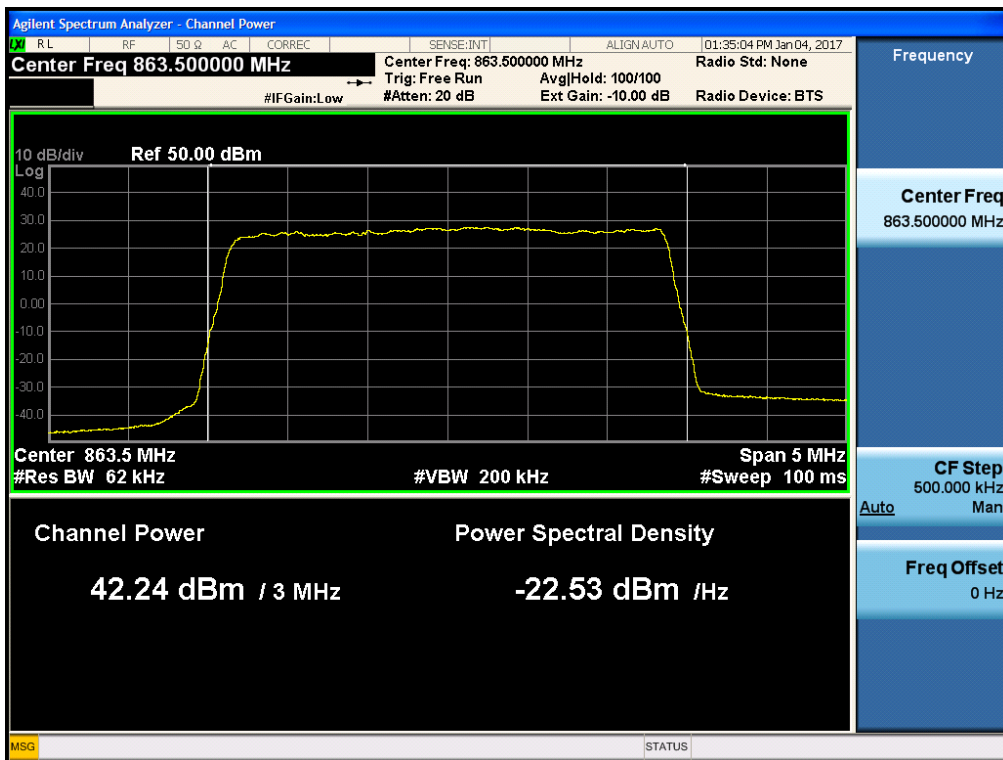
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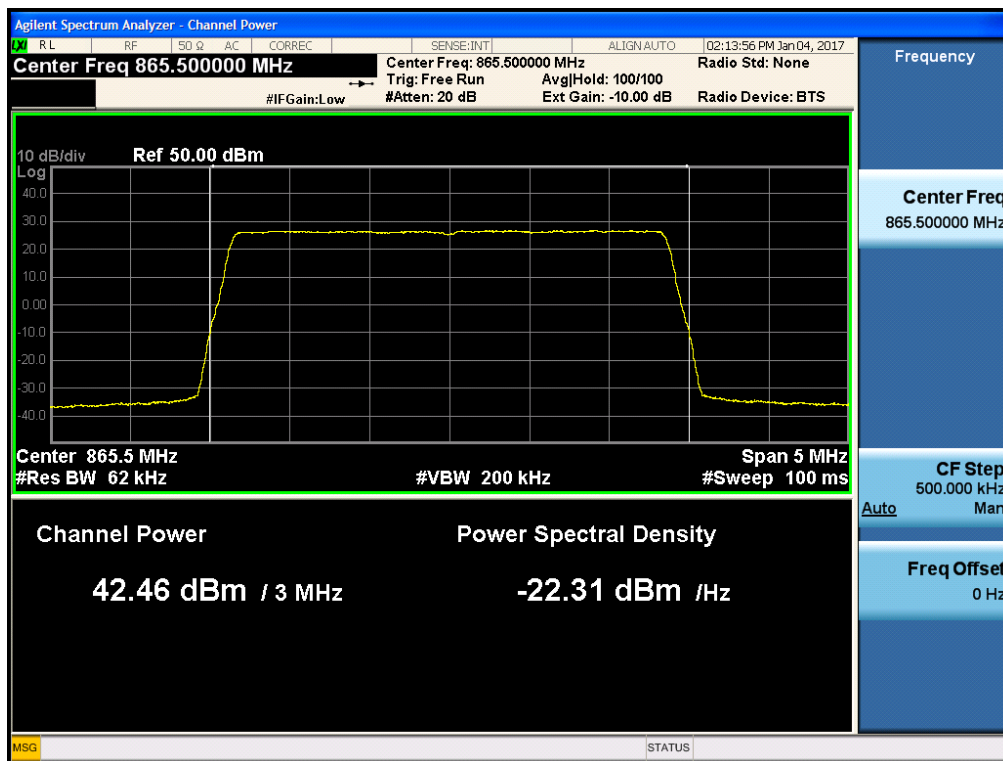
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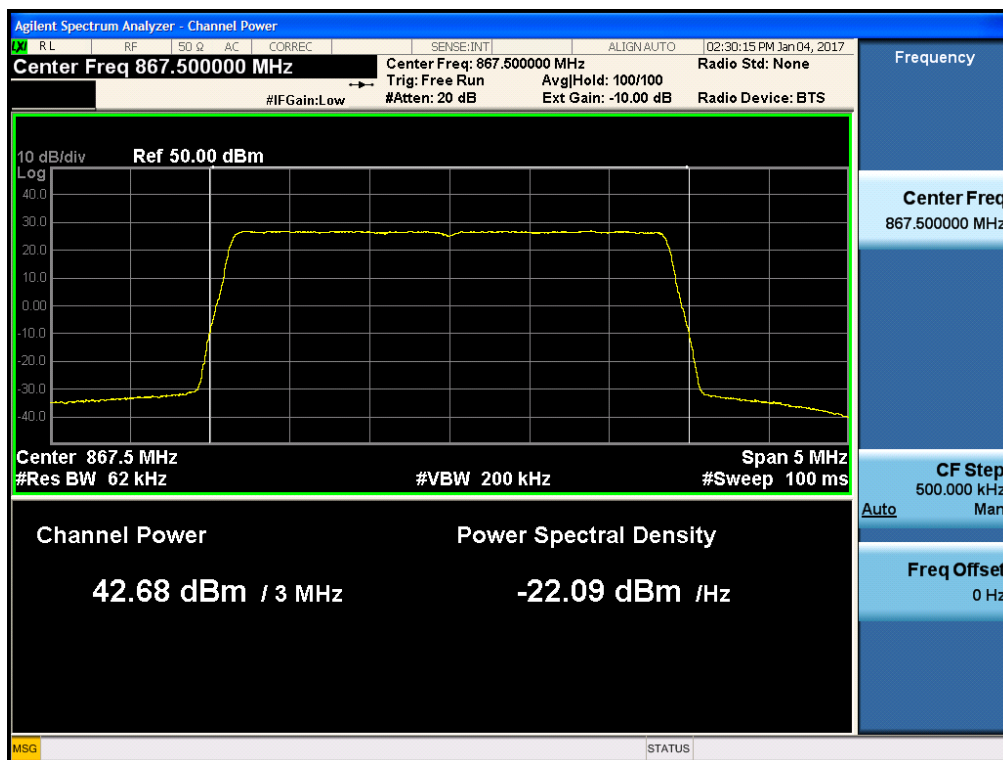
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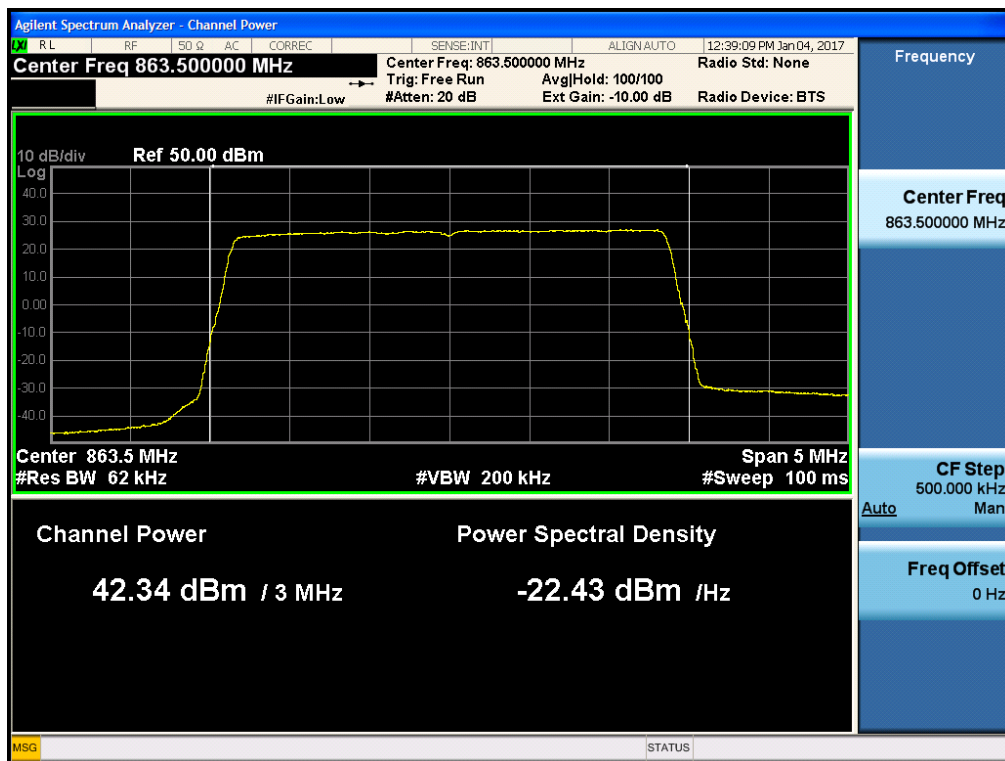
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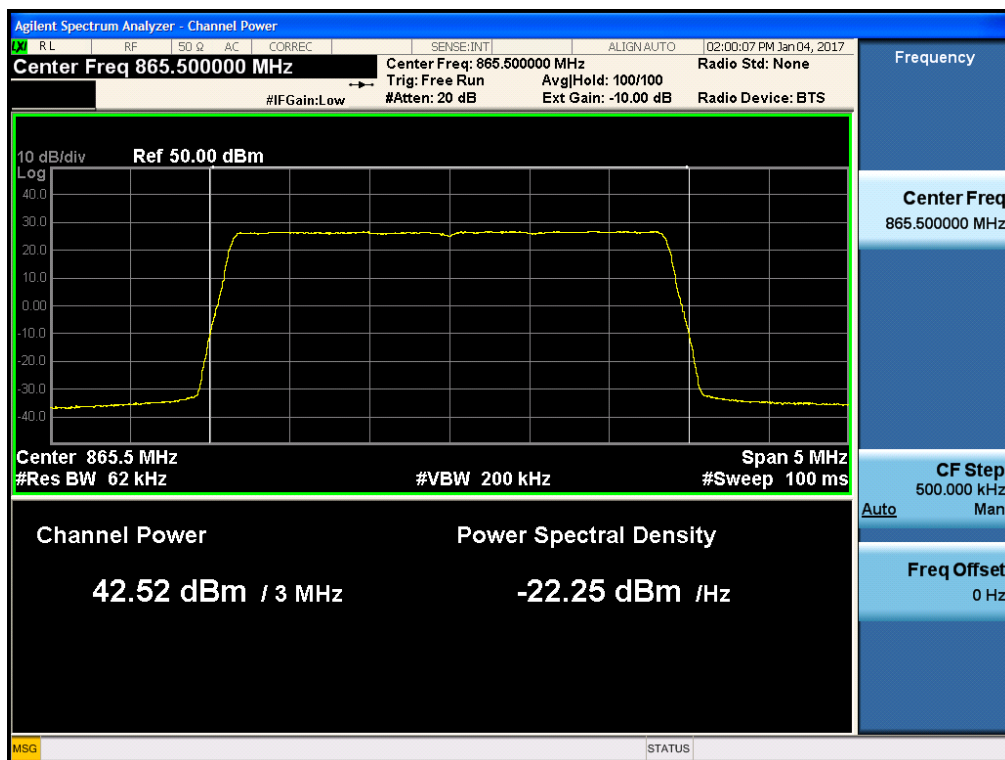
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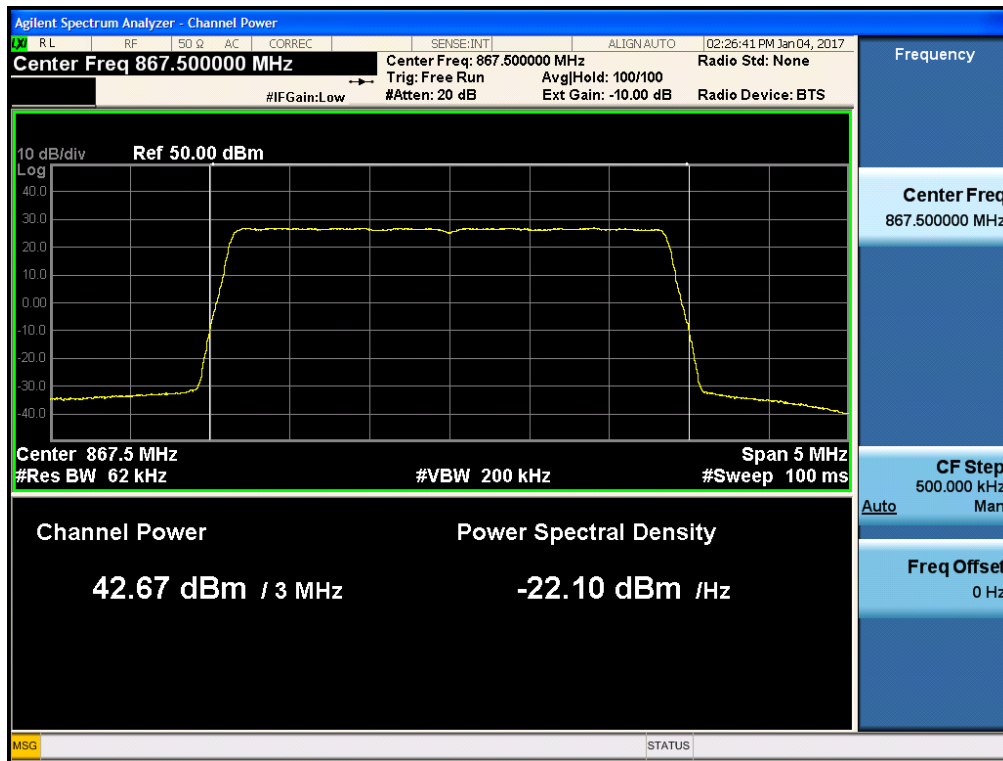
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(64QAM Middle Channel)

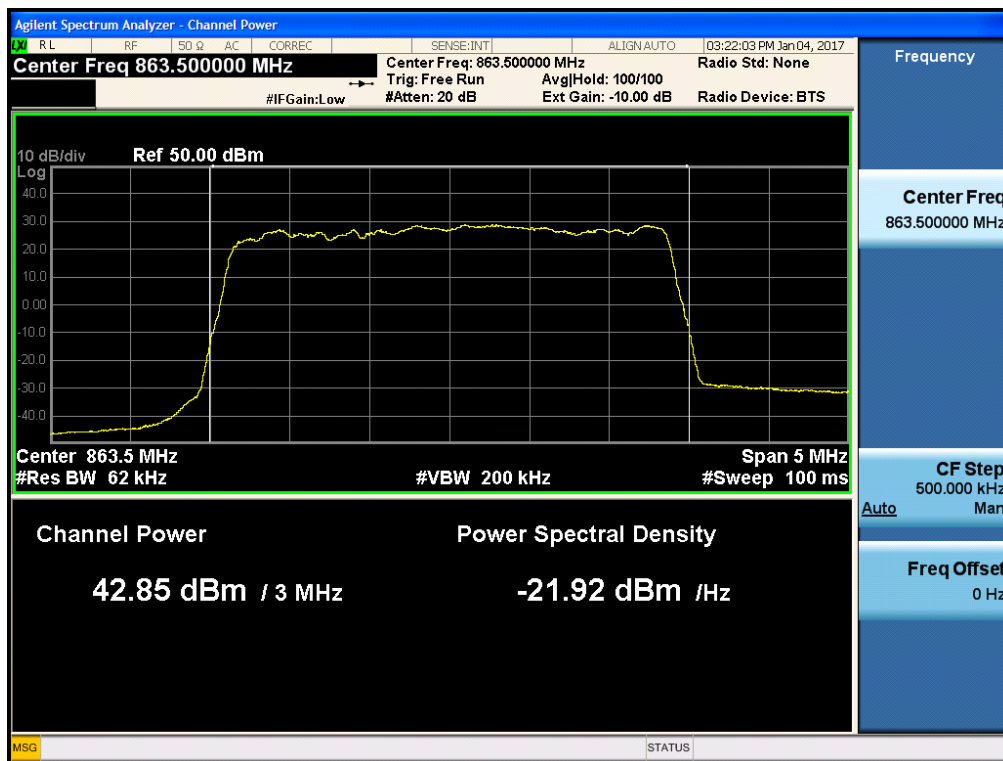


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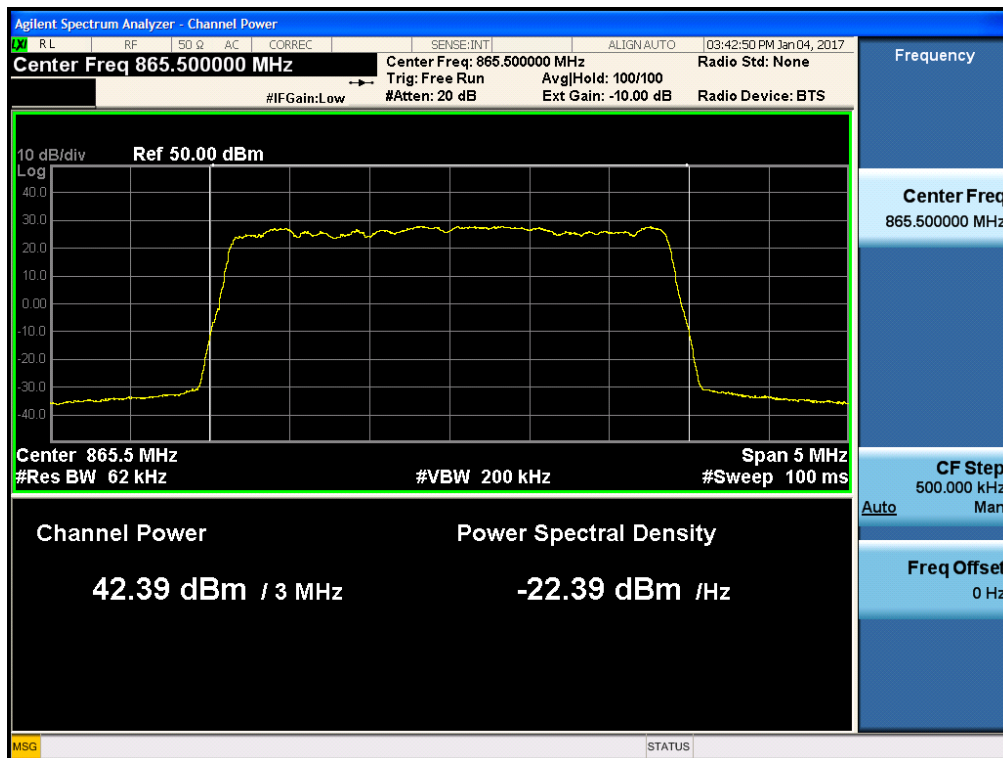


Plot Data for Output Port 1 (Conducted Output Power)

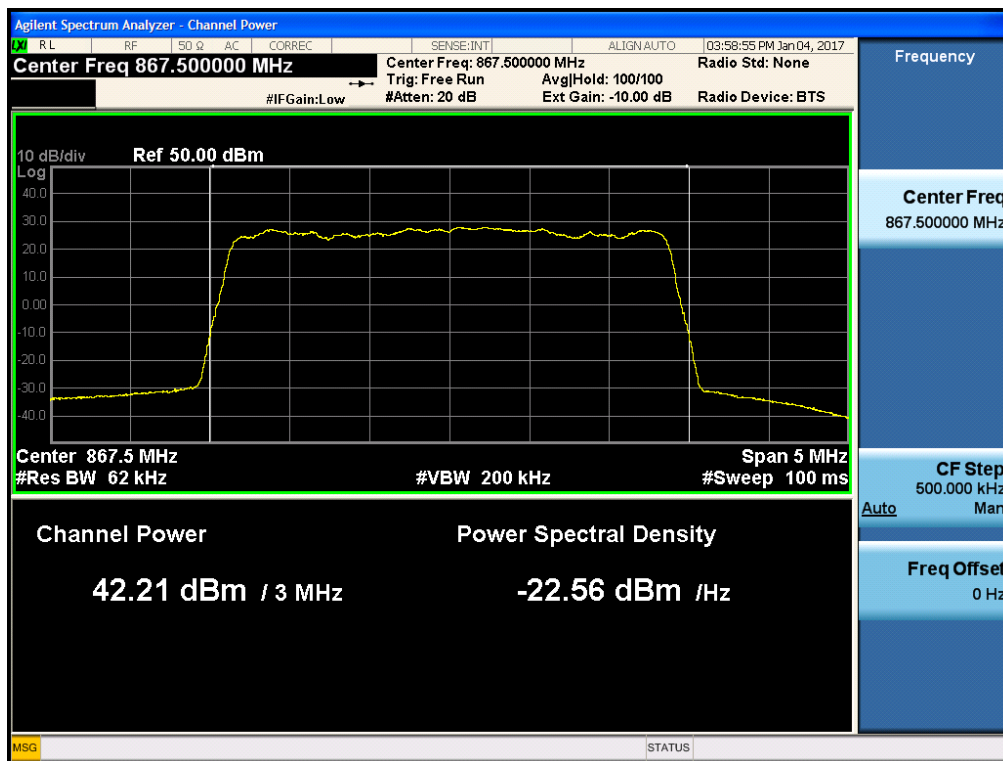
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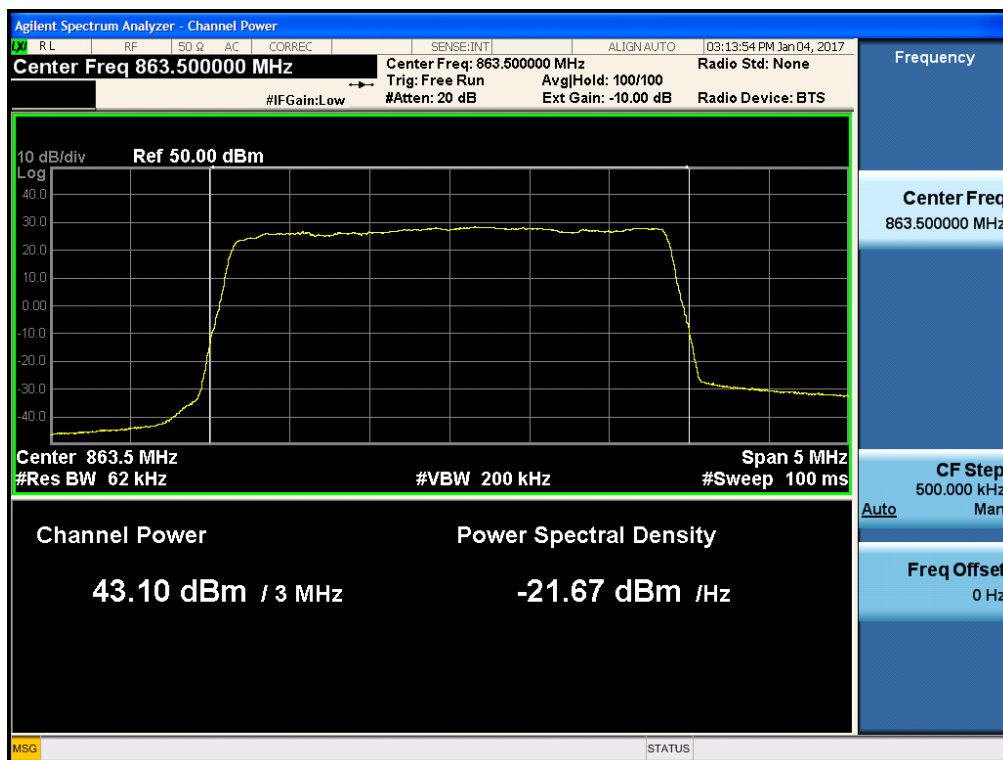
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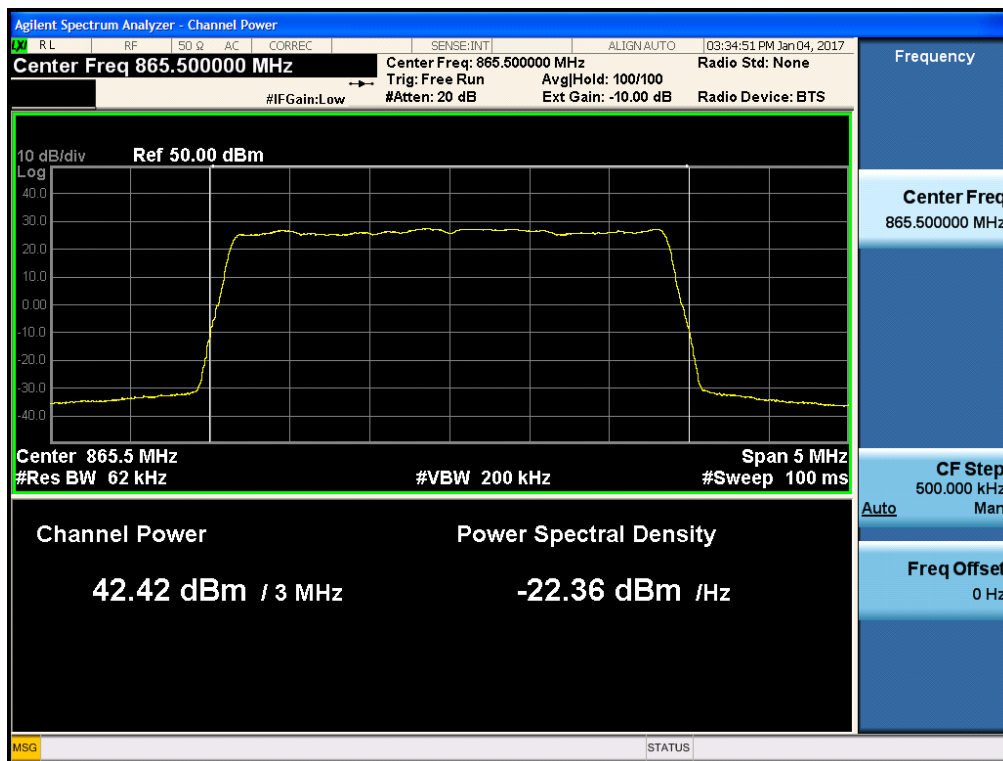
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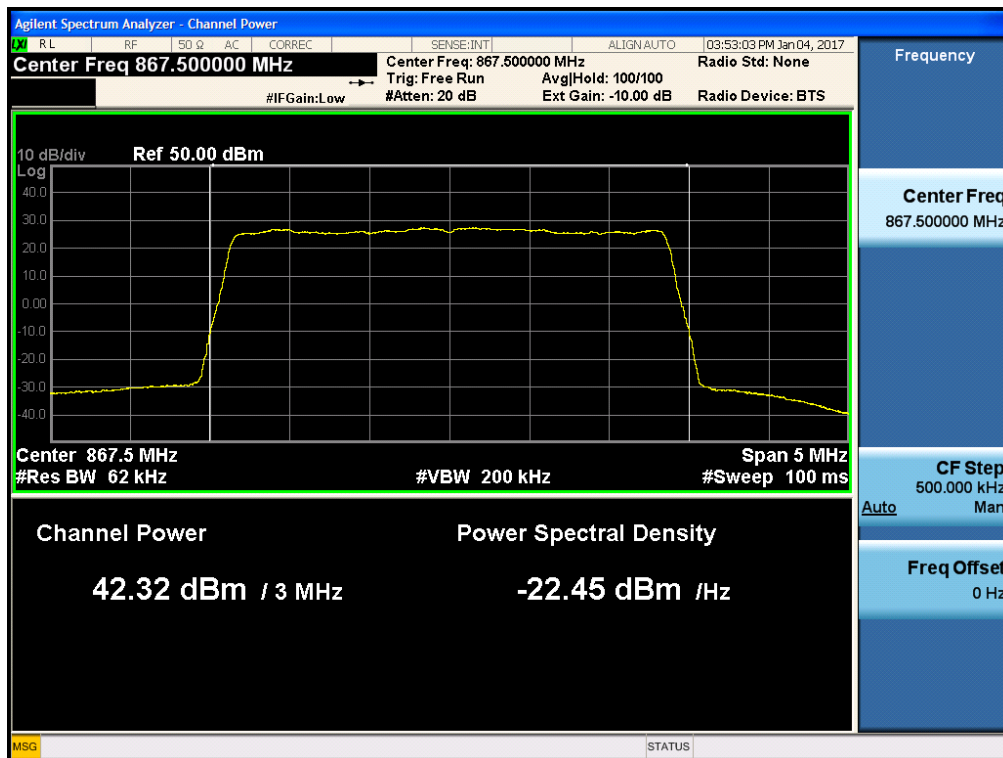
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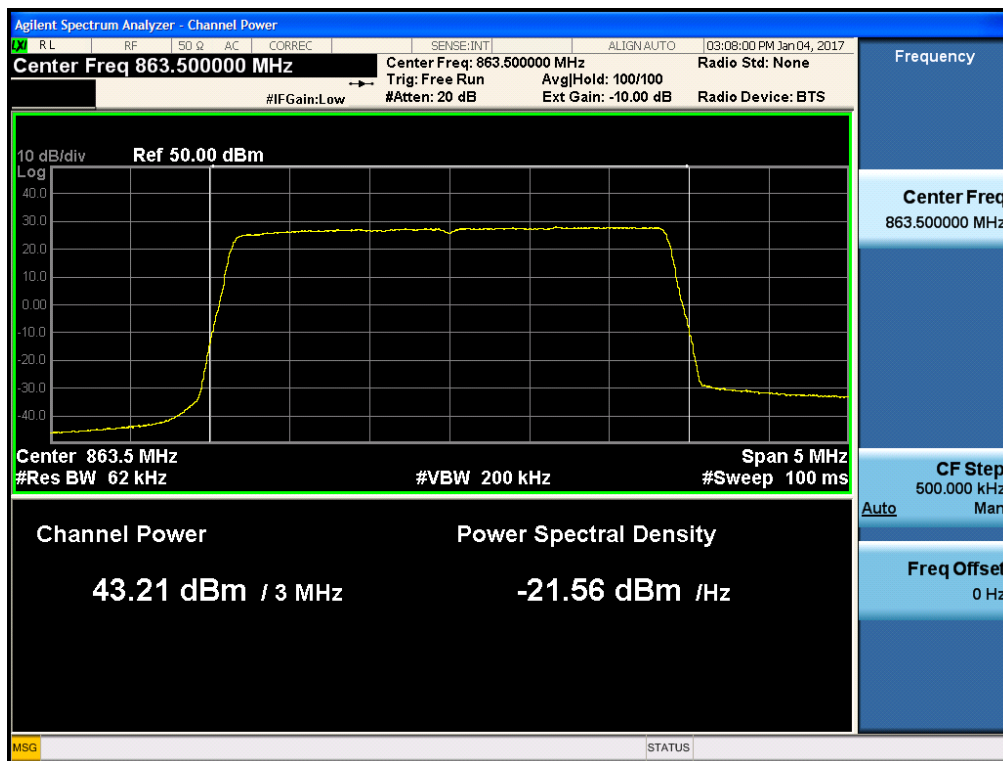
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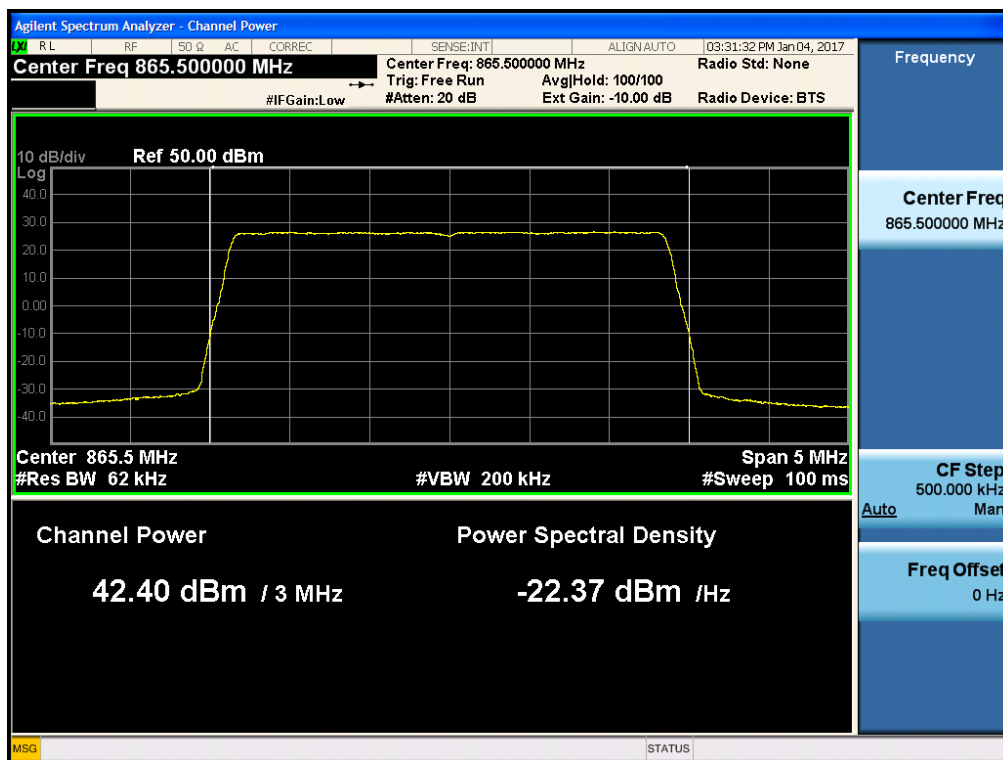
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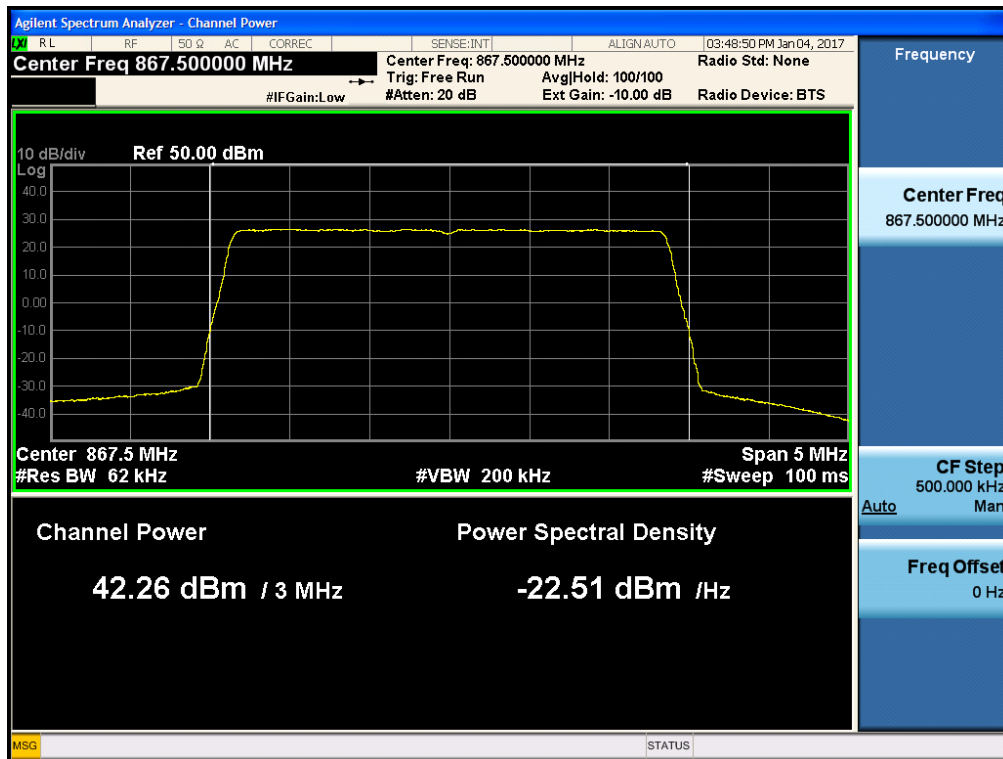
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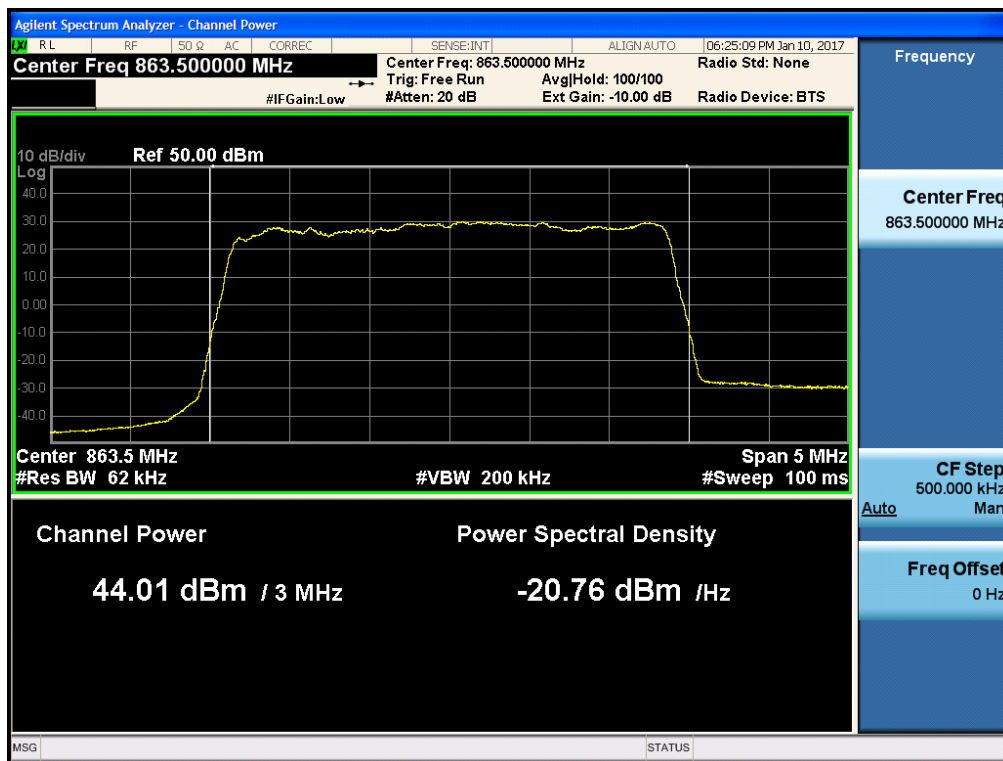


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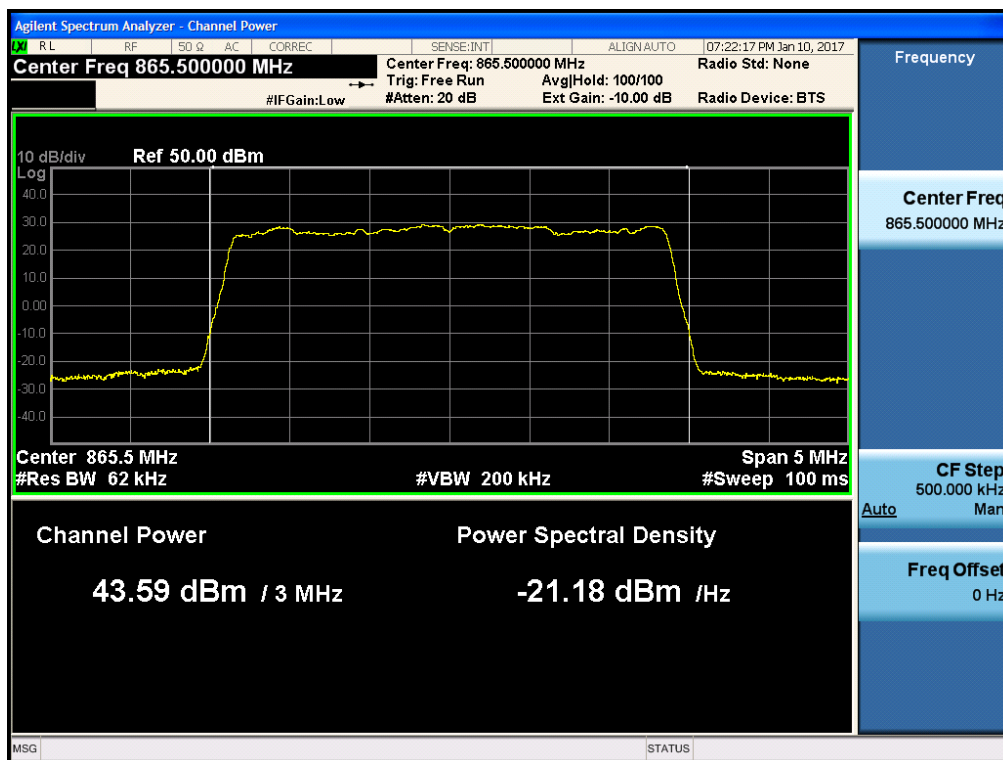


Plot Data for Output Port 2 (Conducted Output Power)

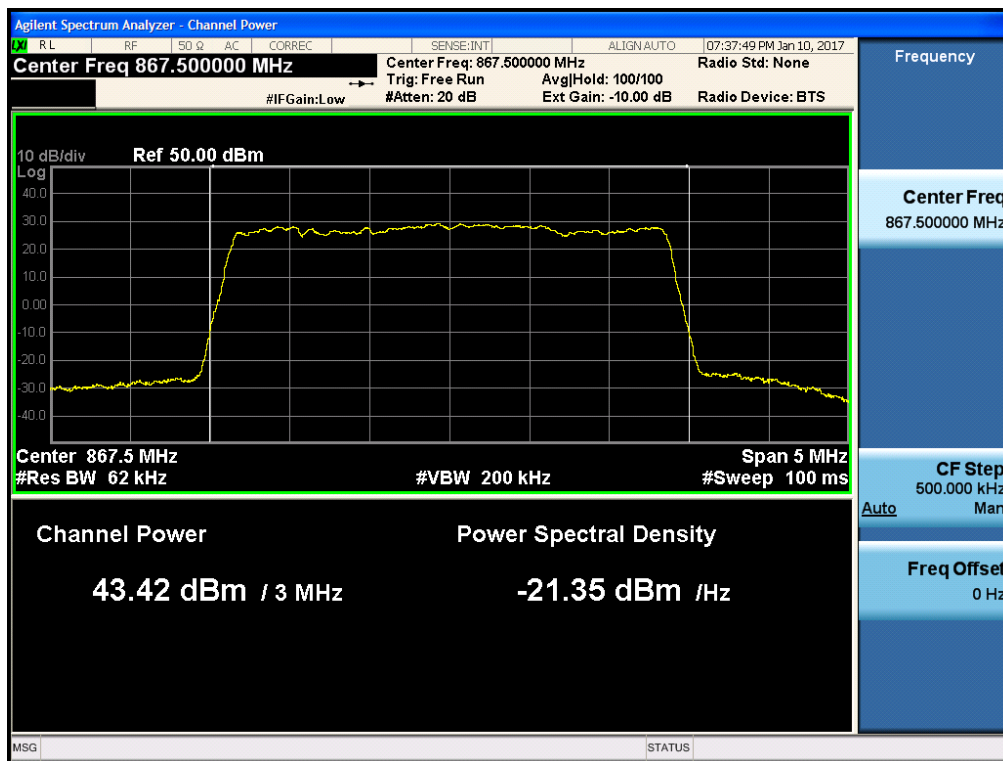
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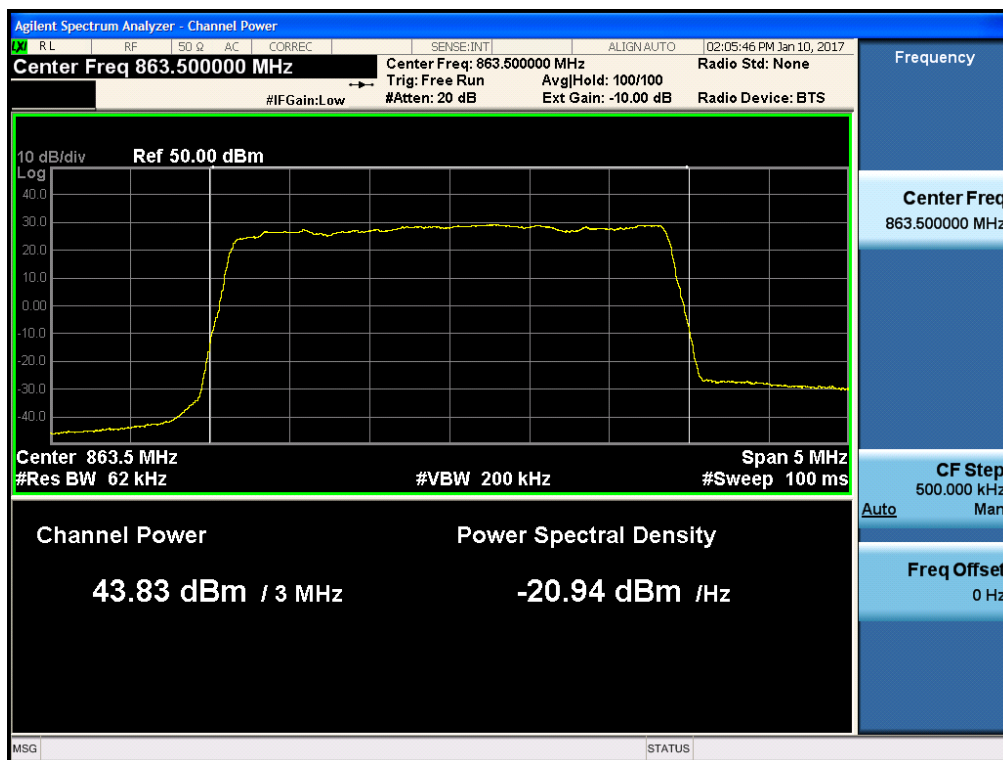
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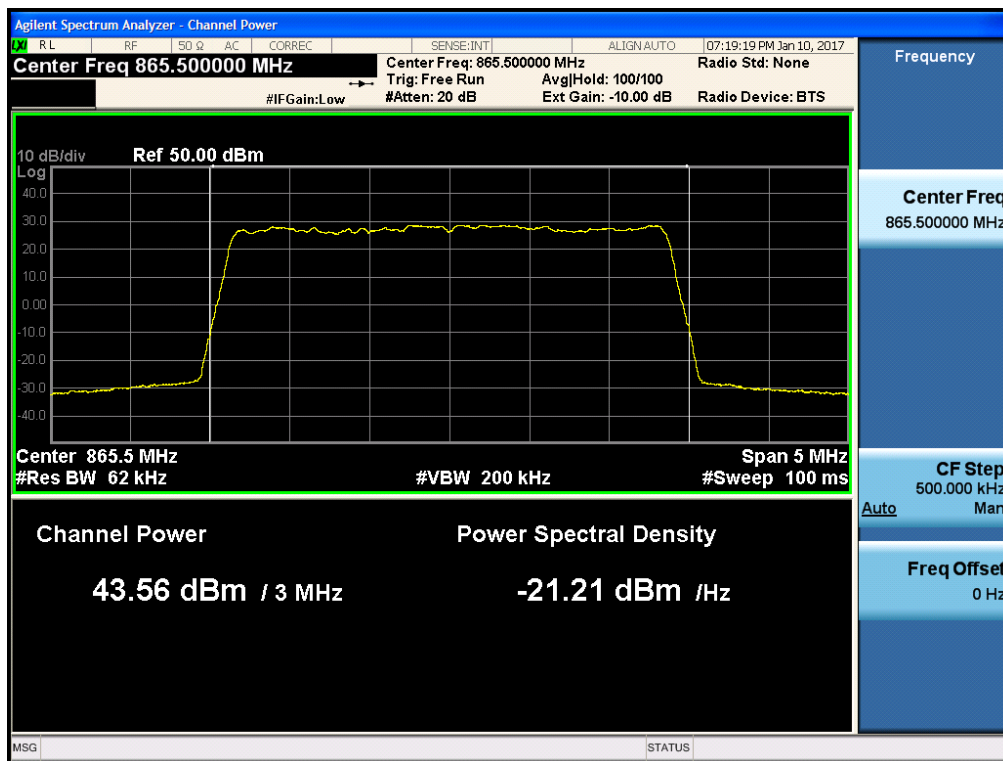
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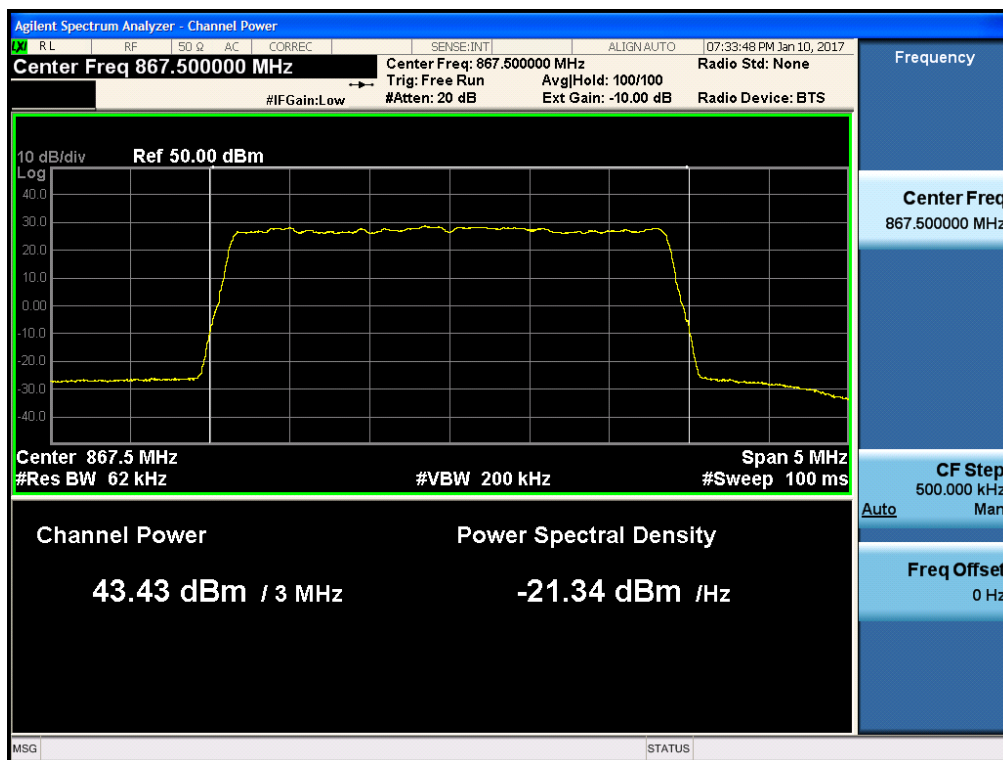
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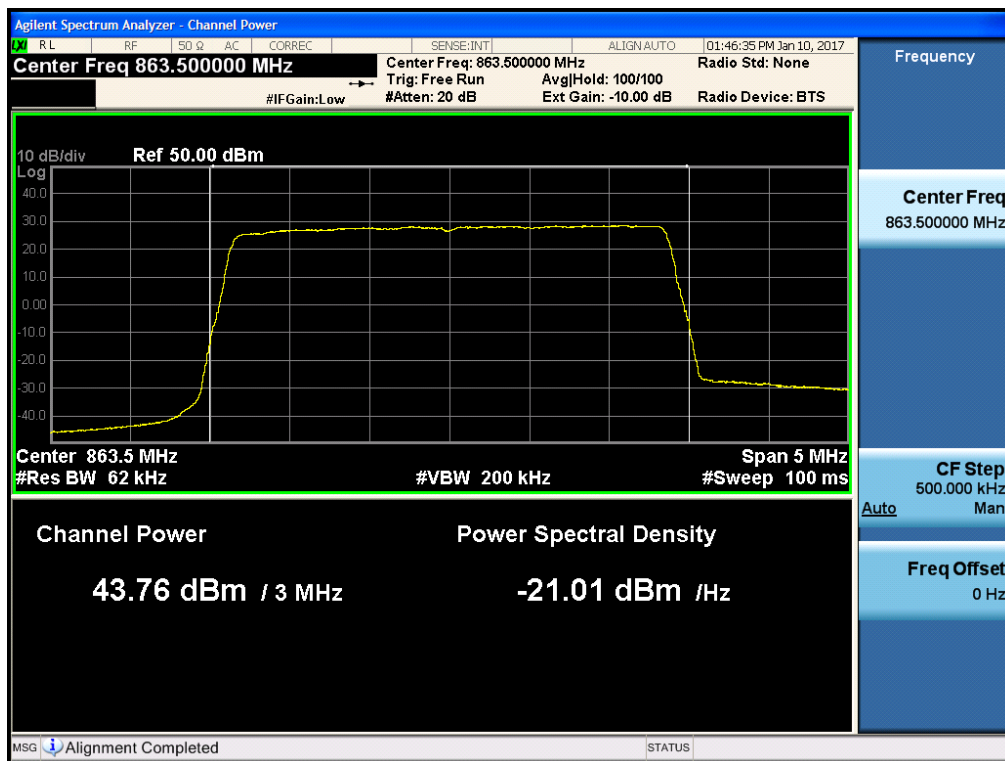
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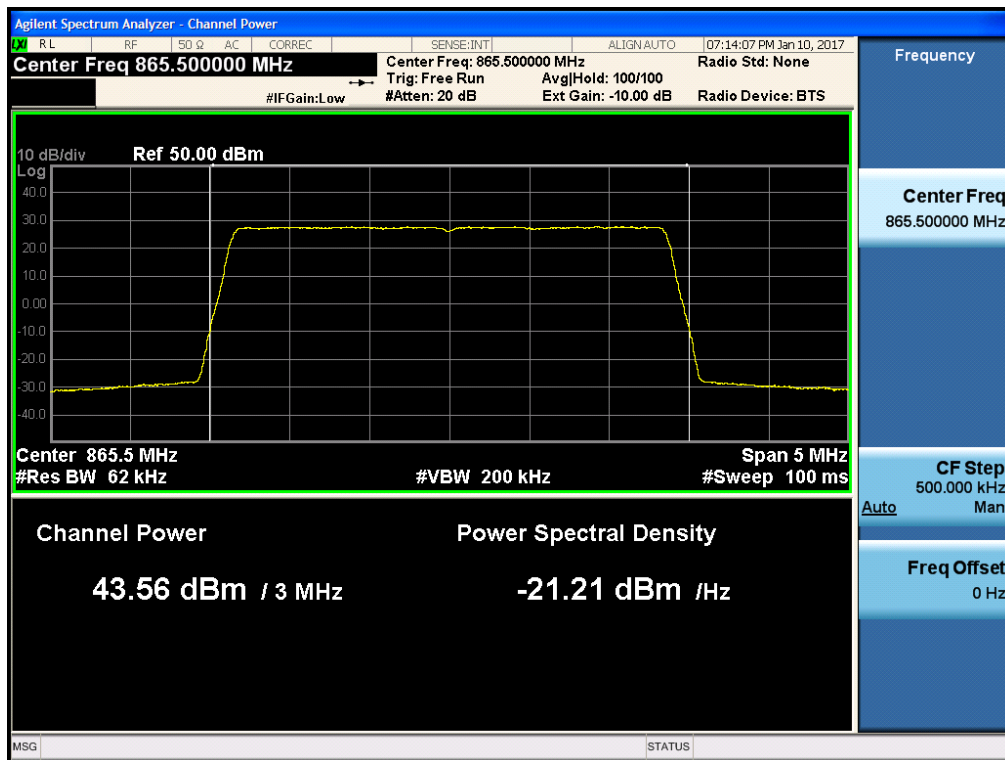
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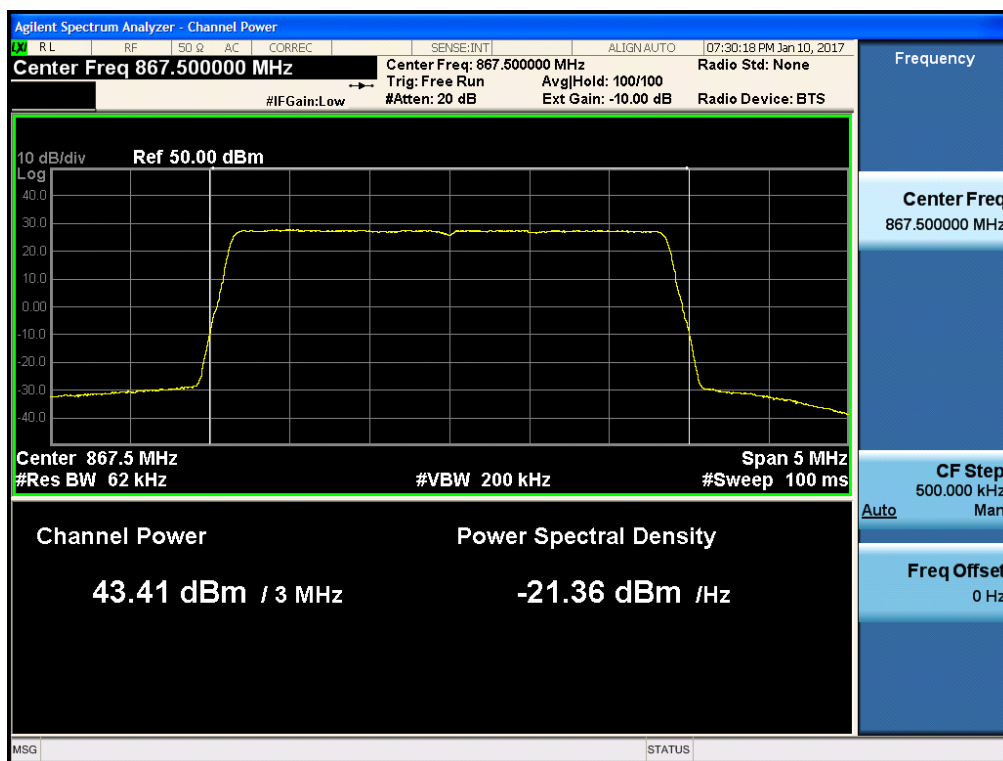
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(64QAM Middle Channel)

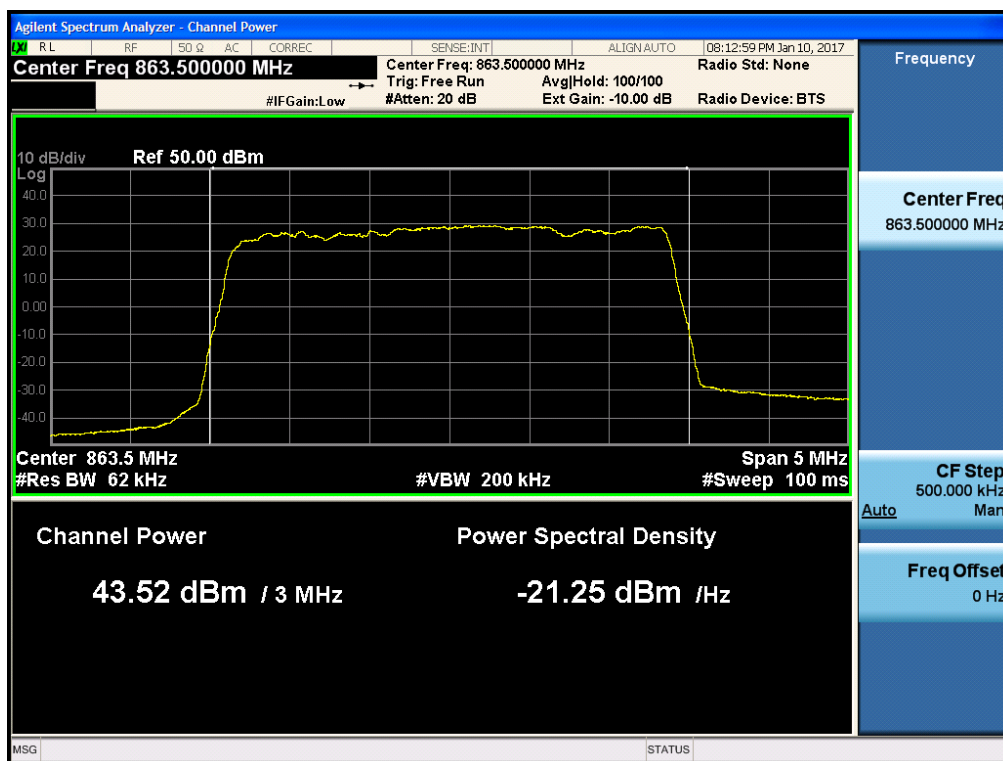


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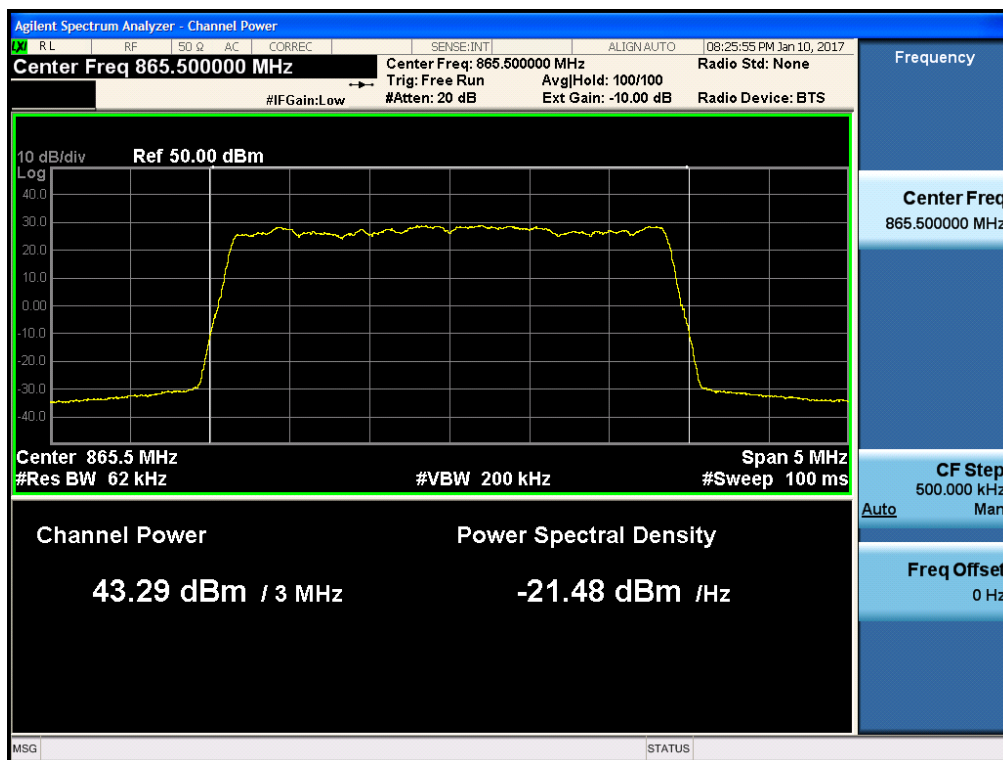


Plot Data for Output Port 3 (Conducted Output Power)

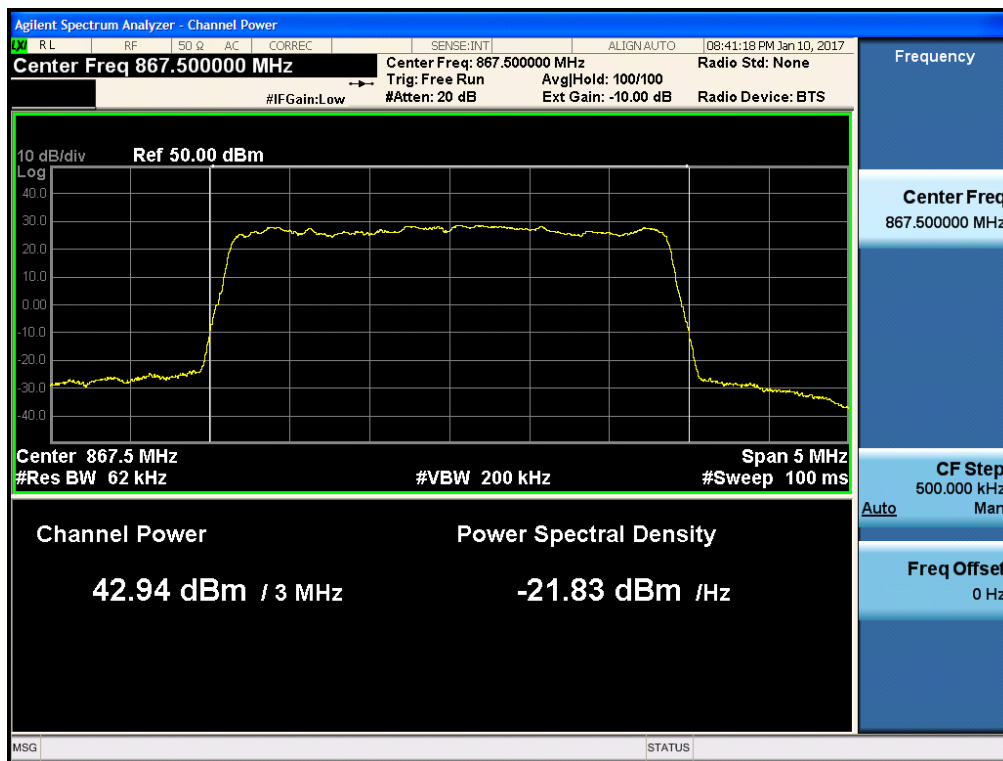
(QPSK Low Channel)



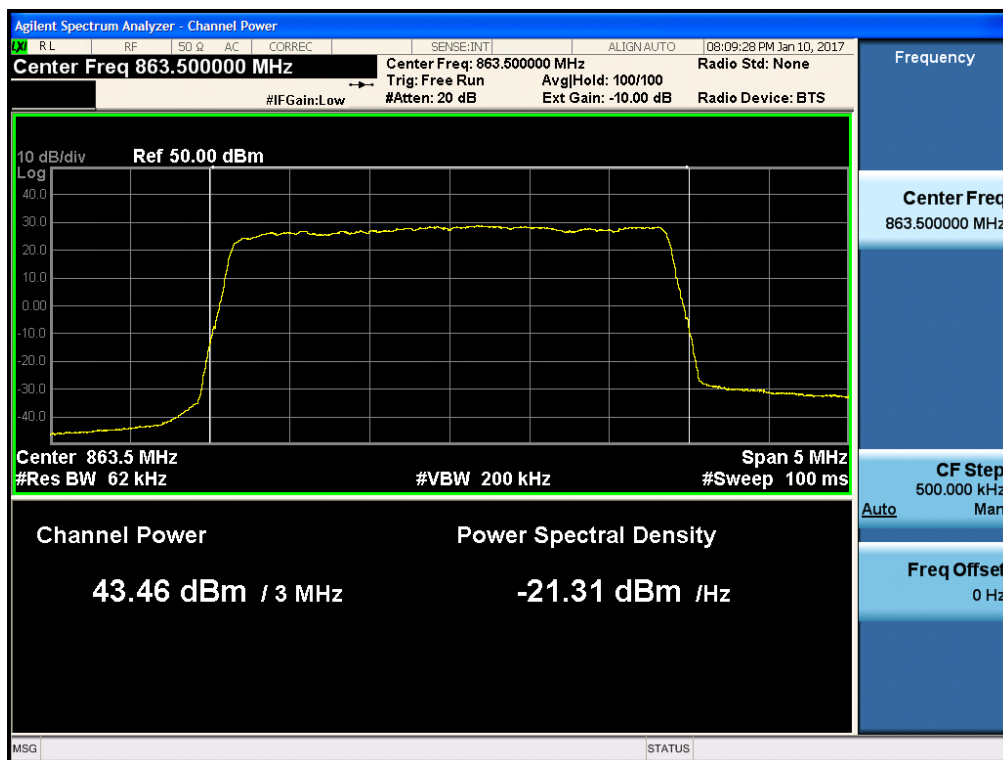
(QPSK Middle Channel)



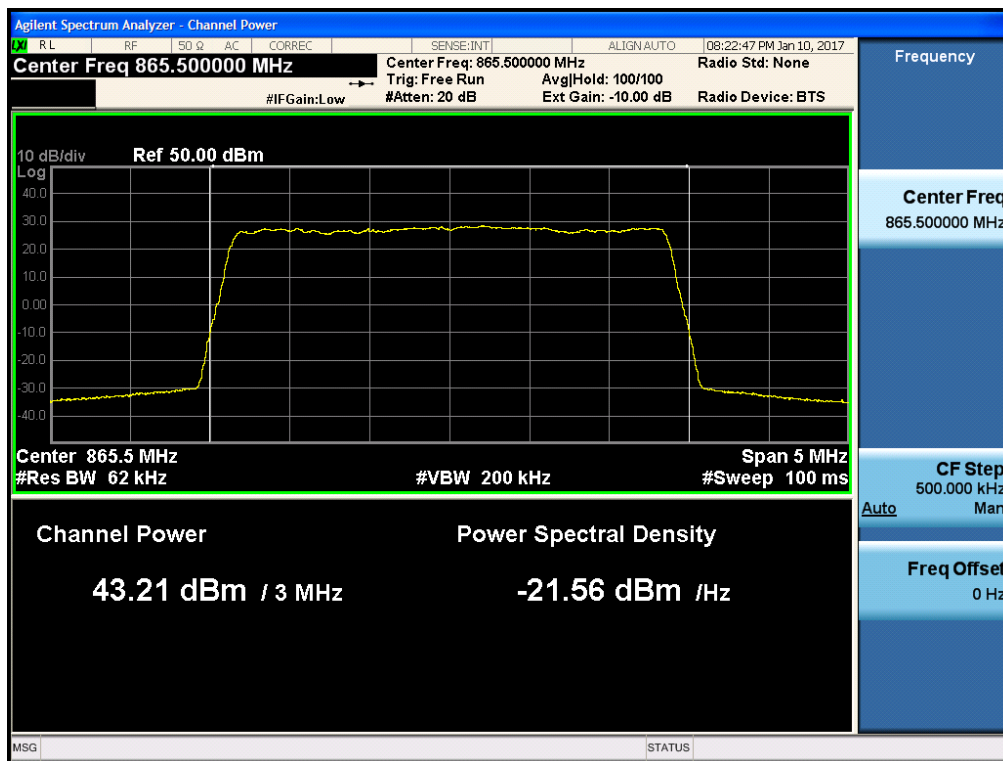
(QPSK High Channel)



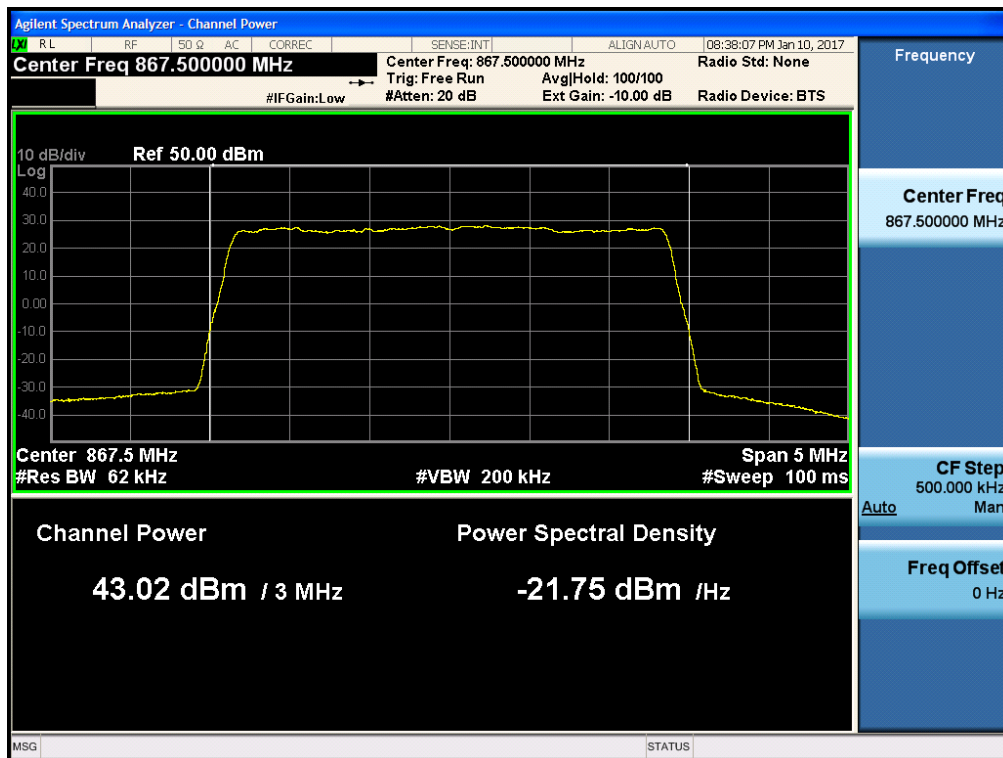
(16QAM Low Channel)



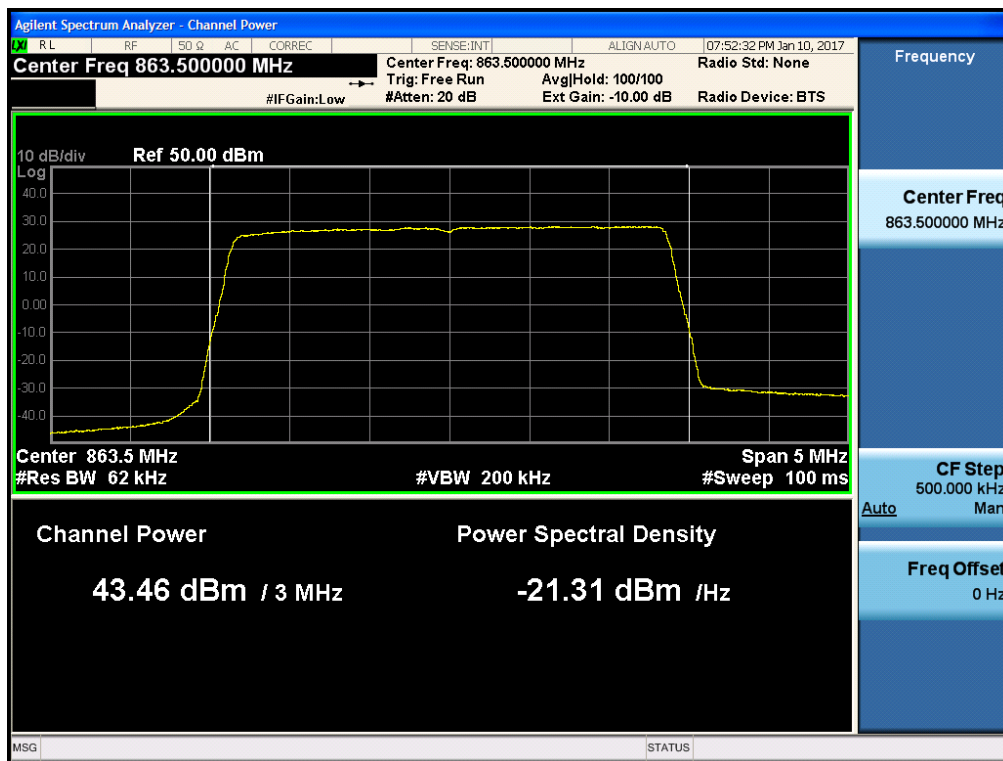
(16QAM Middle Channel)



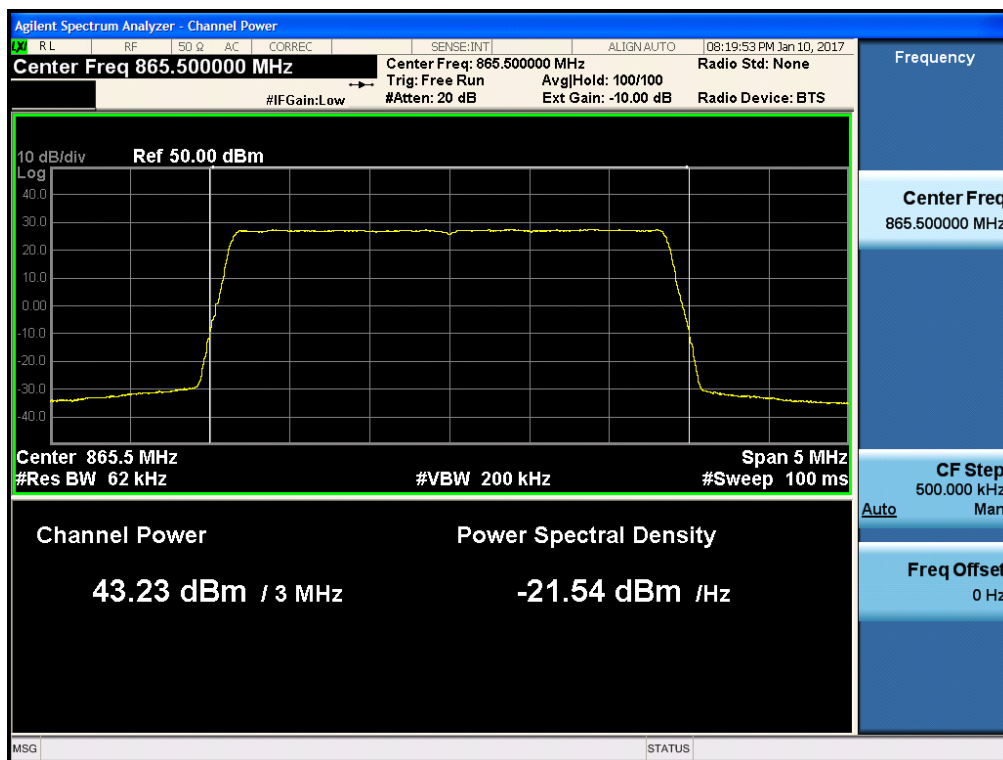
(16QAM High Channel)



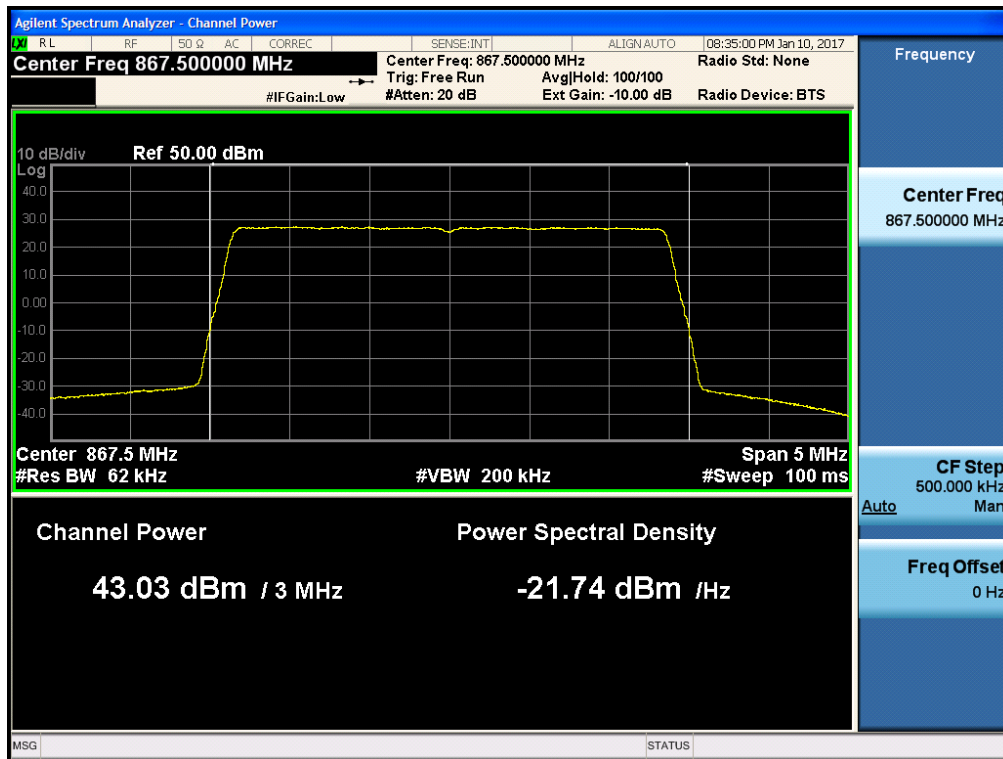
(64QAM Low Channel)



(64QAM Middle Channel)



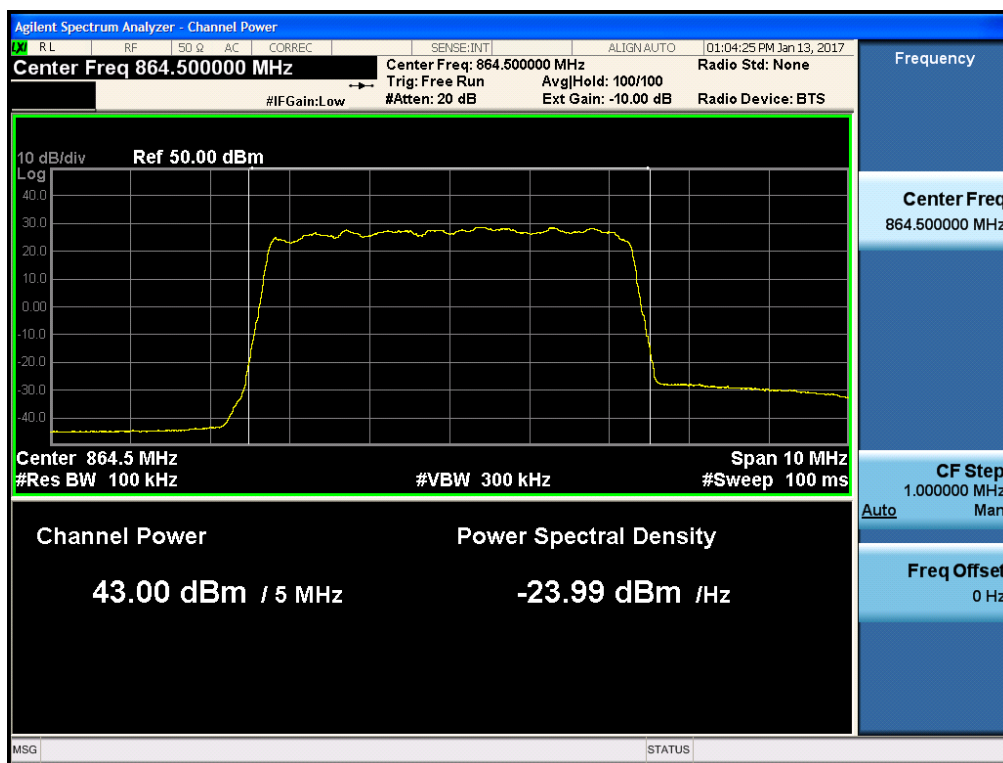
(64QAM High Channel)



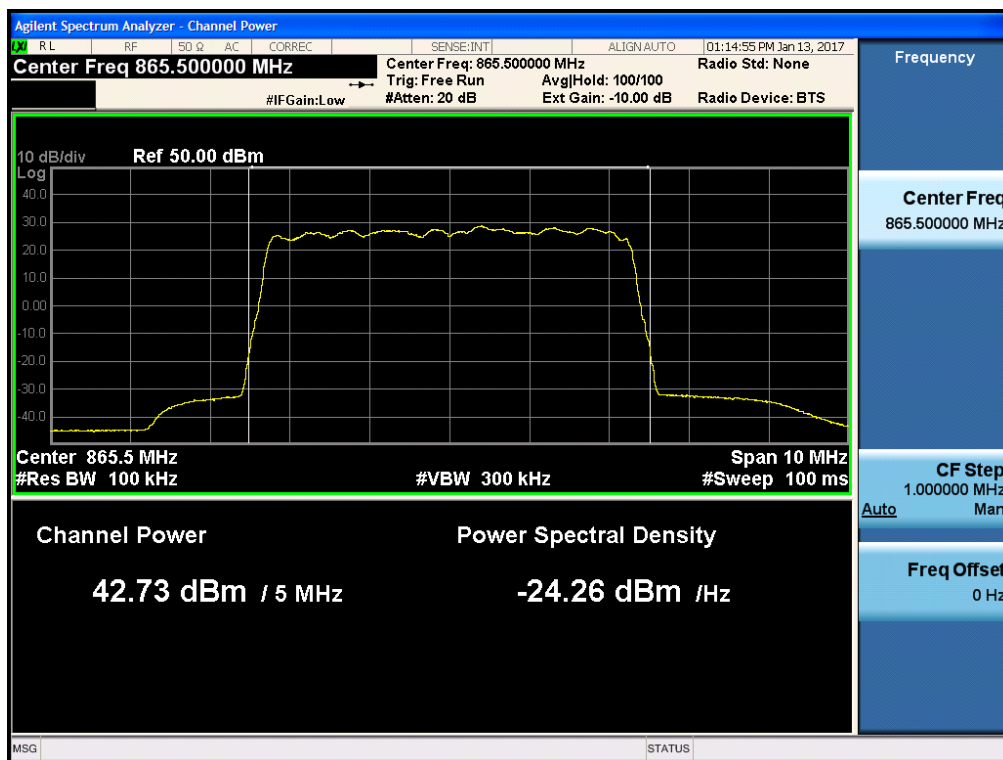
LTE 5 MHz

Plot Data for Output Port 0 (Conducted Output Power)

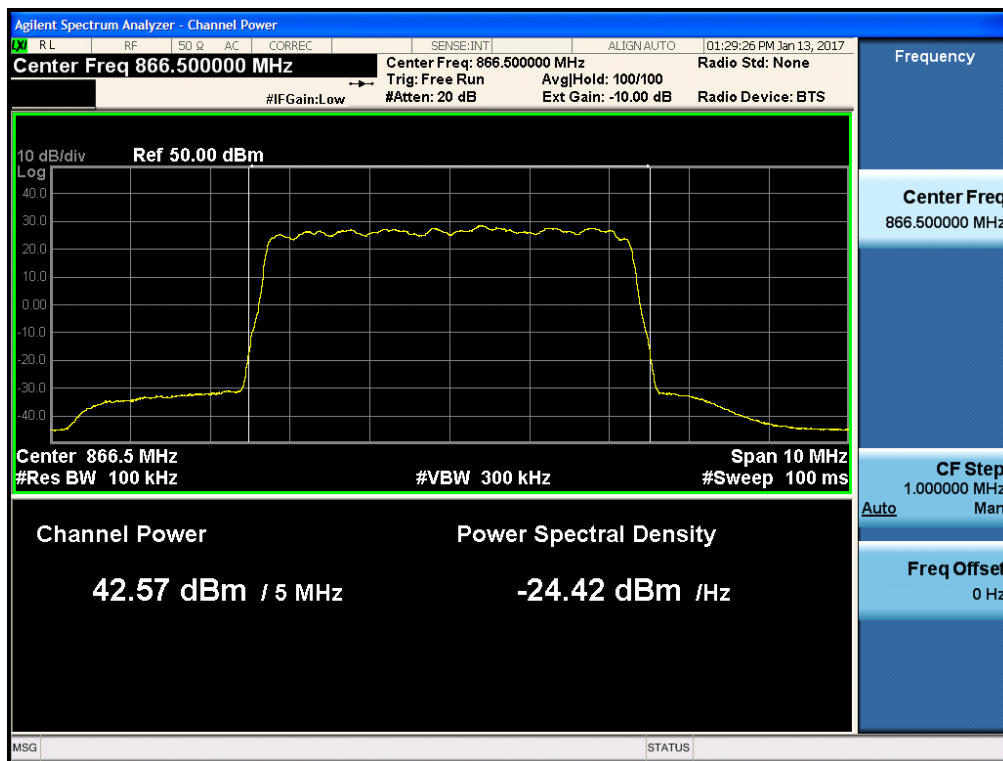
(QPSK Low Channel)



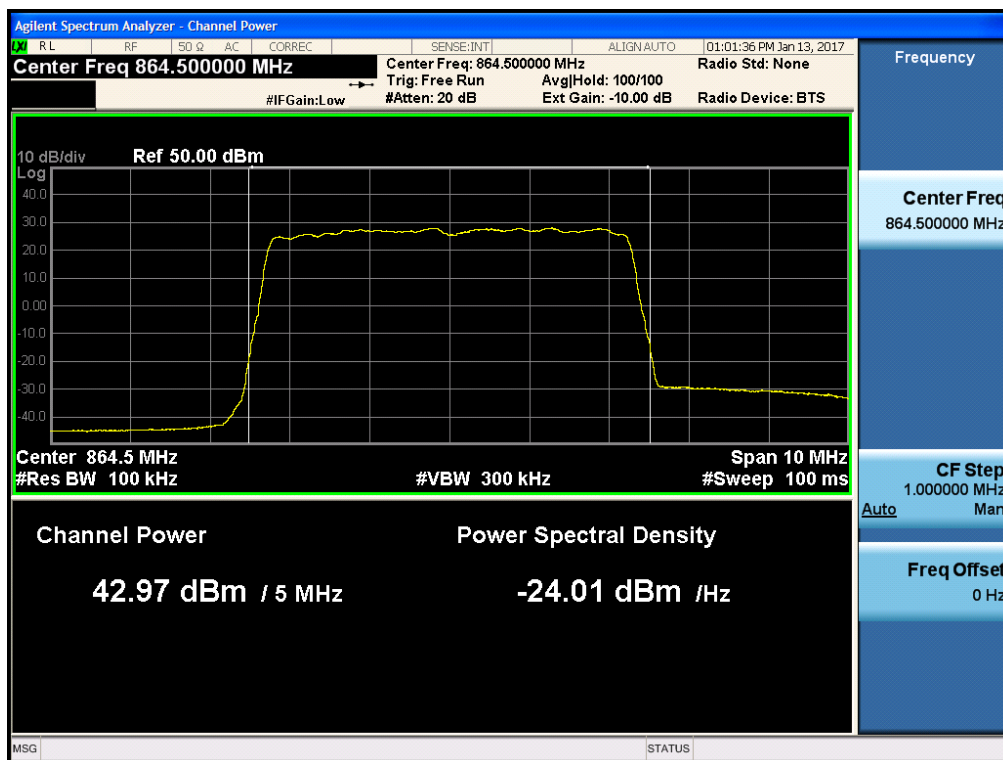
(QPSK Middle Channel)



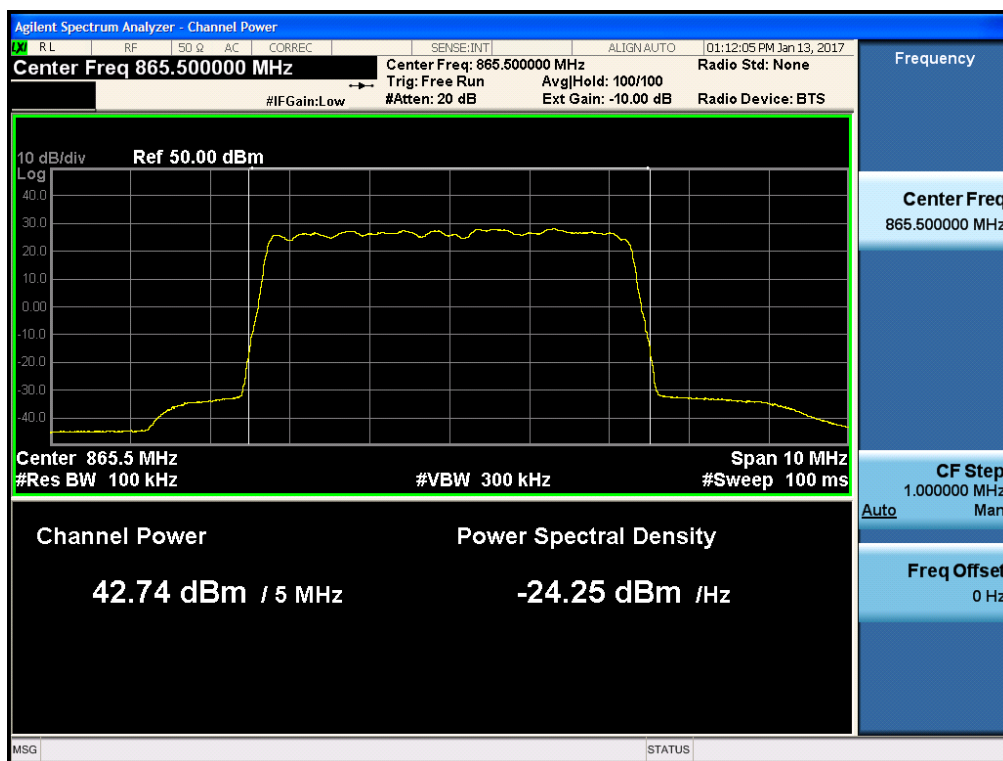
(QPSK High Channel)



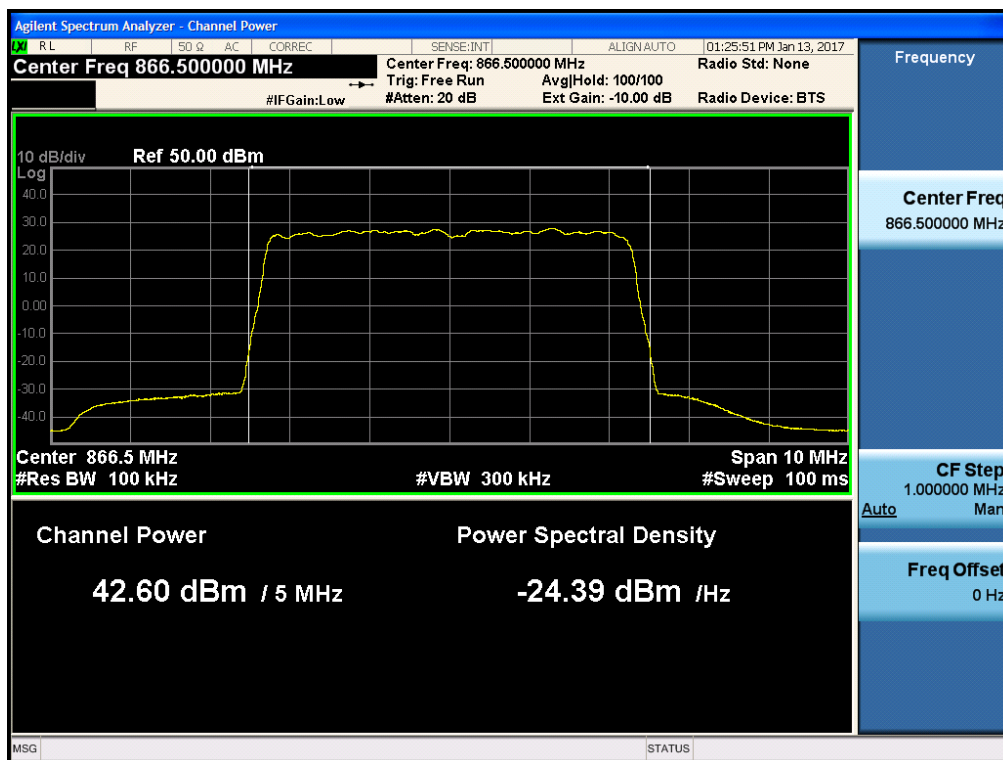
(16QAM Low Channel)



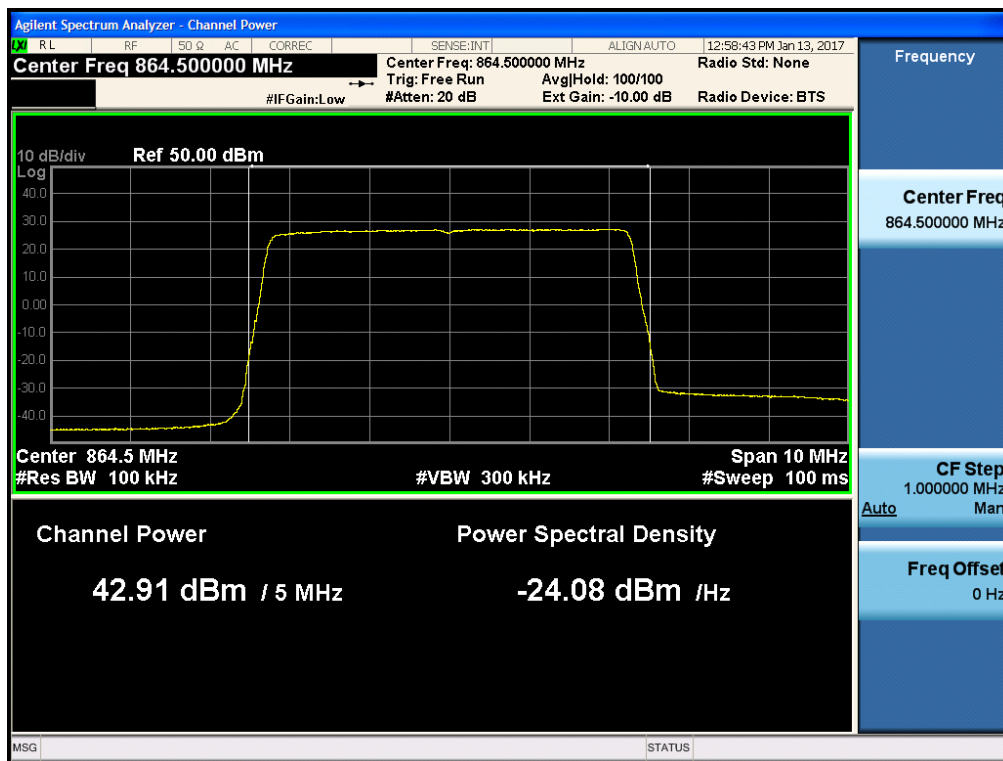
(16QAM Middle Channel)



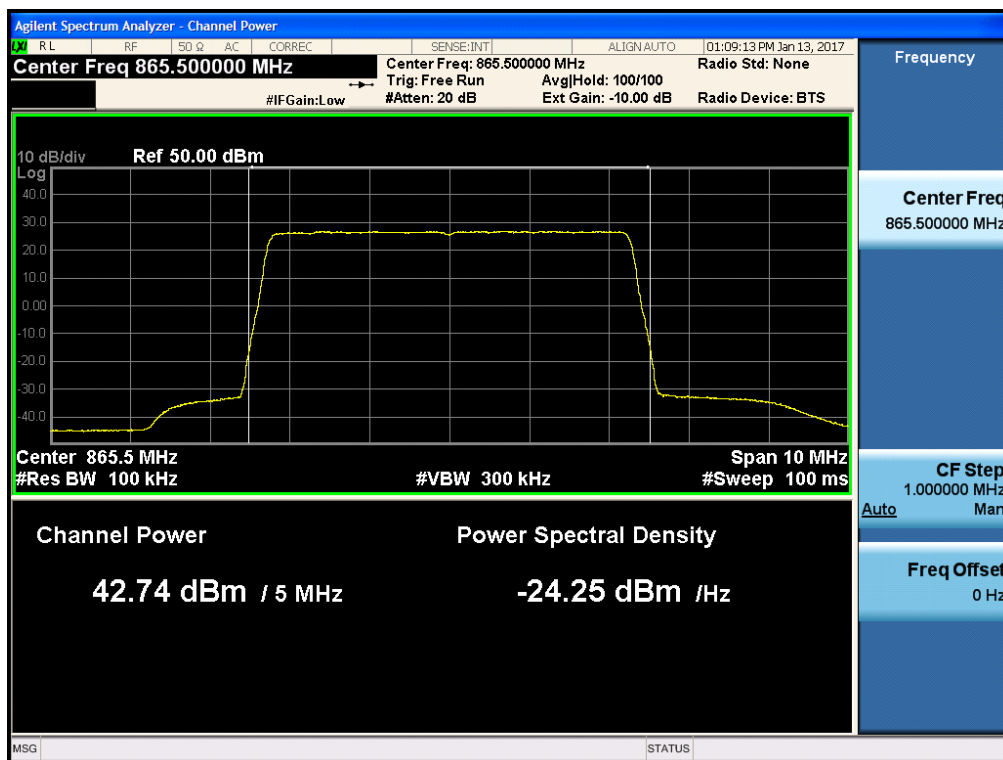
(16QAM High Channel)



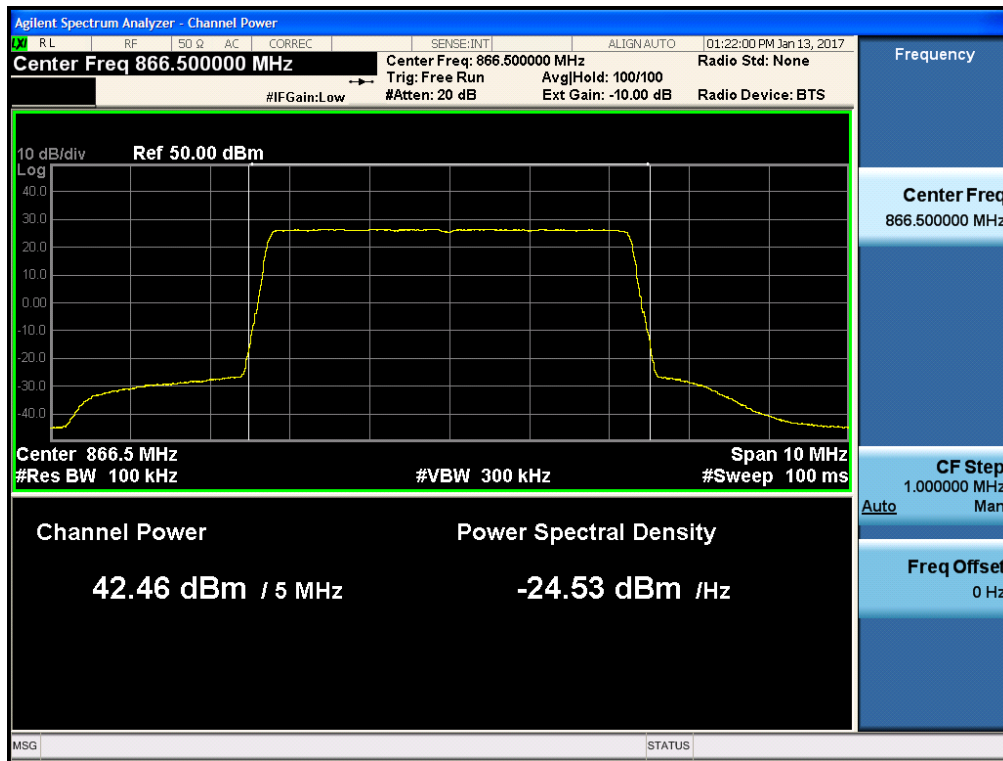
(64QAM Low Channel)



(64QAM Middle Channel)

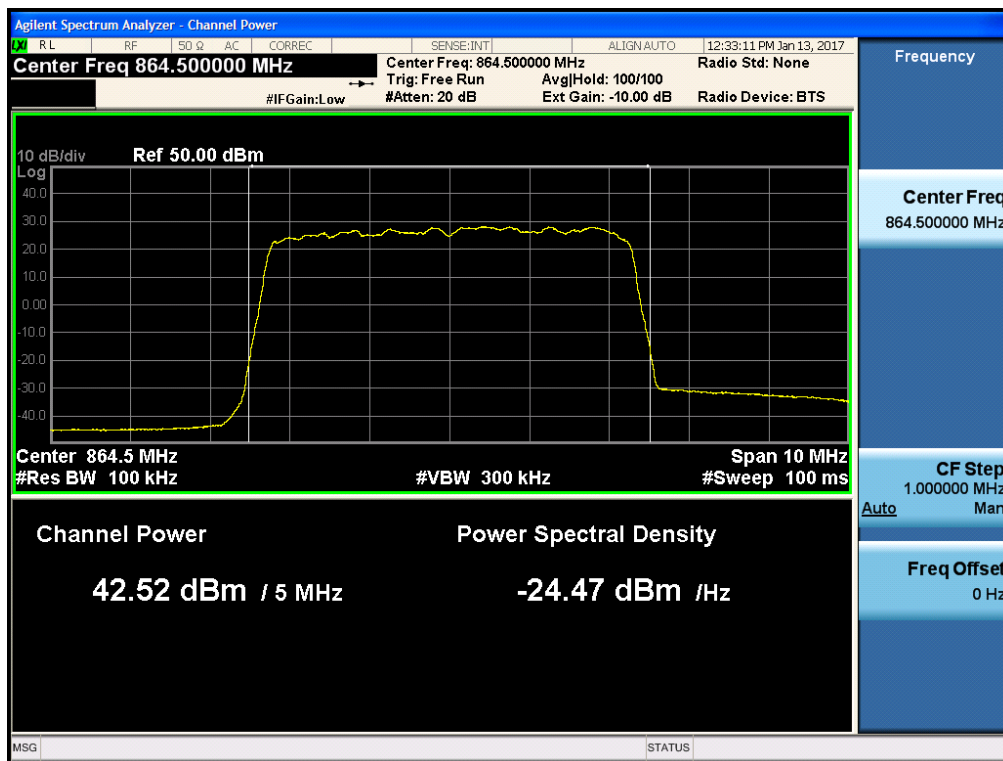


(64QAM High Channel)

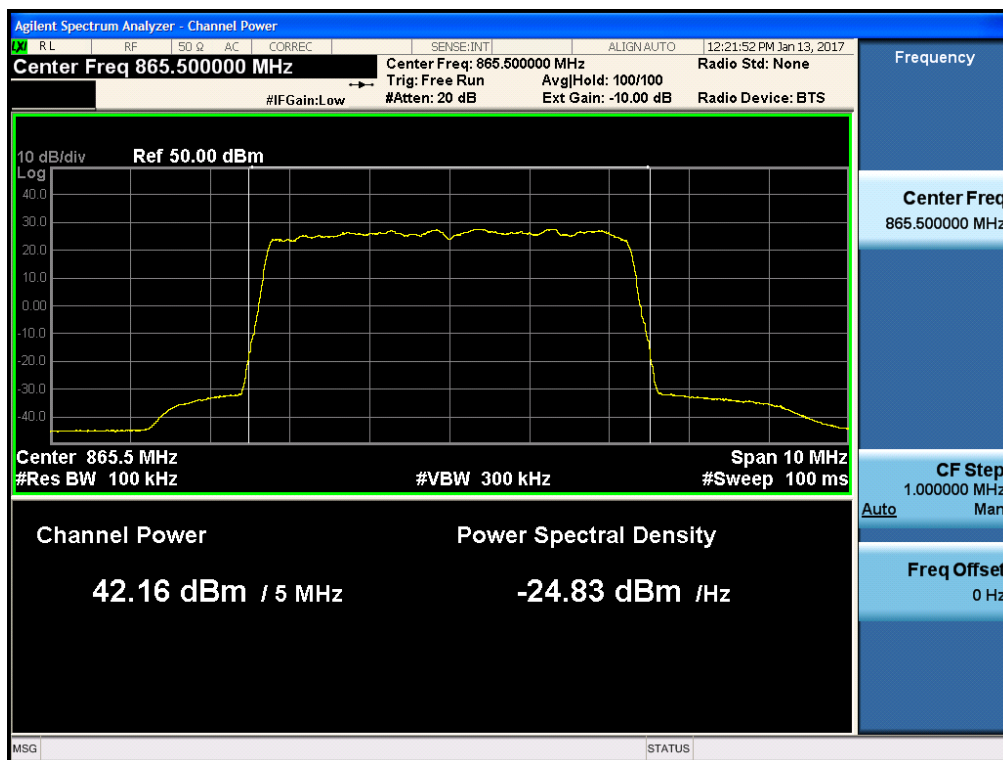


Plot Data for Output Port 1 (Conducted Output Power)

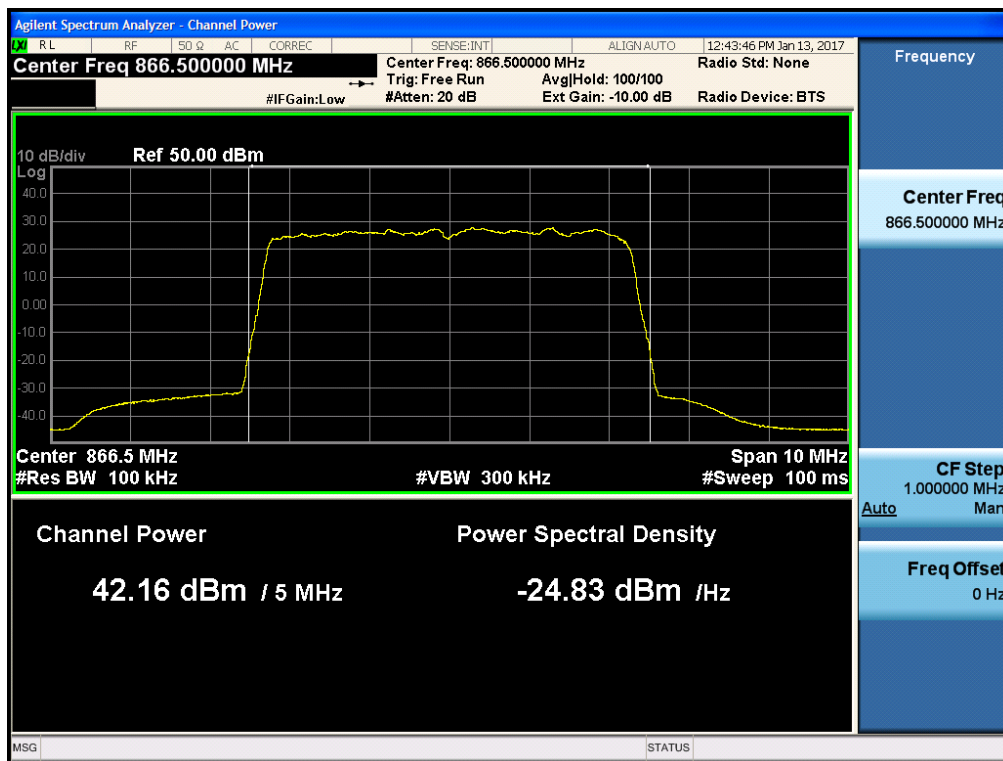
(QPSK Low Channel)



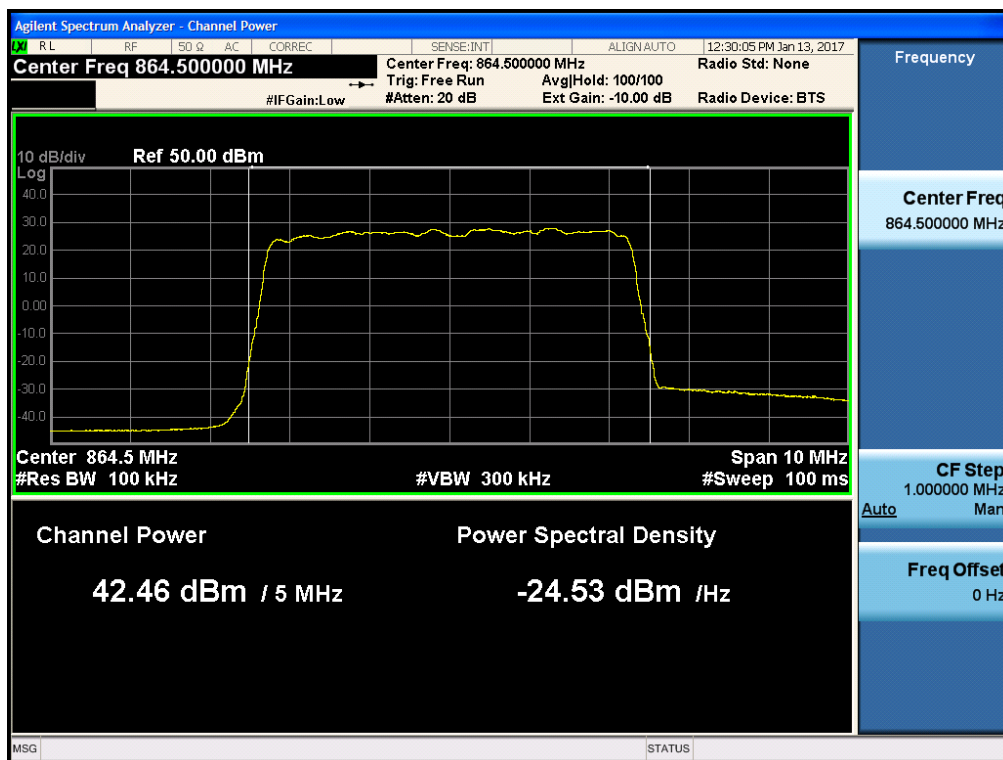
(QPSK Middle Channel)



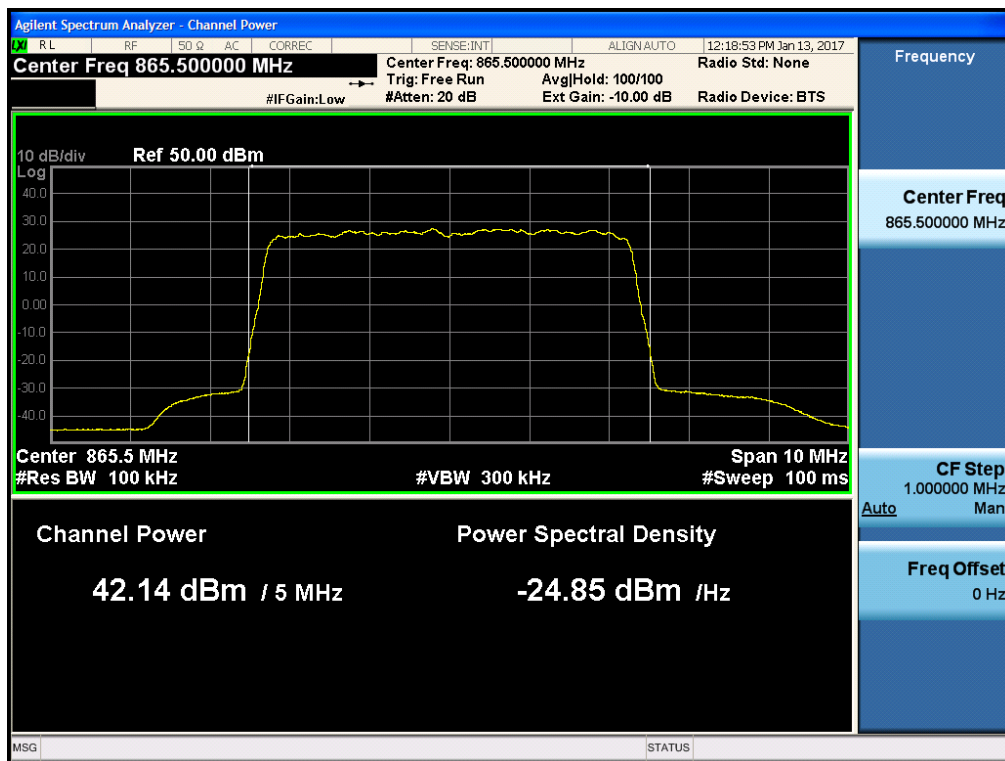
(QPSK High Channel)



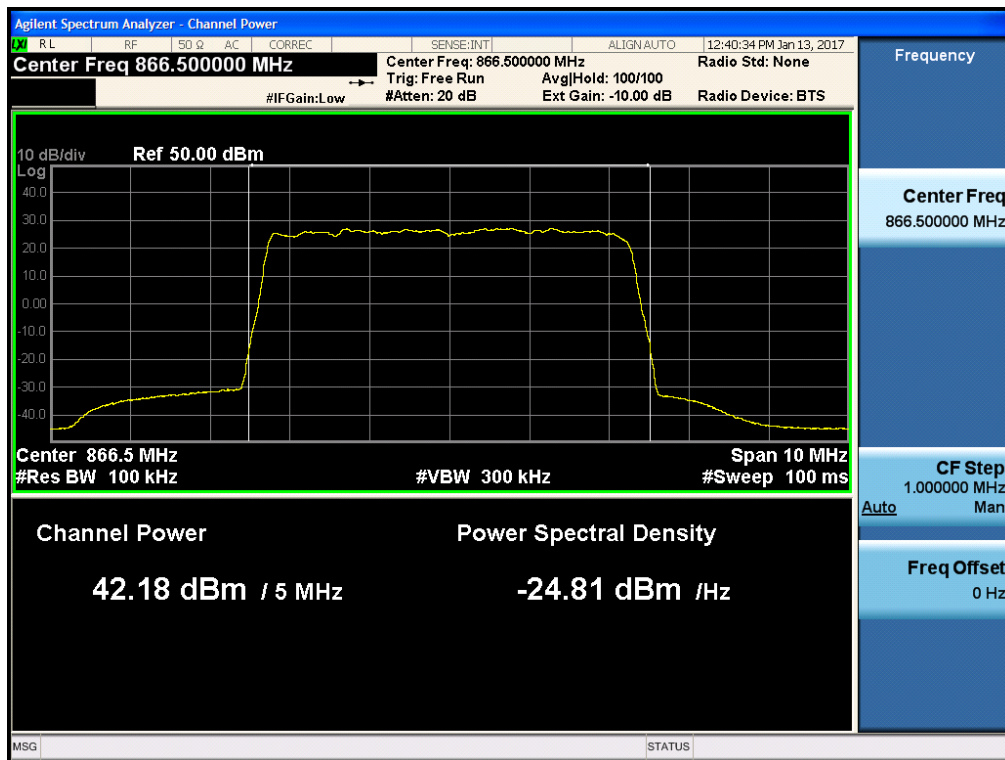
(16QAM Low Channel)



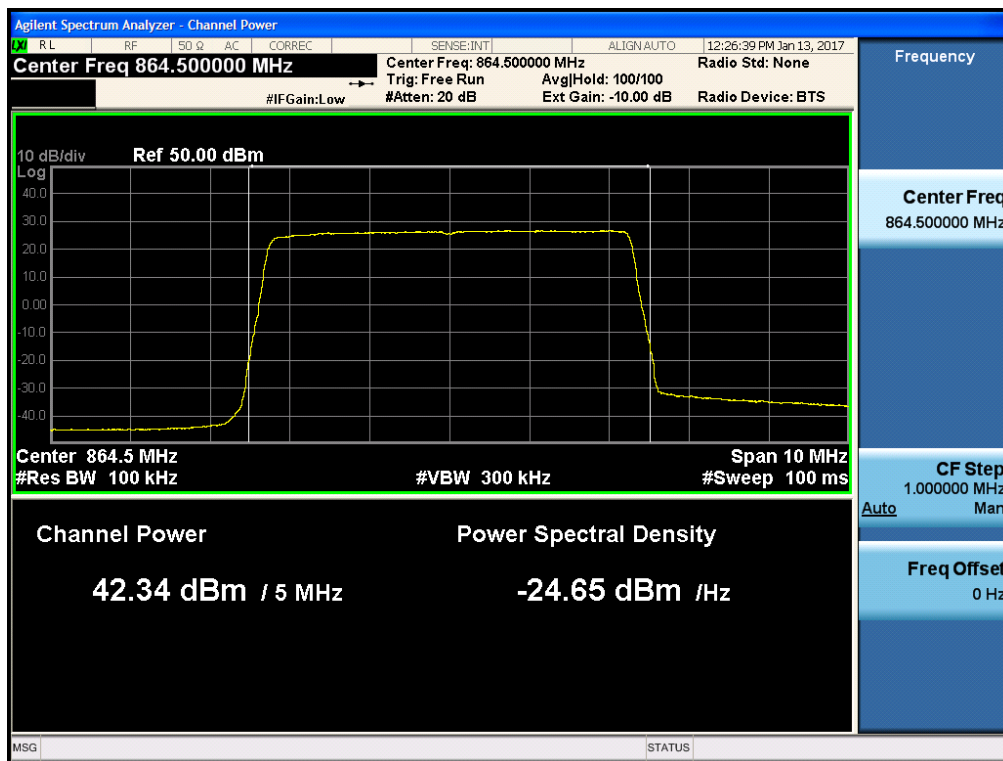
(16QAM Middle Channel)



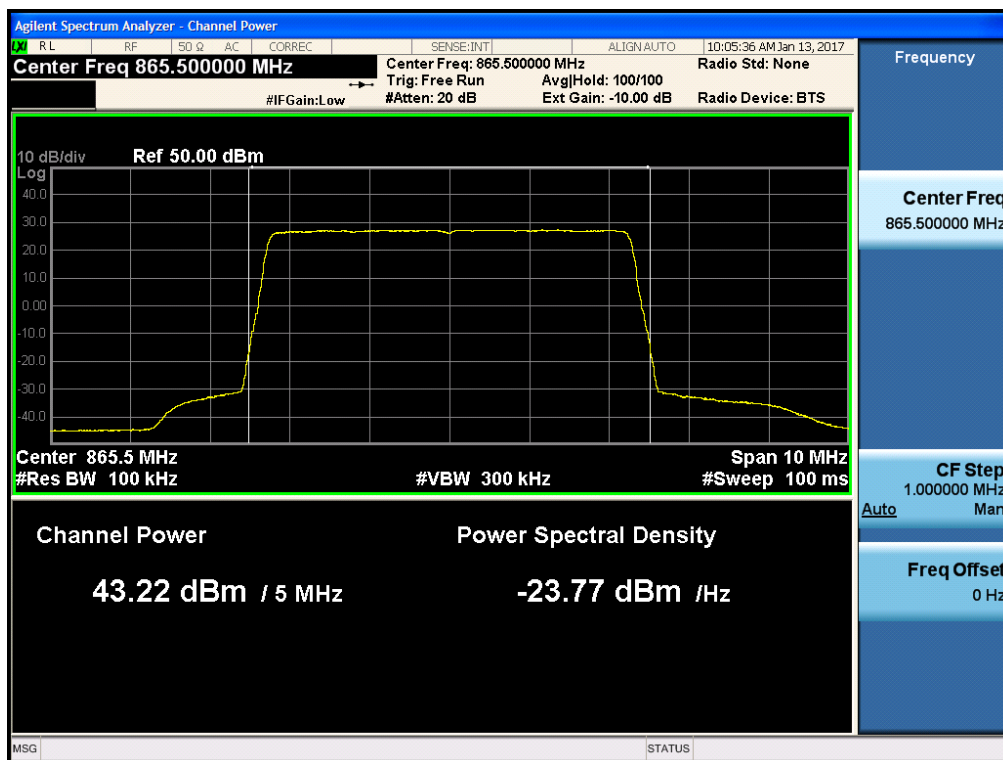
(16QAM High Channel)



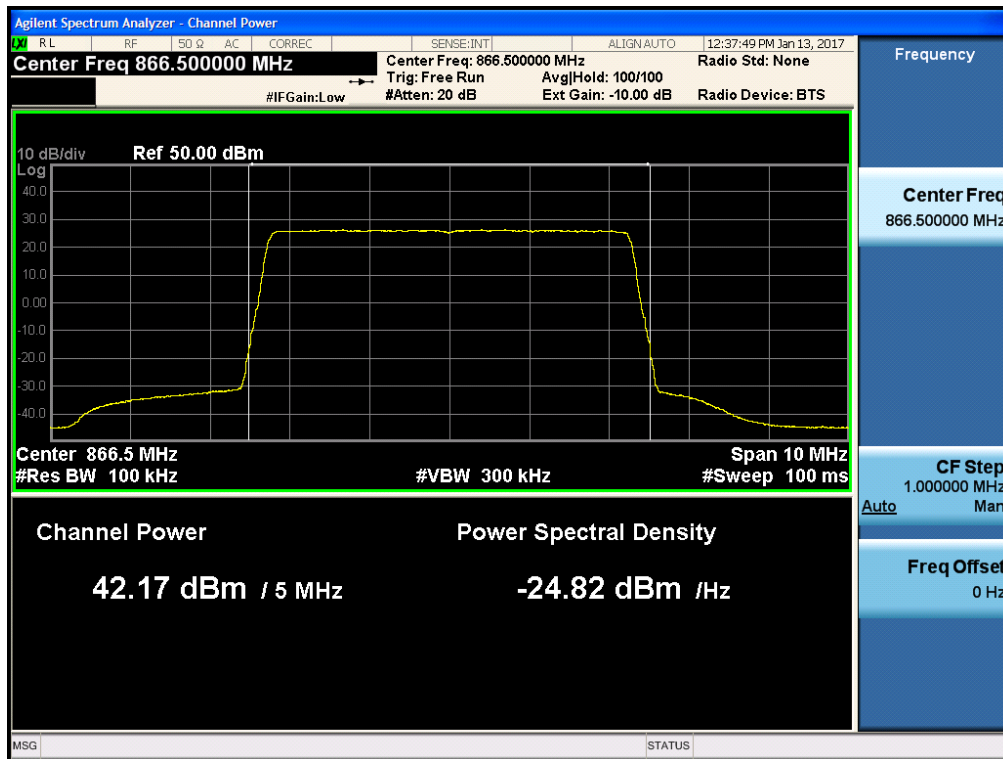
(64QAM Low Channel)



(64QAM Middle Channel)

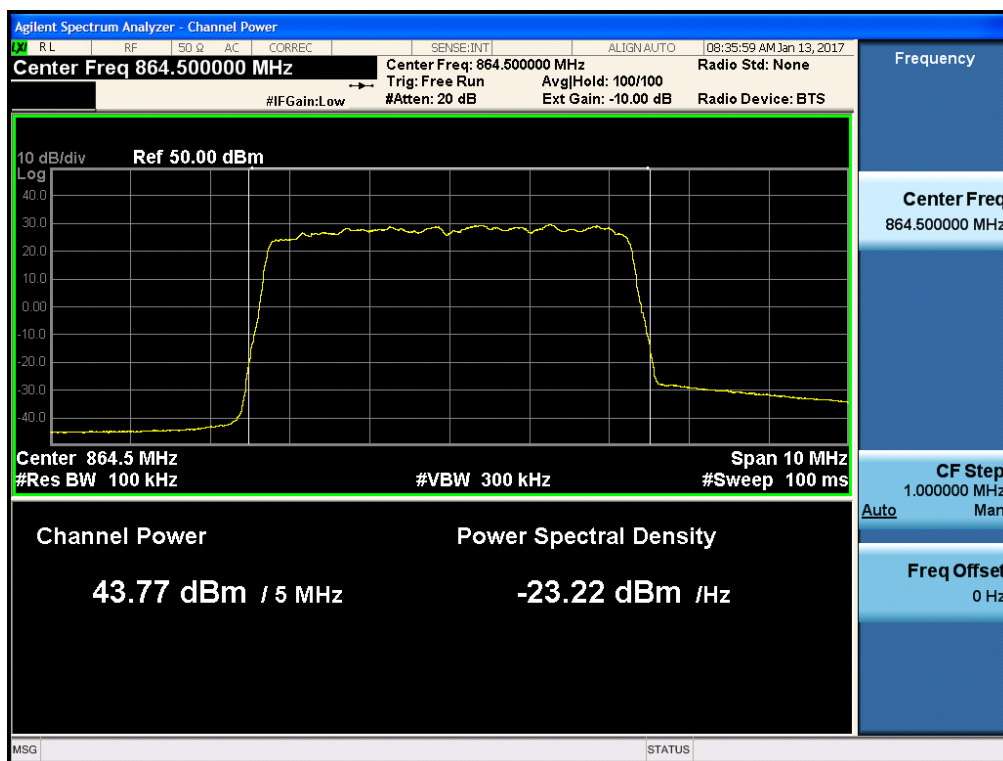


(64QAM High Channel)

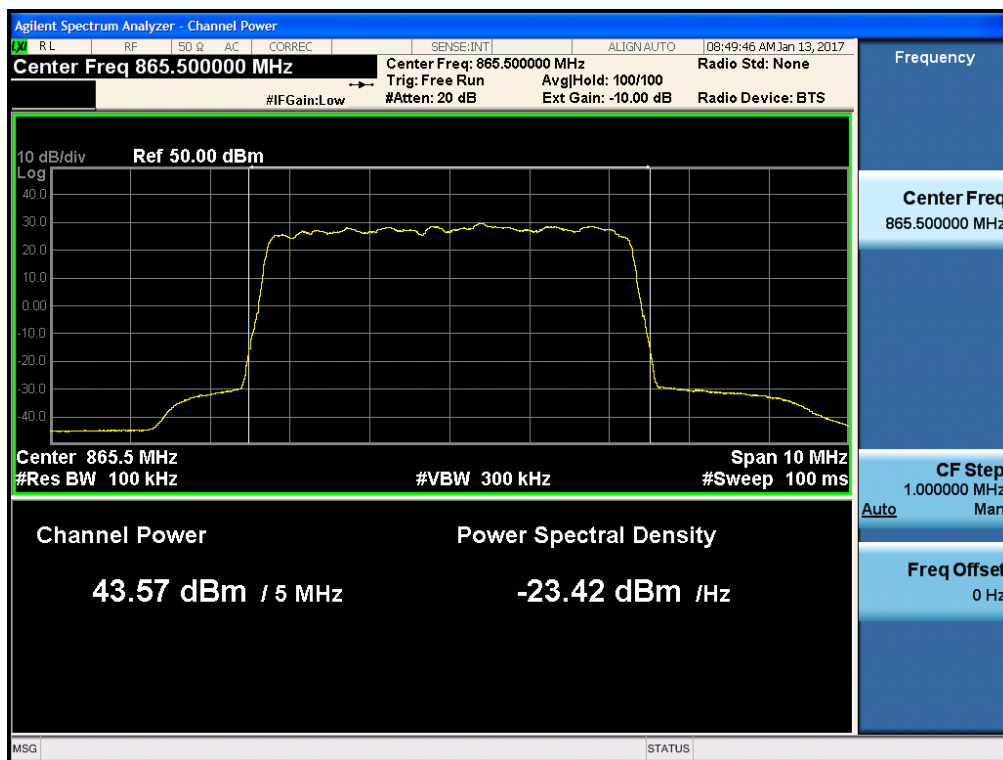


Plot Data for Output Port 2 (Conducted Output Power)

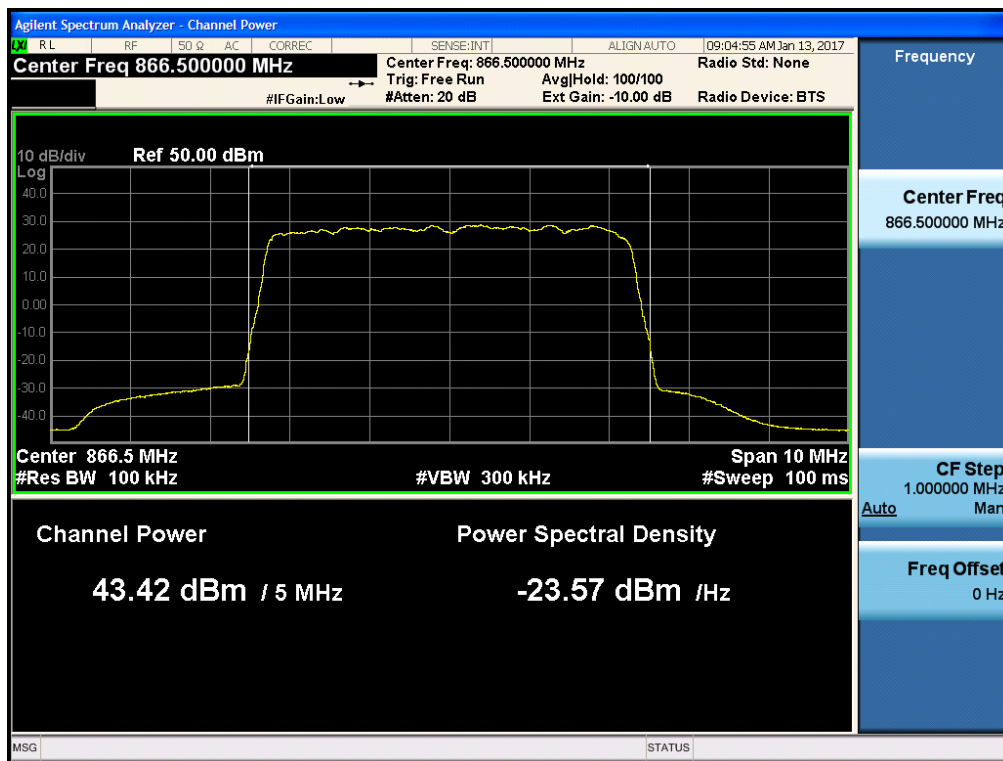
(QPSK Low Channel)



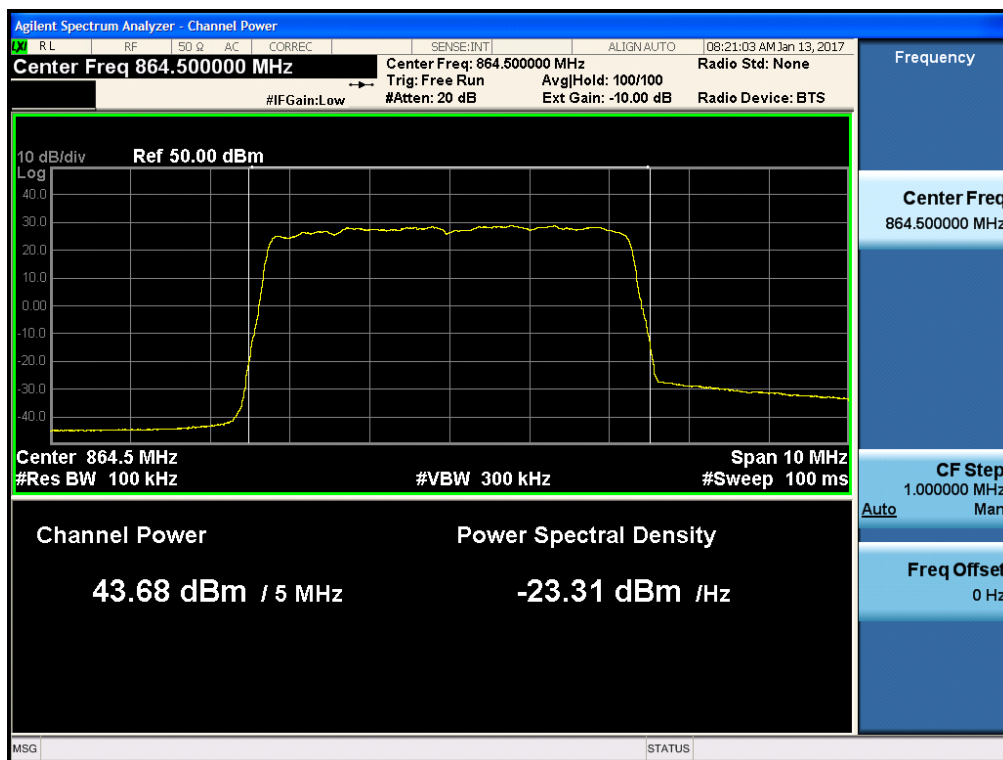
(QPSK Middle Channel)



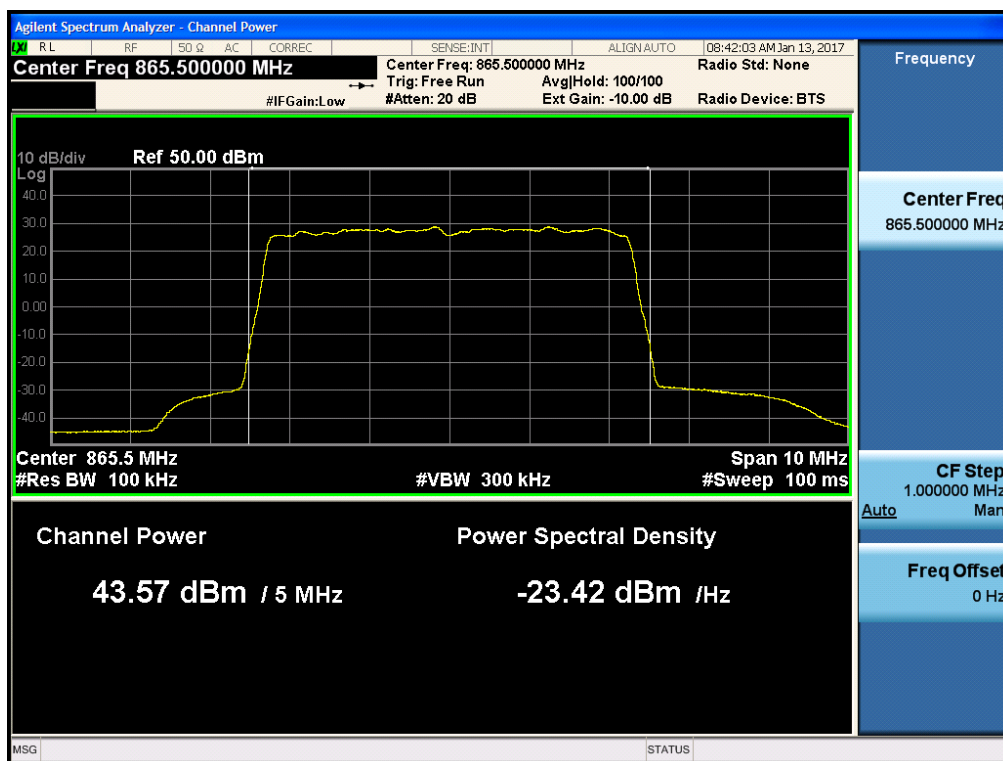
(QPSK High Channel)



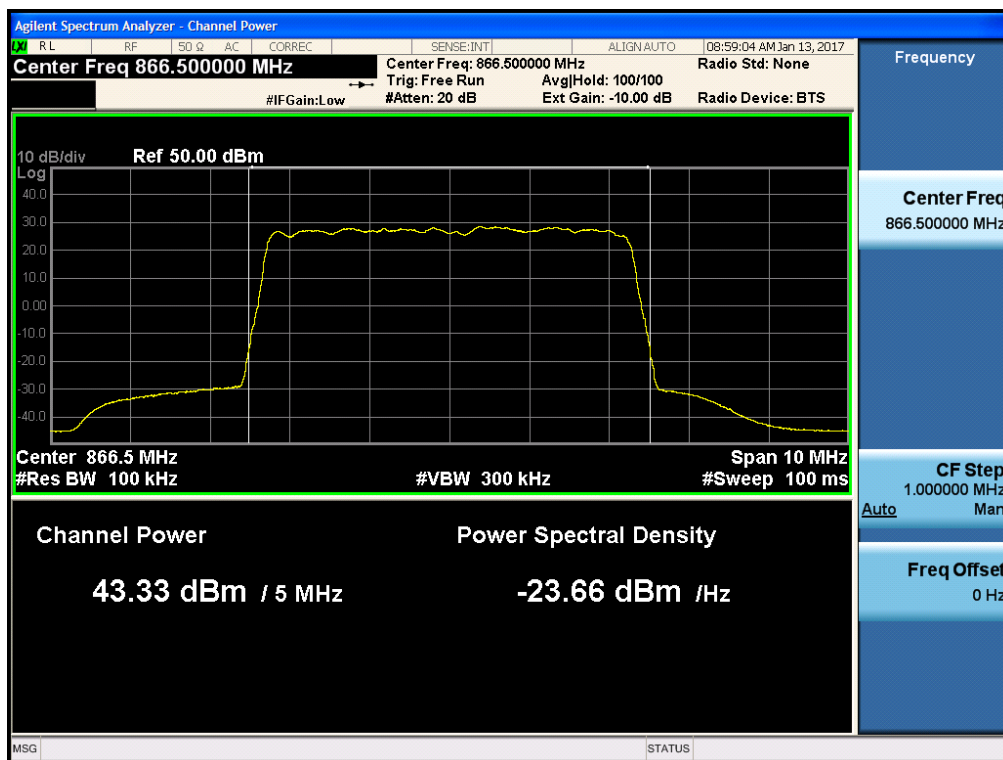
(16QAM Low Channel)



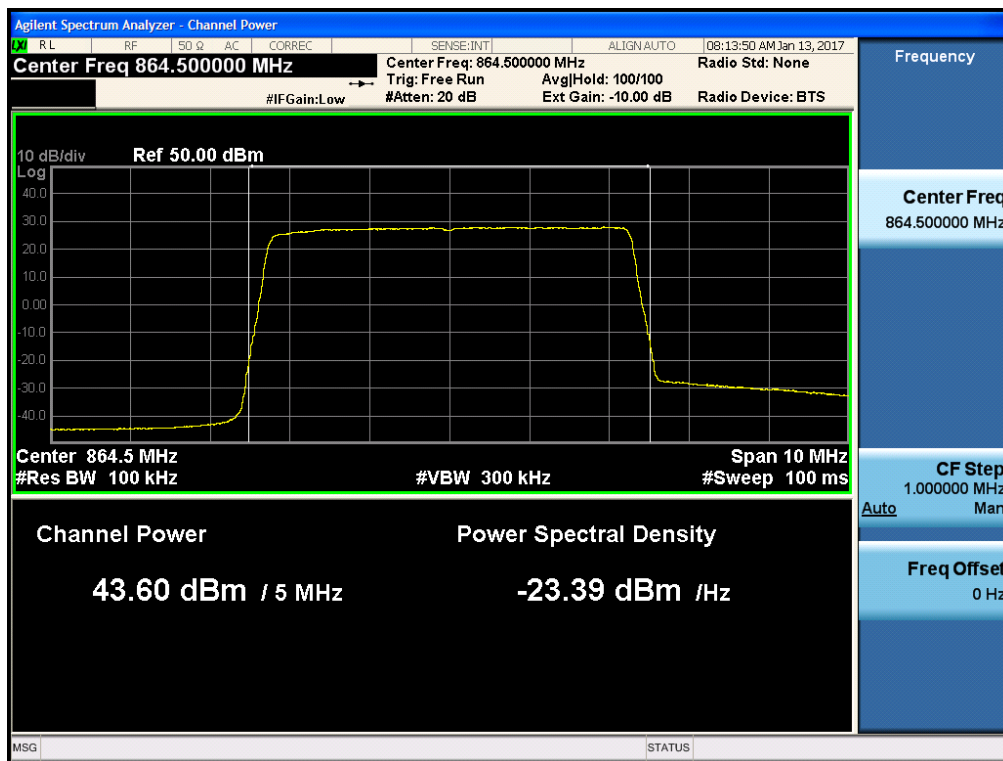
(16QAM Middle Channel)



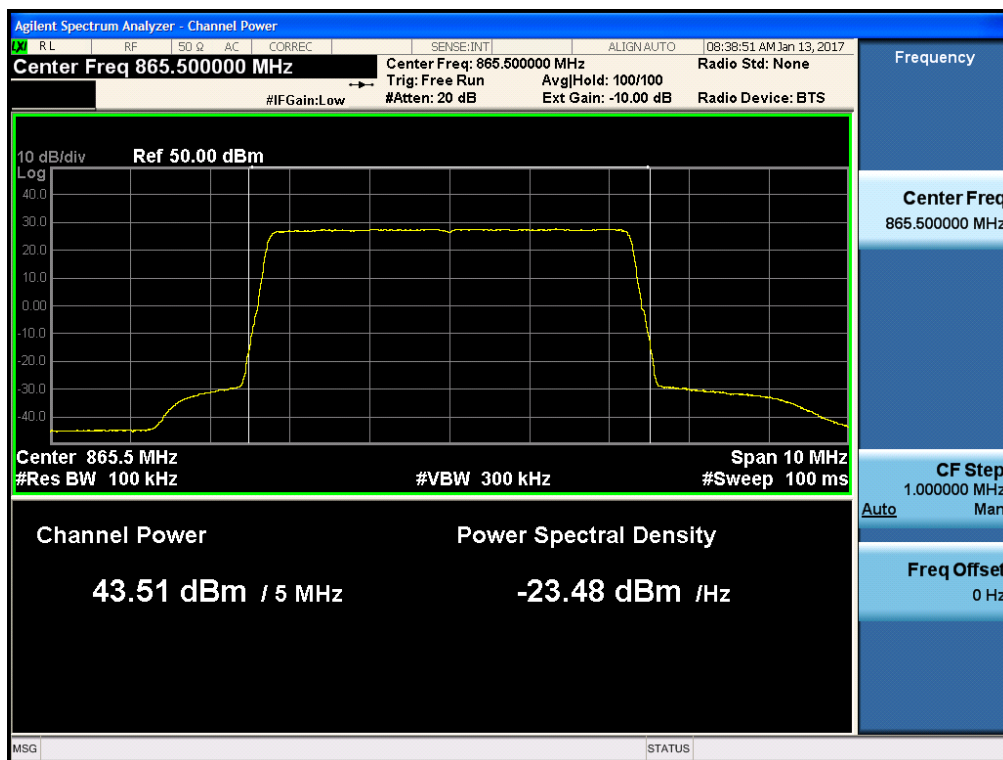
(16QAM High Channel)



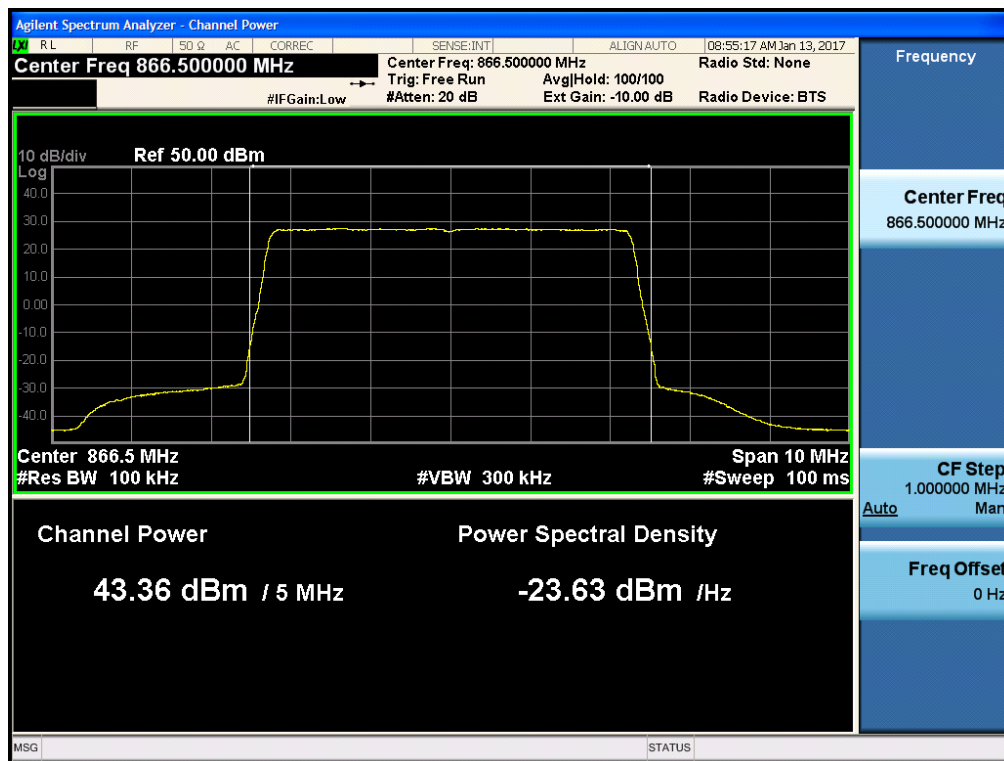
(64QAM Low Channel)



(64QAM Middle Channel)

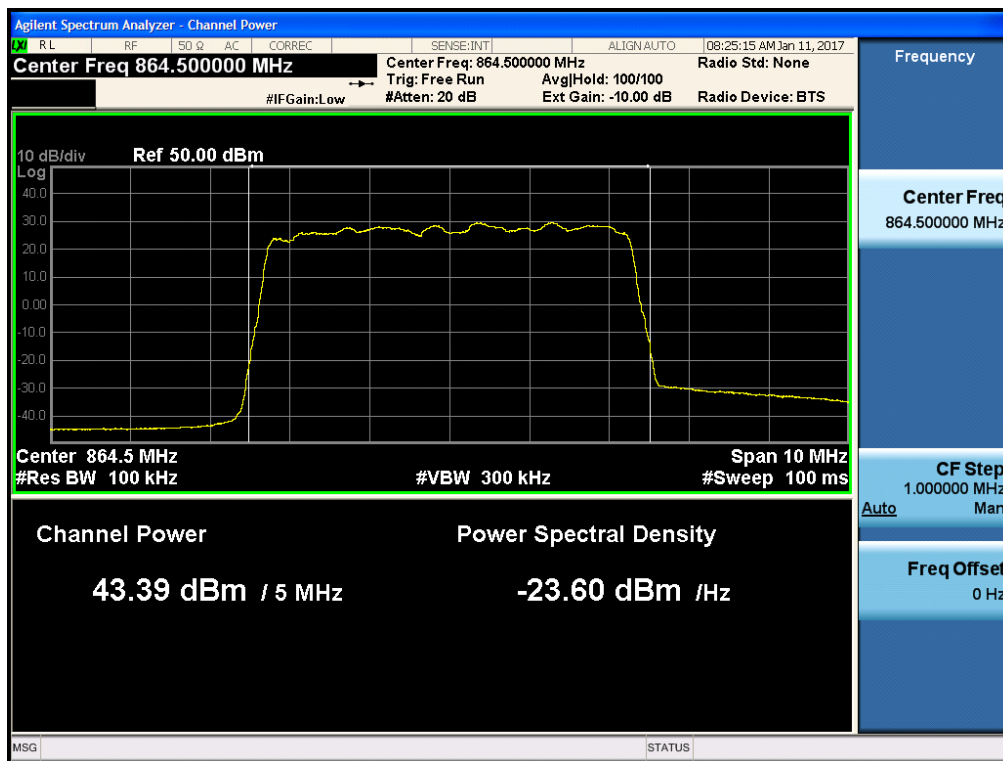


(64QAM High Channel)

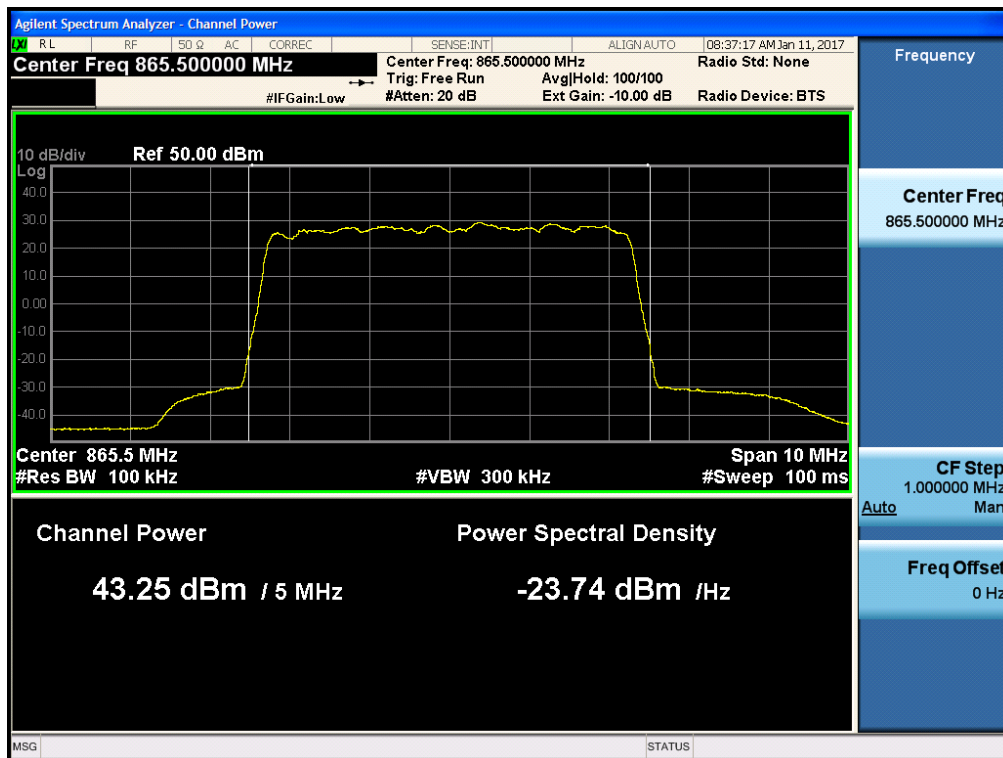


Plot Data for Output Port 3 (Conducted Output Power)

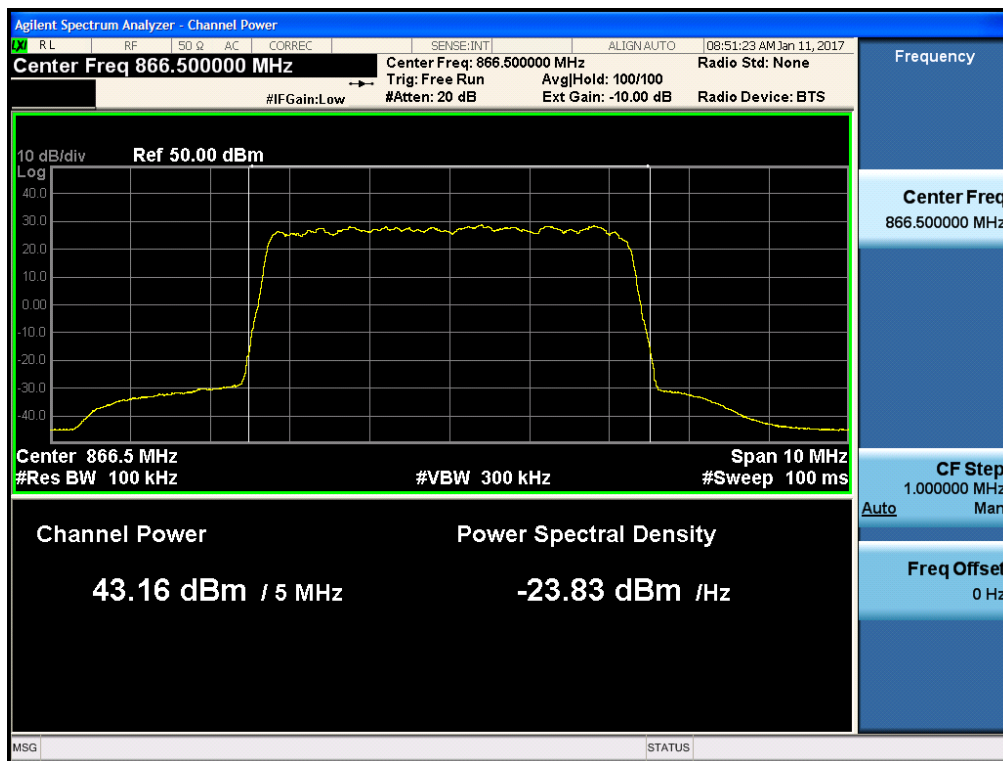
(QPSK Low Channel)



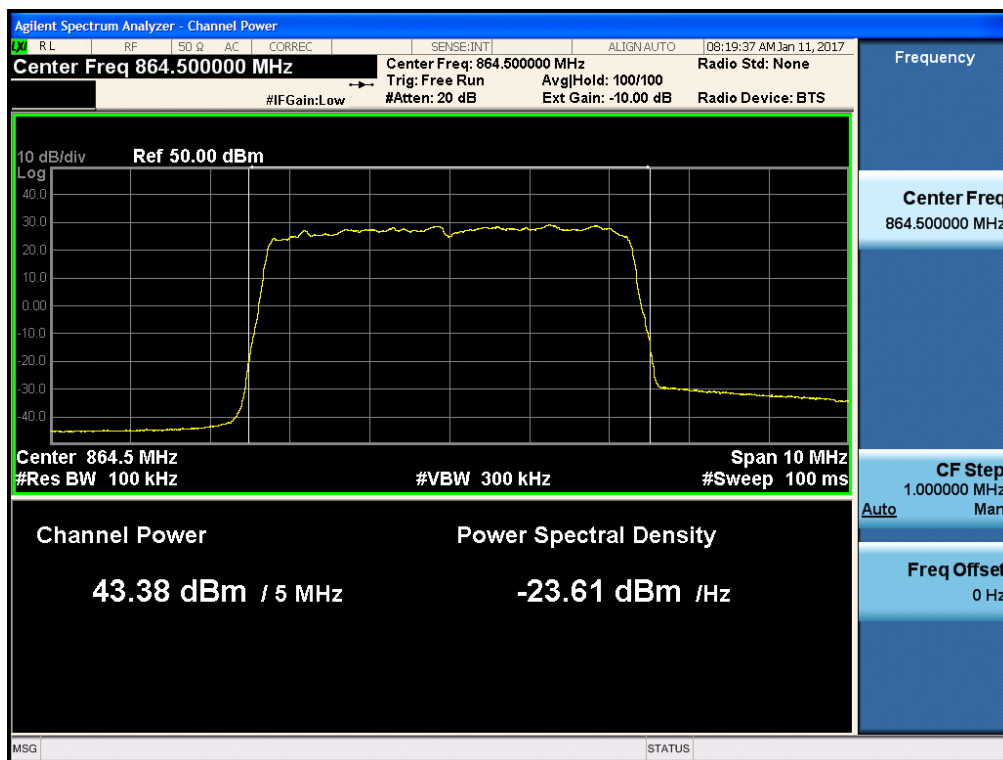
(QPSK Middle Channel)



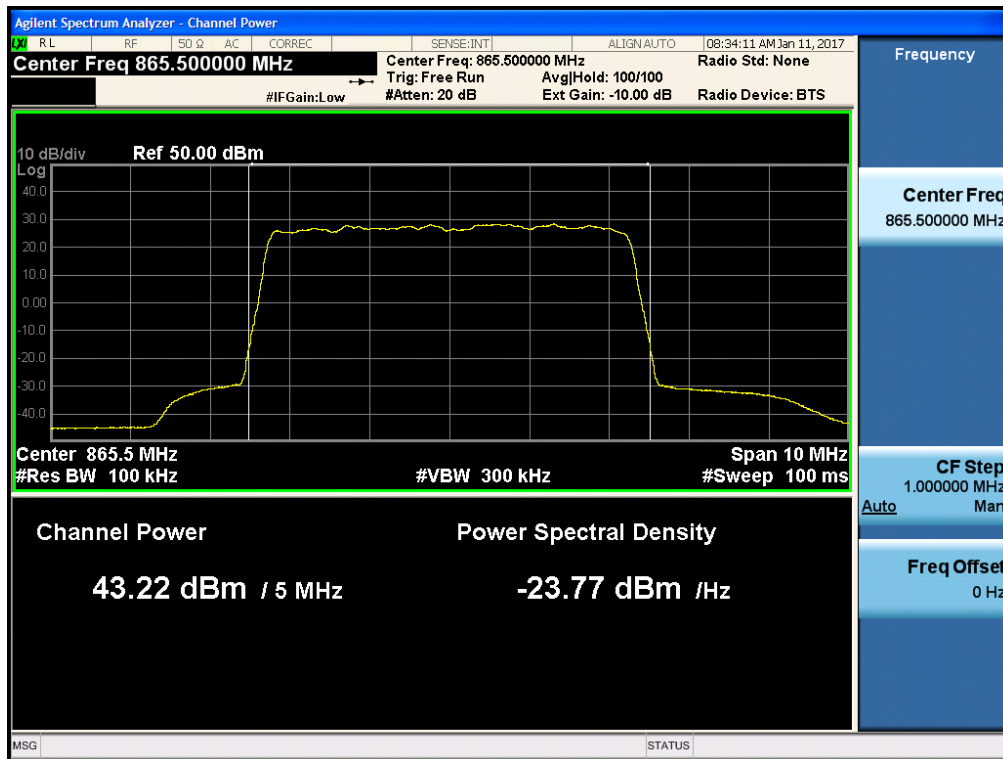
(QPSK High Channel)



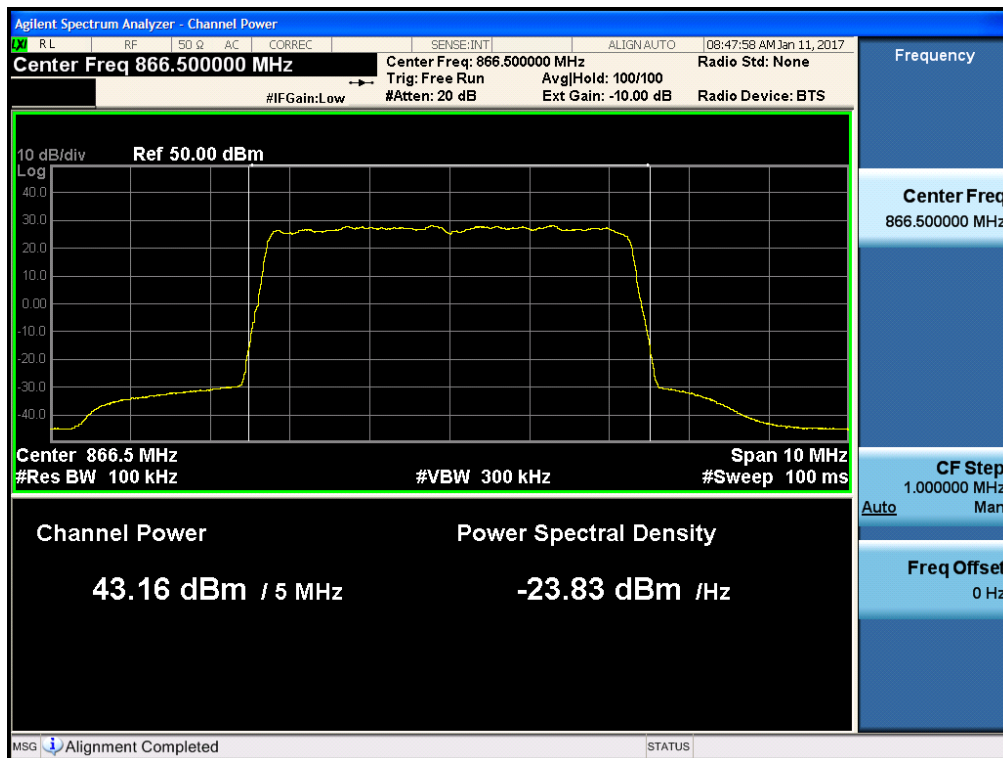
(16QAM Low Channel)



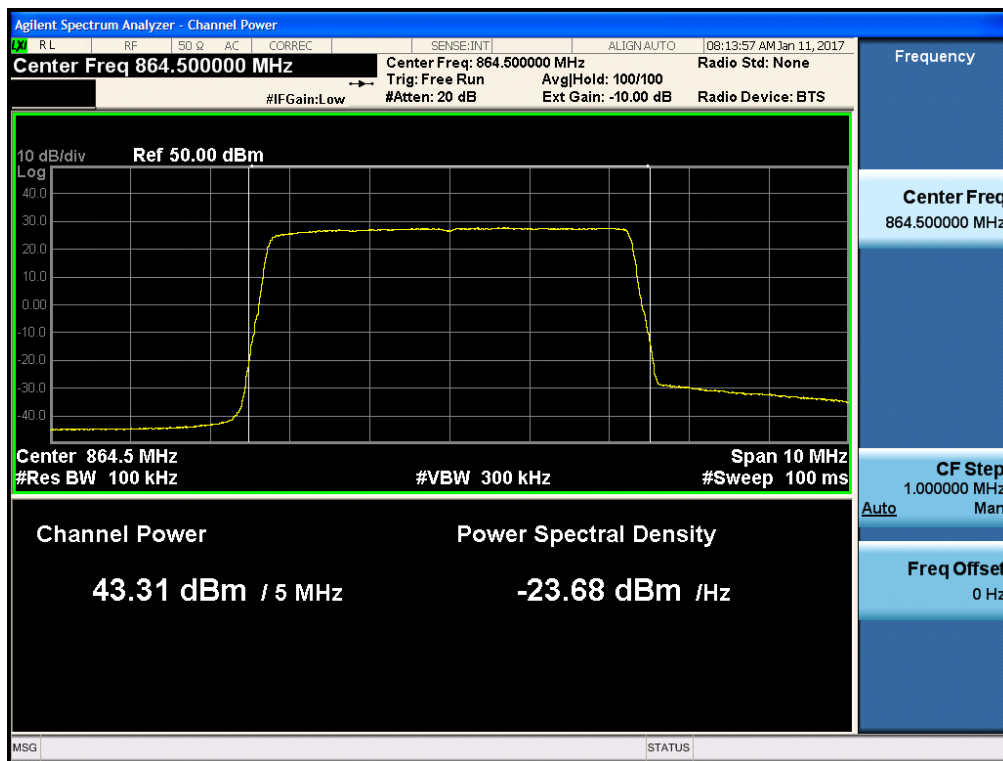
(16QAM Middle Channel)



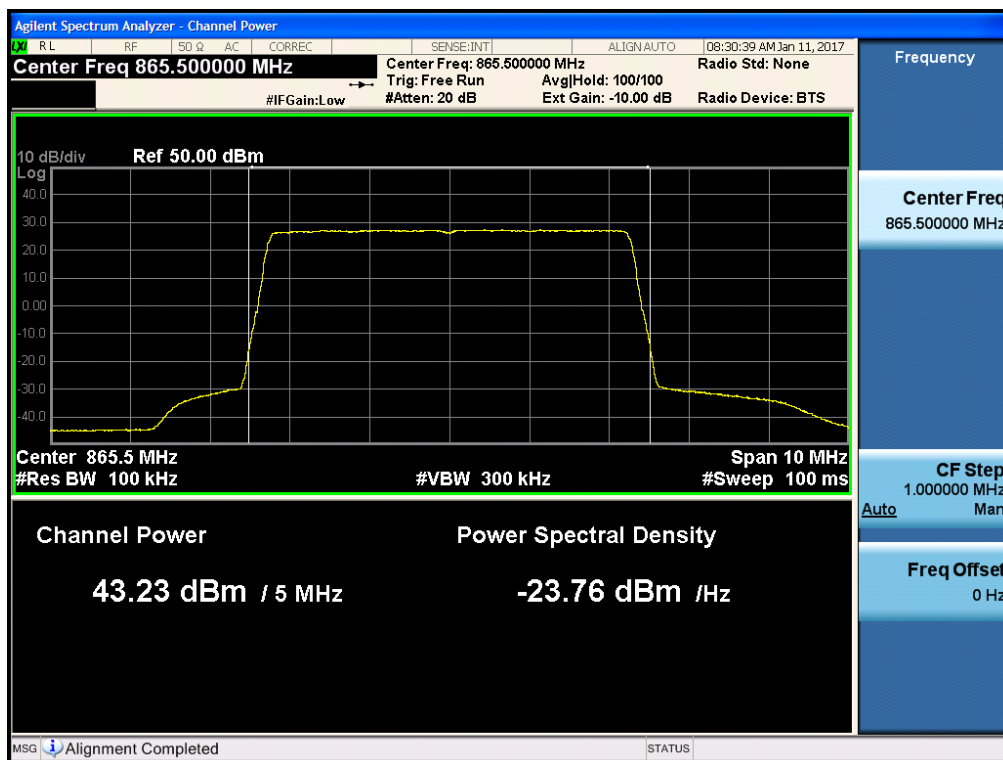
(16QAM High Channel)



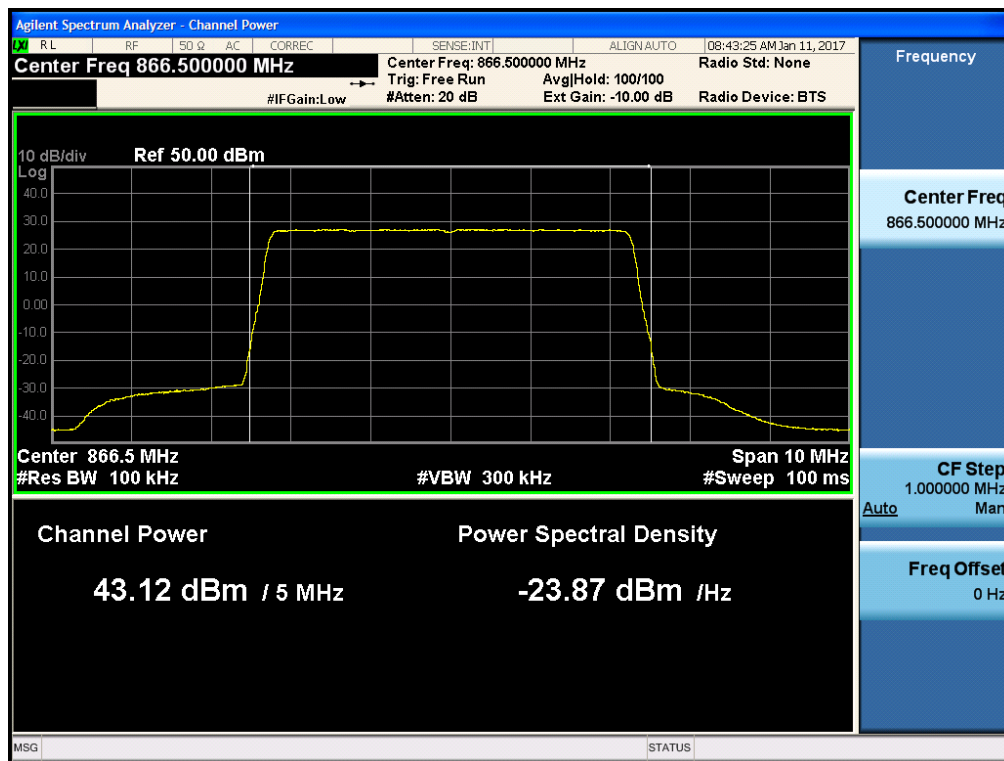
(64QAM Low Channel)



(64QAM Middle Channel)



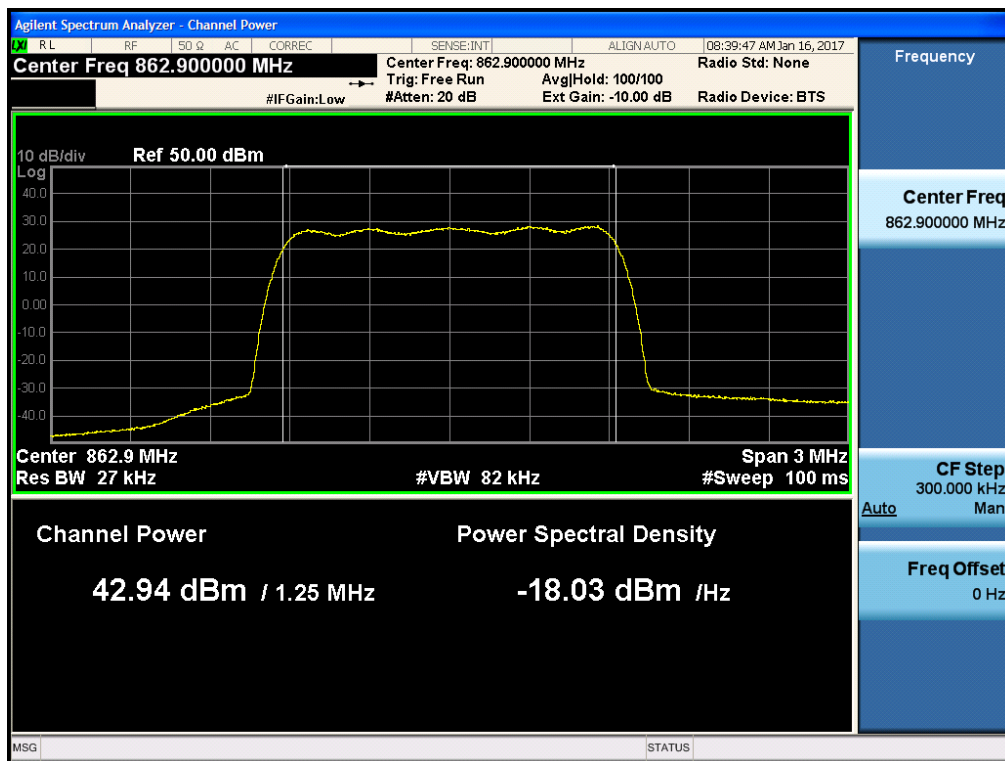
(64QAM High Channel)



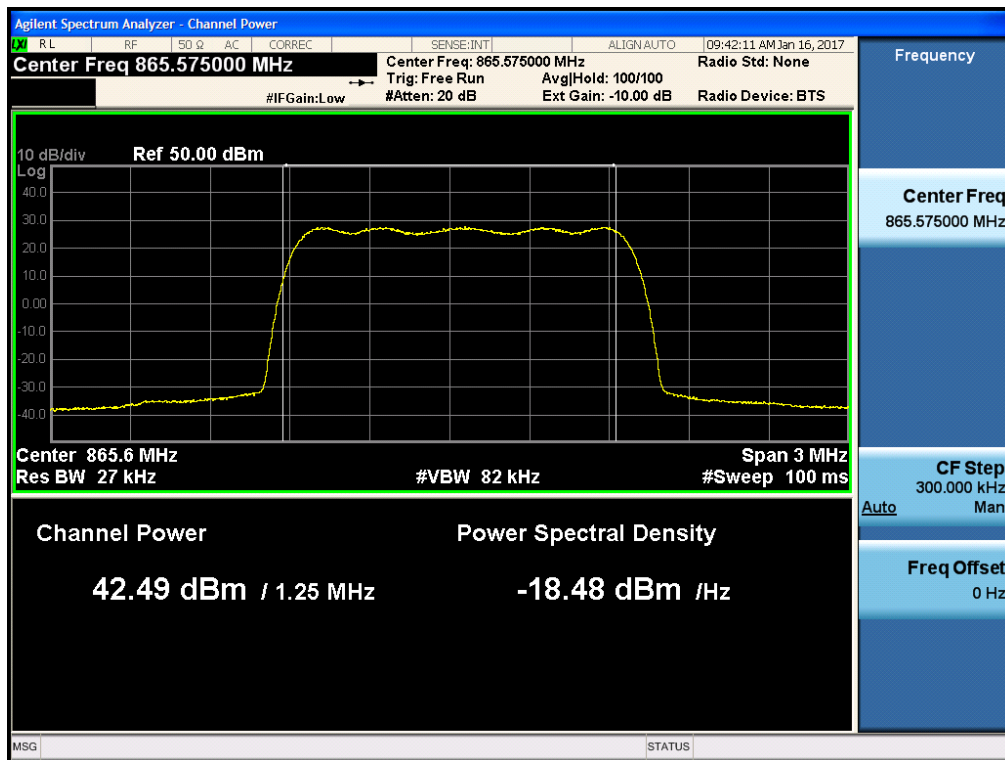
CDMA

Plot Data for Output Port 0 (Conducted Output Power)

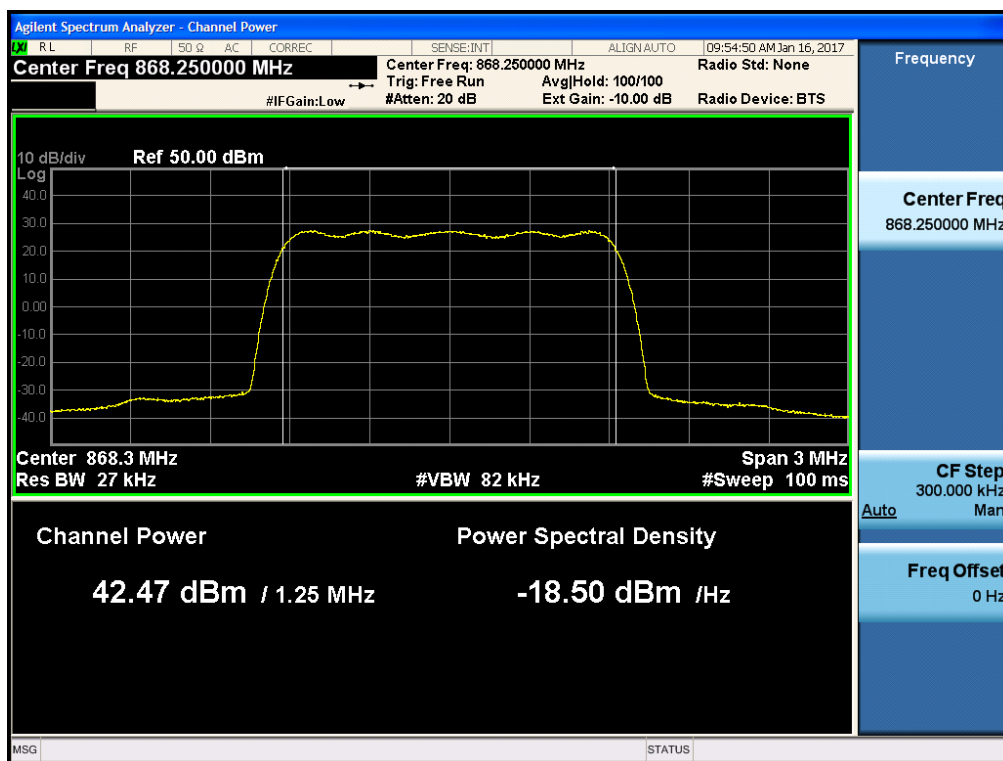
(QPSK Low Channel)



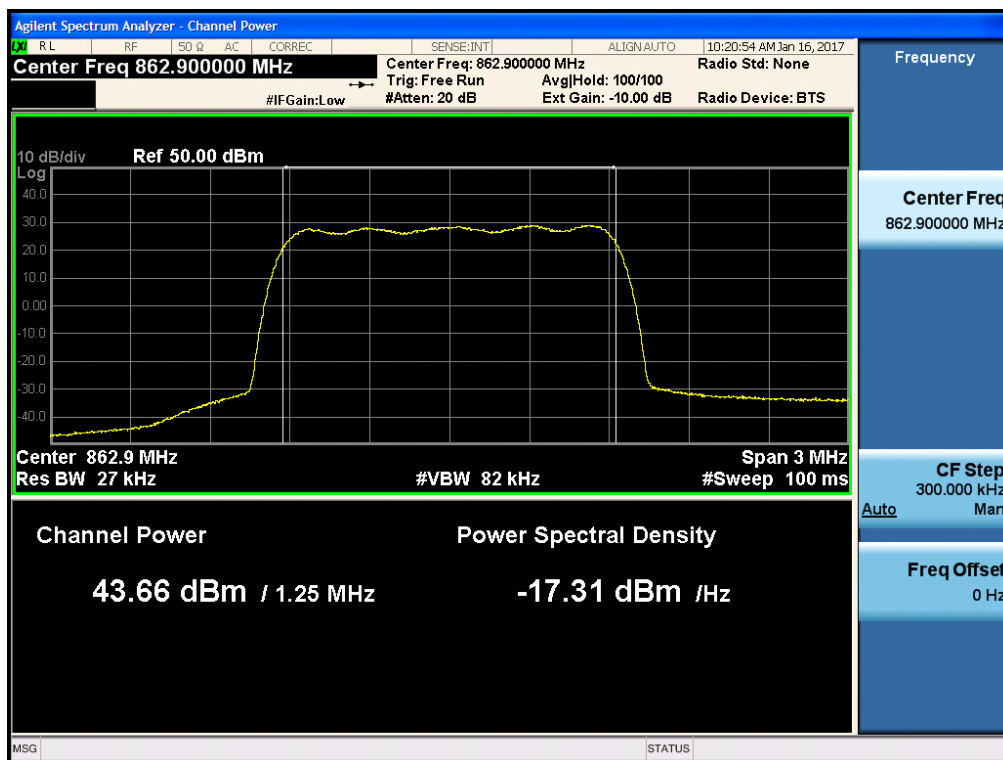
(QPSK Middle Channel)



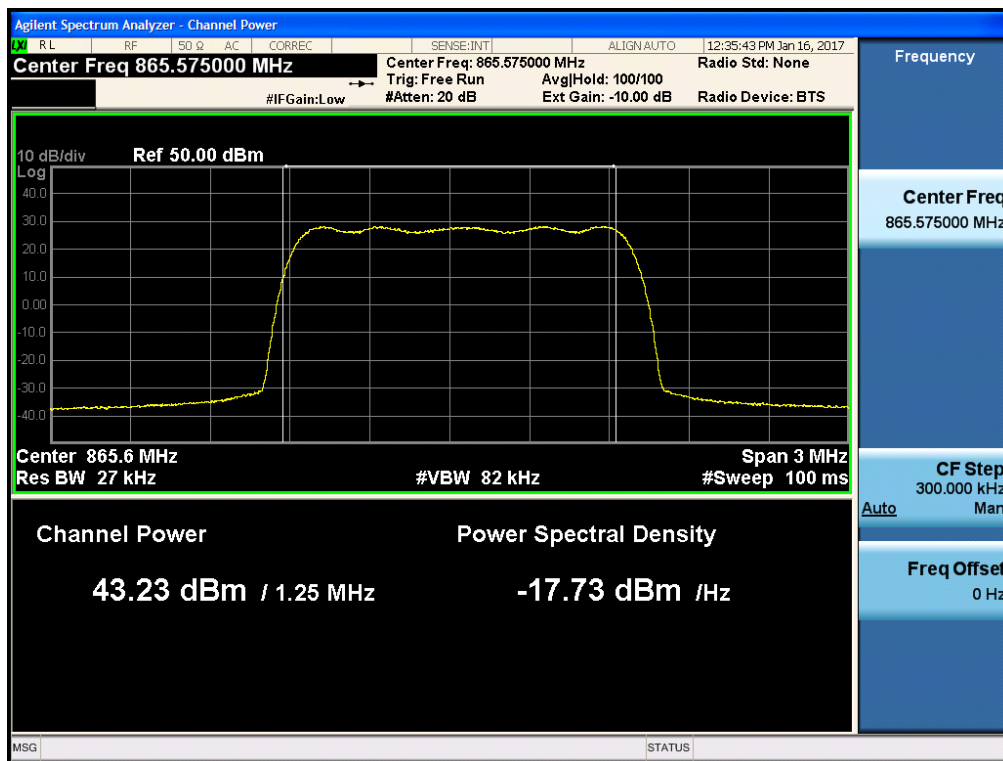
(QPSK High Channel)



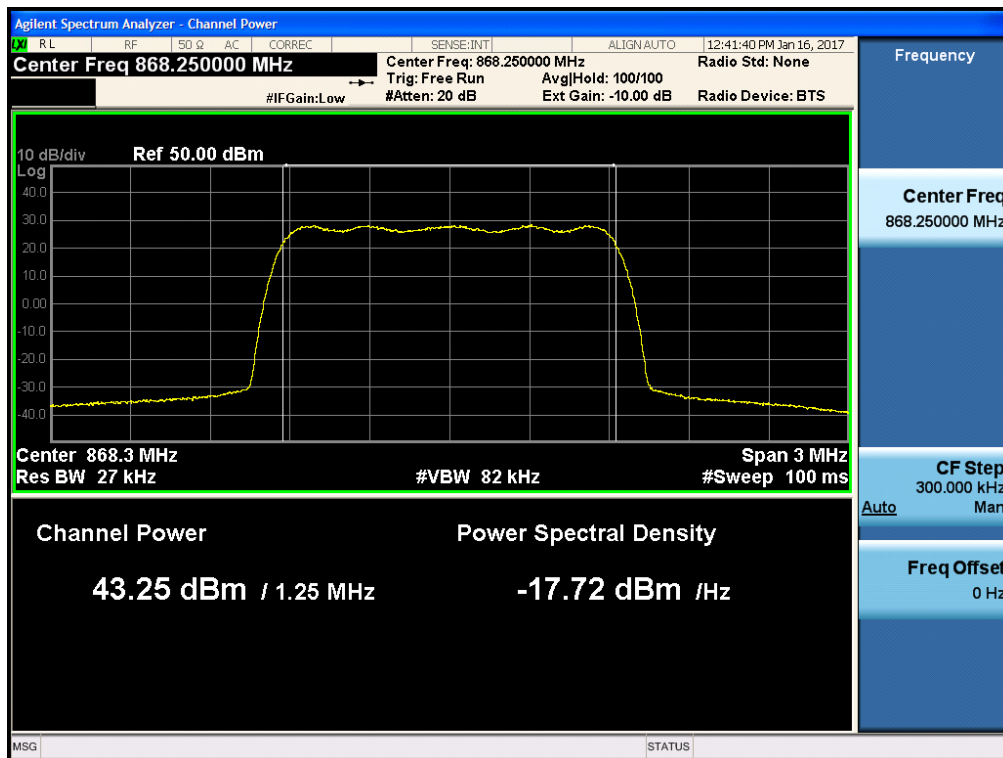
(16QAM Low Channel)



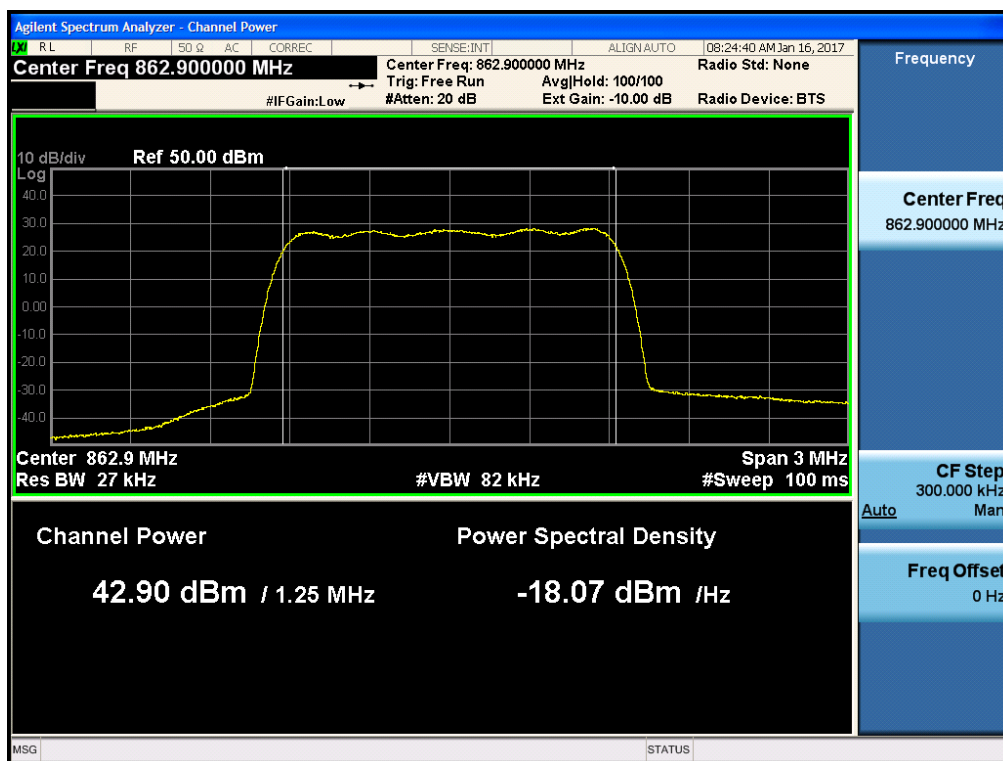
(16QAM Middle Channel)



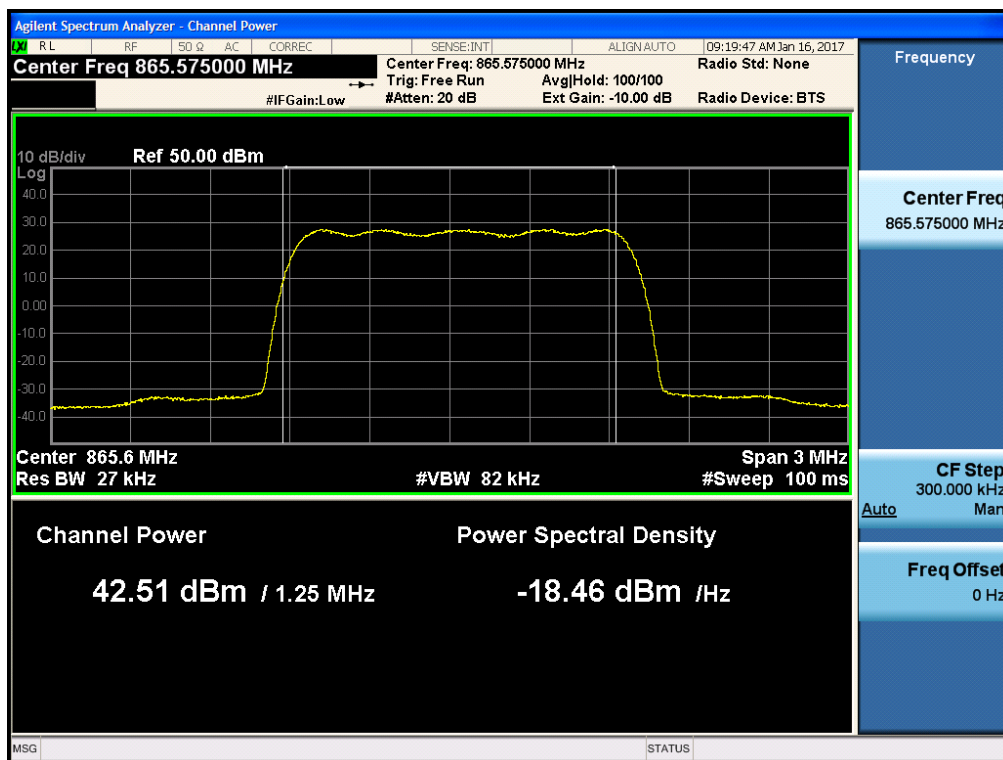
(16QAM High Channel)



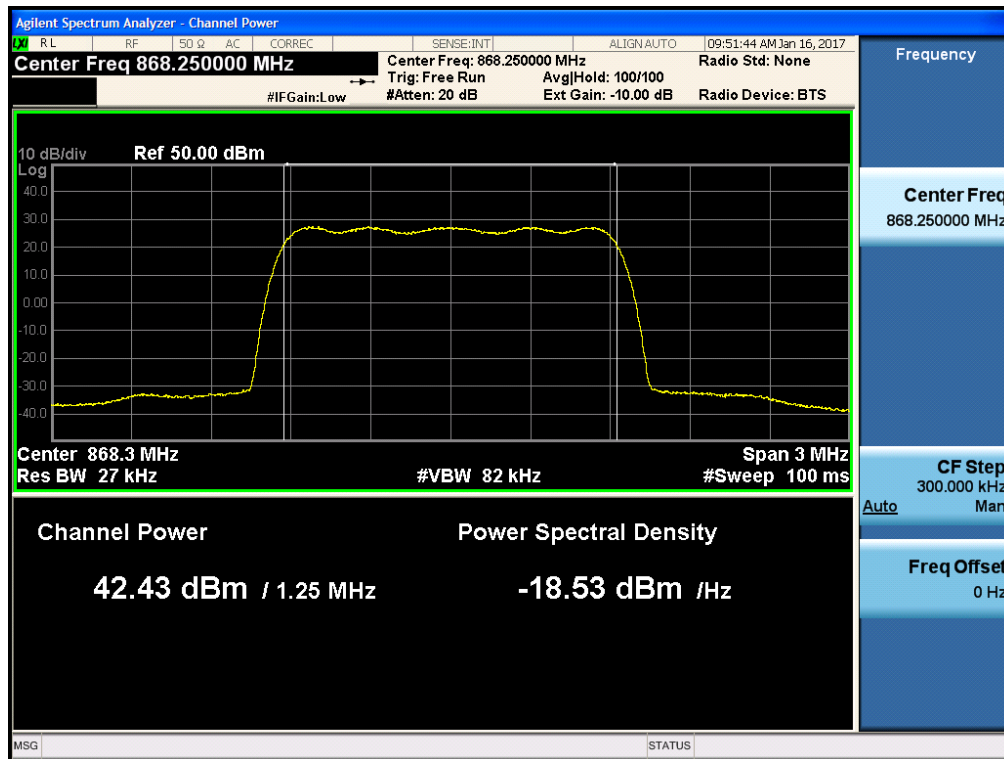
(BPSK Low Channel)



(BPSK Middle Channel)



(BPSK High Channel)



6. OCCUPIED BANDWIDTH

Test Requirements:

§ 2.1049 Measurements required: Occupied bandwidth.

The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission shall be measured under the following conditions as applicable:

- (g) Transmitters in which the modulating baseband comprises not more than three independent channels—when modulated by the full complement of signals for which the transmitter is rated. The level of modulation for each channel should be set to that prescribed in rule parts applicable to the services for which the transmitter is intended. If specific modulation levels are not set forth in the rules, the tests should provide the manufacturer's maximum rated condition.
- (h) Transmitters employing digital modulation techniques—when modulated by an input signal such that its amplitude and symbol rate represent the maximum rated conditions under which the equipment will be operated. The signal shall be applied through any filter networks, pseudo-random generators or other devices required in normal service. Additionally, the occupied bandwidth shall be shown for operation with any devices used for modifying the spectrum when such devices are optional at the discretion of the user.

Test Procedures:

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.

Test Results:

LTE 3 MHz

Test Data at Output Port 0

Frequency (MHz)	Occupied Bandwidth (MHz)		
	QPSK	16QAM	64QAM
863.50	2.6980	2.7005	2.6977
865.50	2.7155	2.7149	2.7143
867.50	2.7073	2.7105	2.7127

Test Data at Output Port 1

Frequency (MHz)	Occupied Bandwidth (MHz)		
	QPSK	16QAM	64QAM
863.50	2.6916	2.6999	2.7030
865.50	2.6992	2.7190	2.7109
867.50	2.7176	2.7172	2.7133

Test Data at Output Port 2

Frequency (MHz)	Occupied Bandwidth (MHz)		
	QPSK	16QAM	64QAM
863.50	2.6929	2.7006	2.7041
865.50	2.7012	2.7152	2.7181
867.50	2.7119	2.7188	2.7179

Test Data at Output Port 3

Frequency (MHz)	Occupied Bandwidth (MHz)		
	QPSK	16QAM	64QAM
863.50	2.6889	2.6948	2.6943
865.50	2.7020	2.7169	2.7124
867.50	2.7162	2.7191	2.7183

LTE 5 MHz

Test Data at Output Port 0

Frequency (MHz)	Occupied Bandwidth (MHz)		
	QPSK	16QAM	64QAM
864.50	4.4943	4.4769	4.4963
865.50	4.4898	4.4905	4.4973
866.50	4.4783	4.5097	4.5003

Test Data at Output Port 1

Frequency (MHz)	Occupied Bandwidth (MHz)		
	QPSK	16QAM	64QAM
864.50	4.4752	4.4750	4.4915
865.50	4.4925	4.4949	4.5010
866.50	4.4947	4.4893	4.5124

Test Data at Output Port 2

Frequency (MHz)	Occupied Bandwidth (MHz)		
	QPSK	16QAM	64QAM
864.50	4.4704	4.4702	4.4801
865.50	4.4884	4.4970	4.5082
866.50	4.4923	4.4843	4.5103

Test Data at Output Port 3

Frequency (MHz)	Occupied Bandwidth (MHz)		
	QPSK	16QAM	64QAM
864.50	4.4704	4.4639	4.4821
865.50	4.4882	4.4984	4.5043
866.50	4.4756	4.5064	4.5152

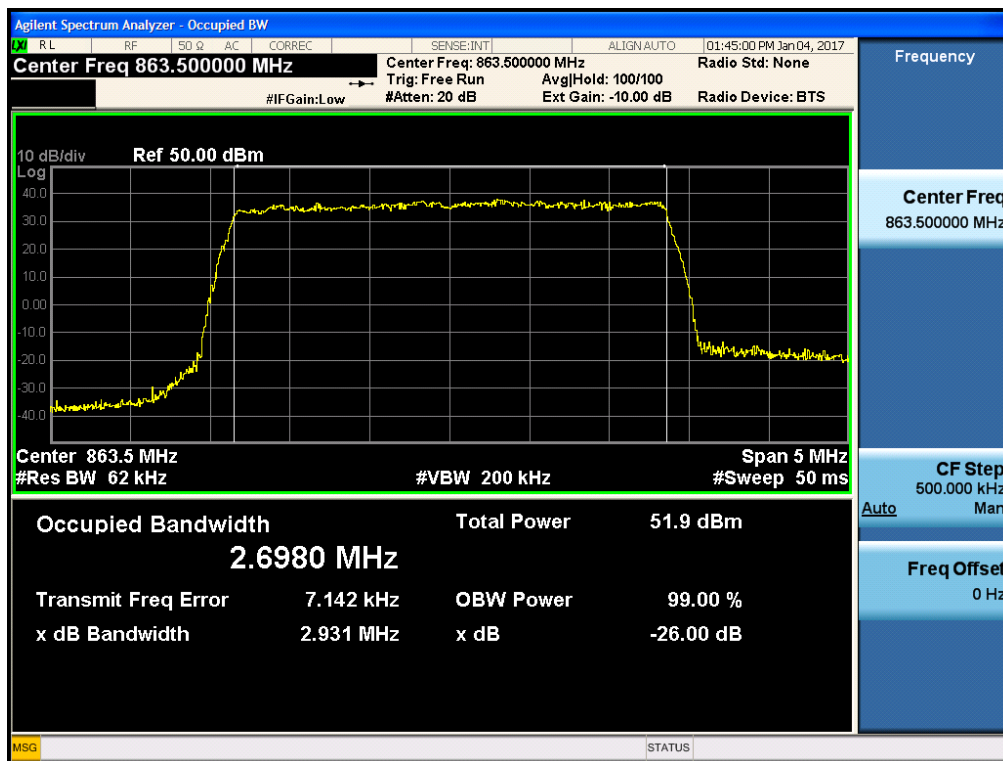
CDMA**Test Data at Output Port 0**

Frequency (MHz)	Occupied Bandwidth (MHz)		
	QPSK	16QAM	BPSK
862.900	1.2434	1.2439	1.2495
865.575	1.2503	1.2517	1.2416
868.250	1.2505	1.2541	1.2537

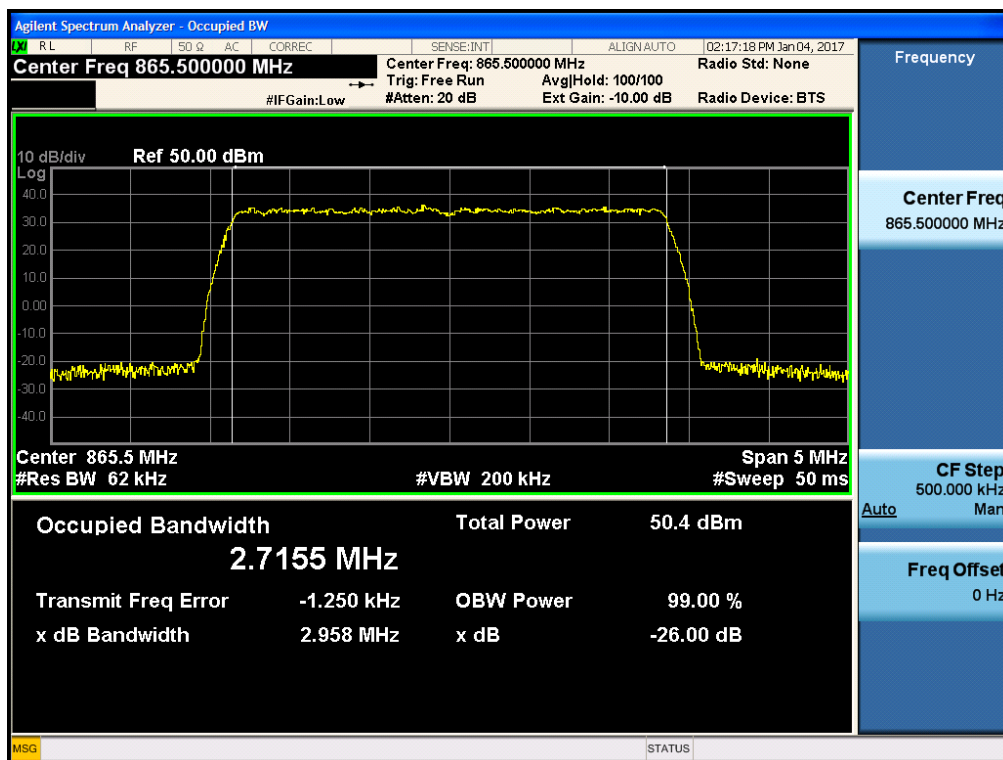
LTE 3 MHz

Test Plot at Output Port 0

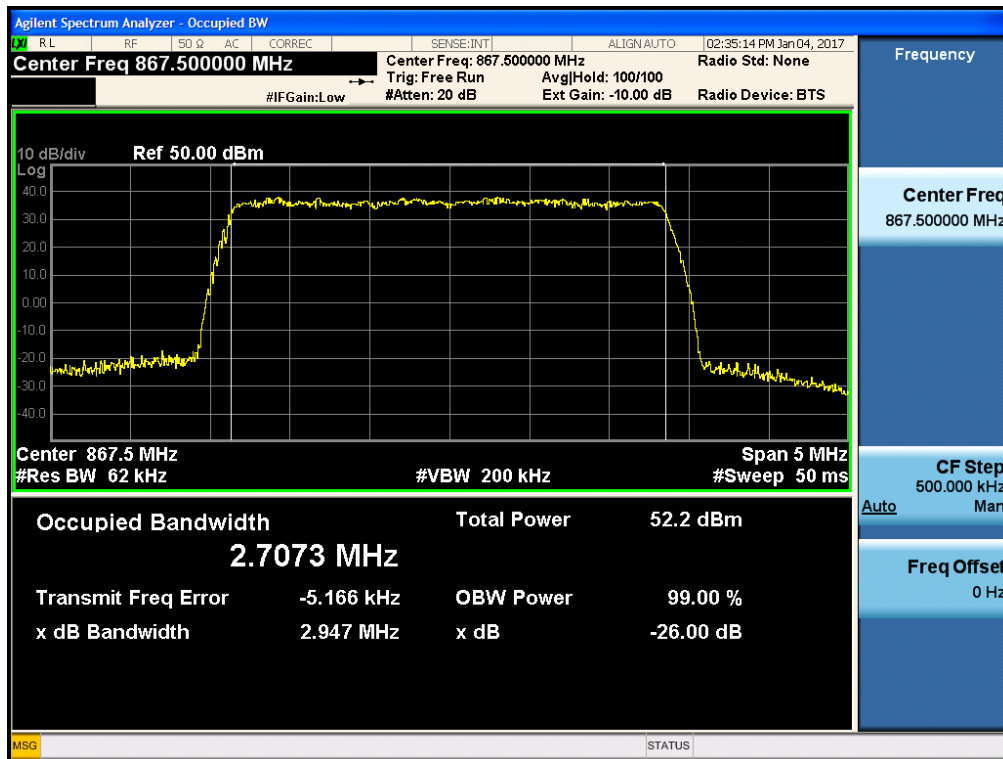
(QPSK Low Channel)



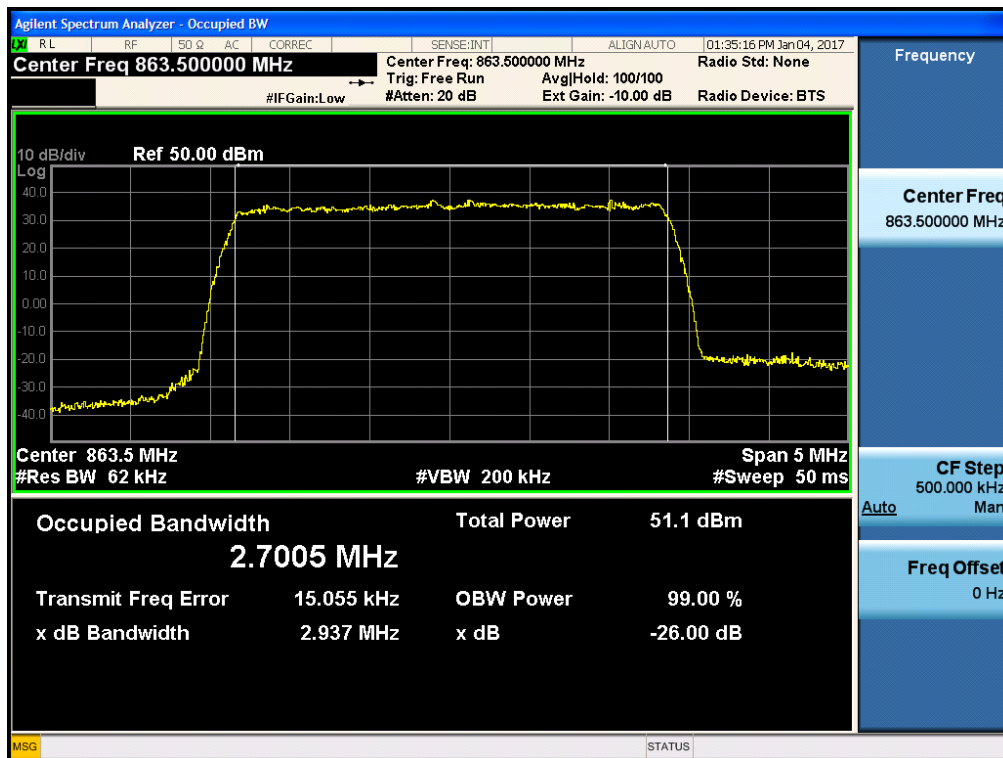
(QPSK Middle Channel)



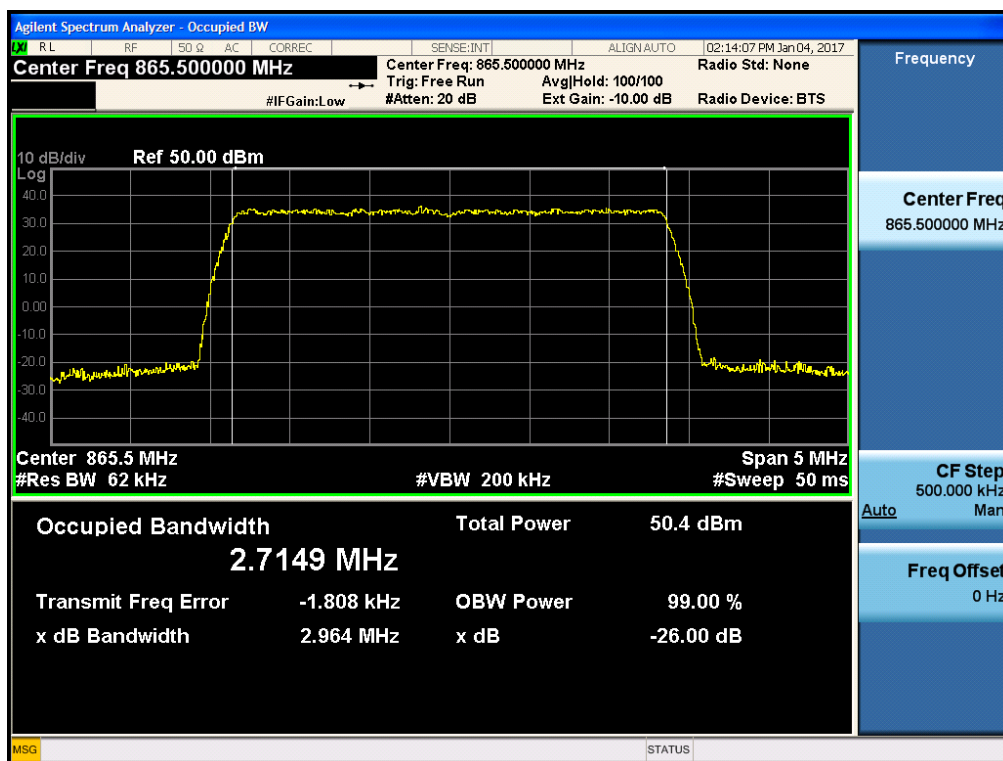
(QPSK High Channel)



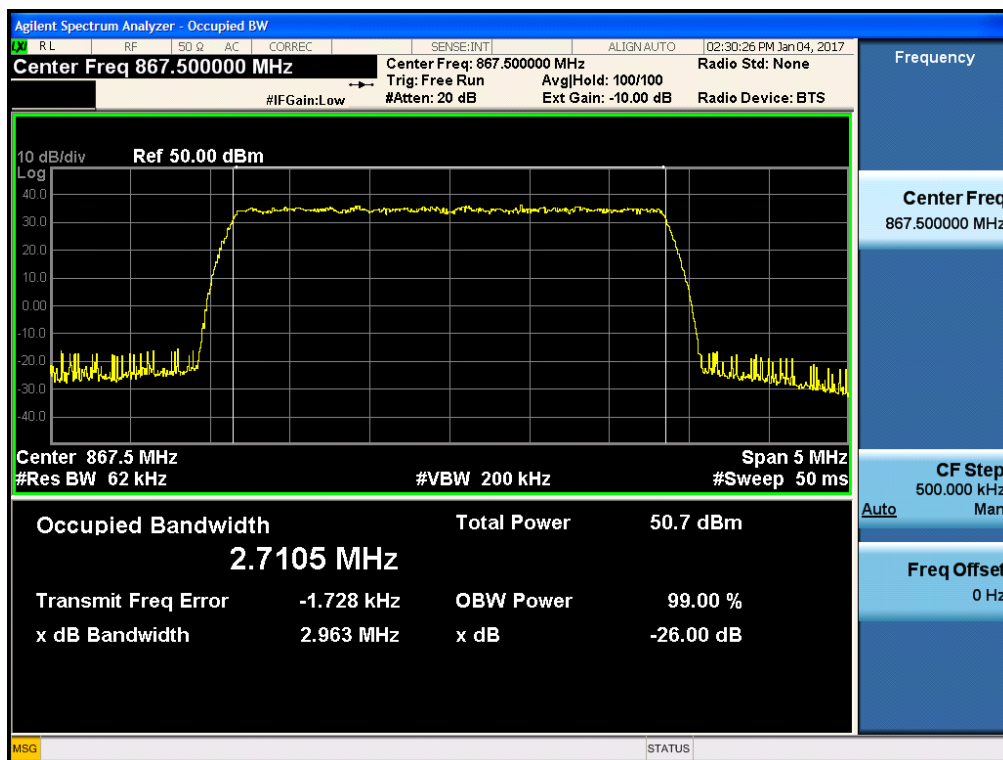
(16QAM Low Channel)



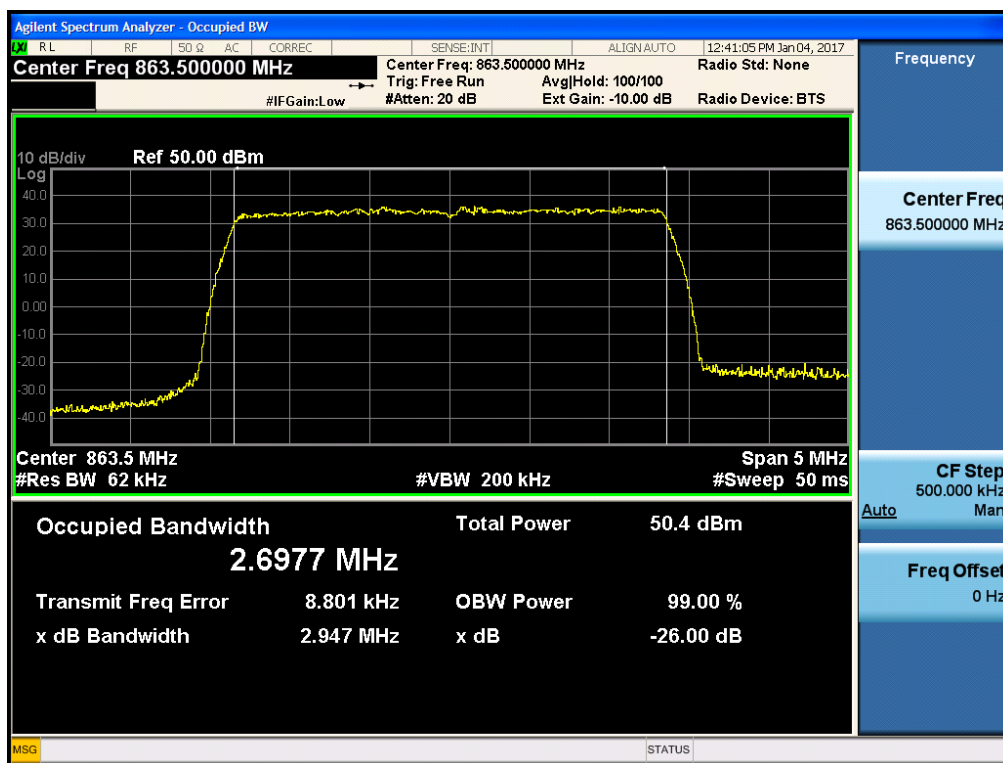
(16QAM Middle Channel)



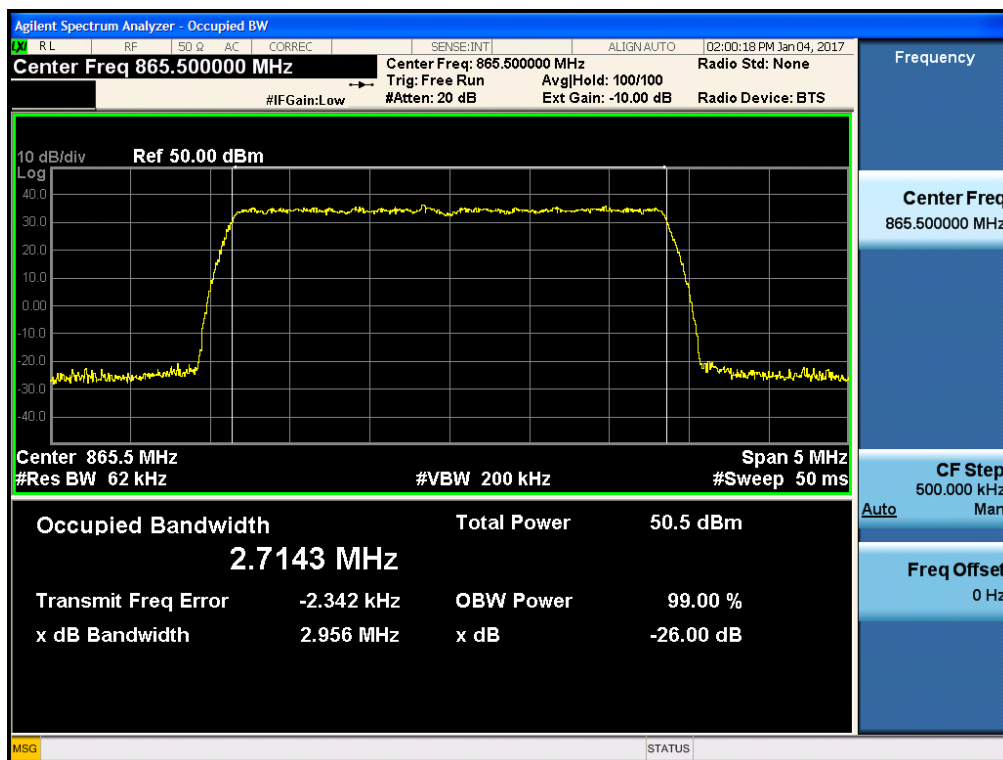
(16QAM High Channel)



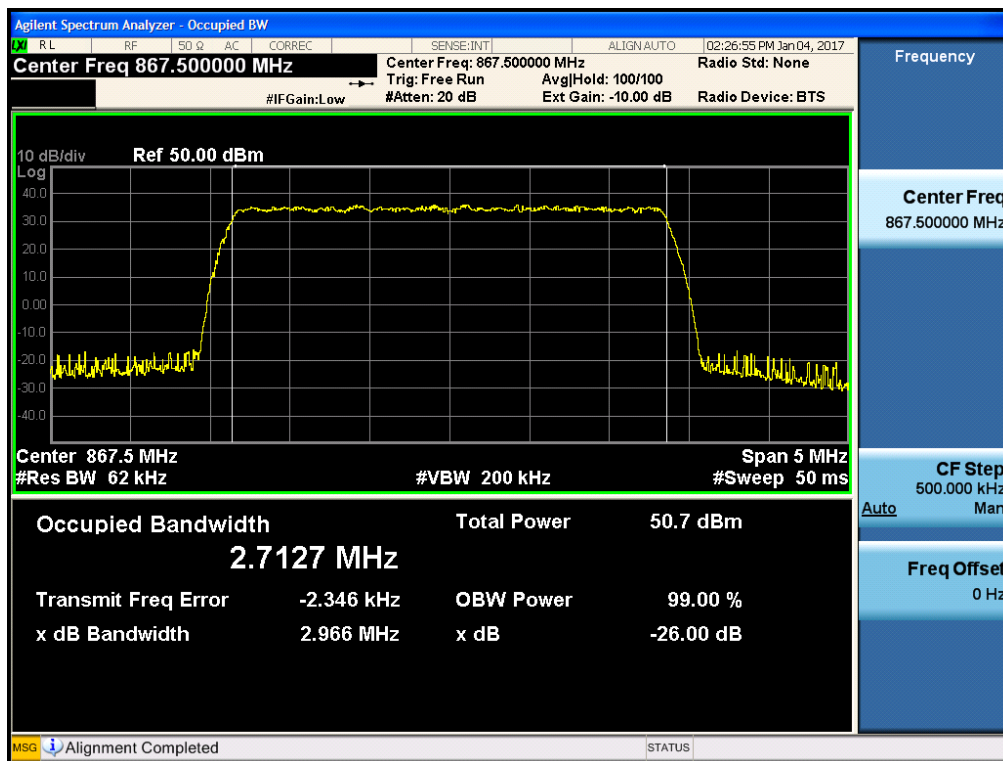
(64QAM Low Channel)



(64QAM Middle Channel)

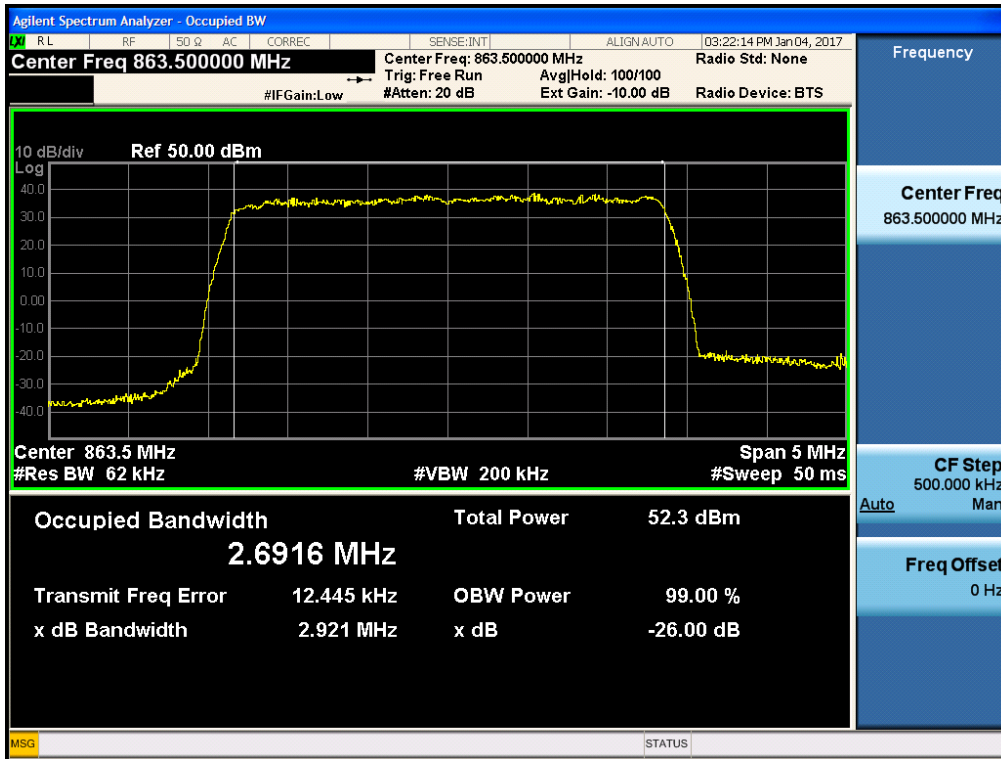


(64QAM High Channel)

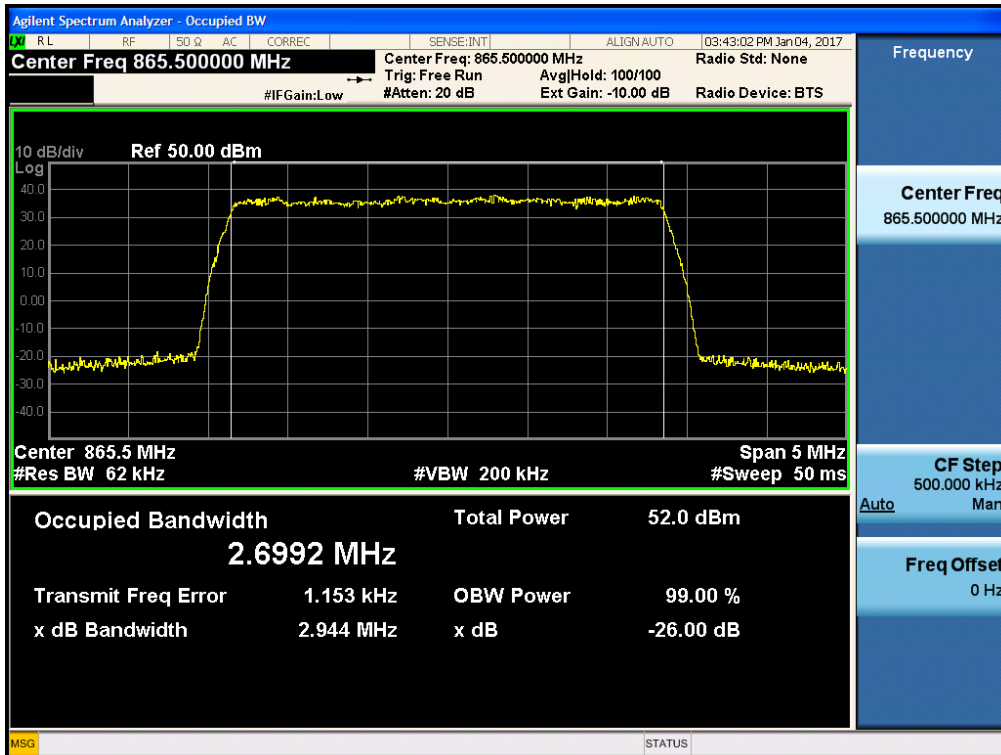


Test Plot at Output Port 1

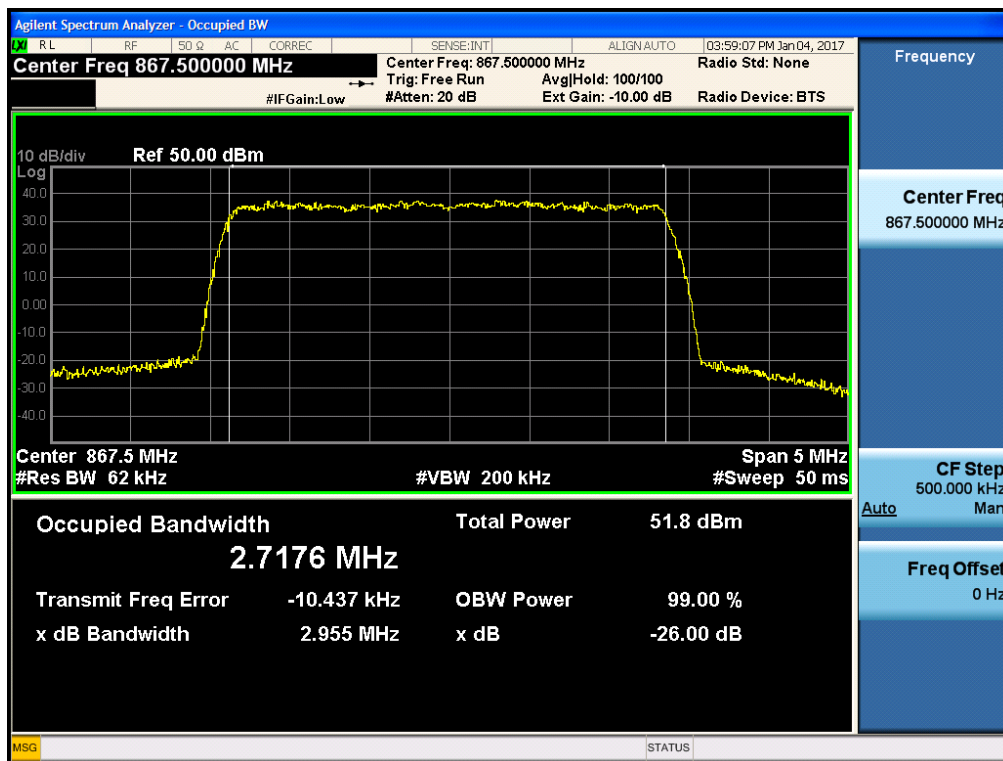
(QPSK Low Channel)



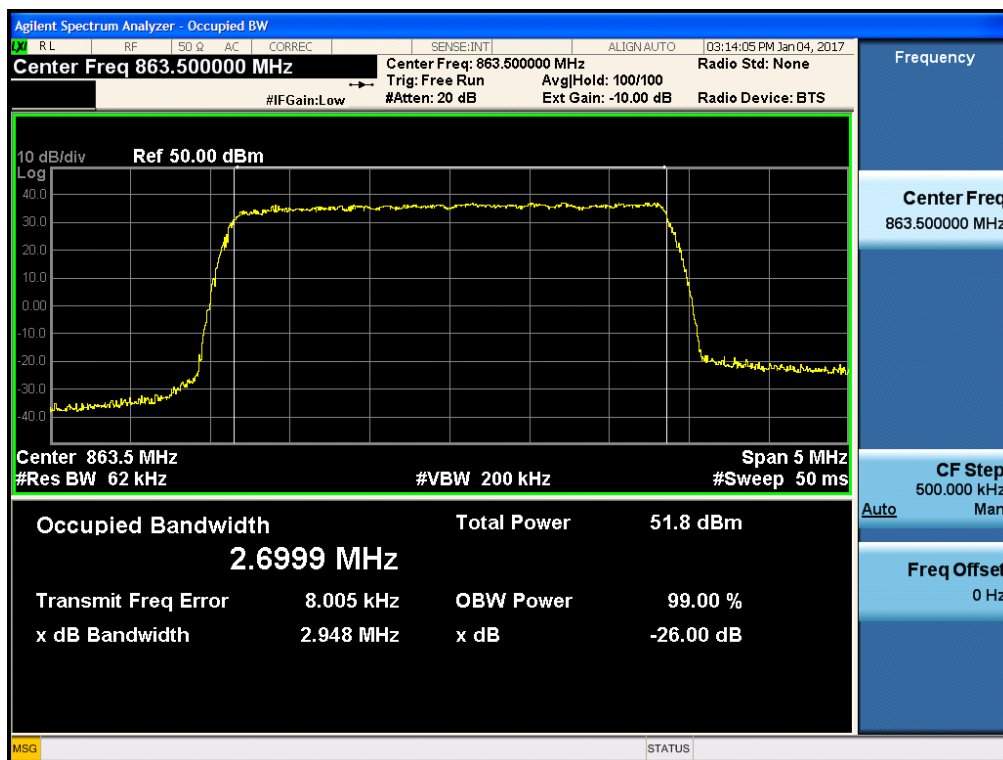
(QPSK Middle Channel)



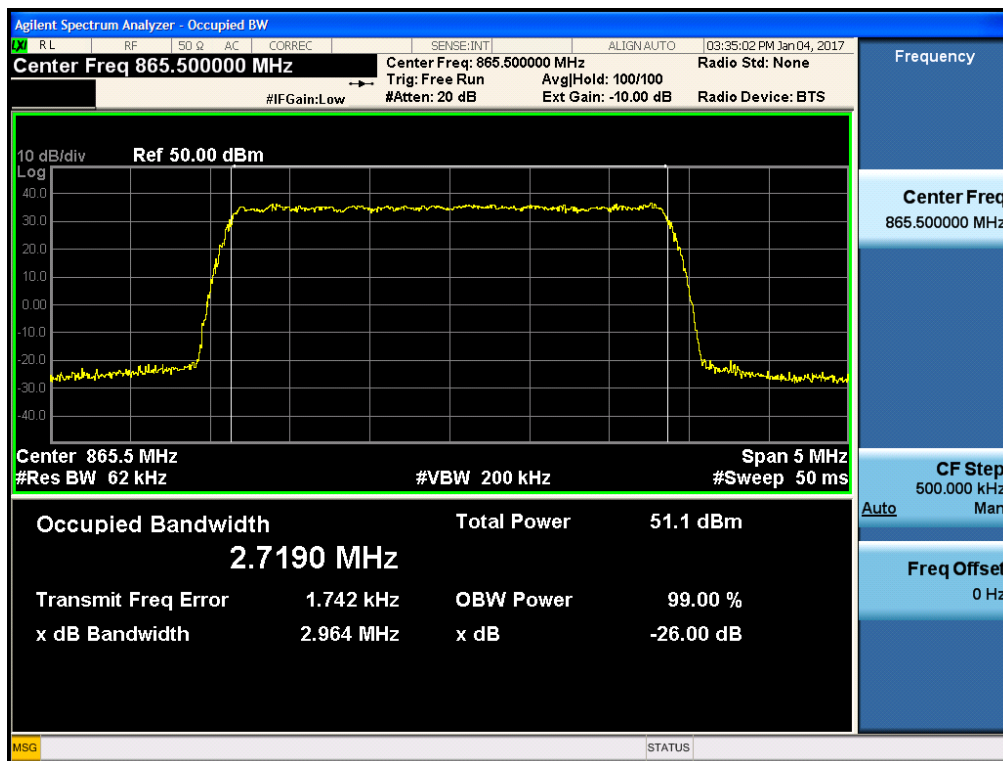
(QPSK High Channel)



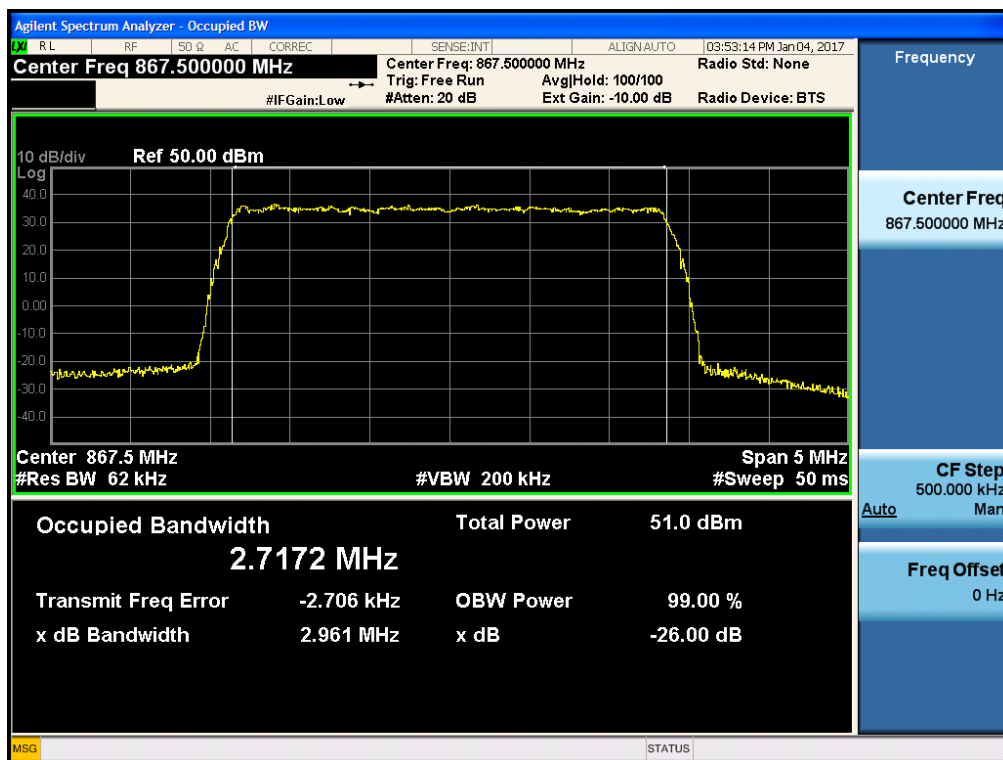
(16QAM Low Channel)



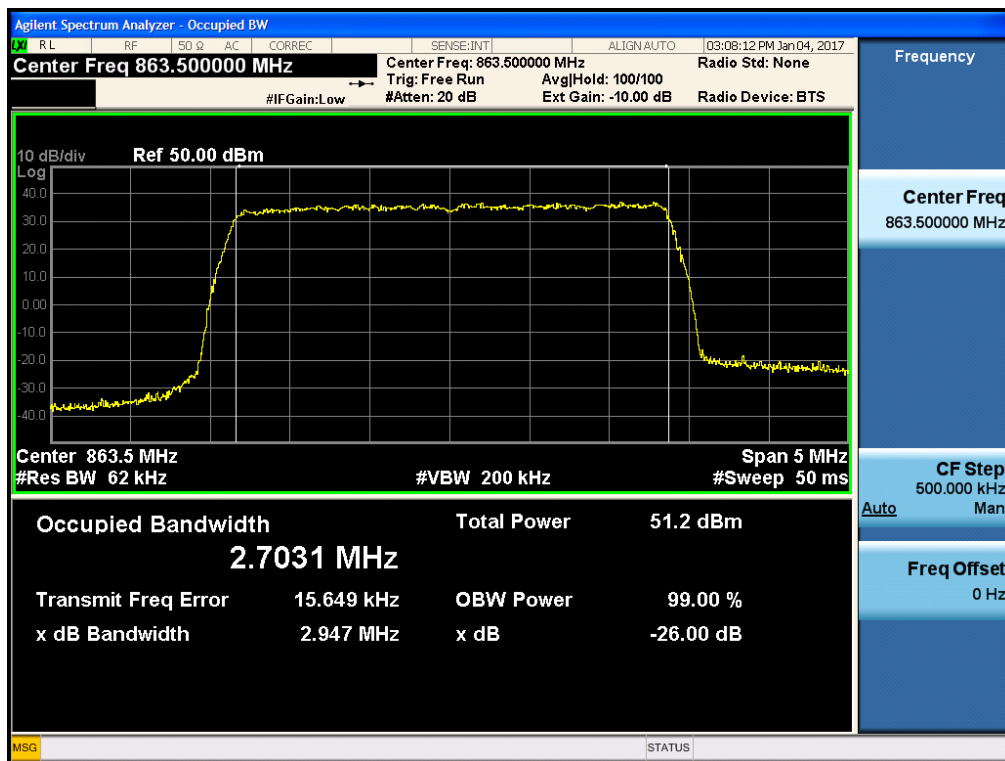
(16QAM Middle Channel)



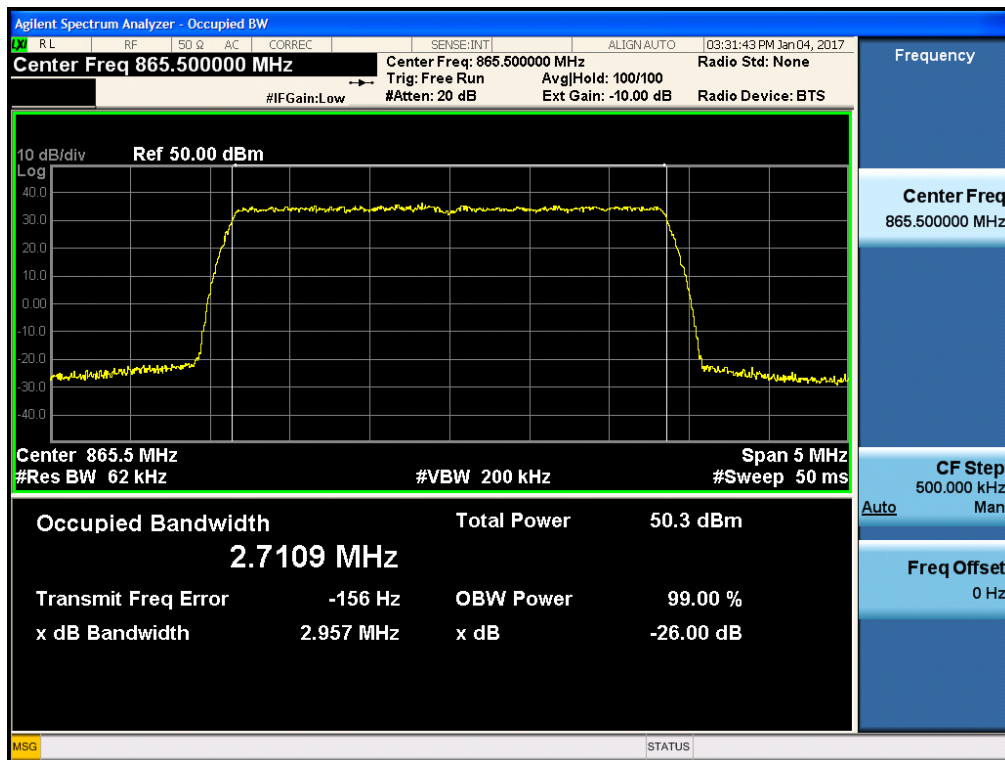
(16QAM High Channel)



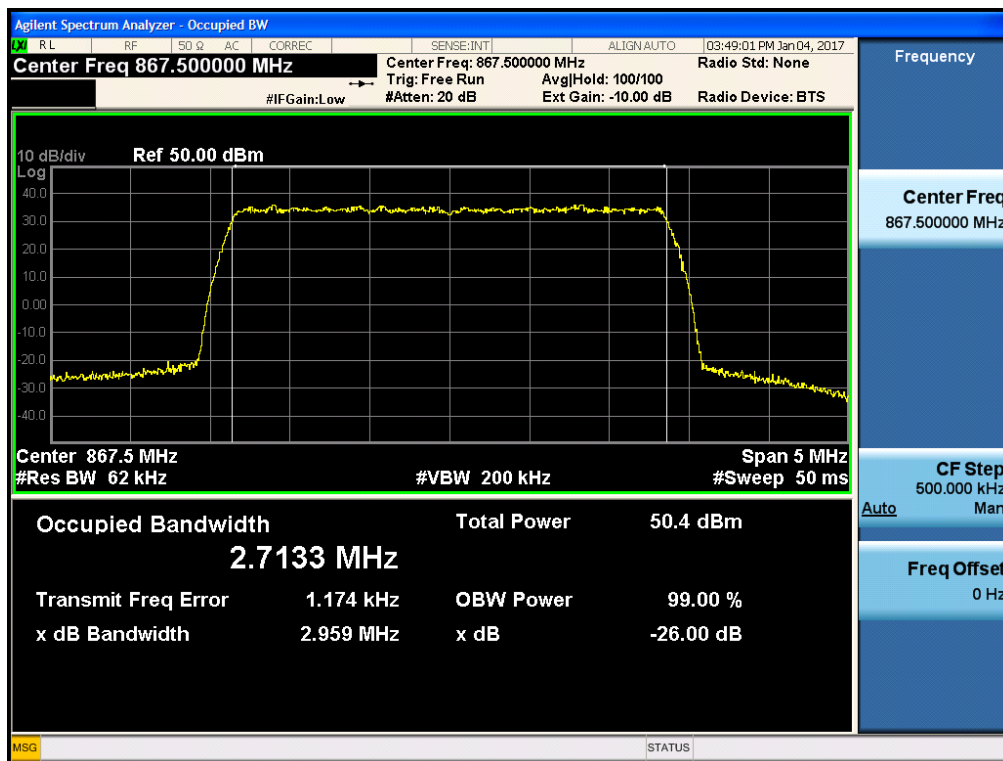
(64QAM Low Channel)



(64QAM Middle Channel)

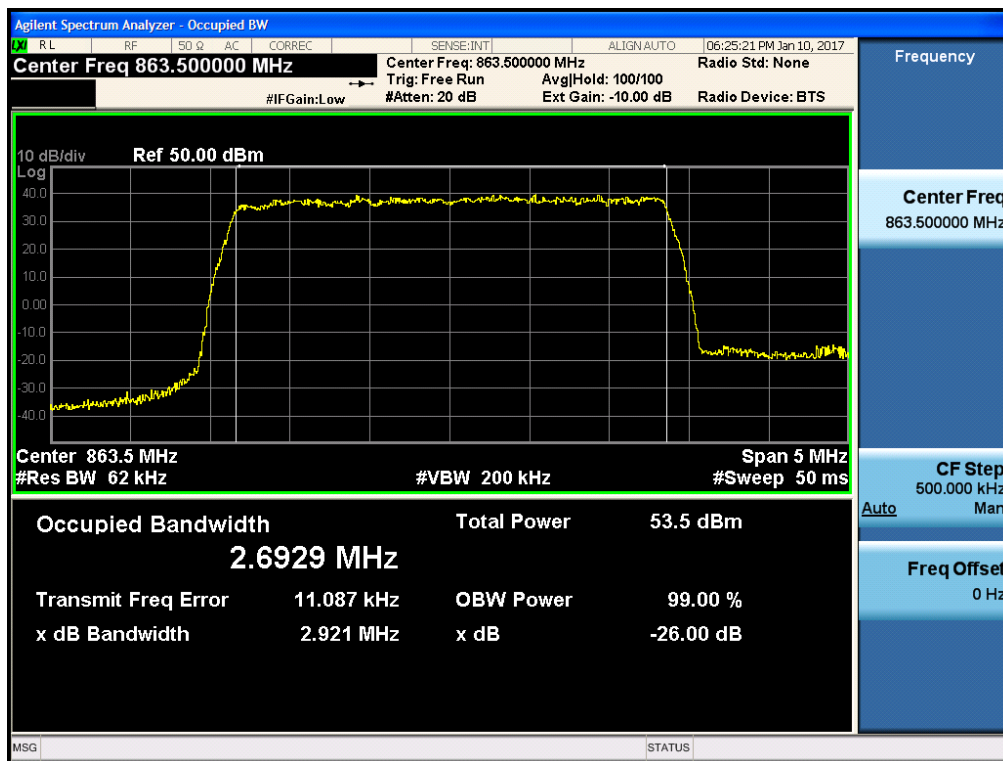


(64QAM High Channel)

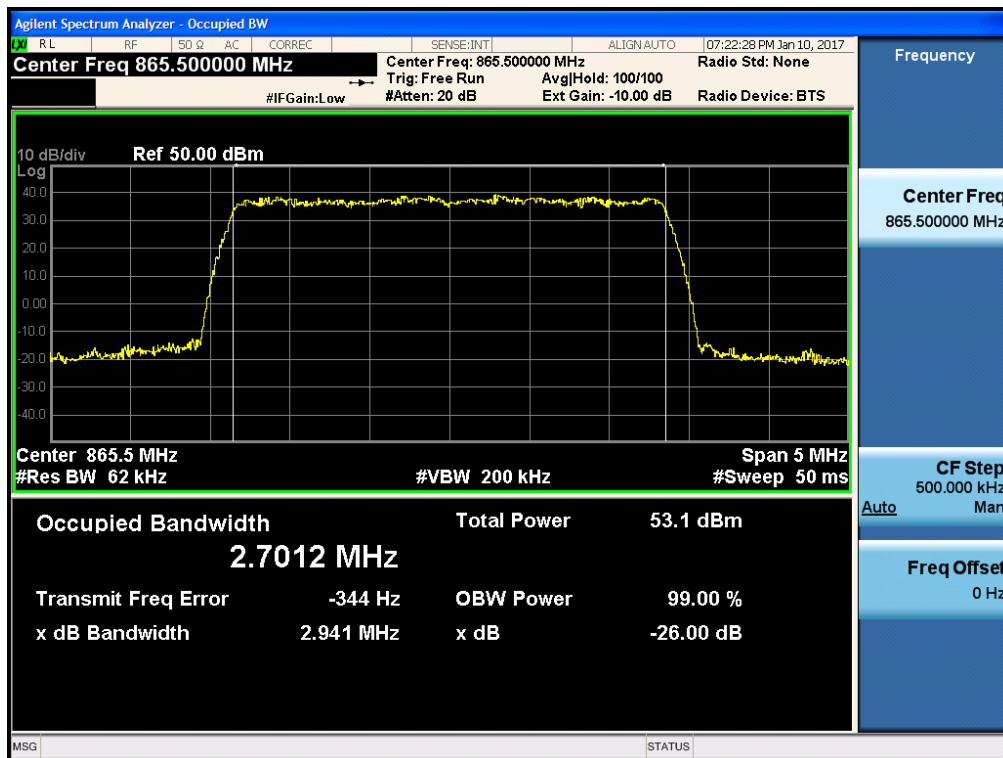


Test Plot at Output Port 2

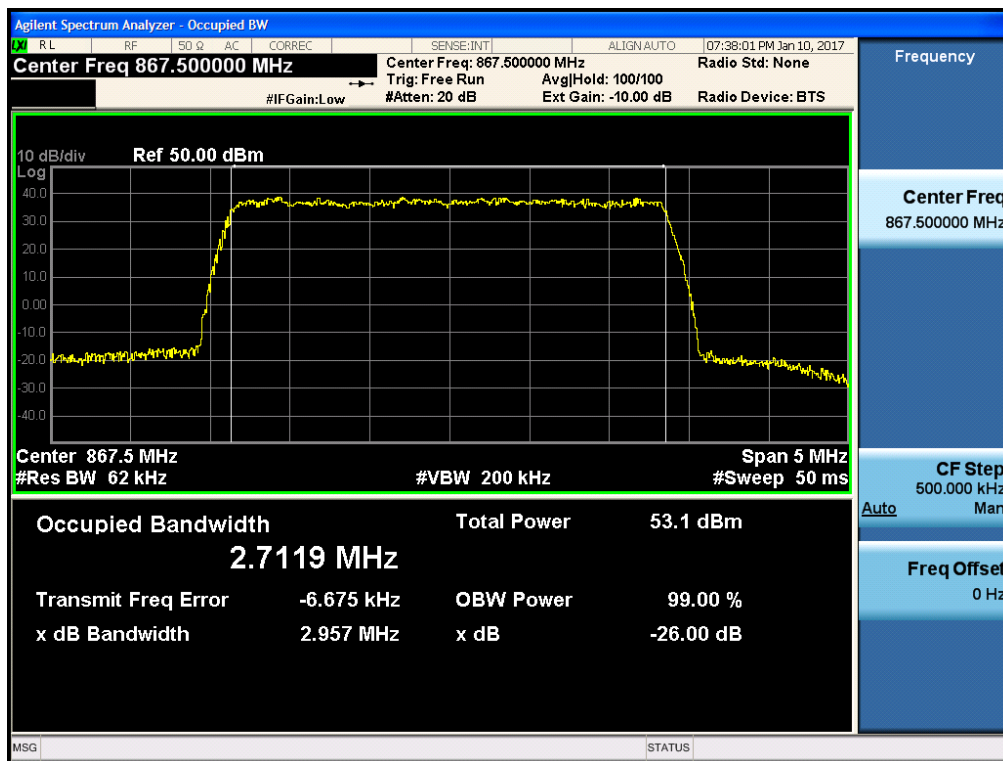
(QPSK Low Channel)



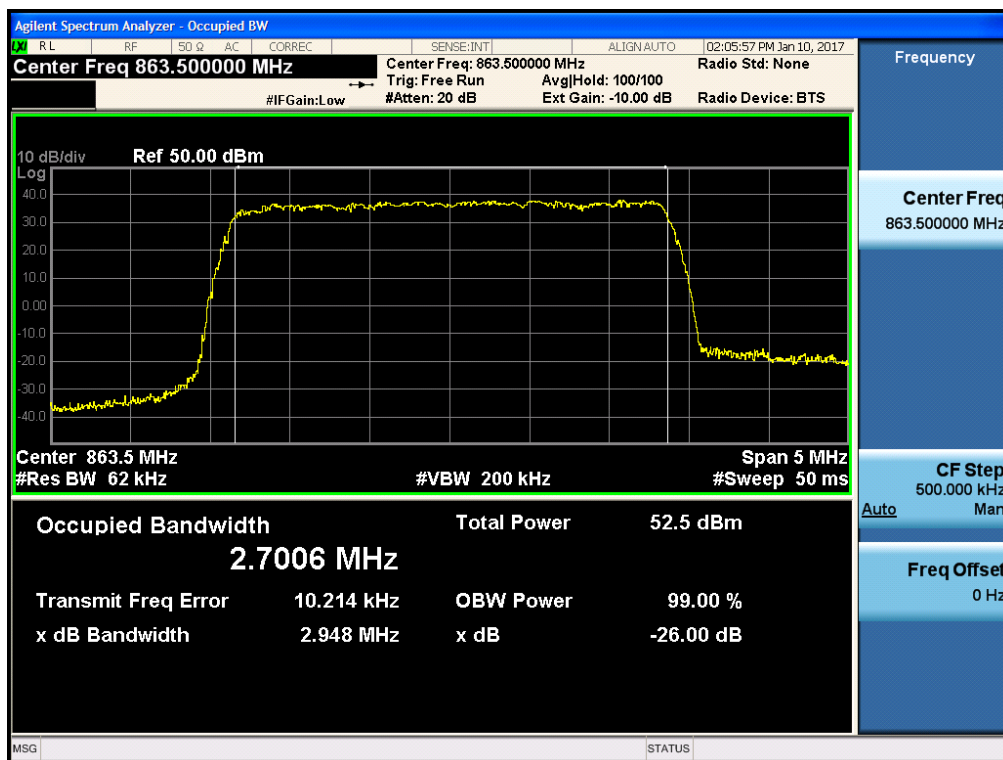
(QPSK Middle Channel)



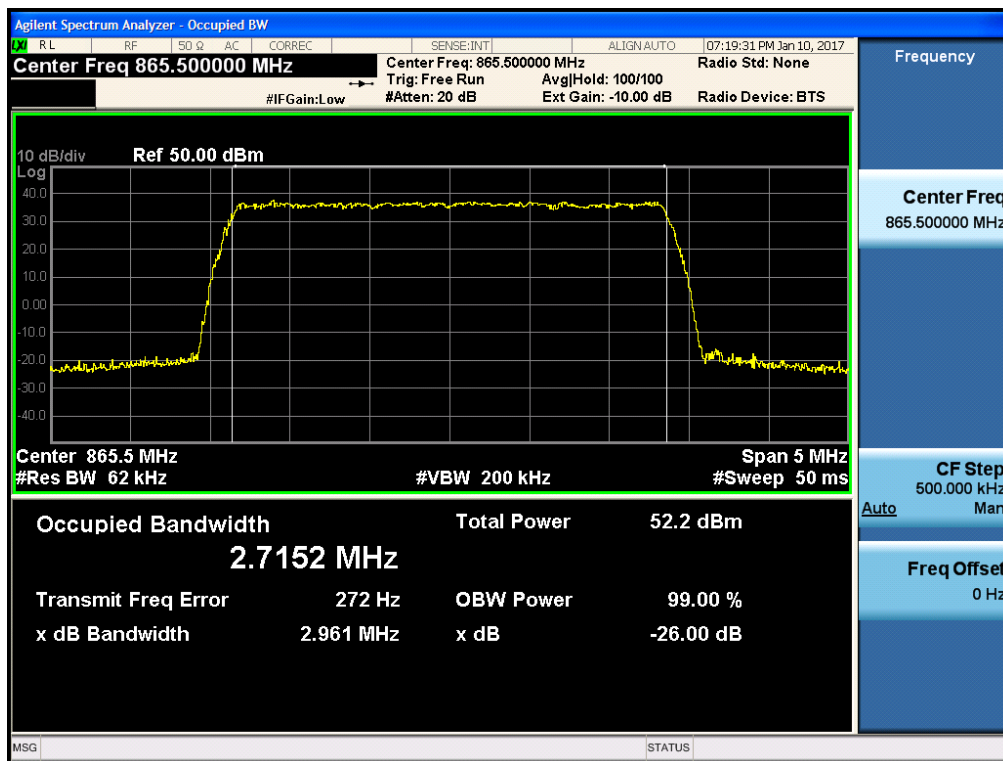
(QPSK High Channel)



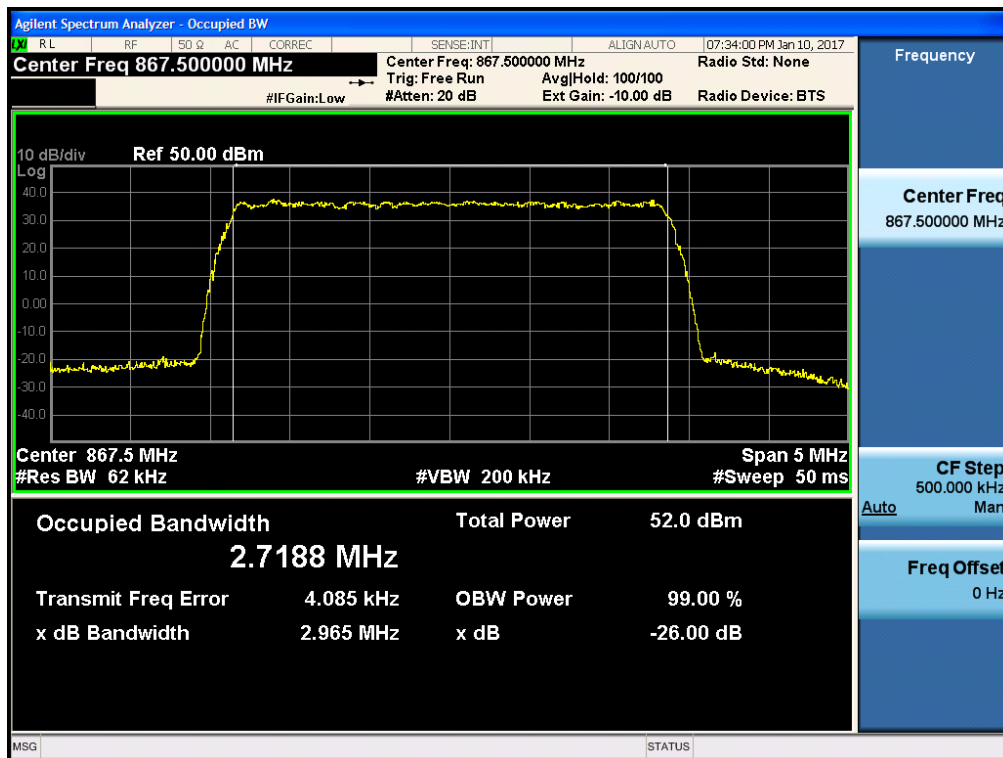
(16QAM Low Channel)



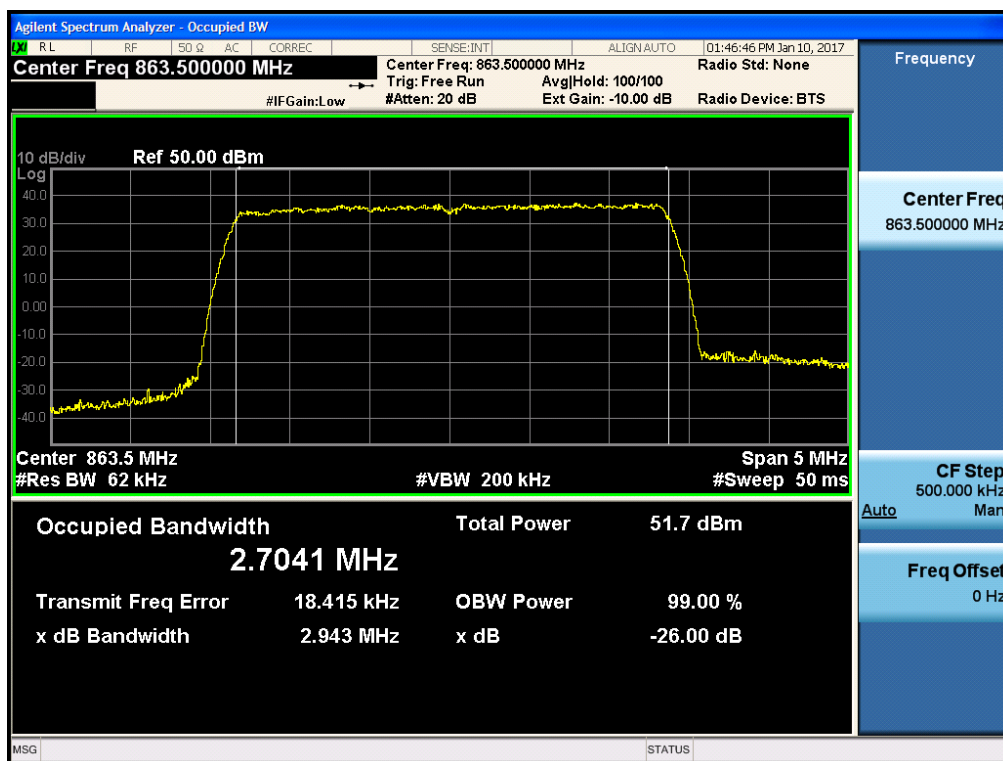
(16QAM Middle Channel)



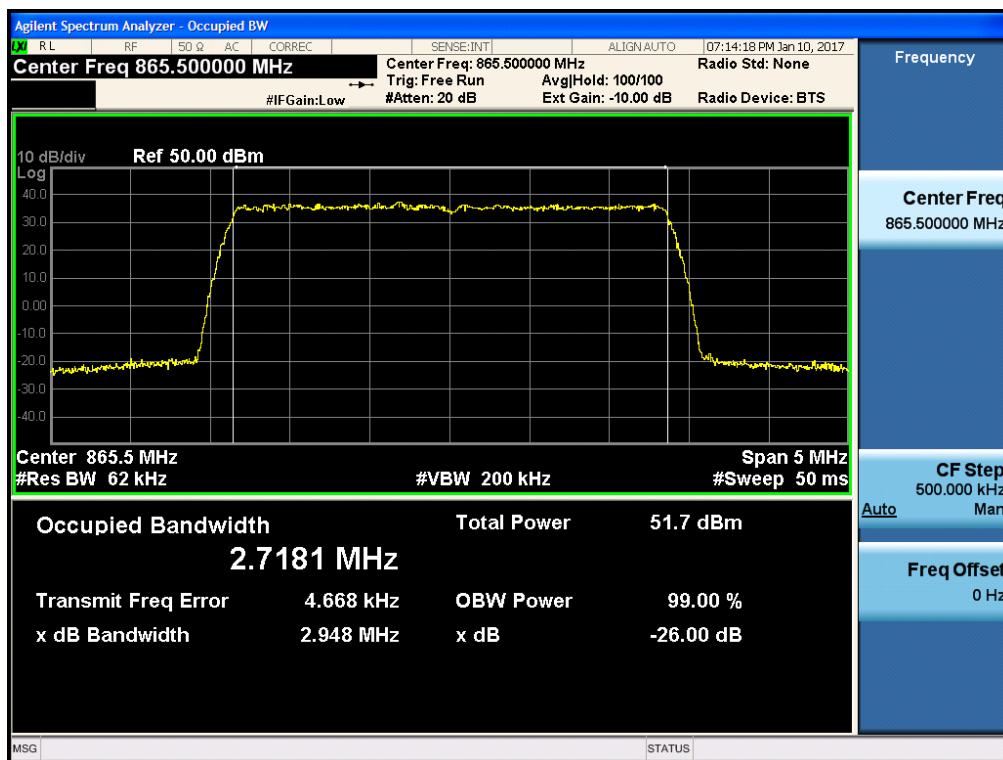
(16QAM High Channel)



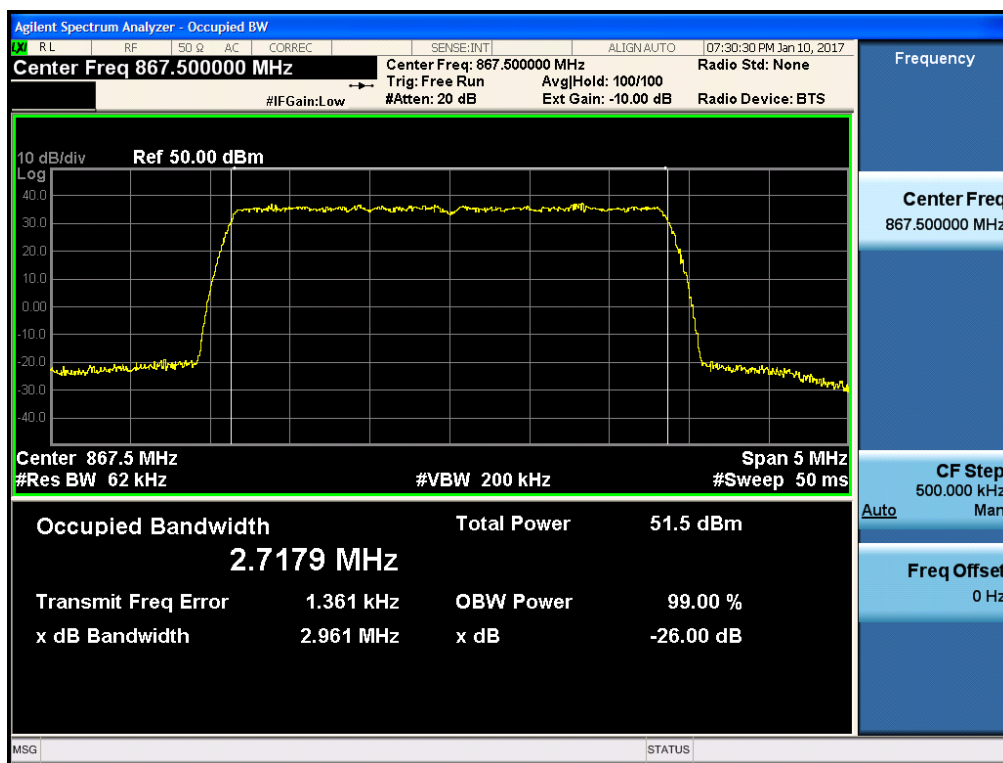
(64QAM Low Channel)



(64QAM Middle Channel)

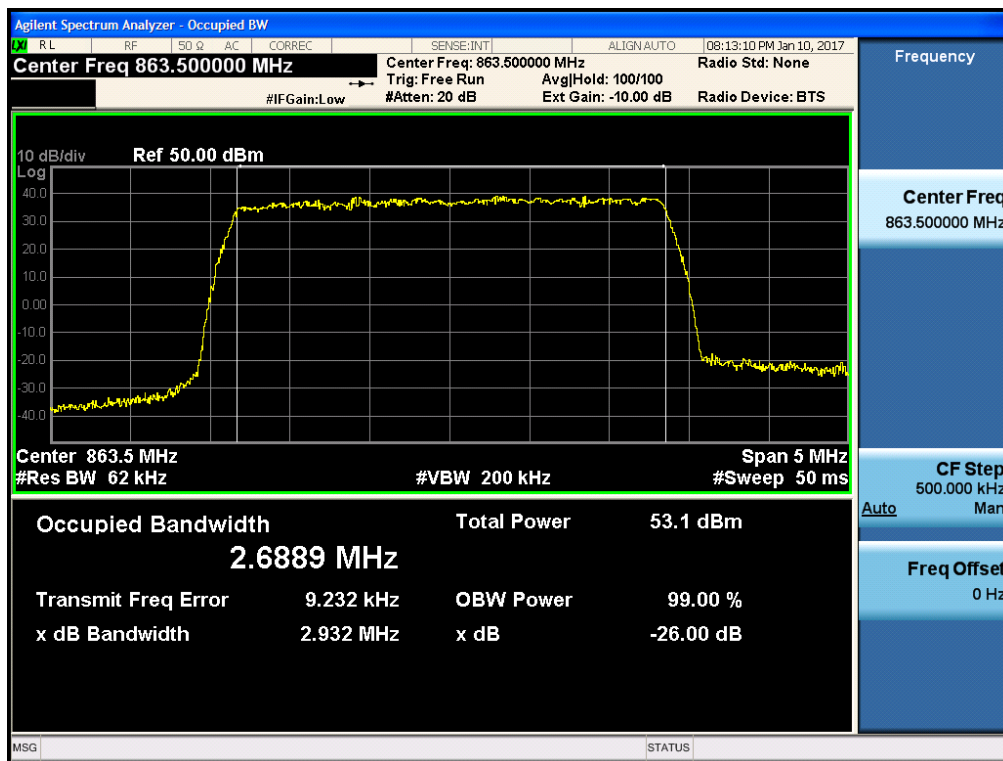


(64QAM High Channel)

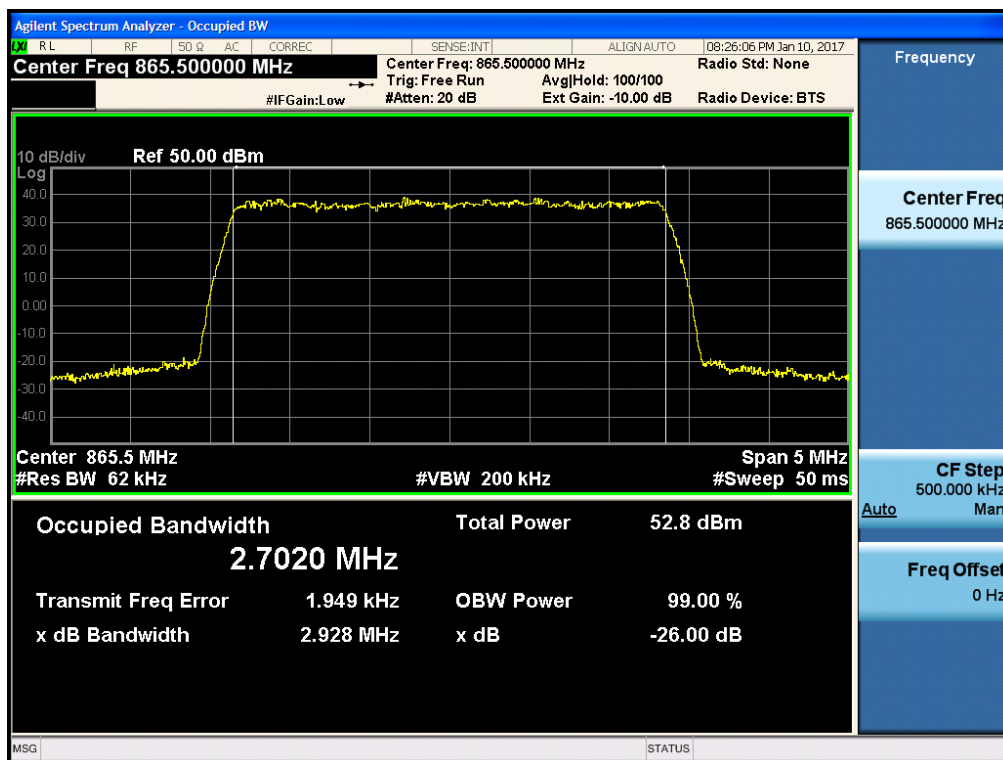


Test Plot at Output Port 3

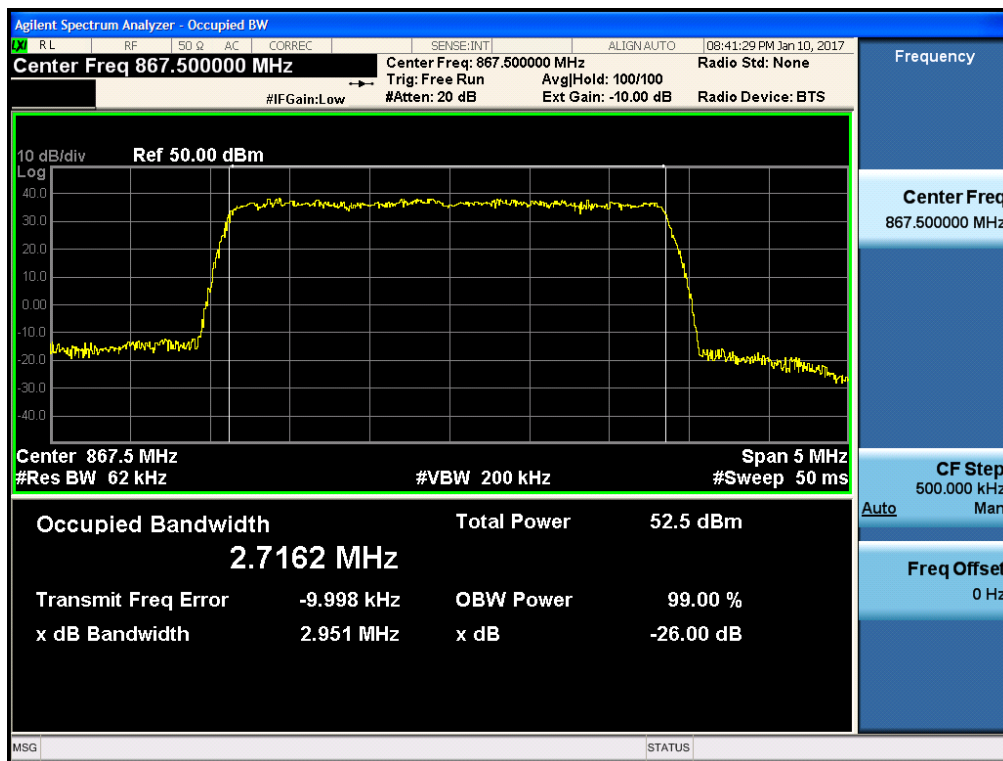
(QPSK Low Channel)



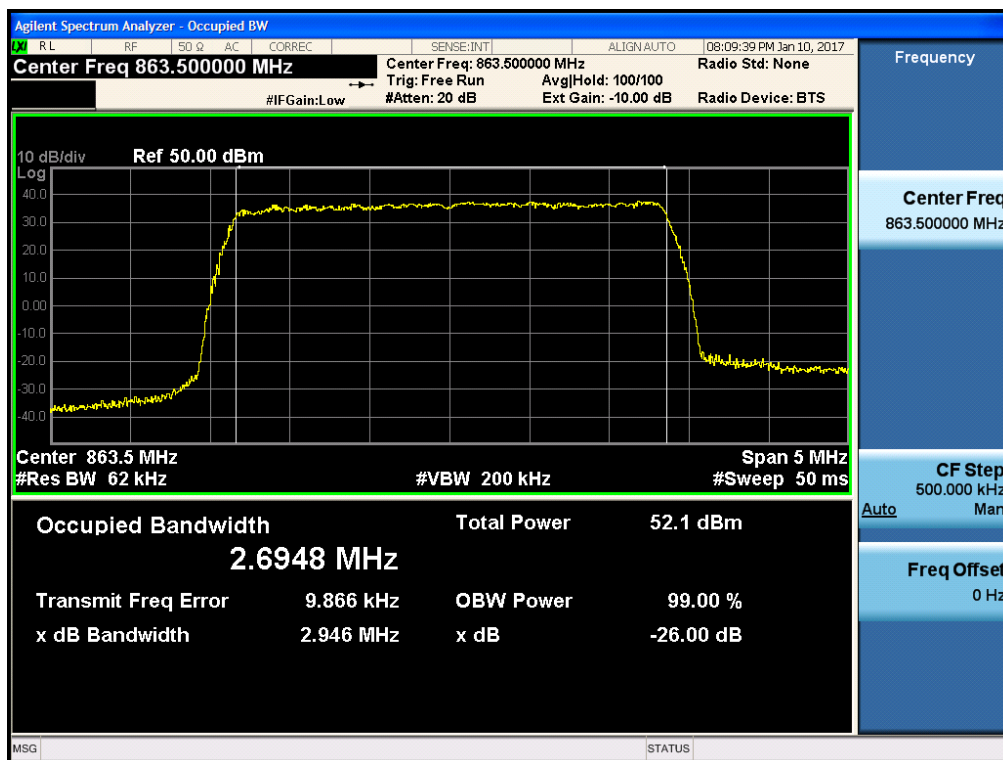
(QPSK Middle Channel)



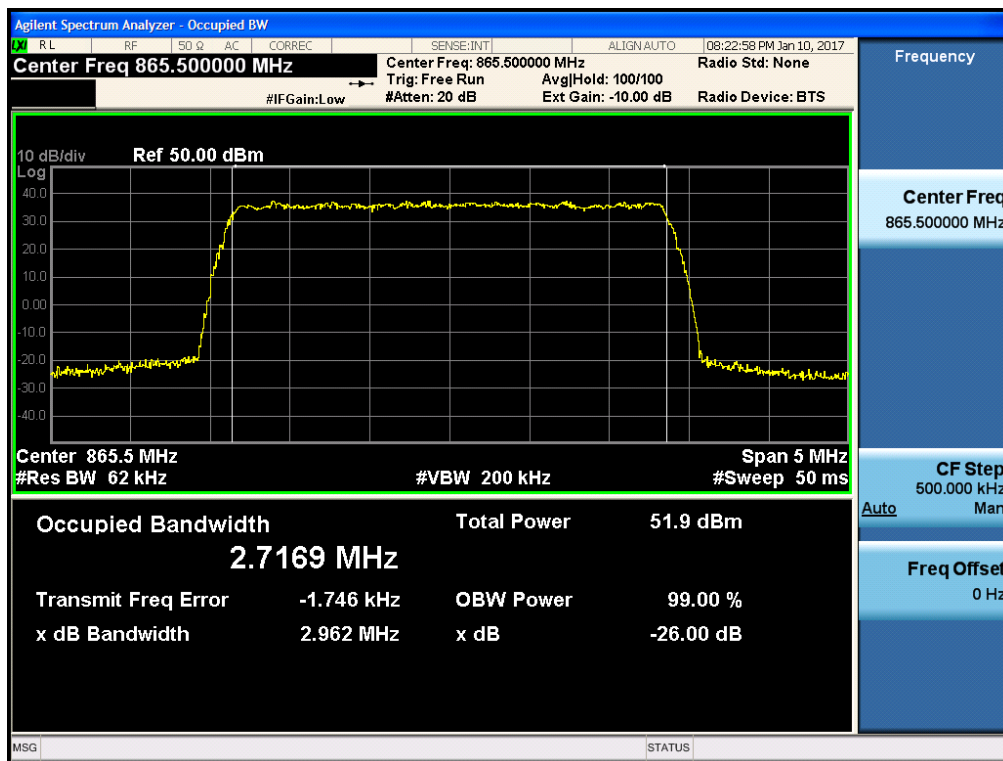
(QPSK High Channel)



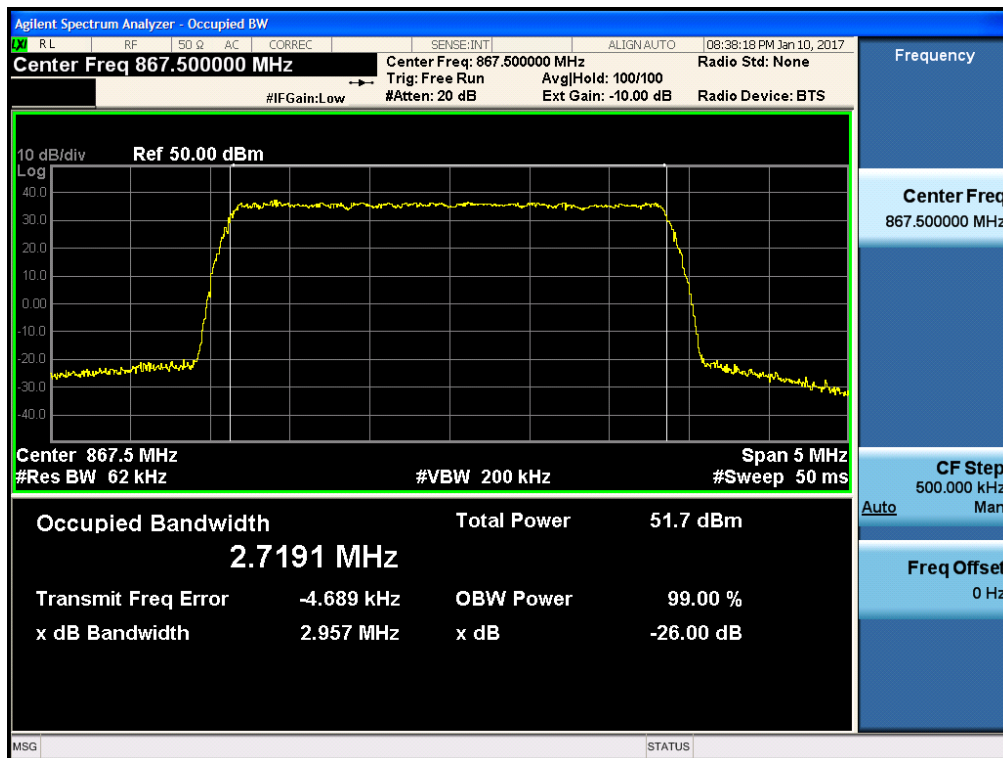
(16QAM Low Channel)



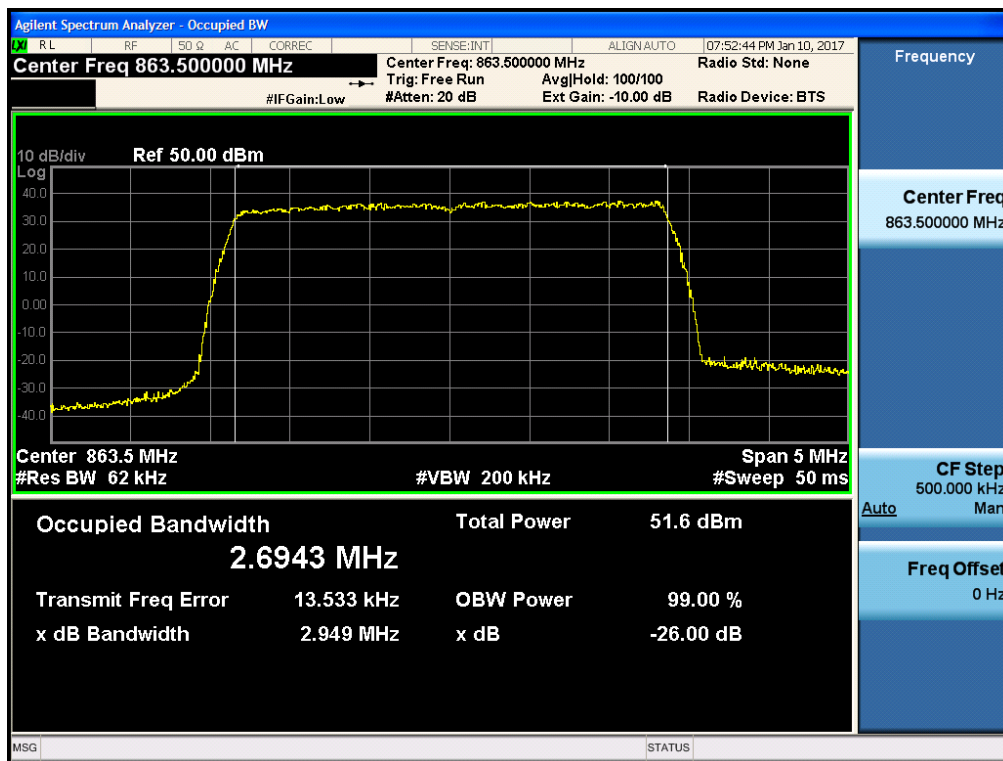
(16QAM Middle Channel)



(16QAM High Channel)



(64QAM Low Channel)



(64QAM Middle Channel)

