

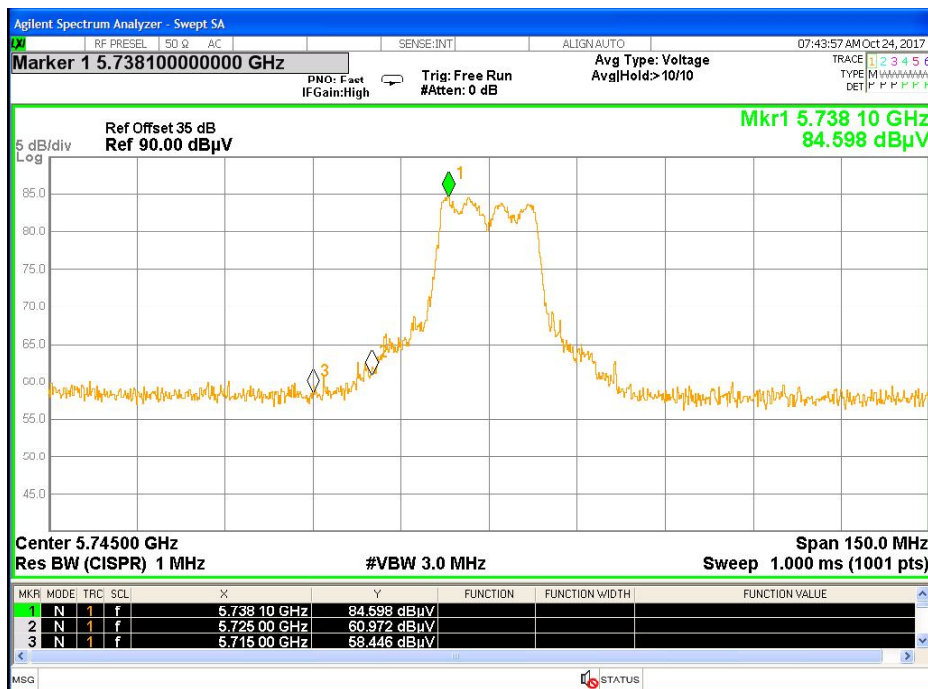


Figure 73 Band Edge, 5745 MHz at 802.11a OFDM Horizontal/Peak

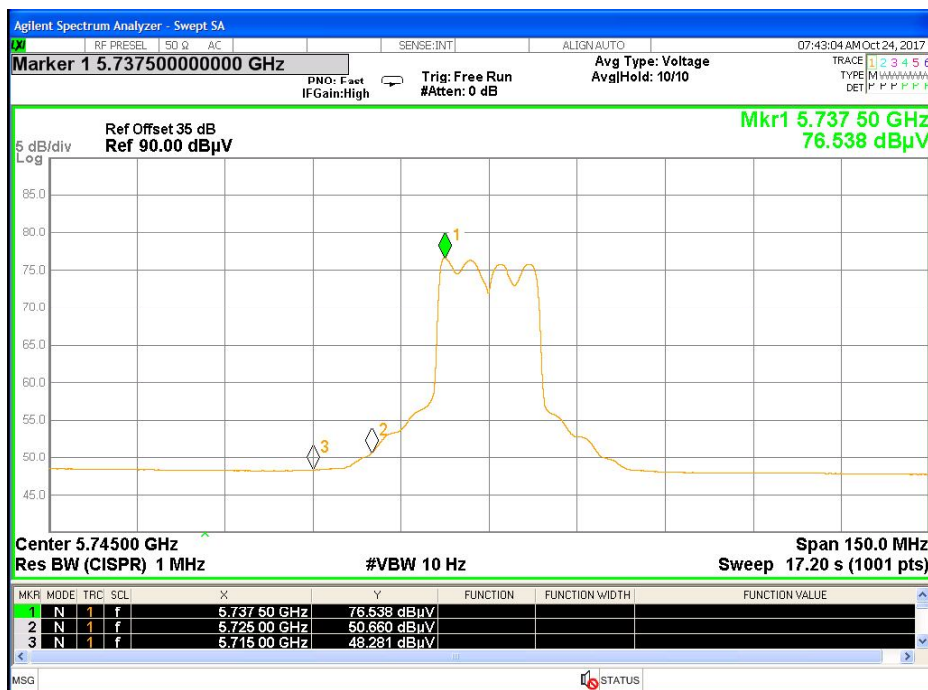


Figure 74 Band Edge, 5745 MHz at 802.11a OFDM Horizontal/Average

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Figure 75 Band Edge, 5745 MHz at 802.11n HT20 Vertical/Peak



Figure 76 Band Edge, 5745 MHz at 802.11n HT20 Vertical/Average

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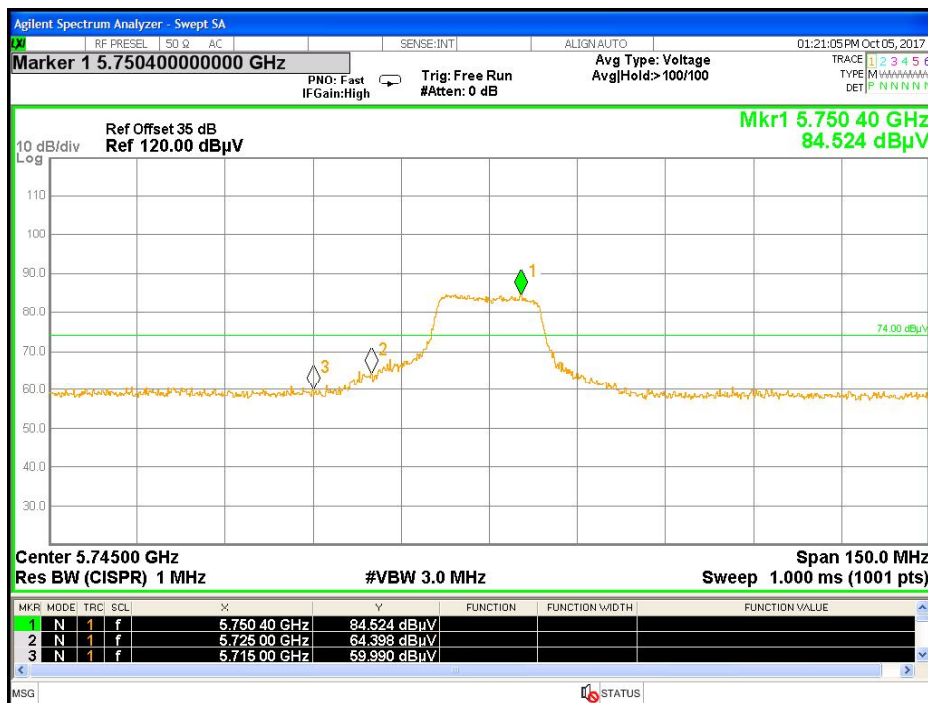


Figure 77 Band Edge, 5745 MHz at 802.11n HT20 Horizontal/Peak

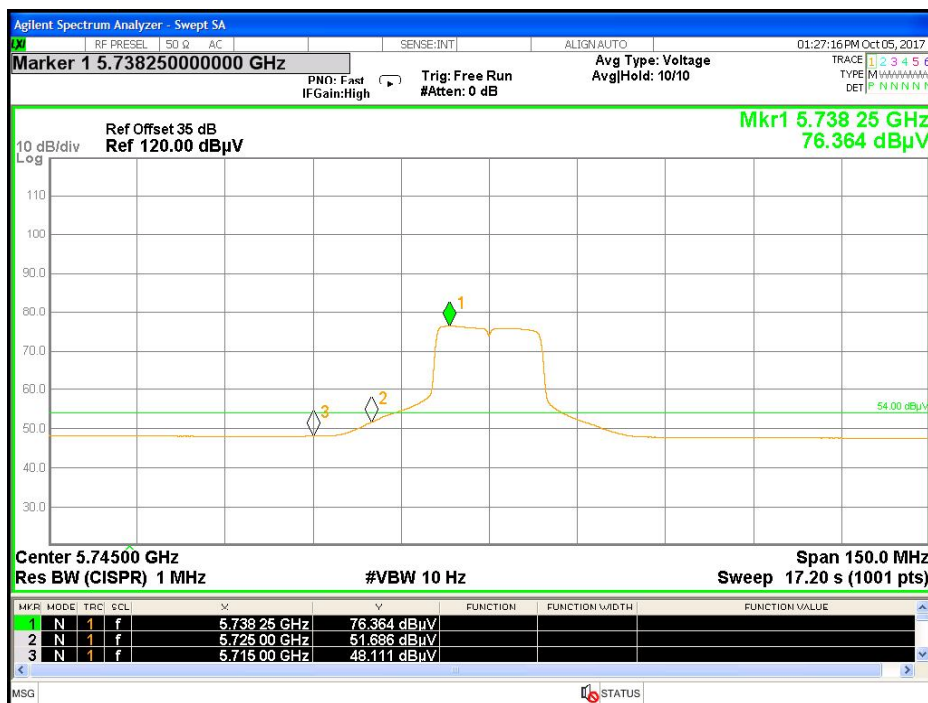


Figure 78 Band Edge, 5745 MHz at 802.11n HT20 Horizontal/Average

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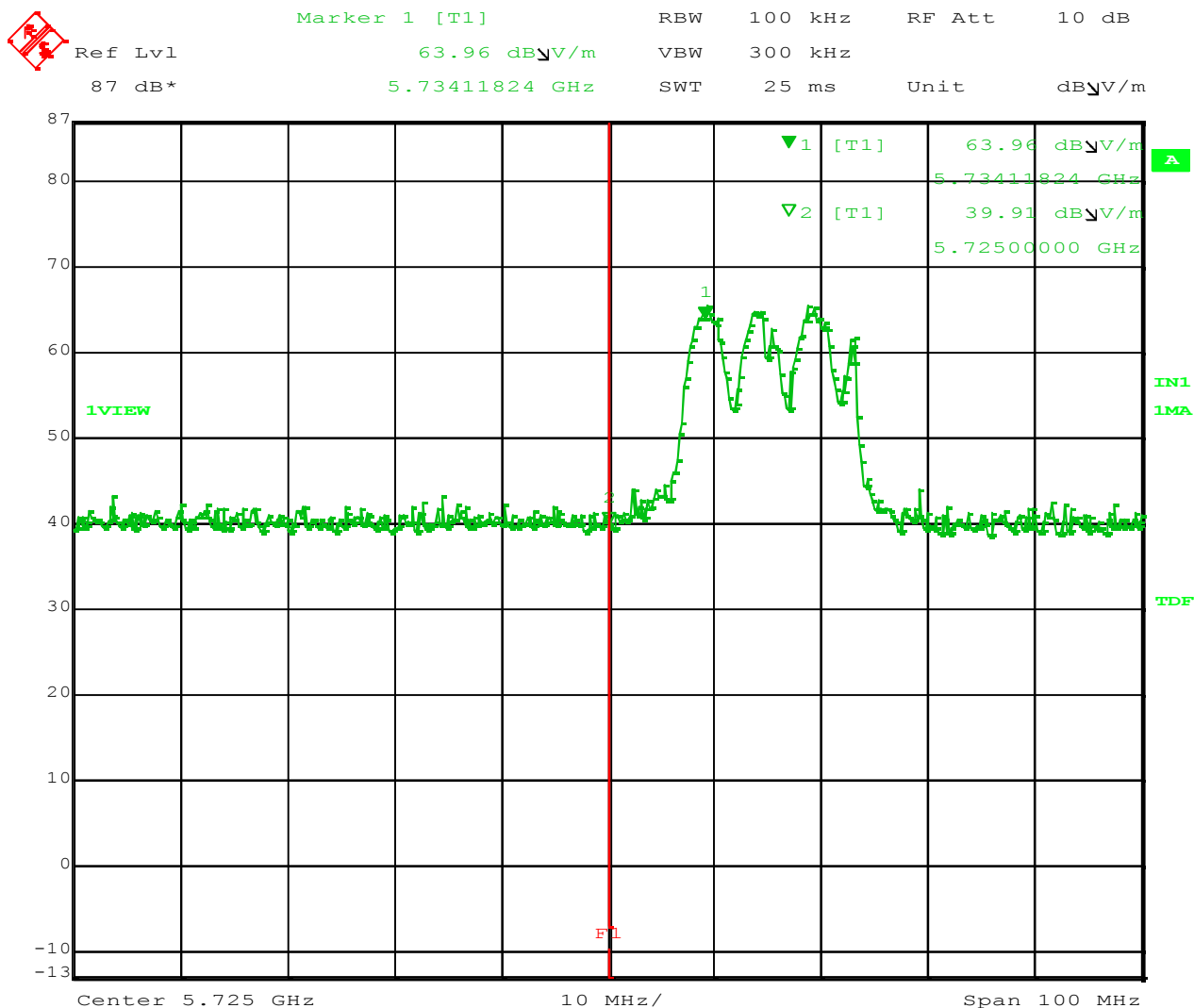
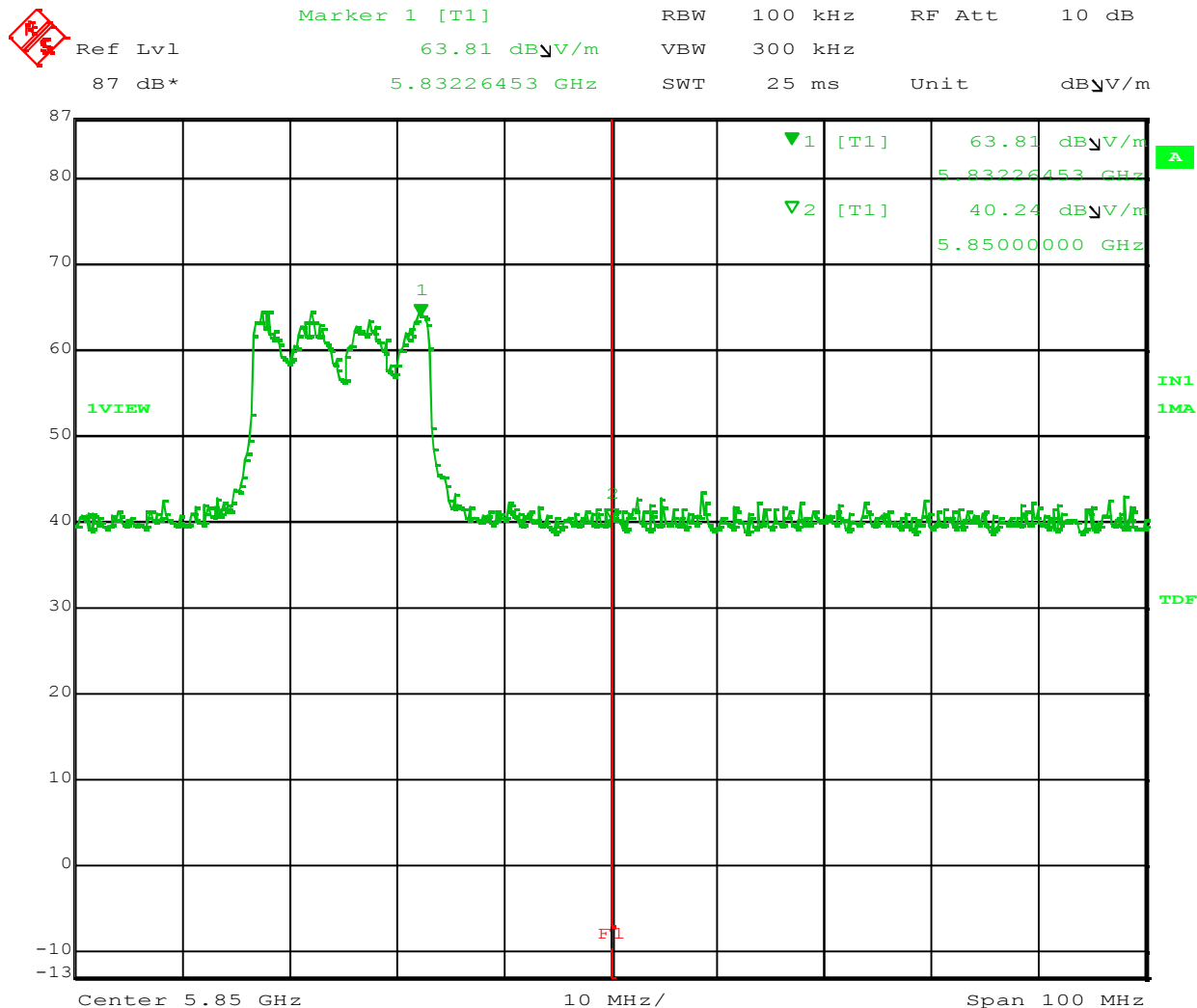


Figure 79: Lower Band Edge Measurement (Radiated Emission)

Note: Band Edge is at 5725 MHz

The EUT is compliant with the rules.

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Date: 26.OCT.2014 12:25:20

Figure 80: Upper Band Edge Measurement (Radiated Emission)

Note: Band edge (F1) at 5850

The EUT is compliant with the rules.

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5.3 Maximum Peak Output Power

For conducted power tests, the emissions were measured at the antenna port.

Testing was performed in accordance with LP0002, (23 - Aug - 2016). These test methods are listed under the laboratory's A2LA Scope of Accreditation. This test measures the levels emanating from the EUT, thus evaluating the potential for the EUT to cause radio frequency interference to other electronic devices.

For systems using digital modulation in the 5725-5850 MHz bands: below 1 Watt (Inclusive).

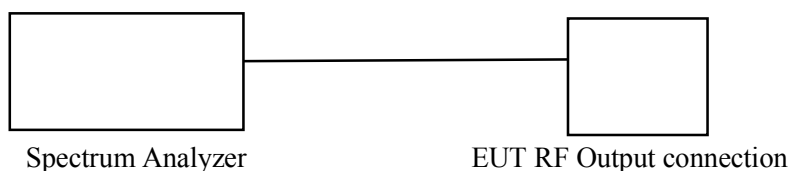
5.3.1 Test Over View

Results	Complies (as tested per this report)					Date	10/03/2017	
Standard	LP0002, 4.7.3.3 (1)							
Product Model	DRX PLUS DETECTOR RADIO				Serial#	13A32S1011361		
Test Set-up	Per LP0002, APPENDIX I							
EUT Powered By	DC	Temp	74° F	Humidity	32%	Pressure	1010mbar	
Perf. Criteria	(Below Limit)			Perf. Verification		Readings Under Limit		
Mod. to EUT	None			Test Performed By		Richard Decker		

5.3.2 Test Procedure

The EUT was using test software to allow the transmitter to transmit continuously. (Duty Cycle > 100%).

Test Setup:



Note: The output of the EUT is low enough that an external attenuator was not necessary.

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5.3.3 Deviations

There were no deviations from the test methodology.

5.3.4 Final Test

The EUT is compliant to the requirements of the standard.

5.3.5 Peak Power Output

Test Conditions: Conducted Measurement, Normal Temperature					
Ambient Temp.: 74° F			Relative Humidity:39%		
802.11a OFDM					
Operating Channel (MHz)	Limit [dBm]	Ch0 [dBm]	Ch1 [dBm]	Max Power [dBm]	Margin [dB]
5745.00	30.00	16.74	17.67	17.67	-12.33
5785.00	30.00	16.30	17.97	17.97	-12.03
5825.00	30.00	17.68	17.24	17.68	-12.32

Test Conditions: Conducted Measurement, Normal Temperature					
Ambient Temp.: 74° F			Relative Humidity:39%		
802.11n HT20 MCS0					
Operating Channel (MHz)	Limit [dBm]	Ch0 [dBm]	Ch1 [dBm]	Max Power [dBm]	Margin [dB]
5745.00	30.00	12.53	12.71	12.71	-17.29
5785.00	30.00	12.11	11.54	12.11	-17.89
5825.00	30.00	10.41	10.90	10.90	-19.10

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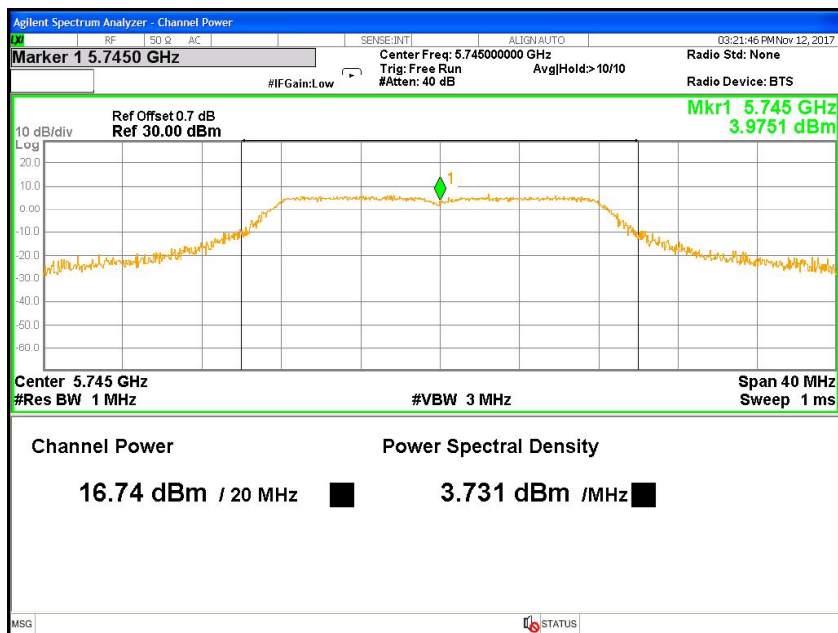


Figure 81 Conducted Power, 5745 MHz at 802.11a OFDM ch0

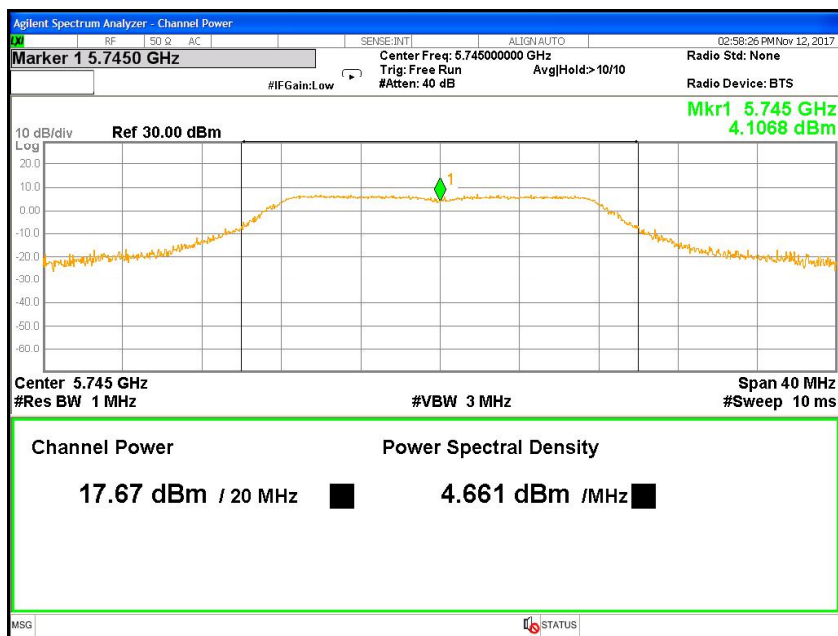


Figure 82 Conducted Power, 5745 MHz at 802.11a OFDM ch1

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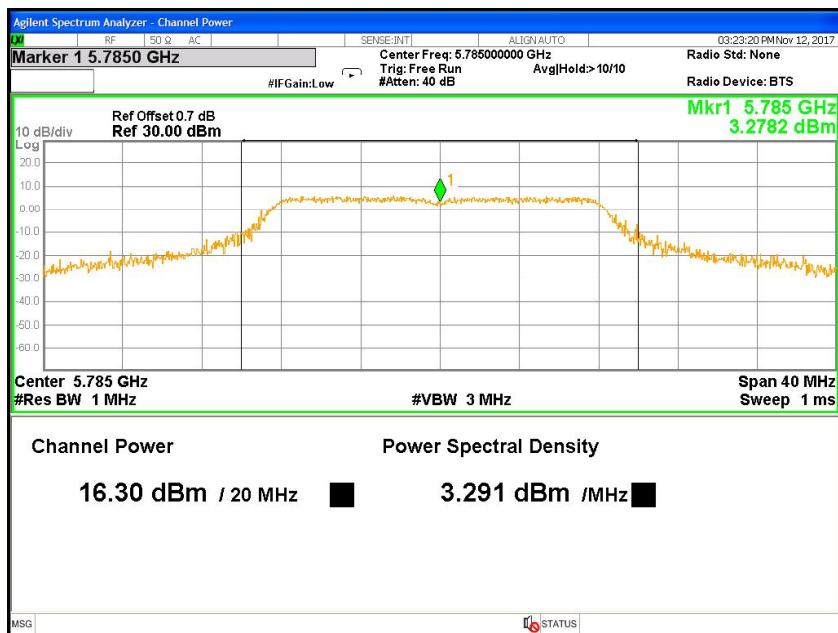


Figure 83 Conducted Power, 5785 MHz at 802.11a OFDM ch0

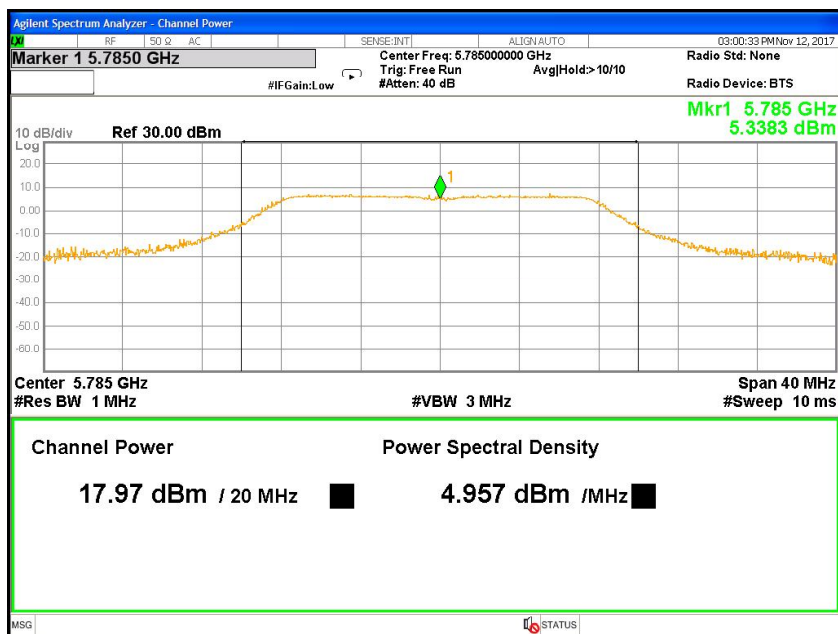


Figure 84 Conducted Power, 5785 MHz at 802.11a OFDM ch1

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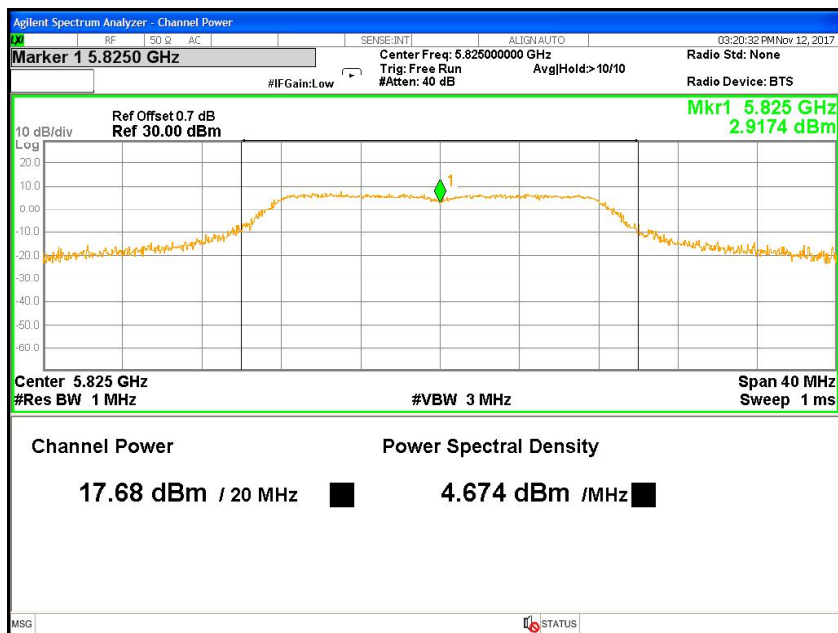


Figure 85 Conducted Power, 5825 MHz at 802.11a OFDM ch0

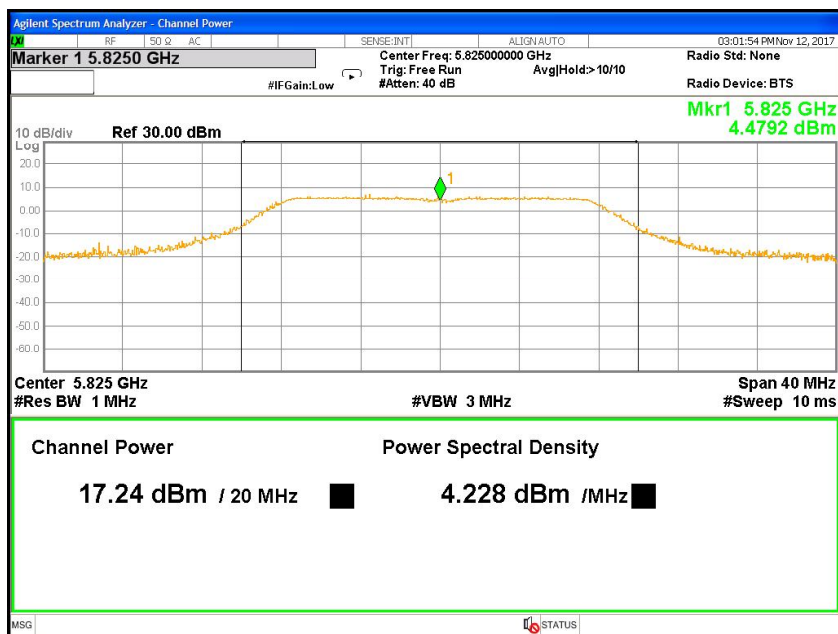


Figure 86 Conducted Power, 5825 MHz at 802.11a OFDM ch1

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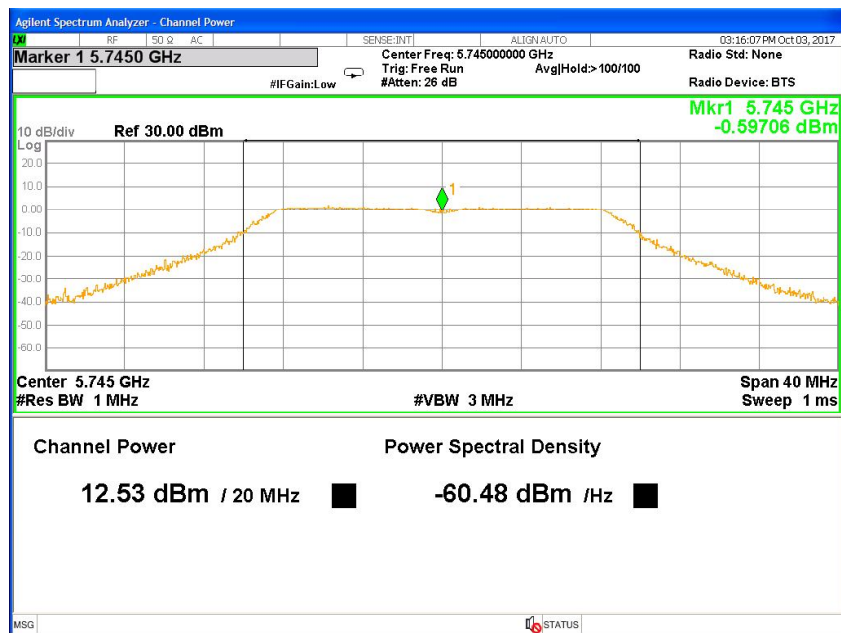


Figure 87 Conducted Power, 5745 MHz at 802.11n HT20 MCS0 ch0

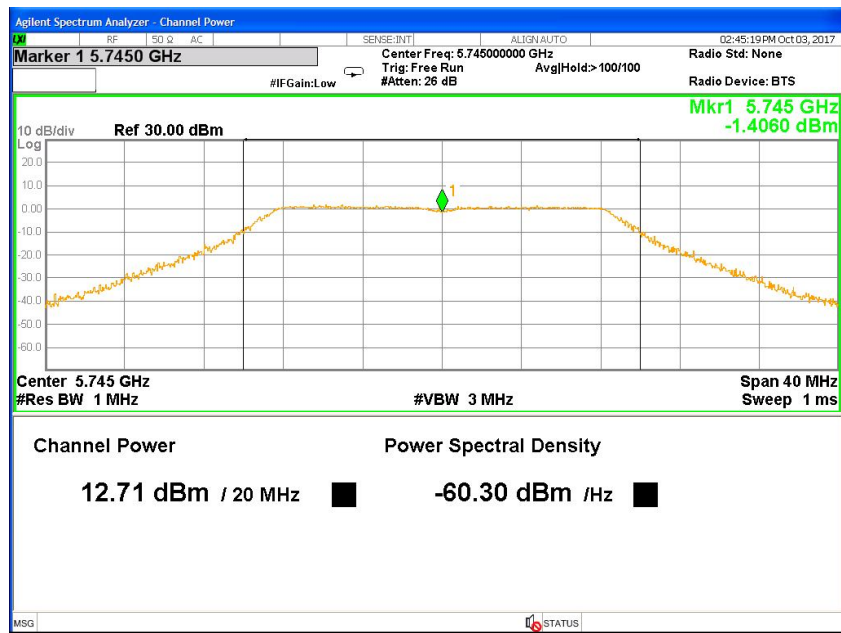


Figure 88 Conducted Power, 5745 MHz at 802.11n HT20 MCS0 ch1

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Figure 89 Conducted Power, 5785 MHz at 802.11n HT20 MCS0 ch0

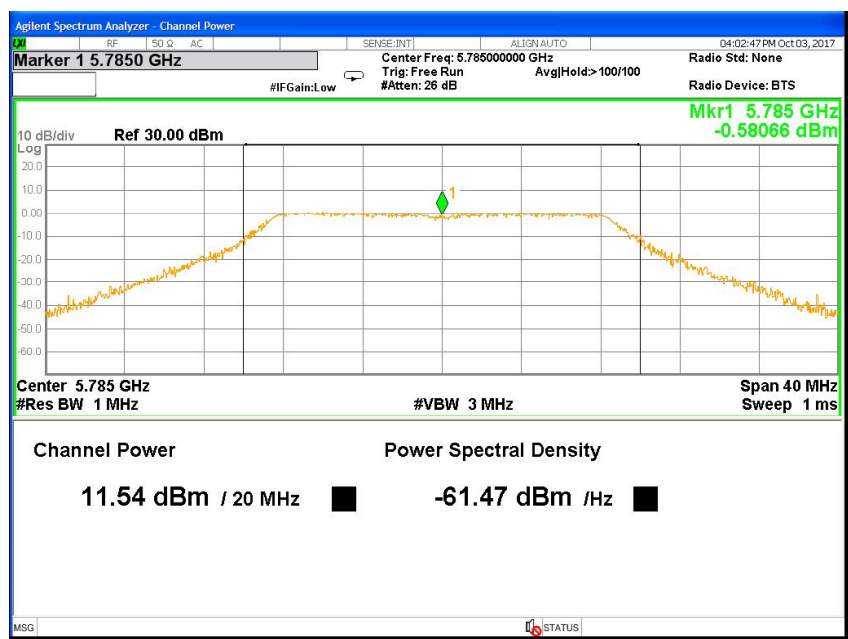


Figure 90 Conducted Power, 5785 MHz at 802.11n HT20 MCS0 ch1

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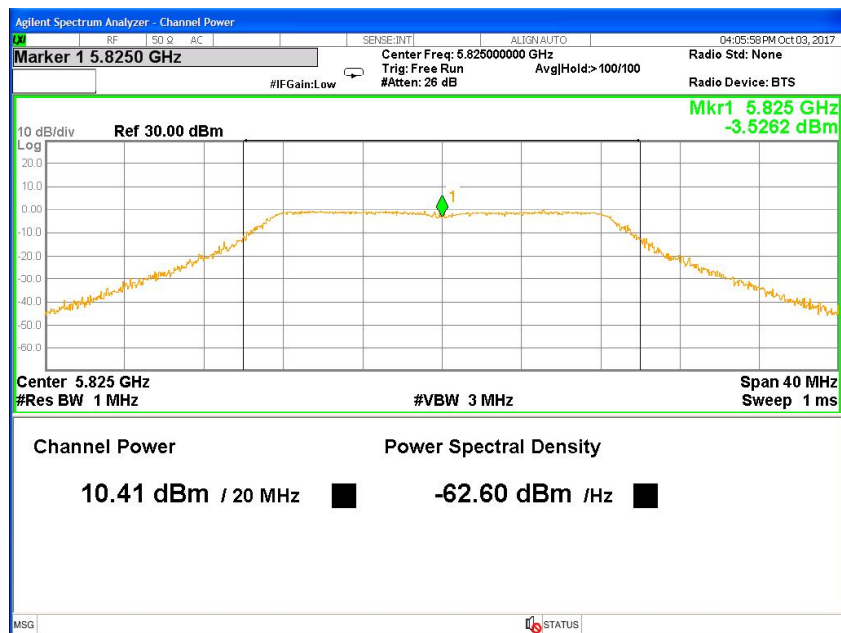


Figure 91 Conducted Power, 5825 MHz at 802.11n HT20 MCS0 ch0

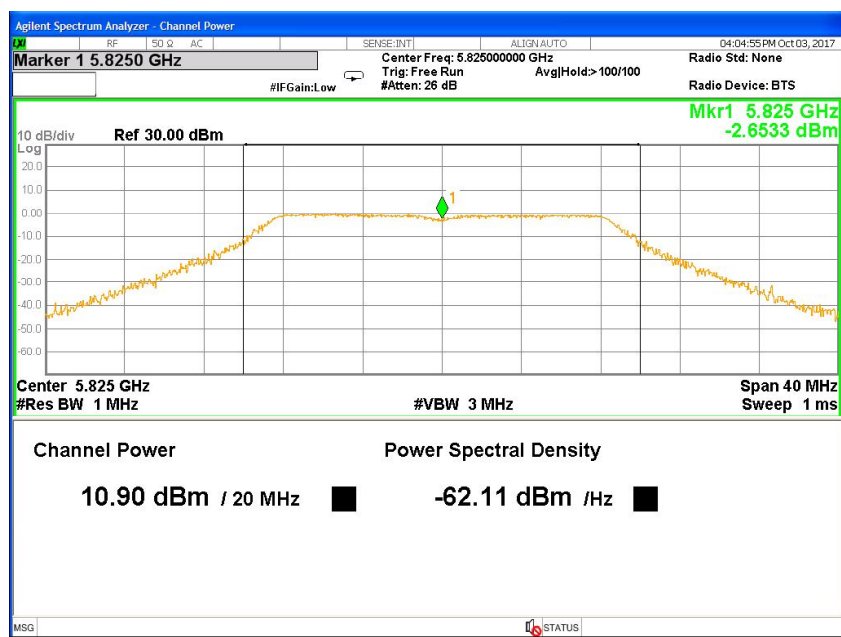


Figure 92 Conducted Power, 5825 MHz at 802.11n HT20 MCS0 ch1

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5.4 Antenna Requirements

5.4.1 Over View of Test

Results	Complies (as tested per this report)	Date	11/4/2014
Standard	LP0002, 3.10.1.3		
Product Model	DRX PLUS DETECTOR RADIO	Serial#	13A32S1011361

5.4.2 Test Procedure

The EUT was operates using only an internal printed circuit “Inverted – F” antenna.

The antennae are placed inside a Detector and are professionally installed and uses security screws.

5.4.3 Antenna Gain

The antenna used on the product is a PC Board “Inverted-F” antenna that has a measured maximum gain.

Frequency [Ghz]	2.4	2.44	2.48	5.15	5.25	5.35	5.5	5.725	5.825
Gain [dbi]	-7.2	-5.5	-8.4	-1.2	-0.8	-1.8	-2.3	-3.3	-3.5
Polarization	V	V	V	V	V	S45	S45	S45	S45
3db beamwidth Elev 1 [deg.]	140	150	150	120	120	110	110	110	110
3db beamwidth Elev 2 [deg.]	120	120	150	60	60	150	180	180	180
Impedance [ohms]	50								
VSWR	2.6:1 max								

Results

As tested, the EUT was found to be compliant to the requirements of the test standard.

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5.5 Maximum Power Spectral Density

5.5.1 Test Overview

Results	Complies (as tested per this report)					Date	10/3/2017	
Standard	LP0002, 4.7.3.3 (2)							
Product Model	DRX PLUS DETECTOR RADIO				Serial#	13A32S1011361		
Test Set-up	Per LP0002, APPENDIX I							
EUT Powered By	DC	Temp	74° F	Humidity	32%	Pressure	1010mbar	
Perf. Criteria	Below Limit (10dBm)			Perf. Verification		≤8 dBm in any 3 kHz		
Mod. to EUT	None			Test Performed By		Richard Decker		

5.5.2 Test Procedure

The EUT was using test software to allow the transmitter to transmit continuously. (Duty Cycle > 98%).

5.5.3 Deviations

None.

5.5.4 Final Test

The EUT's Power Spectral Density Measurements are below 30 dBm. It is compliant with the standard. The Power Spectral Density Measurements are shown below.

5.5.5 Final Data

Frequency MHz	Modulation	Meas ch 0 dBm	Meas ch 1 dBm	Limit dB	Margin dB
5745	OFDM	4.3	3.0	30	-25.7
5785	OFDM	3.4	4.9	30	-25.1
5825	OFDM	3.9	4.3	30	-25.7
5745	HT20	3.0	4.7	30	-25.3
5785	HT20	2.8	3.3	30	-26.7
5825	HT20	2.5	3.1	30	-26.9
Power Spectral Density					

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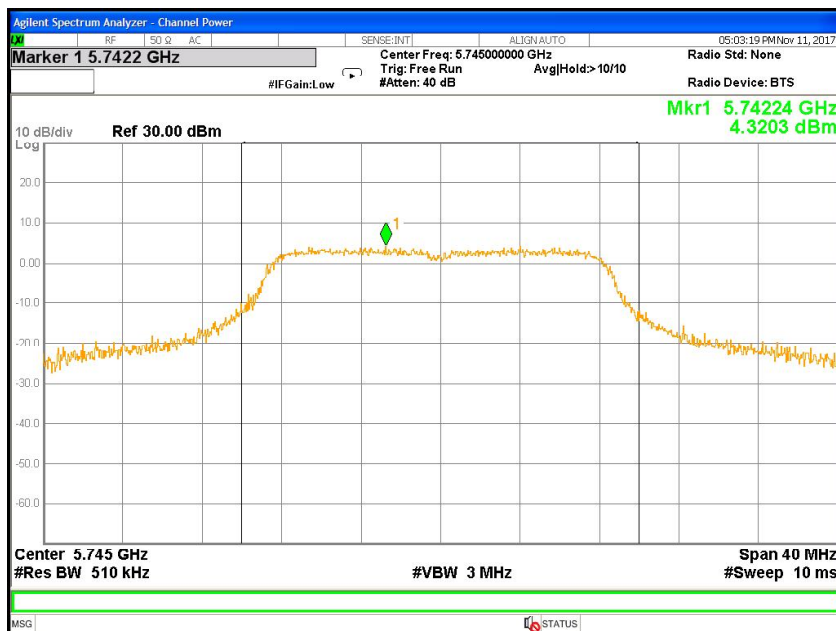


Figure 93 Power Spectral Density, 5745 MHz at 802.11a OFDM, ch0

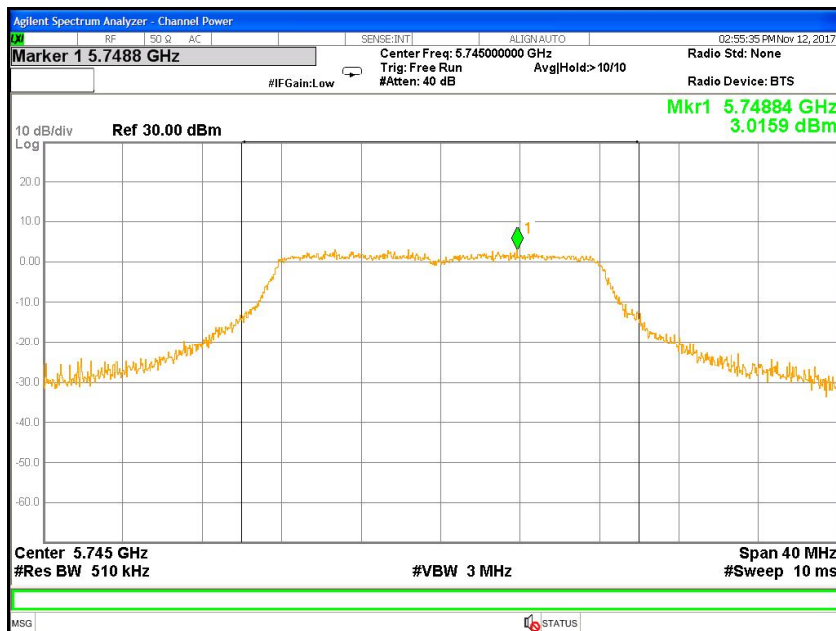


Figure 94 Power Spectral Density, 5745 MHz at 802.11a OFDM, ch1

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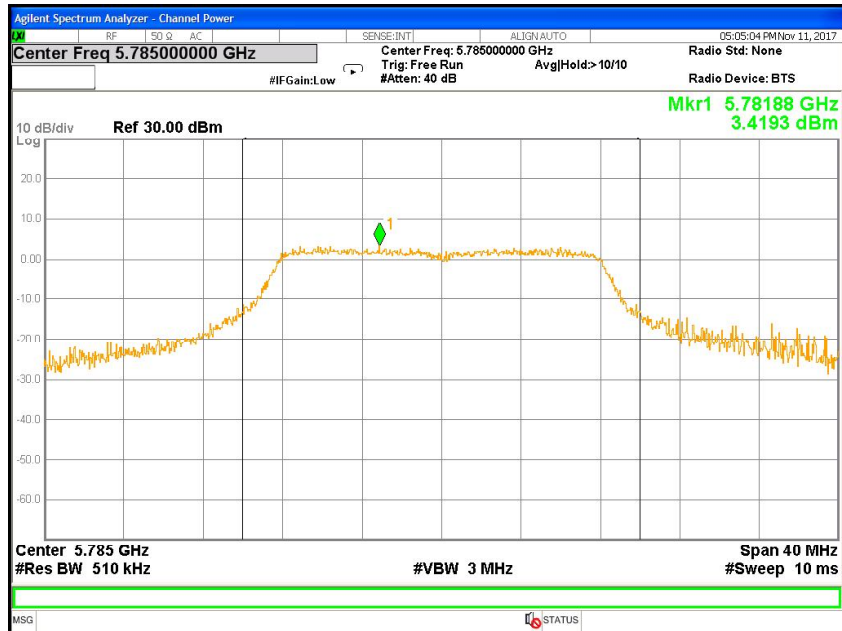


Figure 95 Power Spectral Density, 5785 MHz at 802.11a OFDM, ch0



Figure 96 Power Spectral Density, 5785 MHz at 802.11a OFDM, ch1

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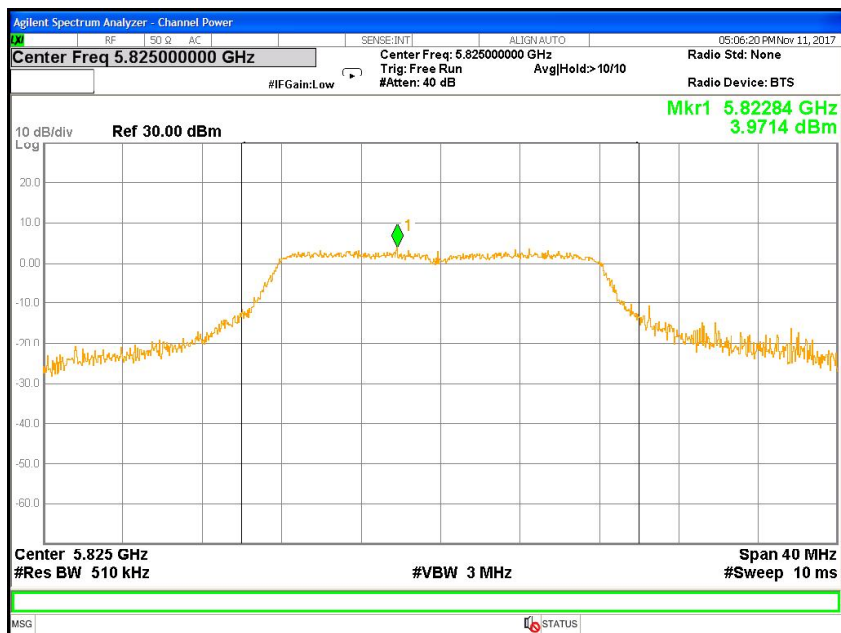


Figure 97 Power Spectral Density, 5825 MHz at 802.11a OFDM, ch0

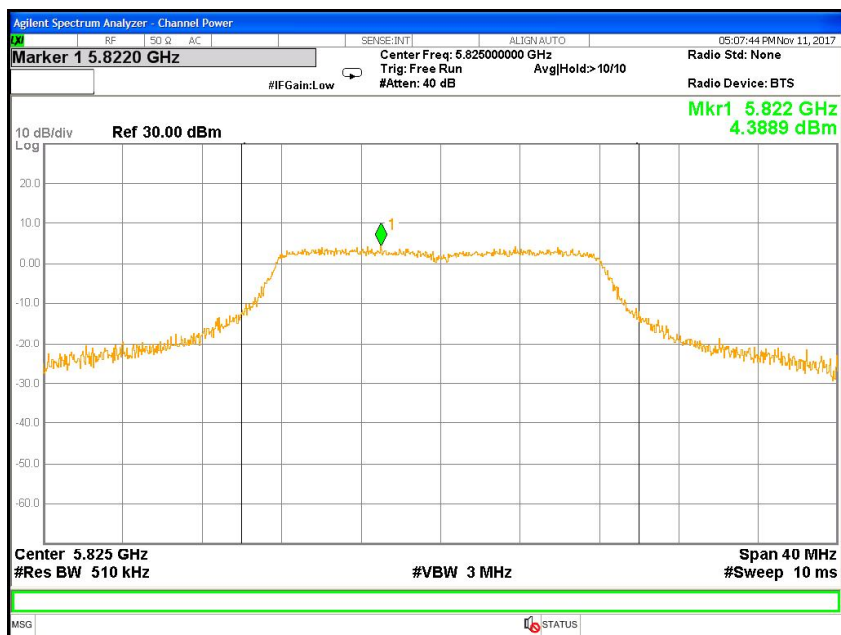


Figure 98 Power Spectral Density, 5825 MHz at 802.11a OFDM, ch1

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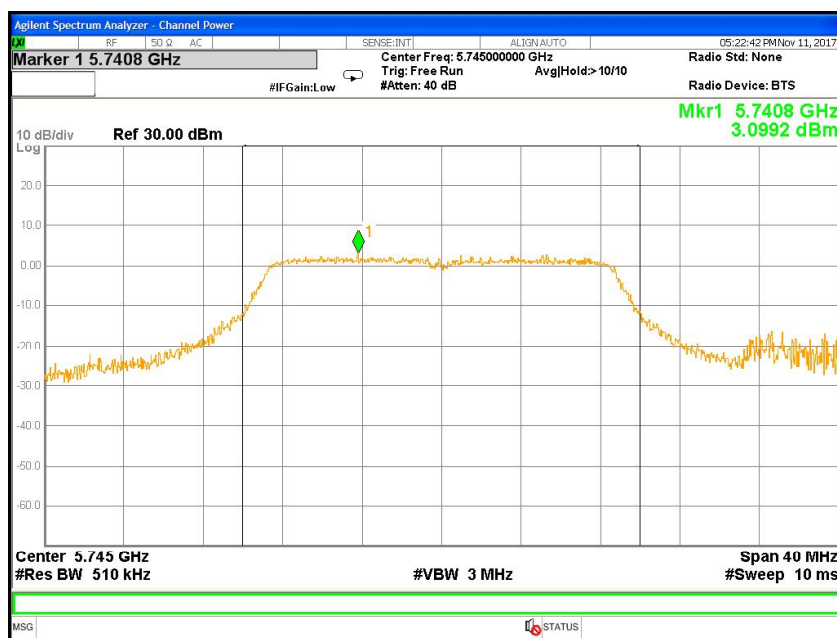


Figure 99 Power Spectral Density, 5745 MHz at 802.11n HT20 MCS0, ch0



Figure 100 Power Spectral Density, 5745 MHz at 802.11n HT20 MCS0, ch1

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Figure 101 Power Spectral Density, 5785 MHz at 802.11n HT20 MCS0, ch0



Figure 102 Power Spectral Density, 5785 MHz at 802.11n HT20 MCS0, ch1

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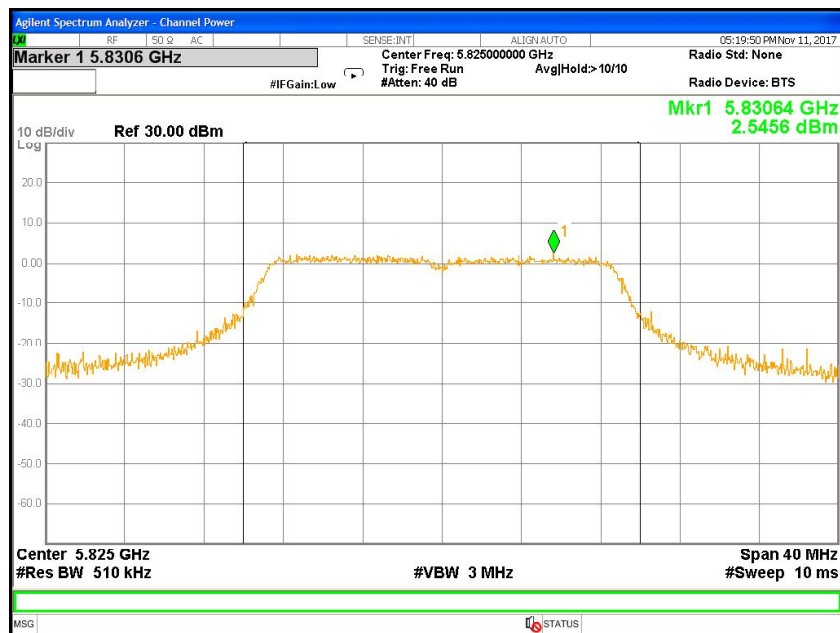


Figure 103 Power Spectral Density, 5825 MHz at 802.11n HT20 MCS0, ch0

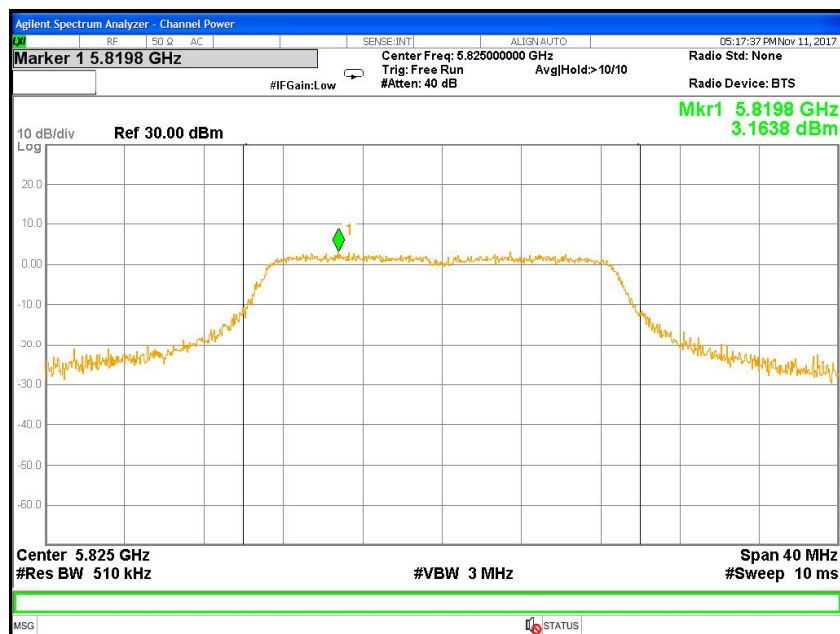


Figure 104 Power Spectral Density, 5825 MHz at 802.11n HT20 MCS0, ch1

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5.6 Occupied Bandwidth

For systems using digital modulation techniques shall have a minimum 6 dB bandwidth of at least 500 kHz.

5.6.1 Test Over View

Results	Complies (as tested per this report)					Date	11/5/2014	
Standard	LP0002, 4.75							
Product Model	DRX PLUS DETECTOR RADIO			Serial#	13A32S1011361			
Test Set-up	Per LP0002, APPENDIX I:							
EUT Powered By	DC	Temp	74° F	Humidity	32%	Pressure	1010mbar	
Perf. Criteria	(Below Limit)			Perf. Verification		Readings Under Limit		
Mod. to EUT	None			Test Performed By		Randy Masline		

5.6.2 Test Procedure

The EUT was using test software to allow the transmitter to transmit continuously. (Duty Cycle > 98%).

5.6.3 Deviations

No deviations

5.6.4 Final Test

All 6 dB bandwidth measurements are greater than 500 kHz. The EUT is compliant to the standard(s).

5.6.5 Final Data

Frequency MHz	Wireless Specification	Modulation	Meas ch 0 MHz	Meas ch 1 MHz
5745	802.11a	OFDM	17.59	17.60
5785	802.11a	OFDM	17.03	17.21
5825	802.11a	OFDM	17.70	16.56
5745	802.11n	MCS0	17.80	17.82
5785	802.11n	MCS0	17.78	17.82
5825	802.11n	MCS0	17.78	17.77
Occupied Bandwidth				

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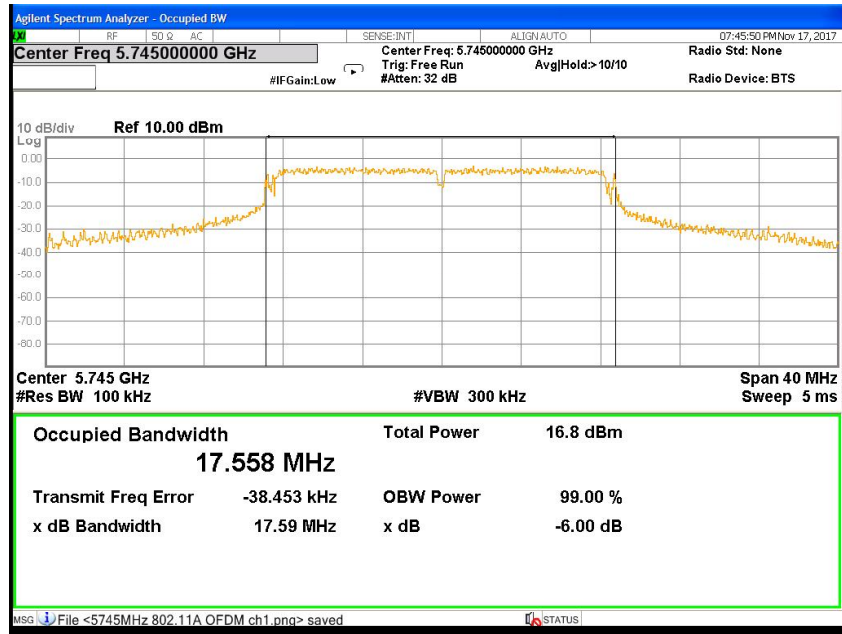


Figure 105: OBW 5745MHz 802.11a OFDM ch0

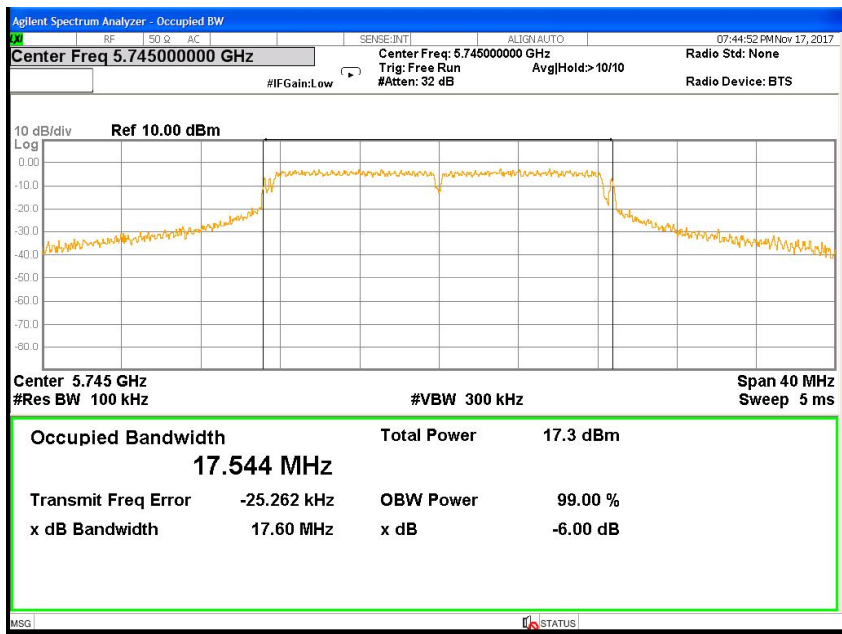


Figure 106: OBW 5745MHz 802.11a OFDM ch1

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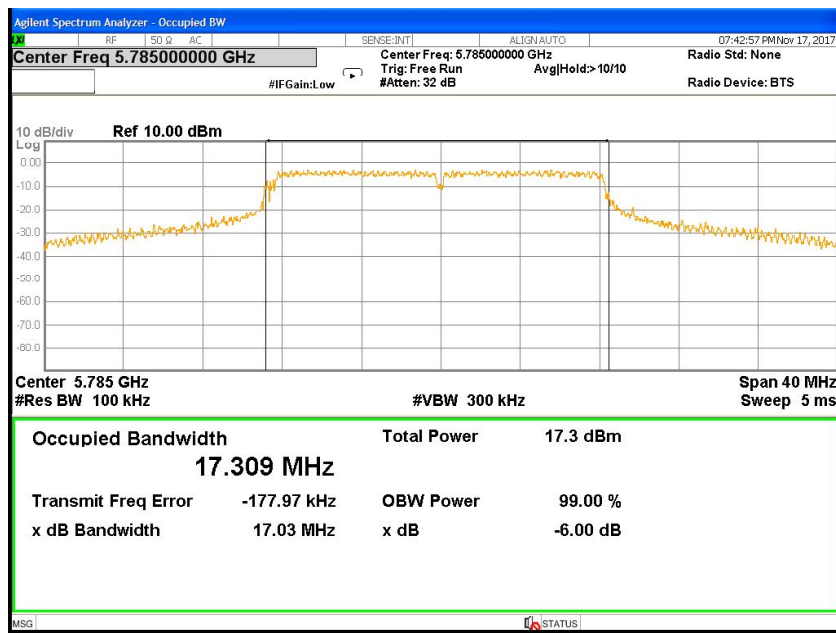


Figure 107: OBW 5785MHz 802.11a OFDM ch0

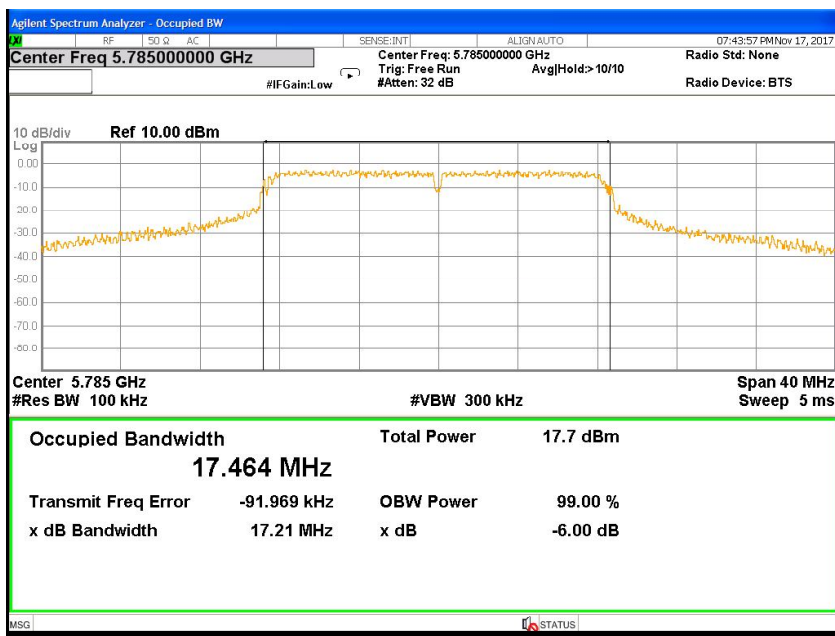


Figure 108: OBW 5785MHz 802.11a OFDM ch1

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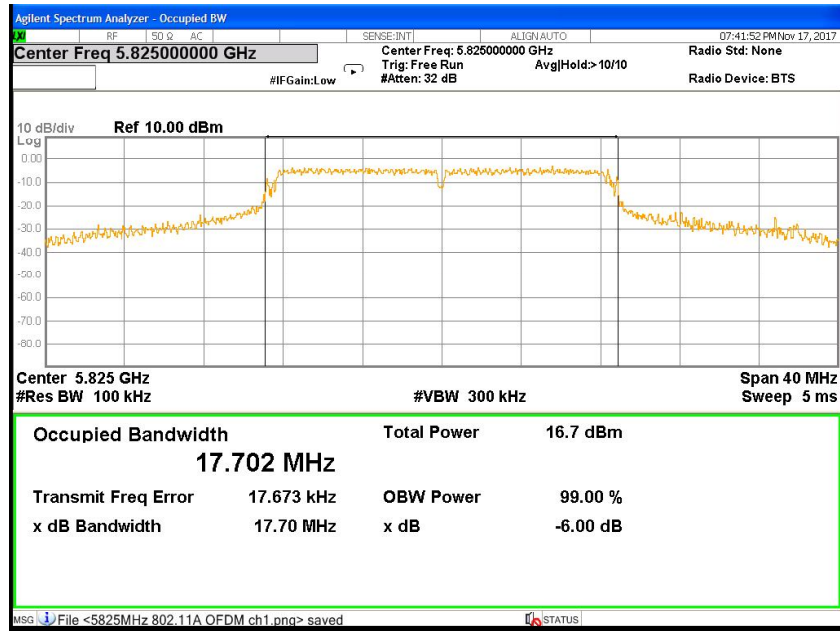


Figure 109: 5825MHz 802.11a OFDM ch0

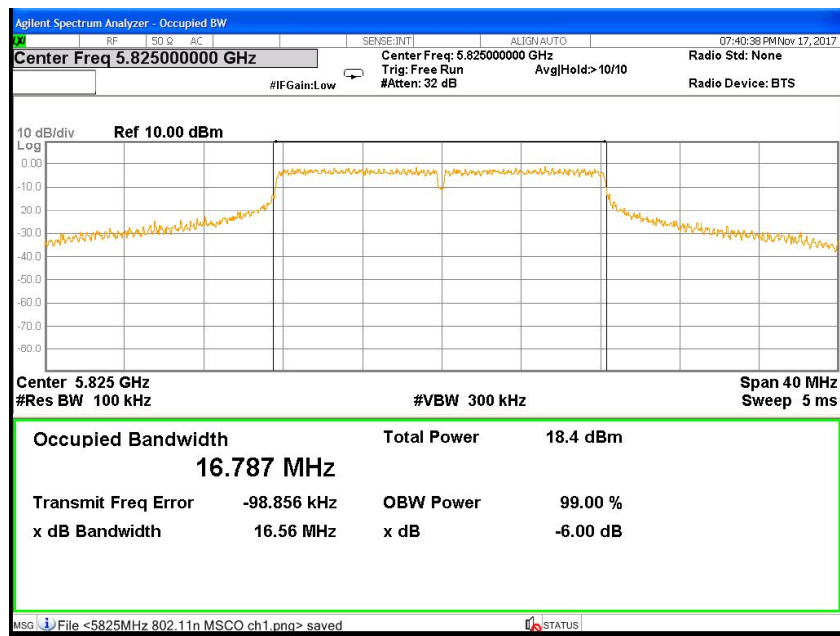


Figure 110: 5825MHz 802.11a OFDM ch1

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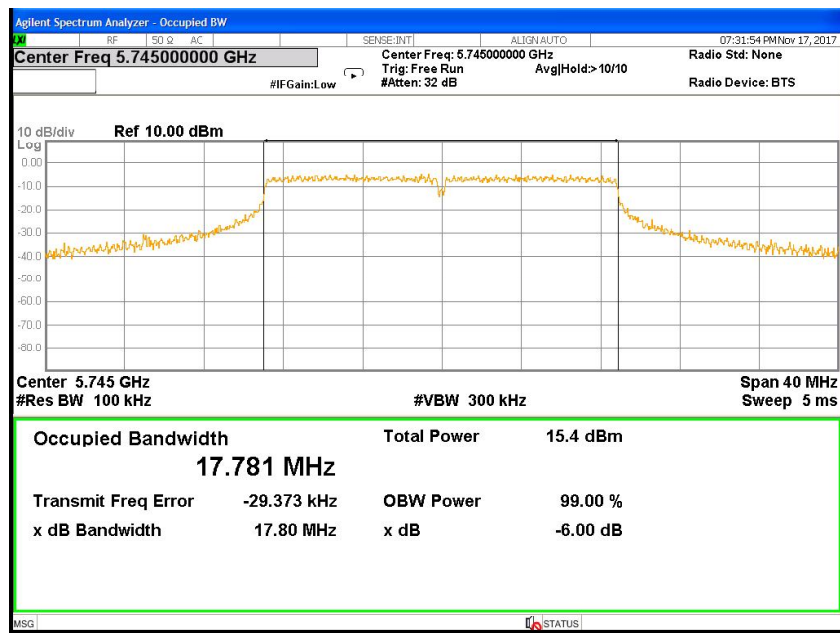


Figure 111: 5745MHz 802.11n MCS0 ch0

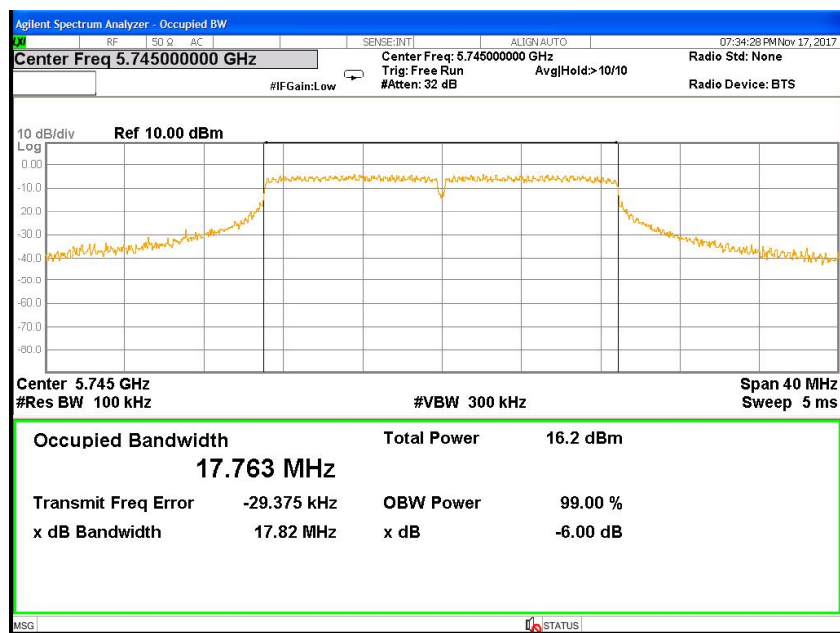


Figure 112: 5745MHz 802.11n MCS0 ch1

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