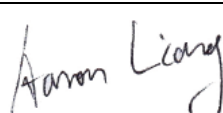
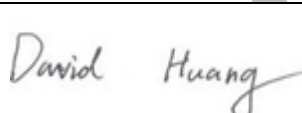



# RF TEST REPORT



Report No.: 17070869-FCC-R2

Supersede Report No.: N/A

Applicant	Humax Co., Ltd.	
Product Name	Wi-Fi Router	
Model No.	QUANTUM T9x (WLAN 2G : 3T3R, 5G : 4T4R)	
Serial No.	QUANTUM T7x(WLAN 2G : 3T3R, 5G : 3T3R);QUANTUM T5x(WLAN 2G : 2T2R, 5G : 3T3R)	
Test Standard	FCC Part 15.407: 2016, ANSI C63.10: 2013	
Test Date	September 13 to December 16, 2017	
Issue Date	December 17, 2017	
Test Result	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	
Equipment complied with the specification	<input checked="" type="checkbox"/>	
Equipment did not comply with the specification	<input type="checkbox"/>	
		
Aaron Liang Test Engineer	David Huang Checked By	
This test report may be reproduced in full only Test result presented in this test report is applicable to the tested sample only		

Issued by:

**SIEMIC (SHENZHEN-CHINA) LABORATORIES**

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## Laboratories Introduction

SIEMIC, headquartered in the heart of Silicon Valley, with superior facilities in US and Asia, is one of the leading independent testing and certification facilities providing customers with one-stop shop services for Compliance Testing and Global Certifications.



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### Accreditations for Conformity Assessment

Country/Region	Scope
USA	EMC, RF/Wireless, SAR, Telecom
Canada	EMC, RF/Wireless, SAR, Telecom
Taiwan	EMC, RF, Telecom, SAR, Safety
Hong Kong	RF/Wireless, SAR, Telecom
Australia	EMC, RF, Telecom, SAR, Safety
Korea	EMI, EMS, RF, SAR, Telecom, Safety
Japan	EMI, RF/Wireless, SAR, Telecom
Singapore	EMC, RF, SAR, Telecom
Europe	EMC, RF, SAR, Telecom, Safety

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## 1. Report Revision History

Report No.	Report Version	Description	Issue Date
17070869-FCC-R2	NONE	Original	December 17, 2017

## 2. Customer information

Applicant Name	Humax Co., Ltd.
Applicant Add	HUMAX Village, 11-4, Sunae-dong, Bundang-gu, Seongnam city, Gyeonggi-do , South Korea 463-825
Manufacturer	Humax Co., Ltd.
Manufacturer Add	HUMAX Village, 11-4, Sunae-dong, Bundang-gu, Seongnam city, Gyeonggi-do , South Korea 463-825

### 3. Test site information

Test Lab A:

Lab performing tests	SIEMIC (Shenzhen-China) LABORATORIES
Lab Address	Zone A, Floor 1, Building 2 Wan Ye Long Technology Park South Side of Zhoushi Road, Bao' an District, Shenzhen, Guangdong China 518108
FCC Test Site No.	535293
IC Test Site No.	4842E-1
Test Software	Radiated Emission Program-To Shenzhen v2.0

Test Lab B:

Lab performing tests	BV 7LAYERS COMMUNICATION TRCHNOLOGY(SHENZHEN)CO.,LTD
Lab Address	No. B102, Dazu Cuangxin Mansion, North of Beihuan Avenue, North Area, Hi-Tech Industry Park, Nanshan District Shenzhen, Guangdong China
FCC Test Site No.	525120

Note: We just perform Radiated Spurious Emission above 18GHz in the test Lab. B.

## 4. Equipment under Test (EUT) Information

Description of EUT:	Wi-Fi Router
Main Model:	QUANTUM T9x (WLAN 2G : 3T3R, 5G : 4T4R)
Serial Model:	QUANTUM T7x(WLAN 2G : 3T3R, 5G : 3T3R);QUANTUM T5x(WLAN 2G : 2T2R, 5G : 3T3R)
Date EUT received:	September 12, 2017
Test Date(s):	September 13 to December 16, 2017
Equipment Category :	NII
Antenna Gain:	WIFI(2.4G): Antenna (White): 3.5 dBi Antenna (Blue): 3.5 dBi Antenna (Black): 3.5 dBi WIFI(5150-5250MHz): Antenna (Gray): 4.5 dBi Antenna (Black): 4.5 dBi Antenna (Blue): 4.5 dBi Antenna (White): 4.5 dBi WIFI(5725-5875MHz): Antenna (Gray): 4.5 dBi Antenna (Black): 4.5 dBi Antenna (Blue): 4.5 dBi Antenna (White): 4.5 dBi
Antenna Type:	Dipole antenna
Type of Modulation:	802.11b: DSSS 802.11g/n20/n40/a/ac20/ac40/ac80: OFDM
Number of Channels:	WIFI :802.11b/g/n(20M): 11CH WIFI :802.11n(40M): 7CH WIFI :802.11a: 9CH WIFI :802.11ac20: 9CH WIFI :802.11ac40: 4CH WIFI :802.11ac80: 1CH

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RF Operating Frequency (ies):

WIFI: 802.11b/g: 2412-2462 MHz(TX/RX)  
WIFI: 802.11n(20M): 2412-2462 MHz; 5180-5240 MHz;  
5745-5825 MHz; (TX/RX)  
WIFI: 802.11n(40M): 2422-2452 MHz; 5190-5230 MHz;  
5755-5795 MHz (TX/RX)  
802.11a: 5180-5240 MHz;5745-5825 MHz; (TX/RX)  
802.11ac 20: 5180-5240 MHz;5745-5825 MHz; (TX/RX)  
802.11ac 40: 5190-5230 MHz;5755-5795 MHz; (TX/RX)  
802.11ac 80: 5210 MHz; 5775 MHz; (TX/RX)

Max. Output Power:

5150-5250MHz: 802.11a: 21.93dBm  
802.11n20: 18.88dBm  
802.11n40: 18.65dBm  
802.11ac(20M): 18.88dBm  
802.11ac(40M): 18.62dBm  
802.11ac(80M): 21.62.dBm

5725-5825MHz: 802.11a: 23.33dBm  
802.11n20: 24.82dBm  
802.11n40: 24.31dBm  
802.11ac(20M): 24.83dBm  
802.11ac(40M): 24.33dBm  
802.11ac(80M): 24.23dBm

Port: Power Port; Ethernet Port; WAN Port

Trade Name : N/A

FCC ID: O6ZT9X



## 5. Power level setup in software

5150-5250MHz

Power level setup in softwarec					
Mode	Antenna Path	Software Setup			
		Antenna (Gray) (dBm)	Antenna (Black) (dBm)	Antenna (Blue) (dBm)	Antenna (White) (dBm)
a	SISO	22	22	22	22
n20	MIMO(4TX 0-1-2-3)	13	13	13	13
	MIMO(3TX 0-1-2)	13	13	13	/
	MIMO(3TX 0-1-3)	13	13	/	13
	MIMO(3TX 0-2-3)	13	/	13	13
	MIMO(3TX 1-2-3)	/	13	13	13
	MIMO(2TX 0-1)	13	13	/	/
	MIMO(2TX 0-2)	13	/	13	/
	MIMO(2TX 0-3)	13	/	/	13
	MIMO(2TX 1-2)	/	13	13	/
	MIMO(2TX 1-3)	/	13	/	13
	MIMO(2TX 2-3)	/	/	13	13
	SISO(1TX 0)	13	/	/	/
	SISO(1TX 1)	/	13	/	/
	SISO(1TX 2)	/	/	13	/
SISO(1TX 3)	/	/	/	13	
n40	MIMO(4TX 0-1-2-3)	13	13	13	13
	MIMO(3TX 0-1-2)	13	13	13	/
	MIMO(3TX 0-1-3)	13	13	/	13
	MIMO(3TX 0-2-3)	13	/	13	13
	MIMO(3TX 1-2-3)	/	13	13	13
	MIMO(2TX 0-1)	13	13	/	/
	MIMO(2TX 0-2)	13	/	13	/
	MIMO(2TX 0-3)	13	/	/	13
	MIMO(2TX 1-2)	/	13	13	/
	MIMO(2TX 1-3)	/	13	/	13
	MIMO(2TX 2-3)	/	/	13	13
	SISO(1TX 0)	13	/	/	/
	SISO(1TX 1)	/	13	/	/
	SISO(1TX 2)	/	/	13	/
SISO(1TX 3)	/	/	/	13	
ac20	MIMO(4TX 0-1-2-3)	13	13	13	13
	MIMO(3TX 0-1-2)	13	13	13	/
	MIMO(3TX 0-1-3)	13	13	/	13
	MIMO(3TX 0-2-3)	13	/	13	13
	MIMO(3TX 1-2-3)	/	13	13	13

	MIMO(2TX 0-1)	13	13	/	/
	MIMO(2TX 0-2)	13	/	13	/
	MIMO(2TX 0-3)	13	/	/	13
	MIMO(2TX 1-2)	/	13	13	/
	MIMO(2TX 1-3)	/	13	/	13
	MIMO(2TX 2-3)	/	/	13	13
	SISO(1TX 0)	13	/	/	/
	SISO(1TX 1)	/	13	/	/
	SISO(1TX 2)	/	/	13	/
	SISO(1TX 3)	/	/	/	13
ac40	MIMO(4TX 0-1-2-3)	13	13	13	13
	MIMO(3TX 0-1-2)	13	13	13	/
	MIMO(3TX 0-1-3)	13	13	/	13
	MIMO(3TX 0-2-3)	13	/	13	13
	MIMO(3TX 1-2-3)	/	13	13	13
	MIMO(2TX 0-1)	13	13	/	/
	MIMO(2TX 0-2)	13	/	13	/
	MIMO(2TX 0-3)	13	/	/	13
	MIMO(2TX 1-2)	/	13	13	/
	MIMO(2TX 1-3)	/	13	/	13
	MIMO(2TX 2-3)	/	/	13	13
	SISO(1TX 0)	13	/	/	/
	SISO(1TX 1)	/	13	/	/
	SISO(1TX 2)	/	/	13	/
SISO(1TX 3)	/	/	/	13	
ac80	MIMO(4TX 0-1-2-3)	16	16	16	16
	MIMO(3TX 0-1-2)	16	16	16	/
	MIMO(3TX 0-1-3)	16	16	/	16
	MIMO(3TX 0-2-3)	16	/	16	16
	MIMO(3TX 1-2-3)	/	16	16	16
	MIMO(2TX 0-1)	16	16	/	/
	MIMO(2TX 0-2)	16	/	16	/
	MIMO(2TX 0-3)	16	/	/	16
	MIMO(2TX 1-2)	/	16	16	/
	MIMO(2TX 1-3)	/	16	/	16
	MIMO(2TX 2-3)	/	/	16	16
	SISO(1TX 0)	16	/	/	/
	SISO(1TX 1)	/	16	/	/
	SISO(1TX 2)	/	/	16	/
SISO(1TX 3)	/	/	/	16	

**5725-5850MHz**

Power level setup in softwarec					
Mode	Antenna Path	Software Setup			
		Antenna (Gray) (dBm)	Antenna (Black) (dBm)	Antenna (Blue) (dBm)	Antenna (White) (dBm)
a	SISO	28	28	28	28
n20	MIMO(4TX 0-1-2-3)	18	18	18	18
	MIMO(3TX 0-1-2)	18	18	18	/
	MIMO(3TX 0-1-3)	18	18	/	18
	MIMO(3TX 0-2-3)	18	/	18	18
	MIMO(3TX 1-2-3)	/	18	18	18
	MIMO(2TX 0-1)	18	18	/	/
	MIMO(2TX 0-2)	18	/	18	/
	MIMO(2TX 0-3)	18	/	/	18
	MIMO(2TX 1-2)	/	18	18	/
	MIMO(2TX 1-3)	/	18	/	18
	MIMO(2TX 2-3)	/	/	18	18
	SISO(1TX 0)	18	/	/	/
	SISO(1TX 1)	/	18	/	/
	SISO(1TX 2)	/	/	18	/
	SISO(1TX 3)	/	/	/	18
n40	MIMO(4TX 0-1-2-3)	18	18	18	18
	MIMO(3TX 0-1-2)	18	18	18	/
	MIMO(3TX 0-1-3)	18	18	/	18
	MIMO(3TX 0-2-3)	18	/	18	18
	MIMO(3TX 1-2-3)	/	18	18	18
	MIMO(2TX 0-1)	18	18	/	/
	MIMO(2TX 0-2)	18	/	18	/
	MIMO(2TX 0-3)	18	/	/	18
	MIMO(2TX 1-2)	/	18	18	/
	MIMO(2TX 1-3)	/	18	/	18
	MIMO(2TX 2-3)	/	/	18	18
	SISO(1TX 0)	18	/	/	/
	SISO(1TX 1)	/	18	/	/
	SISO(1TX 2)	/	/	18	/
	SISO(1TX 3)	/	/	/	18
ac20	MIMO(4TX 0-1-2-3)	18	18	18	18
	MIMO(3TX 0-1-2)	18	18	18	/
	MIMO(3TX 0-1-3)	18	18	/	18
	MIMO(3TX 0-2-3)	18	/	18	18
	MIMO(3TX 1-2-3)	/	18	18	18
	MIMO(2TX 0-1)	18	18	/	/
	MIMO(2TX 0-2)	18	/	18	/

	MIMO(2TX 0-3)	18	/	/	18
	MIMO(2TX 1-2)	/	18	18	/
	MIMO(2TX 1-3)	/	18	/	18
	MIMO(2TX 2-3)	/	/	18	18
	SISO(1TX 0)	18	/	/	/
	SISO(1TX 1)	/	18	/	/
	SISO(1TX 2)	/	/	18	/
	SISO(1TX 3)	/	/	/	18
ac40	MIMO(4TX 0-1-2-3)	18	18	18	18
	MIMO(3TX 0-1-2)	18	18	18	/
	MIMO(3TX 0-1-3)	18	18	/	18
	MIMO(3TX 0-2-3)	18	/	18	18
	MIMO(3TX 1-2-3)	/	18	18	18
	MIMO(2TX 0-1)	18	18	/	/
	MIMO(2TX 0-2)	18	/	18	/
	MIMO(2TX 0-3)	18	/	/	18
	MIMO(2TX 1-2)	/	18	18	/
	MIMO(2TX 1-3)	/	18	/	18
	MIMO(2TX 2-3)	/	/	18	18
	SISO(1TX 0)	18	/	/	/
	SISO(1TX 1)	/	18	/	/
	SISO(1TX 2)	/	/	18	/
SISO(1TX 3)	/	/	/	18	
ac80	MIMO(4TX 0-1-2-3)	18	18	18	18
	MIMO(3TX 0-1-2)	18	18	18	/
	MIMO(3TX 0-1-3)	18	18	/	18
	MIMO(3TX 0-2-3)	18	/	18	18
	MIMO(3TX 1-2-3)	/	18	18	18
	MIMO(2TX 0-1)	18	18	/	/
	MIMO(2TX 0-2)	18	/	18	/
	MIMO(2TX 0-3)	18	/	/	18
	MIMO(2TX 1-2)	/	18	18	/
	MIMO(2TX 1-3)	/	18	/	18
	MIMO(2TX 2-3)	/	/	18	18
	SISO(1TX 0)	18	/	/	/
	SISO(1TX 1)	/	18	/	/
	SISO(1TX 2)	/	/	18	/
SISO(1TX 3)	/	/	/	18	

## 6. Test Summary

The product was tested in accordance with the following specifications.

All testing has been performed according to below product classification:

FCC Rules	Description of Test	Result
§15.407 (i), §2.1093	RF Exposure	Compliance
§15.203	Antenna Requirement	Compliance
§15.407 (a)(1)	DTS (99%&26 dB) CHANNEL BANDWIDTH	Compliance
§15.407 (e)	DTS (99%&6 dB) CHANNEL BANDWIDTH	Compliance
§15.407(a/1/2)	Conducted Maximum Output Power	Compliance
§15.407(a/1/2)	Maximum Power Spectral Density	Compliance
§15.407(a)(6)	Bandedge	Compliance
§15.207 (a)	AC Power Line Conducted Emissions	Compliance
§15.205, §15.209, §15.247(b/1/2/3/6)	Radiated Spurious Emissions & Unwanted Emissions into Restricted Frequency Bands	Compliance

## 7. Measurements, Examination And Derived Results

### 6.1 §15.203 - ANTENNA REQUIREMENT

#### Applicable Standard

According to § 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the user of a standard antenna jack or electrical connector is prohibited. The structure and application of the EUT were analyzed to determine compliance with section §15.203 of the rules. §15.203 state that the subject device must meet the following criteria:

- a. Antenna must be permanently attached to the unit.
- b. Antenna must use a unique type of connector to attach to the EUT.

Unit must be professionally installed, and installer shall be responsible for verifying that the correct antenna is employed with the unit.

And according to FCC 47 CFR section 15.247 (b), if the transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

#### Antenna Connector Construction

The EUT has three attached Dipole antennas for 2.4GHz WIFI and four attached PIFA internal antennas for 5GHz WIFI.

FCC KDB 662911 D01 Multiple Transmitter Output V02r01

For CDD transmissions, directional gain is calculated as

Directional Gain = GANT + Array Gain, where Array Gain is as follows.

For power spectral density (PSD) measurements on all devices.

Array Gain =  $10 \log(NANT/NSS - 1)$

For power measurements on IEEE802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for  $NANT \leq 4$ .

The EUT supports CDD mode, for Power and PSD, the directional gain is following F)2)f) i )

The directional gain "DG" is calculated as following table.

Mode	Antenna (Gray) (dBi)	Antenna (Black) (dBi)	Antenna (Blue) (dBi)	Antenna (White) (dBi)	DG For Power (dBi)	DG For PSD (dBi)	Power Limit Reduction	PSD Limit Reduction
2.4GHz	3.5	3.5	3.5	/	3.5	8.27	0	2.27
5G	4.5	4.5	4.5	4.5	4.5	10.52	0	4.52

Power Limit Reduction=  $DG(\text{Power}) - 6\text{dBi}, (\text{min}=0)$

PSD Limit Reduction=  $DG(\text{Power}) - 6\text{dBi}, (\text{min}=0)$

DG: Directional Gain

**The antenna meets up with the ANTENNA REQUIREMENT.**

**Result: Compliance.**

## 6.2 §15.407(a)-DTS (99% & 26 dB) Channel Bandwidth

### 1. Conducted Measurement

EUT was set for low, mid, high channel with modulated mode and highest RF output power.

The spectrum analyzer was connected to the antenna terminal.

2. Environmental Conditions	Temperature	24°C
	Relative Humidity	53%
	Atmospheric Pressure	1010mbar

### 3. Conducted Emissions Measurement Uncertainty

All test measurements carried out are traceable to national standards. The uncertainty of the measurement at a confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2, in the range 30MHz – 40GHz is  $\pm 1.5\text{dB}$ .

4. Test date : November 15, 2017

Tested By : Aaron Liang

### **Standard Requirement:**

None; for reporting purposes only.

### **Procedures:**

#### **99% Bandwidth:**

1. Set center frequency to the nominal EUT channel center frequency
2. Set span = 1.5 times to 5.0 times the OBW.
3. Set RBW = 1 % to 5 % of the OBW
4. The video bandwidth (VBW)  $\geq 3 \times \text{RBW}$ .
5. Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used
6. Use the 99 % power bandwidth function of the instrument (if available)
7. If the instrument does not have a 99 % power bandwidth function, the trace data points are recovered and directly summed in power units. The recovered amplitude data points, beginning



at the lowest frequency, are placed in a running sum until 0.5 % of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5 % of the total is reached; that frequency is recorded as the upper frequency. The 99% occupied bandwidth is the difference between these two frequencies.

### **Emission Bandwidth (EBW)**

- 1) Set RBW = approximately 1% of the emission bandwidth.
- 2) Set the VBW > RBW.
- 3) Detector = Peak.
- 4) Trace mode = max hold.
- 5) Measure the maximum width of the emission that is 26 dB down from the maximum of the emission. Compare this with the RBW setting of the analyzer. Readjust

**Test Result: Pass.**

Please refer to the following tables and plots.

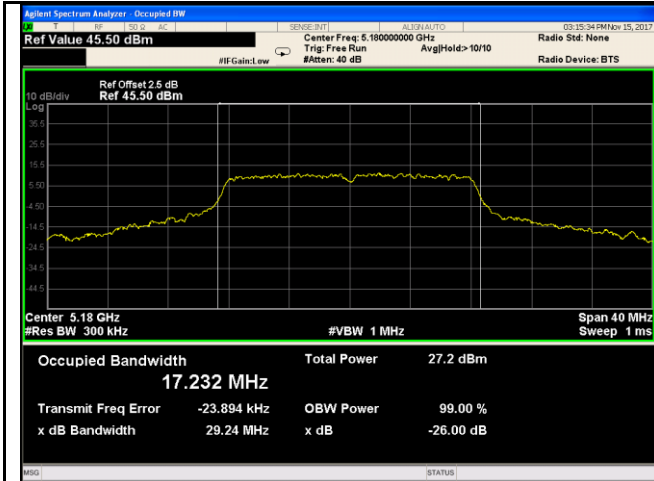
### Measurement result

Test mode	Freq Band (MHz)	CH	Freq (MHz)	99% Bandwidth (MHz)				26dB Bandwidth (MHz)			
				Ant. (Gray)	Ant. (Black)	Ant. (Blue)	Ant. (White)	Ant. (Gray)	Ant. (Black)	Ant. (Blue)	Ant. (White)
820.11a	5150-5250	Low	5180	17.232	16.859	17.029	16.926	29.24	26.38	28.18	27.21
		Middle	5220	17.188	16.795	16.992	16.879	30.37	25.41	27.97	27.02
		High	5240	17.057	16.789	16.953	16.803	29.85	26.25	25.62	25.72
	5725-5825	Low	5745	28.748	22.673	21.641	19.058	43.40	39.19	38.73	35.74
		Mid	5785	28.498	22.044	21.335	18.637	42.96	38.80	38.76	35.73
		High	5825	28.472	21.781	20.845	18.649	42.95	38.70	37.02	34.29
802.11n (20M)	5150-5250	Low	5180	17.873	17.842	17.897	17.837	23.07	23.47	23.48	22.97
		Middle	5220	17.866	17.848	17.873	17.835	23.21	23.30	23.67	22.83
		High	5240	17.874	17.890	17.899	17.870	23.40	23.30	23.23	23.36
	5725-5825	Low	5745	17.949	17.831	17.858	17.878	23.73	23.64	22.81	24.14
		Mid	5785	17.901	17.800	17.849	17.878	23.22	23.41	23.57	23.25
		High	5825	17.908	17.840	17.886	17.832	23.68	23.22	22.94	23.77
802.11n (40M)	5150-5250	Low	5190	40.196	39.091	39.773	38.897	53.84	51.89	53.67	51.53
		High	5230	39.762	38.370	38.651	38.299	52.18	51.00	52.75	51.14
	5725-5825	Low	5755	43.043	41.643	37.628	41.738	69.22	55.44	48.61	55.25
		High	5795	43.723	41.450	37.444	42.015	69.96	56.48	49.20	56.90
820.11ac (20M)	5150-5250	Low	5180	17.877	17.850	17.869	17.824	23.47	23.34	22.60	22.99
		Middle	5220	17.919	17.841	17.812	17.834	23.55	23.38	22.56	23.00
		High	5240	17.905	17.900	17.781	17.835	23.46	23.16	23.89	23.31
	5725-5825	Low	5745	17.965	20.169	17.888	17.855	23.78	30.02	23.28	24.05
		Mid	5785	17.874	21.102	17.849	17.813	24.09	30.61	23.00	22.45
		High	5825	17.907	19.989	17.934	17.881	23.87	31.73	23.38	23.21
802.11n ac (40M)	5150-5250	Low	5190	40.315	38.696	39.547	38.637	53.50	52.23	53.65	52.42
		High	5230	39.307	38.371	39.353	38.353	53.41	51.07	52.19	52.26
	5725-5825	Low	5755	43.031	41.353	37.371	41.643	75.14	56.36	49.95	57.25
		High	5795	43.600	41.776	37.317	42.690	74.85	56.58	49.39	65.33
802.11ac (80M)	5150-5250	One	5210	79.957	76.832	79.702	78.653	99.05	89.84	97.62	95.54
	5725-5825	One	5775	81.215	79.903	77.298	79.865	149.4	99.61	91.82	100.2

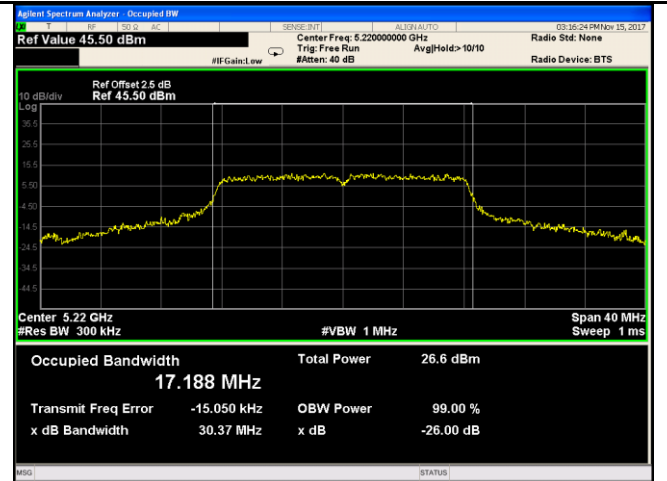
## Test Plots

### Bandwidth measurement result

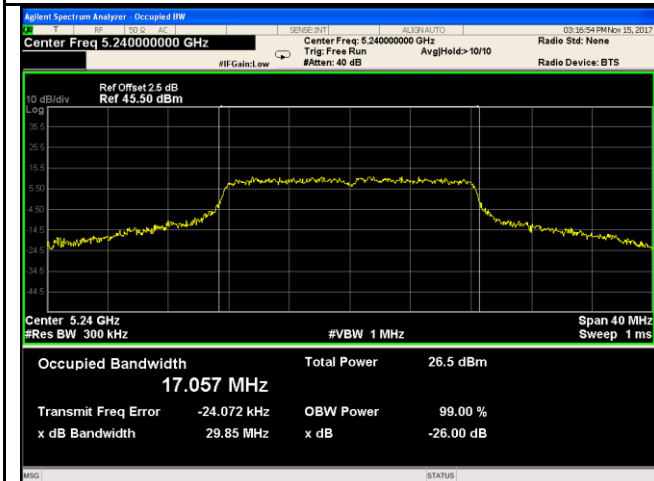
802.11a



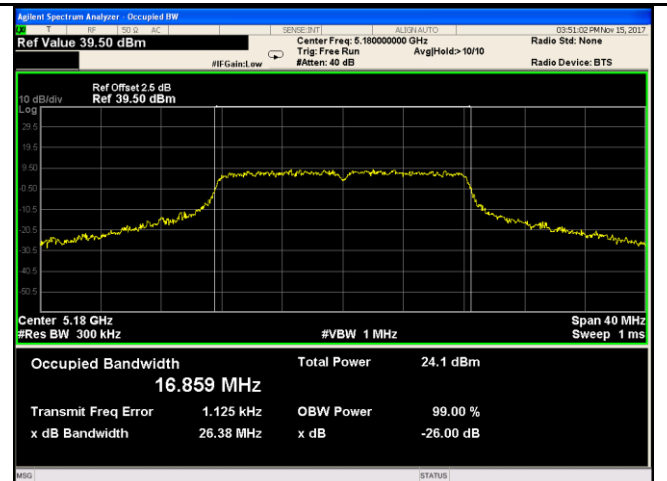
5150-5250MHz Bandwidth - Low CH 5180(Gray)



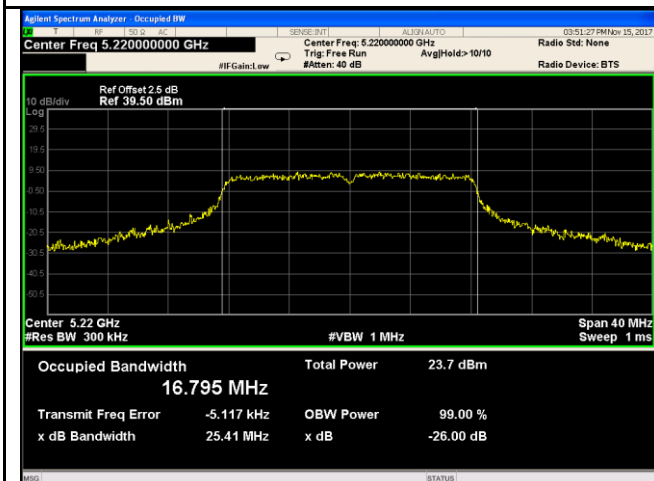
5150-5250MHz Bandwidth - Middle CH 5220(Gray)



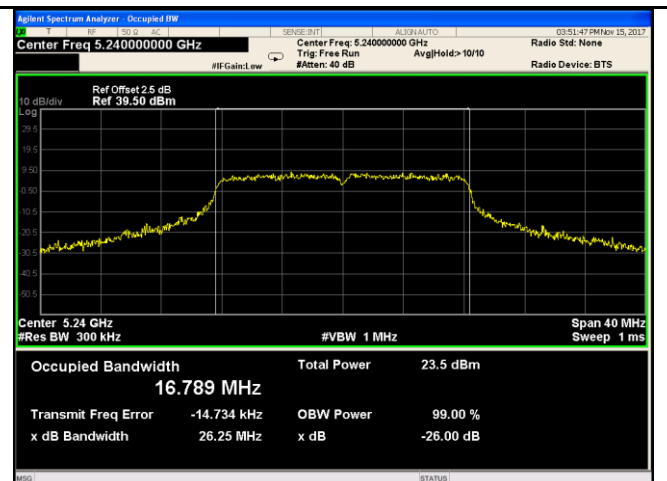
5150-5250MHz Bandwidth - High CH 5240(Gray)



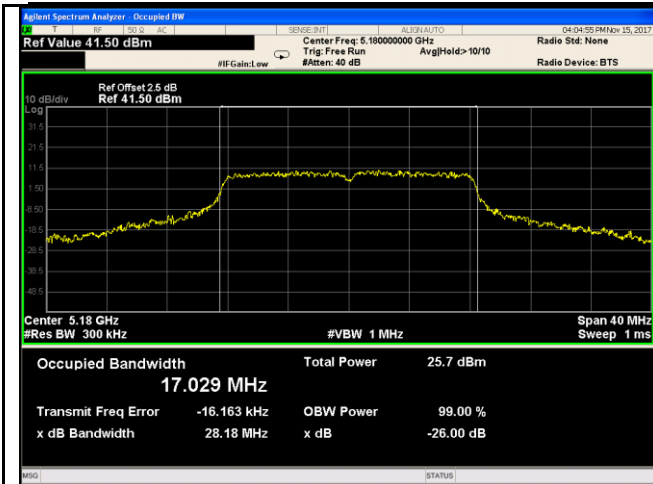
5150-5250MHz Bandwidth - Low CH 5180(Black)



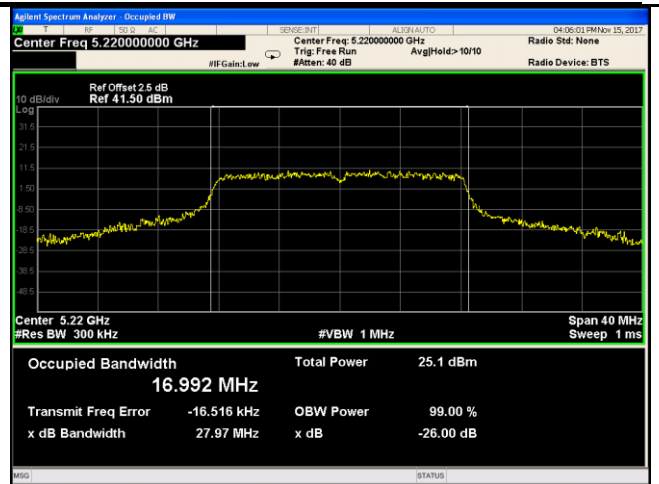
5150-5250MHz Bandwidth - Middle CH 5220(Black)



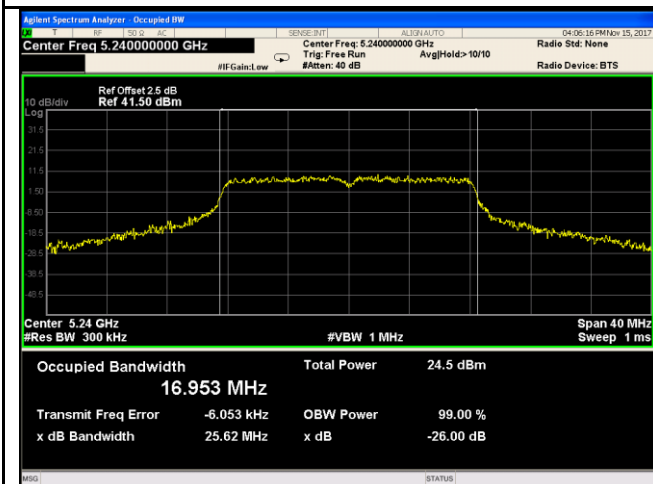
5150-5250MHz Bandwidth - High CH 5240(Black)



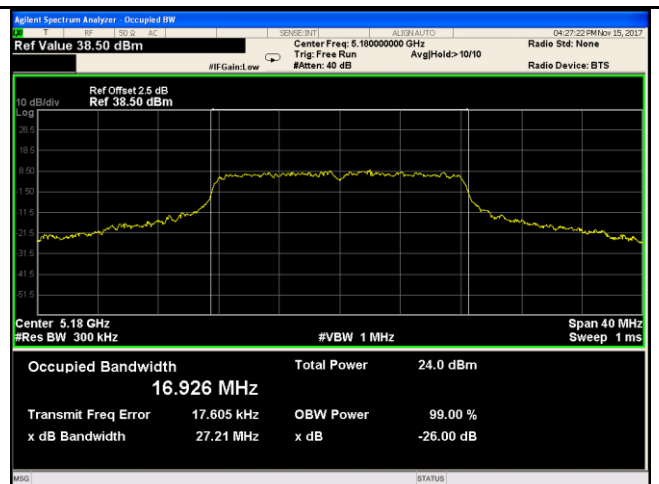
5150-5250MHz Bandwidth - Low CH 5180(Blue)



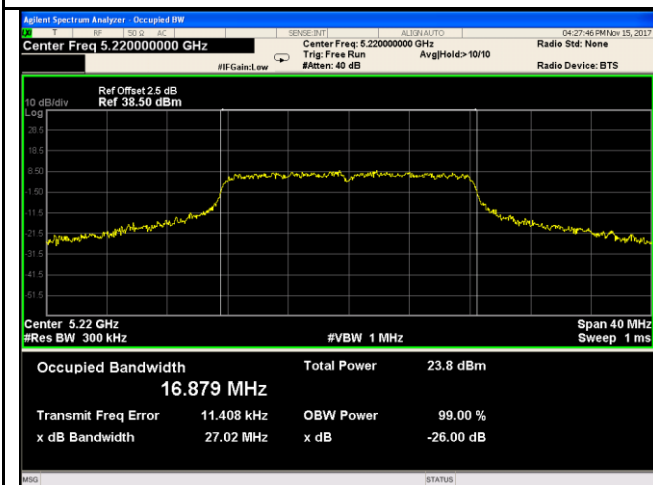
5150-5250MHz Bandwidth - Middle CH 5220(Blue)



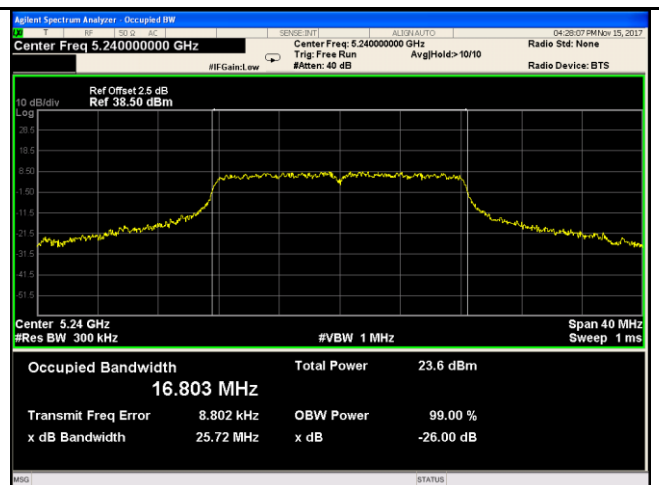
5150-5250MHz Bandwidth - High CH 5240(Blue)



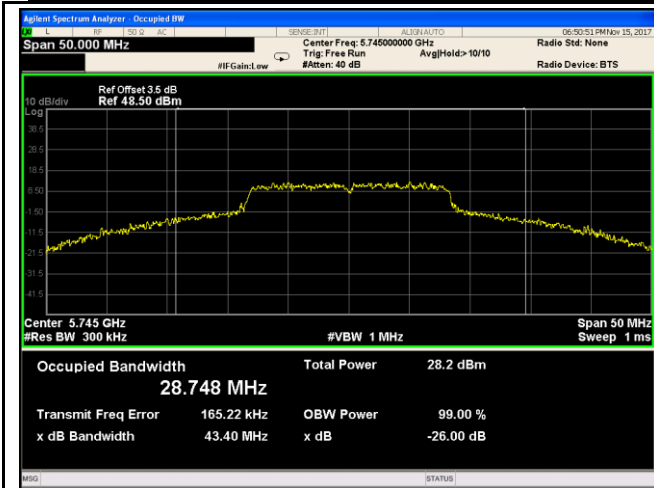
5150-5250MHz Bandwidth - Low CH 5180(White)



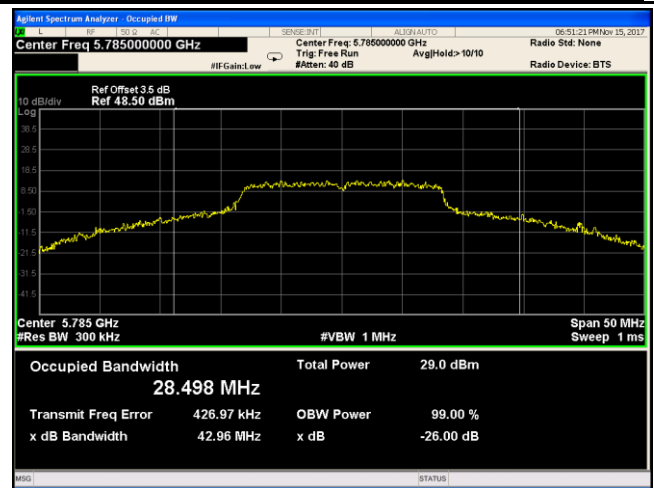
5150-5250MHz Bandwidth - Middle CH 5220(White)



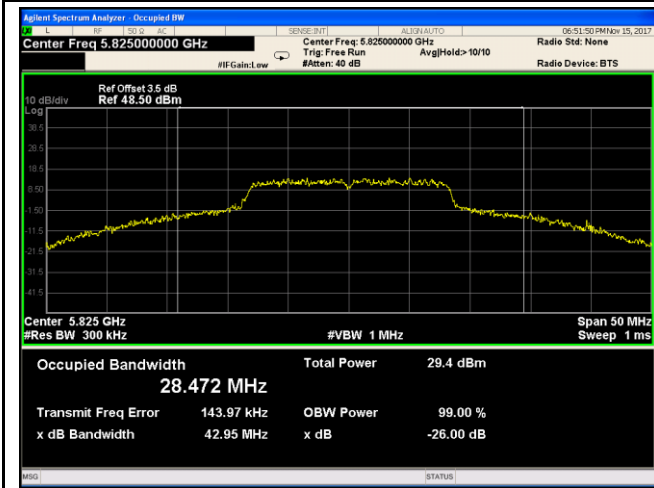
5150-5250MHz Bandwidth - High CH 5240(White)



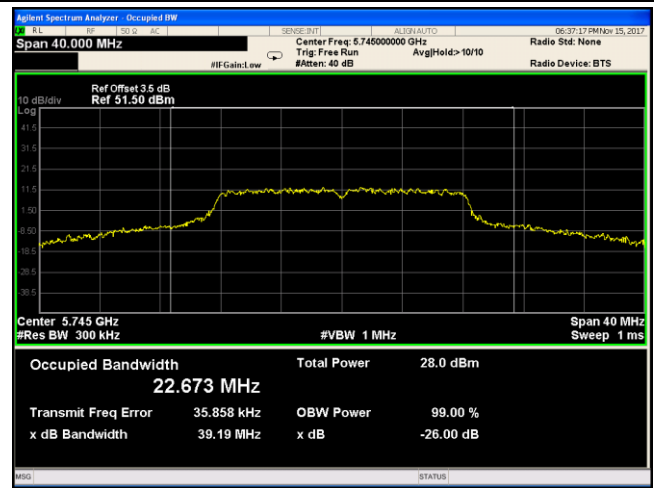
5725-5825MHz Bandwidth - Low CH 5745(Gray)



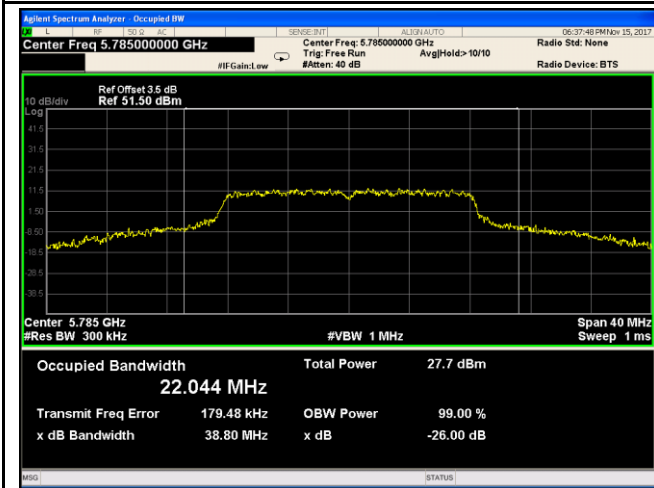
5725-5825MHz Bandwidth - Mid CH 5785(Gray)



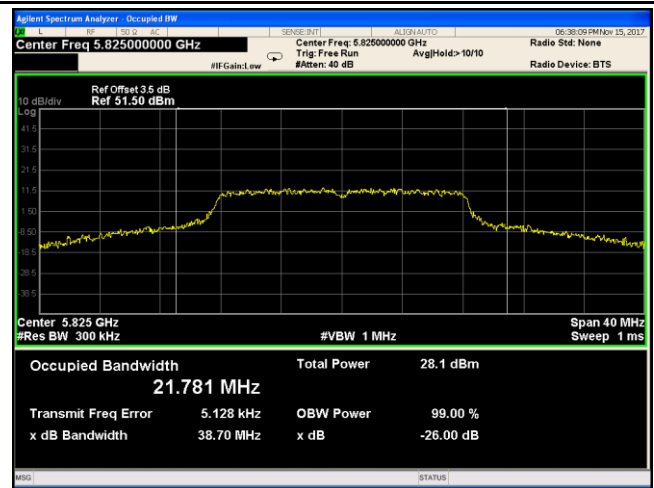
5725-5825MHz Bandwidth - High CH 5825(Gray)



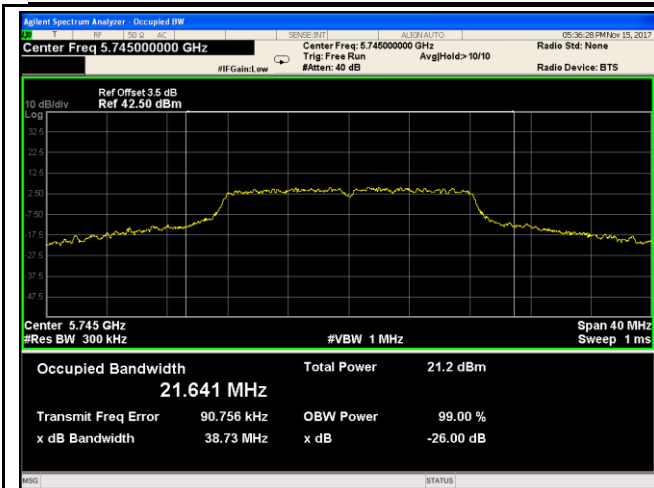
5725-5825MHz Bandwidth - Low CH 5745(Black)



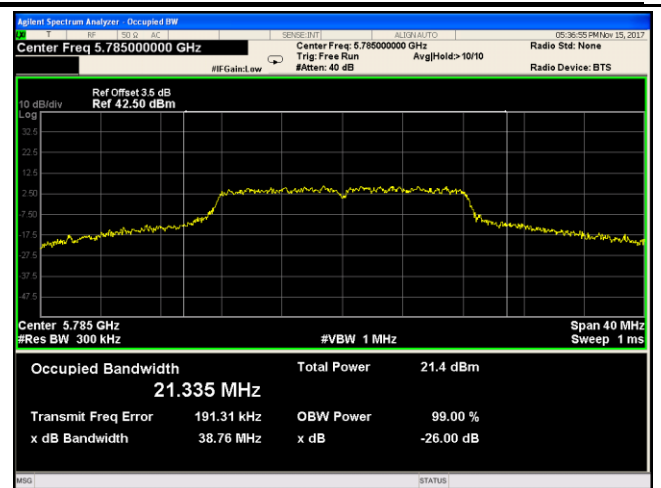
5725-5825MHz Bandwidth - Mid CH 5785(Black)



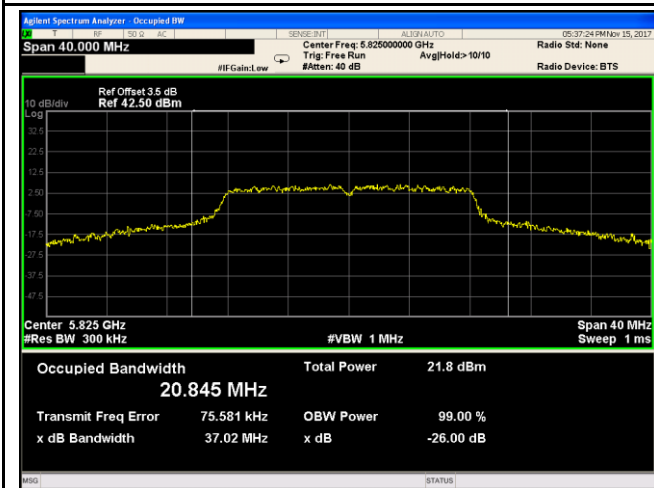
5725-5825MHz Bandwidth - High CH 5825(Black)



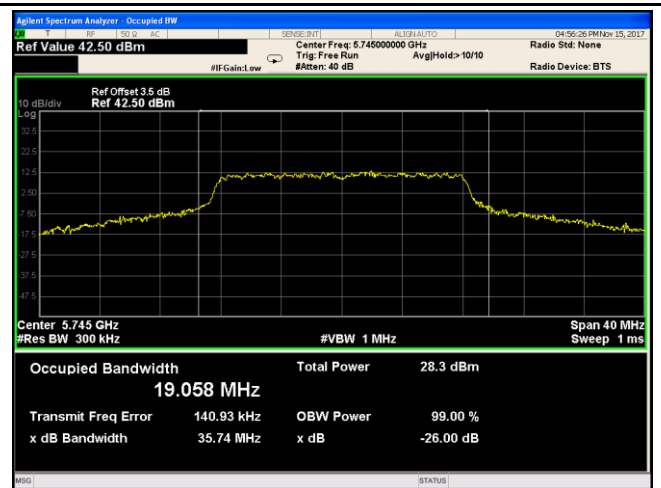
5725-5825MHz Bandwidth - Low CH 5745(Blue)



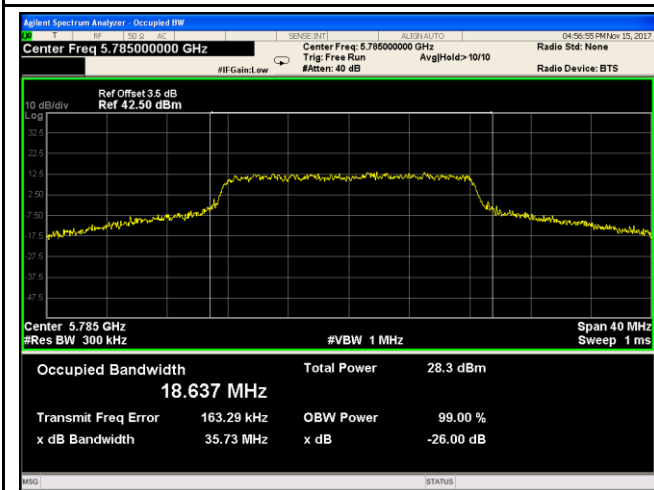
5725-5825MHz Bandwidth - Mid CH 5785(Blue)



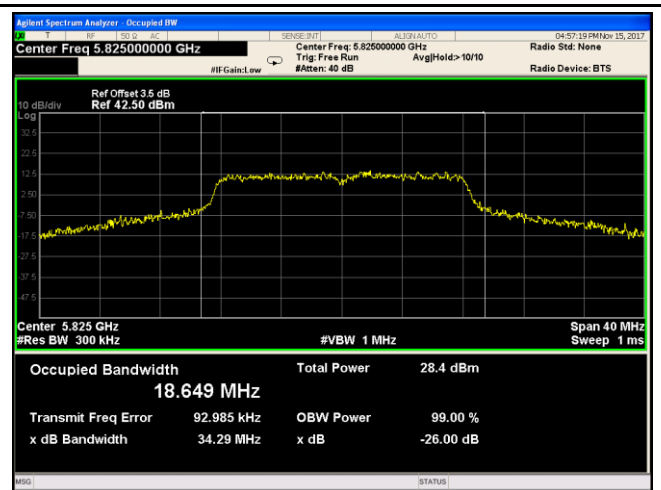
5725-5825MHz Bandwidth - High CH 5825(Blue)



5725-5825MHz Bandwidth - Low CH 5745(White)

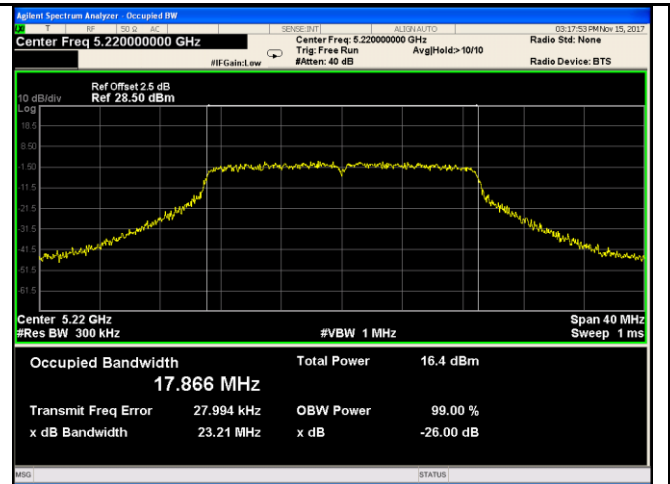
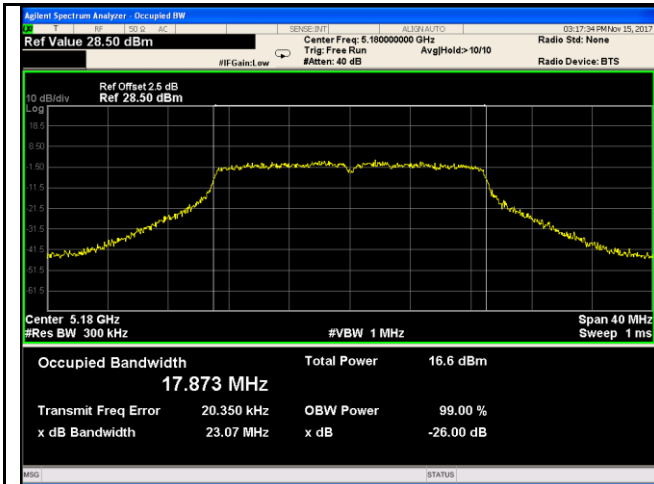


5725-5825MHz Bandwidth - Mid CH 5785(White)



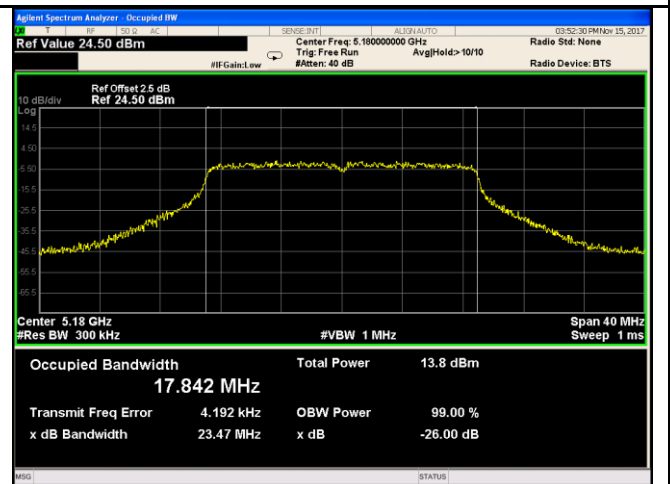
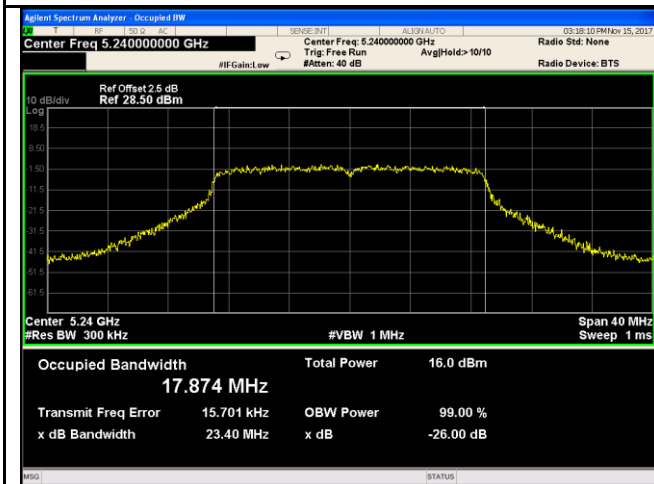
5725-5825MHz Bandwidth - High CH 5825(White)

### 802.11n (20M)



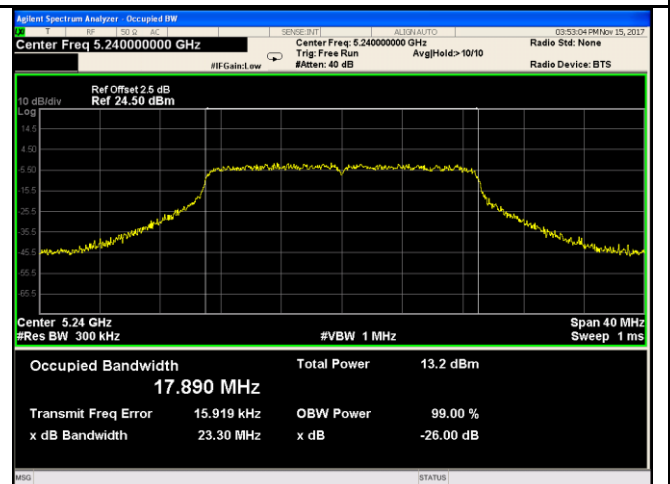
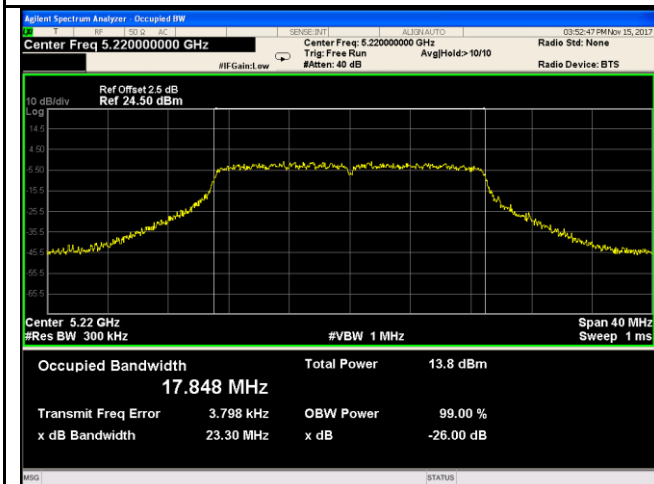
5150-5250MHz Bandwidth - Low CH 5180(Gray)

5150-5250MHz Bandwidth - Middle CH 5220(Gray)



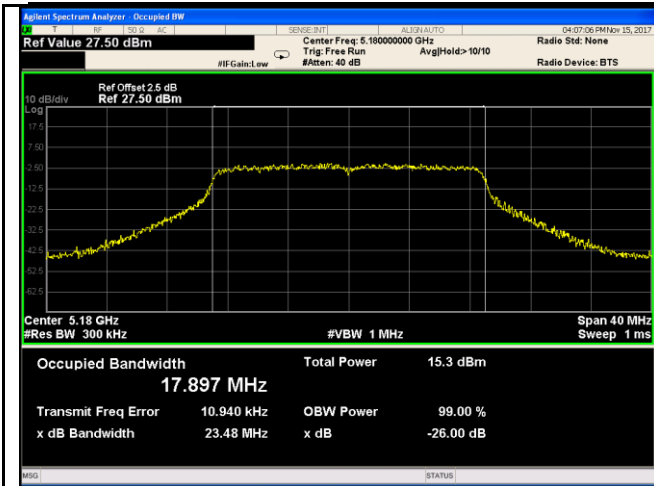
5150-5250MHz Bandwidth - High CH 5240(Gray)

5150-5250MHz Bandwidth - Low CH 5180(Black)

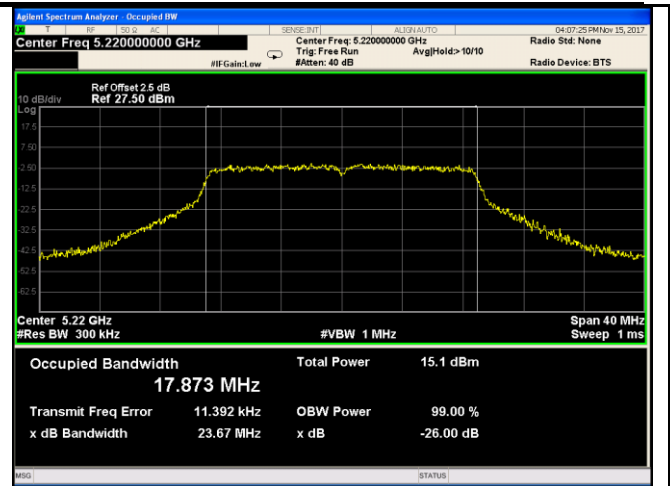


5150-5250MHz Bandwidth - Middle CH 5220(Black)

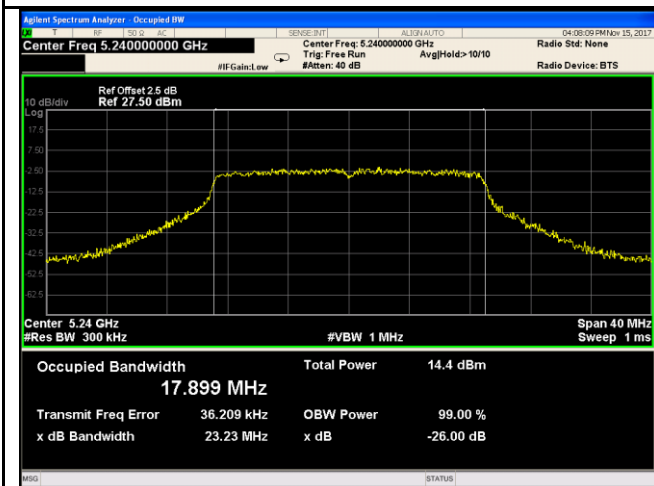
5150-5250MHz Bandwidth - High CH 5240(Black)



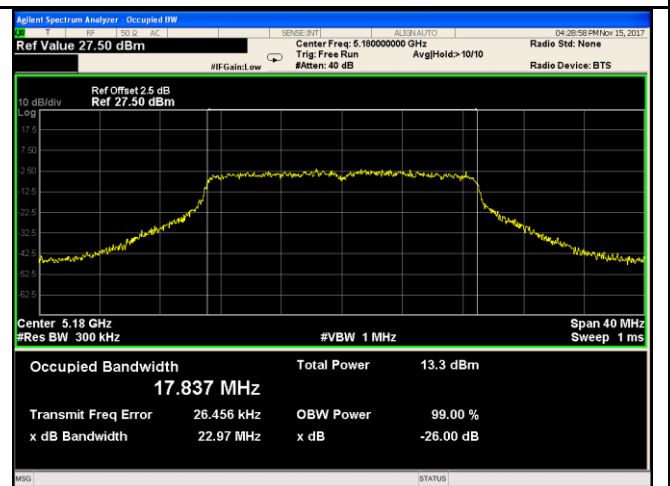
5150-5250MHz Bandwidth - Low CH 5180(Blue)



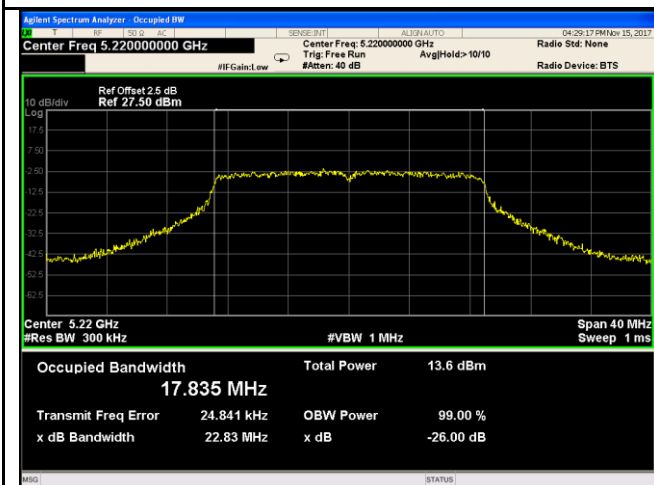
5150-5250MHz Bandwidth - Middle CH 5220(Blue)



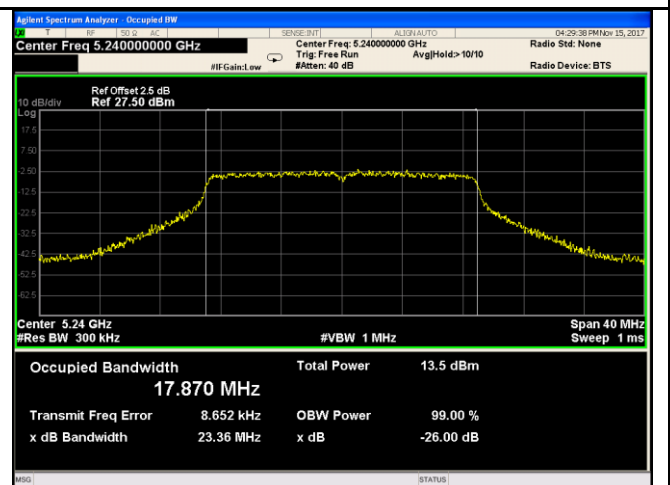
5150-5250MHz Bandwidth - High CH 5240(Blue)



5150-5250MHz Bandwidth - Low CH 5180(White)

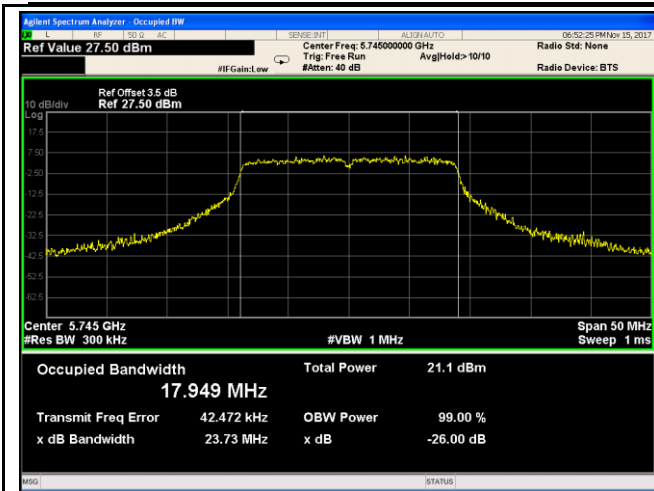


5150-5250MHz Bandwidth - Middle CH 5220(White)

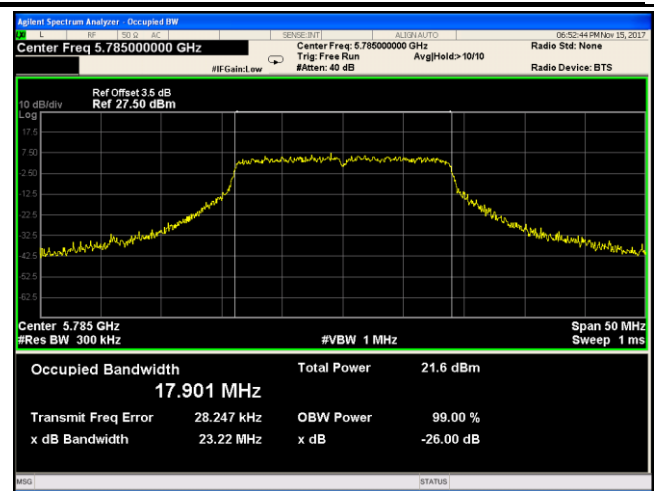


5150-5250MHz Bandwidth - High CH 5240(White)

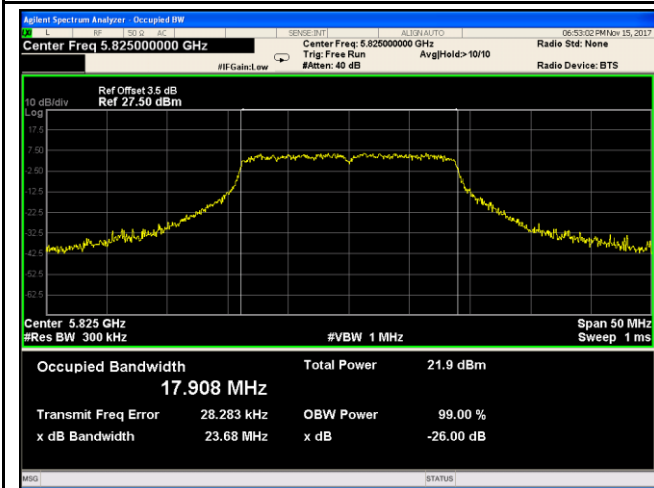




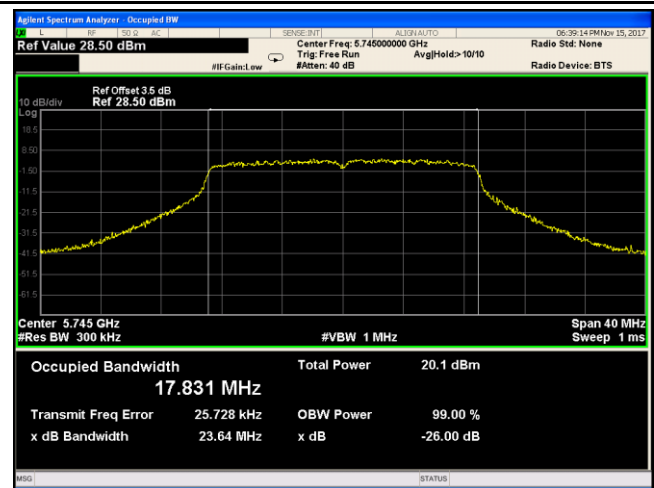
5725-5825MHz Bandwidth - Low CH 5745(Gray)



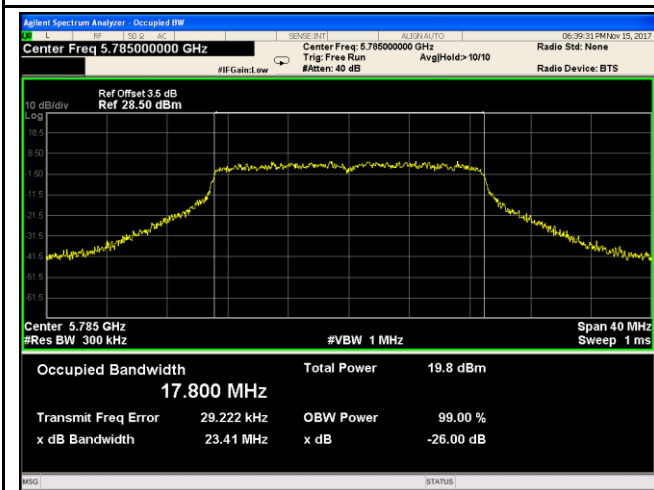
5725-5825MHz Bandwidth - Mid CH 5785(Gray)



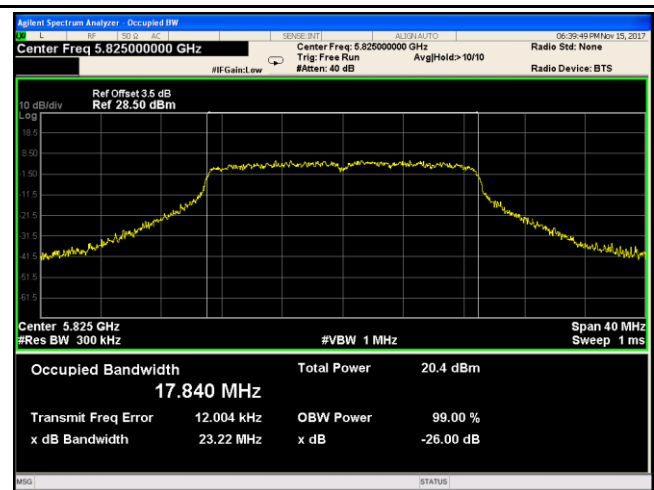
5725-5825MHz Bandwidth - High CH 5825(Gray)



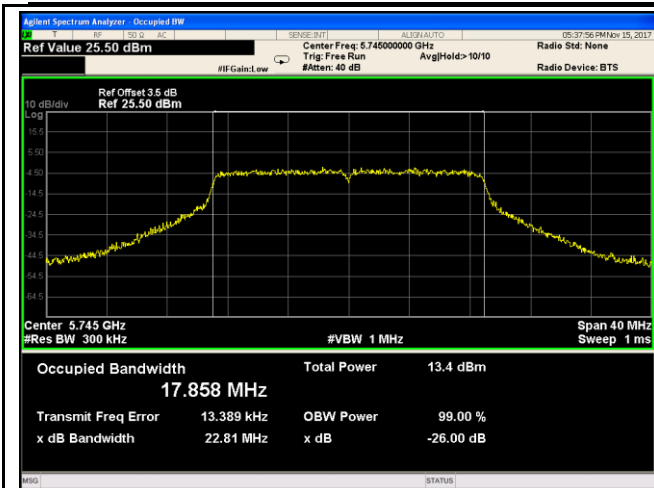
5725-5825MHz Bandwidth - Low CH 5745(Black)



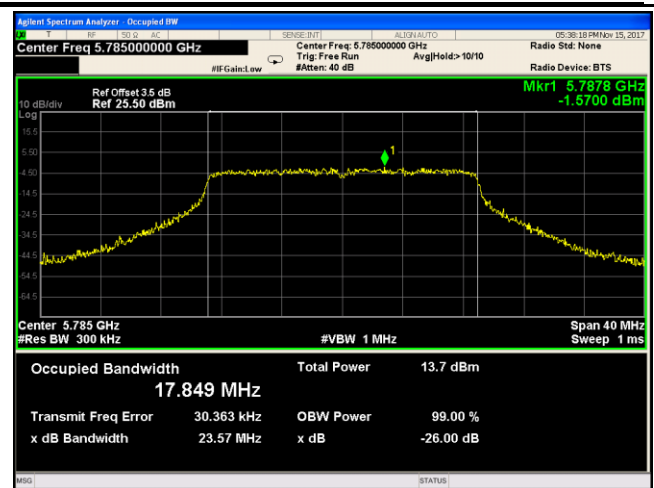
5725-5825MHz Bandwidth - Mid CH 5785(Black)



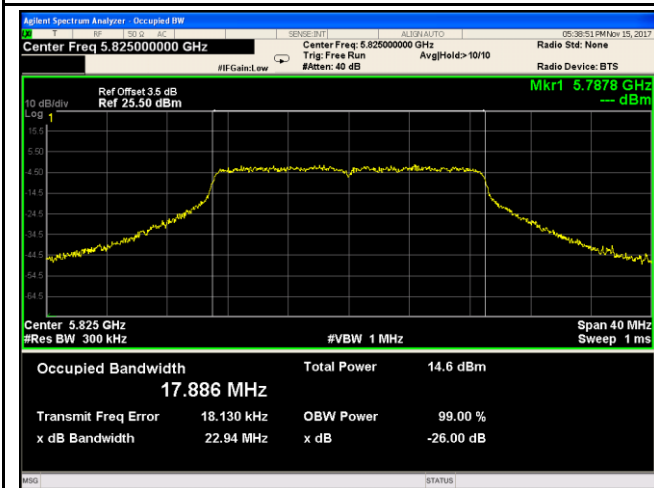
5725-5825MHz Bandwidth - High CH 5825(Black)



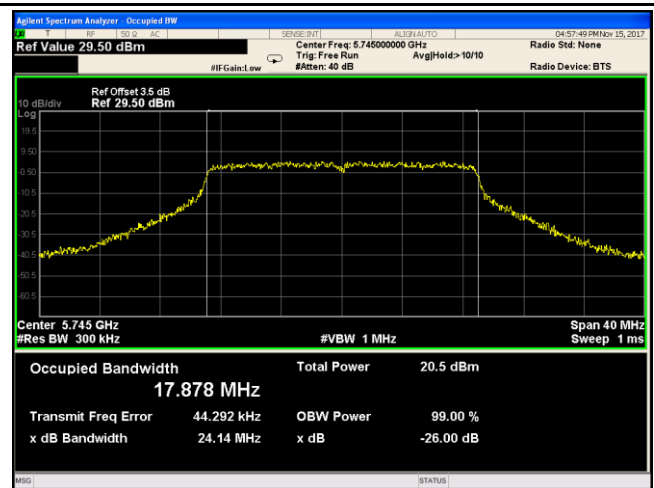
5725-5825MHz Bandwidth - Low CH 5745(Blue)



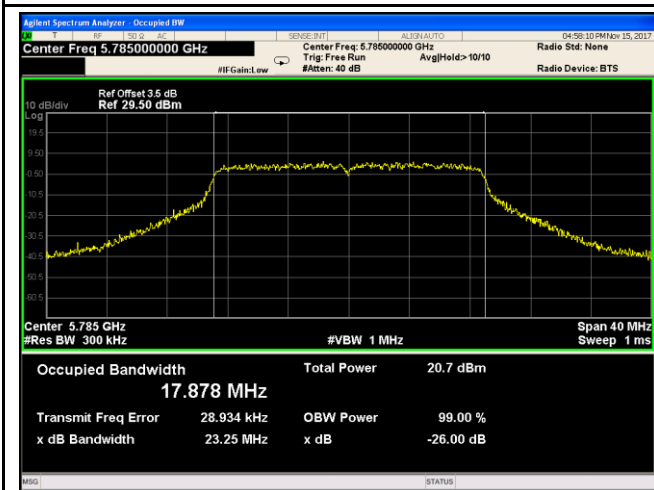
5725-5825MHz Bandwidth - Mid CH 5785(Blue)



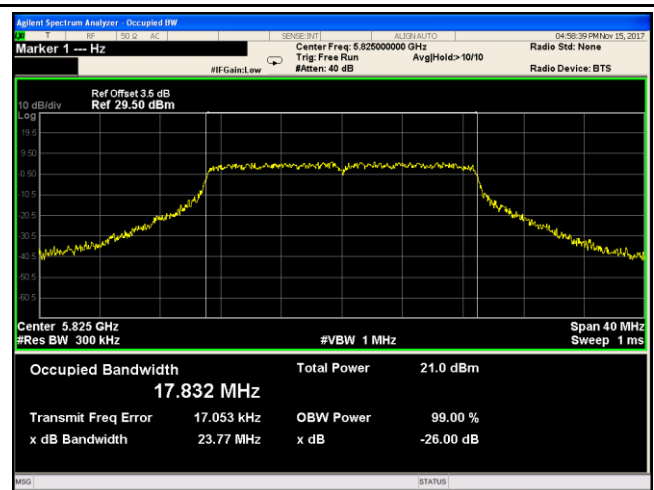
5725-5825MHz Bandwidth - High CH 5825(Blue)



5725-5825MHz Bandwidth - Low CH 5745(White)

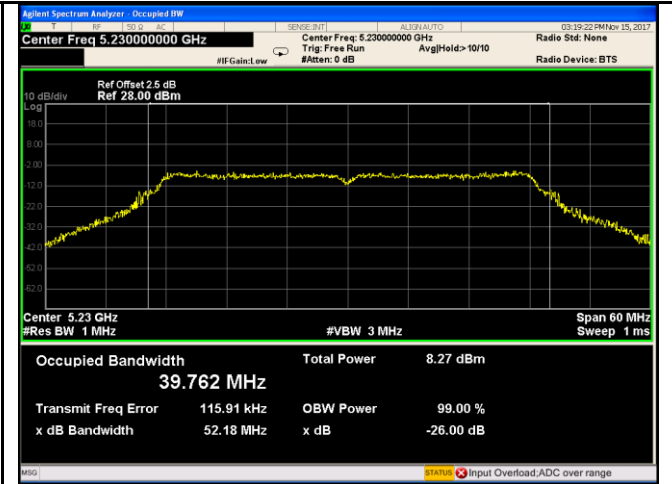
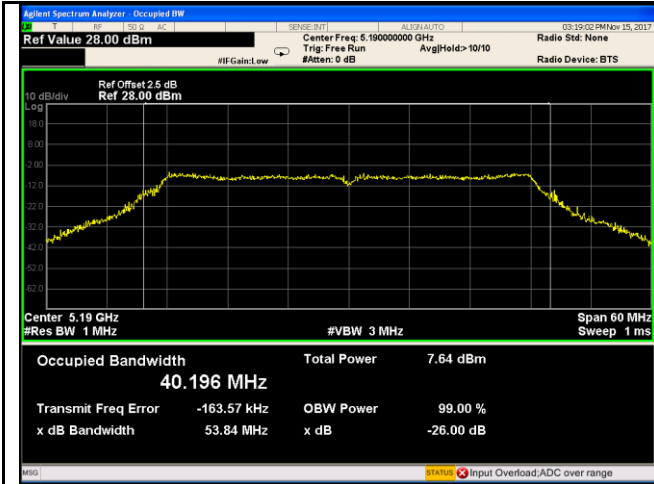


5725-5825MHz Bandwidth - Mid CH 5785(White)



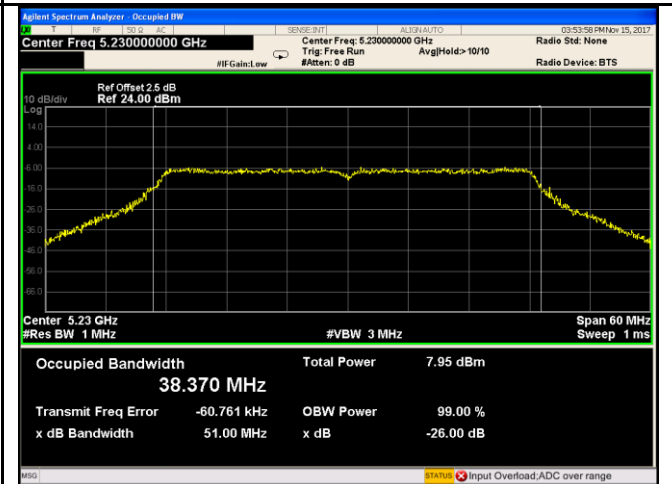
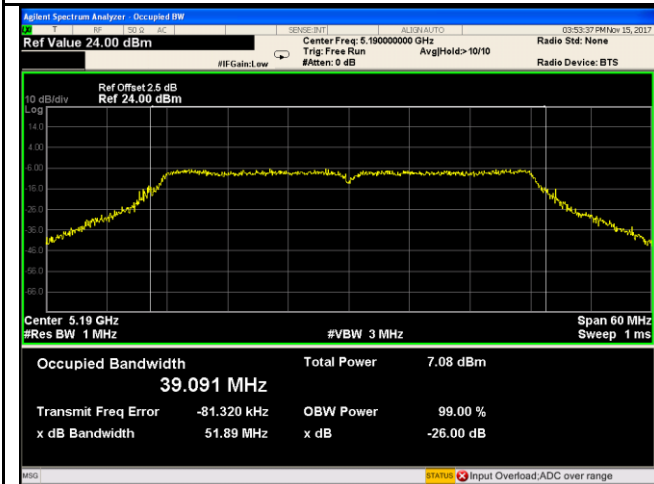
5725-5825MHz Bandwidth - High CH 5825(White)

**802.11n (40M)**



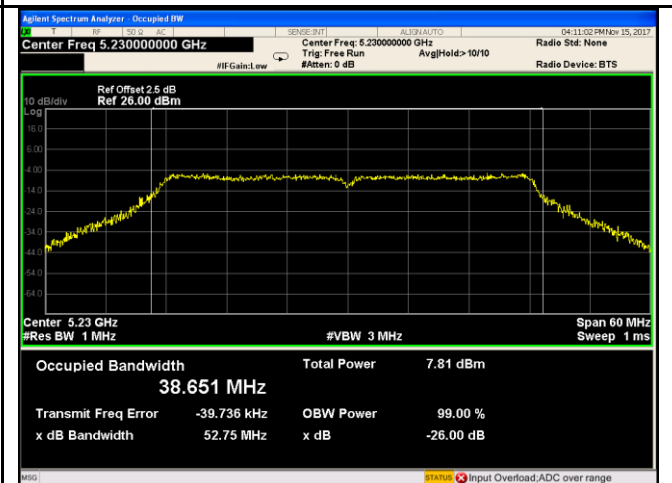
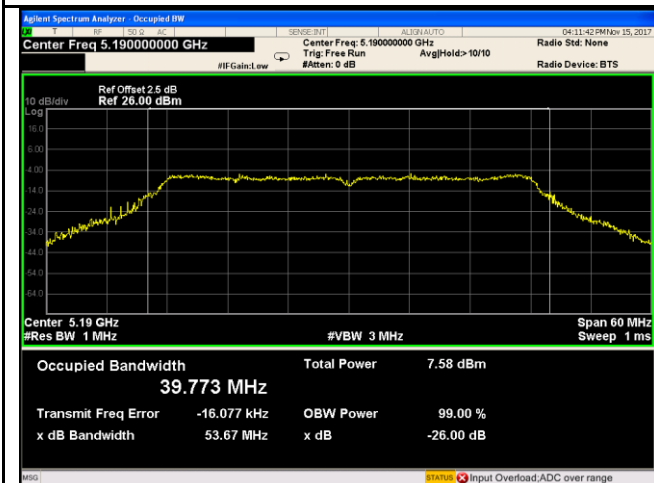
5150-5250MHz Bandwidth - Low CH 5190(Gray)

5150-5250MHz Bandwidth - High CH 5230(Gray)



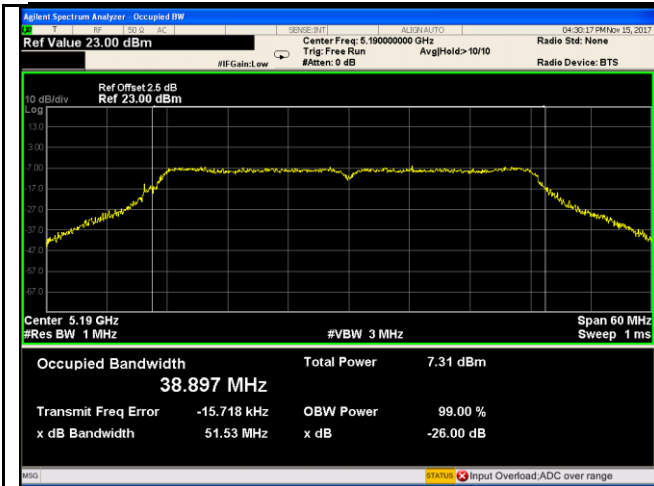
5150-5250MHz Bandwidth - Low CH 5190(Black)

5150-5250MHz Bandwidth - High CH 5230(Black)

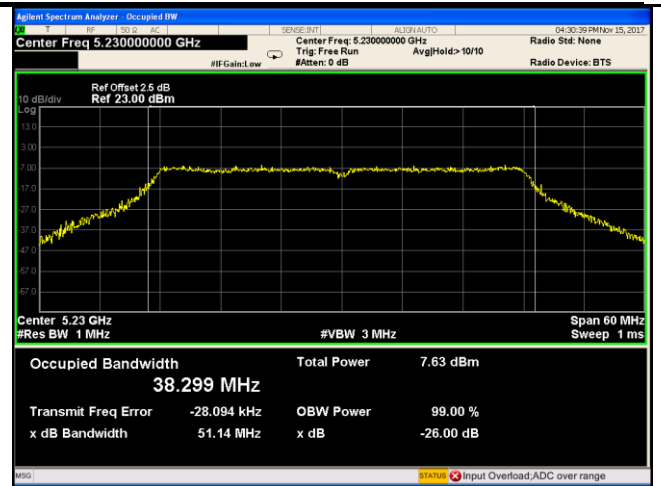


5150-5250MHz Bandwidth - High CH 5230(Blue)

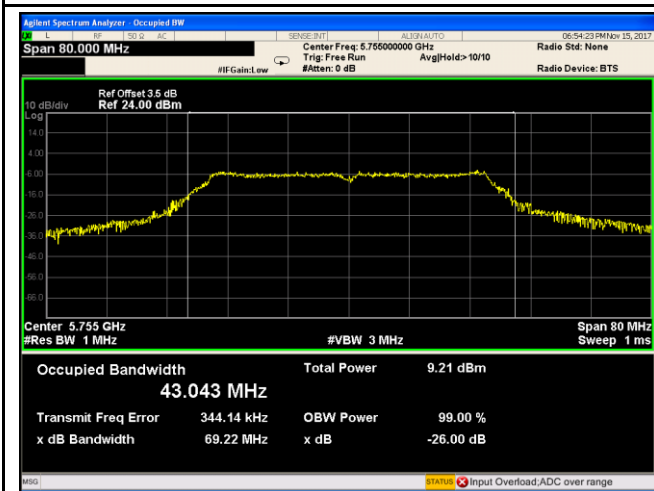
5150-5250MHz Bandwidth - High CH 5230(Blue)



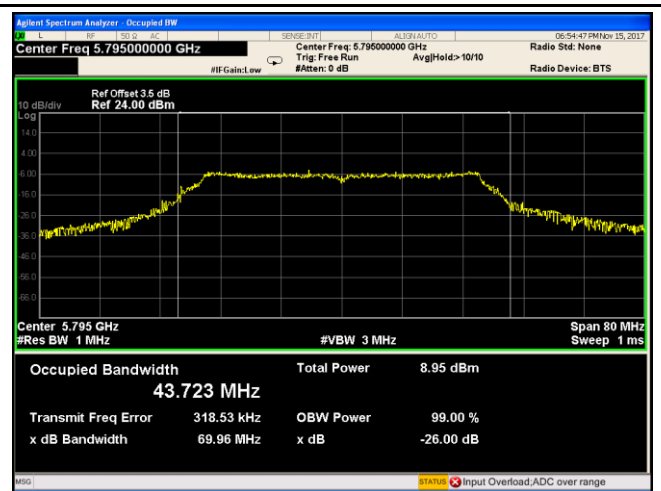
5150-5250MHz Bandwidth - High CH 5230(White)



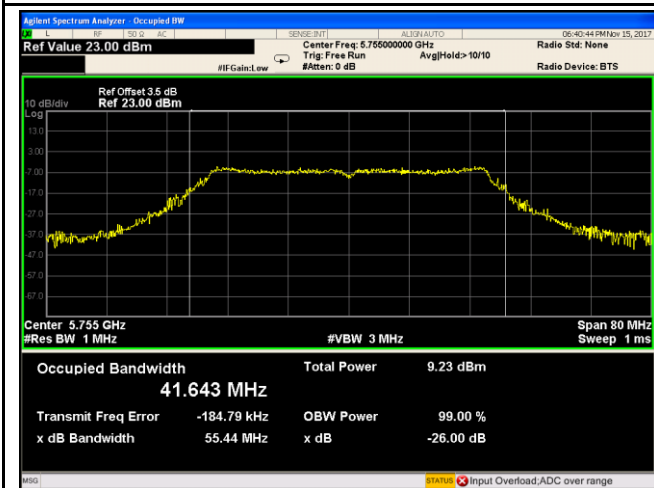
5150-5250MHz Bandwidth - High CH 5230(White)



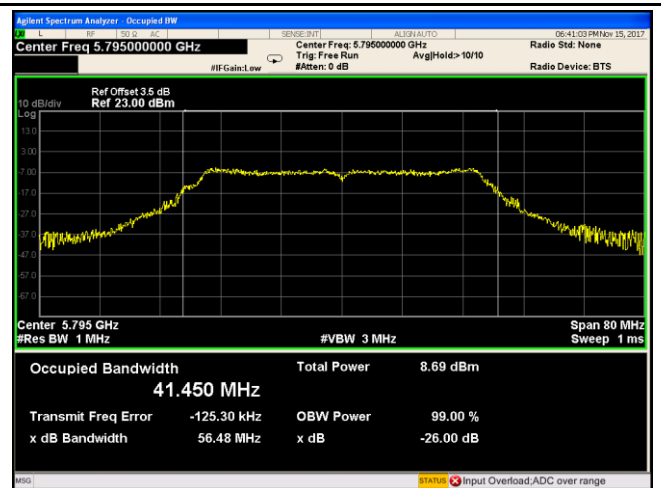
5725-5825MHz Bandwidth - Low CH 5755(Gray)



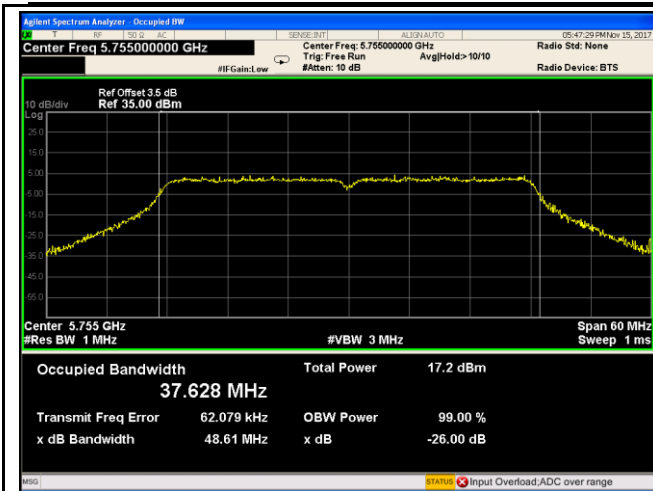
5725-5825MHz Bandwidth - High CH 5795(Gray)



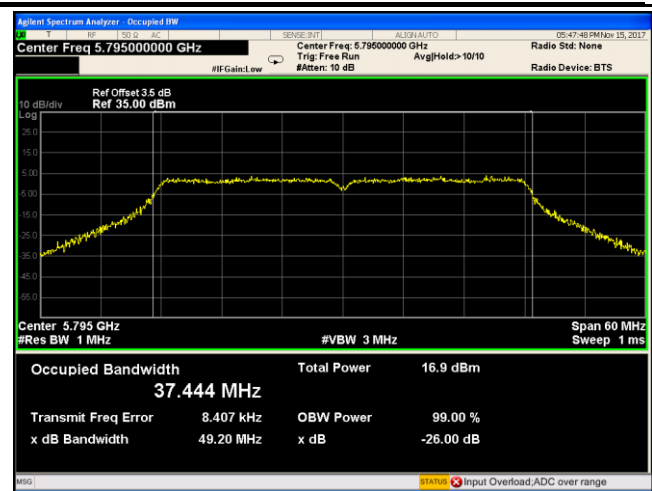
5725-5825MHz Bandwidth - Low CH 5755(Black)



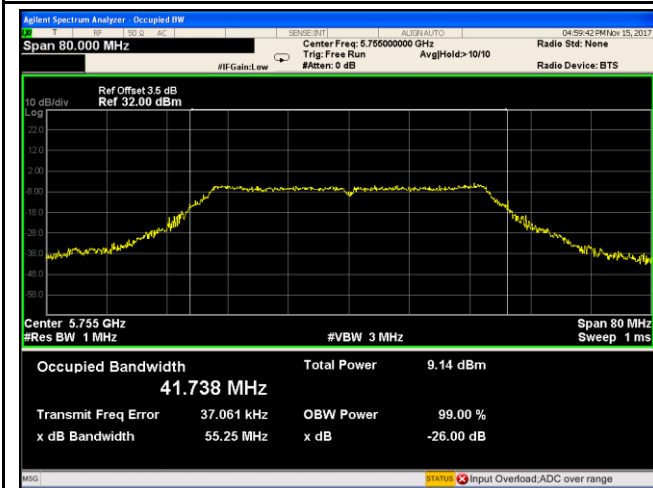
5725-5825MHz Bandwidth - High CH 5795(Black)



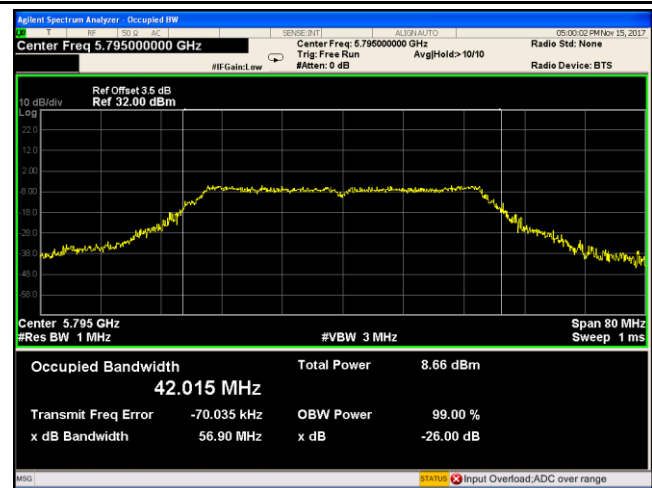
5725-5825MHz Bandwidth - Low CH 5755(Blue)



5725-5825MHz Bandwidth - High CH 5795(Blue)

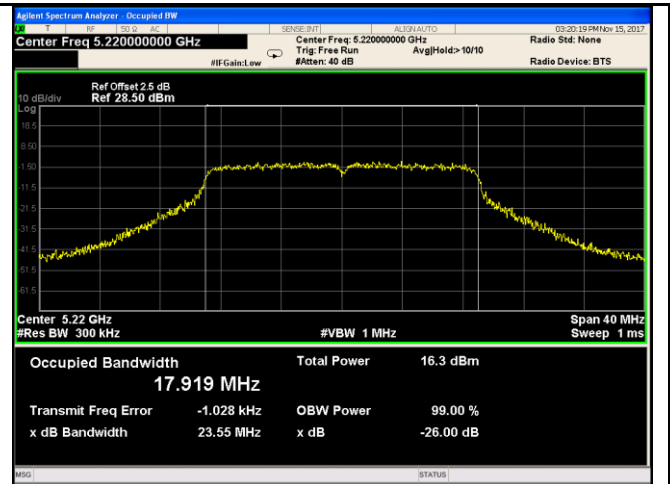
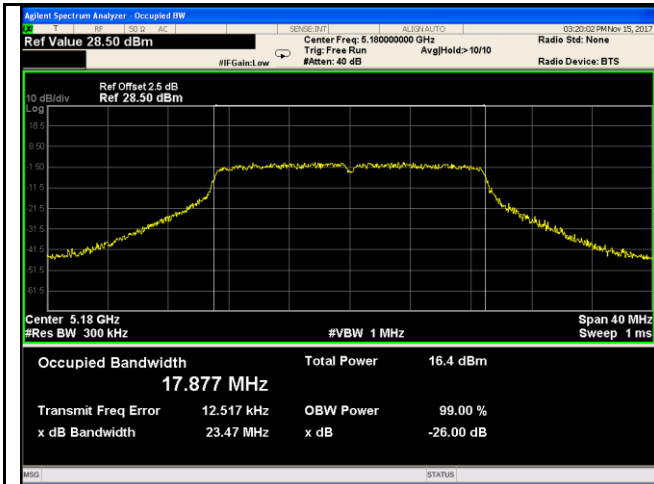


5725-5825MHz Bandwidth - Low CH 5755(White)



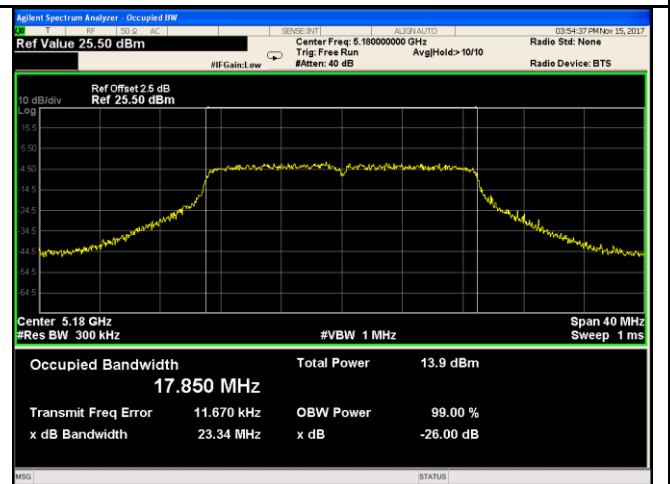
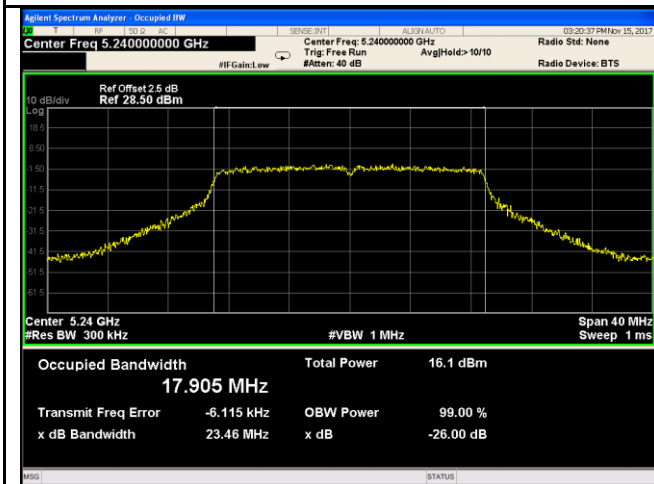
5725-5825MHz Bandwidth - High CH 5795(White)

### 802.11ac (20M)



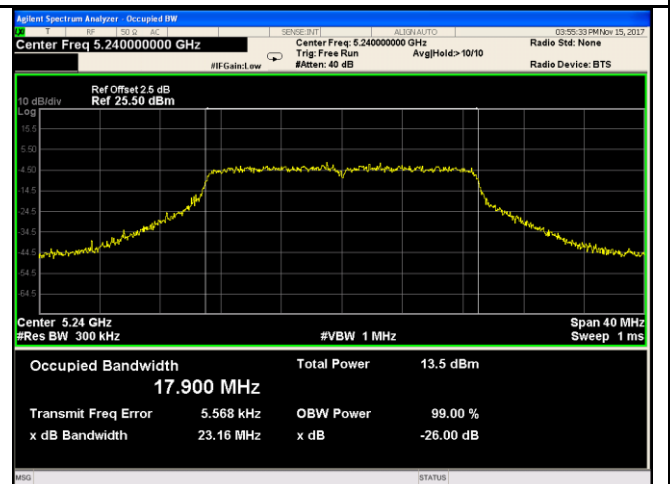
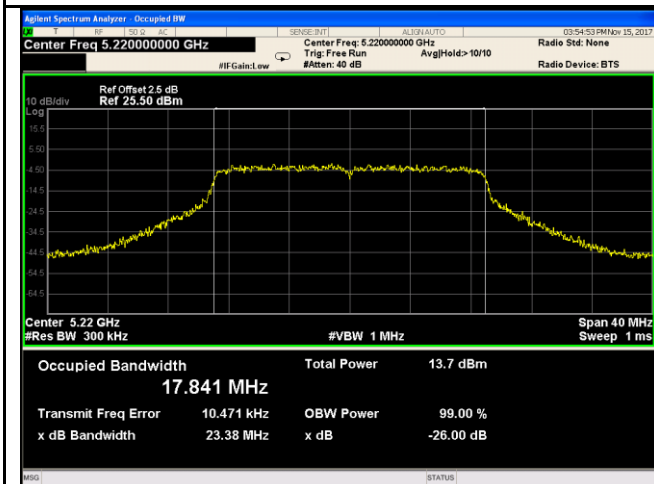
5150-5250MHz Bandwidth - Low CH 5180(Gray)

5150-5250MHz Bandwidth - Middle CH 5220(Gray)



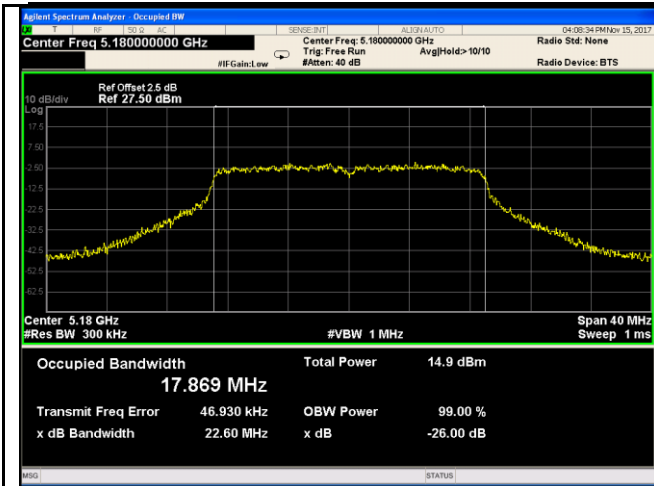
5150-5250MHz Bandwidth - High CH 5240(Gray)

5150-5250MHz Bandwidth - Low CH 5180(Black)

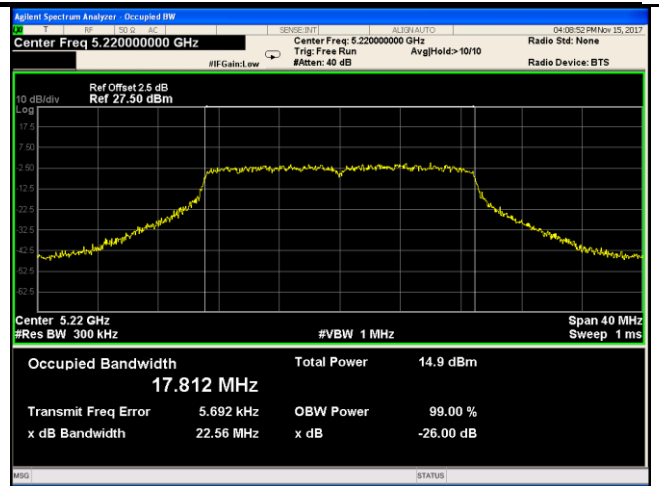


5150-5250MHz Bandwidth - Middle CH 5220(Black)

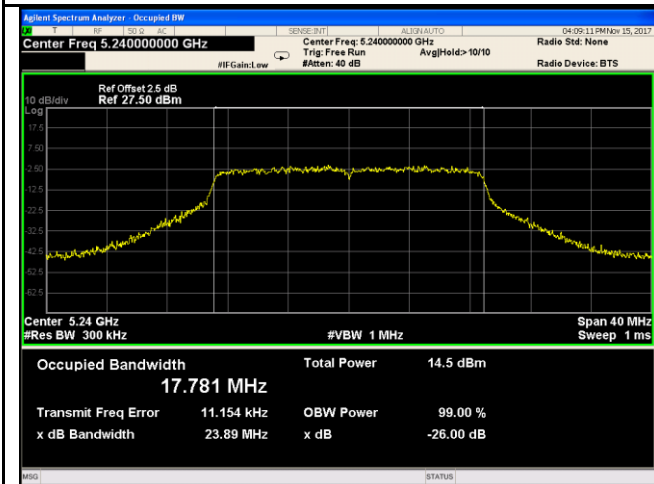
5150-5250MHz Bandwidth - High CH 5240(Black)



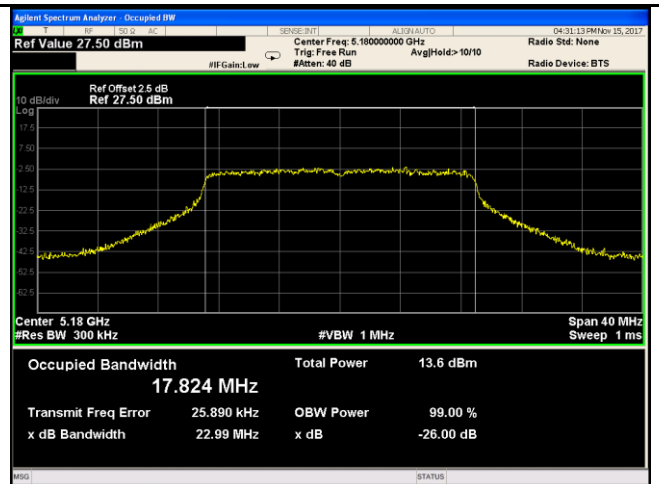
5150-5250MHz Bandwidth - Low CH 5180(Blue)



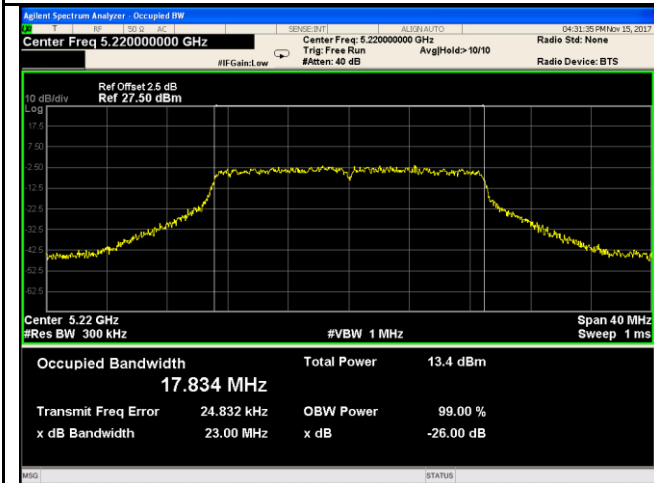
5150-5250MHz Bandwidth - Middle CH 5220(Blue)



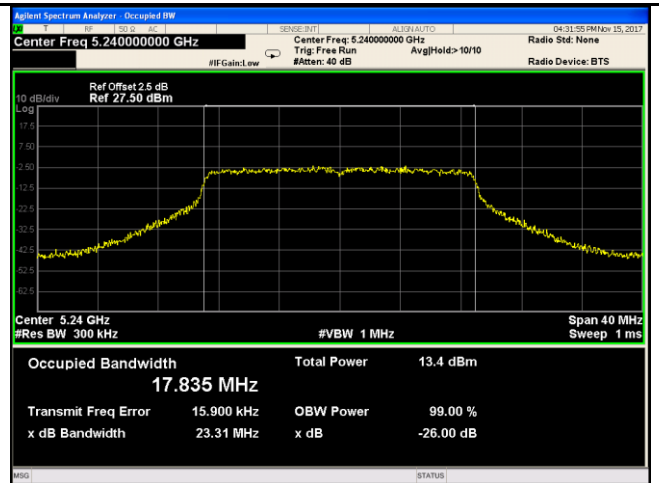
5150-5250MHz Bandwidth - High CH 5240(Blue)



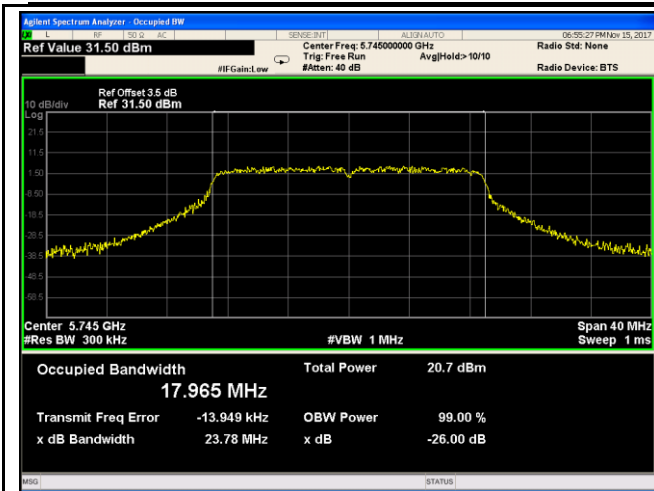
5150-5250MHz Bandwidth - Low CH 5180(White)



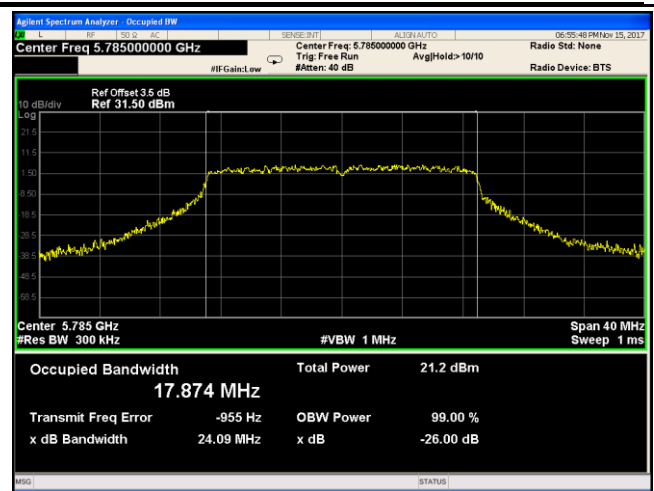
5150-5250MHz Bandwidth - Middle CH 5220(White)



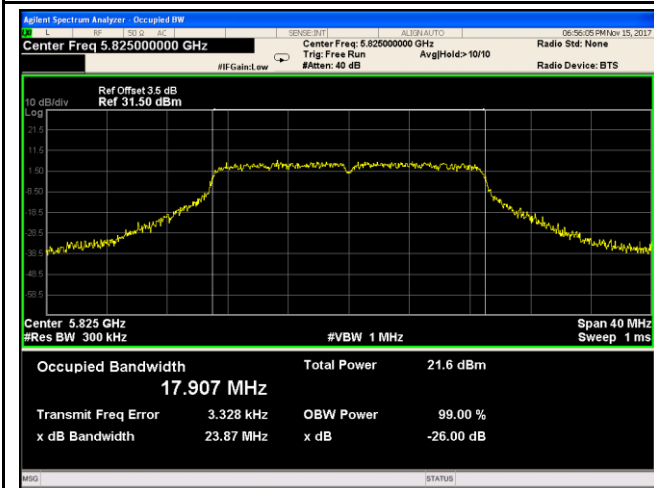
5150-5250MHz Bandwidth - High CH 5240(White)



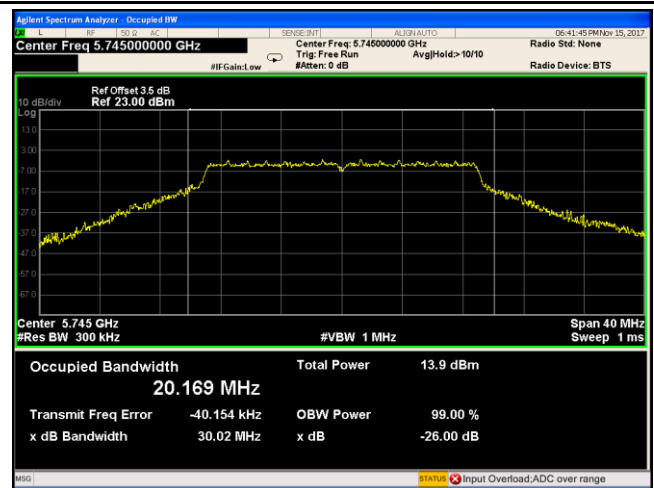
5725-5825MHz Bandwidth - Low CH 5745(Gray)



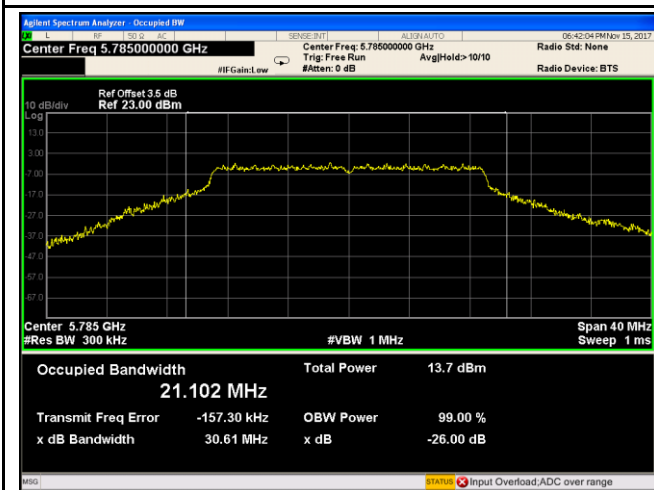
5725-5825MHz Bandwidth - Mid CH 5785(Gray)



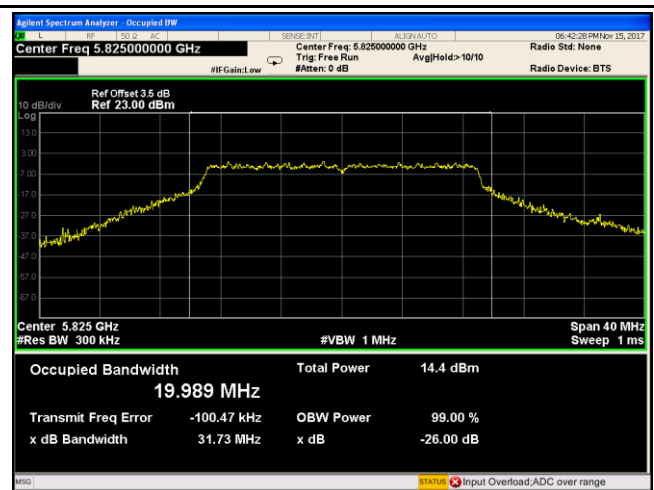
5725-5825MHz Bandwidth - High CH 5825(Gray)



5725-5825MHz Bandwidth - Low CH 5745(Black)



5725-5825MHz Bandwidth - Mid CH 5785(Black)



5725-5825MHz Bandwidth - High CH 5825(Black)