



Test report No. : 4788166493A-US-R2-V0
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Issued date : 2017/10/31
FCC ID : A43-WISP5

RADIO TEST REPORT

Applicant : Portwell, Inc.
Model No. : WiSP
FCC ID : A43-WISP5
Test regulation : FCC 47 CFR Part 15 Subpart E (Section 15.407)
Test Result : Complied

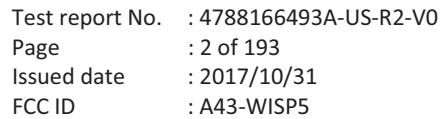
Date of test: 2017/10/2~2017/10/31
Sample received Date: 2017/9/29
Representative test engineer: *Wayne Chen*
Bull Chen
Approved by:



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Original Test Report No.: 4788166493A-US-R2-V0

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1. Attestation of Test Results

Applicant

Company Name: Portwell, Inc.
Address: No. 242, Bo-Ai St., Shu-Lin Dist., New Taipei City 238, Taiwan
Model Name WiSP

Manufacturer

Company Name: Portwell, Inc.
Address: No. 242, Bo-Ai St., Shu-Lin Dist., New Taipei City 238, Taiwan
Model Name WiSP

APPLICABLE STANDARDS	
STANDARD	Test Results
FCC 47 CFR PART 15 Subpart E (Section 15.407)	PASS

1. This test report shall not be reproduced in full or partial, without the written approval of UL Taiwan, Inc.
2. The results in this report apply only to the sample tested.
3. This sample tested is in compliance with the above regulation.
4. The test results in this report are traceable to the national or international standards.

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2. Test Methodology

The tests documented in this report were performed in accordance with FCC CFR 47 Part 2, FCC CFR 47 Part 15.407, KDB662911 D01 v02r01, KDB789033 D02 v01r04 and ANSI C63.10-2013.

3. Facilities and Accreditation

Test Location	UL Verification Services Taiwan Co., Ltd
Address	Building B & E, No.372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County 310, Taiwan (R.O.C.)
Accreditation Certificate	UL Verification Services Inc. is accredited by TAF, Laboratory Code 3398. The full scope of accreditation can be viewed at http://www.taftw.org.tw/wSite/sp?xdUrl=/wSite/taf/lalab.jsp&mp=1

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4. Measurement Uncertainty

The following uncertainties have been calculated to provide a confidence level of 95 % using a coverage factor k=2.

Test Item	Measurement Frequency Range	K	U(dB)
Conducted disturbance at mains terminals ports	0.15MHz ~ 30MHz	2	2.6
RF Conducted	9 kHz - 40GHz	2	0.94
Radiated disturbance below 30MHz	9 kHz - 30 MHz	2	2.4
Radiated disturbance below 1 GHz	30MHz ~ 1GHz	2	5.5
Radiated disturbance above 1GHz	1GHz ~ 40GHz	2	5.0

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5. Equipment under Test

5.1. Description of EUT

Product	Wireless Service Platform	
Model Name	WiSP	
Power Supply	1. EUT power Rating : 100-240V 2. Internal Battery Rating:11.1V, 2500mAh / 28Wh	
Operating Frequency	802.11a/n HT20	5180~5240 MHz
		5745~5825 MHz
	802.11n HT40	5190~5230 MHz
		5755~5795 MHz
Number of channels	802.11a / HT20 : 9 Channels 802.11n HT40: 4 Channels	

Modulaton	Chain 0	Chain 1
802.11a	V	X
802.11n HT20	V	V
802.11n HT40	V	V

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Modulaton	Channel	Frequency(MHz)	Power Setting
802.11a Chain 0	36	5180	07
	40	5200	07
	48	5240	07
	149	5745	0C
	157	5785	0D
	165	5825	0E

Modulaton	Channel	Frequency(MHz)	Power Setting	
			Chain 0	Chain 1
802.11n HT20	36	5180	05	06
	40	5200	05	06
	48	5240	05	06
	149	5745	0B	0B
	157	5785	0B	0B
	165	5825	0B	0B
802.11n HT40	38	5190	05	07
	46	5230	05	07
	151	5755	0B	0B
	159	5795	0B	0B

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5.2. Test Condition

Test Item	Test Site No.	Environmental Condition	Input Power
Antenna Port Conducted Measuremaent	SR4	24°C / 60%RH	120Vac / 60Hz
Radiated Spurious Emission	966-2	22°C / 58%RH	120Vac / 60Hz
AC power Line Conducted Emission	SR1	24°C / 60%RH	120Vac / 60Hz

5.3. Description Of Available Antennas

Frequecny Band (GHz)	Brand Name	Model Name	Antenna Type	Antenna Gain(dBi)	
				Chain 0	Chain 1
5	Aristotle	RFA-25-L2M2	Dipole Antenna	2	2

5.4. Software And Firmware

The software installed in the EUT during testing was “Ralink QA test program Version 17”.

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5.5. Operating Mode and Worst Case of EUT

For below 1G radiated emission and AC power line conducted emission were performed with the EUT set to transmit at the channel with highest output power as worst-case.

The fundamental of the EUT was investigated in three orthogonal axes X/Y/Z, it was determined that X axis was worst-case . Therefore, all final radiated testing was performed with the EUT in X axis.

Worst-case data rates as provided by the client were:

802.11a mode: 6 Mbps

802.11n HT20 mode: MCS0

802.11n HT40 mode: MCS0

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6. Test Equipment

Test Equipment List					
Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
Radiated Spurious Emission					
Spectrum Analyzer	Keysight	N9010A	MY56070821	Nov. 21, 2016	1 year
Loop Antenna	ETS lindgren	6502	00213440	Dec. 13, 2016	1 year
Trilog-Broadband Antenna	Schwarzbeck	VULB9168	VULB9168-733	Jan. 17, 2017	1 year
Horn Antenna (1G~18GHz)	Schwarzbeck	BBHA 9120D	BBHA 9120D-01686	Jan. 12, 2017	1 year
Horn Antenna(18-40GHz)	Schwarzbeck	BBHA9170	BBHA9170#759	Jan.12, 2017	1 year
Preamplifier (30-1000MHz)	EMCI	RMC330E	980405	Jan. 25, 2017	1 year
Preamplifier (1-18GHz)	EMCI	EMC051835BE	908044	Jan. 25, 2017	1 year
Preamplifier (18-40GHz)	EMCI	EMC184045SE	980407	Apr. 18, 2017	1 year
RF Cable (9K~18G)	emci	EMC106-NM-NM-7000	170102	July 10, 2017	1 year
RF Cable (9K~18G)	emci	EMC106-NM-SM-2500	170219	July 10, 2017	1 year
RF Cable (9K~18G)	emci	EMC106-NM-NM-4000	170221	July 10, 2017	1 year
RF Cable (18G~40G)	Rosnol	K1K50-UP0264-K1K50-2500	170214-1	July 10, 2017	1 year
RF Cable (18G~40G)	Rosnol	K1K50-UP0264-K1K50-3500	170214-2	July 10, 2017	1 year
RF Cable (18G~40G)	Rosnol	K1K50-UP0264-K1K50-2500	170214-3	July 10, 2017	1 year
Antenna Port Conducted Measurement					
Spectrum Analyzer	Keysight	N9010A	MY56070834	Nov. 21, 2016	1 year
Power meter	Anrisu	MA2411B	1531202	Dec. 13, 2016	1 year
Power sensor	Anrisu	ML2495A	1645002	Dec. 13, 2016	1 year
Signal Generator	Keysight	N5182B	MY56200244	Dec. 19, 2016	1 year

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AC power Line Conducted Emission					
EMI Test Receiver	Rohde & Schwarz	ESR7	101753	Nov. 4, 2016	1 year
Two-Line V-Network	Rohde & Schwarz	ENV216	102136	Nov. 16, 2016	1 year
Four-Line V-Network	Rohde & Schwarz	ENV432	101298	Dec. 7, 2016	1 year
RF Cable-CON	Huber+Suhner	RG214/U	FCC-BCICF-4_RF	Mar. 23, 2017	1 year

UL Software

Software	Test Item	Version
EMC-RI	Radiated measurement	1.0.0.0
Keysight.TestSystem	Conducted measurement	1.0.0.0
EZ_EMCC	AC power Line Conducted Emission	1.1.4.2

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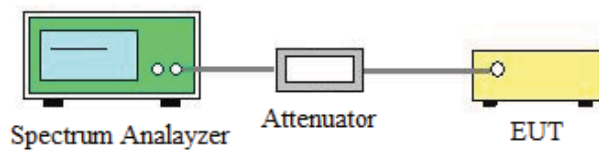
7. Test Result

7.1. Duty Cycle

Requirements

N/A

Test Setup



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Test Data

Mode	On time (ms)	Period (ms)	Duty cycle	Duty Cycle factor
802.11a Chain 0	1	1	100%	0.000
802.11n HT20 Chain 0	1	1	100%	0.000
802.11n HT20 Chain 1	1	1	100%	0.000
802.11n HT40 Chain 0	1	1	100%	0.000
802.11n HT40 Chain 1	1	1	100%	0.000

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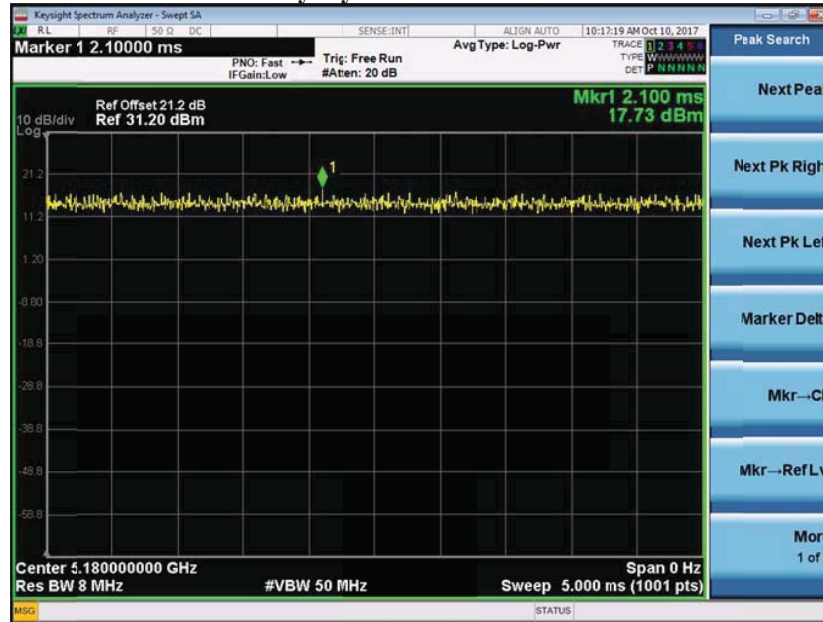
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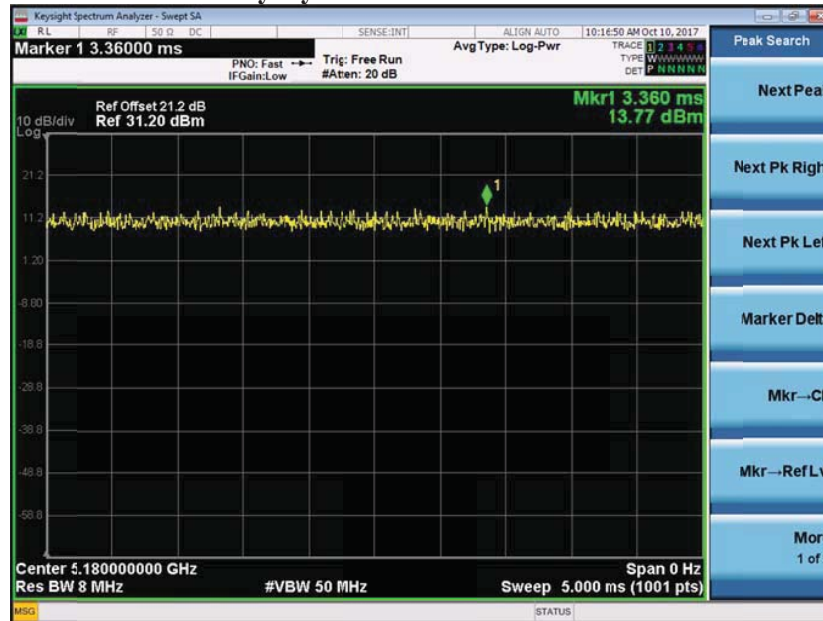


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Duty Cycle 802.11a Chain 0



Duty Cycle 802.11n HT20 Chain 0



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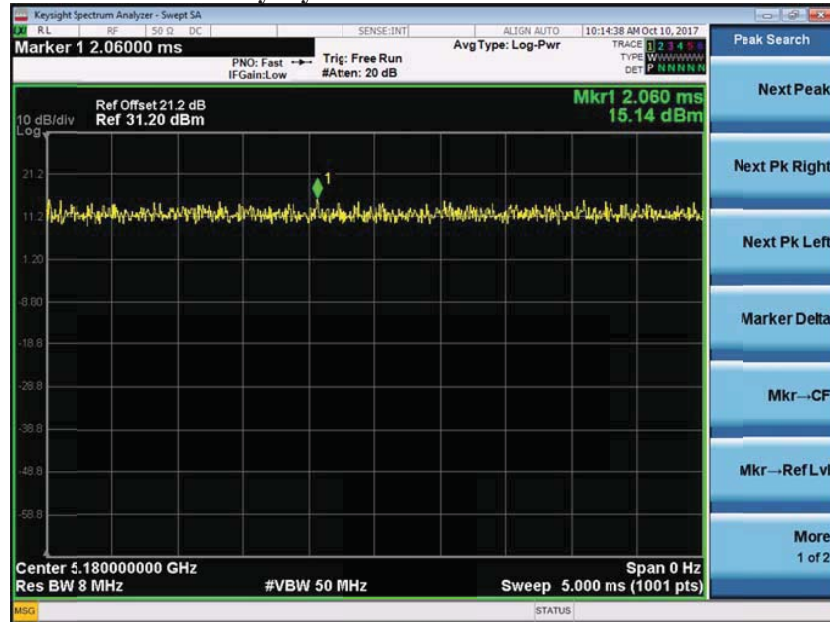
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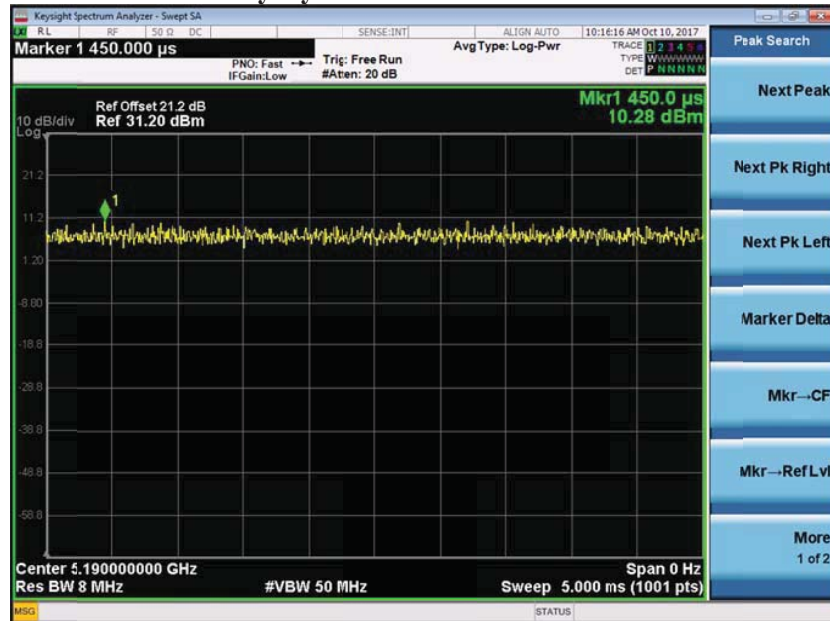


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Duty Cycle 802.11n HT20 Chain 1



Duty Cycle 802.11n HT40 Chain 0



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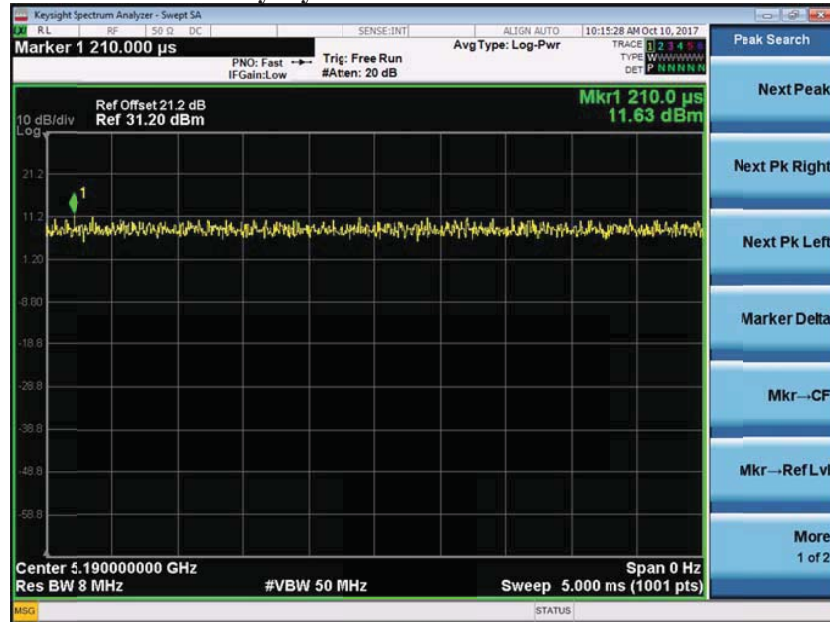
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Duty Cycle 802.11n HT40 Chain 1



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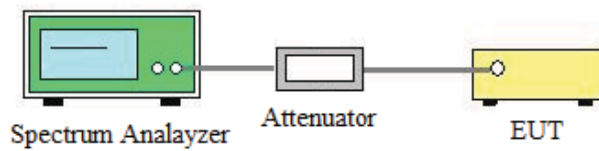
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7.2. 26 dB Bandwidth

Requirements

For reporting purpose only.

Test Setup



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Test Data

Mode	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
802.11a Chain0	36	5180	19.02
	40	5200	19.09
	48	5240	19.61
	149	5745	19.8
	157	5785	19.35
	165	5825	19.72
802.11n HT20 Chain 0	36	5180	19.23
	40	5200	19.25
	48	5240	19.6
	149	5745	19.25
	157	5785	19.31
	165	5825	19.79
802.11n HT20 Chain 1	36	5180	19.74
	40	5200	19.74
	48	5240	19.73
	149	5745	20.75
	157	5785	19.73
	165	5825	20.47
802.11n HT40 Chain 0	38	5190	39.35
	46	5230	39.37
	151	5755	39.92
	159	5795	39.45
802.11n HT40 Chain 1	38	5190	39.43
	46	5230	39.66
	151	5755	39.64
	159	5795	39.85

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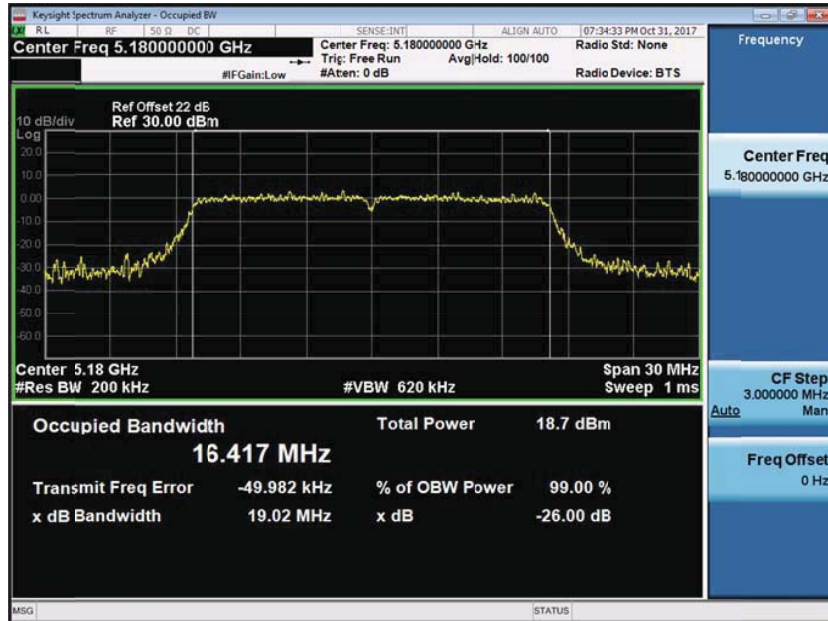
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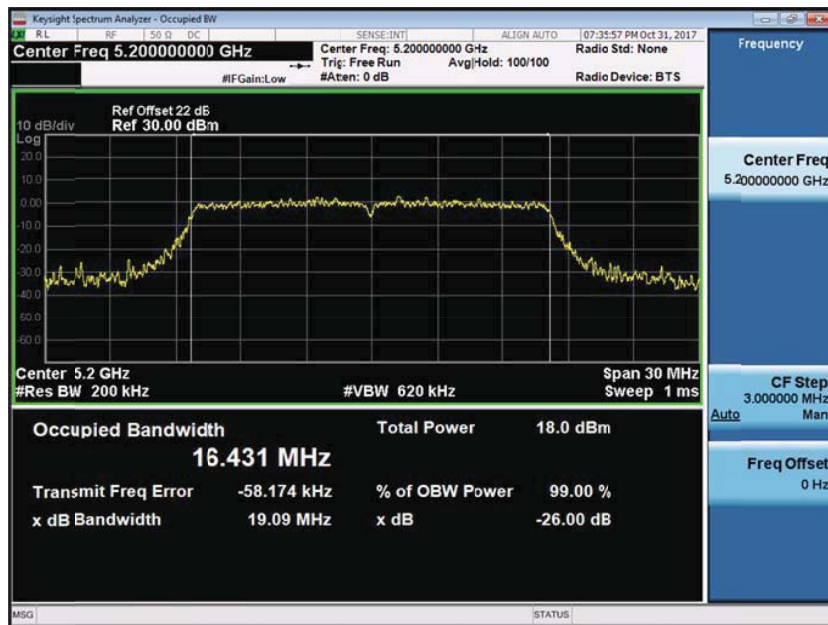


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26dB Bandwidth 802.11a Chain 0 Ch 36 5180MHz



26dB Bandwidth 802.11a Chain 0 Ch 40 5200MHz



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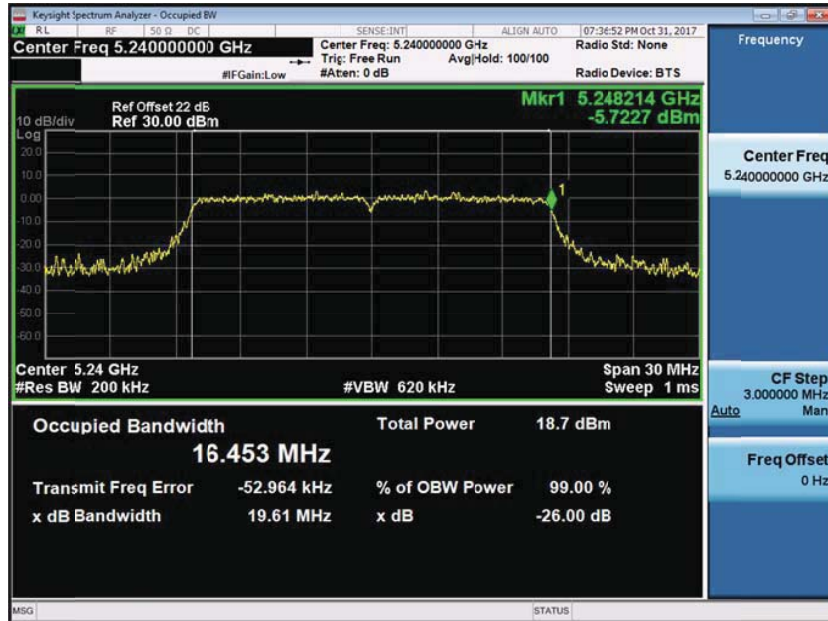
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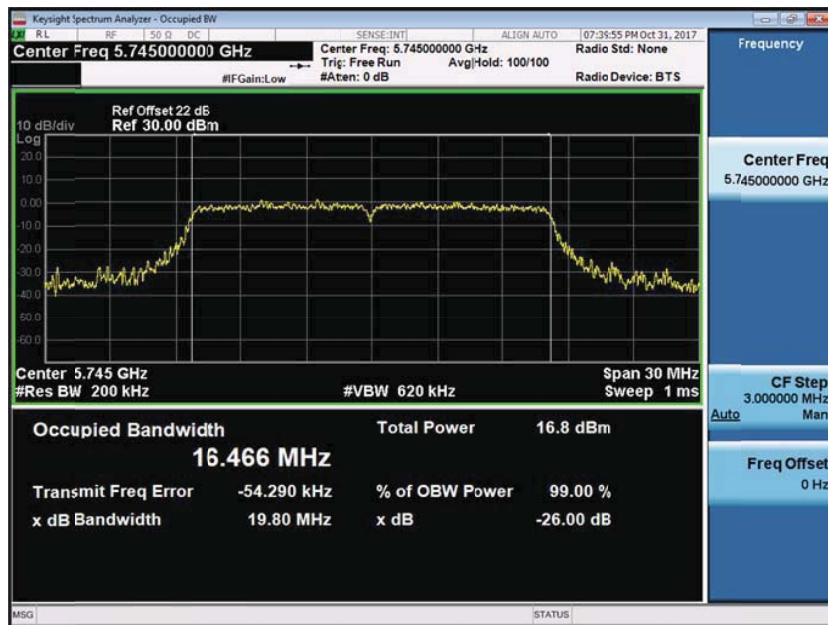


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26dB Bandwidth 802.11a Chain 0 Ch 48 5240MHz



26dB Bandwidth 802.11a Chain 0 Ch 149 5745MHz



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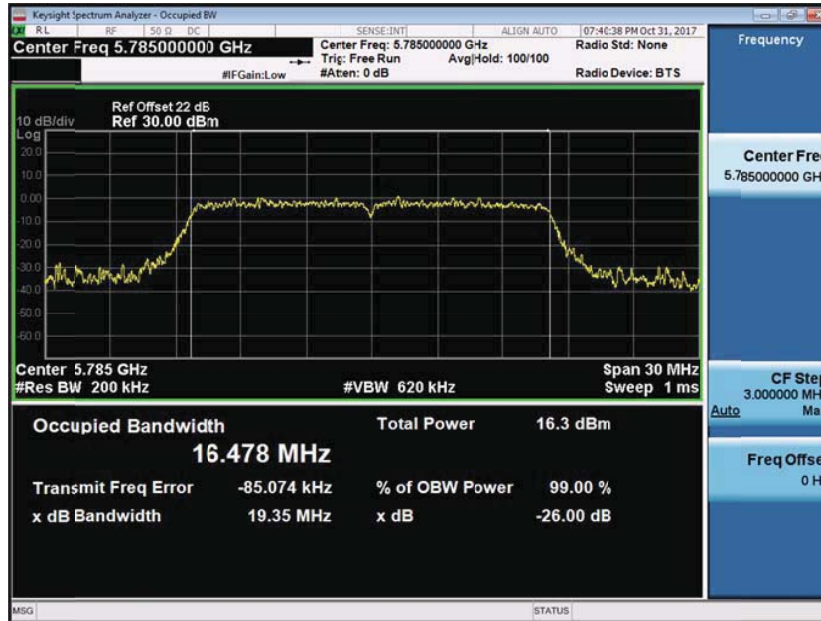
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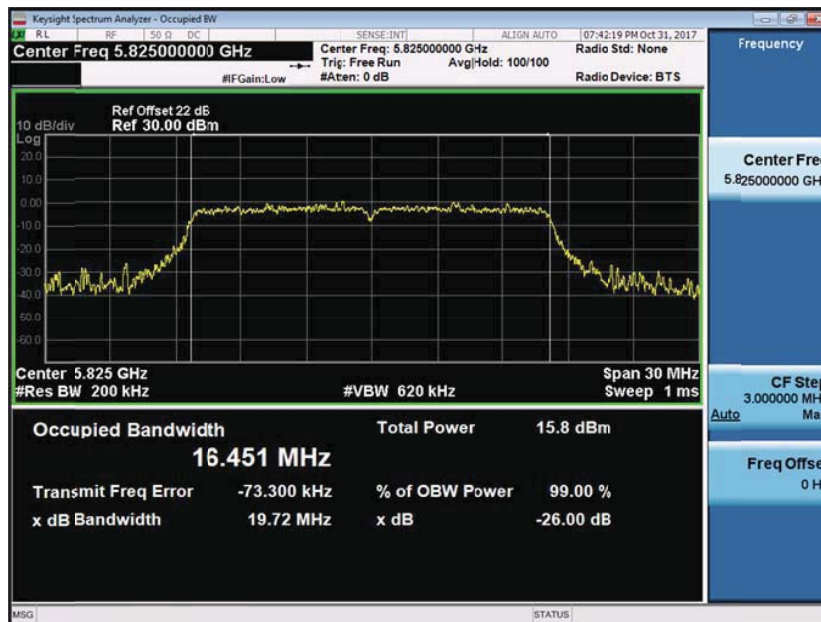


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26dB Bandwidth 802.11a Chain 0 Ch 157 5785MHz



26dB Bandwidth 802.11a Chain 0 Ch 165 5825MHz



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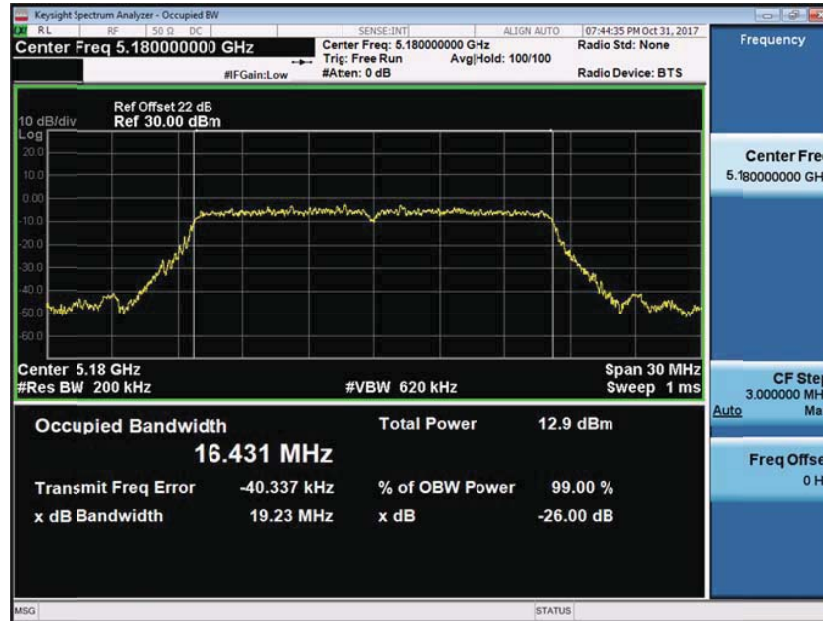
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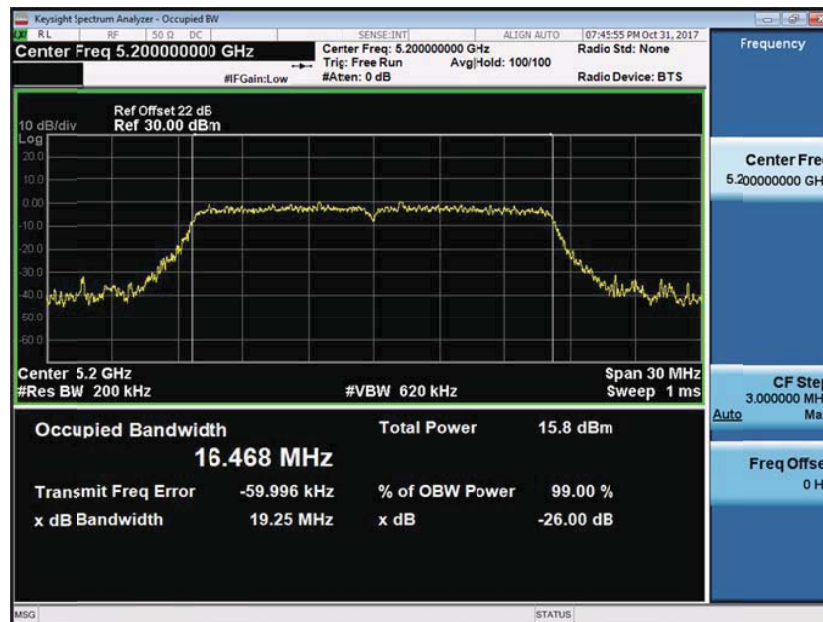


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26dB Bandwidth 802.11n HT20 Chain 0 Ch 36 5180MHz



26dB Bandwidth 802.11n HT20 Chain 0 Ch 40 5200MHz



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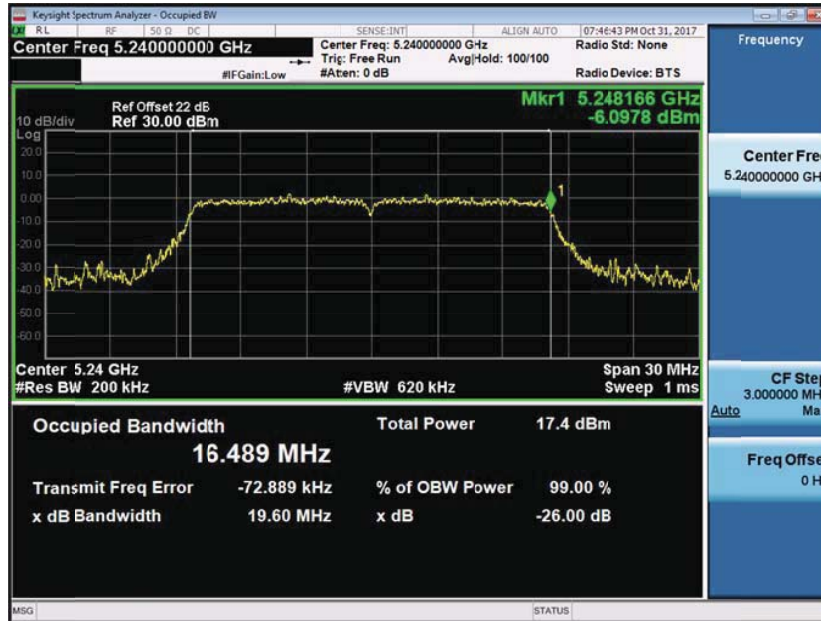
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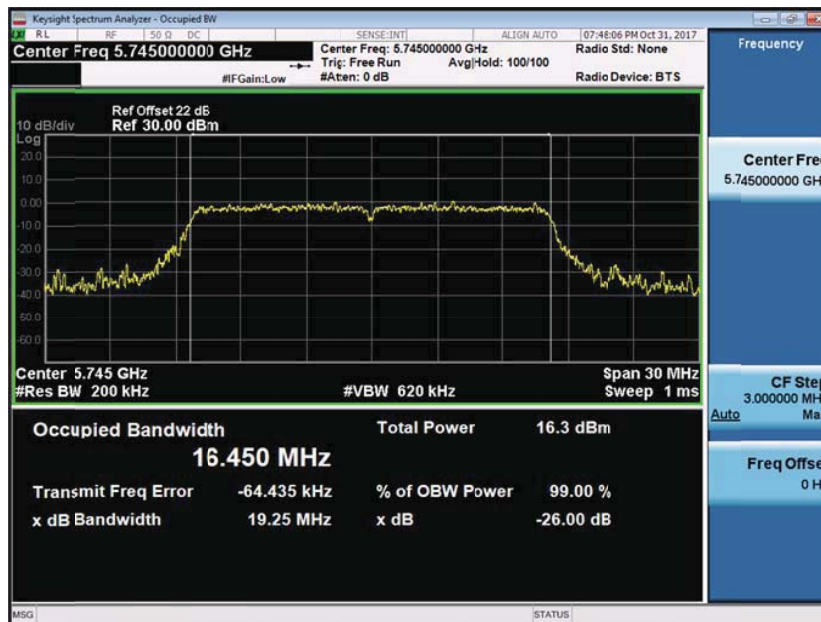


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26dB Bandwidth 802.11n HT20 Chain 0 Ch 48 5240MHz



26dB Bandwidth 802.11n HT20 Chain 0 Ch 149 5745MHz



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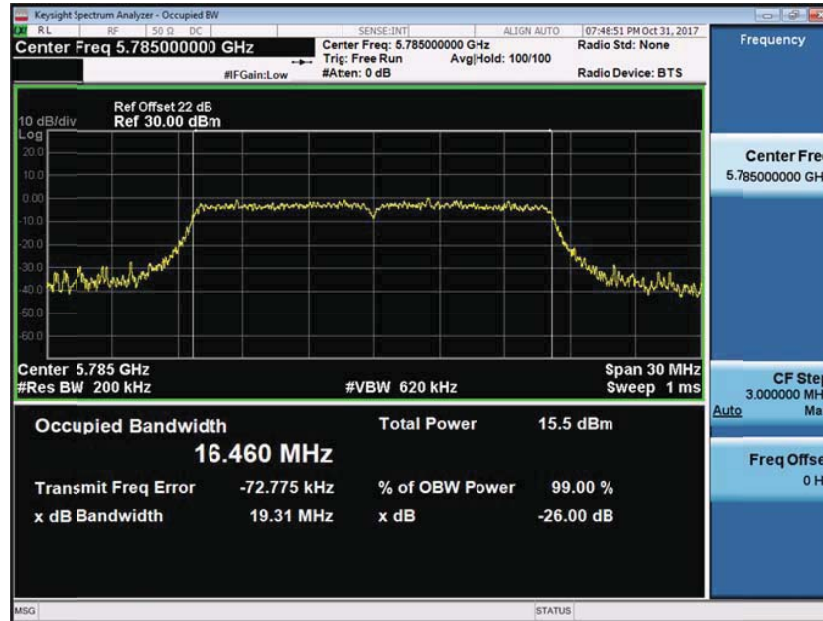
Telephone :+886-2-7737-3000

Facsimile (FAX) :+886-2-7737-3610

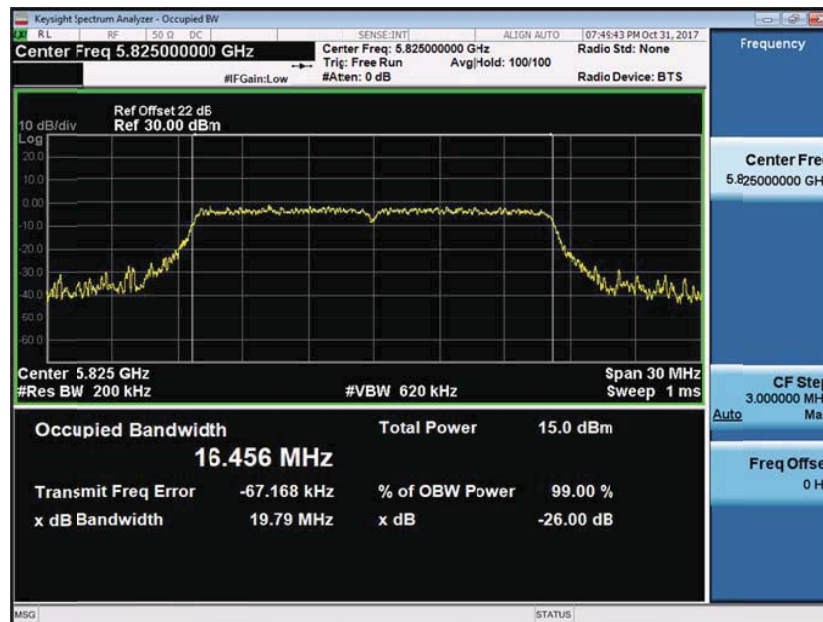


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FCC ID : A43-WISP5

26dB Bandwidth 802.11n HT20 Chain 0 Ch 157 5785MHz



26dB Bandwidth 802.11n HT20 Chain 0 Ch 165 5825MHz



EMC Lab.

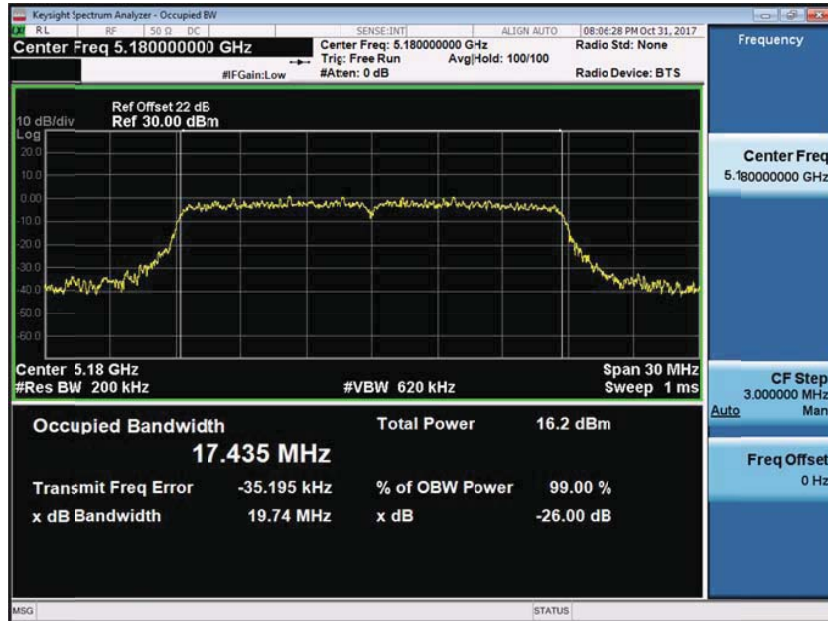
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Telephone : +886-2-7737-3000
Facsimile (FAX) : +886-2-7737-3610

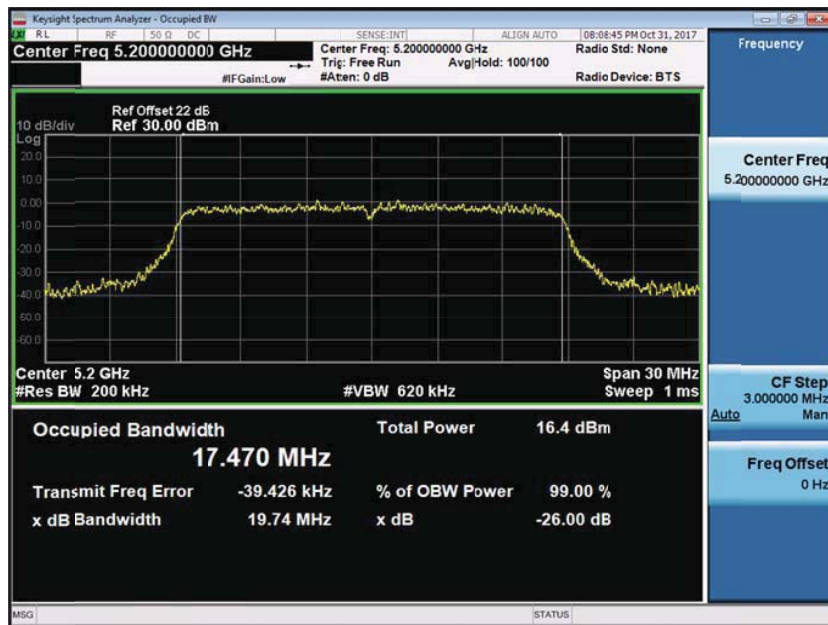


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26dB Bandwidth 802.11n HT20 Chain 1 Ch 36 5180MHz



26dB Bandwidth 802.11n HT20 Chain 1 Ch 40 5200MHz



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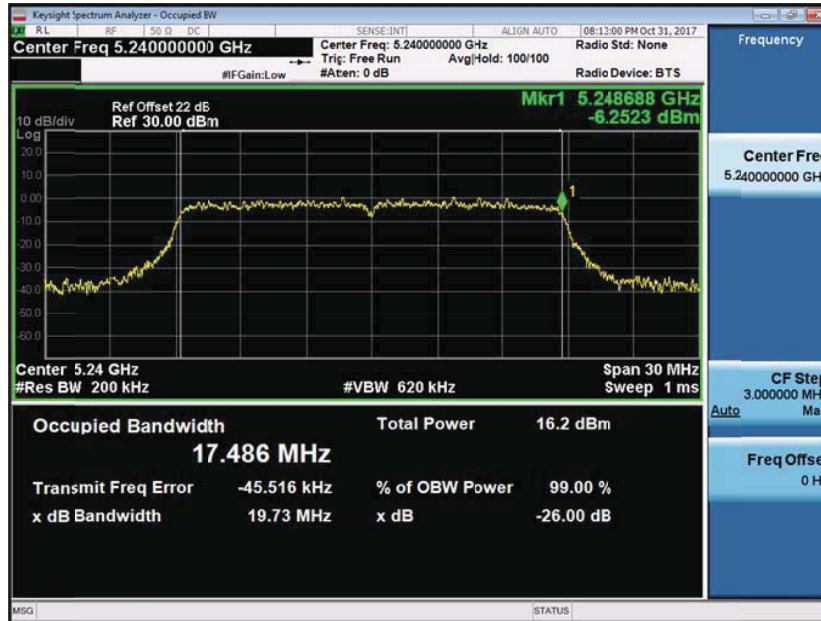
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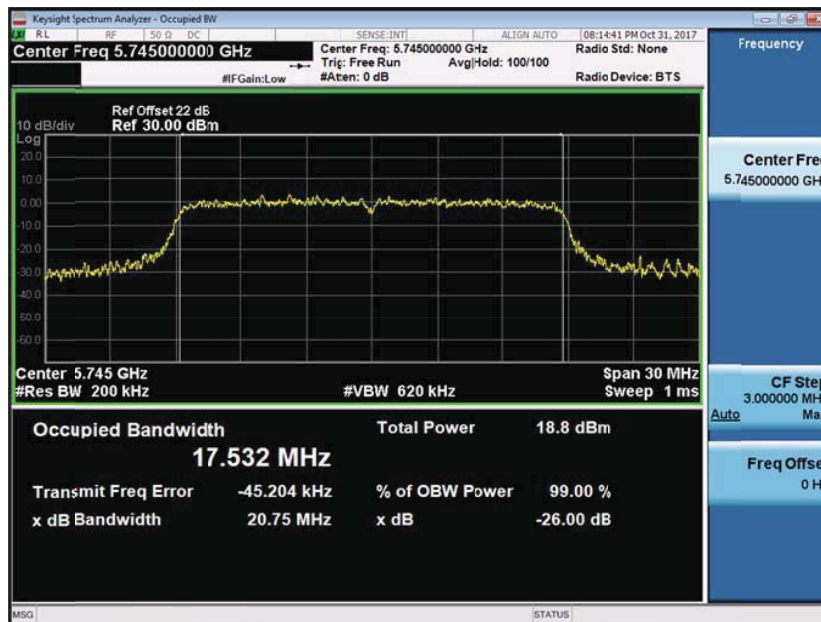


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26dB Bandwidth 802.11n HT20 Chain 1 Ch 48 5240MHz



26dB Bandwidth 802.11n HT20 Chain 1 Ch 149 5745MHz



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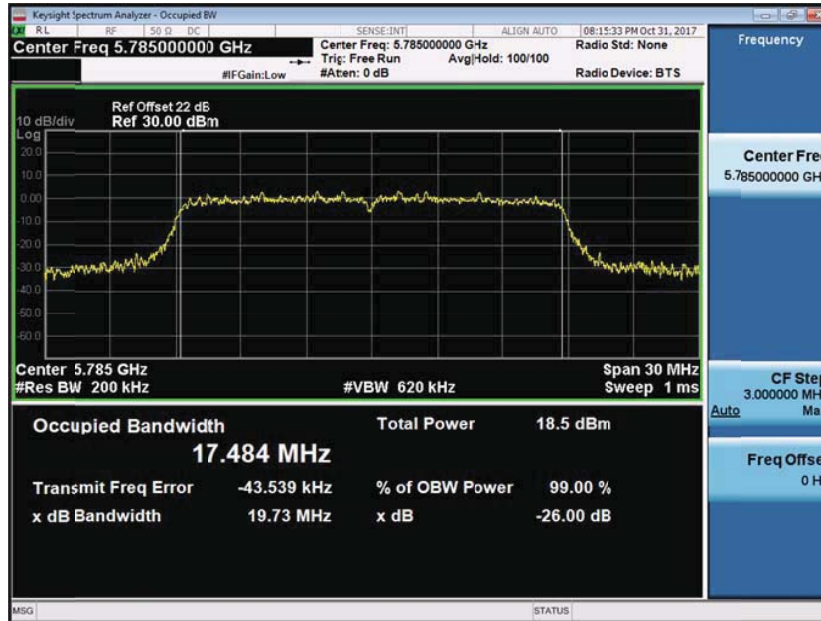
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Telephone :+886-2-7737-3000
Facsimile (FAX) :+886-2-7737-3610

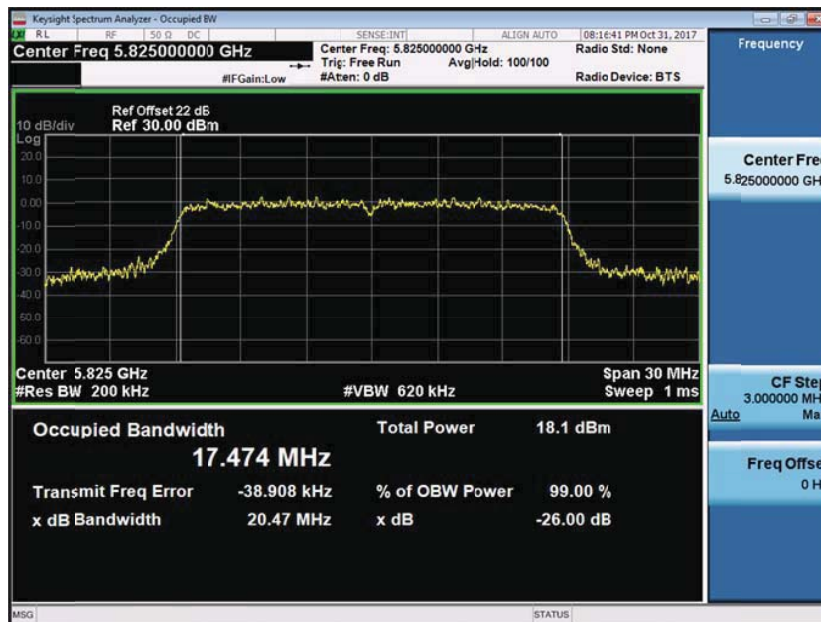


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FCC ID : A43-WISP5

26dB Bandwidth 802.11n HT20 Chain 1 Ch 157 5785MHz



26dB Bandwidth 802.11n HT20 Chain 1 Ch 165 5825MHz



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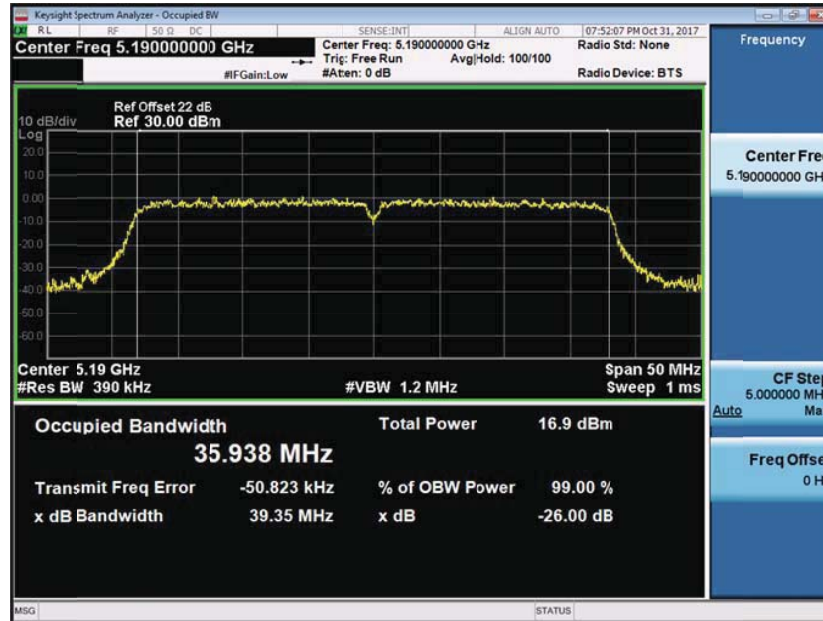
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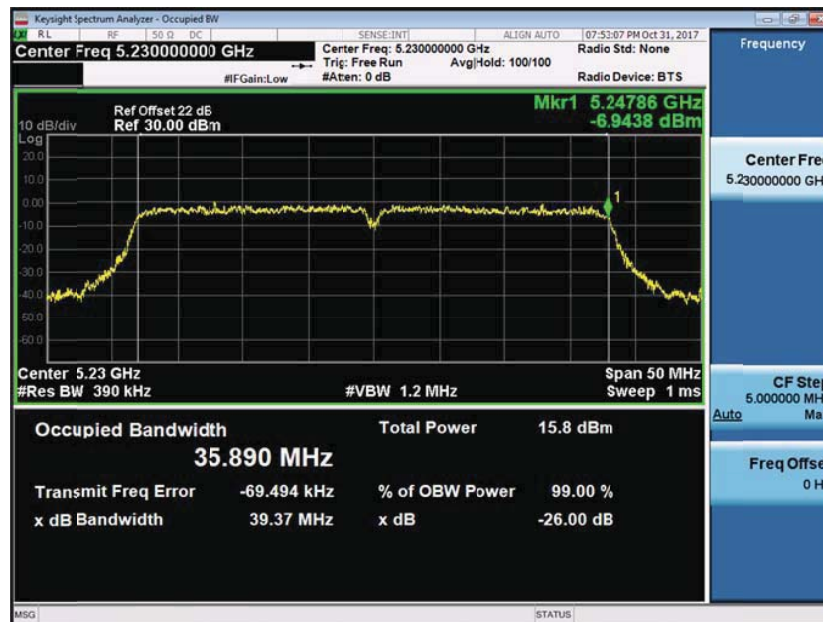


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FCC ID : A43-WISP5

26dB Bandwidth 802.11n HT40 Chain 0 Ch 38 5190MHz



26dB Bandwidth 802.11n HT40 Chain 0 Ch 46 5230MHz



EMC Lab.

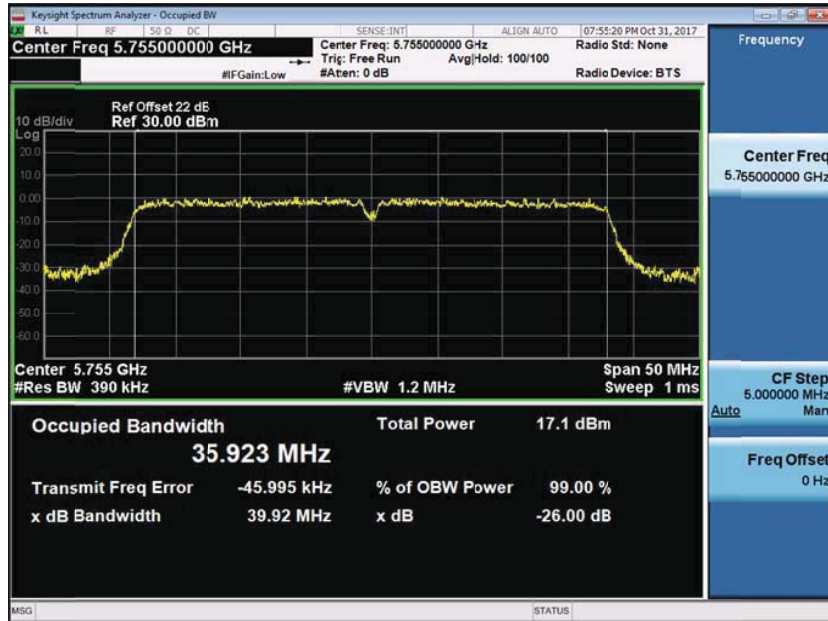
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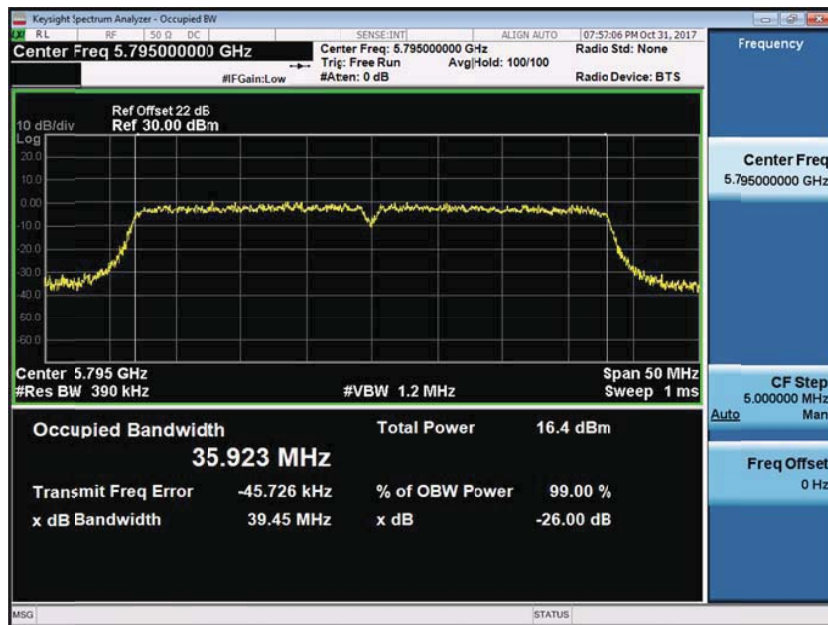


Test report No. : 4788166493A-US-R2-V0
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FCC ID : A43-WISP5

26dB Bandwidth 802.11n HT40 Chain 0 Ch 151 5755MHz



26dB Bandwidth 802.11n HT40 Chain 0 Ch 159 5795MHz



EMC Lab.

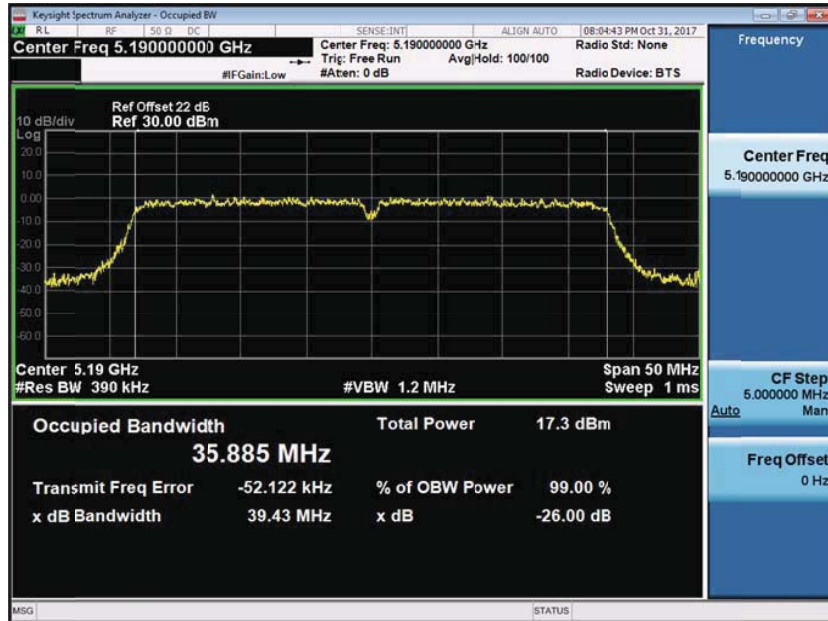
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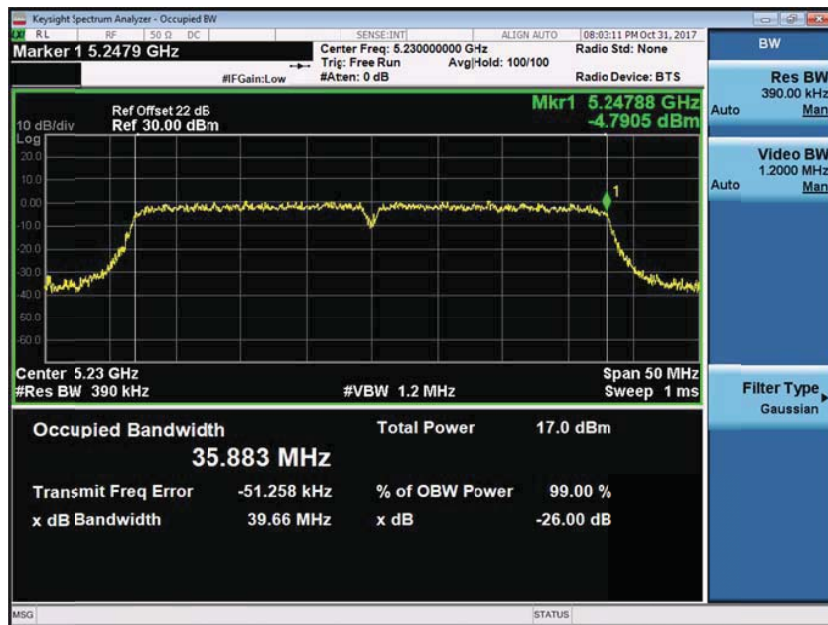


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26dB Bandwidth 802.11n HT40 Chain 1 Ch 38 5190MHz



26dB Bandwidth 802.11n HT40 Chain 1 Ch 46 5230MHz



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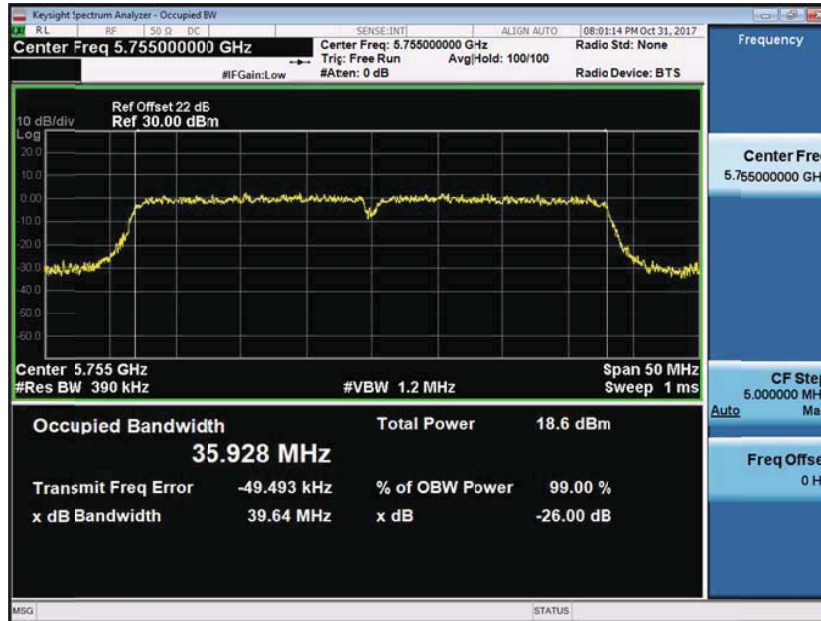
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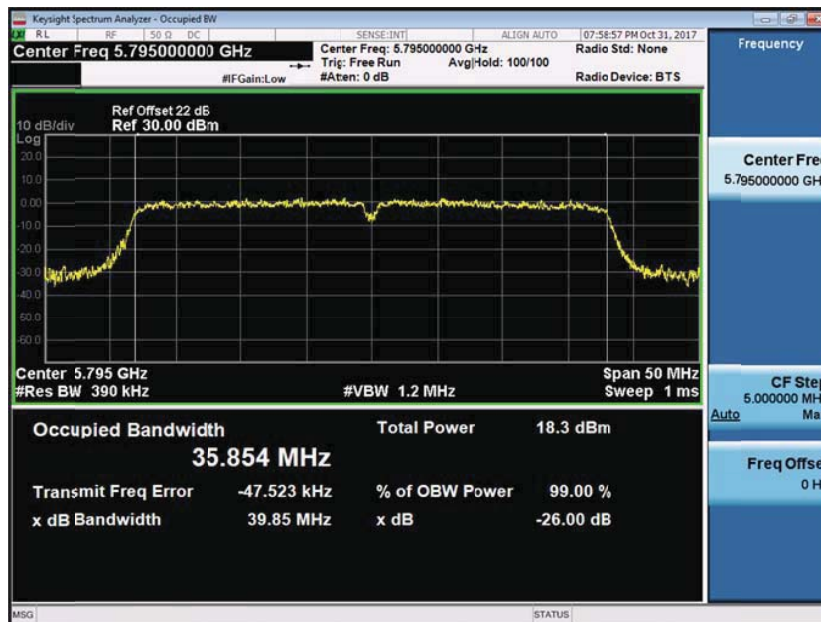


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FCC ID : A43-WISP5

26dB Bandwidth 802.11n HT40 Chain 1 Ch 151 5755MHz



26dB Bandwidth 802.11n HT40 Chain 1 Ch 159 5795MHz



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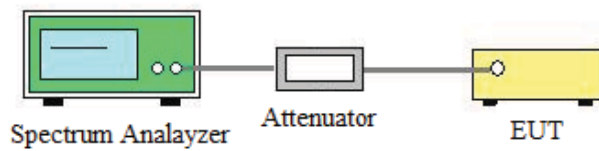
Test report No. : 4788166493A-US-R2-V0
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FCC ID : A43-WISP5

7.3. 99% Bandwidth

Requirements

For reporting purpose only.

Test Setup



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Issued date : 2017/10/31
FCC ID : A43-WISP5

Test Data

Mode	Channel	Frequency (MHz)	99% Bandwidth (MHz)
802.11a Chain0	36	5180	16.417
	40	5200	16.431
	48	5240	16.453
	149	5745	16.466
	157	5785	16.478
	165	5825	16.451
802.11n HT20 Chain 0	36	5180	16.431
	40	5200	16.468
	48	5240	16.489
	149	5745	16.45
	157	5785	16.46
	165	5825	16.456
802.11n HT20 Chain 1	36	5180	17.435
	40	5200	17.47
	48	5240	17.486
	149	5745	17.532
	157	5785	17.484
	165	5825	17.474
802.11n HT40 Chain 0	38	5190	35.938
	46	5230	35.89
	151	5755	35.923
	159	5795	35.923
802.11n HT40 Chain 1	38	5190	35.885
	46	5230	35.883
	151	5755	35.928
	159	5795	35.854

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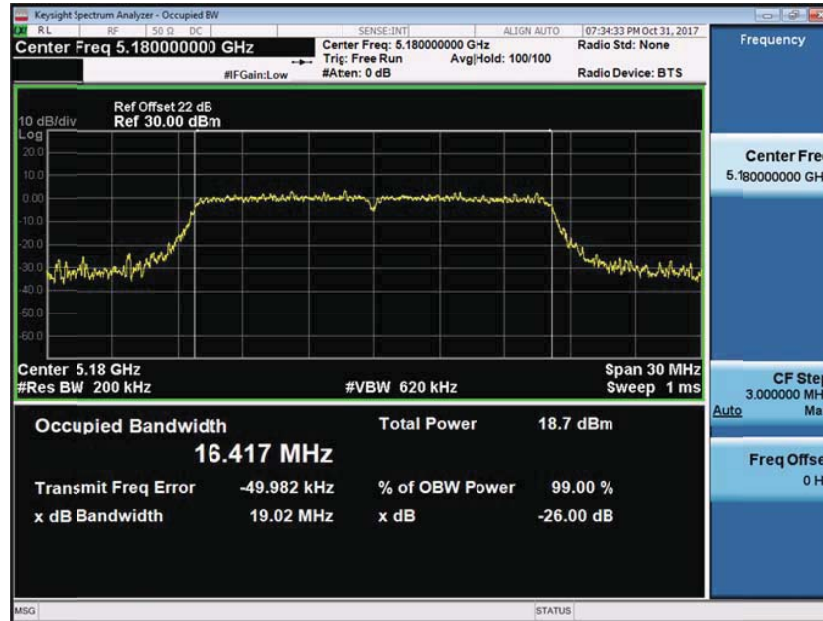
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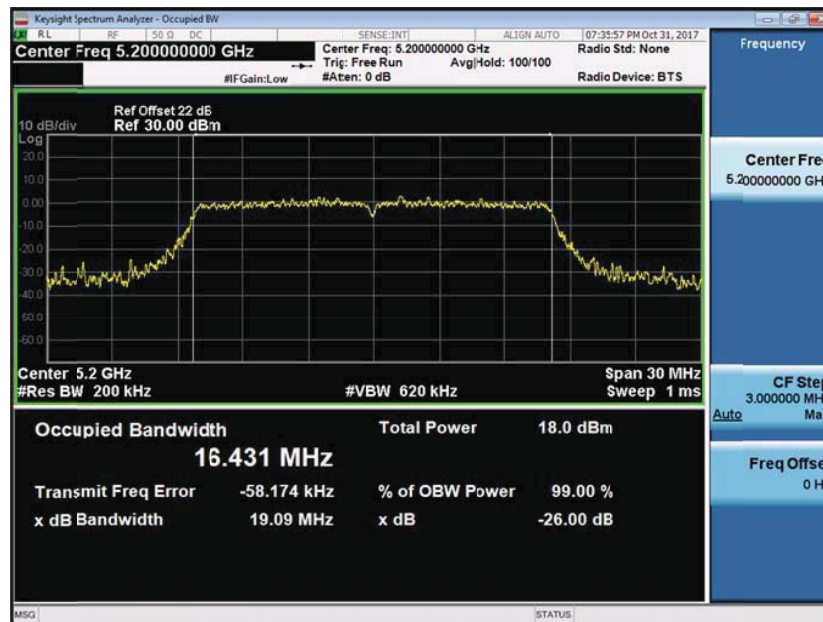


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Issued date : 2017/10/31
FCC ID : A43-WISP5

99% Bandwidth 802.11a Chain 0 Ch 36 5180MHz



99% Bandwidth 802.11a Chain 0 Ch 40 5200MHz



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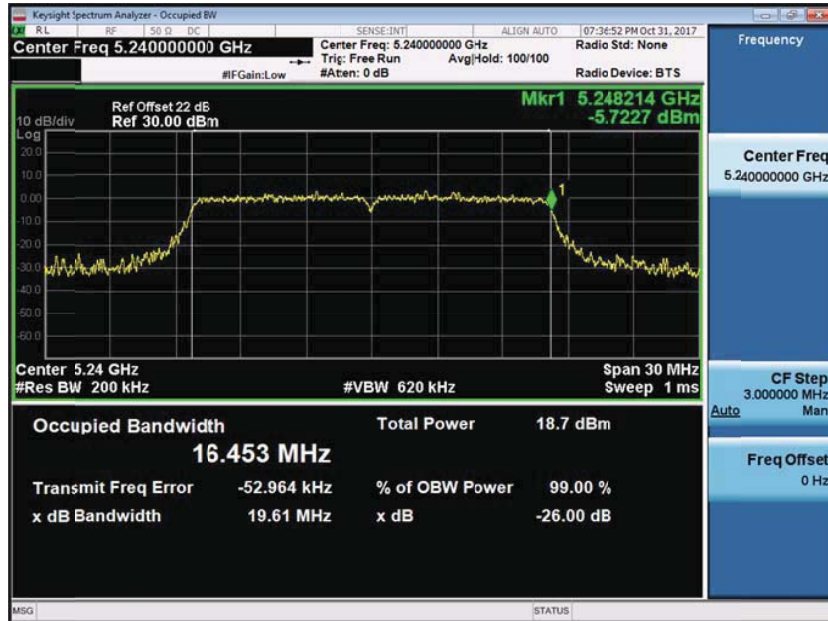
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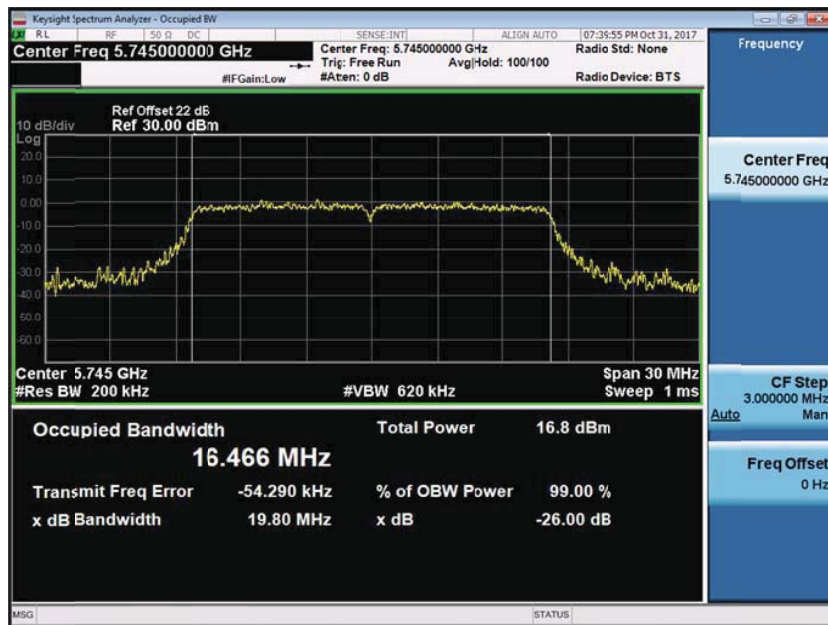


Test report No. : 4788166493A-US-R2-V0
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Issued date : 2017/10/31
FCC ID : A43-WISP5

99% Bandwidth 802.11a Chain 0 Ch 48 5240MHz



99% Bandwidth 802.11a Chain 0 Ch 149 5745MHz



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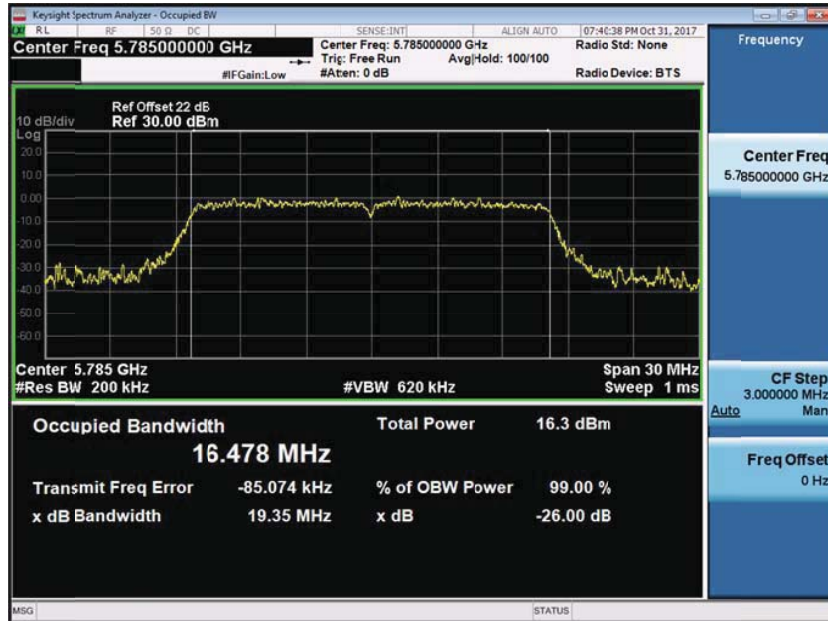
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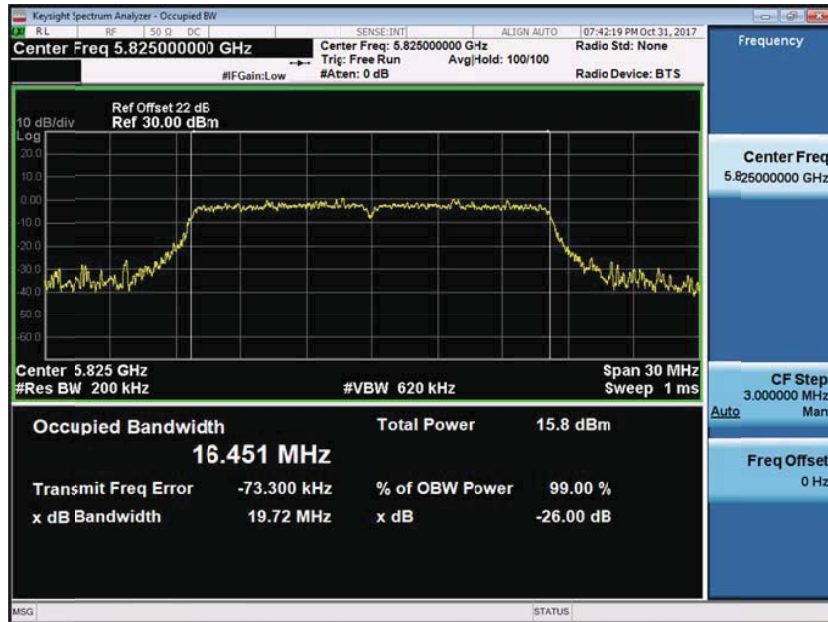


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Issued date : 2017/10/31
FCC ID : A43-WISP5

99% Bandwidth 802.11a Chain 0 Ch 157 5785MHz



99% Bandwidth 802.11a Chain 0 Ch 165 5825MHz



EMC Lab.

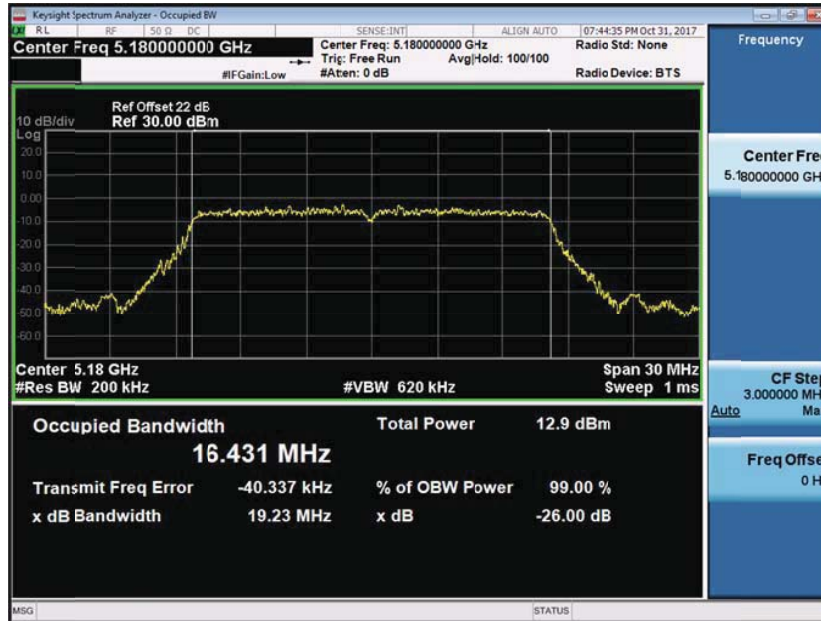
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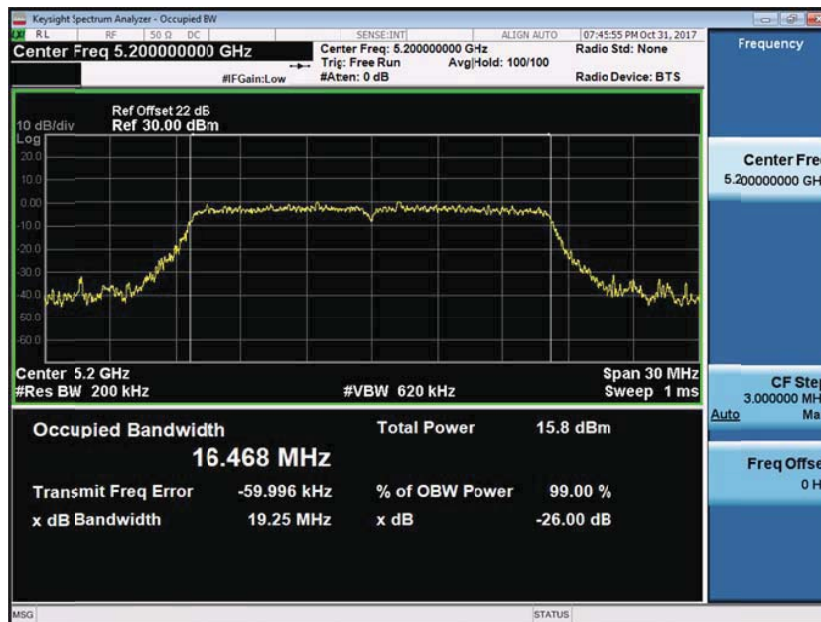


Test report No. : 4788166493A-US-R2-V0
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99% Bandwidth 802.11n HT20 Chain 0 Ch 36 5180MHz



99% Bandwidth 802.11n HT20 Chain 0 Ch 40 5200MHz



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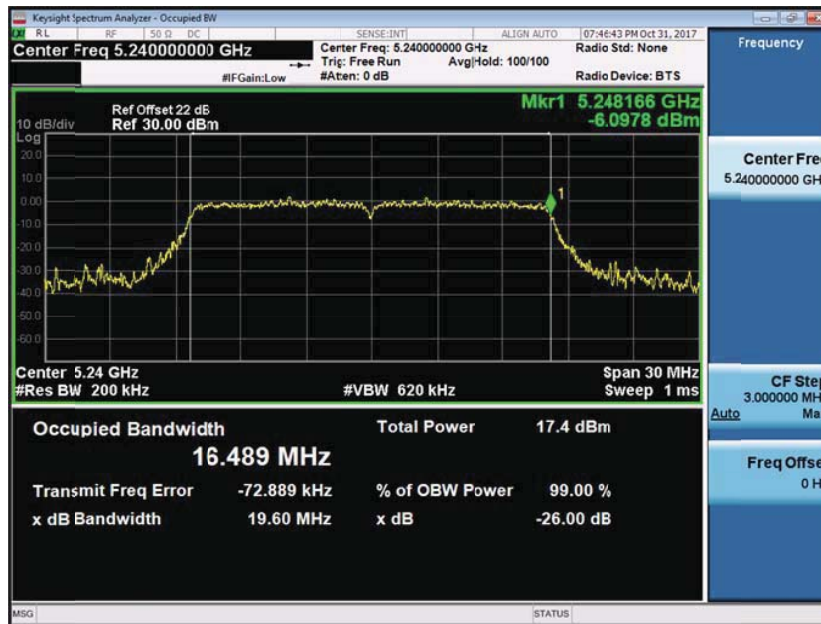
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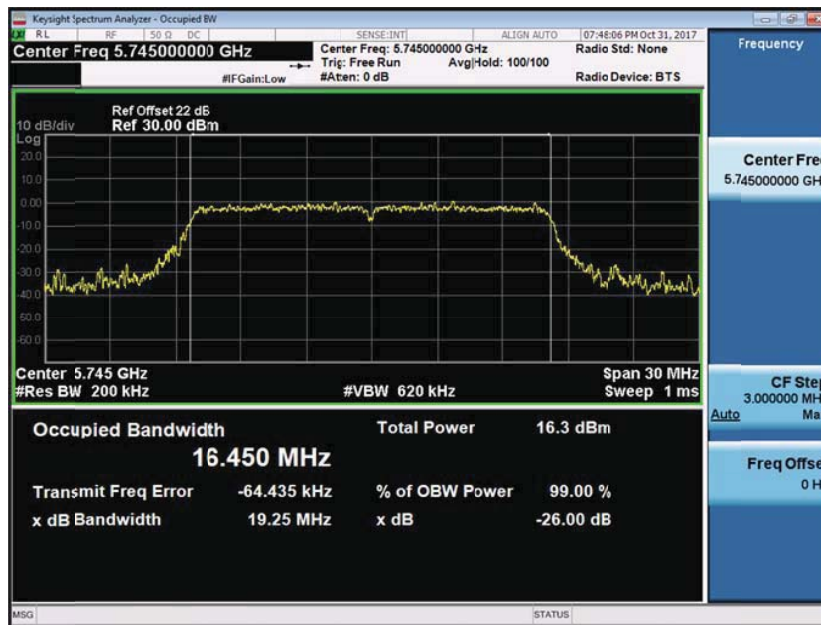


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Issued date : 2017/10/31
FCC ID : A43-WISP5

99% Bandwidth 802.11n HT20 Chain 0 Ch 48 5240MHz



99% Bandwidth 802.11n HT20 Chain 0 Ch 149 5745MHz



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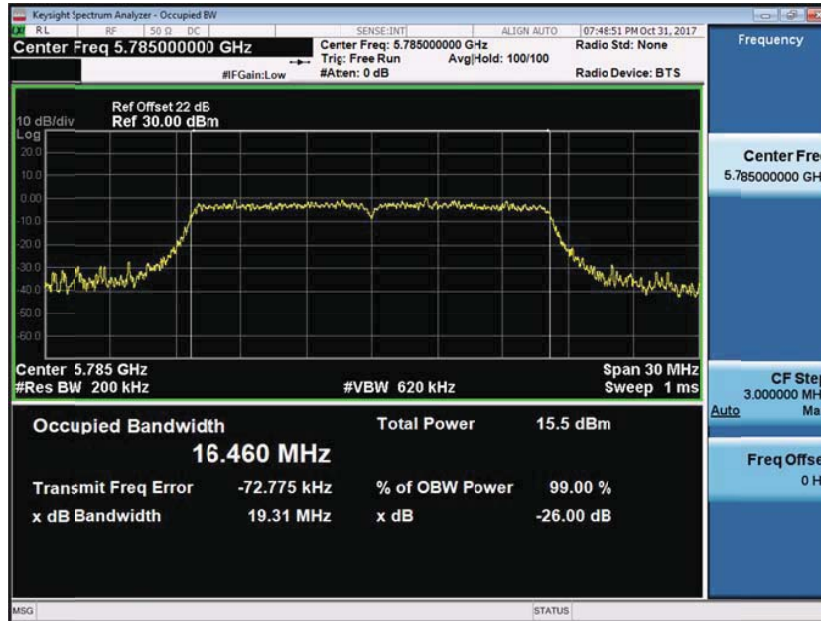
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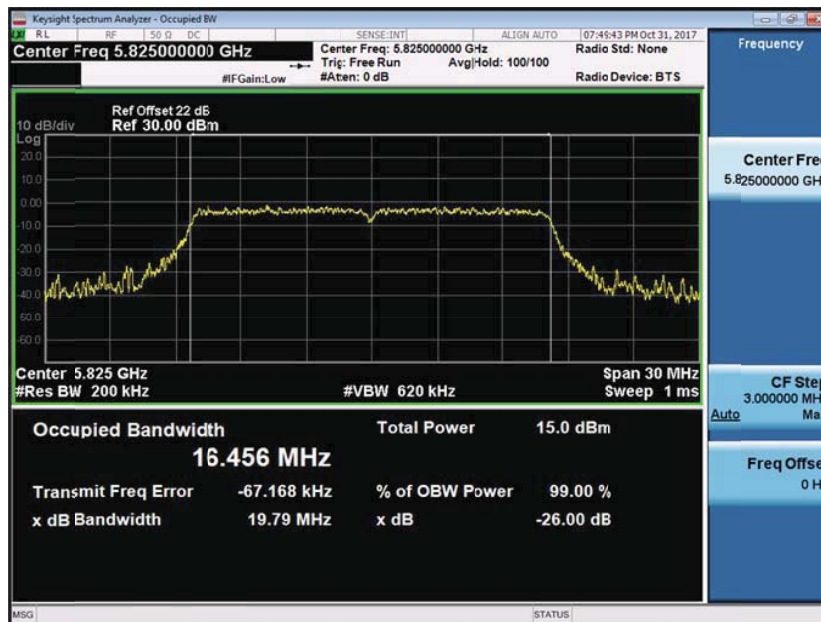


Test report No. : 4788166493A-US-R2-V0
Page : 40 of 193
Issued date : 2017/10/31
FCC ID : A43-WISP5

99% Bandwidth 802.11n HT20 Chain 0 Ch 157 5785MHz



99% Bandwidth 802.11n HT20 Chain 0 Ch 165 5825MHz



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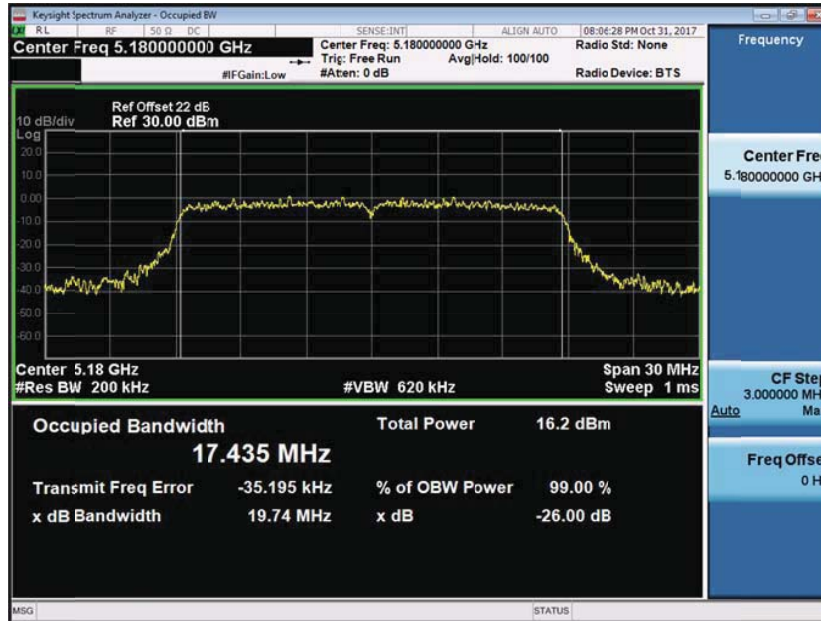
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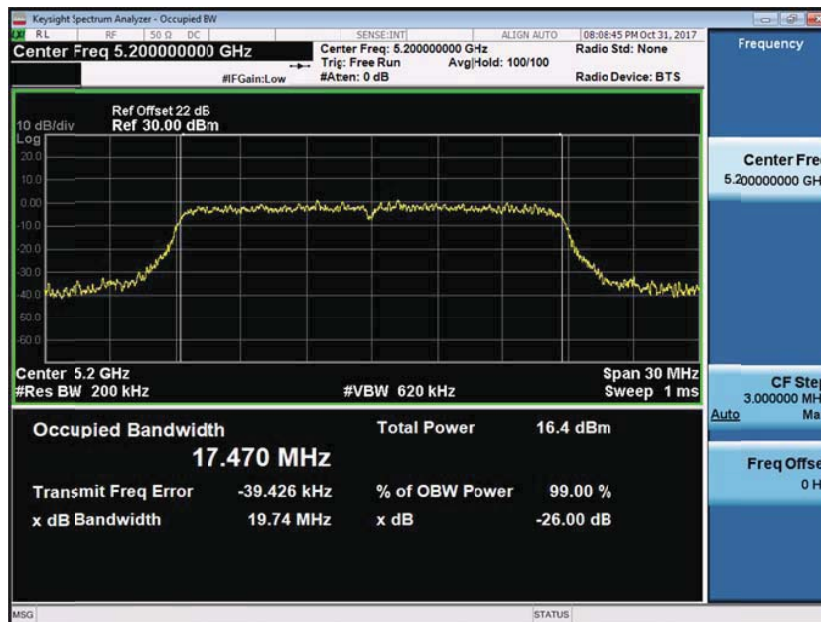


Test report No. : 4788166493A-US-R2-V0
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Issued date : 2017/10/31
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99% Bandwidth 802.11n HT20 Chain 1 Ch 36 5180MHz



99% Bandwidth 802.11n HT20 Chain 1 Ch 40 5200MHz



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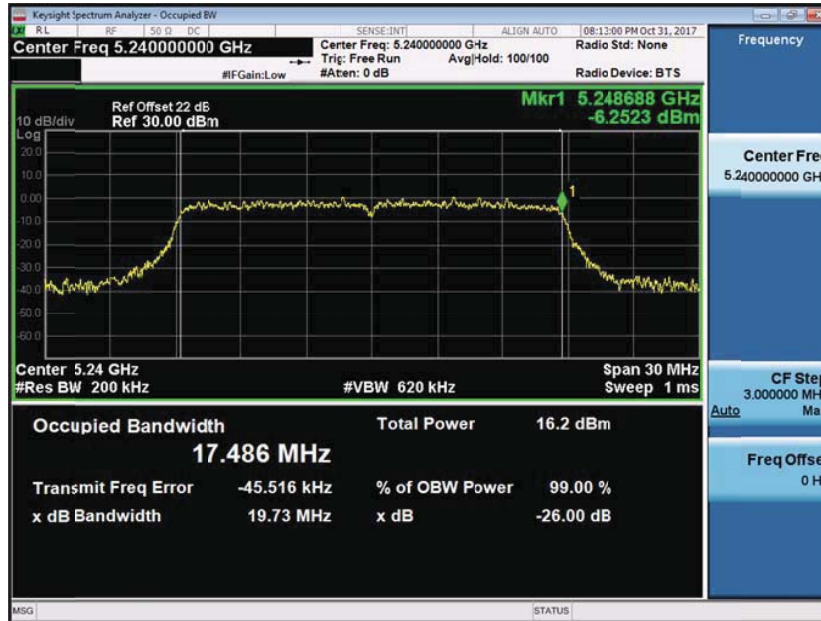
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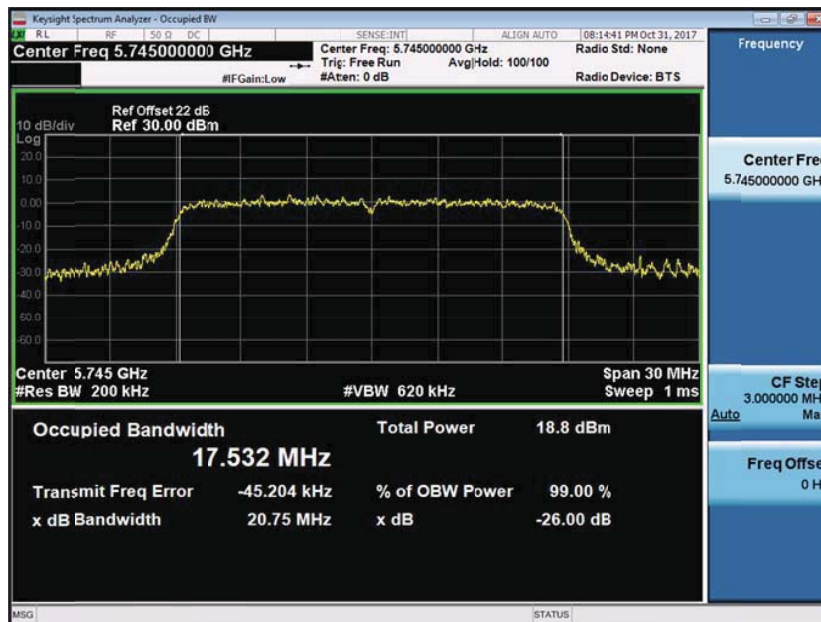


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99% Bandwidth 802.11n HT20 Chain 1 Ch 48 5240MHz



99% Bandwidth 802.11n HT20 Chain 1 Ch 149 5745MHz



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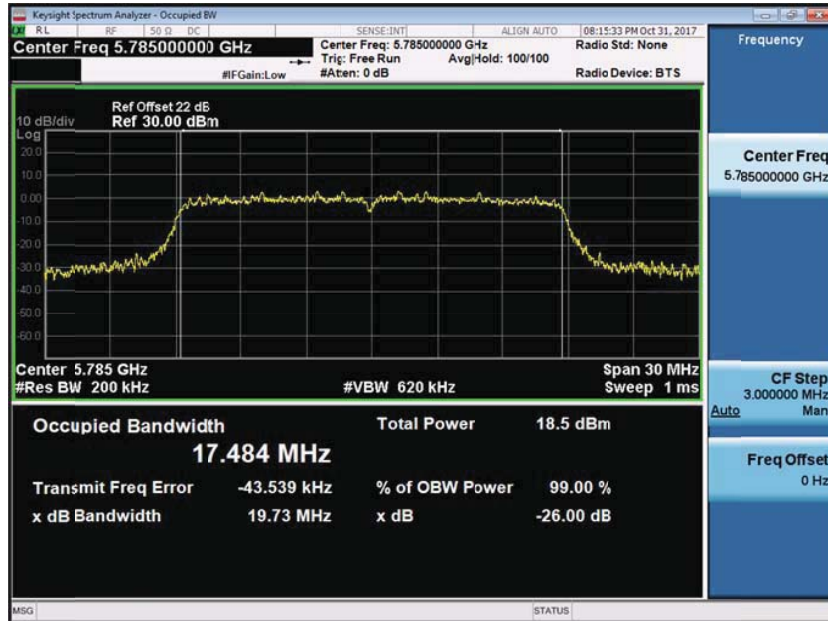
Telephone :+886-2-7737-3000

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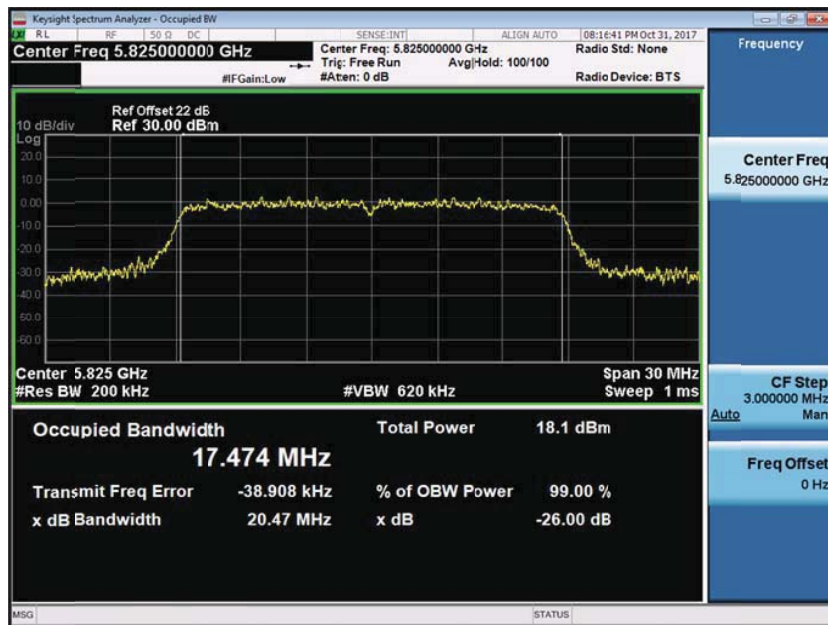


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99% Bandwidth 802.11n HT20 Chain 1 Ch 165 5825MHz



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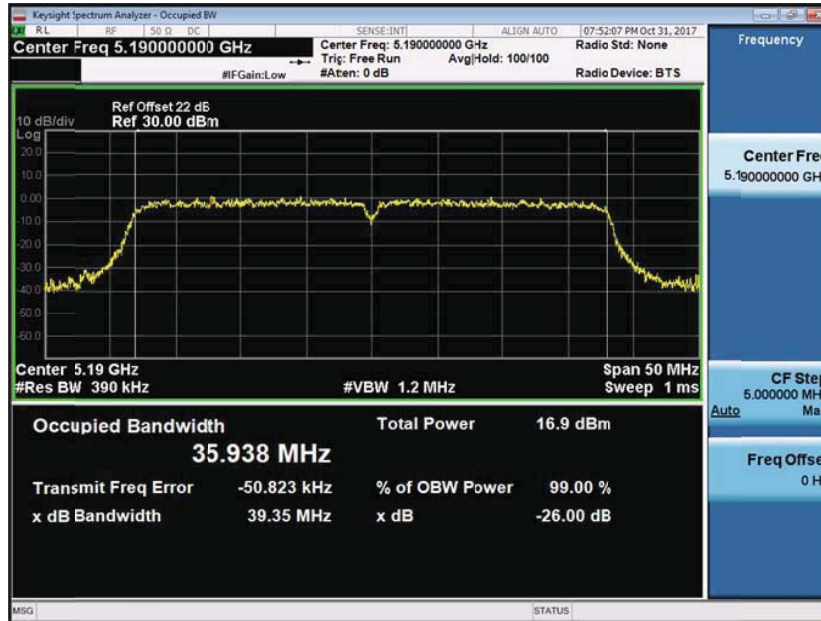
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FCC ID : A43-WISP5

99% Bandwidth 802.11n HT40 Chain 0 Ch 38 5190MHz



99% Bandwidth 802.11n HT40 Chain 0 Ch 46 5230MHz



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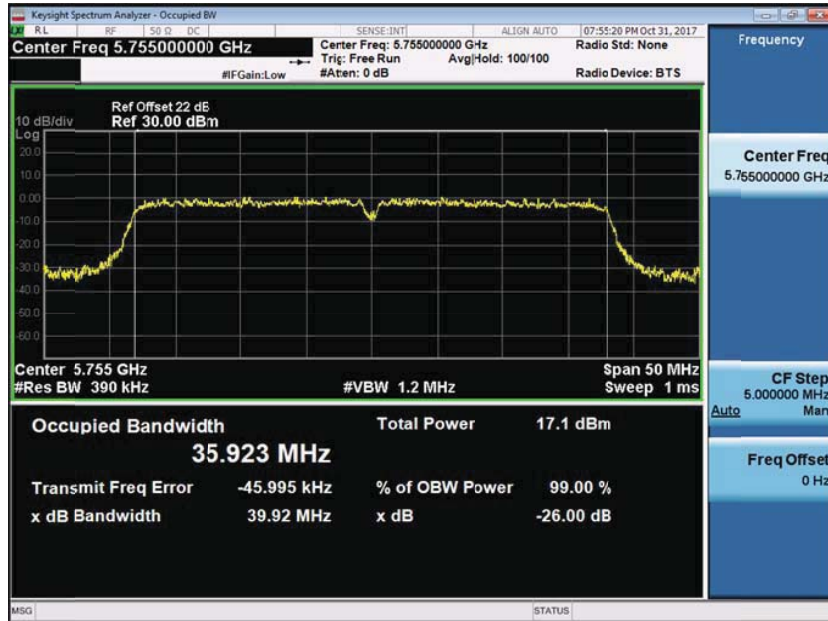
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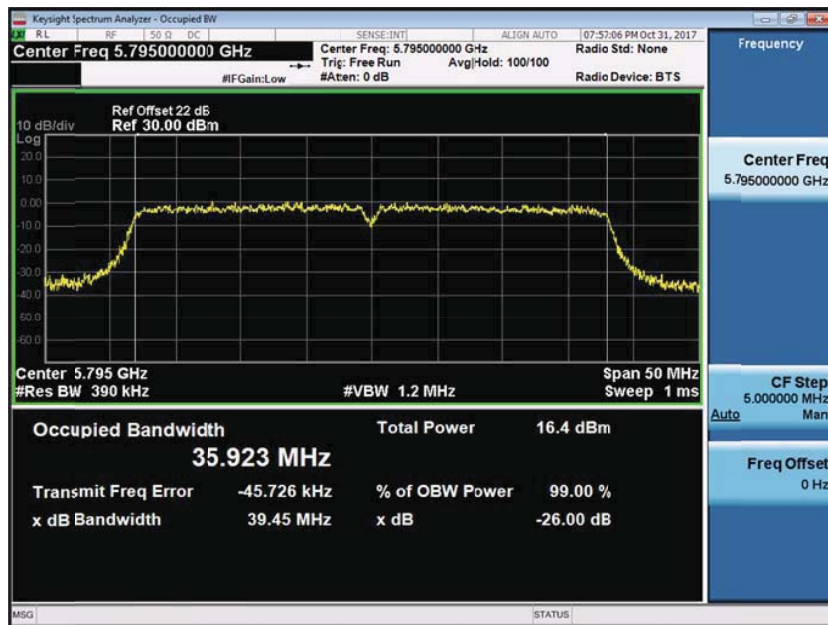


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FCC ID : A43-WISP5

99% Bandwidth 802.11n HT40 Chain 0 Ch 151 5755MHz



99% Bandwidth 802.11n HT40 Chain 0 Ch 159 5795MHz



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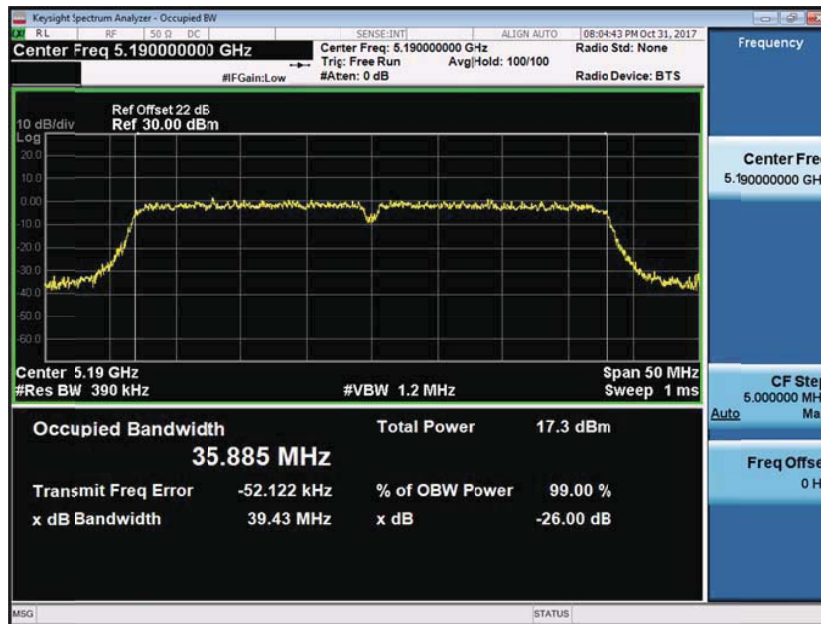
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Facsimile (FAX) :+886-2-7737-3610

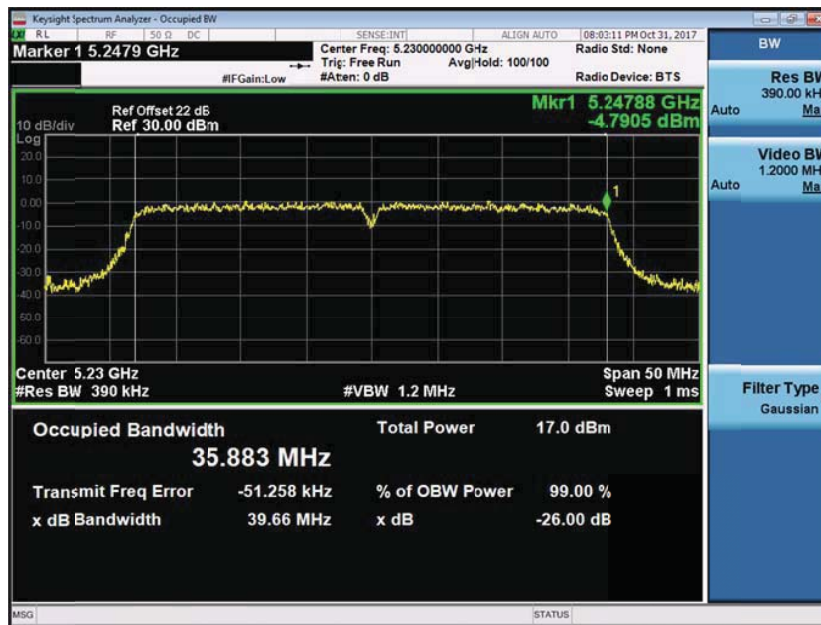


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99% Bandwidth 802.11n HT40 Chain 1 Ch 38 5190MHz



99% Bandwidth 802.11n HT40 Chain 1 Ch 46 5230MHz



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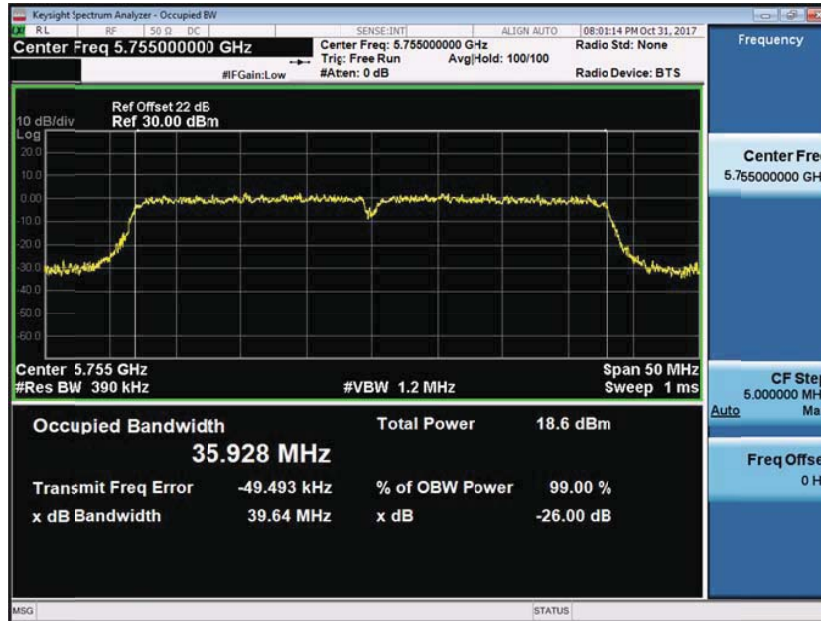
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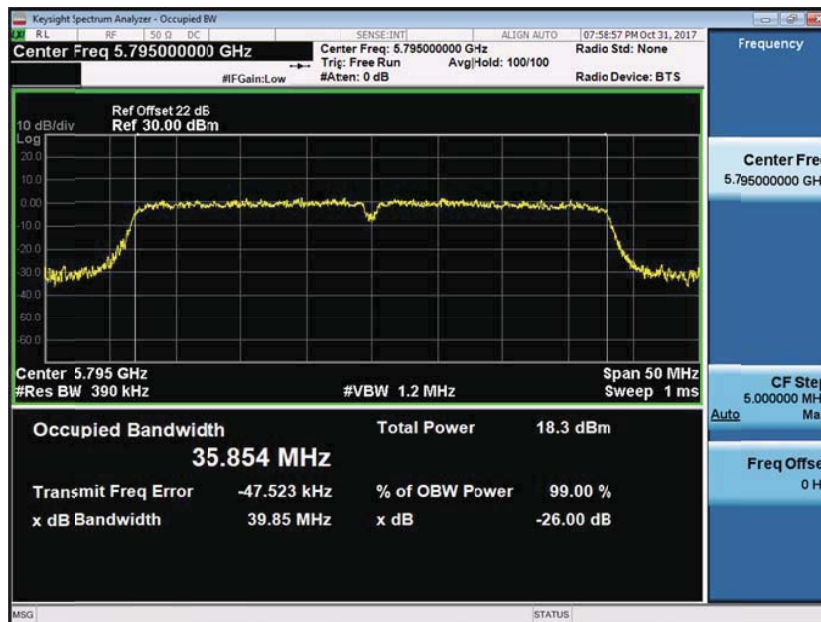


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99% Bandwidth 802.11n HT40 Chain 1 Ch 151 5755MHz



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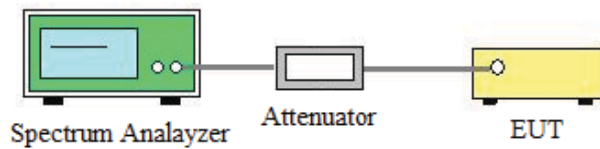
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Issued date : 2017/10/31
FCC ID : A43-WISP5

7.4. 6 dB Bandwidth

Requirements

The minimum 6 dB bandwidth shall be at least 500 kHz.

Test Setup



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Issued date : 2017/10/31
FCC ID : A43-WISP5

Test Data

Mode	Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)	Result
802.11a Chain0	149	5745	16.36	≥ 0.5	Pass
	157	5785	16.32	≥ 0.5	Pass
	165	5825	16.3	≥ 0.5	Pass
802.11n HT20 Chain 0	149	5745	16.68	≥ 0.5	Pass
	157	5785	16.05	≥ 0.5	Pass
	165	5825	16.64	≥ 0.5	Pass
802.11n HT20 Chain 1	149	5745	16.9	≥ 0.5	Pass
	157	5785	16.68	≥ 0.5	Pass
	165	5825	16.83	≥ 0.5	Pass
802.11n HT40 Chain 0	151	5755	35.16	≥ 0.5	Pass
	159	5795	35.11	≥ 0.5	Pass
802.11n HT40 Chain 1	151	5755	35.1	≥ 0.5	Pass
	159	5795	35.1	≥ 0.5	Pass

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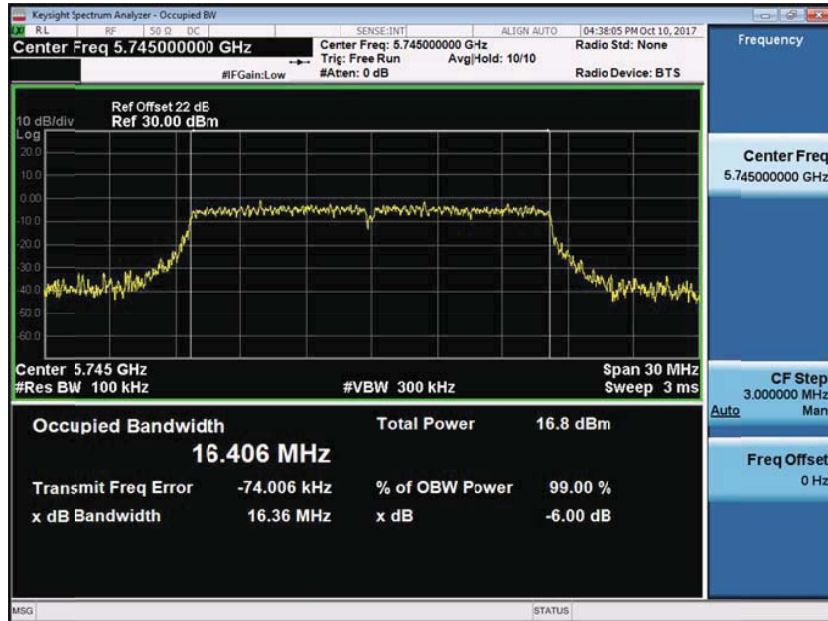
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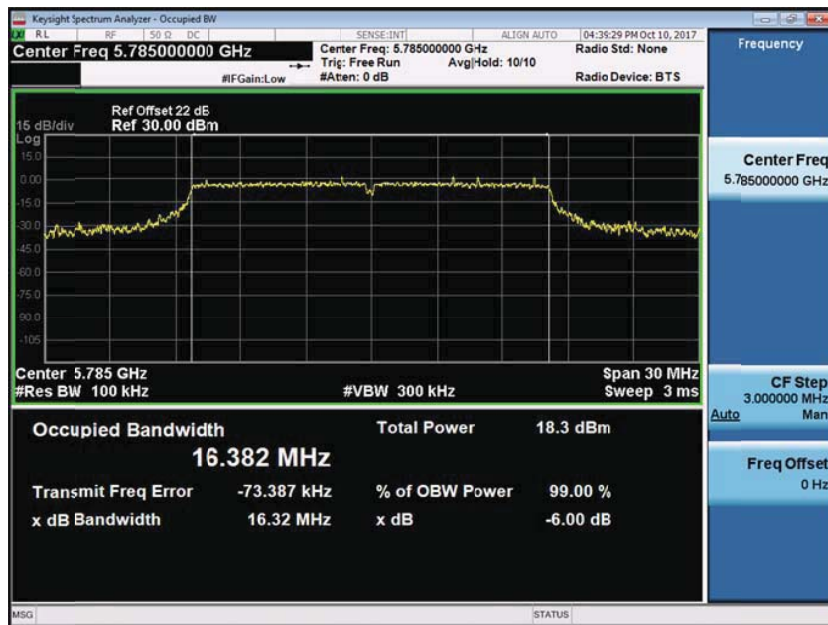


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6dB Bandwidth 802.11a Chain 0 Ch 149 5745MHz



6dB Bandwidth 802.11a Chain 0 Ch 157 5785MHz



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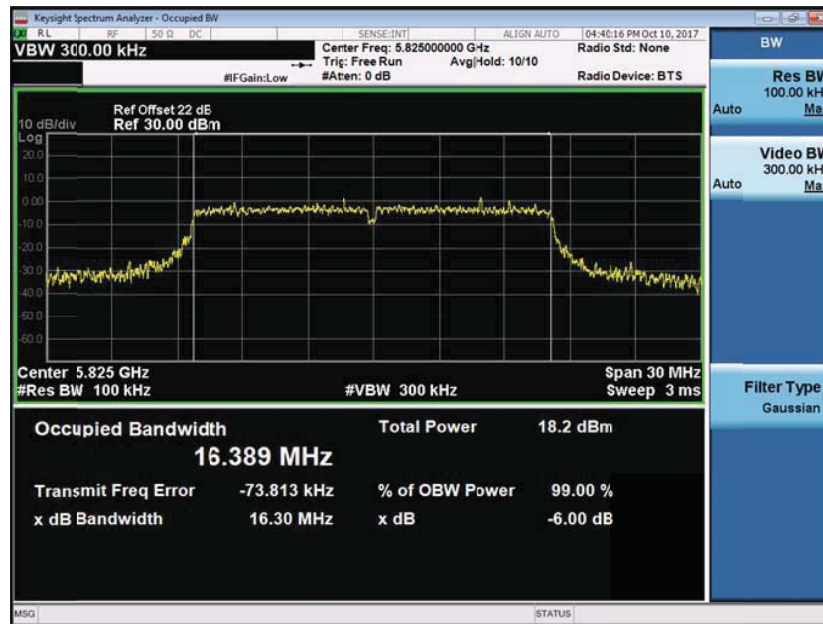
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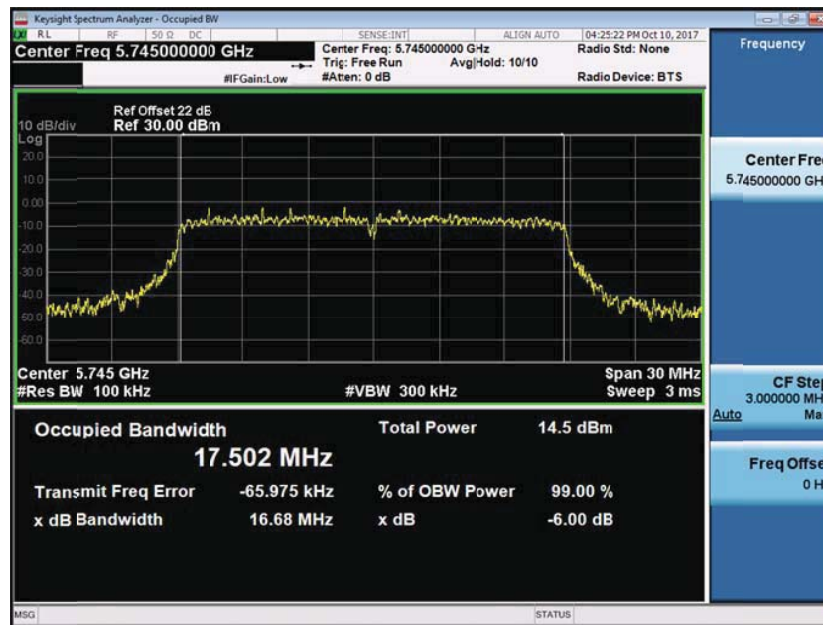


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6dB Bandwidth 802.11a Chain 0 Ch 165 5825MHz



6dB Bandwidth 802.11n HT20 Chain 0 Ch 149 5745MHz



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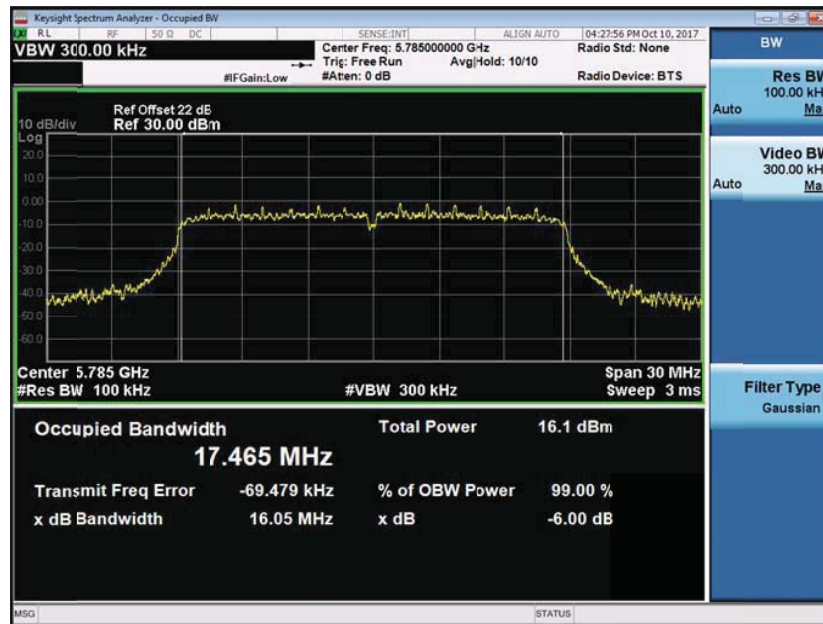
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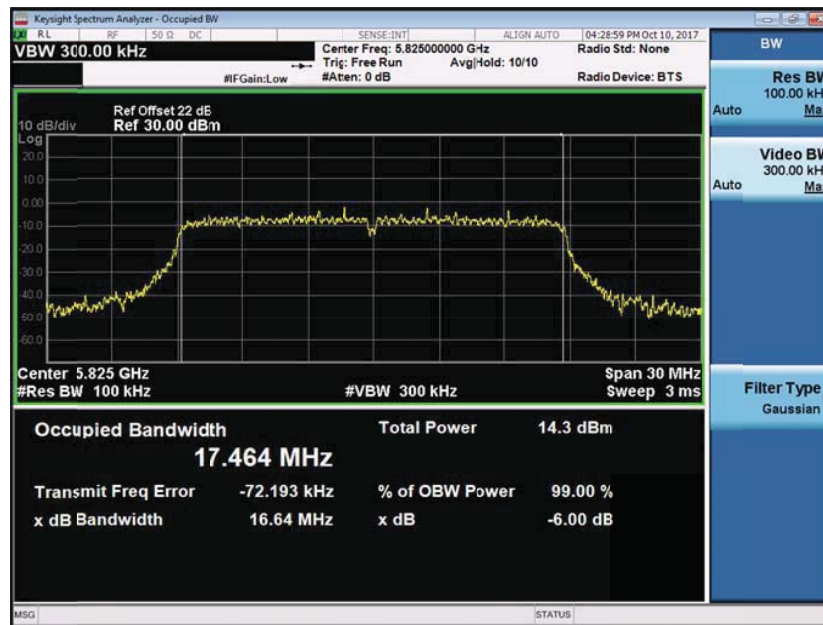


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6dB Bandwidth 802.11n HT20 Chain 0 Ch 157 5785MHz



6dB Bandwidth 802.11n HT20 Chain 0 Ch 165 5825MHz



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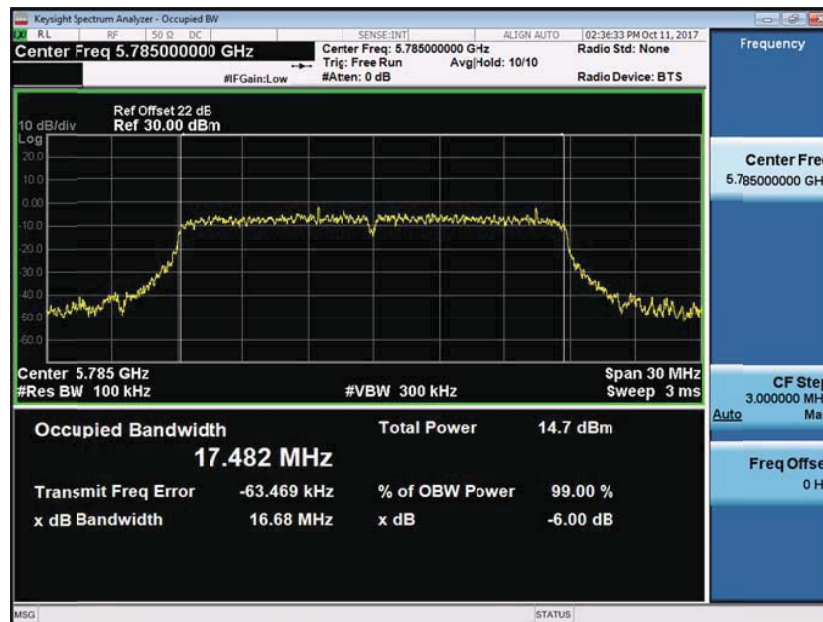


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6dB Bandwidth 802.11n HT20 Chain 1 Ch 149 5745MHz



6dB Bandwidth 802.11n HT20 Chain 1 Ch 157 5785MHz



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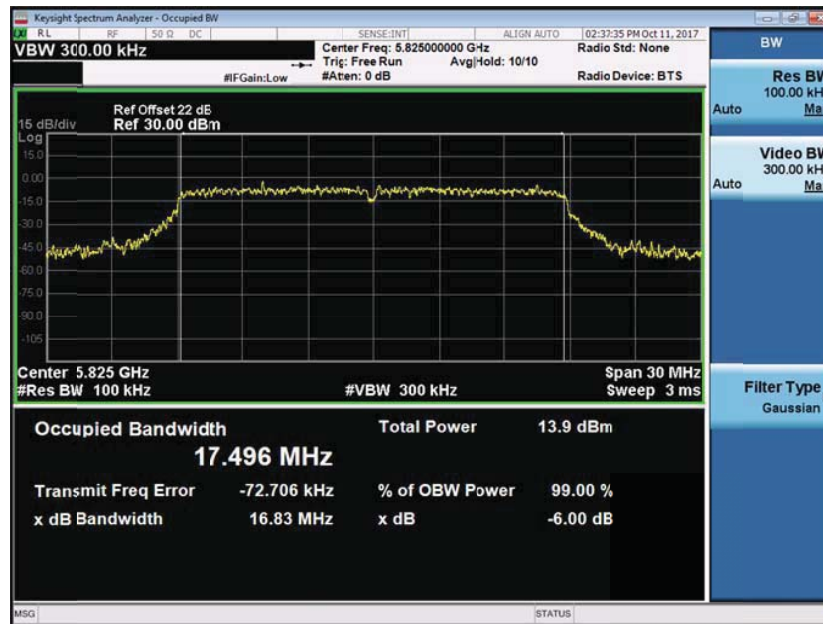
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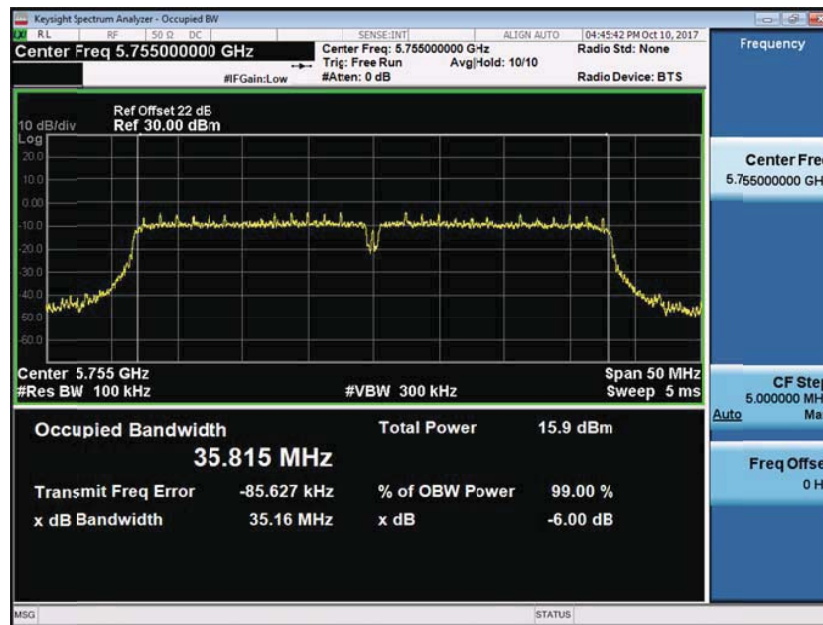


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6dB Bandwidth 802.11n HT20 Chain 1 Ch 165 5825MHz



6dB Bandwidth 802.11n HT40 Chain 0 Ch 151 5755MHz



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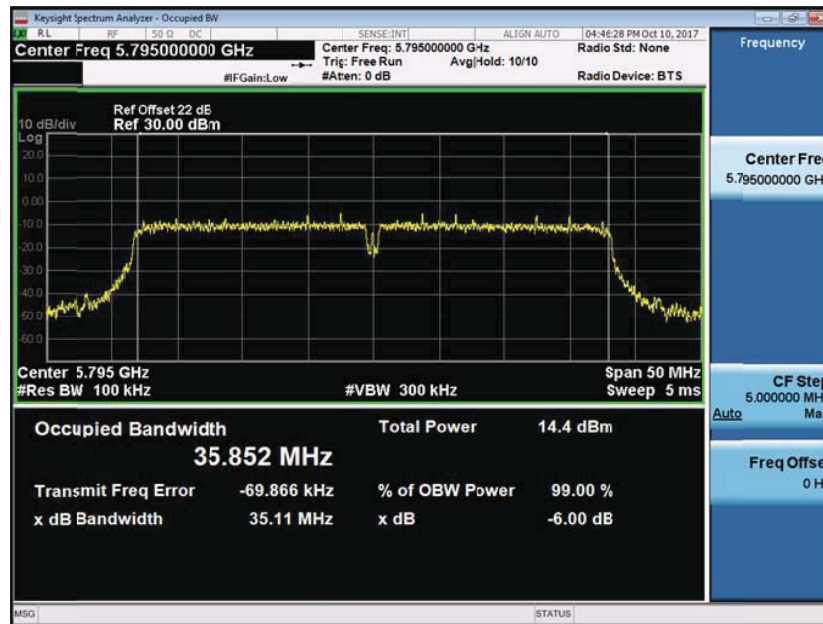
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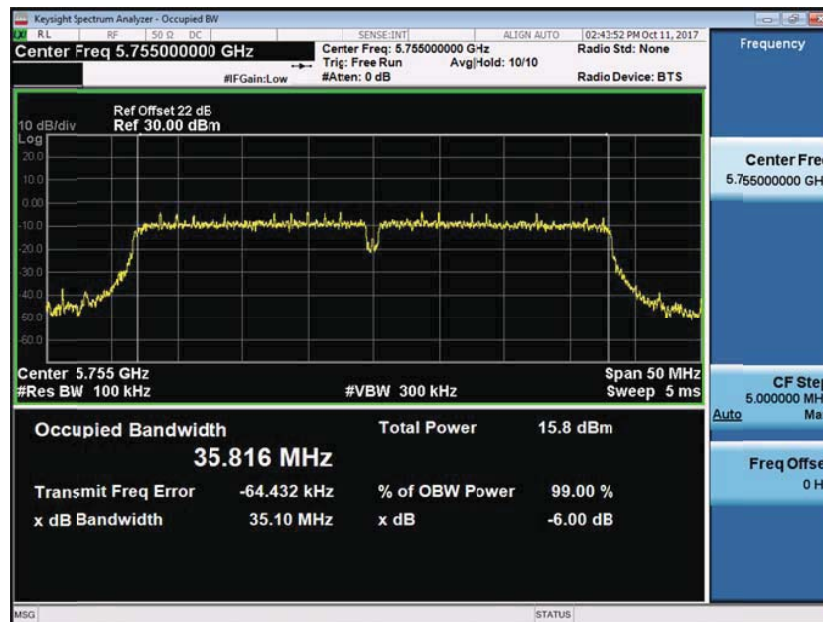


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6dB Bandwidth 802.11n HT40 Chain 0 Ch 159 5795MHz



6dB Bandwidth 802.11n HT40 Chain 1 Ch 151 5755MHz



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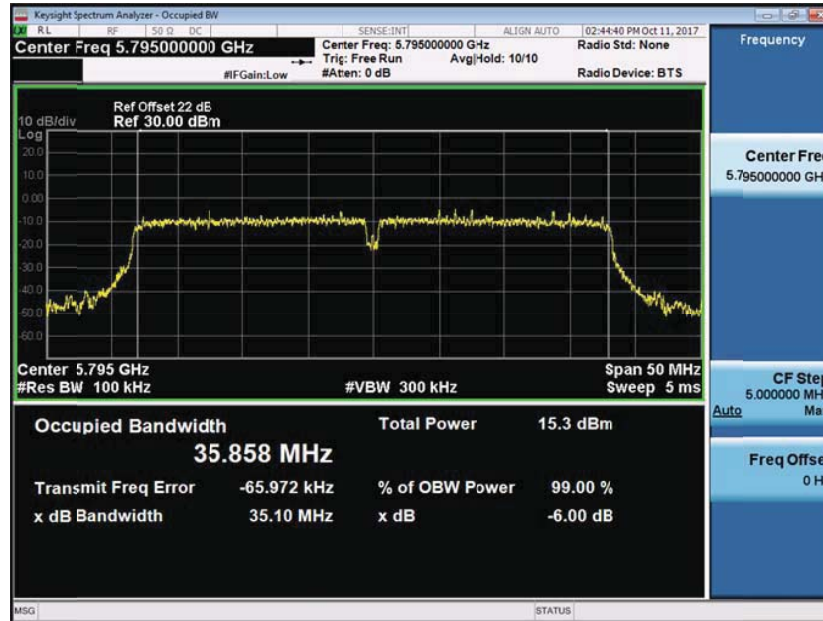
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6dB Bandwidth 802.11n HT40 Chain 1 Ch 159 5795MHz



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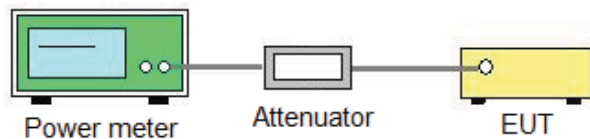
7.5. Maximum Conducted Output Power

Requirements

For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi.

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W.

Test Setup



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Test Data

Mode	Channel	Frequency (MHz)	Output Power (dBm)	Duty Cycle Factor (dB)	Total Power (dBm)	Output Power Limit (dBm)	Margin (dB)
802.11a Chain 0	36	5180	11.15	0	11.15	24	-12.85
	40	5200	11.32	0	11.32	24	-12.68
	48	5240	11.39	0	11.39	24	-12.61
	149	5745	11.24	0	11.24	30	-18.76
	157	5785	11.73	0	11.73	30	-18.27
	165	5825	11.81	0	11.81	30	-18.19

Mode	Channel	Frequency (MHz)	Output Power (dBm)		Output Power (mW)		Duty Cycle Factor (dB)	Total Power (dBm)	Output Power Limit (dBm)	Margin (dB)
			Chain 0	Chain 1	Chain 0	Chain 1				
802.11n HT20	36	5180	8.27	8.36	6.71	6.85	0	11.33	24	-12.67
	40	5200	8.35	8.24	6.84	6.67	0	11.31	24	-12.69
	48	5240	8.57	8.13	7.19	6.50	0	11.37	24	-12.63
	149	5745	8.32	9.21	6.79	8.34	0	11.80	30	-18.20
	157	5785	8.16	8.77	6.55	7.53	0	11.49	30	-18.51
	165	5825	8.02	8.45	6.34	7.00	0	11.25	30	-18.75

Mode	Channel	Frequency (MHz)	Output Power (dBm)		Output Power (mW)		Duty Cycle Factor (dB)	Total Power (dBm)	Output Power Limit (dBm)	Margin (dB)
			Chain 0	Chain 1	Chain 0	Chain 1				
802.11n HT40	38	5190	8.21	8.34	6.62	6.82	0	11.29	24	-12.71
	46	5230	8.23	8.22	6.65	6.64	0	11.24	24	-12.76
	151	5755	8.34	8.92	6.82	7.80	0	11.65	30	-18.35
	159	5795	8.01	8.62	6.32	7.28	0	11.34	30	-18.66

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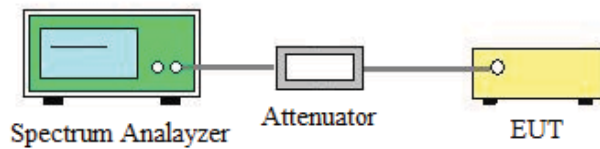
7.6. Power Spectral Density

Requirements

For client devices in the 5.15-5.25 GHz band, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band.

For the band 5.725-5.85 GHz, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band.

Test Setup



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Test Data

Mode	Channel	Frequency (MHz)	PSD (dBm)	Duty Cycle Factor (dB)	Total PSD (dBm)	Limit (dBm)	Margin (dB)
802.11a Chain 0	36	5180	0.340	0.00	0.340	11	-10.66
	40	5200	0.700	0.00	0.700	11	-10.30
	48	5240	0.810	0.00	0.810	11	-10.19
	149	5745	-2.600	0.00	-2.600	30	-32.60
	157	5785	-1.880	0.00	-1.880	30	-31.88
	165	5825	-1.660	0.00	-1.660	30	-31.66

Mode	Channel	Frequency (MHz)	PSD (dBm)		PSD (mW)		Duty Cycle Factor (dB)	Total PSD (dBm)	Limit (dBm)	Margin (dB)
			Chain 0	Chain 1	Chain 0	Chain 1				
802.11n HT20	36	5180	-2.39	-2	0.58	0.63	0.00	0.82	11	-10.18
	40	5200	-2.34	-2.85	0.58	0.52	0.00	0.42	11	-10.58
	48	5240	-2.54	-2.73	0.56	0.53	0.00	0.38	11	-10.62
	149	5745	-4.42	-4.34	0.36	0.37	0.00	-1.37	30	-31.37
	157	5785	-5.13	-4.81	0.31	0.33	0.00	-1.96	30	-31.96
	165	5825	-5.86	-5.26	0.26	0.30	0.00	-2.54	30	-32.54

Mode	Channel	Frequency (MHz)	PSD (dBm)		PSD (mW)		Duty Cycle Factor (dB)	Total PSD (dBm)	Limit (dBm)	Margin (dB)
			Chain 0	Chain 1	Chain 0	Chain 1				
802.11n HT40	38	5190	-6.11	-5.15	0.24	0.31	0.00	-2.59	11	-13.59
	46	5230	-5.63	-6.26	0.27	0.24	0.00	-2.92	11	-13.92
	151	5755	-8.46	-7.98	0.14	0.16	0.00	-5.20	30	-35.20
	159	5795	-8.18	-7.91	0.15	0.16	0.00	-5.03	30	-35.03

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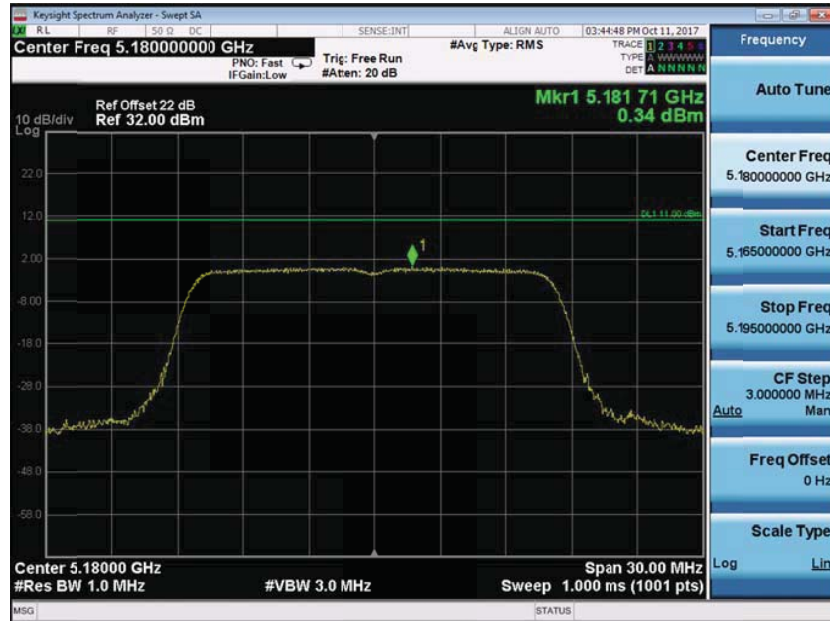
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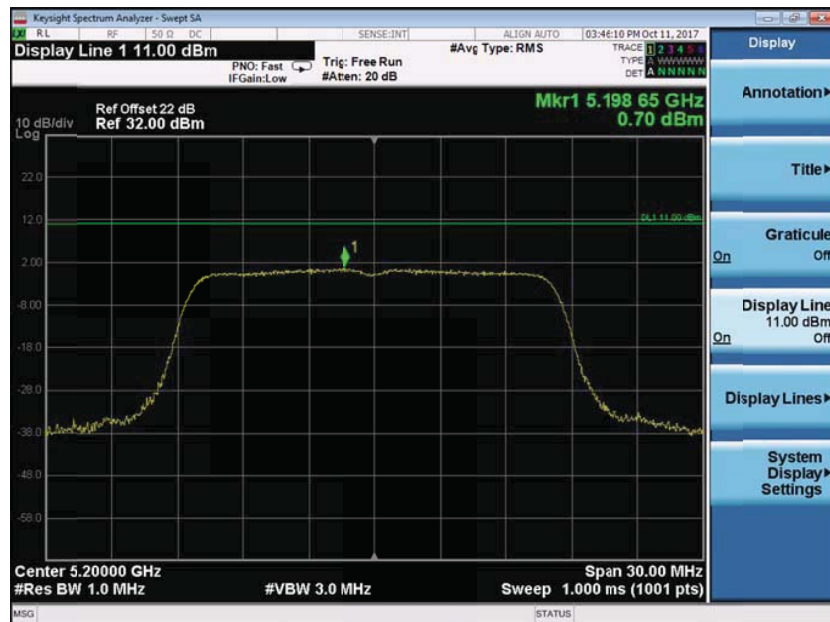


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Power Spectral Density 802.11a Chain 0 Ch 36 5180MHz



Power Spectral Density 802.11a Chain 0 Ch 40 5200MHz



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Power Spectral Density 802.11a Chain 0 Ch 48 5240MHz



Power Spectral Density 802.11a Chain 0 Ch 149 5745MHz



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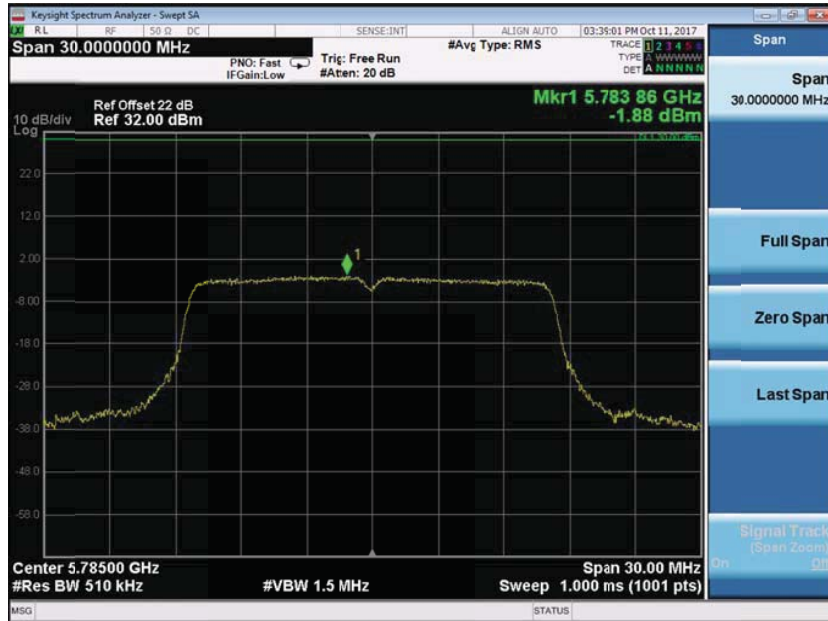
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Power Spectral Density 802.11a Chain 0 Ch 157 5785MHz



Power Spectral Density 802.11a Chain 0 Ch 165 5825MHz



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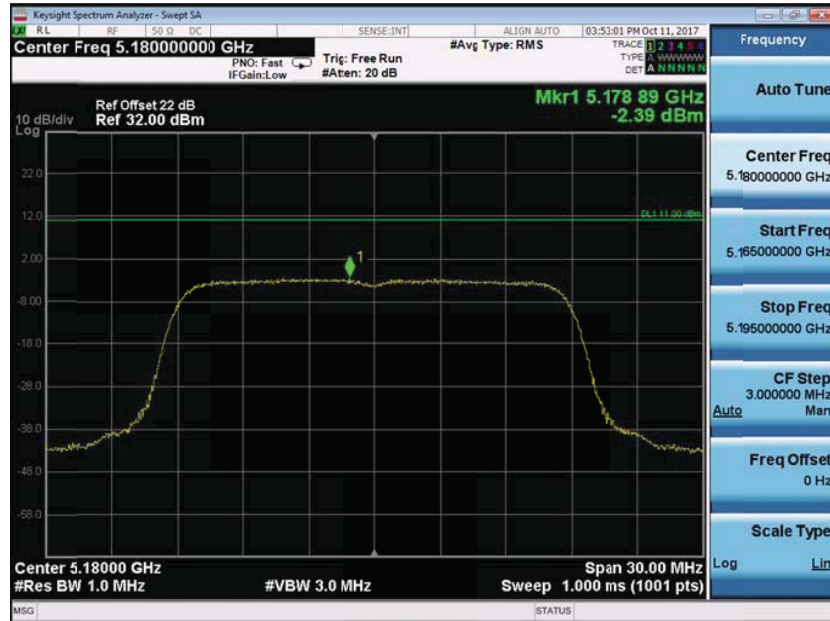
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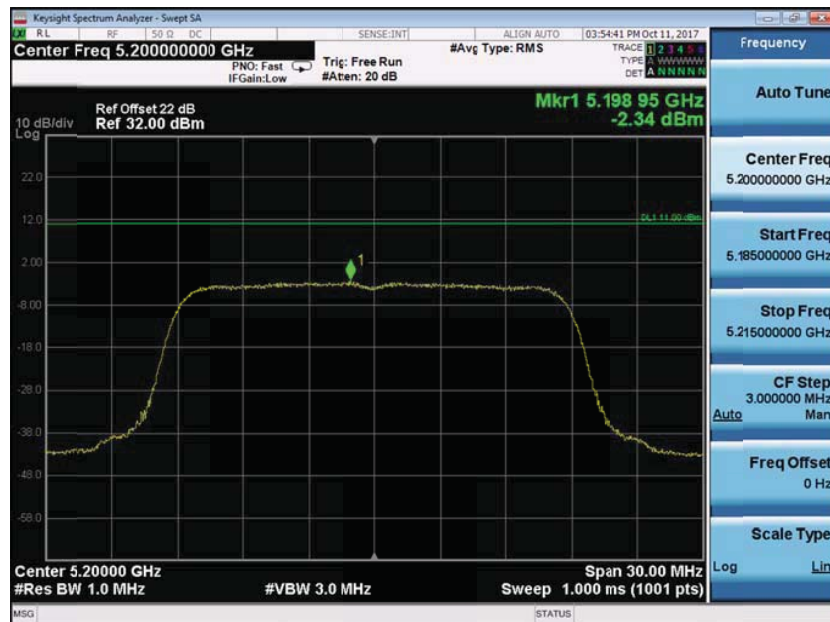


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Power Spectral Density 802.11n HT20 Chain 0 Ch 36 5180MHz



Power Spectral Density 802.11n HT20 Chain 0 Ch 40 5200MHz



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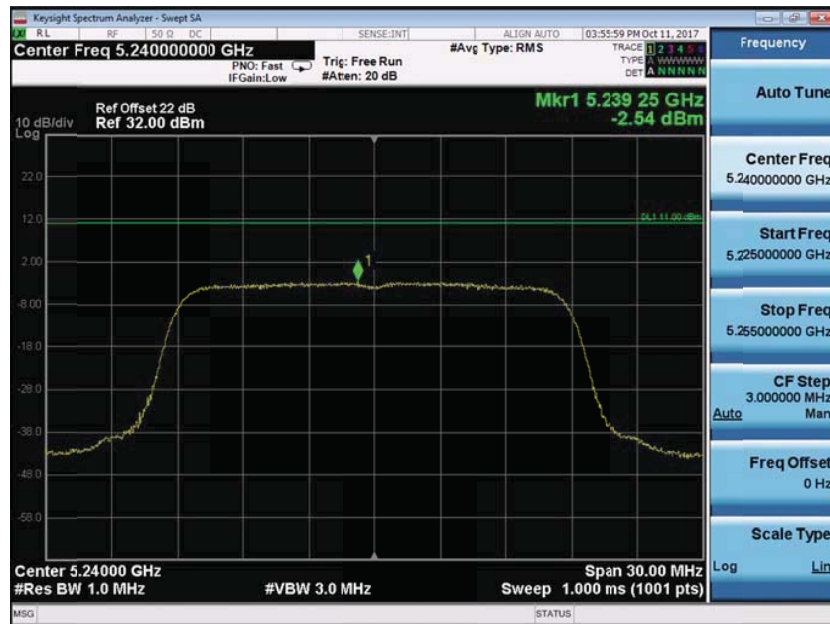
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Power Spectral Density 802.11n HT20 Chain 0 Ch 48 5240MHz



Power Spectral Density 802.11n HT20 Chain 0 Ch 149 5745MHz



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Power Spectral Density 802.11n HT20 Chain 0 Ch 157 5785MHz



Power Spectral Density 802.11n HT20 Chain 0 Ch 165 5825MHz



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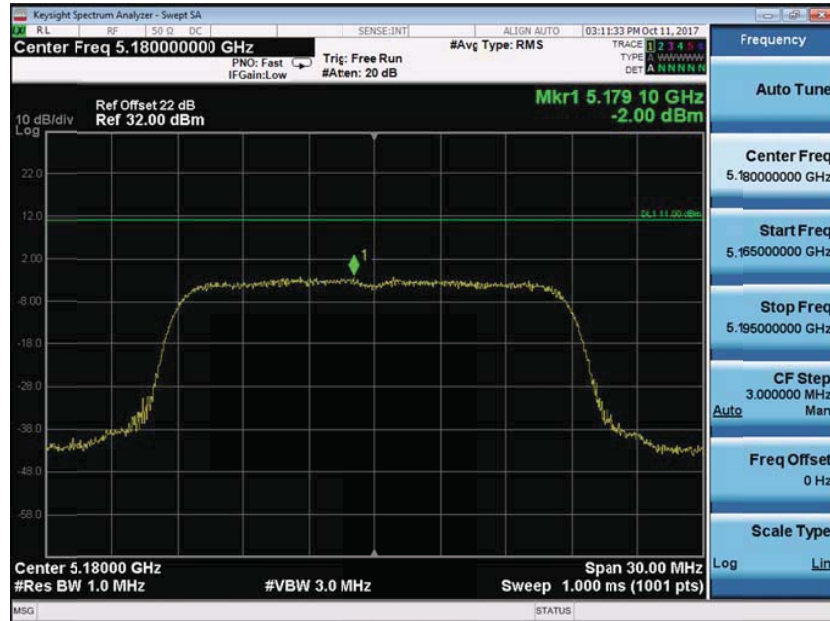
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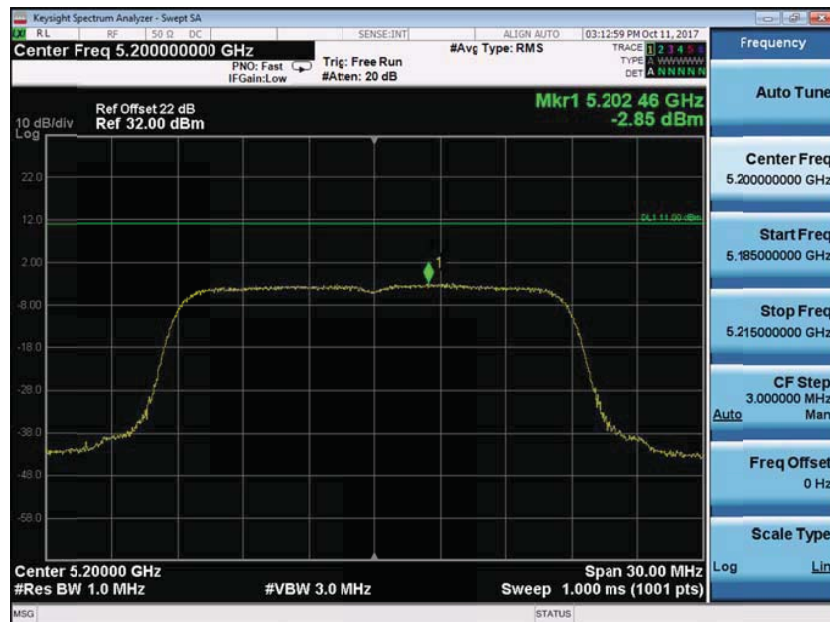


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Power Spectral Density 802.11n HT20 Chain 1 Ch 36 5180MHz



Power Spectral Density 802.11n HT20 Chain 1 Ch 40 5200MHz



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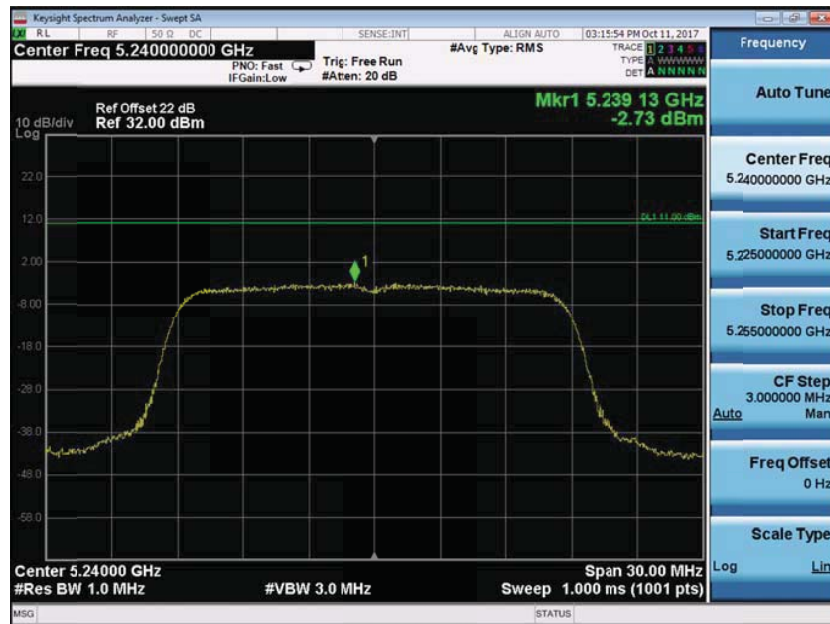
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Power Spectral Density 802.11n HT20 Chain 1 Ch 48 5240MHz



Power Spectral Density 802.11n HT20 Chain 1 Ch 149 5745MHz



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Power Spectral Density 802.11n HT20 Chain 1 Ch 157 5785MHz



Power Spectral Density 802.11n HT20 Chain 1 Ch 165 5825MHz



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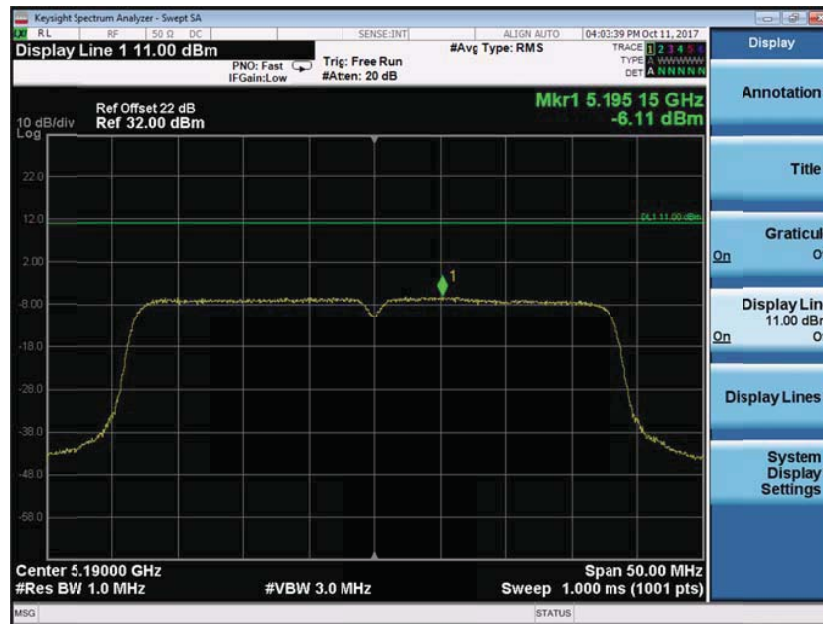
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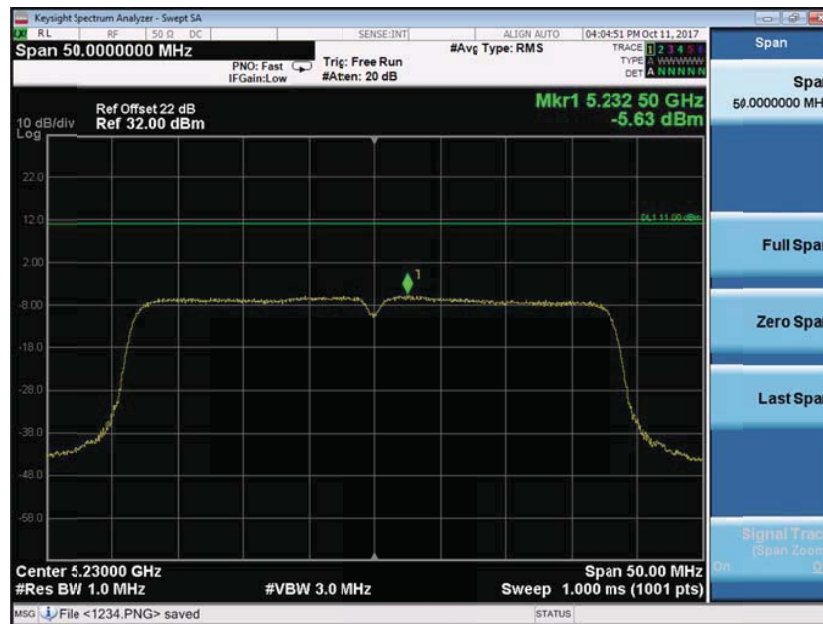


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Power Spectral Density 802.11n HT40 Chain 0 Ch 38 5190MHz



Power Spectral Density 802.11n HT40 Chain 0 Ch 46 5230MHz



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Power Spectral Density 802.11n HT40 Chain 0 Ch 151 5755MHz



Power Spectral Density 802.11n HT40 Chain 0 Ch 159 5795MHz



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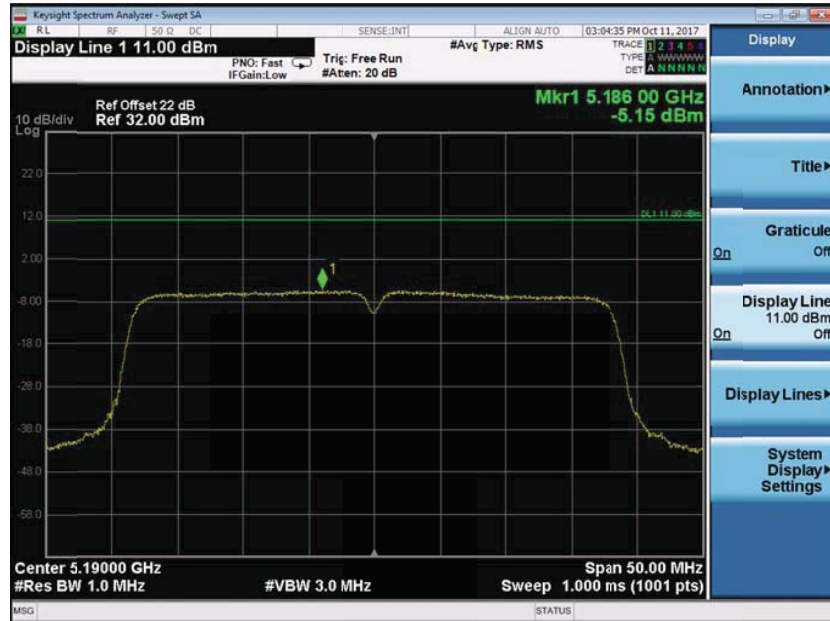
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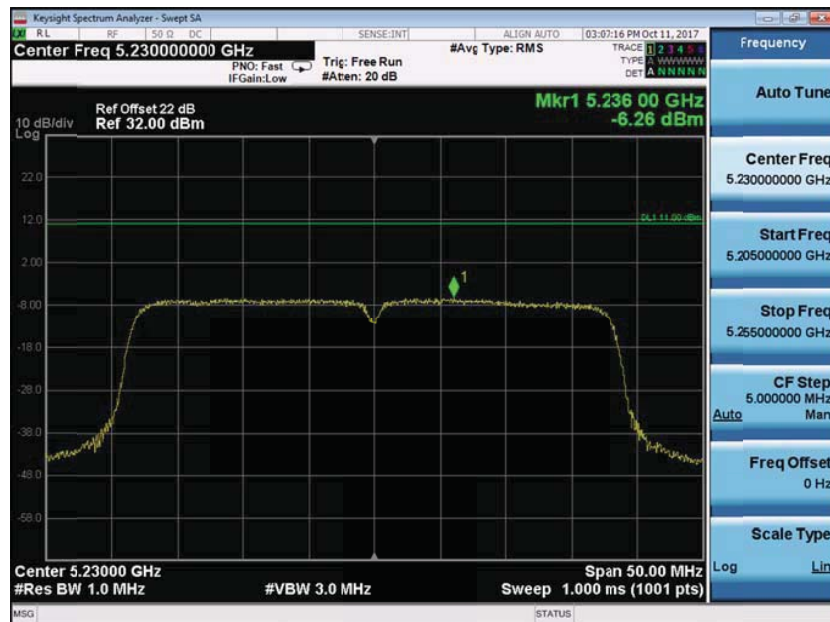


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Power Spectral Density 802.11n HT40 Chain 1 Ch 38 5190MHz



Power Spectral Density 802.11n HT40 Chain 1 Ch 46 5230MHz



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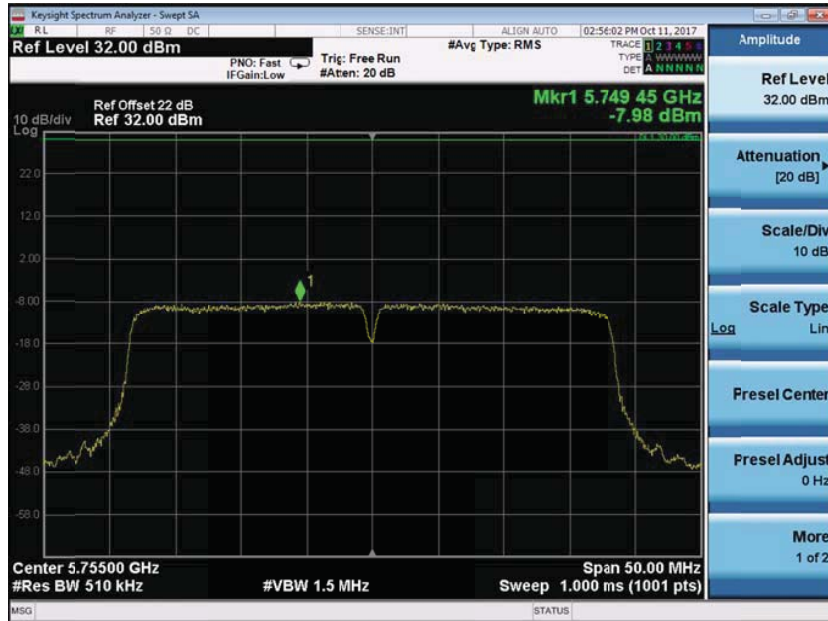
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FCC ID : A43-WISP5

Power Spectral Density 802.11n HT40 Chain 1 Ch 151 5755MHz



Power Spectral Density 802.11n HT40 Chain 1 Ch 159 5795MHz



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