Produkte
Products

Prüfbericht - Nr.: *Test Report No.:*	**ULR-TC568819300000023F 001**	**Seite 1 von 212** *Page 1 of 212*

Auftraggeber: *Client:*	**Jason Schmidt** **Director Government Relations** **Whirlpool Corporation 2000 M-63** **Benton Harbor, MI 49022**		
Gegenstand der Prüfung: *Test item:*	**REBEL UI Module**		
Bezeichnung: *Identification:*	**EICHRB01**	**Serien-Nr.:** *Serial No.*	Engineering Sample
Wareneingangs-Nr.: *Receipt No.:*	**166117823**	**Eingangsdatum:** *Date of receipt:*	17.03.2019
Prüfort: *Testing location:*	**Refer Page 5 of 212 for test facilities**		
Prüfgrundlage: *Test specification:*	**FCC Part 15 Subpart E, 15.407** **ANSI C63.10-2013**		
Prüfergebnis: *Test Result:*	**Der Prüfgegenstand entspricht oben genannter Prüfgrundlage(n).** *The test items passed the test specification(s).*		
Prüflaboratorium: *Testing Laboratory:*	**TÜV Rheinland (India) Pvt. Ltd.** 27/B, 2nd corss, Electronic City Phase 1 Bangalore – 560 100. India FCC Test Site Registration no.: **496599**		

geprüft */ tested by:*

29.04.2019	Raghavendra G Katti Senior Engineer	Raghav. k.
Datum *Date*	**Name/Stellung** *Name/Position*	**Unterschrift** *Signature*

kontrolliert */ reviewed by:*

17.05.2019	Shrikanth S Naik Assistant Manager	
Datum *Date*	**Name/Stellung** *Name/Position*	**Unterschrift** *Signature*

Sonstiges */Other Aspects:* **FCC ID :A5UEICHRB01, On receipt the equipment was in good condition**

Abkürzungen:	***P(ass)***	= ***entspricht Prüfgrundlage***	***Abbreviations:***	***P(ass)***	= ***passed***
	F(ail)	= ***entspricht nicht Prüfgrundlage***		***F(ail)***	= ***failed***
	N/A	= ***nicht anwendbar***		***N/A***	= ***not applicable***
	N/T	= ***nicht getestet***		***N/T***	= ***not tested***

Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.

This test report relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any safety mark on this or similar products.

CIN: U72501KA1996PTC020653

Test Summary

Section	Test item	Result
15.407 (a)	Emission Bandwidth	Pass
15.407 (a)	Maximum conducted output power	Pass
15.407 (a)	Maximum Power spectral density	Pass
15.407 (b) / (15.205 &15.209)	Restricted bands of emission and Restricted bands of operation	Pass
15.207	Conducted emission on A.C power lines	Pass

Discipline: Electronics Testing
Group: EMC Test Facility

Note: Conducted measurements are done according to the procedure given in KDB No. 789033 D02 General UNII Test Procedures v02r0

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1 GENERAL REMARKS

1.1 Complimentary Materials

All attachments are integral part of this test report.

1. TEST SETUP PHOTOS

2: EUT EXTERNAL PHOTOS

3: EUT INTERNAL PHOTOS

4: FCC LABEL AND LABEL LOCATION

5: BLOCK DIAGRAM

6: SPECIFICATION OF EUT

7: SCHEMATIC DIAGRAM

8: BILL OF MATERIAL

9: USER MANUAL

10: MAXIMUM PERMISSIBLE EXPOSURE INFORMATION

2 TEST SITES

2.1 Testing Facilities

TUV Rheinland (India) Private Limited
108 , Beside ISBR Business School,
Electronic city Phase I
Bangalore - 560 100.

2.2 List of Test and Measurement Instruments

Table 1: Test and measurements instrument used

Equipment	Manufacturer	Model Name	Serial Number	Calibration Due Date	Periodicity	Used for Test Items
Spectrum Analyser	Agilent Technologies	E4407B	US41192772	15-11-2019	Yearly	Antenna - Port Measurements
USB Peak power sensor	AIMIL Ltd	55006	10231	22-12-2019	Yearly	
EMI Test Receiver	Rohde & Schwarz	ESW 44	101732	26-05-2019	Yearly	Radiated Spurious Emission
Active loop antenna	Frankonia	LAX-10	LAX-10-800	15-01-2020	Yearly	
Biconical Antenna	Schwarzbeck mess-elektronik	VHBB-9124 / BBA-9106	9124-656	16-01-2020	Yearly	
Log-Periodic Antenna	Schwarzbeck mess-elektronik	VUSLP-9111B	9111B-111	17-01-2020	Yearly	
Broadband Horn Antenna	Frankonia	HAX-18	HAX18-802	17-05-2019	Yearly	
Semi Anechoic Chamber	Frankonia	-	-	-	-	
EMI Receiver	Rohde & Schwarz	ESR7	101133	16-01-2020	Yearly	AC Power line conducted emission
LISN	Rohde & Schwarz	ENV 216	100022	18-10-2019	Yearly	
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100811	09-08-2019	Yearly	

3 GENERAL PRODUCT INFORMATION

3.1 Product Function and Intended Use

REBEL UI Module is the platform which will be used across different appliances categories (Refrigeration, Cooking, Laundry, Dishwashers, etc.) based on Qualcomm Snapdragon 660 (SDA 660) processor.The Rebel Module is 2.4G/5G Wi-Fi-connected graphical user interface. It supports LCD with touch-screen and audio video interfaces. It supports mics, cameras, speaker and other sensor interfaces for smart appliance application. The module contains the high bandwidth Wi-Fi module (WCN3990) for data and video transfer over Wi-Fi interface. Which also supports the communication over Bluetooth.It supports Wi-Fi (802.11 a/b/g/n/ac - 2x2 MIMO, ISM 2.4GHz at 20MHz/40MHz and 5GHz at 20/40/80 MHz),Bluetooth (BT5.0) and BLE. It supports FPC antennas, mentioned in user manual.

3.2 Ratings and System Details

Table 2: Ratings and System Details

Operating frequency range	U-NII-1 : 5150MHz to 5250MHz U-NII-3 : 5725MHz to 5850MHz	
Radio Protocol	WLAN_5GHz	
Bandwidth	20,40,80	
Modulation	802.11a:	OFDM with BPSK,QPSK,16QAM , 64QAM
	802.11n:	OFDM with BPSK,QPSK,16QAM , 64QAM
	802.11ac:	OFDM with BPSK,QPSK,16QAM , 64QAM, 256QAM
Number of antennas	2	
Antenna type	External FPC(Flexible Printed Circuit) Antenna	
Antenna gain	Antennova	5.10 dBi
	Molex	4.75 dBi
Supply Voltage to Product	11V-13.5V(Typically 12.7V) DC	
Dimensions	Width: 45mm Length: 190 mm	
Environmental conditions	Operating Temperature Range: -10°C to +70°C (No air flow) Storage Temperature Range: -40°C to +80°C Humidity requirement: is 5% to 95%, non-condensing.	

3.1 Measurement Uncertainty:

Table 3: Measurement Uncertainty

Parameter	Uncertainty
Occupied Channel Bandwidth	±5 %
RF output power, conducted	±1.5 dB
Power Spectral Density, conducted	±3 dB
Unwanted Emissions, conducted	±3 dB
All emissions, radiated	±6 dB
Temperature	±3 ℃
Supply Voltages	±3 %
Time	±5 %

Note: The listsed uncertainities are the worst case uncertainity for the entire range of mesurements and are for the reporting purpose only and are not used in determining the PASS/FAIL of the results.

4 TEST SET-UP AND OPERATION MODE

4.1 Principle of Configuration Selection

Transmission was enabled with highest possible duty cycle transmission on low, mid and high channels to obtain maximum emissions.

4.2 Test Operation and Test Software

Test Software - QRCT (Qualcomm Radio Control Tool) Version 4.0.00113
Hardware version - PCBA Rev - W11324868

4.3 Special Accessories and Auxiliary Equipment

- Test Laptop was used to configure the device in transmission mode and module was tested with following accessories 1. Display 2, Speaker and 3 Camera.

4.4 Countermeasures to achieve EMC Compliance

- None

4.5 Test modes – data rates and modulations

For Radiated spurious emissions only the worst case results are reported in this report.

4.6 List of Test Frequencies and Frequency bands

5GHz Band – 20MHz Bandwidth Channel List

Frequency Band	Channel No.	Frequency (MHz)
5150 – 5250 MHz	36	5180
	48	5240
5725 – 5850MHz	149	5745
	165	5825

5GHz Band – 40MHz Bandwidth Channel List

Frequency Band	Channel No.	Frequency (MHz)
5150 – 5250 MHz	38	5190
	46	5230
5725 – 5850MHz	151	5755
	159	5795

5GHz Band – 80MHz Bandwidth Channel List

Frequency Band	Channel No.	Frequency (MHz)
5150 – 5250 MHz	42	5210
5725 – 5850MHz	155	5775

Note: TUV Sample Identification number : A000893143-001 (Conducted Sample)
A000893143-002 (Radiated Sample)
A000893143-003 (Radiated Sample)

5 TEST METHODOLOGY

5.1 Radiated Emission Test

The radiated emission measurement was performed according to the procedures in ANSI C63.10-2013. The equipment under test (EUT) was placed at the middle of the 80 cm high turntable for below 1 GHz & 1.5 m height for above 1 GHz measurement, and the EUT is 3 meters far from the measuring antenna. The turntable was rotated 360˚ for obtaining the maximum emission. The height of the measuring antennas was scanned between 1 m and 4 m, and the antenna rotated to repeat the measurements for both the horizontal and vertical antenna polarizations. Repeat the measurement steps until the maximum emissions were obtained. The measurement above 1000 MHz was performed by horn antenna, The measurement below 30 MHz was performed by loop antenna, Measurement from 30 MHz to 200 MHz was performed by Baloon and Biconical Antenna, and mesurement from 200 MHz to 1 GHz was performed by Log-Periodic Antenna.
The EUT was rotated around the X-, Y-, and Z-Axis and the results from worst case axis are recorded.

5.1.1 Test Setup Configuration

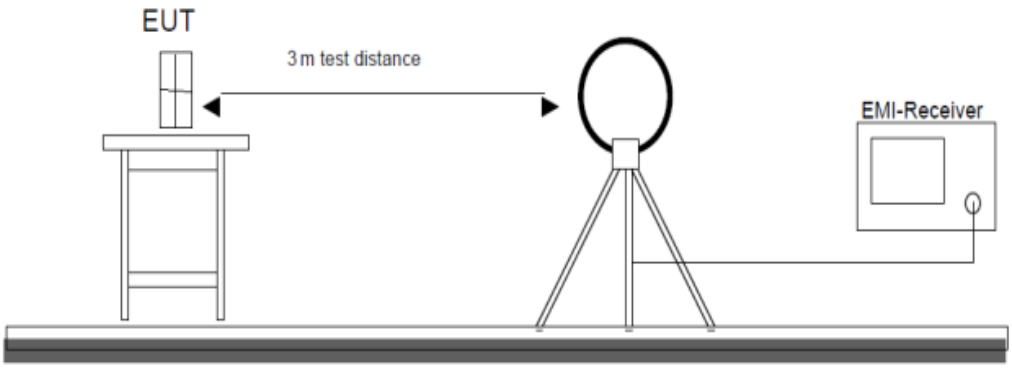


Figure 1: Frequency Range 9 kHz- 30 MHz

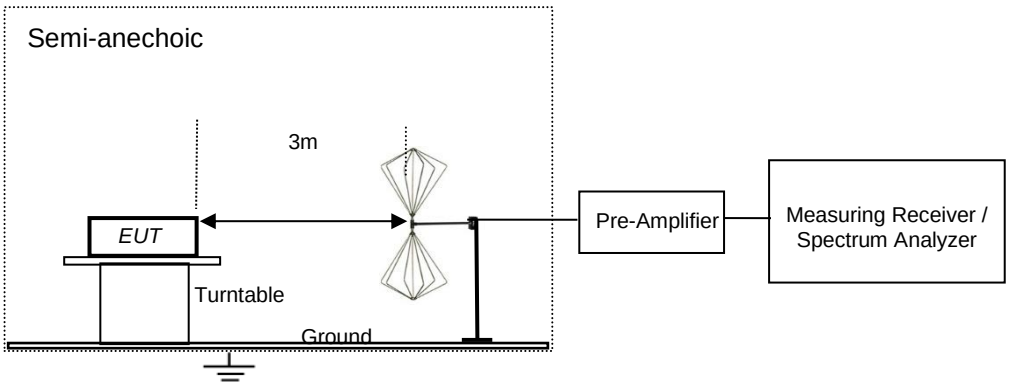


Figure 2: Frequency Range 30 MHz – 200 MHz

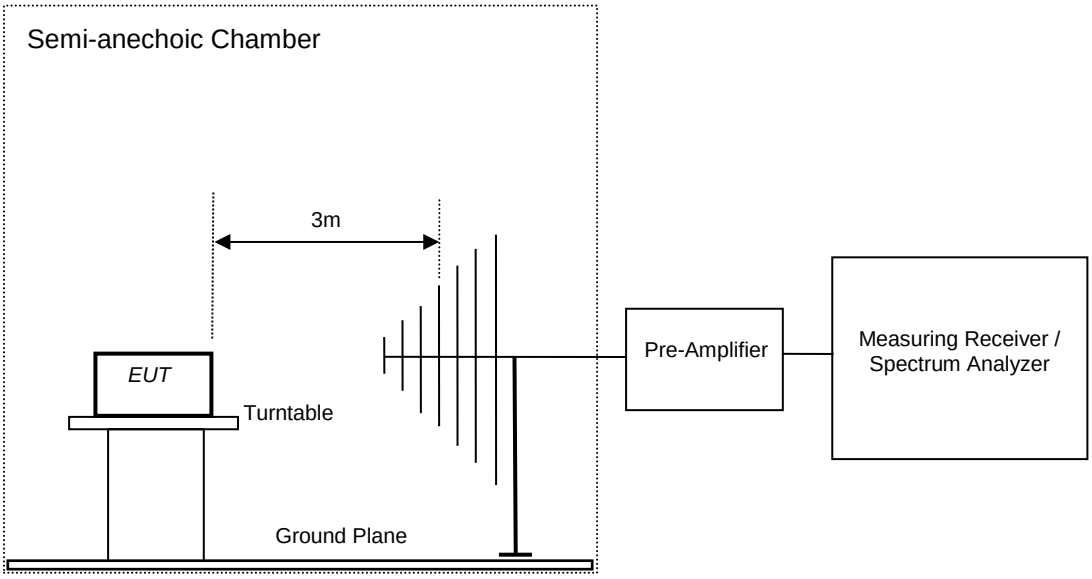


Figure 3: Frequency Range 200 MHz - 1GHz

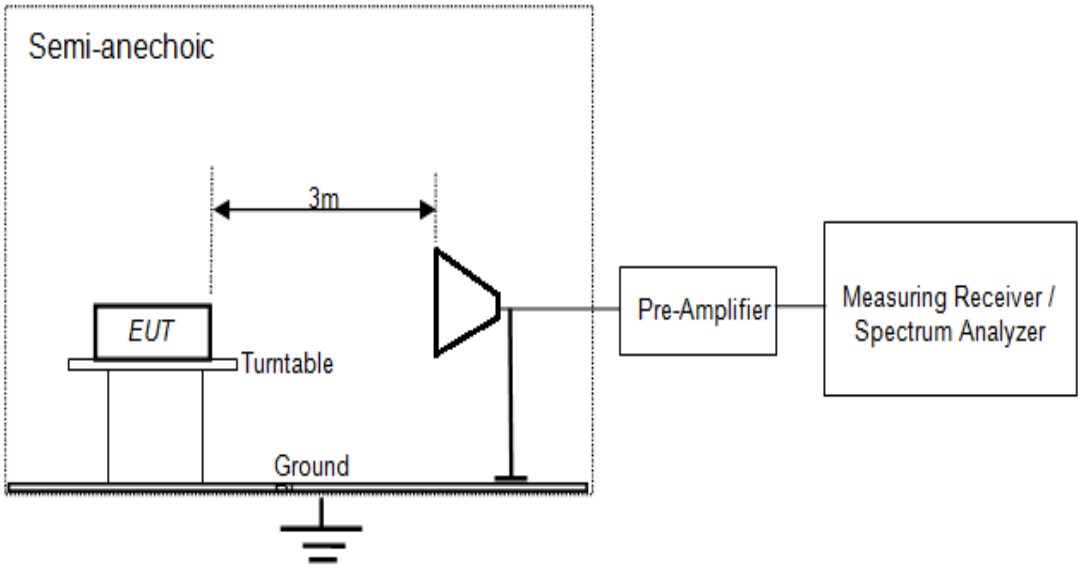


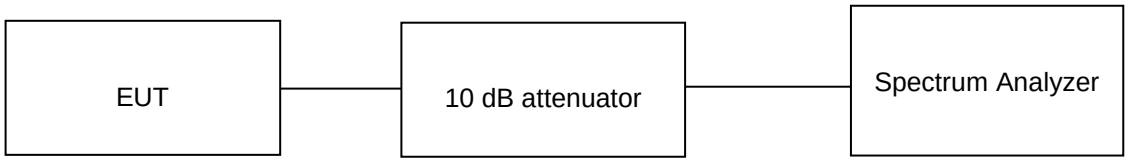
Figure 4: Frequency Range above 1 GHz

6 TEST RESULTS

6.1 Emission Bandwidth

Result ***Pass***

Test Specification	FCC Part 15 Section 15.407(a)
Measurement Bandwidth	300kHz



Environmental and Test conditions:

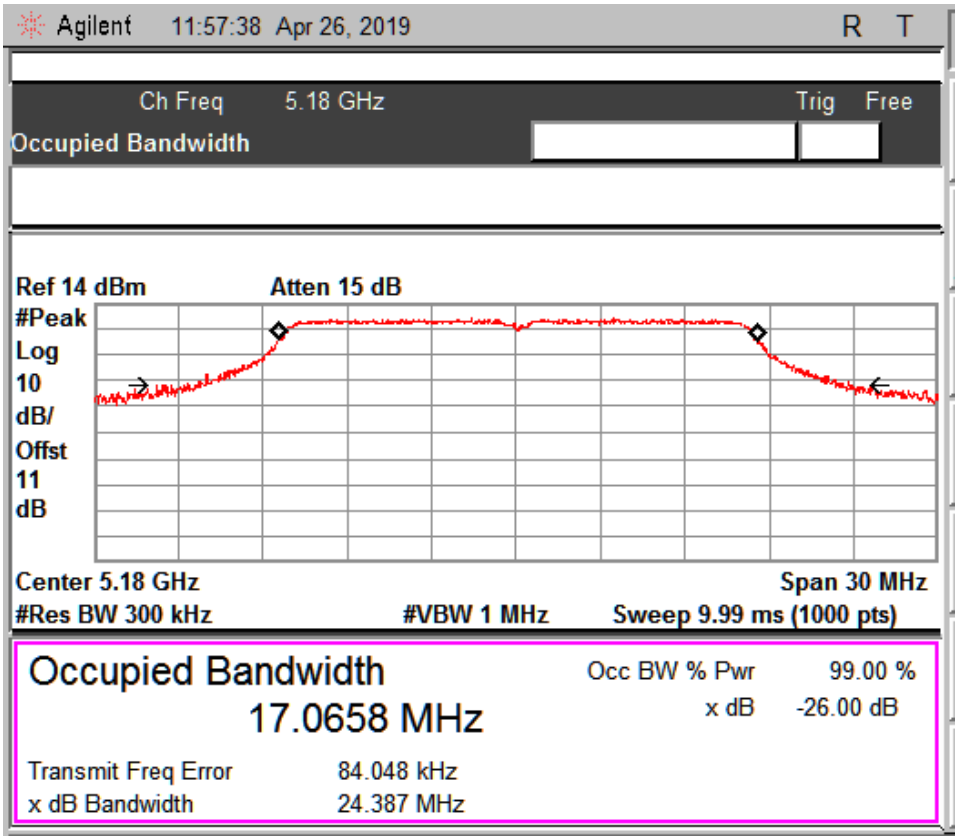
Normal Temperature = +25 °C Voltage (V norm) = 12 V DC RH = 63.2 %

Test results:

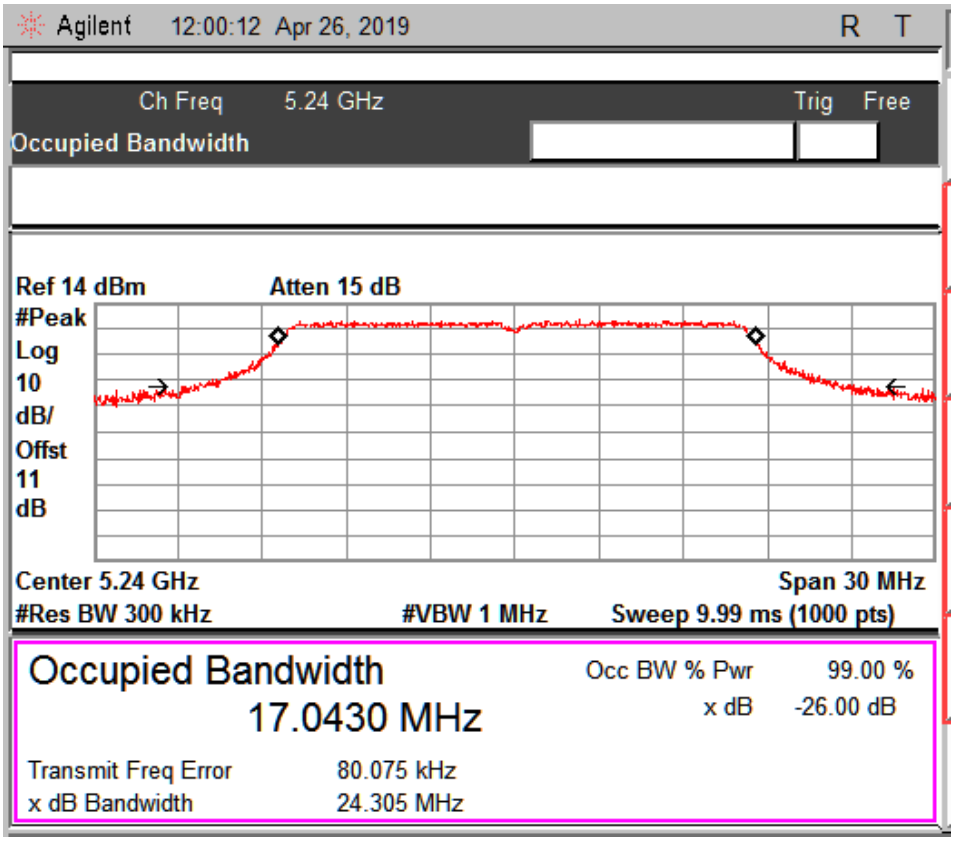
10 dB attenuator + 1 dB Cable loss = 11 dB offset is considered in below results

Modulation: 802.11a mode SISO

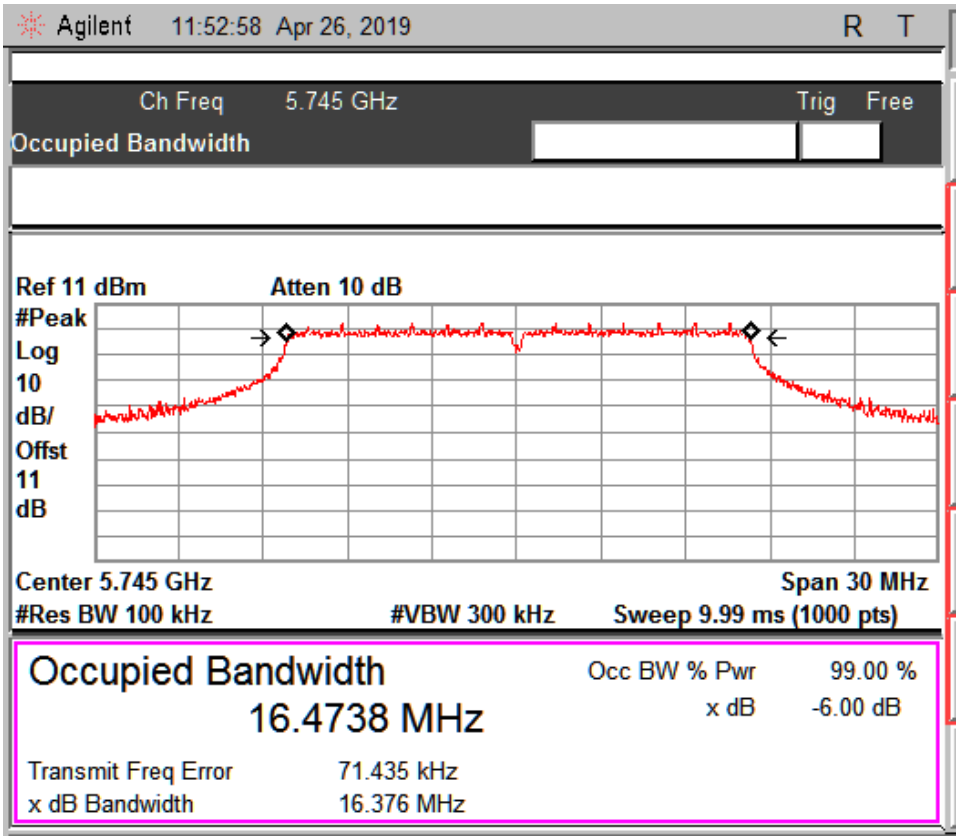
Mode	Data rate (Mbps)	Frequency (MHz)	Emission Bandwidth (MHz)	OBW (MHz)
a	6	5180	24.38	17.06
		5240	24.30	17.04
		5745	16.37	16.47
		5825	16.37	16.46
	24	5180	22.11	16.86
		5240	22.72	16.89
		5745	16.44	16.42
		5825	16.46	16.42
	54	5180	22.89	16.86
		5240	23.30	16.90
		5745	16.48	16.43
		5825	16.45	16.43



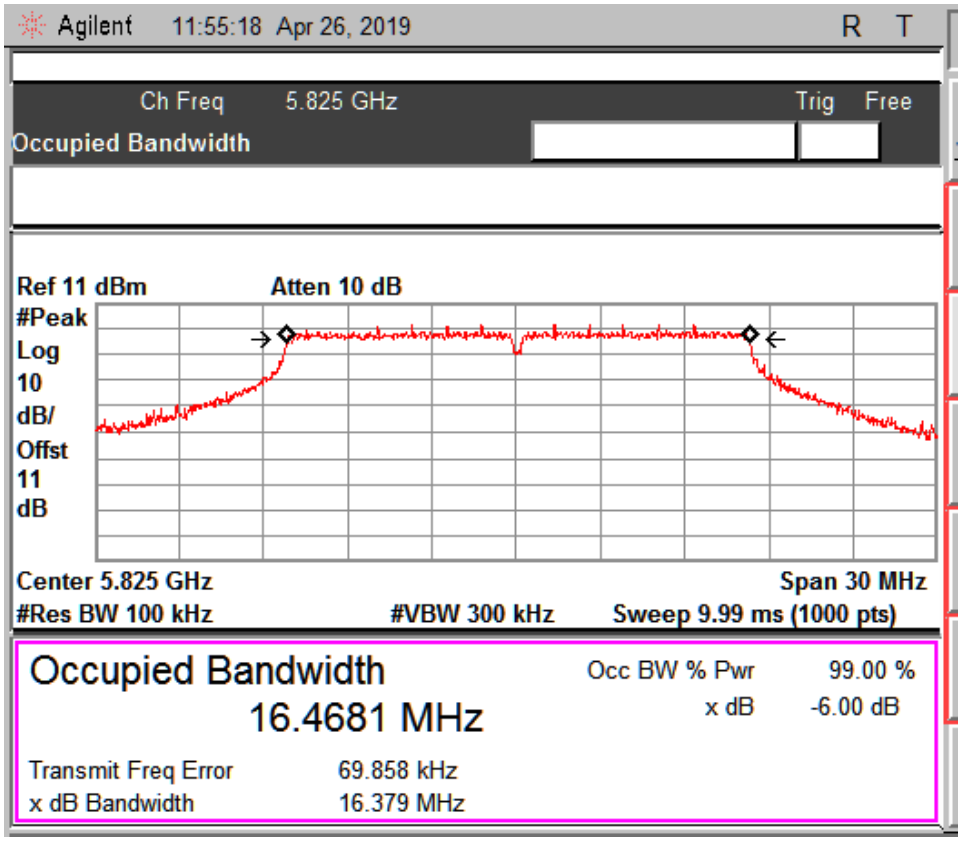
Data rate: 6 Mbps **Channel Frequency : 5.180 GHz**



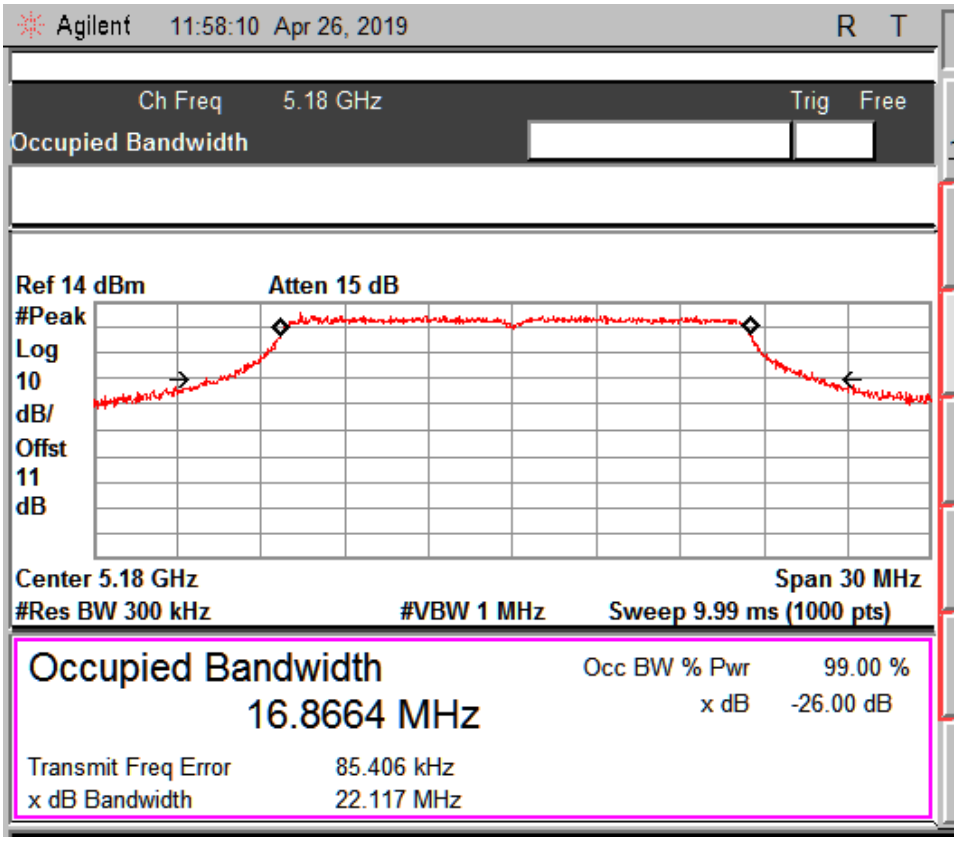
Data rate: 6 Mbps **Channel Frequency : 5.240 GHz**



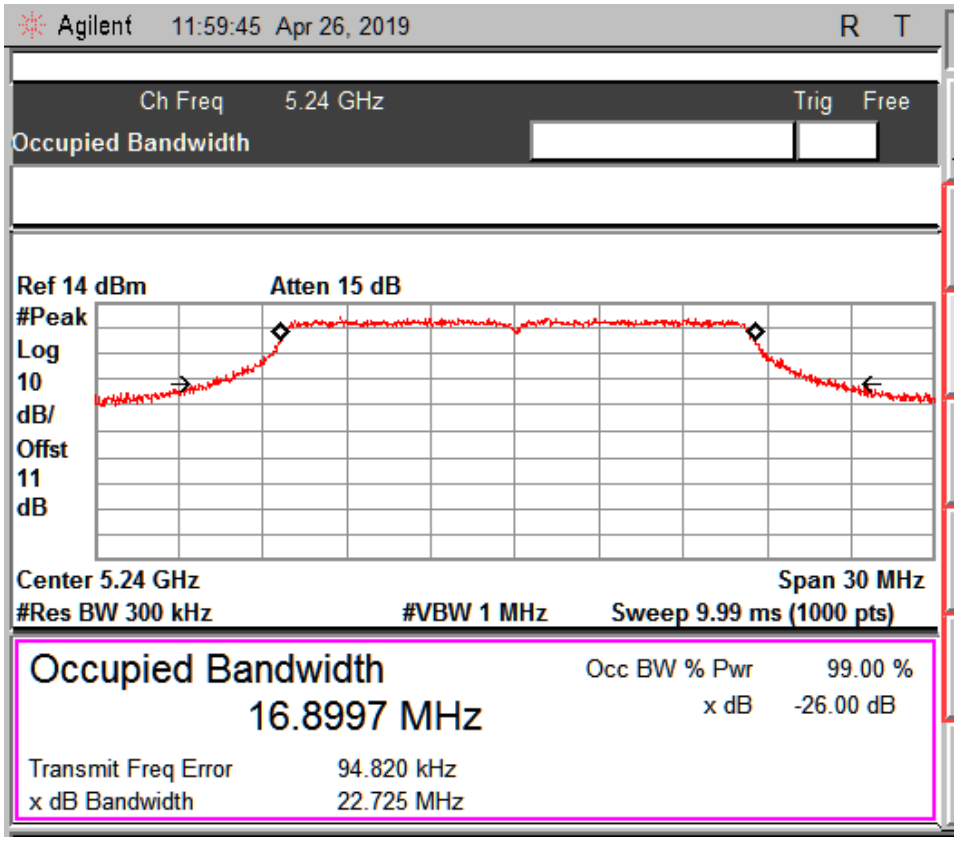
Data rate: 6 Mbps **Channel Frequency : 5.745 GHz**



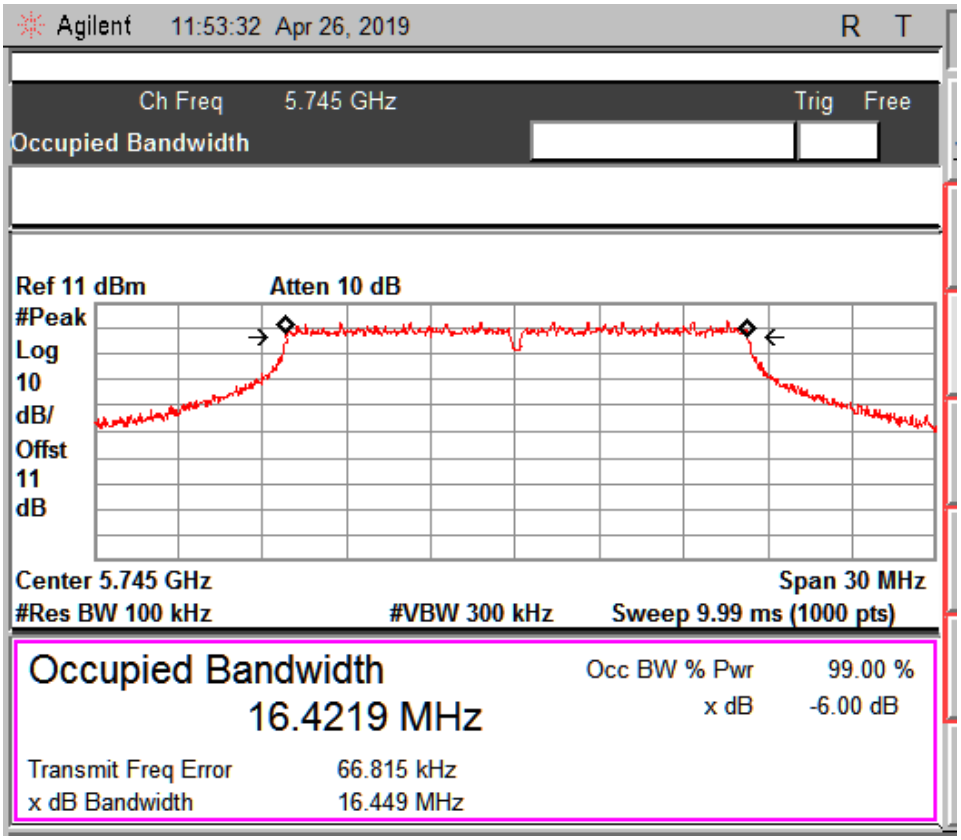
Data rate: 6 Mbps **Channel Frequency : 5.825 GHz**



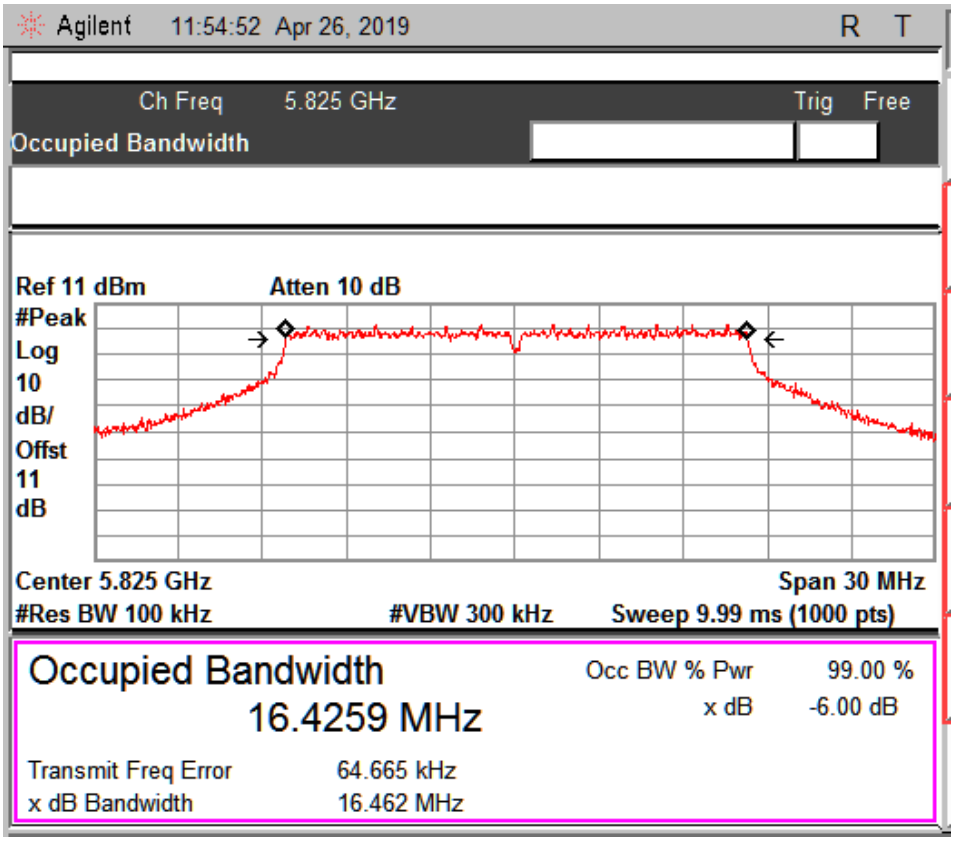
Data rate: 24 Mbps **Channel Frequency : 5.180 GHz**



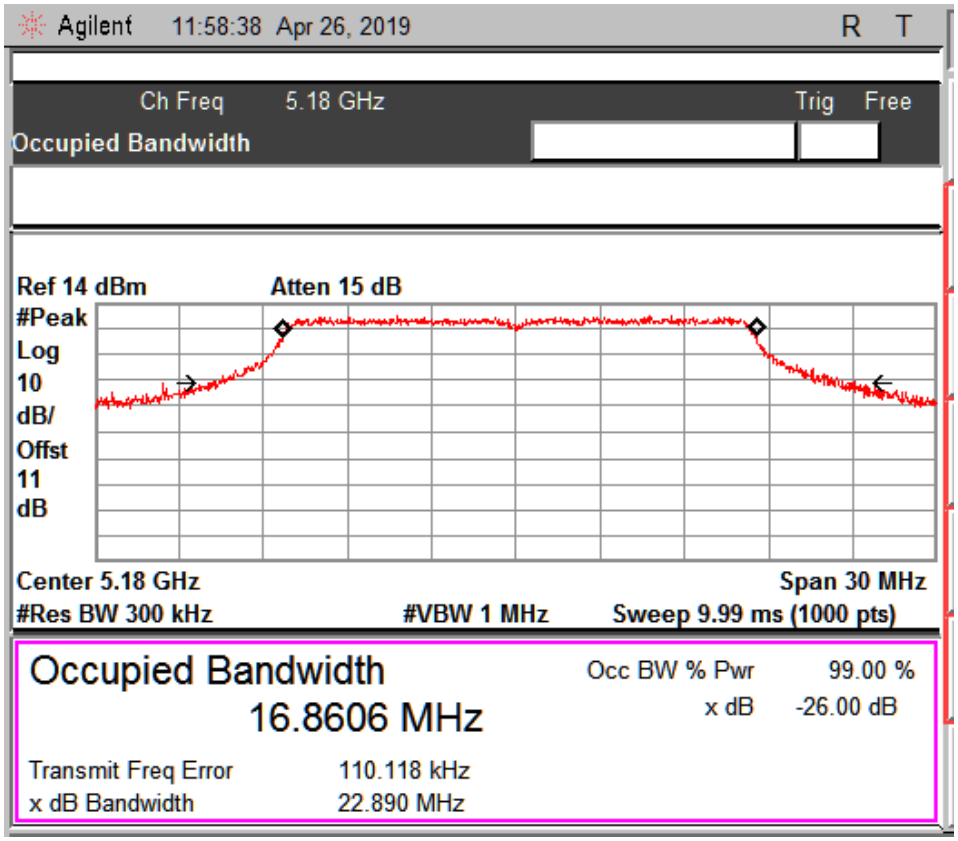
Data rate: 24 Mbps **Channel Frequency : 5.240 GHz**



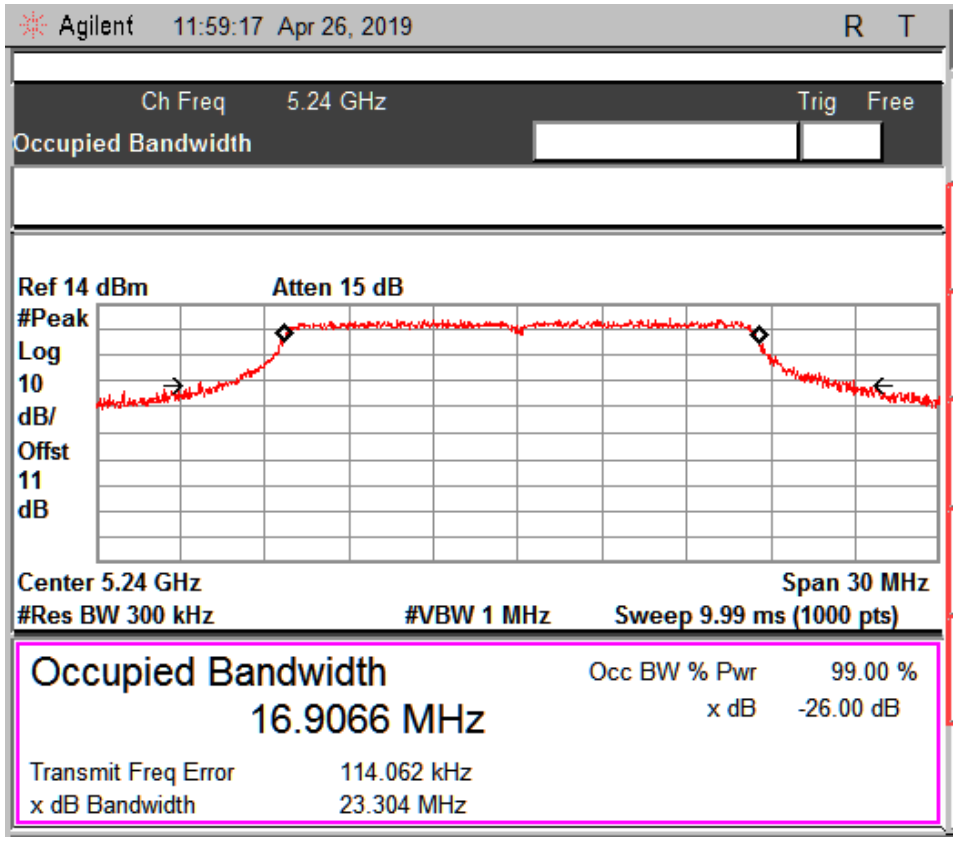
Data rate: 24 Mbps **Channel Frequency : 5.745 GHz**



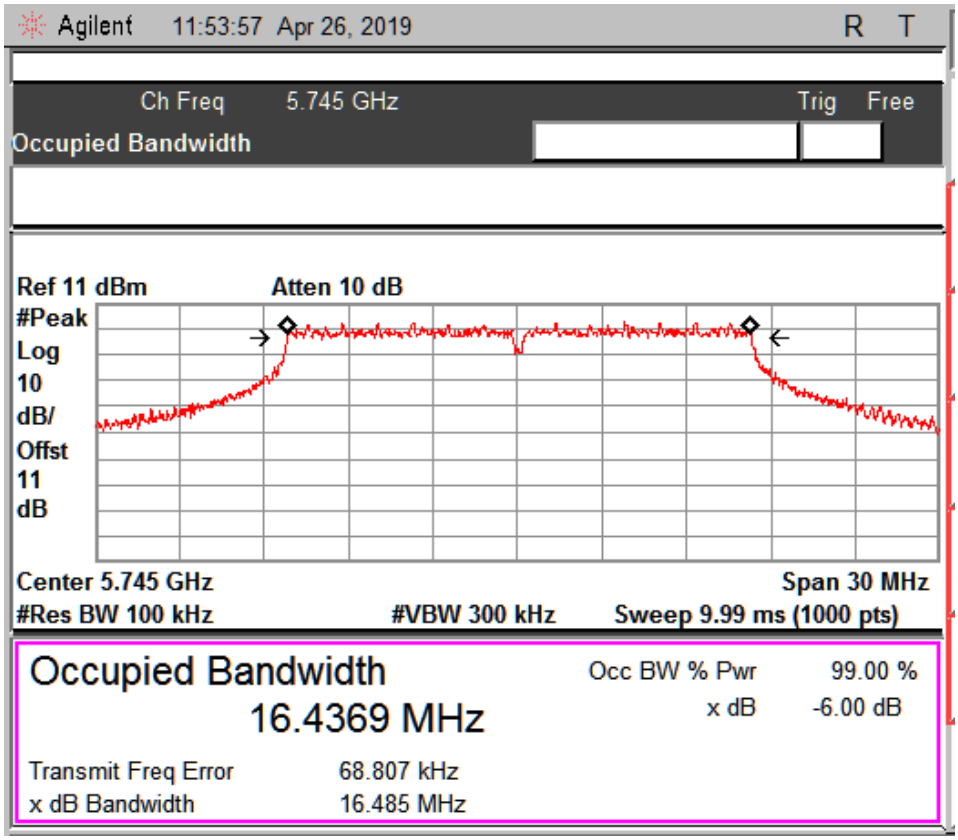
Data rate: 24 Mbps **Channel Frequency : 5.825 GHz**



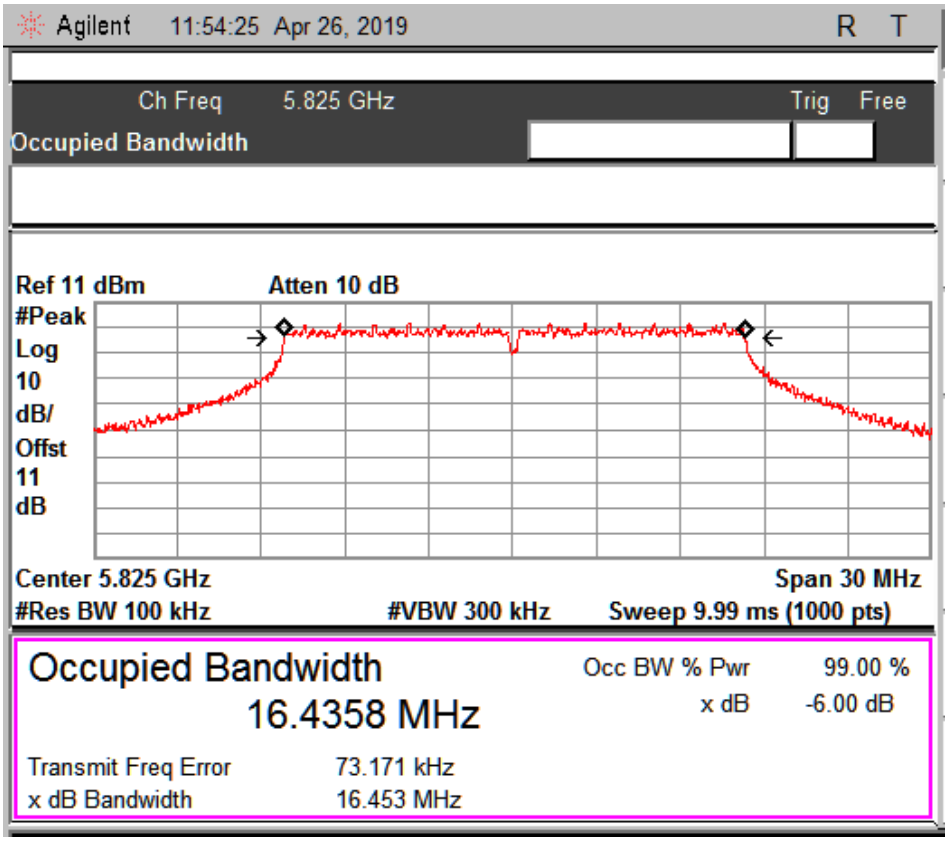
Data rate: 54 Mbps **Channel Frequency : 5.180 GHz**



Data rate: 54 Mbps **Channel Frequency : 5.240 GHz**



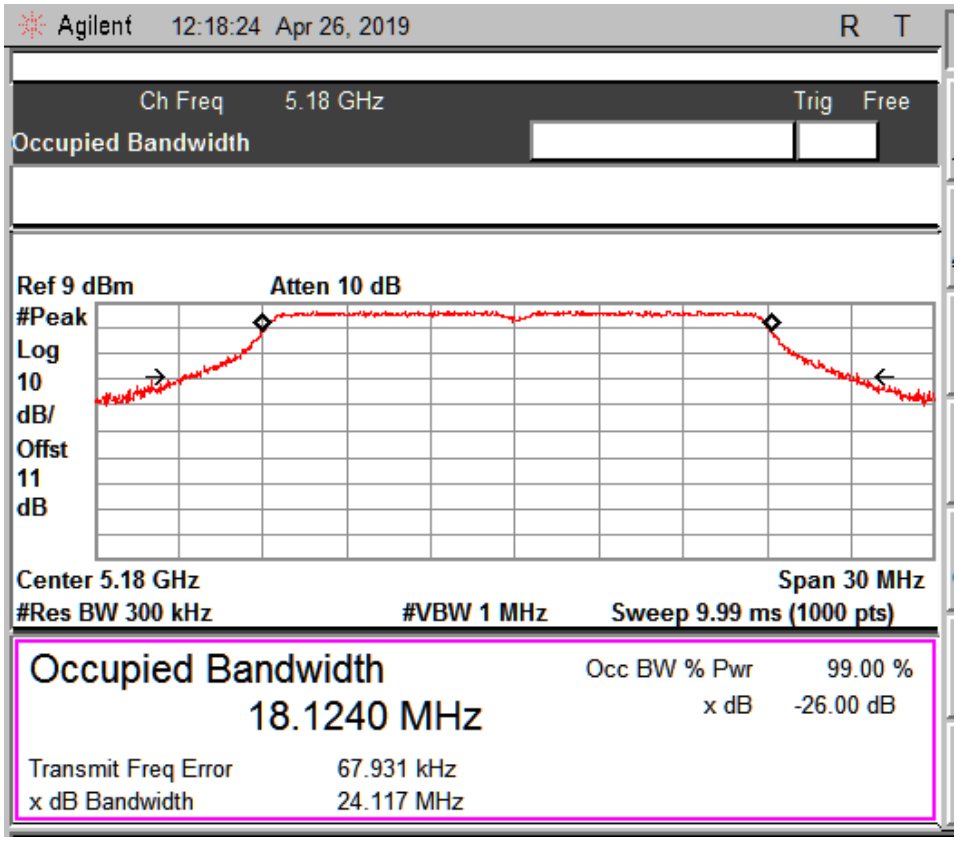
Data rate: 54 Mbps **Channel Frequency : 5.745 GHz**



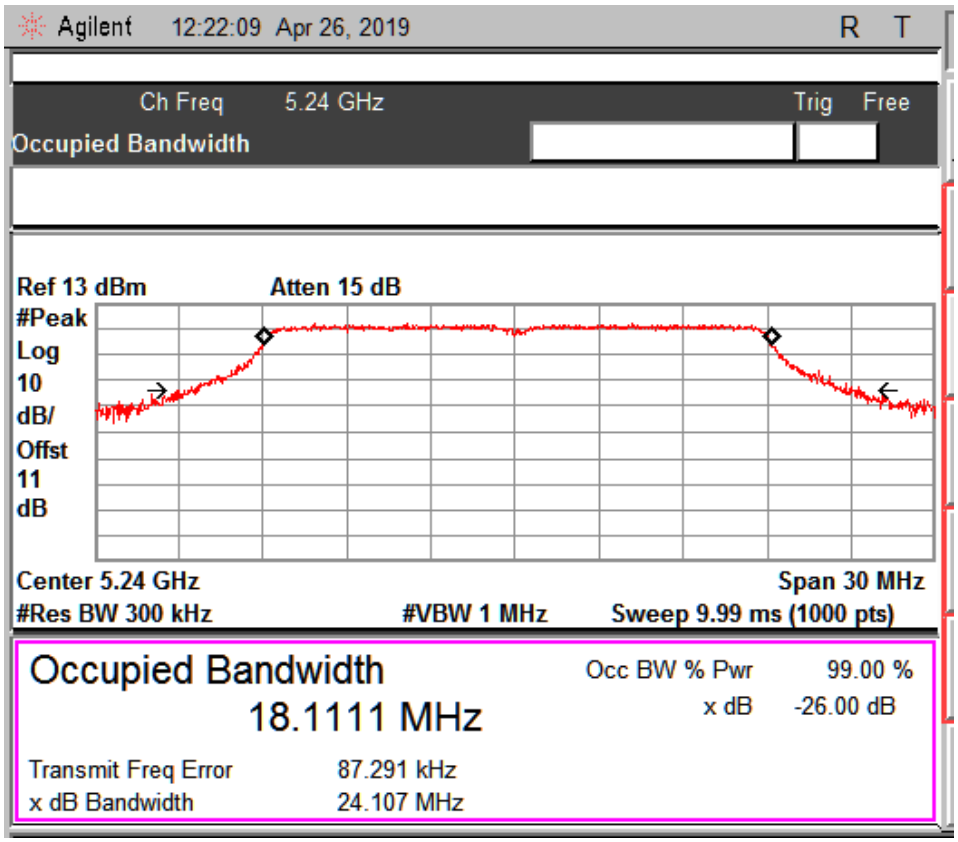
Data rate: 54 Mbps **Channel Frequency : 5.825 GHz**

Modulation: 802.11ac mode SISO_VHT20

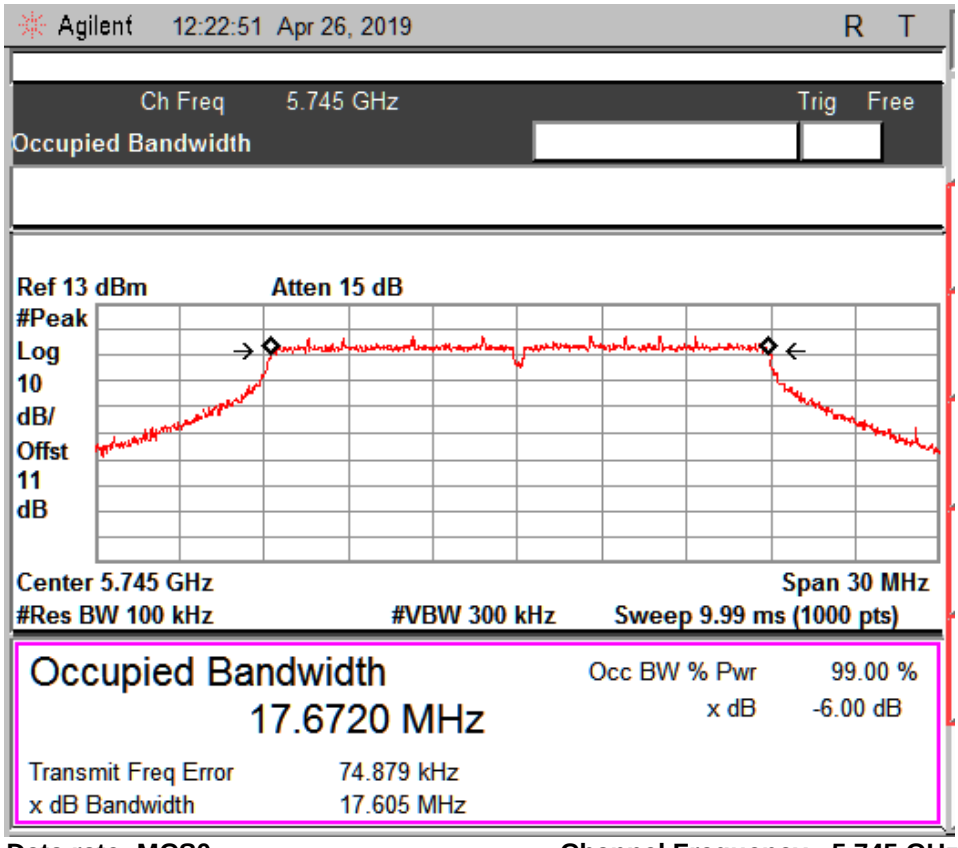
Data rate (Mbps)	Frequency (MHz)	Emission Bandwidth (MHz)	OBW (MHz)
MCS0	5180	24.11	18.12
	5240	24.10	18.11
	5745	17.60	17.67
	5825	17.60	17.66
MCS5	5180	22.47	17.97
	5240	22.71	18.03
	5745	17.71	17.64
	5825	17.72	17.64
MCS8	5180	22.9	18.02
	5240	22.75	18.00
	5745	17.70	17.63
	5825	17.723	17.65



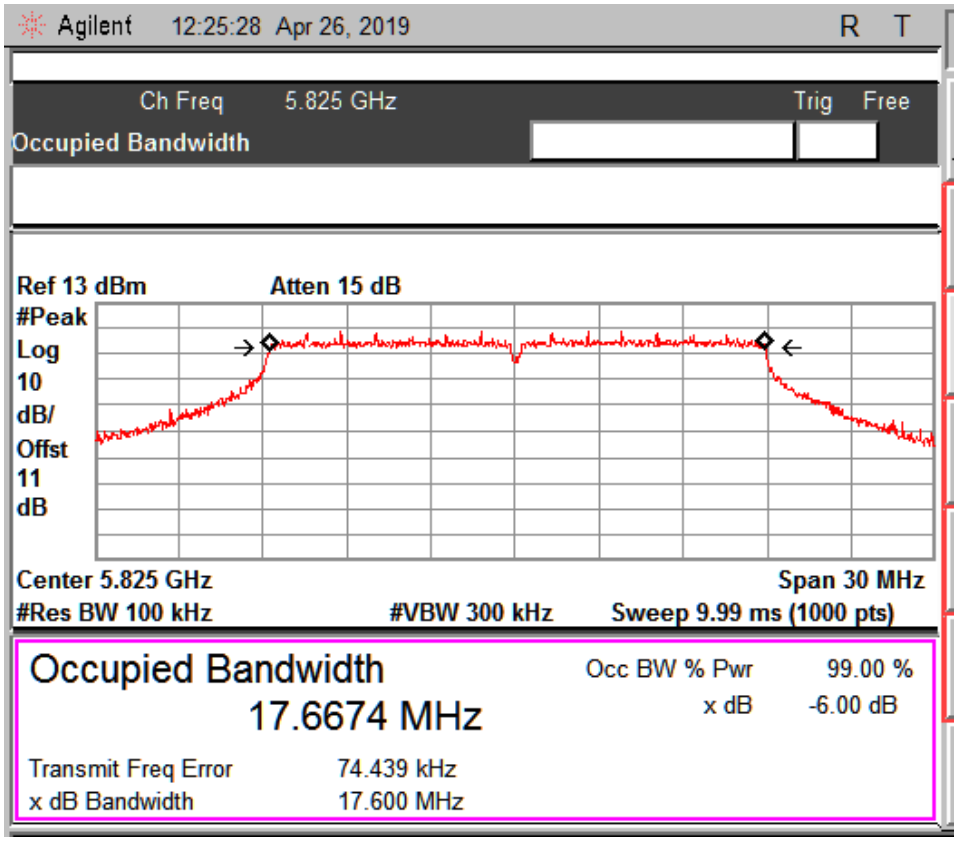
Data rate: MCS0 **Channel Frequency : 5.180 GHz**



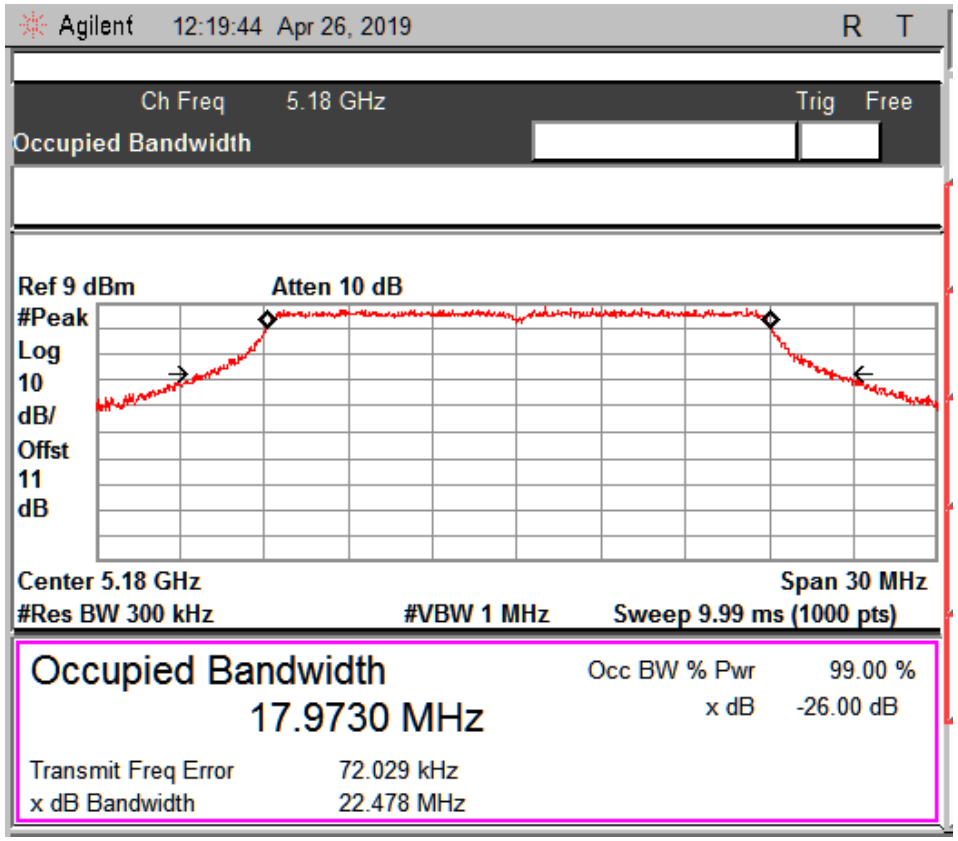
Data rate: MCS0 **Channel Frequency : 5.240 GHz**



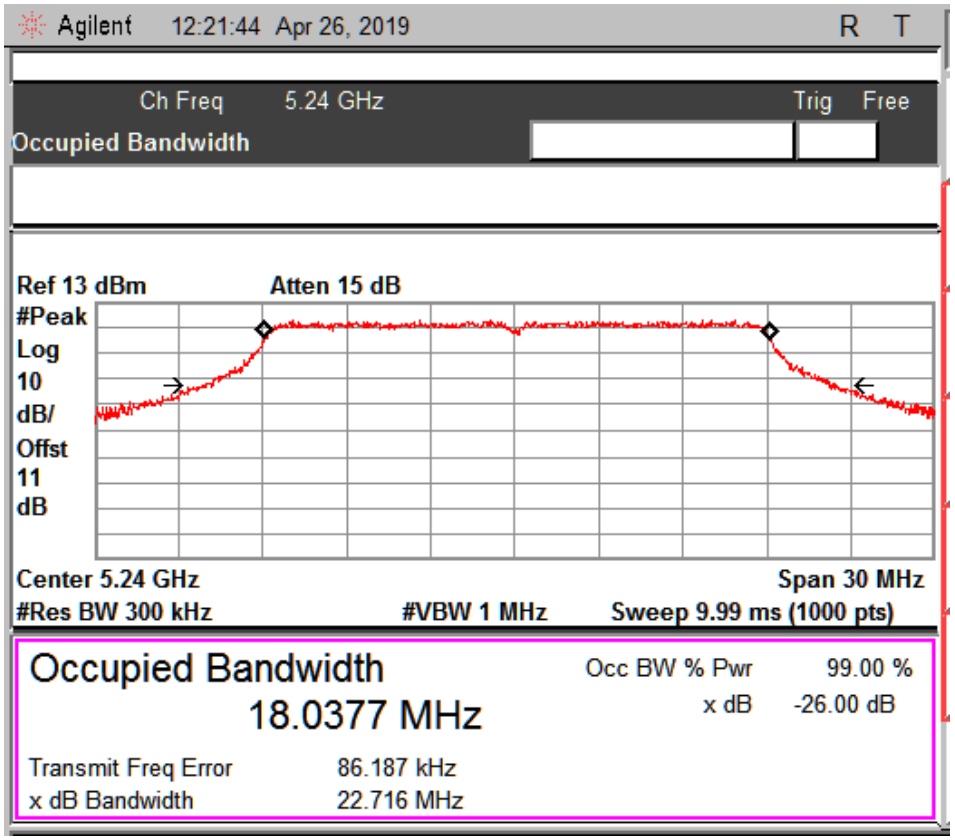
Data rate: MCS0 **Channel Frequency : 5.745 GHz**



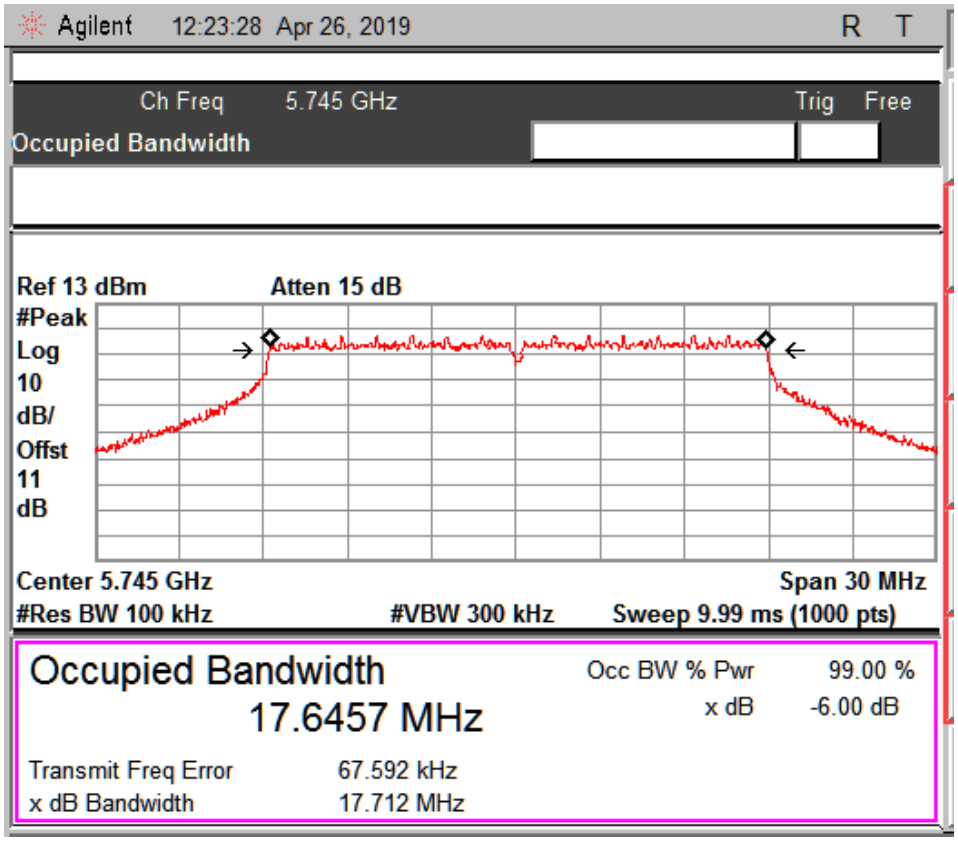
Data rate: MCS0 **Channel Frequency : 5.825 GHz**



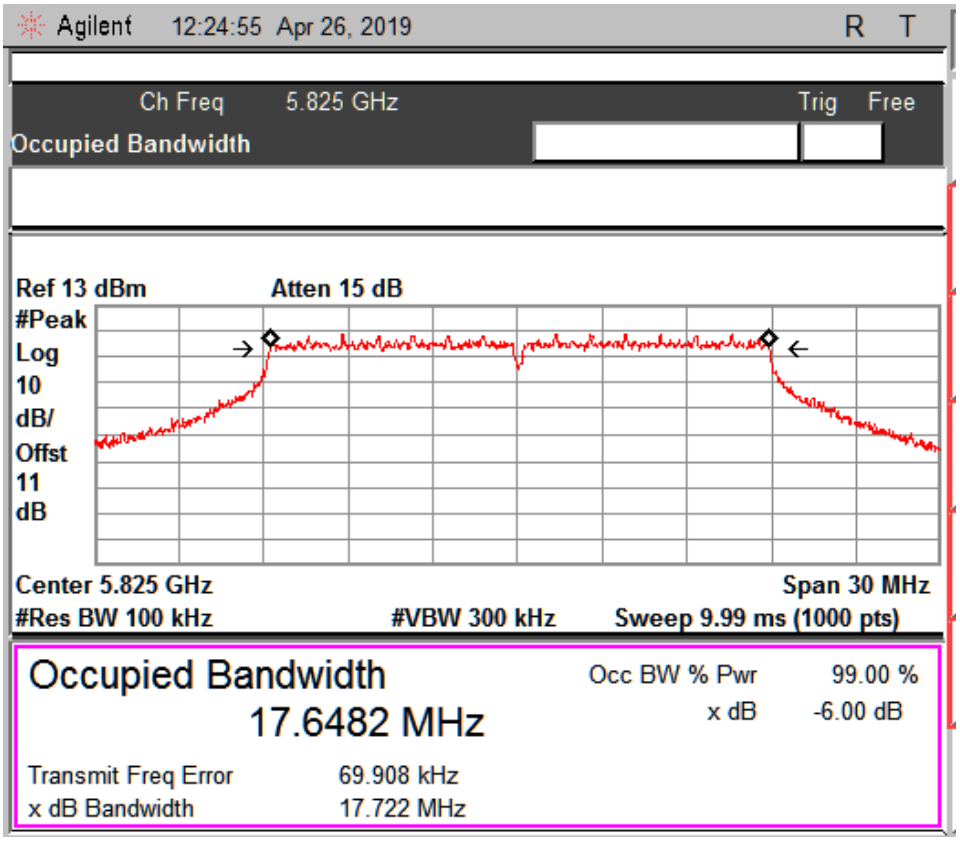
Data rate: MCS5 **Channel Frequency : 5.180 GHz**



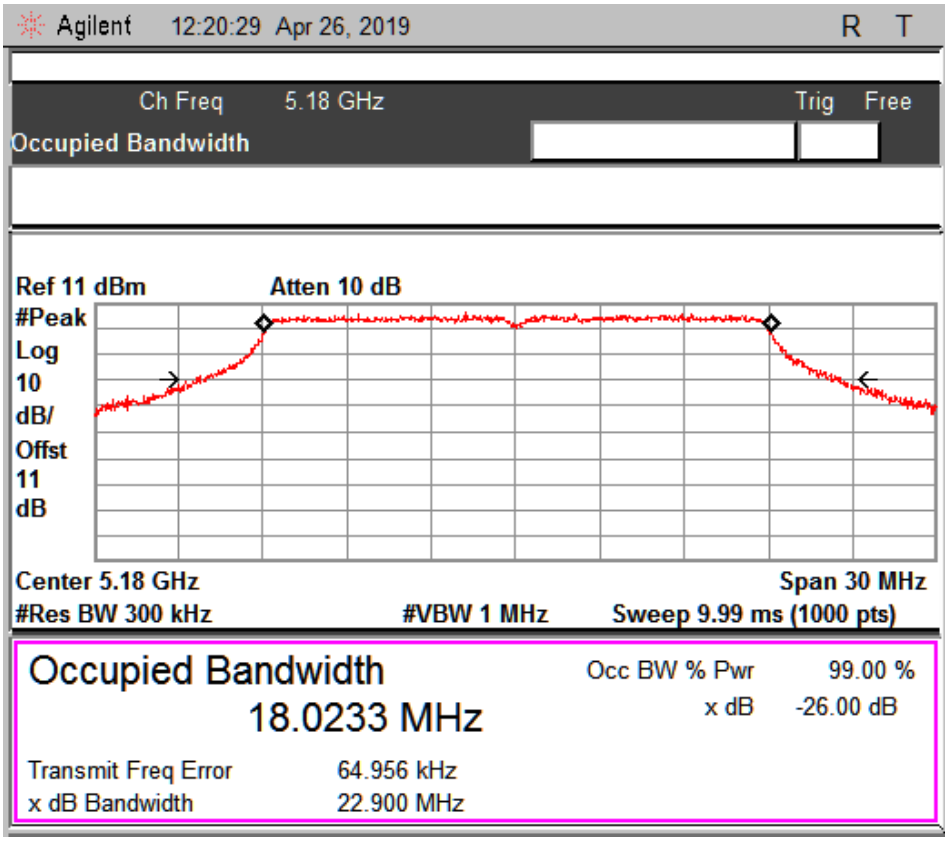
Data rate: MCS5 **Channel Frequency : 5.240 GHz**



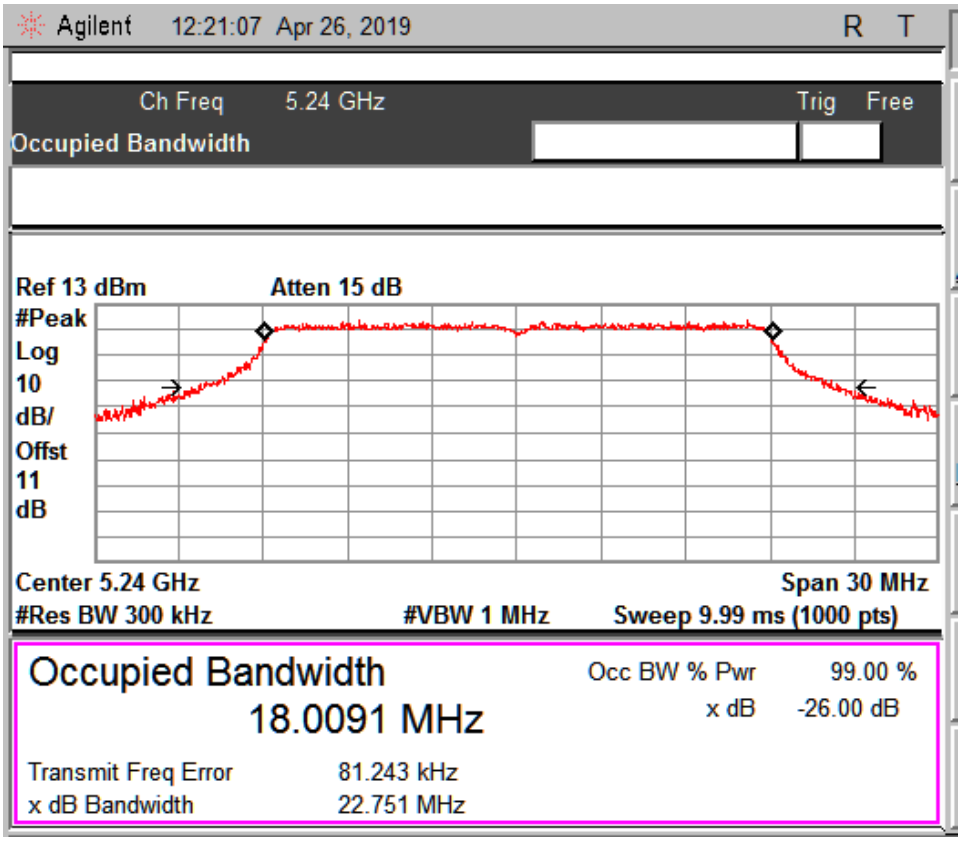
Data rate: MCS5 **Channel Frequency : 5.745 GHz**



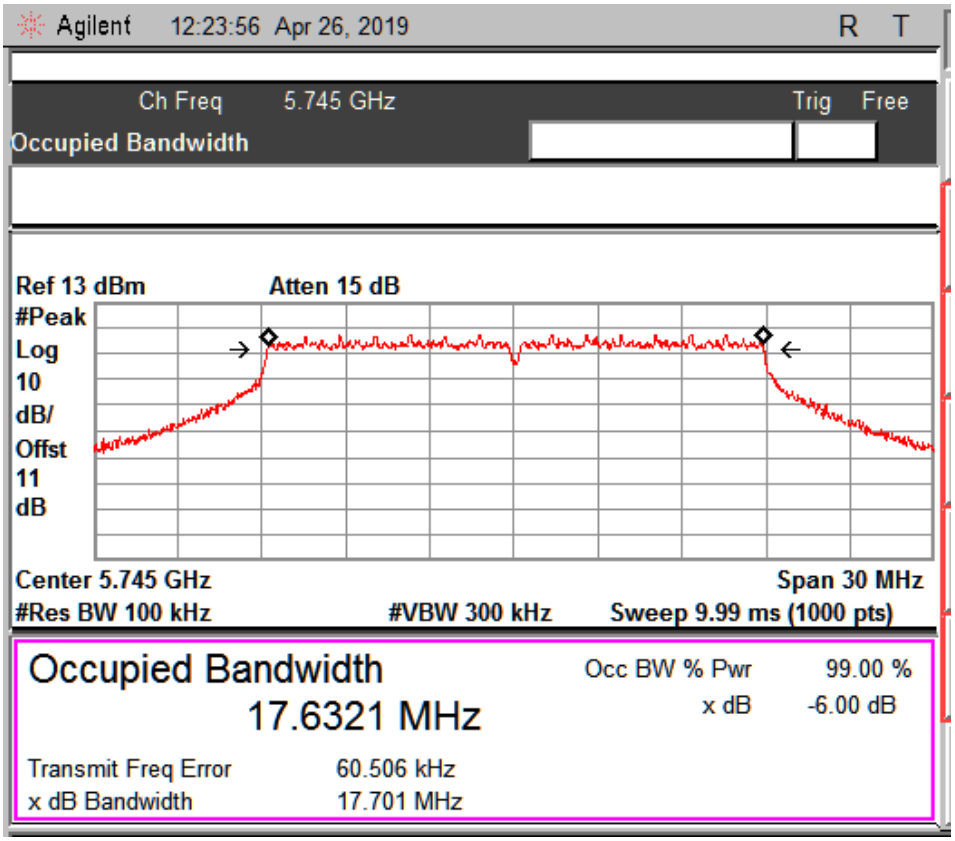
Data rate: MCS5 **Channel Frequency : 5.825 GHz**



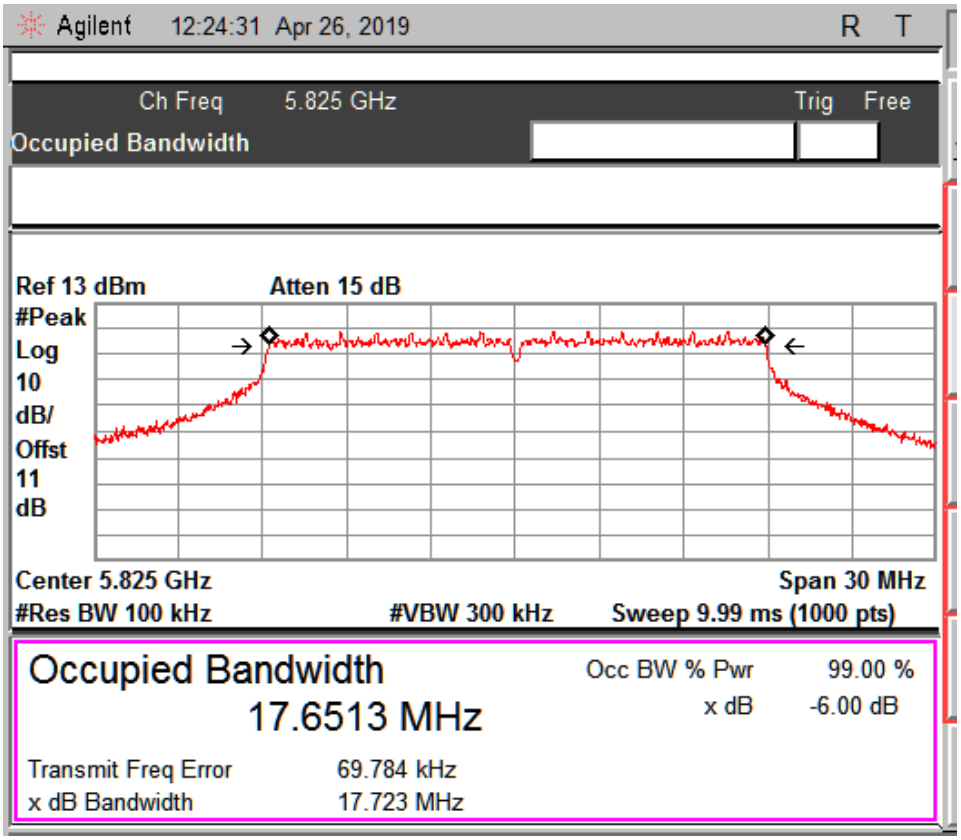
Data rate: MCS8 **Channel Frequency : 5.180 GHz**



Data rate: MCS8 **Channel Frequency : 5.240 GHz**



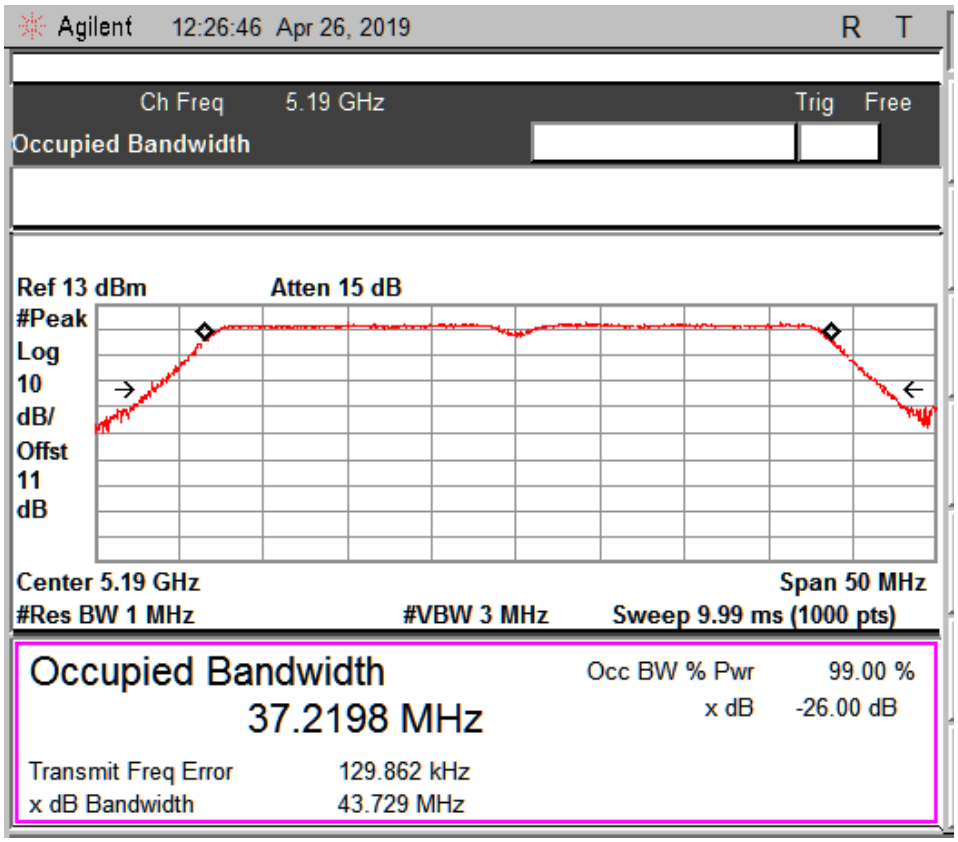
Data rate: MCS8 **Channel Frequency : 5.745 GHz**



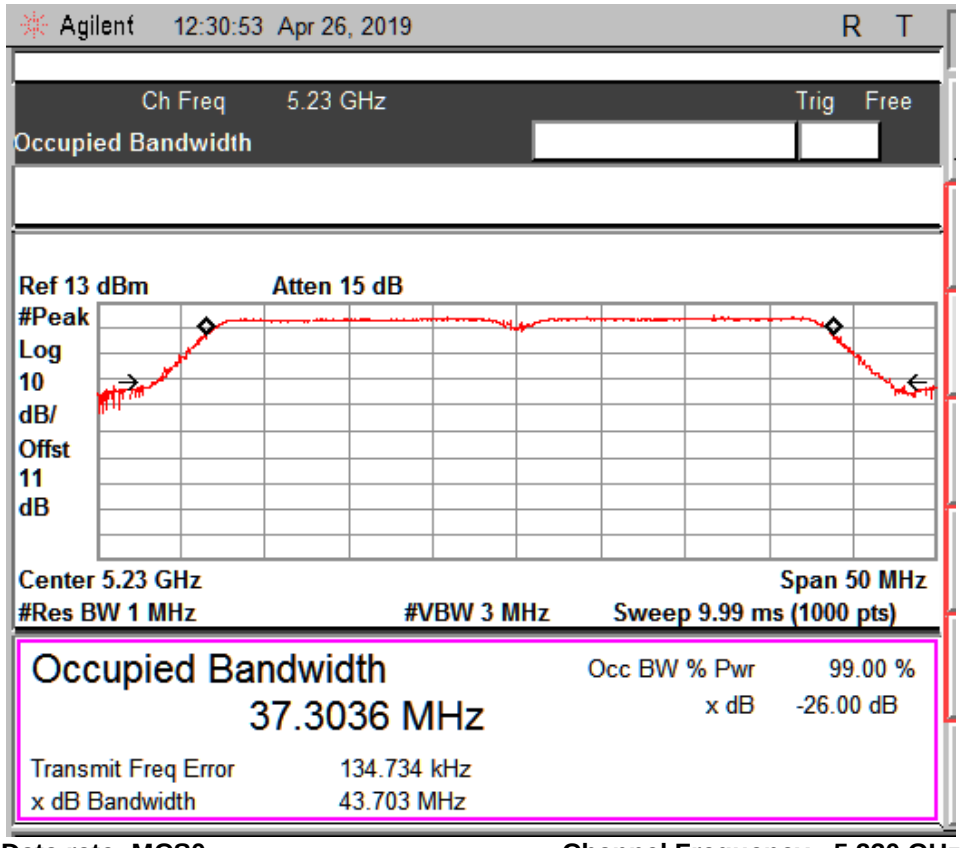
Data rate: MCS8 **Channel Frequency : 5.825 GHz**

Modulation: 802.11ac mode SISO_VHT40

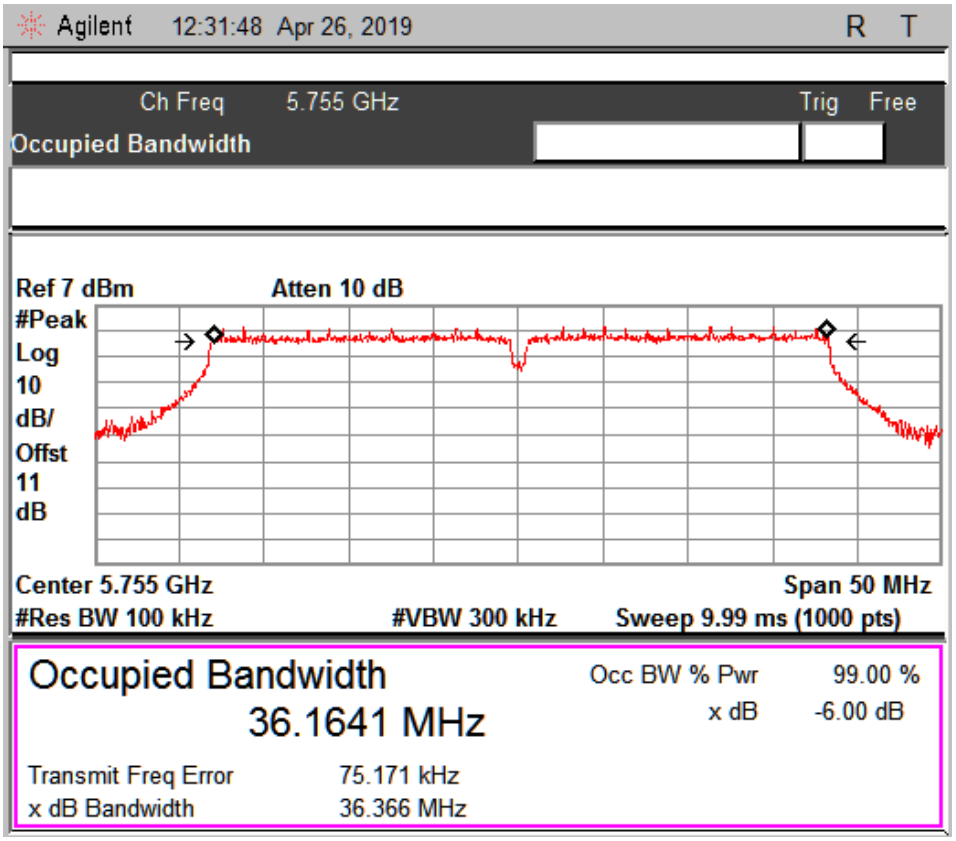
Data rate (Mbps)	Frequency (MHz)	Emission Bandwidth (MHz)	OBW (MHz)
MCS0	5190	43.72	37.21
	5230	43.70	37.30
	5755	36.36	36.16
	5795	36.36	36.18
MCS5	5190	46.01	37.28
	5230	45.55	37.42
	5755	36.44	36.18
	5795	36.40	36.18
MCS9	5190	43.56	37.30
	5230	43.31	37.34
	5755	36.35	36.17
	5795	36.32	36.17



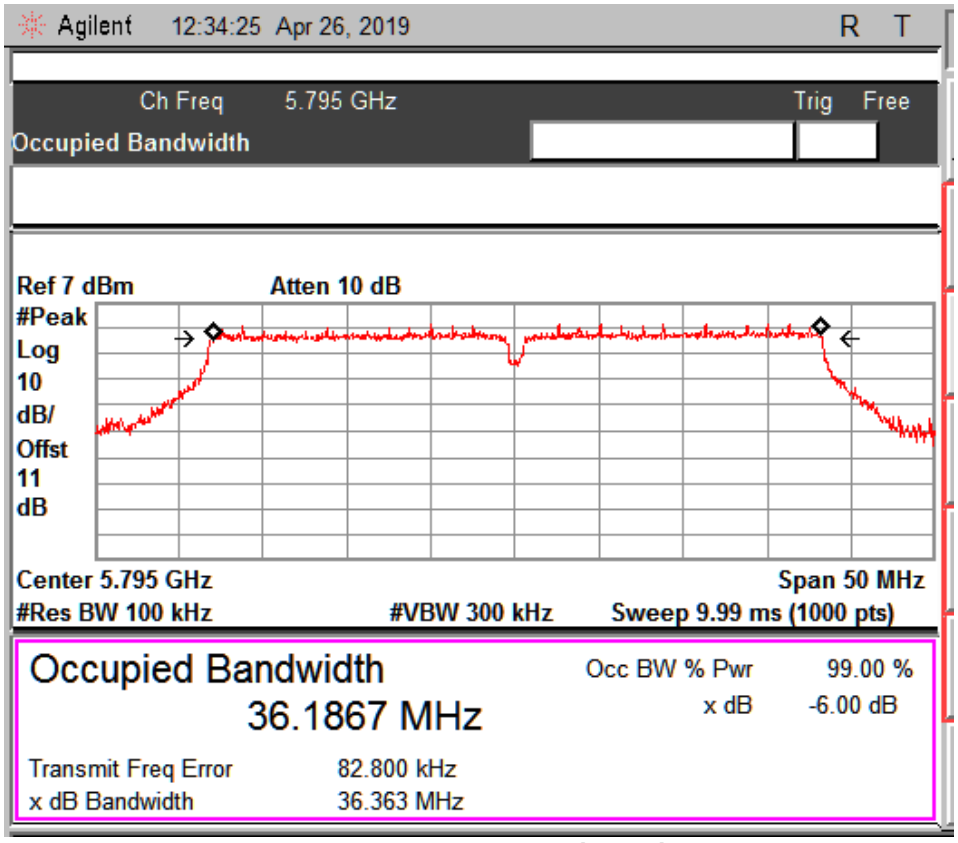
Data rate: MCS0 **Channel Frequency : 5.190 GHz**



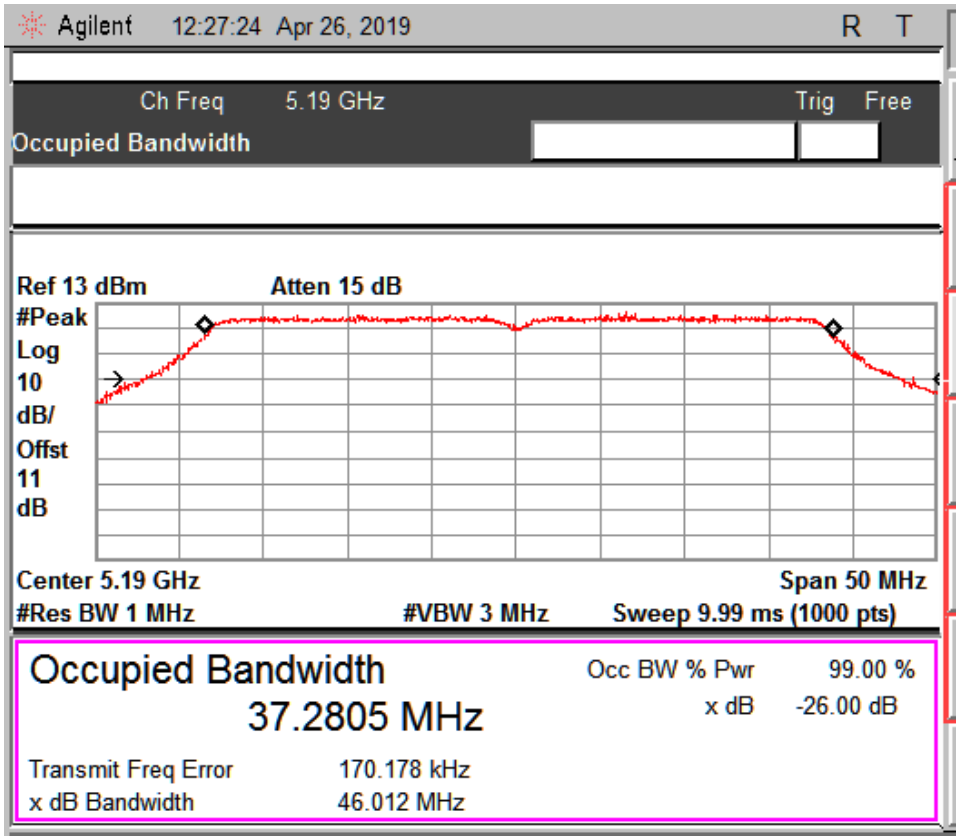
Data rate: MCS0 **Channel Frequency : 5.230 GHz**



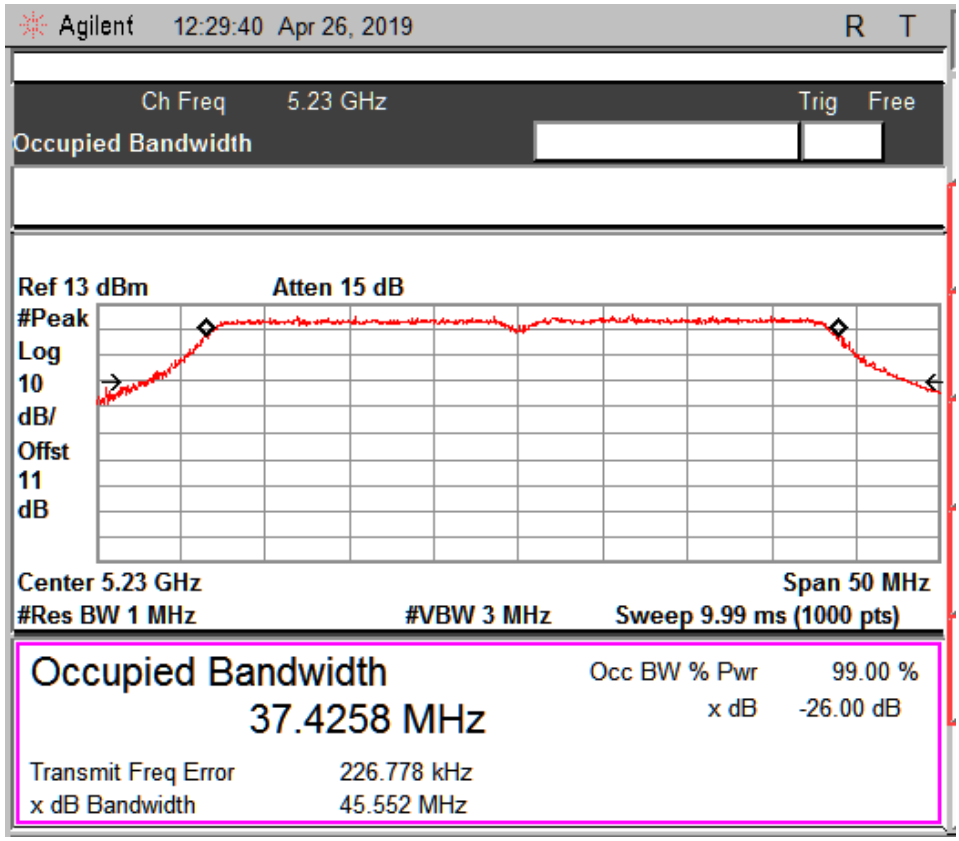
Data rate: MCS0 **Channel Frequency : 5.755 GHz**



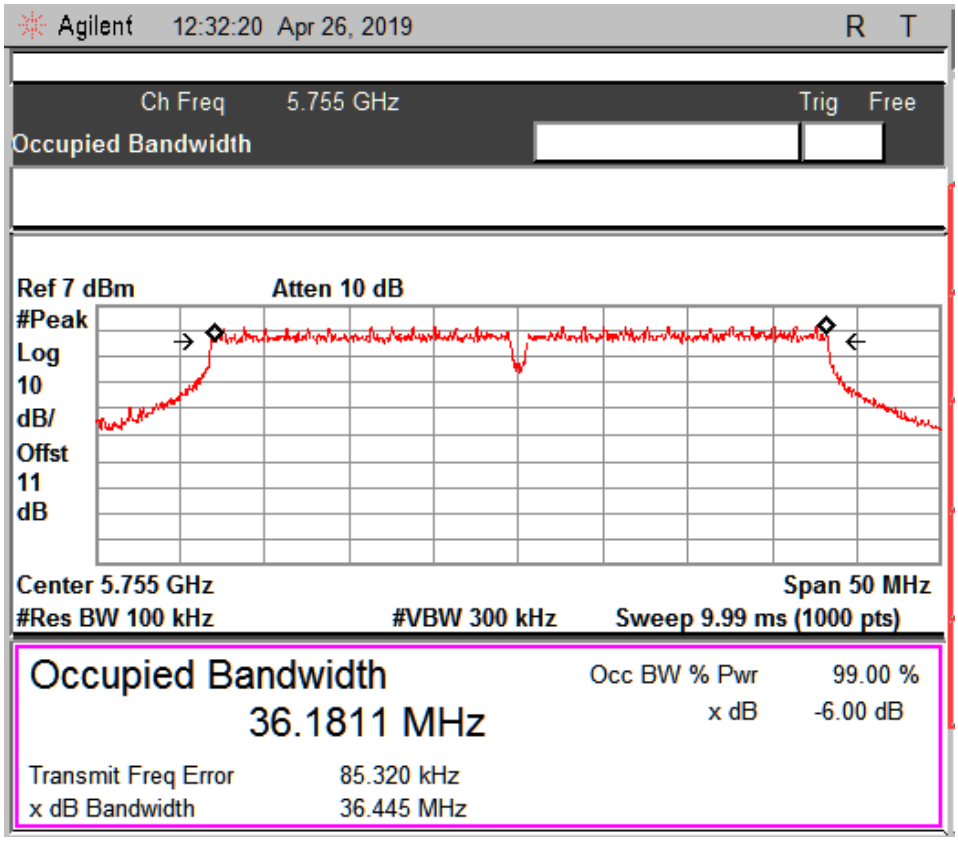
Data rate: MCS0 **Channel Frequency : 5.795 GHz**



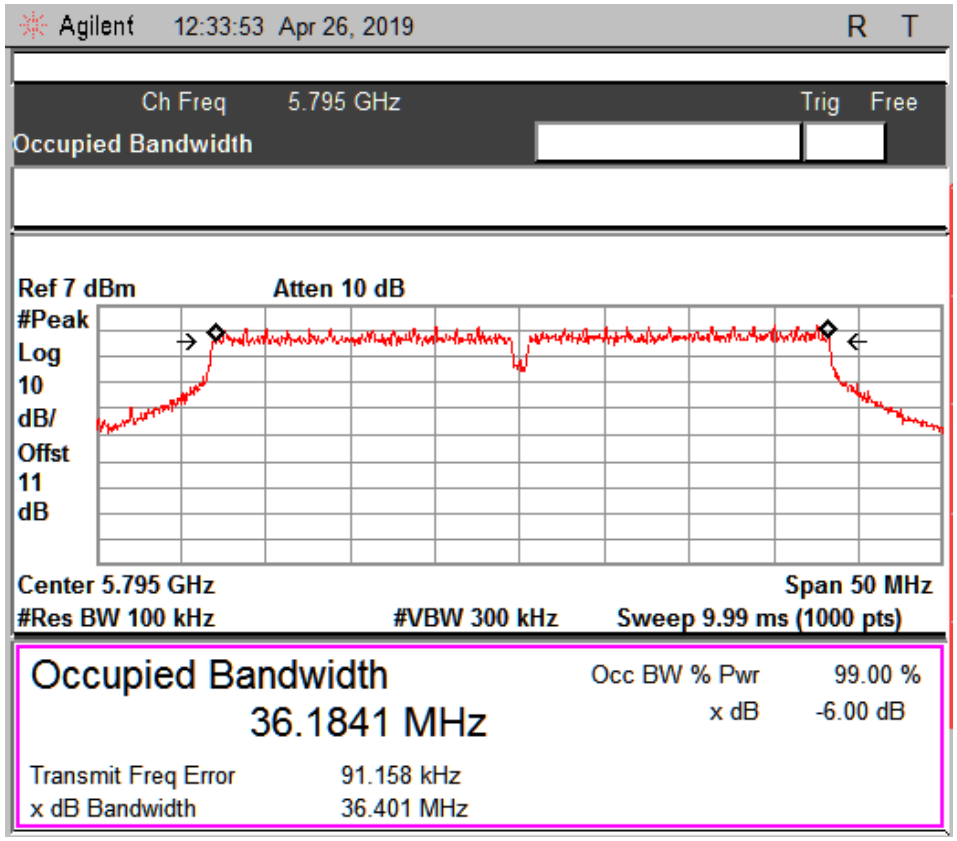
Data rate: MCS5 **Channel Frequency : 5.190 GHz**



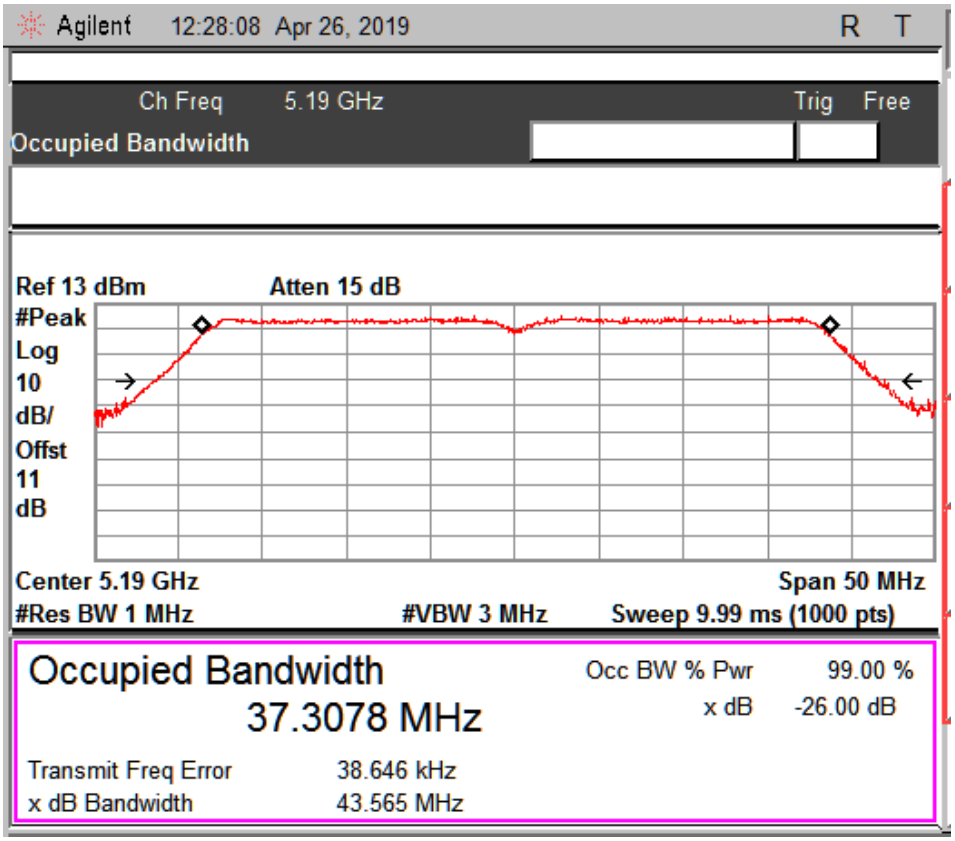
Data rate: MCS5 **Channel Frequency : 5.230 GHz**



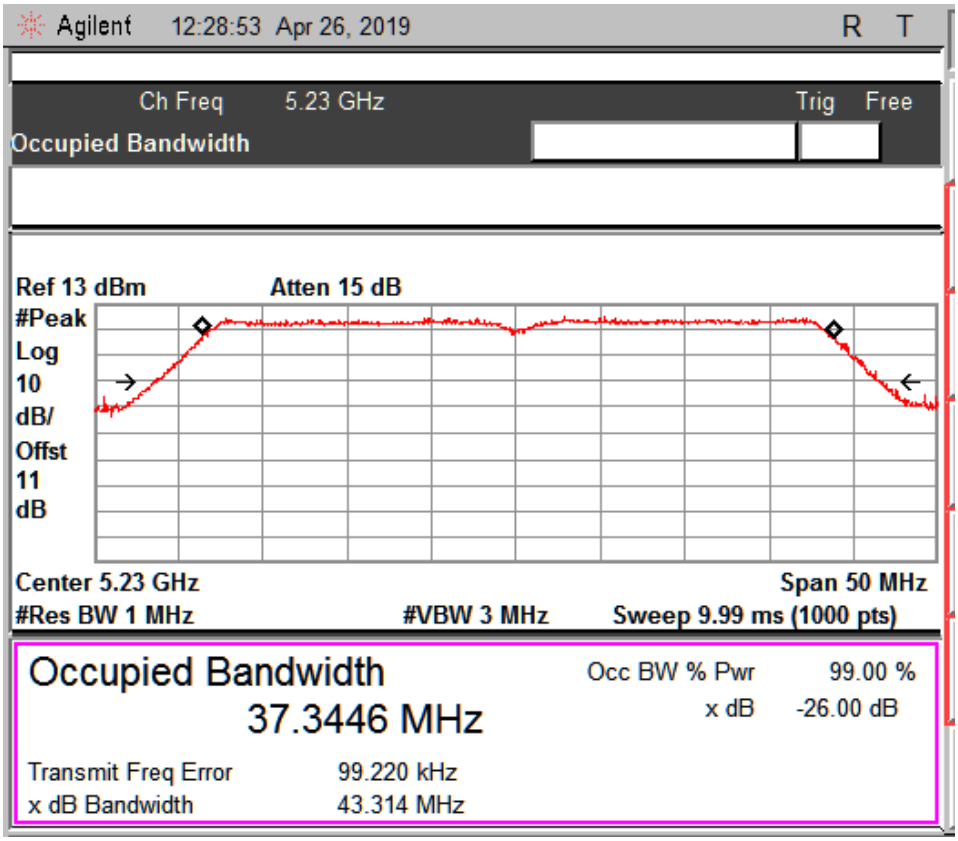
Data rate: MCS5 **Channel Frequency : 5.755 GHz**



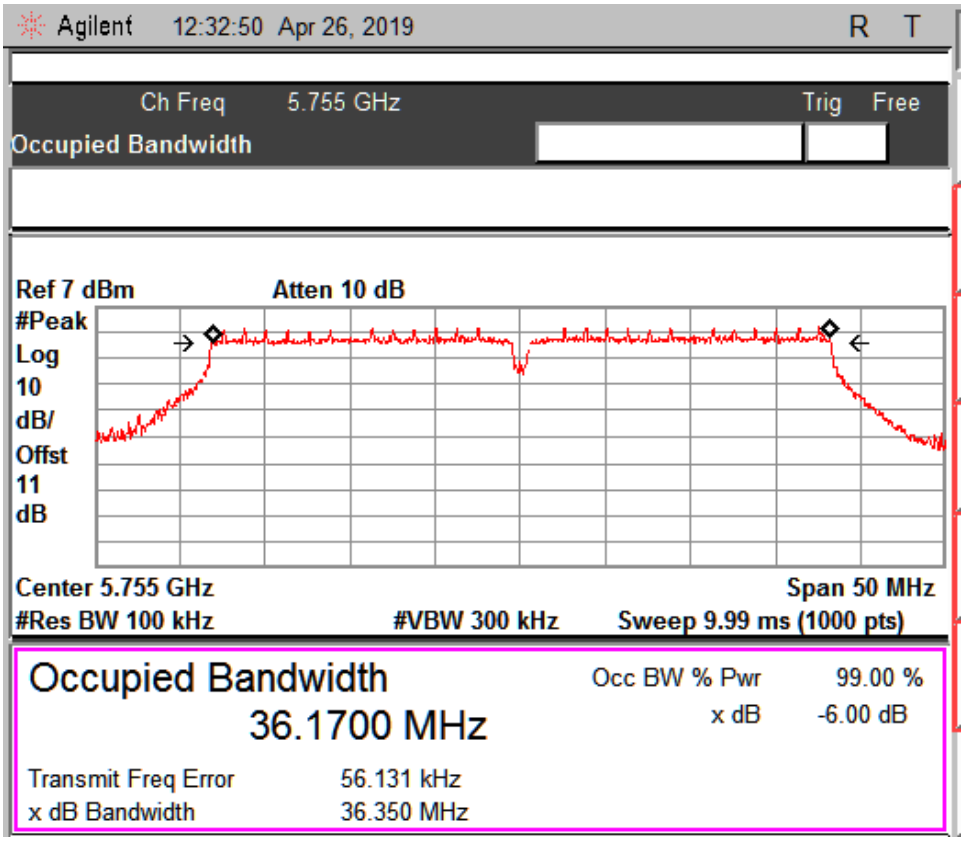
Data rate: MCS5 **Channel Frequency : 5.795 GHz**



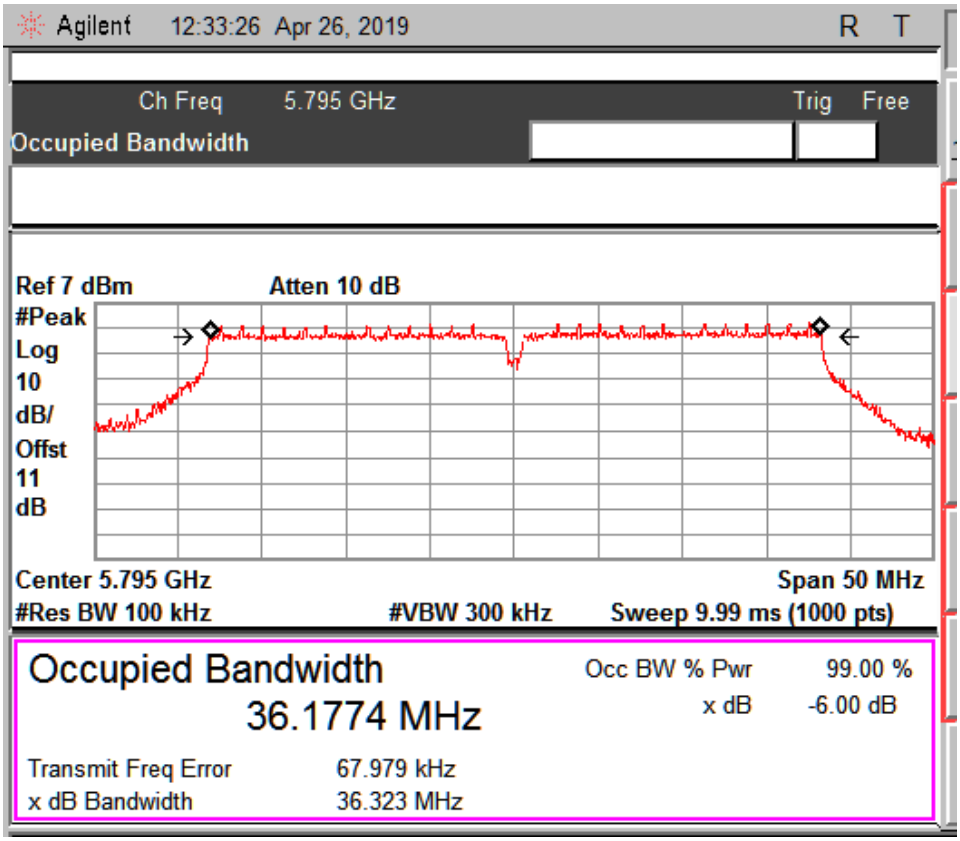
Data rate: MCS5 **Channel Frequency : 5.190 GHz**



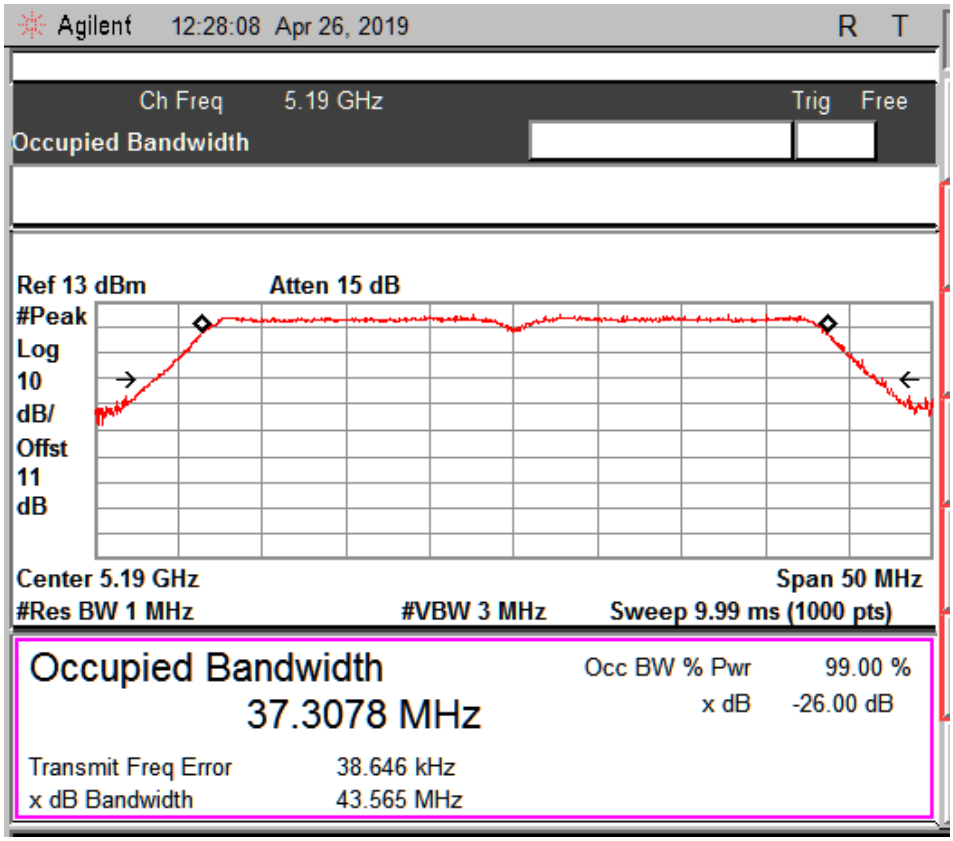
Data rate: MCS5 **Channel Frequency : 5.230 GHz**



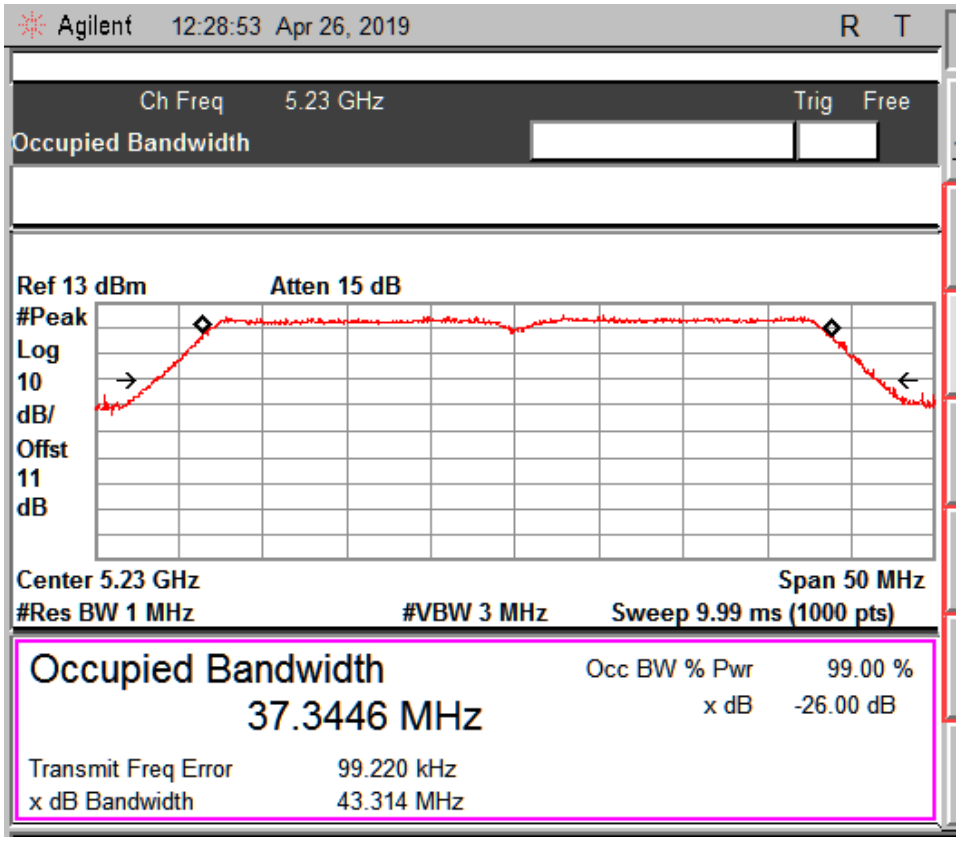
Data rate: MCS5 **Channel Frequency : 5.755 GHz**



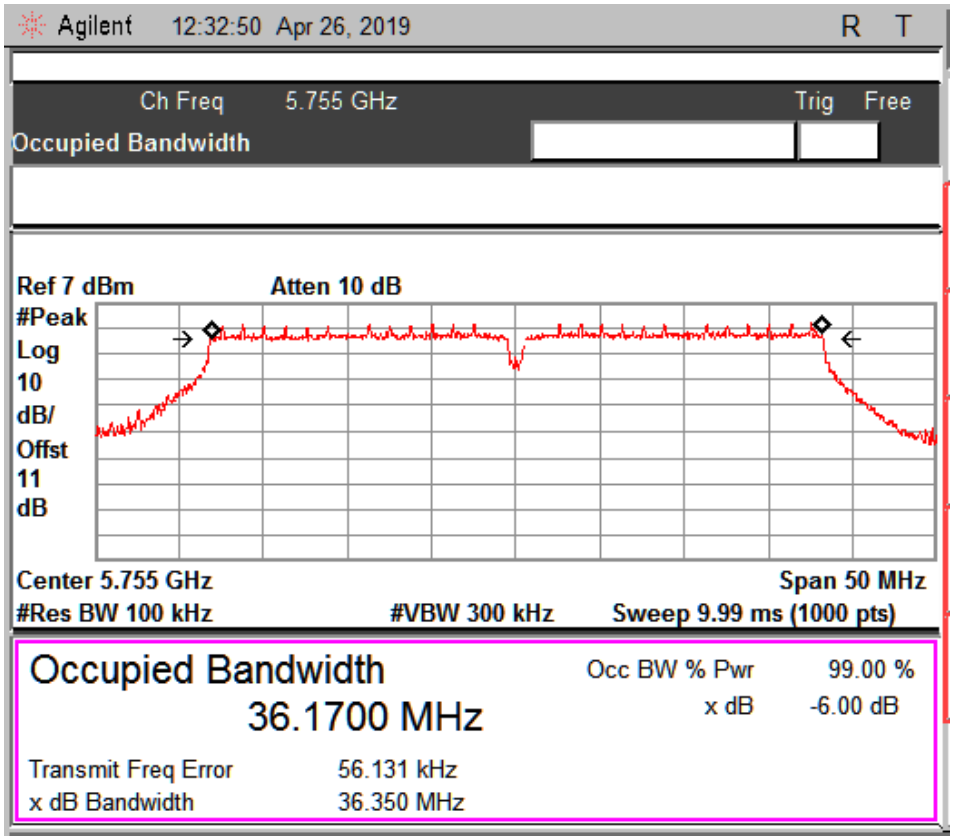
Data rate: MCS5 **Channel Frequency : 5.795 GHz**



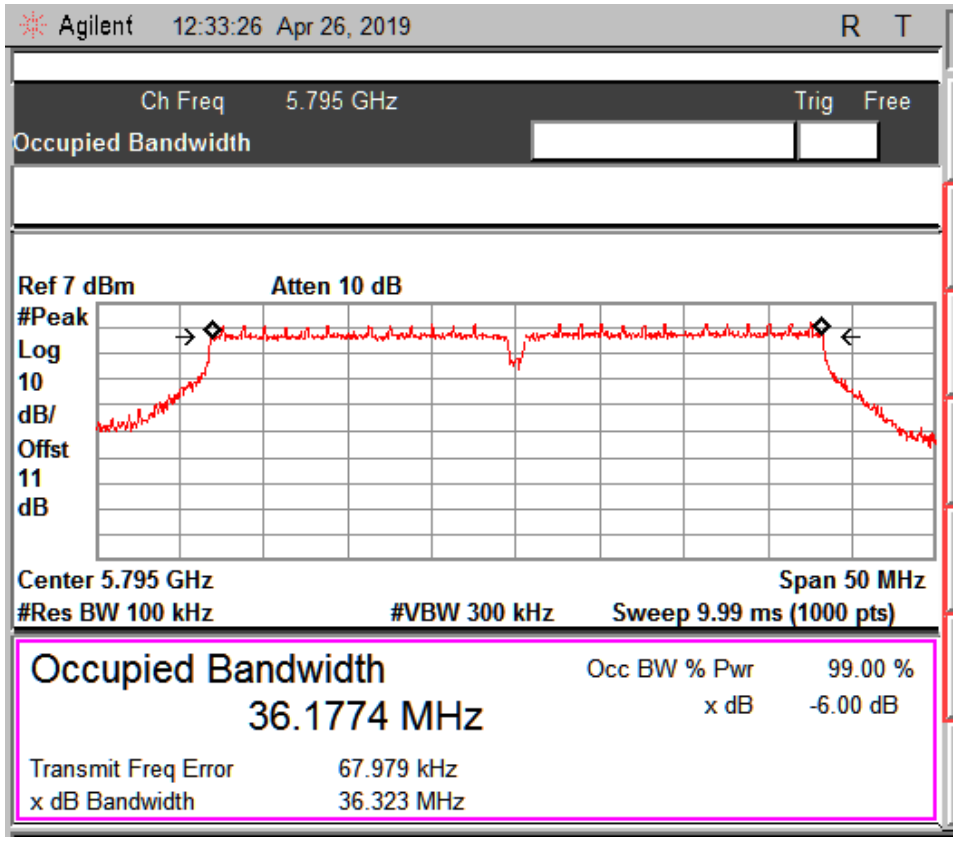
Data rate: MCS9 **Channel Frequency : 5.190 GHz**



Data rate: MCS9 **Channel Frequency : 5.230 GHz**



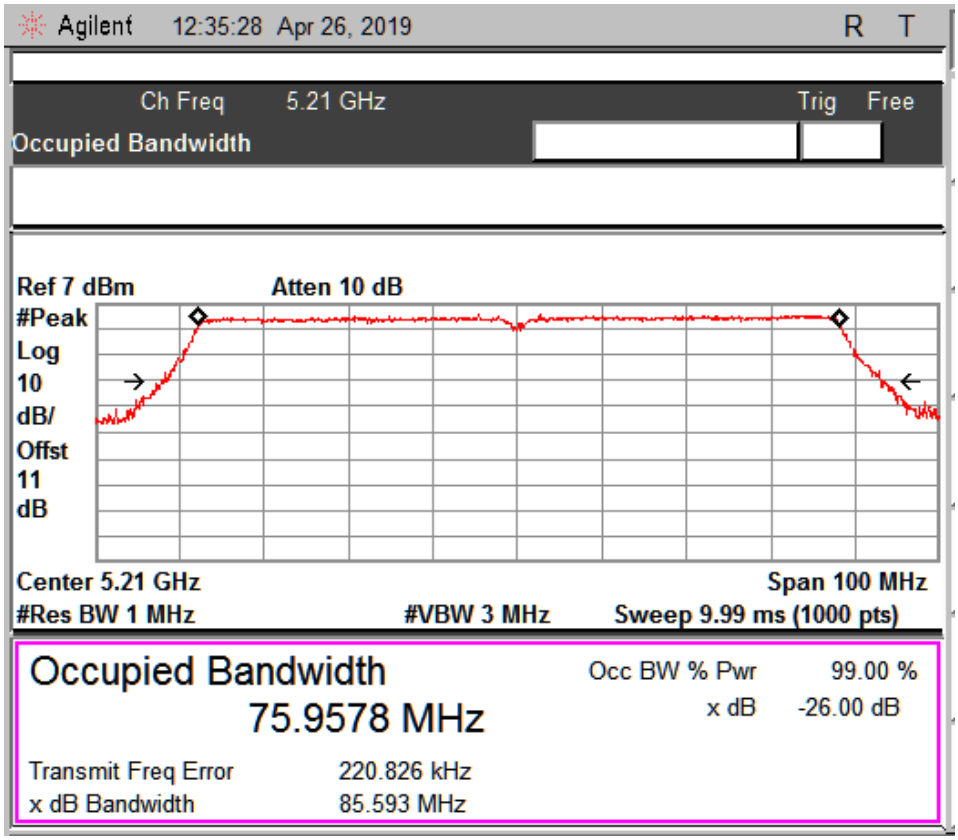
Data rate: MCS9 **Channel Frequency : 5.755 GHz**



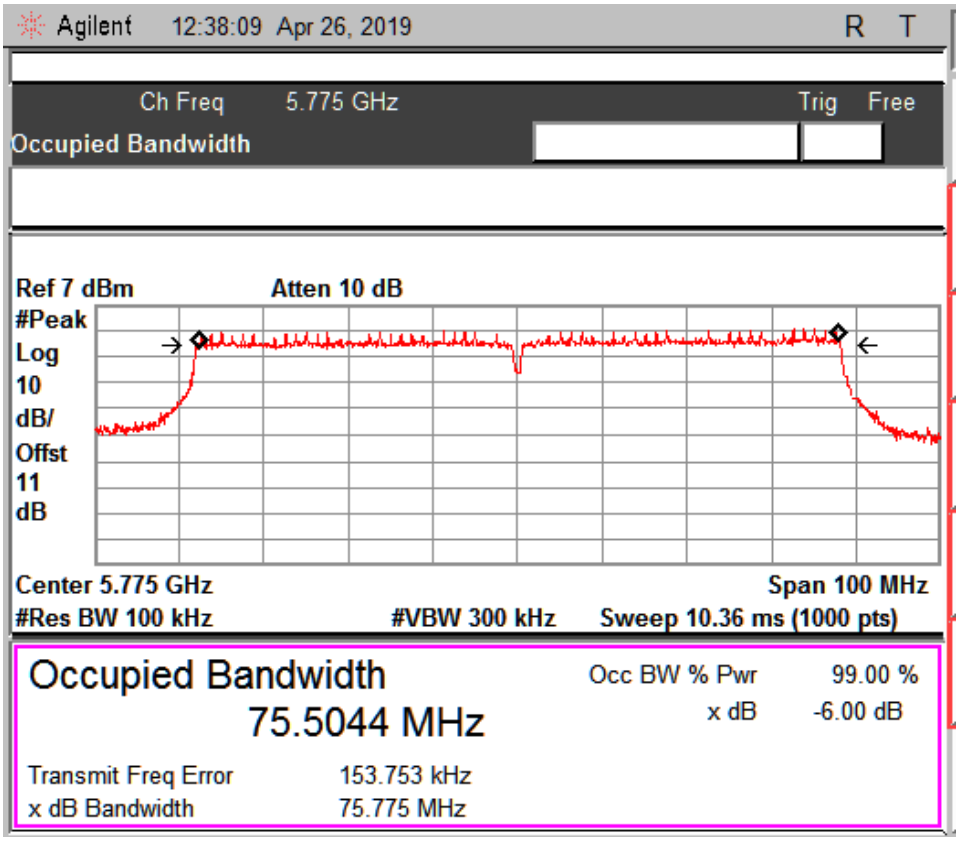
Data rate: MCS9 **Channel Frequency : 5.795 GHz**

Modulation: 802.11ac mode SISO_VHT80

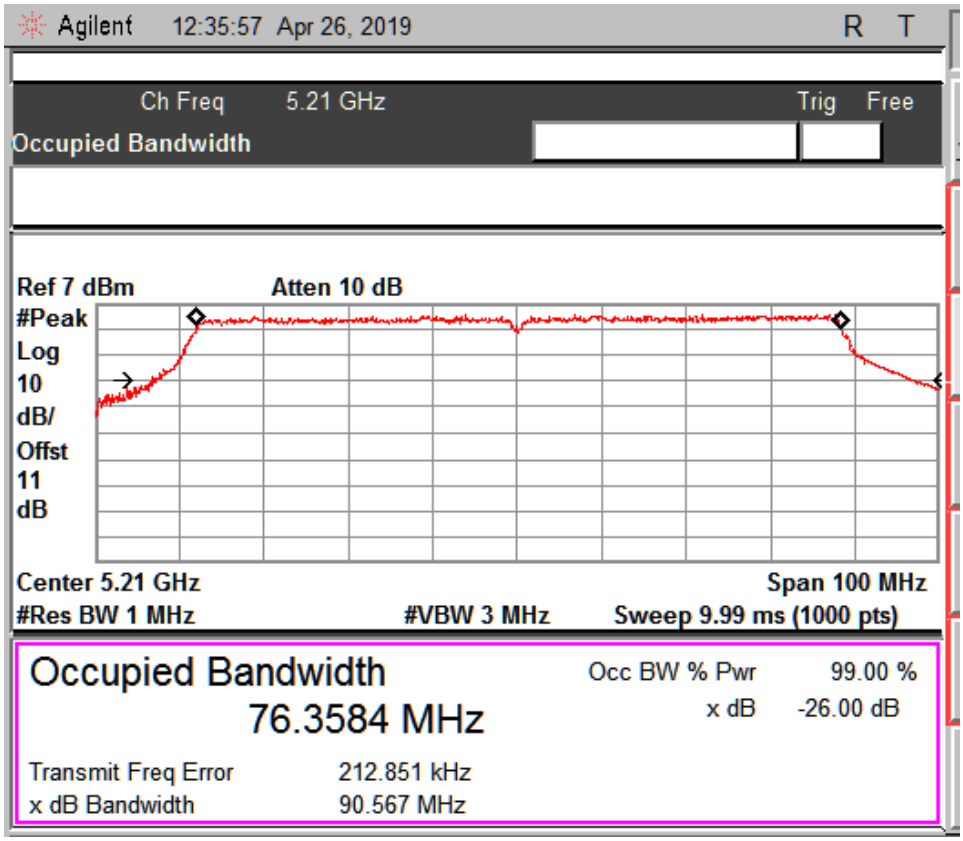
Data rate (Mbps)	Frequency (MHz)	Emission Bandwidth (MHz)	OBW (MHz)
MCS0	5210	85.59	75.95
	5775	75.77	75.50
MCS5	5210	90.56	76.35
	5775	76.43	75.71
MCS9	5210	90.43	76.37
	5775	76.11	75.65



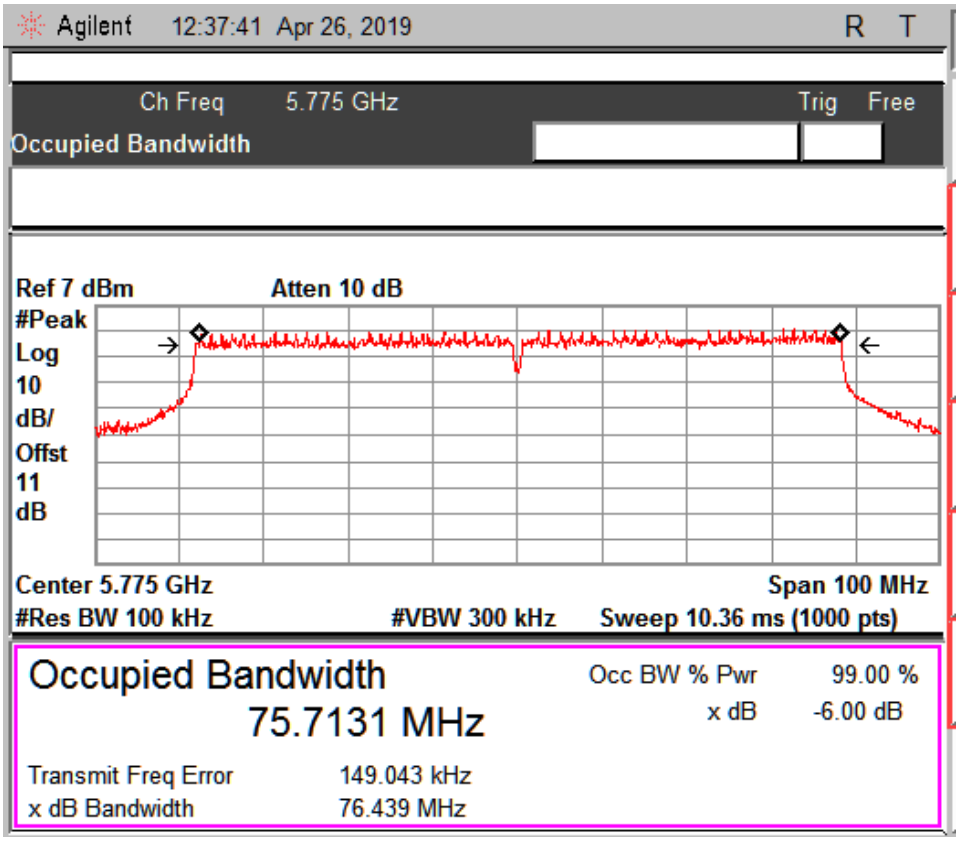
Data rate: MCS0 **Channel Frequency : 5.210 GHz**



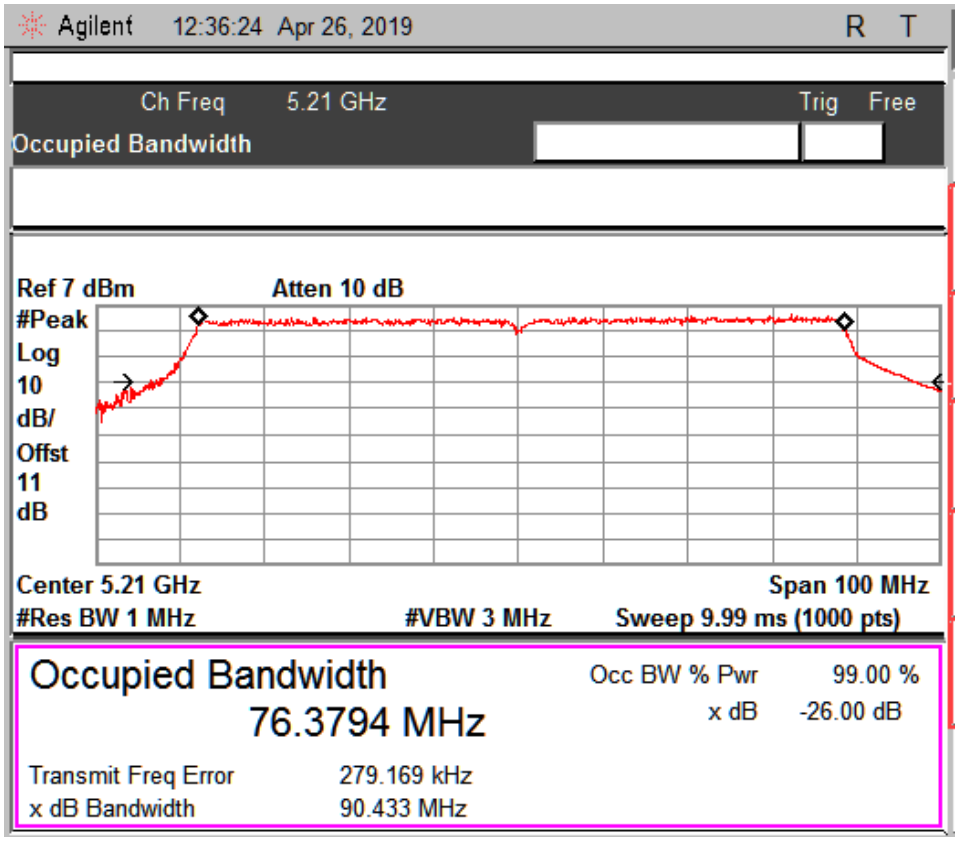
Data rate: MCS0 **Channel Frequency : 5.775 GHz**



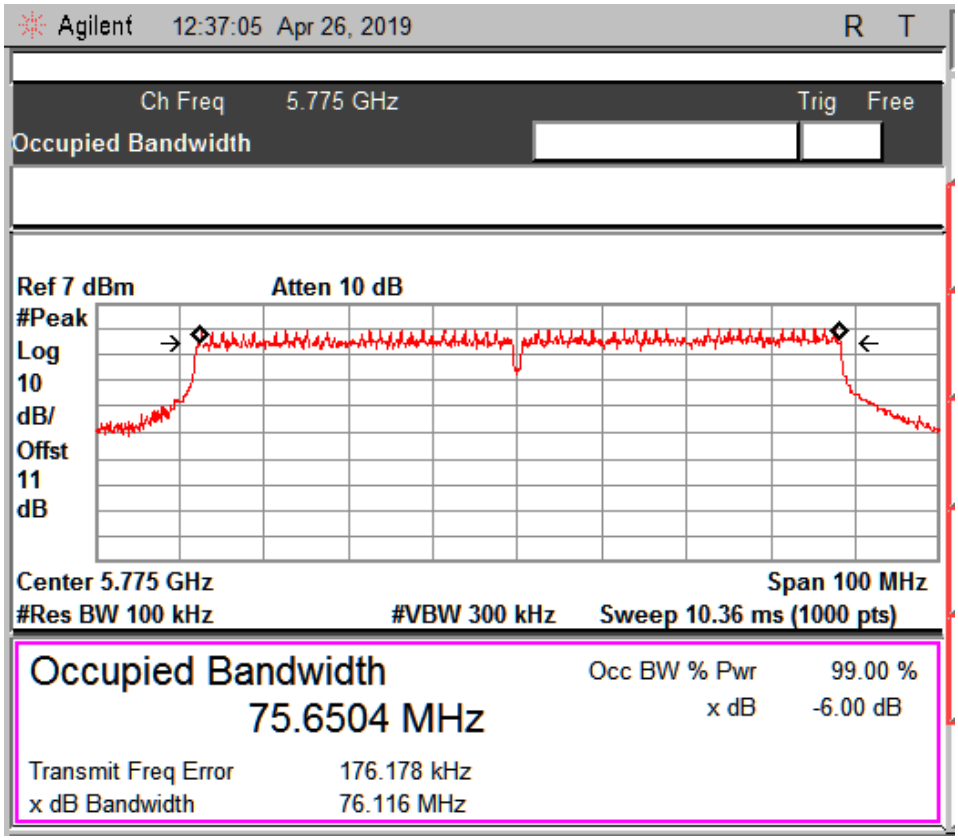
Data rate: MCS5 **Channel Frequency : 5.210 GHz**



Data rate: MCS5 **Channel Frequency : 5.775 GHz**



Data rate: MCS9 **Channel Frequency : 5.210 GHz**

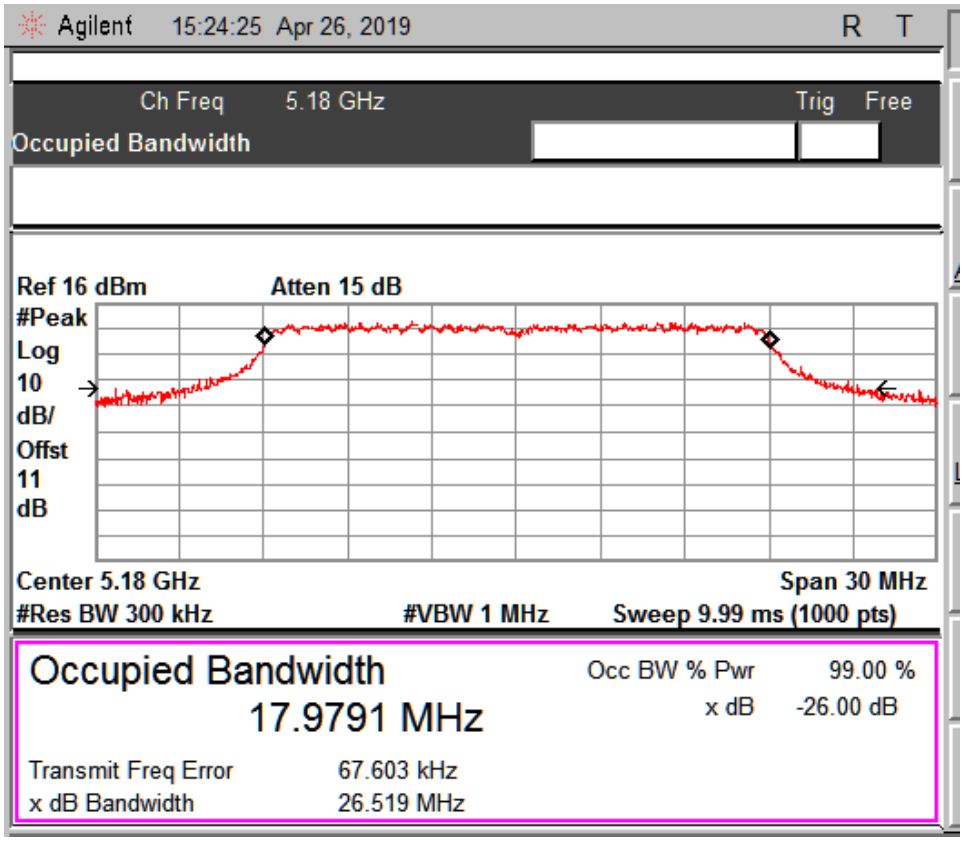


Data rate: MCS9 **Channel Frequency : 5.775 GHz**

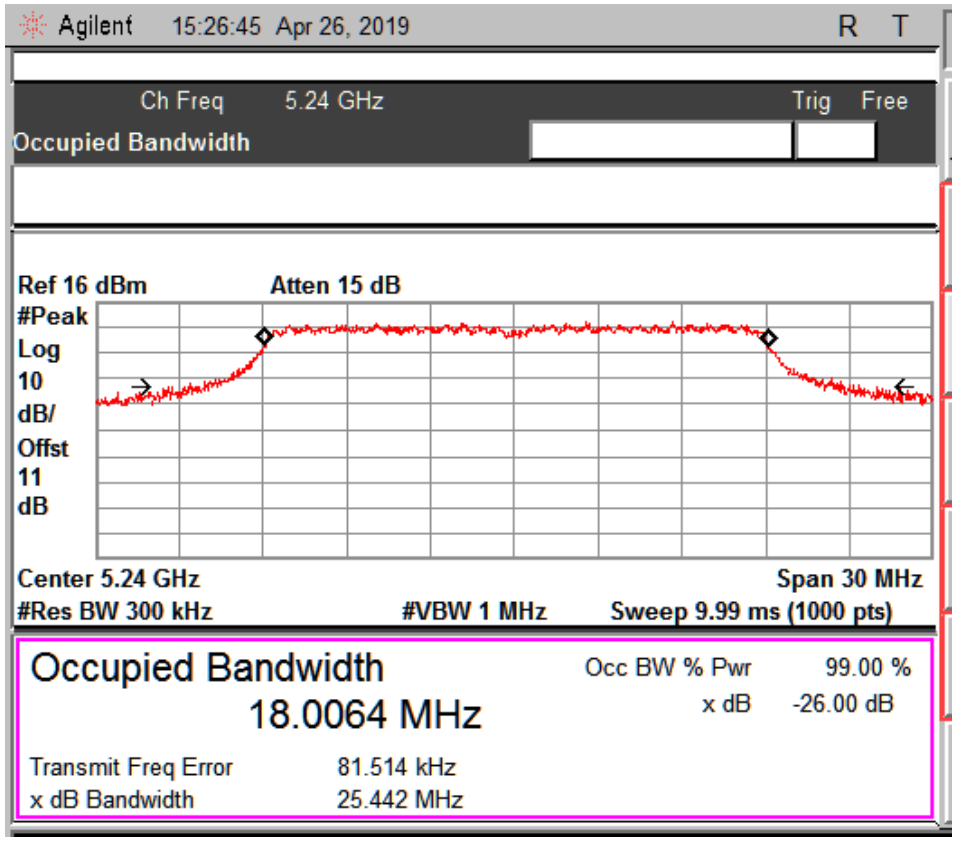
Modulation: 802.11ac mode MIMO_VHT20

Note: Test was performed on both the transmit chains and worst case results were from chain 2 and the respective results has been reported.

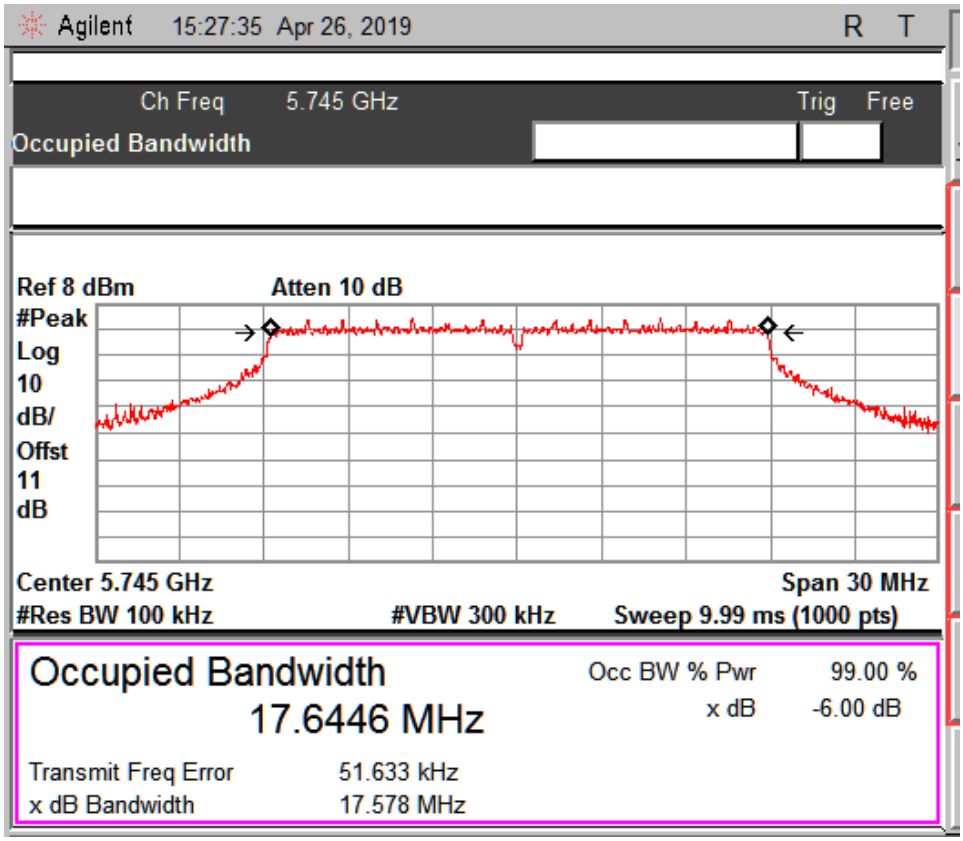
Data rate (Mbps)	Frequency (MHz)	Emission Bandwidth (MHz)	OBW (MHz)
MCS0	5180	26.51	17.97
	5240	25.44	18.00
	5745	17.57	17.64
	5825	17.62	17.65
MCS5	5180	24.10	18.01
	5240	23.13	18.02
	5745	17.66	17.63
	5825	17.68	17.63
MCS8	5180	22.73	17.97
	5240	23.08	18.01
	5745	17.68	17.62
	5825	17.65	17.63



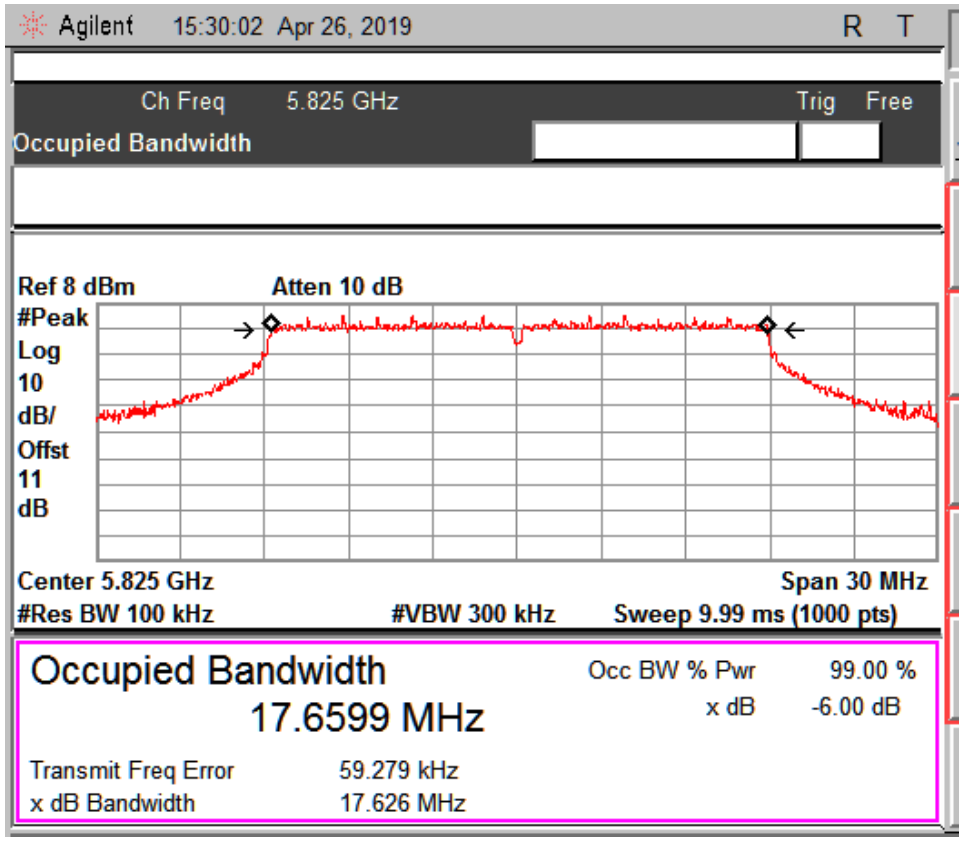
Data rate: MCS0 **Channel Frequency : 5.180 GHz**



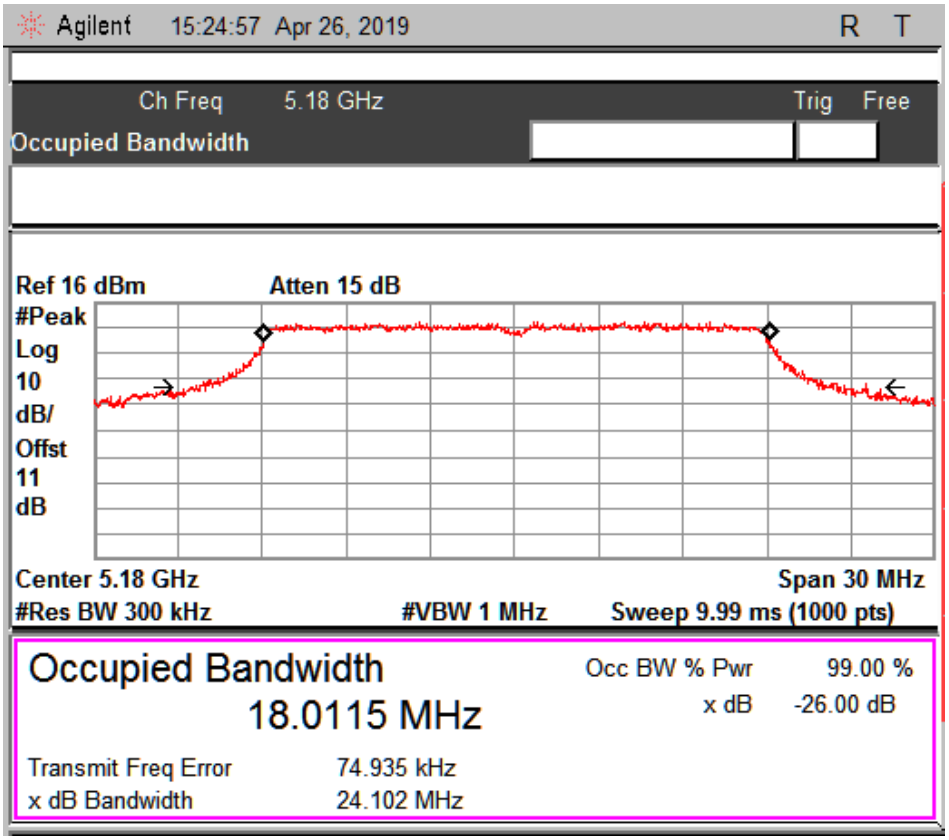
Data rate: MCS0 **Channel Frequency : 5.240 GHz**



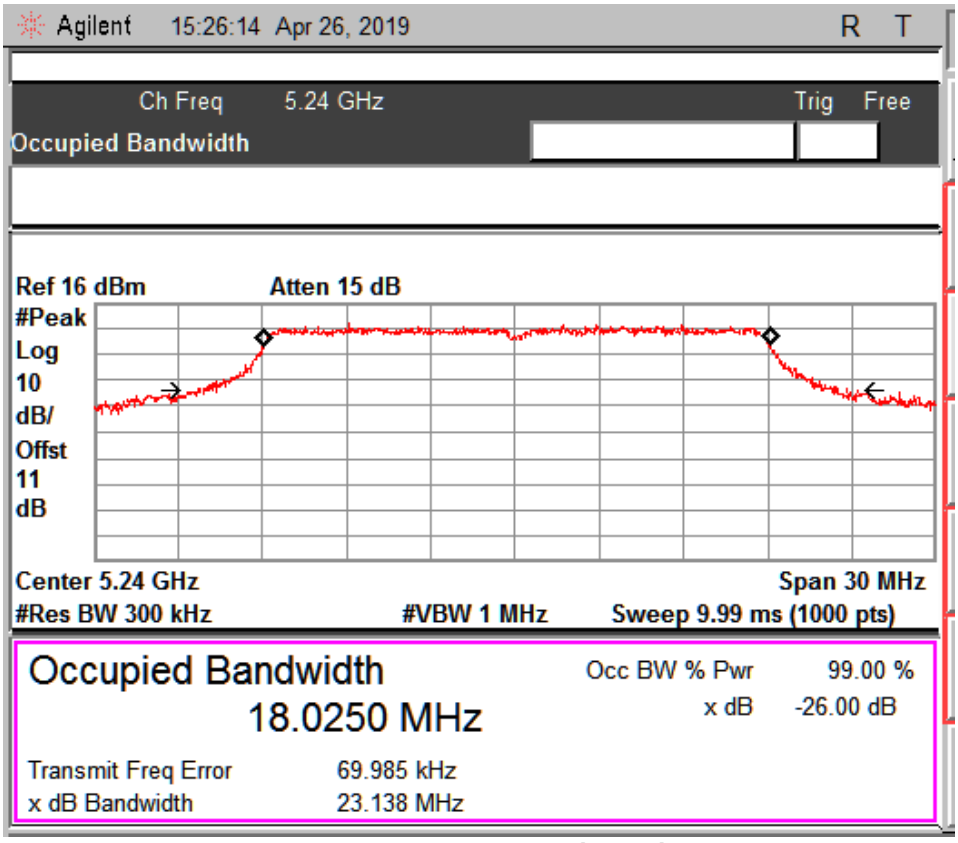
Data rate: MCS0 **Channel Frequency : 5.745 GHz**



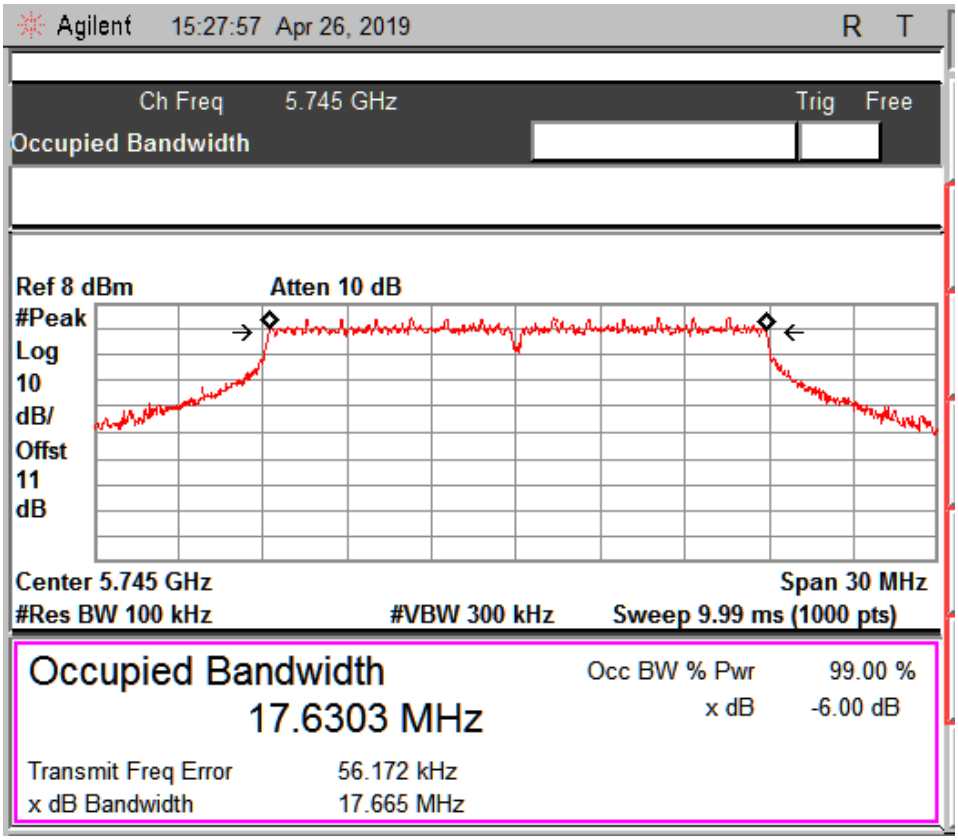
Data rate: MCS0 **Channel Frequency : 5.825 GHz**



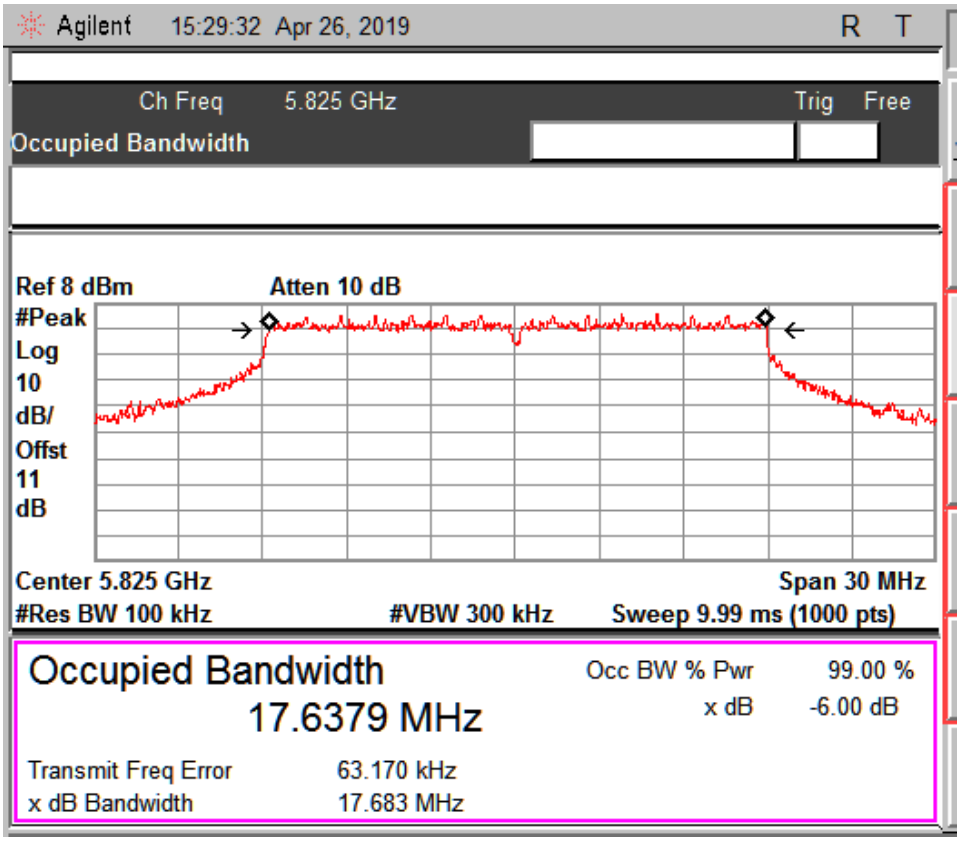
Data rate: MCS5 **Channel Frequency : 5.180 GHz**



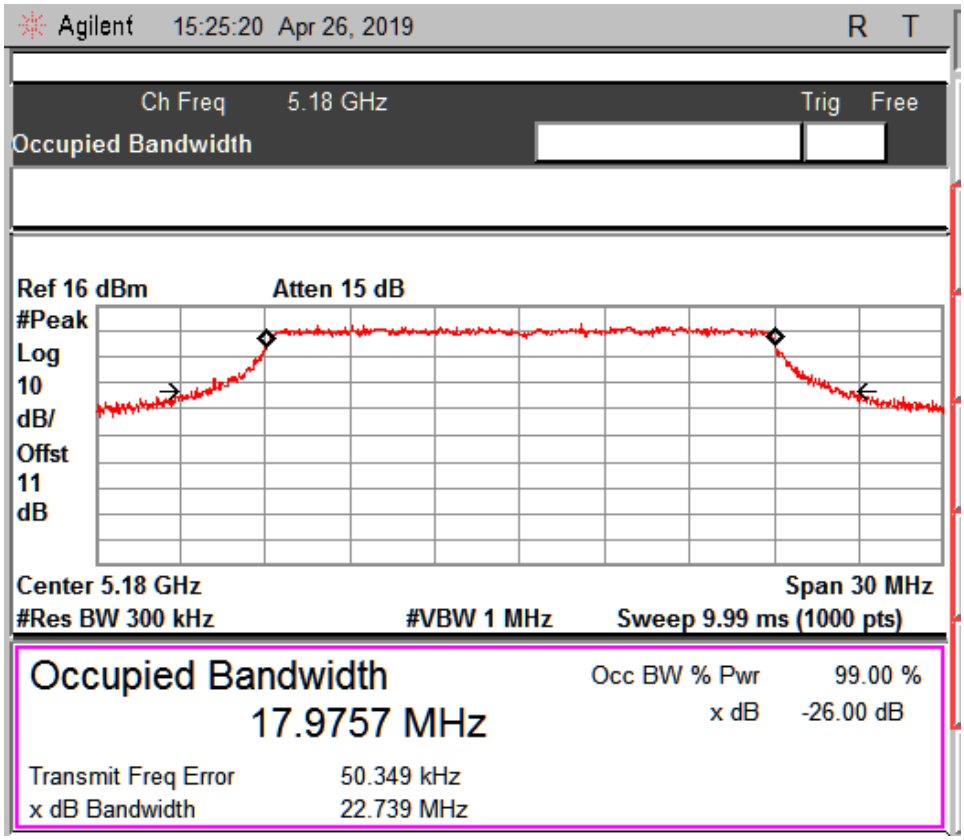
Data rate: MCS5 **Channel Frequency : 5.240 GHz**



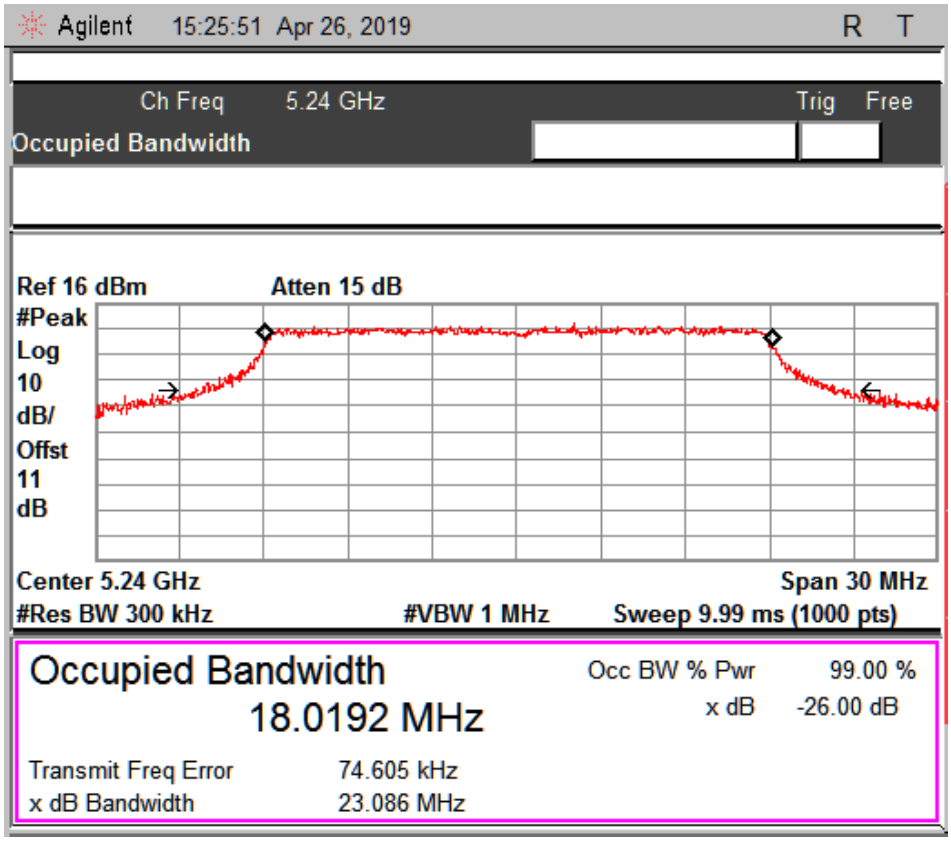
Data rate: MCS5 **Channel Frequency : 5.745 GHz**



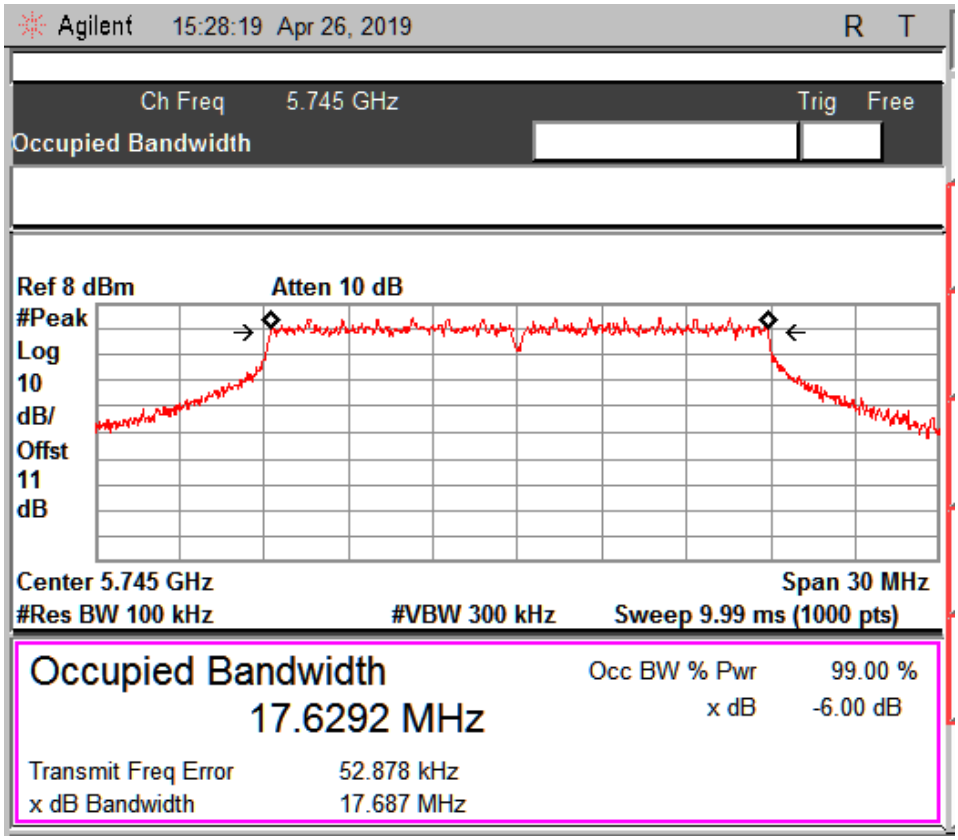
Data rate: MCS5 **Channel Frequency : 5.825 GHz**



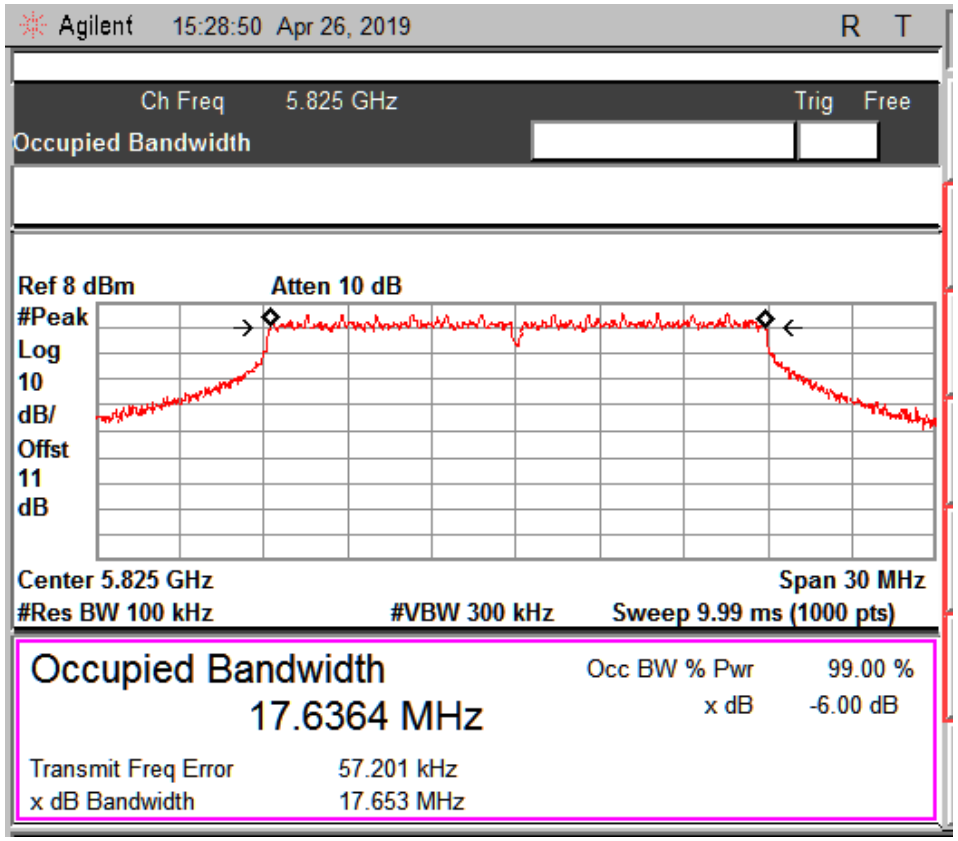
Data rate: MCS8 **Channel Frequency : 5.180 GHz**



Data rate: MCS8 **Channel Frequency : 5.240 GHz**



Data rate: MCS8 **Channel Frequency : 5.745 GHz**

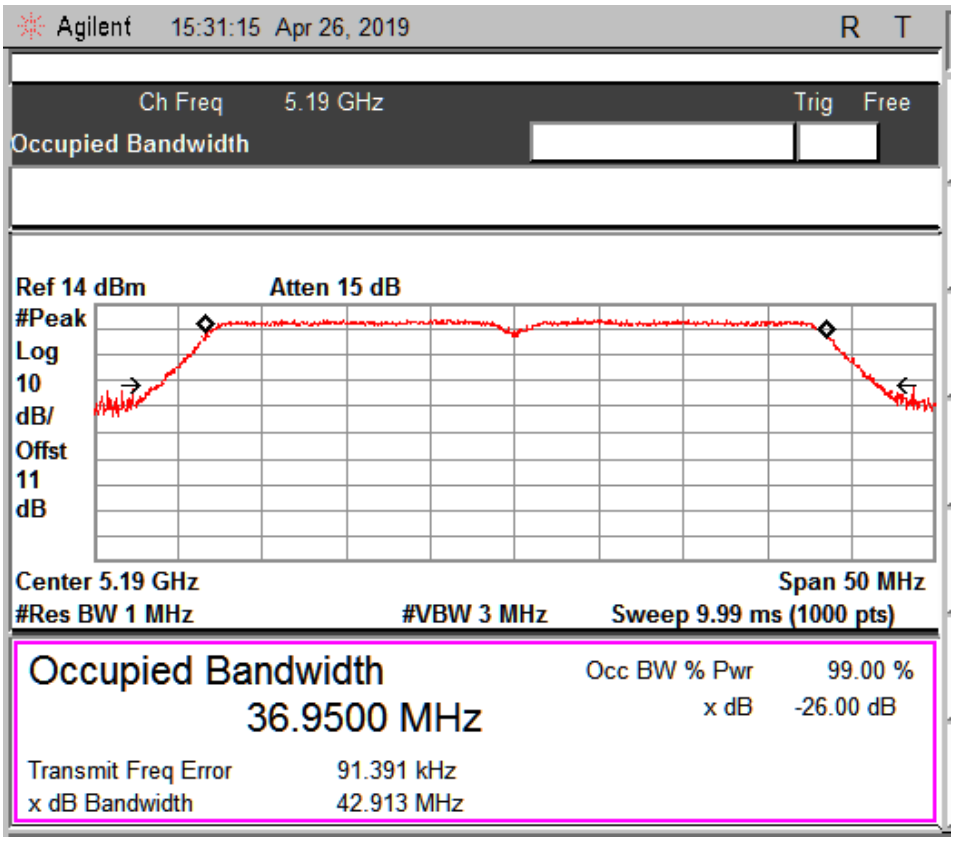


Data rate: MCS8 **Channel Frequency : 5.825 GHz**

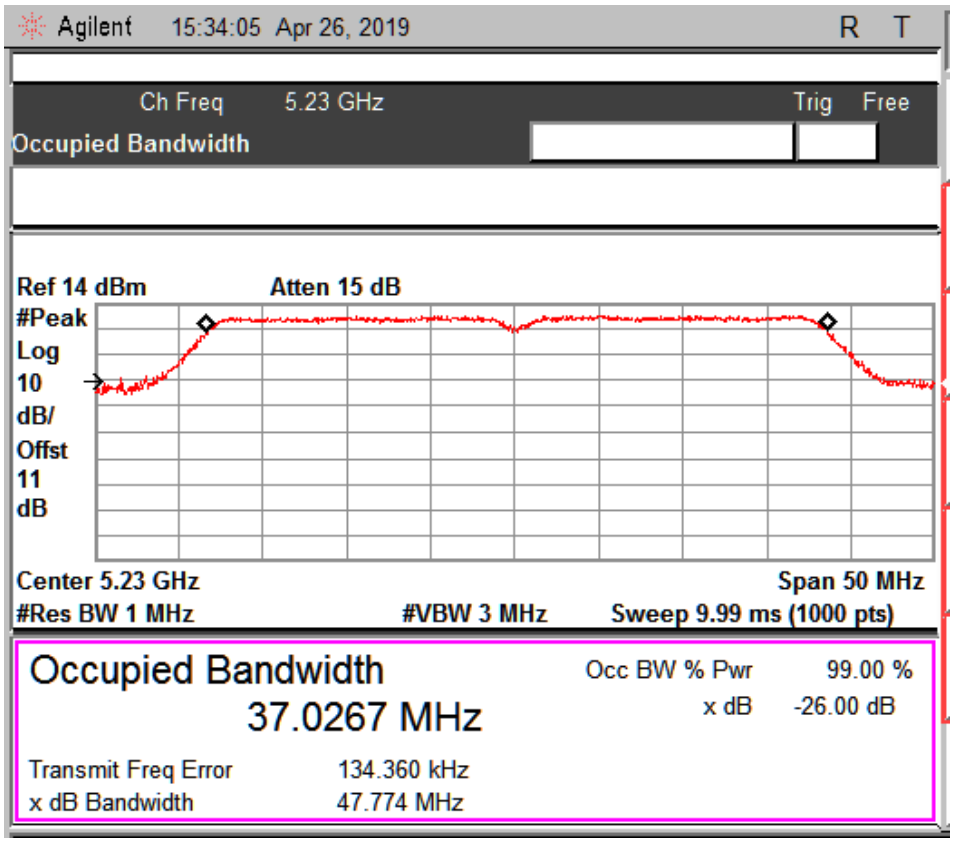
Modulation: 802.11ac mode MIMO_VHT40

Note: Test was performed on both the transmit chains and worst case results were from chain 2 and the respective results has been reported.

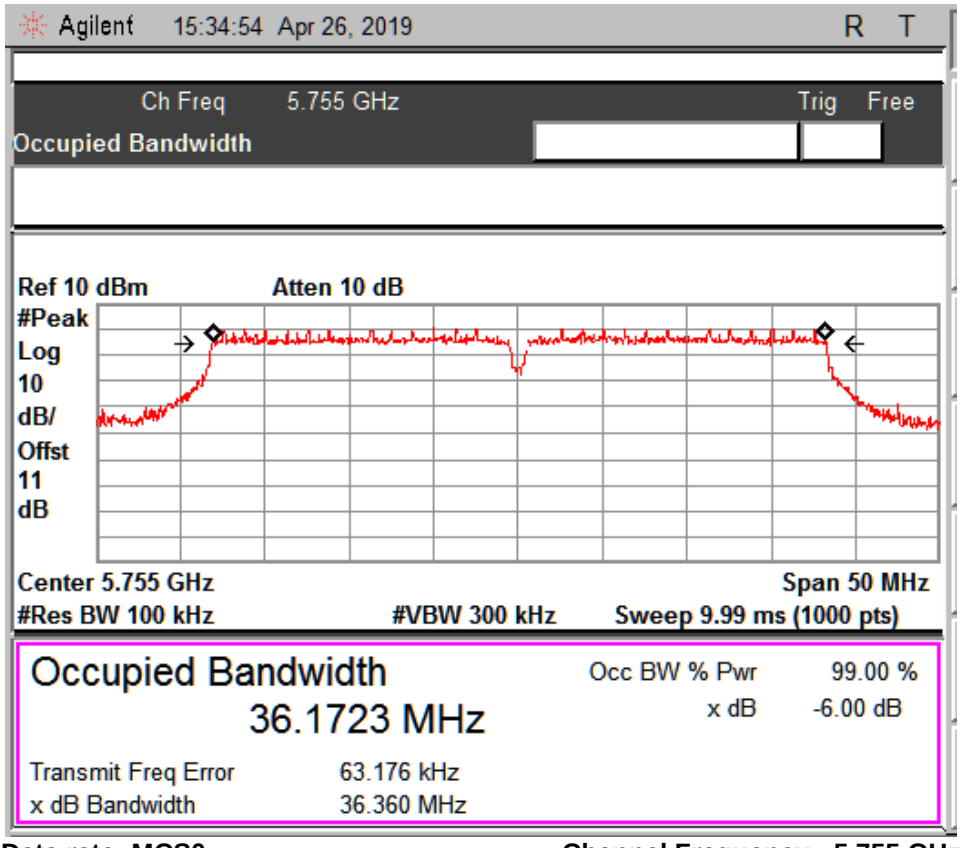
Data rate (Mbps)	Frequency (MHz)	Emission Bandwidth (MHz)	OBW (MHz)
MCS0	5190	42.91	36.95
	5230	47.77	37.02
	5755	36.36	36.17
	5795	36.36	36.19
MCS5	5190	45.46	37.17
	5230	47.67	37.31
	5755	36.41	36.16
	5795	36.4	36.19
MCS9	5190	45.46	37.11
	5230	44.94	37.18
	5755	36.35	36.16
	5795	36.3	36.15



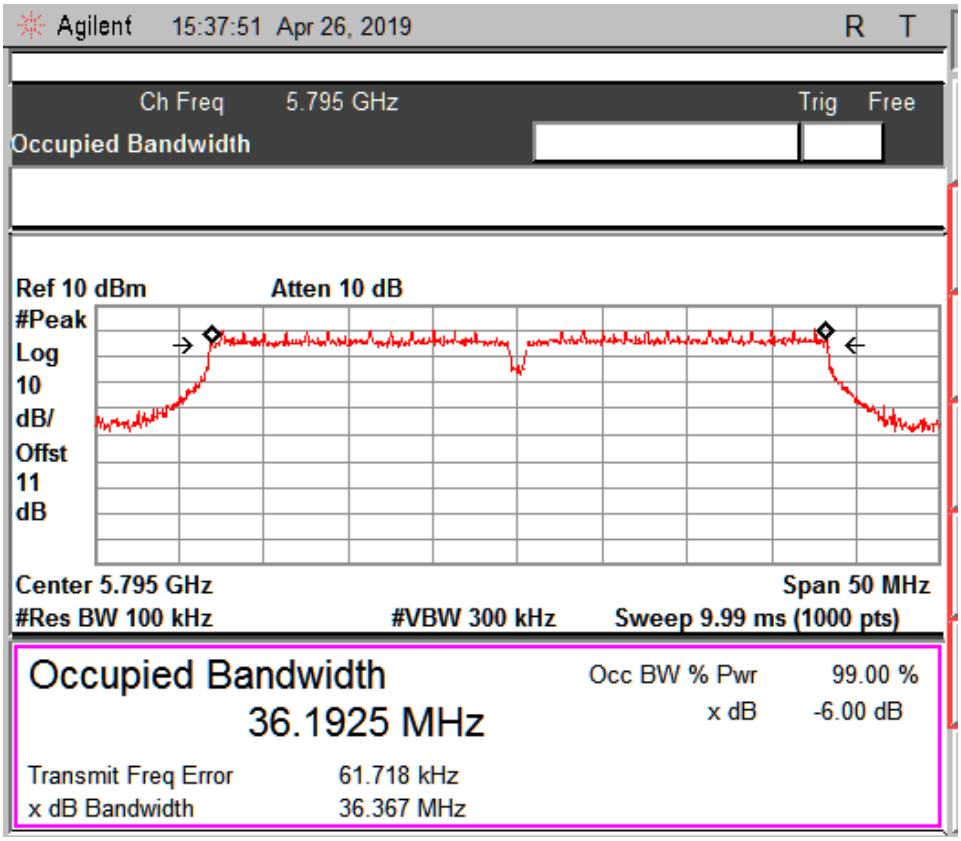
Data rate: MCS0 **Channel Frequency : 5.190 GHz**



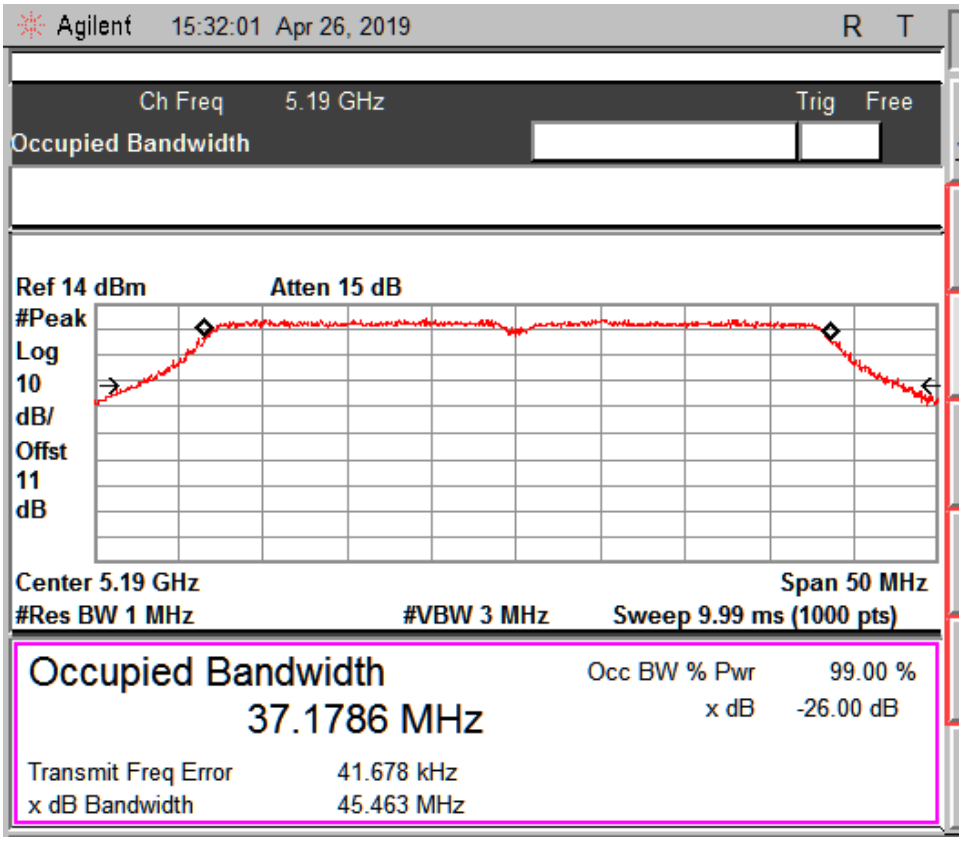
Data rate: MCS0 **Channel Frequency : 5.230 GHz**



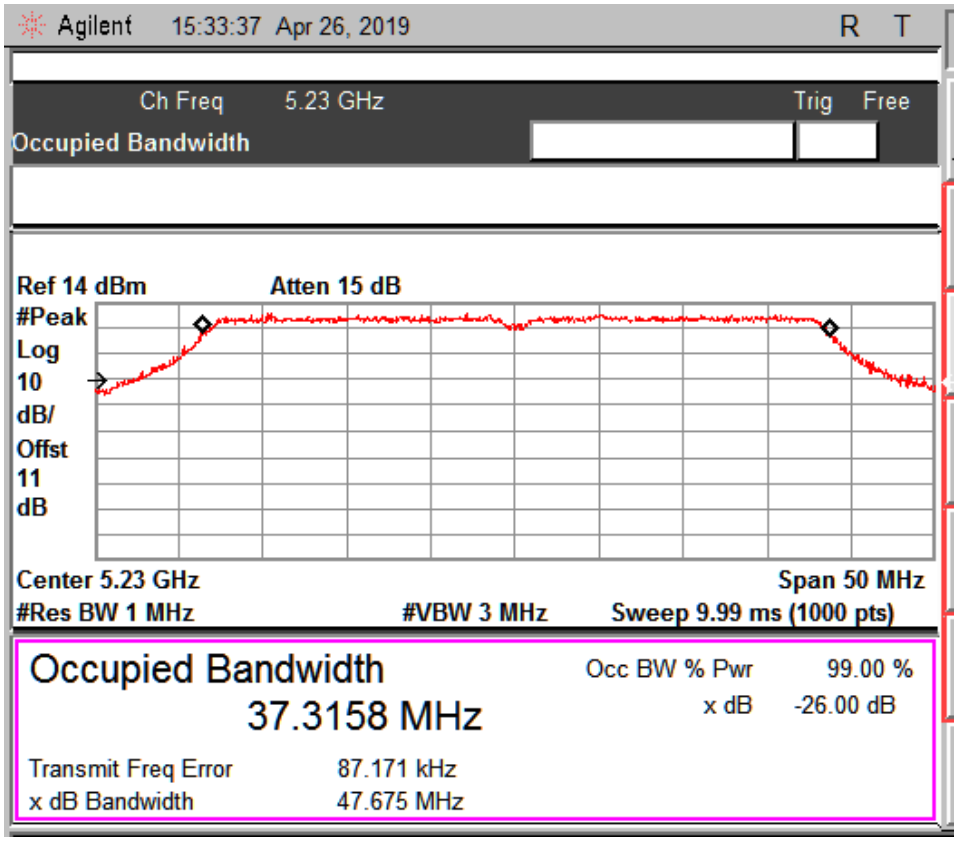
Data rate: MCS0 **Channel Frequency : 5.755 GHz**



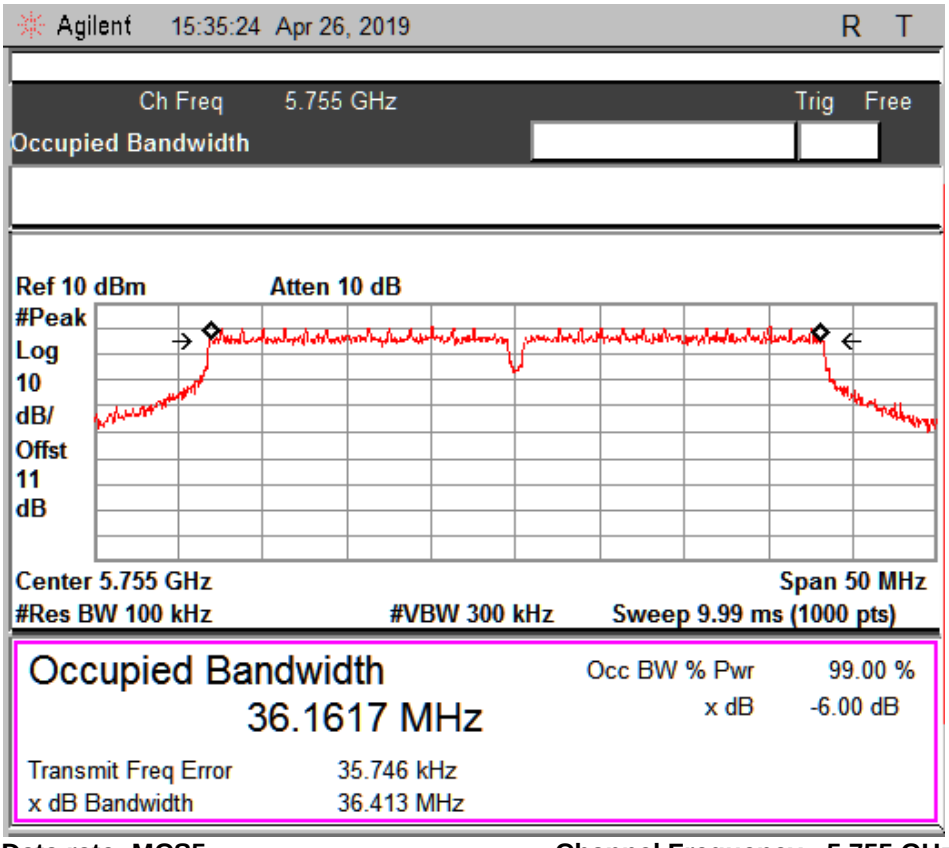
Data rate: MCS0 **Channel Frequency : 5.795 GHz**



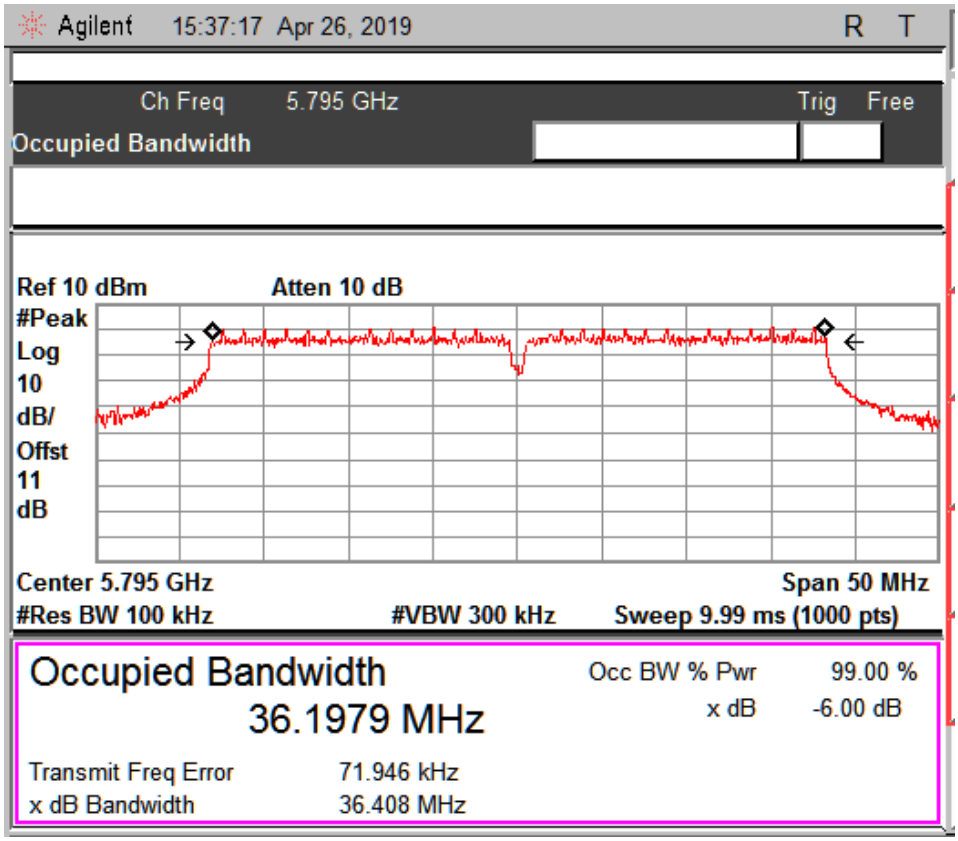
Data rate: MCS5 **Channel Frequency : 5.190 GHz**



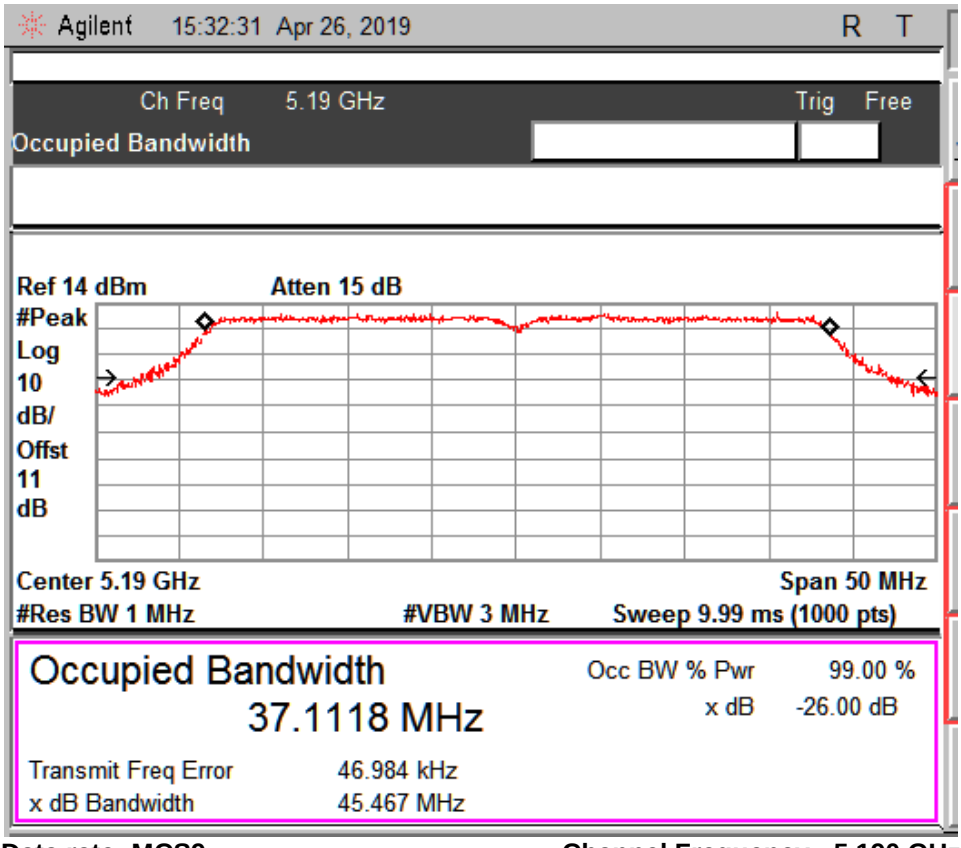
Data rate: MCS5 **Channel Frequency : 5.230 GHz**



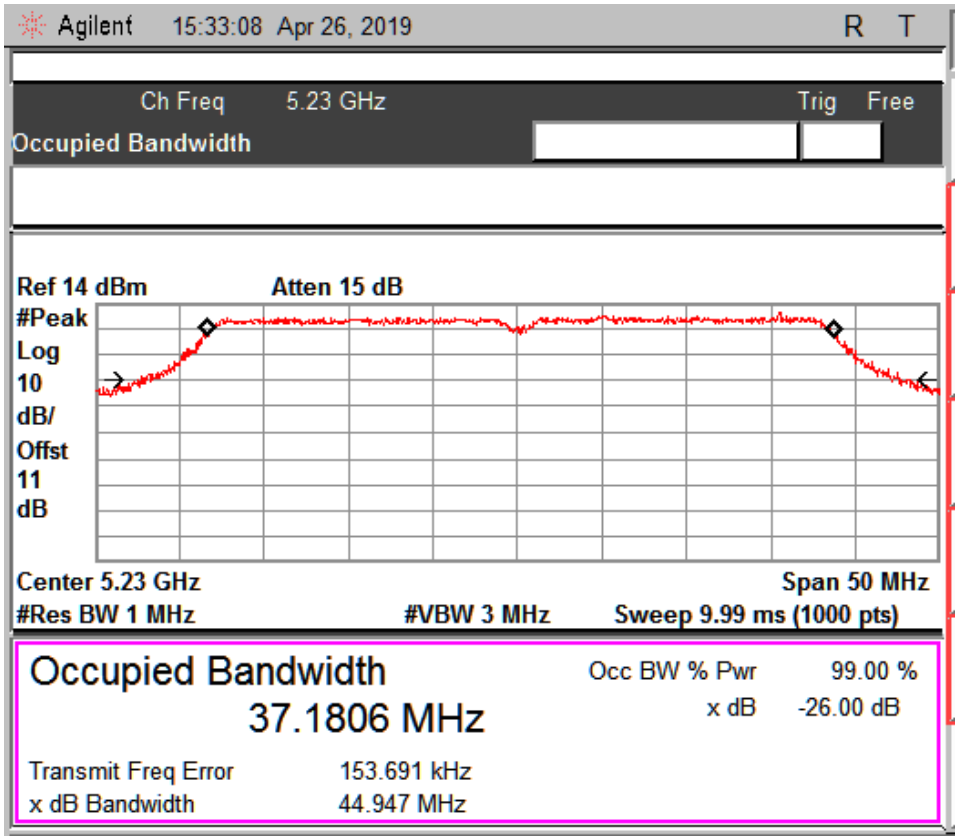
Data rate: MCS5 **Channel Frequency : 5.755 GHz**



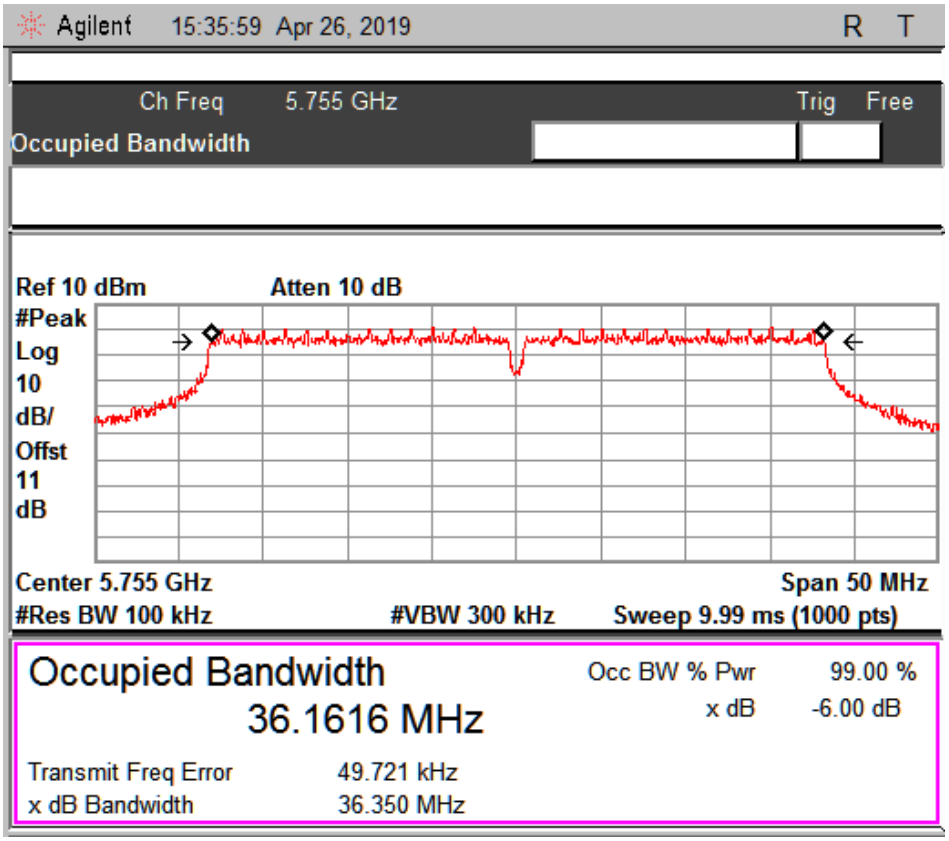
Data rate: MCS5 **Channel Frequency : 5.795 GHz**



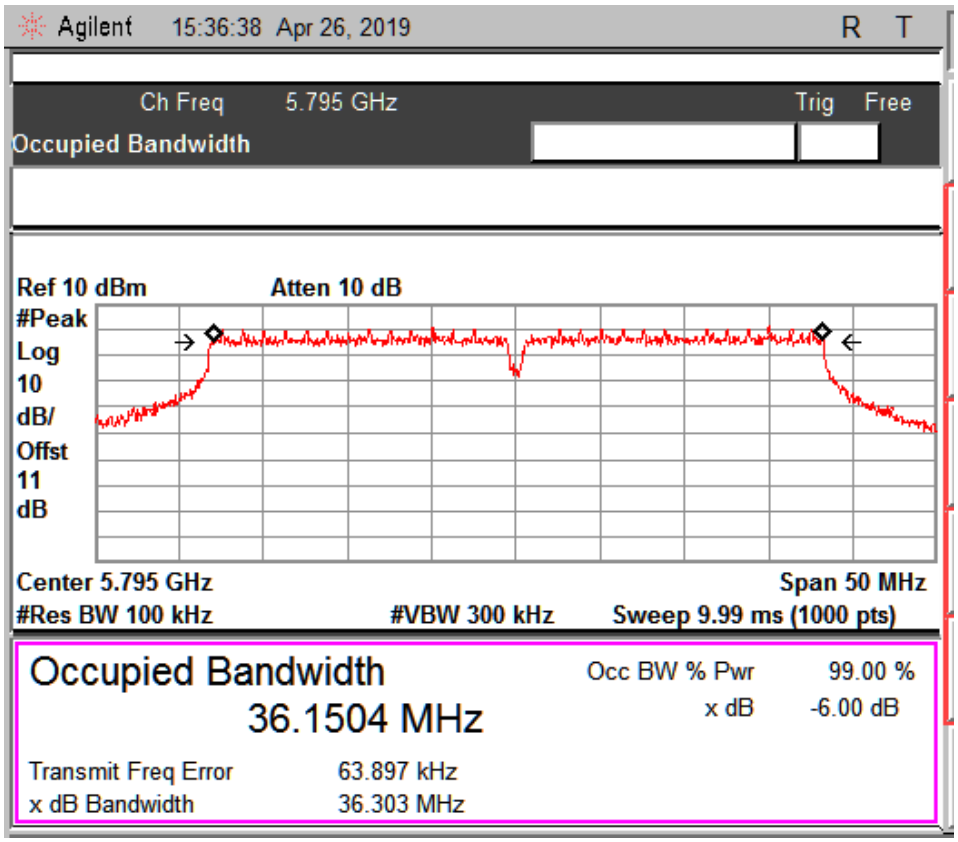
Data rate: MCS9 **Channel Frequency : 5.190 GHz**



Data rate: MCS9 **Channel Frequency : 5.230 GHz**



Data rate: MCS9 **Channel Frequency : 5.755 GHz**

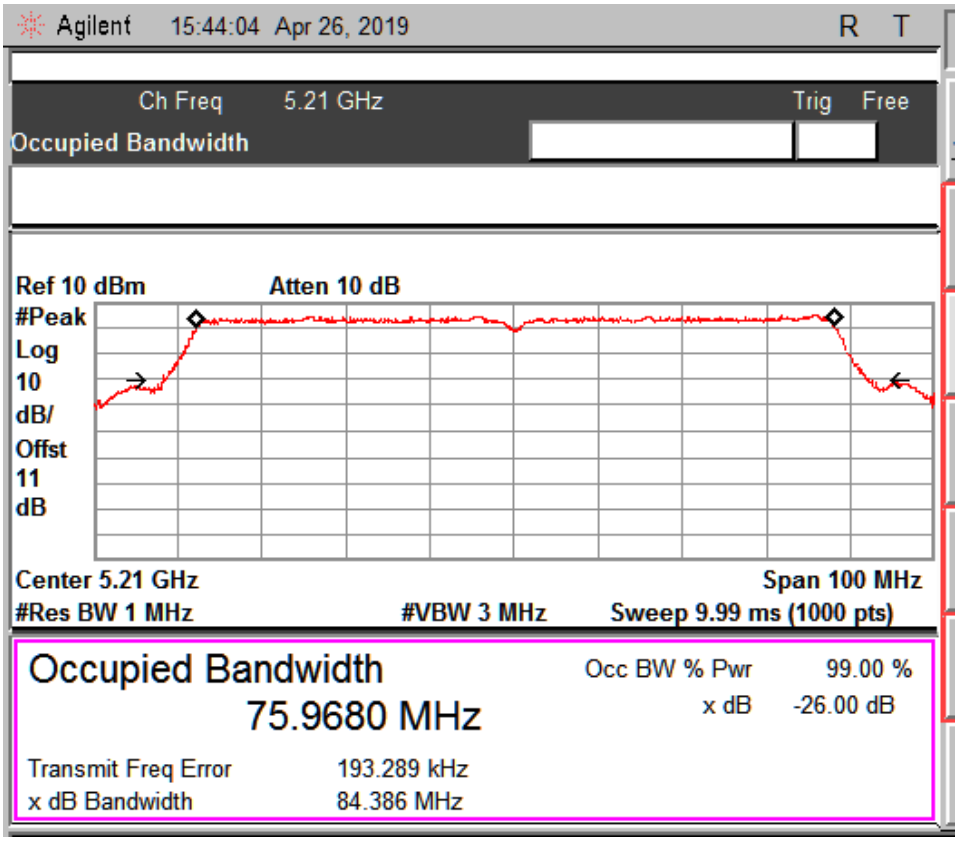


Data rate: MCS9 **Channel Frequency : 5.795 GHz**

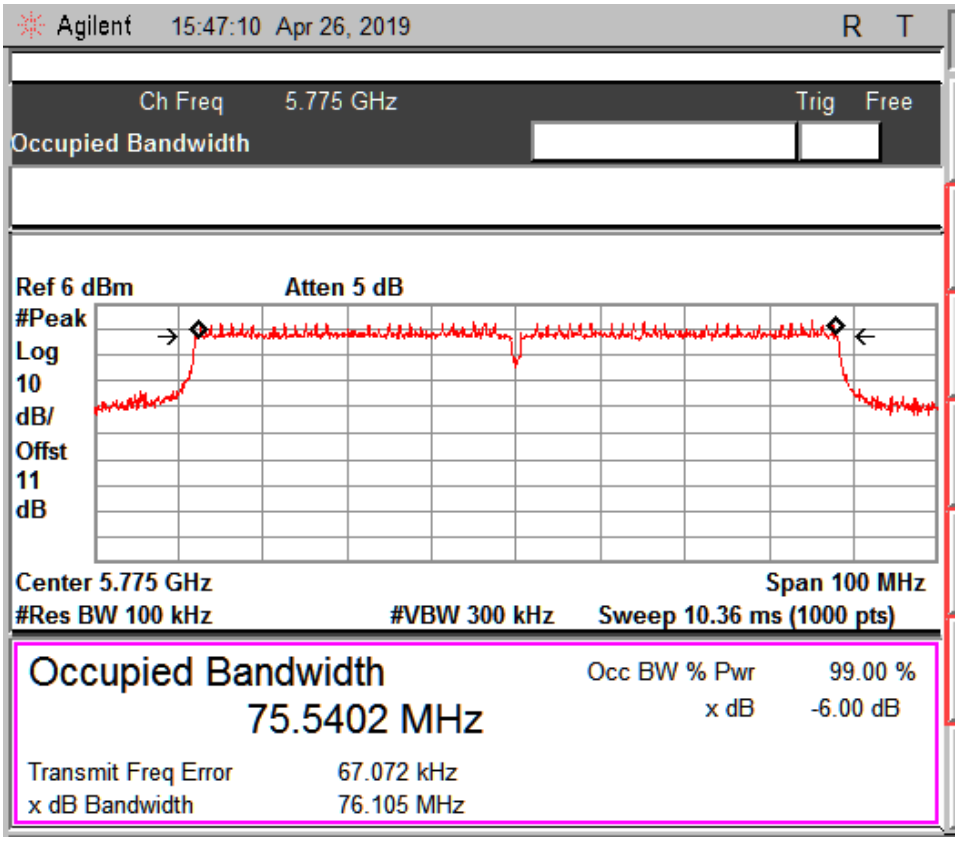
Modulation: 802.11ac mode MIMO_VHT80

Note: Test was performed on both the transmit chains and worst case results were from chain 2 and the respective results has been reported.

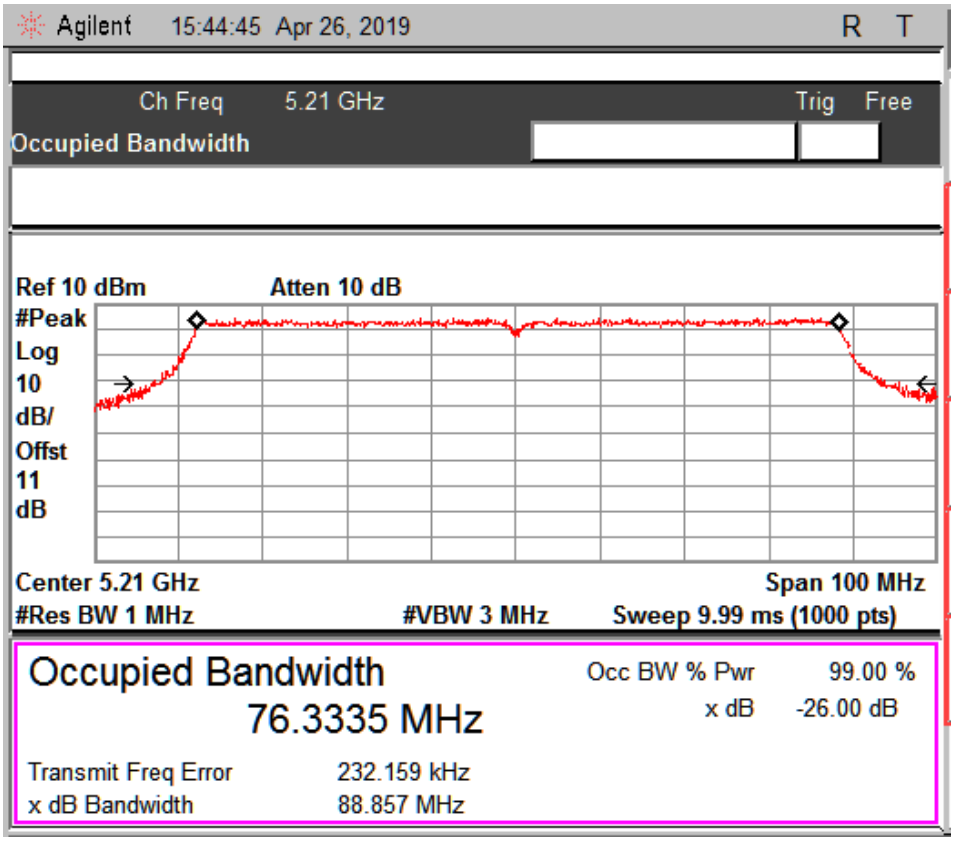
Data rate (Mbps)	Frequency (MHz)	Emission Bandwidth (MHz)	OBW (MHz)
MCS0	5210	84.38	75.96
	5775	76.10	75.54
MCS5	5210	88.85	76.33
	5775	76.27	75.67
MCS9	5210	88.72	76.33
	5775	76.36	75.59



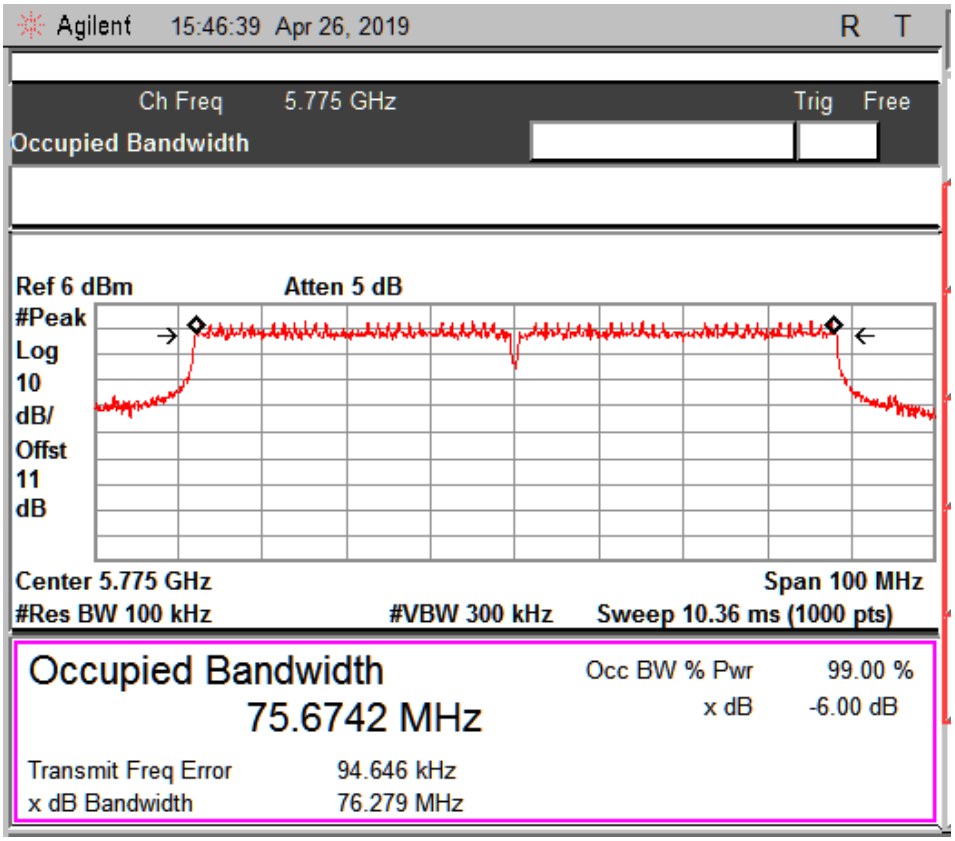
Data rate: MCS0 **Channel Frequency : 5.210 GHz**



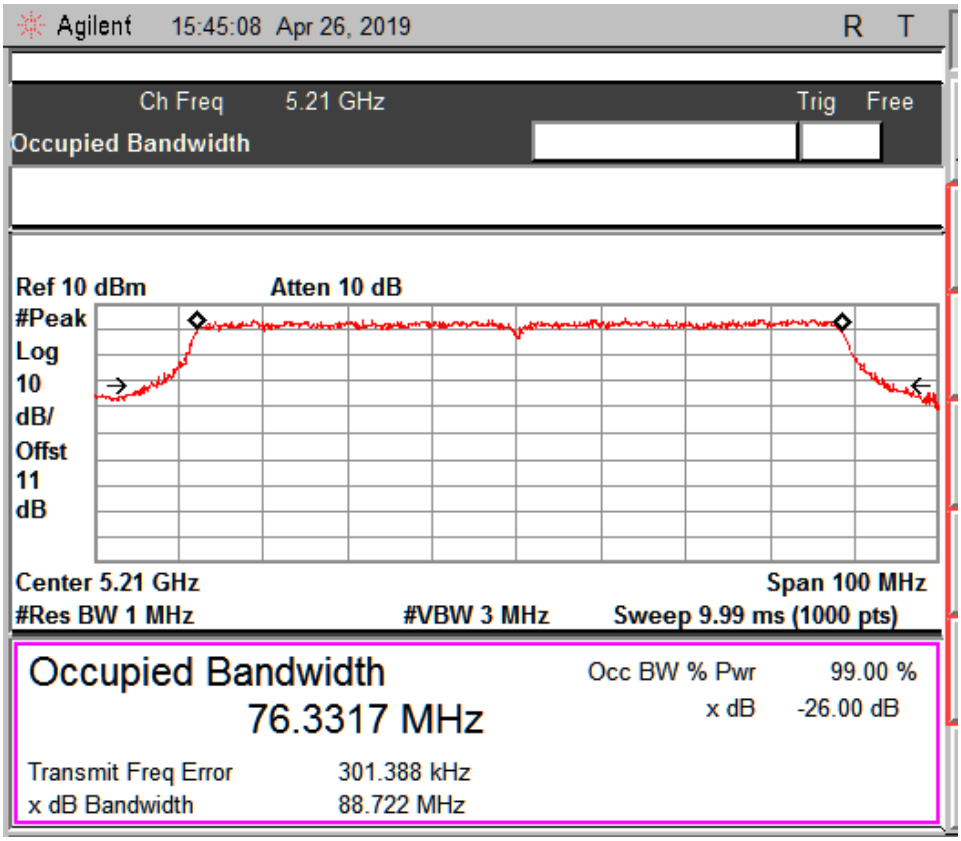
Data rate: MCS0 **Channel Frequency : 5.775 GHz**



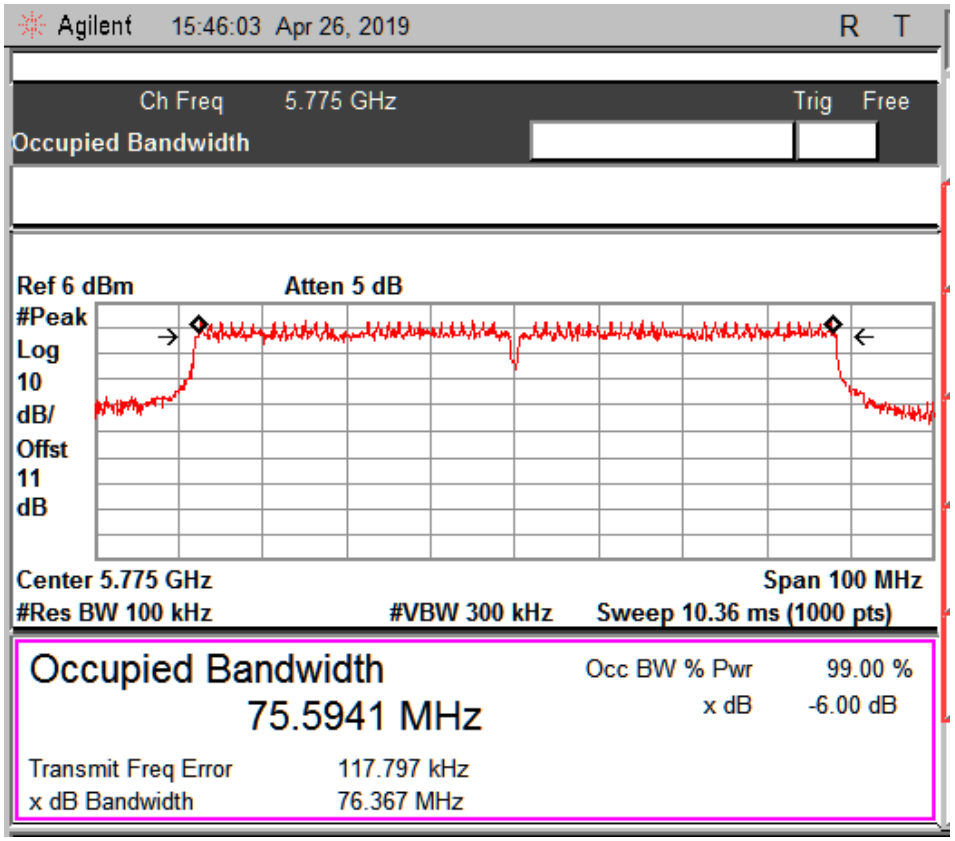
Data rate: MCS5 **Channel Frequency : 5210 GHz**



Data rate: MCS5 **Channel Frequency : 5.775 GHz**



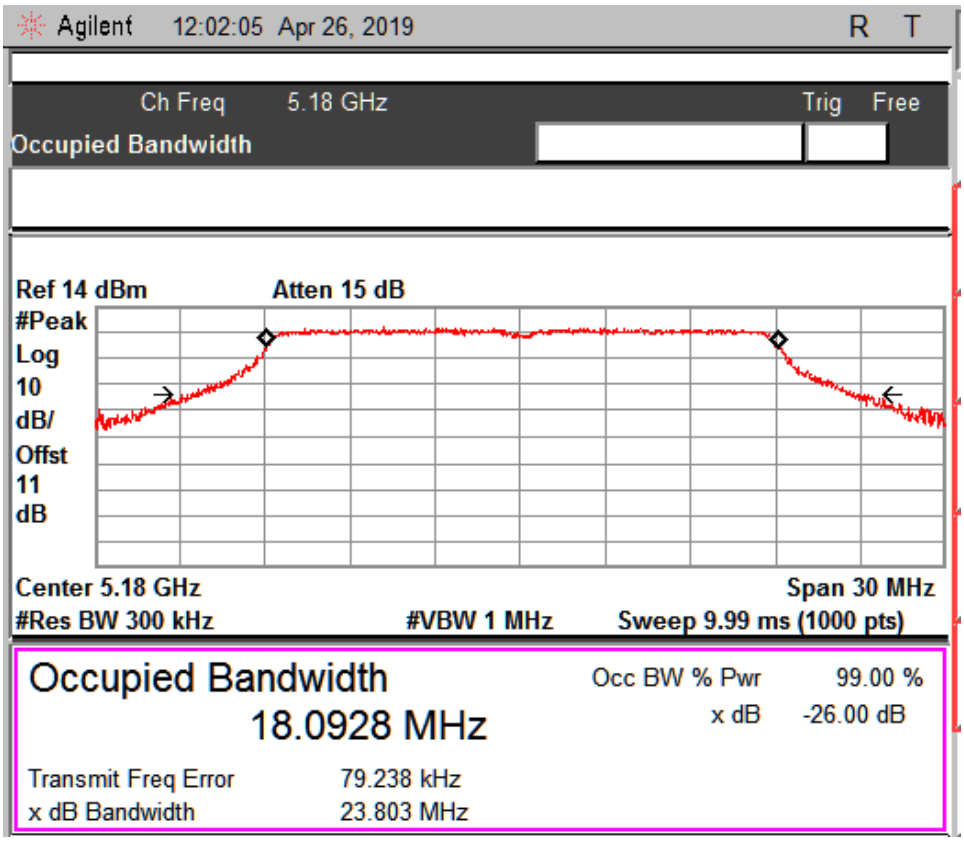
Data rate: MCS9 **Channel Frequency : 5.775 GHz**



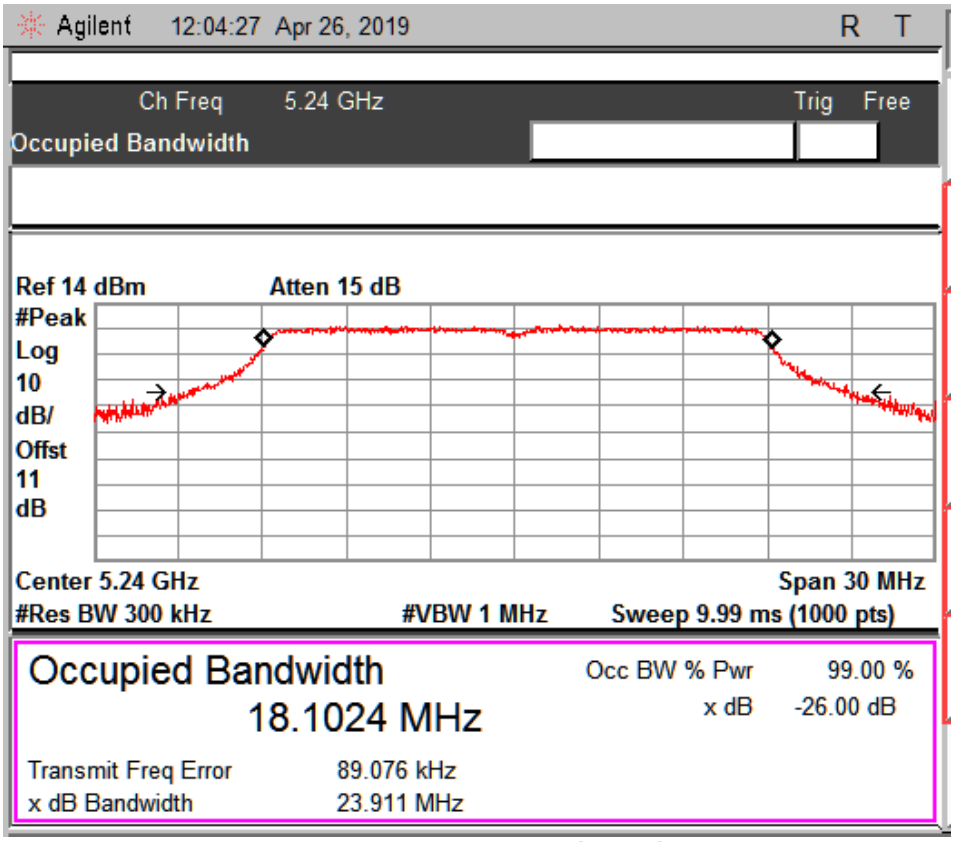
Data rate: MCS9 **Channel Frequency : 5.775 GHz**

Modulation: 802.11n mode SISO_VHT20

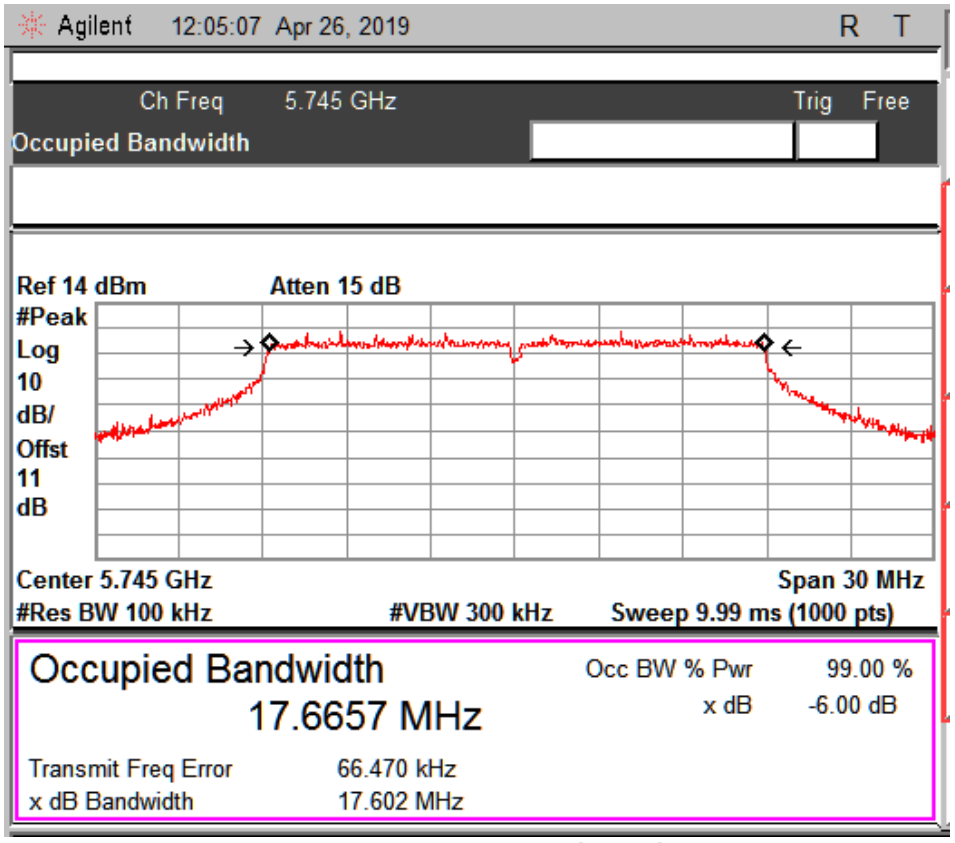
Data rate (Mbps)	Frequency (MHz)	Emission Bandwidth (MHz)	OBW (MHz)
MCS0	5180	23.80	18.09
	5240	23.91	18.10
	5745	17.60	17.66
	5825	17.59	17.67
MCS4	5180	22.79	18.01
	5240	22.85	18.00
	5745	17.71	17.65
	5825	17.70	17.64
MCS7	5180	22.85	17.98
	5240	22.65	17.97
	5745	17.71	17.65
	5825	17.71	17.64



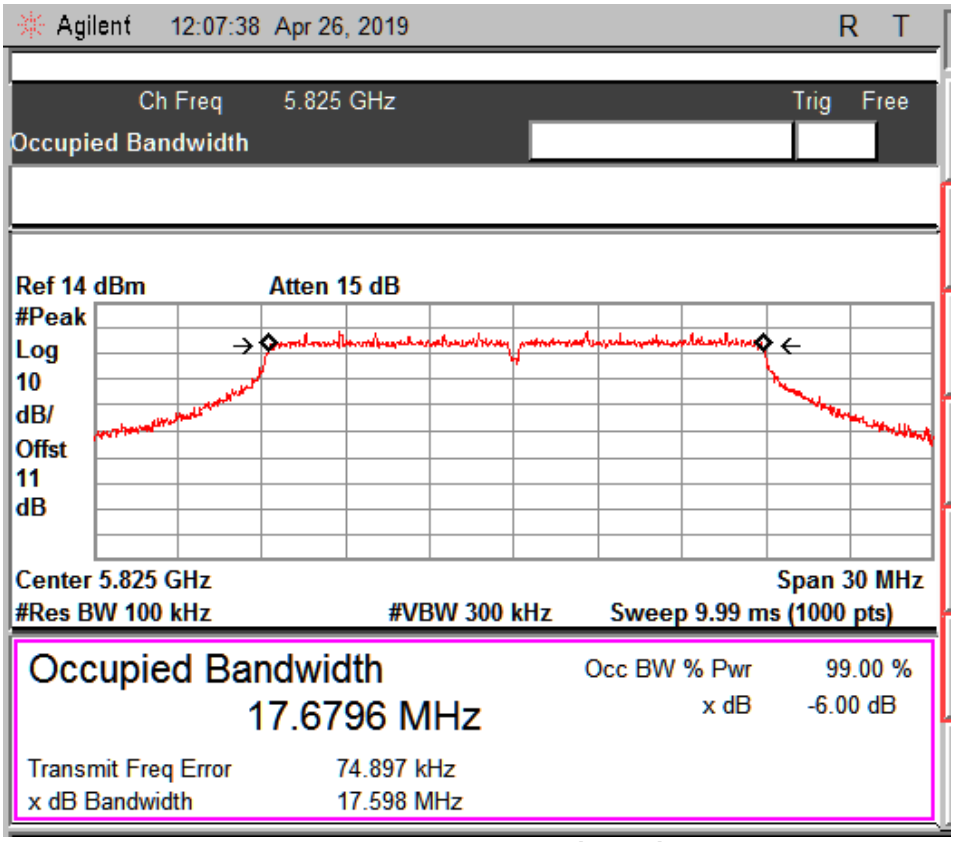
Data rate: MCS0 **Channel Frequency : 5.180 GHz**



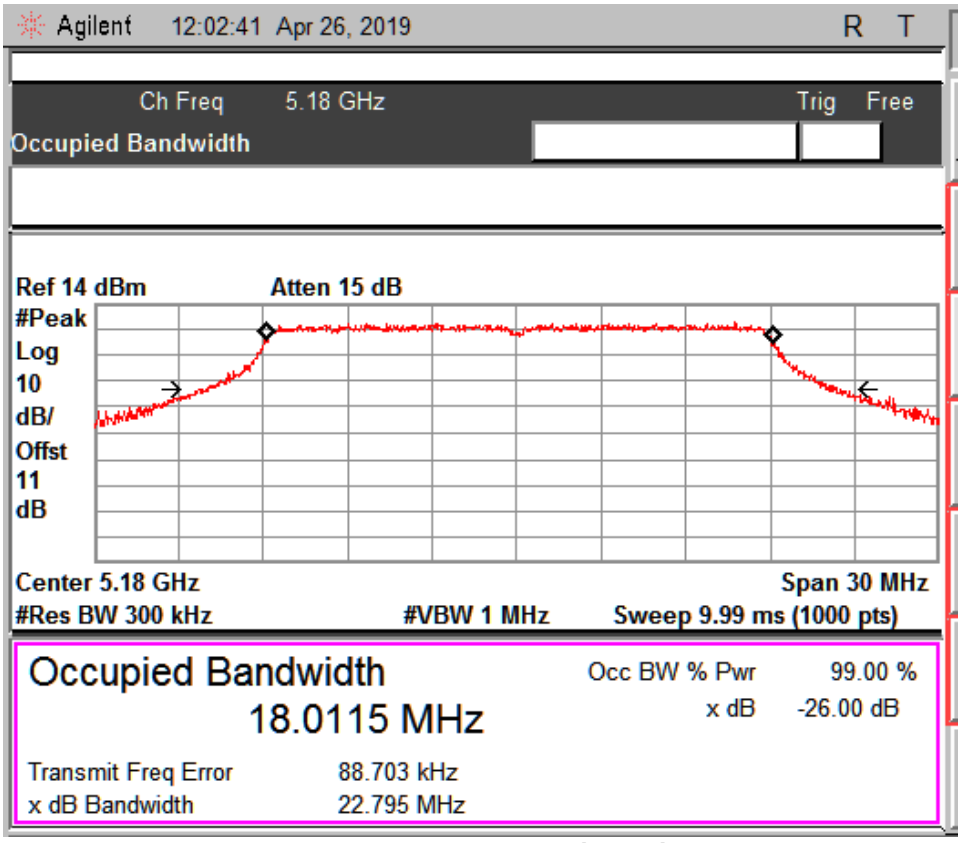
Data rate: MCS0 **Channel Frequency : 5.240 GHz**



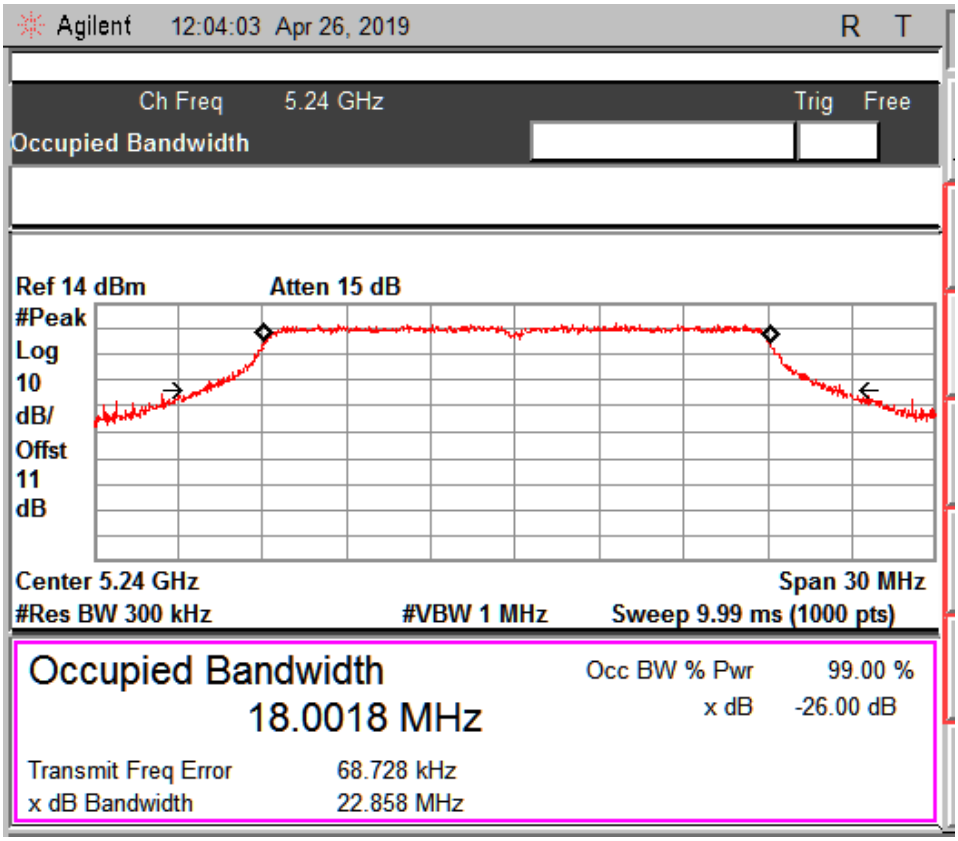
Data rate: MCS0 **Channel Frequency : 5.745 GHz**



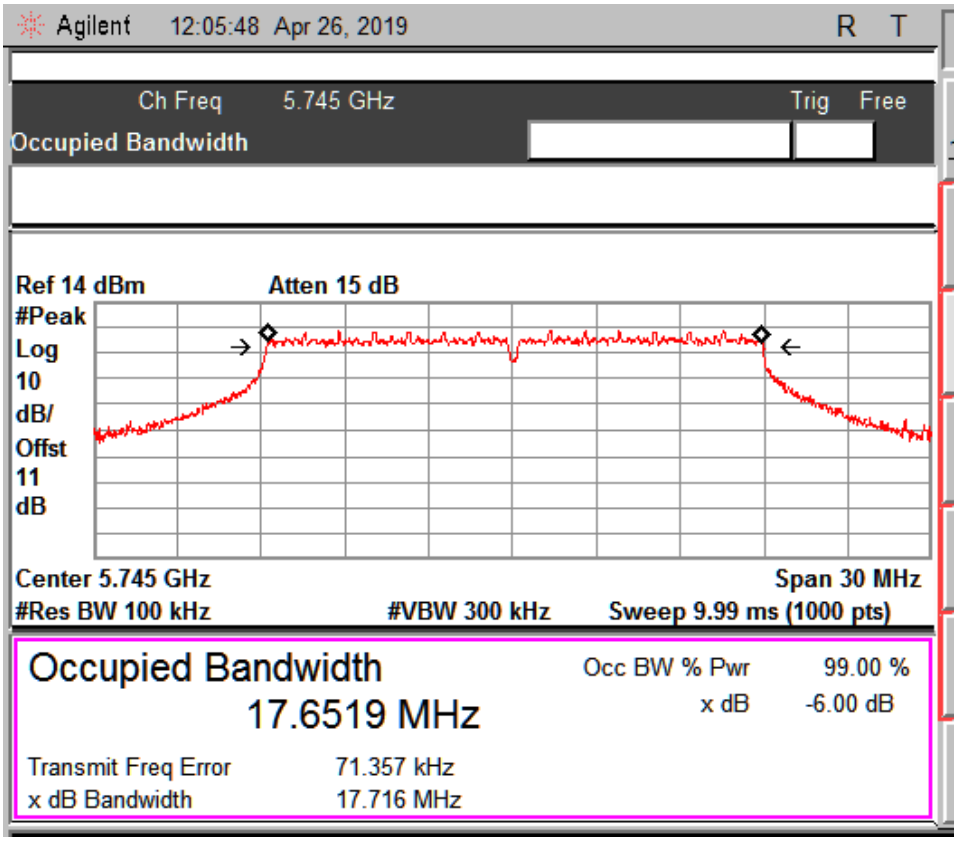
Data rate: MCS0 **Channel Frequency : 5.825 GHz**



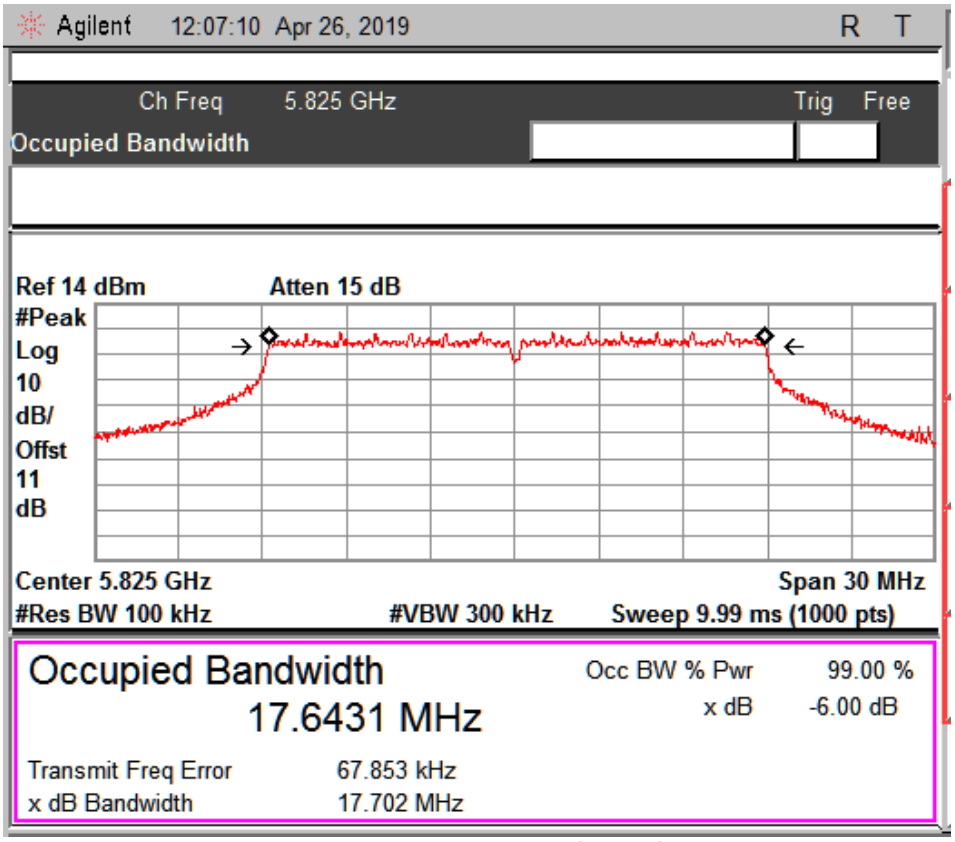
Data rate: MCS4 **Channel Frequency : 5.180 GHz**



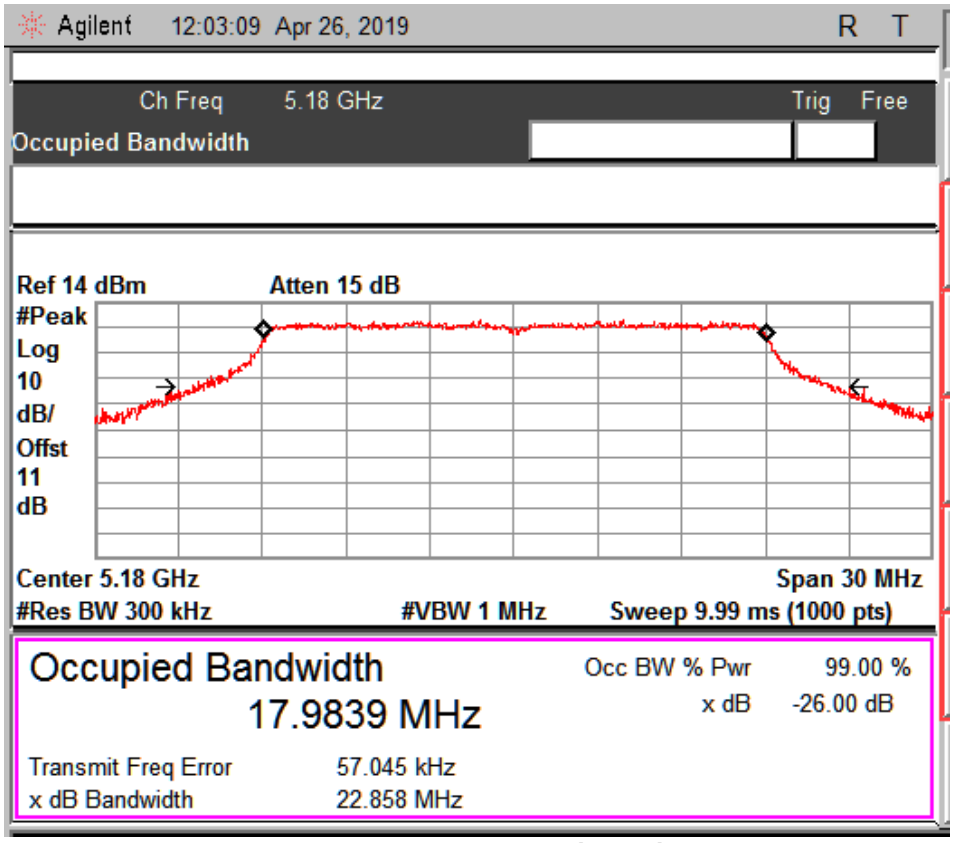
Data rate: MCS4 **Channel Frequency : 5.240 GHz**



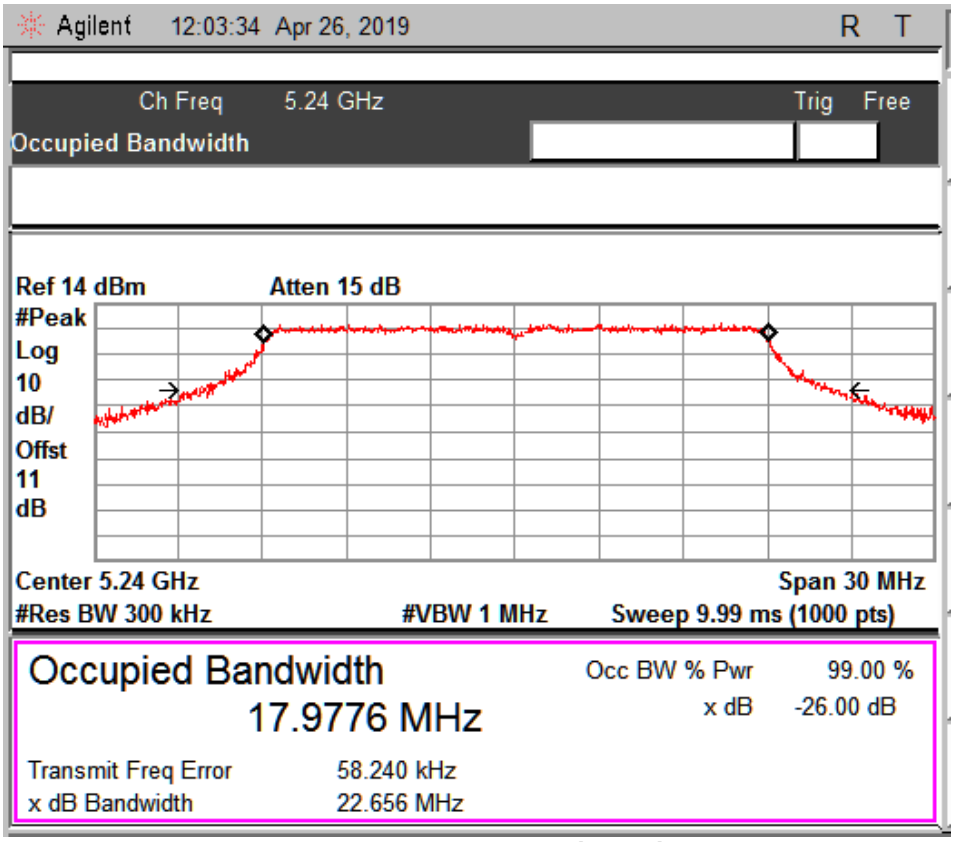
Data rate: MCS4 **Channel Frequency : 5.745 GHz**



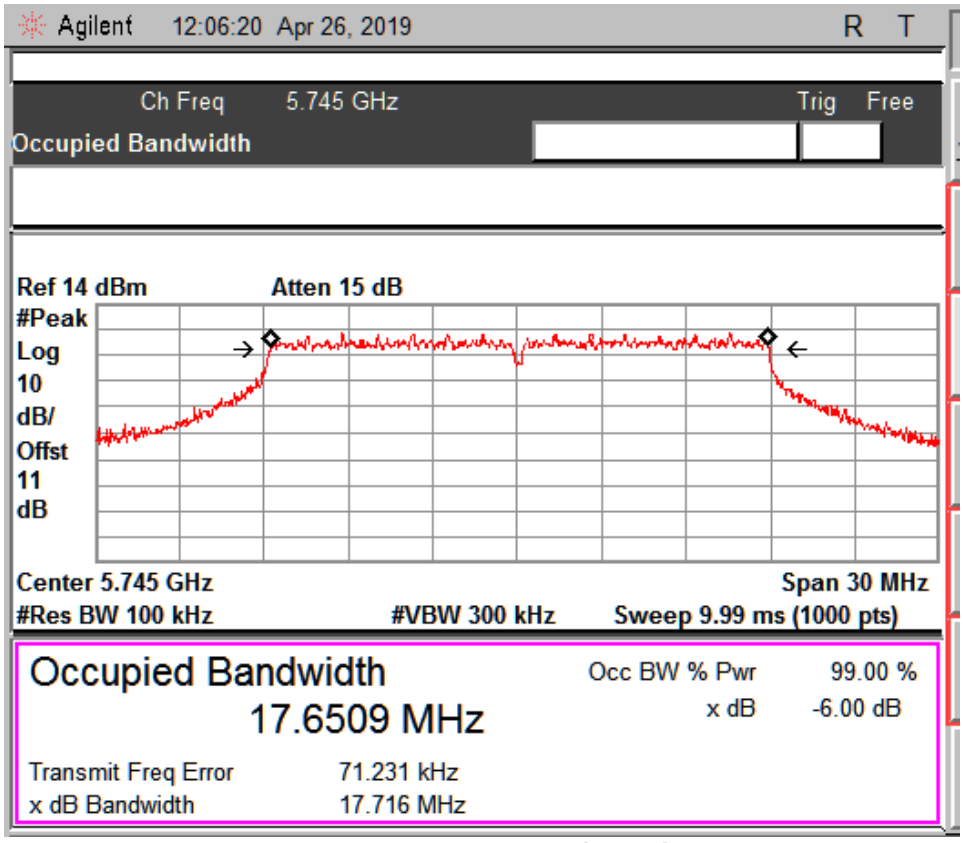
Data rate: MCS4 **Channel Frequency : 5.825 GHz**



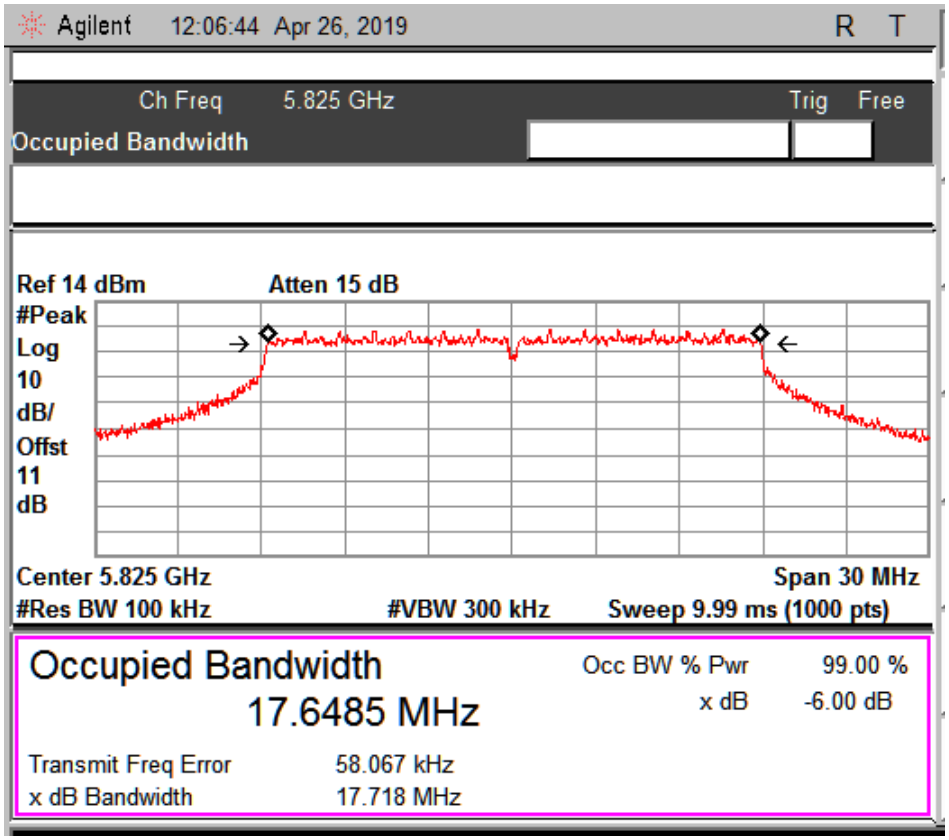
Data rate: MCS7 **Channel Frequency : 5.180 GHz**



Data rate: MCS7 **Channel Frequency : 5.240 GHz**



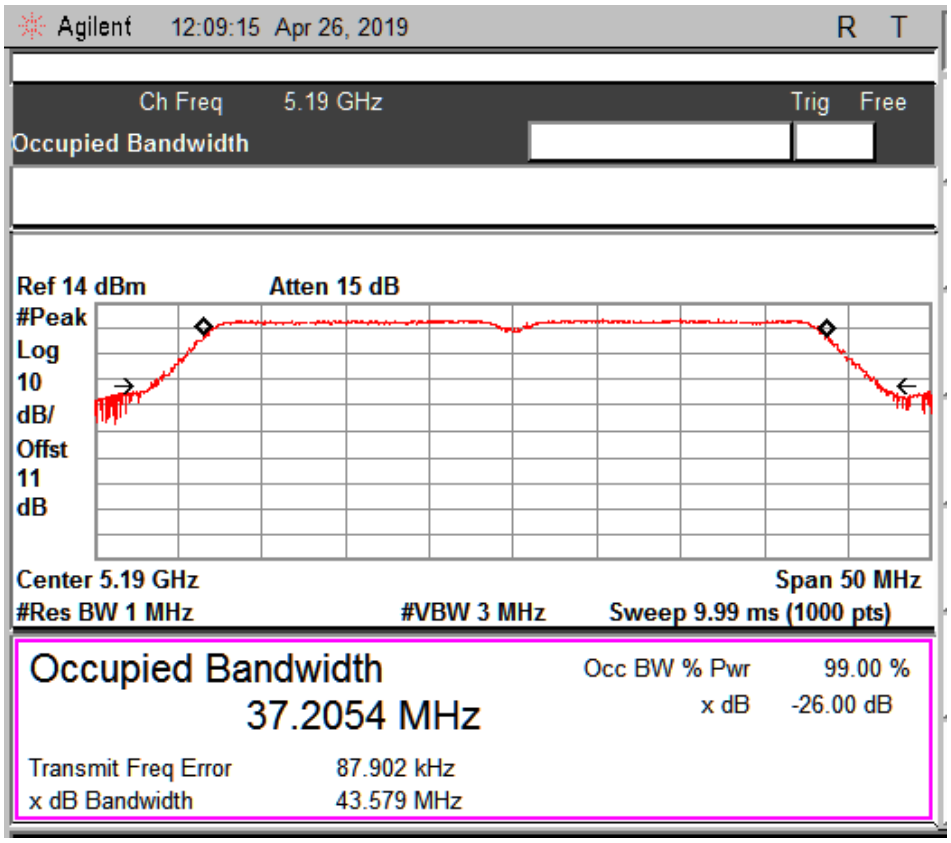
Data rate: MCS7 **Channel Frequency : 5.745 GHz**



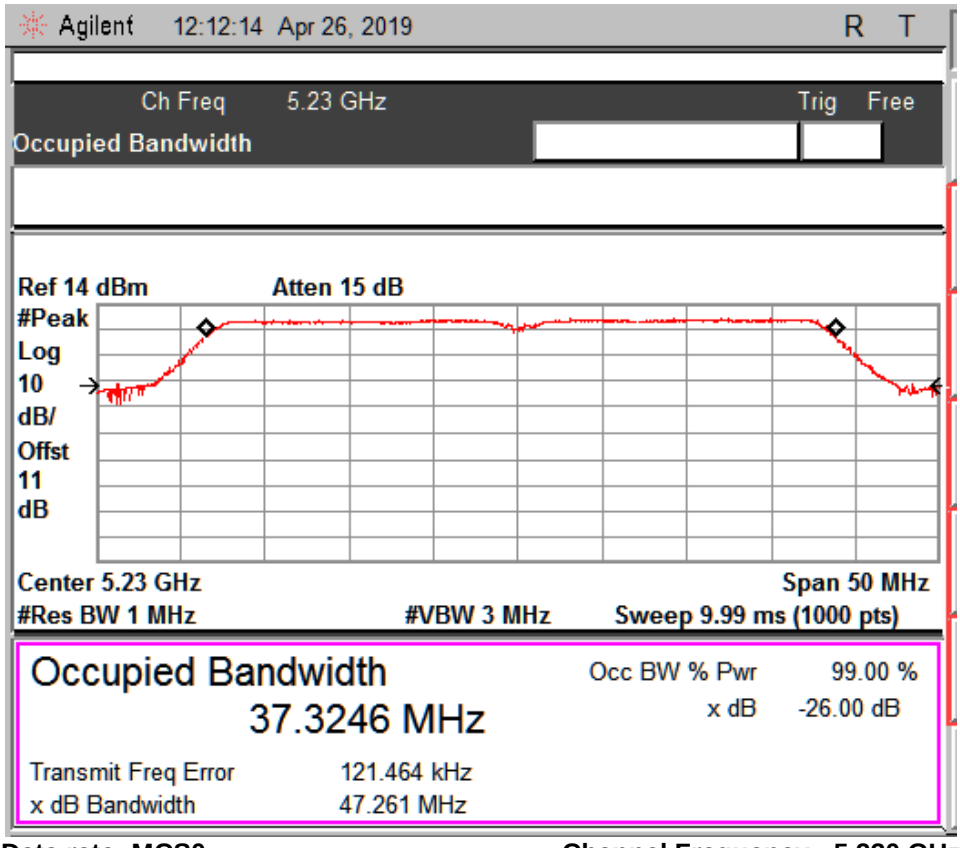
Data rate: MCS7 **Channel Frequency : 5.825 GHz**

Modulation: 802.11n mode SISO_VHT40

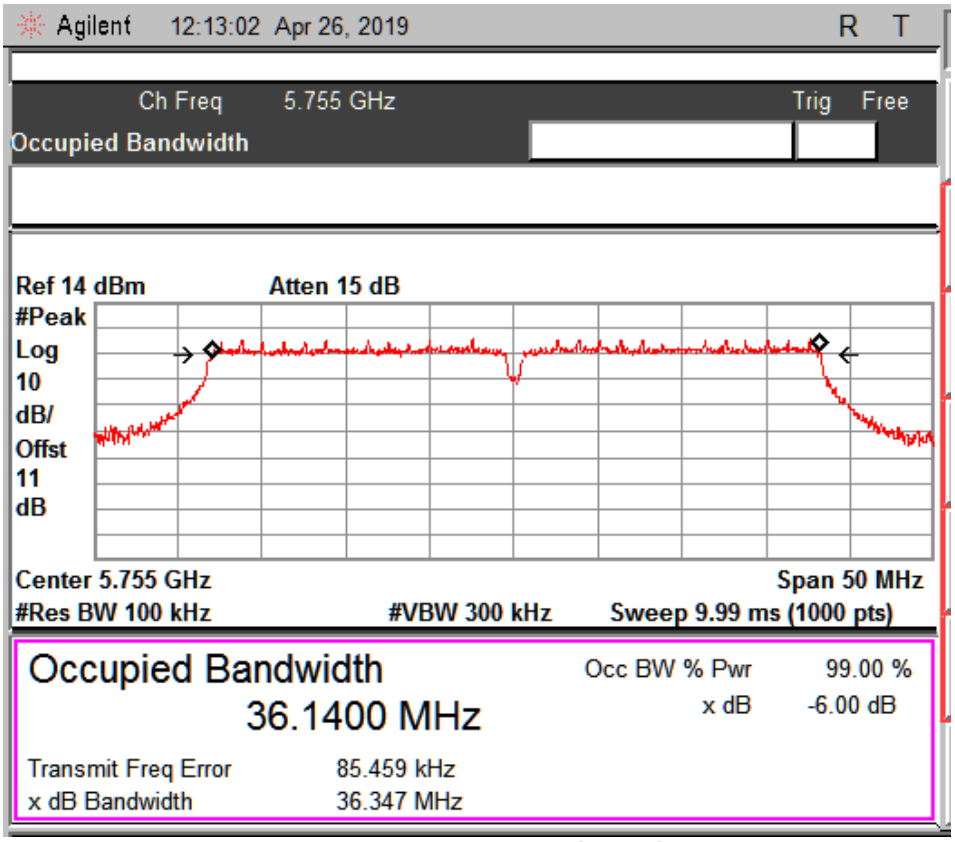
Data rate (Mbps)	Frequency (MHz)	Emission Bandwidth (MHz)	OBW (MHz)
MCS0	5190	43.57	37.20
	5230	47.26	37.32
	5755	36.34	36.14
	5795	36.33	36.16
MCS4	5190	45.97	37.20
	5230	46.27	37.38
	5755	36.43	36.16
	5795	36.45	36.16
MCS7	5190	45.90	37.15
	5230	46.08	37.29
	5755	36.48	36.19
	5795	36.47	36.19



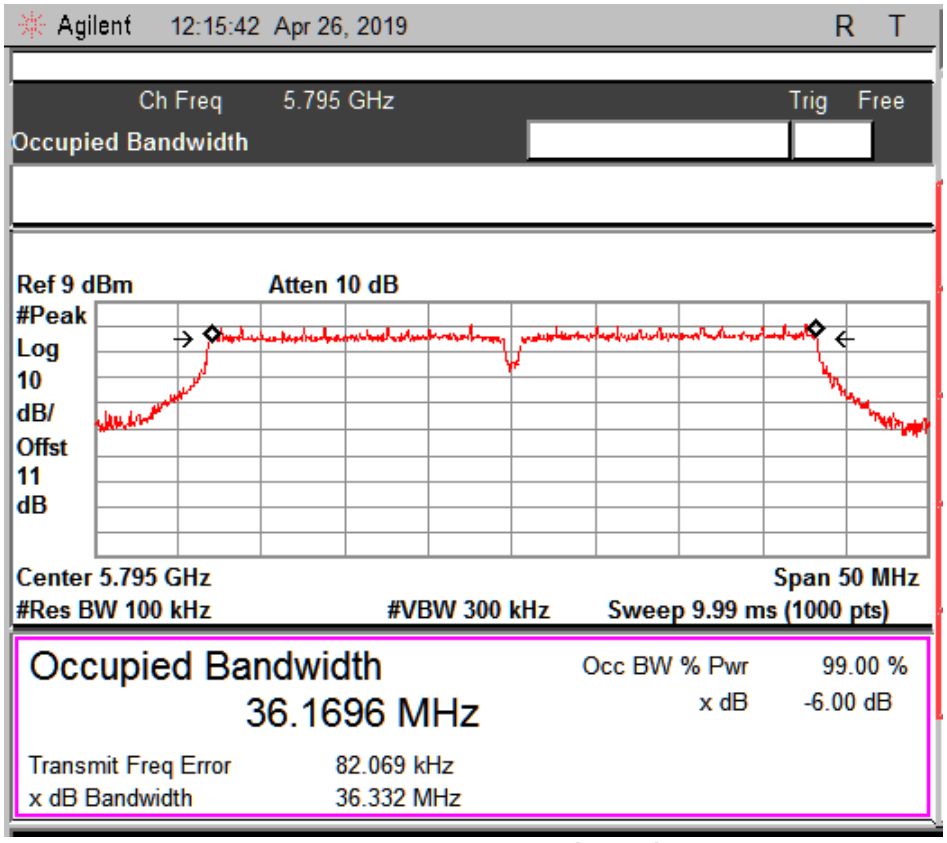
Data rate: MCS0 **Channel Frequency : 5.190 GHz**



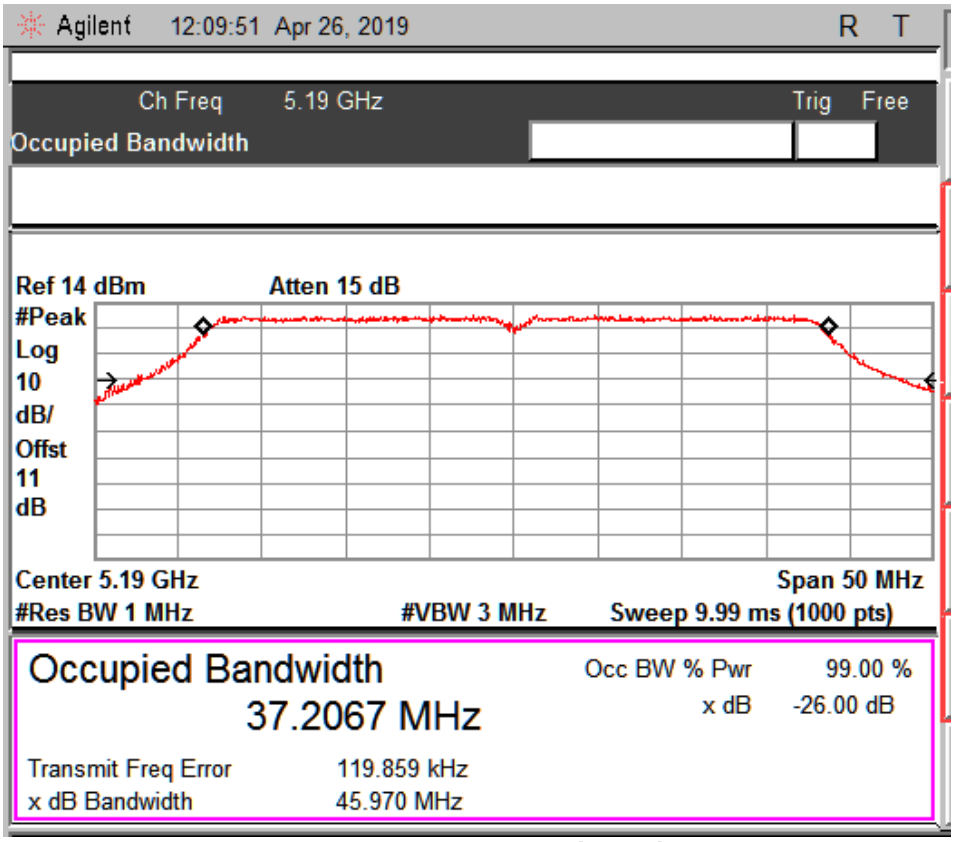
Data rate: MCS0 **Channel Frequency : 5.230 GHz**



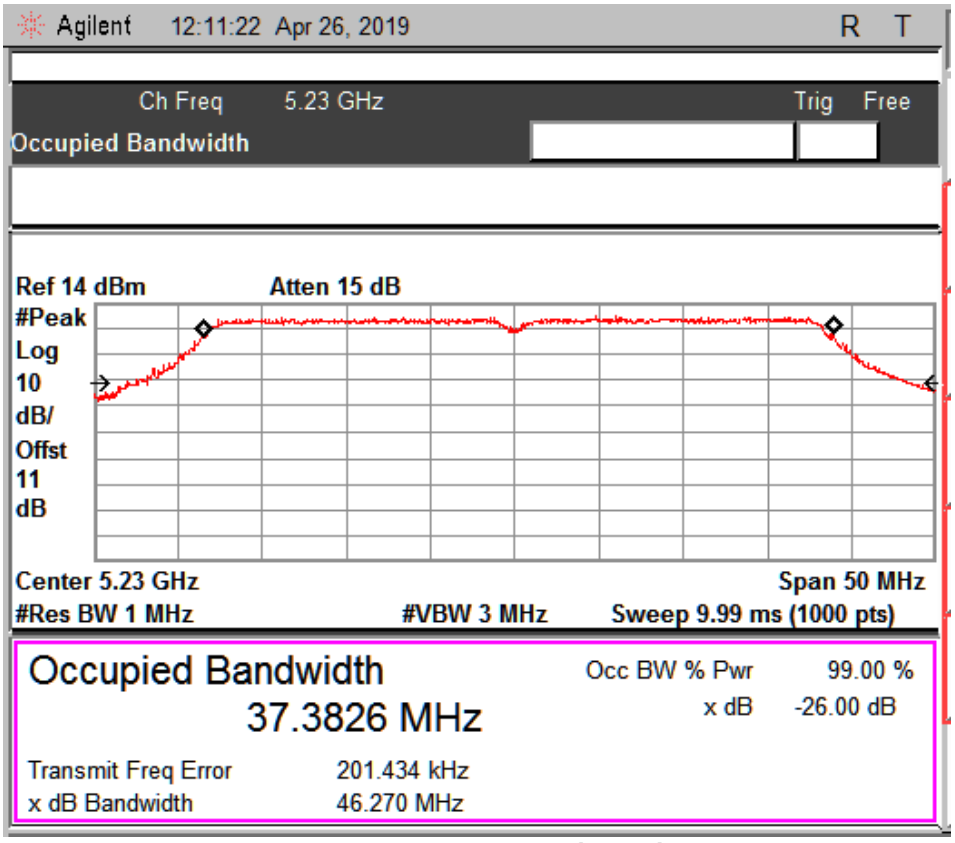
Data rate: MCS0 **Channel Frequency : 5.755 GHz**



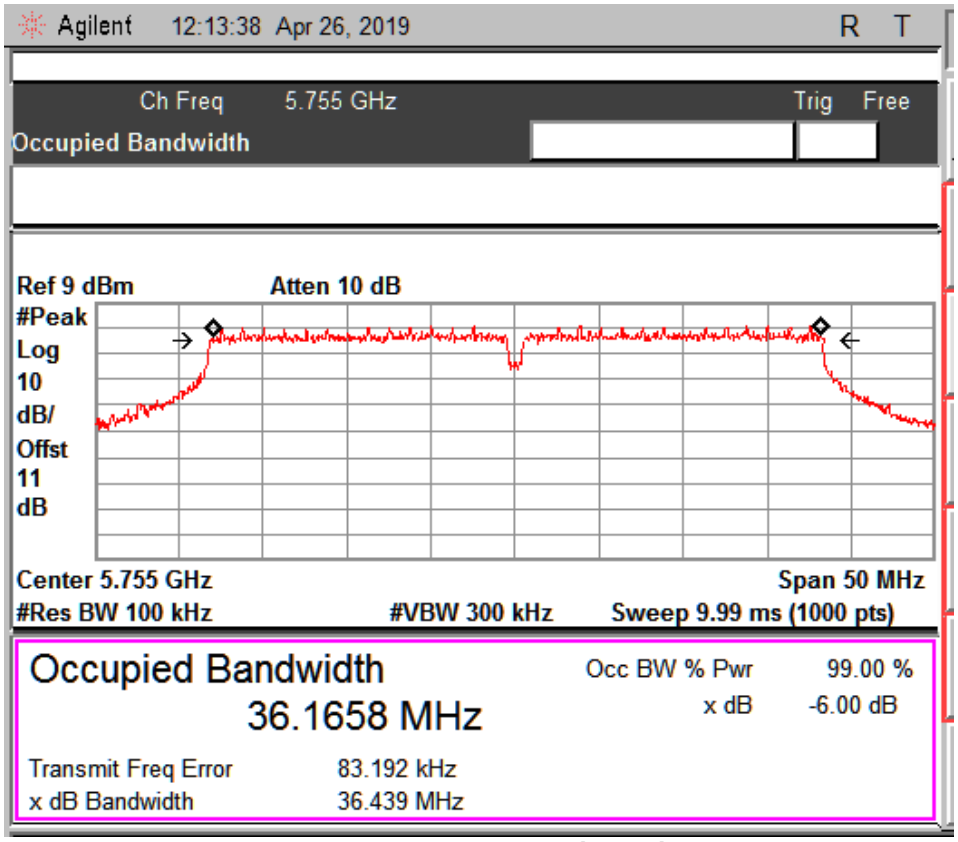
Data rate: MCS0 **Channel Frequency : 5.795 GHz**



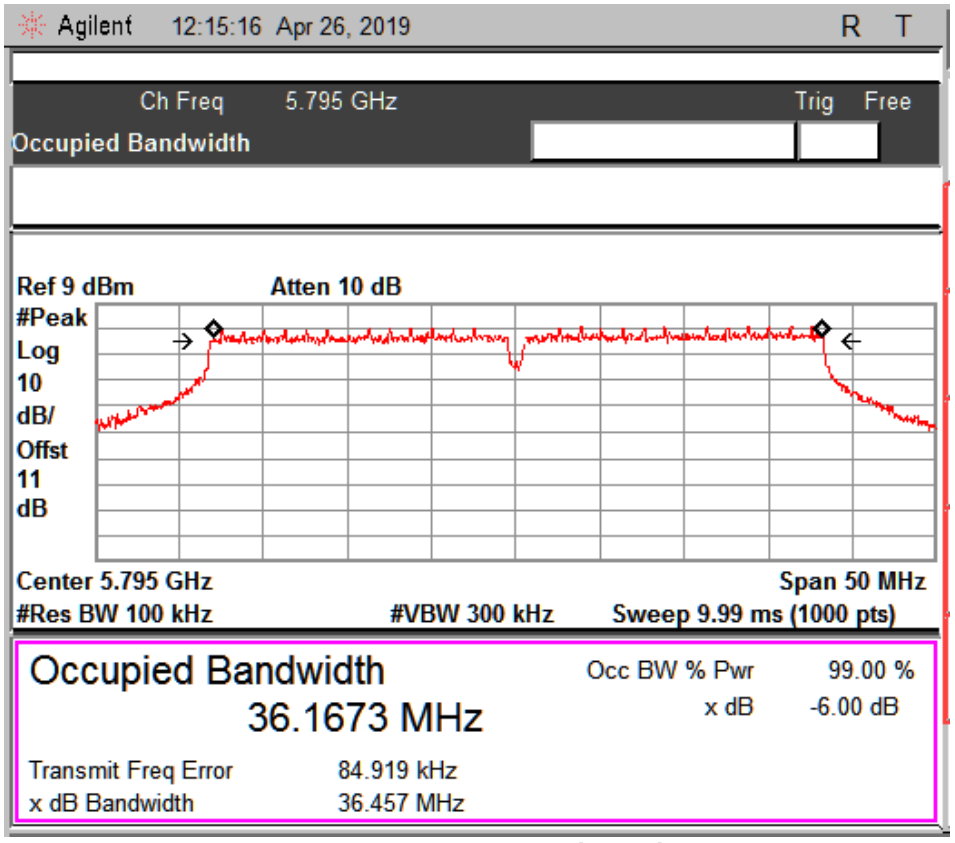
Data rate: MCS4 **Channel Frequency : 5.190 GHz**



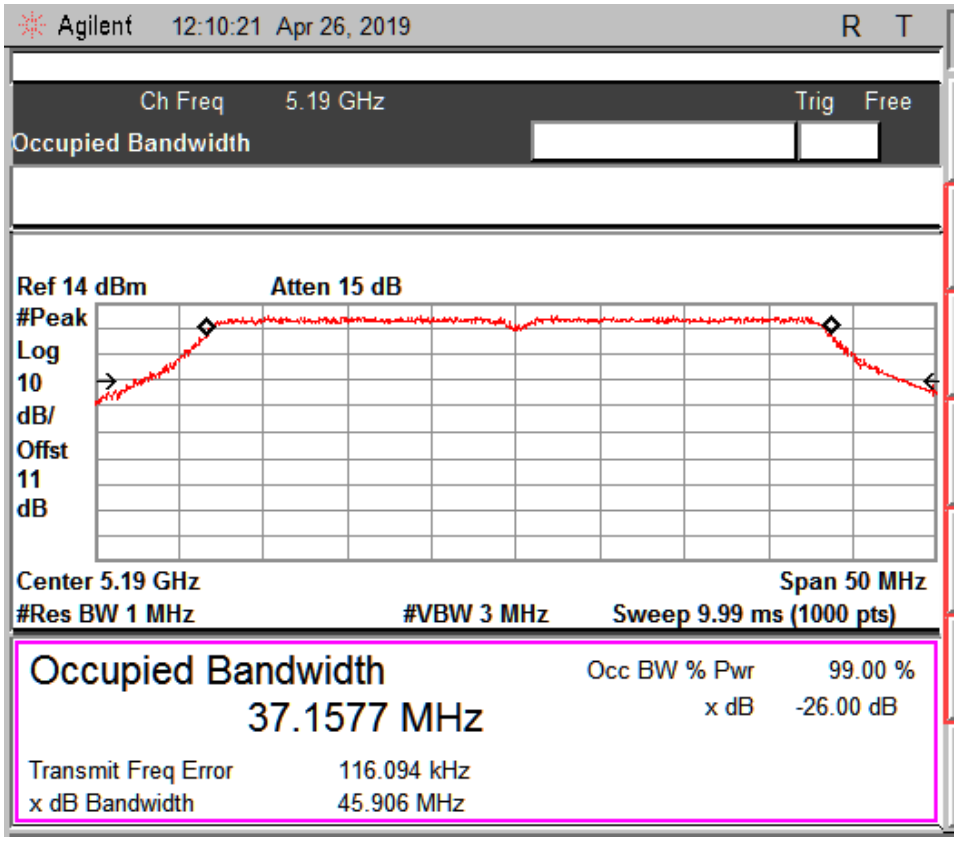
Data rate: MCS4 **Channel Frequency : 5.230 GHz**



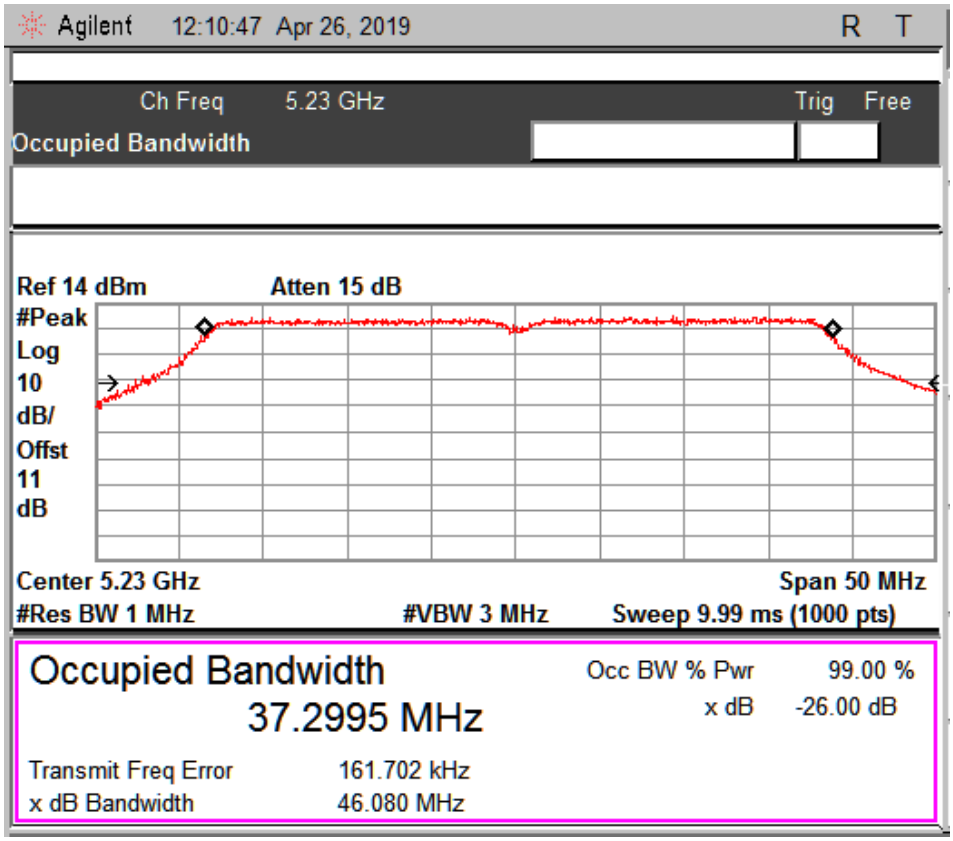
Data rate: MCS4 **Channel Frequency : 5.755 GHz**



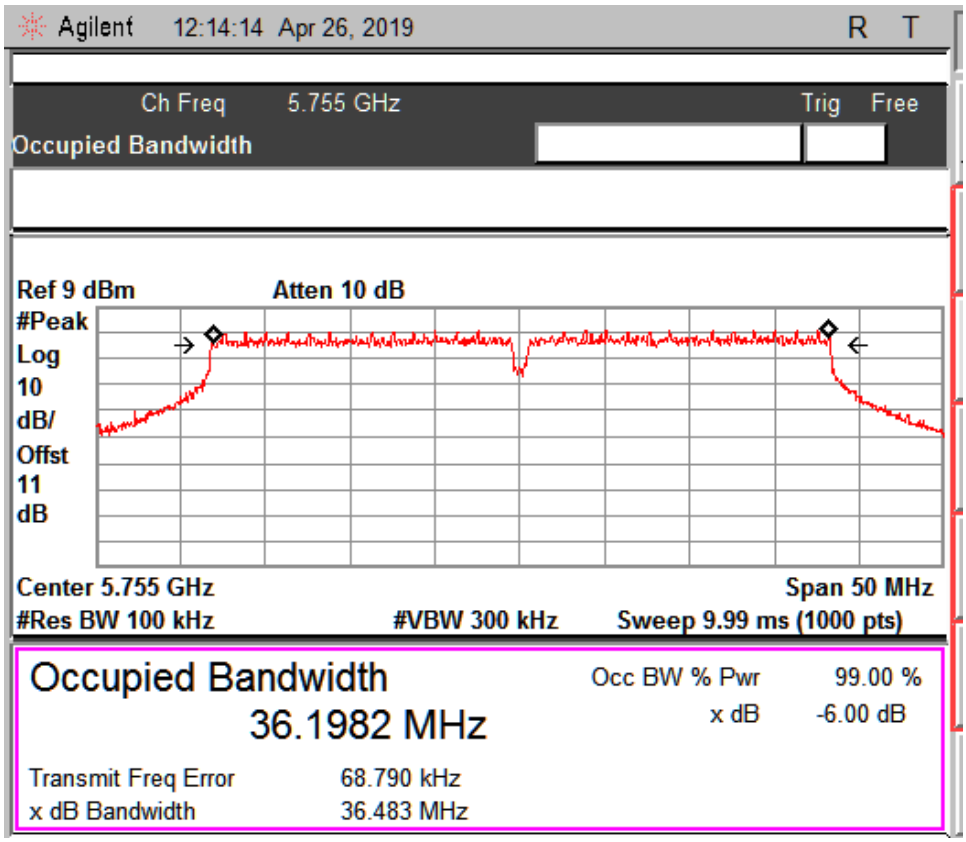
Data rate: MCS4 **Channel Frequency : 5.795 GHz**



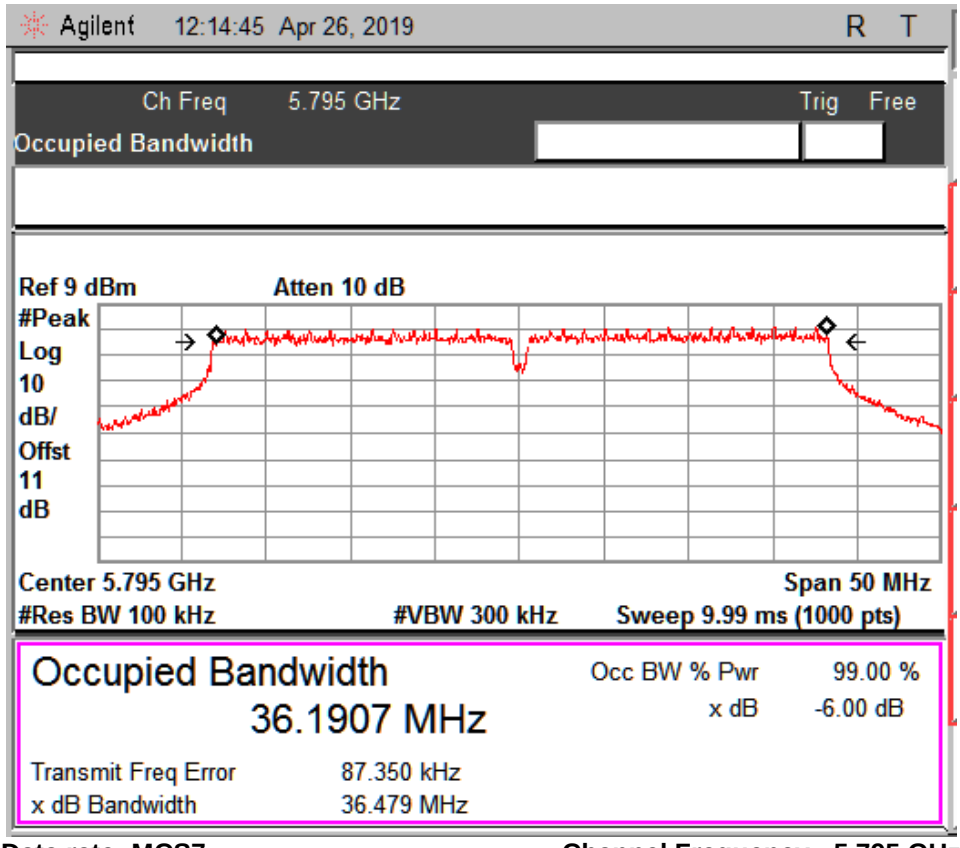
Data rate: MCS7 **Channel Frequency : 5.190 GHz**



Data rate: MCS7 **Channel Frequency : 5.230 GHz**



Data rate: MCS7 **Channel Frequency : 5.755 GHz**

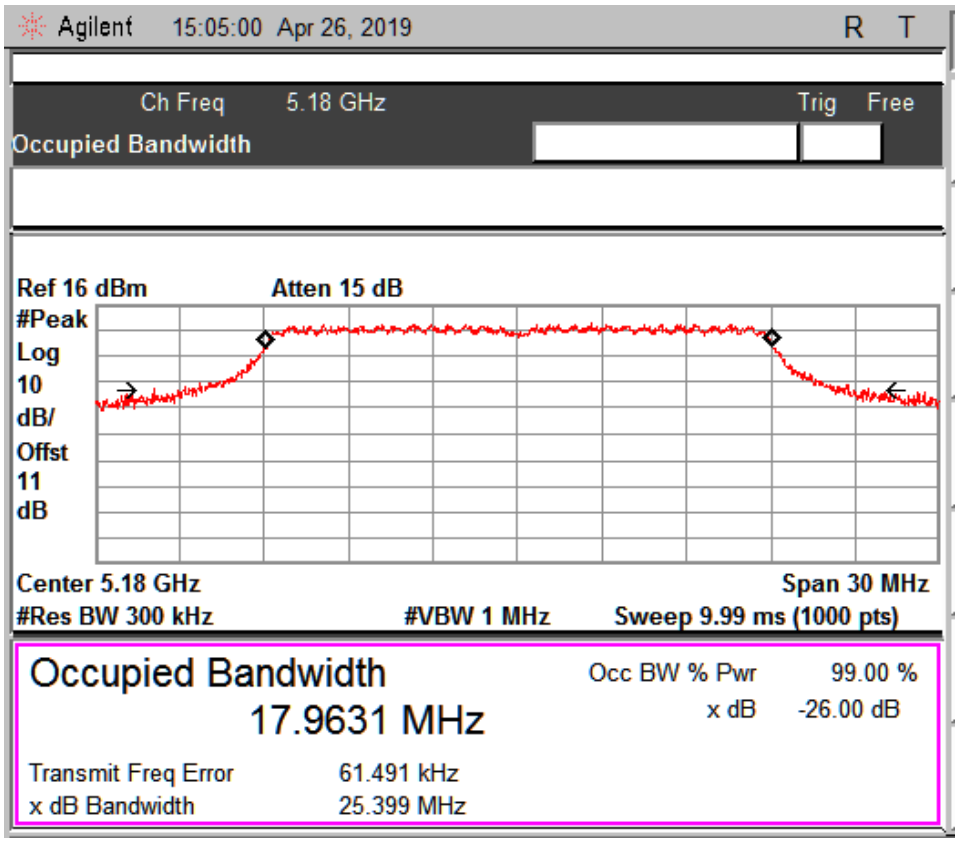


Data rate: MCS7 **Channel Frequency : 5.795 GHz**

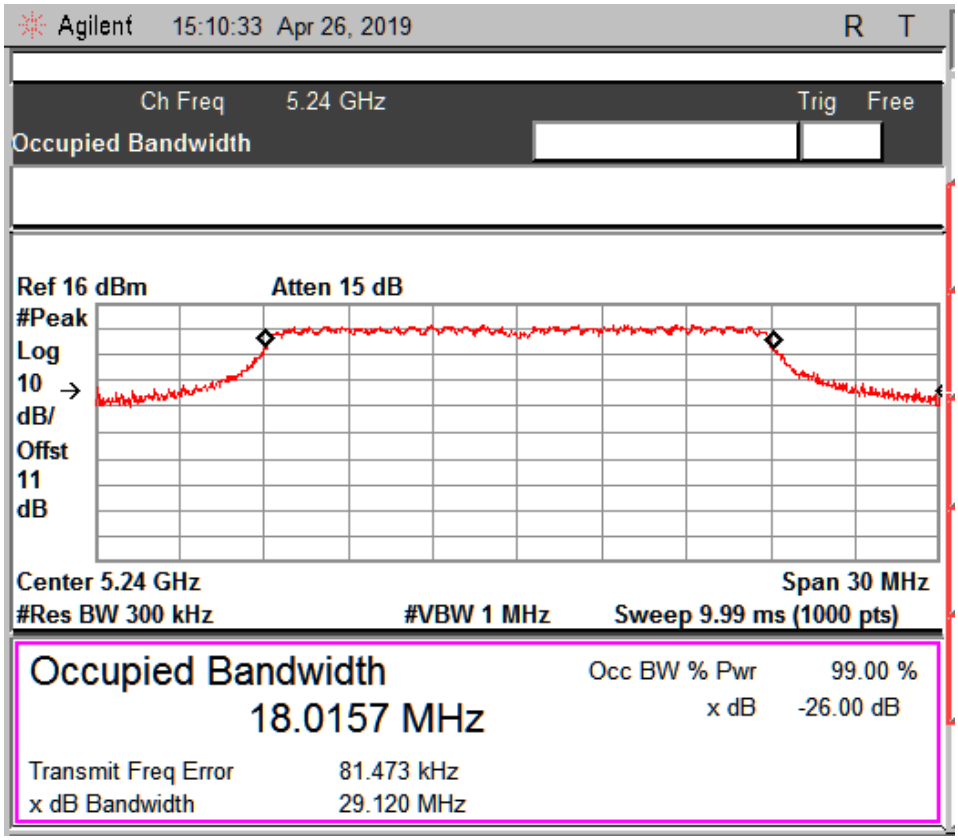
Modulation: 802.11n mode MIMO_HT20

Note: Test was performed on both the transmit chains and worst case results were from chain 2 and the respective results has been reported.

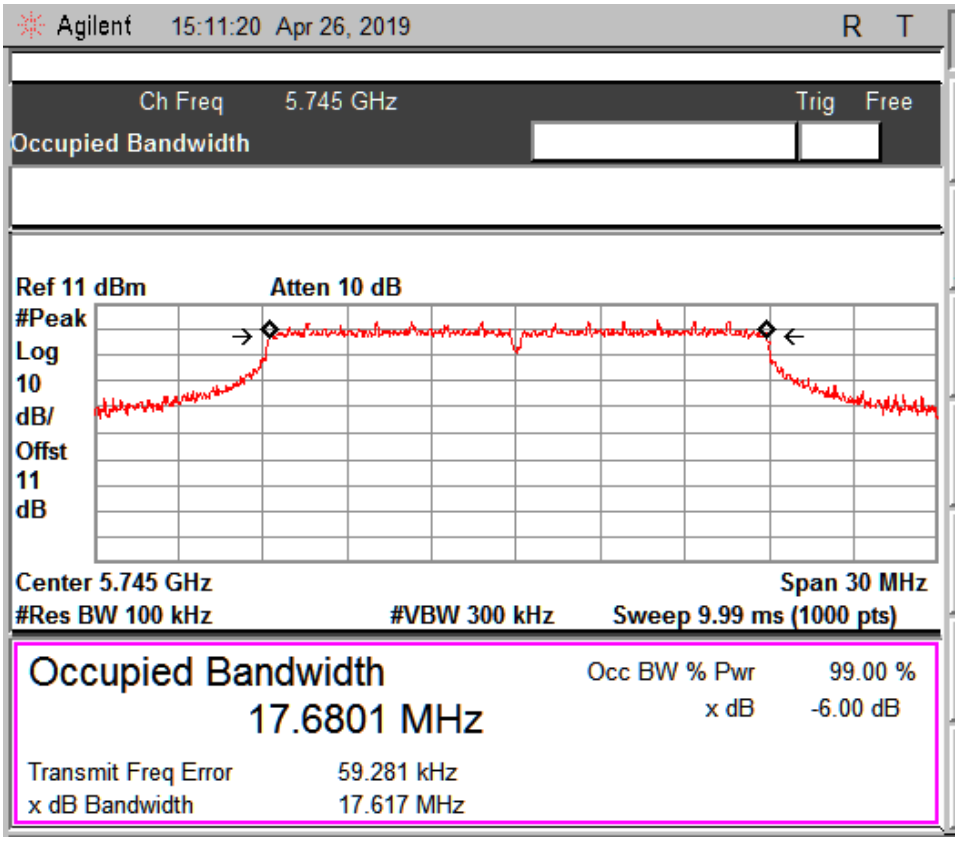
Data rate (Mbps)	Frequency (MHz)	Emission Bandwidth (MHz)	OBW (MHz)
MCS8	5180	25.99	17.96
	5240	29.12	18.01
	5745	17.61	17.68
	5825	17.61	17.67
MCS11	5180	26.21	18.02
	5240	24.48	18.04
	5745	17.65	17.64
	5825	17.73	17.66
MCS15	5180	23.59	18.01
	5240	24	18.08
	5745	17.66	17.65
	5825	17.71	17.65



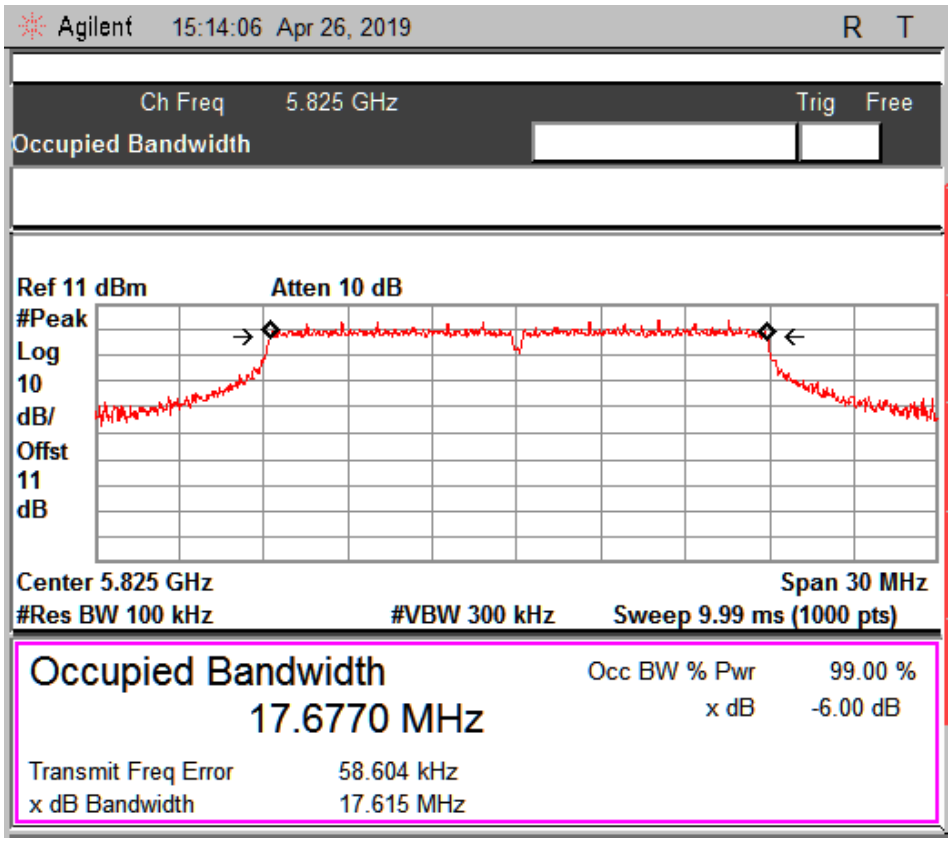
Data rate: MCS8 **Channel Frequency : 5.180 GHz**



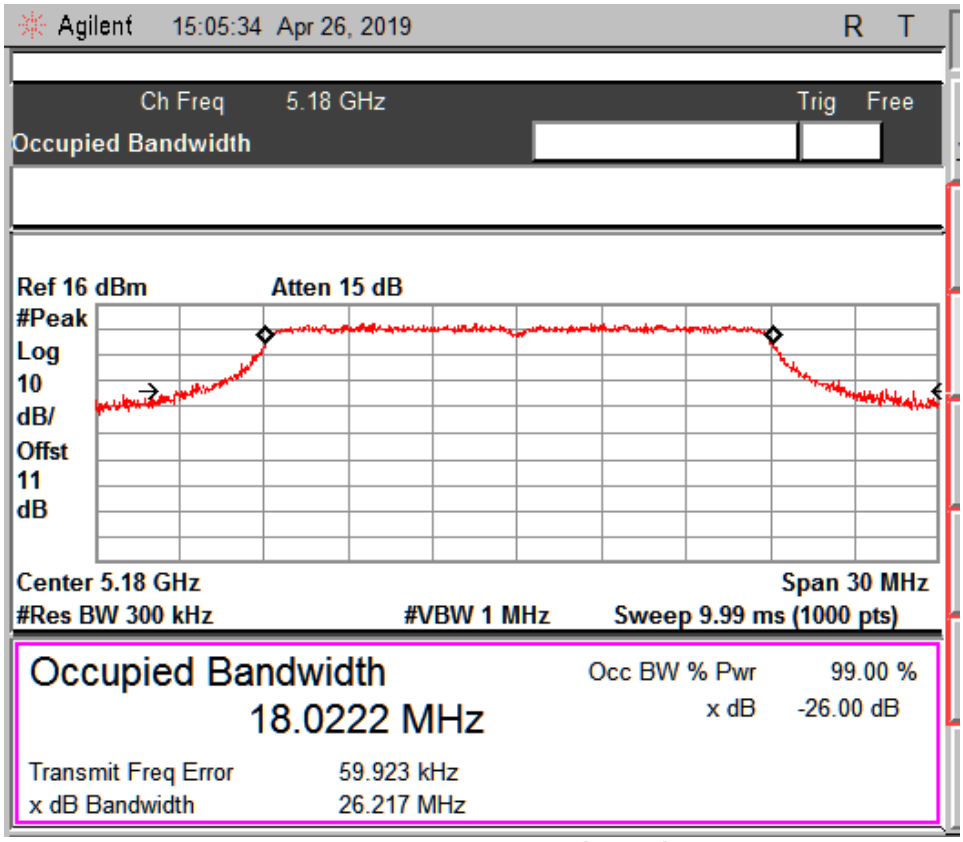
Data rate: MCS8 **Channel Frequency : 5.240 GHz**



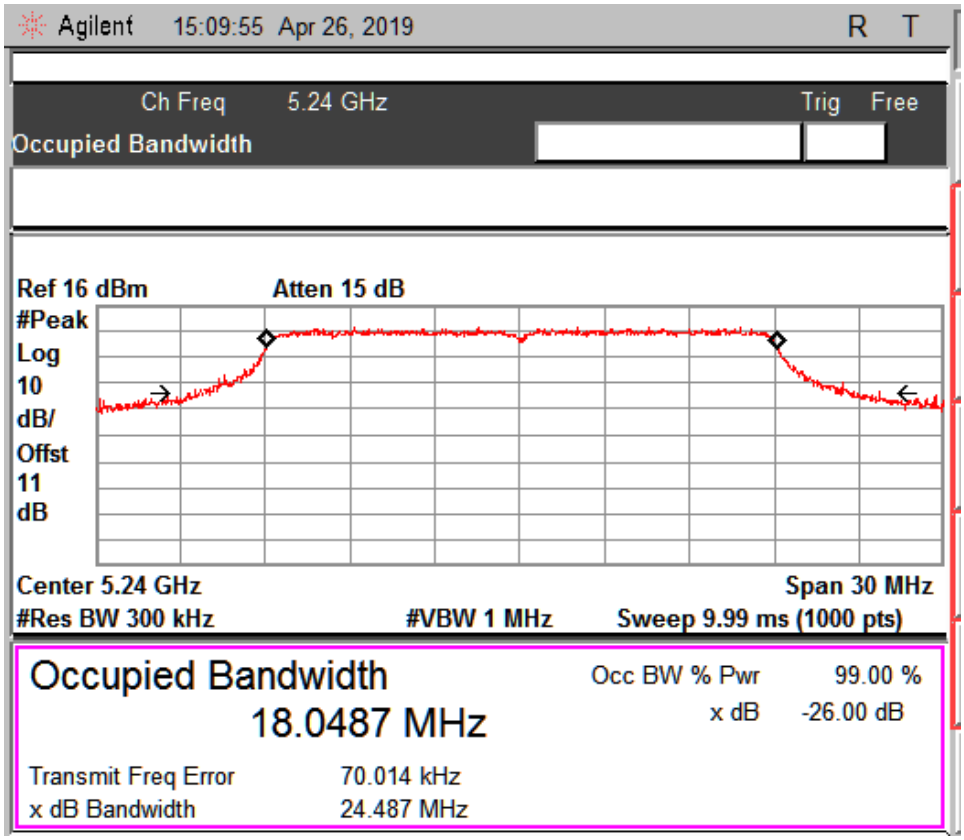
Data rate: MCS8 **Channel Frequency : 5.745 GHz**



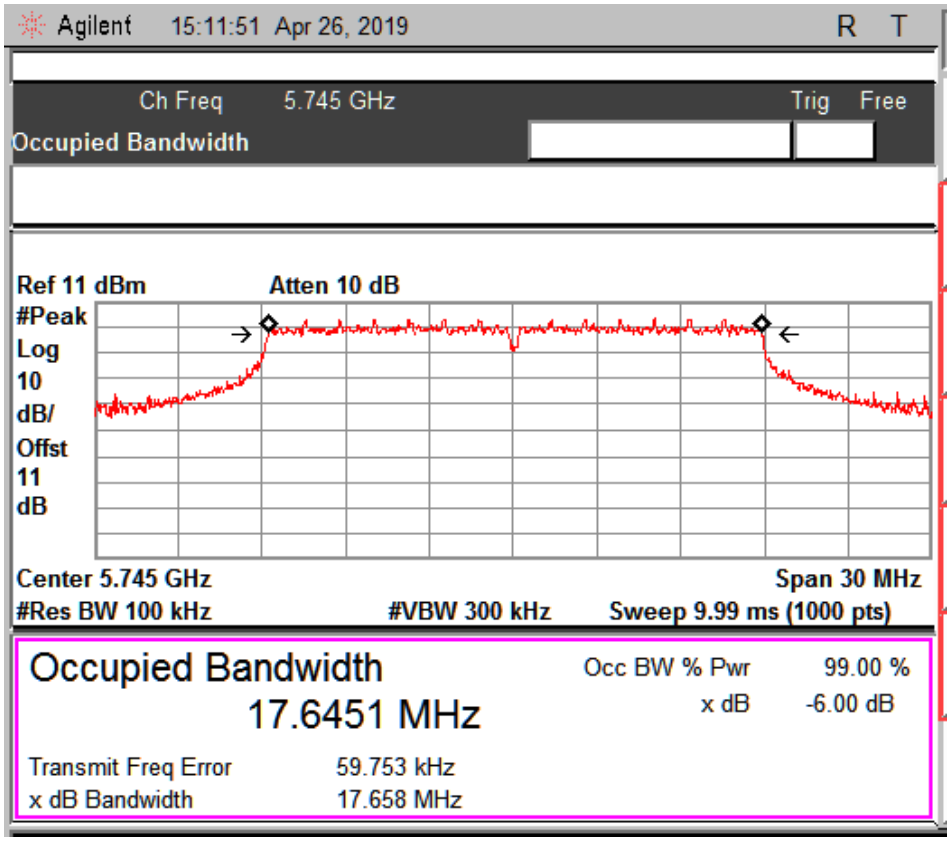
Data rate: MCS8 **Channel Frequency : 5.825 GHz**



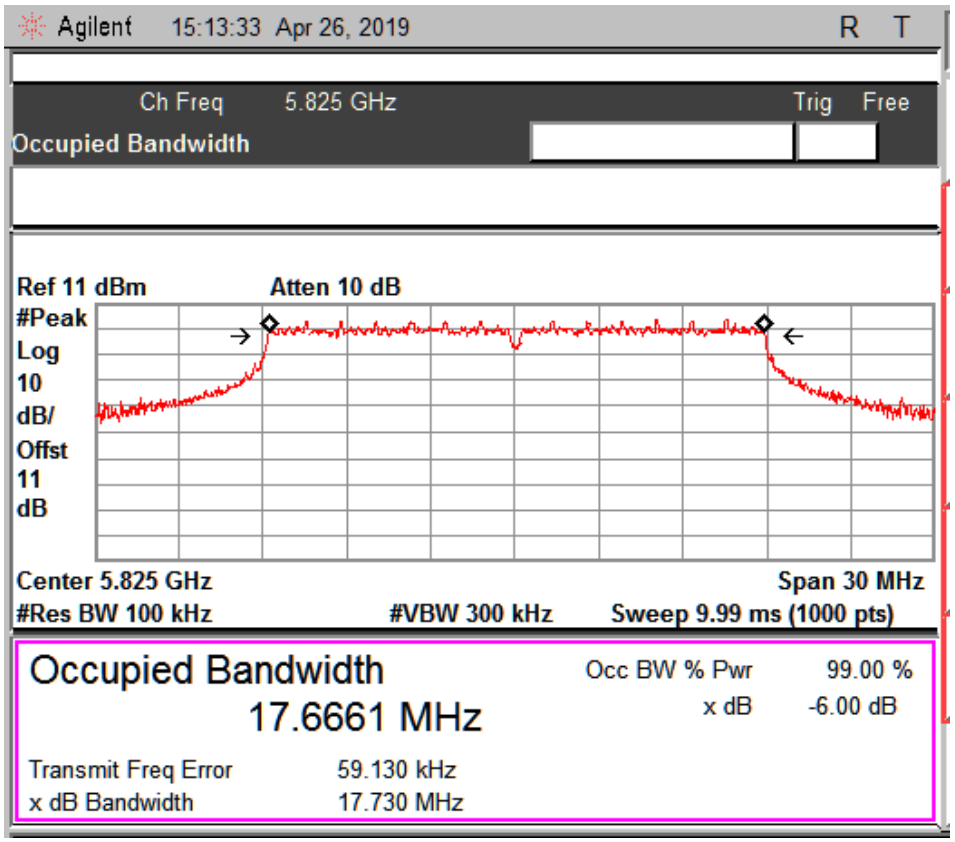
Data rate: MCS11 **Channel Frequency : 5.180 GHz**



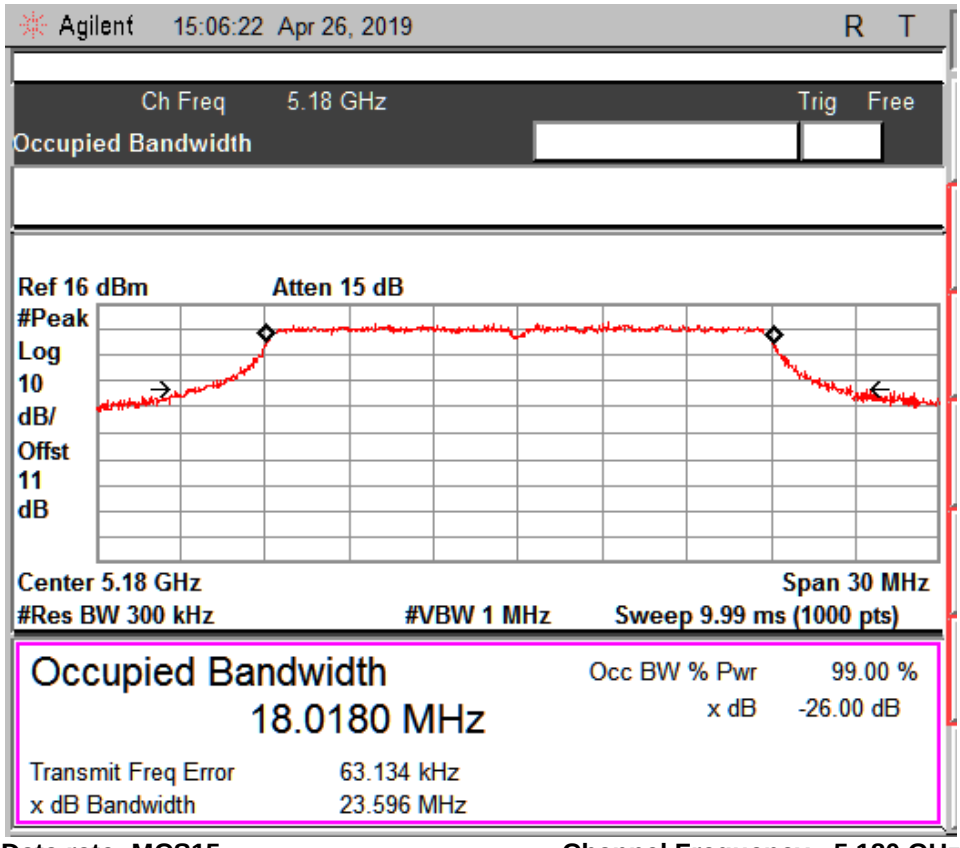
Data rate: MCS11 **Channel Frequency : 5.240 GHz**



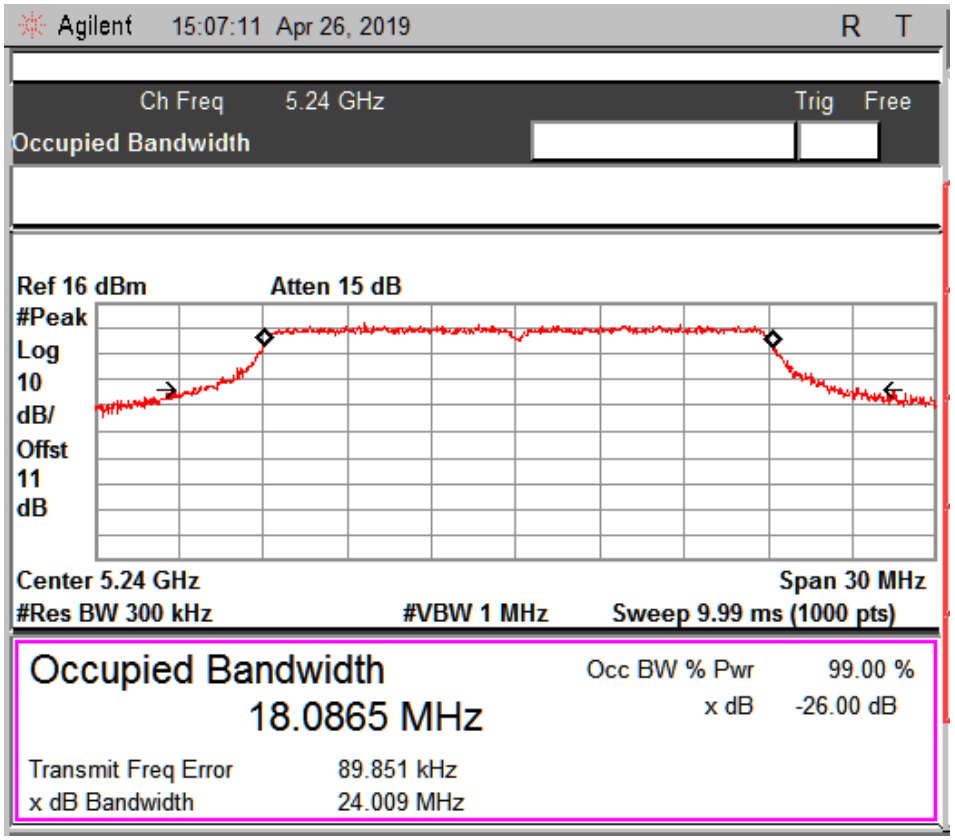
Data rate: MCS11 **Channel Frequency : 5.745 GHz**



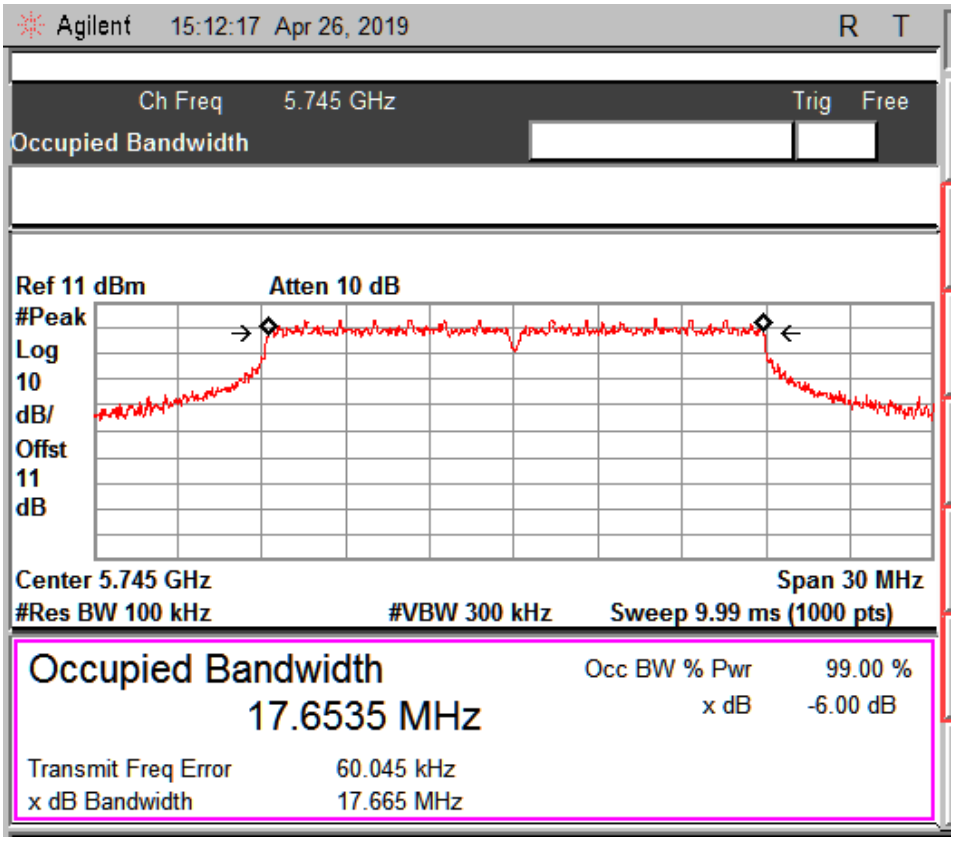
Data rate: MCS11 **Channel Frequency : 5.825 GHz**



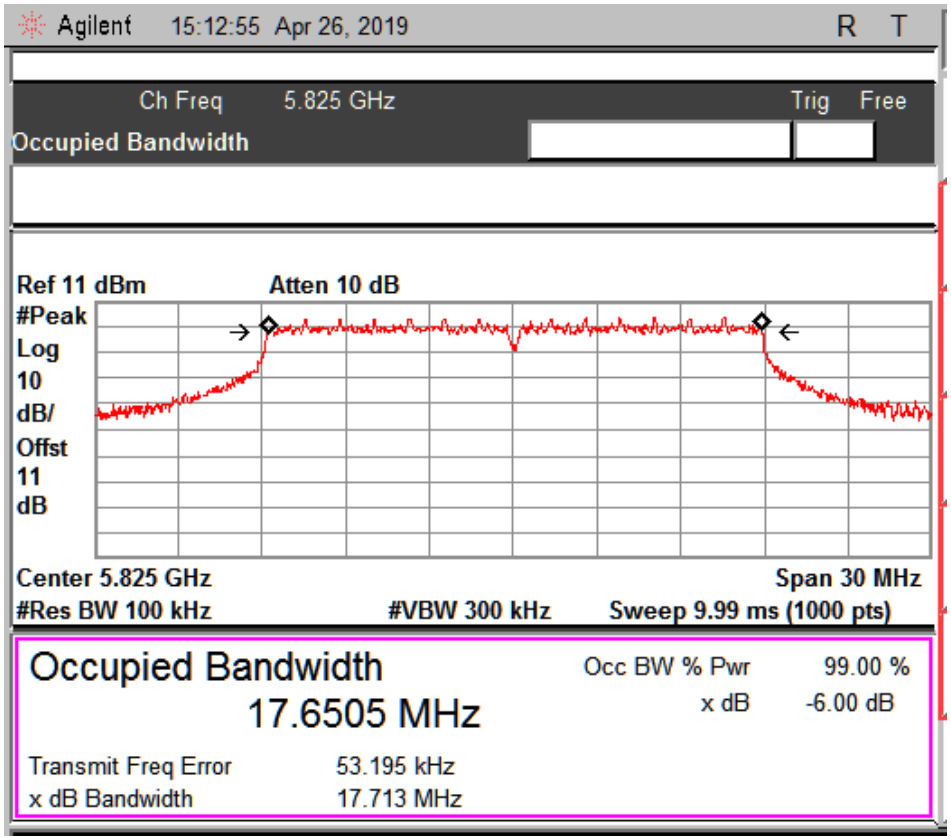
Data rate: MCS15 **Channel Frequency : 5.180 GHz**



Data rate: MCS15 **Channel Frequency : 5.240 GHz**



Data rate: MCS15 **Channel Frequency : 5.745 GHz**

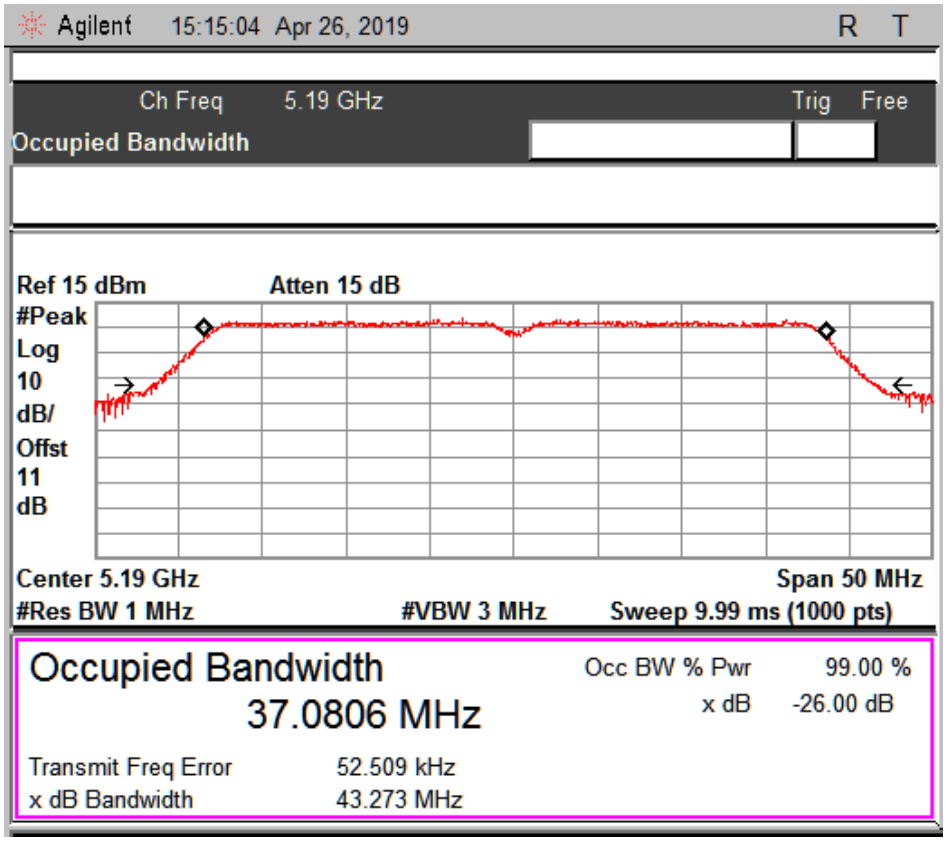


Data rate: MCS15 **Channel Frequency : 5.825 GHz**

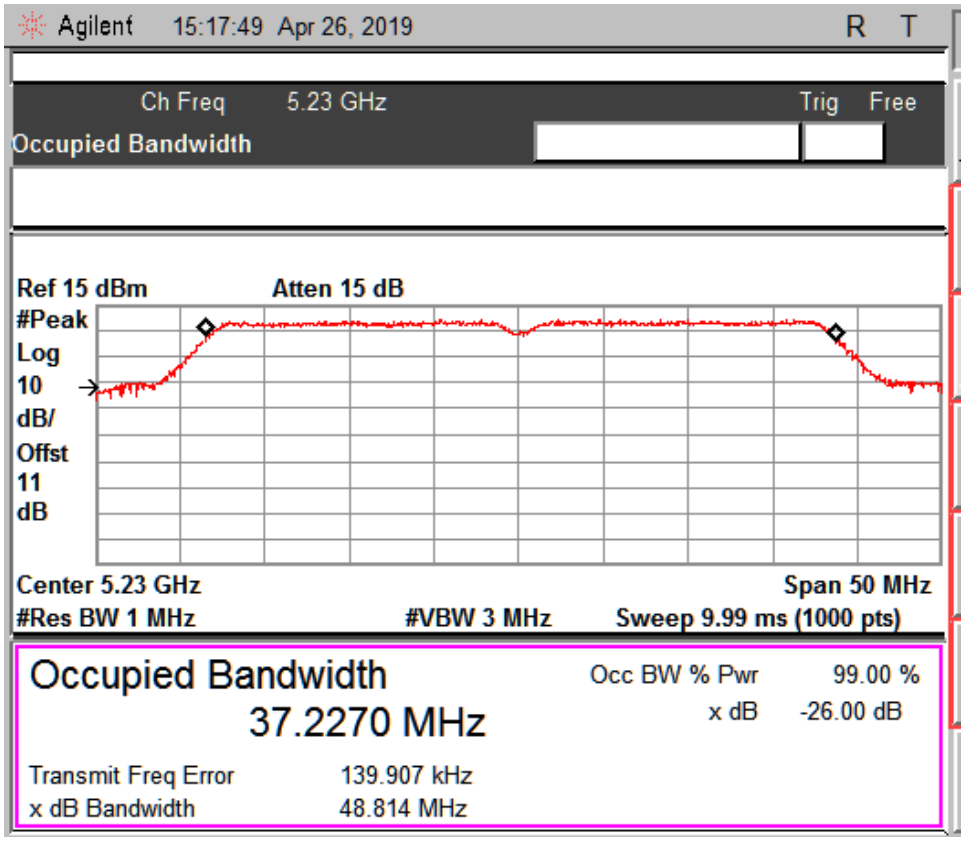
Modulation: 802.11n mode MIMO_VHT40

Note: Test was performed on both the transmit chains and worst case results were from chain 2 and the respective results has been reported.

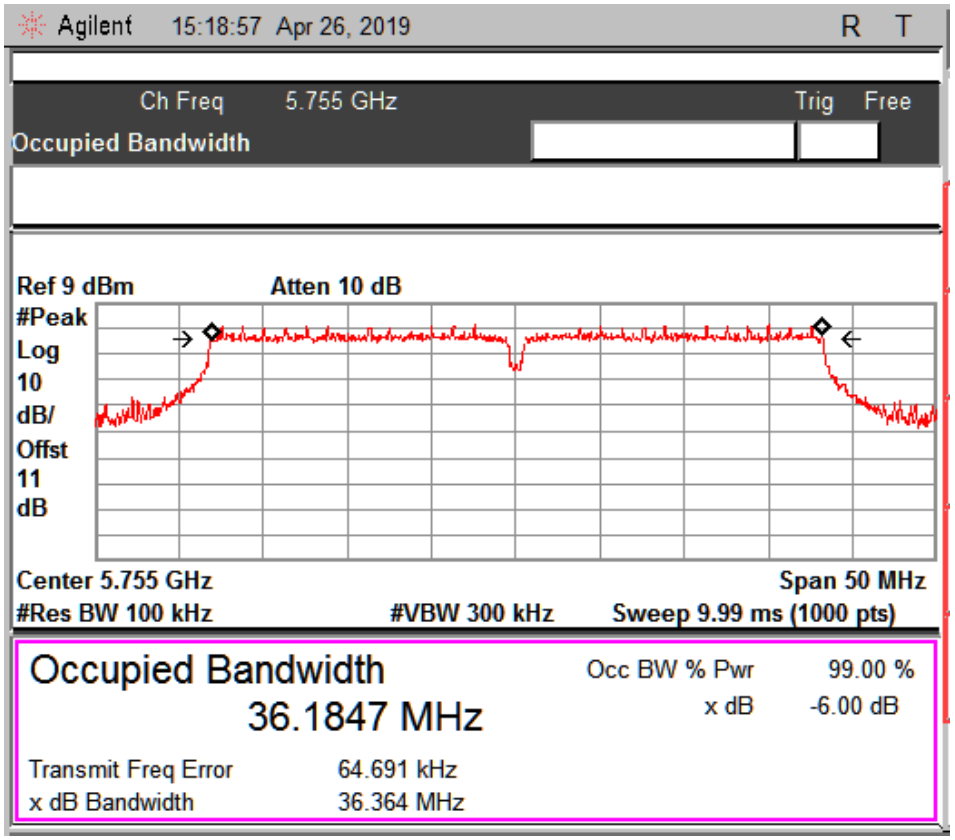
Data rate (Mbps)	Frequency (MHz)	Emission Bandwidth (MHz)	OBW (MHz)
MCS8	5190	43.27	37.08
	5230	48.81	37.22
	5755	36.36	36.18
	5795	36.37	36.18
MCS11	5190	46.30	37.40
	5230	49.32	37.42
	5755	36.40	36.18
	5795	36.37	36.17
MCS15	5190	45.78	37.14
	5230	49.00	37.35
	5755	36.39	36.17
	5795	36.46	36.18



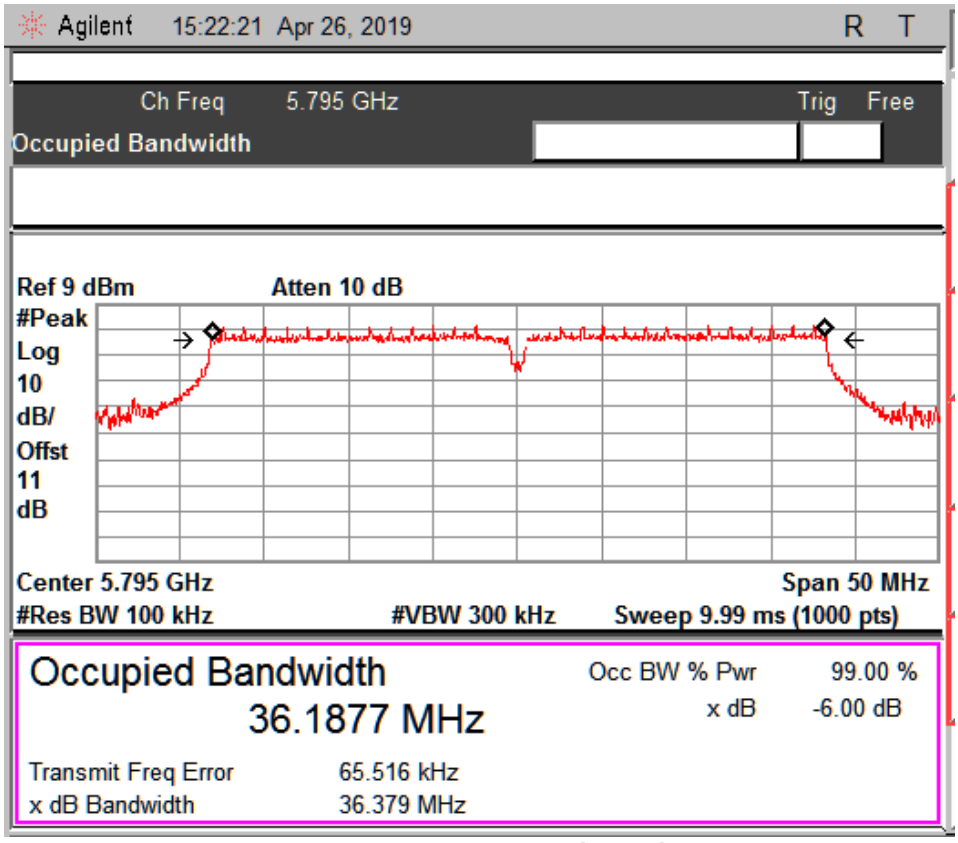
Data rate: MCS8 **Channel Frequency : 5.190 GHz**



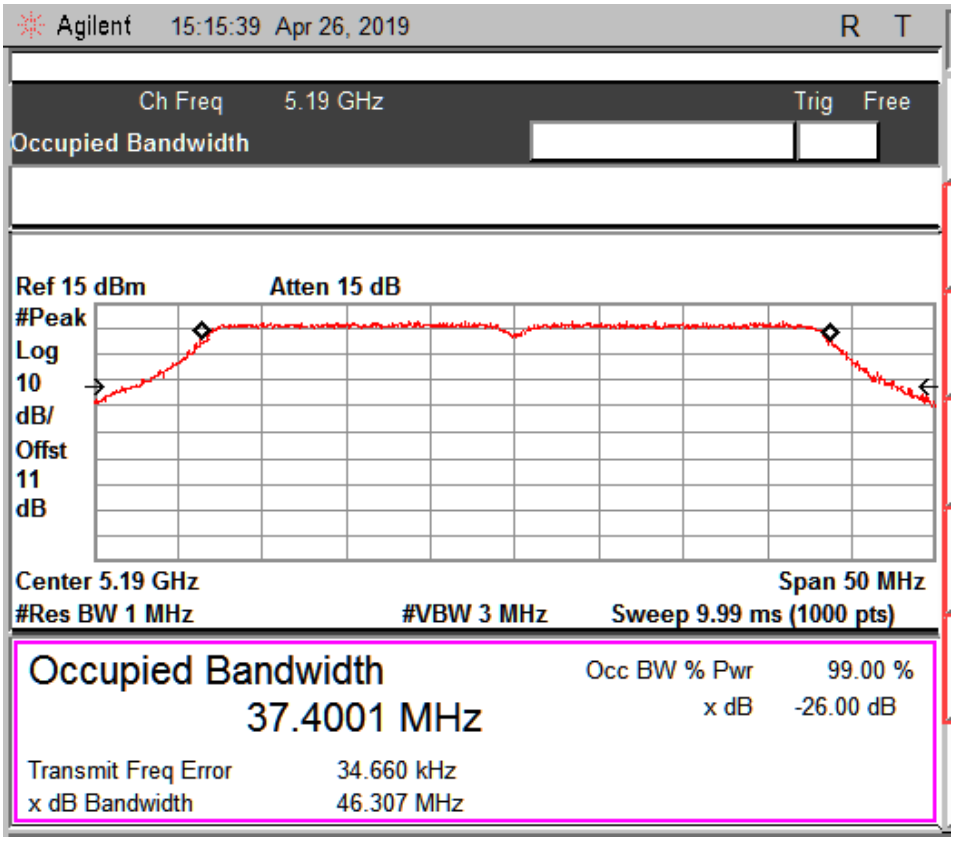
Data rate: MCS8 **Channel Frequency : 5.230 GHz**



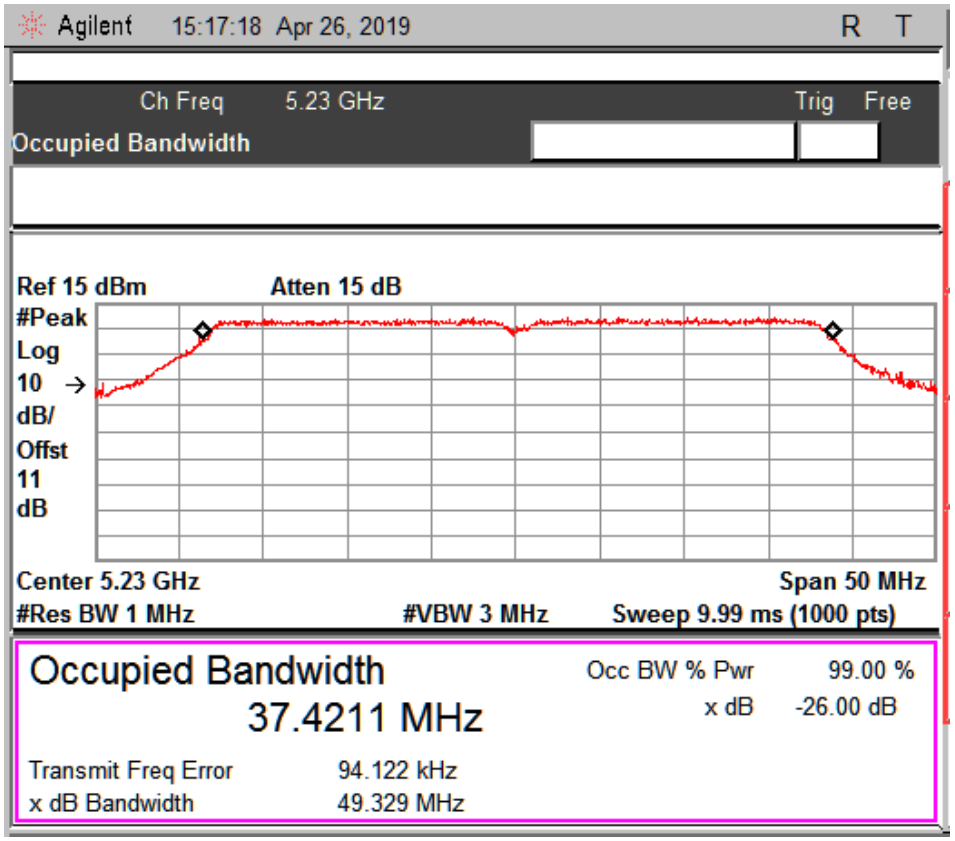
Data rate: MCS8 **Channel Frequency : 5.755 GHz**



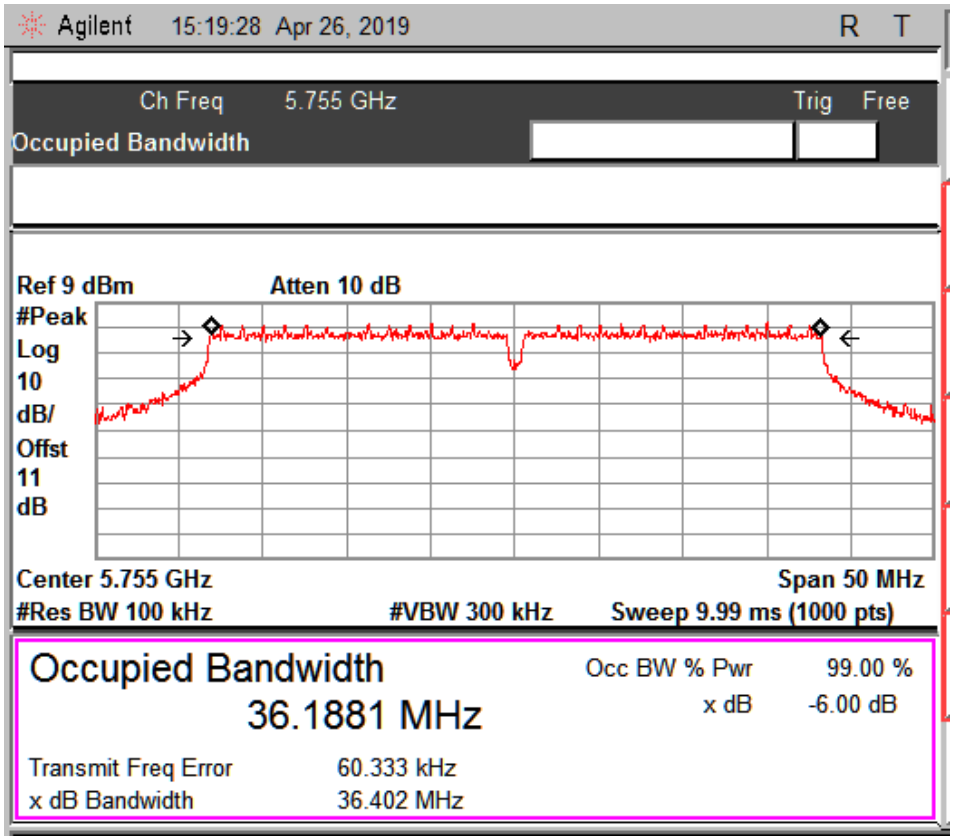
Data rate: MCS8 **Channel Frequency : 5.795 GHz**



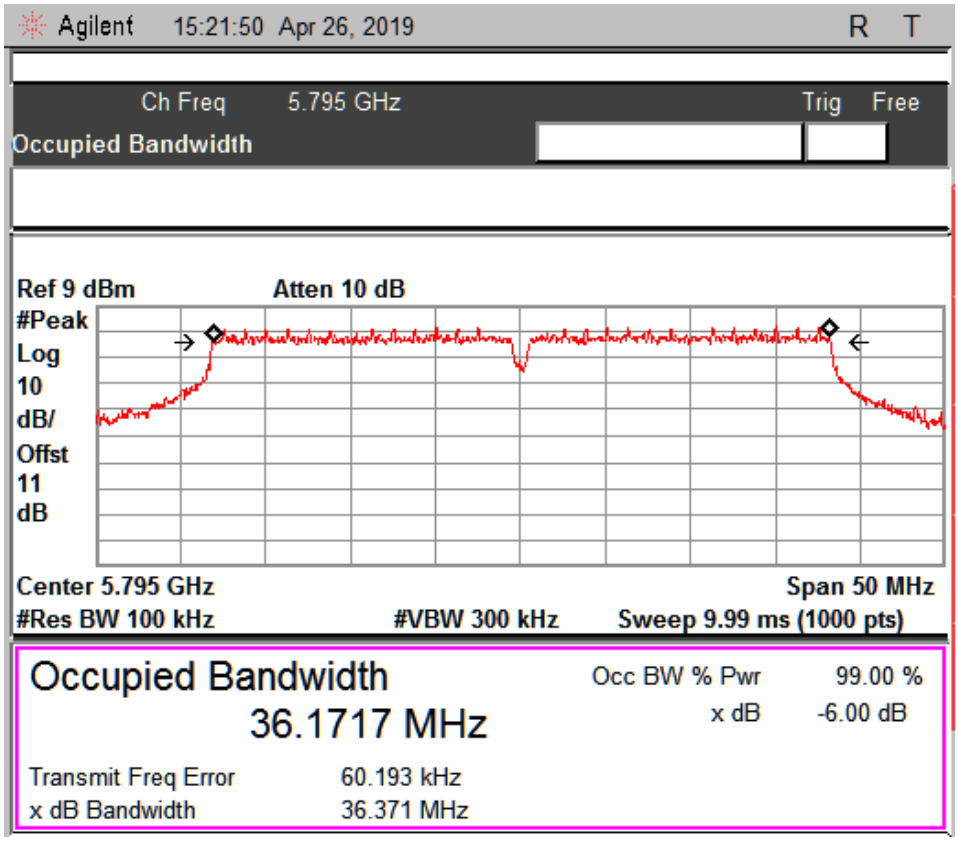
Data rate: MCS11 **Channel Frequency : 5.190 GHz**



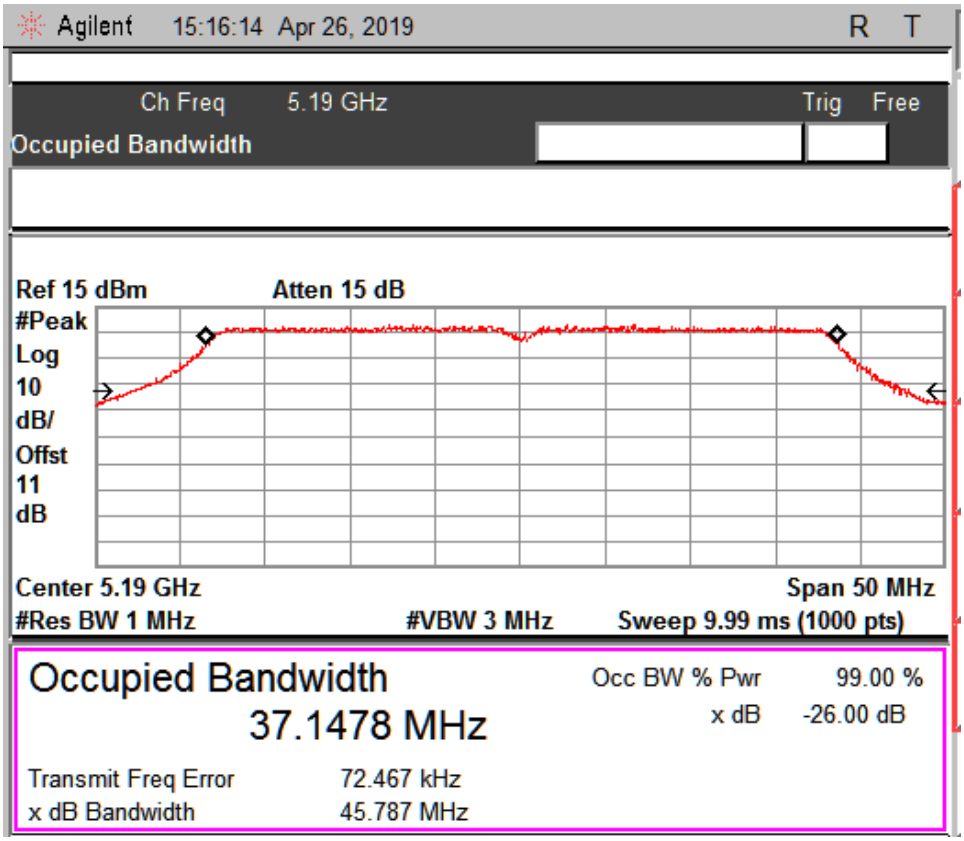
Data rate: MCS11 **Channel Frequency : 5.230 GHz**



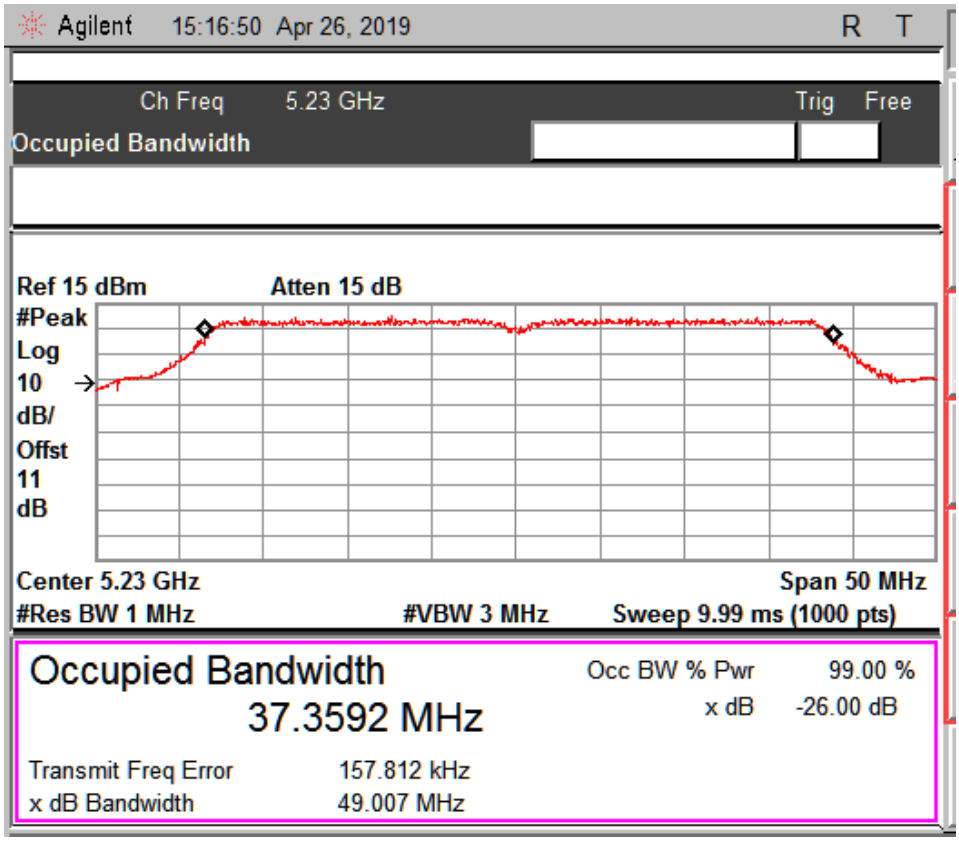
Data rate: MCS11 **Channel Frequency : 5.755 GHz**



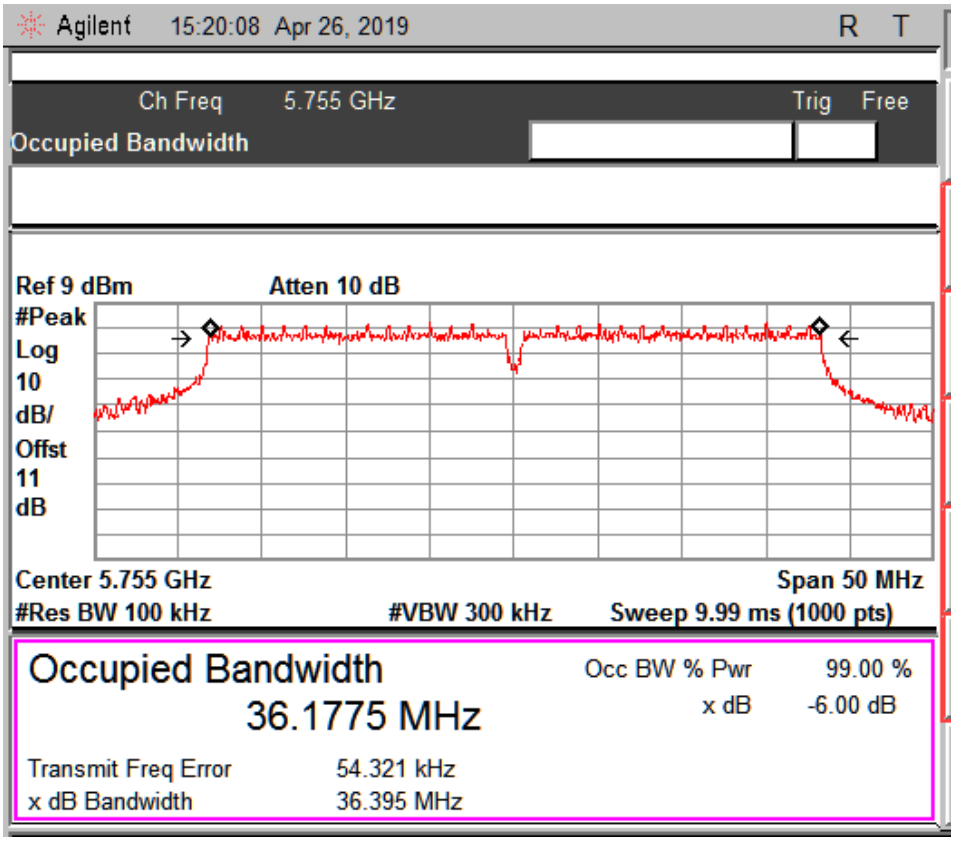
Data rate: MCS11 **Channel Frequency : 5.795 GHz**



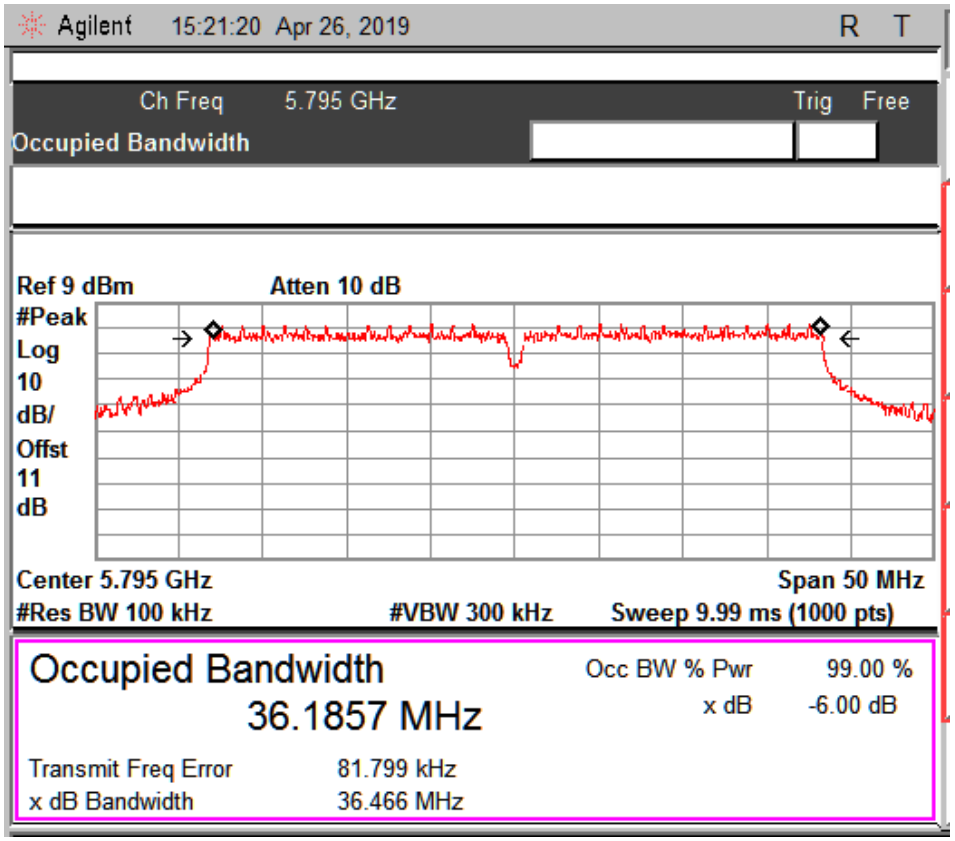
Data rate: MCS15 **Channel Frequency : 5.190 GHz**



Data rate: MCS15 **Channel Frequency : 5.230 GHz**



Data rate: MCS15 **Channel Frequency : 5.755 GHz**



Data rate: MCS15 **Channel Frequency : 5.795 GHz**