Prüfbericht - Nr.: *Test Report No.:*	**19660222 001**	**Seite 1 von 145** *Page 1 of 145*
Auftraggeber: *Client:*	**Camera Vision Solutions, Inc.** **P.O Box 80249** **Austin, TX 78708** **United States**	
Gegenstand der Prüfung: *Test item:*	**On-board Video Vehicle Recorder**	
Bezeichnung: *Identification:*	**SentinelHDx**	**Serien-Nr.:** *Serial No.* **Engineering Sample**
Wareneingangs-Nr.: *Receipt No.:*	**1803117312**	**Eingangsdatum:** *Date of receipt:* **13.01.2016**
Prüfort: *Testing location:*	**Refer Page 4 of 145 for test facilities**	
Prüfgrundlage: *Test specification:*	**FCC Part 15, Subpart E** **ANSI C63.10-2013**	
Prüfergebnis: *Test Result:*	**Der Prüfgegenstand entspricht oben genannter Prüfgrundlage(n).** *The tests item passed the test specification(s).*	
Prüflaboratorium: *Testing Laboratory:*	**TÜV Rheinland (India) Pvt. Ltd.** 82/A, 3rd Main, West Wing, Electronic City Phase 1 Hosur Road, Bangalore – 560 100. India FCC Registration No.: 176555	

geprüft / *tested by:*			**kontrolliert** / *reviewed by:*		
27.04.2016	Saibaba Siddapur Sr. Engineer		16.05.2016	Raghavendra Kulkarni Sr. Manager	
Datum *Date*	**Name/Stellung** *Name/Position*	**Unterschrift** *Signature*	**Datum** *Date*	**Name/Stellung** *Name/Position*	**Unterschrift** *Signature*

Sonstiges /*Other Aspects:* **FCC ID: 2AFS2-SHDX**

Abkürzungen:				*Abbreviations:*			
P(ass)	=	*entspricht Prüfgrundlage*		*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.

Test Result Summary

Clause	Test Item	Result
FCC part 15.407 (a)	Emission Bandwidth (26dB Bandwidth), Minimum Emission Bandwidth (6dB Bandwidth) & 99 Percent Occupied Bandwidth	Pass
FCC Part 15.407 (a)	Maximum Conducted Output Power	Pass
FCC Part 15.407 (a)	Maximum Power Spectral Density (PSD)	Pass
FCC 15.209/15.205/15.407 (b)	Radiated Spurious Emissions, Restricted bands of operation & Unwanted Emission	Pass
FCC 15.207	Conducted Emissions on a.c Power Lines	N/A*

Note: Conducted measurements are done according to the procedure given in KDB 789033 D02 General UNII Test Procedures New Rules v01r02 & 662911 D01 Multiple Transmitter Output v02r01.

* - > Device exclusively used in vehicle only, it will operates on vehicle battery & internal back up battery only.

Content

List of Test and Measurement Instruments

Equipment	Manufacturer	Model Name	Serial Number	Calibration Due Date	Periodicity	Used for Test Items
EMI Test Receiver	Rohde & Schwarz	ESU 40	100288	023.11.2016	Yearly	Spurious Radiated Emissions
Broadband Antenna	Frankonia	ALX-4000	ALX-4000-806	08.04.2016	Yearly	
Active Loop Antenna	Frankonia	LAX-10	LAX-10-800	22.12.2016	Yearly	
Broadband Horn Antenna	Frankonia	HAX-18	HAX18-802	14.03.2017	Yearly	
Emission Horn Antenna	ETS Lindgren	116706	00107323	02.11.2016	Yearly	
Anechoic Chamber	Frankonia	-	-	-	-	
Spectrum Analyser	Agilent Technologies	E4407B	US41192772	23.04.2017	Yearly	Antenna - Port Conducted Tests
Signal Analyzer	Rohde & Schwarz	FSV7	101644	07.12.1016	Yearly	

Testing Facilities:

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

General Product Information

Product Function and Intended Use

Sentinel HDx unit is a Dual Camera Event Recorder and will be installed on the windshield of the vehicle. This product is going to be installed inside the vehicles like cars, truck, taxi etc.

Ratings and System Details

Operating Frequency	5150 – 5250 MHz 5725 – 5850 MHz	
No. of channel	Refer page 6, Table 2	
Channel Spacing	20 MHz, 40MHz	
Transmitted Power	802.11a	11.92 dBm / **15.559mW**
	802.11n 20MHz	11.70 dBm / **14.791mW**
	802.11n 40MHz	10.21 dBm / **10.495mW**
Modulation	802.11a	OFDM with BPSK,QPSK, 16-QAM, 64-QAM
	802.11n	BPSK,QPSK,16-QAM,64-QAM
Data Rate	802.11nHT20,HT40 : MCS0 – MCS7 – MCS15 -> refer page 5 of 145 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps	
Antenna Type	Refer table 1	
Number of antenna	Refer table 1	
Antenna Gain	Refer table 1	
Supply Voltage	9-17VDC from Vehicle Battery & Internal Back-up Battery Voltage: 3.0V to 4.2V DC	
Environmental Condition	Operational : -10ºC to 50º C Storage : -20ºC to +60º C	

802.11n Mode data rate

802.11nHT20: 6.5, 13, 19.5, 26, 39, 52, 58.5,65, 13, 26, 39, 52, 78, 104,117 & 130 Mbps

802.11nHT40: 13.5, 27, 40.5, 54, 81, 108, 121.5, 135, 27, 54, 81, 108, 162, 216, 243, 270 Mbps

Test Conditions:

Supply Voltage: 12 VDC from Vehicle Battery & Internal Back-up Battery Voltage: 3.0V to 4.2V DC

Environmental conditions:

Temperature: +23 º C **RH:** 62%

Test Set-up and Operation Mode

Principle of Configuration Selection
Transmission was enabled with 100% duty cycle transmission on low, mid and high channel.

Test Operation and Test Software
Test software (Labtool) was used to enable the transmission with 100% duty cycle, changing channels (low/mid/high) and data rates on the EUT for the tests in this report.

Special Accessories and Auxiliary Equipment
- None

Countermeasures to achieve EMC Compliance
- None

Test Modes – Data Rates and Modulations
For Radiated spurious emissions, the tests were performed for all data rates and only worst case results are reported in this report.

Antenna Port measurements are performed on the following paths

Path A – J7 Connector –ANT1
Path B – J8 Connector – ANT2

Bluetooth (EDR+BDR) & Bluetooth LE will transmit only on ANT2 & Wi-Fi (IEEE802.11abgnHT20/HT40) will transmit on both ANT1 & ANT2.
Product also has GPS functionality with operating frequency 1575.42MHz

Sample used for testing as identified with below number.
Sample Serial No.12
Sample Serial No.13

Table 1: List of Antenna Used

Manufacturer	Antenna Type	Antenna Part No.	Operating Frequency (GHz)
TAIYO YUDEN	Multilayer Monopole Antenna	AH 104N2450D1	2.4 & 5
Laird	External Two-Way Radio Antenna	WTS 2450	2.4 & 5

Table of Carrier frequencies Table 2:

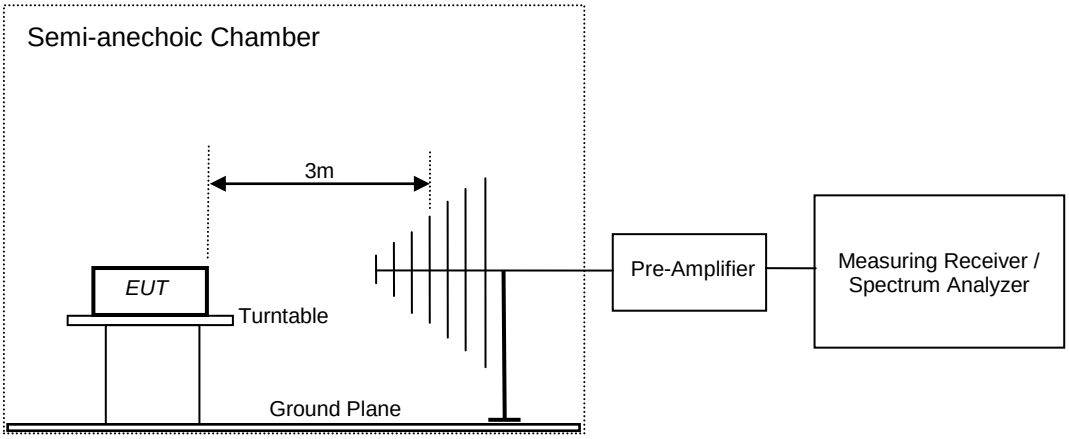
Frequency Band	Channel No.	Frequency (MHz)
5GHz Band – 20MHz Bandwidth Channel List		
5150 – 5250 MHz	36	5180
	40	5200
	44	5220
	48	5240
5725 – 5850MHz	149	5745
	143	5765
	157	5785
	161	5805
	165	5825
5GHz Band – 40MHz Bandwidth Channel List		
5150 – 5250 MHz	38	5190
	46	5230
5725 – 5850MHz	151	5755
	159	5795

Test Methodology

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, and the EUT is 3 meters far from the measuring antenna for below 1GHz & The equipment under test (EUT) was placed at the middle of the 1.5m high turntable, and the EUT is 3 meters far from the measuring antenna for above 1GHz. The turntable was rotated 360° for obtaining the maximum emission. The height of the measuring antennas was scanned between 1m and 4m, 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 1000MHz was performed by horn antenna. The measurement below 30MHz was performed by loop antenna.

The EUT was rotated around the X-, Y-, and Z-Axis and the results from worst case axis are recorded.

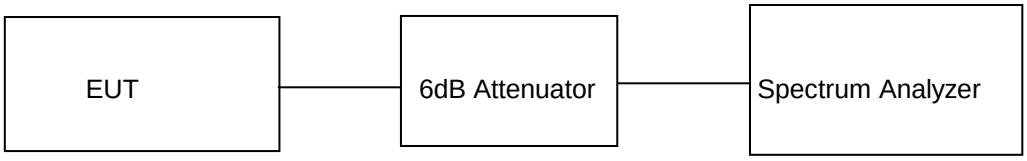


Test Results

Emission Bandwidth (26dB) & OBW **Section 15.407(a)**
Result **Pass**

Test Specification	FCC Part 15 Subpart E
Measurement Bandwidth (RBW)	300 kHz

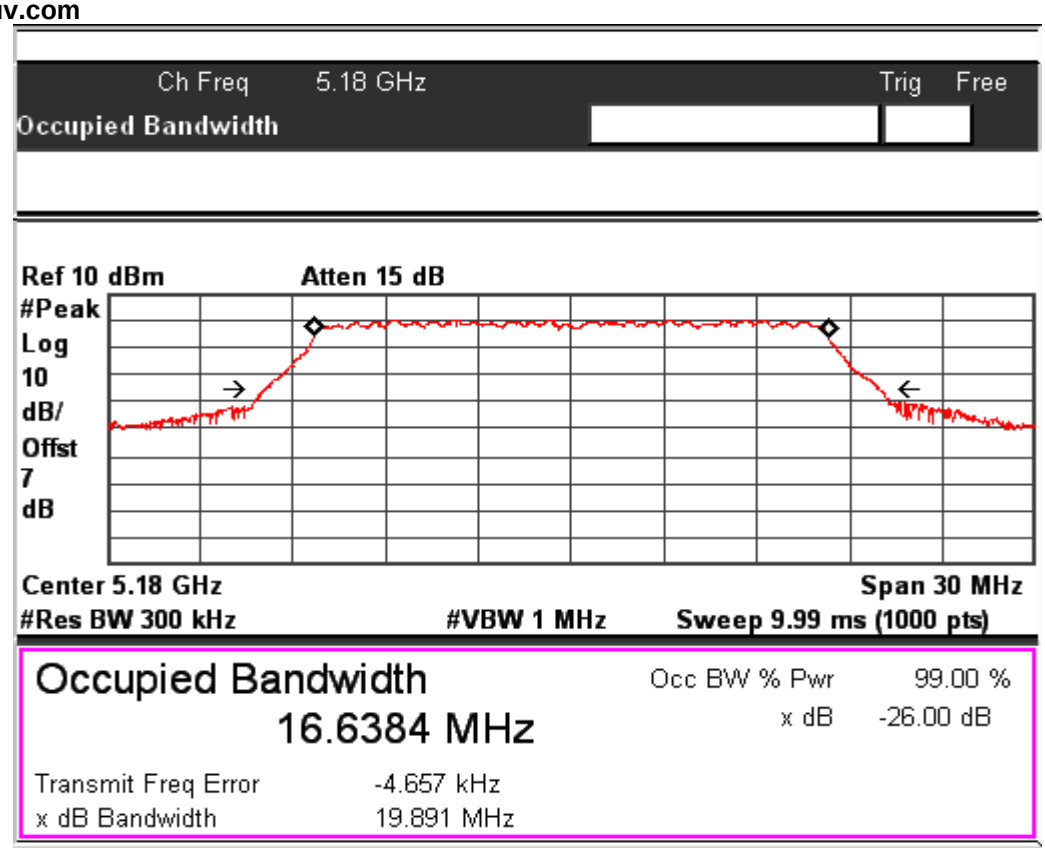
Test Method:



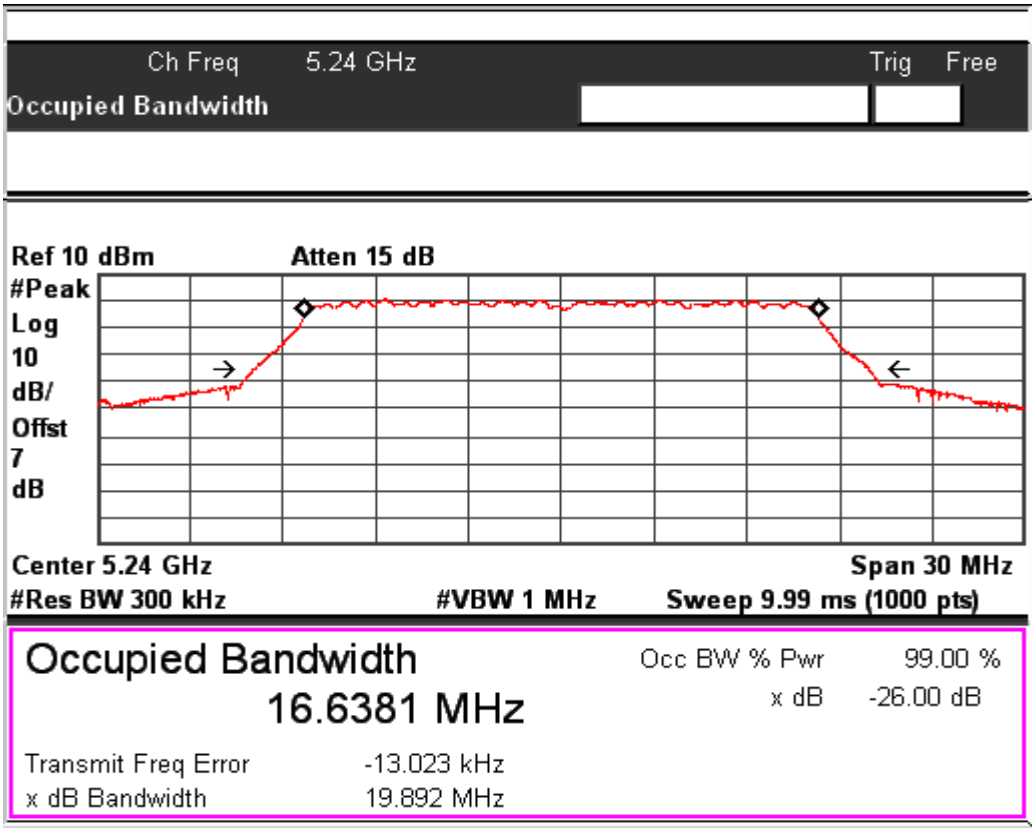
Note: Attenuator (6dB) + cable loss (1dB) = 7dB Considered in the test result

Note: Worst case test results are reported

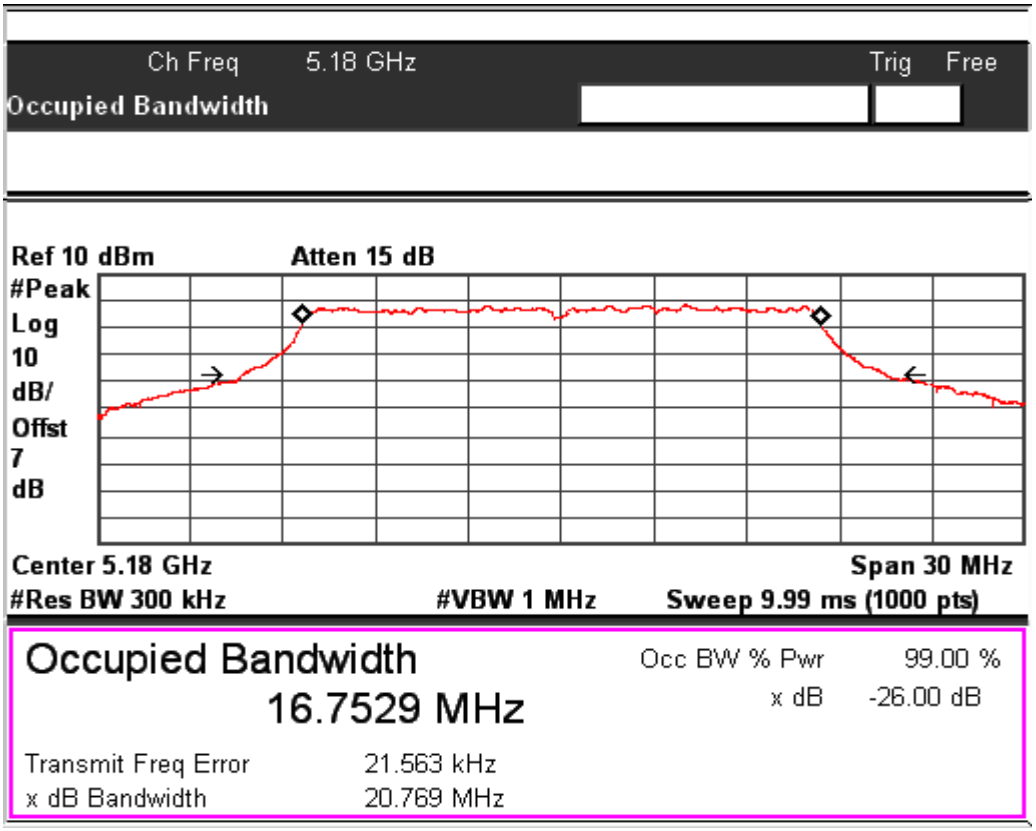
IEEE802.11 a_20MHz Channel				
Data Rate (Mbps)	**Channel. No**	**Frequency (MHz)**	**EBW (MHz)**	**OBW (MHz)**
6	36	5180	19.89	16.63
	48	5240	19.89	16.63
24	36	5180	20.76	16.75
	48	5240	20.73	16.72
54	36	5180	20.05	16.77
	48	5240	20.06	16.76



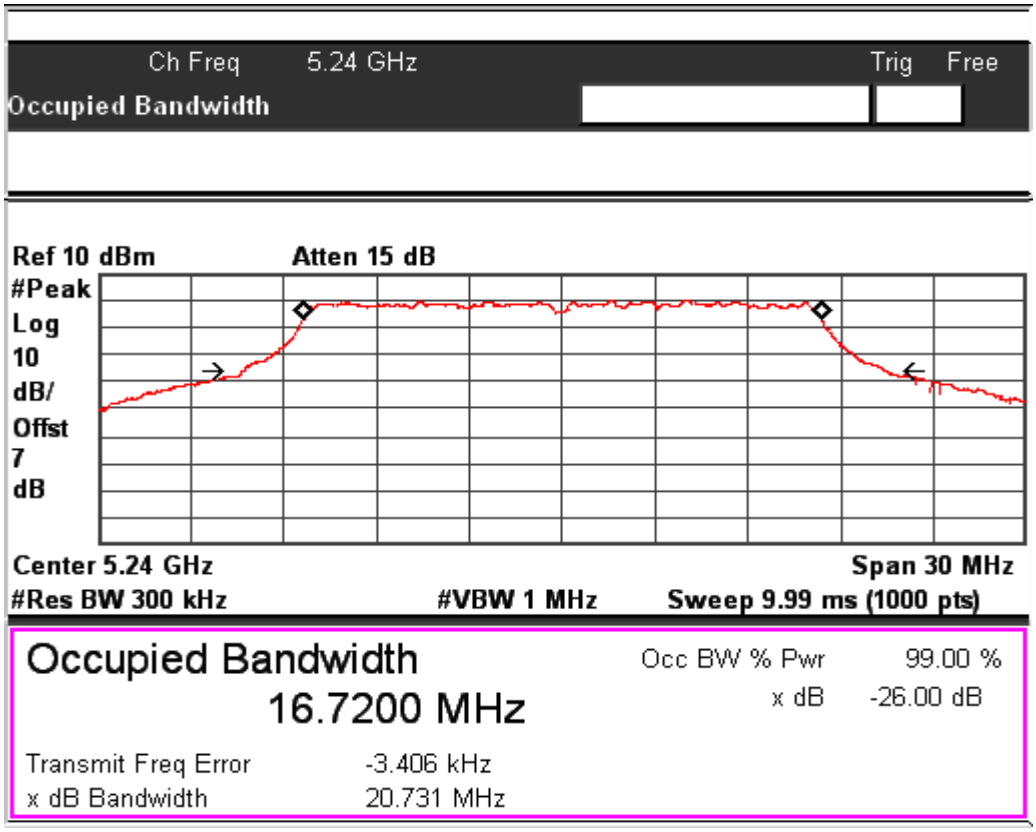
Data Rate: 6Mbps **Channel Frequency: 5180MHz**



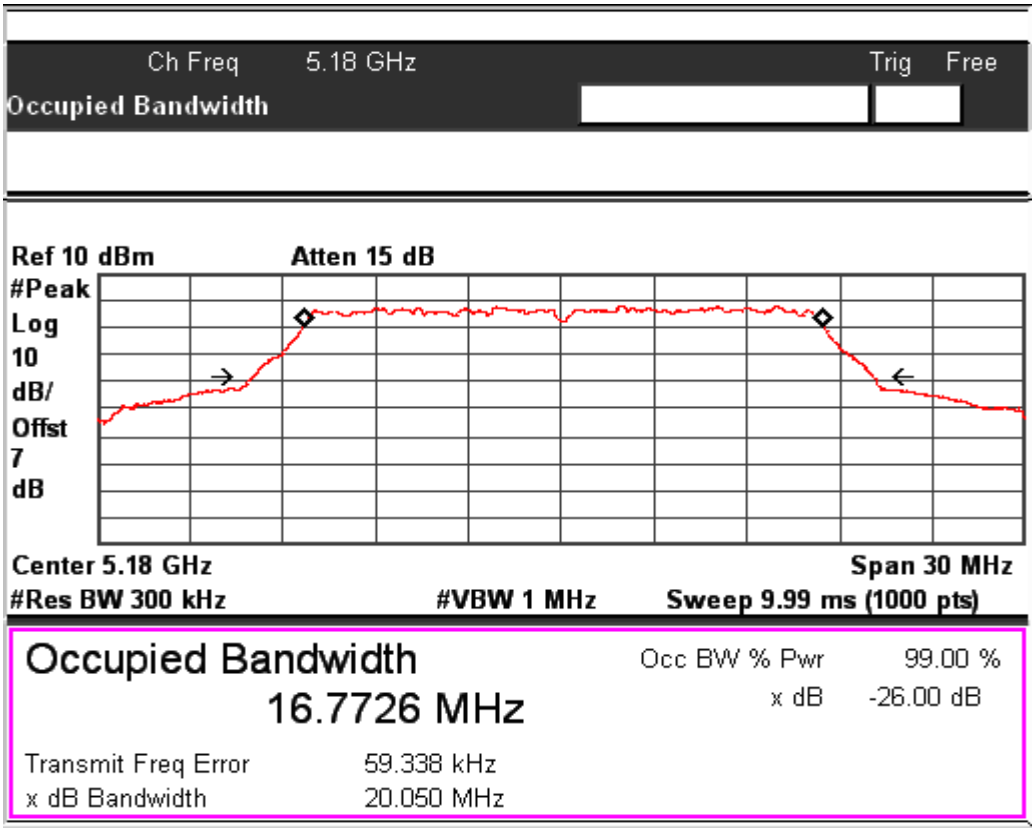
Data Rate: 6Mbps **Channel Frequency: 5240MHz**



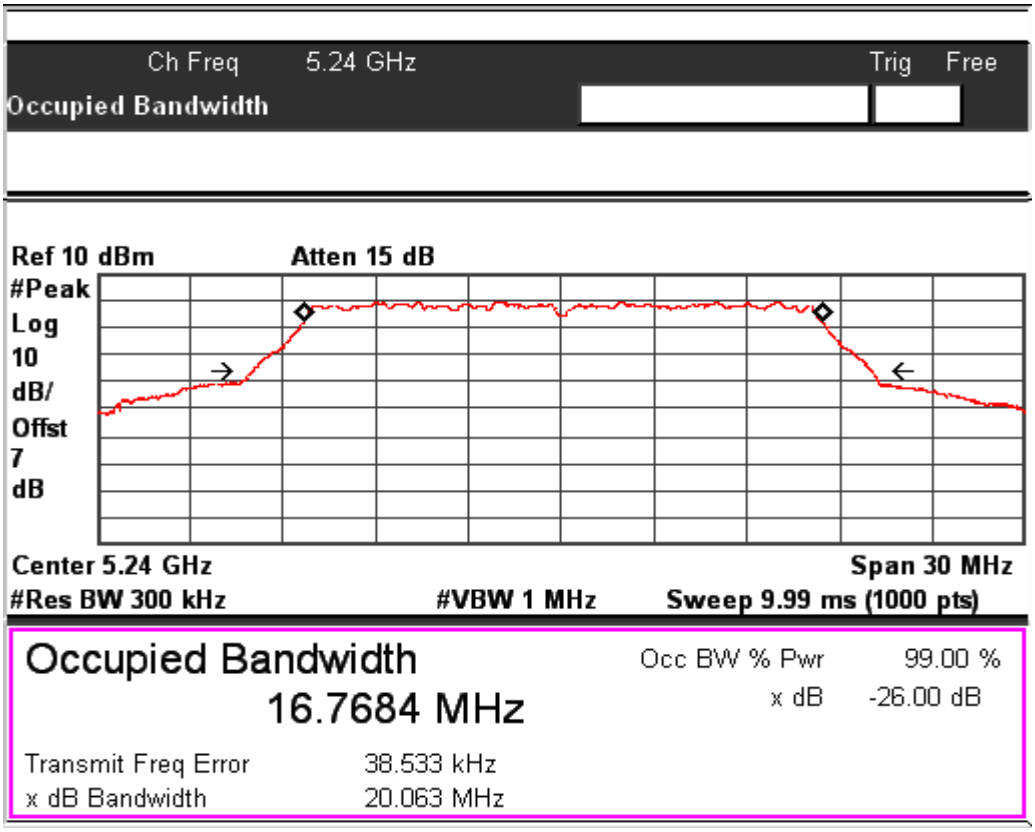
Data Rate: 24Mbps **Channel Frequency: 5180MHz**



Data Rate: 24Mbps **Channel Frequency: 5240MHz**

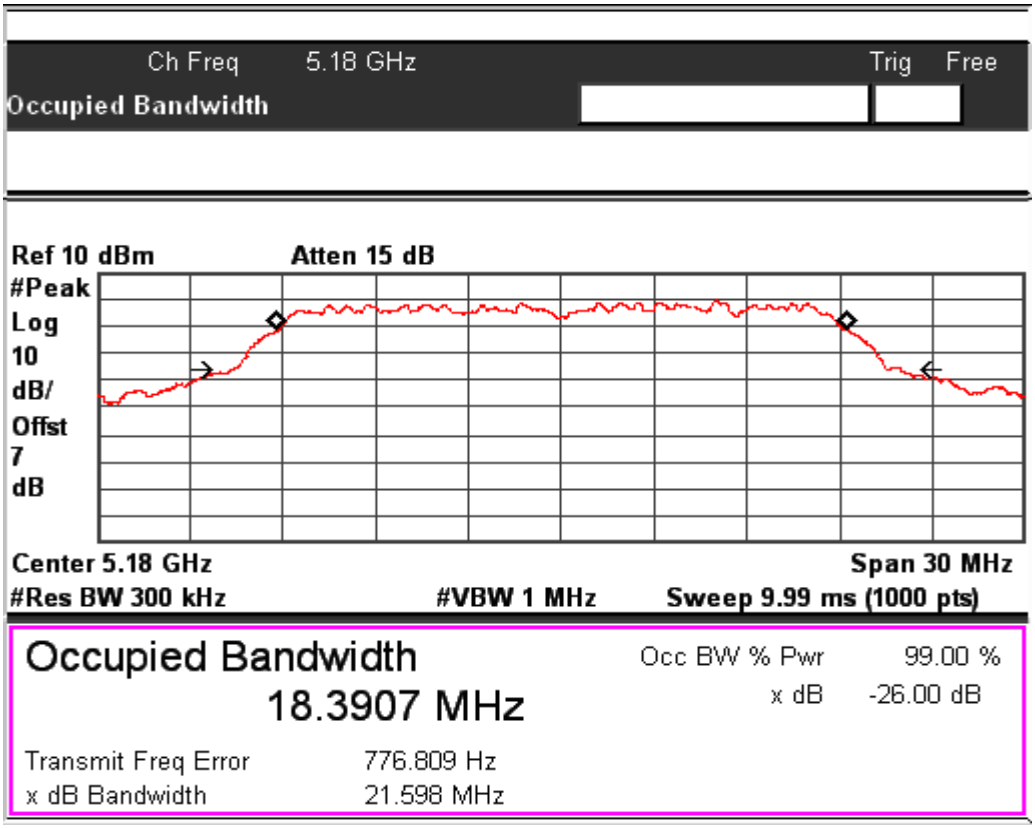


Data Rate: 54Mbps **Channel Frequency: 5180MHz**

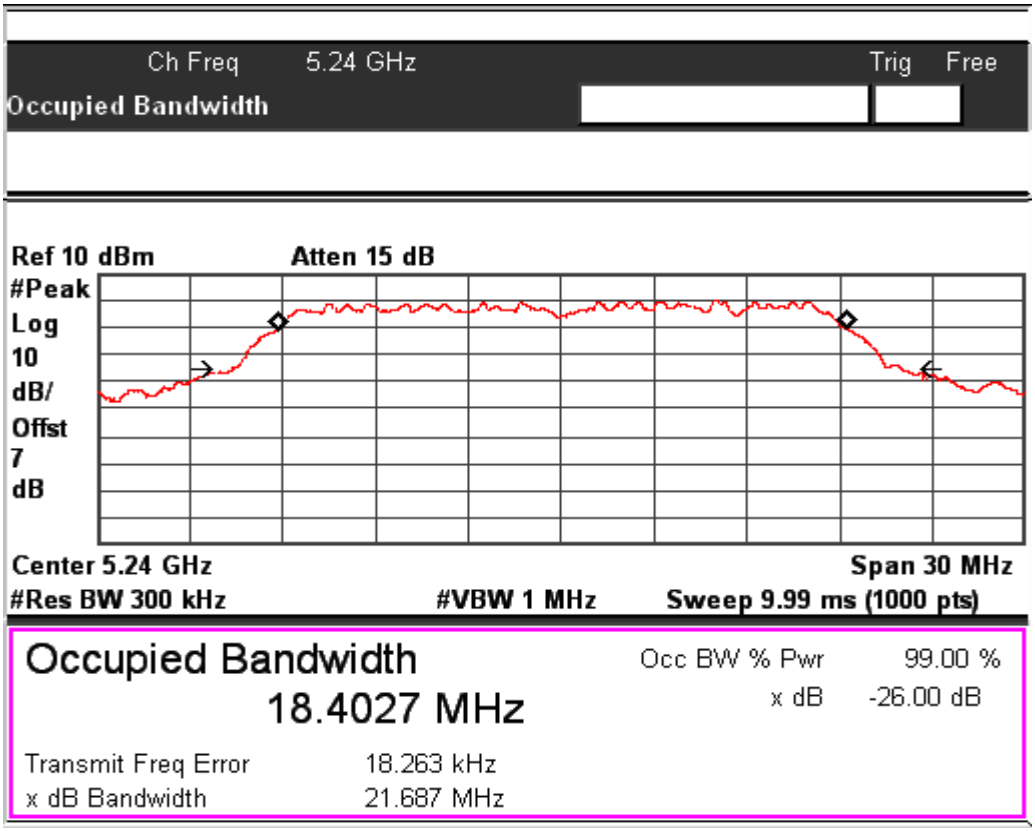


Data Rate: 54Mbps **Channel Frequency: 5240MHz**

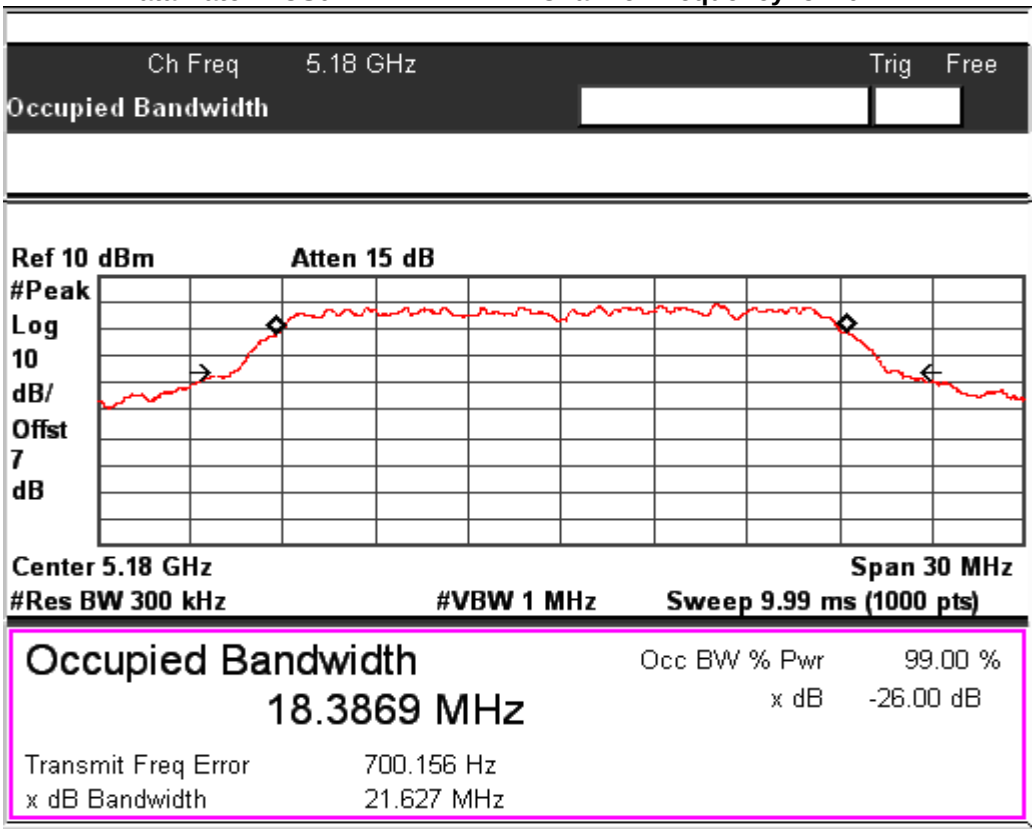
IEEE802.11 nHT20				
Data Rate (Mbps)	**Channel. No**	**Frequency (MHz)**	**EBW (MHz)**	**OBW (MHz)**
MCS0	36	5180	21.59	18.39
	48	5240	21.68	18.40
MCS7	36	5180	21.62	18.38
	48	5240	21.63	18.41
MCS15	36	5180	21.64	18.39
	48	5240	21.62	18.42



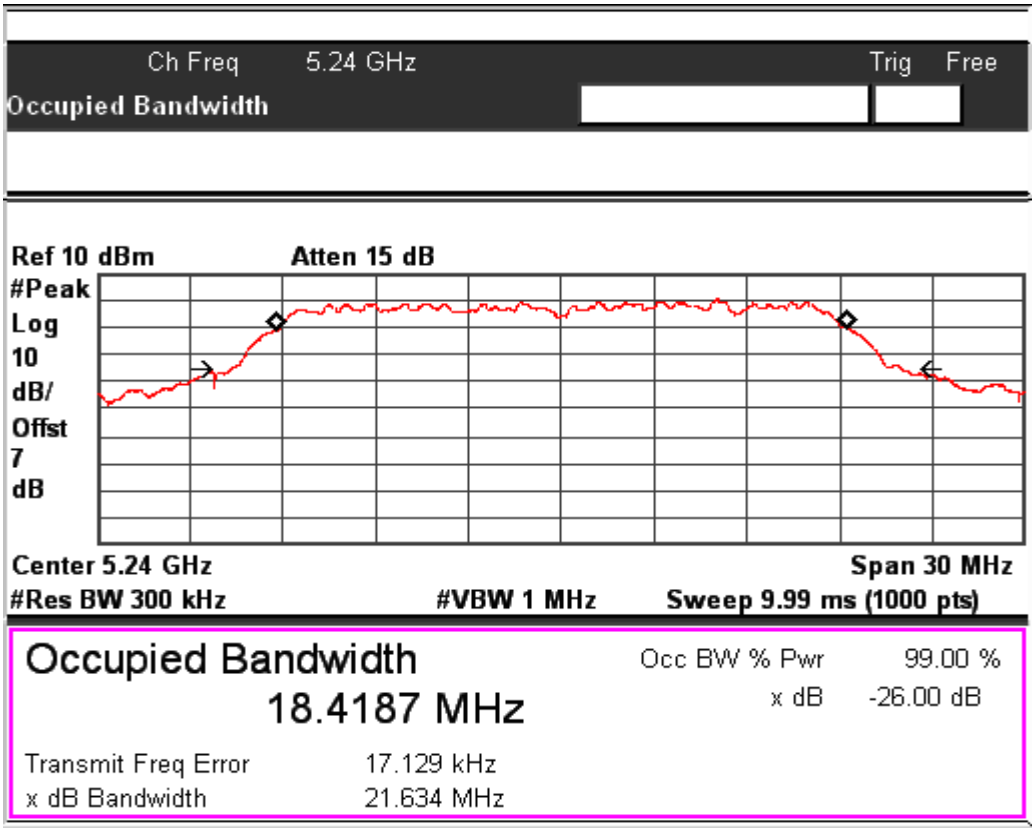
Data Rate: MCS0 **Channel Frequency: 5180MHz**



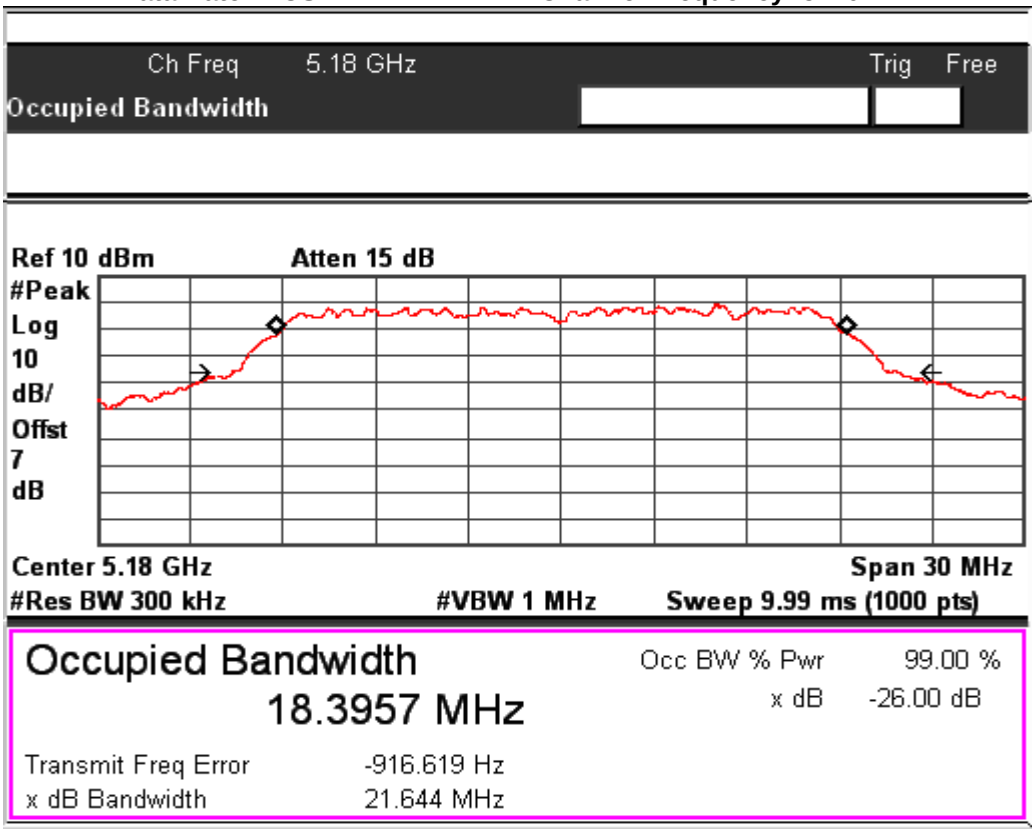
Data Rate: MCS0 **Channel Frequency: 5240MHz**



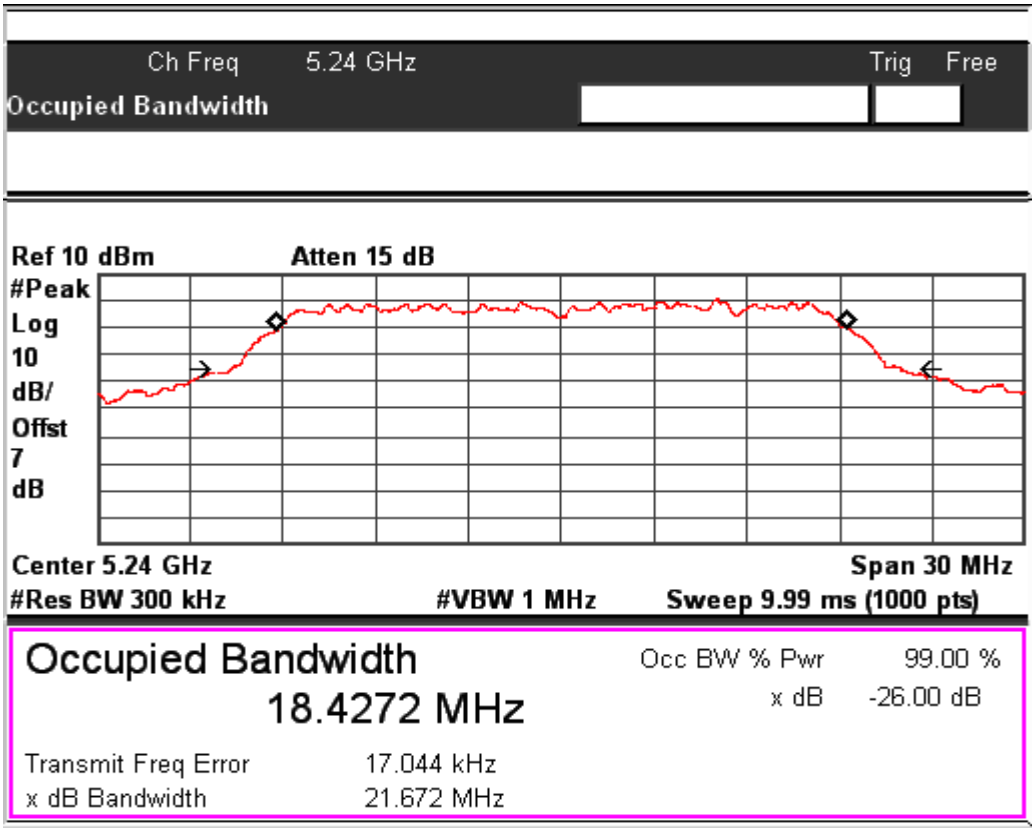
Data Rate: MCS7 **Channel Frequency: 5180MHz**



Data Rate: MCS7 **Channel Frequency: 5240MHz**

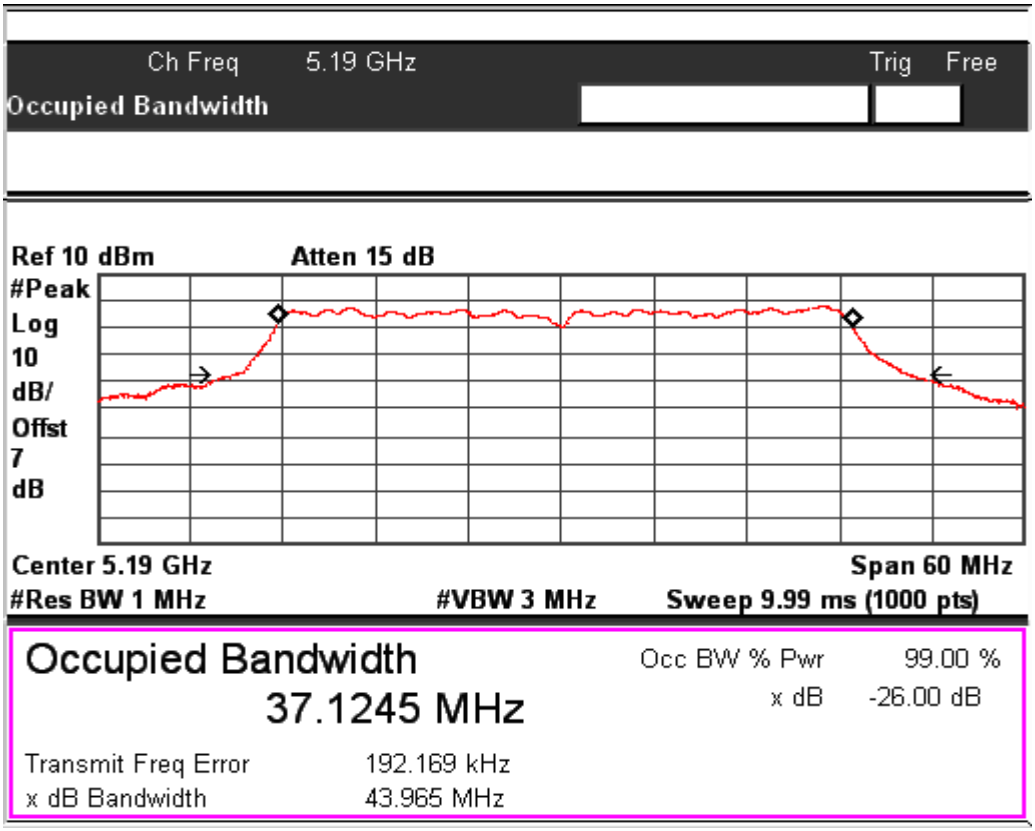


Data Rate: MCS15 **Channel Frequency: 5180MHz**

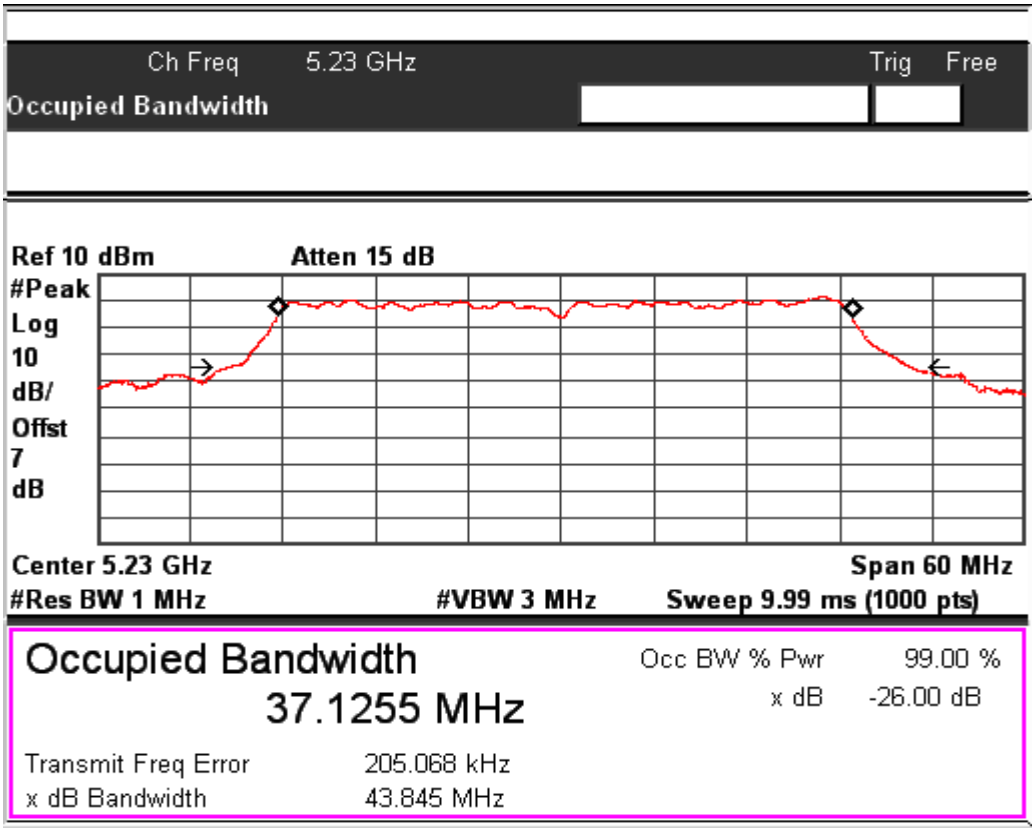


Data Rate: MCS15 **Channel Frequency: 5240MHz**

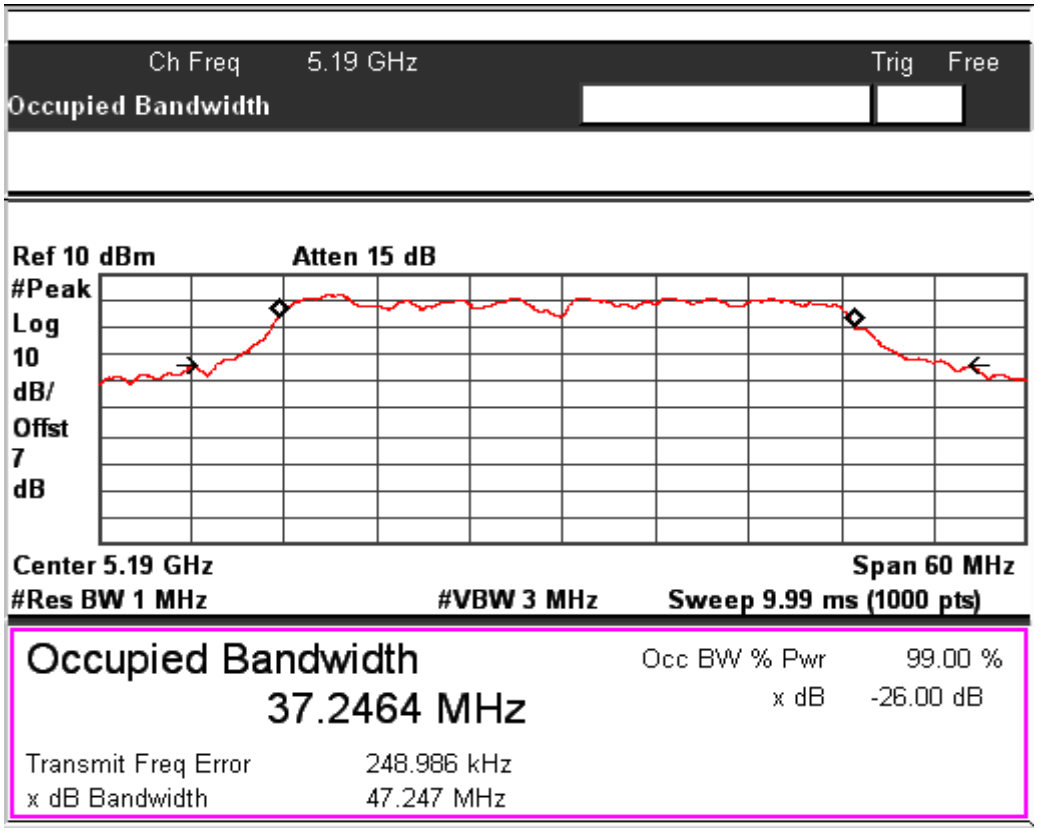
IEEE802.11n HT40				
Data Rate (Mbps)	**Channel. No**	**Frequency (MHz)**	**EBW (MHz)**	**OBW (MHz)**
MCS0	38	5190	43.96	37.12
	46	5230	43.85	37.12
MCS7	38	5190	47.24	37.24
	46	5230	49.11	37.6
MCS15	38	5190	43.79	39.42
	46	5230	43.82	39.47



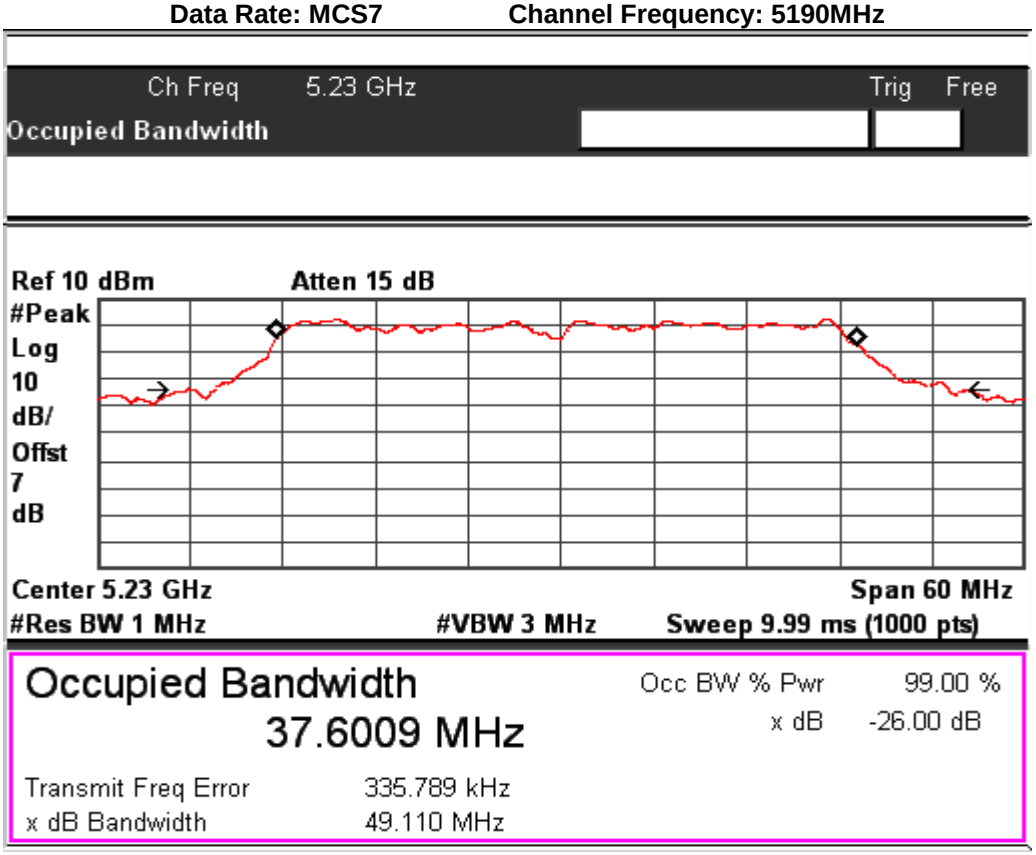
Data Rate: MCS0 **Channel Frequency: 5190MHz**



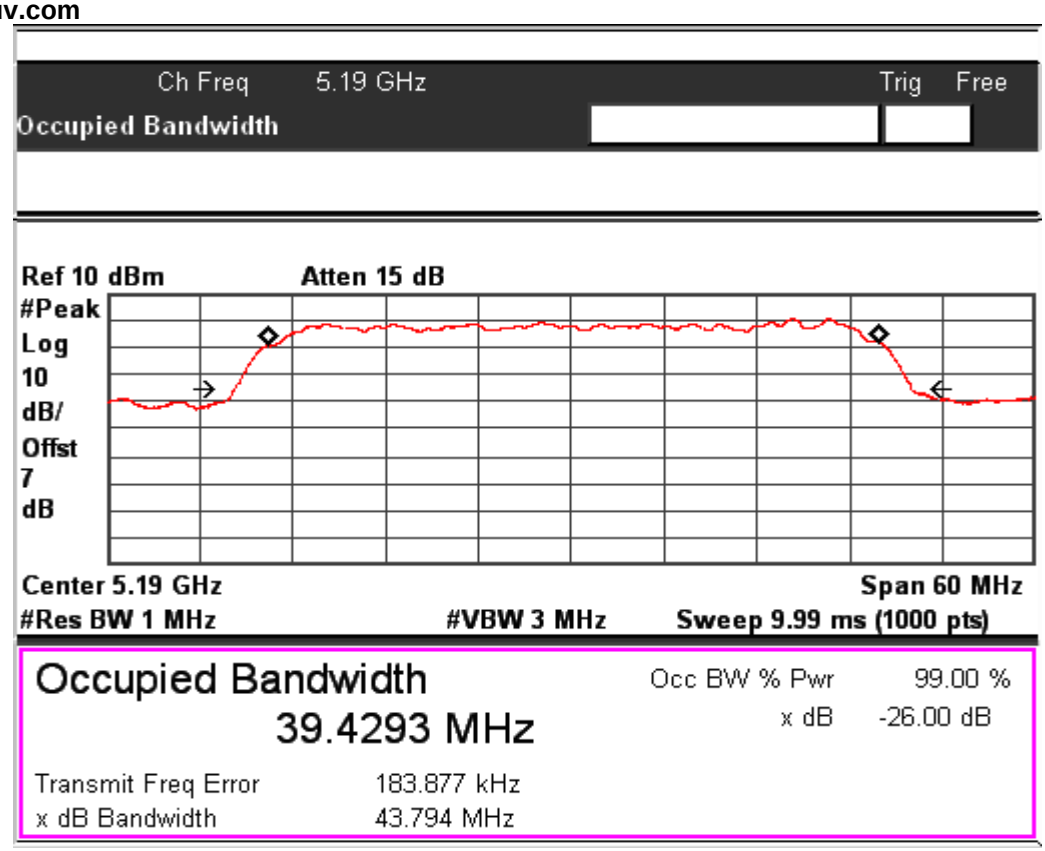
Data Rate: MCS0 **Channel Frequency: 5230MHz**



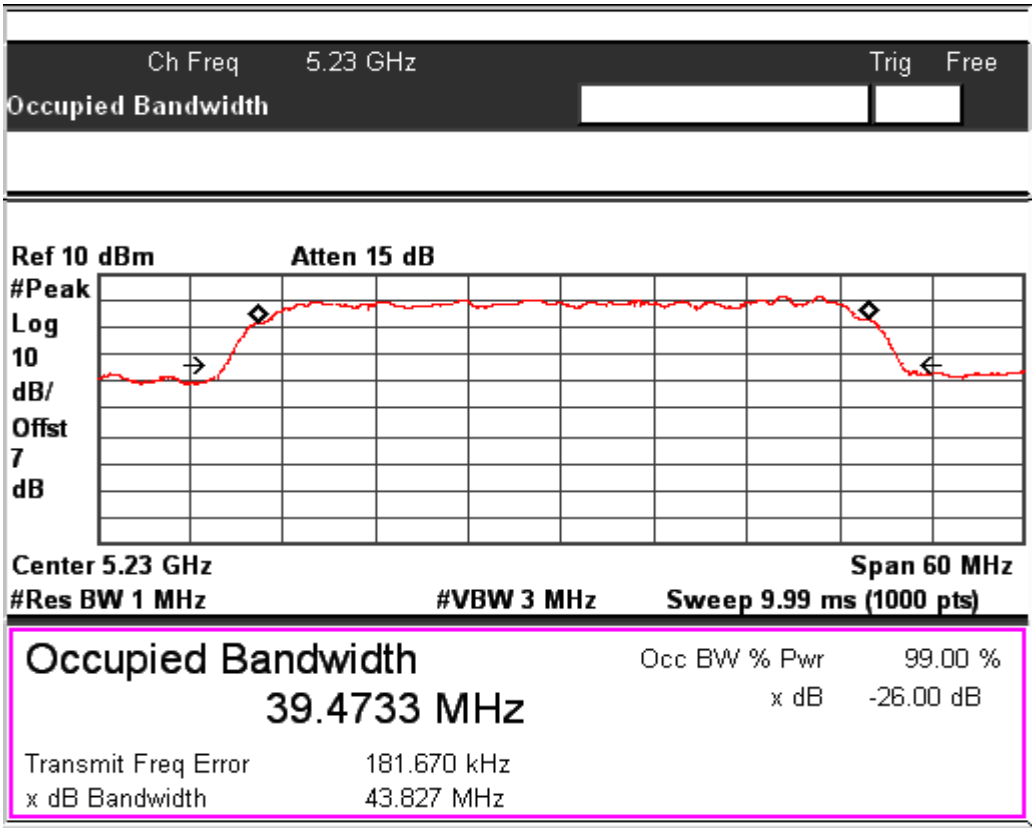
Data Rate: MCS7 **Channel Frequency: 5190MHz**



Data Rate: MCS7 **Channel Frequency: 5230MHz**



Data Rate: MCS15 **Channel Frequency: 5190MHz**

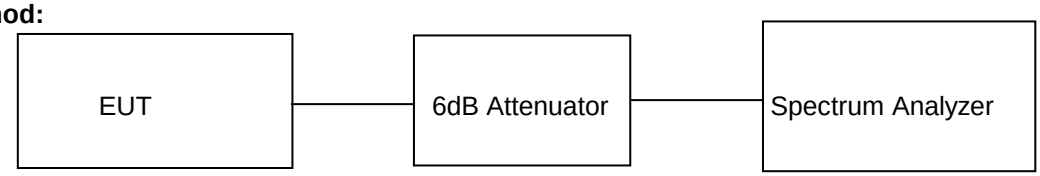


Data Rate: MCS15 **Channel Frequency: 5230MHz**

6dB Bandwidth **Section 15.407(e)**
Result **Pass**

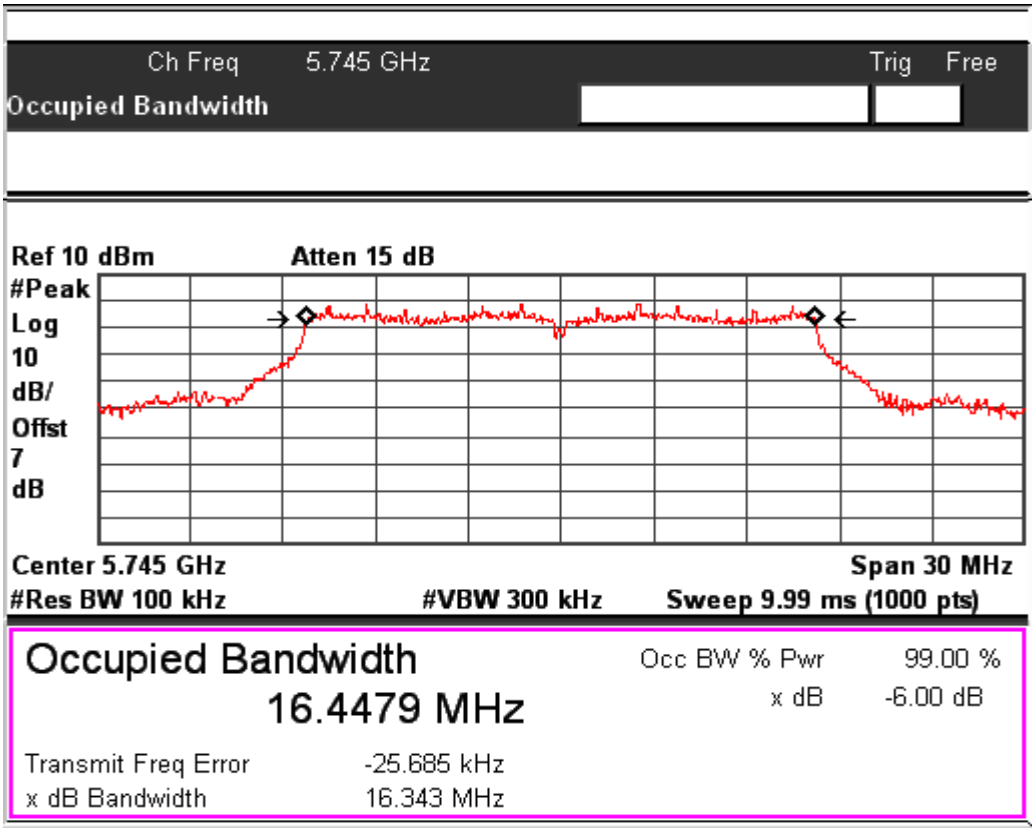
Test Specification	FCC Part 15 Subpart E
Measurement Bandwidth (RBW)	100 kHz
Requirement	≥ 500kHz

Test Method:

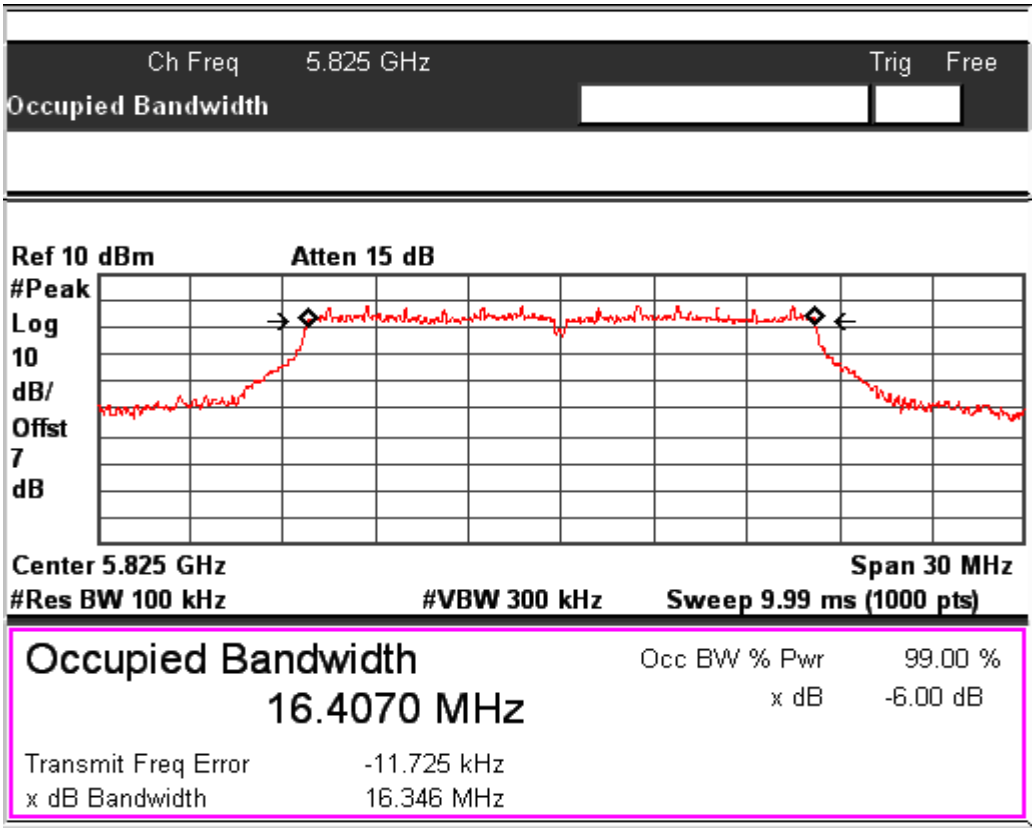


Note: Attenuator (6dB) + cable loss (1dB) = 7dB Considered in the test result
Worst case test results reported.

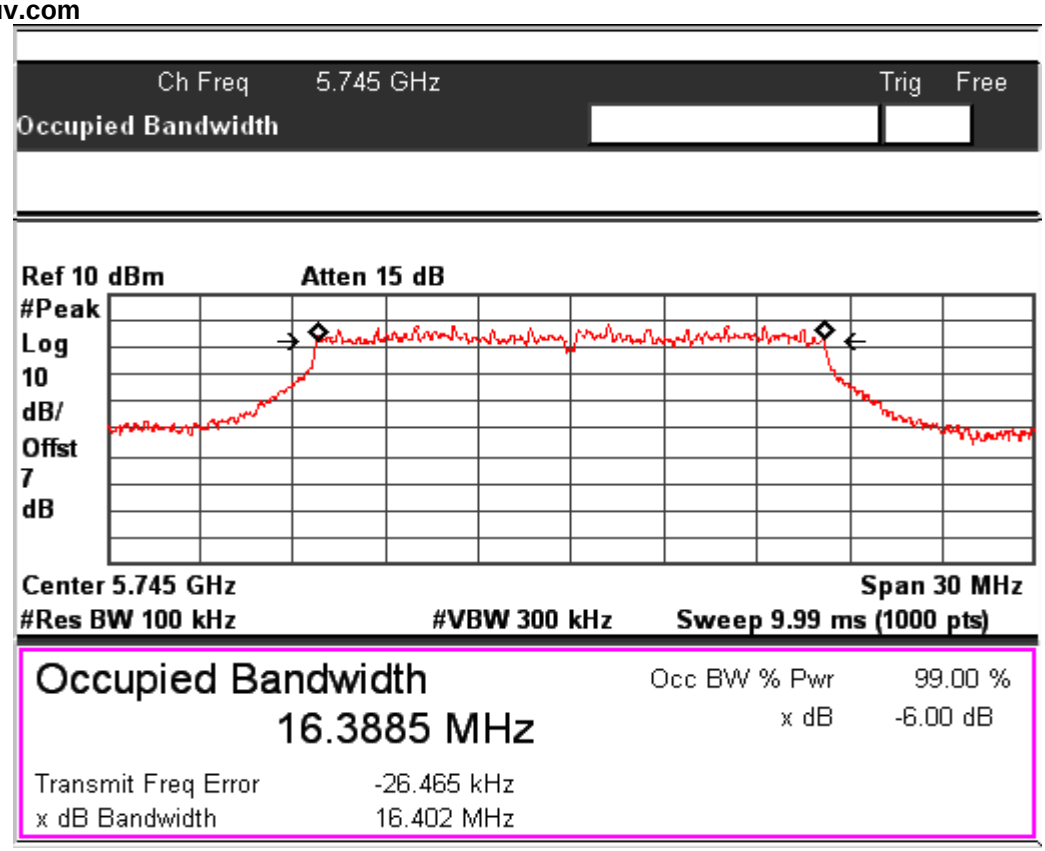
IEEE802.11a 20MHz Channel				
Data Rate (Mbps)	**Channel. No**	**Frequency (MHz)**	**6 dB Bandwidth (MHz)**	**OBW (MHz)**
6	149	5745	16.44	16.94
	165	5825	16.4	16.89
24	149	5745	16.4	16.75
	165	5825	16.43	16.81
54	149	5745	16.4	16.70
	165	5825	16.4	16.75



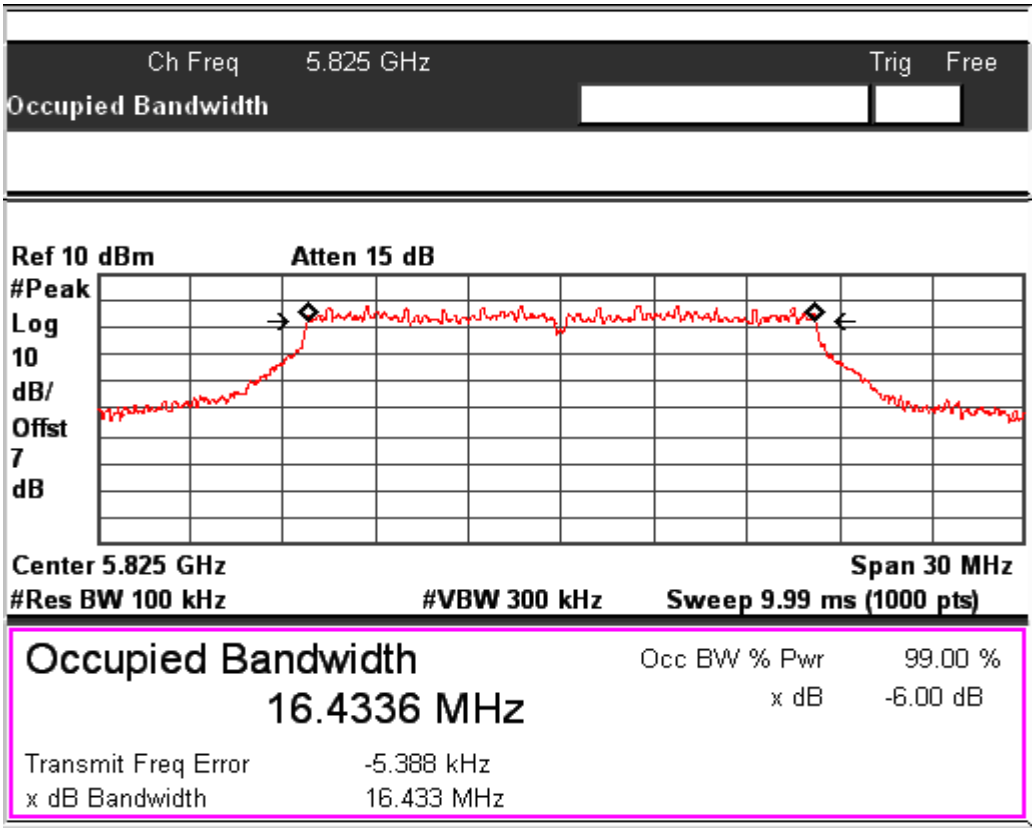
Data Rate: 6 Mbps **Channel Frequency: 5745MHz**



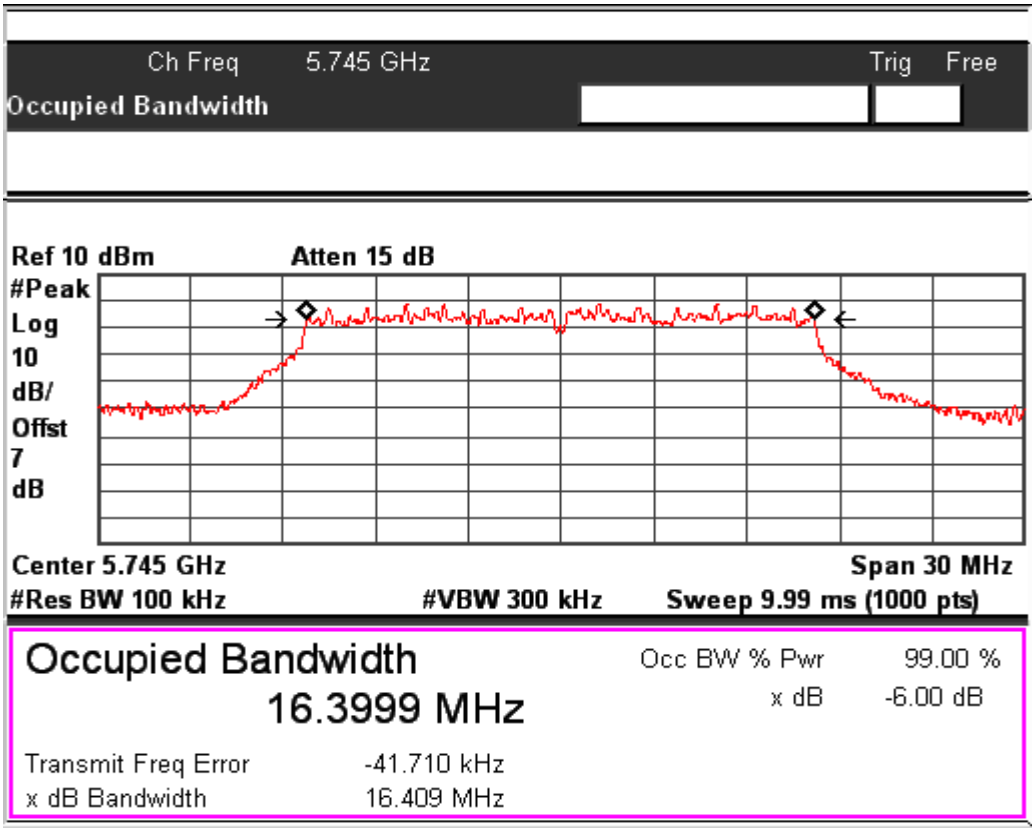
Data Rate: 6 Mbps **Channel Frequency: 5825MHz**



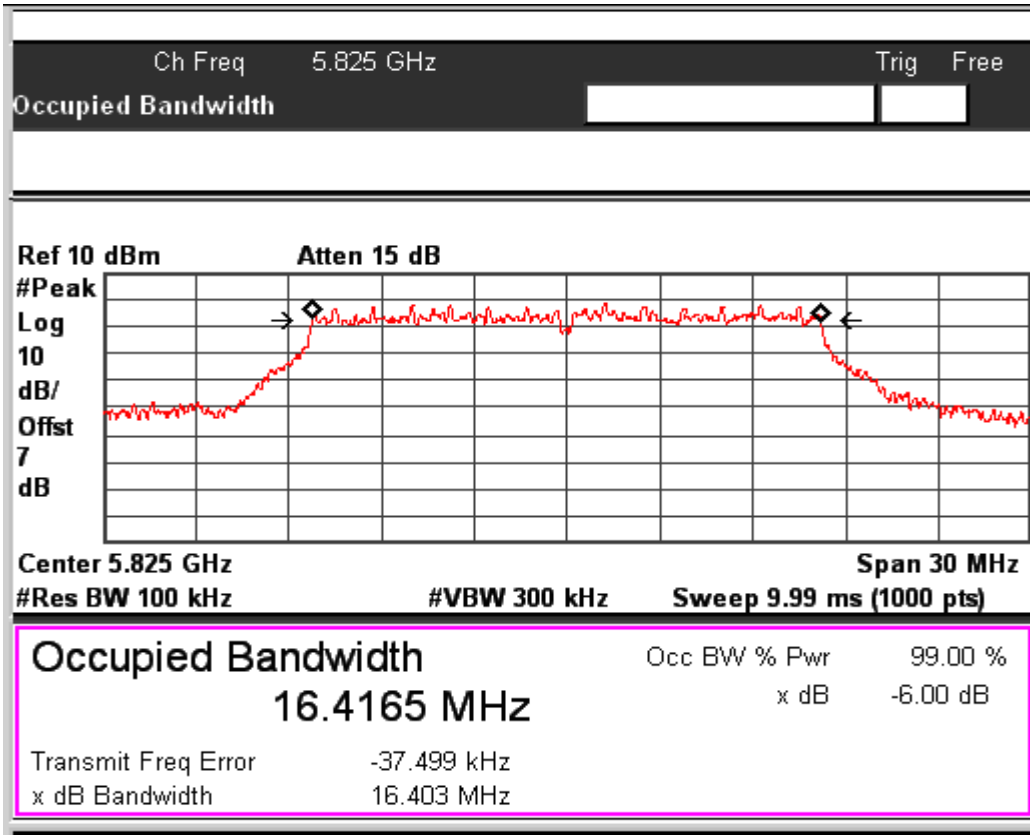
Data Rate: 24 Mbps **Channel Frequency: 5745MHz**



Data Rate: 24 Mbps **Channel Frequency: 5825MHz**

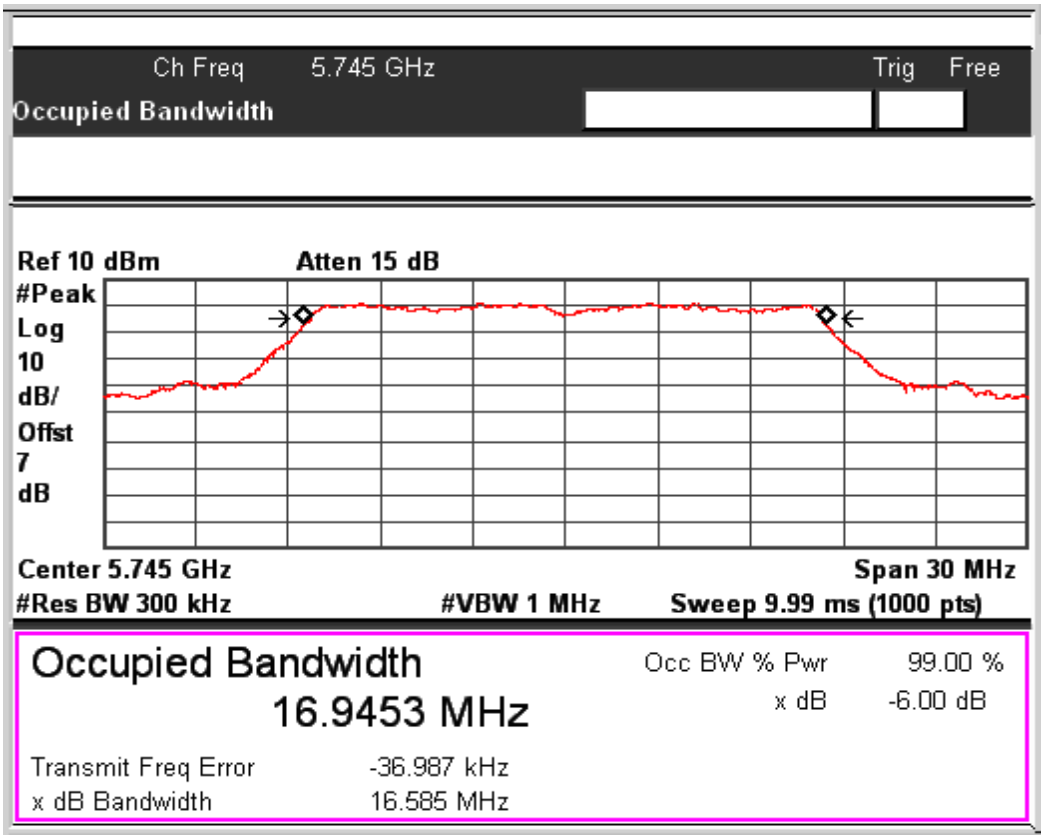


Data Rate: 54 Mbps **Channel Frequency: 5745MHz**

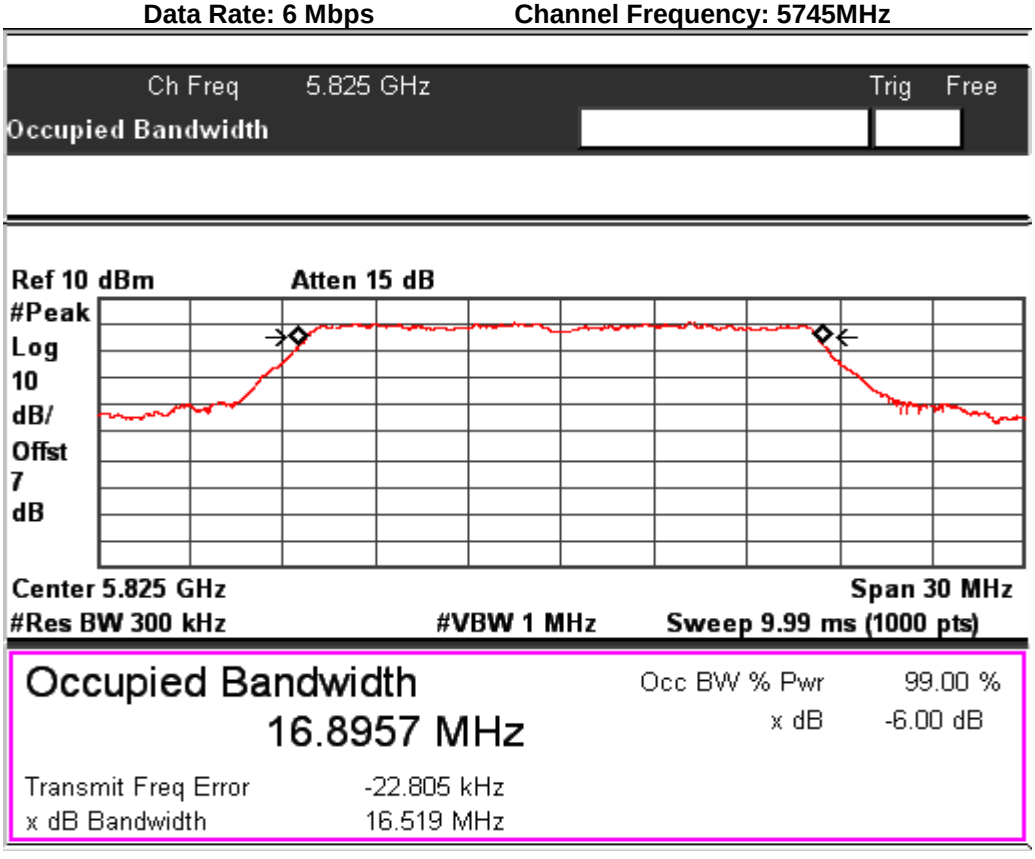


Data Rate: 54 Mbps **Channel Frequency: 5825MHz**

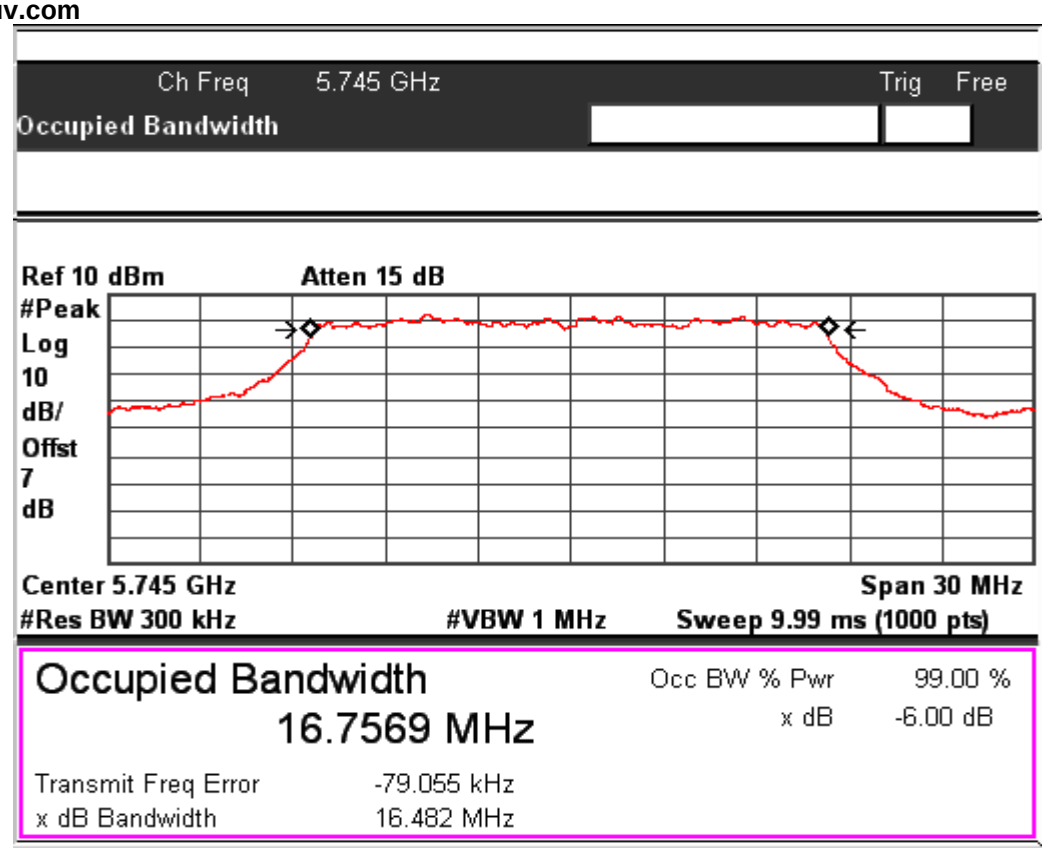
OBW:



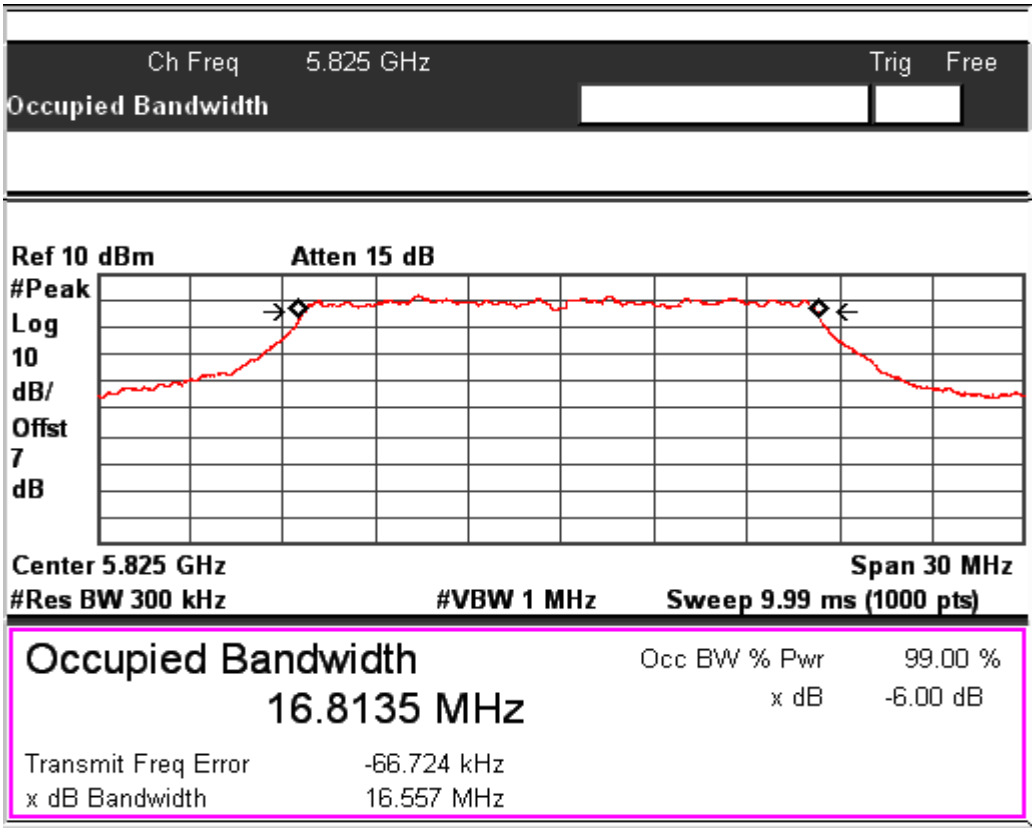
Data Rate: 6 Mbps **Channel Frequency: 5745MHz**



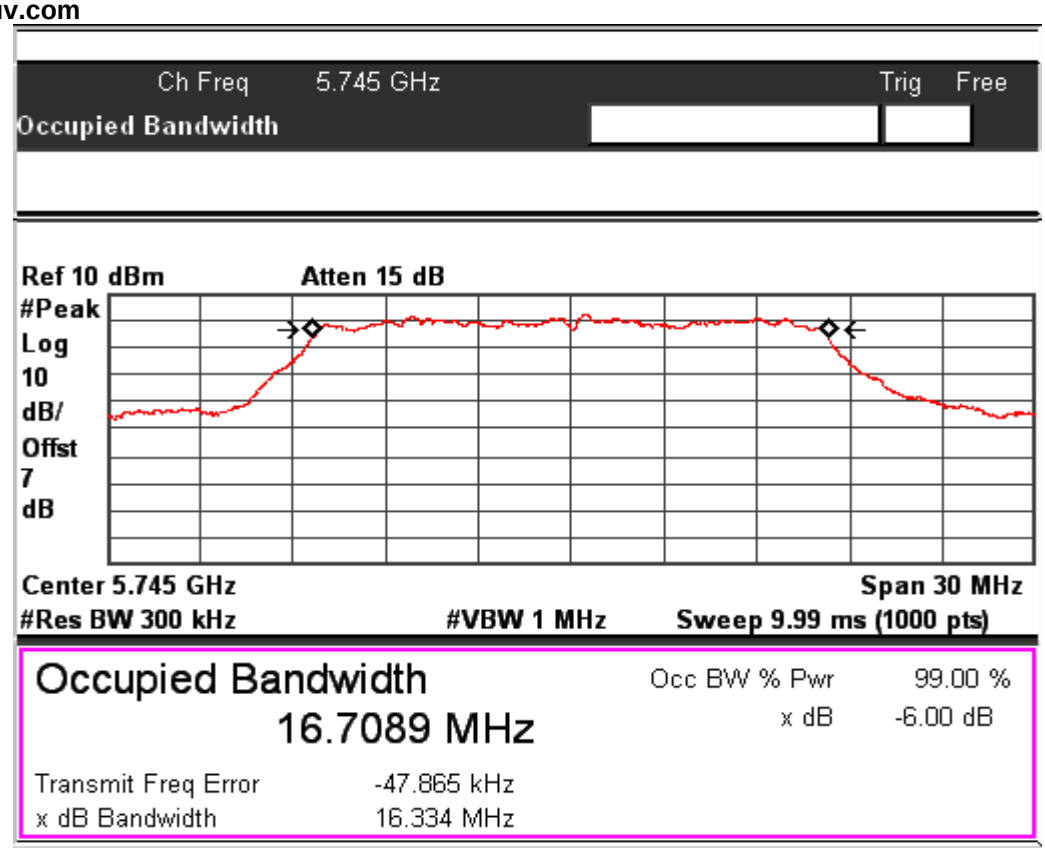
Data Rate: 6 Mbps **Channel Frequency: 5825MHz**



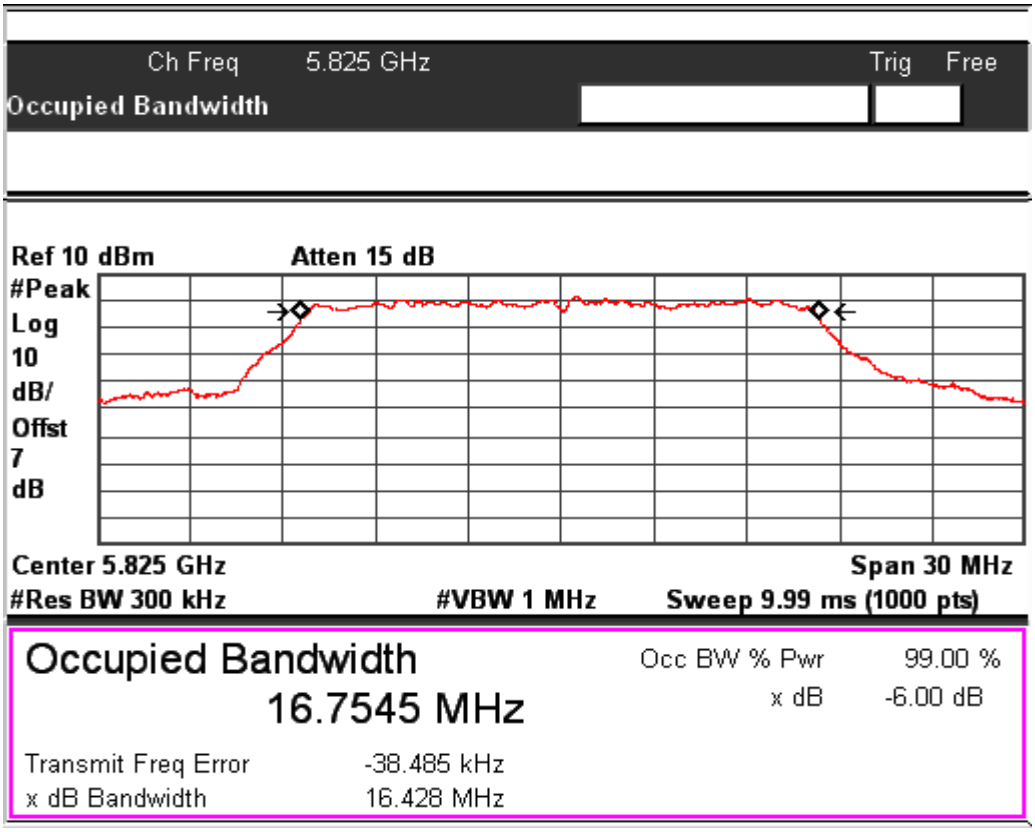
Data Rate: 24 Mbps **Channel Frequency: 5745MHz**



Rate: 24 Mbps **Channel Frequency: 5825MHz**

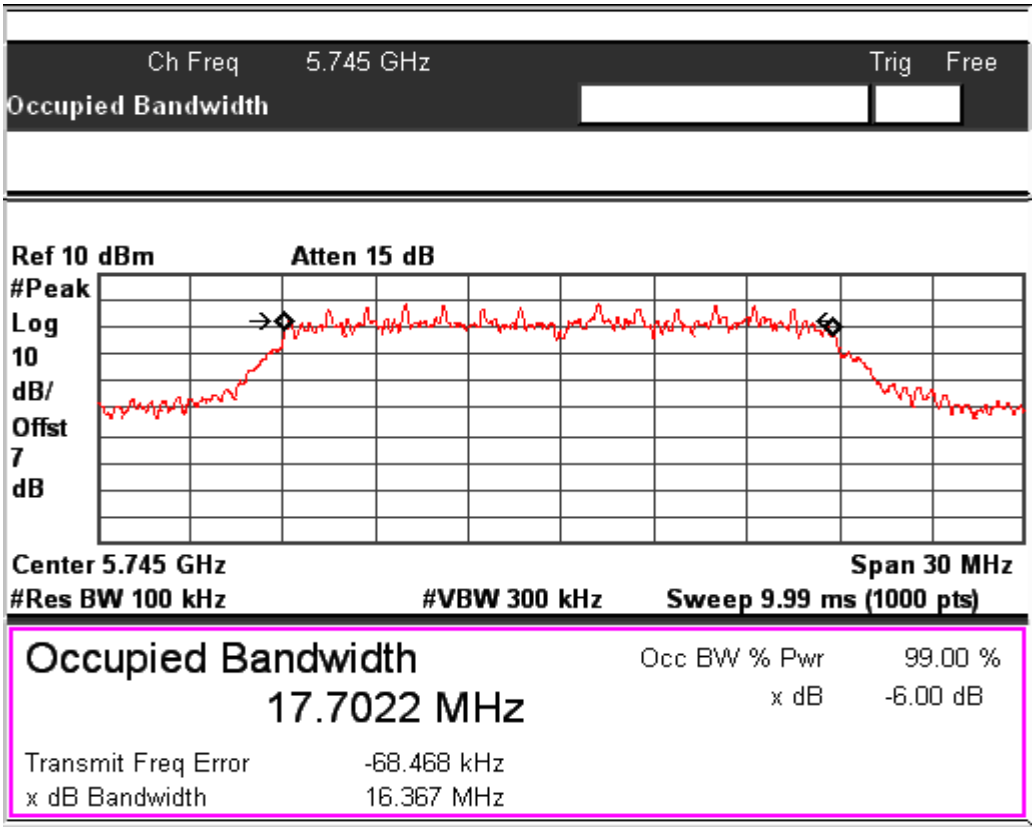


Data Rate: 54 Mbps **Channel Frequency: 5745MHz**

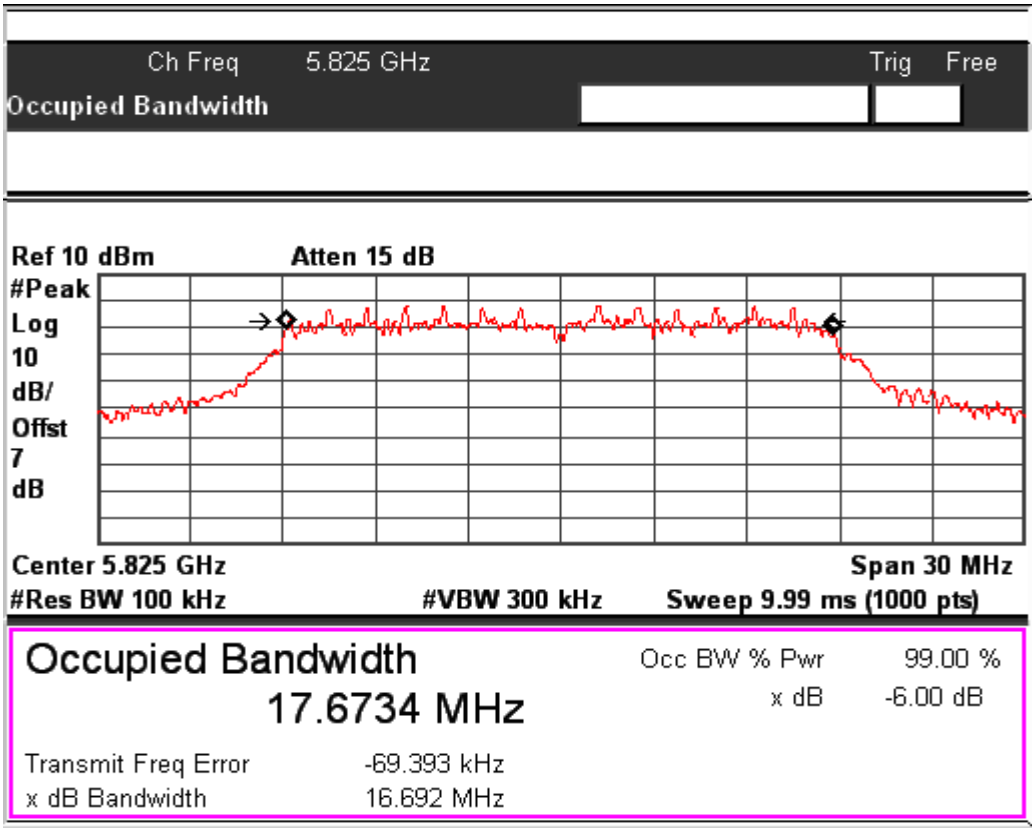


Data Rate: 54 Mbps **Channel Frequency: 5825MHz**

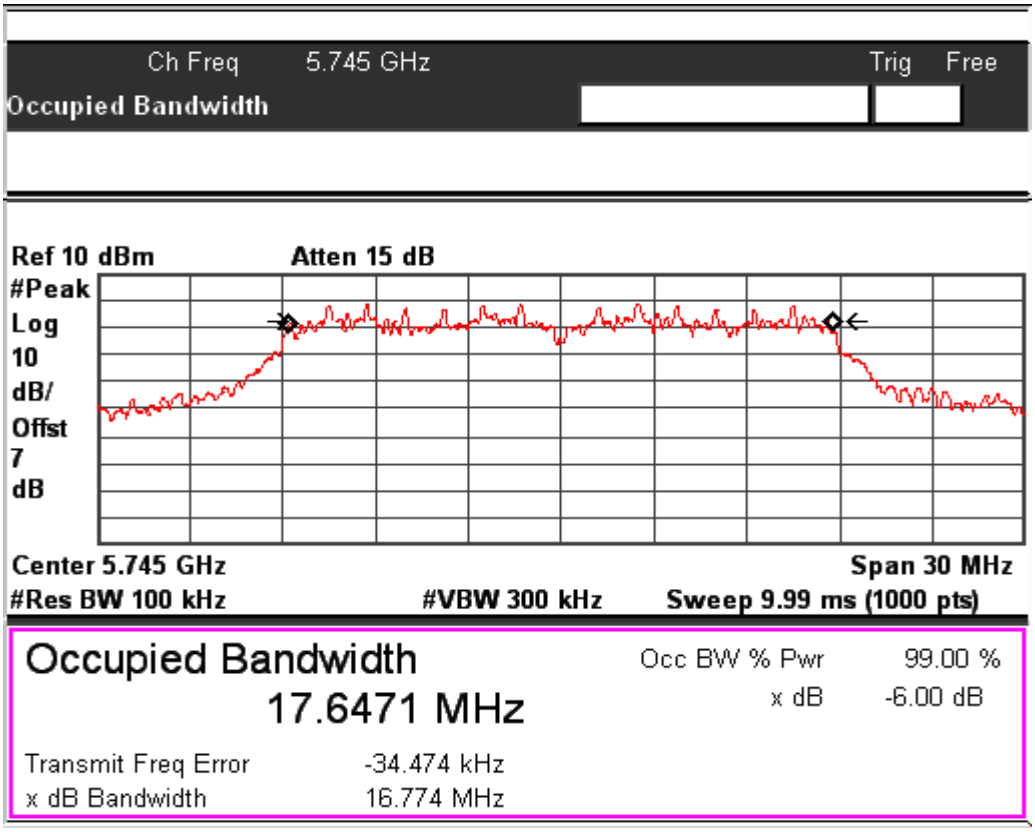
IEEE802.11n HT20				
Data Rate (Mbps)	**Channel. No**	**Frequency (MHz)**	**EBW (MHz)**	**OBW (MHz)**
MCS0	149	5745	16.36	18.62
	165	5825	16.69	18.50
MCS7	149	5745	16.77	18.34
	165	5825	16.25	18.39
MCS15	149	5745	16.77	18.35
	165	5825	16.69	18.50



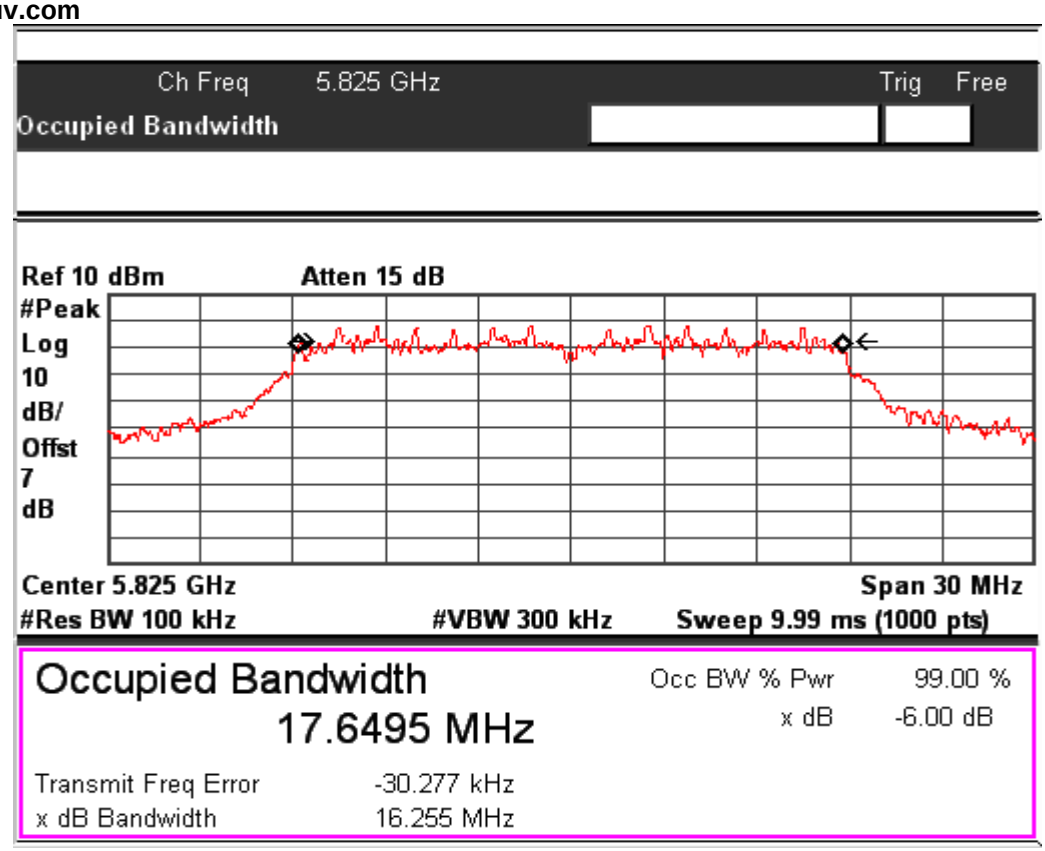
Data Rate: MCS0 **Channel Frequency: 5745MHz**



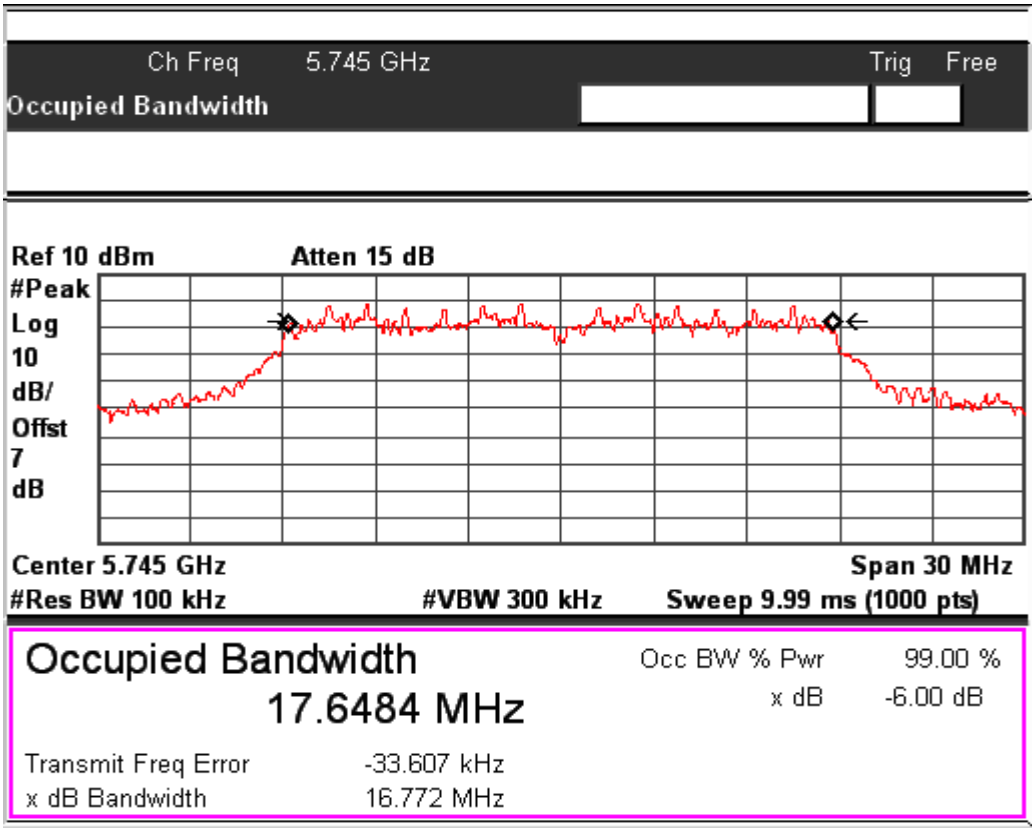
Data Rate: MCS0 Channel Frequency: 5825MHz



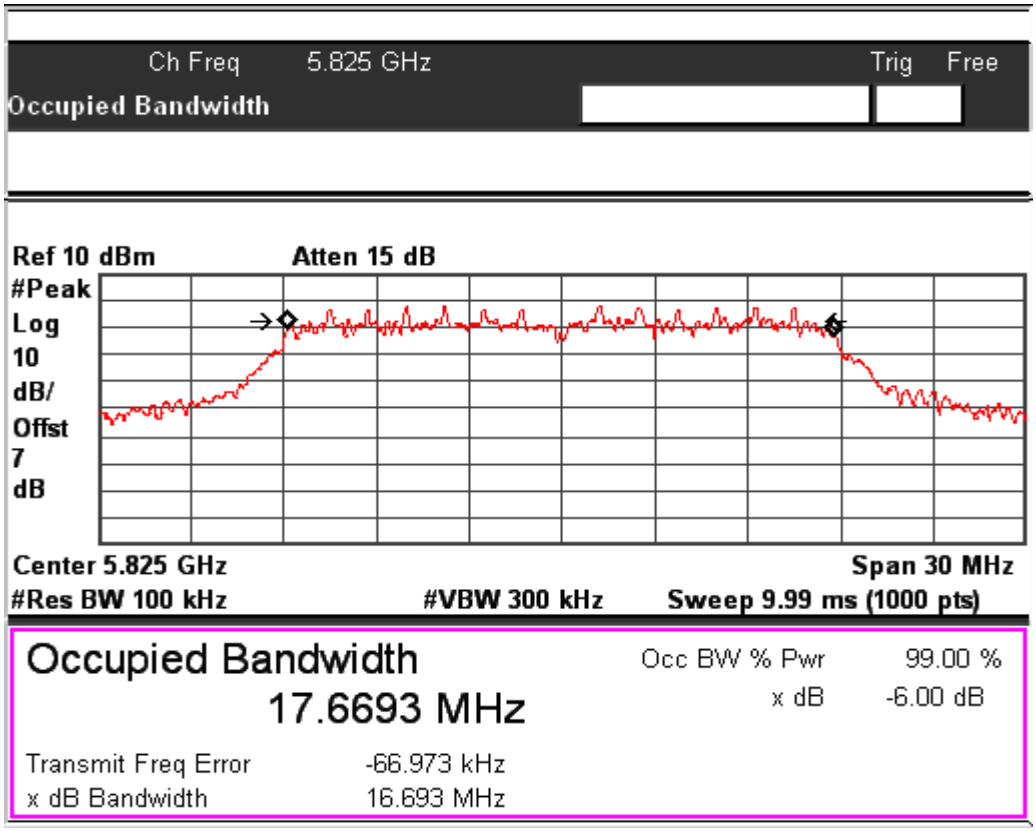
Data Rate: MCS7 Channel Frequency: 5745MHz



Data Rate: MCS7 Channel Frequency: 5825MHz

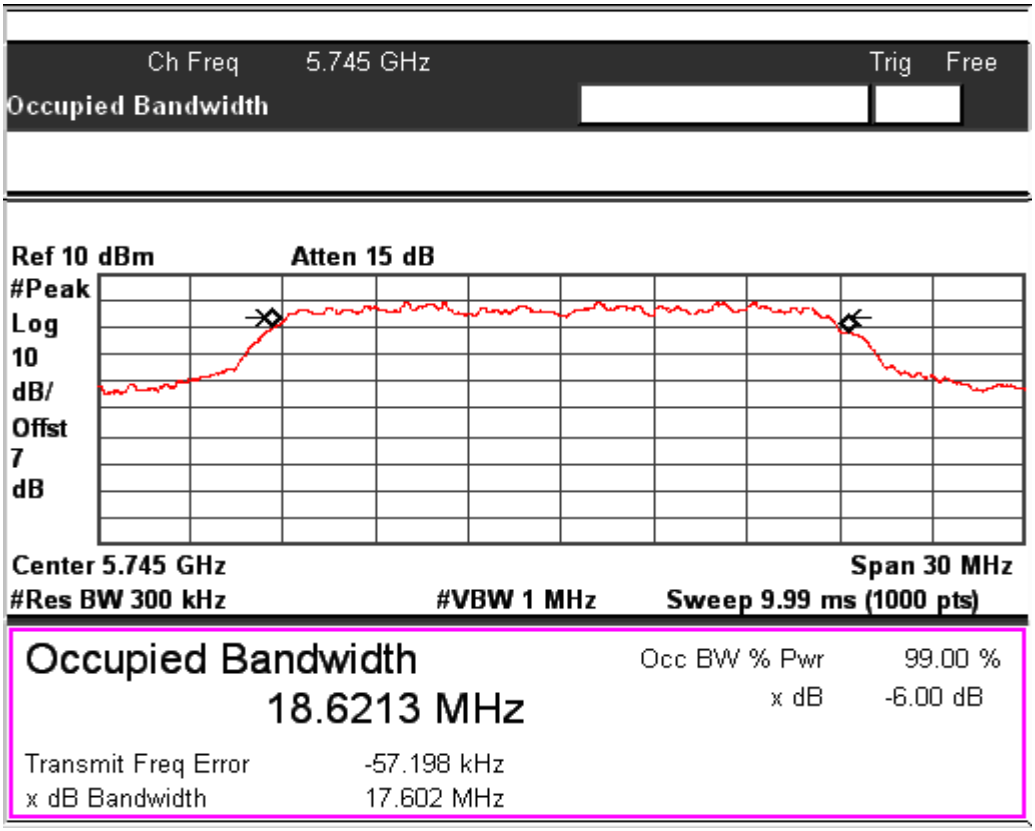


Data Rate: MCS15 Channel Frequency: 5745MHz

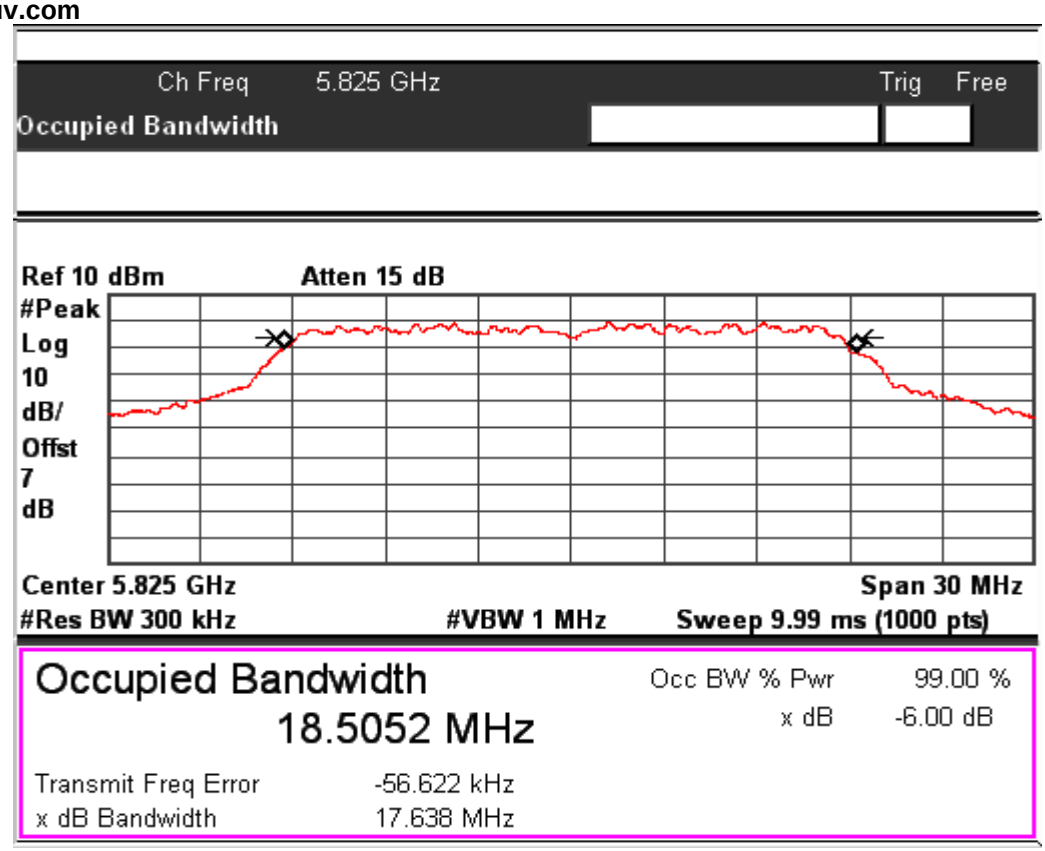


Data Rate: MCS15 Channel Frequency: 5825MHz

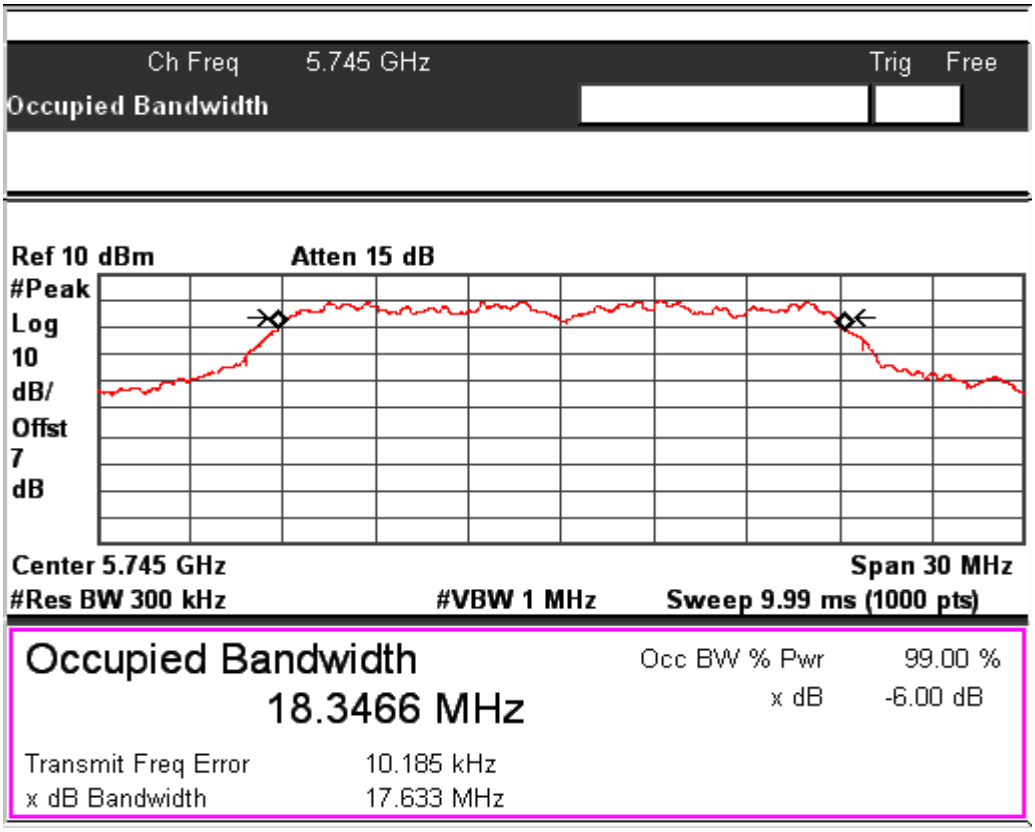
OBW:



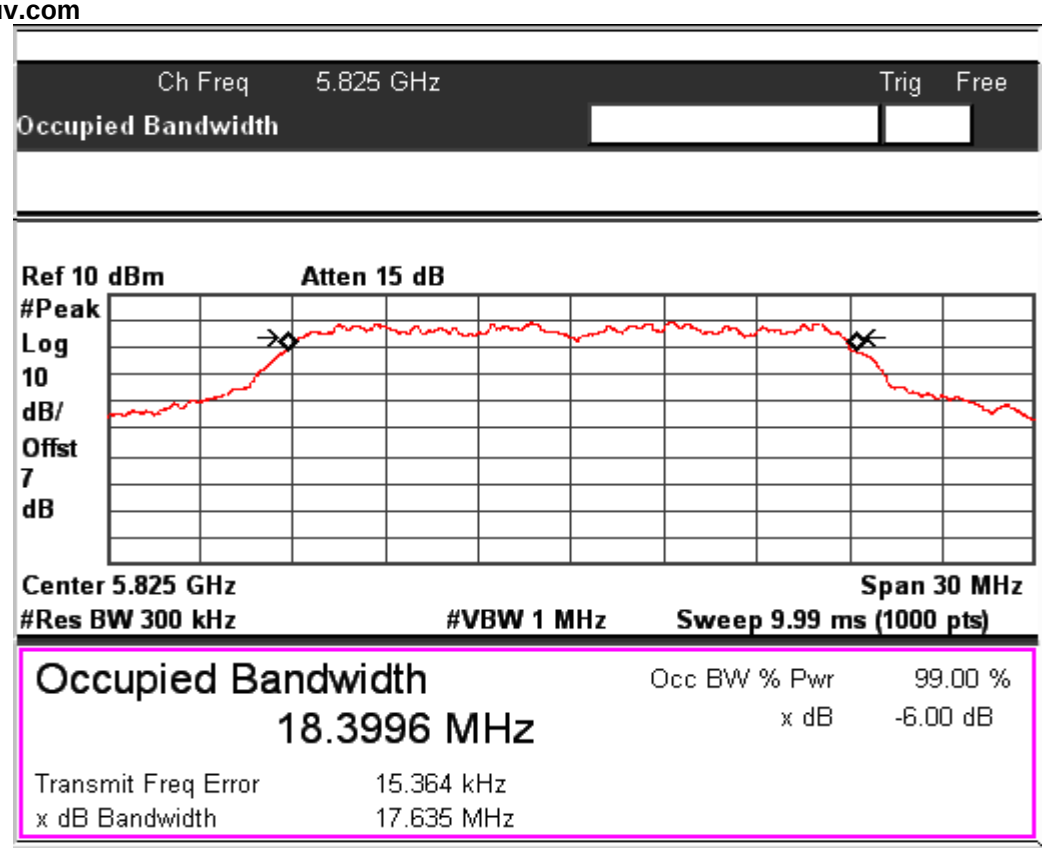
Data Rate: MCS0 Channel Frequency: 5745MHz



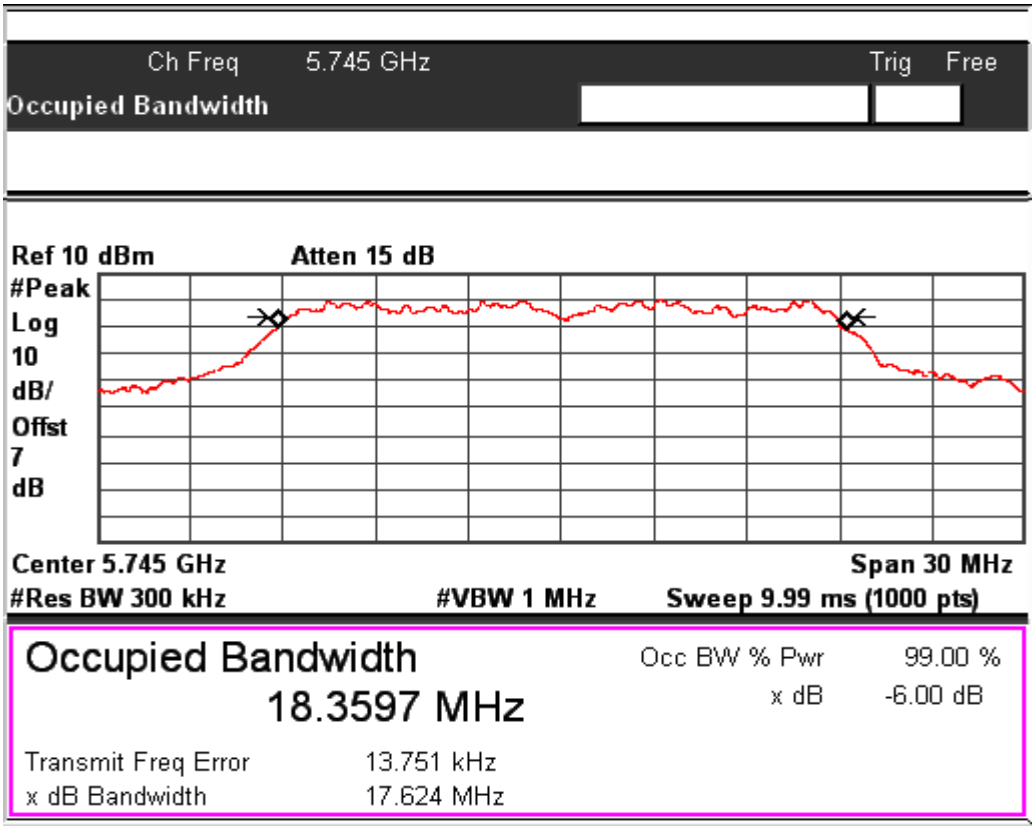
Data Rate: MCS0 Channel Frequency: 5825MHz



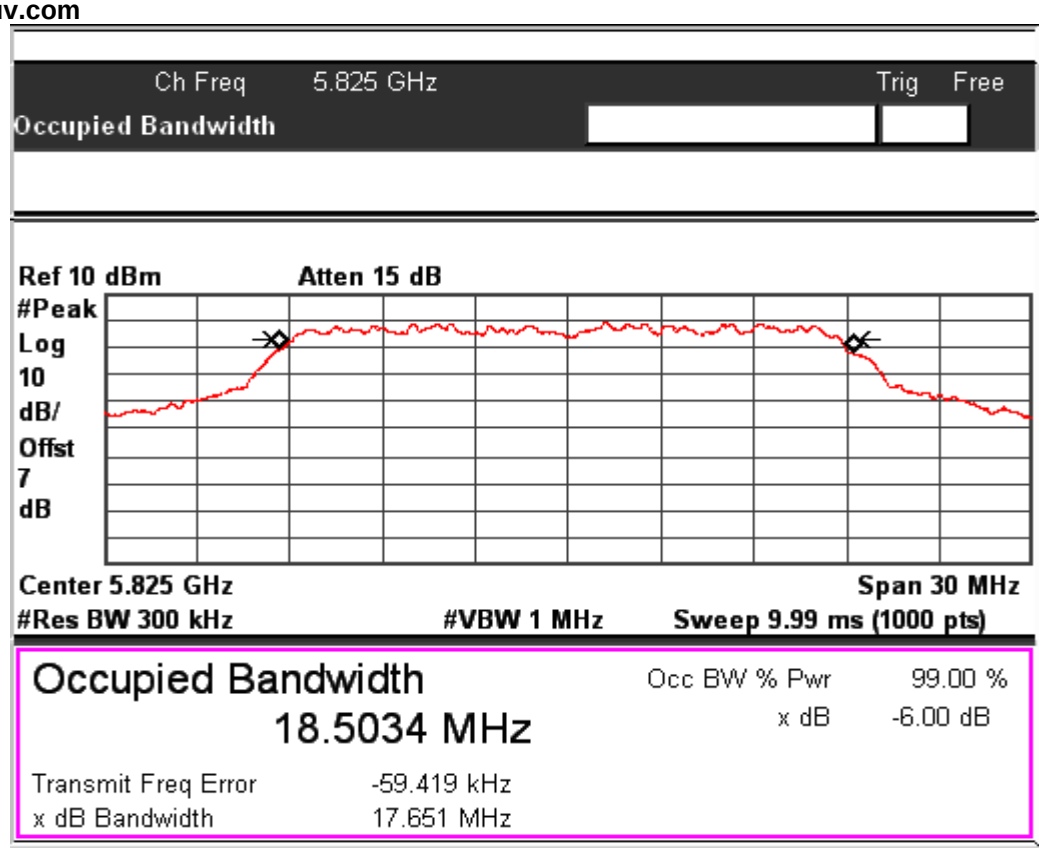
Data Rate: MCS7 Channel Frequency: 5745MHz



Data Rate: MCS7 Channel Frequency: 5825MHz

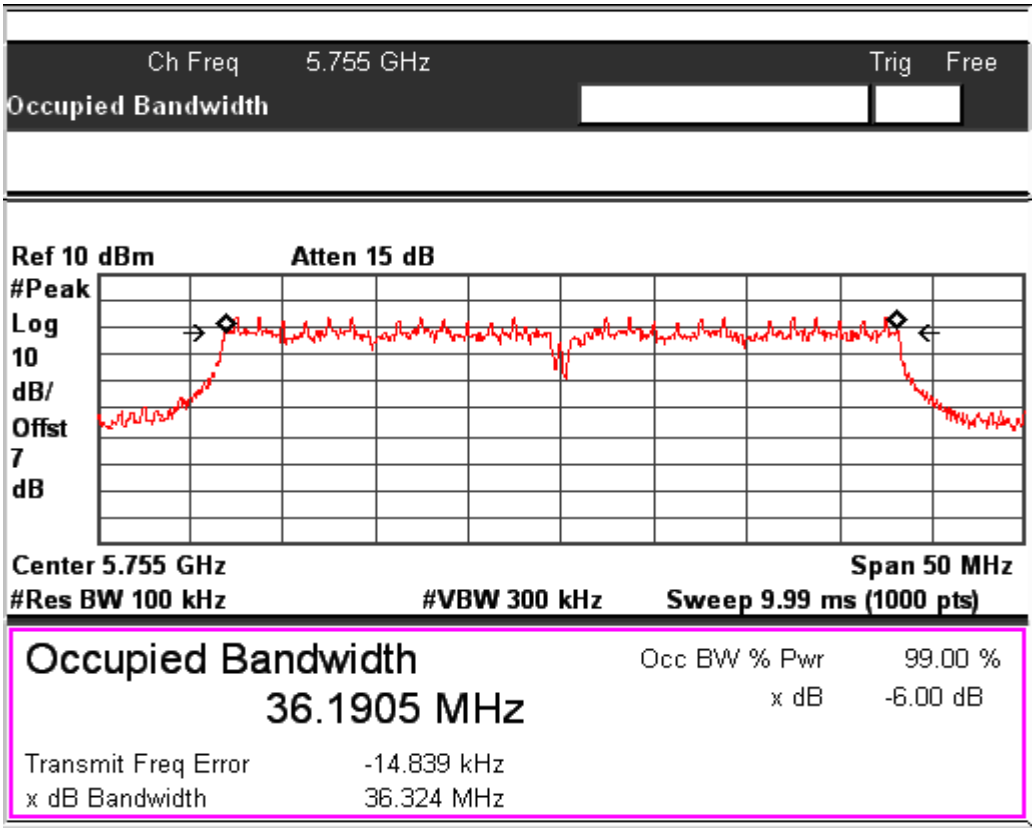


Data Rate: MCS15 Channel Frequency: 5745MHz

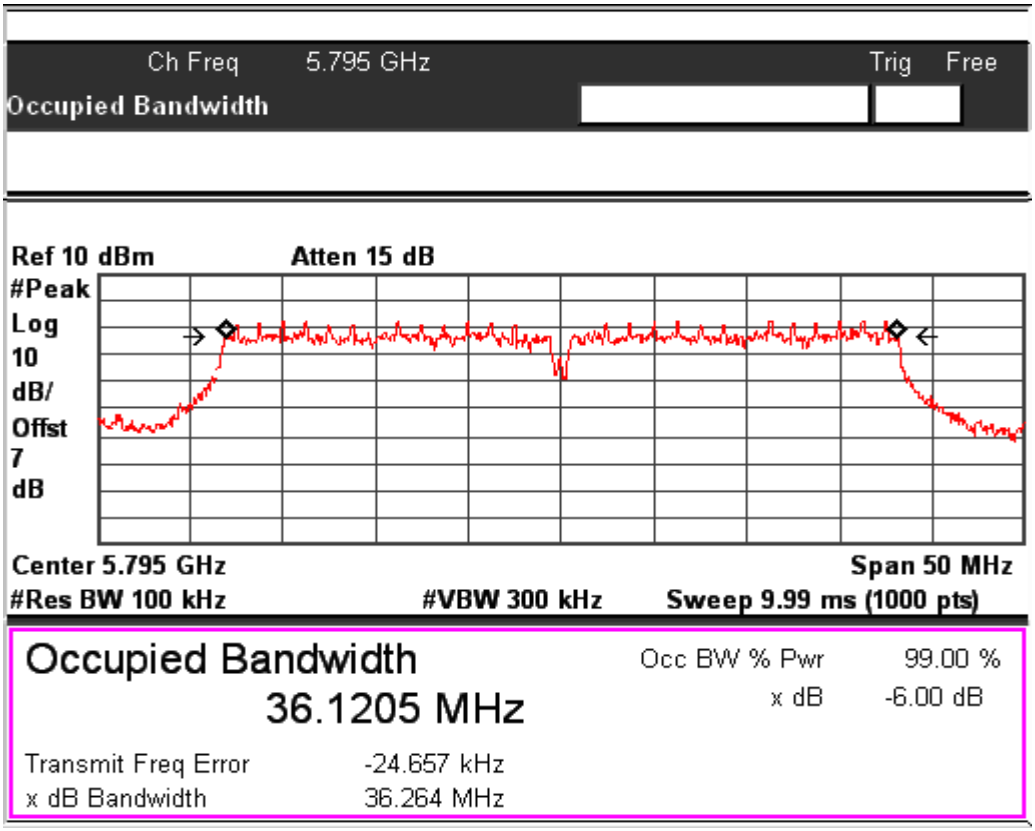


Data Rate: MCS15 **Channel Frequency: 5825MHz**

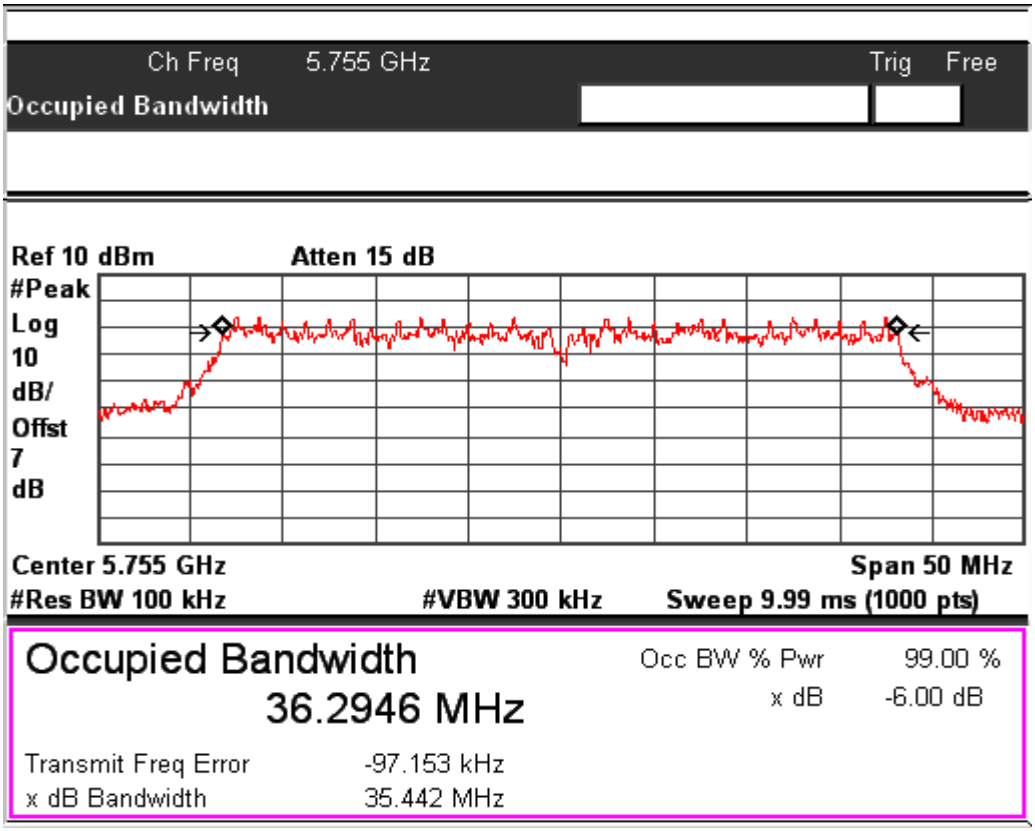
IEEE802.11n HT40				
Data Rate (Mbps)	**Channel. No**	**Frequency (MHz)**	**6 dB Bandwidth (MHz)**	**OBW (MHz)**
MCS0	151	5755	36.32	36.32
	159	5795	36.26	36.24
MCS7	151	5755	35.44	36.63
	159	5795	35.42	36.58
MCS15	151	5755	36.00	36.73
	159	5795	35.99	36.67



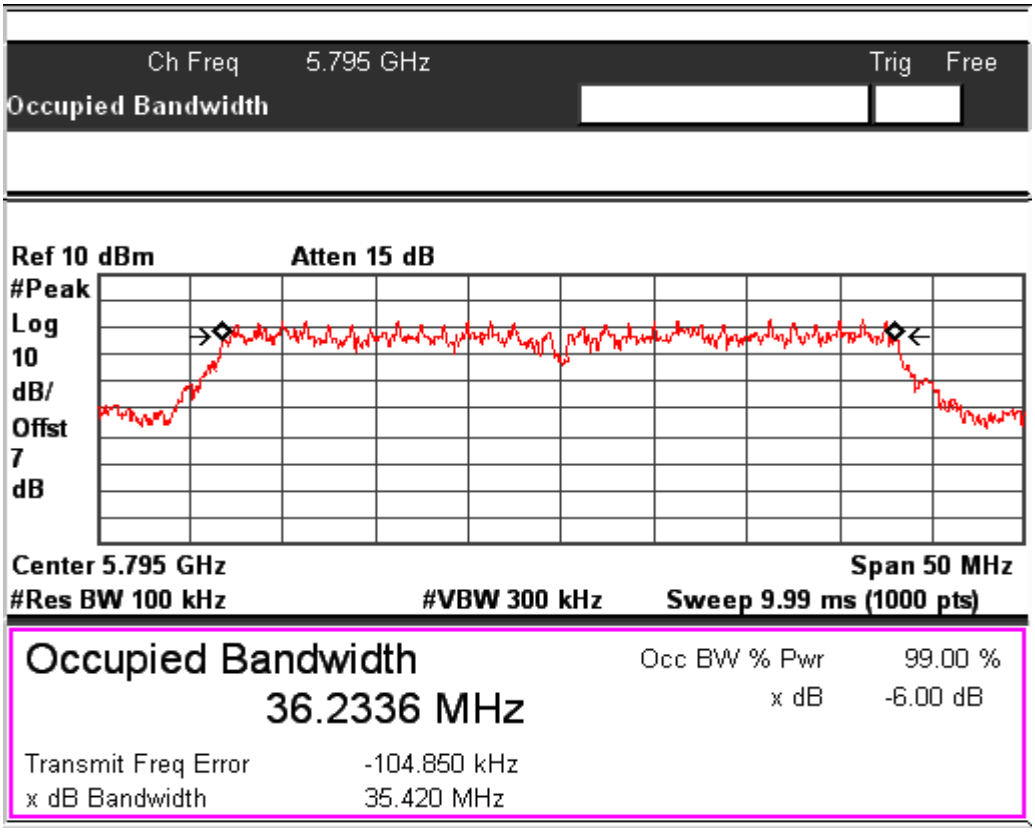
Data Rate: MCS0 **Channel Frequency: 5755MHz**



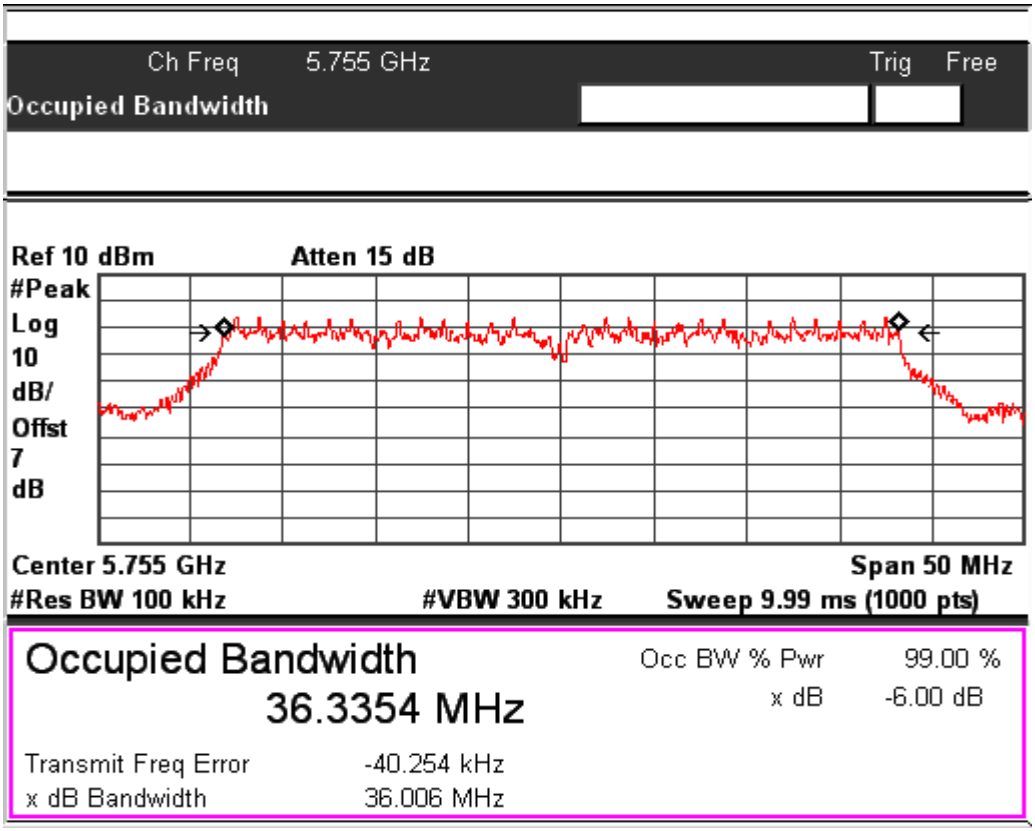
Data Rate: MCS0 **Channel Frequency: 5795MHz**



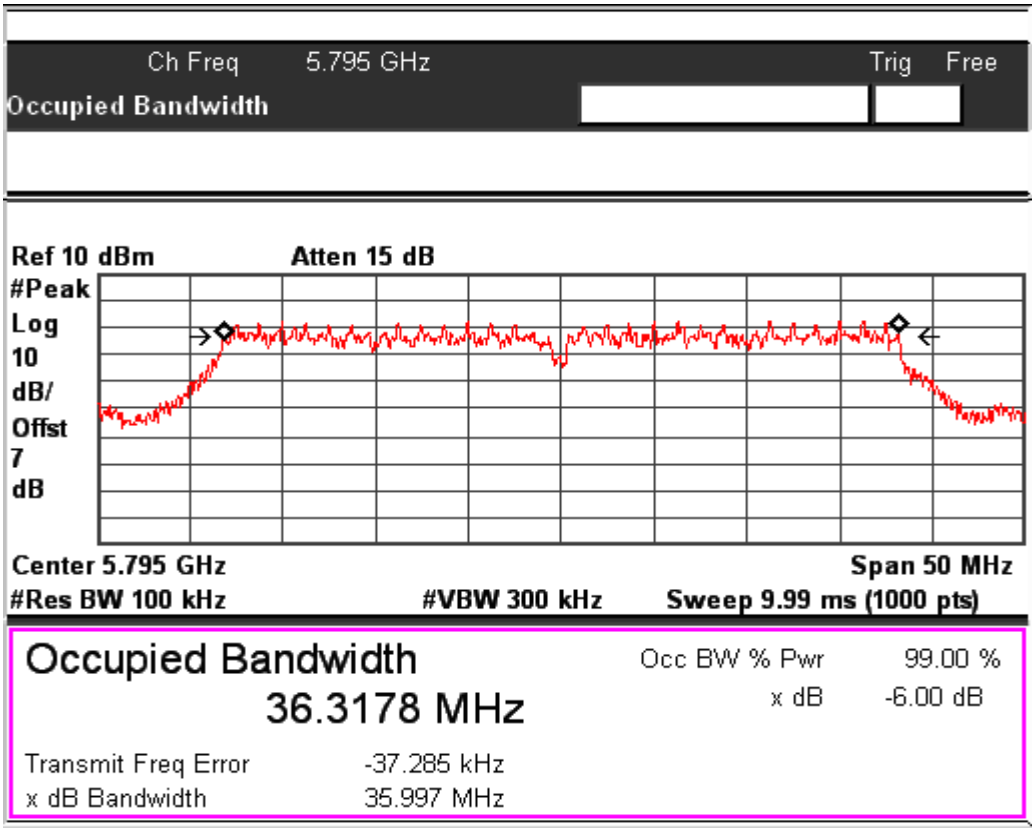
Data Rate: MCS7 **Channel Frequency: 5755MHz**



Data Rate: MCS7 **Channel Frequency: 5795MHz**

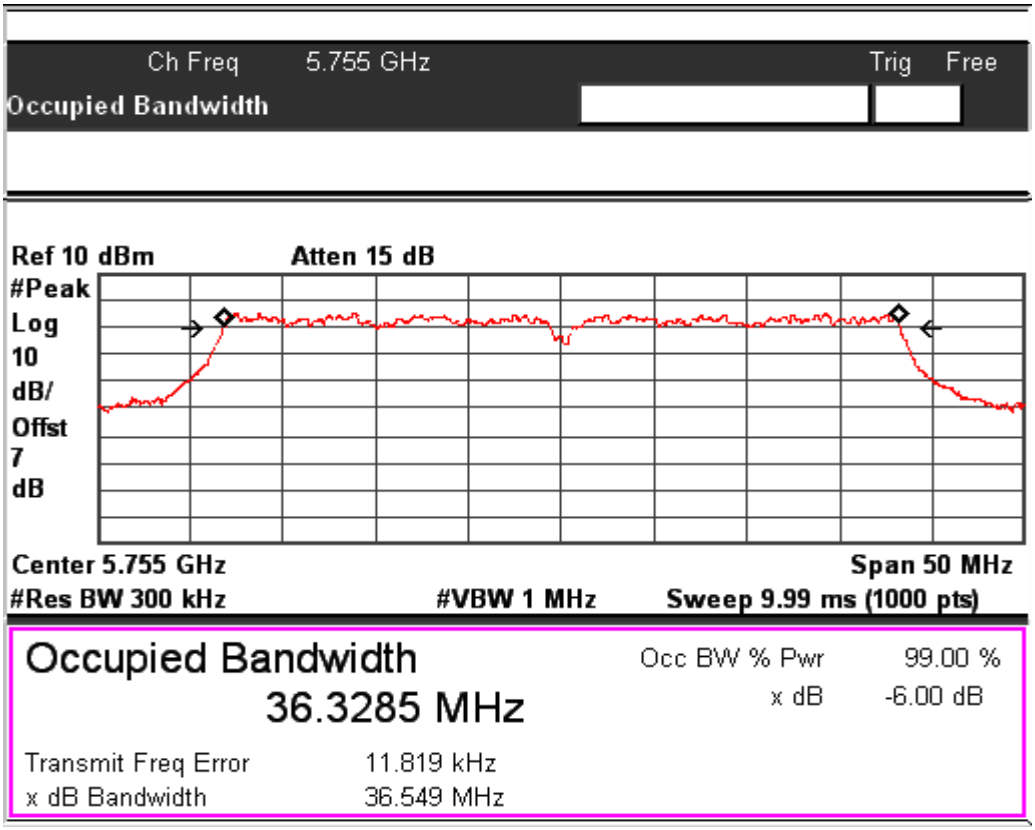


Data Rate: MCS15 **Channel Frequency: 5755MHz**

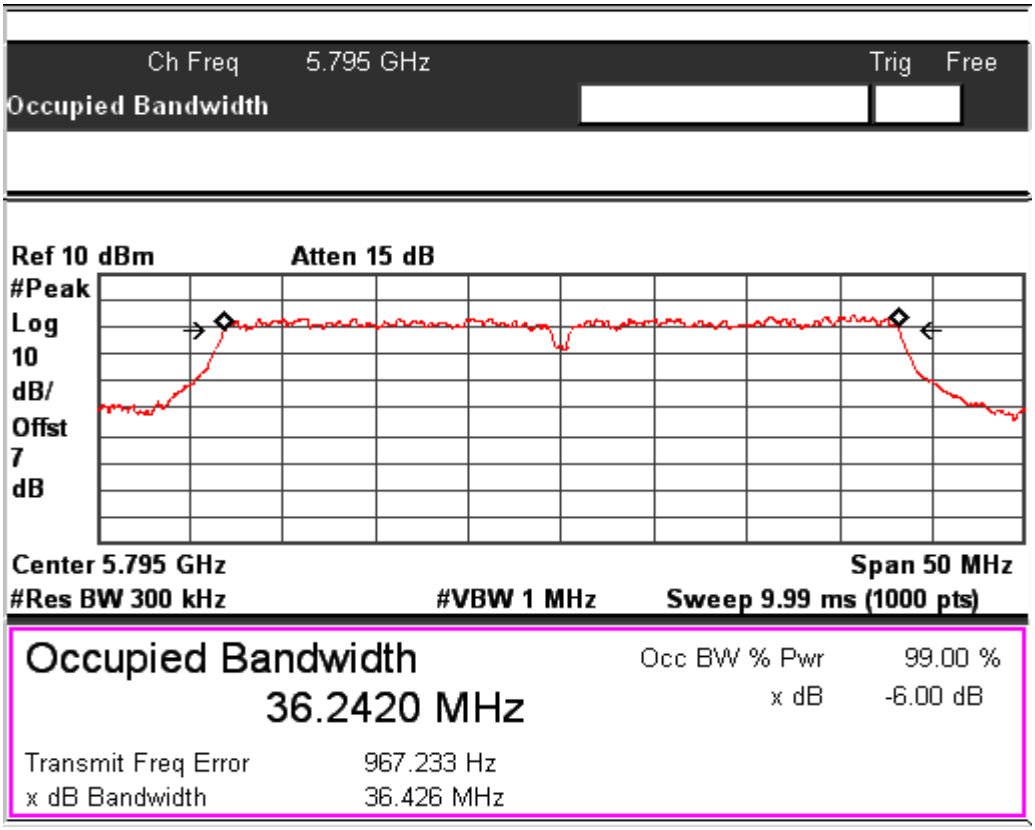


Data Rate: MCS15 **Channel Frequency: 5795MHz**

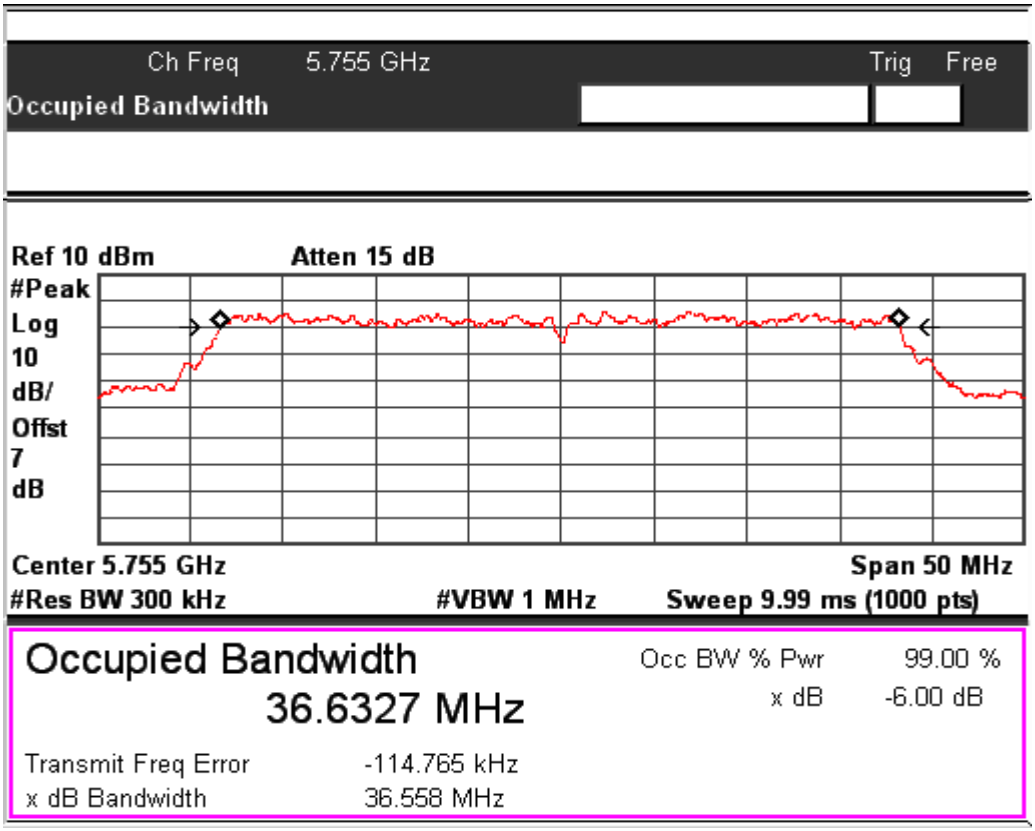
OBW:



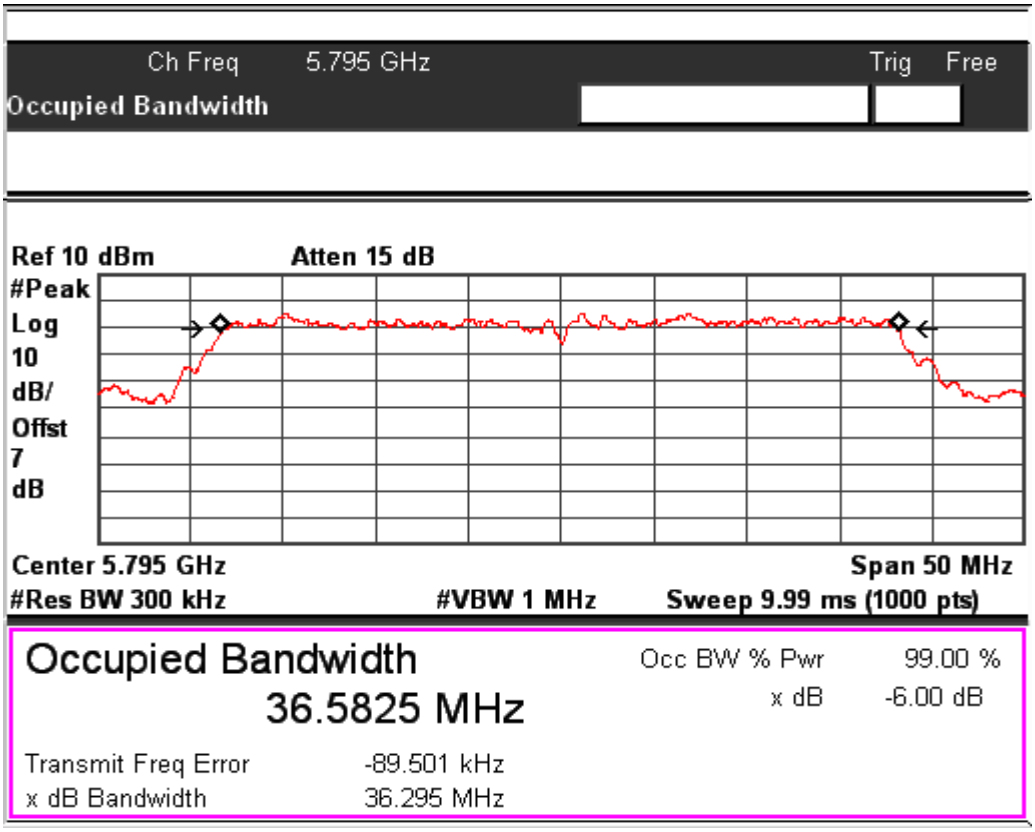
Data Rate: MCS0 Channel Frequency: 5755MHz



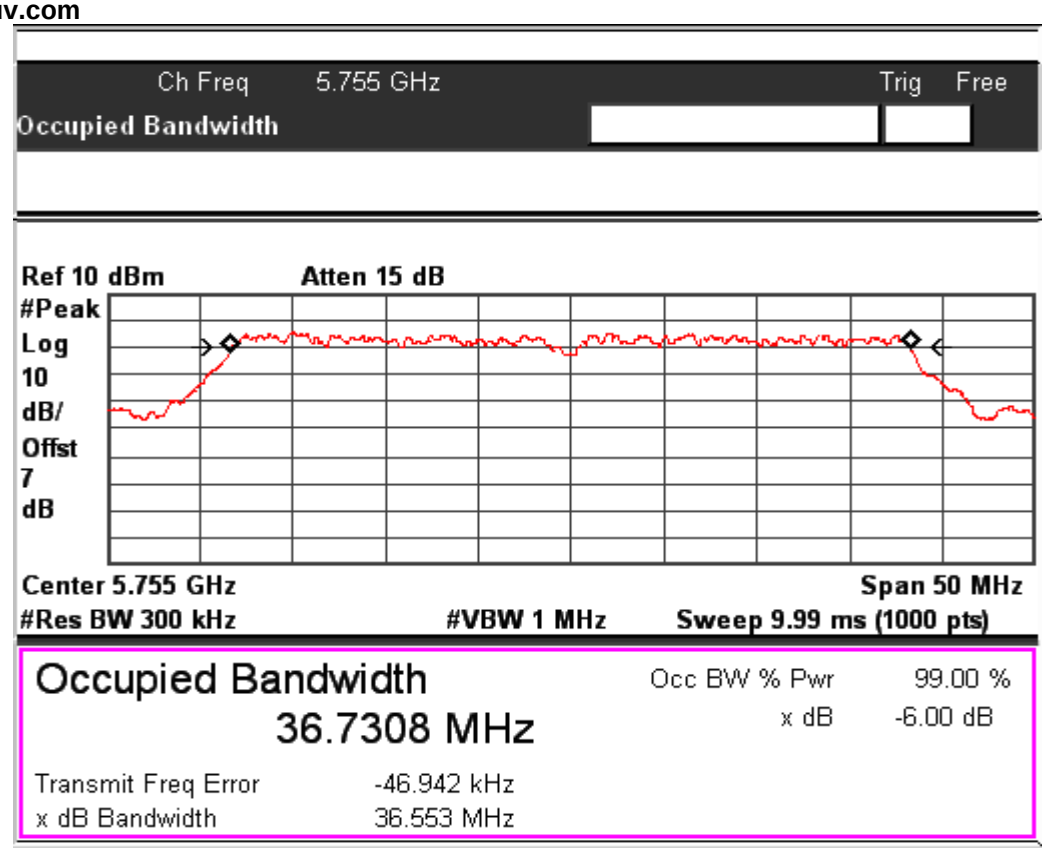
Data Rate: MCS0 Channel Frequency: 5795MHz



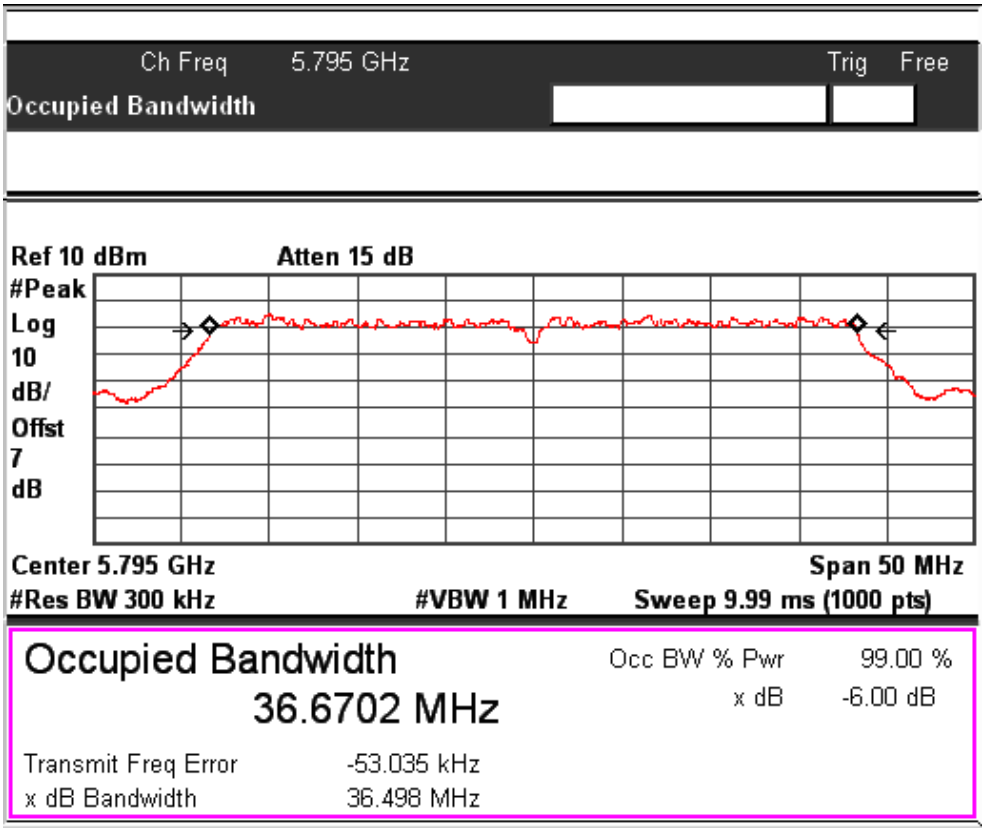
Data Rate: MCS7 **Channel Frequency: 5755MHz**



Data Rate: MCS7 **Channel Frequency: 5795MHz**



Data Rate: MCS15 **Channel Frequency: 5755MHz**

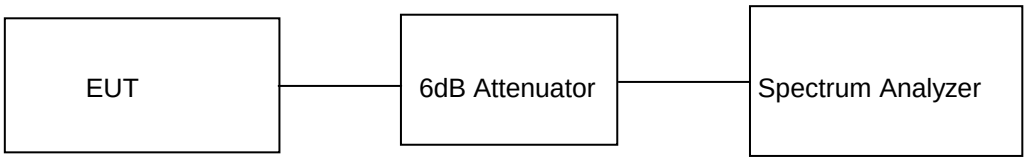


Data Rate: MCS15 **Channel Frequency: 5795MHz**

Maximum conducted output power **Section 15.407(a)**
Result **Pass**

Test Specification	FCC Part 15 Subpart E
Measurement Bandwidth (RBW)	1 MHz
Requirement	The maximum conducted output power over the frequency band of operation shall not exceed the 24dBm in 5.15-5.25 GHz & 30dBm in 5.725-5.85 GHz.

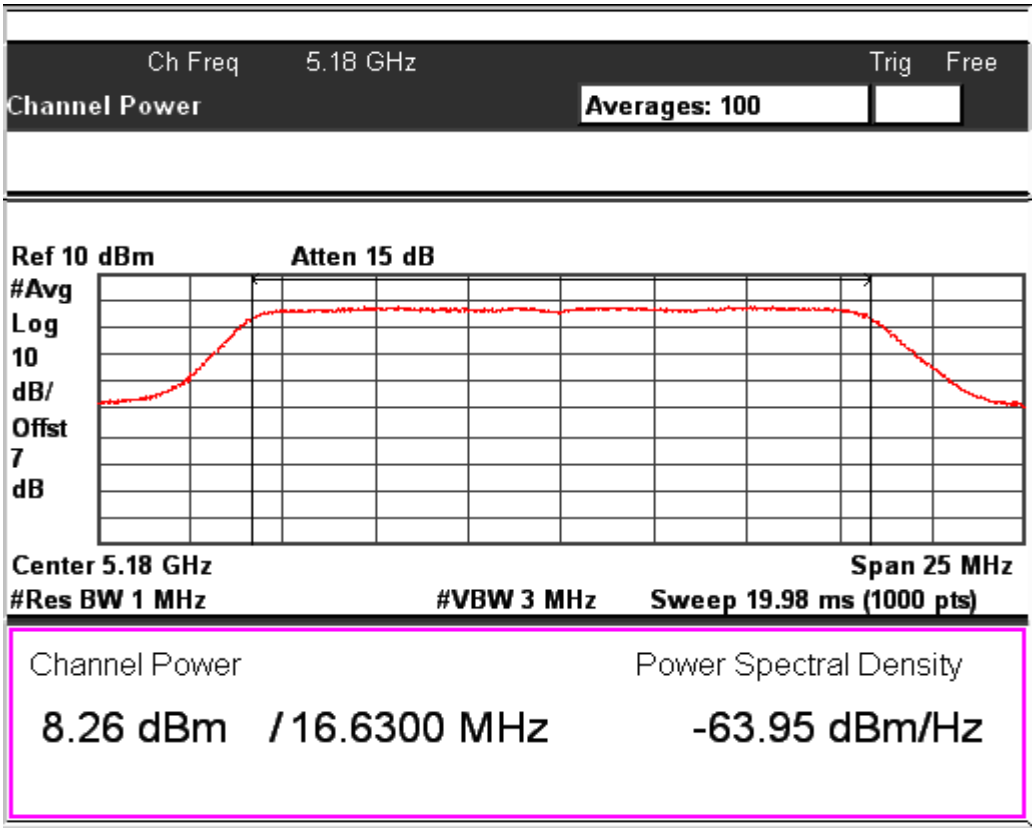
Test Method:



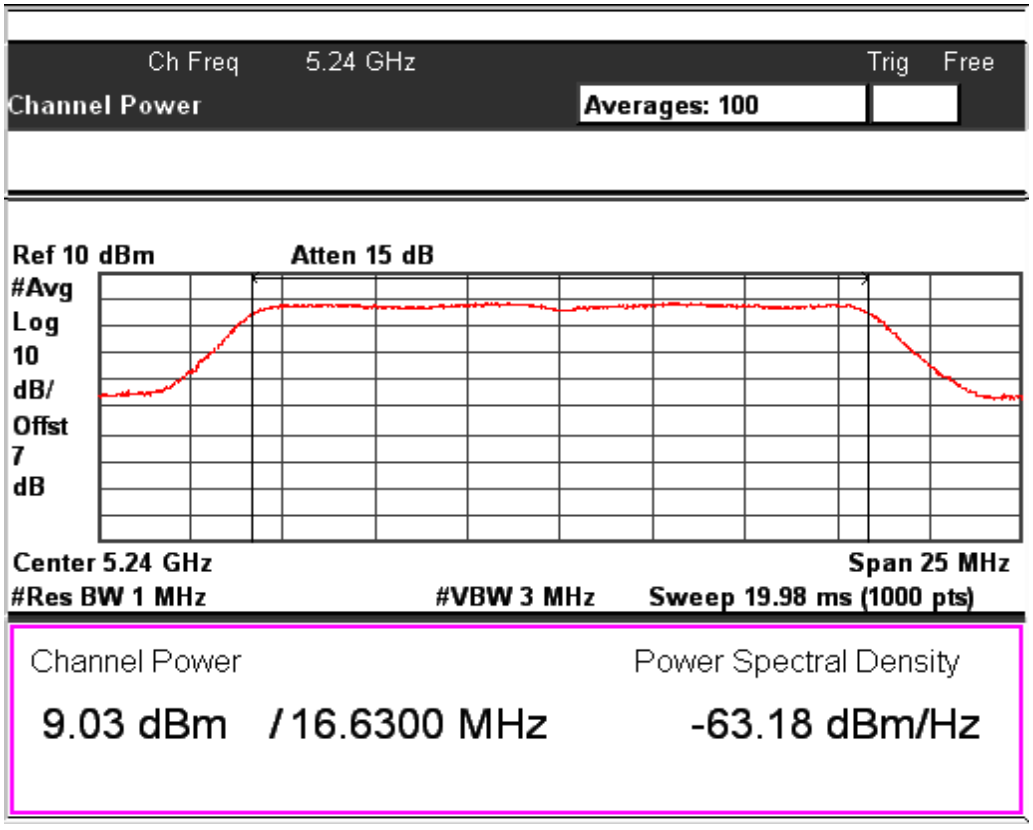
Note: For measurement of Maximum conducted output power, method SA-1 Alternative was used, Attenuator (6dB) + cable loss (1dB) = 7dB Considered in the test result.

Test Results for Path A:

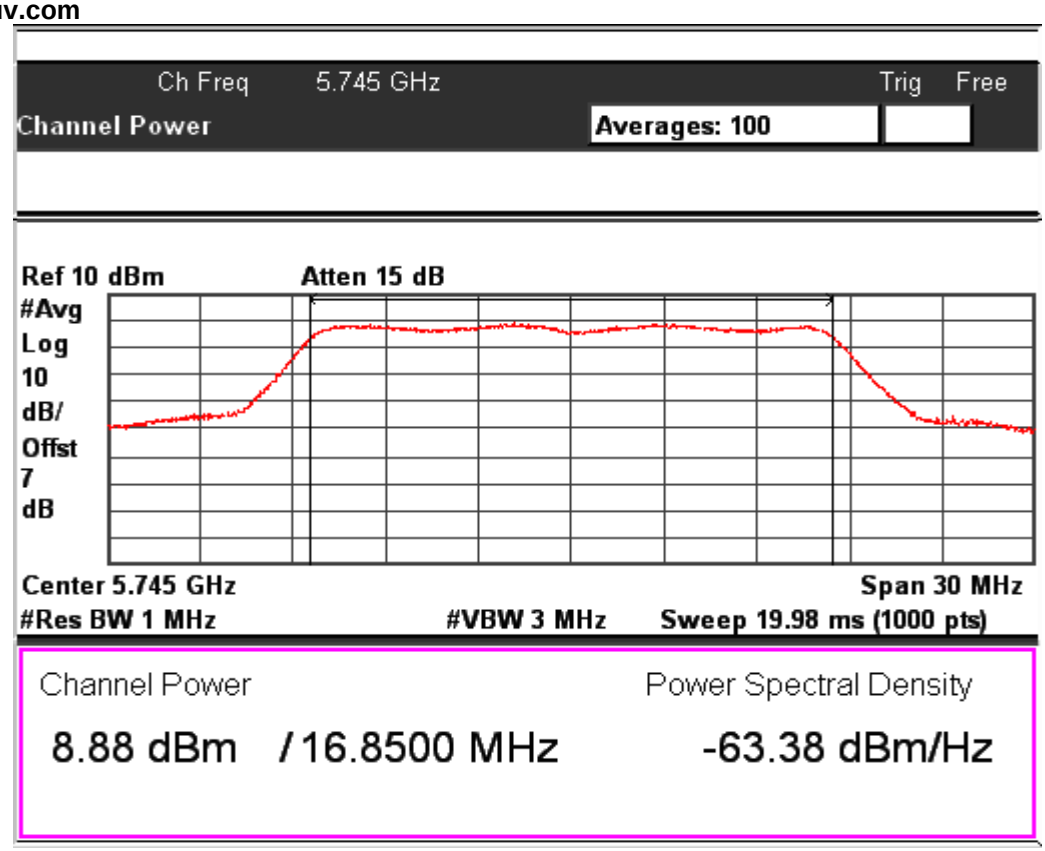
IEEE802.11a 20MHz Channel				
Data Rate (Mbps)	**Channel No.**	**Frequency (MHz)**	**Average Output power (dBm)**	**Average Power (mW)**
6	36	5180	8.26	6.70
	48	5240	9.03	8.00
	149	5745	8.88	7.73
	165	5825	8.3	6.76
24	36	5180	8.62	7.28
	48	5240	8.62	7.28
	149	5745	8.68	7.38
	165	5825	8.08	6.43
54	36	5180	8.02	6.34
	48	5240	9.09	8.11
	149	5745	8.78	7.55
	165	5825	8.18	6.58



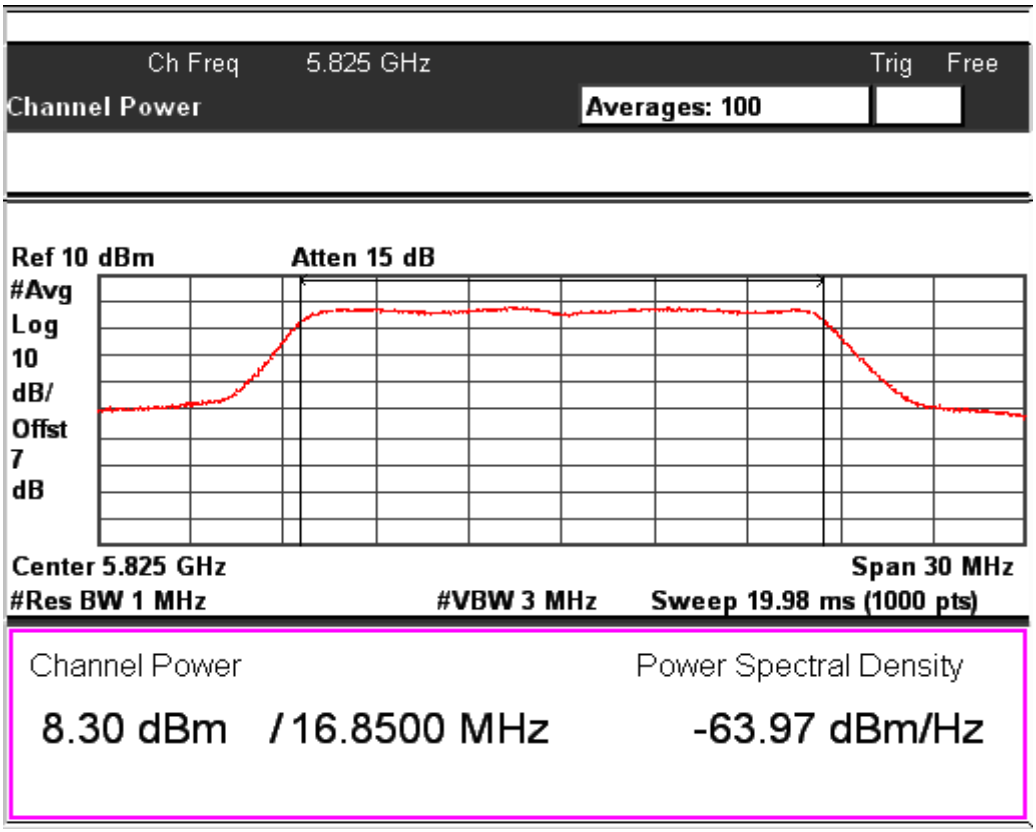
Data Rate: 6Mbps **Channel Frequency: 5180MHz**



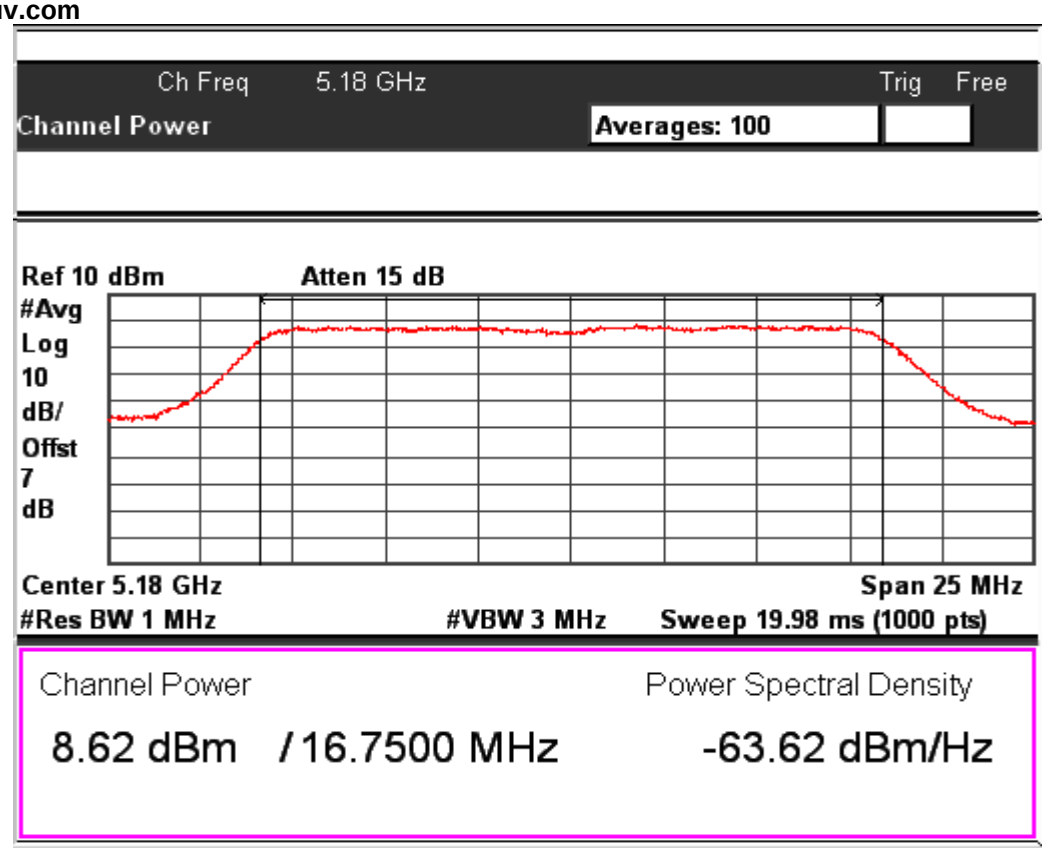
Data Rate: 6Mbps **Channel Frequency: 5240MHz**



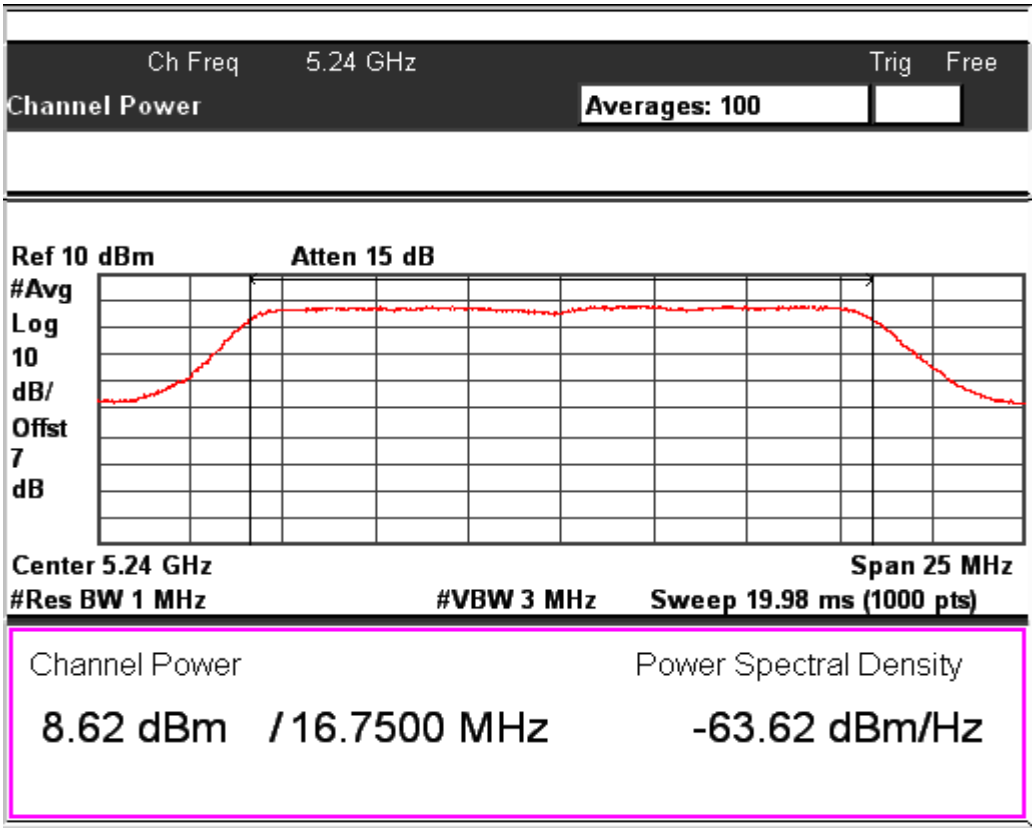
Data Rate: 6Mbps **Channel Frequency: 5745MHz**



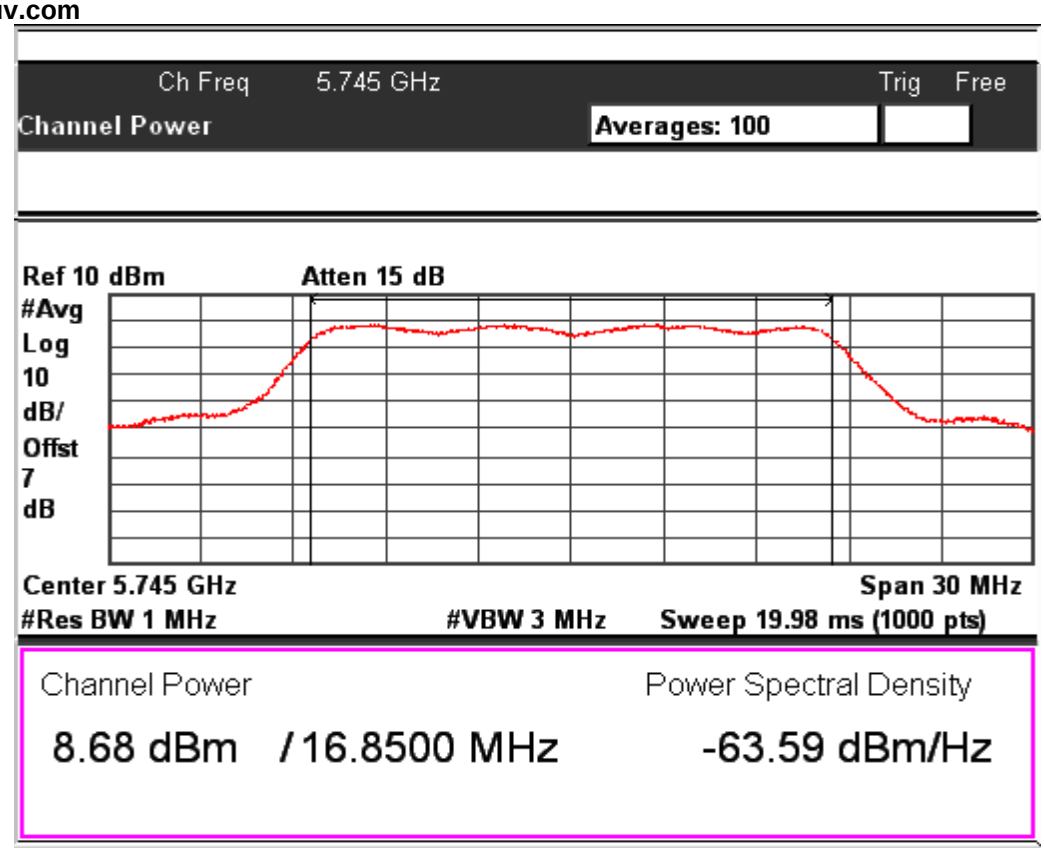
Data Rate: 6Mbps **Channel Frequency: 5825MHz**



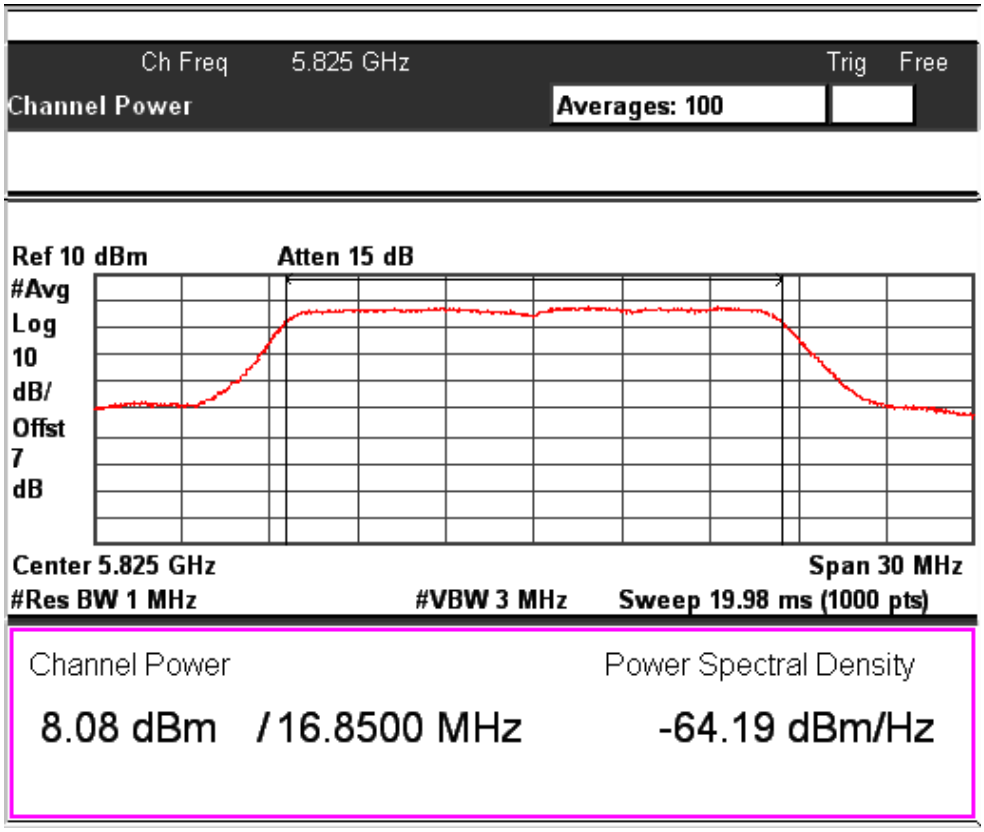
Data Rate: 24Mbps **Channel Frequency: 5180MHz**



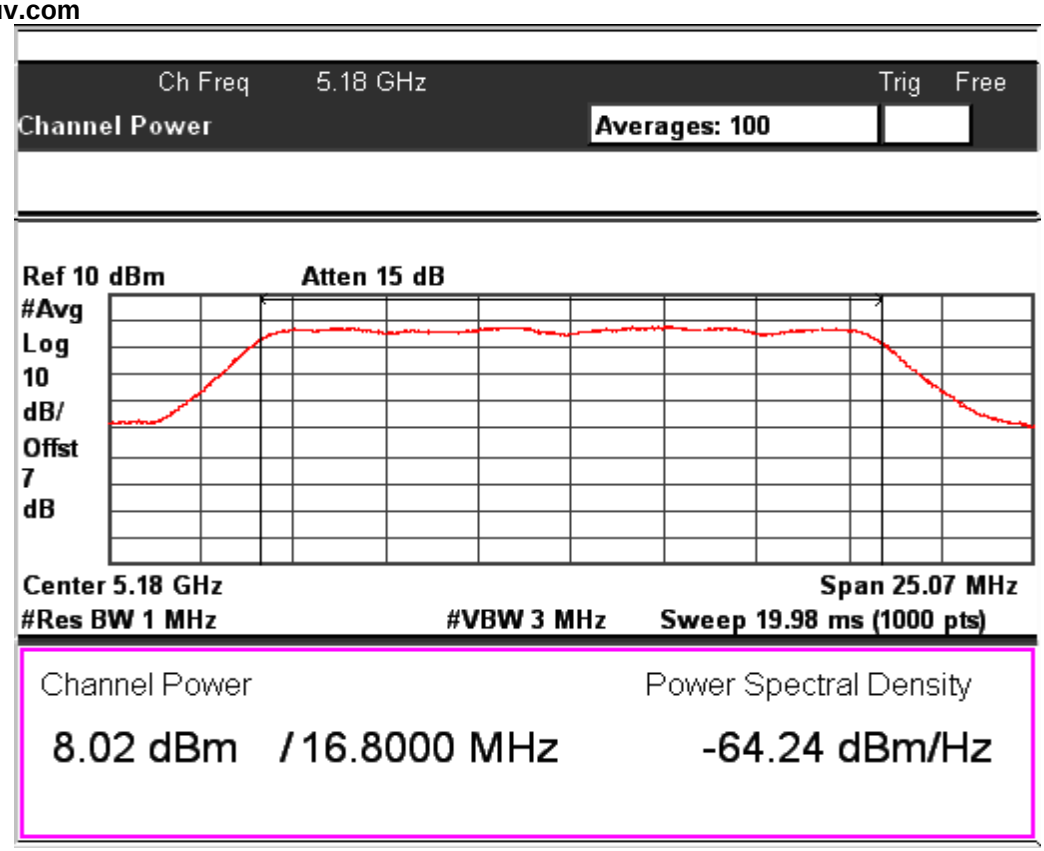
Data Rate: 24Mbps **Channel Frequency: 5240MHz**



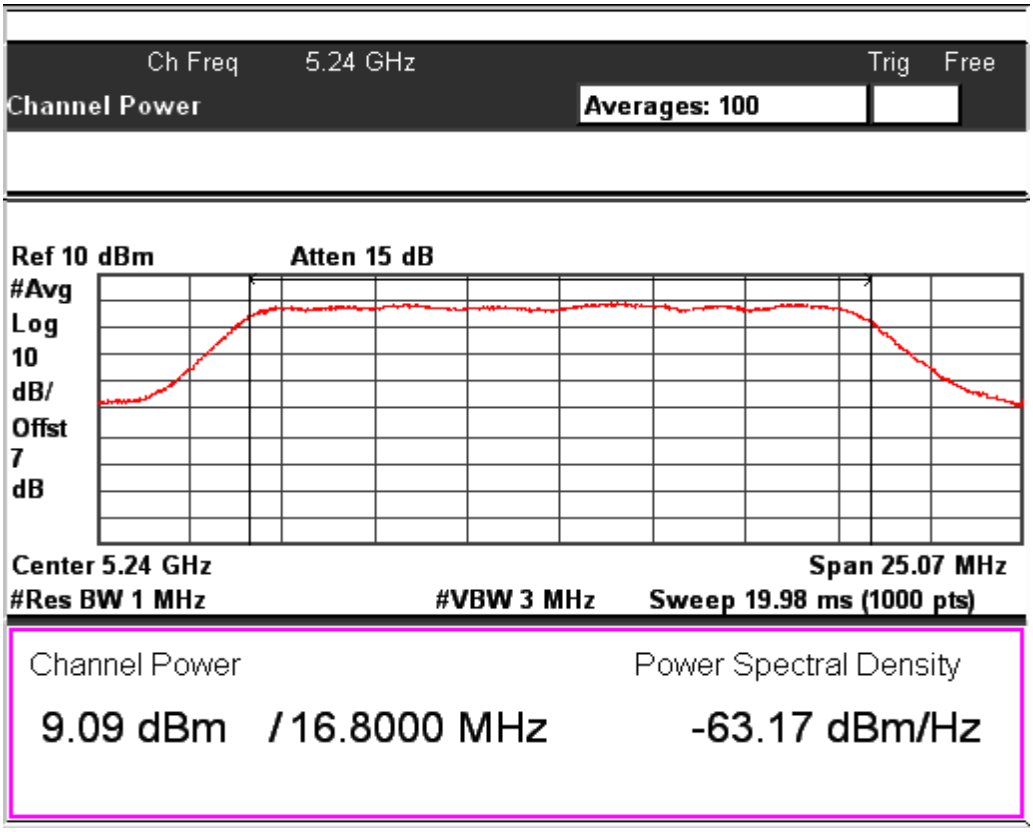
Data Rate: 24Mbps **Channel Frequency: 5745MHz**



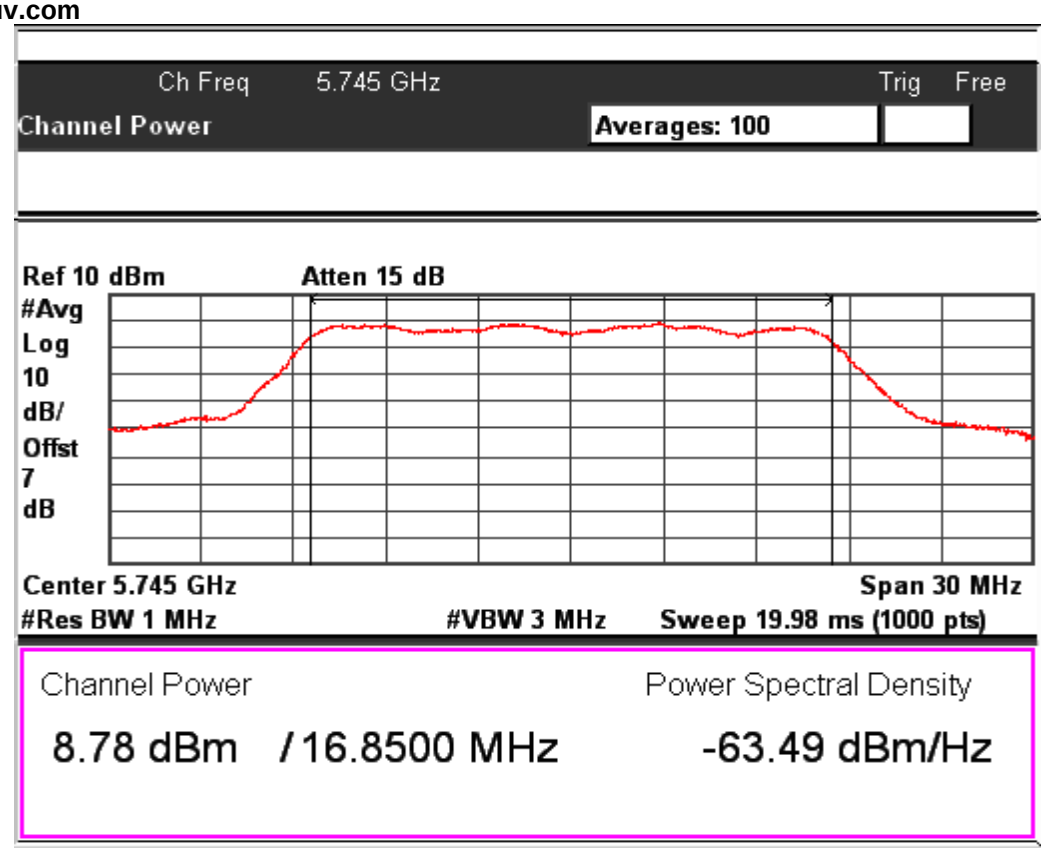
Data Rate: 24Mbps **Channel Frequency: 5825MHz**



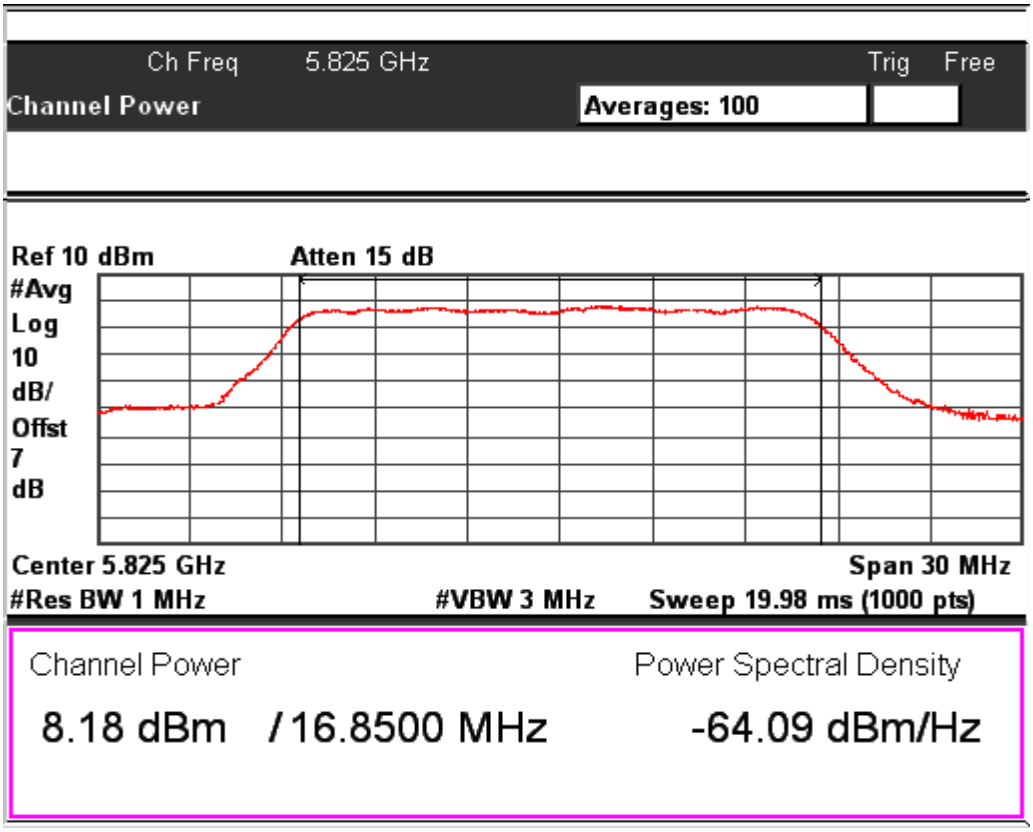
Data Rate: 54Mbps **Channel Frequency: 5180MHz**



Data Rate: 54Mbps **Channel Frequency: 5240MHz**



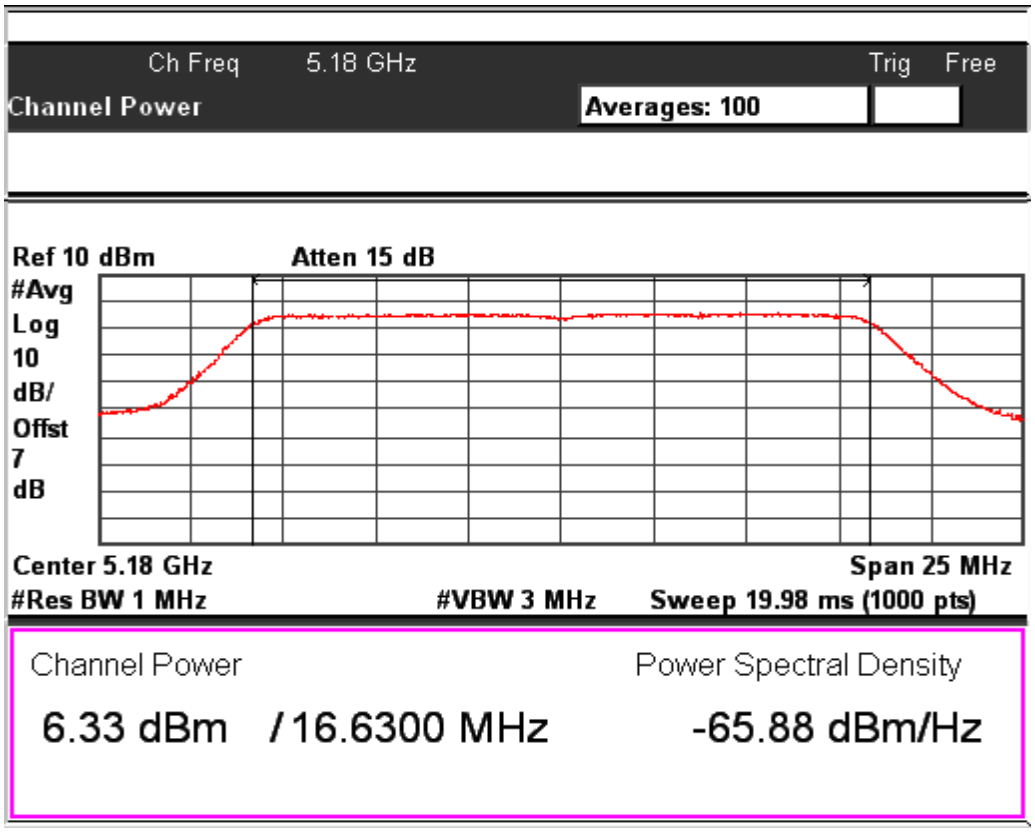
Data Rate: 54Mbps **Channel Frequency: 5745MHz**



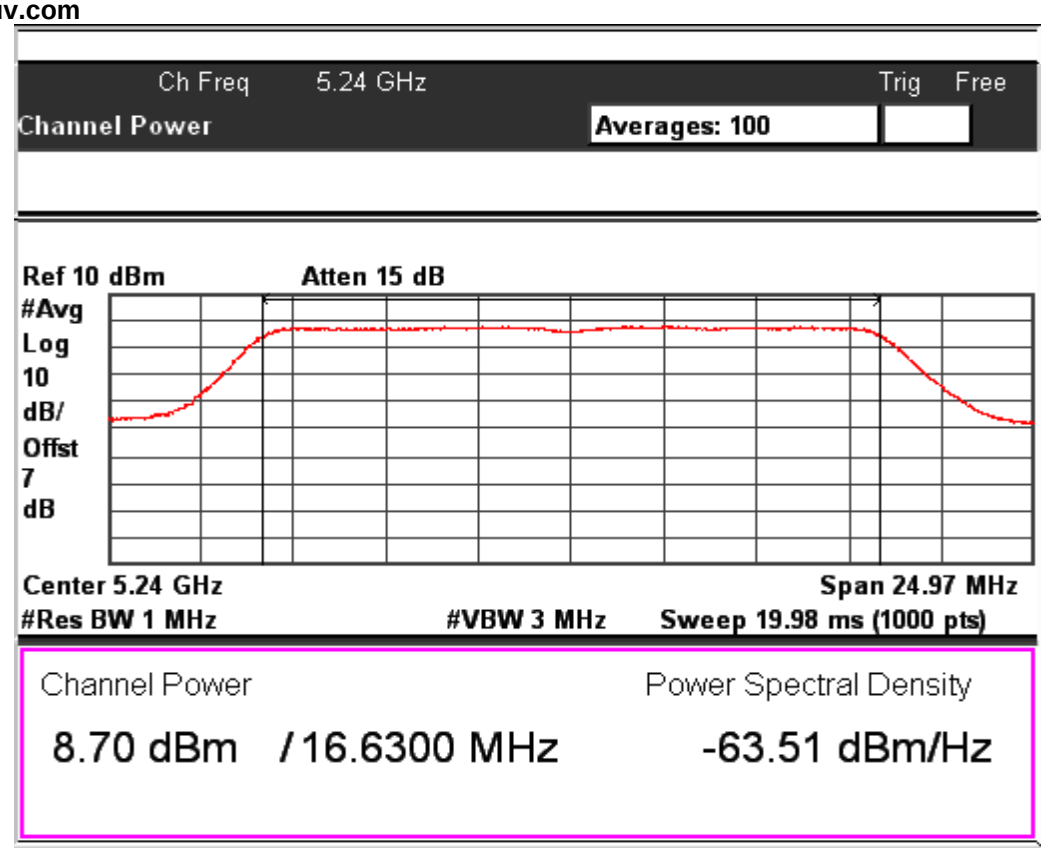
Data Rate: 54Mbps **Channel Frequency: 5825MHz**

Test Results for Path B:

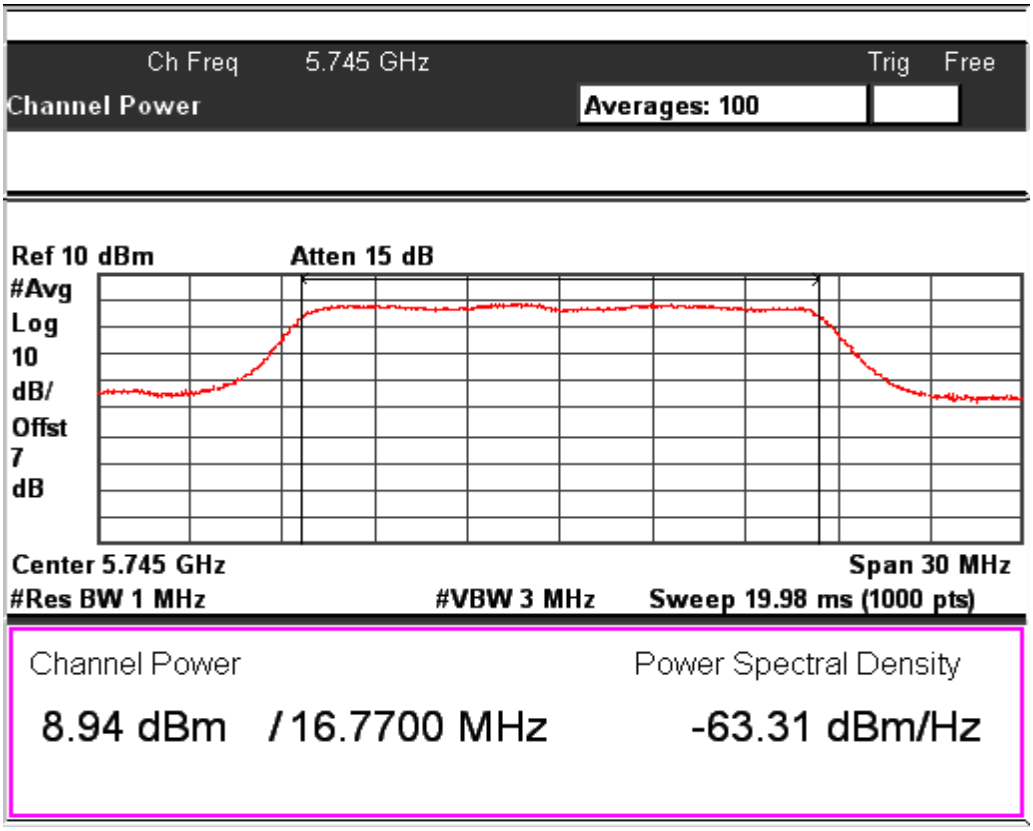
IEEE802.11a 20MHz Channel				
Data Rate (Mbps)	**Channel No.**	**Frequency (MHz)**	**Average Output power (dBm)**	**Average Power (mW)**
6	36	5180	6.33	4.30
	48	5240	8.7	7.41
	149	5745	8.94	7.83
	165	5825	7.32	5.40
24	36	5180	6.89	4.89
	48	5240	8.34	6.82
	149	5745	8.67	7.36
	165	5825	7.25	5.31
54	36	5180	7.01	5.02
	48	5240	8.68	7.38
	149	5745	8.83	7.64
	165	5825	7.36	5.45



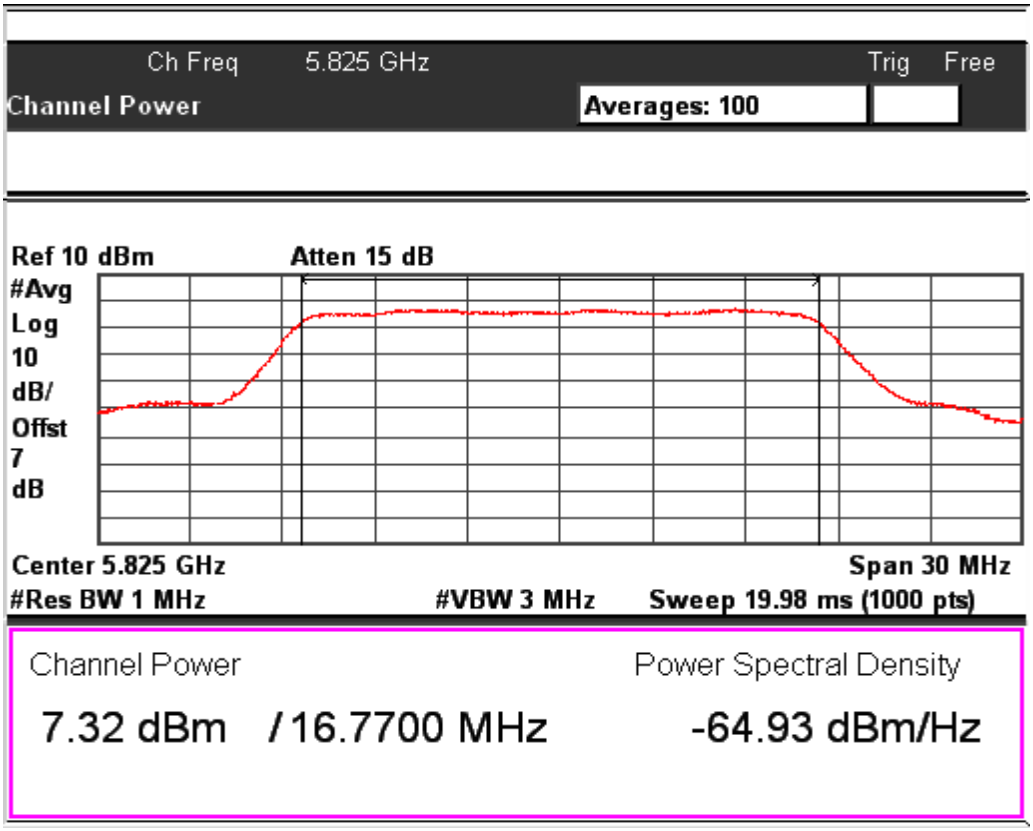
Data Rate: 6Mbps **Channel Frequency: 5180MHz**



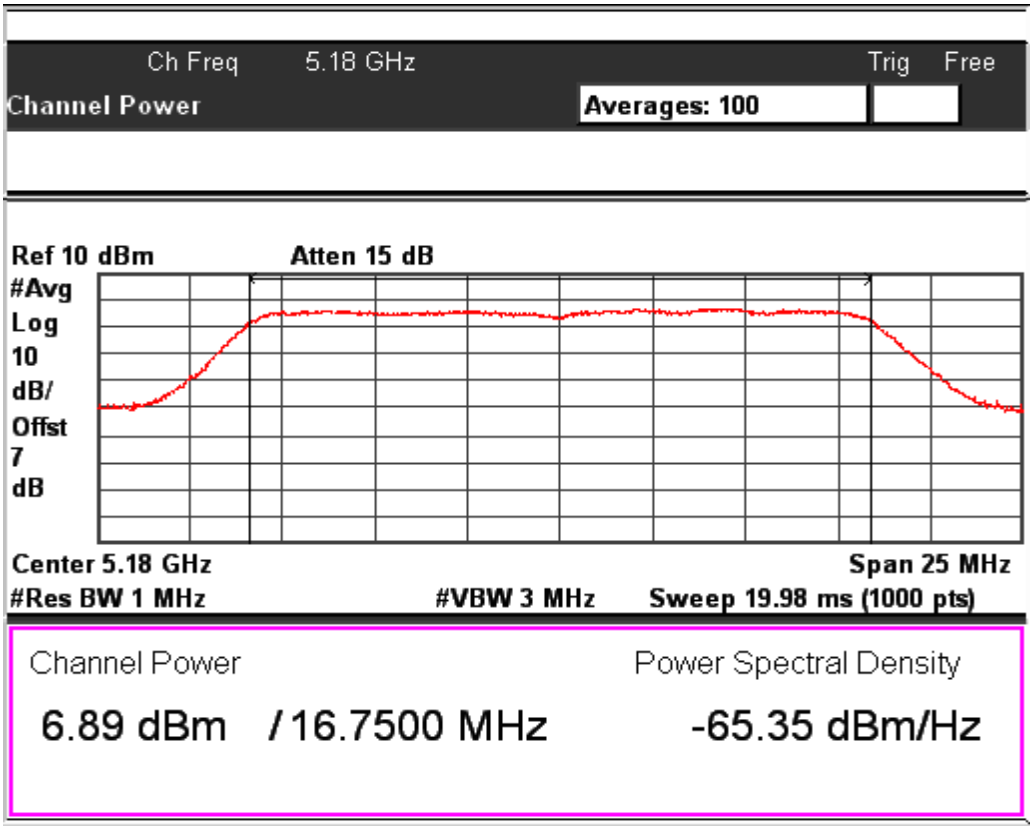
Data Rate: 6Mbps **Channel Frequency: 5240MHz**



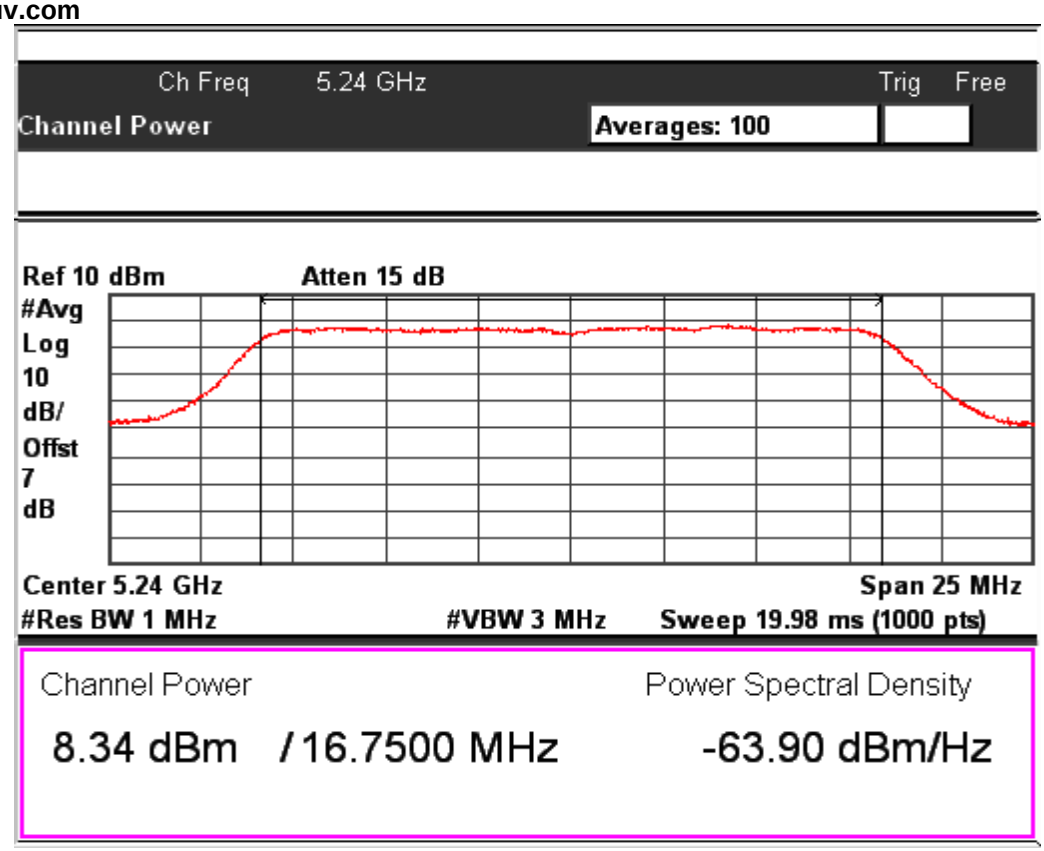
Data Rate: 6Mbps **Channel Frequency: 5745MHz**



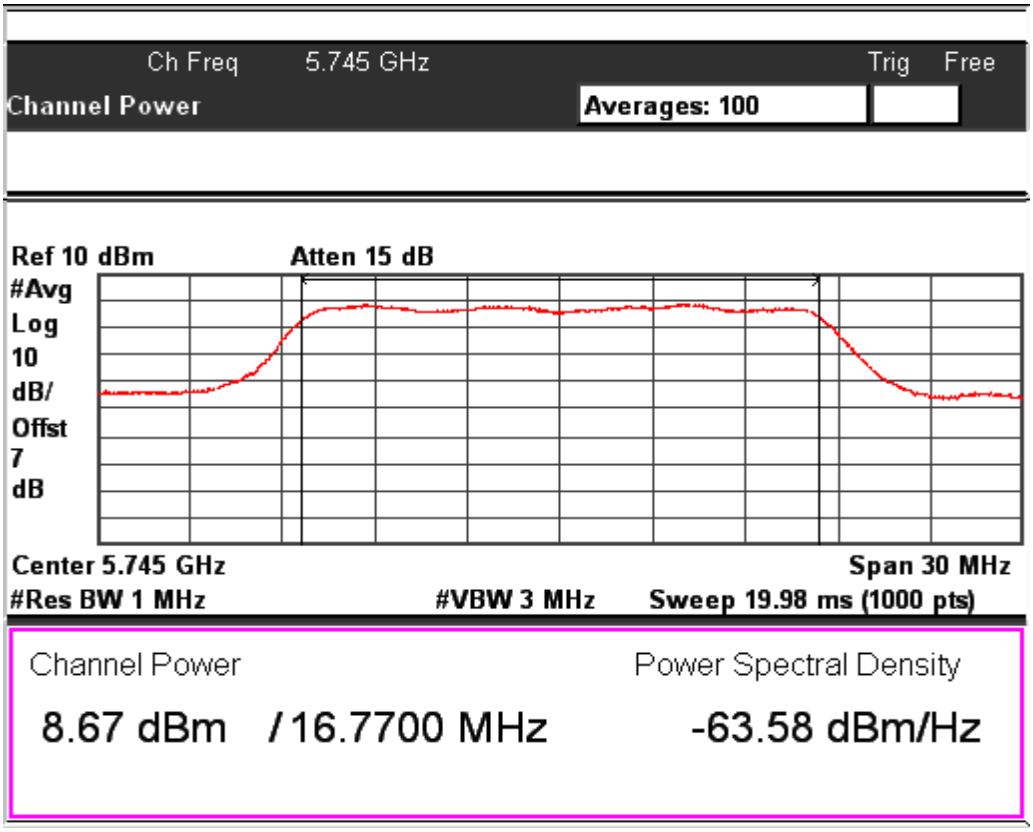
Data Rate: 6Mbps **Channel Frequency: 5825MHz**



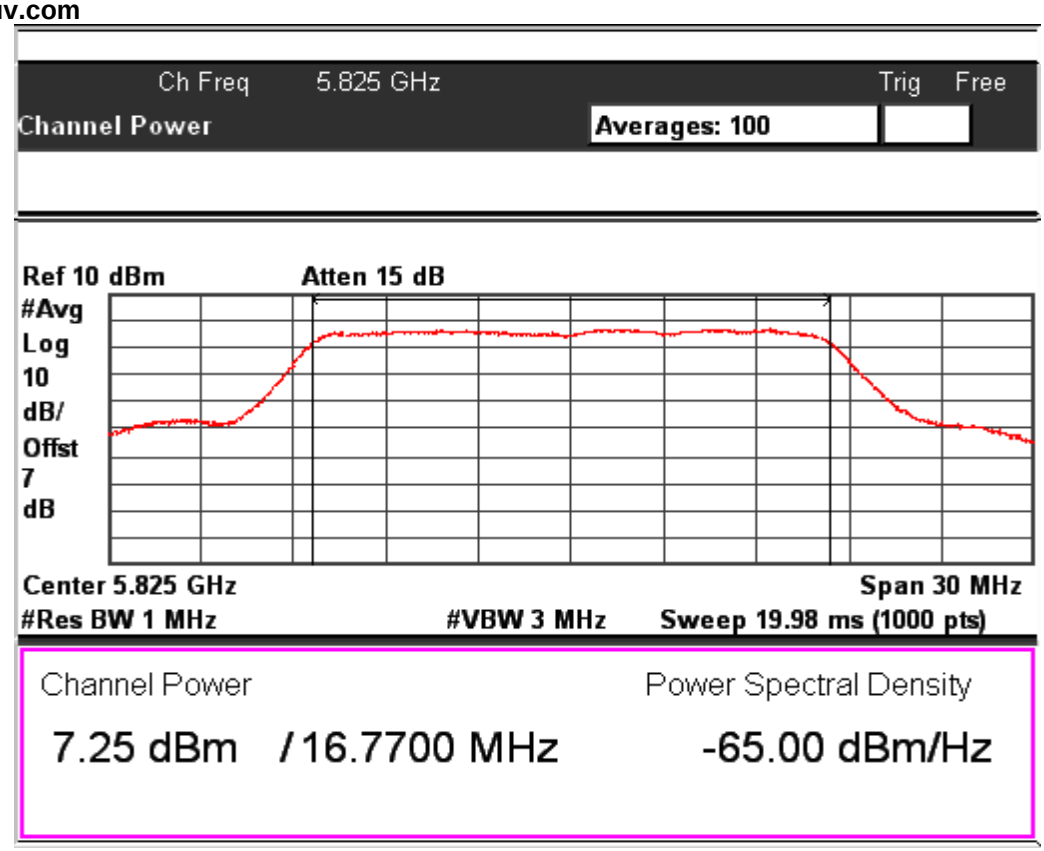
Data Rate: 24Mbps **Channel Frequency: 5180MHz**



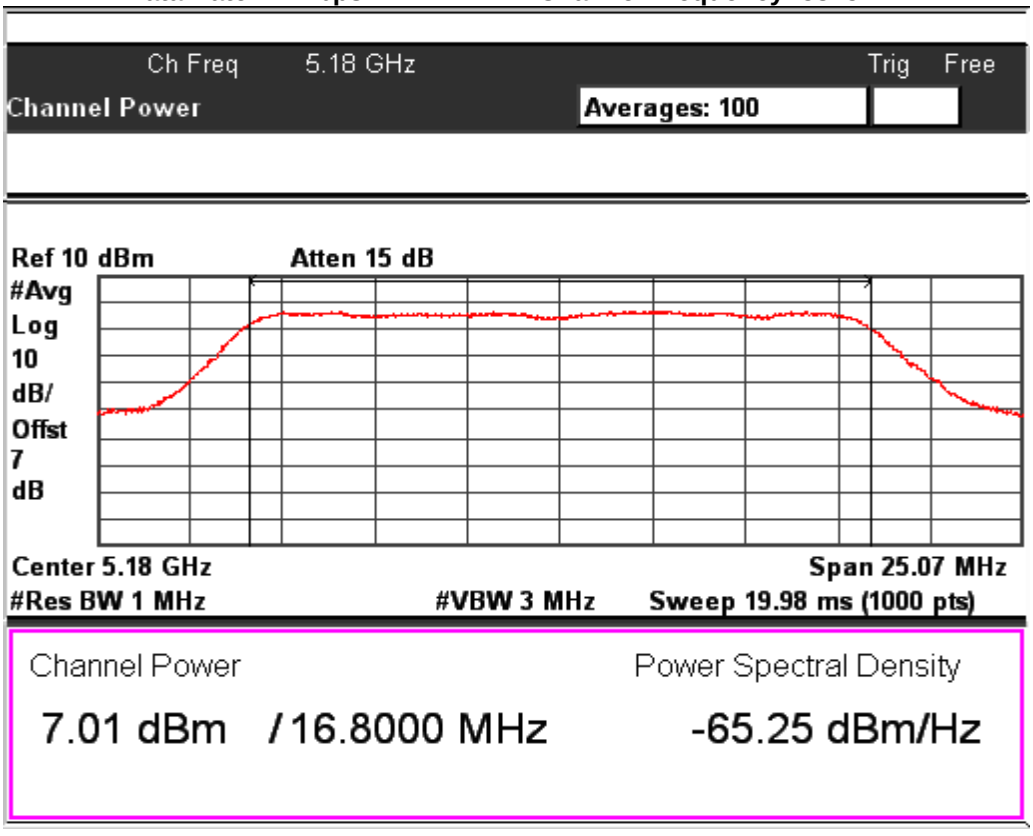
Data Rate: 24Mbps **Channel Frequency: 5240MHz**



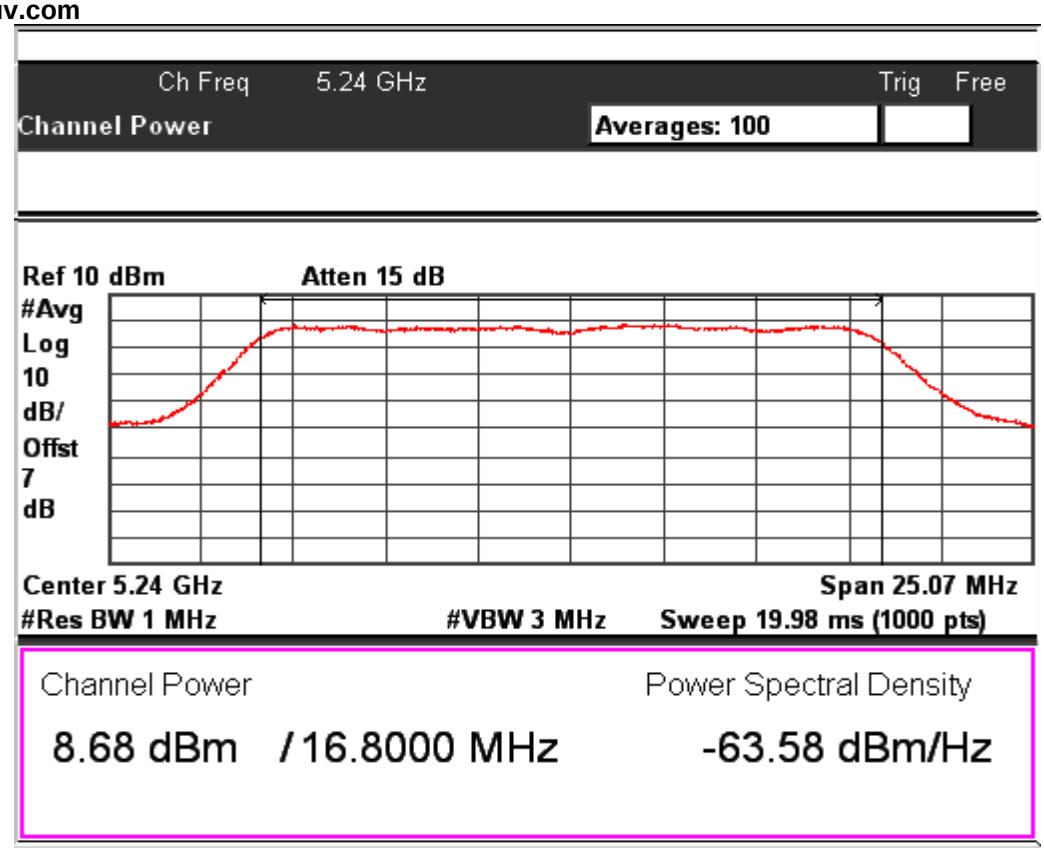
Data Rate: 24Mbps **Channel Frequency: 5745MHz**



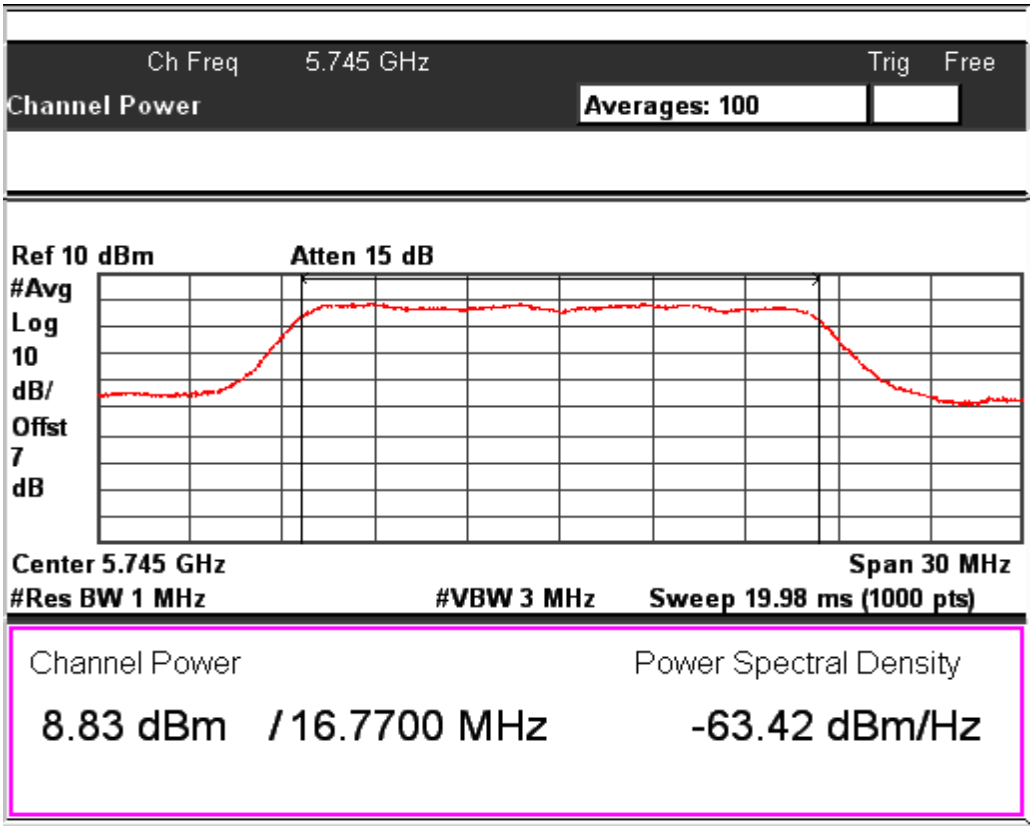
Data Rate: 24Mbps **Channel Frequency: 5825MHz**



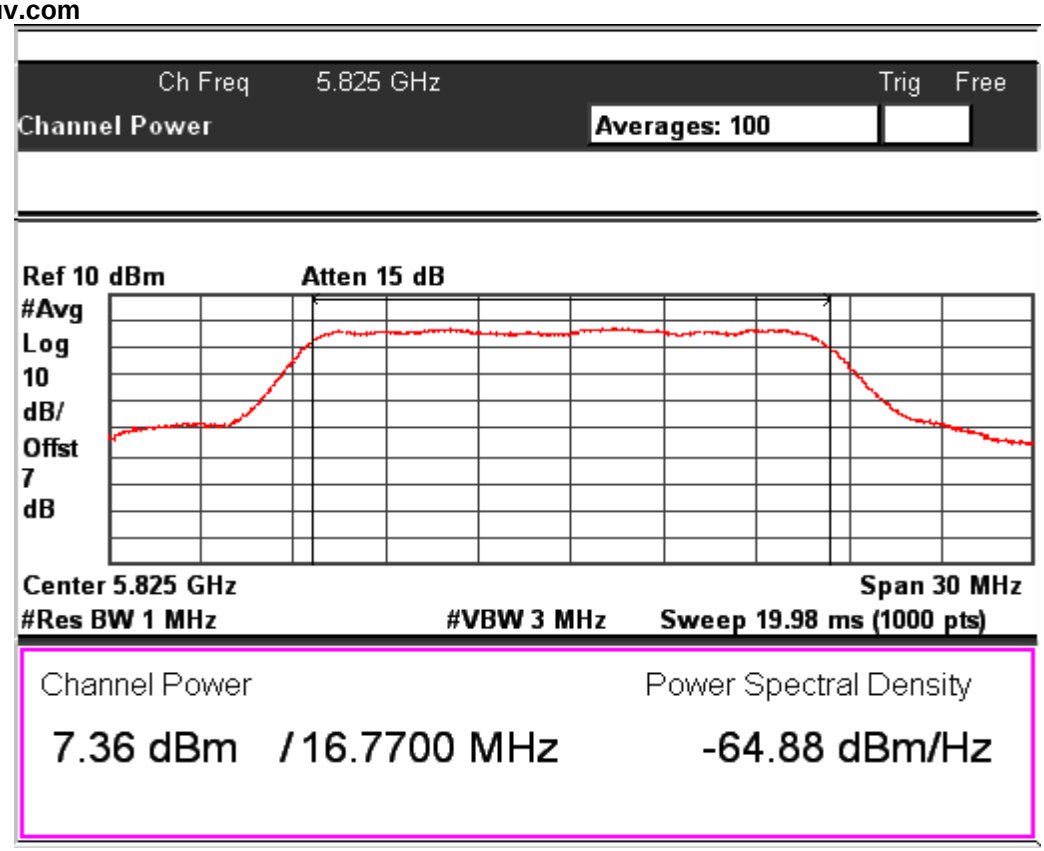
Data Rate: 54Mbps **Channel Frequency: 5180MHz**



Data Rate: 54Mbps **Channel Frequency: 5240MHz**



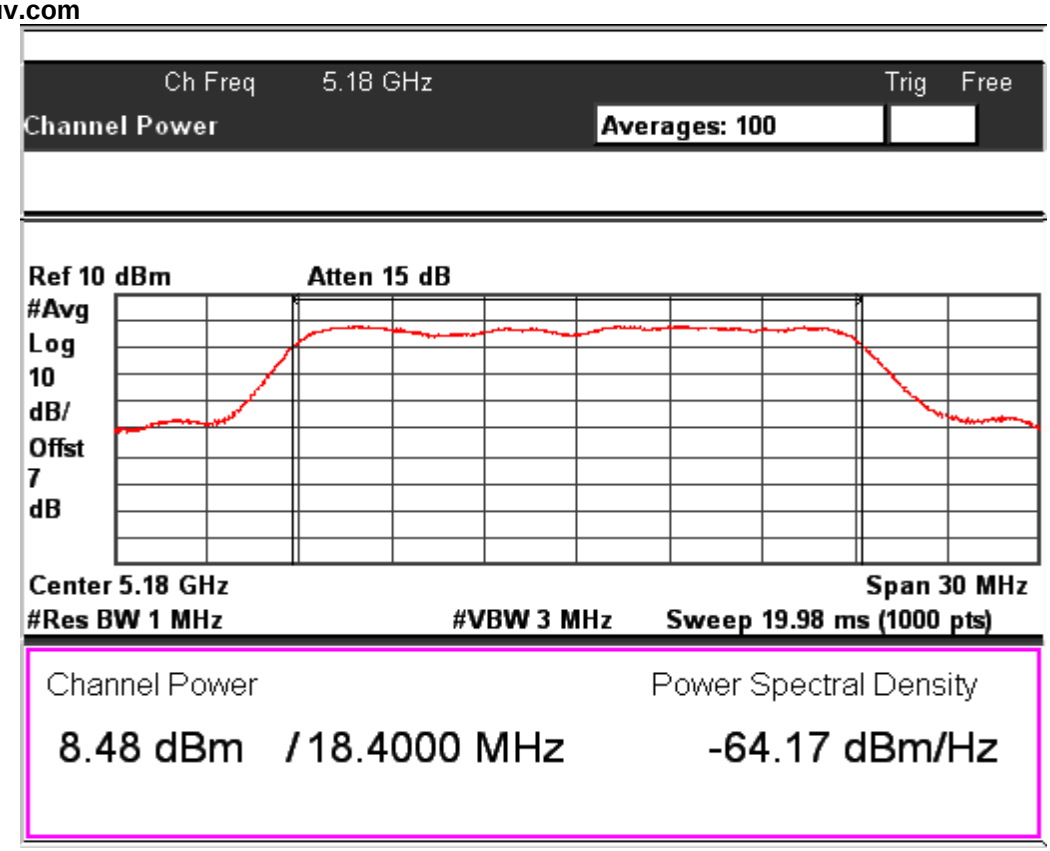
Data Rate: 54Mbps **Channel Frequency: 5745MHz**



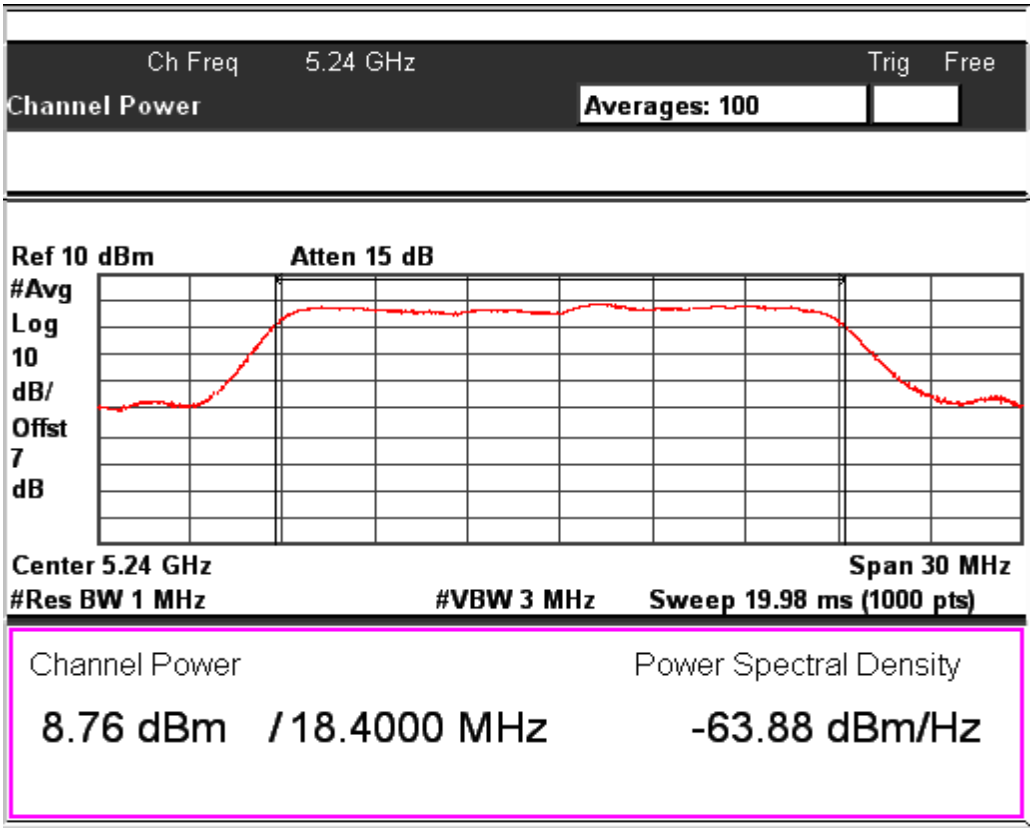
Data Rate: 54Mbps **Channel Frequency: 5825MHz**

Test Results for Path A

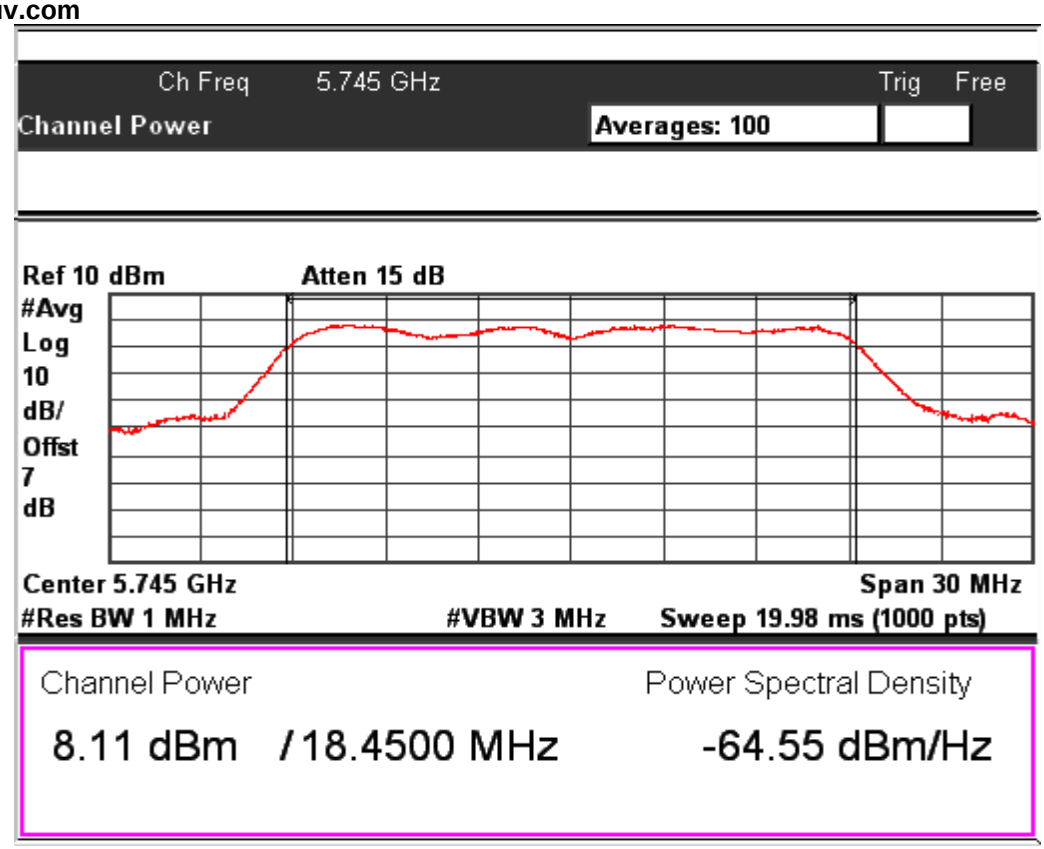
IEEE802.11n HT20				
Data Rate (Mbps)	**Channel No.**	**Frequency (MHz)**	**Average Output power (dBm)**	**Average Power (mW)**
MCS0	36	5180	8.48	7.05
	48	5240	8.76	7.52
	149	5745	8.11	6.47
	165	5825	7.75	5.96
MCS7	36	5180	8.52	9.30
	48	5240	8.74	7.48
	149	5745	8.25	6.68
	165	5825	7.87	6.12
MCS15	36	5180	8.44	6.98
	48	5240	8.79	7.57
	149	5745	8.26	6.70
	165	5825	7.87	6.12



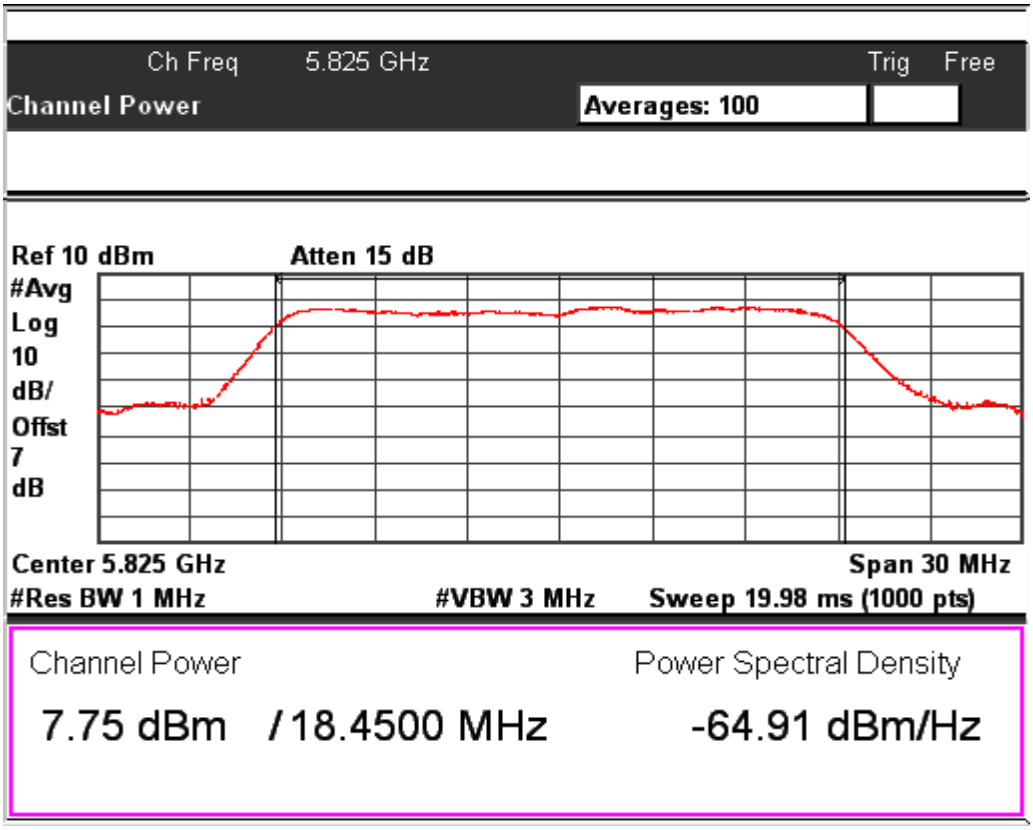
Data Rate: MCS0 **Channel Frequency: 5180MHz**



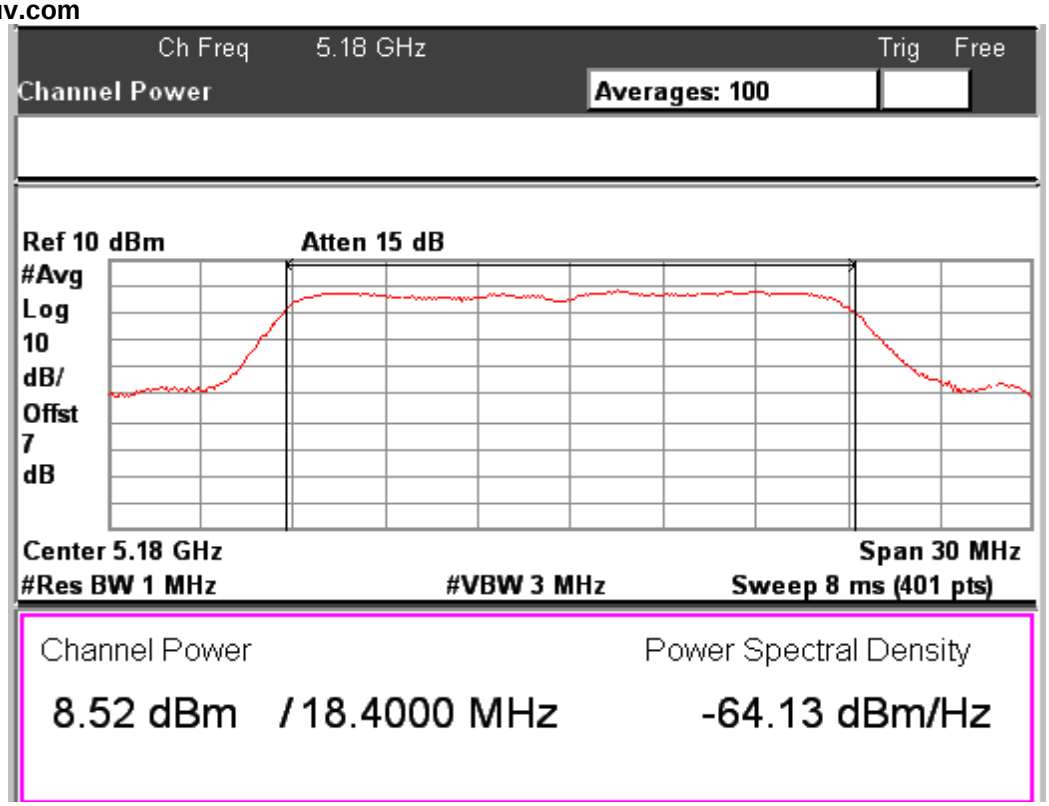
Data Rate: MCS0 **Channel Frequency: 5240MHz**



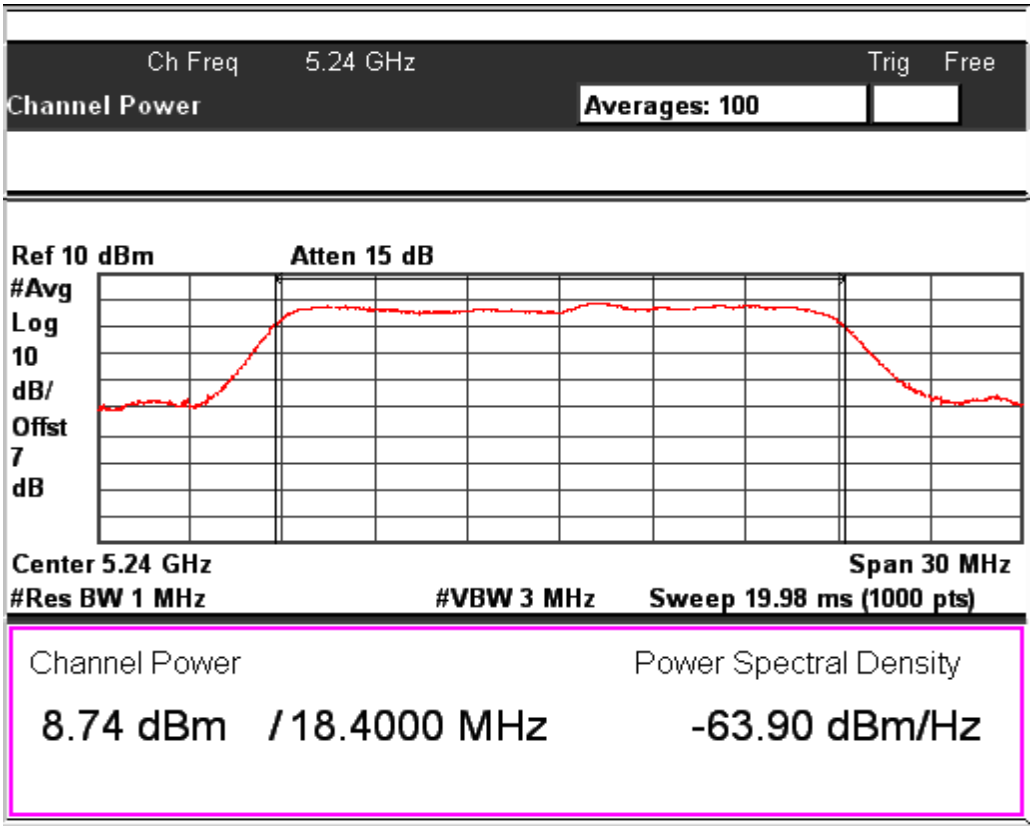
Data Rate: MCS0 **Channel Frequency: 5745MHz**



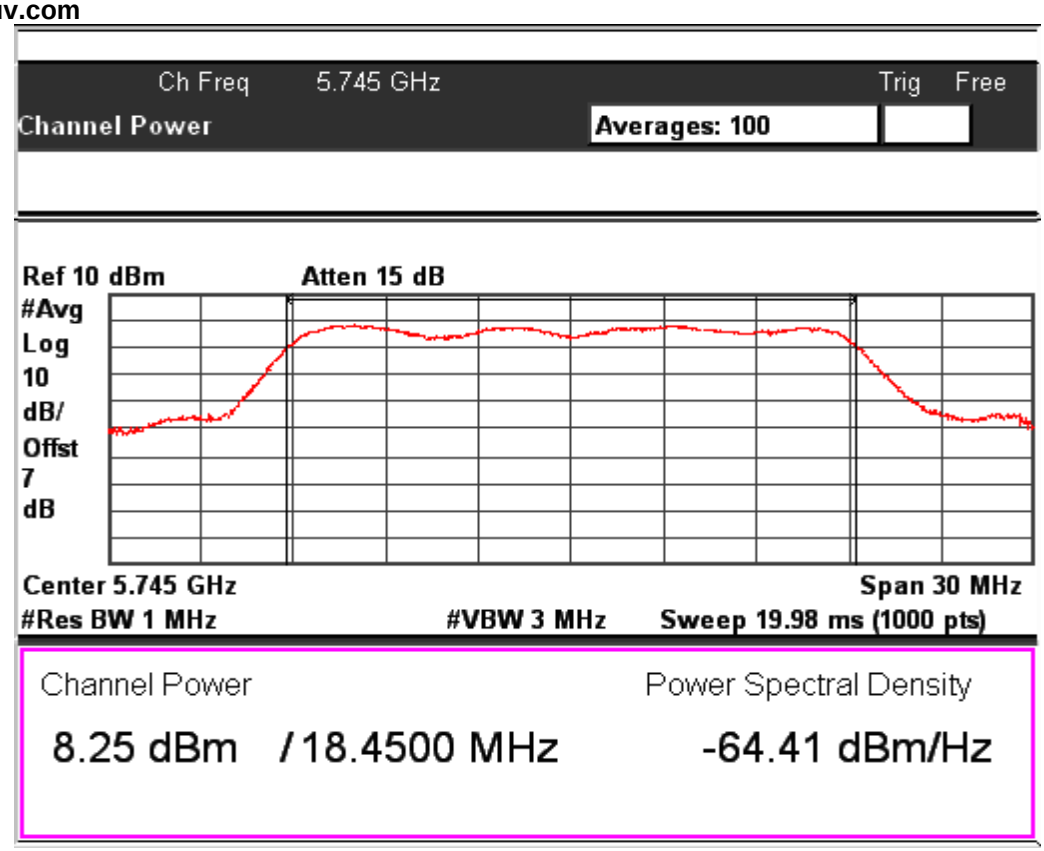
Data Rate: MCS0 **Channel Frequency: 5825MHz**



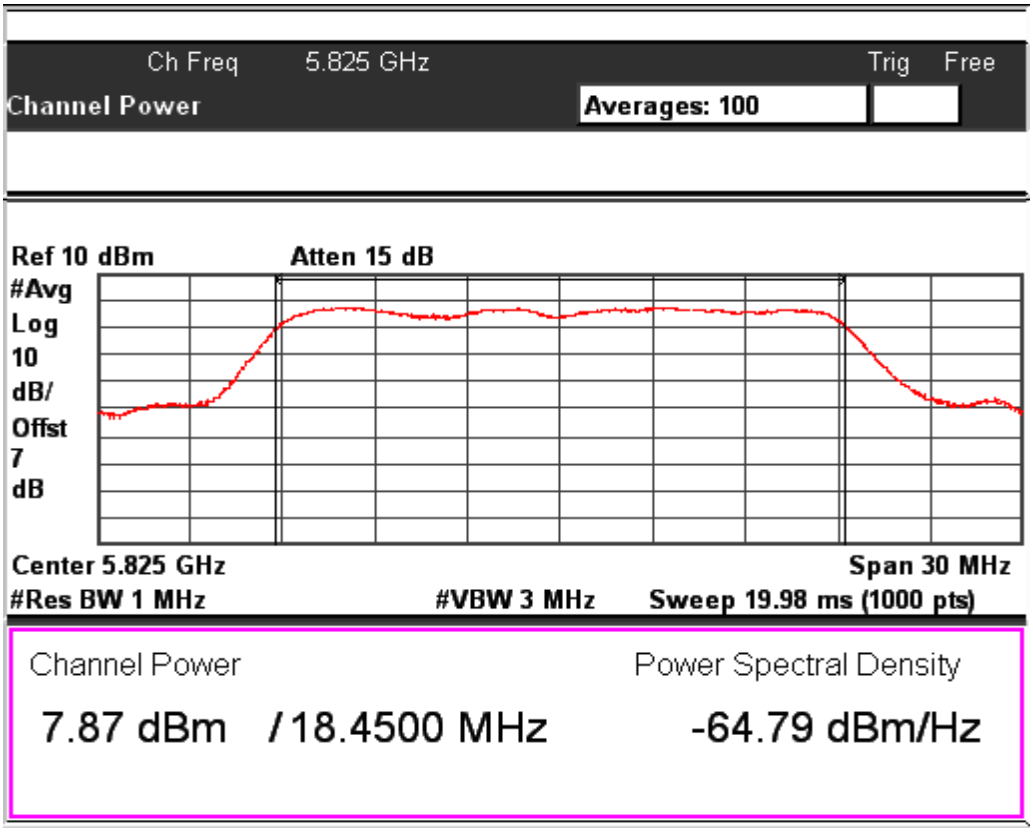
Data Rate: MCS7 **Channel Frequency: 5180MHz**



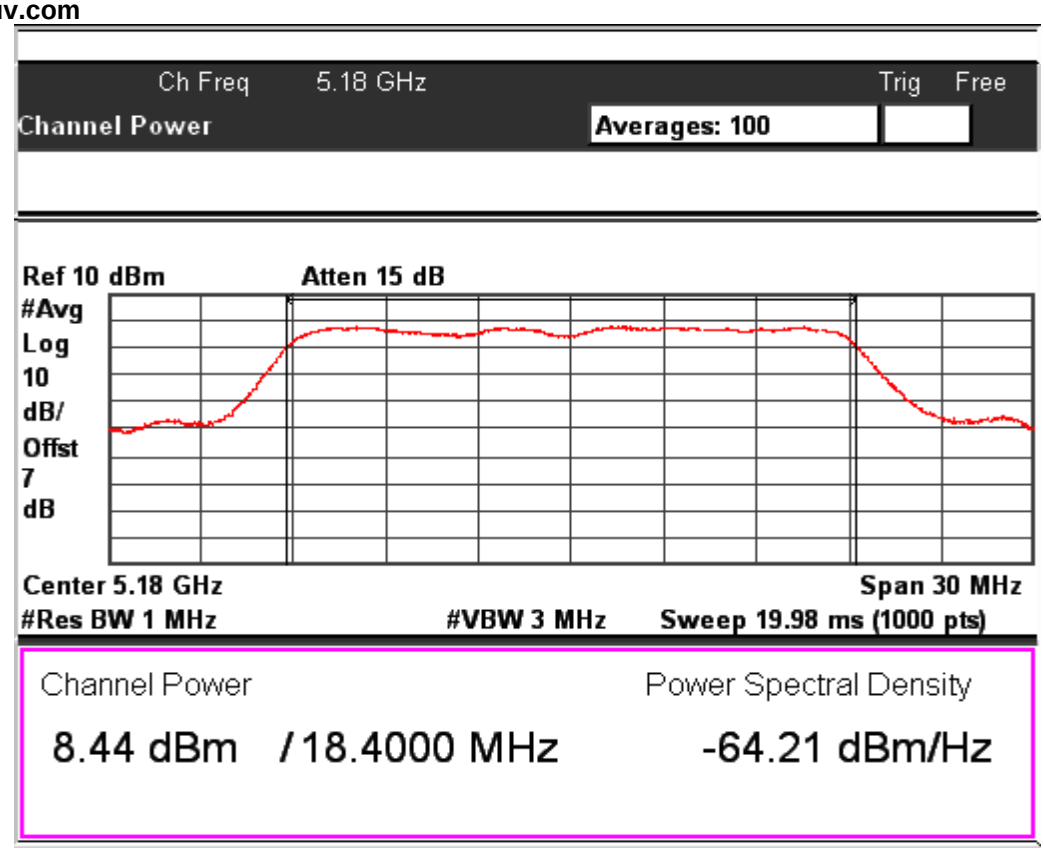
Data Rate: MCS7 **Channel Frequency: 5240MHz**



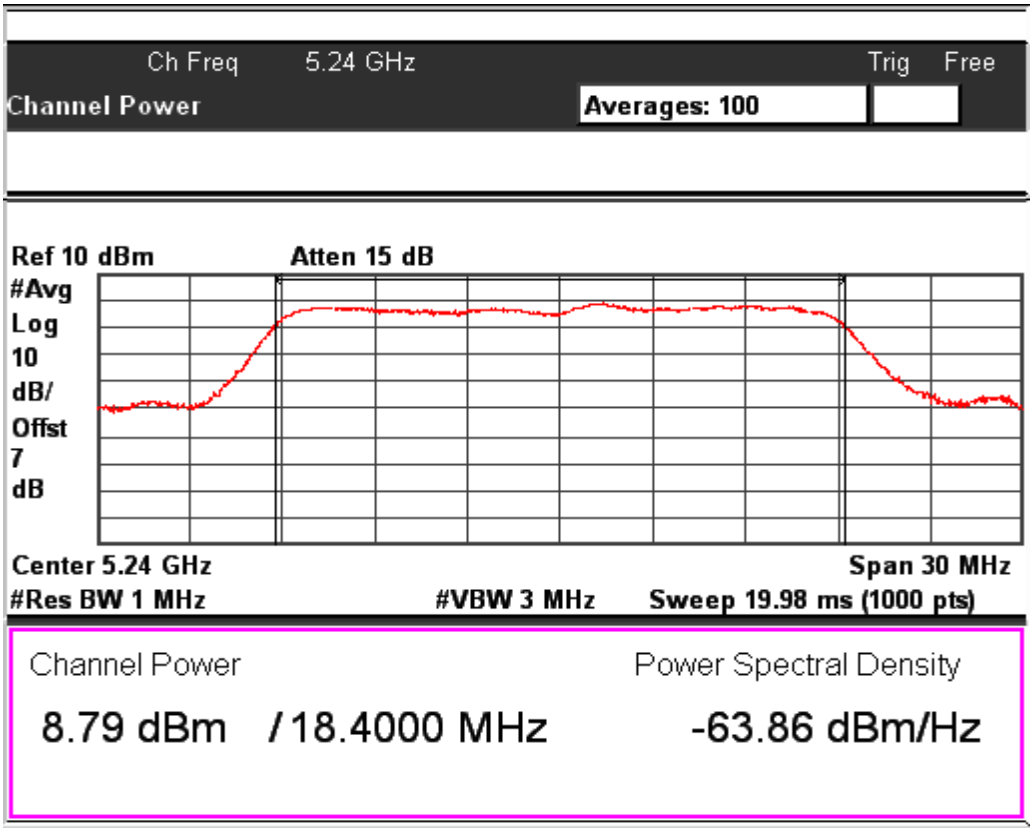
Data Rate: MCS7 **Channel Frequency: 5745MHz**



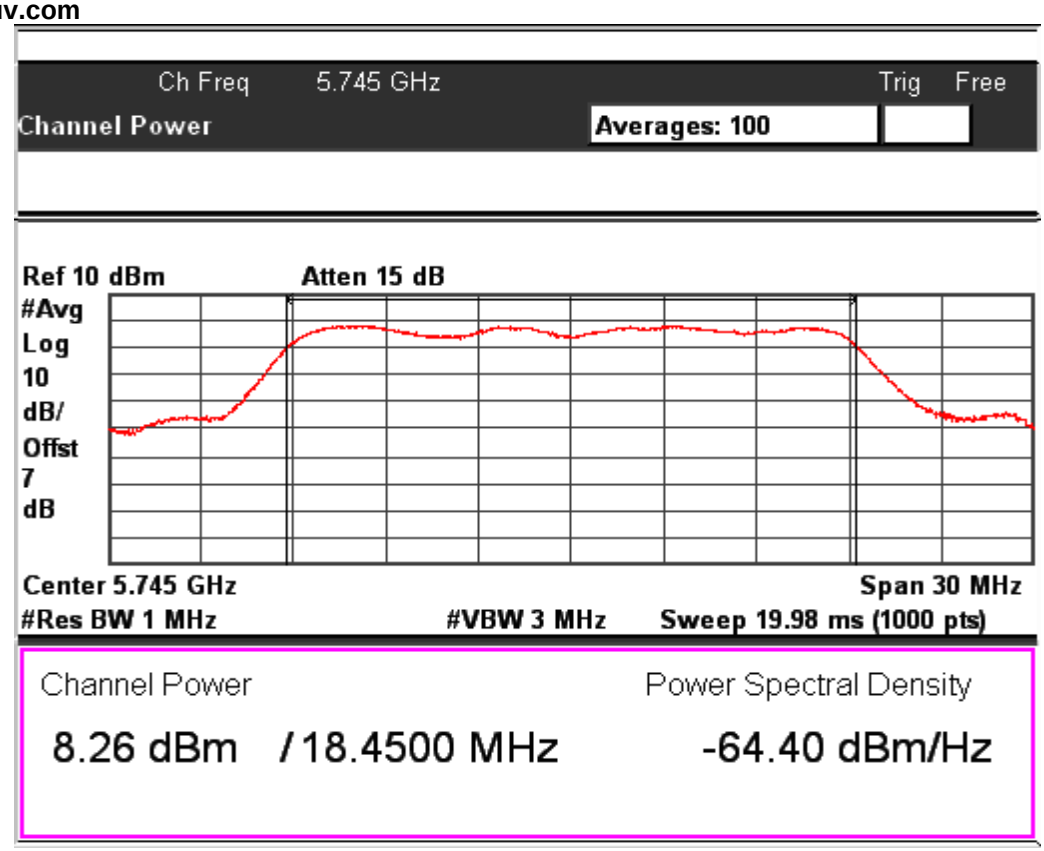
Data Rate: MCS7 **Channel Frequency: 5825MHz**



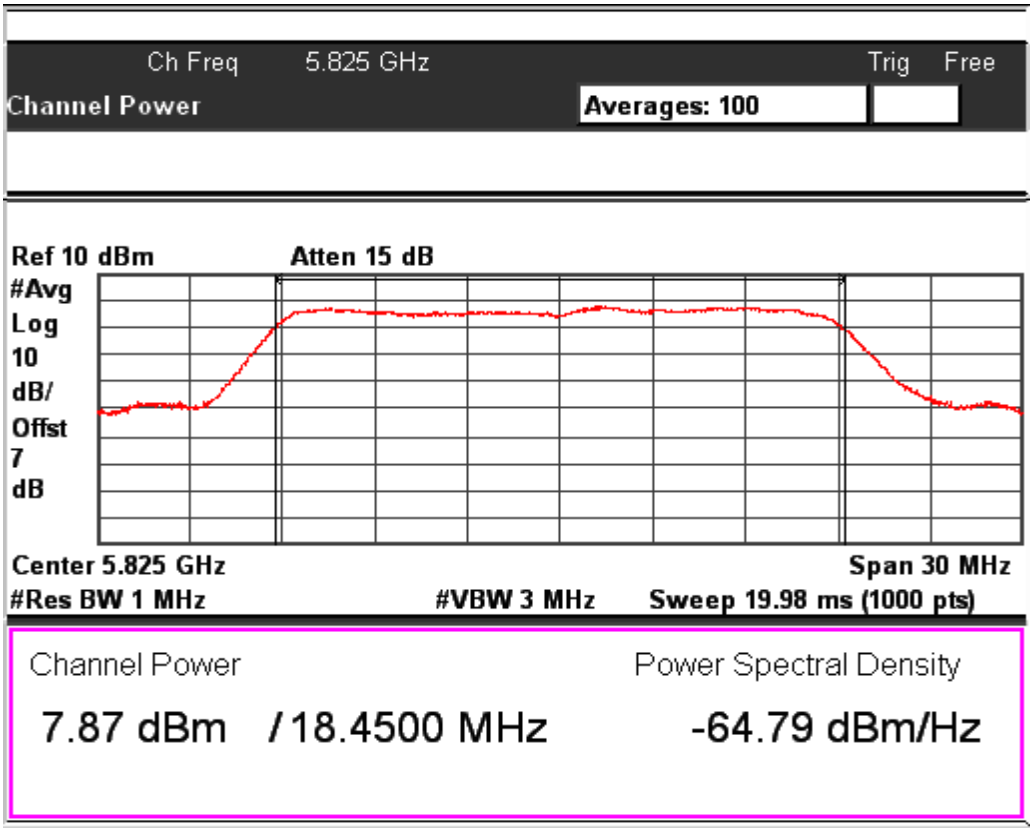
Data Rate: MCS15 **Channel Frequency: 5180MHz**



Data Rate: MCS15 **Channel Frequency: 5240MHz**



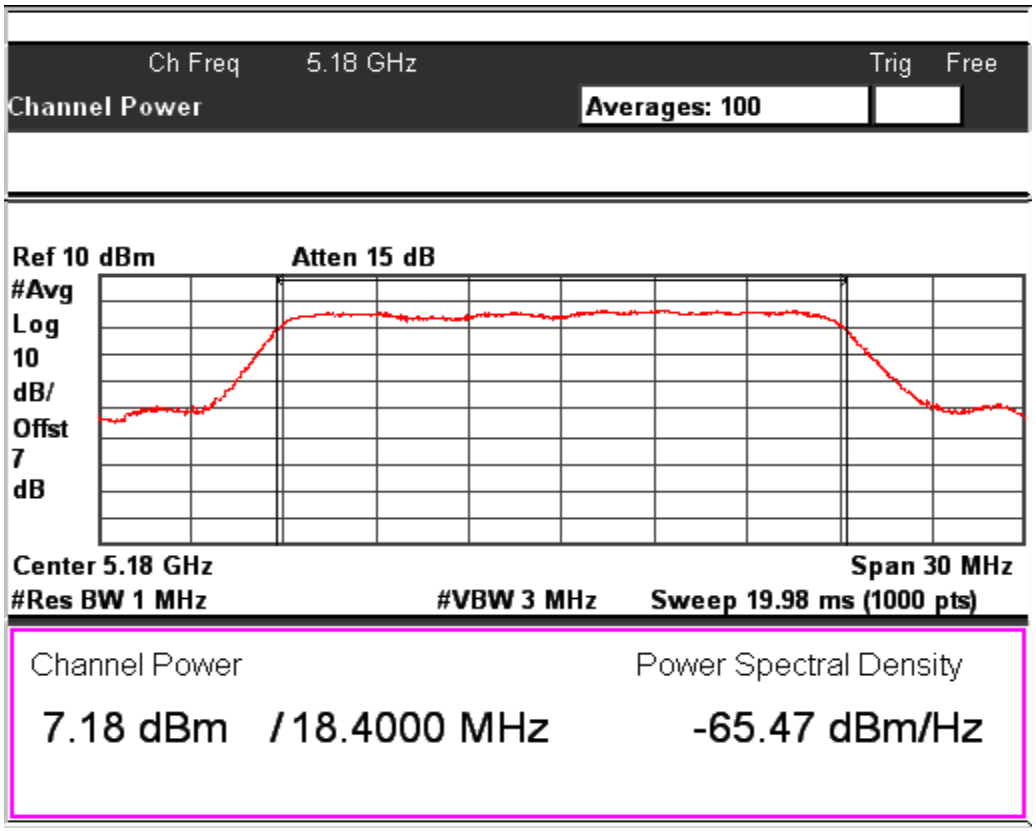
Data Rate: MCS15 **Channel Frequency: 5745MHz**



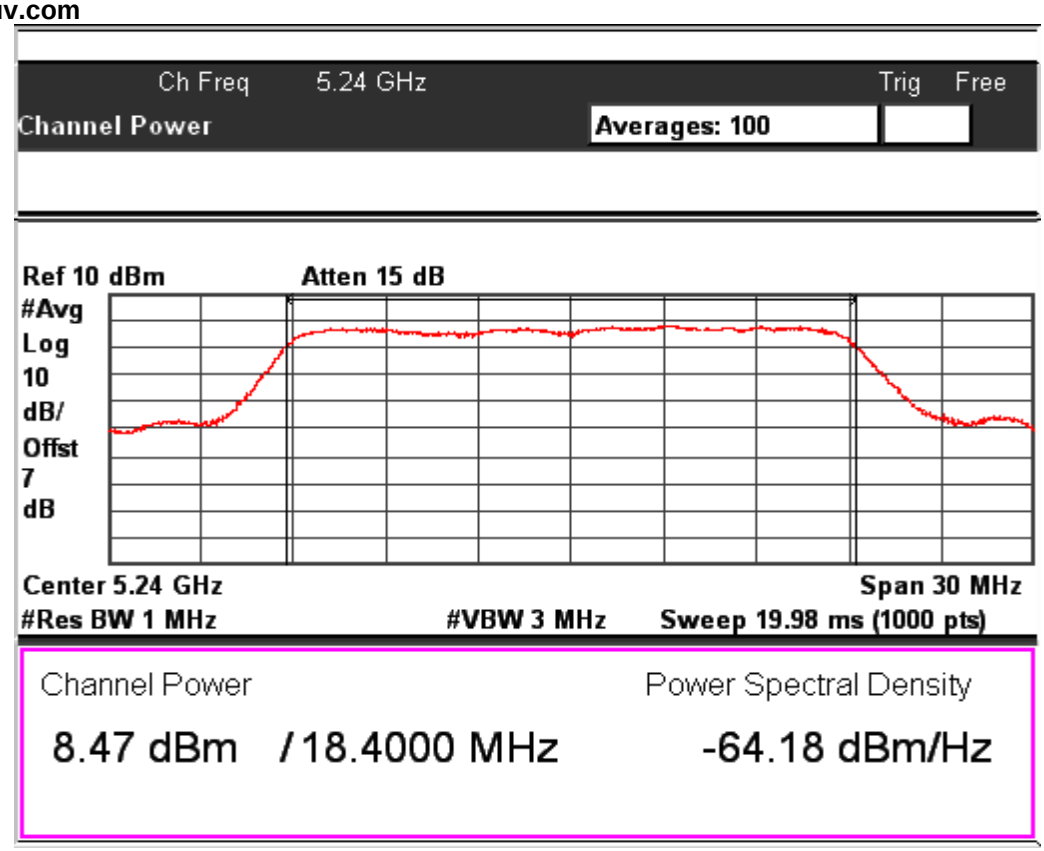
Data Rate: MCS15 **Channel Frequency: 5825MHz**

Test Results for Path B:

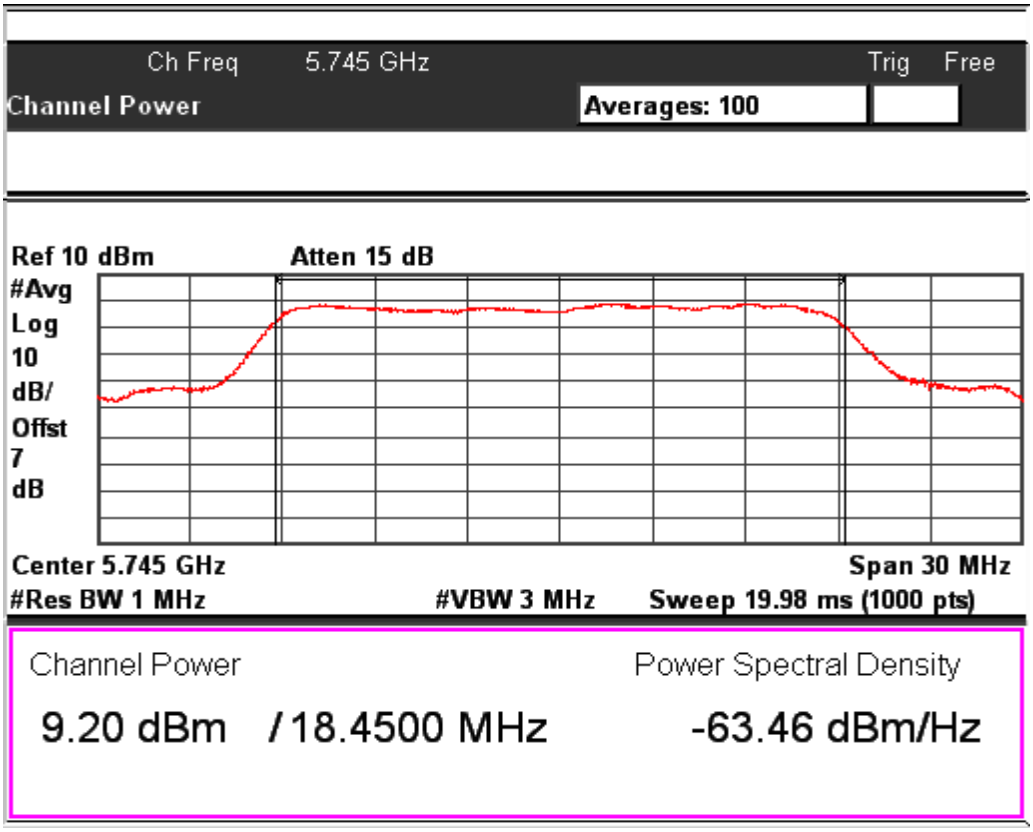
IEEE802.11n HT20				
Data Rate (Mbps)	**Channel No.**	**Frequency (MHz)**	**Average Output power (dBm)**	**Average Power (mW)**
MCS0	36	5180	7.18	5.22
	48	5240	8.47	7.03
	149	5745	9.2	8.32
	165	5825	7.04	5.06
MCS7	36	5180	5.96	3.94
	48	5240	8.2	6.61
	149	5745	8.84	7.66
	165	5825	7.03	5.05
MCS15	36	5180	7.08	5.11
	48	5240	7.84	6.08
	149	5745	8.61	7.26
	165	5825	6.96	4.97



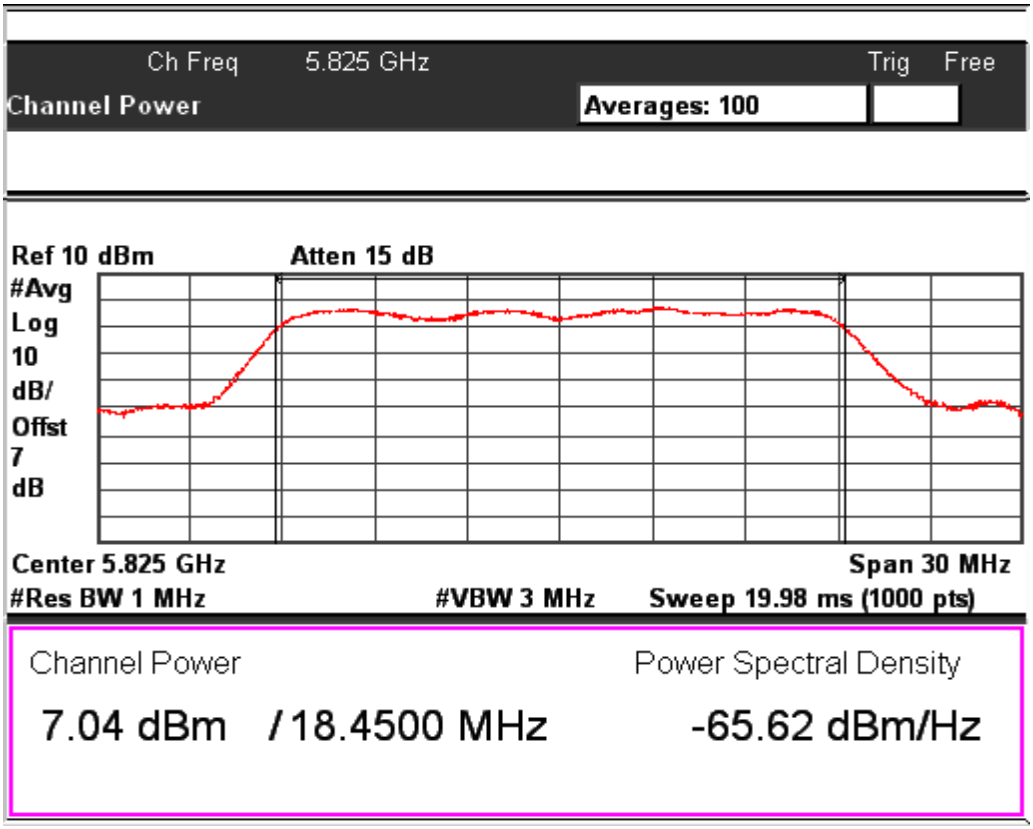
Data Rate: MCS0 **Channel Frequency: 5180MHz**



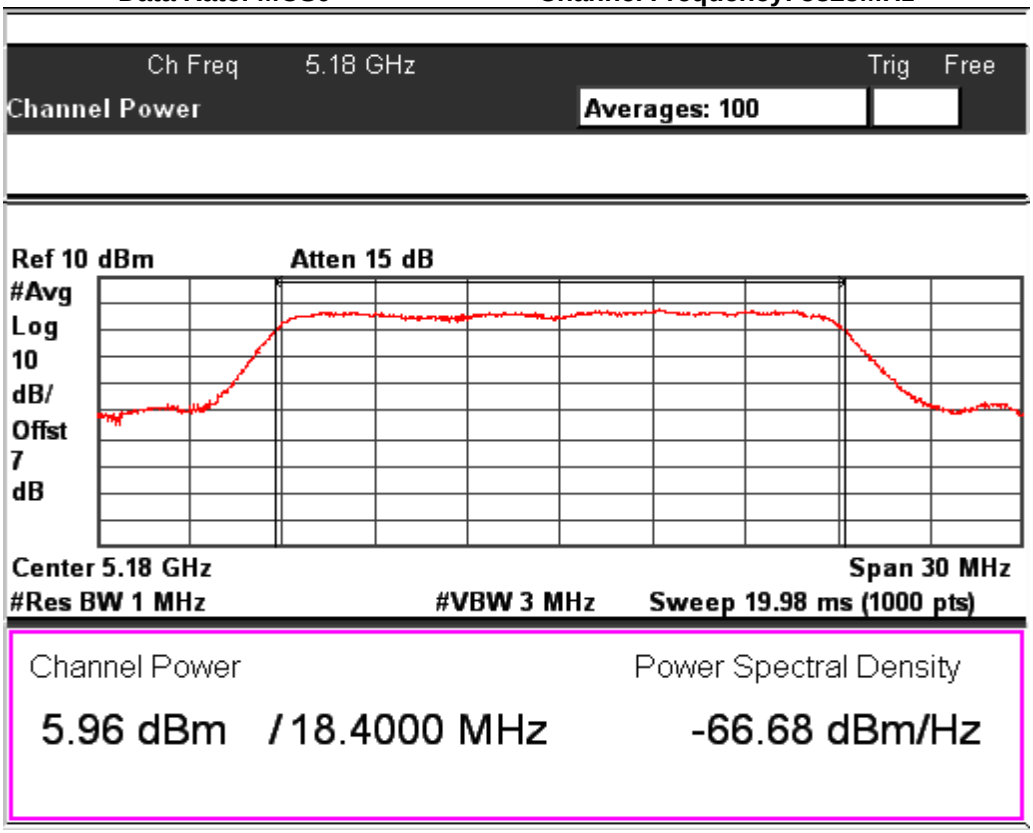
Data Rate: MCS0 **Channel Frequency: 5240MHz**



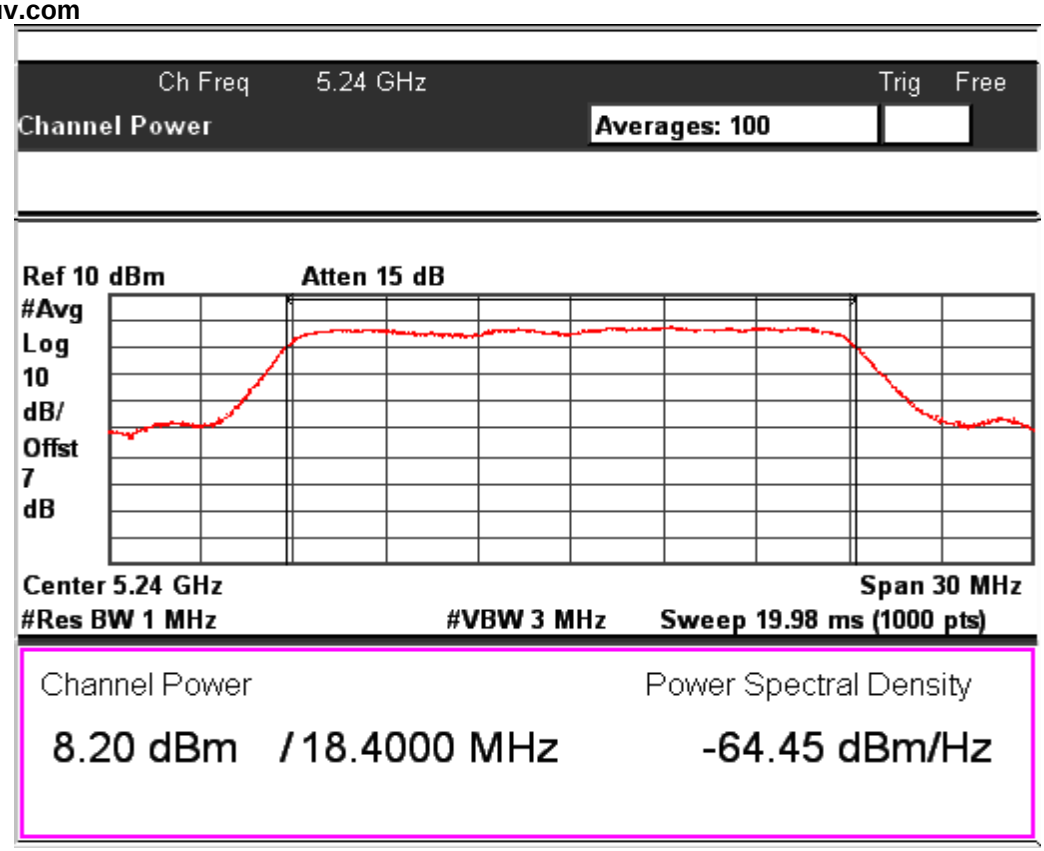
Data Rate: MCS0 **Channel Frequency: 5745MHz**



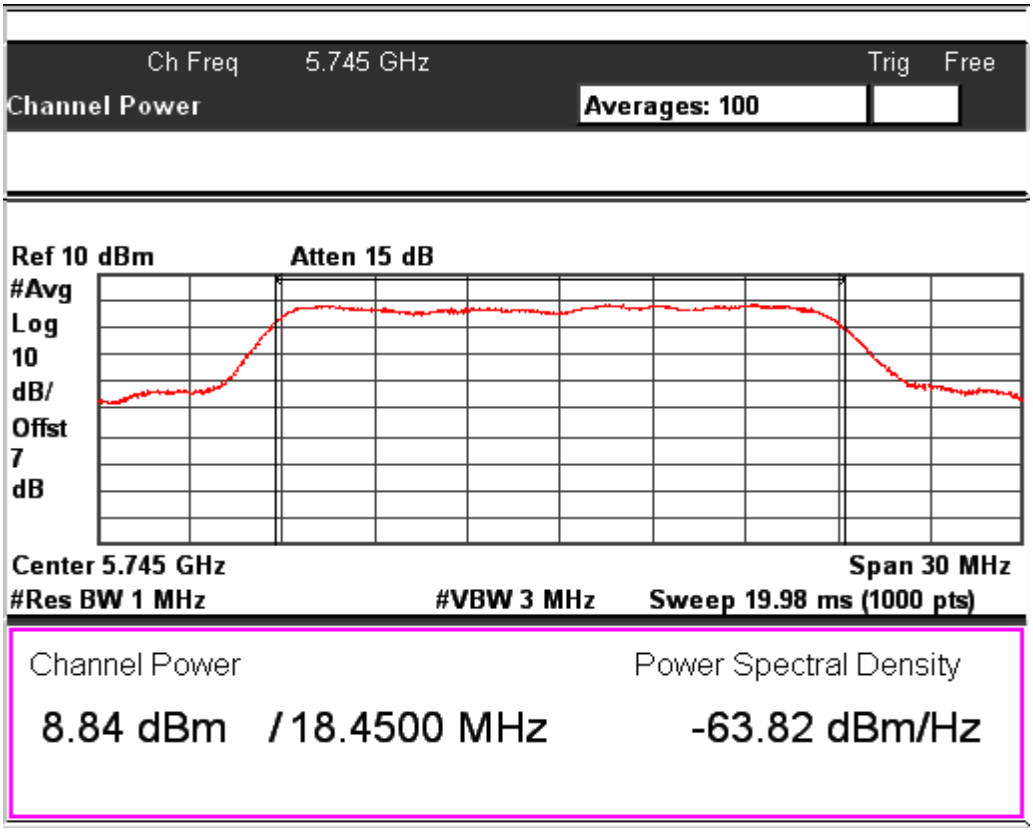
Data Rate: MCS0 **Channel Frequency: 5825MHz**



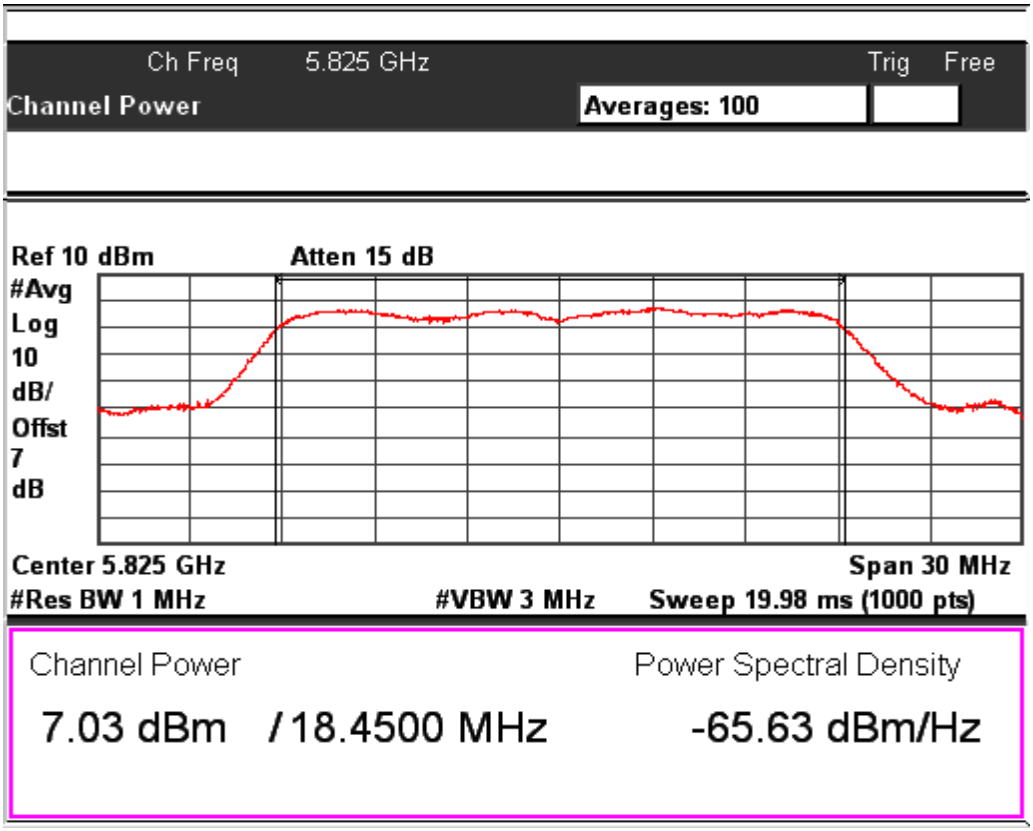
Data Rate: MCS7 **Channel Frequency: 5180MHz**



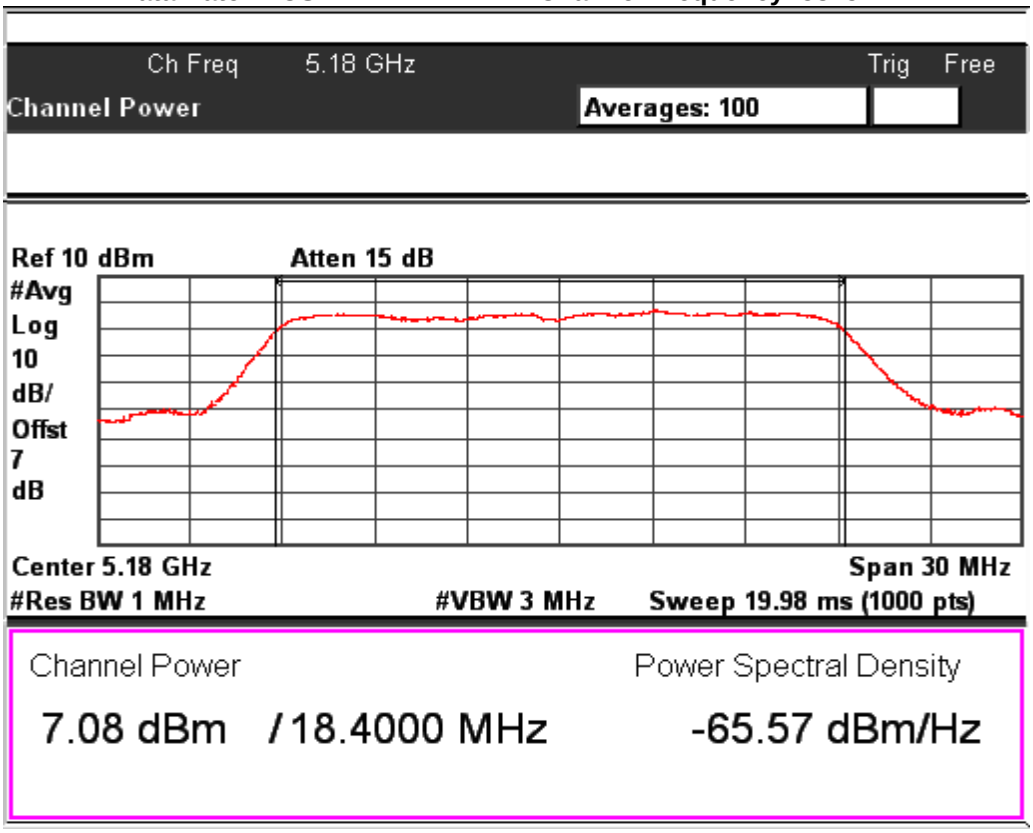
Data Rate: MCS7 **Channel Frequency: 5240MHz**



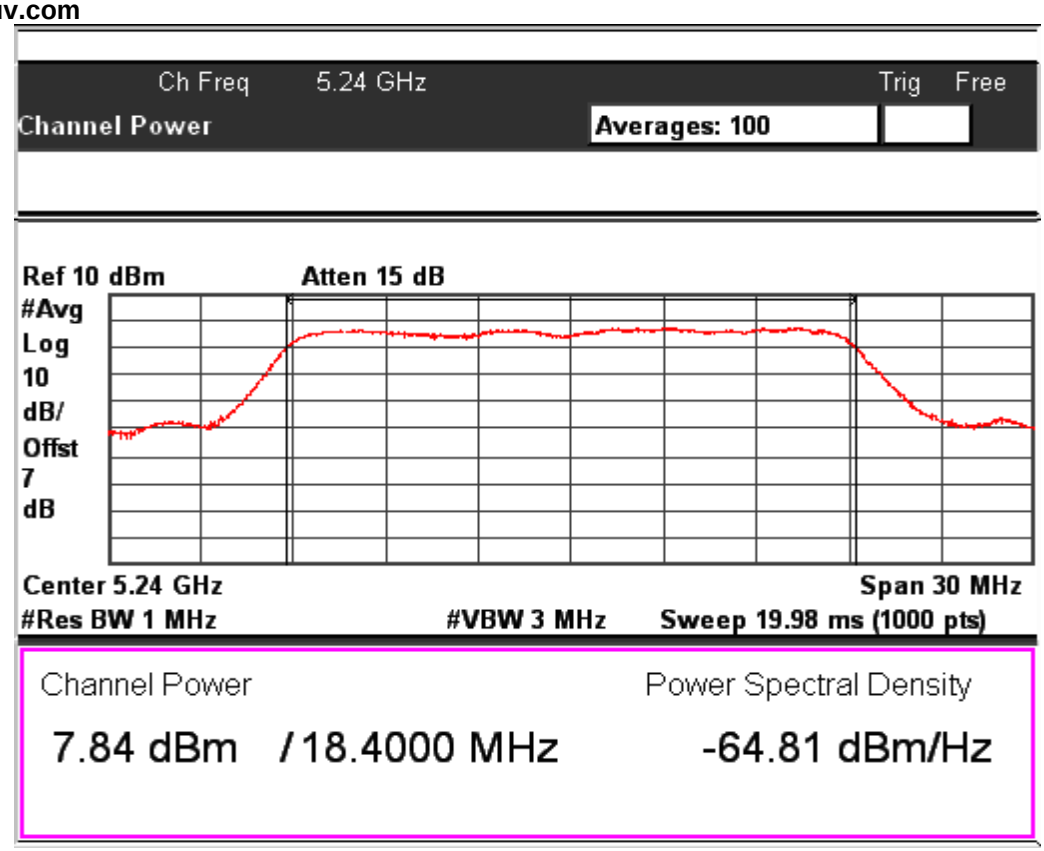
Data Rate: MCS7 **Channel Frequency: 5745MHz**



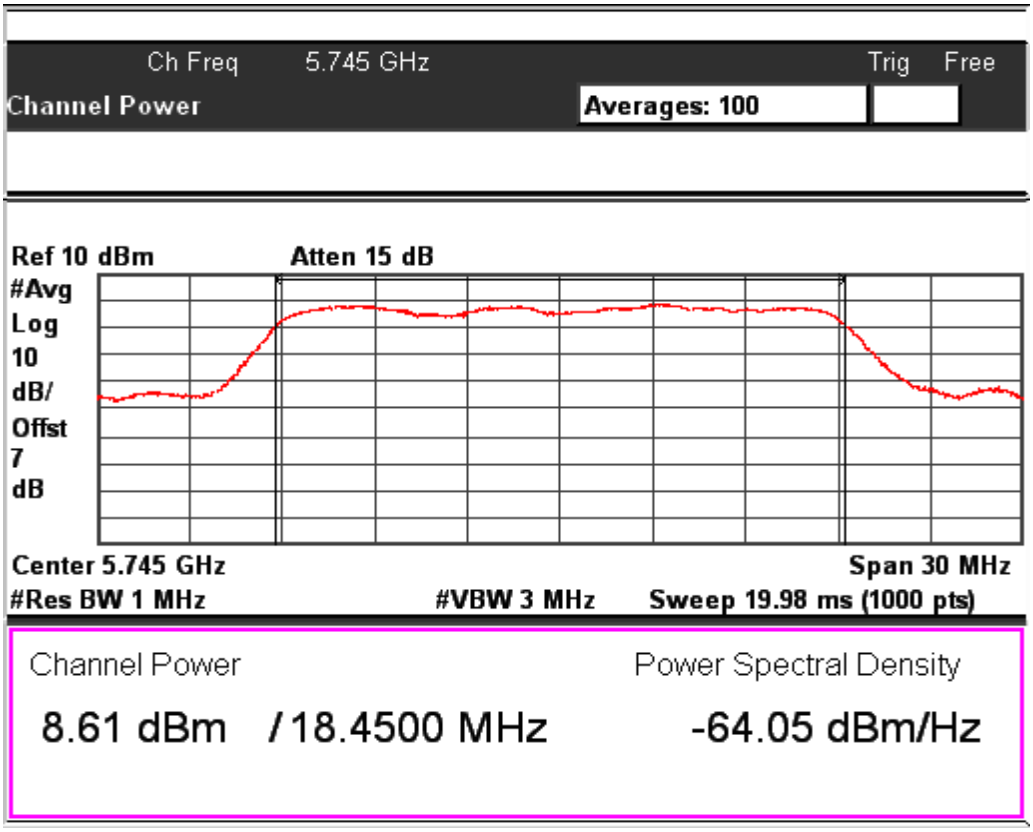
Data Rate: MCS7 **Channel Frequency: 5825MHz**



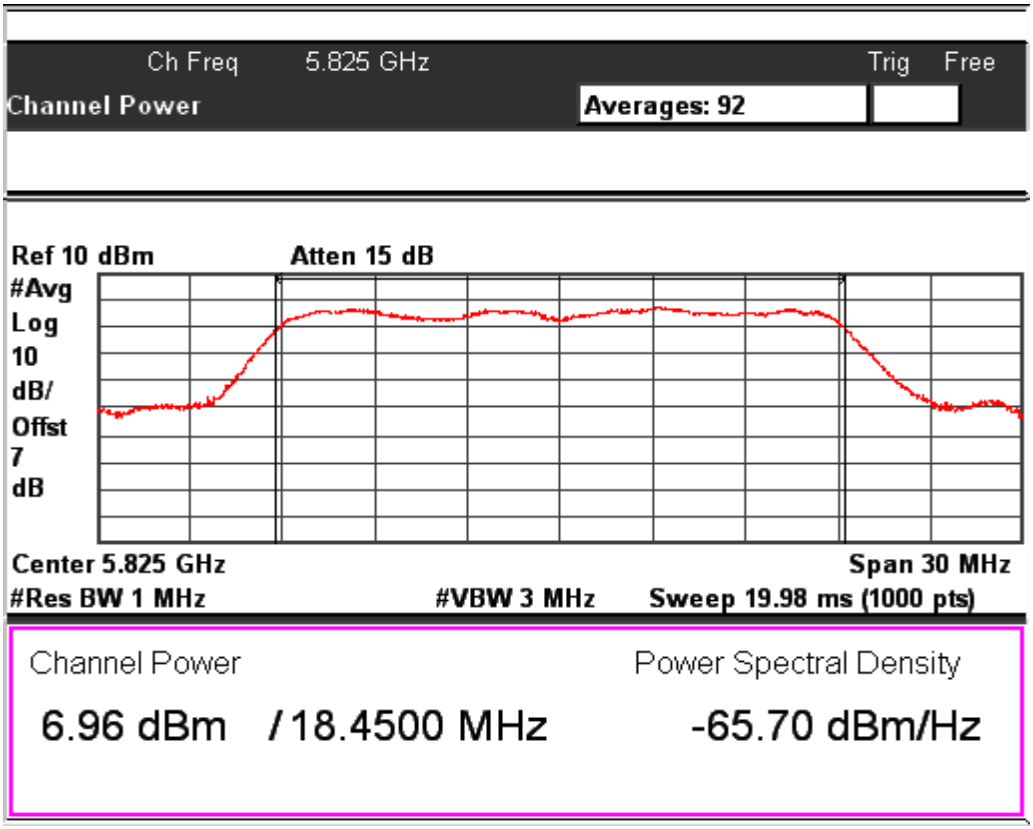
Data Rate: MCS15 **Channel Frequency: 5180MHz**



Data Rate: MCS15 **Channel Frequency: 5240MHz**



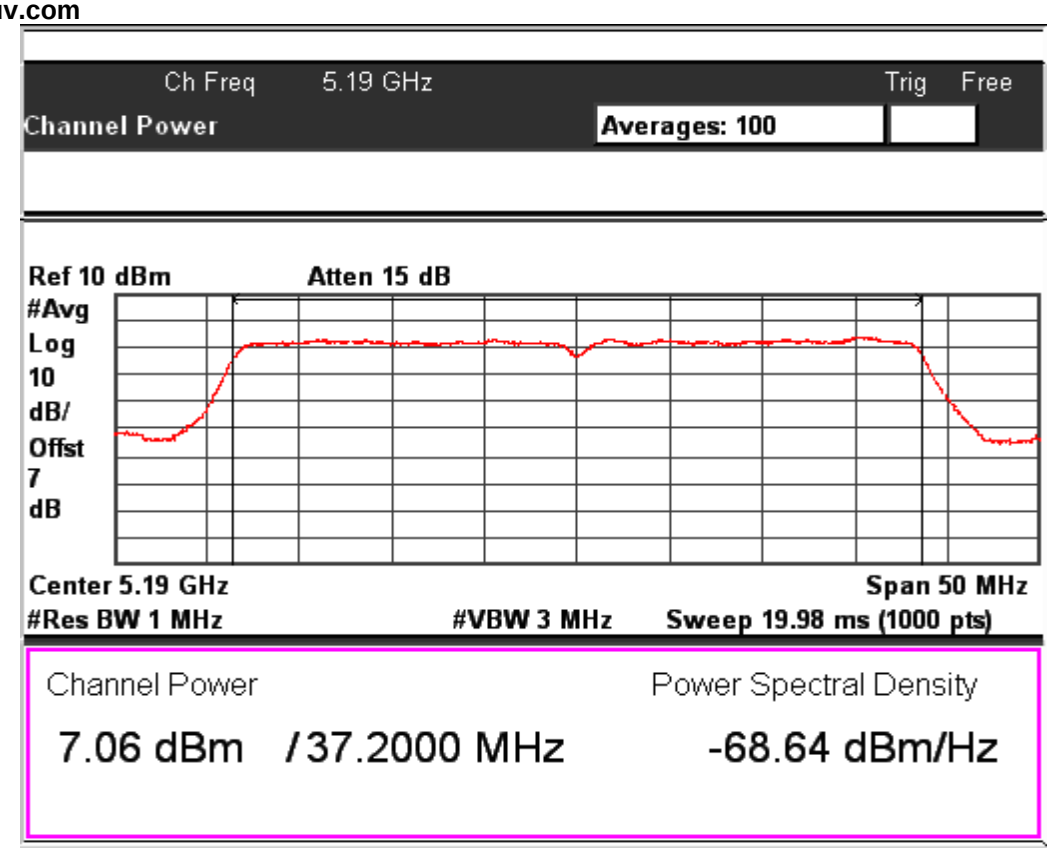
Data Rate: MCS15 **Channel Frequency: 5745MHz**



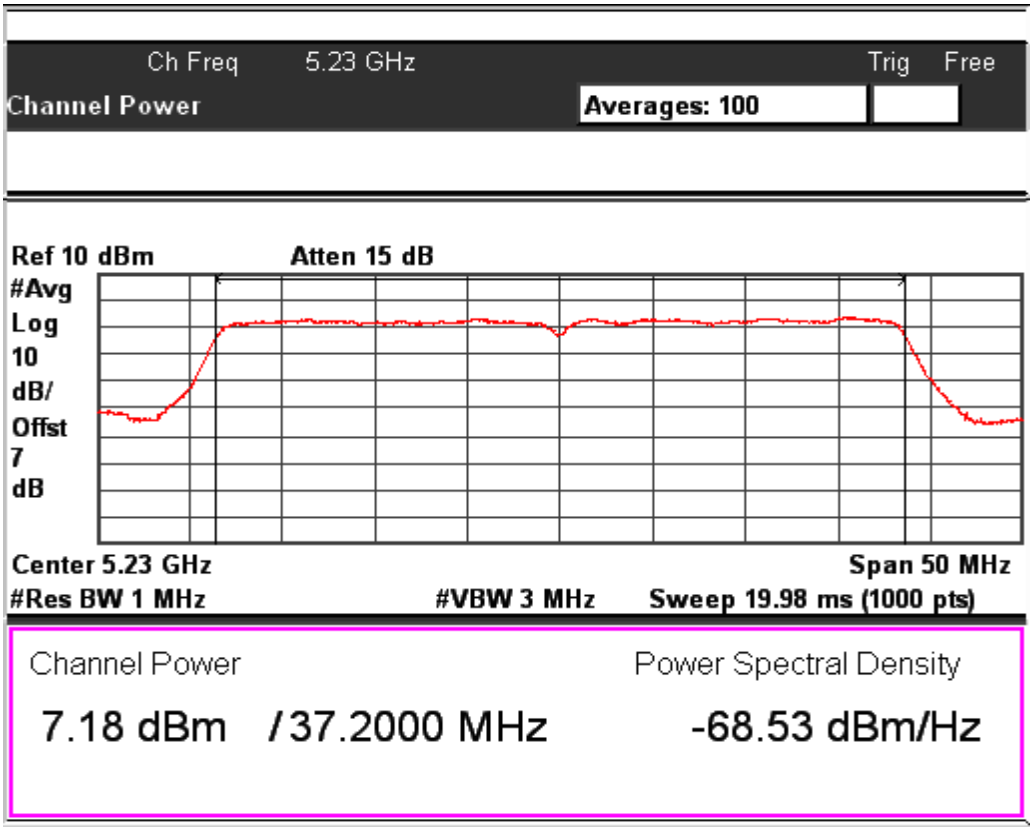
Data Rate: MCS15 **Channel Frequency: 5825MHz**

Test results for Path A

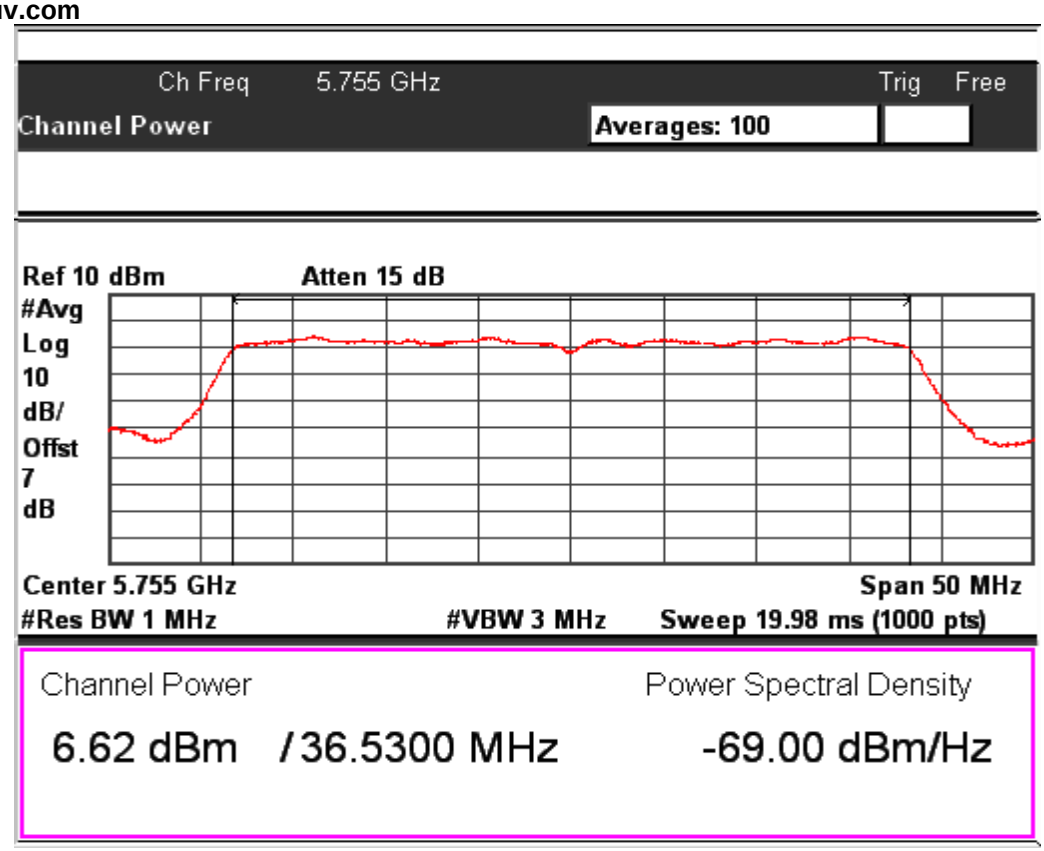
IEEE802.11n HT40				
Data Rate (Mbps)	**Channel No.**	**Frequency (MHz)**	**Average Output power (dBm)**	**Average Power (mW)**
MCS0	38	5190	7.06	5.08
	46	5230	7.18	5.22
	151	5755	6.62	4.59
	159	5795	5.69	3.71
MCS7	38	5190	7.51	5.64
	46	5230	7.66	5.83
	151	5755	7.18	5.22
	159	5795	6.08	4.06
MCS15	38	5190	7.49	5.61
	46	5230	7.54	5.68
	151	5755	7.00	5.01
	159	5795	5.92	3.91



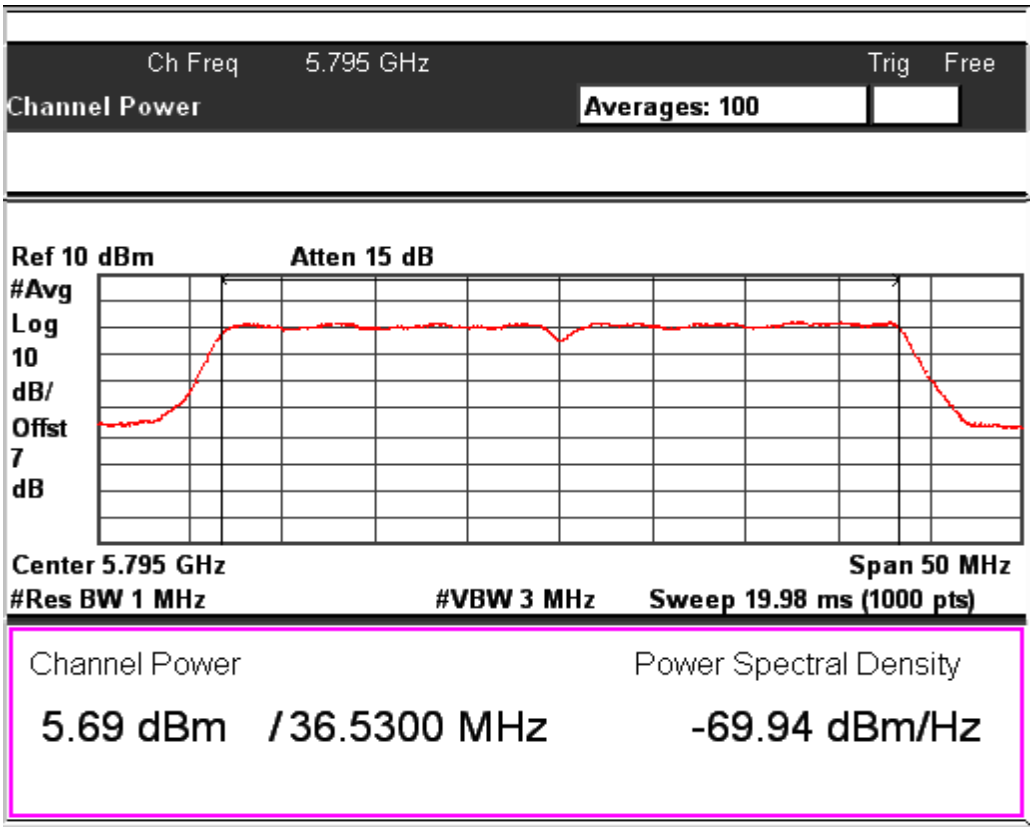
Data Rate: MCS0 **Channel Frequency: 5190MHz**



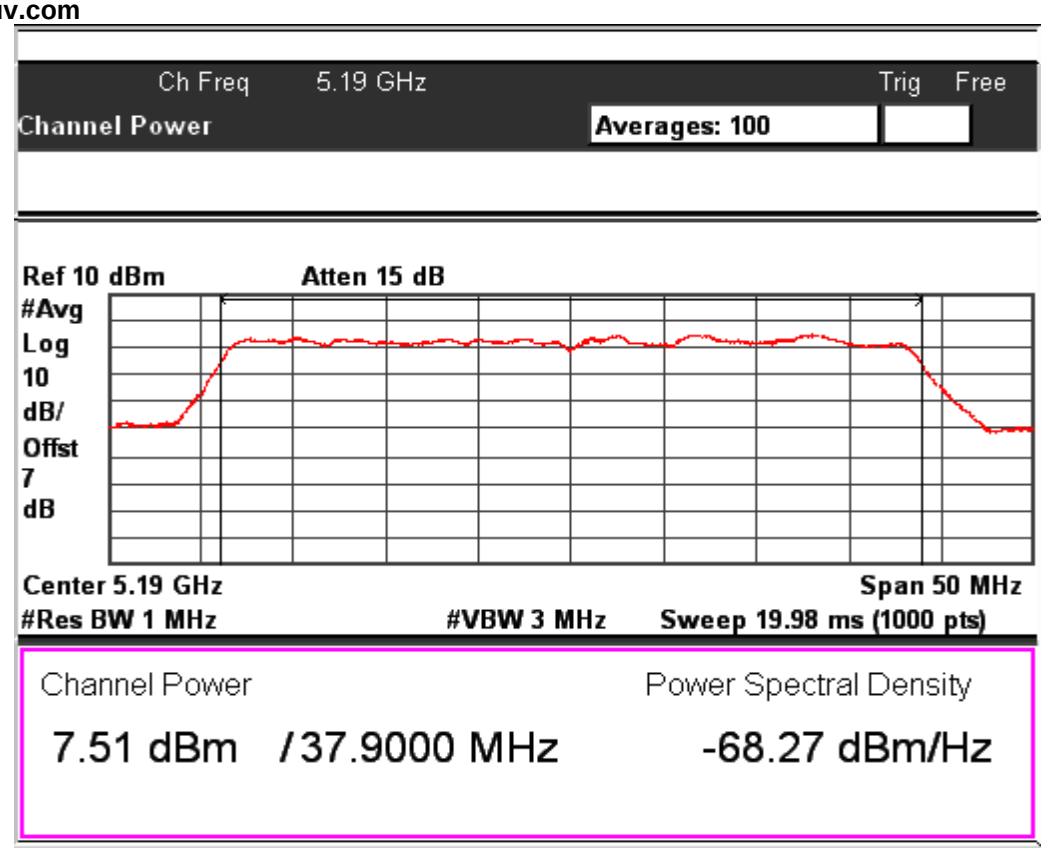
Data Rate: MCS0 **Channel Frequency: 5230MHz**



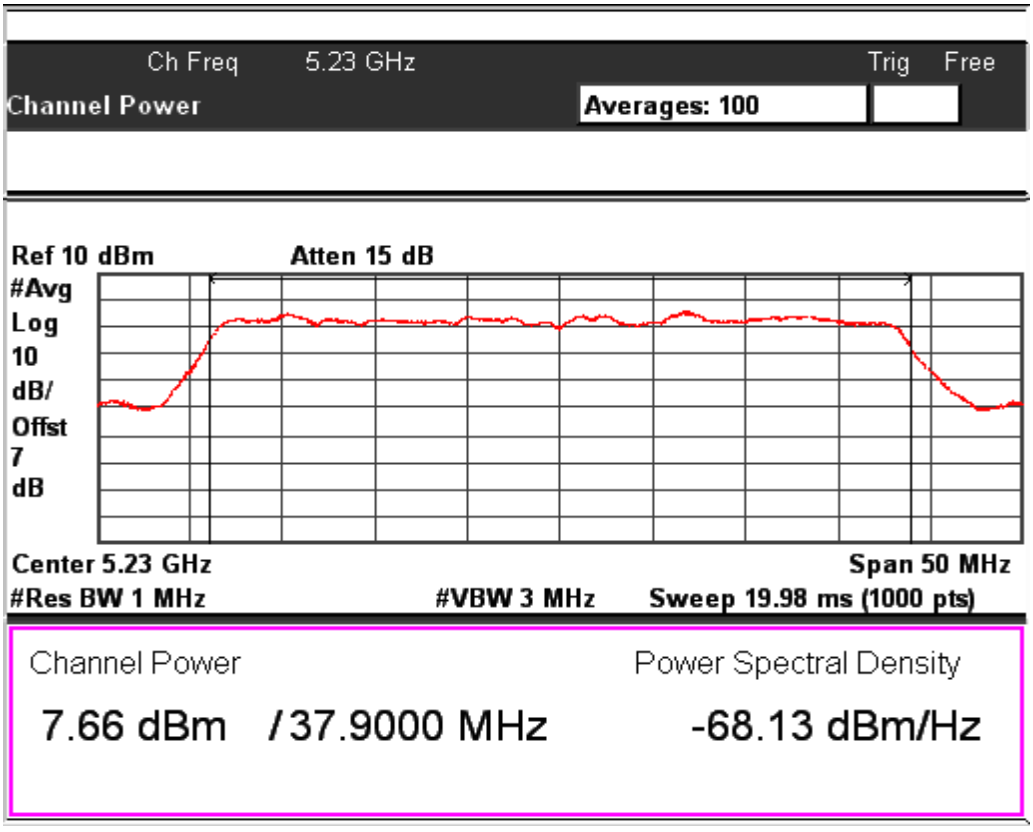
Data Rate: MCS0 **Channel Frequency: 5755MHz**



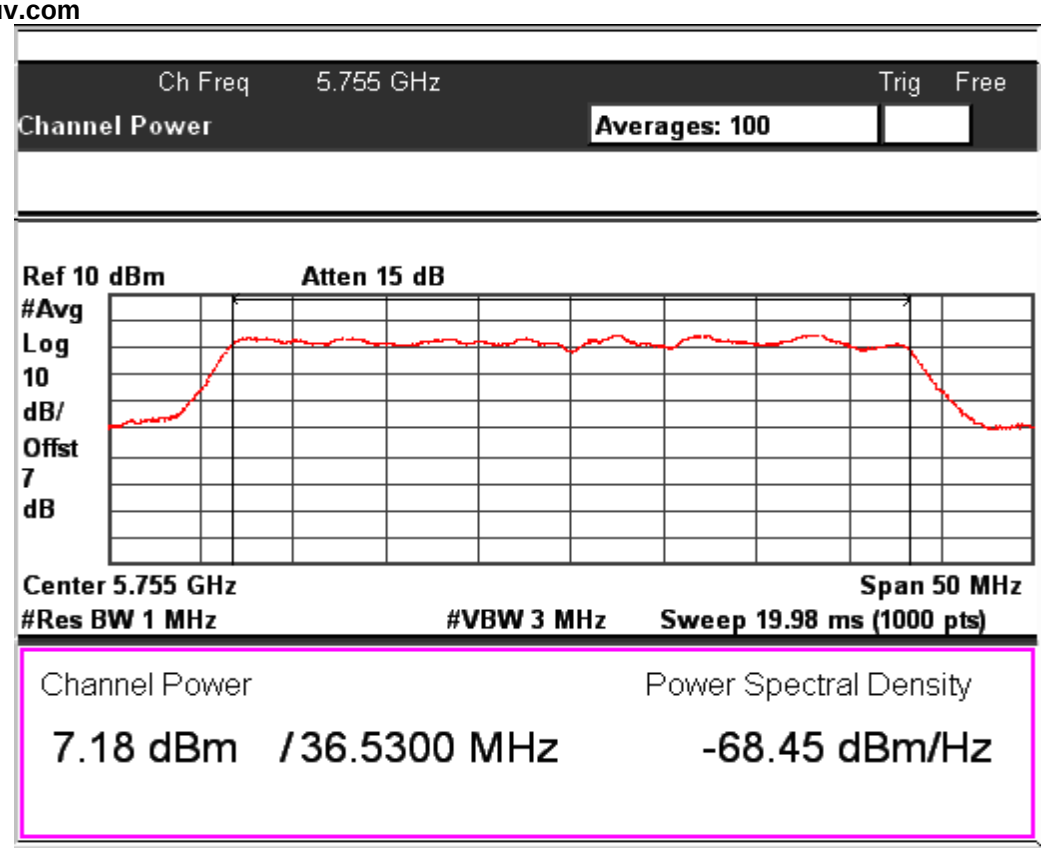
Data Rate: MCS0 **Channel Frequency: 5795MHz**



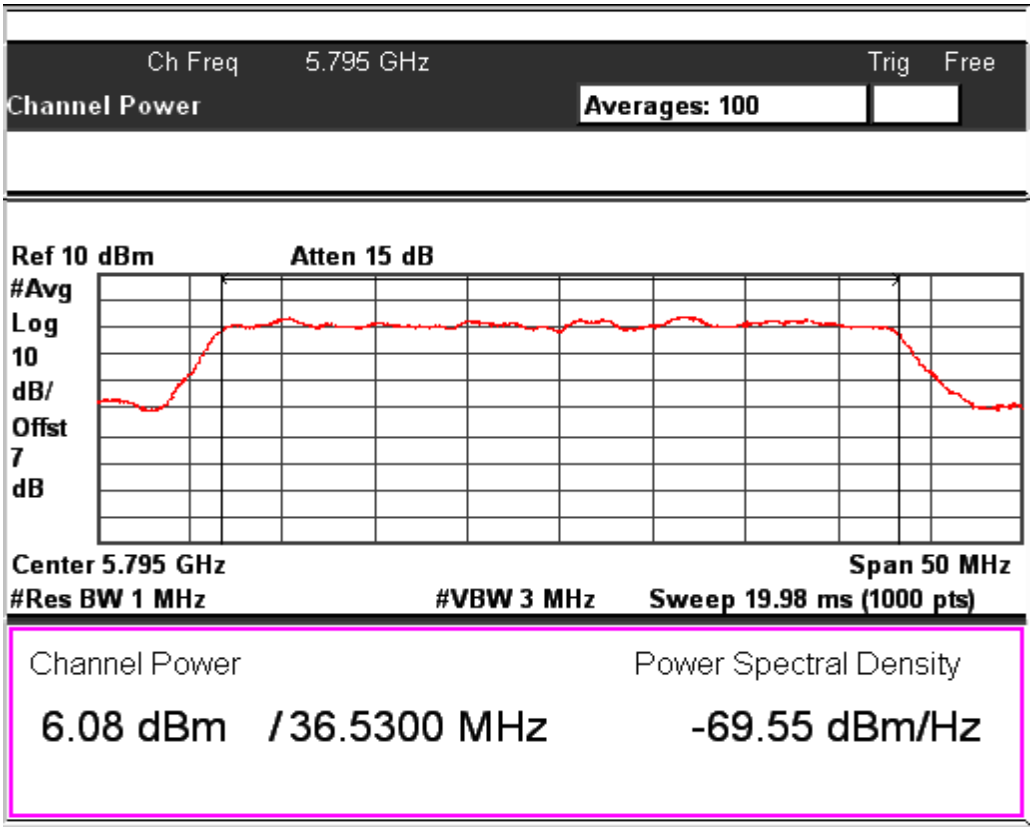
Data Rate: MCS7 **Channel Frequency: 5190MHz**



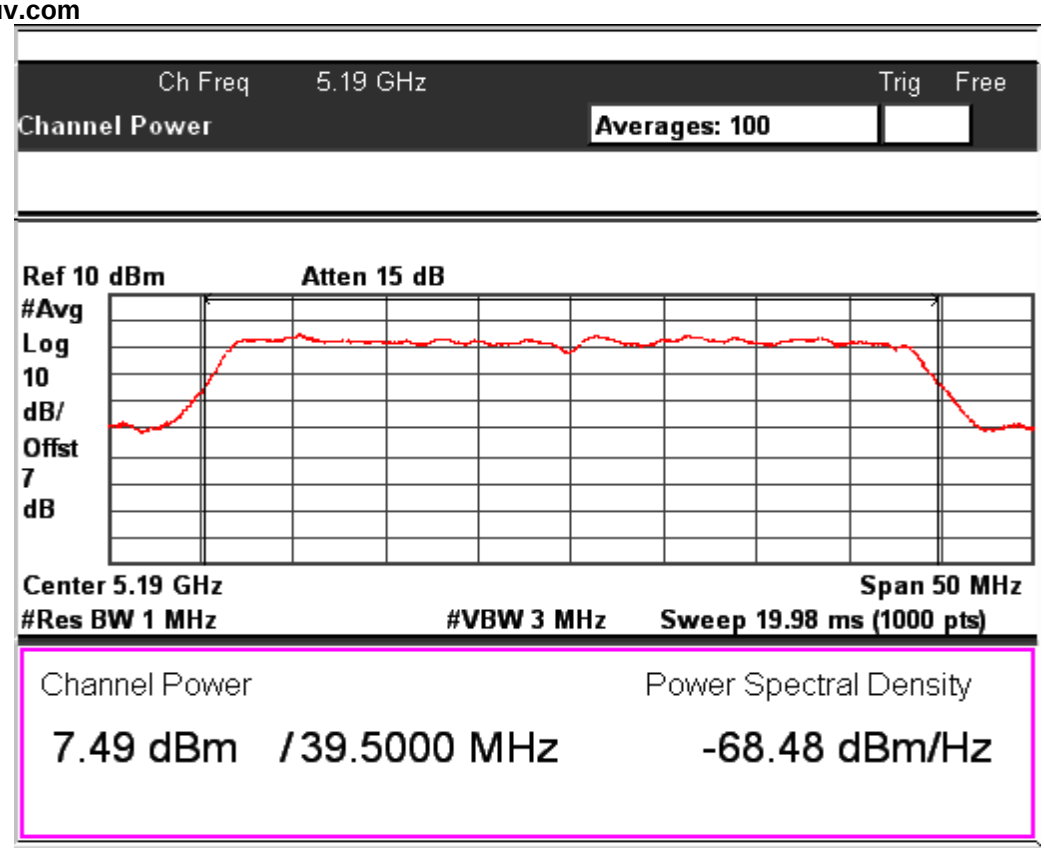
Data Rate: MCS7 **Channel Frequency: 5230MHz**



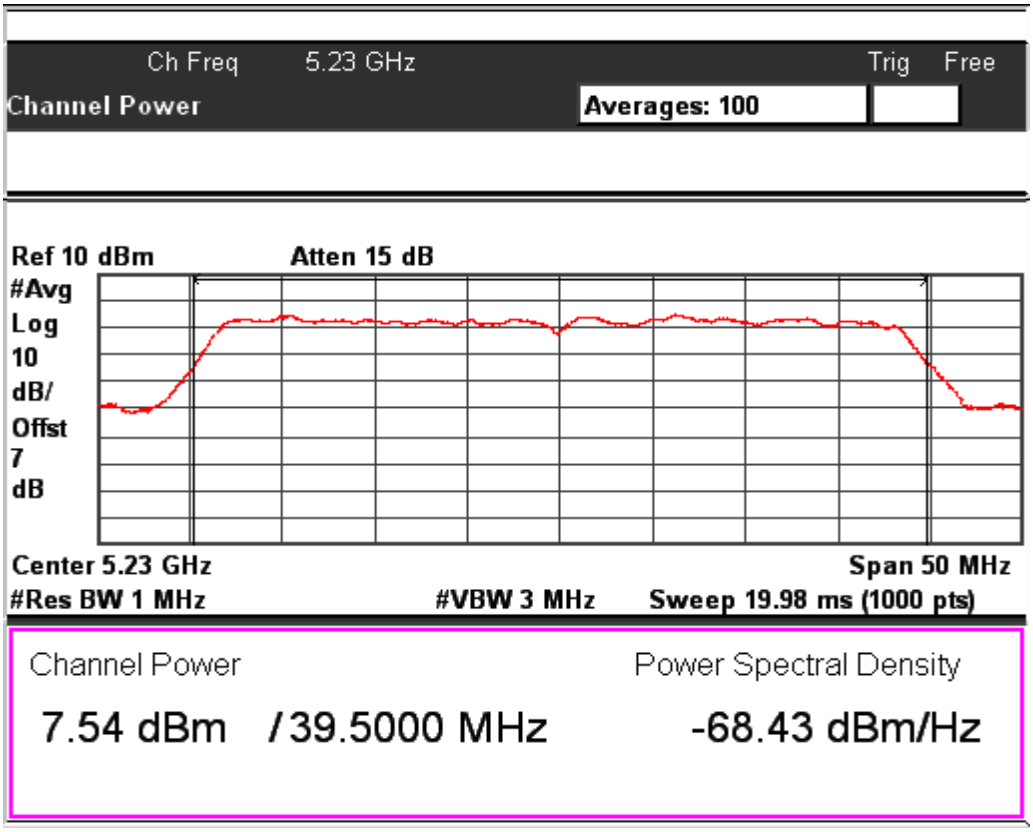
Data Rate: MCS7 **Channel Frequency: 5755MHz**



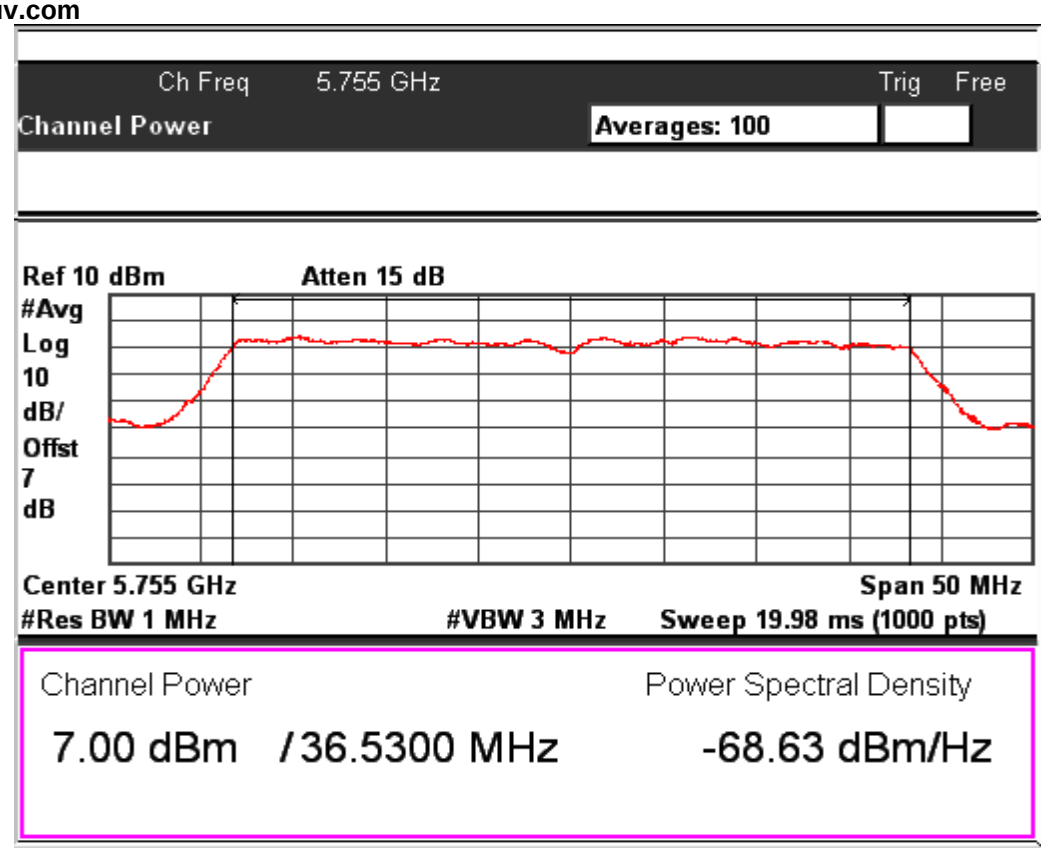
Data Rate: MCS7 **Channel Frequency: 5795MHz**



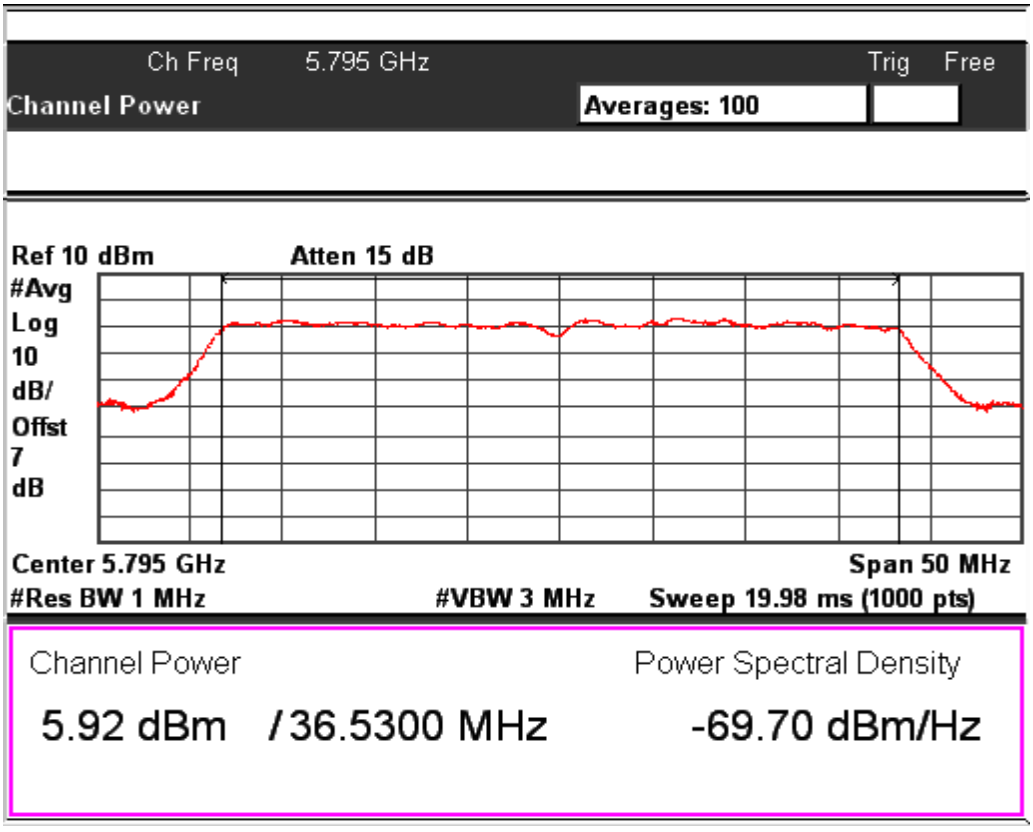
Data Rate: MCS15 **Channel Frequency: 5190MHz**



Data Rate: MCS15 **Channel Frequency: 5230MHz**



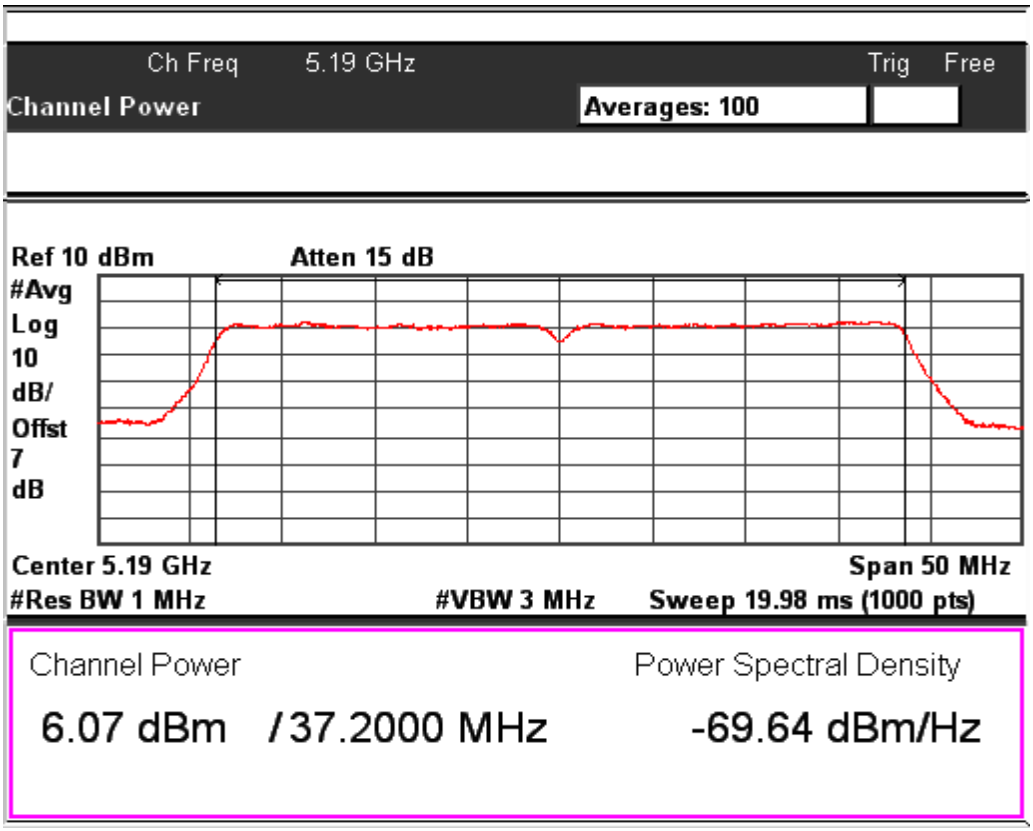
Data Rate: MCS15 **Channel Frequency: 5755MHz**



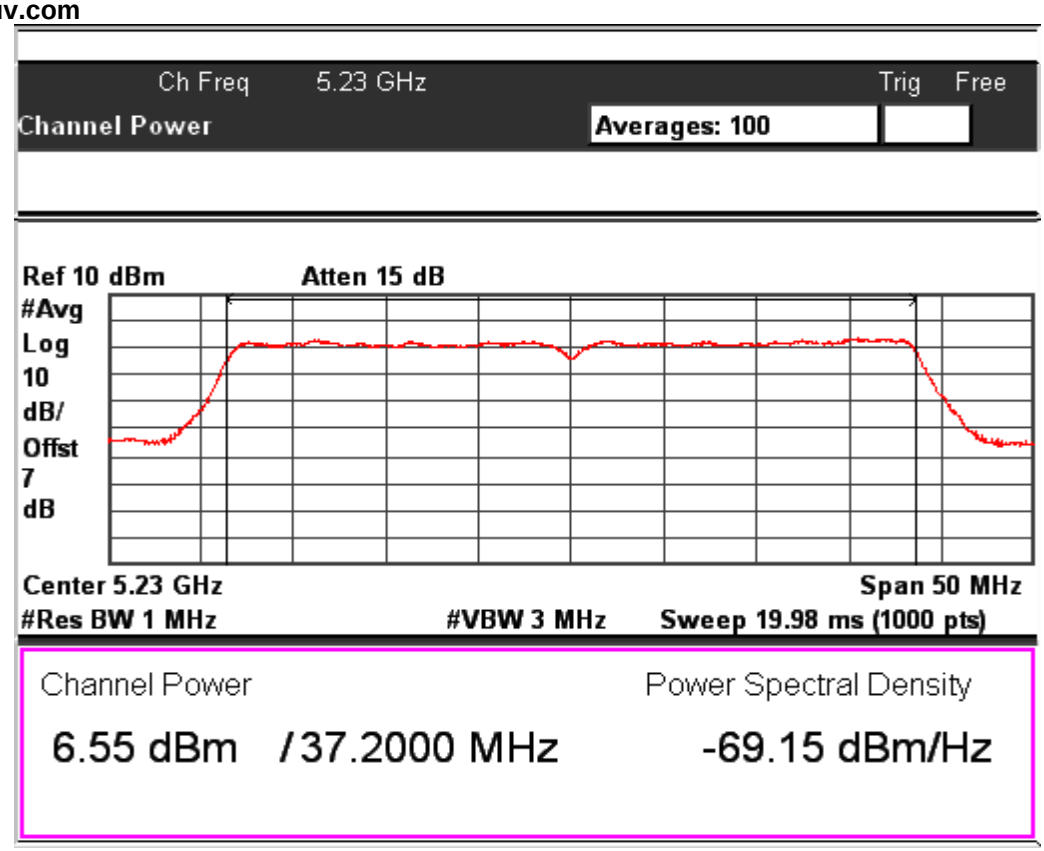
Data Rate: MCS15 **Channel Frequency: 5795MHz**

Test results for Path B

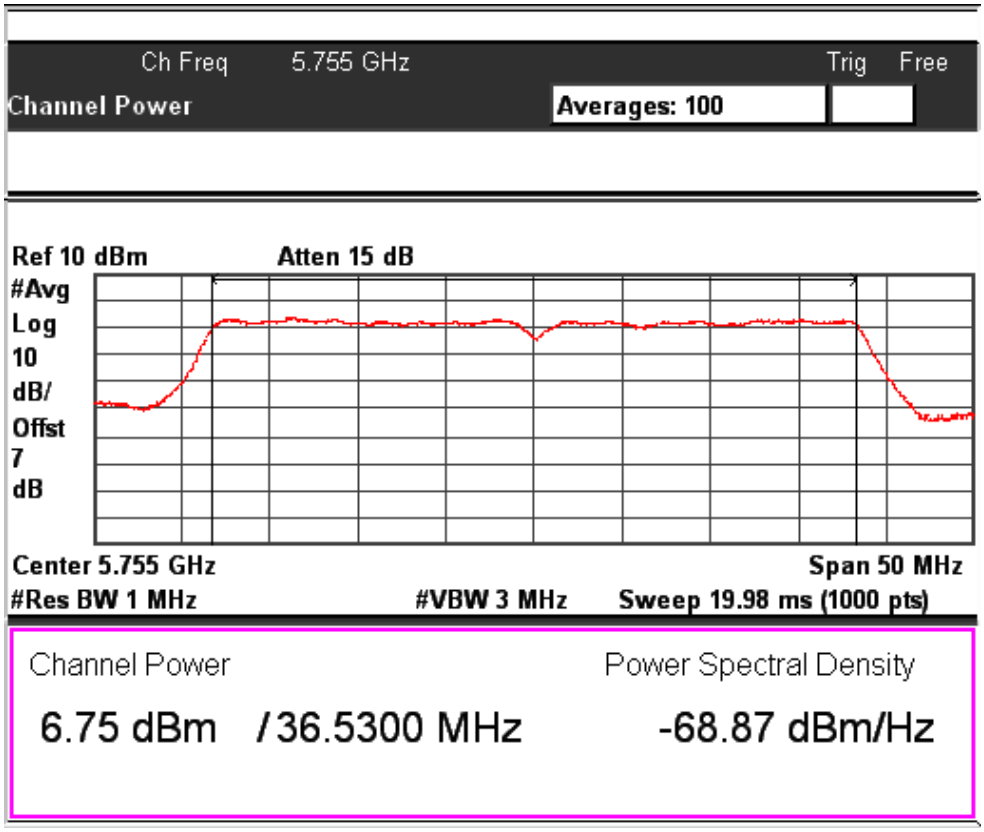
IEEE802.11n HT40				
Data Rate (Mbps)	**Channel No.**	**Frequency (MHz)**	**Average Output power (dBm)**	**Average Power (mW)**
MCS0	38	5190	6.07	4.05
	46	5210	6.55	4.52
	151	5755	6.75	4.73
	159	5795	6.51	4.48
MCS7	38	5190	5.79	3.79
	46	5210	7.24	5.30
	151	5755	7.2	5.25
	159	5795	6.68	4.66
MCS15	38	5190	5.06	3.21
	46	5210	4.94	3.12
	151	5755	7.39	5.48
	159	5795	6.84	4.83



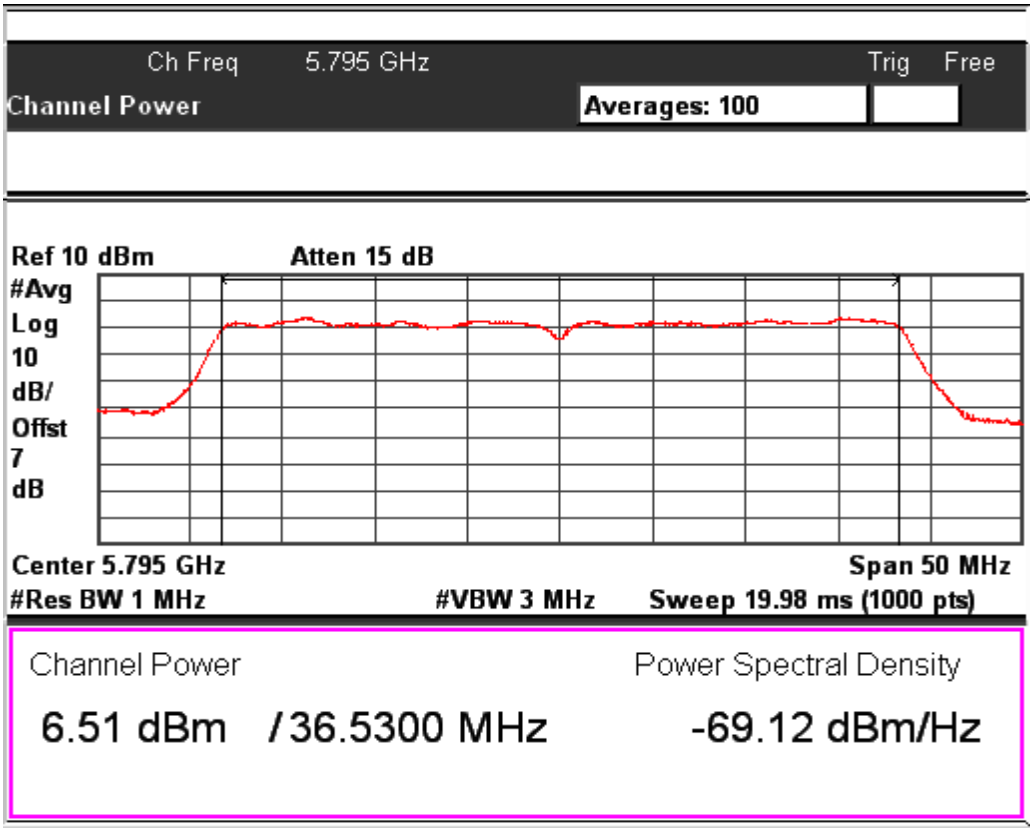
Data Rate: MCS0 **Channel Frequency: 5190MHz**



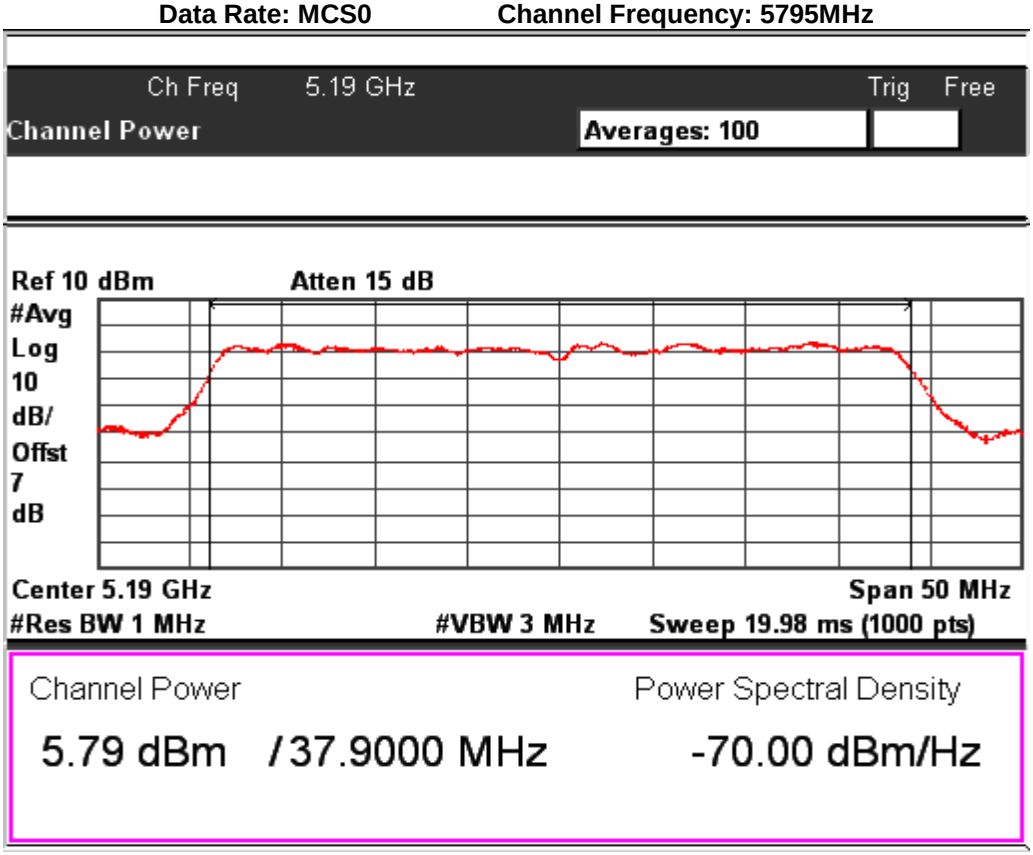
Data Rate: MCS0 **Channel Frequency: 5210MHz**



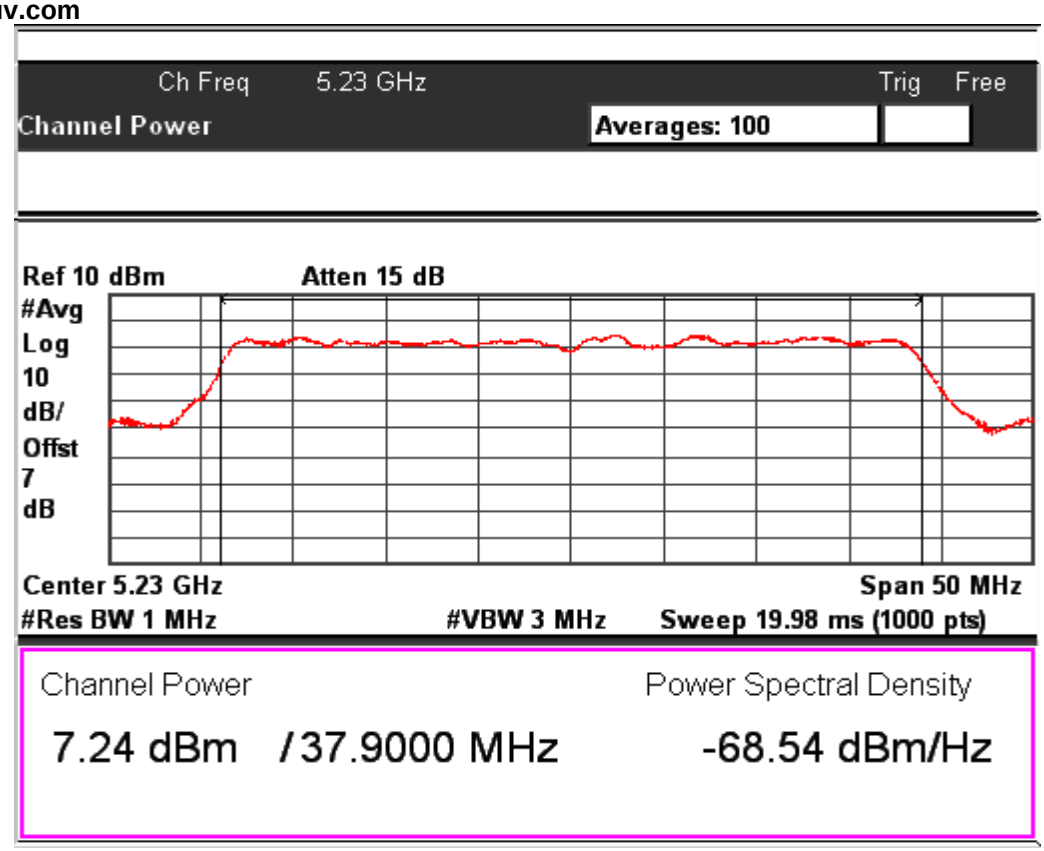
Data Rate: MCS0 **Channel Frequency: 5755MHz**



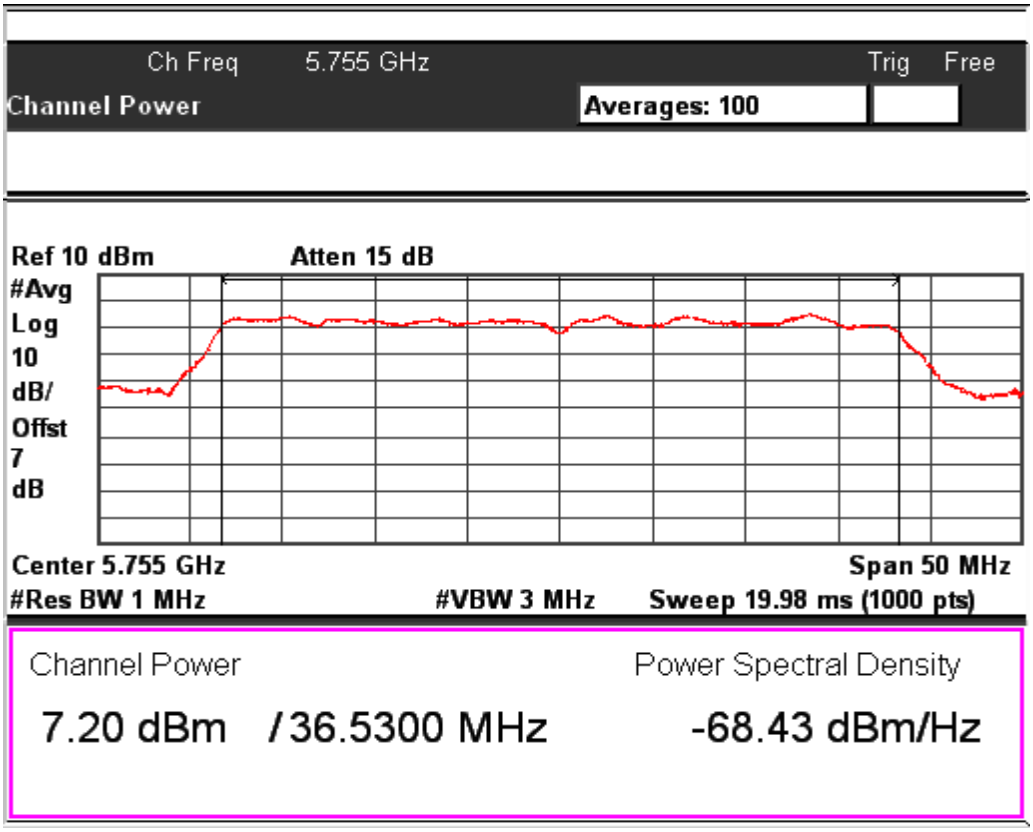
Data Rate: MCS0 **Channel Frequency: 5795MHz**



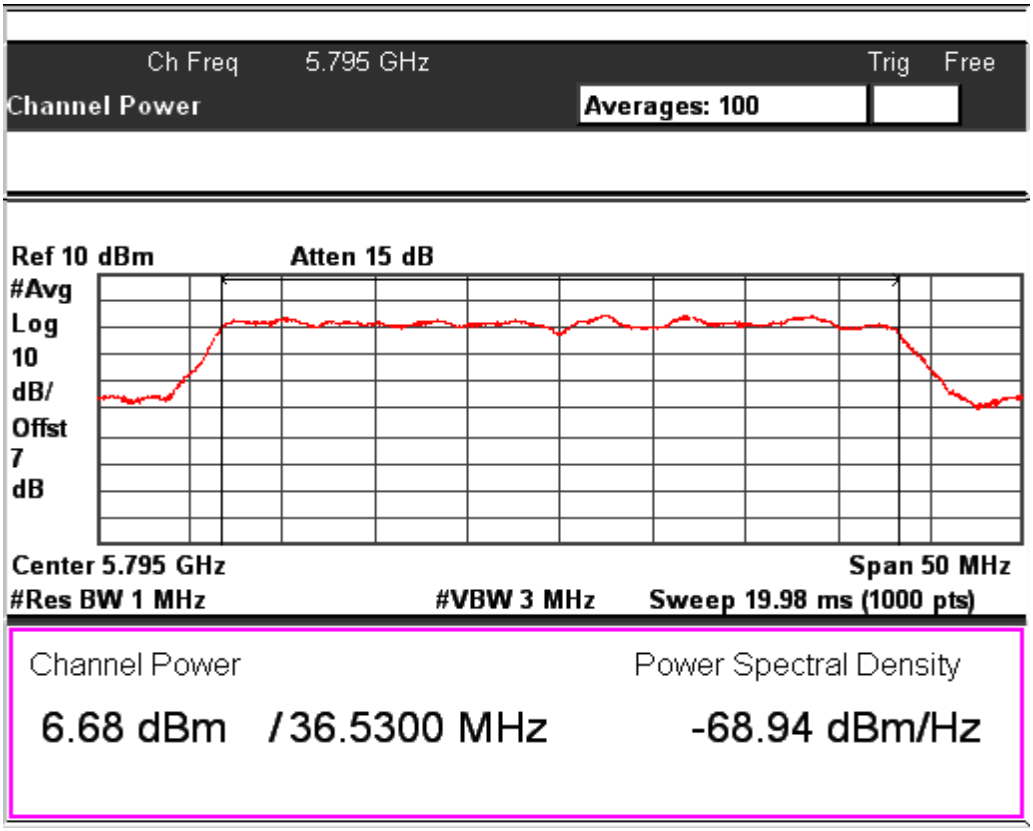
Data Rate: MCS7 **Channel Frequency: 5190MHz**



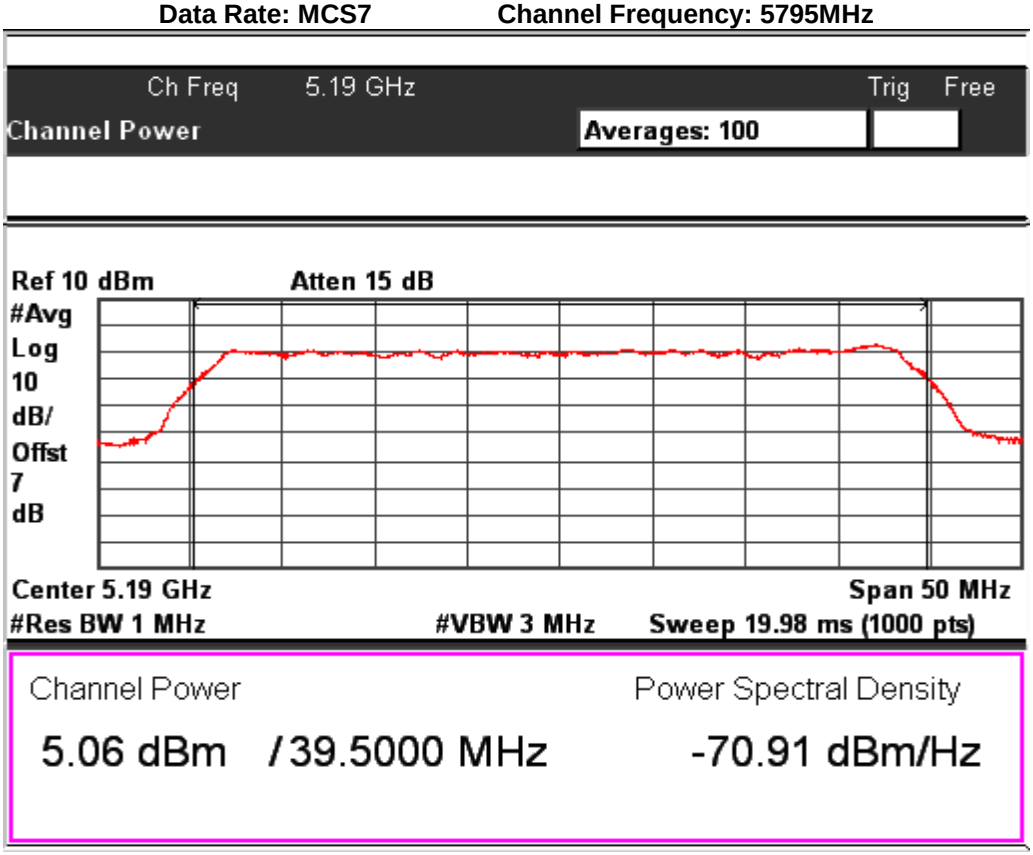
Data Rate: MCS7 **Channel Frequency: 5210MHz**



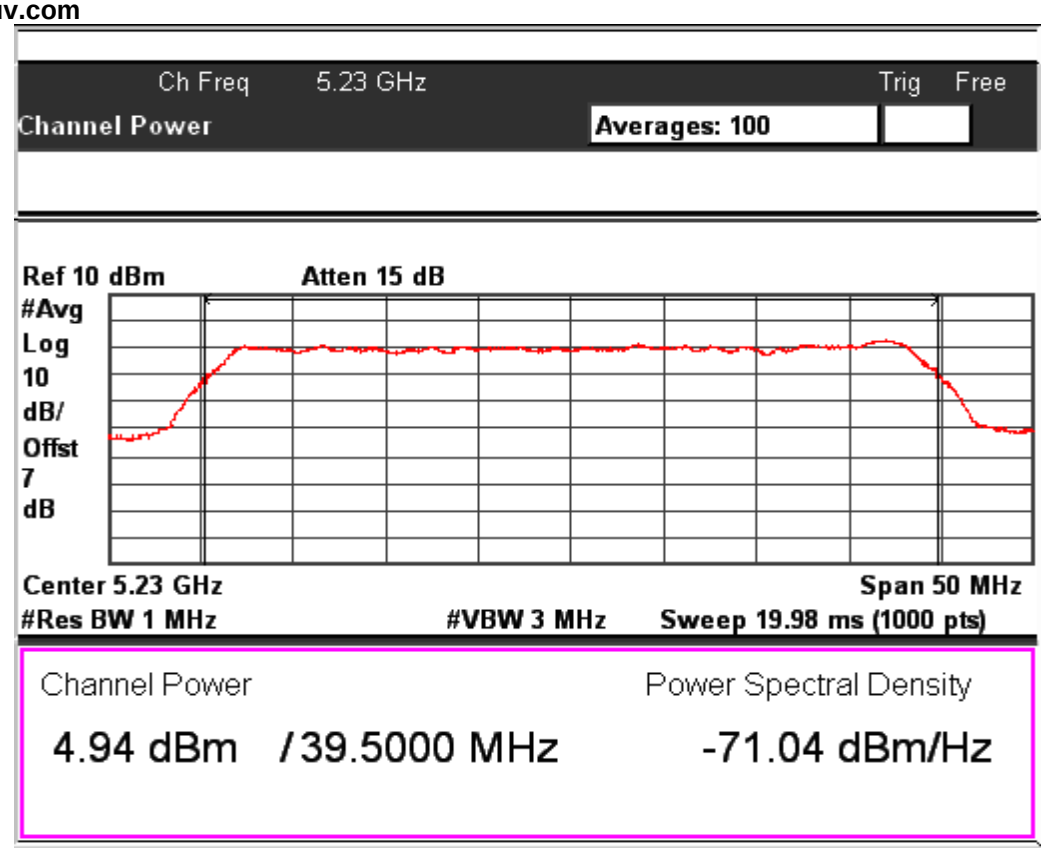
Data Rate: MCS7 **Channel Frequency: 5755MHz**



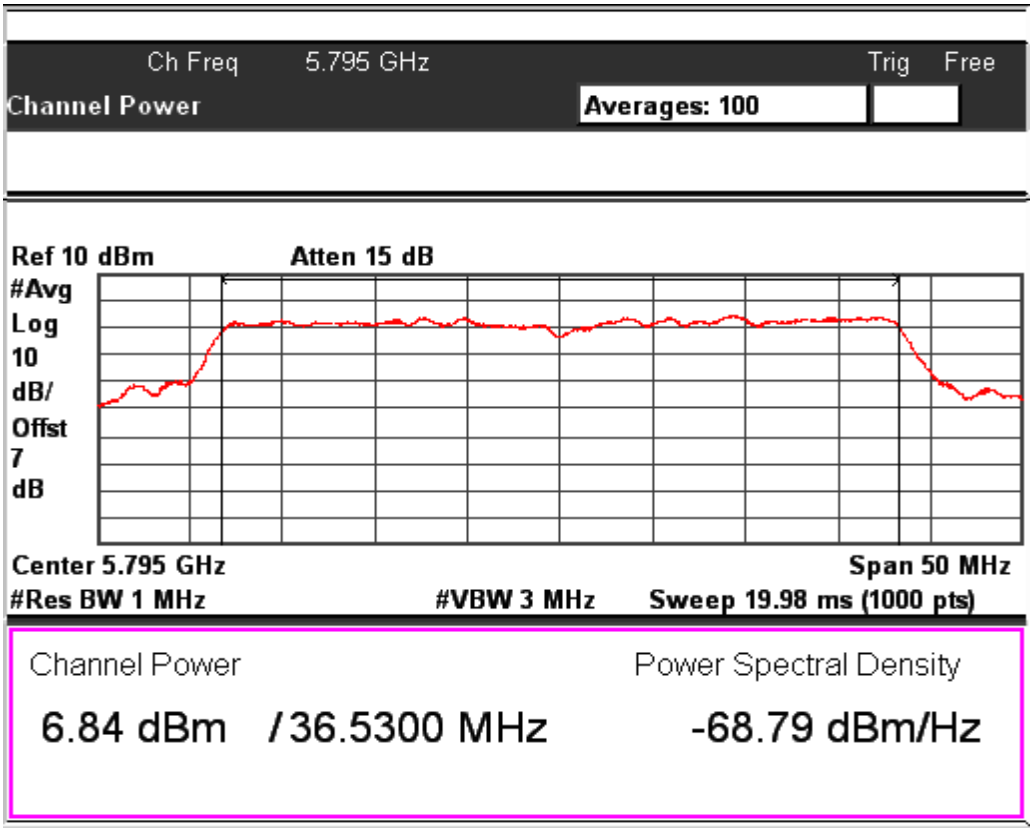
Data Rate: MCS7 Channel Frequency: 5795MHz



Data Rate: MCS15 Channel Frequency: 5190MHz



Data Rate: MCS15 **Channel Frequency: 5210MHz**



Data Rate: MCS15 **Channel Frequency: 5795MHz**

Measure and sum Technique

IEEE802.11a 20MHz Channel							
Data Rate (Mbps)	**Channel No**	**Channel frequency (MHz)**	**Average Power (mW) Path A**	**Average Power (mW) Path B**	**Total Average Power (mW)**	**Total Average Power (dBm)**	**Limit (dBm)**
6	36	5180	6.70	4.30	10.99	10.41	**24**
	48	5240	8.00	7.41	15.41	11.88	**24**
	149	5745	7.73	7.83	15.56	**11.92**	**29.6**
	165	5825	6.76	5.40	12.16	10.85	**29.6**
24	36	5180	7.28	4.89	12.16	10.85	**24**
	48	5240	7.28	6.82	14.10	11.49	**24**
	149	5745	7.38	7.36	14.74	11.69	**29.6**
	165	5825	6.43	5.31	11.74	10.70	**29.6**
54	36	5180	6.34	5.02	11.36	10.55	**24**
	48	5240	8.11	7.38	15.49	**11.90**	**24**
	149	5745	7.55	7.64	15.19	11.82	**29.6**
	165	5825	6.58	5.45	12.02	10.80	**29.6**

IEEE802.11n 20MHz Channel							
Data Rate (Mbps)	**Channel No**	**Channel frequency (MHz)**	**Average Power (mW) Path A**	**Average Power (mW) Path B**	**Total Average Power (mW)**	**Total Average Power (dBm)**	**Limit (dBm)**
MCS0	36	5180	7.05	5.22	12.27	10.89	**24**
	48	5240	7.52	7.03	14.55	11.63	**24**
	149	5745	6.47	8.32	14.79	11.70	**29.6**
	165	5825	5.96	5.06	11.01	10.42	**29.6**
MCS7	36	5180	9.30	3.94	13.24	11.21	**24**
	48	5240	7.48	6.61	14.09	11.49	**24**
	149	5745	6.68	7.66	14.34	11.57	**29.6**
	165	5825	6.12	5.05	11.17	10.48	**29.6**
MCS15	36	5180	6.98	5.11	12.09	10.82	**24**
	48	5240	7.57	6.08	13.65	11.35	**24**
	149	5745	6.70	7.26	13.96	11.45	**29.6**
	165	5825	6.12	4.97	11.09	10.45	**29.6**

IEEE802.11n 40MHz Channel							
Data Rate (Mbps)	**Channel No**	**Channel frequency (MHz)**	**Average Power (mW) Path A**	**Average Power (mW) Path B**	**Add & Sum (mW)**	**Total (dBm)**	**Limit (dBm)**
MCS0	38	5190	5.08	4.05	9.13	9.60	**24**
	46	5210	5.22	4.52	9.74	9.89	**24**
	151	5755	4.59	4.73	9.32	9.70	**29.6**
	159	5795	3.71	4.48	8.18	9.13	**29.6**
MCS7	38	5190	5.64	3.79	9.43	9.74	**24**
	46	5210	5.83	5.30	11.13	**10.47**	**24**
	151	5755	5.22	5.25	10.47	10.20	**29.6**
	159	5795	4.06	4.66	8.71	9.40	**29.6**
MCS15	38	5190	5.61	3.21	8.82	9.45	**24**
	46	5210	5.68	3.12	8.79	9.44	**24**
	151	5755	5.01	5.48	10.49	10.21	**29.6**
	159	5795	3.91	4.83	8.74	9.41	**29.6**

Note: Antenna gain for the frequency band 5725-5850MHz is 3.4dBi,
Directional gain = Antenna Gain+10*log ((NANT) dBi, = 3.4+10*log (2) =6.4dBi is more that 6dBi & hence power limit will be reduced by Pout= P_{Limit} - (G_{Tx} -6) = 30-(6.4-6) =29.6 dBm

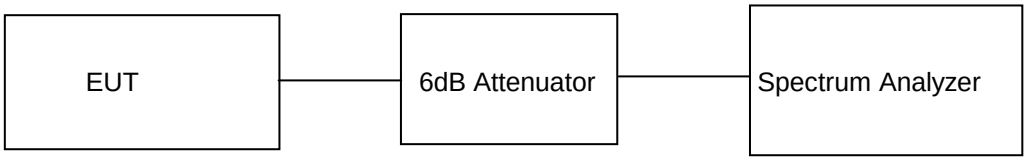
P_{Out} is the maximum conducted output power in dBm,
P_{Limit} is the output power limit in dBm,
G_{Tx} is the maximum transmitting antenna directional gain in dBi

Maximum power spectral density **Section 15.407 (a)**
Result **Pass**

Test Specification FCC Part 15 Subpart E
Requirement the power spectral density shall not exceed as per limit mentioned in limit table measured at in any 1-MHz band

Note: Attenuator (6dB) + cable loss (1dB) = 7 dB Considered in the test results for the band 5150-5250MHz & For the frequency range 5725 -5850MHz, 14dB considered in the test results (Maximum Measured PSD specified in 500kHz).

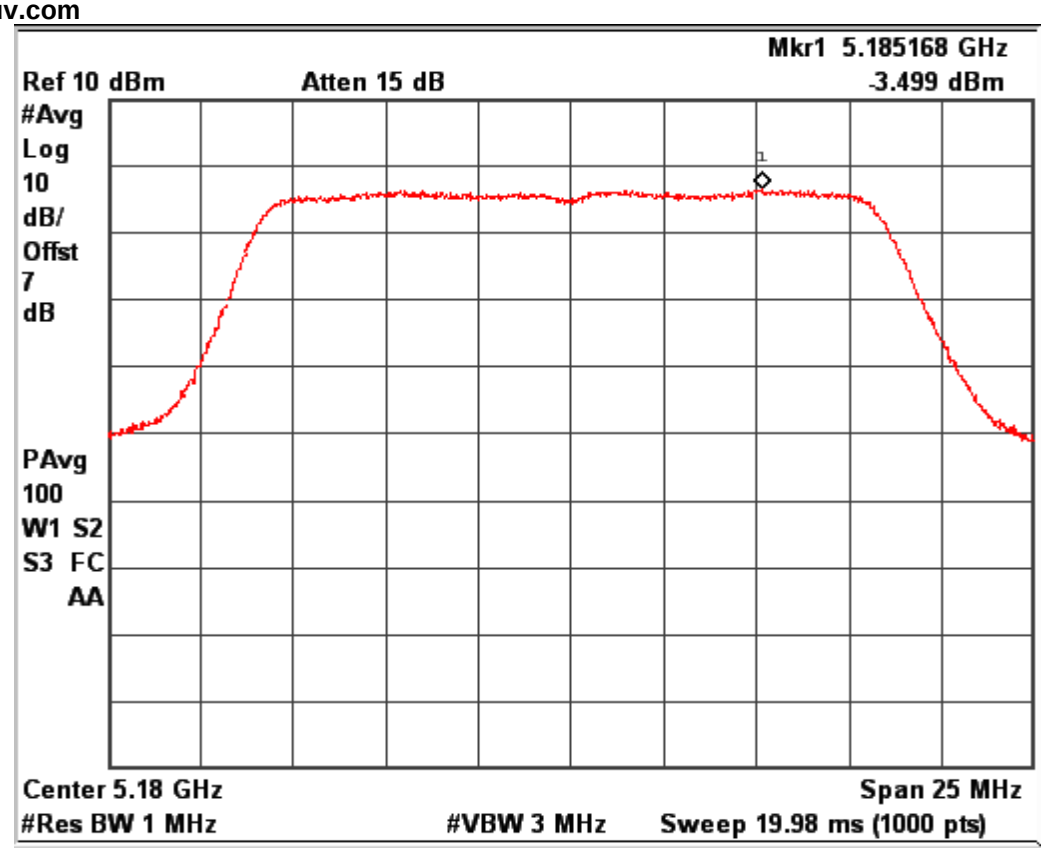
Test Method:



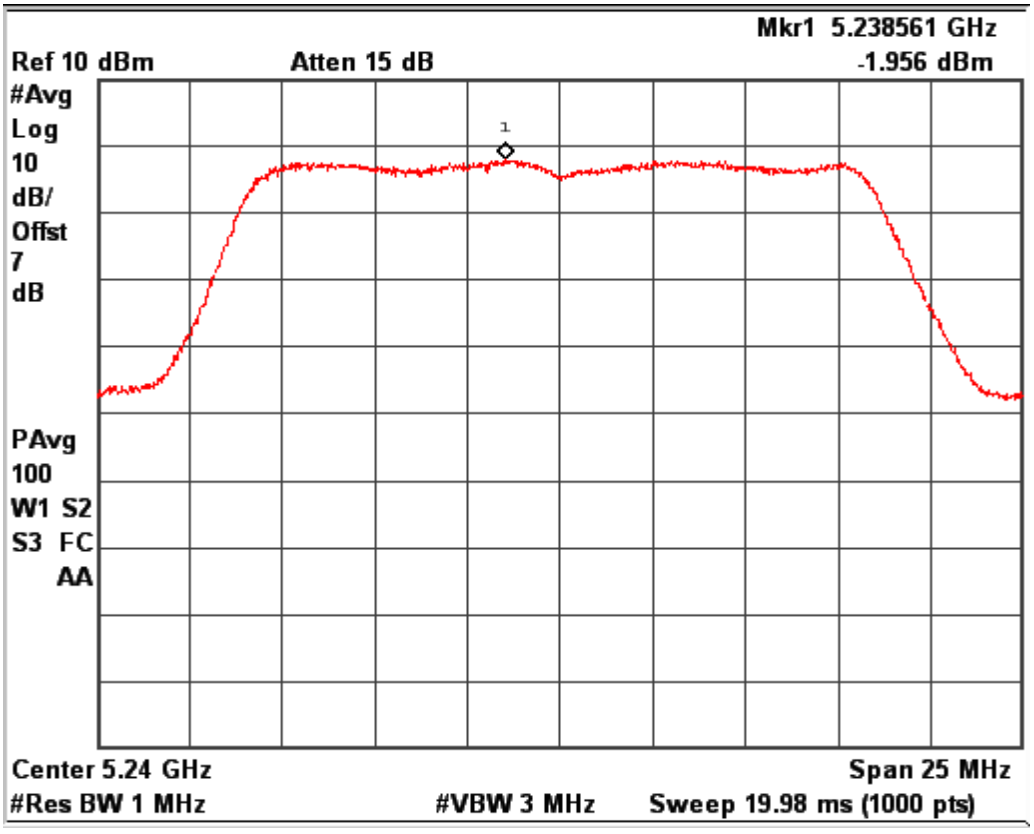
Test Results:

Test Results for Path A

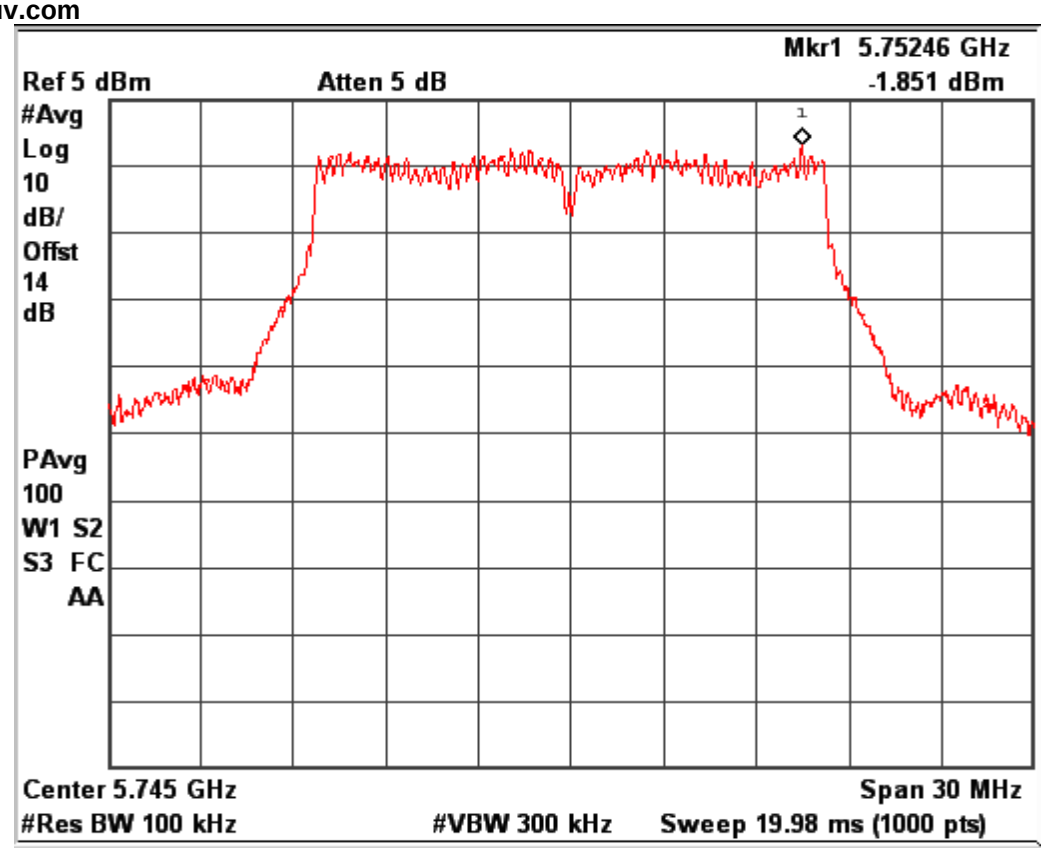
IEEE802.11a 20MHz channel						
Data Rate (Mbps)	**Channel No.**	**Frequency (MHz)**	**Measured PSD (dBm)**	**Measure & Add 10*log(2)**	**Total PSD (dBm)**	**Limit (dB)**
6	36	5180	-3.49	3.01	-0.48	11
	48	5240	-1.95	3.01	1.06	11
	149	5745	-1.85	3.01	1.16	30
	165	5825	-2.37	3.01	0.64	30
24	36	5180	-2.33	3.01	0.68	11
	48	5240	-2.19	3.01	0.82	11
	149	5745	-1.53	3.01	1.48	30
	165	5825	-0.97	3.01	2.04	30
54	36	5180	-1.55	3.01	1.46	11
	48	5240	-1.57	3.01	1.44	11
	149	5745	-0.37	3.01	2.64	30
	165	5825	-0.44	3.01	2.57	30



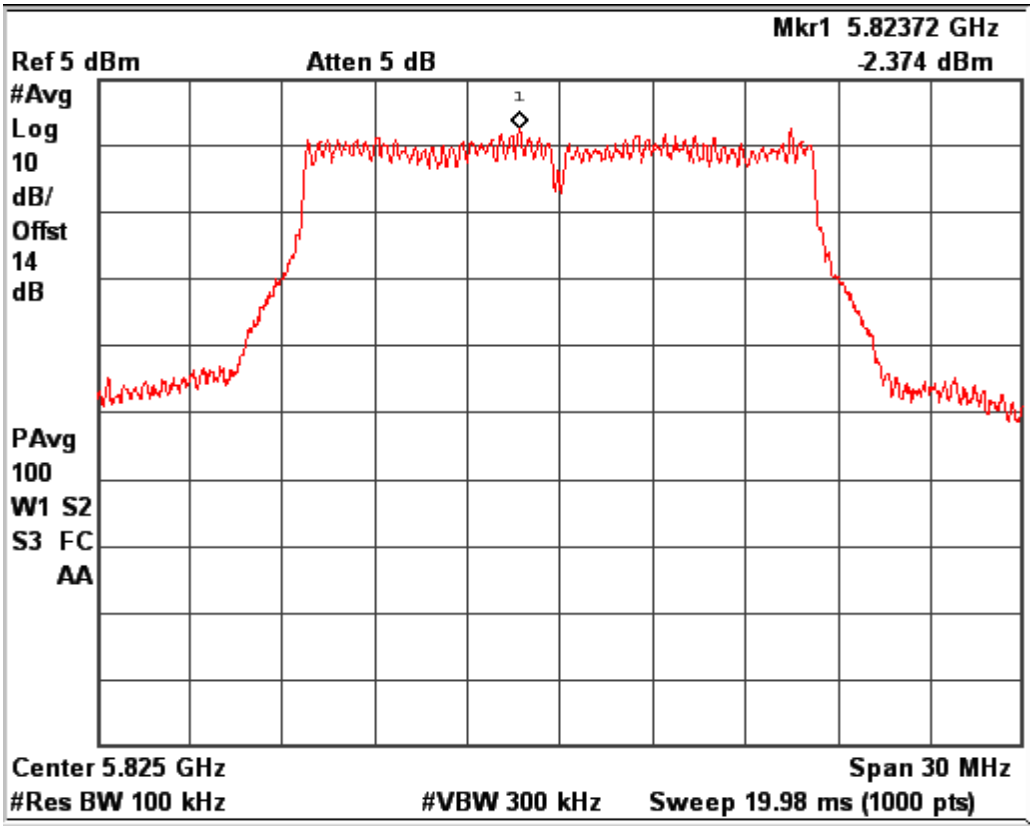
Data Rate: 6Mbps **Channel Frequency: 5180MHz**



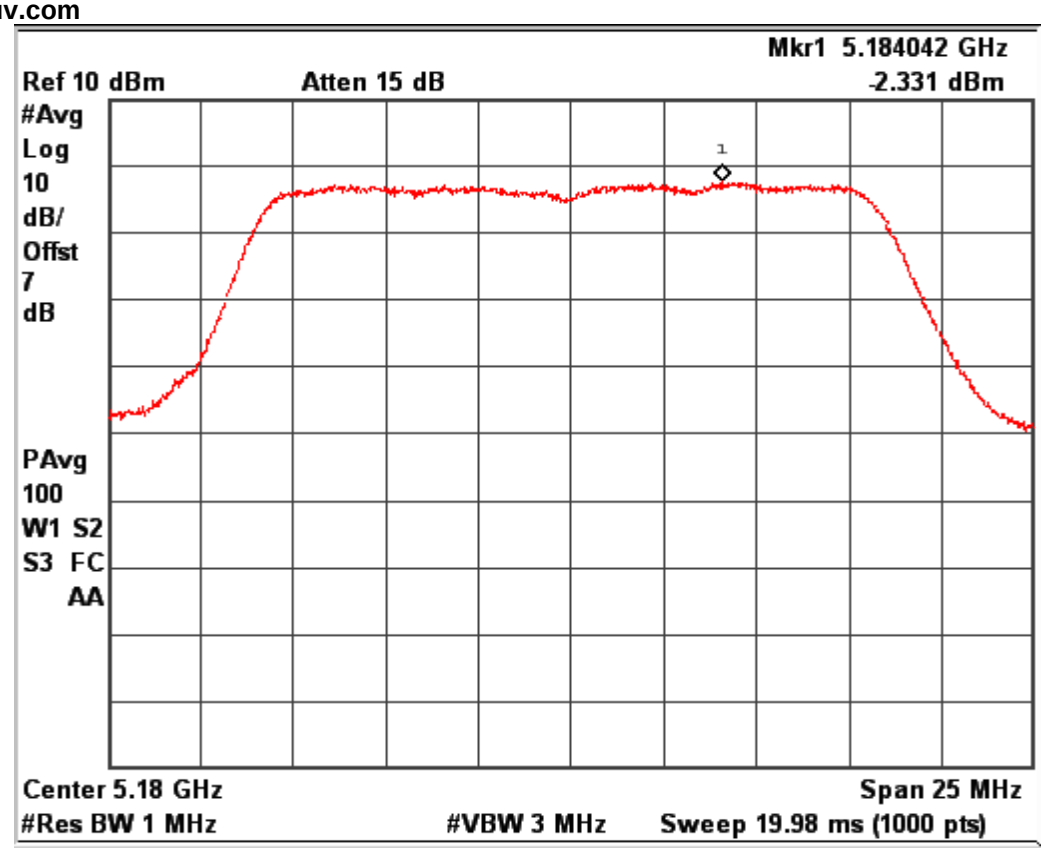
Data Rate: 6Mbps **Channel Frequency: 5240MHz**



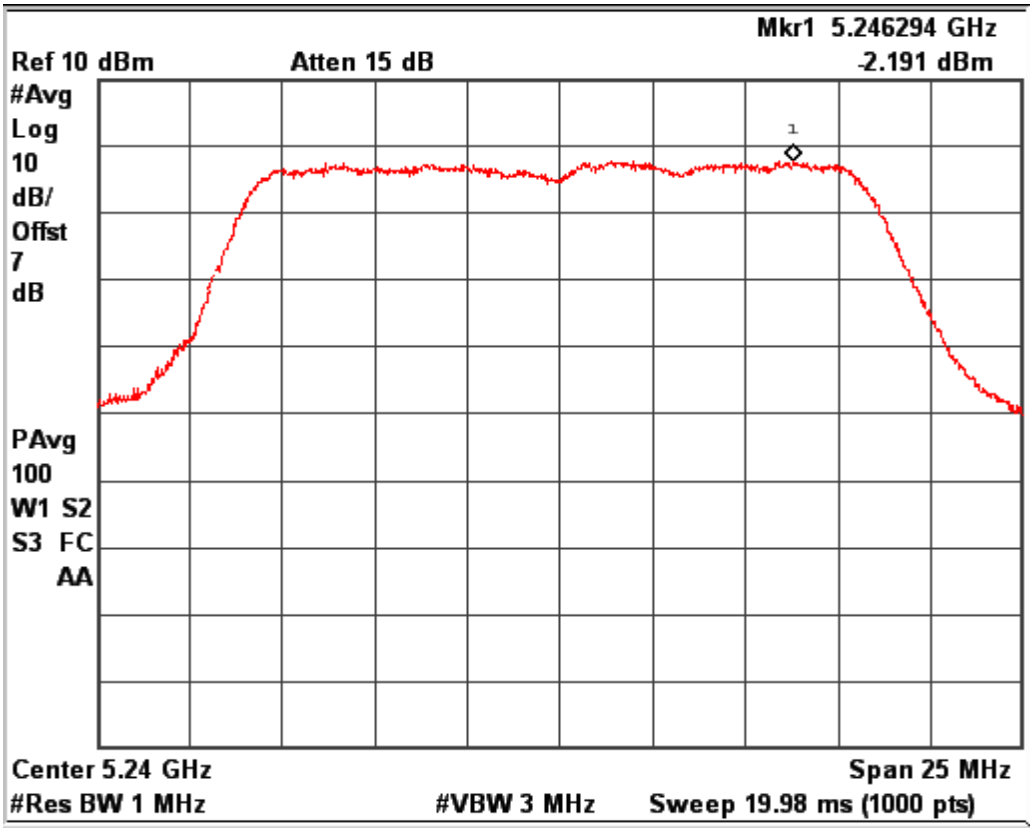
Data Rate: 6Mbps **Channel Frequency: 5745MHz**



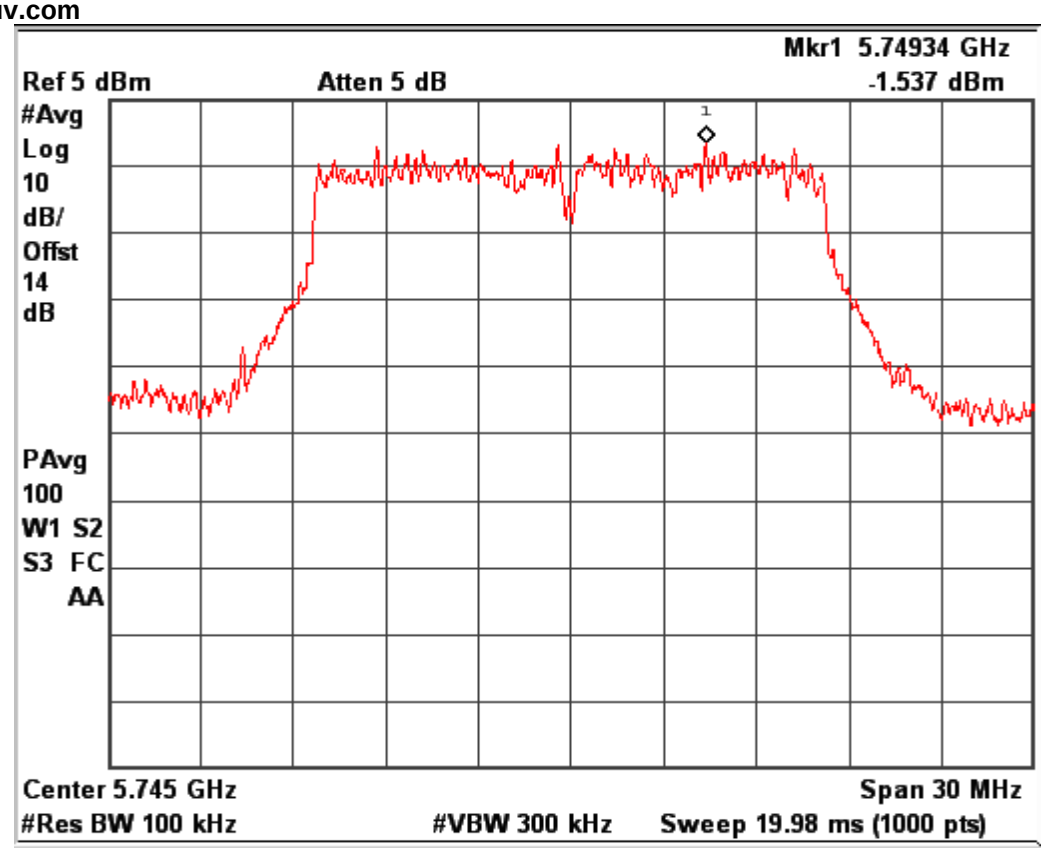
Data Rate: 6Mbps **Channel Frequency: 5825MHz**



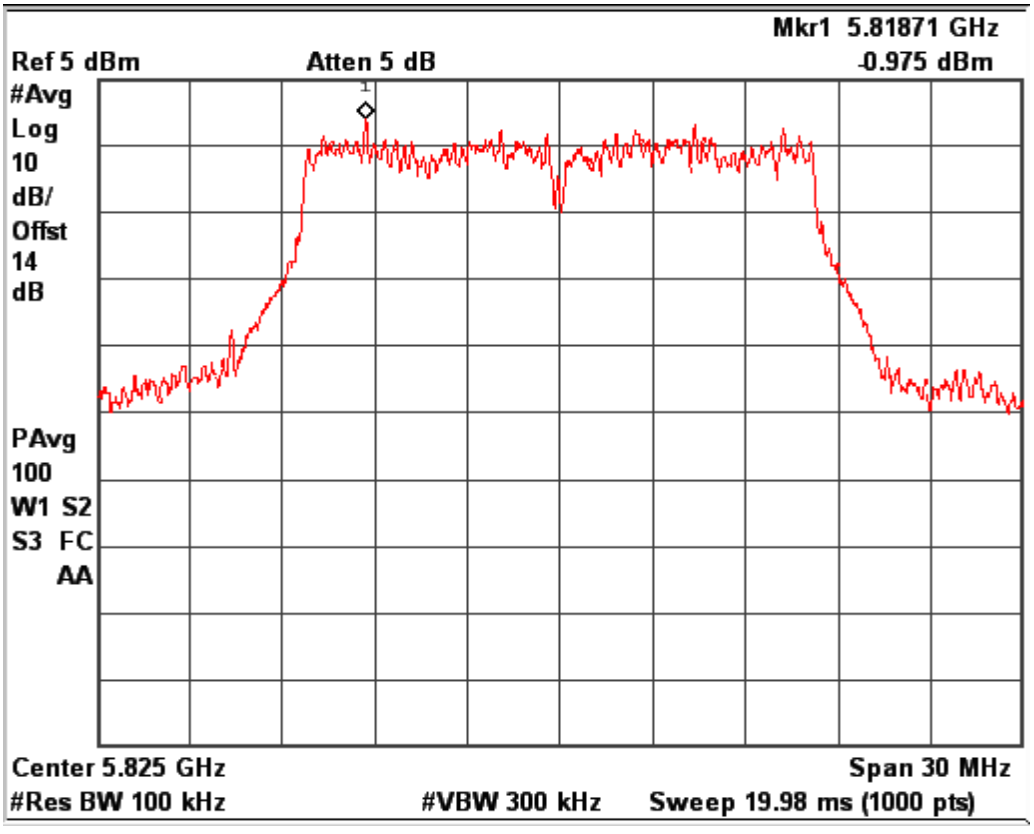
Data Rate: 24Mbps **Channel Frequency: 5180MHz**



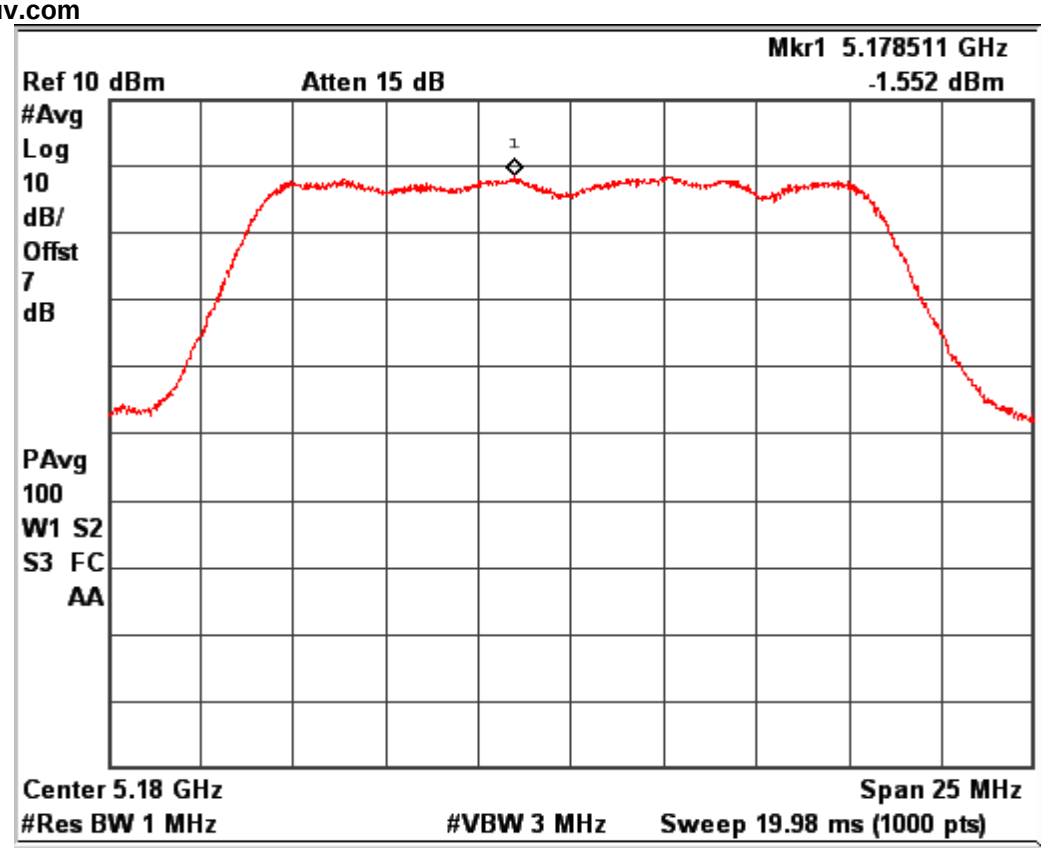
Data Rate: 24Mbps **Channel Frequency: 5240MHz**



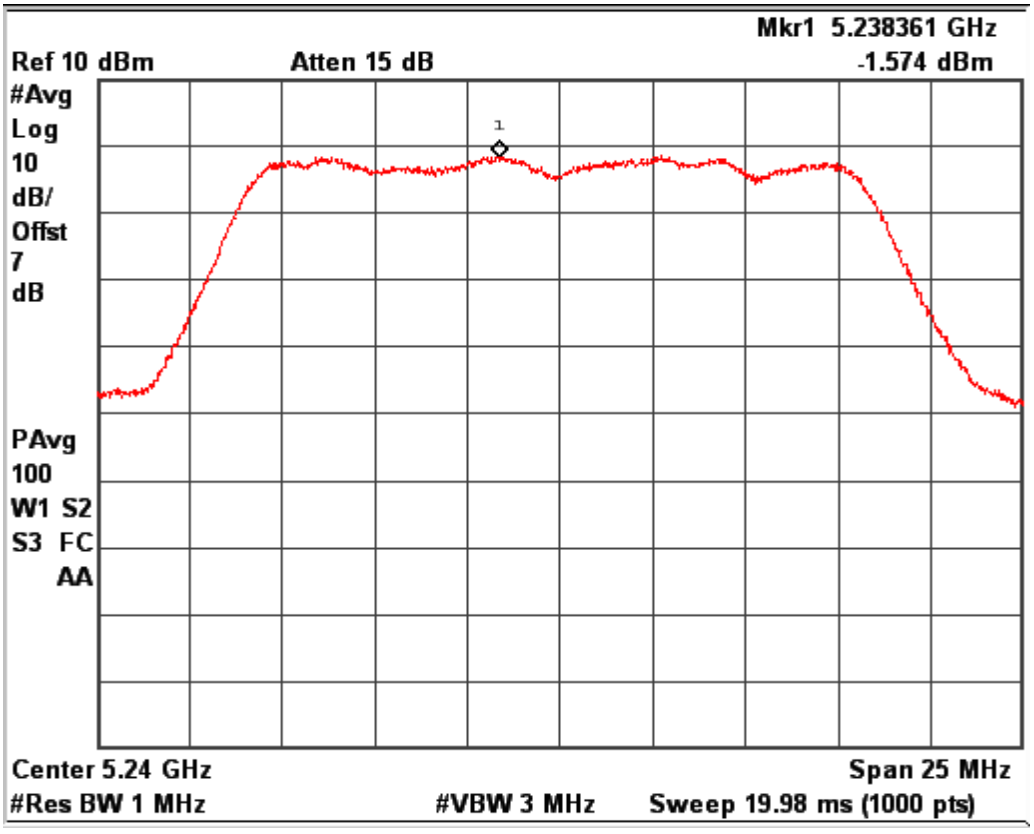
Data Rate: 24Mbps **Channel Frequency: 5745MHz**



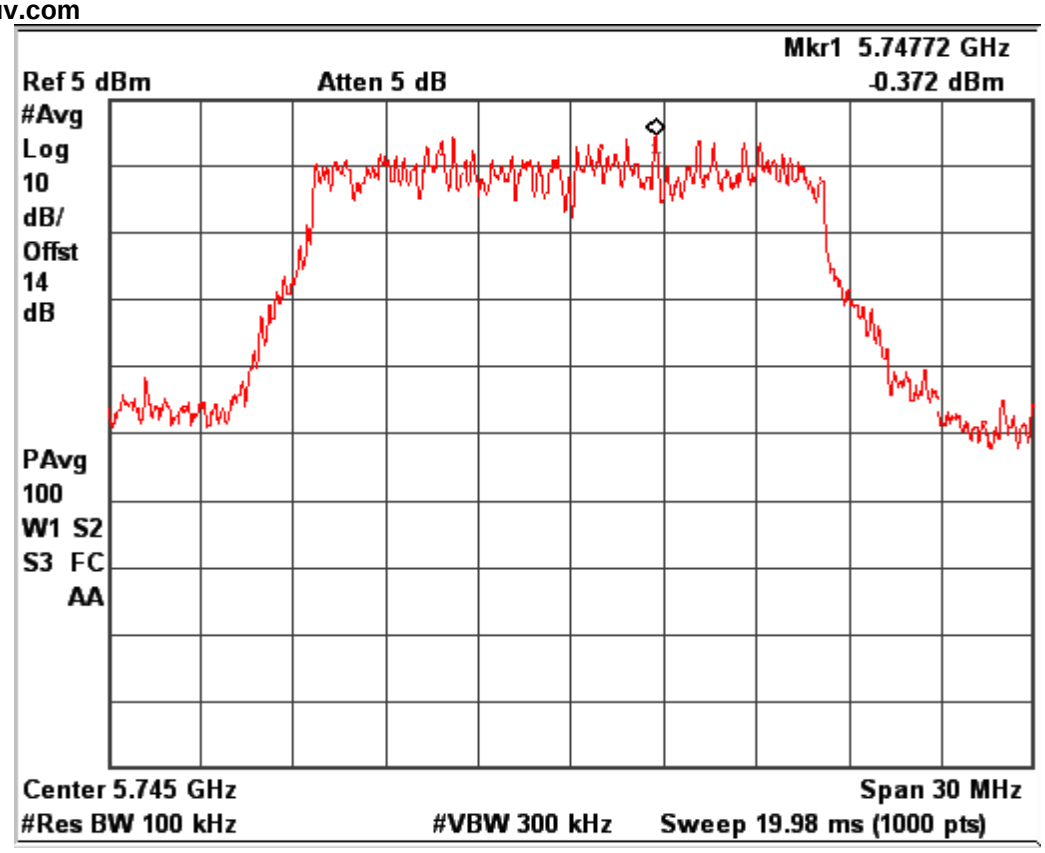
Data Rate: 24Mbps **Channel Frequency: 5825MHz**



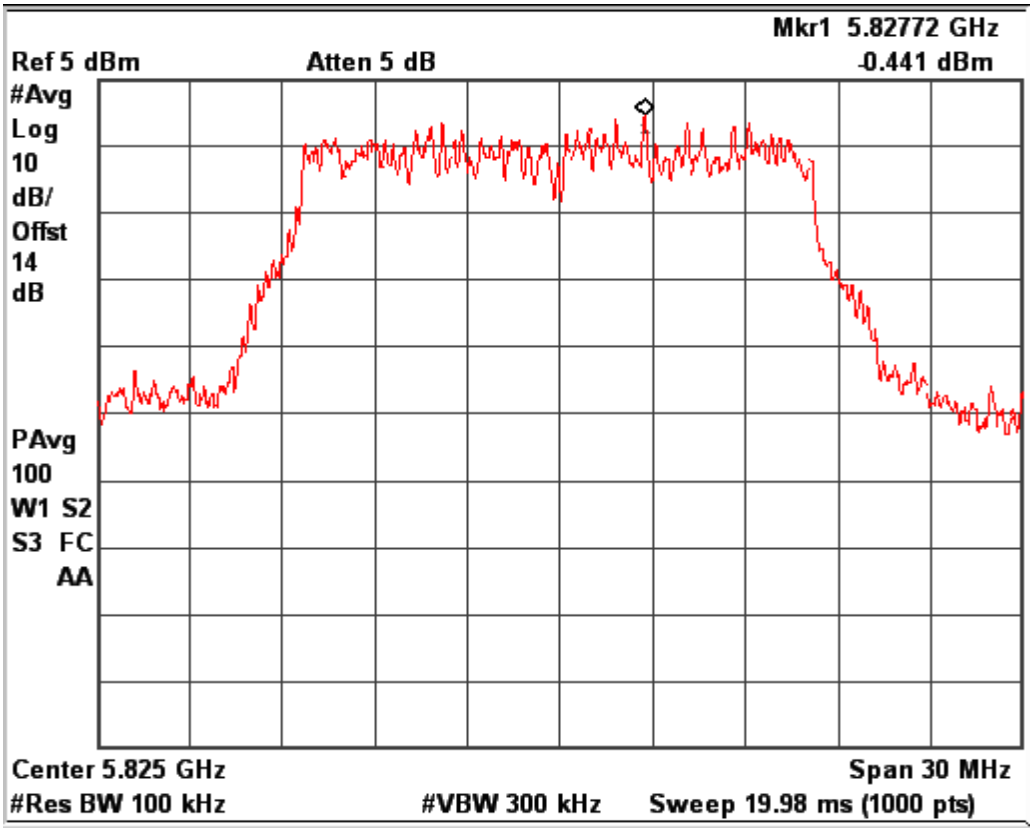
Data Rate: 54Mbps **Channel Frequency: 5180MHz**



Data Rate: 54Mbps **Channel Frequency: 5240MHz**



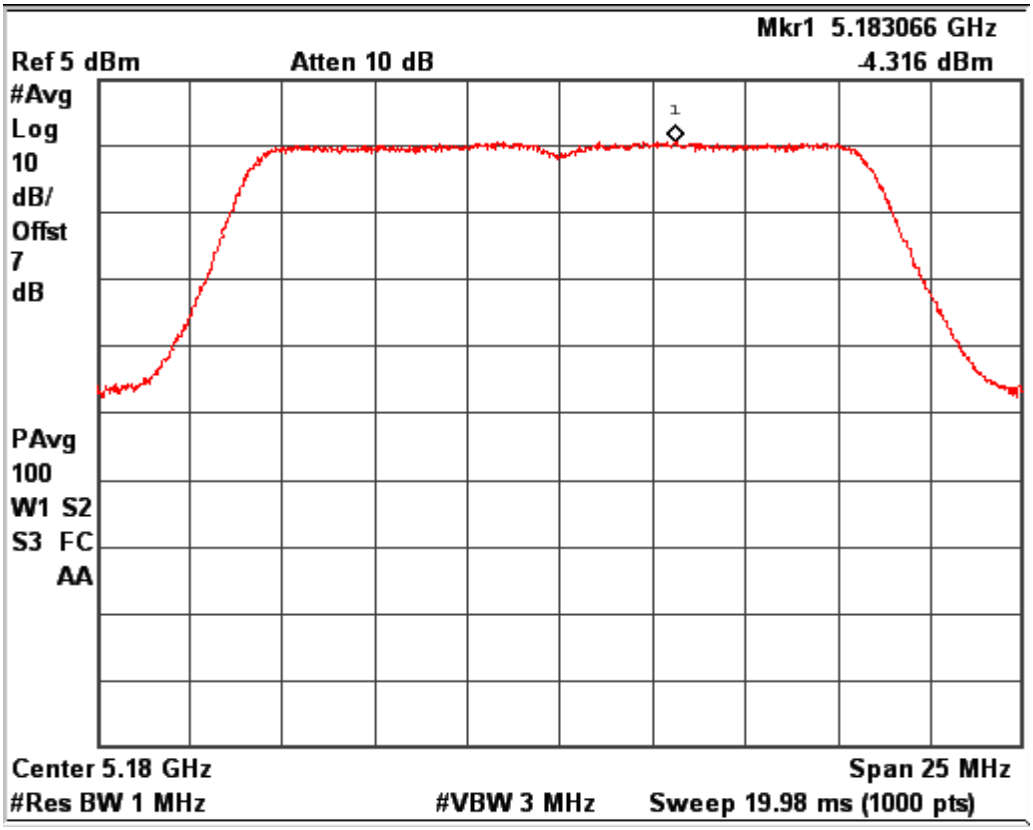
Data Rate: 54Mbps **Channel Frequency: 5745MHz**



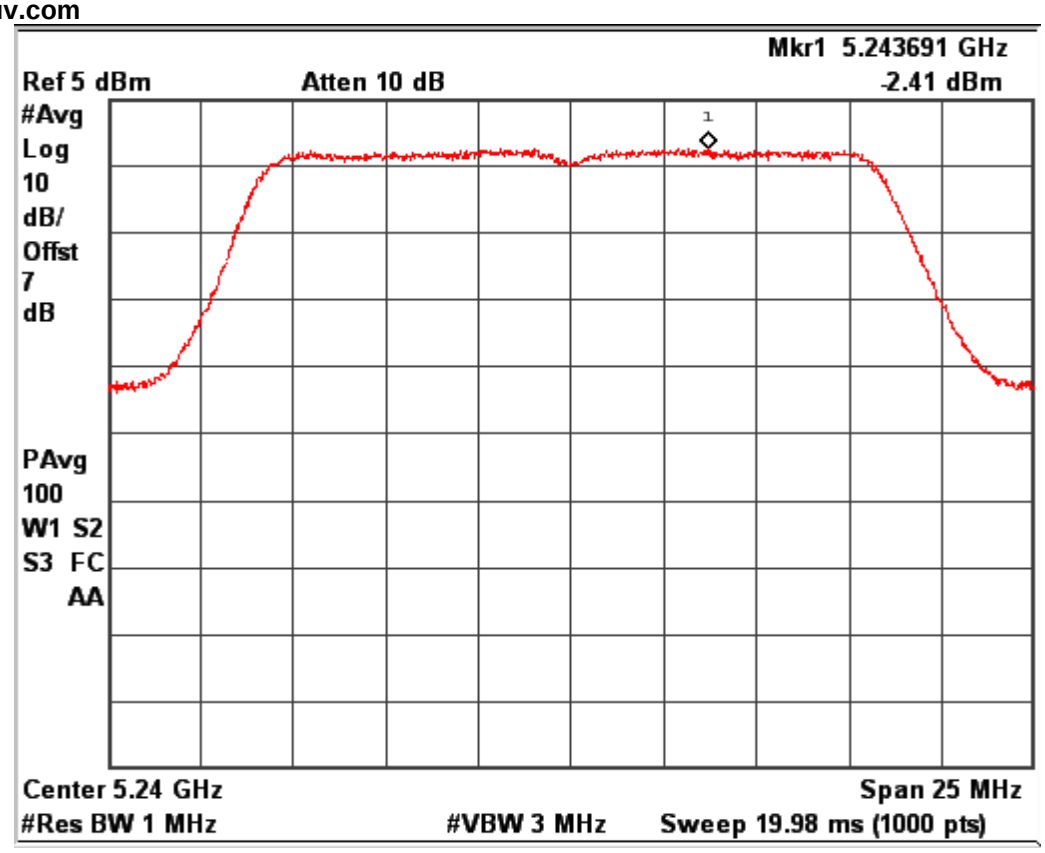
Data Rate: 54Mbps **Channel Frequency: 5825MHz**

Test Results for Path B

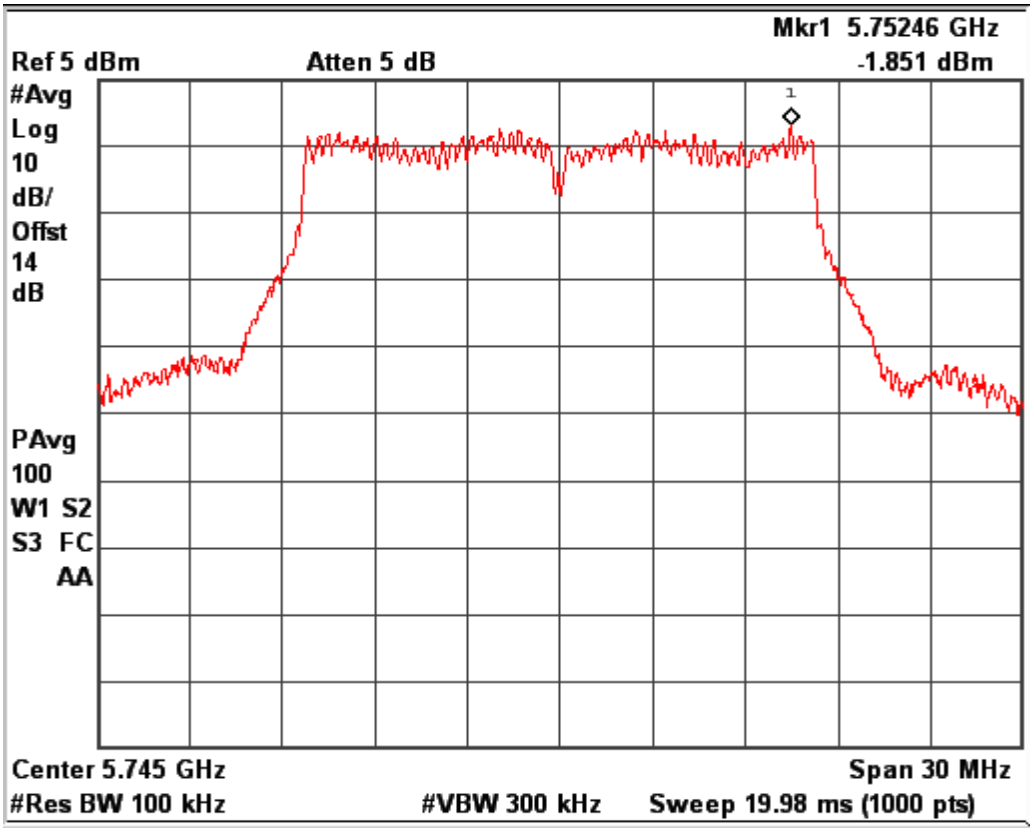
IEEE802.11a 20MHz channel						
Data Rate (Mbps)	**Channel No.**	**Frequency (MHz)**	**Measured PSD (dBm)**	**Measure & Add 10*log(2)**	**Total PSD (dBm)**	**Limit (dB)**
6	36	5180	-4.31	3.01	-1.30	11
	48	5240	-2.41	3.01	0.60	11
	149	5745	-1.85	3.01	1.16	30
	165	5825	-2.37	3.01	0.64	30
24	36	5180	-2.85	3.01	0.16	11
	48	5240	-1.97	3.01	1.04	11
	149	5745	-1.53	3.01	1.48	30
	165	5825	-0.97	3.01	2.04	30
54	36	5180	-3.22	3.01	-0.21	11
	48	5240	-1.96	3.01	1.05	11
	149	5745	-0.37	3.01	2.64	30
	165	5825	-0.44	3.01	2.57	30



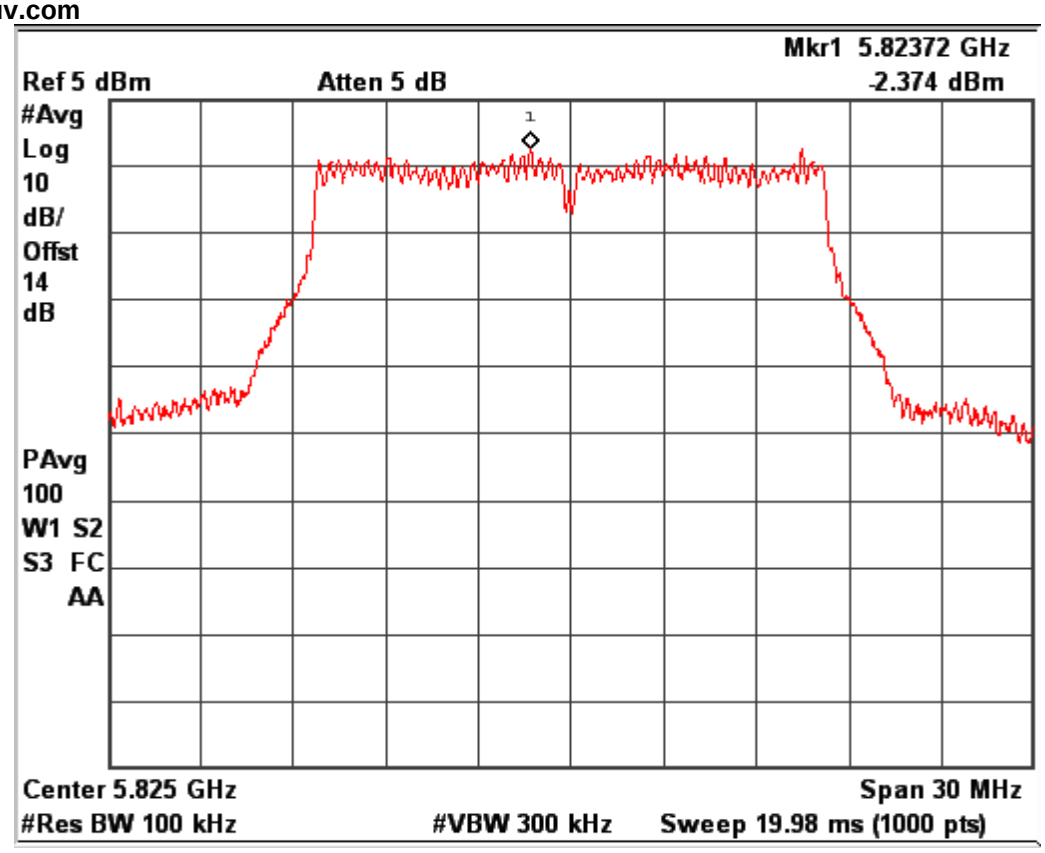
Data Rate: 6Mbps **Channel Frequency: 5180MHz**



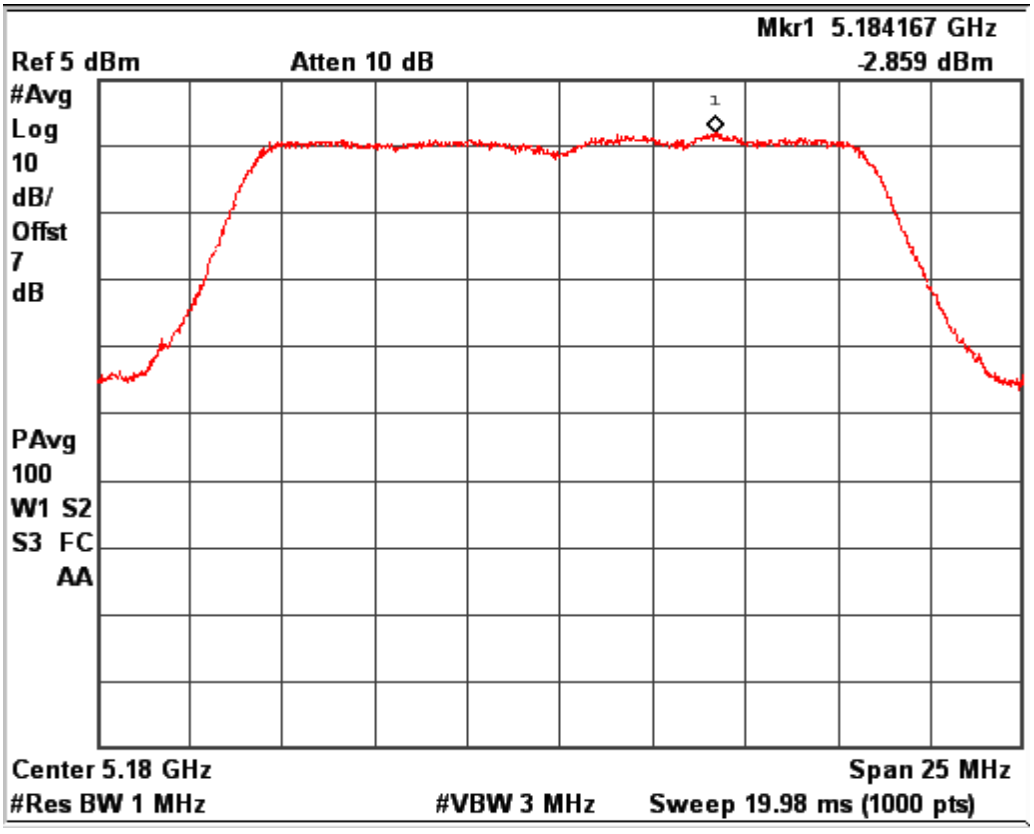
Data Rate: 6Mbps **Channel Frequency: 5240MHz**



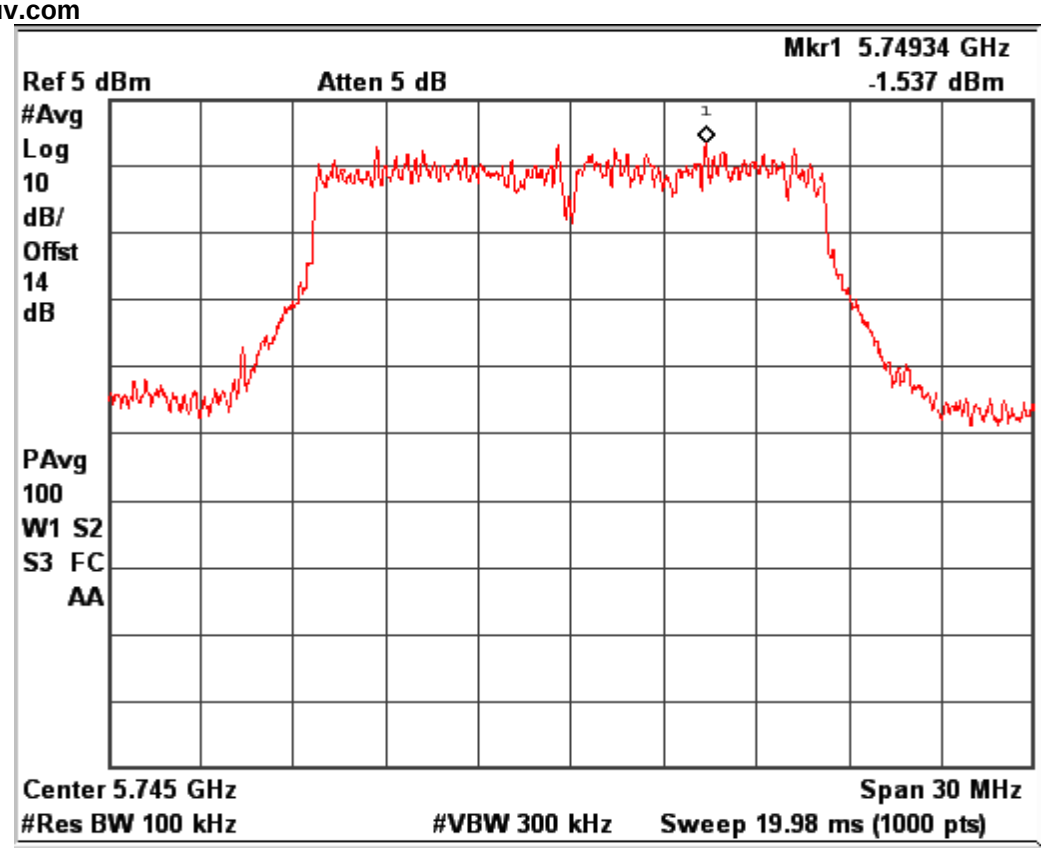
Data Rate: 6Mbps **Channel Frequency: 5745MHz**



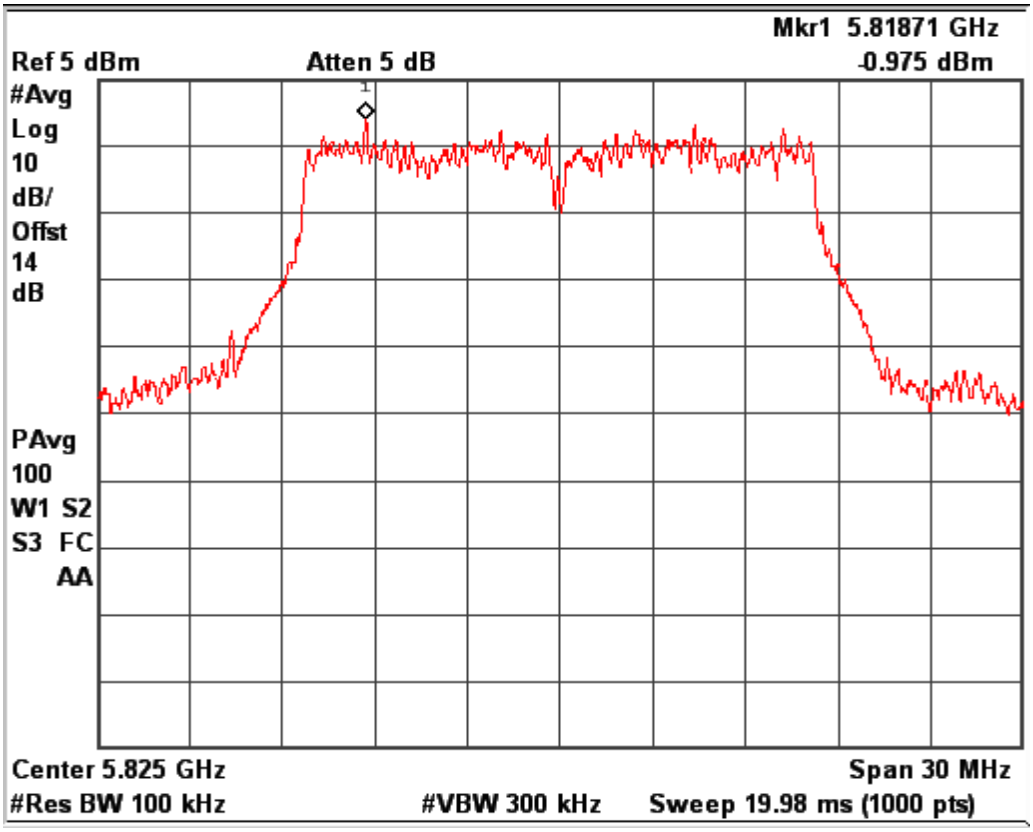
Data Rate: 6Mbps **Channel Frequency: 5825MHz**



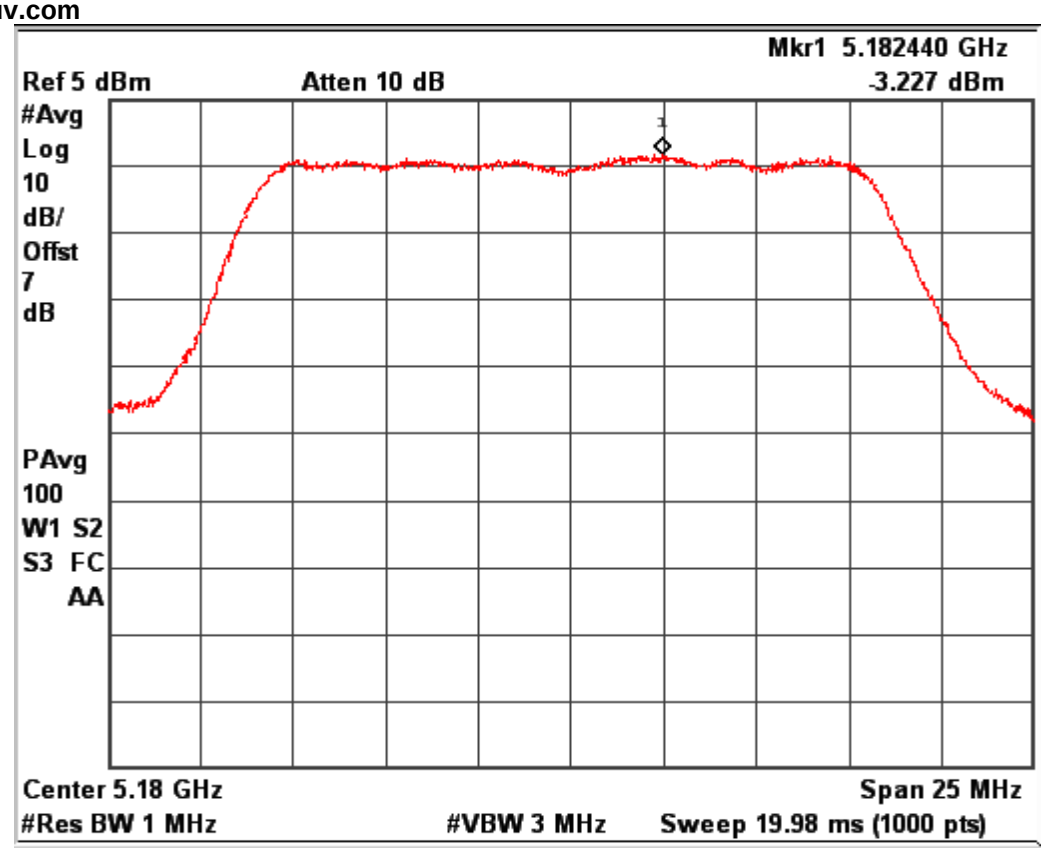
Data Rate: 24Mbps **Channel Frequency: 5180MHz**



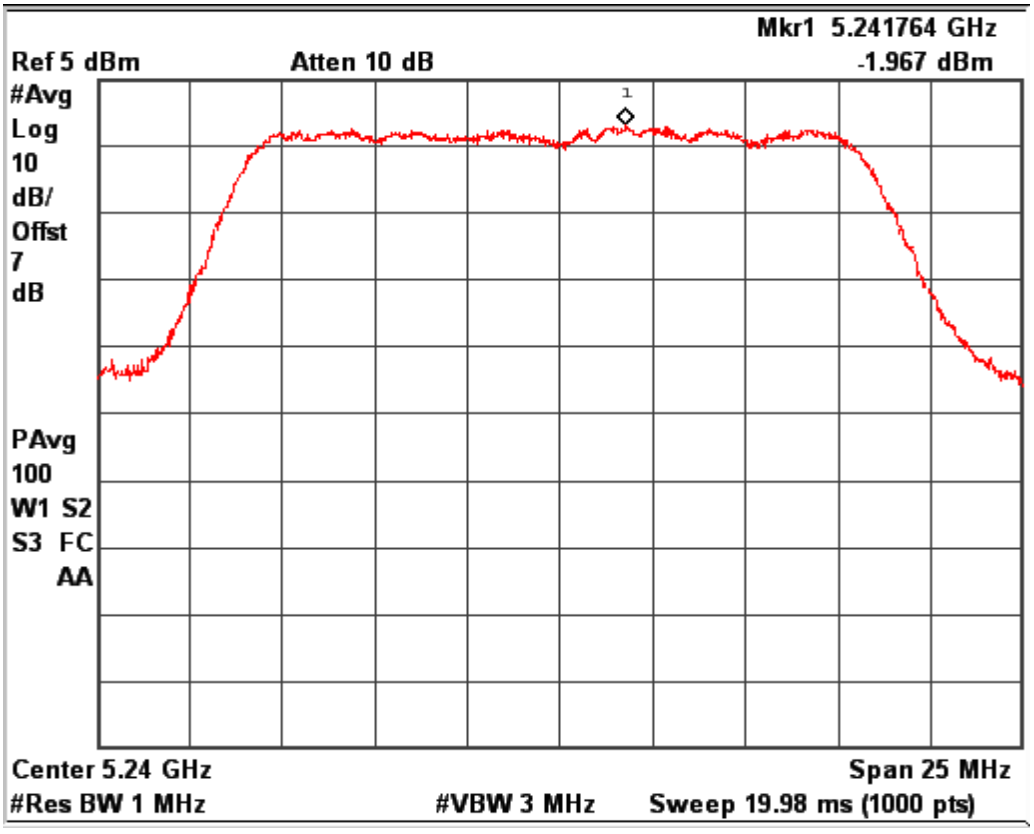
Data Rate: 24Mbps **Channel Frequency: 5745MHz**



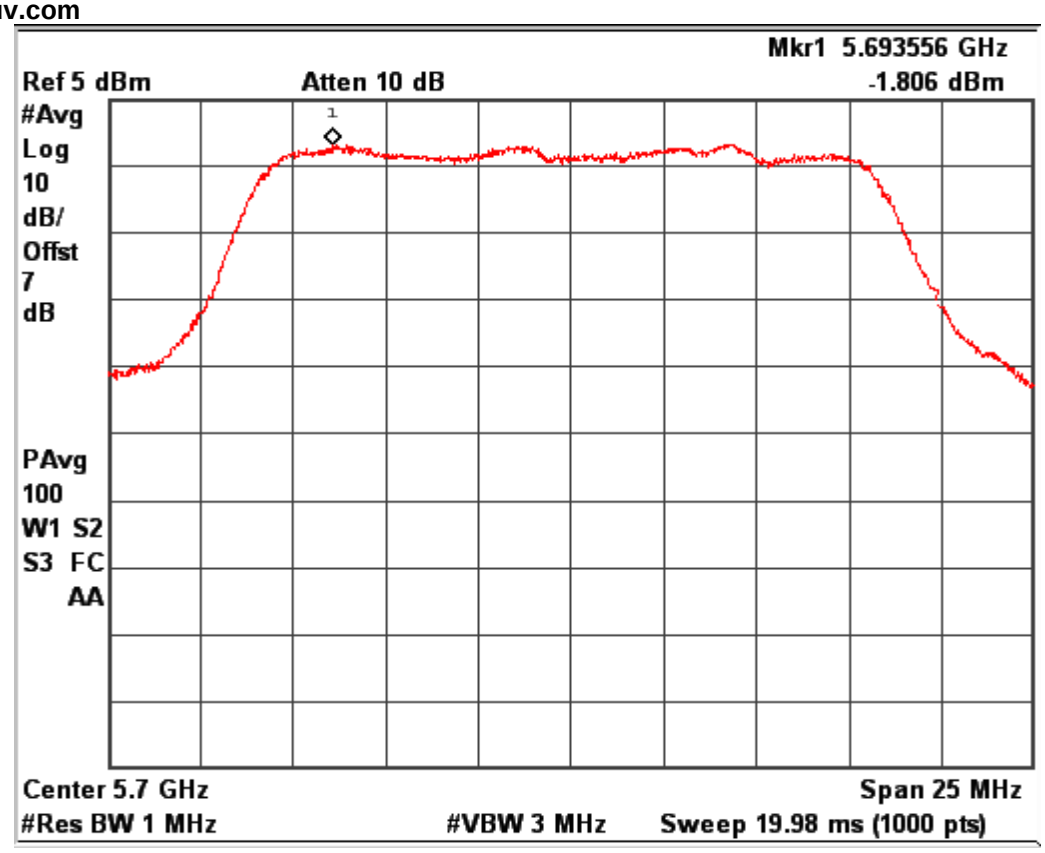
Data Rate: 24Mbps **Frequency: 5825MHz**



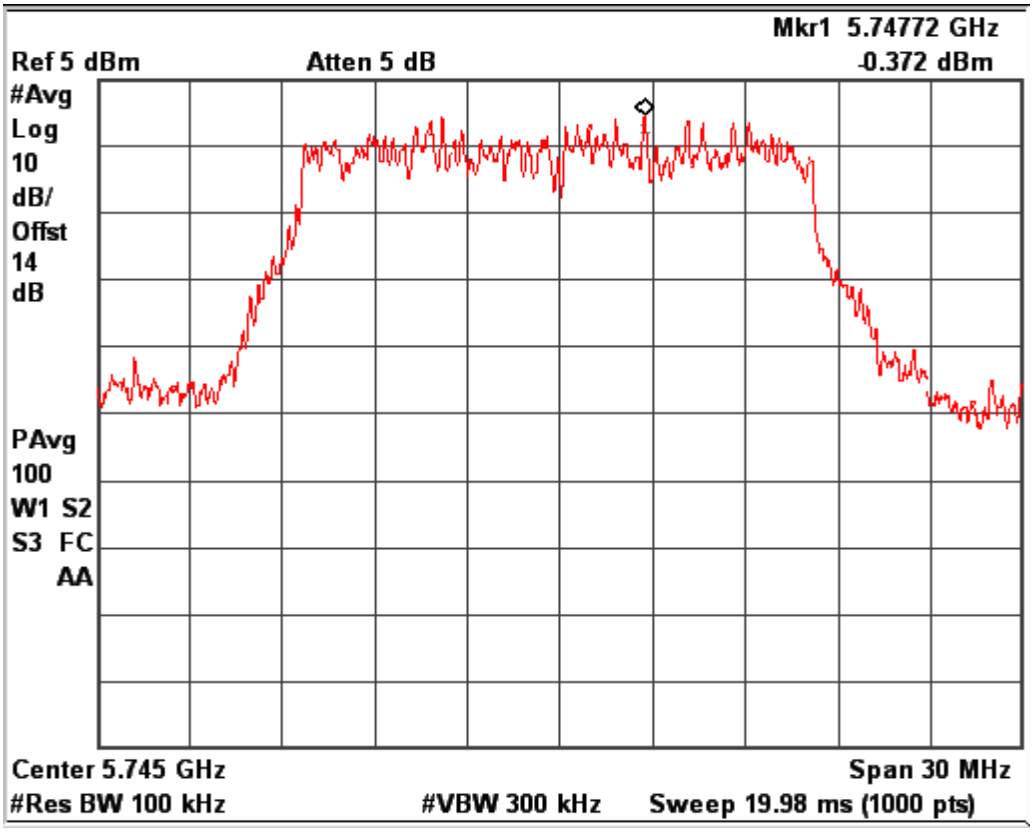
Data Rate: 54Mbps **Channel Frequency: 5180MHz**



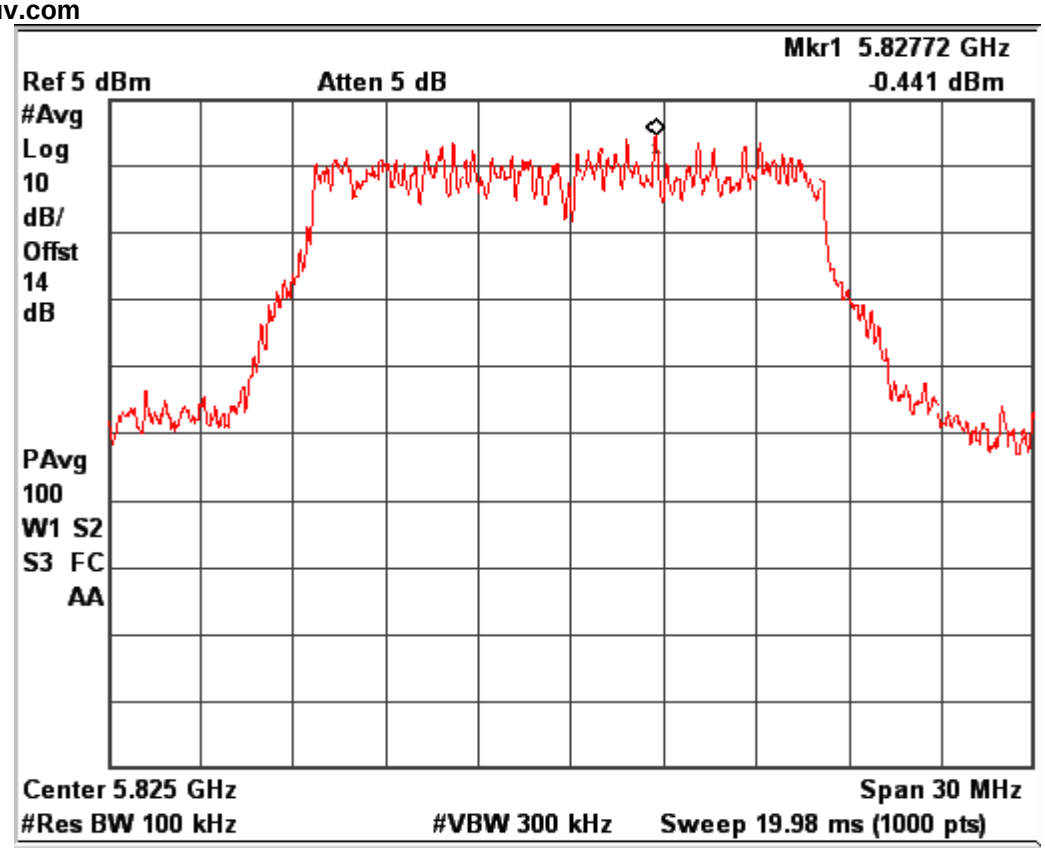
Data Rate: 54Mbps **Channel Frequency: 5240MHz**



Data Rate: 54Mbps **Channel Frequency: 5700MHz**



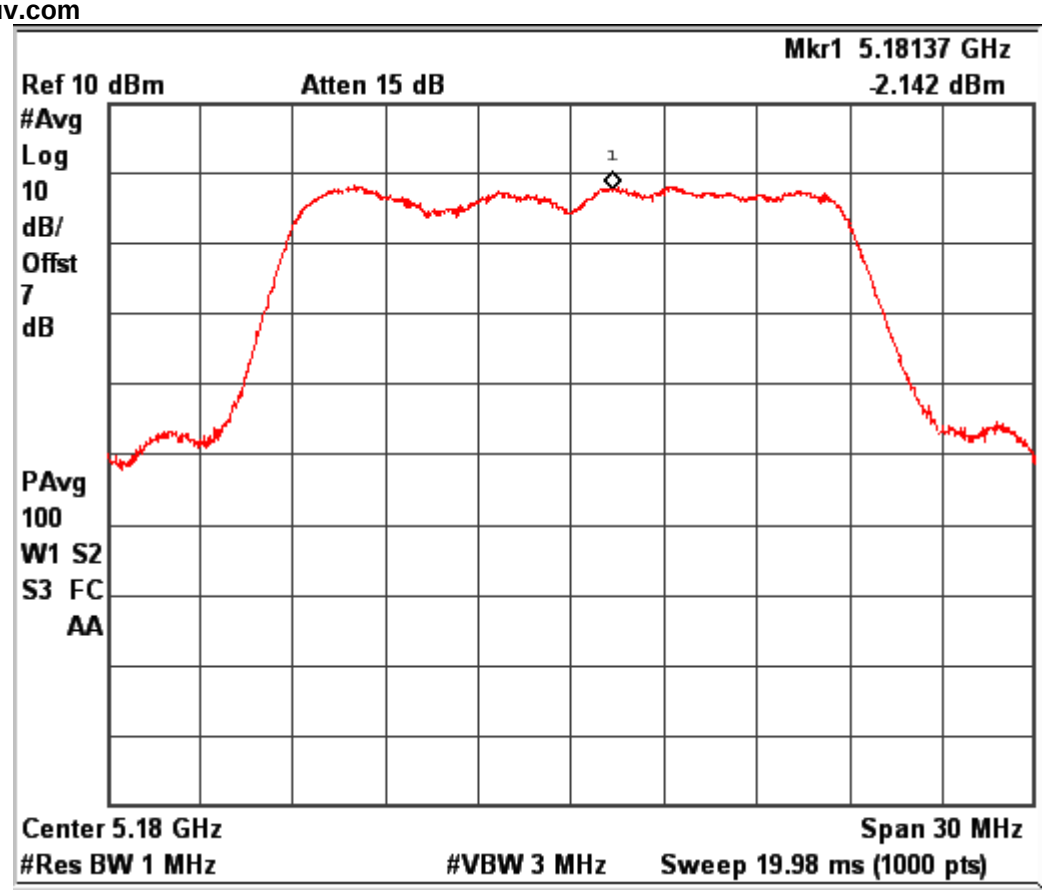
Data Rate: 54Mbps **Channel Frequency: 5745MHz**



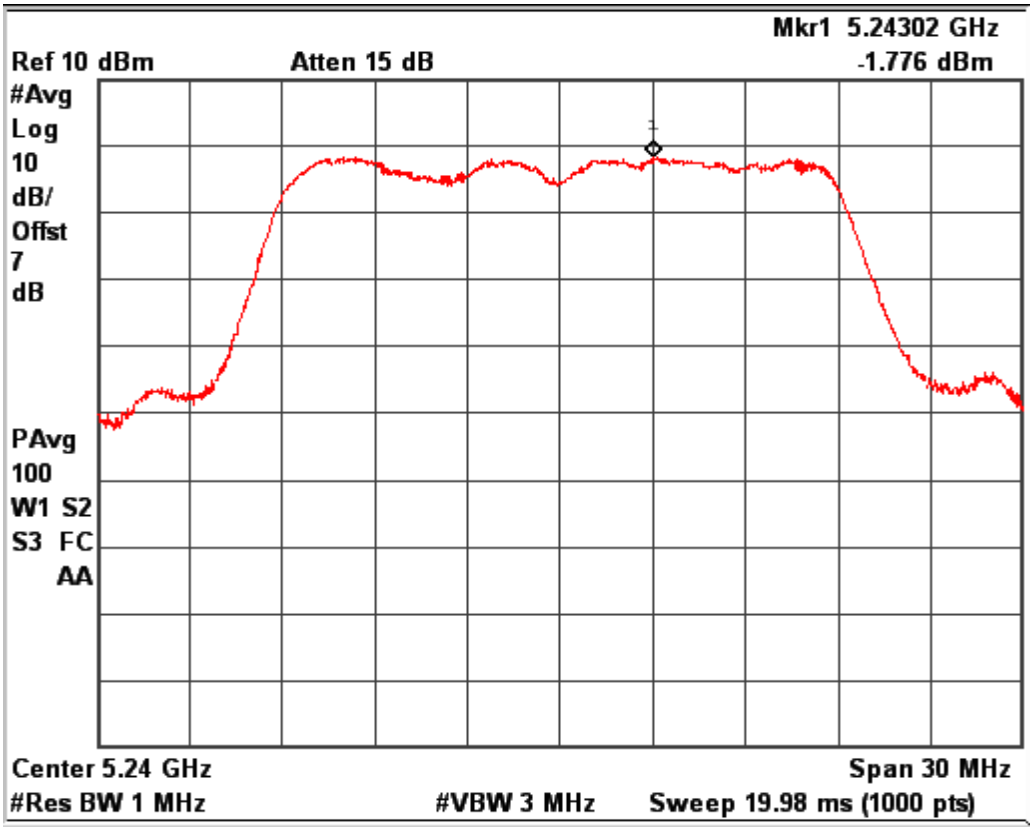
Data Rate: 54Mbps **Channel Frequency: 5825MHz**

Test Results for Path A

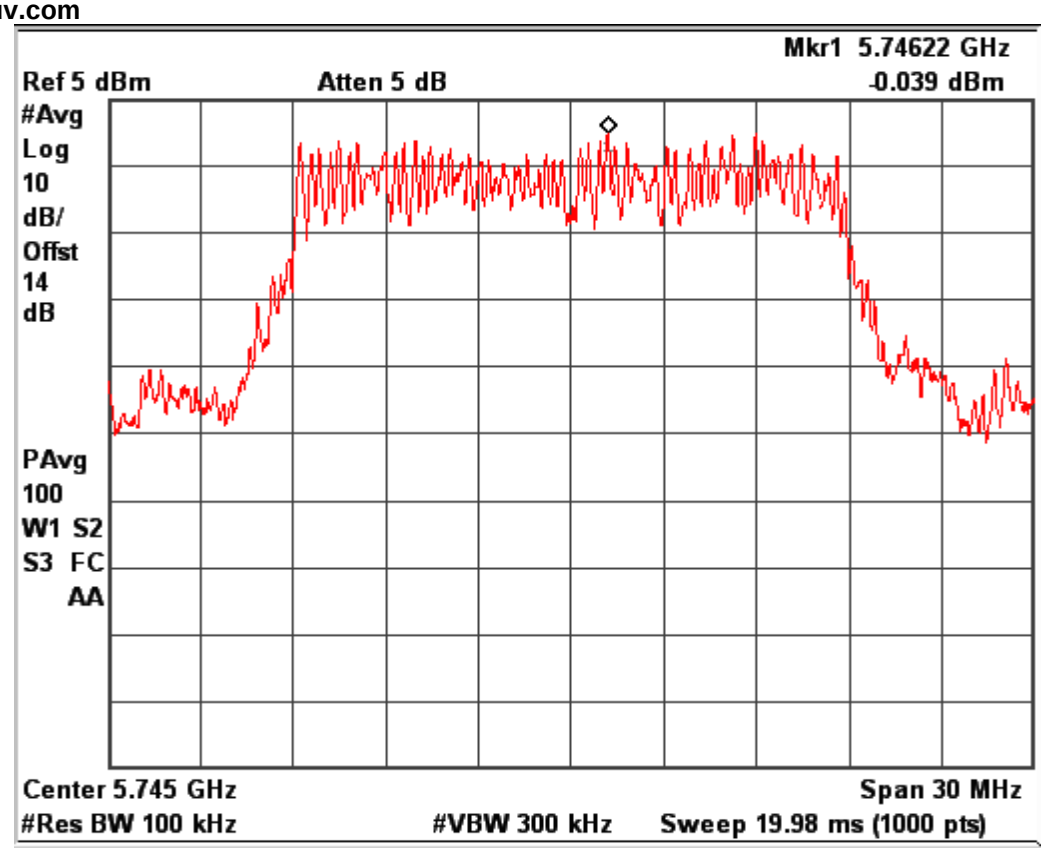
IEEE802.11n HT20						
Data Rate (Mbps)	**Channel No.**	**Frequency (MHz)**	**Measured PSD (dBm)**	**Measure & Add 10*log(2)**	**Total PSD (dBm)**	**Limit (dB)**
MCS0	36	5180	-2.14	3.01	0.87	11
	48	5240	-1.77	3.01	1.24	11
	149	5745	-0.03	3.01	2.98	30
	165	5825	-0.19	3.01	2.82	30
MCS7	36	5180	-2.16	3.01	0.85	11
	48	5240	-1.75	3.01	1.26	11
	149	5745	0.57	3.01	3.58	30
	165	5825	-0.58	3.01	2.43	30
MCS15	36	5180	-1.72	3.01	1.29	11
	48	5240	-1.56	3.01	1.45	11
	149	5745	-0.12	3.01	2.89	30
	165	5825	-0.2	3.01	2.81	30



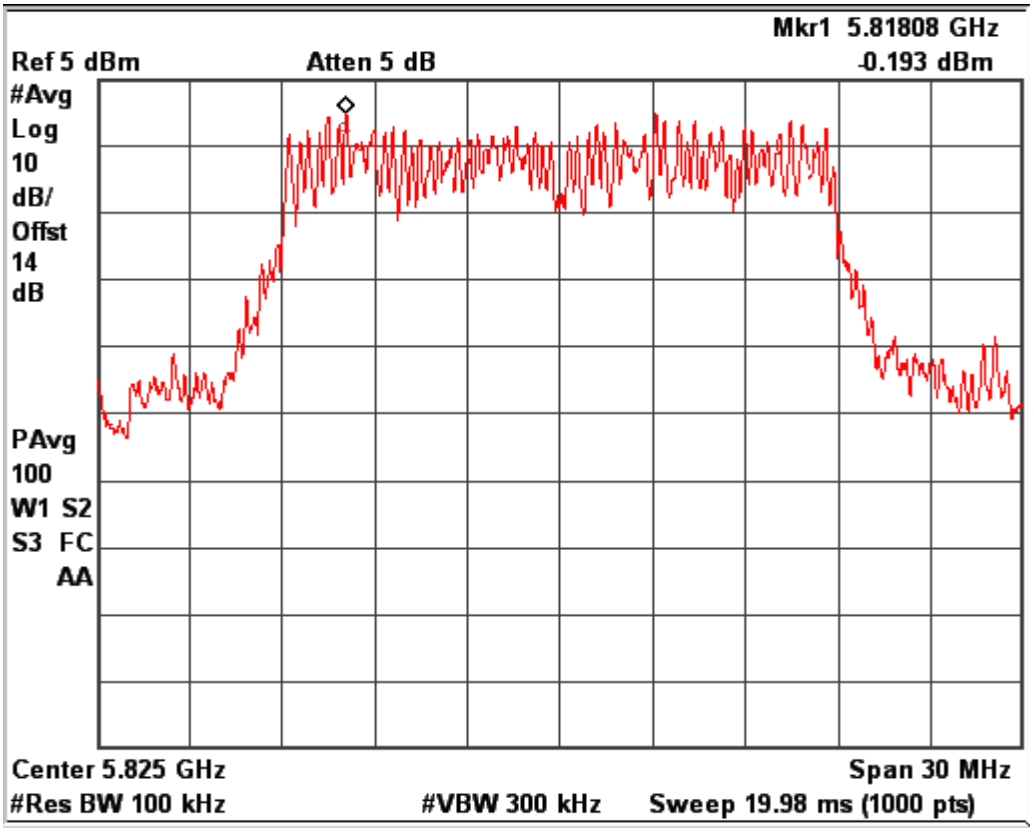
Data Rate: MCS0 **Channel Frequency: 5180MHz**



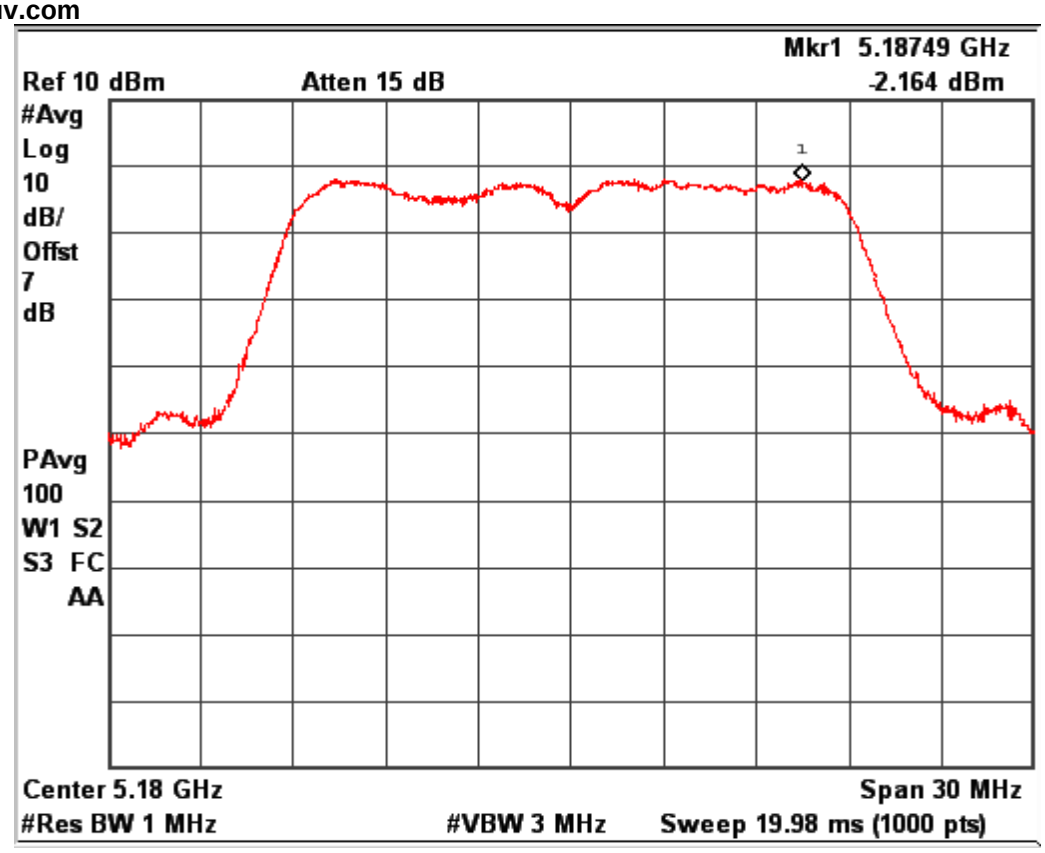
Data Rate: MCS0 Channel Frequency: 5240MHz



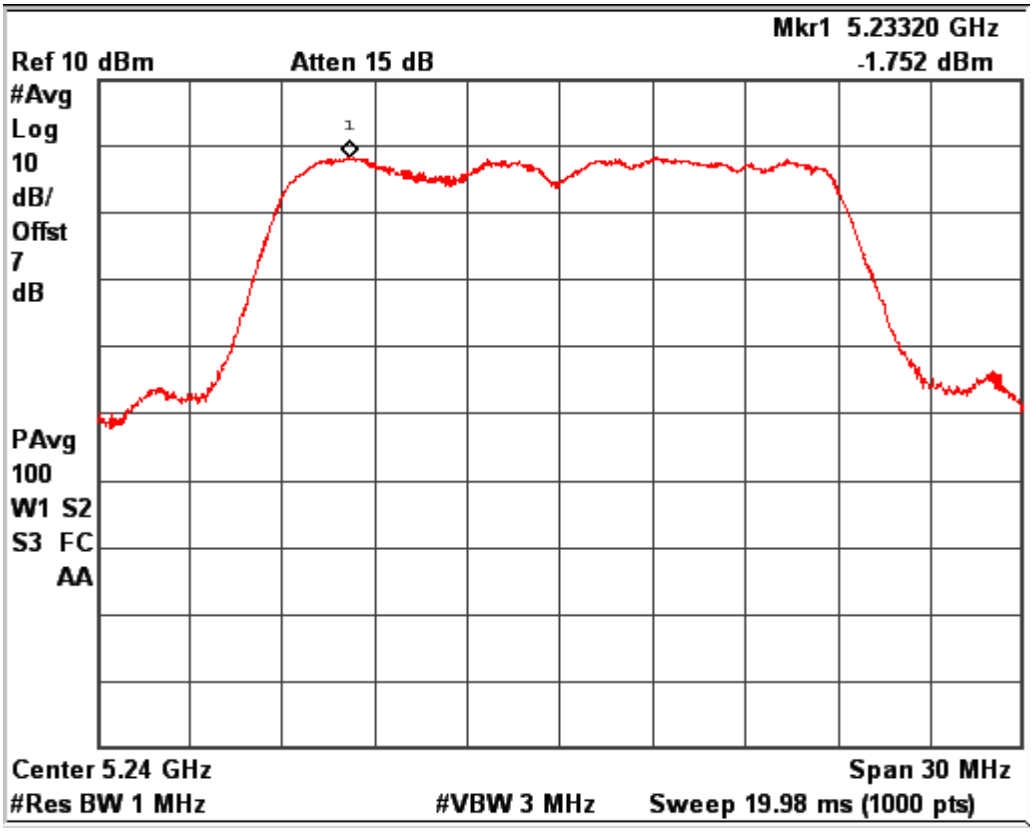
Data Rate: MCS0 **Channel Frequency: 5745MHz**



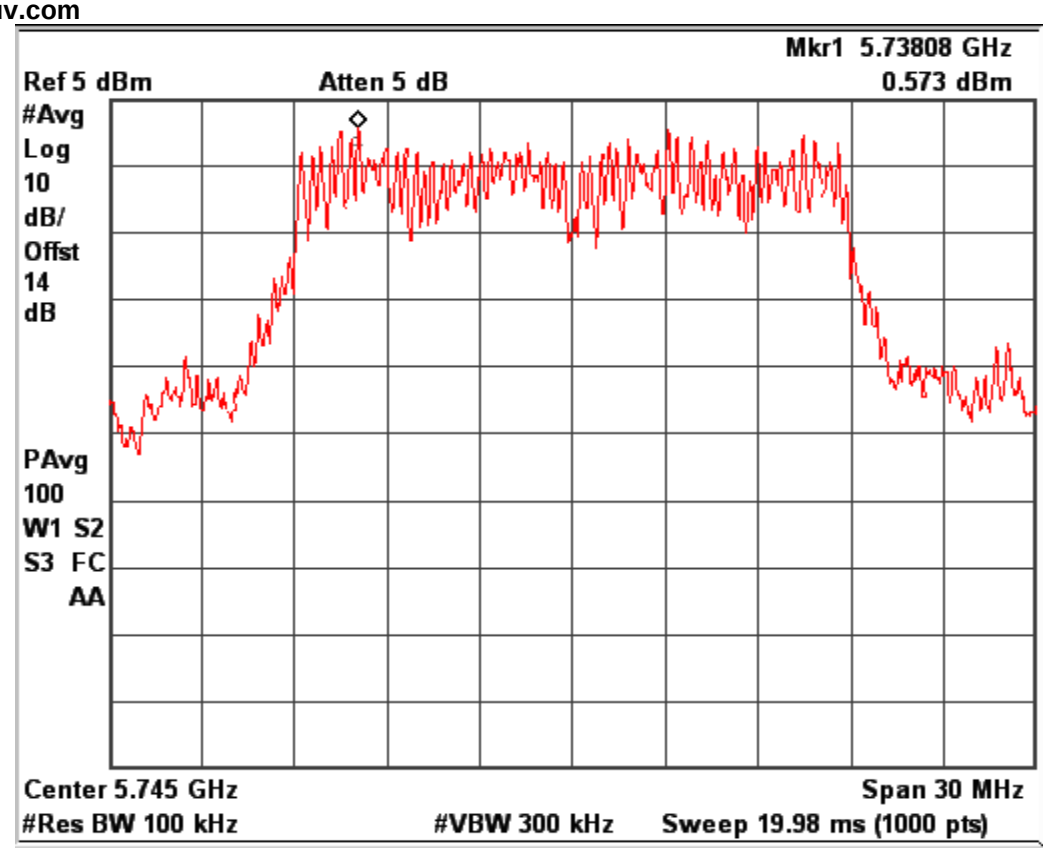
Data Rate: MCS0 **Channel Frequency: 5825MHz**



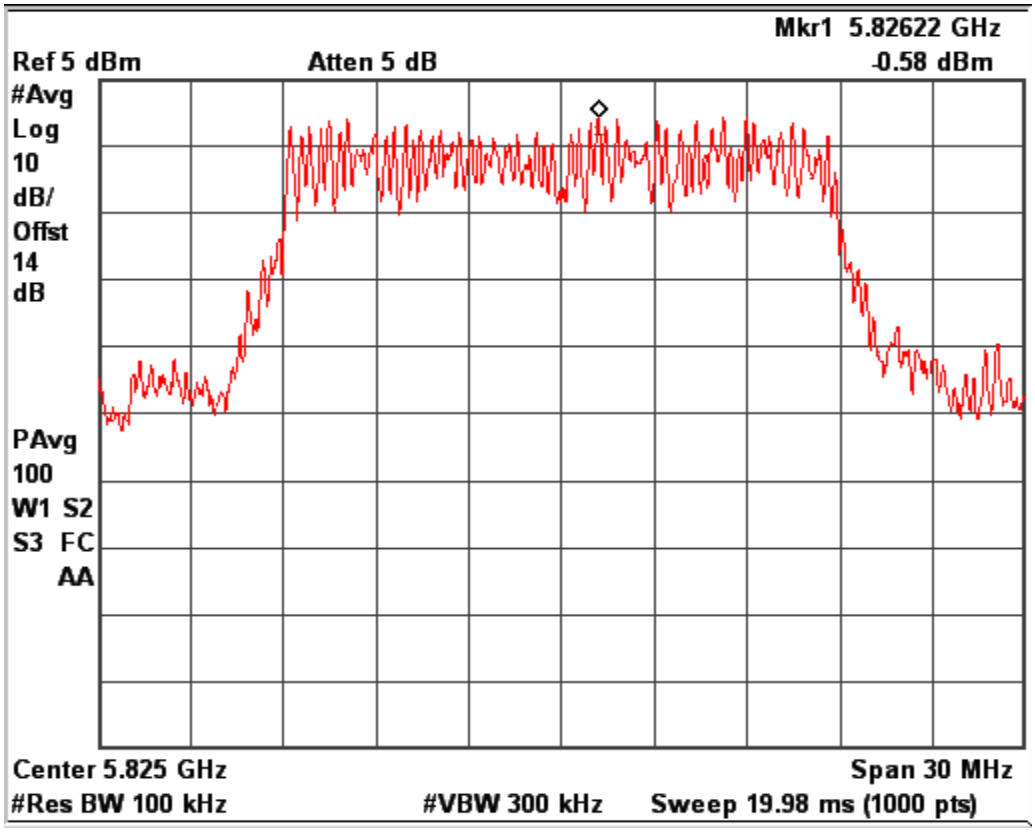
Data Rate: MCS7 **Channel Frequency: 5180MHz**



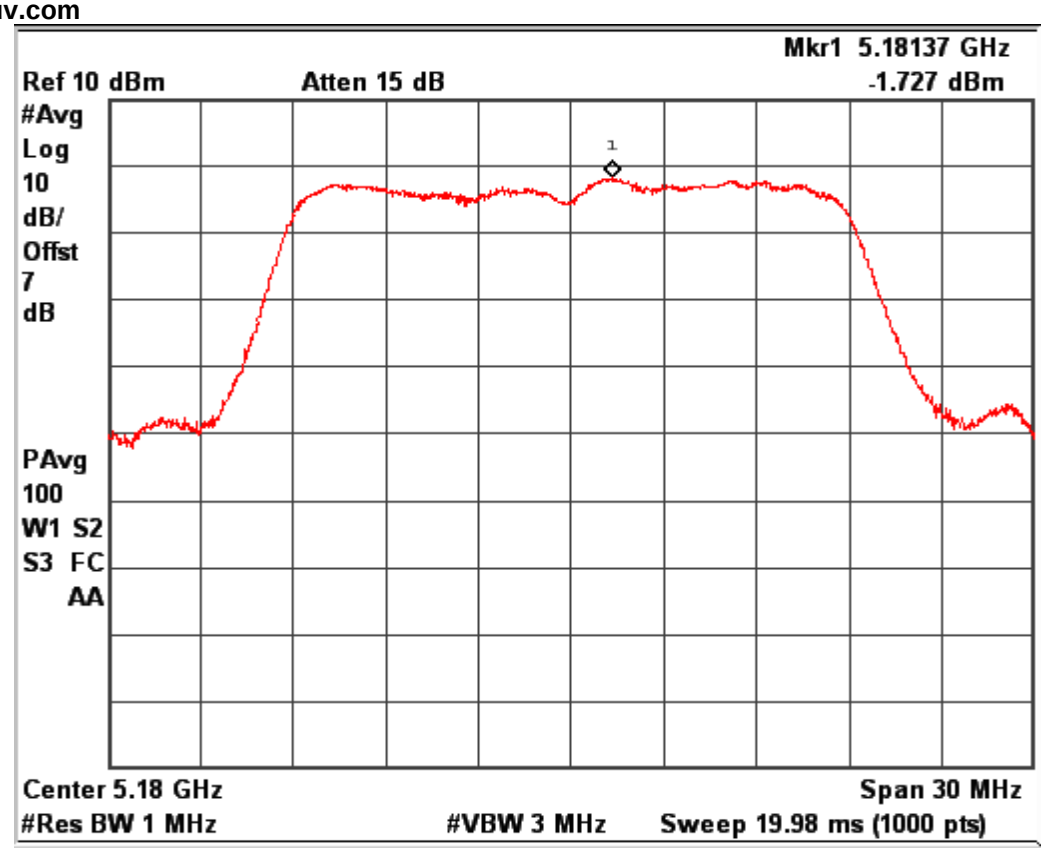
Data Rate: MCS7 **Channel Frequency: 5240MHz**



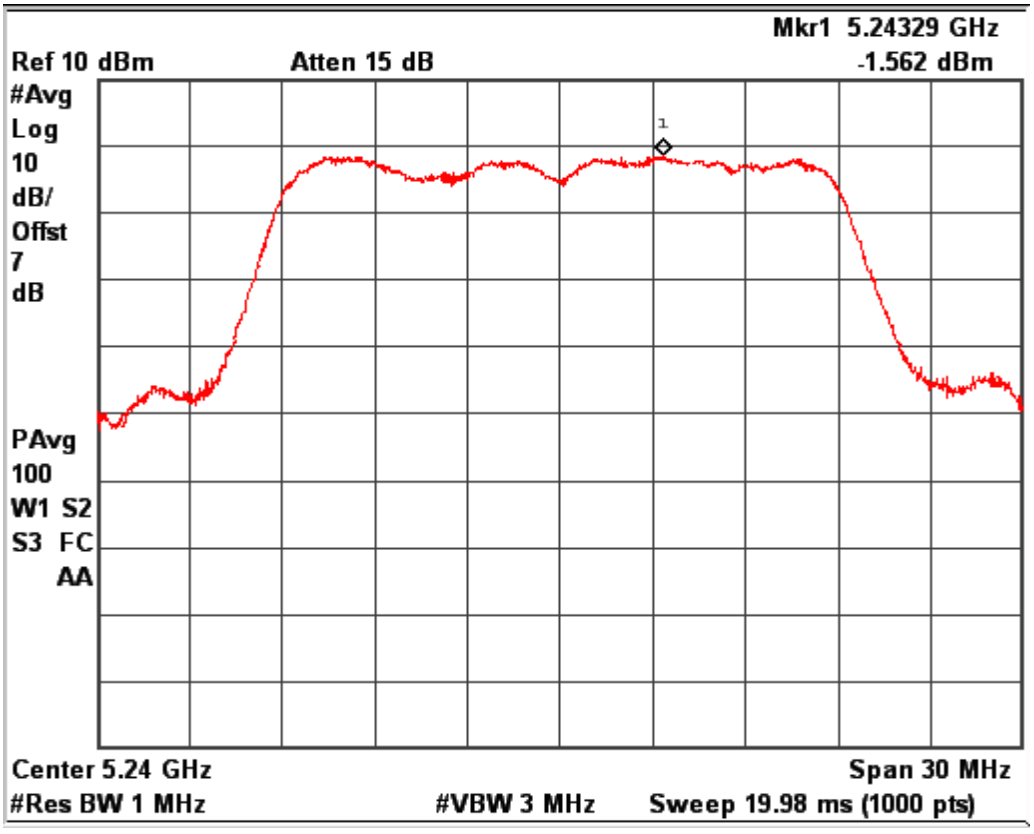
Data Rate: MCS7 **Channel Frequency: 5745MHz**



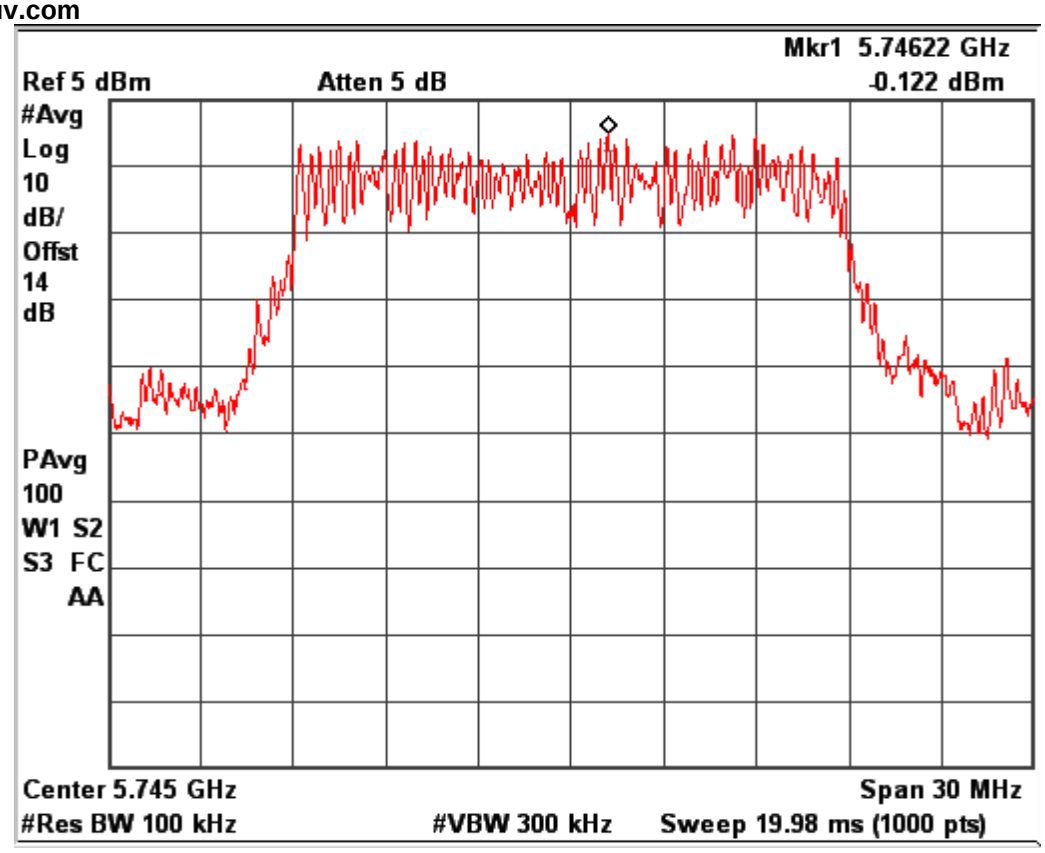
Data Rate: MCS7 **Channel Frequency: 5825MHz**



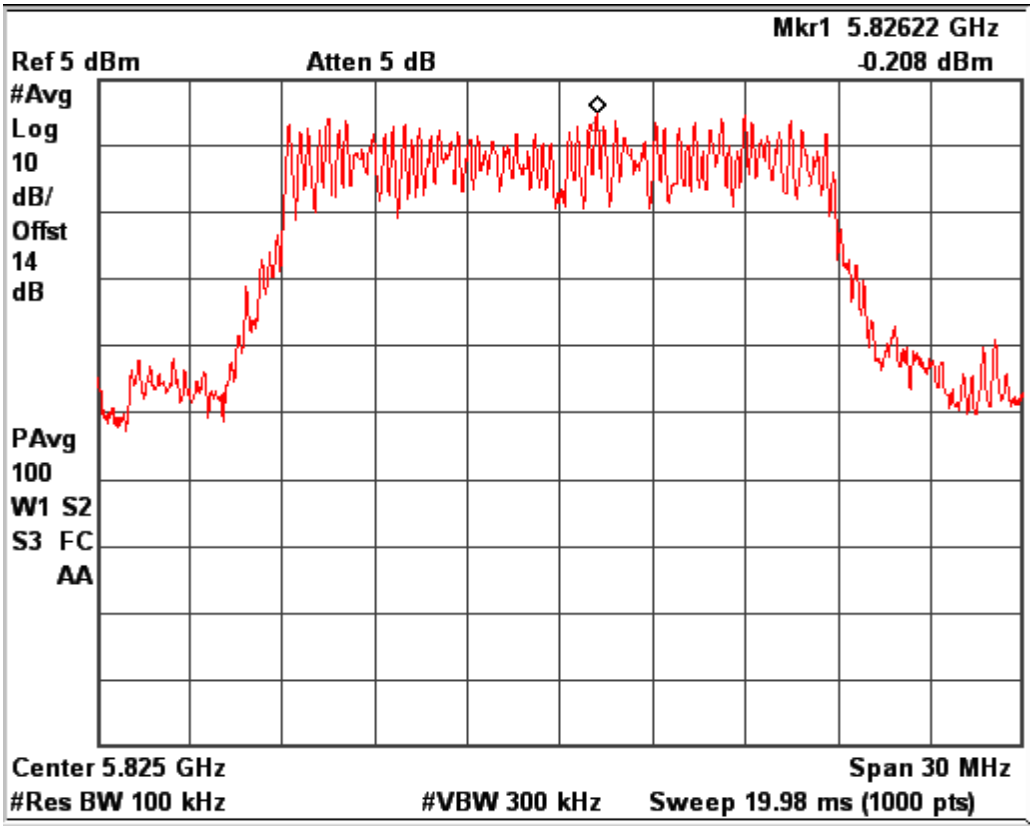
Data Rate: MCS15 **Channel Frequency: 5180MHz**



Data Rate: MCS15 **Channel Frequency: 5240MHz**



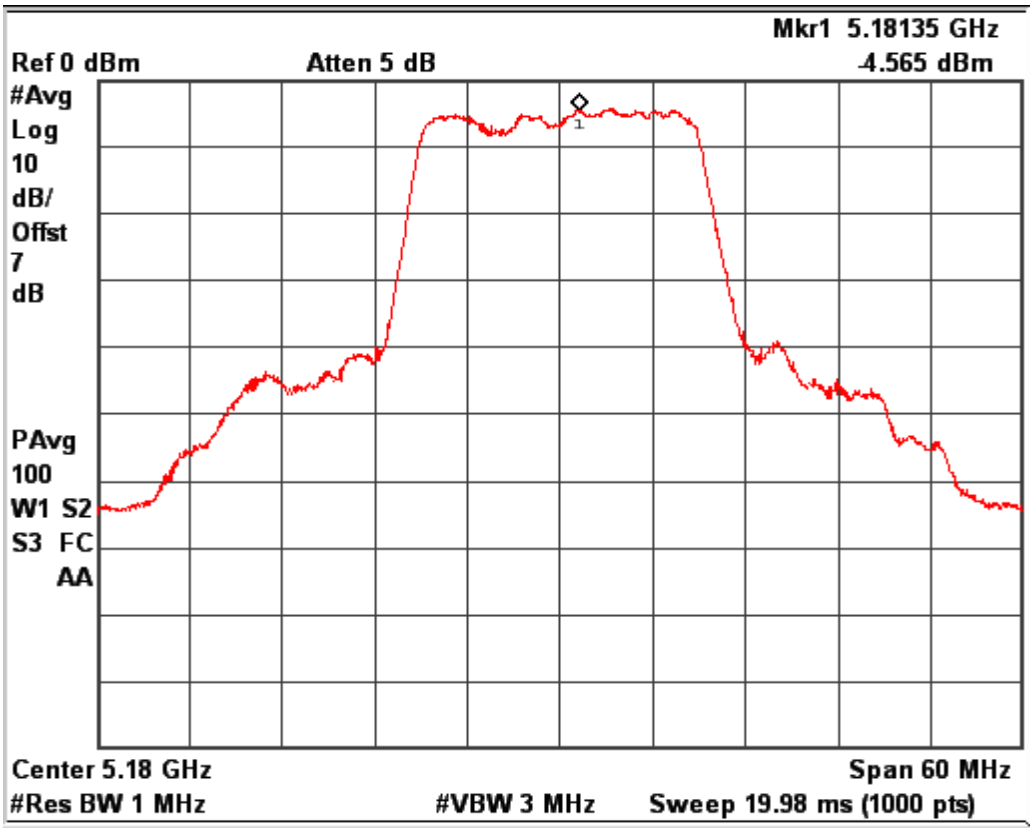
Data Rate: MCS15 **Channel Frequency: 5745MHz**



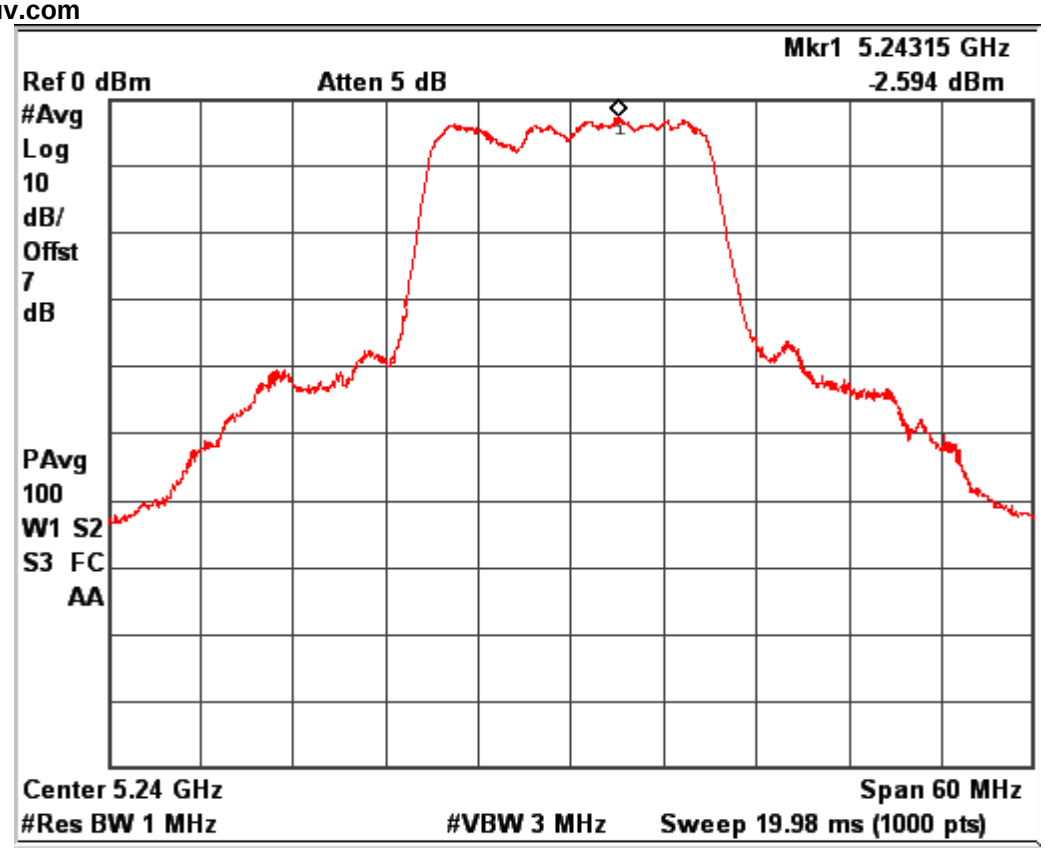
Data Rate: MCS15 **Channel Frequency: 5825MHz**

Test Results for Path B

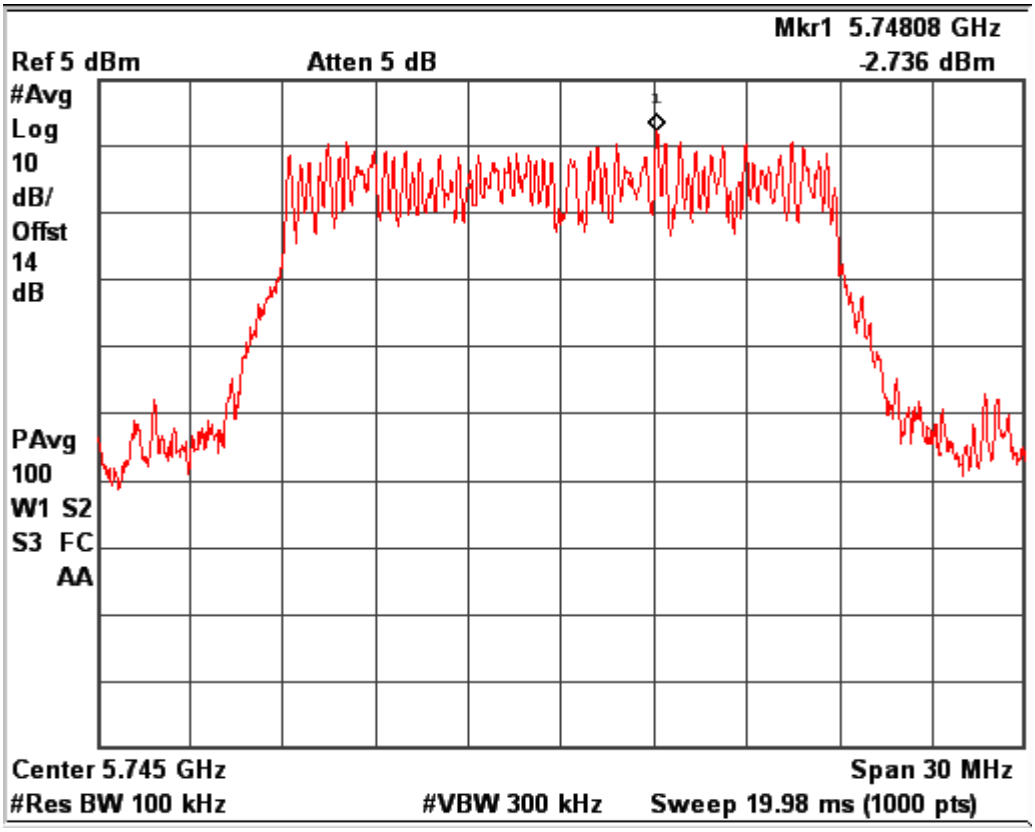
IEEE802.11n HT20						
Data Rate (Mbps)	**Channel No.**	**Frequency (MHz)**	**Measured PSD (dBm)**	**Measure & Add 10*log(2)**	**Total PSD (dBm)**	**Limit (dB)**
MCS0	36	5180	-4.56	3.01	-1.55	11
	48	5240	-2.59	3.01	0.42	11
	149	5745	-2.73	3.01	0.28	30
	165	5825	-1.7	3.01	1.31	30
MCS7	36	5180	-3.46	3.01	-0.45	11
	48	5240	-1.77	3.01	1.24	11
	149	5745	-0.01	3.01	3.00	30
	165	5825	-0.72	3.01	2.29	30
MCS15	36	5180	-2.97	3.01	0.04	11
	48	5240	-1.55	3.01	1.46	11
	149	5745	0.49	3.01	3.50	30
	165	5825	-0.65	3.01	2.36	30



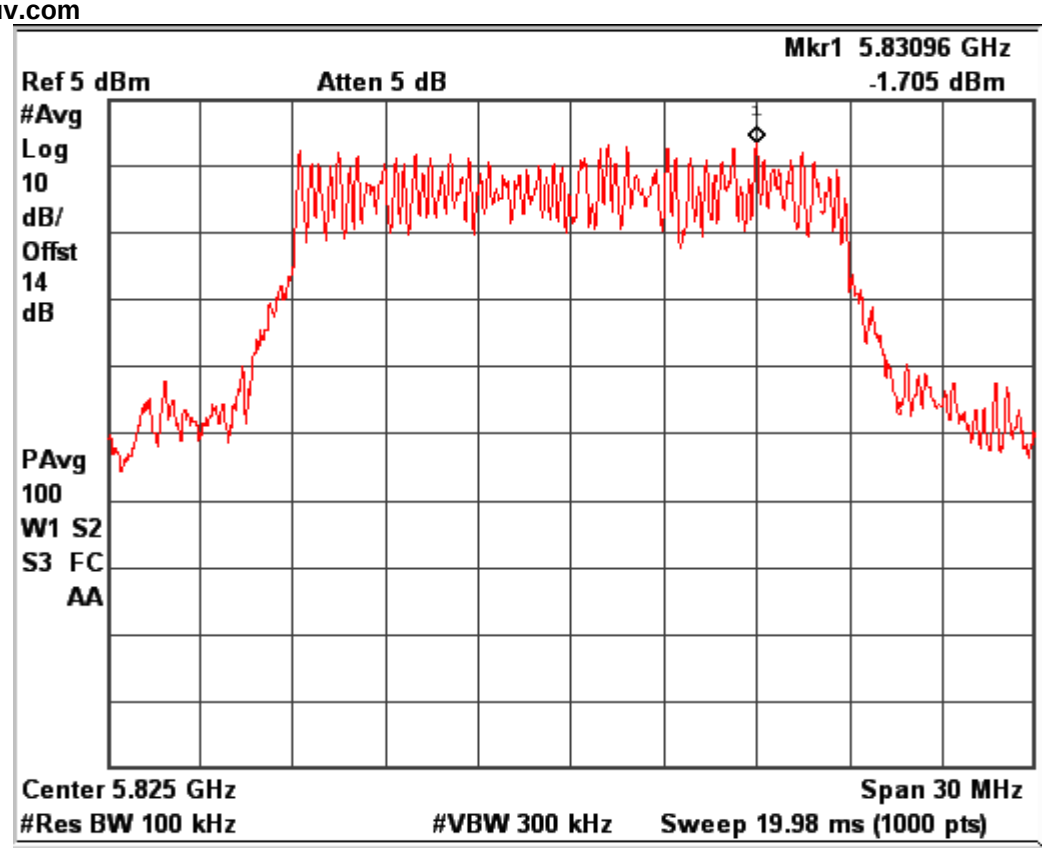
Data Rate: MCS0 **Channel Frequency: 5180MHz**



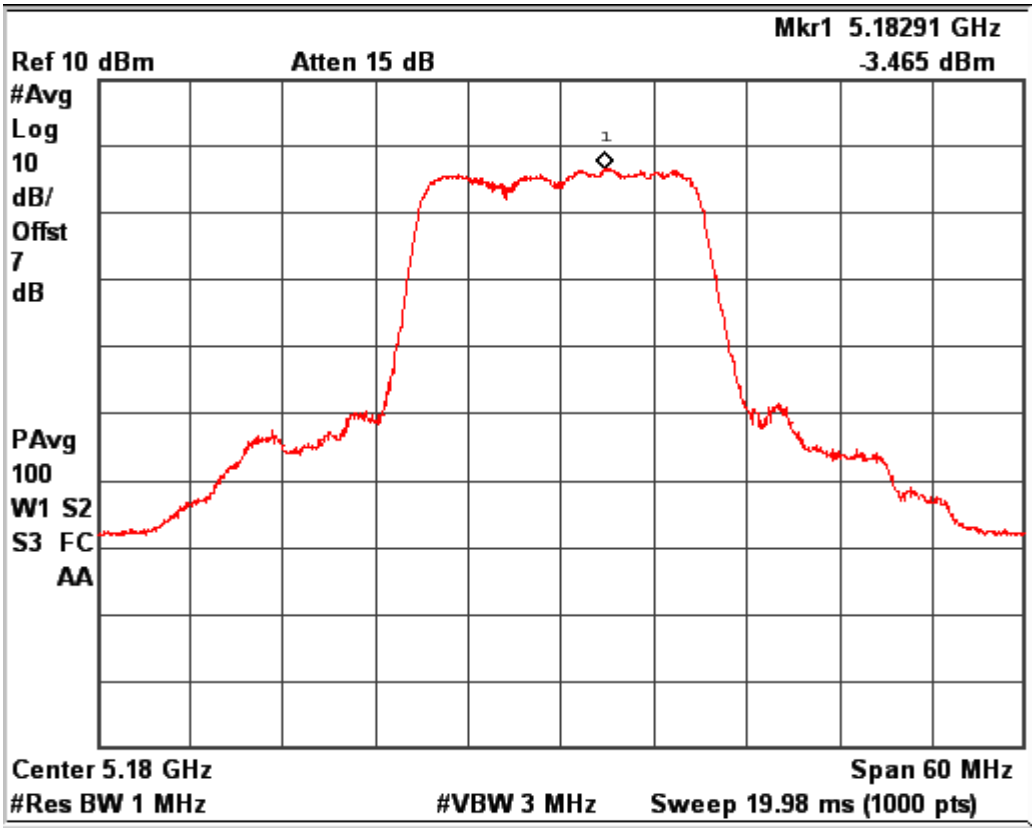
Data Rate: MCS0 **Channel Frequency: 5240MHz**



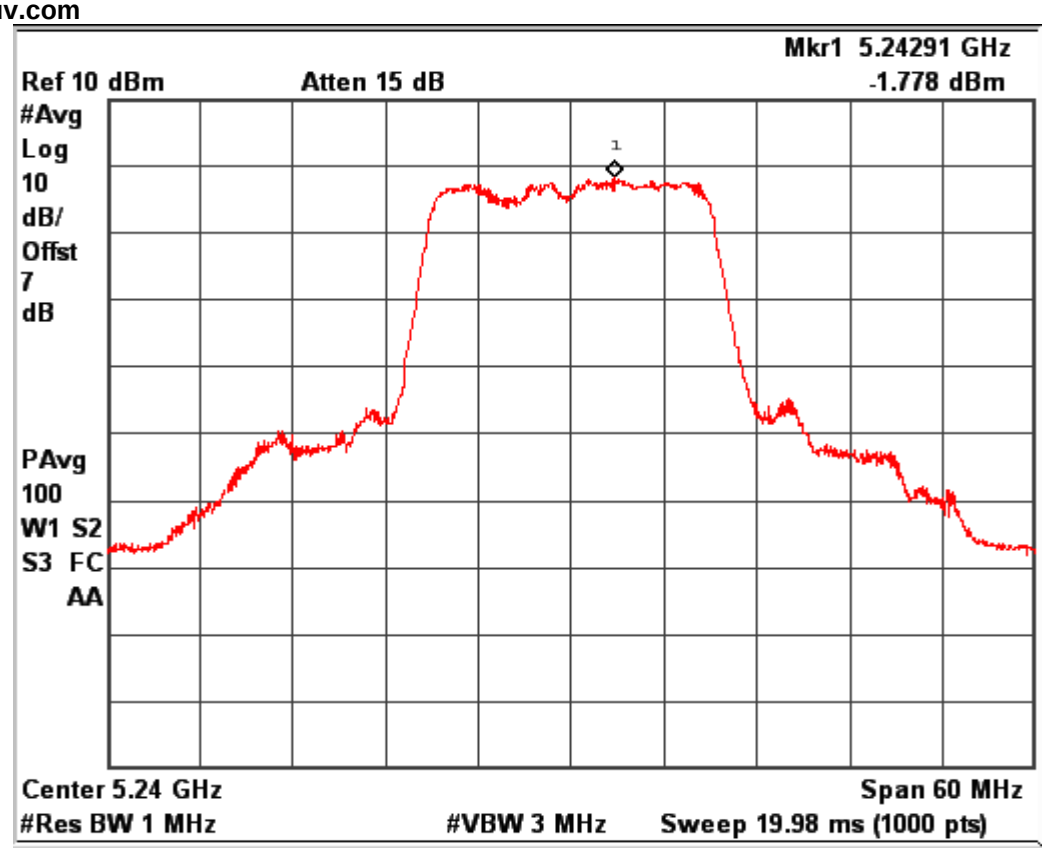
Data Rate: MCS0 **Channel Frequency: 5745MHz**



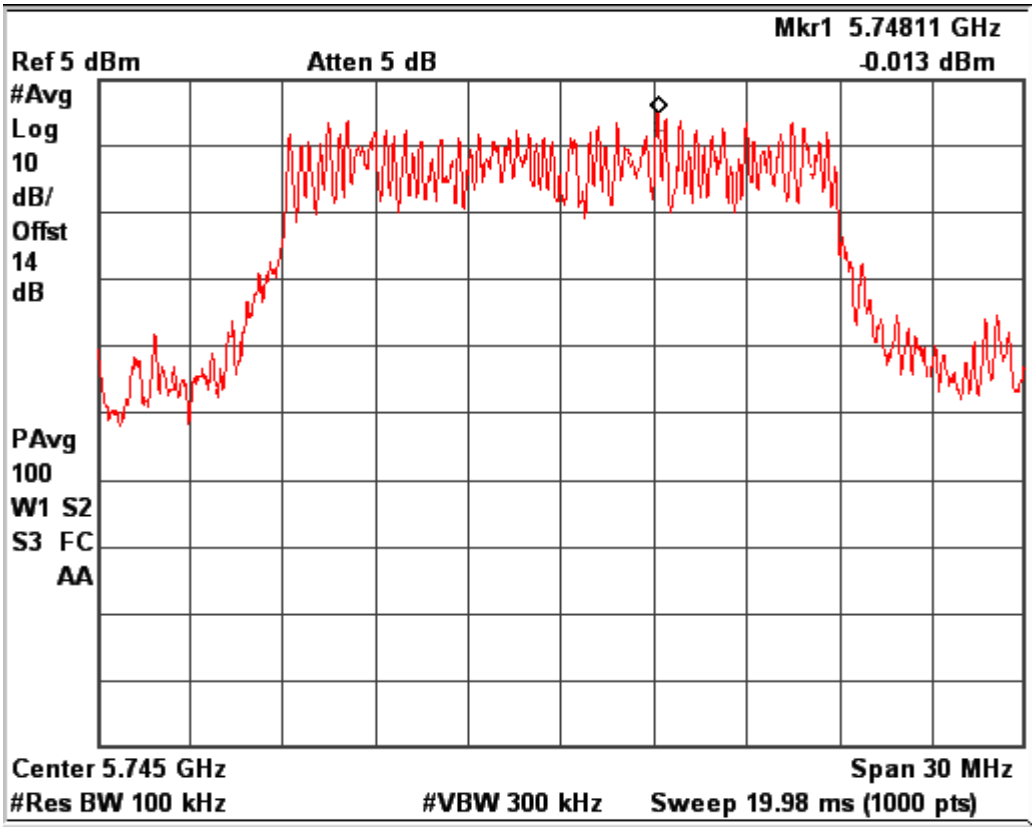
Data Rate: MCS0 **Channel Frequency: 5825MHz**



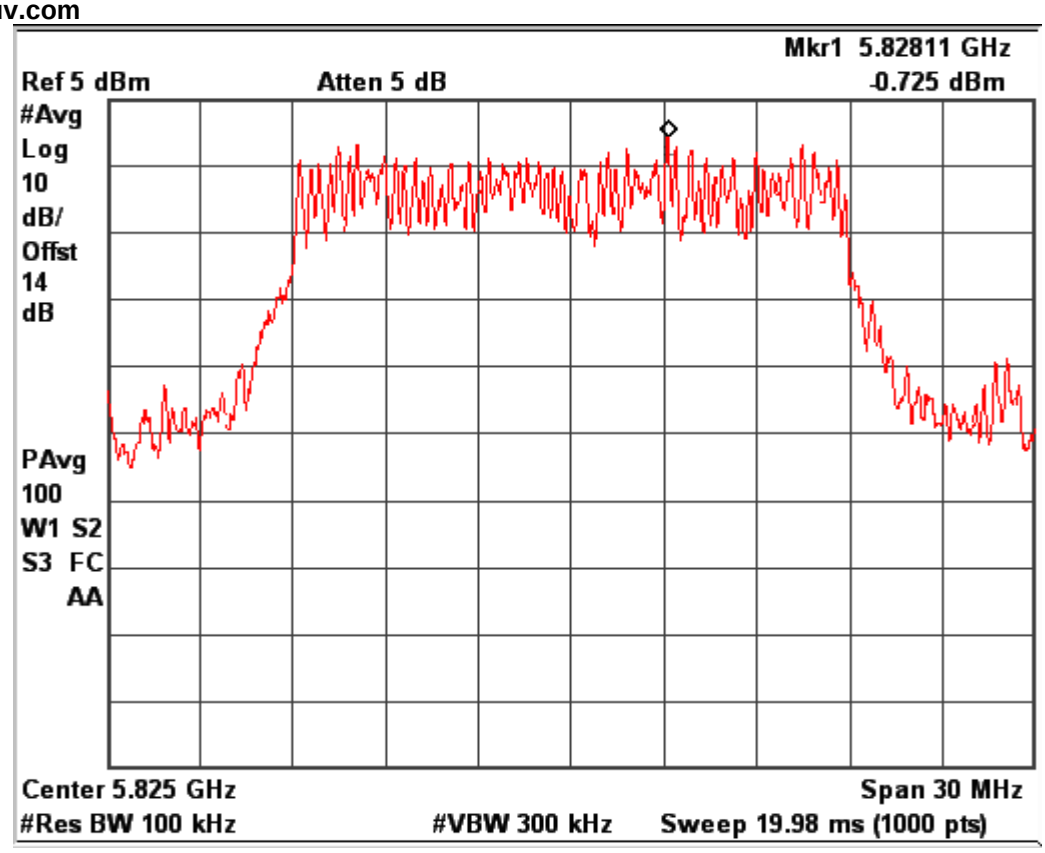
Data Rate: MCS7 **Channel Frequency: 5180MHz**



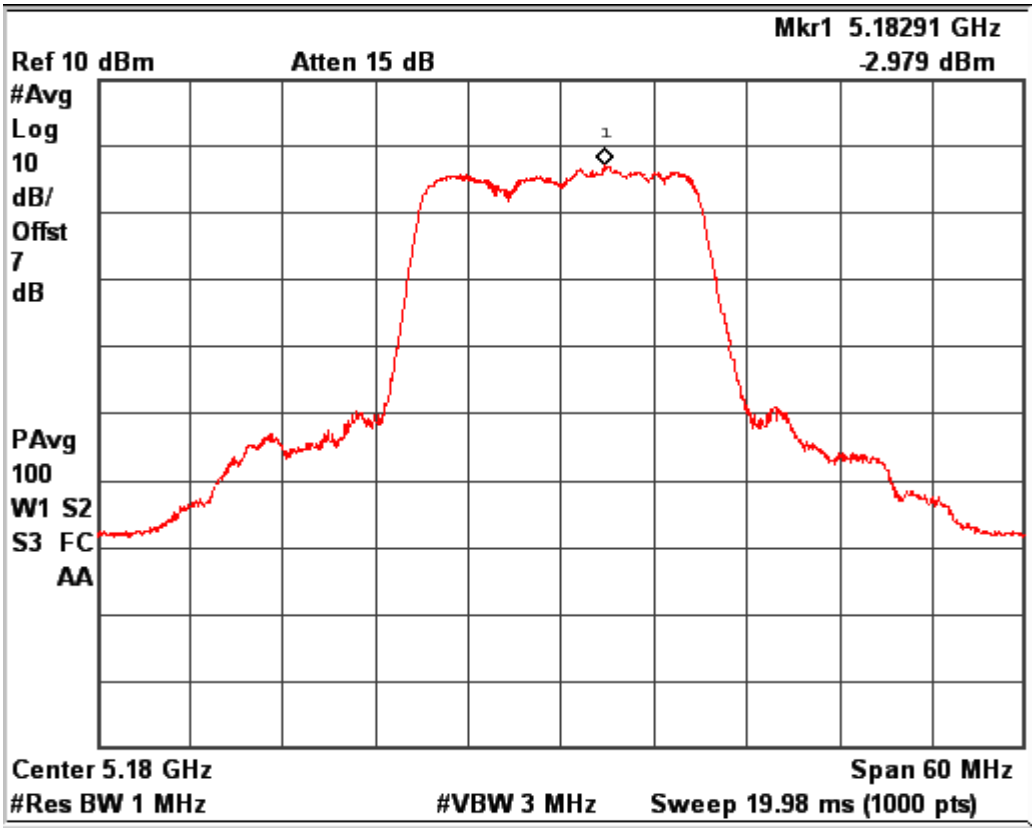
Data Rate: MCS7 **Channel Frequency: 5240MHz**



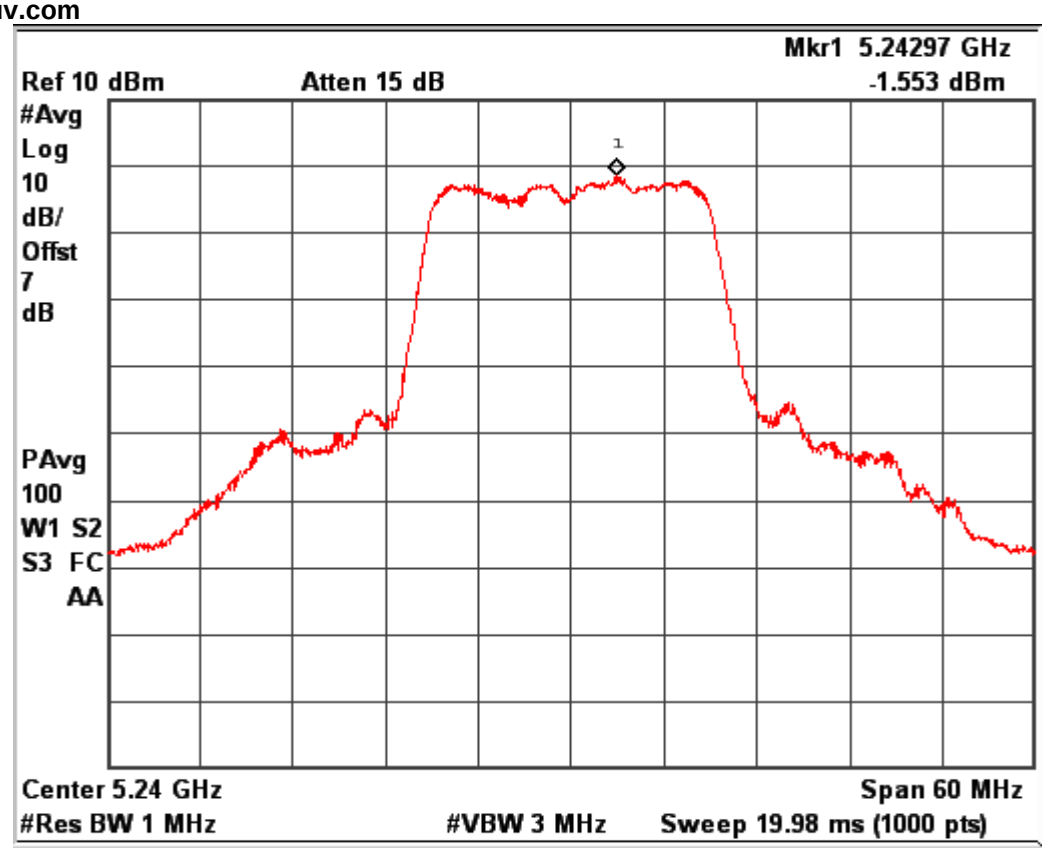
Data Rate: MCS7 **Channel Frequency: 5745MHz**



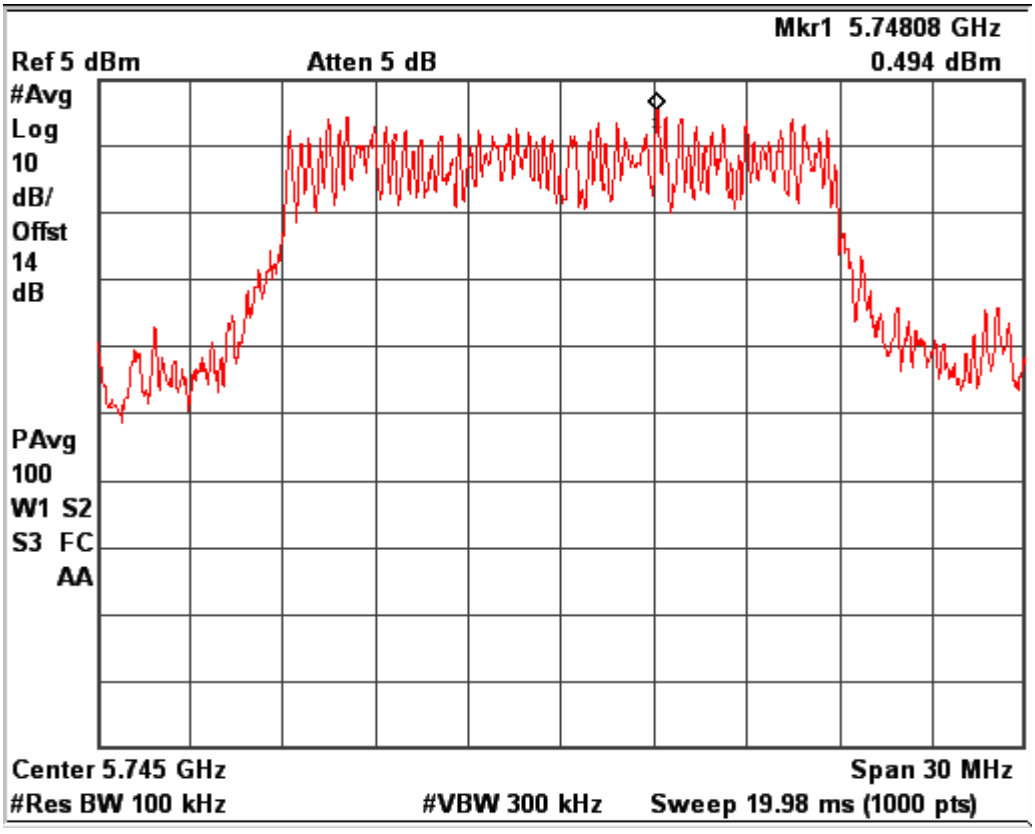
Data Rate: MCS7 **Channel Frequency: 5825MHz**



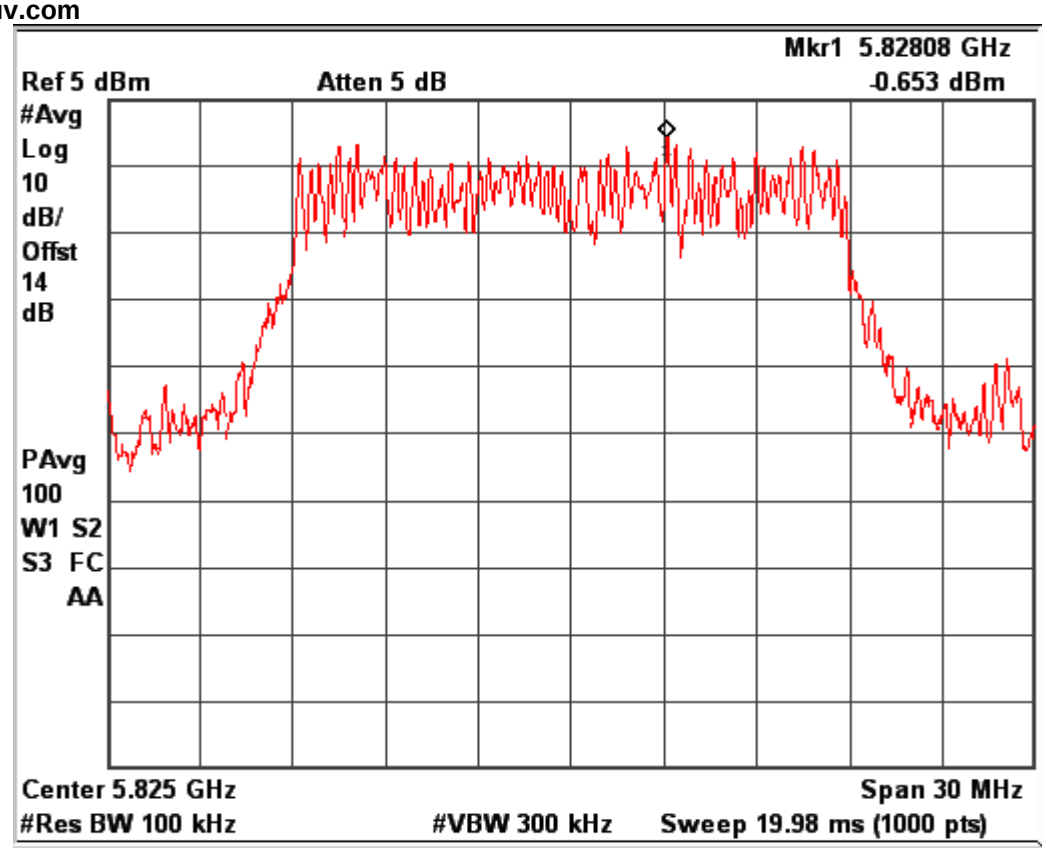
Data Rate: MCS15 **Channel Frequency: 5180MHz**



Data Rate: MCS15 **Channel Frequency: 5240MHz**



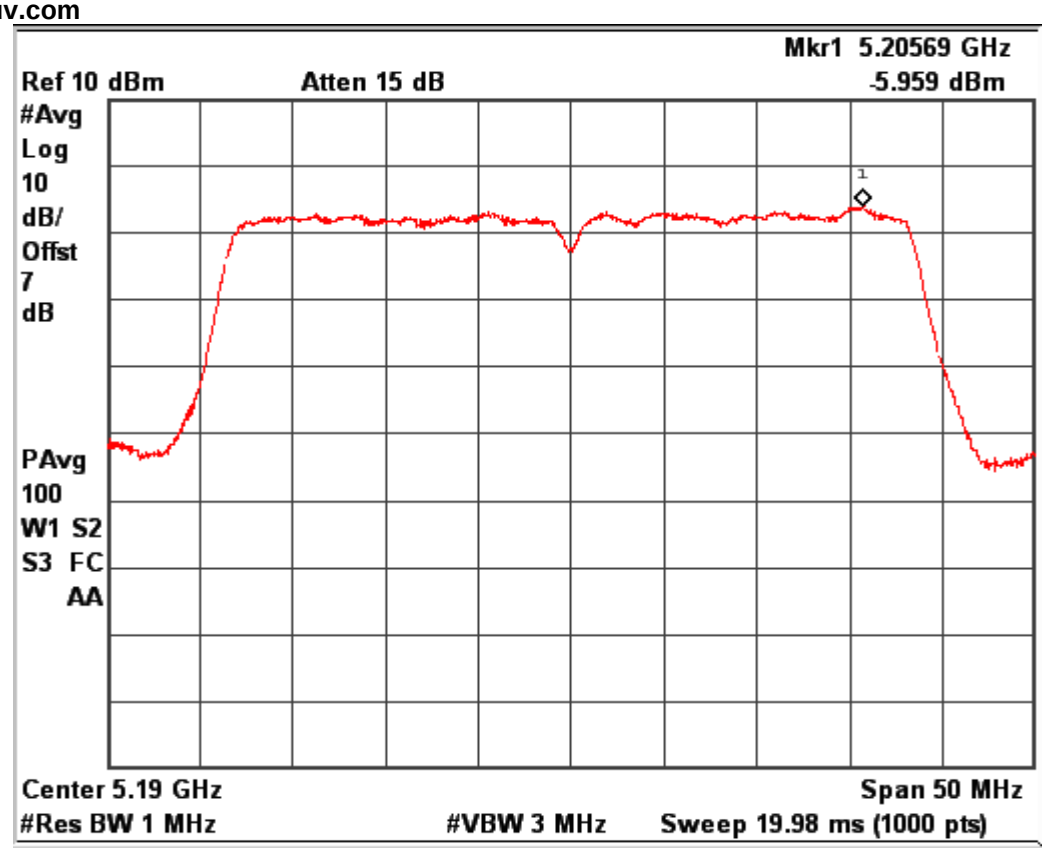
Data Rate: MCS15 **Channel Frequency: 5745MHz**



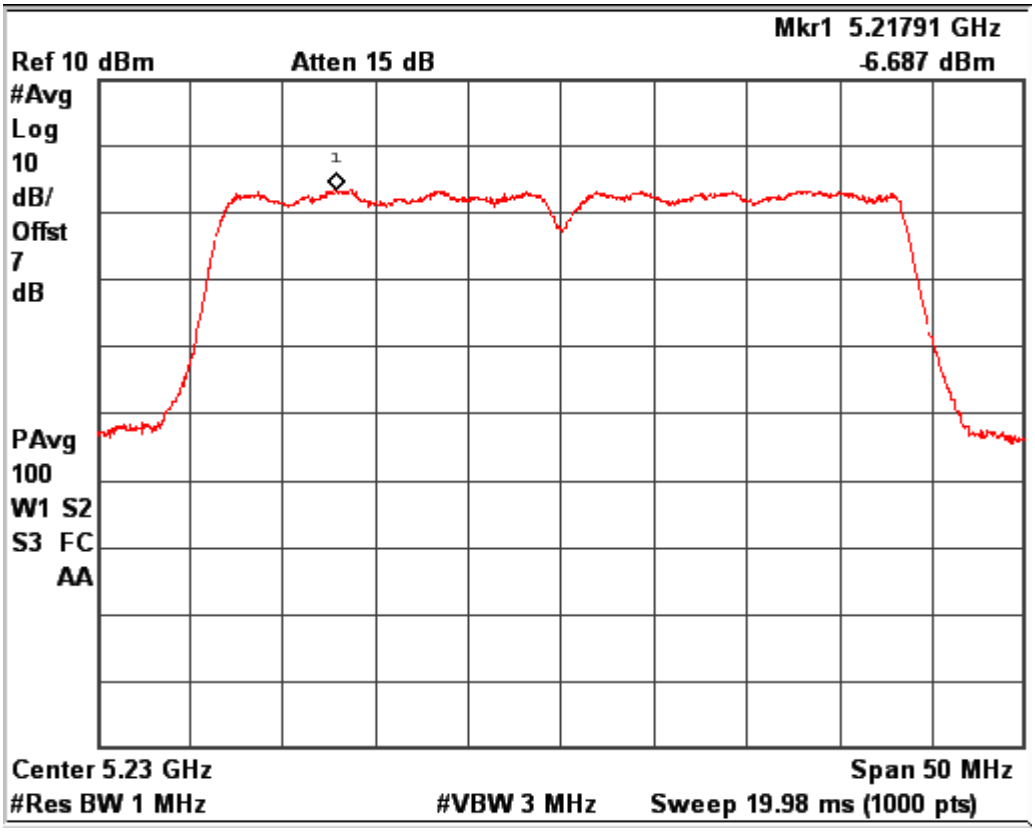
Data Rate: MCS15 **Channel Frequency: 5825MHz**

Test Results for path A

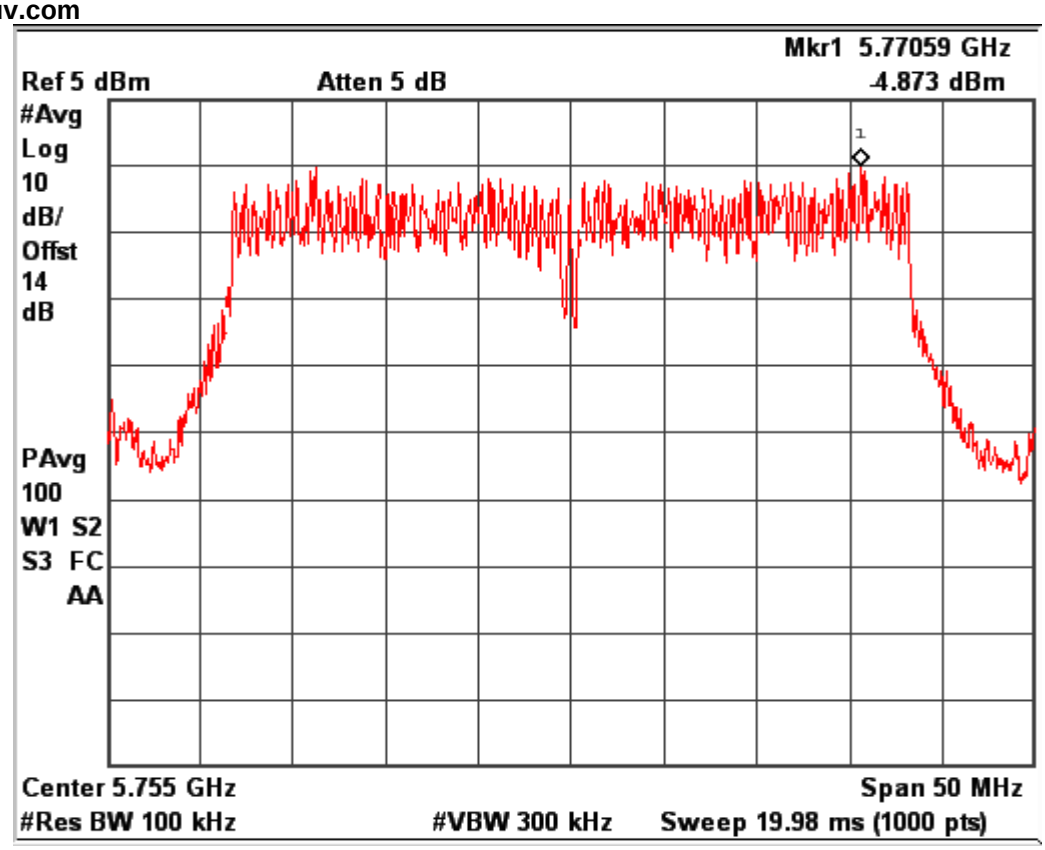
IEEE802.11n HT40						
Data Rate (Mbps)	**Channel No.**	**Frequency (MHz)**	**Measured PSD (dBm)**	**Measure & Add 10*log(2)**	**Total PSD (dBm)**	**Limit (dB)**
MCS0	38	5190	-5.95	3.01	-2.94	11
	46	5230	-6.68	3.01	-3.67	11
	151	5755	-4.87	3.01	-1.86	30
	159	5795	-5.95	3.01	-2.94	30
MCS7	38	5190	-4.96	3.01	-1.95	11
	46	5230	-5.38	3.01	-2.37	11
	151	5755	-4.53	3.01	-1.52	30
	159	5795	-5.26	3.01	-2.25	30
MCS15	38	5190	-5.85	3.01	-2.84	11
	46	5230	-5.07	3.01	-2.06	11
	151	5755	-5.03	3.01	-2.02	30
	159	5795	-5.82	3.01	-2.81	30



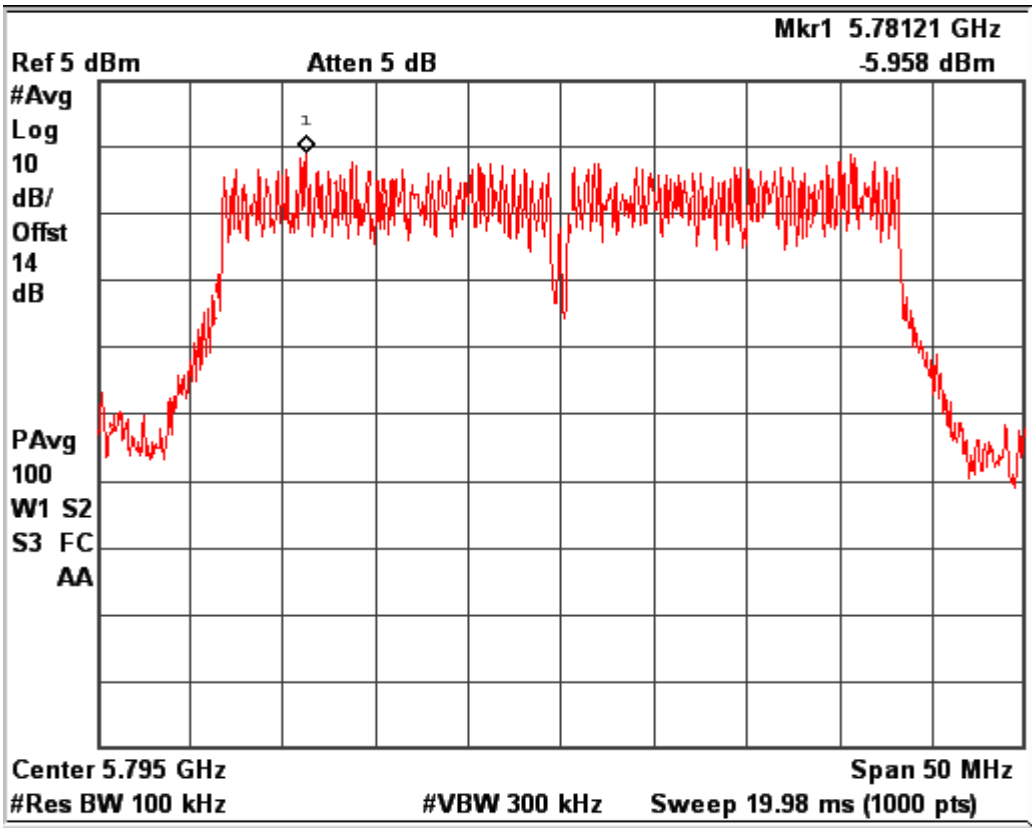
Data Rate: MCS0 **Channel Frequency: 5190MHz**



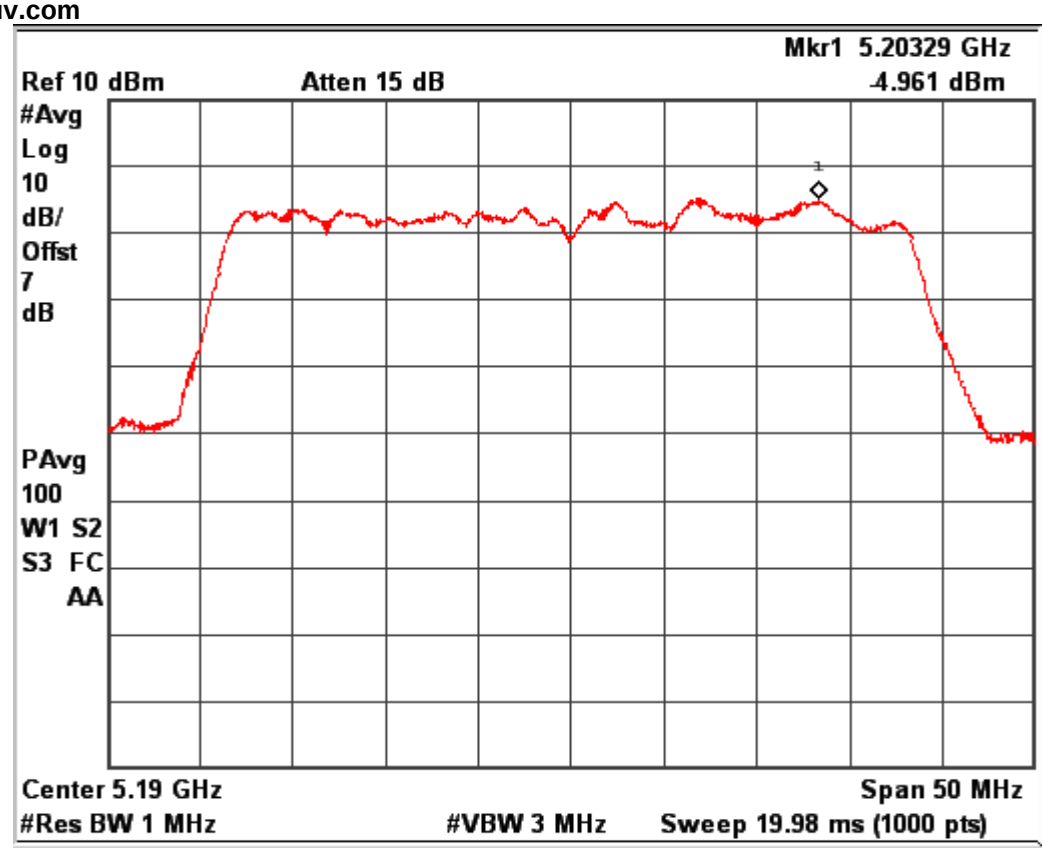
Data Rate: MCS0 **Channel Frequency: 5230MHz**



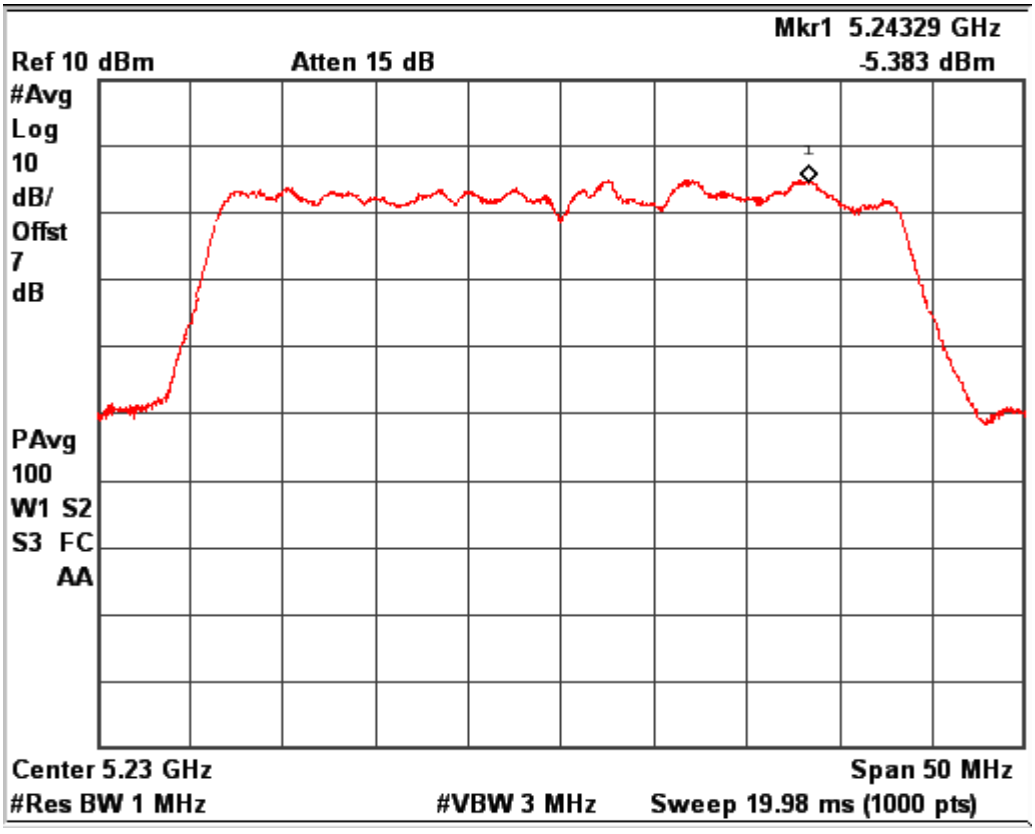
Data Rate: MCS0 **Channel Frequency: 5755MHz**



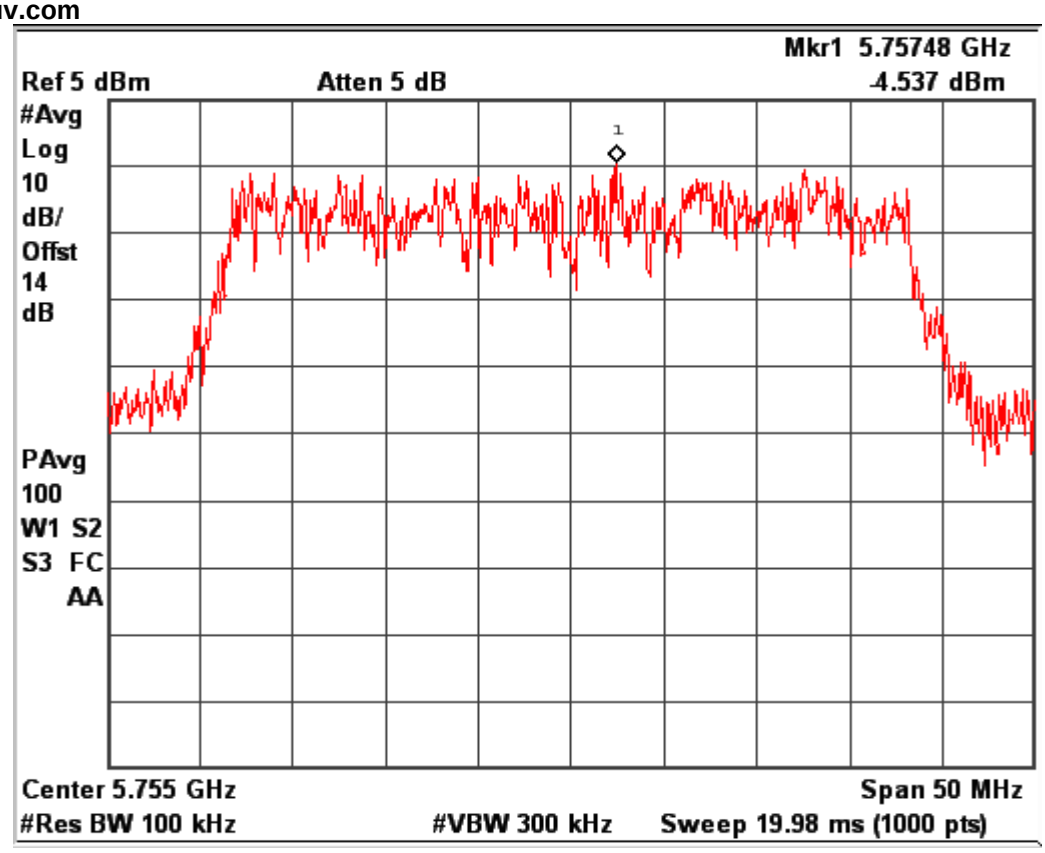
Data Rate: MCS0 **Channel Frequency: 5795MHz**



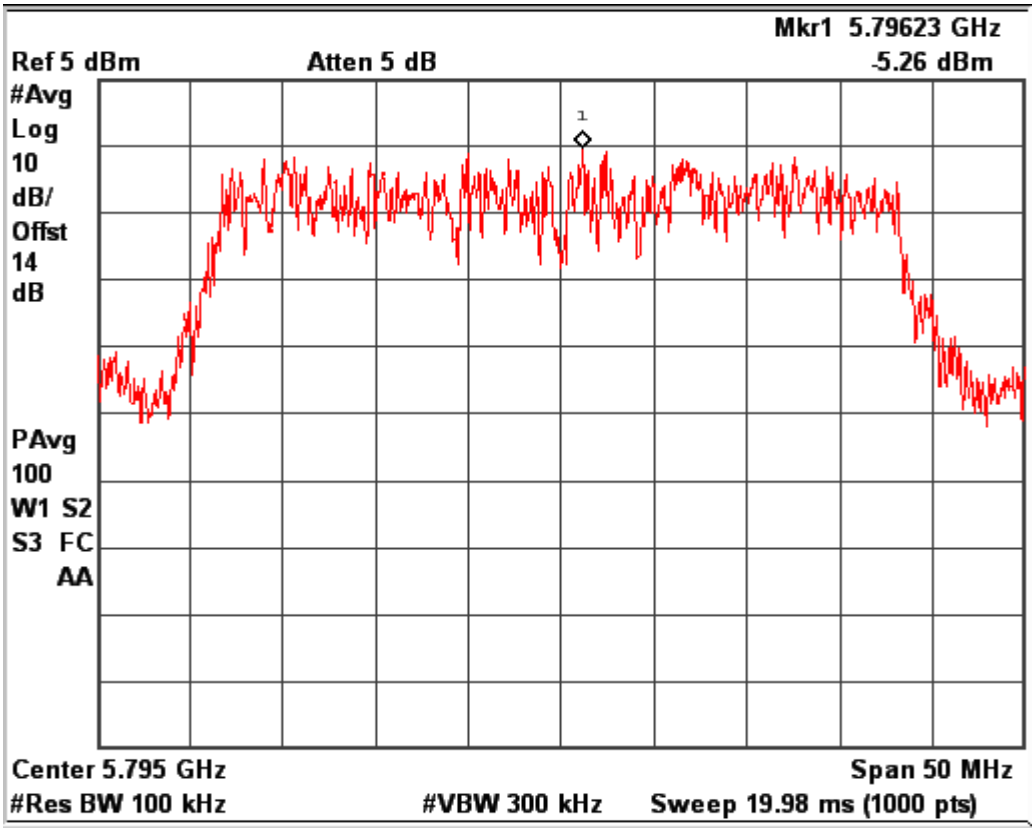
Data Rate: MCS7 **Channel Frequency: 5190MHz**



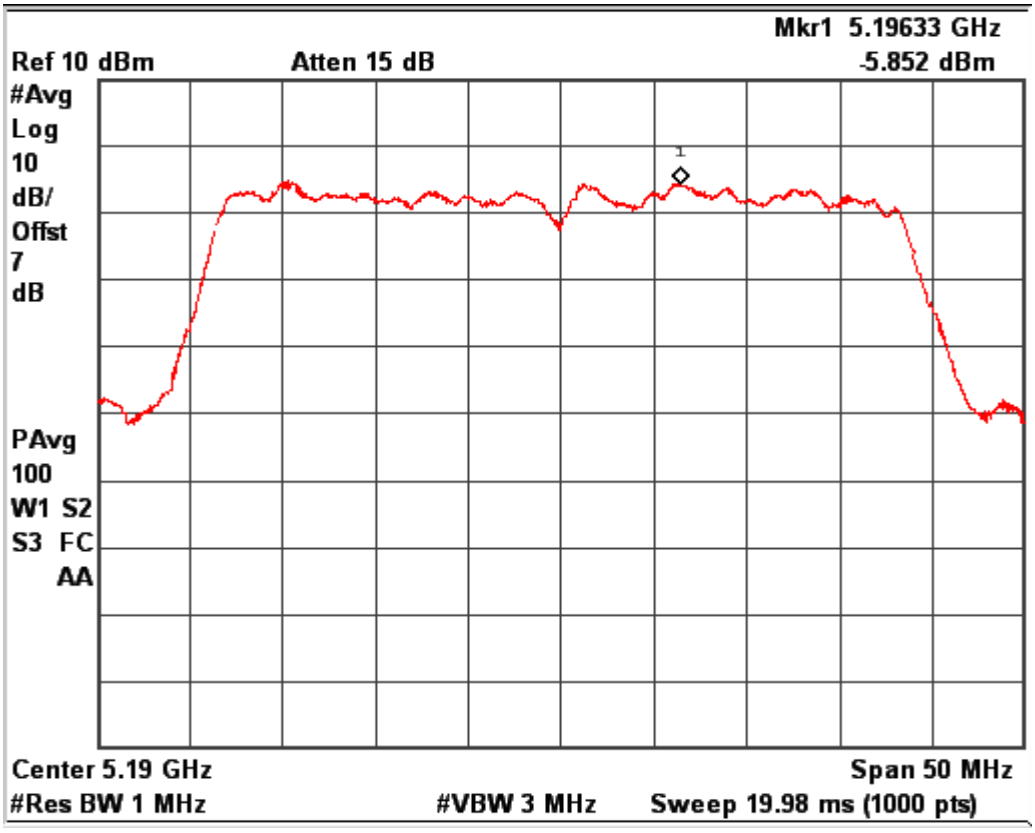
Data Rate: MCS7 **Channel Frequency: 5230MHz**



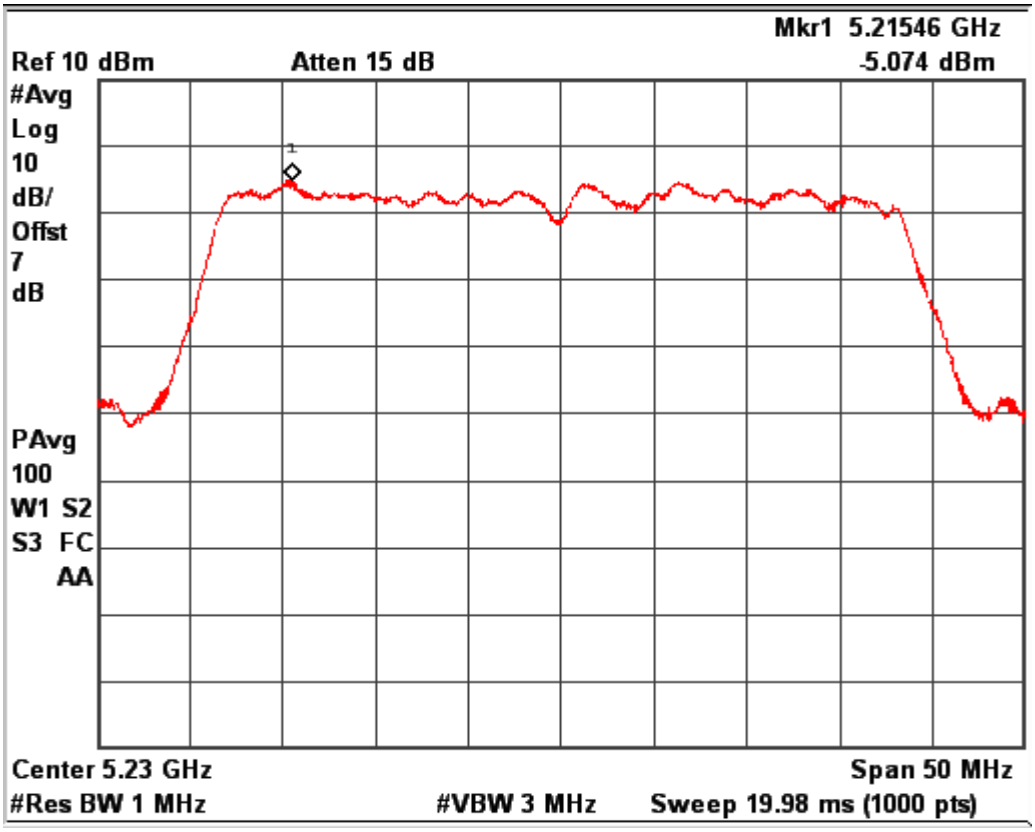
Data Rate: MCS7 **Channel Frequency: 5755MHz**



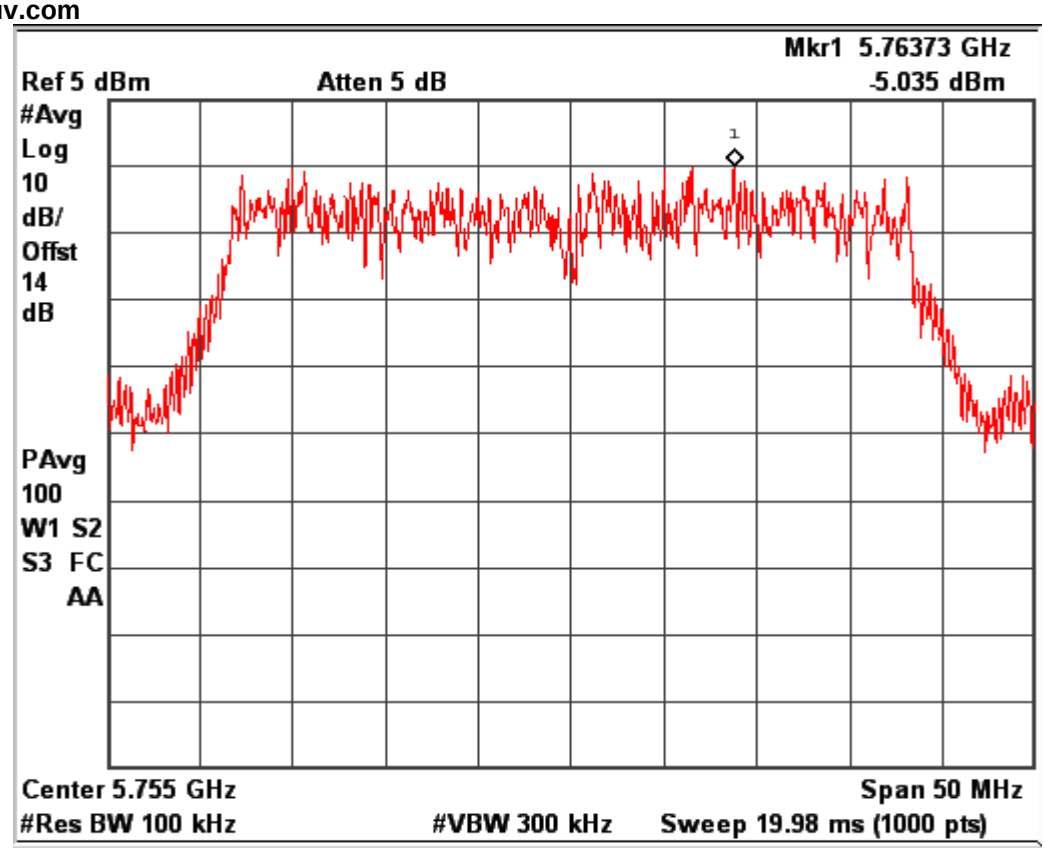
Data Rate: MCS7 **Channel Frequency: 5795MHz**



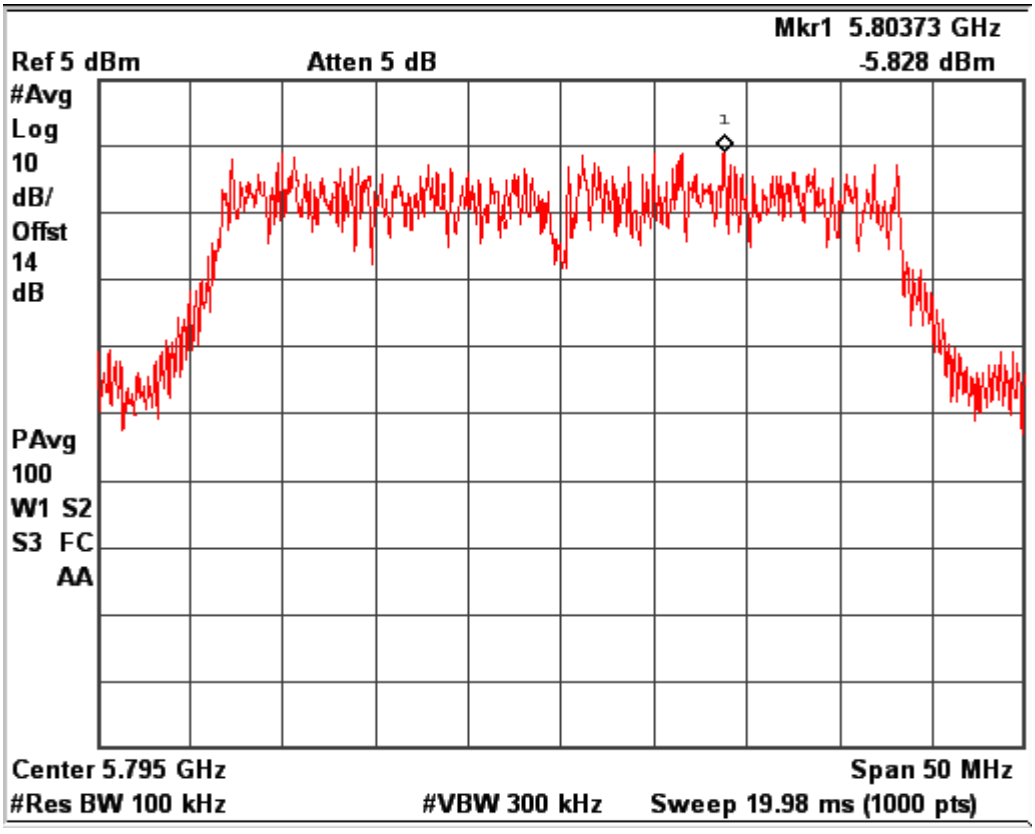
Data Rate: MCS15 **Channel Frequency: 5190MHz**



Data Rate: MCS15 **Channel Frequency: 5230MHz**



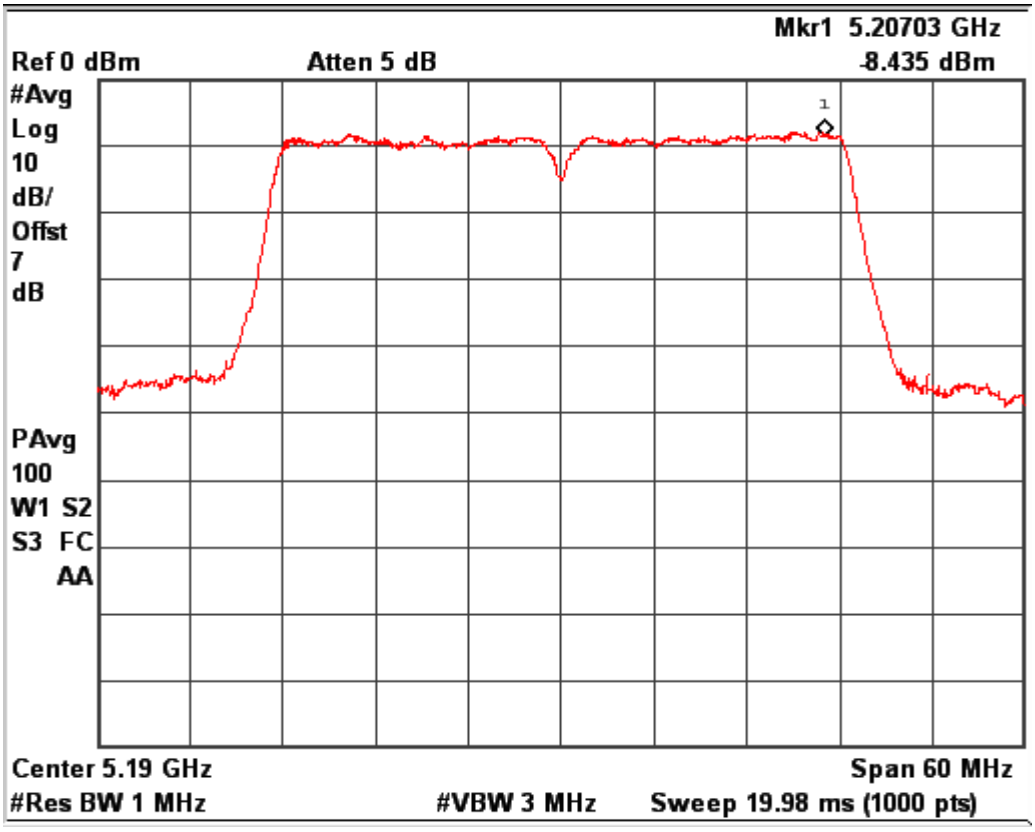
Data Rate: MCS15 **Channel Frequency: 5755MHz**



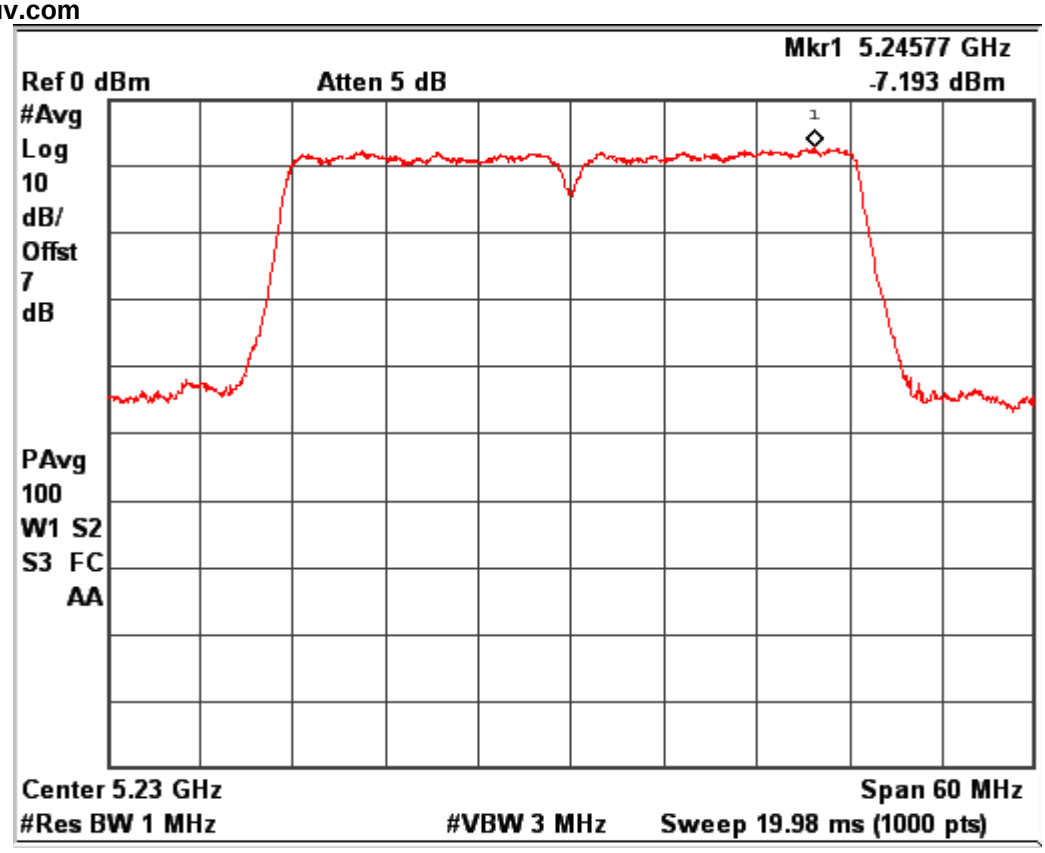
Data Rate: MCS15 **Channel Frequency: 5795MHz**

Test Results for path B

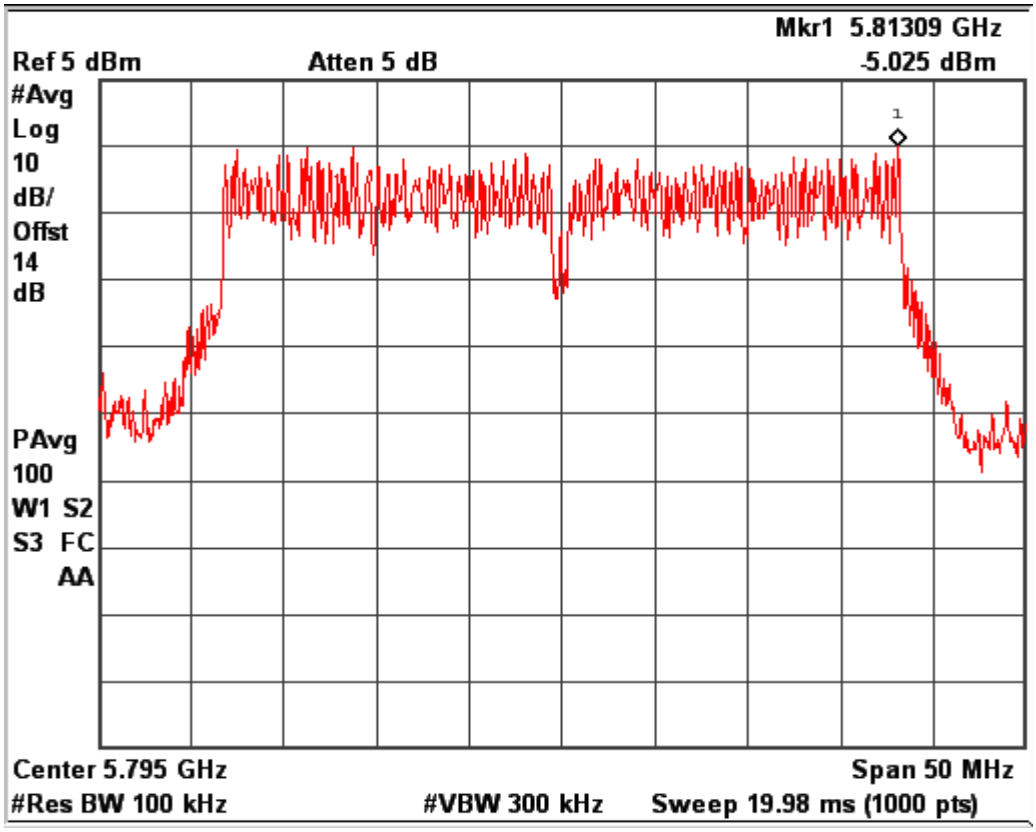
IEEE802.11n HT40						
Data Rate (Mbps)	**Channel No.**	**Frequency (MHz)**	**Measured PSD (dBm)**	**Measure & Add 10*log(2)**	**Total PSD (dBm)**	**Limit (dB)**
MCS0	38	5190	-8.43	3.01	-5.42	11
	46	5230	-7.19	3.01	-4.18	11
	151	5755	-3.47	3.01	-0.46	30
	159	5795	-5.02	3.01	-2.01	30
MCS7	38	5190	-6.31	3.01	-3.30	11
	46	5230	-5.42	3.01	-2.41	11
	151	5755	-2.94	3.01	0.07	30
	159	5795	-3.63	3.01	-0.62	30
MCS15	38	5190	-7.55	3.01	-4.54	11
	46	5230	-6.13	3.01	-3.12	11
	151	5755	-4.25	3.01	-1.24	30
	159	5795	-5.48	3.01	-2.47	30



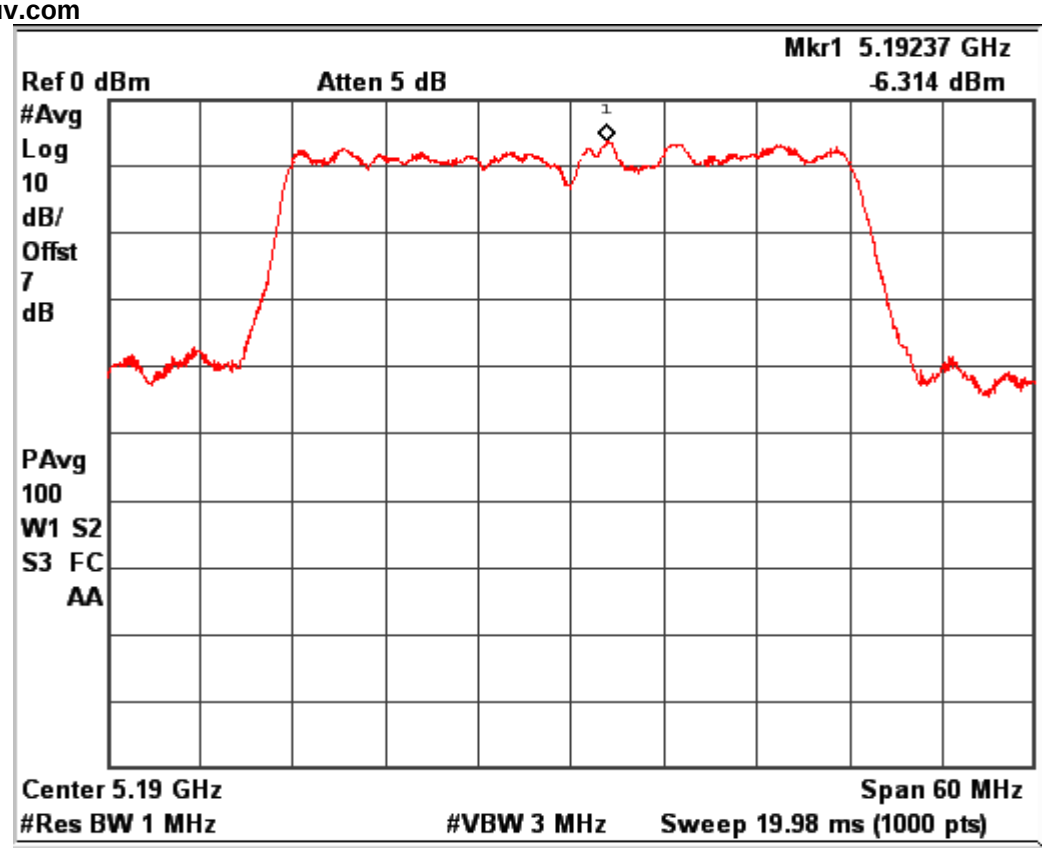
Data Rate: MCS0 **Channel Frequency: 5190MHz**



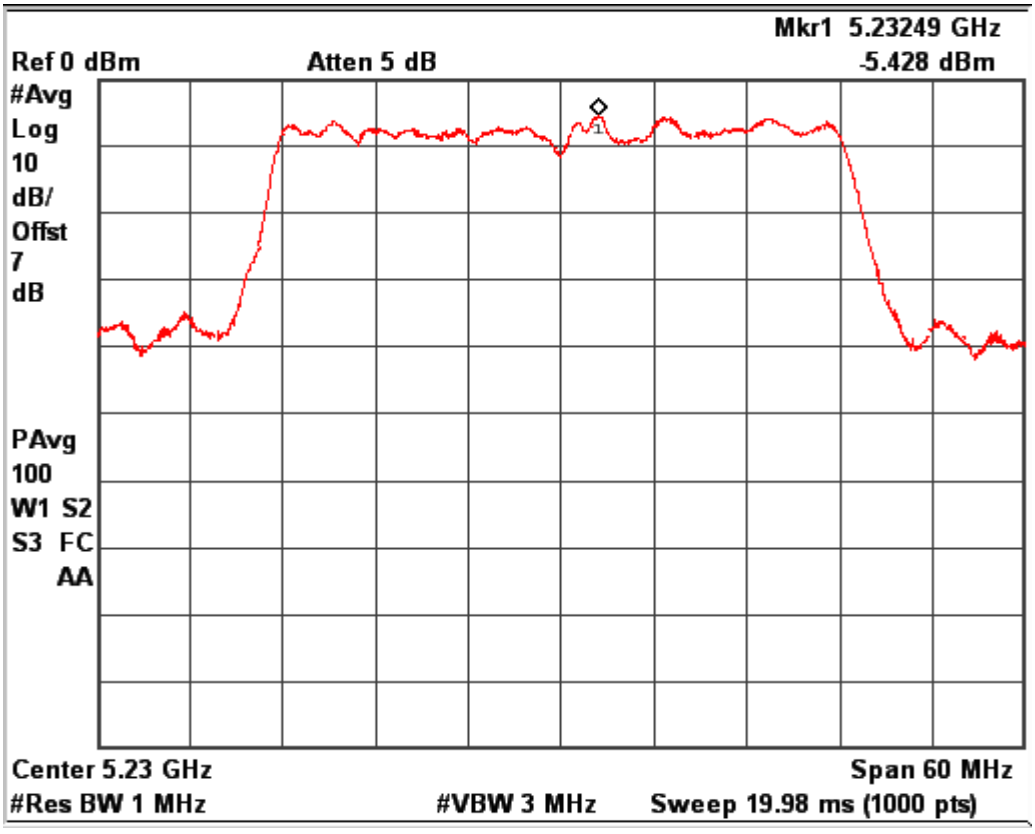
Data Rate: MCS0 **Channel Frequency: 5230MHz**



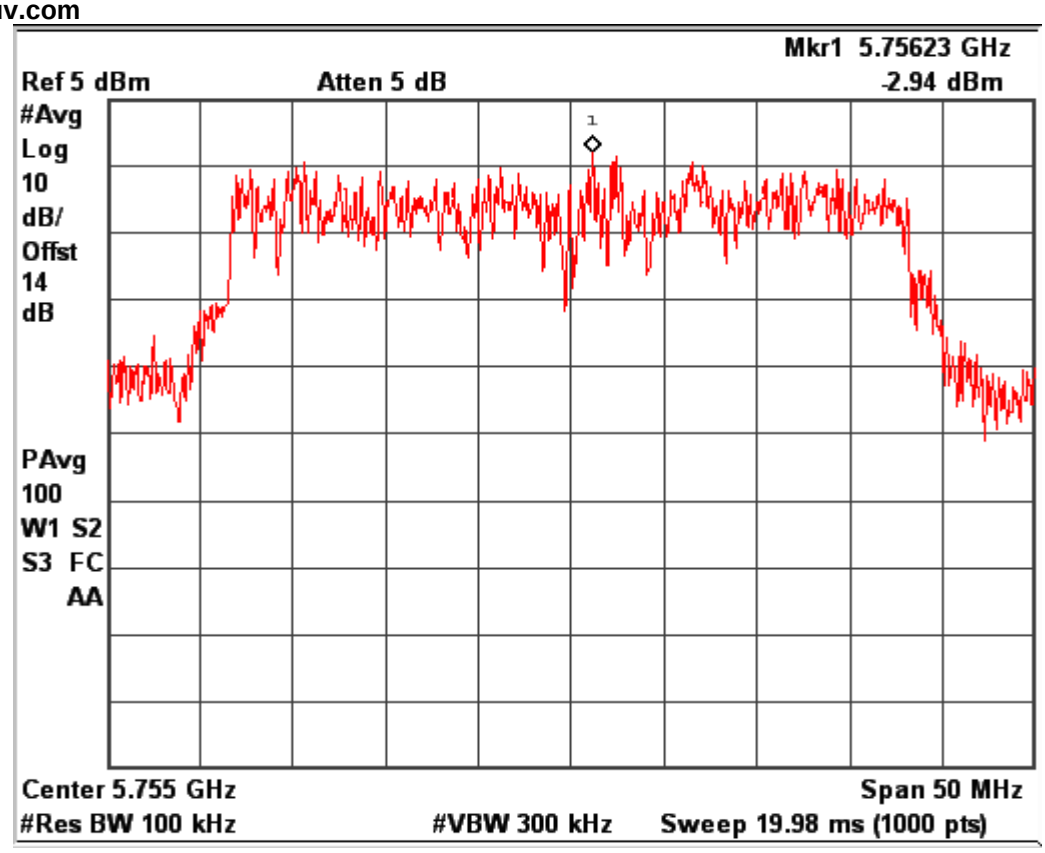
Data Rate: MCS0 **Channel Frequency: 5795MHz**



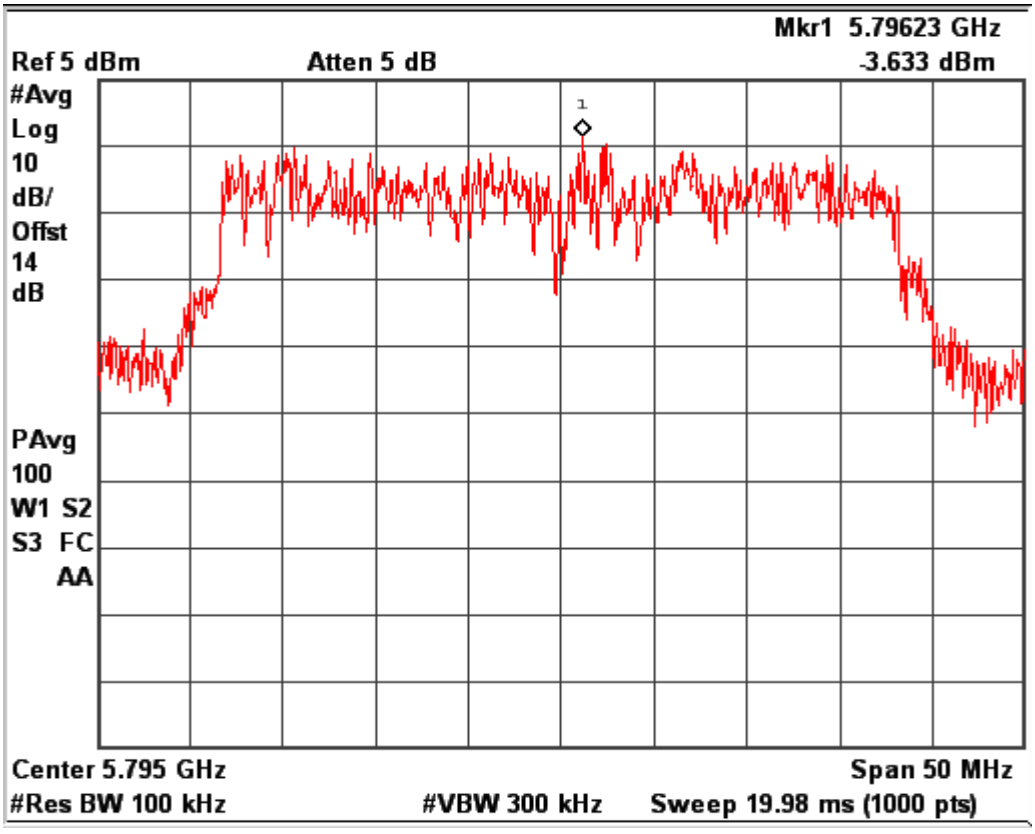
Data Rate: MCS7 **Channel Frequency: 5190MHz**



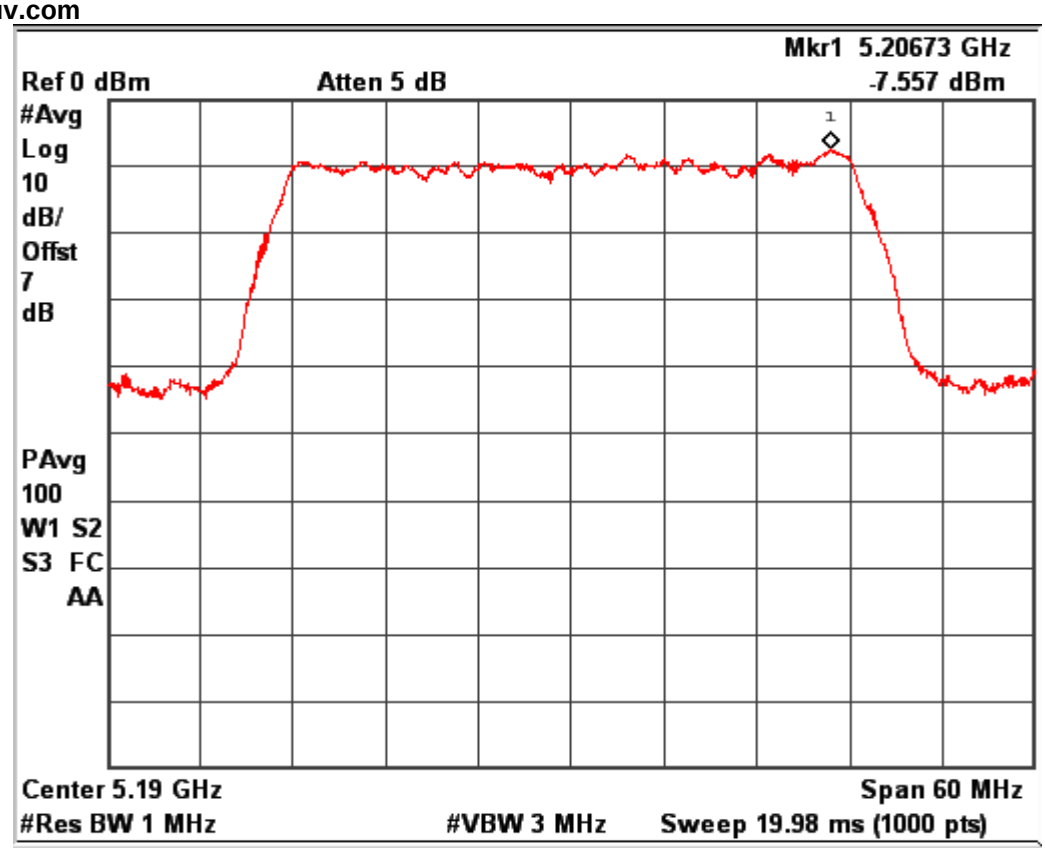
Data Rate: MCS7 **Channel Frequency: 5230MHz**



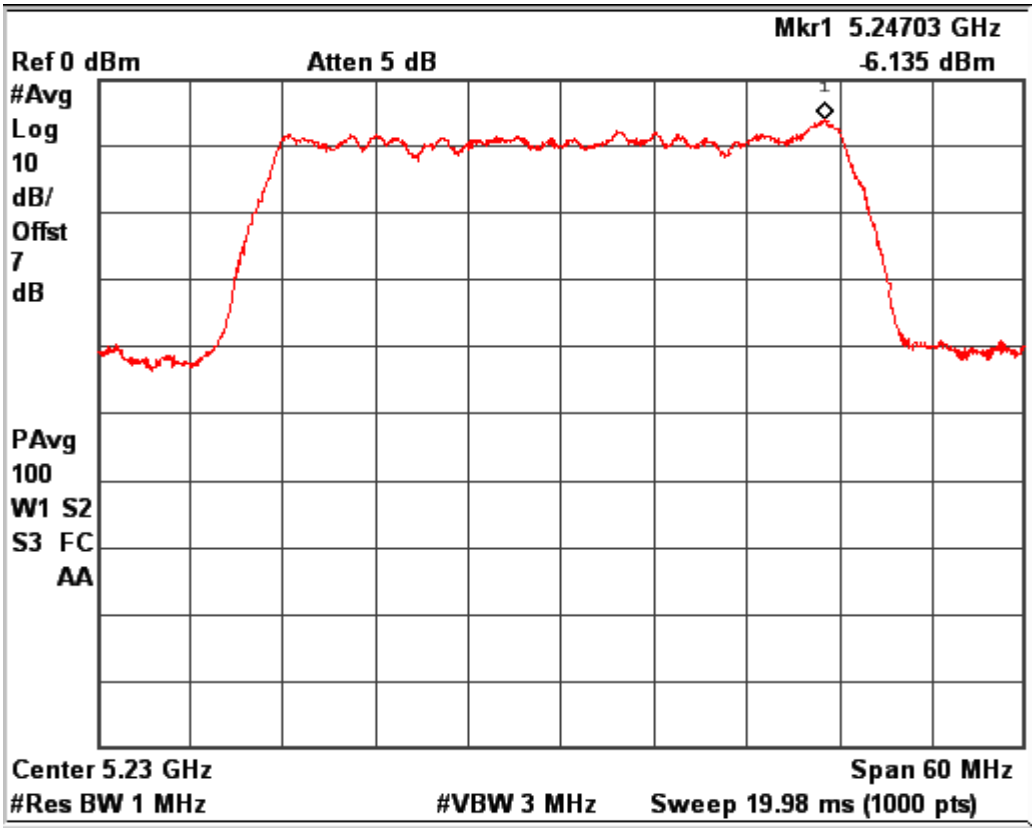
Data Rate: MCS7 **Channel Frequency: 5755MHz**



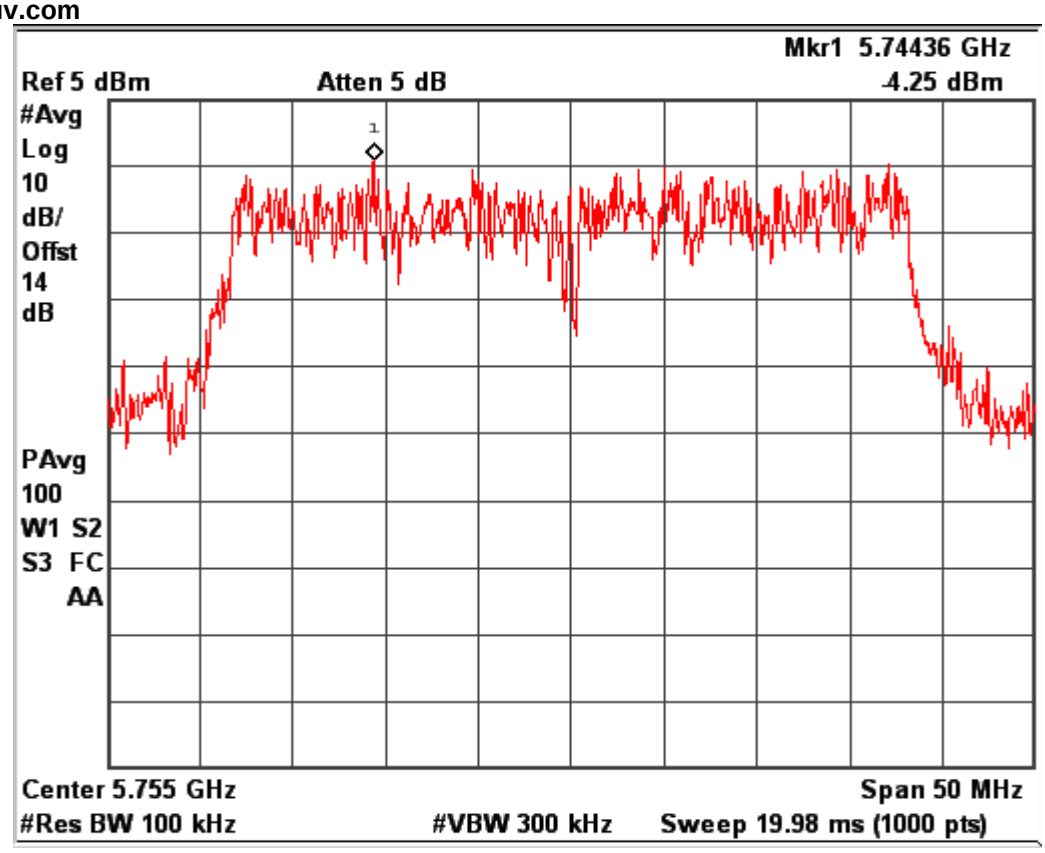
Data Rate: MCS7 **Channel Frequency: 5795MHz**



Data Rate: MCS15 **Channel Frequency: 5190MHz**

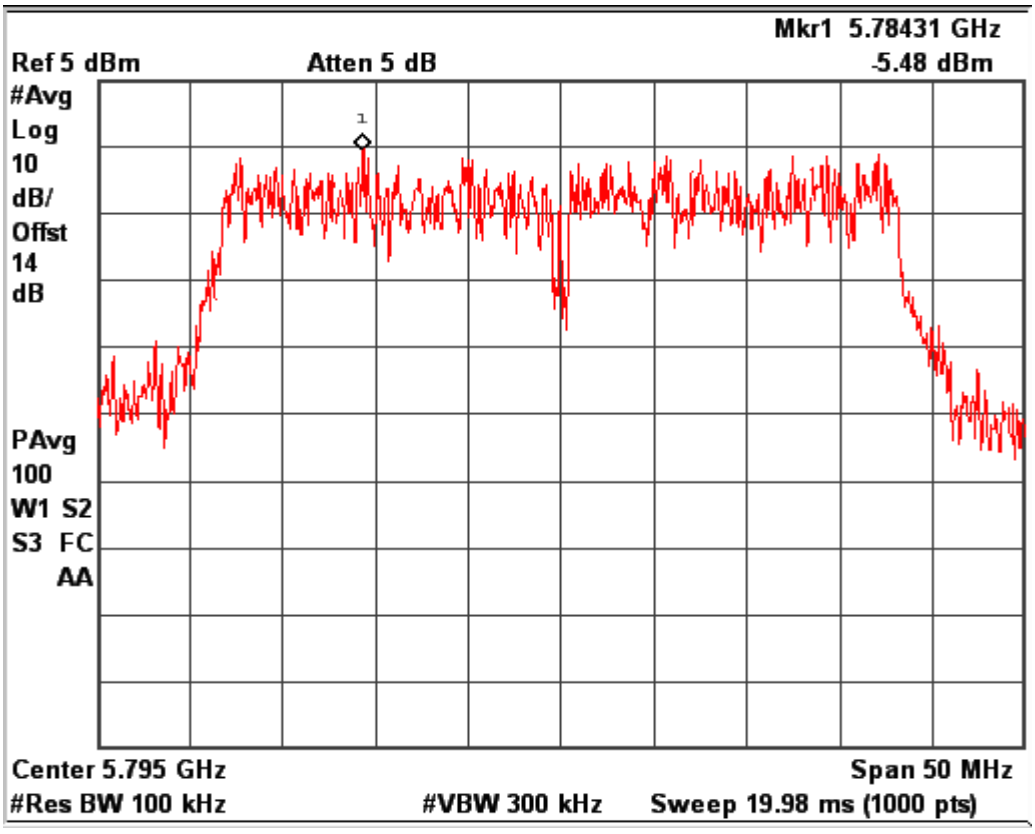


Data Rate: MCS15 **Channel Frequency: 5230MHz**



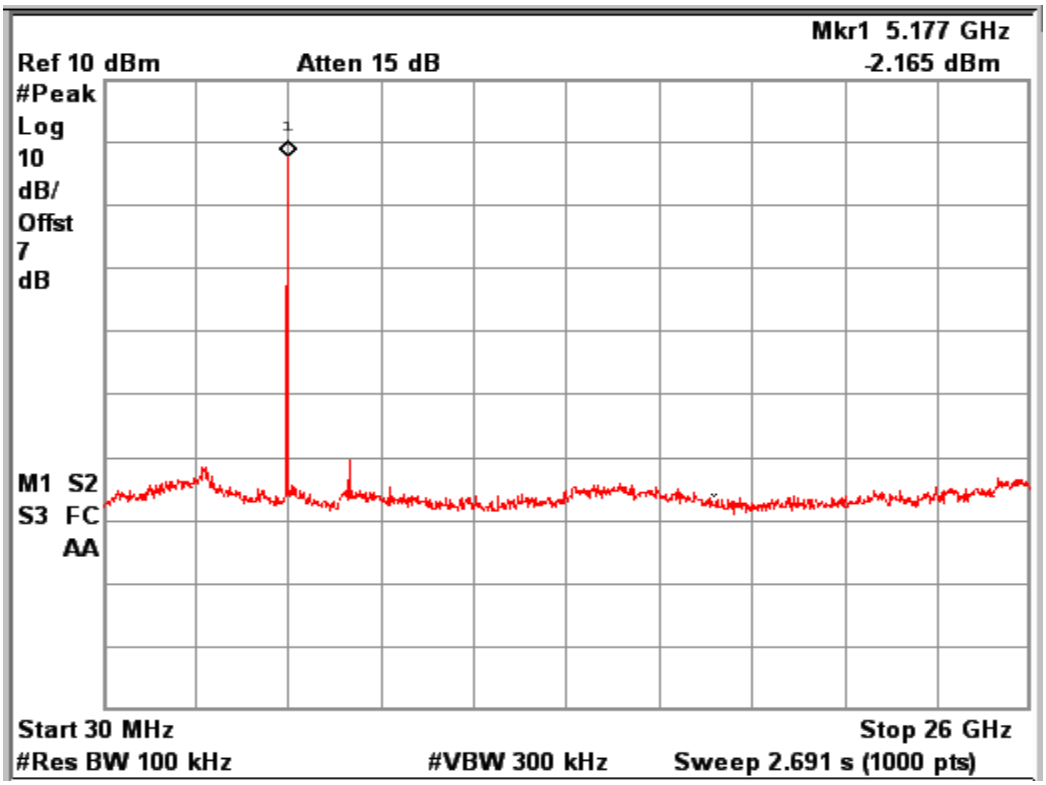
Data Rate: MCS15 **Channel Frequency: 5755MHz**

\

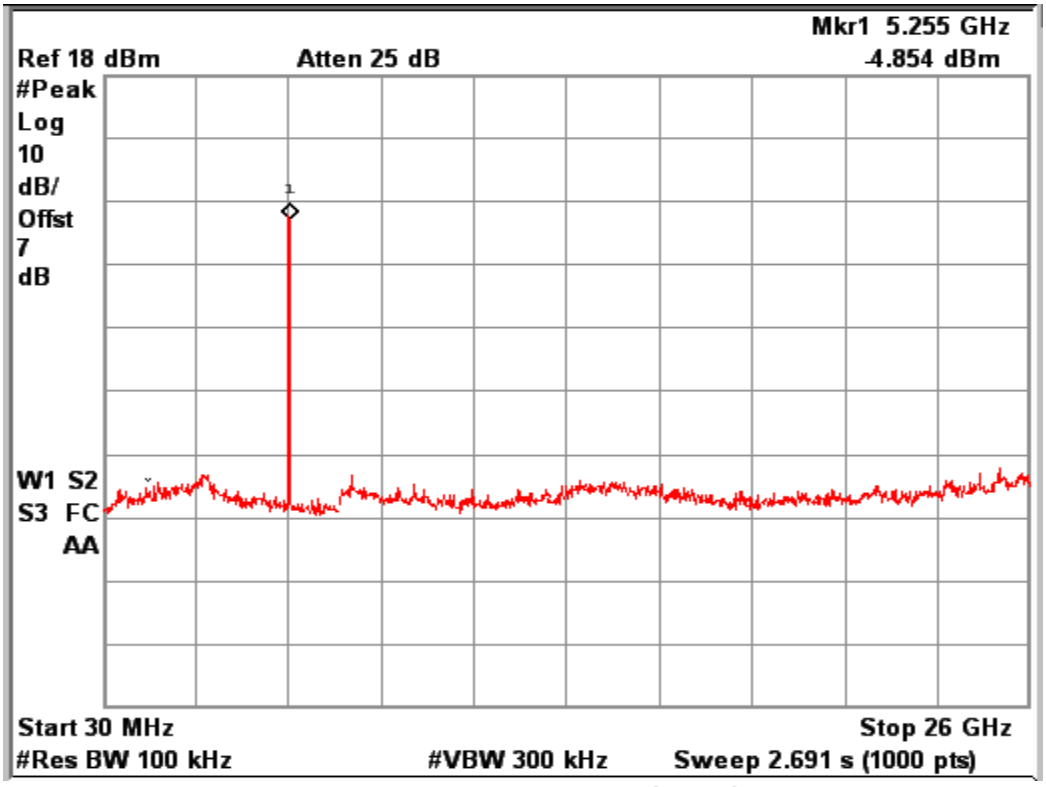


Data Rate: MCS15 **Channel Frequency: 5795MHz**

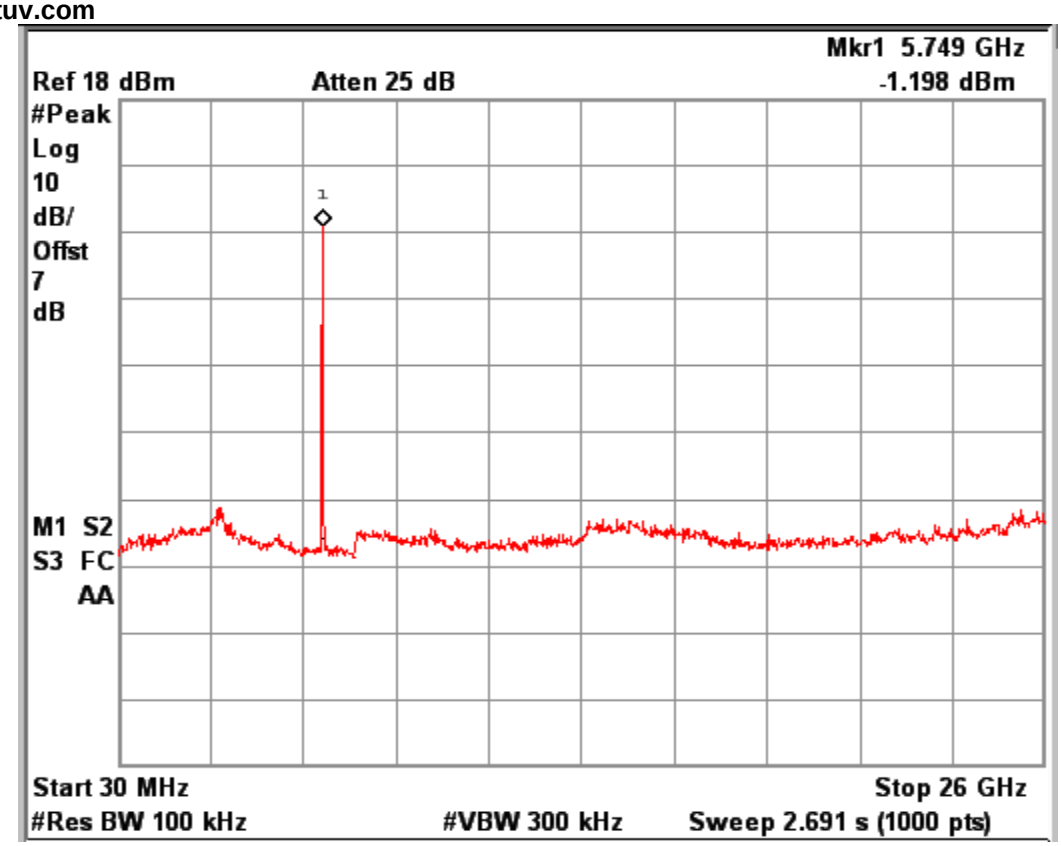
Conducted Spurious Emission



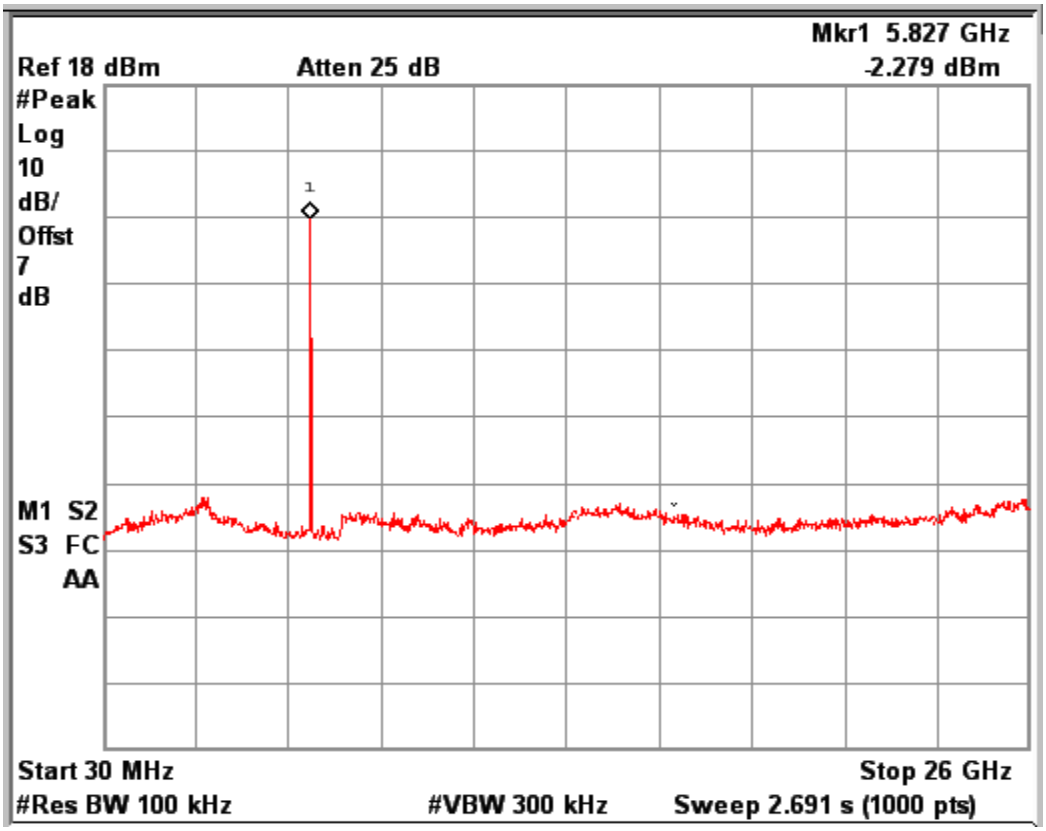
Data Rate: MCS7 **Channel Frequency: 5180MHz**



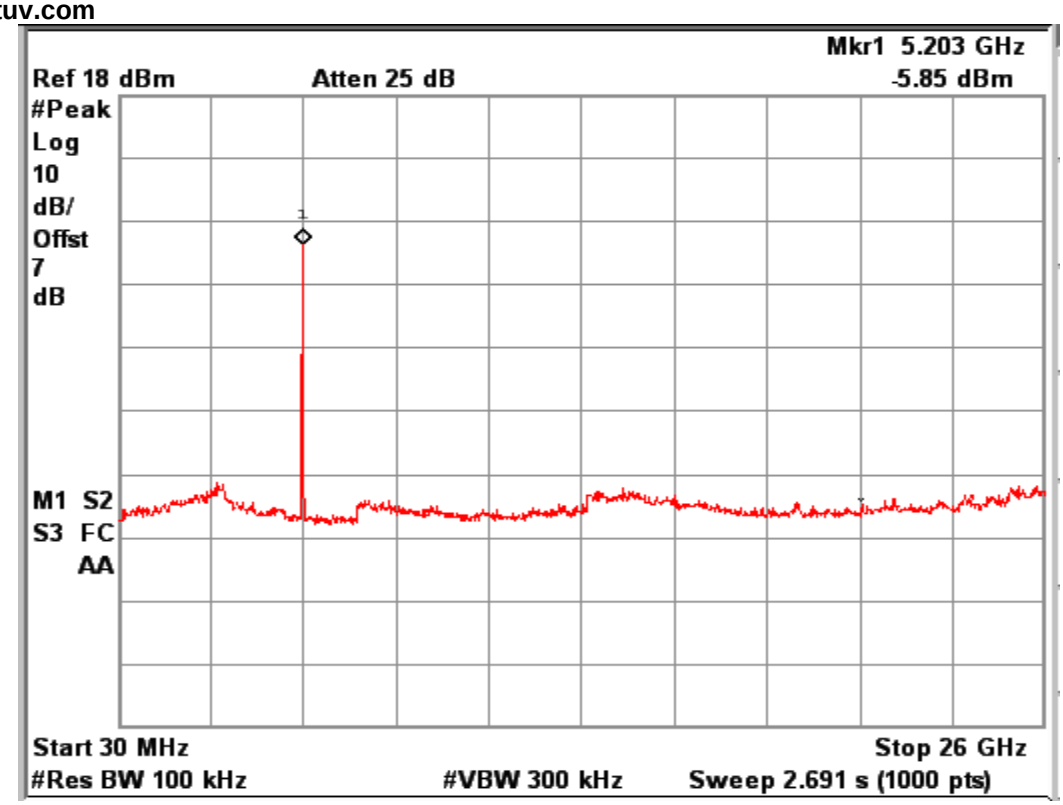
Data Rate: MCS7 **Channel Frequency: 5240MHz**



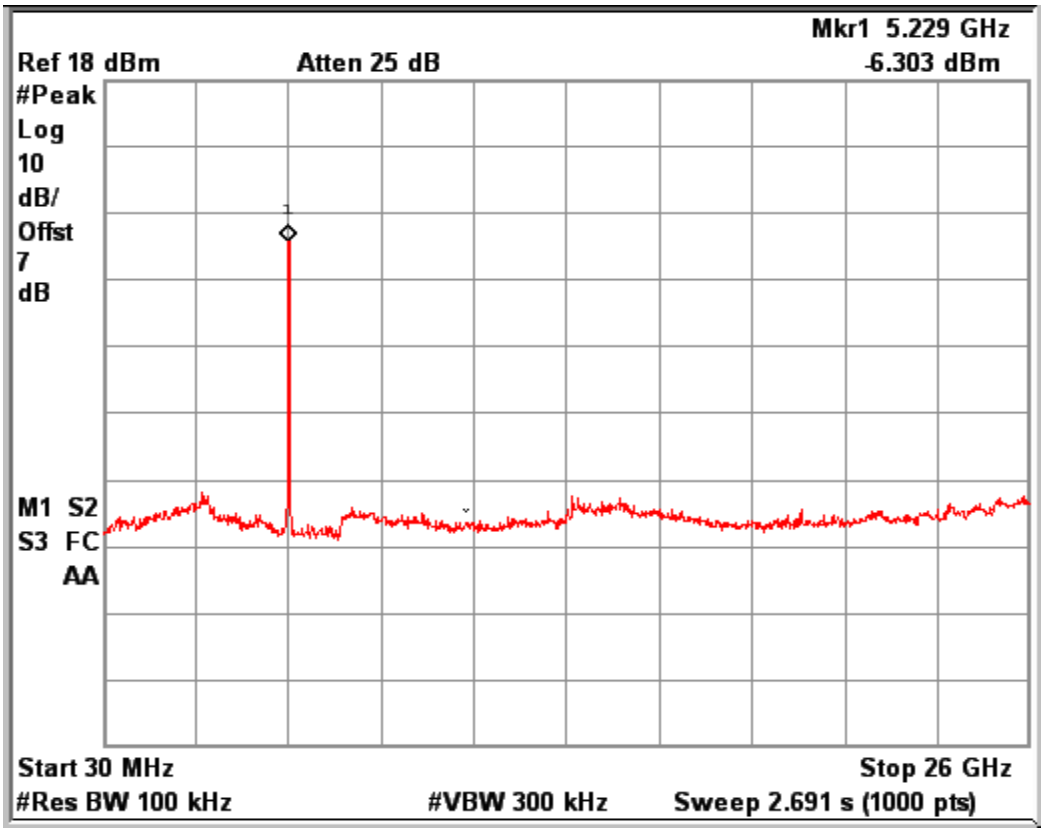
Data Rate: MCS7 **Channel Frequency: 5745MHz**



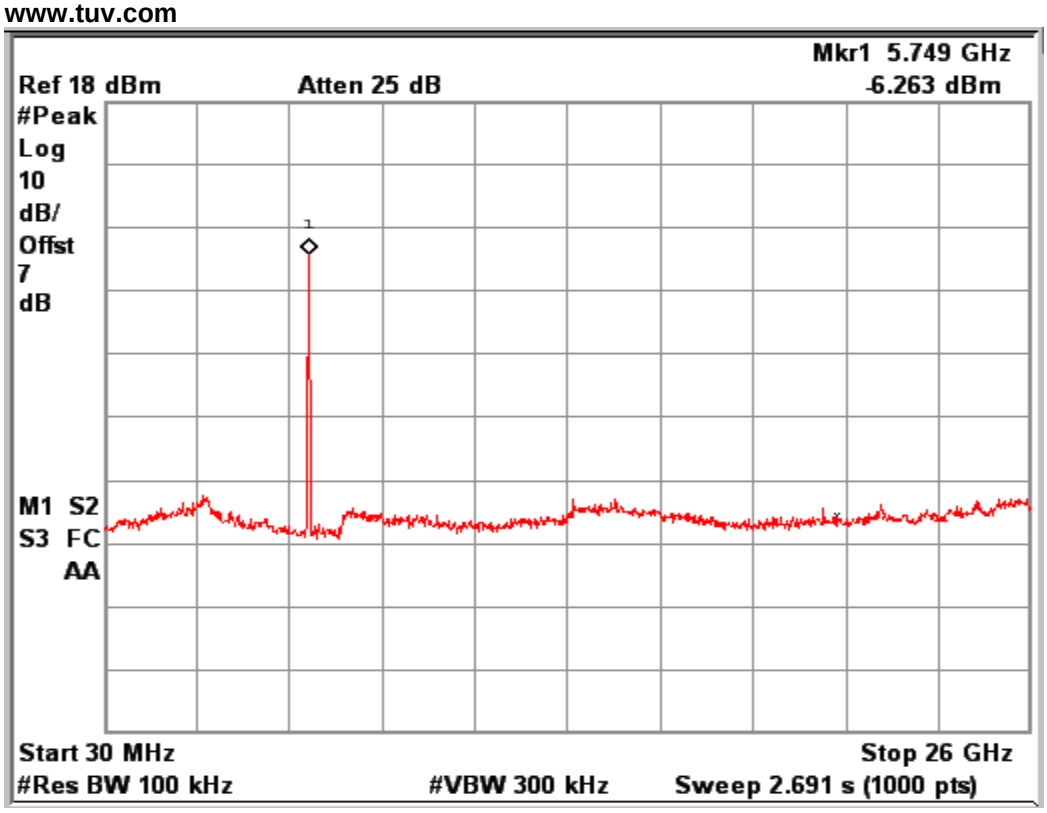
Data Rate: MCS7 **Channel Frequency: 5825MHz**



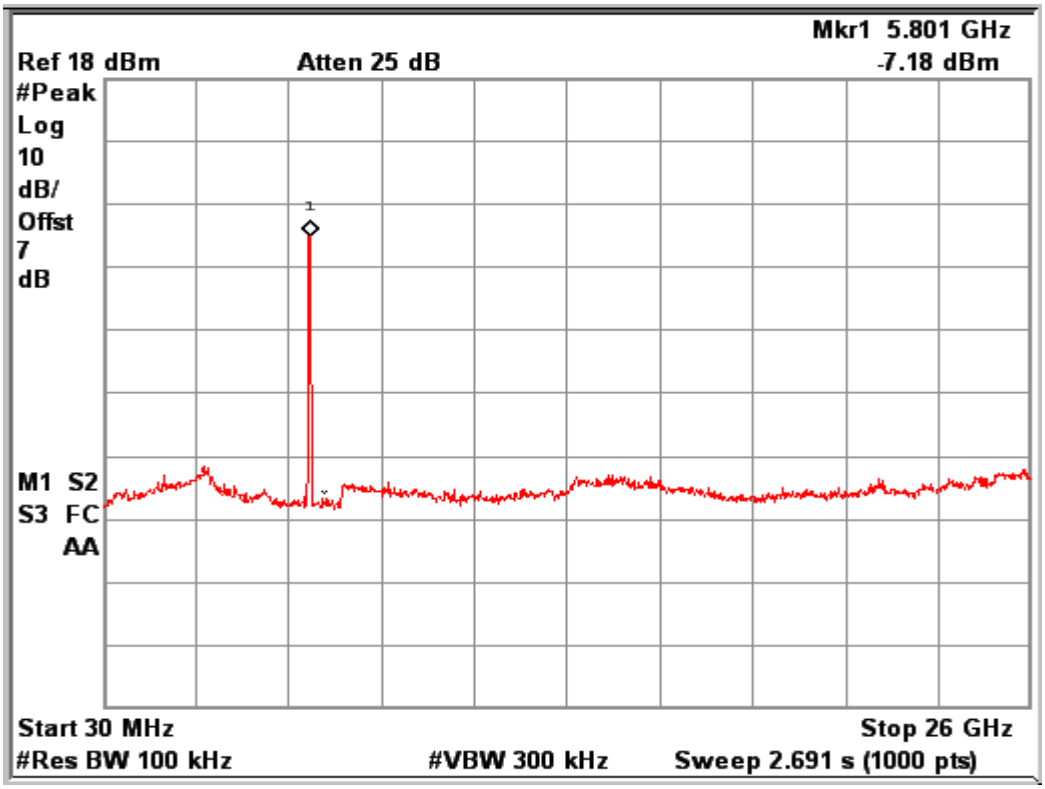
Data Rate: MCS7 **Channel Frequency: 5190MHz**



Data Rate: MCS0 **Channel Frequency: 5320MHz**



Data Rate: MCS0 **Channel Frequency: 5755MHz**



Data Rate: MCS0 **Channel Frequency: 5795MHz**

Radiated Spurious Emissions, Restricted bands of operation &
Unwanted Emission **Section 15.209 /15.205/15.407 (b) (6)**
Result **Pass**

Test Specification	FCC Part 15 Subpart E
Test Method	ANSI C63.10-2013
Measurement Location	Semi Anechoic Chamber
Measuring Distance	3m
Detection	QP for frequency below 1GHz, Peak/Average for frequency above 1GHz
Requirement	Should Comply with the limits stated in the below table.

Limit for Radiated Emission of Section 15.209:

Frequency (MHz)	Field strength (µV/m)	Field strength (dBµV/m)	Distance of Measurement (m)
0.009 – 0.490	2400/F(kHz)	48.50 – 13.80	300*
0.490 – 1.705	24000/F(kHz)	33.80 – 23.00	30*
1.705 -30	30	29.54	30*
30-88	100	40.0	3
88-216	150	43.5	3
216-960	200	46.0	3
Above 960	500	54.0	3

Remark: * the limit shows in the table above of frequency range 0.009 – 0.490, 0.490 – 1.705 MHz and 1.705-30MHz is at 300 meter, 30 meter and 30 meter range respectively, which corresponds To 88,50 – 53.80, 53.80 – 43.00 and 49.5dBµV/m at 3m range by extrapolation calculation and The measurement of loop antenna

The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz Radiated emission limits in these three bands are based on measurements employing an average detector.

Test results:

For frequency Range 9kHz – 30MHz

No emissions found in this frequency range.

For the Frequency range 30MHz -1GHz

Note:

The product has digital device (Camera interfaces, SD card,USB & GPI external Cable) which cannot control the functions of intentional radiator (Wi-Fi, BT(EDR+BDR),BLE)) in such condition Radiated spurious emission for the frequency range from 30MHz to 1GHz was performed as per FCC part 15 subpart B 15.109, Class A requirement & Product exclusively used in Vehicles. Only worst case test results are reported.

FCC Part 15 Subpart B 15.109 Class A limits

Frequency (MHz)	Field Strength dBuV/m	Measured Distance (m)	Field Strength (dBµV/m)
30-88	90.00	10.00	39.08
88-216	150.00	10.00	43.52
216-960	210.00	10.00	46.43
above 960	300.00	10.00	49.54

External Battery (Vehicle Battery)

Polarization	Frequency(MHz)	Field Strength (dBµV/m)	Limit (dBµV/m)	Margin (dB)
Horizontal	199.99	39.26	43.52	-4.26
	299.95	40.09	46.43	-6.34
	320.02	41.02	46.43	-5.41
	399.95	39.28	46.43	-7.15
	479.98	41.60	46.43	-4.83
	527.99	43.52	46.43	-2.91
	800.08	40.88	46.43	-5.55
	928.22	41.56	46.43	-4.87
Vertical	199.94	33.43	43.52	-10.09
	300.04	32.53	46.43	-13.90
	528.09	40.63	46.43	-5.80
	624.02	39.43	46.43	-7.00
	800.08	44.23	46.43	-2.20

Internal Battery

Polarization	Frequency(MHz)	Field Strength (dBµV/m)	Limit (dBµV/m)	Margin (dB)
Horizontal	199.94	39.47	43.52	-4.05
	300.04	36.3	46.43	-10.13
	379.97	39.35	46.43	-7.08
	399.95	37.99	46.43	-8.44
	528.09	43.47	46.43	-2.96
	928.22	42.91	46.43	-3.52
Vertical	479.98	37.59	46.43	-8.84
	527.99	40.63	46.43	-5.80
	800.08	42.03	46.43	-4.40

30MHz to 1GHz test performed with only Radio modules are turned on at 3m distance with FCC part 15 subparts C 15.209 limits

External Battery (Vehicle Battery)

Polarization	Frequency(MHz)	Field Strength (dBµV/m)	Limit (dBµV/m)	Margin (dB)
Horizontal	296.97	44.29	46	-1.71
	371.24	44.51	46	-1.49
	631.10	40.01	46	-5.99
	779.66	44.05	46	-1.95
	853.91	42.65	46	-3.35
Vertical	371.24	40.91	46	-5.09
	556.90	40.69	46	-5.31
	928.22	42.15	46	-3.85

Internal Battery

Polarization	Frequency(MHz)	Field Strength (dBµV/m)	Limit (dBµV/m)	Margin (dB)
Horizontal	371.24	42.64	46	-3.36
	779.71	43.78	46	-2.22
	853.91	44.28	46	-1.72
	928.12	43.86	46	-2.14
Vertical	556.94	42.97	46	-3.03
	779.61	41.44	46	-4.56
	928.12	42.24	46	-3.76

Worst case test results for the frequencies in the range 1 GHz 26.5 GHz are reported in below table.

IEEE 802.11a Mode 20MHz, Data Rate ->6Mbps,External Antenna						
Frequency Bands	**Ch No./ Frequency**	**Polarization**	**Frequency (MHz)**	**Field Strength (dBµV/m)**	**Limit (dBµV/m)**	**Margin (dB)**
5150-5250 (UNII -1)	36 (5180MHz)	Vertical	5150 (Pk)	39.39	74	-34.61
			5150 (Av)	26.89	54	-27.11
			5180 (Pk)	90.49	*	-
			5180 (Av)	81.67	*	-
		Horizontal	5150 (Pk)	39.2	74	-34.8
			5150 (Av)	26.16	54	-27.84
			5180 (Pk)	85.28	*	-
			5180 (Av)	78.54	*	-
	40 (5200MHz)	Vertical	5200 (Pk)	90.52	*	-
			5200 (Av)	80.98	*	-
		Horizontal	5200 (Pk)	85.83	*	-
			5200 (Av)	78.25	*	-
	48 (5240MHz)	Vertical	5240 (Pk)	89.73	*	-
			5240 (Av)	79.02	*	-
		Horizontal	5240 (Pk)	84.73	*	-
			5240 (Av)	78.26	*	-
5725-5850 (UNII - 3)	149 (5745MHz)	Vertical	5715 (Pk)	43.31	68.23	-24.92
			5725 (Pk)	58.93	78.23	-19.3
			5745 (Pk)	93.61	*	-
			5745 (Av)	84.95	*	-
		Horizontal	5715 (Pk)	38.7	68.23	-29.53
			5725 (Pk)	48.15	78.23	-30.08
			5745 (Pk)	85.63	*	-
			5745 (Av)	77.54	*	-
	157 (5785MHz)	Vertical	5785 (Pk)	93.12	*	-
			5785 (Av)	84.37	*	-
		Horizontal	5785 (Pk)	85.92	*	-
			5785 (Av)	77.27	*	-
	165 (5825MHz)	Vertical	5825 (Pk)	91.27	*	-
			5825 (Av)	82.88	*	-
			5850 (Pk)	41.93	78.23	-36.3
			5860 (Pk)	39.07	68.23	-29.16
		Horizontal	5825 (Pk)	82.2	*	-
			5825 (Av)	74.03	*	-
			5850 (Pk)	39.04	78.23	-39.19
			5860 (Pk)	39.09	68.23	-29.14

IEEE 802.11a Mode 20MHz,Data Rate -> 24Mbps, External Antenna						
Frequency Bands	**Ch No./ Frequency**	**Polarization**	**Frequency (MHz)**	**Field Strength (dBµV/m)**	**Limit (dBµV/m)**	**Margin (dB)**
5150-5250 (UNII -1)	36 (5180MHz)	Vertical	5150 (Pk)	40.27	74	-33.73
			5150 (Av)	26.73	54	-27.27
			5180 (Pk)	90.84	*	-
			5180 (Av)	82.26	*	-
		Horizontal	5150 (Pk)	39.75	74	-34.25
			5150 (Av)	26.43	54	-27.57
			5180 (Pk)	85.37	*	-
			5180 (Av)	78.25	*	-
	40 (5200MHz)	Vertical	5200 (Pk)	90.27	*	-
			5200 (Av)	81.02	*	-
		Horizontal	5200 (Pk)	85.38	*	-
			5200 (Av)	78.64	*	-
	48 (5240MHz)	Vertical	5240 (Pk)	89.2	*	-
			5240 (Av)	79.54	*	-
		Horizontal	5240 (Pk)	85.38	*	-
			5240 (Av)	78.26	*	-
5725-5850 (UNII - 3)	149 (5745MHz)	Vertical	5715 (Pk)	43.32	68.23	23.59
			5725 (Pk)	58.83	78.23	5.11
			5745 (Pk)	93.28	*	-
			5745 (Av)	84.62	*	-
		Horizontal	5715 (Pk)	38.73	68.23	-29.5
			5725 (Pk)	48.28	78.23	-29.95
			5745 (Pk)	85.22	*	-
			5745 (Av)	78.29	*	-
	157 (5785MHz)	Vertical	5785 (Pk)	93.85	*	-
			5785 (Av)	84.28	*	-
		Horizontal	5785 (Pk)	85.26	*	-
			5785 (Av)	77.92	*	-
	165 (5825MHz)	Vertical	5825 (Pk)	91.82	*	-
			5825 (Av)	83.34	*	-
			5850 (Pk)	40.69	78.23	-37.54
			5860 (Pk)	39.75	68.23	-28.48
		Horizontal	5825 (Pk)	83.45	*	-
			5825 (Av)	73.58	*	-
			5850 (Pk)	40.05	78.23	-38.18
			5860 (Pk)	39.14	68.23	-29.09

IEEE 802.11a Mode 20MHz,Data Rate -> 54Mbps, External Antenna						
Frequency Bands	**Ch No./ Frequency**	**Polarization**	**Frequency (MHz)**	**Field Strength (dBµV/m)**	**Limit (dBµV/m)**	**Margin (dB)**
5150-5250 (UNII -1)	36 (5180MHz)	Vertical	5150 (Pk)	39.24	74	-34.76
			5150 (Av)	27.6	54	-26.4
			5180 (Pk)	91.78	*	-
			5180 (Av)	83.42	*	-
		Horizontal	5150 (Pk)	40.01	74	-33.99
			5150 (Av)	26.64	54	-27.36
			5180 (Pk)	85.83	*	-
			5180 (Av)	78.32	*	-
	40 (5200MHz)	Vertical	5200 (Pk)	90.2	*	-
			5200 (Av)	81.37	*	-
		Horizontal	5200 (Pk)	85.38	*	-
			5200 (Av)	78.22	*	-
	48 (5240MHz)	Vertical	5240 (Pk)	89.64	*	-
			5240 (Av)	79.26	*	-
		Horizontal	5240 (Pk)	85.37	*	-
			5240 (Av)	78.37	*	-
5725-5850 (UNII - 3)	149 (5745MHz)	Vertical	5715 (Pk)	43.85	68.23	-24.38
			5725 (Pk)	58.32	78.23	-19.91
			5745 (Pk)	93.82	*	-
			5745 (Av)	84.28	*	-
		Horizontal	5715 (Pk)	38.29	68.23	-29.94
			5725 (Pk)	48.82	78.23	-29.41
			5745 (Pk)	85.27	*	-
			5745 (Av)	78.56	*	-
	157 (5785MHz)	Vertical	5785 (Pk)	93.85	*	-
			5785 (Av)	84.27	*	-
		Horizontal	5785 (Pk)	85.83	*	-
			5785 (Av)	77.29	*	-
	165 (5825MHz)	Vertical	5825 (Pk)	92.04	*	-
			5825 (Av)	83.84	*	-
			5850 (Pk)	41.51	78.23	-36.72
			5860 (Pk)	29.41	68.23	-38.82
		Horizontal	5825 (Pk)	83.96	*	-
			5825 (Av)	75.22	*	-
			5850 (Pk)	38.86	78.23	-39.37
			5860 (Pk)		68.23	-68.23

IEEE 802.11n Mode 20MHz, Data Rate -> MCS0, External Antenna						
Frequency Bands	**Ch No./ Frequency**	**Polarization**	**Frequency (MHz)**	**Field Strength (dBµV/m)**	**Limit (dBµV/m)**	**Margin (dB)**
5150-5250 (UNII -1)	36 (5180MHz)	Vertical	5150 (Pk)	39.11	74	-34.89
			5150 (Av)	27.31	54	-26.69
			5180 (Pk)	90.38	*	-
			5180 (Av)	83.45	*	-
		Horizontal	5150 (Pk)	37.23	74	-36.77
			5150 (Av)	26.12	54	-27.88
			5180 (Pk)	80.61	*	-
			5180 (Av)	73.33	*	-
	40 (5200MHz)	Vertical	5200 (Pk)	90.37	*	-
			5200 (Av)	83.82	*	-
		Horizontal	5200 (Pk)	80.26	*	-
			5200 (Av)	74.28	*	-
	48 (5240MHz)	Vertical	5240 (Pk)	90.28	*	-
			5240 (Av)	83.72	*	-
		Horizontal	5240 (Pk)	80.7	*	-
			5240 (Av)	73.28	*	-
5725-5850 (UNII - 3)	149 (5745MHz)	Vertical	5715 (Pk)	43.92	68.23	-24.31
			5725 (Pk)	60.42	78.23	-17.81
			5745 (Pk)	93.25	*	-
			5745 (Av)	86.09	*	-
		Horizontal	5715 (Pk)	30.65	68.23	-37.58
			5725 (Pk)	52.78	78.23	-25.45
			5745 (Pk)	84.24	*	-
			5745 (Av)	76.71	*	-
	157 (5785MHz)	Vertical	5785 (Pk)	90.36	*	-
			5785 (Av)	83.68	*	-
		Horizontal	5785 (Pk)	81.37	*	-
			5785 (Av)	74.29	*	-
	165 (5825MHz)	Vertical	5825 (Pk)	90.66	*	-
			5825 (Av)	83.84	*	-
			5850 (Pk)	44.83	78.23	-33.4
			5860 (Pk)	39.27	68.23	-28.96
		Horizontal	5825 (Pk)	81.29	*	-
			5825 (Av)	74.25	*	-
			5850 (Pk)	38.53	78.23	-39.7
			5860 (Pk)	39.68	68.23	-28.55

IEEE 802.11n Mode 20MHz, Data Rate -> MCS7, External Antenna						
Frequency Bands	**Ch No./ Frequency**	**Polarization**	**Frequency (MHz)**	**Field Strength (dBµV/m)**	**Limit (dBµV/m)**	**Margin (dB)**
5150-5250 (UNII -1)	36 (5180MHz)	Vertical	5150 (Pk)	39.88	74	-34.12
			5150 (Av)	27.54	54	-26.46
			5180 (Pk)	90.15	*	-
			5180 (Av)	82.7	*	-
		Horizontal	5150 (Pk)	37.81	74	-36.19
			5150 (Av)	26.03	54	-27.97
			5180 (Pk)	81.32	*	-
			5180 (Av)	73.81	*	-
	40 (5200MHz)	Vertical	5200 (Pk)	90.36	*	-
			5200 (Av)	82.45	*	-
		Horizontal	5200 (Pk)	81.38	*	-
			5200 (Av)	73.85	*	-
	48 (5240MHz)	Vertical	5240 (Pk)	90.28	*	-
			5240 (Av)	83.58	*	-
		Horizontal	5240 (Pk)	81.36	*	-
			5240 (Av)	74.27	*	-
5725-5850 (UNII - 3)	149 (5745MHz)	Vertical	5715 (Pk)	43.28	68.23	21.69
			5725 (Pk)	60.75	78.23	4.24
			5745 (Pk)	93.56	*	-
			5745 (Av)	85.38	*	-
		Horizontal	5715 (Pk)	30.84	68.23	-37.39
			5725 (Pk)	51.73	78.23	-26.5
			5745 (Pk)	85.27	*	-
			5745 (Av)	76.38	*	-
	157 (5785MHz)	Vertical	5785 (Pk)	89.72	*	-
			5785 (Av)	82.48	*	-
		Horizontal	5785 (Pk)	80.62	*	-
			5785 (Av)	73.75	*	-
	165 (5825MHz)	Vertical	5825 (Pk)	89.92	*	-
			5825 (Av)	82.47	*	-
			5850 (Pk)	43.82	78.23	-34.41
			5860 (Pk)	39.63	68.23	-28.6
		Horizontal	5825 (Pk)	80.43	*	-
			5825 (Av)	73.28	*	-
			5850 (Pk)	37.82	78.23	-40.41
			5860 (Pk)	40.27	68.23	-27.96

IEEE 802.11n Mode 20MHz, Data Rate -> MCS15, External Antenna						
Frequency Bands	**Ch No./ Frequency**	**Polarization**	**Frequency (MHz)**	**Field Strength (dBµV/m)**	**Limit (dBµV/m)**	**Margin (dB)**
5150-5250 (UNII -1)	36 (5180MHz)	Vertical	5150 (Pk)	40.36	74	-33.64
			5150 (Av)	28.28	54	-25.72
			5180 (Pk)	90.73	*	-
			5180 (Av)	83.61	*	-
		Horizontal	5150 (Pk)	37.7	74	-36.3
			5150 (Av)	26.33	54	-27.67
			5180 (Pk)	81.89	*	-
			5180 (Av)	74.84	*	-
	40 (5200MHz)	Vertical	5200 (Pk)	90.26	*	-
			5200 (Av)	83.17	*	-
		Horizontal	5200 (Pk)	81.73	*	-
			5200 (Av)	74.27	*	-
	48 (5240MHz)	Vertical	5240 (Pk)	90.52	*	-
			5240 (Av)	83.82	*	-
		Horizontal	5240 (Pk)	80.32	*	-
			5240 (Av)	74.27	*	-
5725-5850 (UNII - 3)	149 (5745MHz)	Vertical	5715 (Pk)	43.23	68.23	23.89
			5725 (Pk)	29.6	78.23	6.74
			5745 (Pk)	92.77	*	-
			5745 (Av)	85.66	*	-
		Horizontal	5715 (Pk)	38.4	68.23	-29.83
			5725 (Pk)	50.91	78.23	-27.32
			5745 (Pk)	83.19	*	-
			5745 (Av)	76.25	*	-
	157 (5785MHz)	Vertical	5785 (Pk)	92.74	*	-
			5785 (Av)	85.38	*	-
		Horizontal	5785 (Pk)	83.28	*	-
			5785 (Av)	76.28	*	-
	165 (5825MHz)	Vertical	5825 (Pk)	92.12	*	-
			5825 (Av)	84.97	*	-
			5850 (Pk)	46.58	78.23	-31.65
			5860 (Pk)	40.56	68.23	-27.67
		Horizontal	5825 (Pk)	82.78	*	-
			5825 (Av)	76.4	*	-
			5850 (Pk)	40.35	78.23	-37.88
			5860 (Pk)	39.08	68.23	-29.15

IEEE802.11n Mode 40MHz, Data Rate -> MSC0, External Antenna						
Frequency Bands	**Ch No./ Frequency**	**Polarization**	**Frequency (MHz)**	**Field Strength (dBµV/m)**	**Limit (dBµV/m)**	**Margin (dB)**
5150-5250 (UNII -1)	38 (5190MHz)	Vertical	5150 (Pk)	45.59	74	-28.41
			5150 (Av)	33.24	54	-20.76
			5190 (Pk)	86.57	*	-
			5190 (Av)	79.28	*	-
		Horizontal	5150 (Pk)	40.29	74	-33.71
			5150 (Av)	27.6	54	-26.4
			5190 (Pk)	78.13	*	-
			5190 (Av)	70.43	*	-
	46 (5230MHz)	Vertical	5230 (Pk)	86.27	*	-
			5230 (Av)	79.37	*	-
		Horizontal	5230 (Pk)	78.29	*	-
			5230 (Av)	70.25	*	-
5725-5850 (UNII - 3)	151 (5755MHz)	Vertical	5715 (Pk)	53.78	68.23	-14.45
			5725 (Pk)	62.41	78.23	-15.82
			5755 (Pk)	90.12	*	-
			5755 (Av)	82.72	*	-
		Horizontal	5715 (Pk)	46.89	68.23	-21.34
			5725 (Pk)	55.17	78.23	-23.06
			5755 (Pk)	81.74	*	-
			5755 (Av)	74.22	*	-
	159 (5795MHz)	Vertical	5795 (Pk)	90.45	*	-
			5795 (Av)	82.63	*	-
			5850 (Pk)	40.29	78.23	-37.94
			5860 (Pk)	41.83	68.23	-26.4
		Horizontal	5795 (Pk)	79.22	*	-
			5795 (Av)	71.65	*	-
			5850 (Pk)	39.16	78.23	-39.07
			5860 (Pk)	38.65	68.23	-29.58

IEEE802.11n Mode 40MHz, Data Rate -> MSC7, External Antenna						
Frequency Bands	**Ch No./ Frequency**	**Polarization**	**Frequency (MHz)**	**Field Strength (dBµV/m)**	**Limit (dBµV/m)**	**Margin (dB)**
5150-5250 (UNII -1)	38 (5190MHz)	Vertical	5150 (Pk)	50.84	74	-23.16
			5150 (Av)	36.87	54	-17.13
			5190 (Pk)	88.4	*	-
			5190 (Av)	81.05	*	-
		Horizontal	5150 (Pk)	43.02	74	-30.98
			5150 (Av)	29.94	54	-24.06
			5190 (Pk)	79.86	*	-
			5190 (Av)	70.7	*	-
	46 (5230MHz)	Vertical	5230 (Pk)	49.73	*	-
			5230 (Av)	35.28	*	-
		Horizontal	5230 (Pk)	78.93	*	-
			5230 (Av)	70.01	*	-
5725-5850 (UNII - 3)	151 (5755MHz)	Vertical	5715 (Pk)	57.05	68.23	-11.18
			5725 (Pk)	62.3	78.23	-15.93
			5755 (Pk)	90.84	*	-
			5755 (Av)	82.52	*	-
		Horizontal	5715 (Pk)	48.91	68.23	-19.32
			5725 (Pk)	53.86	78.23	-24.37
			5755 (Pk)	81.63	*	-
			5755 (Av)	73.82	*	-
	159 (5795MHz)	Vertical	5795 (Pk)	89.46	*	-
			5795 (Av)	81.81	*	-
			5850 (Pk)	39.4	78.23	-38.83
			5860 (Pk)	40.02	68.23	-28.21
		Horizontal	5795 (Pk)	79.52	*	-
			5795 (Av)	71.61	*	-
			5850 (Pk)	39.77	78.23	-38.46
			5860 (Pk)	38.73	68.23	-29.5

IEEE802.11n Mode 40MHz, Data Rate -> MSC15, External Antenna						
Frequency Bands	**Ch No./ Frequency**	**Polarization**	**Frequency (MHz)**	**Field Strength (dBµV/m)**	**Limit (dBµV/m)**	**Margin (dB)**
5150-5250 (UNII -1)	38 (5190MHz)	Vertical	5150 (Pk)	54.56	74	-19.44
			5150 (Av)	43.48	54	-10.52
			5190 (Pk)	87.84	*	-
			5190 (Av)	80.1	*	-
		Horizontal	5150 (Pk)	46.34	74	-27.66
			5150 (Av)	35.39	54	-18.61
			5190 (Pk)	78.94	*	-
			5190 (Av)	70.63	*	-
	46 (5230MHz)	Vertical	5230 (Pk)	87.46	*	-
			5230 (Av)	80.24	*	-
		Horizontal	5230 (Pk)	78.01	*	-
			5230 (Av)	70.63	*	-
5725-5850 (UNII - 3)	151 (5755MHz)	Vertical	5715 (Pk)	88.12	68.23	19.89
			5725 (Pk)	80.01	78.23	1.78
			5755 (Pk)	41.23	*	-
			5755 (Av)	38.92	*	-
		Horizontal	5715 (Pk)	79.26	68.23	11.03
			5725 (Pk)	70.53	78.23	-7.7
			5755 (Pk)	39.28	*	-
			5755 (Av)	38.12	*	-
	159 (5795MHz)	Vertical	5795 (Pk)	88.08	*	-
			5795 (Av)	80.28	*	-
			5850 (Pk)	42.4	78.23	-35.83
			5860 (Pk)	39.31	68.23	-28.92
		Horizontal	5795 (Pk)	79.08	*	-
			5795 (Av)	71.23	*	-
			5850 (Pk)	39.66	78.23	-38.57
			5860 (Pk)	38.53	68.23	-29.7

IEEE 802.11a Mode 20MHz, Data Rate ->6Mbps, Internal Antenna						
Frequency Bands	**Ch No./ Frequency**	**Polarization**	**Frequency (MHz)**	**Field Strength (dBµV/m)**	**Limit (dBµV/m)**	**Margin (dB)**
5150-5250 (UNII -1)	36 (5180MHz)	Vertical	5150 (Pk)	38.52	74	-35.48
			5150 (Av)	26.67	54	-27.33
			5180 (Pk)	90.95	*	-
			5180 (Av)	83.16	*	-
		Horizontal	5150 (Pk)	37.74	74	-36.26
			5150 (Av)	26.86	54	-27.14
			5180 (Pk)	89.52	*	-
			5180 (Av)	81.86	*	-
	40 (5200MHz)	Vertical	5200 (Pk)	90.26	*	-
			5200 (Av)	83.03	*	-
		Horizontal	5200 (Pk)	88.38	*	-
			5200 (Av)	82.75	*	-
	48 (5240MHz)	Vertical	5240 (Pk)	89.36	*	-
			5240 (Av)	82.84	*	-
		Horizontal	5240 (Pk)	88.23	*	-
			5240 (Av)	82.84	*	-
5725-5850 (UNII - 3)	149 (5745MHz)	Vertical	5715 (Pk)	40.74	68.23	-27.49
			5725 (Pk)	46.12	78.23	-32.11
			5745 (Pk)	89.25	*	-
			5745 (Av)	82.37	*	-
		Horizontal	5715 (Pk)	40.48	68.23	-27.75
			5725 (Pk)	46.25	78.23	-31.98
			5745 (Pk)	88.72	*	-
			5745 (Av)	82.56	*	-
	157 (5785MHz)	Vertical	5785 (Pk)	89.53	*	-
			5785 (Av)	82.46	*	-
		Horizontal	5785 (Pk)	88.28	*	-
			5785 (Av)	82.47	*	-
	165 (5825MHz)	Vertical	5825 (Pk)	91.35	*	-
			5825 (Av)	82.64	*	-
			5850 (Pk)	40.86	78.23	-37.37
			5860 (Pk)	39.26	68.23	-28.97
		Horizontal	5825 (Pk)	89.46	*	-
			5825 (Av)	82.65	*	-
			5850 (Pk)	40.71	78.23	-37.52
			5860 (Pk)	38.44	68.23	-29.79

EEE 802.11a Mode 20MHz,Data Rate -> 24Mbps, Internal Antenna						
Frequency Bands	**Ch No./ Frequency**	**Polarization**	**Frequency (MHz)**	**Field Strength (dBµV/m)**	**Limit (dBµV/m)**	**Margin (dB)**
5150-5250 (UNII -1)	36 (5180MHz)	Vertical	5150 (Pk)	38.17	74	-35.83
			5150 (Av)	26.1	54	-27.9
			5180 (Pk)	91.2	*	-
			5180 (Av)	83.26	*	-
		Horizontal	5150 (Pk)	37.26	74	-36.74
			5150 (Av)	26.83	54	-27.17
			5180 (Pk)	89.82	*	-
			5180 (Av)	81.26	*	-
	40 (5200MHz)	Vertical	5200 (Pk)	90.35	*	-
			5200 (Av)	83.74	*	-
		Horizontal	5200 (Pk)	88.25	*	-
			5200 (Av)	82.49	*	-
	48 (5240MHz)	Vertical	5240 (Pk)	89.53	*	-
			5240 (Av)	82.74	*	-
		Horizontal	5240 (Pk)	88.26	*	-
			5240 (Av)	81.27	*	-
5725-5850 (UNII - 3)	149 (5745MHz)	Vertical	5715 (Pk)	40.27	68.23	23.13
			5725 (Pk)	46.12	78.23	4.22
			5745 (Pk)	89.28	*	-
			5745 (Av)	82.46	*	-
		Horizontal	5715 (Pk)	40.26	68.23	-27.97
			5725 (Pk)	46.81	78.23	-31.42
			5745 (Pk)	88.28	*	-
			5745 (Av)	82.46	*	-
	157 (5785MHz)	Vertical	5785 (Pk)	89.36	*	-
			5785 (Av)	82.84	*	-
		Horizontal	5785 (Pk)	88.25	*	-
			5785 (Av)	82.46	*	-
	165 (5825MHz)	Vertical	5825 (Pk)	91.36	*	-
			5825 (Av)	82.45	*	-
			5850 (Pk)	40.28	78.23	-37.95
			5860 (Pk)	39.17	68.23	-29.06
		Horizontal	5825 (Pk)	89.65	*	-
			5825 (Av)	82.17	*	-
			5850 (Pk)	40.1	78.23	-38.13
			5860 (Pk)	38.18	68.23	-30.05

IEEE 802.11a Mode 20MHz,Data Rate -> 54Mbps, Internal Antenna						
Frequency Bands	**Ch No./ Frequency**	**Frequency (MHz)**	**Polarization**	**Field Strength (dBµV/m)**	**Limit (dBµV/m)**	**Margin (dB)**
5150-5250 (UNII -1)	36 (5180MHz)	5150 (Pk)	Vertical	38.64	74	-35.36
		5150 (Av)		26.21	54	-27.79
		5180 (Pk)		91	*	-
		5180 (Av)		83.2	*	-
		5150 (Pk)	Horizontal	37.27	74	-36.73
		5150 (Av)		26.35	54	-27.65
		5180 (Pk)		89.01	*	-
		5180 (Av)		81.25	*	-
	40 (5200MHz)	5200 (Pk)	Vertical	90.36	*	-
		5200 (Av)		83.62	*	-
		5200 (Pk)	Horizontal	88.34	*	-
		5200 (Av)		82.35	*	-
	48 (5240MHz)	5240 (Pk)	Vertical	89.26	*	-
		5240 (Av)		82.64	*	-
		5240 (Pk)	Horizontal	88.27	*	-
		5240 (Av)		82.45	*	-
5725-5850 (UNII - 3)	149 (5745MHz)	5715 (Pk)	Vertical	40.27	68.23	-27.96
		5725 (Pk)		46.28	78.23	-31.95
		5745 (Pk)		89.36	*	-
		5745 (Av)		82.35	*	-
		5715 (Pk)	Horizontal	40.26	68.23	-27.97
		5725 (Pk)		46.28	78.23	-31.95
		5745 (Pk)		88.27	*	-
		5745 (Av)		82.63	*	-
	157 (5785MHz)	5785 (Pk)	Vertical	89.25	*	-
		5785 (Av)		82.54	*	-
		5785 (Pk)	Horizontal	88.27	*	-
		5785 (Av)		82.56	*	-
	165 (5825MHz)	5825 (Pk)	Vertical	91.13	*	-
		5825 (Av)		82.38	*	-
		5850 (Pk)		40.87	78.23	-37.36
		5860 (Pk)		39.27	68.23	-28.96
		5825 (Pk)	Horizontal	89.71	*	-
		5825 (Av)		81.09	*	-
		5850 (Pk)		40.36	78.23	-37.87
		5860 (Pk)		38.08	68.23	-30.15

IEEE 802.11n Mode 20MHz, Data Rate -> MCS0, Internal Antenna						
Frequency Bands	**Ch No./ Frequency**	**Polarization**	**Frequency (MHz)**	**Field Strength (dBµV/m)**	**Limit (dBµV/m)**	**Margin (dB)**
5150-5250 (UNII -1)	36 (5180MHz)	Vertical	5150 (Pk)	38.23	74	-35.77
			5150 (Av)	27.02	54	-26.98
			5180 (Pk)	89.16	*	-
			5180 (Av)	82.53	*	-
		Horizontal	5150 (Pk)	38.52	74	-35.48
			5150 (Av)	26.95	54	-27.05
			5180 (Pk)	88.2	*	-
			10360 (Av)	-	54	-
	40 (5200MHz)	Vertical	5200 (Pk)	89.36	*	-
			5200 (Av)	82.46	*	-
		Horizontal	5200 (Pk)	88.38	*	-
			5200 (Av)	80.25	*	-
	48 (5240MHz)	Vertical	5240 (Pk)	89.25	*	-
			5240 (Av)	82.4	*	-
		Horizontal	5240 (Pk)	88.28	*	-
			5240 (Av)	80.43	*	-
5725-5850 (UNII - 3)	149 (5745MHz)	Vertical	5715 (Pk)	43.28	68.23	-24.95
			5725 (Pk)	53.23	78.23	-25
			5745 (Pk)	89.27	*	-
			5745 (Av)	82.34	*	-
		Horizontal	5715 (Pk)	33.46	68.23	-34.77
			5725 (Pk)	45.27	78.23	-32.96
			5745 (Pk)	88.26	*	-
			5745 (Av)	82.45	*	-
	157 (5785MHz)	Vertical	5785 (Pk)	89.25	*	-
			5785 (Av)	82.45	*	-
		Horizontal	5785 (Pk)	88.25	*	-
			5785 (Av)	82.46	*	-
	165 (5825MHz)	Vertical	5825 (Pk)	89.34	*	-
			5825 (Av)	82.01	*	-
			5850 (Pk)	39.28	78.23	-38.95
			5860 (Pk)	38.18	68.23	-30.05
		Horizontal	5825 (Pk)	88.29	*	-
			5825 (Av)	81.37	*	-
			5850 (Pk)	39.02	78.23	-39.21
			5860 (Pk)	37.75	68.23	-30.48

IEEE 802.11n Mode 20MHz, Data Rate -> MCS15, Internal Antenna						
Frequency Bands	**Ch No./ Frequency**	**Frequency (MHz)**	**Polarization**	**Field Strength (dBµV/m)**	**Limit (dBµV/m)**	**Margin (dB)**
5150-5250 (UNII -1)	36 (5180MHz)	5150 (Pk)	Vertical	38.16	74	-35.84
		5150 (Av)		26.63	54	-27.37
		5180 (Pk)		89.73	*	-
		5180 (Av)		82.6	*	-
		5150 (Pk)	Horizontal	38.67	74	-35.33
		5150 (Av)		26.77	54	-27.23
		5180 (Pk)		88.05	*	-
		10360 (Av)		-	54	-
	40 (5200MHz)	5200 (Pk)	Vertical	89.36	*	-
		5200 (Av)		82.745	*	-
		5200 (Pk)	Horizontal		*	-
		5200 (Av)		88.35	*	-
	48 (5240MHz)	5240 (Pk)	Vertical	88.24	*	-
		5240 (Av)		81.38	*	-
		5240 (Pk)	Horizontal	88.38	*	-
		5240 (Av)		80.26	*	-
5725-5850 (UNII - 3)	149 (5745MHz)	5715 (Pk)	Vertical	43.82	68.23	21.5
		5725 (Pk)		52.47	78.23	4.34
		5745 (Pk)		88.82	*	-
		5745 (Av)		81.35	*	-
		5715 (Pk)	Horizontal	32.84	68.23	-35.39
		5725 (Pk)		43.28	78.23	-34.95
		5745 (Pk)		88.27	*	-
		5745 (Av)		81.92	*	-
	157 (5785MHz)	5785 (Pk)	Vertical	88.26	*	-
		5785 (Av)		81.33	*	-
		5785 (Pk)	Horizontal	87.37	*	-
		5785 (Av)		82.46	*	-
	165 (5825MHz)	5825 (Pk)	Vertical	89.73	*	-
		5825 (Av)		82.57	*	-
		5850 (Pk)		39.56	78.23	-38.67
		5860 (Pk)		38.44	68.23	-29.79
		5825 (Pk)	Horizontal	88.27	*	-
		5825 (Av)		79.63	*	-
		5850 (Pk)		38.94	78.23	-39.29
		5860 (Pk)		37.26	68.23	-30.97

IEEE 802.11n Mode 20MHz, Data Rate -> MCS7, Internal Antenna						
Frequency Bands	**Ch No./ Frequency**	**Polarization**	**Frequency (MHz)**	**Field Strength (dBµV/m)**	**Limit (dBµV/m)**	**Margin (dB)**
5150-5250 (UNII -1)	36 (5180MHz)	Vertical	5150 (Pk)	38.56	74	-35.44
			5150 (Av)	27.29	54	-26.71
			5180 (Pk)	89.47	*	-
			5180 (Av)	82.46	*	-
		Horizontal	5150 (Pk)	38.28	74	-35.72
			5150 (Av)	26.55	54	-27.45
			5180 (Pk)	88.28	*	-
	40 (5200MHz)	Vertical	5200 (Pk)	89.35	*	-
			5200 (Av)	82.46	*	-
		Horizontal	5200 (Pk)	88.36	*	-
			5200 (Av)	80.25	*	-
	48 (5240MHz)	Vertical	5240 (Pk)	89.26	*	-
			5240 (Av)	82.46	*	-
		Horizontal	5240 (Pk)	88.47	*	-
			5240 (Av)	80.25	*	-
5725-5850 (UNII - 3)	149 (5745MHz)	Vertical	5715 (Pk)	43.27	68.23	21.02
			5725 (Pk)	52.36	78.23	4.15
			5745 (Pk)	88.26	*	-
			5745 (Av)	81.38	*	-
		Horizontal	5715 (Pk)	33.82	68.23	-34.41
			5725 (Pk)	44.27	78.23	-33.96
			5745 (Pk)	88.27	*	-
			5745 (Av)	81.74	*	-
	157 (5785MHz)	Vertical	5785 (Pk)	88.25	*	-
			5785 (Av)	82.46	*	-
		Horizontal	5785 (Pk)	99.27	*	-
			5785 (Av)	81.76	*	-
	165 (5825MHz)	Vertical	5825 (Pk)	89.25	*	-
			5825 (Av)	82.38	*	-
			5850 (Pk)	39.46	78.23	-38.77
			5860 (Pk)	38.56	68.23	-29.67
		Horizontal	5825 (Pk)	88.46	*	-
			5825 (Av)	80.73	*	-
			5850 (Pk)	38.55	78.23	-39.68
			5860 (Pk)	37.75	68.23	-30.48

IEEE802.11n Mode 40MHz, Data Rate -> MSC0, Internal Antenna						
Frequency Bands	**Ch No./ Frequency**	**Polarization**	**Frequency (MHz)**	**Field Strength (dBµV/m)**	**Limit (dBµV/m)**	**Margin (dB)**
5150-5250 (UNII -1)	38 (5190MHz)	Vertical	5150 (Pk)	46.87	74	-27.13
			5150 (Av)	34.36	54	-19.64
			5190 (Pk)	88.12	*	-
			5190 (Av)	80.64	*	-
		Horizontal	5150 (Pk)	43.39	74	-30.61
			5150 (Av)	30.78	54	-23.22
			5190 (Pk)	84.86	*	-
			5190 (Av)	77.93	*	-
	46 (5230MHz)	Vertical	5230 (Pk)	88.29	*	-
			5230 (Av)	80.16	*	-
		Horizontal	5230 (Pk)	83.47	*	-
			5230 (Av)	77.82	*	-
5725-5850 (UNII - 3)	151 (5755MHz)	Vertical	5715 (Pk)	50.32	68.23	-17.91
			5725 (Pk)	58.25	78.23	-19.98
			5755 (Pk)	88.25	*	-
			5755 (Av)	80.46	*	-
		Horizontal	5715 (Pk)	45.89	68.23	-22.34
			5725 (Pk)	54.27	78.23	-23.96
			5755 (Pk)	88.27	*	-
			5755 (Av)	82.47	*	-
	159 (5795MHz)	Vertical	5795 (Pk)	88.82	*	-
			5795 (Av)	82.63	*	-
			5850 (Pk)	38.27	78.23	-39.96
			5860 (Pk)	39.56	68.23	-28.67
		Horizontal	5795 (Pk)	88.27	*	-
			5795 (Av)	82.46	*	-
			5850 (Pk)	37.75	78.23	-40.48
			5860 (Pk)	36.58	68.23	-31.65

IEEE802.11n Mode 40MHz, Data Rate -> MSC7, Internal Antenna						
Frequency Bands	**Ch No./ Frequency**	**Polarization**	**Frequency (MHz)**	**Field Strength (dBµV/m)**	**Limit (dBµV/m)**	**Margin (dB)**
5150-5250 (UNII -1)	38 (5190MHz)	Vertical	5150 (Pk)	46.92	74	-27.08
			5150 (Av)	34.28	54	-19.72
			5190 (Pk)	89.02	*	-
			5190 (Av)	81.2	*	-
		Horizontal	5150 (Pk)	43.92	74	-30.08
			5150 (Av)	30.18	54	-23.82
			5190 (Pk)	84.28	*	-
			5190 (Av)	78.19	*	-
	46 (5230MHz)	Vertical	5230 (Pk)	88.1	*	-
			5230 (Av)	80.36	*	-
		Horizontal	5230 (Pk)	83.28	*	-
			5230 (Av)	77.37	*	-
5725-5850 (UNII - 3)	151 (5755MHz)	Vertical	5715 (Pk)	49.27	68.23	-18.96
			5725 (Pk)	58.22	78.23	-20.01
			5755 (Pk)	88.48	*	-
			5755 (Av)	79.93	*	-
		Horizontal	5715 (Pk)	44.83	68.23	-23.4
			5725 (Pk)	53.84	78.23	-24.39
			5755 (Pk)	88.73	*	-
			5755 (Av)	81.93	*	-
	159 (5795MHz)	Vertical	5795 (Pk)	88.02	*	-
			5795 (Av)	81.28	*	-
			5850 (Pk)	38.28	78.23	-39.95
			5860 (Pk)	39.26	68.23	-28.97
		Horizontal	5795 (Pk)	87.28	*	-
			5795 (Av)	81.82	*	-
			5850 (Pk)	37.12	78.23	-41.11
			5860 (Pk)	36.82	68.23	-31.41

IEEE802.11n Mode 40MHz, Data Rate -> MSC15, Internal Antenna						
Frequency Bands	**Ch No./ Frequency**	**Frequency (MHz)**	**Polarization**	**Field Strength (dBµV/m)**	**Limit (dBµV/m)**	**Margin (dB)**
5150-5250 (UNII -1)	38 (5190MHz)	5150 (Pk)	Vertical	46.29	74	-27.71
		5150 (Av)		34.82	54	-19.18
		5190 (Pk)		89.29	*	-
		5190 (Av)		81.35	*	-
		5150 (Pk)	Horizontal	43.28	74	-30.72
		5150 (Av)		30.72	54	-23.28
		5190 (Pk)		84.28	*	-
		5190 (Av)		78.57	*	-
	46 (5230MHz)	5230 (Pk)	Vertical	88.36	*	-
		5230 (Av)		80.56	*	-
		5230 (Pk)	Horizontal	83.27	*	-
		5230 (Av)		87.57	*	-
5725-5850 (UNII - 3)	151 (5755MHz)	5715 (Pk)	Vertical	49.28	68.23	-18.95
		5725 (Pk)		57.82	78.23	-20.41
		5755 (Pk)		89.27	*	-
		5755 (Av)		80.47	*	-
		5715 (Pk)	Horizontal	44.88	68.23	-23.35
		5725 (Pk)		54.02	78.23	-24.21
		5755 (Pk)		89.23	*	-
		5755 (Av)		82.64	*	-
	159 (5795MHz)	5795 (Pk)	Vertical	89.01	*	-
		5795 (Av)		82.74	*	-
		5850 (Pk)		38.73	78.23	-39.5
		5860 (Pk)		39.82	68.23	-28.41
		5795 (Pk)	Horizontal	88.72	*	-
		5795 (Av)		82.34	*	-
		5850 (Pk)		37.82	78.23	-40.41
		5860 (Pk)		36.04	68.23	-32.19

Note: No harmonics emissions were found.
* - -> Fundamental Frequency
P-->Peak detector
AV-->Average Detector

*****END OF TEST REPORT*****