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Report On

FCC Testing of the Sharp SHV32 Hex-band LTE (B1 / B3 / B5 / B17 / B26 / B28), Dual-band WCDMA (FDD I / V), Quad-band GSM (850/900/1800/1900) & AXGP (TDD41) multi mode Smart phone with Bluetooth, WLAN, SRD (NFC,FeliCa) and GPS
In accordance with FCC 47 CFR Part 15E (RLAN)

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FCC ID: APYHRO00218

Document 75929719 Report 15 Issue 1

May 2015



Product Service

TÜV SÜD Product Service, Octagon House, Concorde Way, Segensworth North, Fareham, Hampshire, United Kingdom, PO15 5RL
Tel: +44 (0) 1489 558100. Website: www.tuv-sud.co.uk

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REPORT ON

FCC Testing of the Sharp SHV32 Hex-band LTE (B1 / B3 / B5 / B17 / B26 / B28), Dual-band WCDMA (FDD I / V), Quad-band GSM (850/900/1800/1900) & AXGP (TDD41) multi mode Smart phone with Bluetooth, WLAN, SRD (NFC,FeliCa) and GPS
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Document 75929719 Report 15 Issue 1

May 2015

PREPARED FOR

Sharp Communication Compliance Ltd
Inspired
Easthamptead Road
Bracknell
Berkshire
RG12 7QY

PREPARED BY

Natalie Bennett
Senior Administrator, Project Support

APPROVED BY

Simon Bennett
Authorised Signatory

DATED

18 May 2015

ENGINEERING STATEMENT

The measurements shown in this report were made in accordance with the procedures described on test pages. All reported testing was carried out on a sample equipment to demonstrate limited compliance with FCC 47 CFR Part 15E. The sample tested was found to comply with the requirements defined in the applied rules.

Test Engineer(s);

T Guy

Document 75929719 Report 15 Issue 1

M Russell



G Lawler

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SECTION 1

REPORT SUMMARY

FCC Testing of the
Sharp SHV32 Hex-band LTE (B1 / B3 / B5 / B17 / B26 / B28), Dual-band WCDMA (FDD I / V),
Quad-band GSM (850/900/1800/1900) & AXGP (TDD41) multi mode Smart phone with
Bluetooth, WLAN, SRD (NFC,FeliCa) and GPS
In accordance with FCC 47 CFR Part 15E (RLAN)



Product Service

1.1 INTRODUCTION

The information contained in this report is intended to show the verification of FCC Testing of the Sharp SHV32 Hex-band LTE (B1 / B3 / B5 / B17 / B26 / B28), Dual-band WCDMA (FDD I / V), Quad-band GSM (850/900/1800/1900) & AXGP (TDD41) multi mode Smart phone with Bluetooth, WLAN, SRD (NFC,FeliCa) and GPS to the requirements of FCC 47 CFR Part 15E.

Objective	To perform FCC Testing to determine the Equipment Under Test's (EUT's) compliance with the Test Specification, for the series of tests carried out.
Manufacturer	Sharp Corporation
Model Number(s)	SHV32
Serial Number(s)	IMEI 004401115406825 IMEI 004401115406445
Number of Samples Tested	2
Test Specification/Issue/Date	FCC 47 CFR Part 15E (2014)
Disposal	Held Pending Disposal
Reference Number	Not Applicable
Date	Not Applicable
Order Number	10477
Date	02 March 2015
Start of Test	17 April 2015
Finish of Test	6 May 2015
Name of Engineer(s)	T Guy M Russell G Lawler
Related Document(s)	KDB 789033 D02 General UNII Test Procedures New Rules v01 ETSI TR 100 028 (2001) ANCI C63.10 (2009)



Product Service

1.2 BRIEF SUMMARY OF RESULTS

A brief summary of the tests carried out in accordance with FCC 47 CFR Part 15E is shown below.

Section	Specification Clause	Test Description	Result	Comments/Base Standard
802.11a				
2.1	15.207 and 15.407 (b)(6)	AC Line Conducted Emissions	Pass	
2.2	15.407 (a)	26 dB Bandwidth	Pass	
2.3	15.407 (a)(1)(2)	Maximum Conducted Output Power	Pass	
2.4	15.407 (a)(1)(iv) and (a)(2)	Peak Power Spectral Density	Pass	
2.5	15.407 (b) and 15.205	Spurious Radiated Emissions	Pass	
2.6	15.407 (g)	Frequency Stability	Pass	
2.7	15.205	Restricted Band Edges	Pass	
2.8	15.407 (b(1)(2)(3)(4)	Authorised Band Edges	Pass	
802.11n - 5 GHz 20 MHz Bandwidth				
2.2	15.407 (a)	26 dB Bandwidth	Pass	
2.3	15.407 (a)(1)(2)	Maximum Conducted Output Power	Pass	
2.4	15.407 (a)(1)(iv) and (a)(2)	Peak Power Spectral Density	Pass	
2.6	15.407 (g)	Frequency Stability	Pass	
2.7	15.205	Restricted Band Edges	Pass	
2.8	15.407 (b(1)(2)(3)(4)	Authorised Band Edges	Pass	



Section	Specification Clause	Test Description	Result	Comments/Base Standard
802.11n - 5 GHz 40 MHz Bandwidth				
2.2	15.407 (a)	26 dB Bandwidth	Pass	
2.3	15.407 (a)(1)(2)	Maximum Conducted Output Power	Pass	
2.4	15.407 (a)(1)(iv) and (a)(2)	Peak Power Spectral Density	Pass	
2.5	15.407 (b) and 15.205	Spurious Radiated Emissions	Pass	
2.6	15.407 (g)	Frequency Stability	Pass	
2.7	15.205	Restricted Band Edges	Pass	
2.8	15.407 (b(1)(2)(3)(4)	Authorised Band Edges	Pass	
802.11ac - 5 GHz 20 MHz Bandwidth				
2.2	15.407 (a)	26 dB Bandwidth	Pass	
2.3	15.407 (a)(1)(2)	Maximum Conducted Output Power	Pass	
2.4	15.407 (a)(1)(iv) and (a)(2)	Peak Power Spectral Density	Pass	
2.6	15.407 (g)	Frequency Stability	Pass	
2.7	15.205	Restricted Band Edges	Pass	
2.8	15.407 (b(1)(2)(3)(4)	Authorised Band Edges	Pass	



Section	Specification Clause	Test Description	Result	Comments/Base Standard
802.11ac - 5 GHz 40 MHz Bandwidth				
2.2	15.407 (a)	26 dB Bandwidth	Pass	
2.3	15.407 (a)(1)(2)	Maximum Conducted Output Power	Pass	
2.4	15.407 (a)(5)	Peak Power Spectral Density	Pass	
2.5	15.407 (b) and 15.205	Spurious Radiated Emissions	Pass	
2.6	15.407 (g)	Frequency Stability	Pass	
2.7	15.205	Restricted Band Edges	Pass	
2.8	15.407 (b(1)(2)(3)(4)	Authorised Band Edges	Pass	
802.11ac - 5 GHz 80 MHz Bandwidth				
2.2	15.407 (a)	26 dB Bandwidth	Pass	
2.3	15.407 (a)(1)(2)	Maximum Conducted Output Power	Pass	
2.4	15.407 (a)(1)(iv) and (a)(2)	Peak Power Spectral Density	Pass	
2.6	15.407 (g)	Frequency Stability	Pass	
2.7	15.205	Restricted Band Edges	Pass	
2.8	15.407 (b(1)(2)(3)(4)	Authorised Band Edges	Pass	



Product Service

1.3 PRODUCT TECHNICAL DESCRIPTION

Please refer to the SHV32 Model Description Form.

1.4 PRODUCT INFORMATION

1.4.1 Technical Description

The Equipment Under Test (EUT) was a Sharp SHV32 Hex-band LTE (B1 / B3 / B5 / B17 / B26 / B28), Dual-band WCDMA (FDD I / V), Quad-band GSM (850/900/1800/1900) & AXGP (TDD41) multi mode Smart phone with Bluetooth, WLAN, SRD (NFC,FeliCa) and GPS. A full technical description can be found in the manufacturer's documentation.

1.5 TEST CONDITIONS

For all tests the EUT was set up in accordance with the relevant test standard and to represent typical operating conditions. Tests were applied with the EUT situated in a shielded enclosure.

The EUT was powered from a 4.0 V DC supply.

FCC Measurement Facility Registration Number
90987 Octagon House, Fareham Test Laboratory

1.6 DEVIATIONS FROM THE STANDARD

No deviations from the applicable test standard were made during testing.

1.7 MODIFICATION RECORD

Modification 0 - No modifications were made to the test sample during testing.



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SECTION 2

TEST DETAILS

FCC Testing of the
Sharp SHV32 Hex-band LTE (B1 / B3 / B5 / B17 / B26 / B28), Dual-band WCDMA (FDD I / V),
Quad-band GSM (850/900/1800/1900) & AXGP (TDD41) multi mode Smart phone with
Bluetooth, WLAN, SRD (NFC,FeliCa) and GPS
In accordance with FCC 47 CFR Part 15E (RLAN)



Product Service

2.1 AC LINE CONDUCTED EMISSIONS

2.1.1 Specification Reference

FCC 47 CFR Part 15E, Clause 15.207 and 15.407 (b)(6)

2.1.2 Equipment Under Test and Modification State

SHV32 S/N: IMEI 004401115406825 - Modification State 0

2.1.3 Date of Test

25 April 2015

2.1.4 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.1.5 Test Procedure

The test was performed in accordance with ANSI C63.10, clause 6.2.

Remarks

A mains supply cable of 1 m length was used to supply mains power to the EUT from the LISN.

All final measurements were assessed against the Class B emission limits in Clause 15.207 of FCC 47 CFR Part 15.

2.1.6 Environmental Conditions

Ambient Temperature	20.5°C
Relative Humidity	33.0%

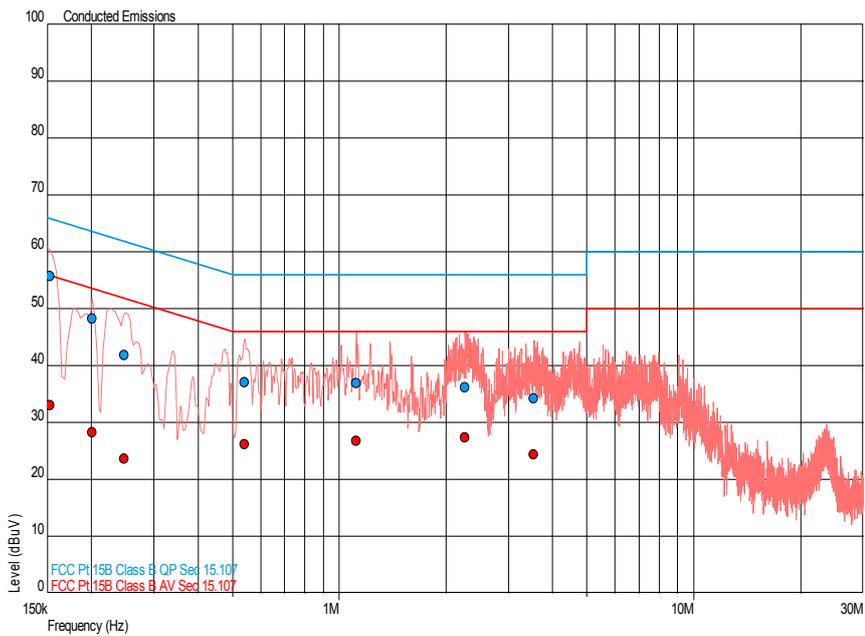


2.1.7 Test Results

802.11a, Live Line, AC Line Conducted Emissions Result

Frequency (MHz)	QP Level (dBµV)	QP Limit (dBµV)	QP Margin (dBµV)	AV Level (dBµV)	AV Limit (dBµV)	AV Margin (dBµV)
0.153	55.7	65.8	-10.1	33.1	55.8	-22.7
0.200	48.3	63.6	-15.3	28.3	53.6	-25.3
0.247	41.9	61.8	-19.9	23.7	51.8	-28.2
0.541	37.1	56.0	-18.9	26.2	46.0	-19.8
1.115	36.9	56.0	-19.1	26.8	46.0	-19.2
2.264	36.2	56.0	-19.8	27.4	46.0	-18.6
3.538	34.2	56.0	-21.8	24.5	46.0	-21.5

802.11a, Live Line, AC Line Conducted Emissions Plot

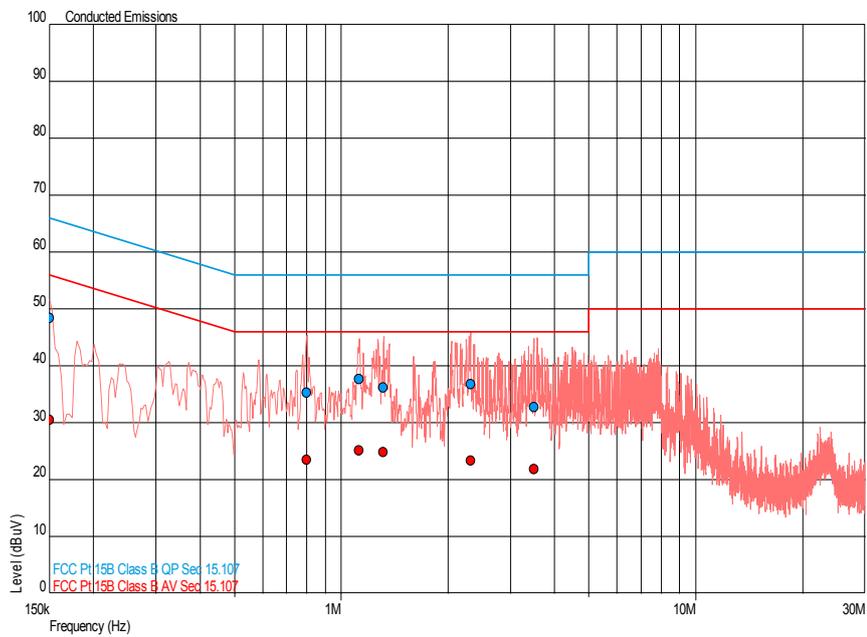




802.11a, Neutral Line, AC Line Conducted Emissions Result

Frequency (MHz)	QP Level (dBµV)	QP Limit (dBµV)	QP Margin (dBµV)	AV Level (dBµV)	AV Limit (dBµV)	AV Margin (dBµV)
0.151	48.4	66.0	-17.6	30.6	56.0	-25.4
0.797	35.2	56.0	-20.8	23.5	46.0	-22.5
1.123	37.7	56.0	-18.3	25.1	46.0	-20.9
1.316	36.2	56.0	-19.8	24.8	46.0	-21.2
2.313	36.8	56.0	-19.2	23.4	46.0	-22.6
3.494	32.7	56.0	-23.3	21.9	46.0	-24.1

802.11a, Neutral Line, AC Line Conducted Emissions Plot



FCC 47 CFR Part 15, Limit Clause 15.207

Frequency of Emission (MHz)	Conducted Limit (dBµV)	
	Quasi-Peak	Average
0.15 to 0.5	66 to 56*	56 to 46*
0.5 to 5	56	46
5 to 30	60	50

*Decreases with the logarithm of the frequency.



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2.2 26 dB BANDWIDTH

2.2.1 Specification Reference

FCC 47 CFR Part 15E, Clause 15.407 (a)

2.2.2 Equipment Under Test and Modification State

SHV32 S/N: IMEI 004401115406445 - Modification State 0

2.2.3 Date of Test

7 May 2015

2.2.4 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.2.5 Test Procedure

This test was performed in accordance with KDB 789033 D02 v01, Section II clause C.1.

2.2.6 Environmental Conditions

Ambient Temperature	22.5°C
Relative Humidity	36.7%



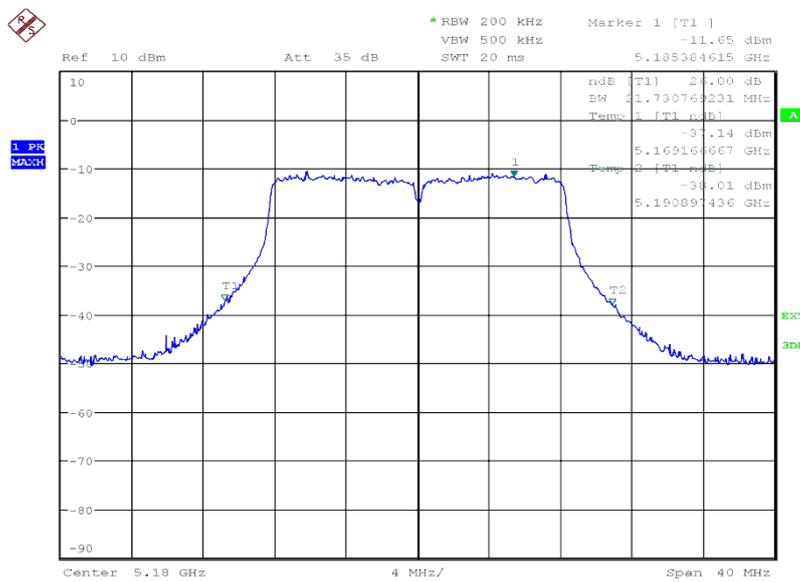
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2.2.7 Test Results

802.11a, OFDM, 36 Mbps, Frequency Band 1, 26 dB Bandwidth Results

5180 MHz	5200 MHz	5240 MHz
MHz	MHz	MHz
21.73	21.03	21.03

802.11a, 5180 MHz, OFDM, 36 Mbps, Frequency Band 1, 26 dB Bandwidth Plot

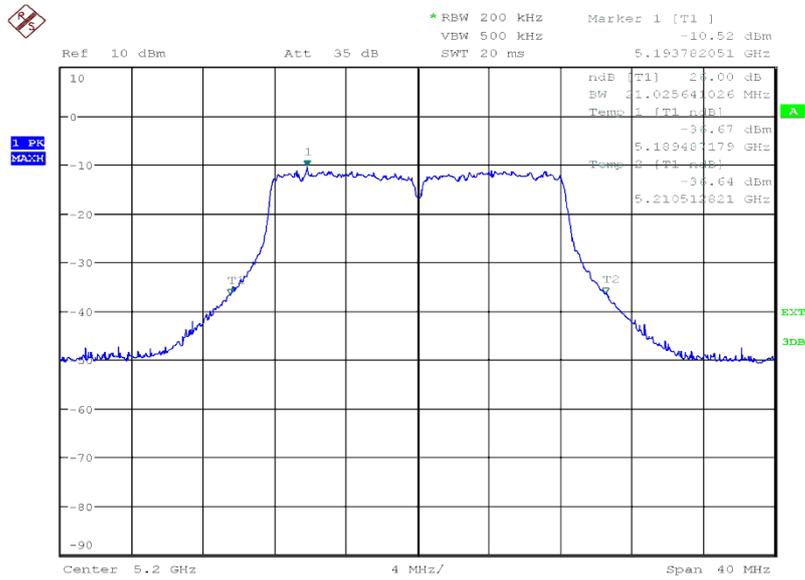


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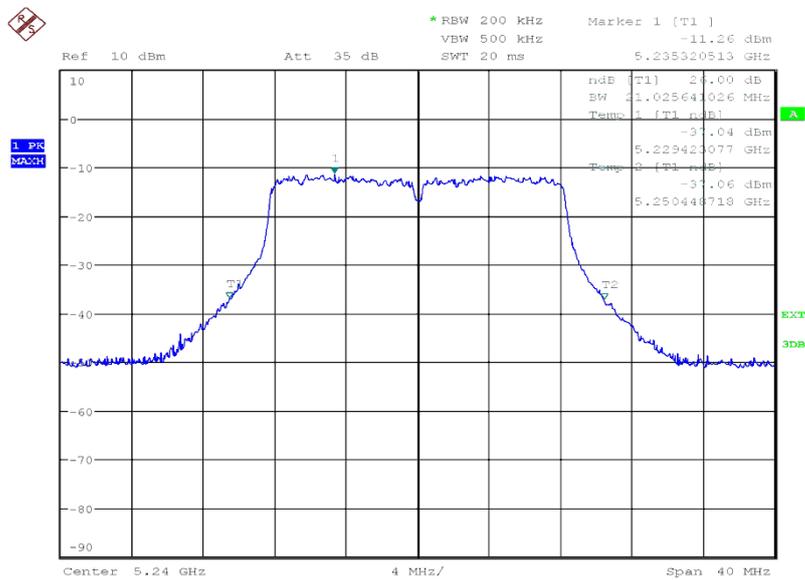
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802.11a, 5200 MHz, OFDM, 36 Mbps, Frequency Band 1, 26 dB Bandwidth Plot



Date: 7.MAY.2015 10:28:54

802.11a, 5240 MHz, OFDM, 36 Mbps, Frequency Band 1, 26 dB Bandwidth Plot



Date: 7.MAY.2015 10:29:28

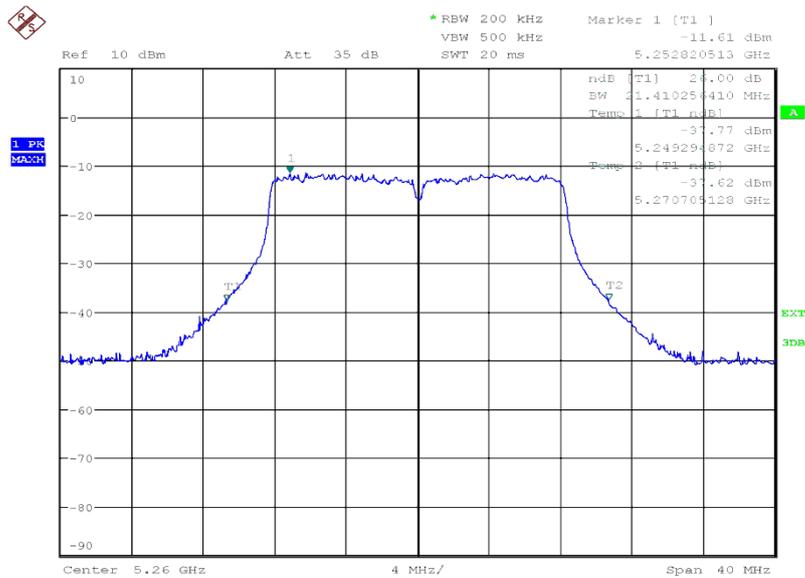


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802.11a, OFDM, 36 Mbps, Frequency Band 2, 26 dB Bandwidth Results

5260 MHz	5300 MHz	5320 MHz
MHz	MHz	MHz
21.41	21.15	20.96

802.11a, 5260 MHz, OFDM, 36 Mbps, Frequency Band 2, 26 dB Bandwidth Plot

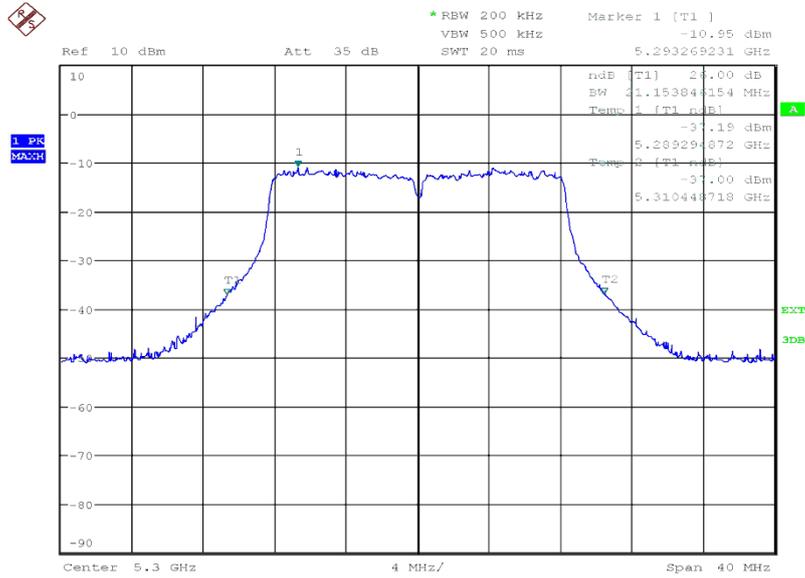


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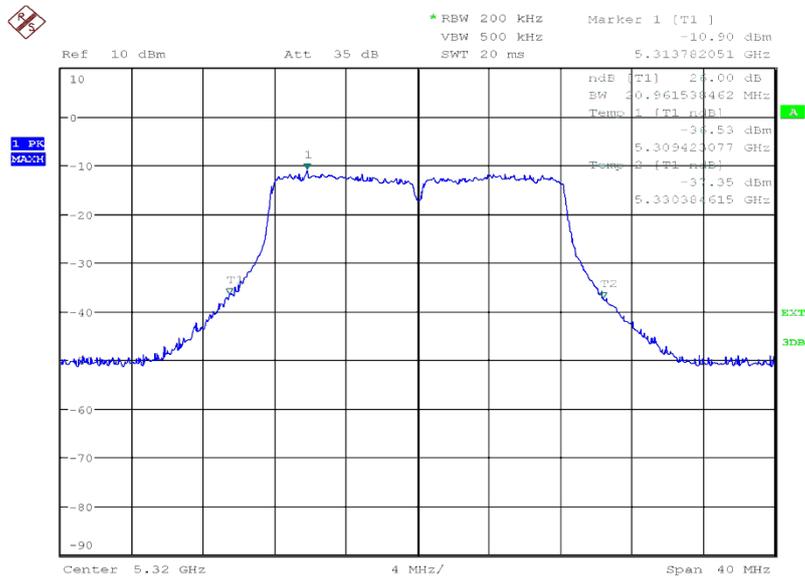
Product Service

802.11a, 5300 MHz, OFDM, 36 Mbps, Frequency Band 2, 26 dB Bandwidth Plot



Date: 7.MAY.2015 10:31:13

802.11a, 5320 MHz, OFDM, 36 Mbps, Frequency Band 2, 26 dB Bandwidth Plot



Date: 7.MAY.2015 10:31:50

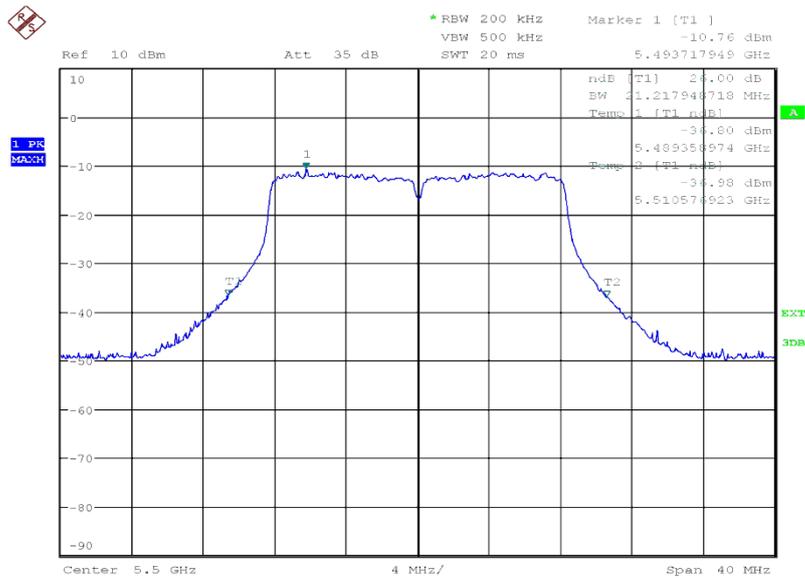


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802.11a, OFDM, 36 Mbps, Frequency Band 3, 26 dB Bandwidth Results

5500 MHz	5600 MHz	5700 MHz
MHz	MHz	MHz
21.22	21.15	21.03

802.11a, 5500 MHz, OFDM, 36 Mbps, Frequency Band 3, 26 dB Bandwidth Plot

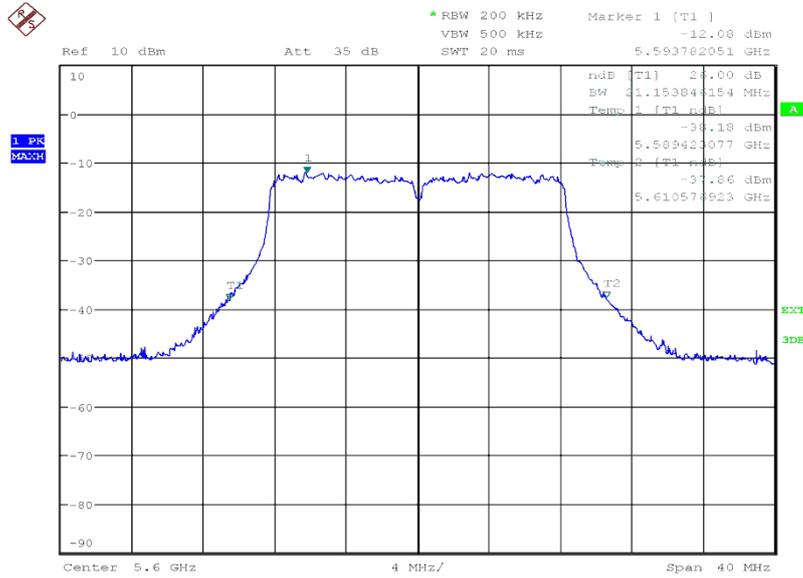


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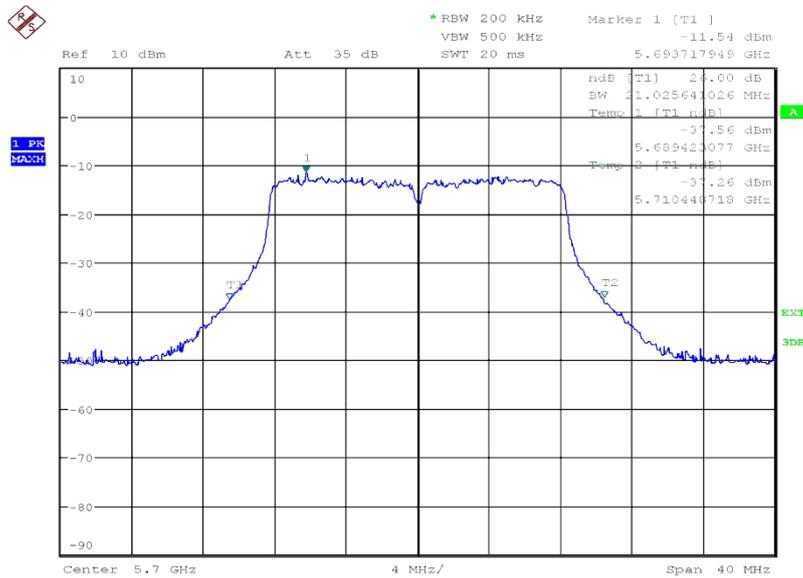
Product Service

802.11a, 5600 MHz, OFDM, 36 Mbps, Frequency Band 3, 26 dB Bandwidth Plot



Date: 7.MAY.2015 10:37:22

802.11a, 5700 MHz, OFDM, 36 Mbps, Frequency Band 3, 26 dB Bandwidth 3 Plot



Date: 7.MAY.2015 10:38:30

FCC 47 CFR Part 15, Limit Clause 15.407 (a)

No limit specified.

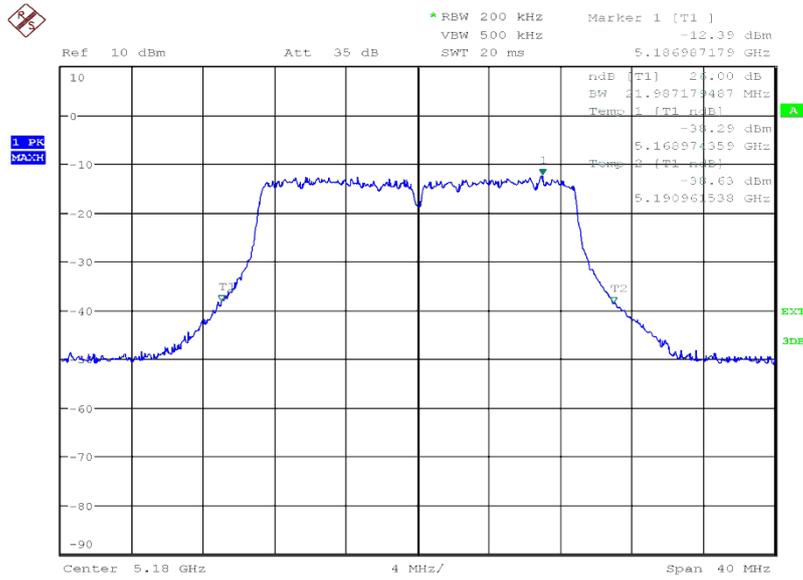


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802.11ac - 5 GHz 20 MHz Bandwidth, 64-QAM, MCS5, Frequency Band 1, 26 dB Bandwidth Results

5180 MHz	5200 MHz	5240 MHz
MHz	MHz	MHz
21.99	22.05	22.18

802.11ac - 5 GHz 20 MHz Bandwidth, 5180 MHz, 64-QAM, MCS5, Frequency Band 1, 26 dB Bandwidth Plot

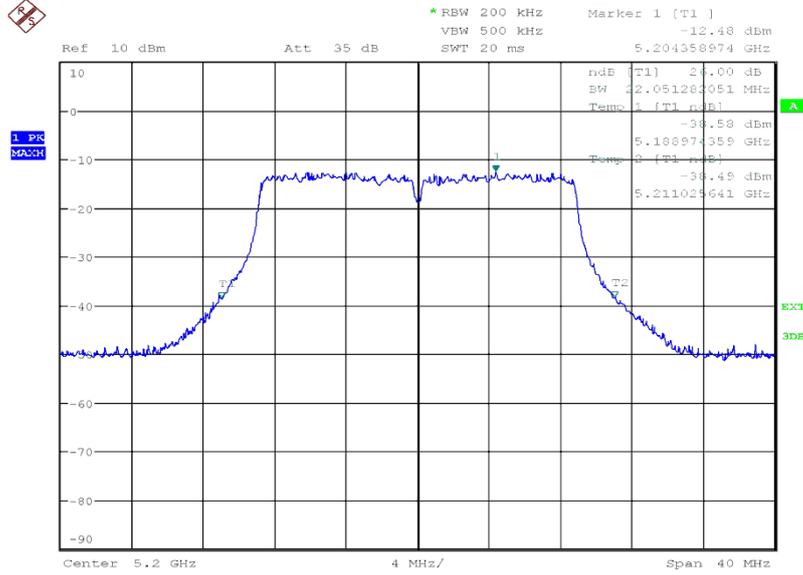


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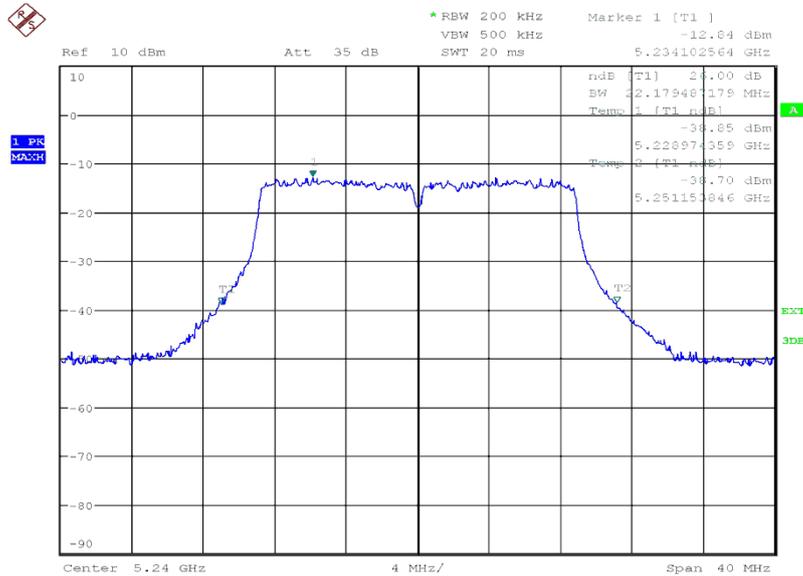
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802.11ac - 5 GHz 20 MHz Bandwidth, 5200 MHz, 64-QAM, MCS5, Frequency Band 1, 26 dB Bandwidth Plot



Date: 7.MAY.2015 10:51:08

802.11ac - 5 GHz 20 MHz Bandwidth, 5240 MHz, 64-QAM, MCS5, Frequency Band 1, 26 dB Bandwidth Plot



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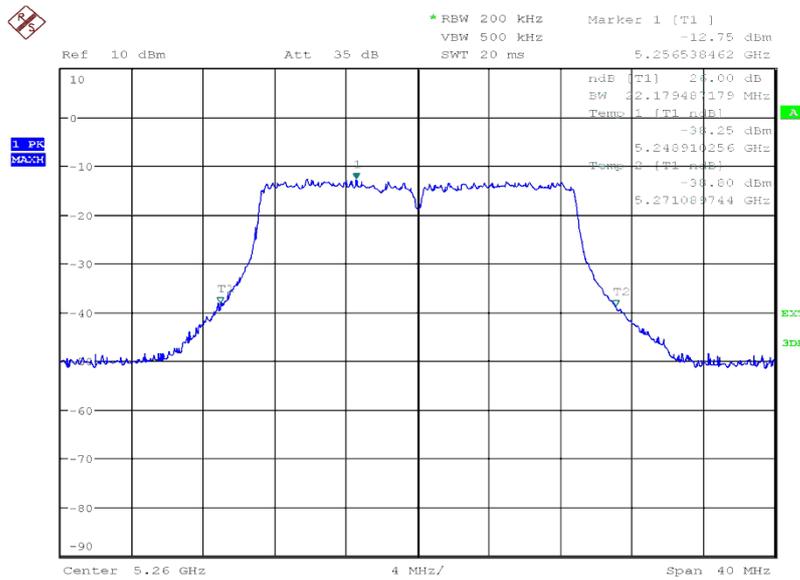


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802.11ac - 5 GHz 20 MHz Bandwidth, 64-QAM, MCS5, Frequency Band 2, 26 dB Bandwidth Results

5260 MHz	5300 MHz	5320 MHz
MHz	MHz	MHz
22.18	21.99	21.92

802.11ac - 5 GHz 20 MHz Bandwidth, 5260 MHz, 64-QAM, MCS5, Frequency Band 2, 26 dB Bandwidth Plot

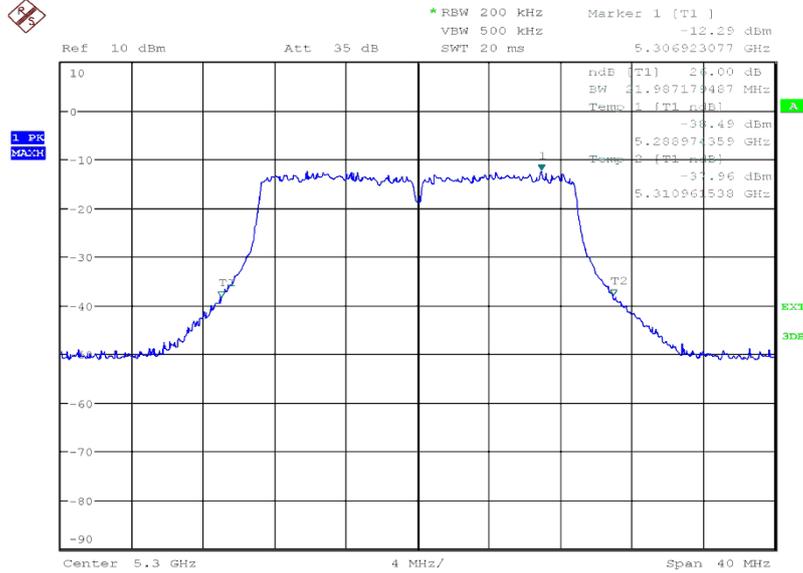


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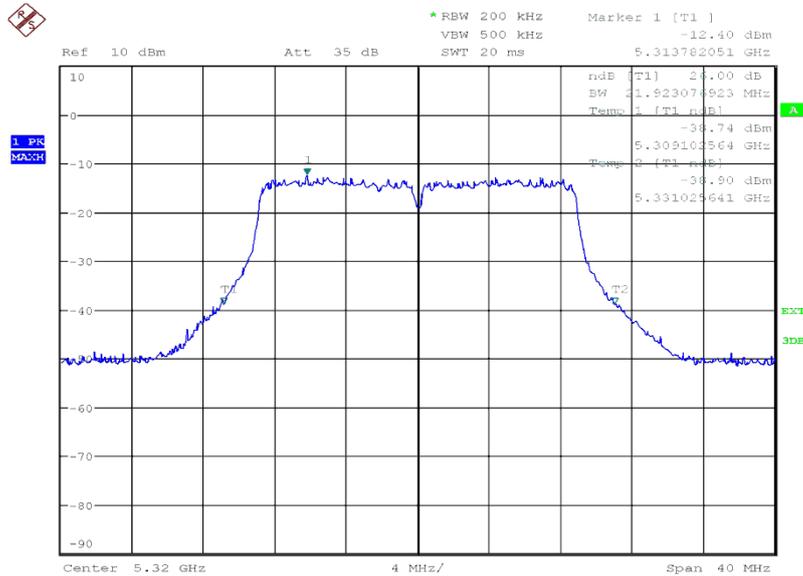
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802.11ac - 5 GHz 20 MHz Bandwidth, 5300 MHz, 64-QAM, MCS5, Frequency Band 2, 26 dB Bandwidth Plot



Date: 7.MAY.2015 10:53:09

802.11ac - 5 GHz 20 MHz Bandwidth, 5320 MHz, 64-QAM, MCS5, Frequency Band 2, 26 dB Bandwidth Plot



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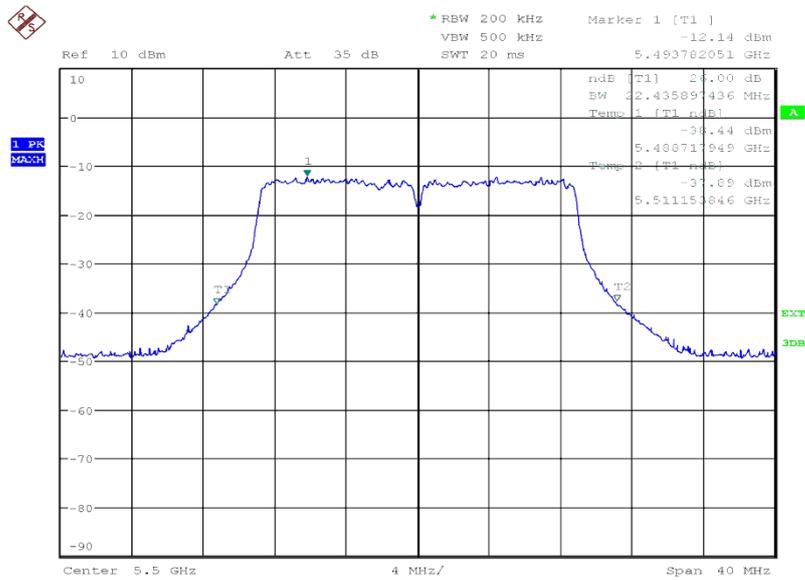


Product Service

802.11ac - 5 GHz 20 MHz Bandwidth, 64-QAM, MCS5, Frequency Band 3, 26 dB Bandwidth Results

5500 MHz	5600 MHz	5700 MHz
MHz	MHz	MHz
22.44	22.11	22.31

802.11ac - 5 GHz 20 MHz Bandwidth, 5500 MHz, 64-QAM, MCS5, Frequency Band 3, 26 dB Bandwidth Plot

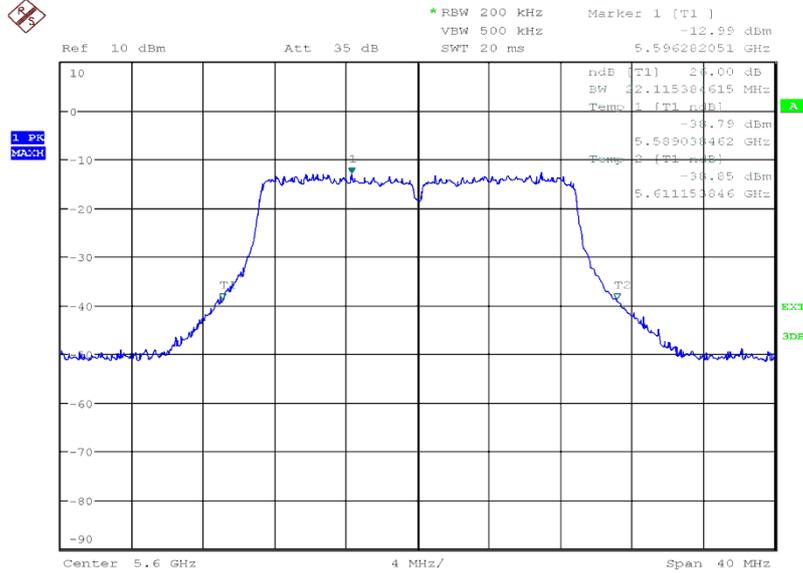


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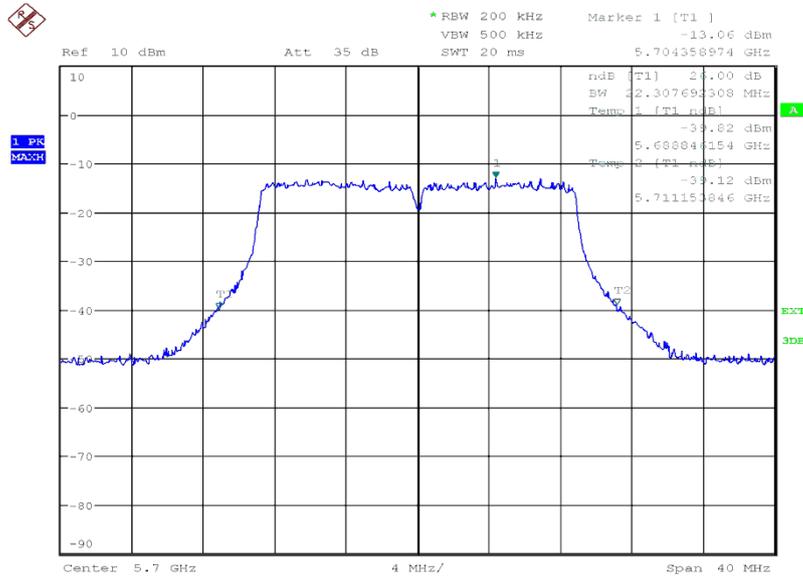
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802.11ac - 5 GHz 20 MHz Bandwidth, 5600 MHz, 64-QAM, MCS5, Frequency Band 3, 26 dB Bandwidth Plot



Date: 7.MAY.2015 11:10:11

802.11ac - 5 GHz 20 MHz Bandwidth, 5700 MHz, 64-QAM, MCS5, Frequency Band 3, 26 dB Bandwidth 3 Plot



Date: 7.MAY.2015 11:10:41

FCC 47 CFR Part 15, Limit Clause 15.407 (a)

No limit specified.

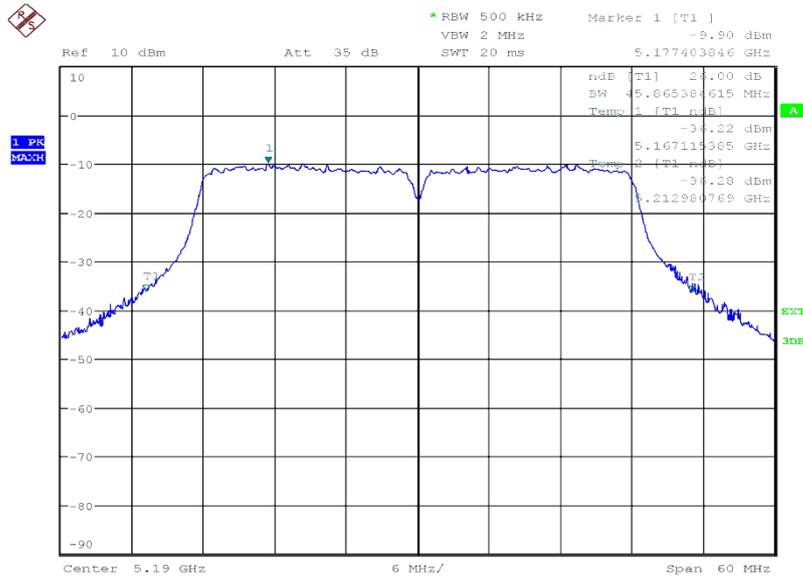


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802.11ac - 5 GHz 40 MHz Bandwidth, 16-QAM, MCS3, Frequency Band 1, 26 dB Bandwidth Results

5190 MHz	5230 MHz
MHz	MHz
45.87	44.81

802.11ac - 5 GHz 40 MHz Bandwidth, 5190 MHz, 16-QAM, MCS3, Frequency Band 1, 26 dB Bandwidth Plot

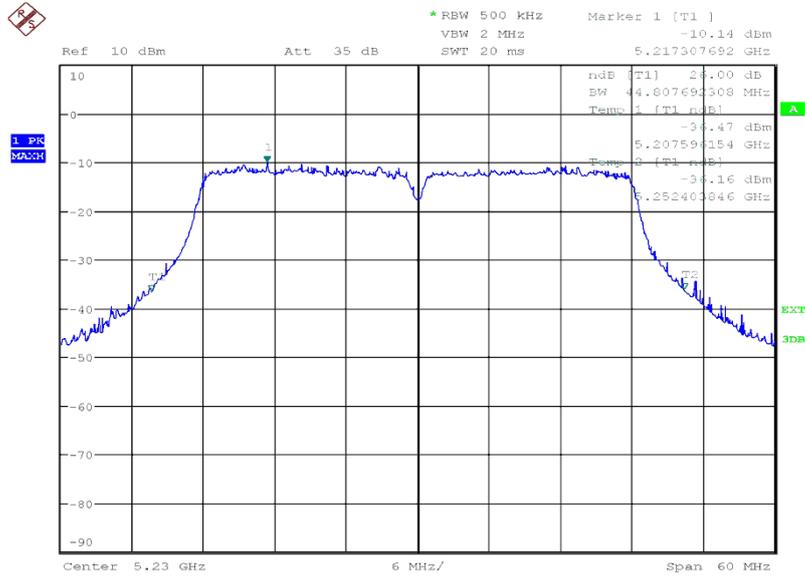


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Product Service

802.11ac - 5 GHz 40 MHz Bandwidth, 5230 MHz, 16-QAM, MCS3, Frequency Band 1, 26 dB Bandwidth Plot



Date: 7.MAY.2015 11:29:01

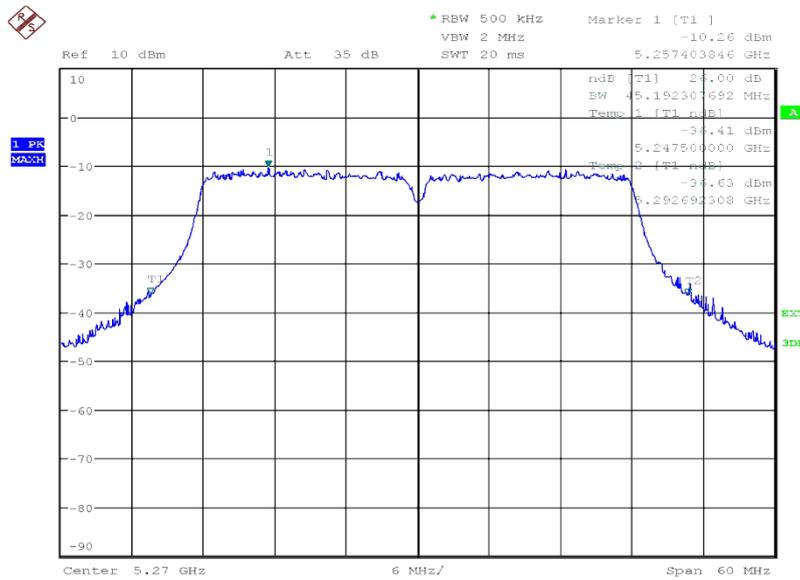


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802.11ac - 5 GHz 40 MHz Bandwidth, 16-QAM, MCS3, Frequency Band 2, 26 dB Bandwidth Results

5270 MHz	5310 MHz
MHz	MHz
45.19	45.58

802.11ac - 5 GHz 40 MHz Bandwidth, 5270 MHz, 16-QAM, MCS3, Frequency Band 2, 26 dB Bandwidth Plot

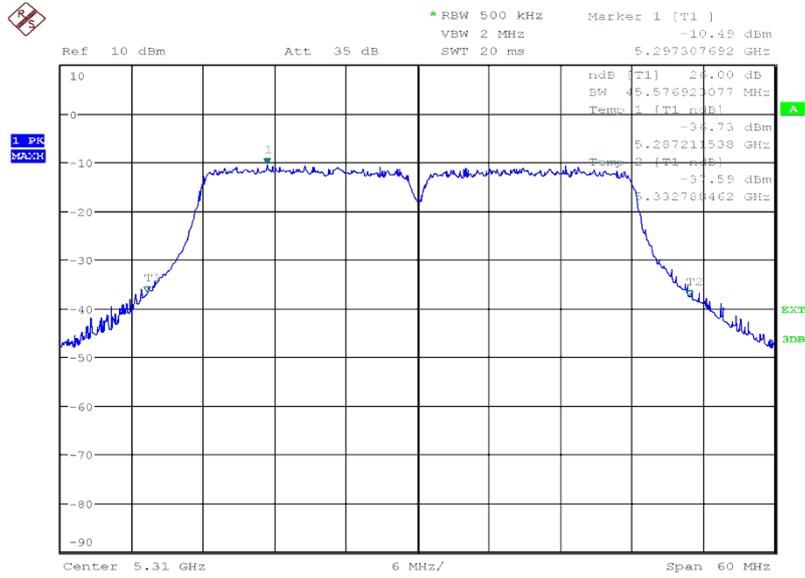


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Product Service

802.11ac - 5 GHz 40 MHz Bandwidth, 5310 MHz, 16-QAM, MCS3, Frequency Band 2, 26 dB Bandwidth Plot



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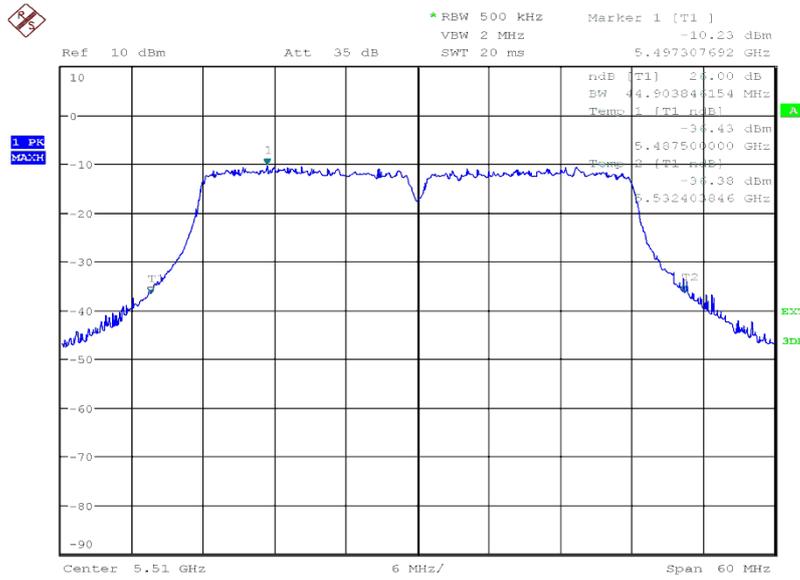


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802.11ac - 5 GHz 40 MHz Bandwidth, 16-QAM, MCS3, Frequency Band 3, 26 dB Bandwidth Results

5510 MHz	5590 MHz	5670 MHz
MHz	MHz	MHz
44.90	45.10	45.00

802.11ac - 5 GHz 40 MHz Bandwidth, 5510 MHz, 16-QAM, MCS3, Frequency Band 3, 26 dB Bandwidth Plot

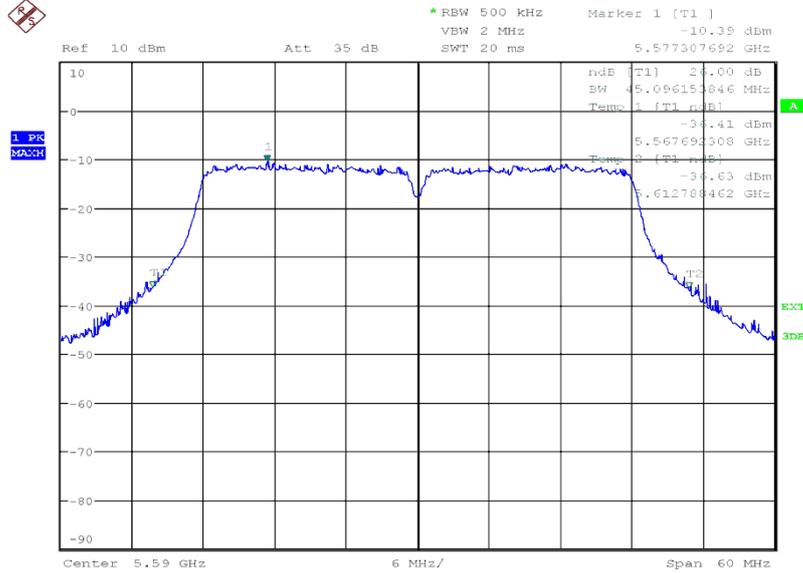


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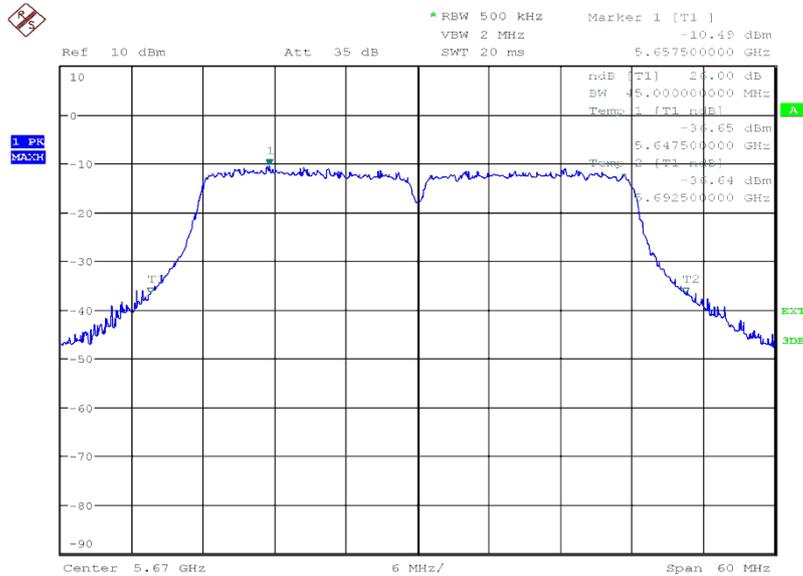
Product Service

802.11ac - 5 GHz 40 MHz Bandwidth, 5590 MHz, 16-QAM, MCS3, Frequency Band 3, 26 dB Bandwidth Plot



Date: 7.MAY.2015 11:31:57

802.11ac - 5 GHz 40 MHz Bandwidth, 5670 MHz, 16-QAM, MCS3, Frequency Band 3, 26 dB Bandwidth 3 Plot



Date: 7.MAY.2015 11:35:41

FCC 47 CFR Part 15, Limit Clause 15.407 (a)

No limit specified.

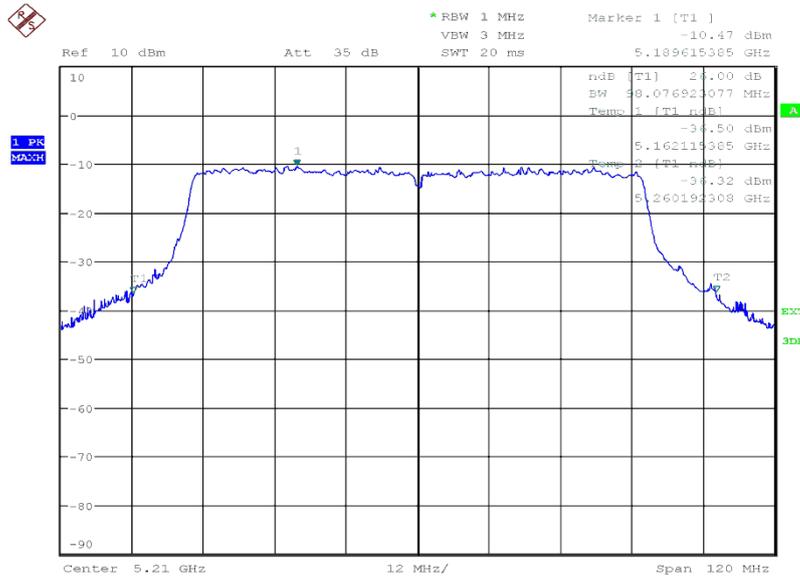


Product Service

802.11ac - 5 GHz 80 MHz Bandwidth, 256-QAM, MCS8, Frequency Band 1, 26 dB Bandwidth Results

5210 MHz
MHz
98.08

802.11ac - 5 GHz 80 MHz Bandwidth, 5210 MHz, 256-QAM, MCS8, Frequency Band 1, 26 dB Bandwidth Plot



Date: 7.MAY.2015 11:39:13

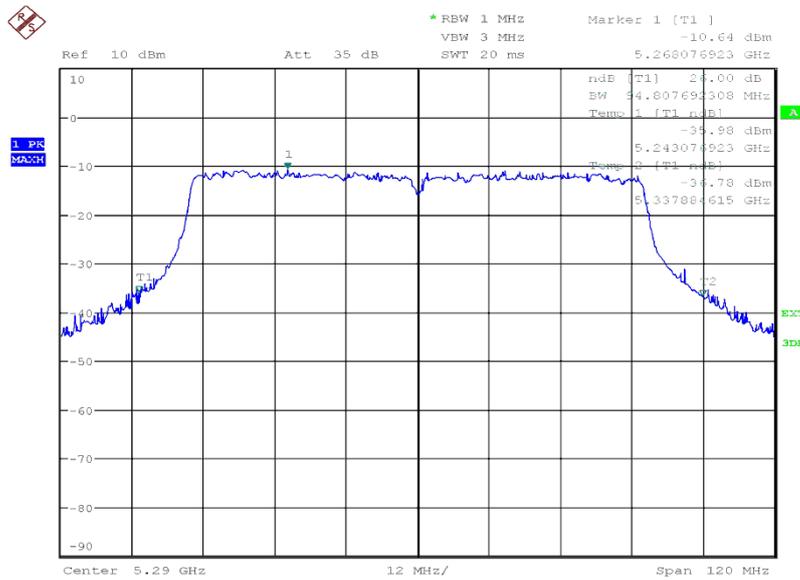


Product Service

802.11ac - 5 GHz 80 MHz Bandwidth, 256-QAM, MCS8, Frequency Band 2, 26 dB Bandwidth Results

5290 MHz
MHz
94.81

802.11ac - 5 GHz 80 MHz Bandwidth, 5290 MHz, 256-QAM, MCS8, Frequency Band 2, 26 dB Bandwidth Plot



Date: 7.MAY.2015 11:39:57

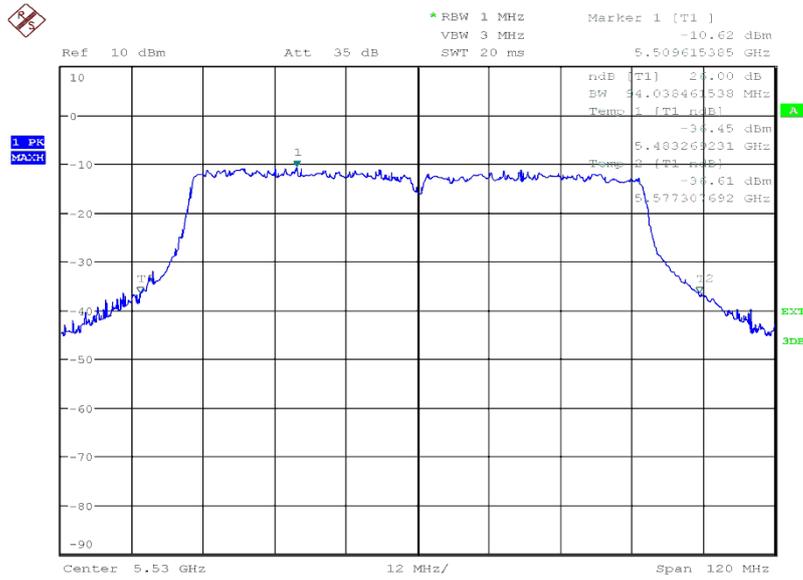


Product Service

802.11ac - 5 GHz 80 MHz Bandwidth, 256-QAM, MCS8, Frequency Band 3, 26 dB Bandwidth Results

5530 MHz	5610 MHz
MHz	MHz
94.04	94.04

802.11ac - 5 GHz 80 MHz Bandwidth, 5530 MHz, 256-QAM, MCS8, Frequency Band 3, 26 dB Bandwidth Plot

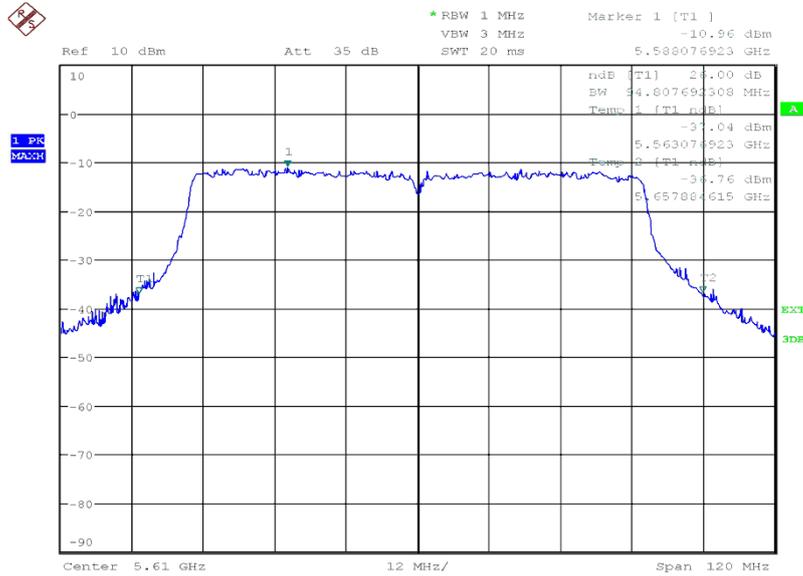


Date: 7.MAY.2015 11:41:00



Product Service

802.11ac - 5 GHz 80 MHz Bandwidth, 5610 MHz, 256-QAM, MCS8, Frequency Band 3, 26 dB Bandwidth 3 Plot



Date: 7.MAY.2015 11:41:36

FCC 47 CFR Part 15, Limit Clause 15.407 (a)

No limit specified.

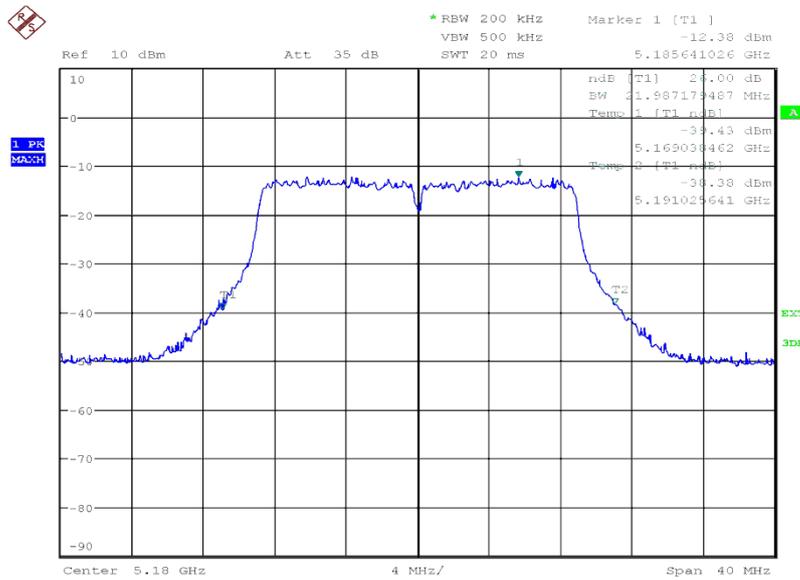


Product Service

802.11n - 5 GHz 20 MHz Bandwidth, 64-QAM, MCS5, Frequency Band 1, 26 dB Bandwidth Results

5180 MHz	5200 MHz	5240 MHz
MHz	MHz	MHz
21.99	21.99	21.86

802.11n - 5 GHz 20 MHz Bandwidth, 5180 MHz, 64-QAM, MCS5, Frequency Band 1, 26 dB Bandwidth Plot

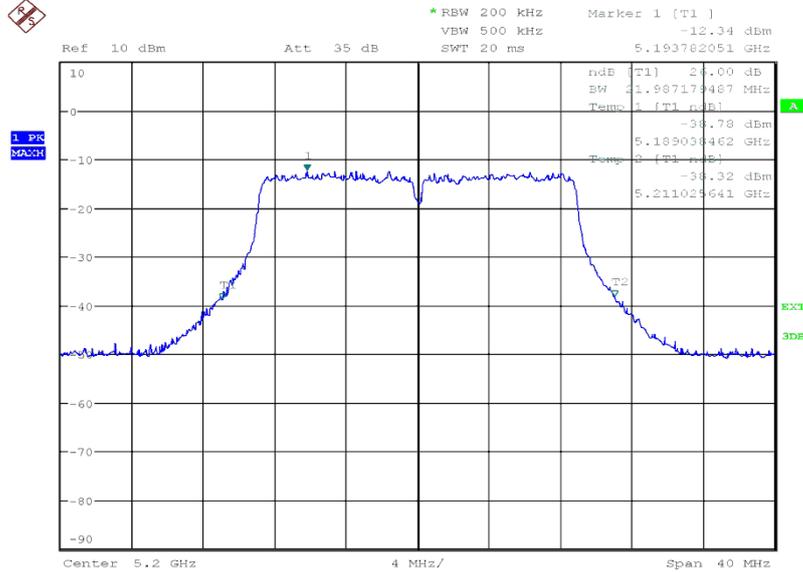


Date: 7.MAY.2015 10:39:40



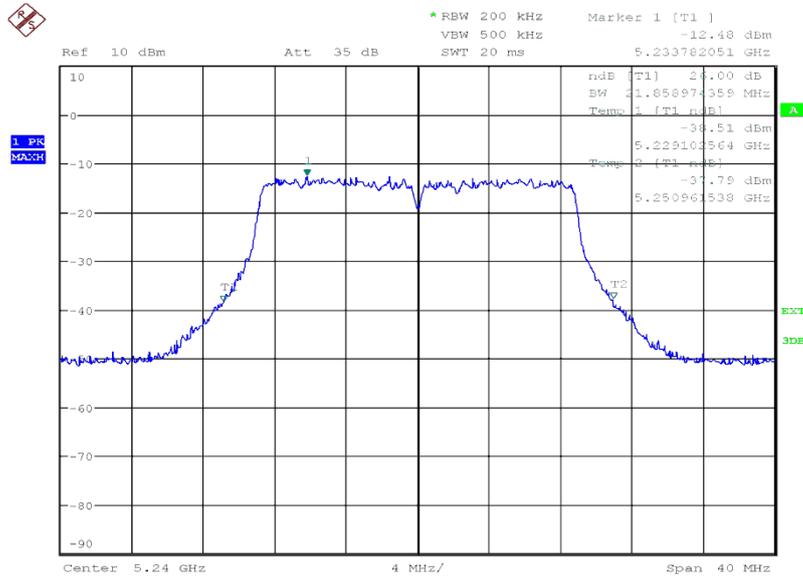
Product Service

802.11n - 5 GHz 20 MHz Bandwidth, 5200 MHz, 64-QAM, MCS5, Frequency Band 1, 26 dB Bandwidth Plot



Date: 7.MAY.2015 10:40:29

802.11n - 5 GHz 20 MHz Bandwidth, 5240 MHz, 64-QAM, MCS5, Frequency Band 1, 26 dB Bandwidth Plot



Date: 7.MAY.2015 10:41:02

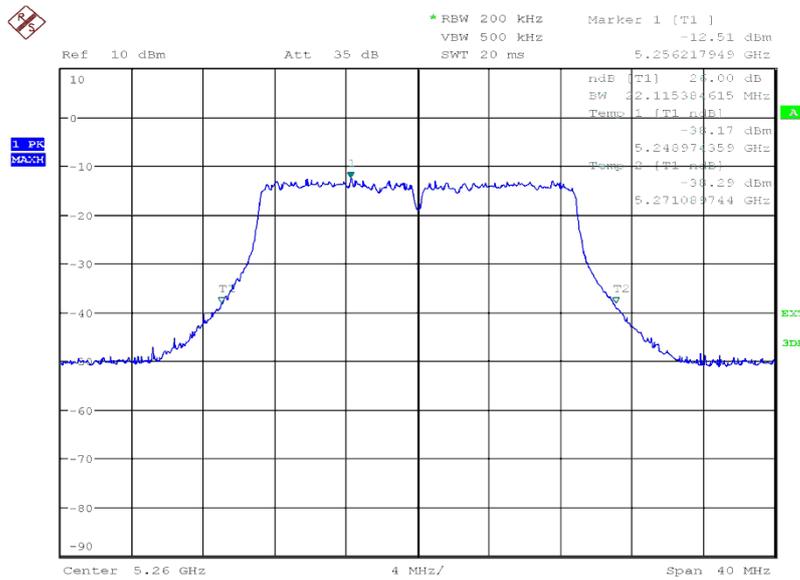


Product Service

802.11n - 5 GHz 20 MHz Bandwidth, 64-QAM, MCS5, Frequency Band 2, 26 dB Bandwidth Results

5260 MHz	5300 MHz	5320 MHz
MHz	MHz	MHz
22.12	22.12	22.18

802.11n - 5 GHz 20 MHz Bandwidth, 5260 MHz, 64-QAM, MCS5, Frequency Band 2, 26 dB Bandwidth Plot

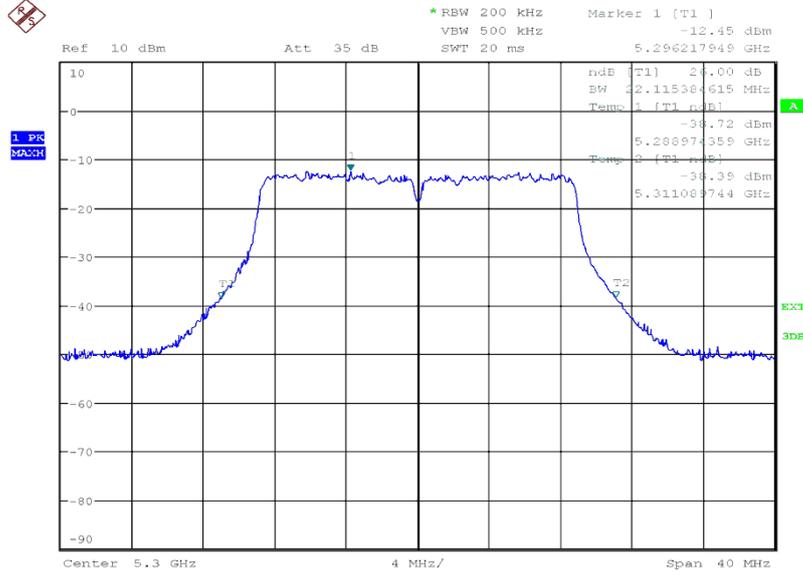


Date: 7.MAY.2015 10:41:50



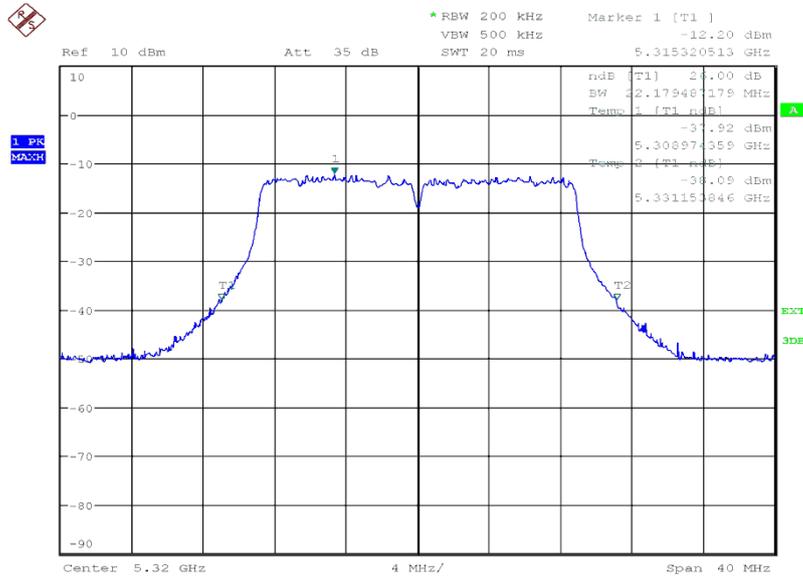
Product Service

802.11n - 5 GHz 20 MHz Bandwidth, 5300 MHz, 64-QAM, MCS5, Frequency Band 2, 26 dB Bandwidth Plot



Date: 7.MAY.2015 10:42:45

802.11n - 5 GHz 20 MHz Bandwidth, 5320 MHz, 64-QAM, MCS5, Frequency Band 2, 26 dB Bandwidth Plot



Date: 7.MAY.2015 10:45:21

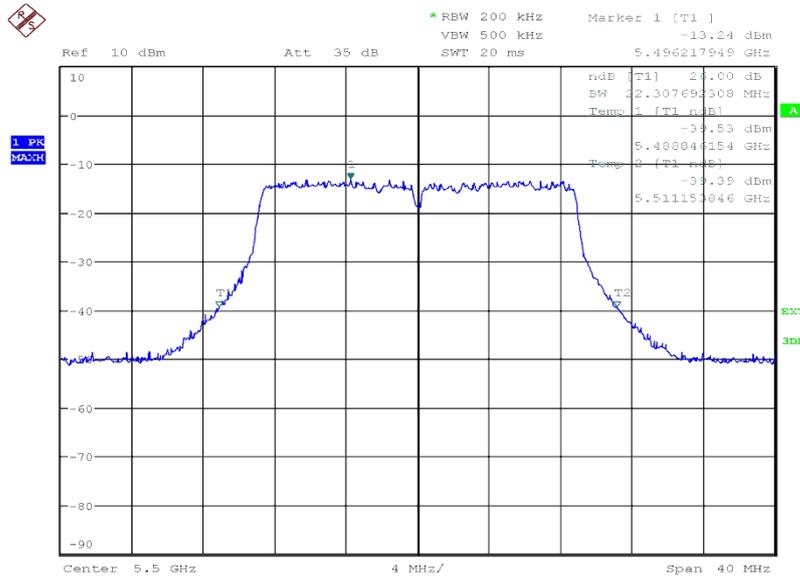


Product Service

802.11n - 5 GHz 20 MHz Bandwidth, 64-QAM, MCS5, Frequency Band 3, 26 dB Bandwidth Results

5500 MHz	5600 MHz	5700 MHz
MHz	MHz	MHz
22.31	22.05	22.12

802.11n - 5 GHz 20 MHz Bandwidth, 5500 MHz, 64-QAM, MCS5, Frequency Band 3, 26 dB Bandwidth Plot

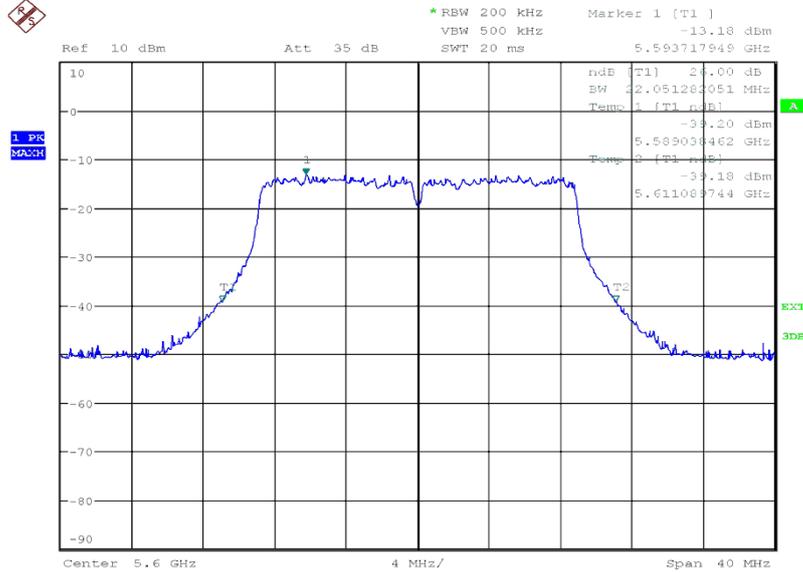


Date: 7.MAY.2015 10:46:08



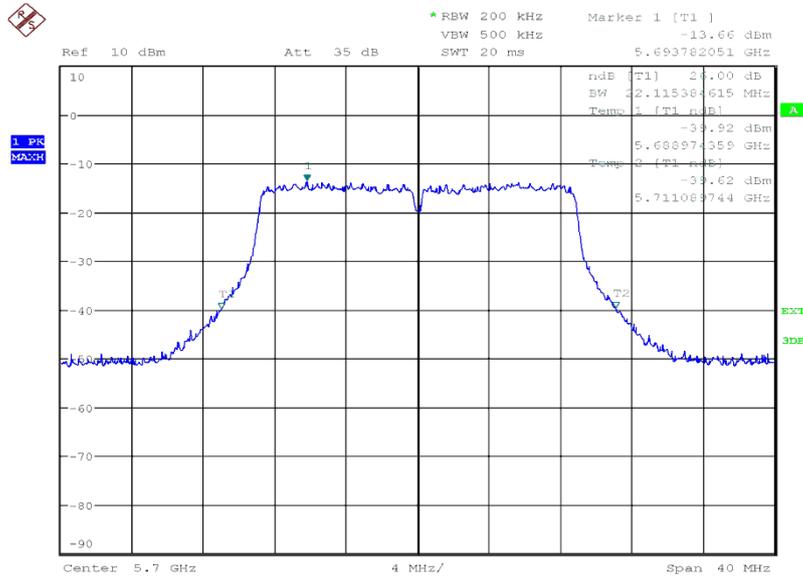
Product Service

802.11n - 5 GHz 20 MHz Bandwidth, 5600 MHz, 64-QAM, MCS5, Frequency Band 3, 26 dB Bandwidth Plot



Date: 7.MAY.2015 10:46:46

802.11n - 5 GHz 20 MHz Bandwidth, 5700 MHz, 64-QAM, MCS5, Frequency Band 3, 26 dB Bandwidth 3 Plot



Date: 7.MAY.2015 10:47:28

FCC 47 CFR Part 15, Limit Clause 15.407 (a)

No limit specified.

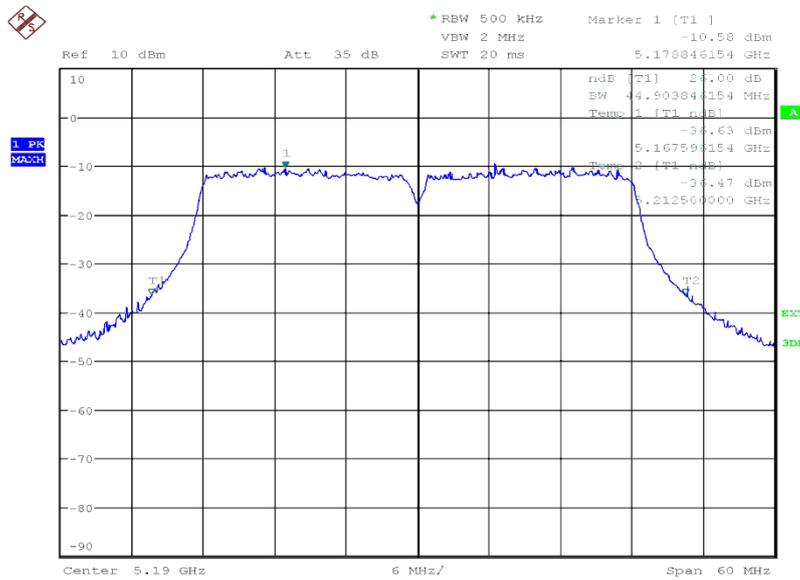


Product Service

802.11n - 5 GHz 40 MHz Bandwidth, 64-QAM, MCS5, Frequency Band 1, 26 dB Bandwidth Results

5190 MHz	5230 MHz
MHz	MHz
44.90	44.81

802.11n - 5 GHz 40 MHz Bandwidth, 5190 MHz, 64-QAM, MCS5, Frequency Band 1, 26 dB Bandwidth Plot

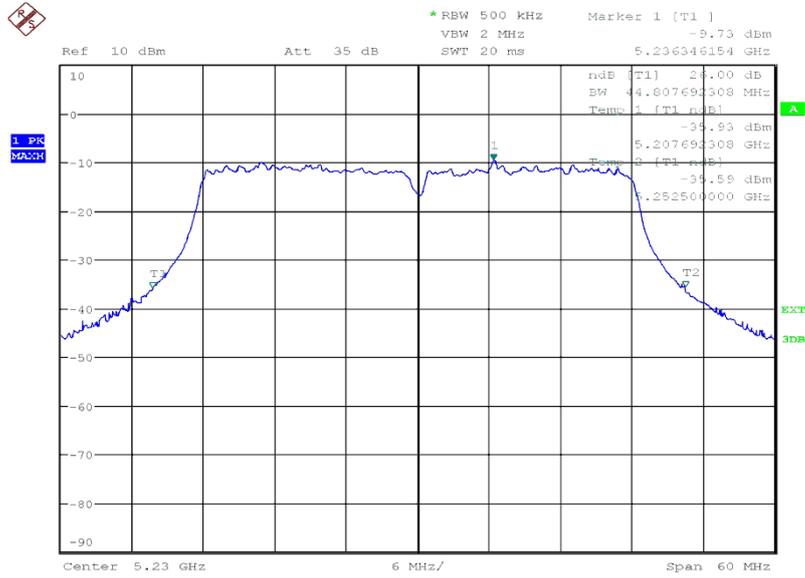


Date: 7.MAY.2015 11:11:51



Product Service

802.11n - 5 GHz 40 MHz Bandwidth, 5230 MHz, 64-QAM, MCS5, Frequency Band 1, 26 dB Bandwidth Plot



Date: 7.MAY.2015 11:18:11

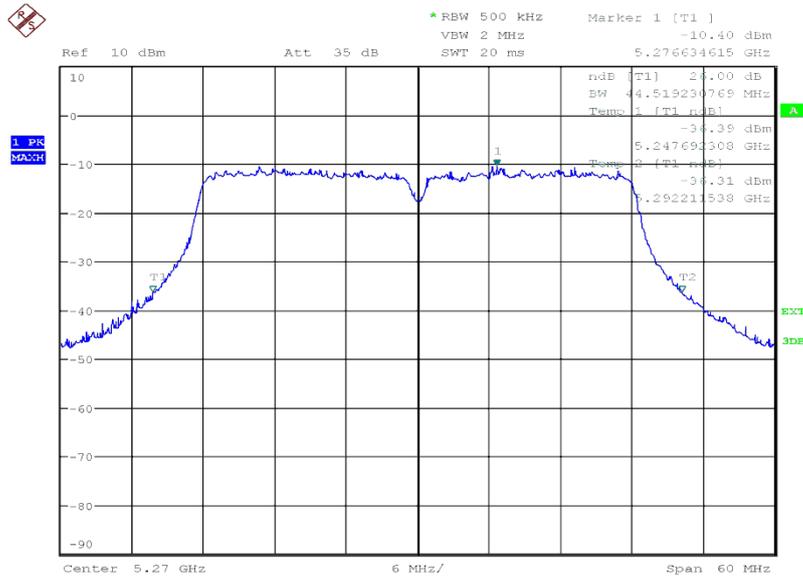


Product Service

802.11n - 5 GHz 40 MHz Bandwidth, 64-QAM, MCS5, Frequency Band 2, 26 dB Bandwidth Results

5270 MHz	5310 MHz
MHz	MHz
44.52	44.13

802.11n - 5 GHz 40 MHz Bandwidth, 5270 MHz, 64-QAM, MCS5, Frequency Band 2, 26 dB Bandwidth Plot

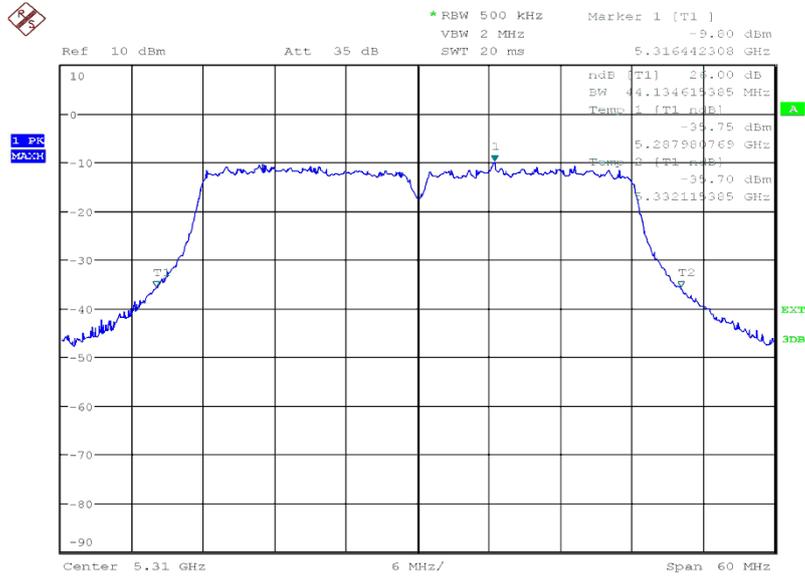


Date: 7.MAY.2015 11:18:45



Product Service

802.11n - 5 GHz 40 MHz Bandwidth, 5310 MHz, 64-QAM, MCS5, Frequency Band 2, 26 dB Bandwidth Plot



Date: 7.MAY.2015 11:19:29

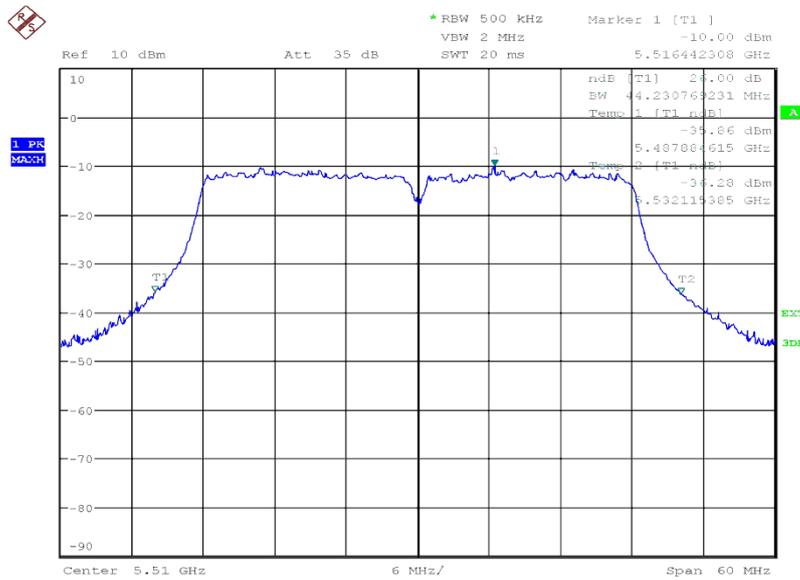


Product Service

802.11n - 5 GHz 40 MHz Bandwidth, 64-QAM, MCS5, Frequency Band 3, 26 dB Bandwidth Results

5510 MHz	5590 MHz	5670 MHz
MHz	MHz	MHz
44.23	44.52	44.42

802.11n - 5 GHz 40 MHz Bandwidth, 5510 MHz, 64-QAM, MCS5, Frequency Band 3, 26 dB Bandwidth Plot

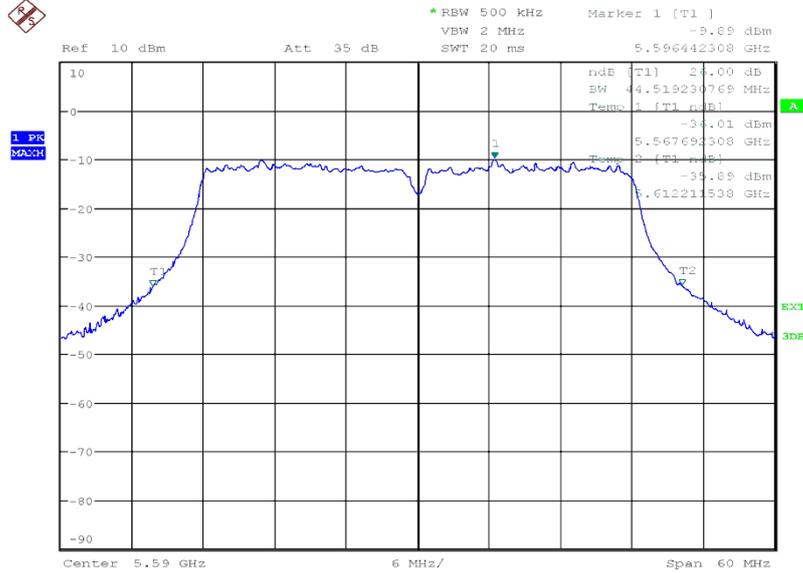


Date: 7.MAY.2015 11:20:48



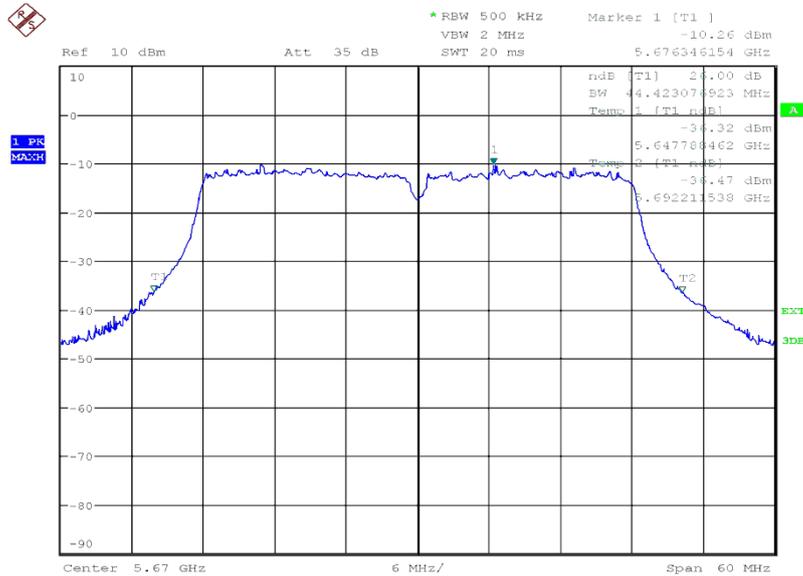
Product Service

802.11n - 5 GHz 40 MHz Bandwidth, 5590 MHz, 64-QAM, MCS5, Frequency Band 3, 26 dB Bandwidth Plot



Date: 7.MAY.2015 11:23:03

802.11n - 5 GHz 40 MHz Bandwidth, 5670 MHz, 64-QAM, MCS5, Frequency Band 3, 26 dB Bandwidth 3 Plot



Date: 7.MAY.2015 11:24:18

FCC 47 CFR Part 15, Limit Clause 15.407 (a)

No limit specified.



Product Service

2.3 MAXIMUM CONDUCTED OUTPUT POWER

2.3.1 Specification Reference

FCC 47 CFR Part 15E, Clause 15.407 (a)(1)(2)

2.3.2 Equipment Under Test and Modification State

SHV32 S/N: IMEI 004401115406445 - Modification State 0

2.3.3 Date of Test

17 April 2015, 20 April 2015 & 21 April 2015

2.3.4 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.3.5 Test Procedure

This test was performed in accordance with KDB 789033 D02 v01, Section II clause E.3b Method PM-G.

Remarks

For modes where simultaneous transmission on multiple antenna outputs are supported, the procedure defined in KDB 662911 D01 v02r01, clause E.2.b was used to sum the spectra across the outputs.

2.3.6 Environmental Conditions

Ambient Temperature	22.7°C
Relative Humidity	28.5%



Product Service

2.3.7 Test Results

802.11a, 5180 MHz, OFDM, 9 Mbps, Frequency Band 1, Maximum Conducted Output Power Results

5180 MHz					
dBm			mW		
Port A	Port B	Total Power	Port A	Port B	Total Power
10.23	9.85	N/A	10.54	9.66	N/A

802.11a, 5200 MHz, OFDM, 9 Mbps, Frequency Band 1, Maximum Conducted Output Power Results

5200 MHz					
dBm			mW		
Port A	Port B	Total Power	Port A	Port B	Total Power
10.12	9.76	N/A	10.28	9.46	N/A

802.11a, 5240 MHz, OFDM, 9 Mbps, Frequency Band 1, Maximum Conducted Output Power Results

5240 MHz					
dBm			mW		
Port A	Port B	Total Power	Port A	Port B	Total Power
10.00	9.51	N/A	10.00	8.93	N/A

802.11a, 5260 MHz, OFDM, 9 Mbps, Frequency Band 2, Maximum Conducted Output Power Results

5260 MHz					
dBm			mW		
Port A	Port B	Total Power	Port A	Port B	Total Power
10.14	9.66	N/A	10.33	9.25	N/A

802.11a, 5300 MHz, OFDM, 9 Mbps, Frequency Band 12 Maximum Conducted Output Power Results

5300 MHz					
dBm			mW		
Port A	Port B	Total Power	Port A	Port B	Total Power
10.07	9.49	N/A	10.16	8.89	N/A



Product Service

802.11a, 5320 MHz, OFDM, 9 Mbps, Frequency Band 2, Maximum Conducted Output Power Results

5320 MHz					
dBm			mW		
Port A	Port B	Total Power	Port A	Port B	Total Power
10.08	9.41	N/A	10.19	8.73	N/A

802.11a, 5500 MHz, OFDM, 9 Mbps, Frequency Band 3, Maximum Conducted Output Power Results

5500 MHz					
dBm			mW		
Port A	Port B	Total Power	Port A	Port B	Total Power
10.37	9.59	N/A	10.89	9.10	N/A

802.11a, 5600 MHz, OFDM, 9 Mbps, Frequency Band 3, Maximum Conducted Output Power Results

5600 MHz					
dBm			mW		
Port A	Port B	Total Power	Port A	Port B	Total Power
10.51	9.79	N/A	11.25	9.53	N/A

802.11a, 5700 MHz, OFDM, 9 Mbps, Frequency Band 3, Maximum Conducted Output Power Results

5700 MHz					
dBm			mW		
Port A	Port B	Total Power	Port A	Port B	Total Power
10.25	9.59	N/A	10.59	9.10	N/A

Remarks

Port A = ANT-0 and Port B = ANT-1

FCC 47 CFR Part 15, Limit Clause 15.407 (a)(1)(2)(3)

Frequency Band (MHz)	Limit
5150 to 5250	Lesser of 250 mW
5250 to 5350	Lesser of 250 mW or 11 dBm + 10 log B
5470 to 5725	Lesser of 250 mW or 11 dBm + 10 log B
5725 to 5825	≤1 W

Note: "B" = 26 dB Bandwidth (MHz).



Product Service

802.11ac - 5 GHz 20 MHz Bandwidth, 5180 MHz, 64-QAM, MCS0, Frequency Band 1, Maximum Conducted Output Power Results

5180 MHz					
dBm			mW		
Port A	Port B	Total Power	Port A	Port B	Total Power
8.81	8.40	11.62	7.60	6.92	14.52

802.11ac - 5 GHz 20 MHz Bandwidth, 5200 MHz, 64-QAM, MCS0, Frequency Band 1, Maximum Conducted Output Power Results

5200 MHz					
dBm			mW		
Port A	Port B	Total Power	Port A	Port B	Total Power
8.66	8.02	11.36	7.35	6.34	13.68

802.11ac - 5 GHz 20 MHz Bandwidth, 5240 MHz, 64-QAM, MCS0, Frequency Band 1, Maximum Conducted Output Power Results

5240 MHz					
dBm			mW		
Port A	Port B	Total Power	Port A	Port B	Total Power
8.45	8.05	11.26	7.00	6.38	13.38

802.11ac - 5 GHz 20 MHz Bandwidth, 5260 MHz, 64-QAM, MCS0, Frequency Band 2, Maximum Conducted Output Power Results

5260 MHz					
dBm			mW		
Port A	Port B	Total Power	Port A	Port B	Total Power
8.77	8.25	11.53	7.53	6.68	14.22

802.11ac - 5 GHz 20 MHz Bandwidth, 5300 MHz, 64-QAM, MCS0, Frequency Band 12, Maximum Conducted Output Power Results

5300 MHz					
dBm			mW		
Port A	Port B	Total Power	Port A	Port B	Total Power
8.74	8.15	11.47	7.48	6.53	14.01



Product Service

802.11ac - 5 GHz 20 MHz Bandwidth, 5320 MHz, 64-QAM, MCS0, Frequency Band 2, Maximum Conducted Output Power Results

5320 MHz					
dBm			mW		
Port A	Port B	Total Power	Port A	Port B	Total Power
8.34	8.16	11.26	6.82	6.55	13.37

802.11ac - 5 GHz 20 MHz Bandwidth, 5500 MHz, 64-QAM, MCS0, Frequency Band 3, Maximum Conducted Output Power Results

5500 MHz					
dBm			mW		
Port A	Port B	Total Power	Port A	Port B	Total Power
8.97	8.32	11.67	7.89	6.79	14.68

802.11ac - 5 GHz 20 MHz Bandwidth, 5600 MHz, 64-QAM, MCS0, Frequency Band 3, Maximum Conducted Output Power Results

5600 MHz					
dBm			mW		
Port A	Port B	Total Power	Port A	Port B	Total Power
8.91	8.34	11.64	7.78	6.82	14.60

802.11ac - 5 GHz 20 MHz Bandwidth, 5700 MHz, 64-QAM, MCS0, Frequency Band 3, Maximum Conducted Output Power Results

5700 MHz					
dBm			mW		
Port A	Port B	Total Power	Port A	Port B	Total Power
8.78	8.23	11.52	7.55	6.65	14.20

Remarks

Port A = ANT-0 and Port B = ANT-1

FCC 47 CFR Part 15, Limit Clause 15.407 (a)(1)(2)(3)

Frequency Band (MHz)	Limit
5150 to 5250	Lesser of 250 mW
5250 to 5350	Lesser of 250 mW or 11 dBm + 10 log B
5470 to 5725	Lesser of 250 mW or 11 dBm + 10 log B
5725 to 5825	Lesser of 1 W

Note: "B" = 26 dB Bandwidth (MHz).



Product Service

802.11ac - 5 GHz 40 MHz Bandwidth, 5190 MHz, 16-QAM, MCS0, Frequency Band 1, Maximum Conducted Output Power Results

5190 MHz					
dBm			mW		
Port A	Port B	Total Power	Port A	Port B	Total Power
9.17	8.92	12.06	8.26	7.80	16.06

802.11ac - 5 GHz 40 MHz Bandwidth, 5230 MHz, 16-QAM, MCS0, Frequency Band 1, Maximum Conducted Output Power Results

5230 MHz					
dBm			mW		
Port A	Port B	Total Power	Port A	Port B	Total Power
8.79	8.62	11.72	7.57	7.28	14.85

802.11ac - 5 GHz 40 MHz Bandwidth, 5270 MHz, 16-QAM, MCS0, Frequency Band 2, Maximum Conducted Output Power Results

5270 MHz					
dBm			mW		
Port A	Port B	Total Power	Port A	Port B	Total Power
9.21	8.75	12.00	8.34	7.50	15.84

802.11ac - 5 GHz 40 MHz Bandwidth, 5310 MHz, 16-QAM, MCS0, Frequency Band 2, Maximum Conducted Output Power Results

5310 MHz					
dBm			mW		
Port A	Port B	Total Power	Port A	Port B	Total Power
9.02	8.66	11.85	7.98	7.35	15.33

802.11ac - 5 GHz 40 MHz Bandwidth, 5510 MHz, 16-QAM, MCS0, Frequency Band 3, Maximum Conducted Output Power Results

5510 MHz					
dBm			mW		
Port A	Port B	Total Power	Port A	Port B	Total Power
9.28	8.74	12.03	8.47	7.48	15.95



Product Service

802.11ac - 5 GHz 40 MHz Bandwidth, 5590 MHz, 16-QAM, MCS0, Frequency Band 3, Maximum Conducted Output Power Results

5590 MHz					
dBm			mW		
Port A	Port B	Total Power	Port A	Port B	Total Power
9.44	8.87	12.17	8.79	7.71	16.50

802.11ac - 5 GHz 40 MHz Bandwidth, 5670 MHz, 16-QAM, MCS0, Frequency Band 3, Maximum Conducted Output Power Results

5670 MHz					
dBm			mW		
Port A	Port B	Total Power	Port A	Port B	Total Power
9.04	8.83	11.95	8.02	7.64	15.66

Remarks

Port A = ANT-0 and Port B = ANT-1

FCC 47 CFR Part 15, Limit Clause 15.407 (a)(1)(2)

Frequency Band (MHz)	Limit
5150 to 5250	Lesser of 250 mW
5250 to 5350	Lesser of 250 mW or 11 dBm + 10 log B
5470 to 5725	Lesser of 250 mW or 11 dBm + 10 log B
5725 to 5825	≤1 W

Note: "B" = 26 dB Bandwidth (MHz).



Product Service

802.11ac - 5 GHz 80 MHz Bandwidth, 5210 MHz, 256-QAM, MCS0, Frequency Band 1, Maximum Conducted Output Power Results

5210 MHz					
dBm			mW		
Port A	Port B	Total Power	Port A	Port B	Total Power
8.49	8.27	11.39	7.06	6.71	13.78

802.11ac - 5 GHz 80 MHz Bandwidth, 5290 MHz, 256-QAM, MCS0, Frequency Band 2, Maximum Conducted Output Power Results

5290 MHz					
dBm			mW		
Port A	Port B	Total Power	Port A	Port B	Total Power
8.78	8.33	11.57	7.55	6.81	14.36

802.11ac - 5 GHz 80 MHz Bandwidth, 5530 MHz, 256-QAM, MCS0, Frequency Band 3, Maximum Conducted Output Power Results

5530 MHz					
dBm			mW		
Port A	Port B	Total Power	Port A	Port B	Total Power
8.51	8.06	11.30	7.10	6.40	13.49

802.11ac - 5 GHz 80 MHz Bandwidth, 5610 MHz, 256-QAM, MCS0, Frequency Band 3, Maximum Conducted Output Power Results

5610 MHz					
dBm			mW		
Port A	Port B	Total Power	Port A	Port B	Total Power
8.80	8.29	11.56	7.59	6.75	14.33

Remarks

Port A = ANT-0 and Port B = ANT-1

FCC 47 CFR Part 15, Limit Clause 15.407 (a)(1)(2)(3)

Frequency Band (MHz)	Limit
5150 to 5250	Lesser of 250 mW
5250 to 5350	Lesser of 250 mW or 11 dBm + 10 log B
5470 to 5725	Lesser of 250 mW or 11 dBm + 10 log B
5725 to 5825	≤1 W

Note: "B" = 26 dB Bandwidth (MHz).



Product Service

802.11n - 5 GHz 20 MHz Bandwidth, 5180 MHz, 64-QAM, MCS0, Frequency Band 1, Maximum Conducted Output Power Results

5180 MHz					
dBm			mW		
Port A	Port B	Total Power	Port A	Port B	Total Power
9.11	8.38	11.77	8.15	6.89	15.03

802.11n - 5 GHz 20 MHz Bandwidth, 5200 MHz, 64-QAM, MCS0, Frequency Band 1, Maximum Conducted Output Power Results

5200 MHz					
dBm			mW		
Port A	Port B	Total Power	Port A	Port B	Total Power
8.93	8.02	11.51	7.82	6.34	14.15

802.11n - 5 GHz 20 MHz Bandwidth, 5240 MHz, 64-QAM, MCS0, Frequency Band 1, Maximum Conducted Output Power Results

5240 MHz					
dBm			mW		
Port A	Port B	Total Power	Port A	Port B	Total Power
8.58	8.04	11.33	7.21	6.37	13.58

802.11n - 5 GHz 20 MHz Bandwidth, 5260 MHz, 64-QAM, MCS0, Frequency Band 2, Maximum Conducted Output Power Results

5260 MHz					
dBm			mW		
Port A	Port B	Total Power	Port A	Port B	Total Power
8.67	8.30	11.50	7.36	6.76	14.12

802.11n - 5 GHz 20 MHz Bandwidth, 5300 MHz, 64-QAM, MCS0, Frequency Band 12 Maximum Conducted Output Power Results

5300 MHz					
dBm			mW		
Port A	Port B	Total Power	Port A	Port B	Total Power
9.03	8.17	11.63	8.00	6.56	14.56



Product Service

802.11n - 5 GHz 20 MHz Bandwidth, 5320 MHz, 64-QAM, MCS0, Frequency Band 2, Maximum Conducted Output Power Results

5320 MHz					
dBm			mW		
Port A	Port B	Total Power	Port A	Port B	Total Power
8.82	7.96	11.42	7.62	6.25	13.87

802.11n - 5 GHz 20 MHz Bandwidth, 5500 MHz, 64-QAM, MCS0, Frequency Band 3, Maximum Conducted Output Power Results

5500 MHz					
dBm			mW		
Port A	Port B	Total Power	Port A	Port B	Total Power
9.18	8.36	11.80	8.28	6.85	15.13

802.11n - 5 GHz 20 MHz Bandwidth, 5600 MHz, 64-QAM, MCS0, Frequency Band 3, Maximum Conducted Output Power Results

5600 MHz					
dBm			mW		
Port A	Port B	Total Power	Port A	Port B	Total Power
9.14	8.36	11.78	8.20	6.85	15.06

802.11n - 5 GHz 20 MHz Bandwidth, 5700 MHz, 64-QAM, MCS0, Frequency Band 3, Maximum Conducted Output Power Results

5700 MHz					
dBm			mW		
Port A	Port B	Total Power	Port A	Port B	Total Power
9.03	8.25	11.67	8.00	6.68	14.68

Remarks

Port A = ANT-0 and Port B = ANT-1

FCC 47 CFR Part 15, Limit Clause 15.407 (a)(1)(2)(3)

Frequency Band (MHz)	Limit
5150 to 5250	Lesser of 250 mW
5250 to 5350	Lesser of 250 mW or 11 dBm + 10 log B
5470 to 5725	Lesser of 250 mW or 11 dBm + 10 log B
5725 to 5825	≤1 W

Note: "B" = 26 dB Bandwidth (MHz).



Product Service

802.11n - 5 GHz 40 MHz Bandwidth, 5190 MHz, 64-QAM, MCS0, Frequency Band 1, Maximum Conducted Output Power Results

5190 MHz					
dBm			mW		
Port A	Port B	Total Power	Port A	Port B	Total Power
9.16	8.99	12.09	8.24	7.93	16.17

802.11n - 5 GHz 40 MHz Bandwidth, 5230 MHz, 64-QAM, MCS0, Frequency Band 1, Maximum Conducted Output Power Results

5230 MHz					
dBm			mW		
Port A	Port B	Total Power	Port A	Port B	Total Power
8.80	8.69	11.76	7.59	7.40	14.98

802.11n - 5 GHz 40 MHz Bandwidth, 5270 MHz, 64-QAM, MCS0, Frequency Band 2, Maximum Conducted Output Power Results

5270 MHz					
dBm			mW		
Port A	Port B	Total Power	Port A	Port B	Total Power
9.21	8.80	12.02	8.34	7.59	15.92

802.11n - 5 GHz 40 MHz Bandwidth, 5310 MHz, 64-QAM, MCS0, Frequency Band 2, Maximum Conducted Output Power Results

5310 MHz					
dBm			mW		
Port A	Port B	Total Power	Port A	Port B	Total Power
9.05	8.71	11.89	8.04	7.43	15.47

802.11n - 5 GHz 40 MHz Bandwidth, 5510 MHz, 64-QAM, MCS0, Frequency Band 3, Maximum Conducted Output Power Results

5510 MHz					
dBm			mW		
Port A	Port B	Total Power	Port A	Port B	Total Power
9.25	8.77	12.03	8.41	7.53	15.95



Product Service

802.11n - 5 GHz 40 MHz Bandwidth, 5590 MHz, 64-QAM, MCS0, Frequency Band 3, Maximum Conducted Output Power Results

5590 MHz					
dBm			mW		
Port A	Port B	Total Power	Port A	Port B	Total Power
9.43	8.87	12.17	8.77	7.71	16.48

802.11n - 5 GHz 40 MHz Bandwidth, 5670 MHz, 64-QAM, MCS0, Frequency Band 3, Maximum Conducted Output Power Results

5670 MHz					
dBm			mW		
Port A	Port B	Total Power	Port A	Port B	Total Power
9.00	8.83	11.93	7.94	7.64	15.58

Remarks

Port A = ANT-0 and Port B = ANT-1

FCC 47 CFR Part 15, Limit Clause 15.407 (a)(1)(2)(3)

Frequency Band (MHz)	Limit
5150 to 5250	Lesser of 250 mW
5250 to 5350	Lesser of 250 mW or 11 dBm + 10 log B
5470 to 5725	Lesser of 250 mW or 11 dBm + 10 log B
5725 to 5825	≤1 W

Note: "B" = 26 dB Bandwidth (MHz).



Product Service

2.4 PEAK POWER SPECTRAL DENSITY

2.4.1 Specification Reference

FCC 47 CFR Part 15E, Clause 15.407 (a)(1)(iv) and (a)(2)

2.4.2 Equipment Under Test and Modification State

SHV32 S/N: IMEI 004401115406445 - Modification State 0

2.4.3 Date of Test

5 May 2015 & 6 May 2015

2.4.4 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.4.5 Test Procedure

This test was performed in accordance with KDB 789033 D02 v01, Section II clause F, (SA-2 Alternative).

Remarks

Duty cycle correction was included in the reference level offset.

For modes which support simultaneous transmission - KDB 662911 D01, v02r01, clause E.2 was used to sum and add the total power spectral density.

2.4.6 Environmental Conditions

Ambient Temperature	22.5°C
Relative Humidity	31.5%



Product Service

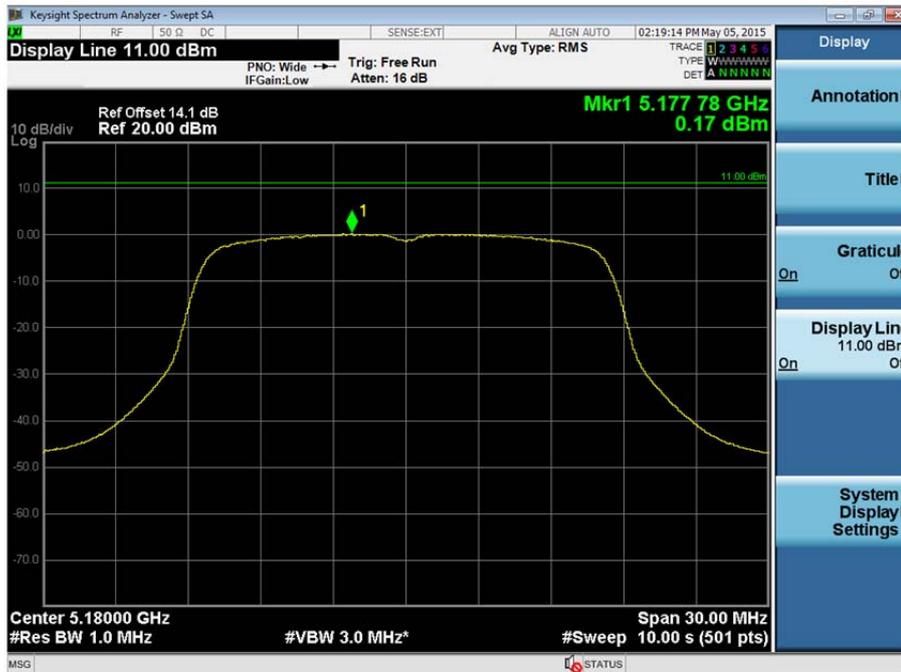
2.4.7 Test Results

Duty cycle : 93.79 %

802.11a, 5180 MHz, OFDM, 9 Mbps, Frequency Band 1, Peak Power Spectral Density Results

5180 MHz		
dBm		
Port A	Port B	Total Power
0.17	-0.46	N/A

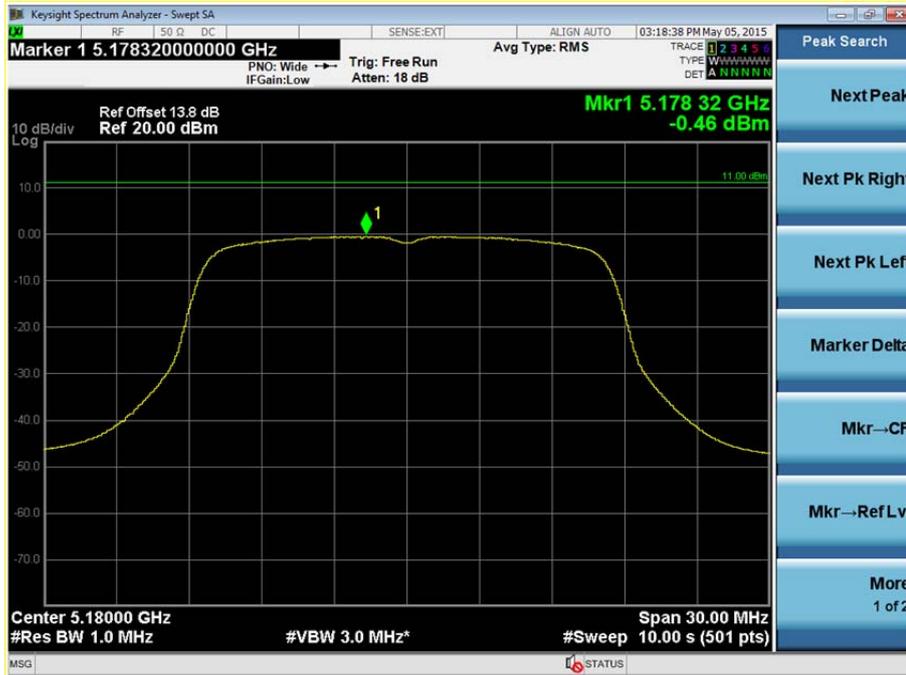
802.11a, 5180 MHz, OFDM, 9 Mbps, Frequency Band 1, Port A, Peak Power Spectral Density Plot





Product Service

802.11a, 5180 MHz, OFDM, 9 Mbps, Frequency Band 1, Port B, Peak Power Spectral Density Plot



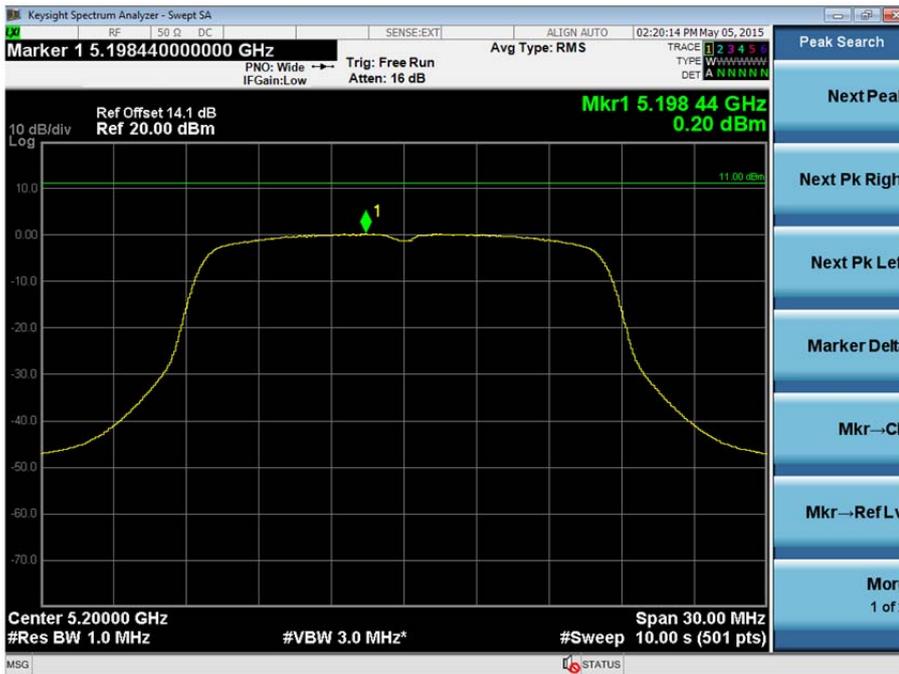


Product Service

802.11a, 5200 MHz, OFDM, 9 Mbps, Frequency Band 1, Peak Power Spectral Density Results

5200 MHz		
dBm		
Port A	Port B	Total Power
0.20	-0.46	N/A

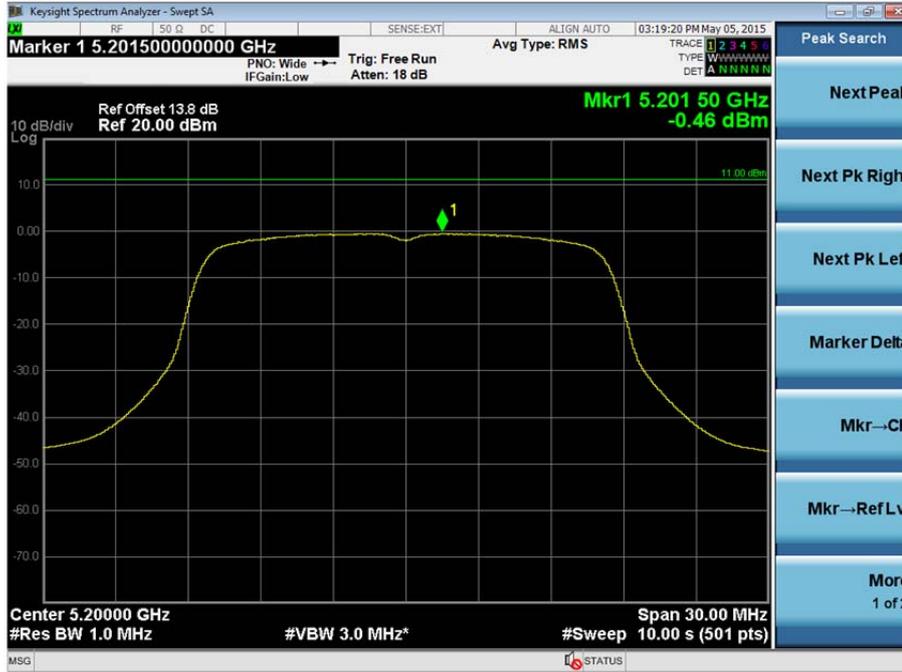
802.11a, 5200 MHz, OFDM, 9 Mbps, Frequency Band 1, Port A, Peak Power Spectral Density Plot





Product Service

802.11a, 5200 MHz, OFDM, 9 Mbps, Frequency Band 1, Port B, Peak Power Spectral Density Plot





Product Service

802.11a, 5240 MHz, OFDM, 9 Mbps, Frequency Band 1, Peak Power Spectral Density Plot



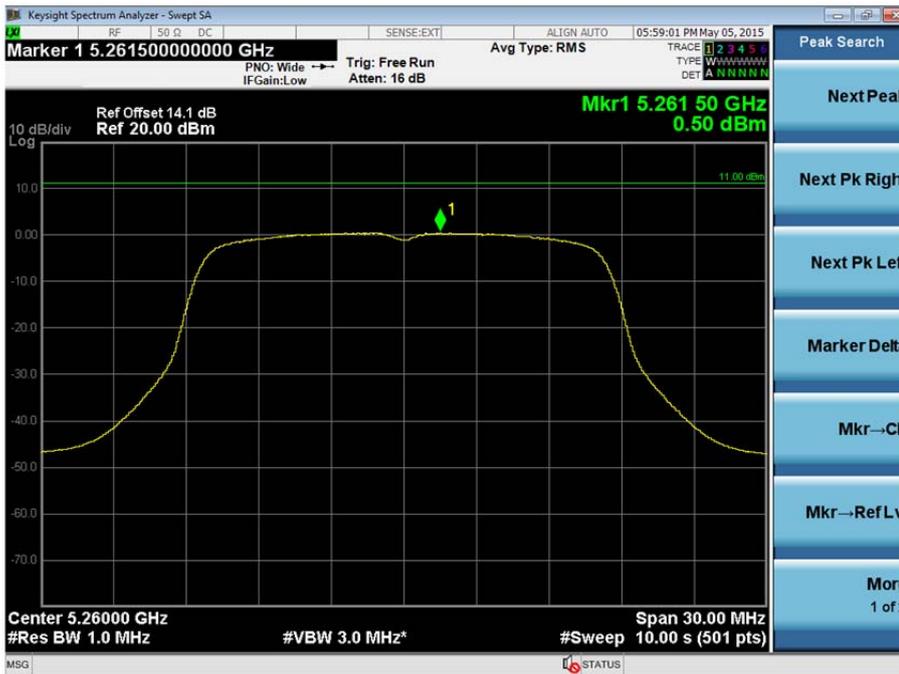


Product Service

802.11a, 5260 MHz, OFDM, 9 Mbps, Frequency Band 2, Peak Power Spectral Density Results

5260 MHz		
dBm		
Port A	Port B	Total Power
0.50	-0.34	N/A

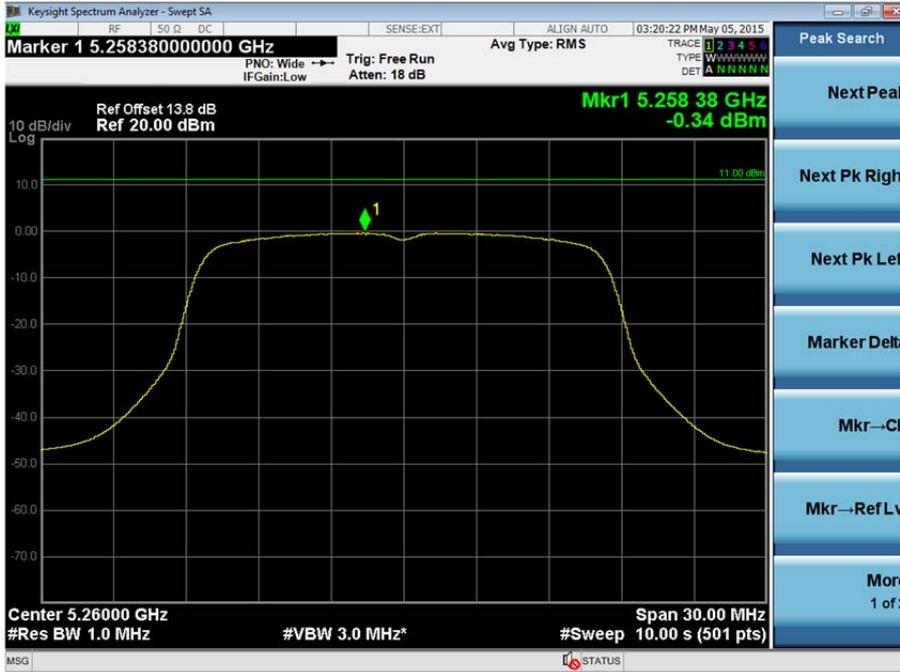
802.11a, 5260 MHz, OFDM, 9 Mbps, Frequency Band 2, Port A, Peak Power Spectral Density Plot





Product Service

802.11a, 5260 MHz, OFDM, 9 Mbps, Frequency Band 2, Port B, Peak Power Spectral Density Plot



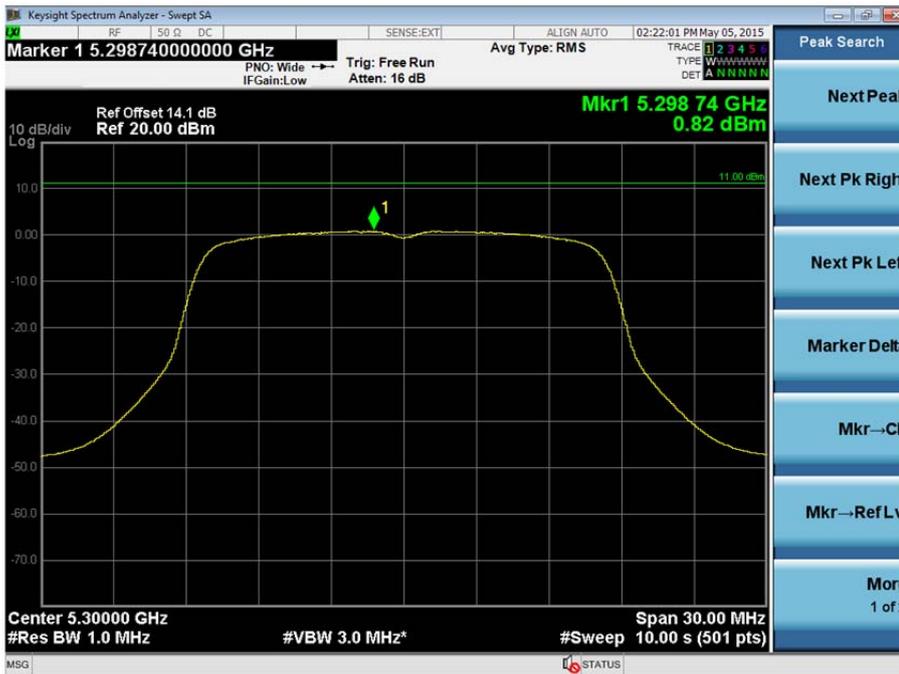


Product Service

802.11a, 5300 MHz, OFDM, 9 Mbps, Frequency Band 2, Peak Power Spectral Density Results

5300 MHz		
dBm		
Port A	Port B	Total Power
0.82	-0.01	N/A

802.11a, 5300 MHz, OFDM, 9 Mbps, Frequency Band 2, Port A, Peak Power Spectral Density Plot





Product Service

802.11a, 5300 MHz, OFDM, 9 Mbps, Frequency Band 2, Port B, Peak Power Spectral Density Plot





Product Service

802.11a, 5320 MHz, OFDM, 9 Mbps, Frequency Band 2, Peak Power Spectral Density Results

5320 MHz		
dBm		
Port A	Port B	Total Power
1.00	0.14	N/A

802.11a, 5320 MHz, OFDM, 9 Mbps, Frequency Band 2, Peak Power Spectral Density Plot





Product Service

802.11a, 5320 MHz, OFDM, 9 Mbps, Frequency Band 2, Peak Power Spectral Density Plot



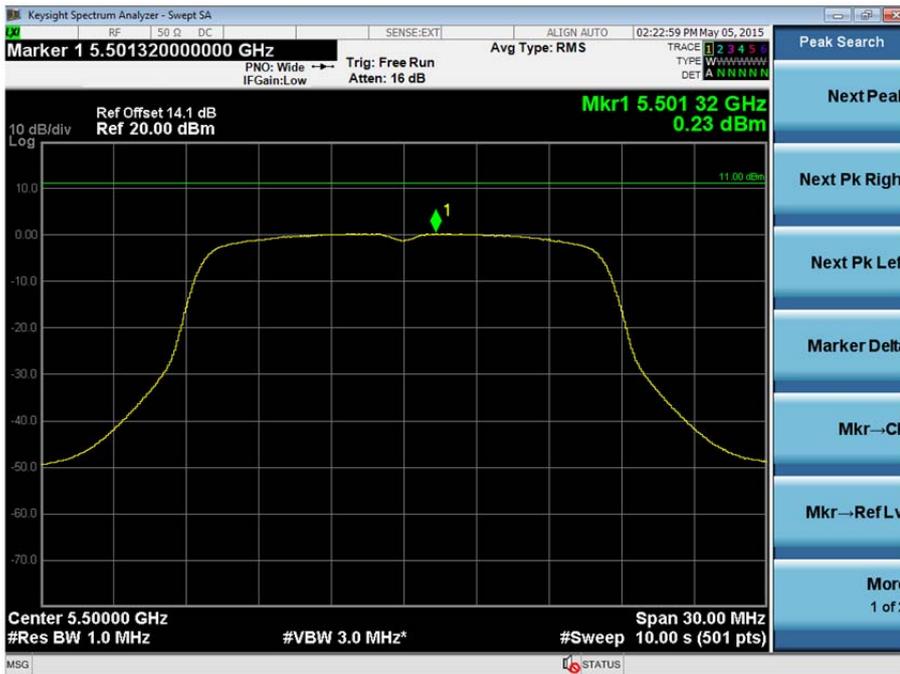


Product Service

802.11a, 5500 MHz, OFDM, 9 Mbps, Frequency Band 3, Peak Power Spectral Density Results

5500 MHz		
dBm		
Port A	Port B	Total Power
0.23	-0.59	N/A

802.11a, 5500 MHz, OFDM, 9 Mbps, Frequency Band 3, Port A, Peak Power Spectral Density Plot





Product Service

802.11a, 5500 MHz, OFDM, 9 Mbps, Frequency Band 3, Port B, Peak Power Spectral Density Plot





Product Service

802.11a, 5600 MHz, OFDM, 9 Mbps, Frequency Band 3, Peak Power Spectral Density Results

5600 MHz		
dBm		
Port A	Port B	Total Power
0.87	-0.31	N/A

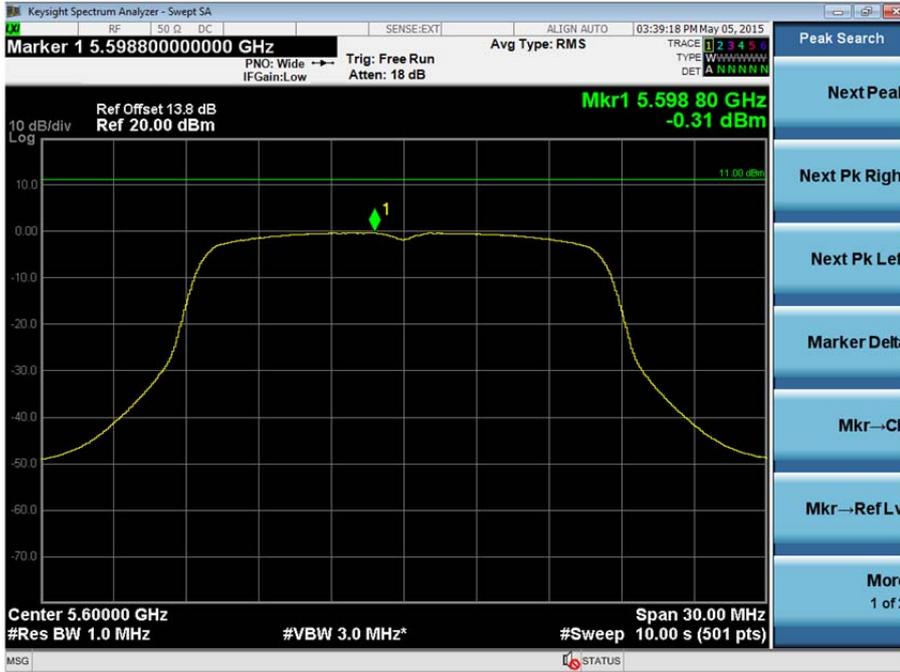
802.11a, 5600 MHz, OFDM, 9 Mbps, Frequency Band 3, Port A, Peak Power Spectral Density Plot





Product Service

802.11a, 5600 MHz, OFDM, 9 Mbps, Frequency Band 3, Port B, Peak Power Spectral Density Plot





Product Service

802.11a, 5700 MHz, OFDM, 9 Mbps, Frequency Band 3, Peak Power Spectral Density Results

5700 MHz		
dBm		
Port A	Port B	Total Power
0.10	-0.86	N/A

802.11a, 5700 MHz, OFDM, 9 Mbps, Frequency Band 3, Peak Power Spectral Density Plot





Product Service

802.11a, 5700 MHz, OFDM, 9 Mbps, Frequency Band 3, Peak Power Spectral Density Plot



Remarks

802.11a does not support simultaneous transmission from multiple antenna outputs therefore no 'total' power is specified.

Port A = ANT-0 and Port B = ANT-1

FCC 47 CFR Part 15, Limit Clause 15.407 (a)(1)(2)(3)

Frequency Band (MHz)	Limit
5150 to 5250	≤11 dBm / 1 MHz
5250 to 5350	≤11 dBm / 1 MHz
5470 to 5725	≤11 dBm / 1 MHz
5725 to 5825	≤30 dBm / 500 kHz



Product Service

Duty cycle : 94.50%

802.11ac - 5 GHz 20 MHz Bandwidth, 5180 MHz, 64-QAM, MCS0, Frequency Band 1, Peak Power Spectral Density Results

5180 MHz		
dBm		
Port A	Port B	Total Power
-1.06	-1.69	1.65

802.11ac - 5 GHz 20 MHz Bandwidth, 5180 MHz, 64-QAM, MCS0, Frequency Band 1, Port A, Peak Power Spectral Density Plot





Product Service

802.11ac - 5 GHz 20 MHz Bandwidth, 5180 MHz, 64-QAM, MCS0, Frequency Band 1, Port B, Peak Power Spectral Density Plot





Product Service

802.11ac - 5 GHz 20 MHz Bandwidth, 5200 MHz, 64-QAM, MCS0, Frequency Band 1, Peak Power Spectral Density Results

5200 MHz		
dBm		
Port A	Port B	Total Power
-1.06	-1.65	1.67

802.11ac - 5 GHz 20 MHz Bandwidth, 5200 MHz, 64-QAM, MCS0, Frequency Band 1, Port A, Peak Power Spectral Density Plot





Product Service

802.11ac - 5 GHz 20 MHz Bandwidth, 5200 MHz, 64-QAM, MCS0, Frequency Band 1, Port B, Peak Power Spectral Density Plot





Product Service

802.11ac - 5 GHz 20 MHz Bandwidth, 5240 MHz, 64-QAM, MCS0, Frequency Band 1, Peak Power Spectral Density Results

5240 MHz		
dBm		
Port A	Port B	Total Power
-1.22	-1.53	1.64

802.11ac - 5 GHz 20 MHz Bandwidth, 5240 MHz, 64-QAM, MCS0, Frequency Band 1, Peak Power Spectral Density Plot





Product Service

802.11ac - 5 GHz 20 MHz Bandwidth, 5240 MHz, 64-QAM, MCS0, Frequency Band 1, Peak Power Spectral Density Plot





Product Service

802.11ac - 5 GHz 20 MHz Bandwidth, 5260 MHz, 64-QAM, MCS0, Frequency Band 2, Peak Power Spectral Density Results

5260 MHz		
dBm		
Port A	Port B	Total Power
-1.13	-1.62	1.64

802.11ac - 5 GHz 20 MHz Bandwidth, 5260 MHz, 64-QAM, MCS0, Frequency Band 2, Port A, Peak Power Spectral Density Plot





Product Service

802.11ac - 5 GHz 20 MHz Bandwidth, 5260 MHz, 64-QAM, MCS0, Frequency Band 2, Port B, Peak Power Spectral Density Plot





Product Service

802.11ac - 5 GHz 20 MHz Bandwidth, 5300 MHz, 64-QAM, MCS0, Frequency Band 2, Peak Power Spectral Density Results

5300 MHz		
dBm		
Port A	Port B	Total Power
-0.50	-1.11	2.22

802.11ac - 5 GHz 20 MHz Bandwidth, 5300 MHz, 64-QAM, MCS0, Frequency Band 2, Port A, Peak Power Spectral Density Plot





Product Service

802.11ac - 5 GHz 20 MHz Bandwidth, 5300 MHz, 64-QAM, MCS0, Frequency Band 2, Port B, Peak Power Spectral Density Plot





Product Service

802.11ac - 5 GHz 20 MHz Bandwidth, 5320 MHz, 64-QAM, MCS0, Frequency Band 2, Peak Power Spectral Density Results

5320 MHz		
dBm		
Port A	Port B	Total Power
-0.38	-1.10	2.29

802.11ac - 5 GHz 20 MHz Bandwidth, 5320 MHz, 64-QAM, MCS0, Frequency Band 2, Peak Power Spectral Density Plot





Product Service

802.11ac - 5 GHz 20 MHz Bandwidth, 5320 MHz, 64-QAM, MCS0, Frequency Band 2, Peak Power Spectral Density Plot





Product Service

802.11ac - 5 GHz 20 MHz Bandwidth, 5500 MHz, 64-QAM, MCS0, Frequency Band 3, Peak Power Spectral Density Results

5500 MHz		
dBm		
Port A	Port B	Total Power
-1.07	-1.73	1.62

802.11ac - 5 GHz 20 MHz Bandwidth, 5500 MHz, 64-QAM, MCS0, Frequency Band 3, Port A, Peak Power Spectral Density Plot





Product Service

802.11ac - 5 GHz 20 MHz Bandwidth, 5500 MHz, 64-QAM, MCS0, Frequency Band 3, Port B, Peak Power Spectral Density Plot





Product Service

802.11ac - 5 GHz 20 MHz Bandwidth, 5600 MHz, 64-QAM, MCS0, Frequency Band 3, Peak Power Spectral Density Results

5600 MHz		
dBm		
Port A	Port B	Total Power
-0.50	-1.32	2.12

802.11ac - 5 GHz 20 MHz Bandwidth, 5600 MHz, 64-QAM, MCS0, Frequency Band 3, Port A, Peak Power Spectral Density Plot





Product Service

802.11ac - 5 GHz 20 MHz Bandwidth, 5600 MHz, 64-QAM, MCS0, Frequency Band 3, Port B, Peak Power Spectral Density Plot





Product Service

802.11ac - 5 GHz 20 MHz Bandwidth, 5700 MHz, 64-QAM, MCS0, Frequency Band 3, Peak Power Spectral Density Results

5700 MHz		
dBm		
Port A	Port B	Total Power
-1.30	-2.07	1.34

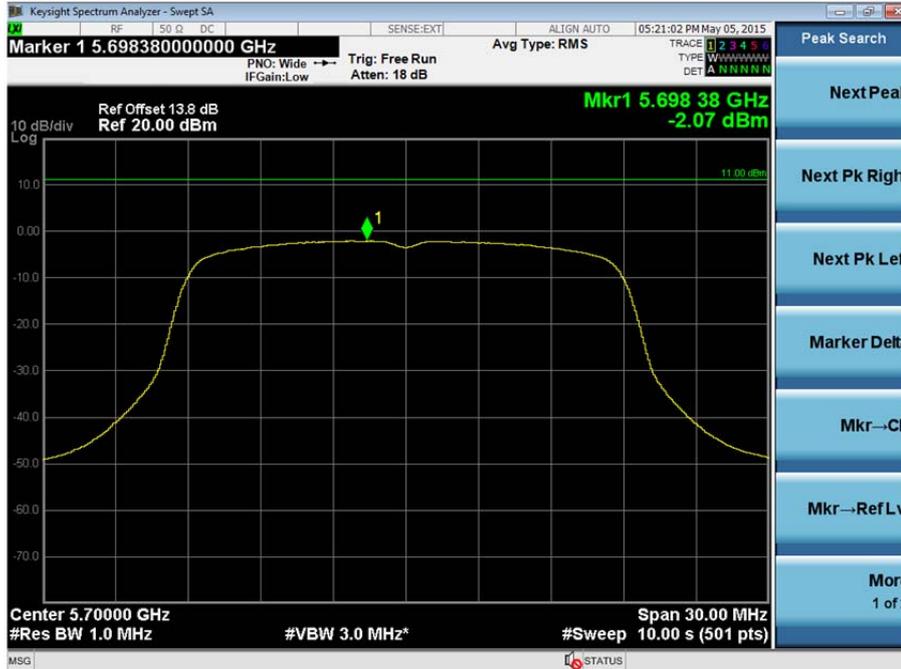
802.11ac - 5 GHz 20 MHz Bandwidth, 5700 MHz, 64-QAM, MCS0, Frequency Band 3, Peak Power Spectral Density Plot





Product Service

802.11ac - 5 GHz 20 MHz Bandwidth, 5700 MHz, 64-QAM, MCS0, Frequency Band 3, Peak Power Spectral Density Plot



Remarks

Port A = ANT-0 and Port B = ANT-1

FCC 47 CFR Part 15, Limit Clause 15.407 (a)(1)(2)(3)

Frequency Band (MHz)	Limit
5150 to 5250	≤11 dBm / 1 MHz
5250 to 5350	≤11 dBm / 1 MHz
5470 to 5725	≤11 dBm / 1 MHz
5725 to 5825	≤30 dBm / 500 kHz



Product Service

802.11ac - 5 GHz 40 MHz Bandwidth, 5190 MHz, 16-QAM, MCS0, Frequency Band 1, Port B, Peak Power Spectral Density Plot





Product Service

802.11ac - 5 GHz 40 MHz Bandwidth, 5230 MHz, 16-QAM, MCS0, Frequency Band 1, Peak Power Spectral Density Results

5230 MHz		
dBm		
Port A	Port B	Total Power
-4.04	-4.25	-1.13

802.11ac - 5 GHz 40 MHz Bandwidth, 5230 MHz, 16-QAM, MCS0, Frequency Band 1, Peak Power Spectral Density Plot





Product Service

802.11ac - 5 GHz 40 MHz Bandwidth, 5230 MHz, 16-QAM, MCS0, Frequency Band 1, Peak Power Spectral Density Plot





Product Service

802.11ac - 5 GHz 40 MHz Bandwidth, 5270 MHz, 16-QAM, MCS0, Frequency Band 2, Peak Power Spectral Density Results

5270 MHz		
dBm		
Port A	Port B	Total Power
-3.93	-4.13	-1.02

802.11ac - 5 GHz 40 MHz Bandwidth, 5270 MHz, 16-QAM, MCS0, Frequency Band 2, Port A, Peak Power Spectral Density Plot





Product Service

802.11ac - 5 GHz 40 MHz Bandwidth, 5270 MHz, 16-QAM, MCS0, Frequency Band 2, Port B, Peak Power Spectral Density Plot





Product Service

802.11ac - 5 GHz 40 MHz Bandwidth, 5310 MHz, 16-QAM, MCS0, Frequency Band 2, Peak Power Spectral Density Results

5310 MHz		
dBm		
Port A	Port B	Total Power
-3.16	-3.79	-0.45

802.11ac - 5 GHz 40 MHz Bandwidth, 5310 MHz, 16-QAM, MCS0, Frequency Band 2, Peak Power Spectral Density Plot





Product Service

802.11ac - 5 GHz 40 MHz Bandwidth, 5310 MHz, 16-QAM, MCS0, Frequency Band 2, Peak Power Spectral Density Plot





Product Service

802.11ac - 5 GHz 40 MHz Bandwidth, 5510 MHz, 16-QAM, MCS0, Frequency Band 3, Peak Power Spectral Density Results

5510 MHz		
dBm		
Port A	Port B	Total Power
-3.80	-4.35	-1.06

802.11ac - 5 GHz 40 MHz Bandwidth, 5510 MHz, 16-QAM, MCS0, Frequency Band 3, Port A, Peak Power Spectral Density Plot





Product Service

802.11ac - 5 GHz 40 MHz Bandwidth, 5510 MHz, 16-QAM, MCS0, Frequency Band 3, Port B, Peak Power Spectral Density Plot





Product Service

802.11ac - 5 GHz 40 MHz Bandwidth, 5590 MHz, 16-QAM, MCS0, Frequency Band 3, Peak Power Spectral Density Results

5590 MHz		
dBm		
Port A	Port B	Total Power
-3.27	-3.99	-0.60

802.11ac - 5 GHz 40 MHz Bandwidth, 5590 MHz, 16-QAM, MCS0, Frequency Band 3, Port A, Peak Power Spectral Density Plot





Product Service

802.11ac - 5 GHz 40 MHz Bandwidth, 5590 MHz, 16-QAM, MCS0, Frequency Band 3, Port B, Peak Power Spectral Density Plot





Product Service

802.11ac - 5 GHz 40 MHz Bandwidth, 5670 MHz, 16-QAM, MCS0, Frequency Band 3, Peak Power Spectral Density Results

5670 MHz		
dBm		
Port A	Port B	Total Power
-3.78	-4.32	-1.03

802.11ac - 5 GHz 40 MHz Bandwidth, 5670 MHz, 16-QAM, MCS0, Frequency Band 3, Peak Power Spectral Density Plot





Product Service

802.11ac - 5 GHz 40 MHz Bandwidth, 5670 MHz, 16-QAM, MCS0, Frequency Band 3, Peak Power Spectral Density Plot



Remarks

Port A = ANT-0 and Port B = ANT-1

FCC 47 CFR Part 15, Limit Clause 15.407 (a)(1)(2)(3)

Frequency Band (MHz)	Limit
5150 to 5250	≤11 dBm / 1 MHz
5250 to 5350	≤11 dBm / 1 MHz
5470 to 5725	≤11 dBm / 1 MHz
5725 to 5825	≤30 dBm / 500 kHz



Product Service

Duty cycle : 81.72%

802.11ac - 5 GHz 80 MHz Bandwidth, 5210 MHz, 256-QAM, MCS0, Frequency Band 1, Peak Power Spectral Density Results

5210 MHz		
dBm		
Port A	Port B	Total Power
-7.23	-7.59	-4.40

802.11ac - 5 GHz 80 MHz Bandwidth, 5210 MHz, 256-QAM, MCS0, Frequency Band 1, Port A, Peak Power Spectral Density Plot





Product Service

802.11ac - 5 GHz 80 MHz Bandwidth, 5210 MHz, 256-QAM, MCS0, Frequency Band 1, Port B, Peak Power Spectral Density Plot





Product Service

802.11ac - 5 GHz 80 MHz Bandwidth, 5290 MHz, 256-QAM, MCS0, Frequency Band 2, Peak Power Spectral Density Results

5290 MHz		
dBm		
Port A	Port B	Total Power
-6.77	-7.11	-3.93

802.11ac - 5 GHz 80 MHz Bandwidth, 5290 MHz, 256-QAM, MCS0, Frequency Band 2, Peak Power Spectral Density Plot





Product Service

802.11ac - 5 GHz 80 MHz Bandwidth, 5290 MHz, 256-QAM, MCS0, Frequency Band 2, Peak Power Spectral Density Plot





Product Service

802.11ac - 5 GHz 80 MHz Bandwidth, 5530 MHz, 256-QAM, MCS0, Frequency Band 3, Peak Power Spectral Density Results

5530 MHz		
dBm		
Port A	Port B	Total Power
-6.79	-7.48	-4.11

802.11ac - 5 GHz 80 MHz Bandwidth, 5530 MHz, 256-QAM, MCS0, Frequency Band 3, Port A, Peak Power Spectral Density Plot





Product Service

802.11ac - 5 GHz 80 MHz Bandwidth, 5530 MHz, 256-QAM, MCS0, Frequency Band 3, Port B, Peak Power Spectral Density Plot





Product Service

802.11ac - 5 GHz 80 MHz Bandwidth, 5610 MHz, 256-QAM, MCS0, Frequency Band 3, Peak Power Spectral Density Results

5610 MHz		
dBm		
Port A	Port B	Total Power
-7.43	-7.19	-4.30

802.11ac - 5 GHz 80 MHz Bandwidth, 5610 MHz, 256-QAM, MCS0, Frequency Band 3, Peak Power Spectral Density Plot





Product Service

802.11ac - 5 GHz 80 MHz Bandwidth, 5610 MHz, 256-QAM, MCS0, Frequency Band 3, Peak Power Spectral Density Plot



Remarks

Port A = ANT-0 and Port B = ANT-1

FCC 47 CFR Part 15, Limit Clause 15.407 (a)(1)(2)(3)

Frequency Band (MHz)	Limit
5150 to 5250	≤11 dBm / 1 MHz
5250 to 5350	≤11 dBm / 1 MHz
5470 to 5725	≤11 dBm / 1 MHz
5725 to 5825	≤30 dBm / 500 kHz



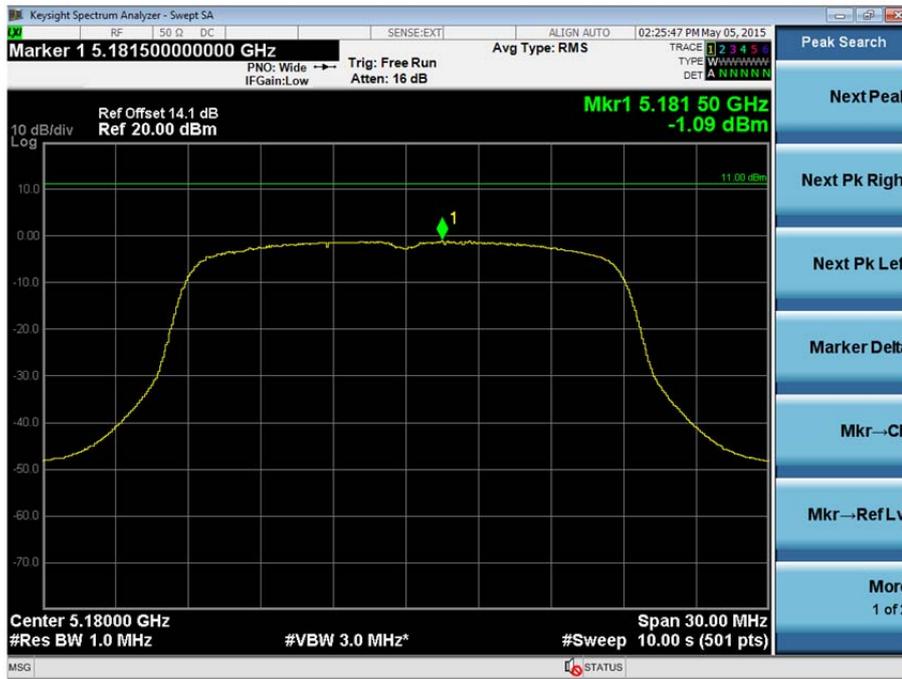
Product Service

Duty cycle : 94.95%

802.11n - 5 GHz 20 MHz Bandwidth, 5180 MHz, 64-QAM, MCS0, Frequency Band 1, Peak Power Spectral Density Results

5180 MHz		
dBm		
Port A	Port B	Total Power
-1.09	-1.73	1.61

802.11n - 5 GHz 20 MHz Bandwidth, 5180 MHz, 64-QAM, MCS0, Frequency Band 1, Port A, Peak Power Spectral Density Plot





Product Service

802.11n - 5 GHz 20 MHz Bandwidth, 5180 MHz, 64-QAM, MCS0, Frequency Band 1, Port B, Peak Power Spectral Density Plot





Product Service

802.11n - 5 GHz 20 MHz Bandwidth, 5200 MHz, 64-QAM, MCS0, Frequency Band 1, Peak Power Spectral Density Results

5200 MHz		
dBm		
Port A	Port B	Total Power
-1.12	-1.83	1.55

802.11n - 5 GHz 20 MHz Bandwidth, 5200 MHz, 64-QAM, MCS0, Frequency Band 1, Port A, Peak Power Spectral Density Plot





Product Service

802.11n - 5 GHz 20 MHz Bandwidth, 5200 MHz, 64-QAM, MCS0, Frequency Band 1, Port B, Peak Power Spectral Density Plot





Product Service

802.11n - 5 GHz 20 MHz Bandwidth, 5240 MHz, 64-QAM, MCS0, Frequency Band 1, Peak Power Spectral Density Results

5240 MHz		
dBm		
Port A	Port B	Total Power
-1.31	-1.78	1.47

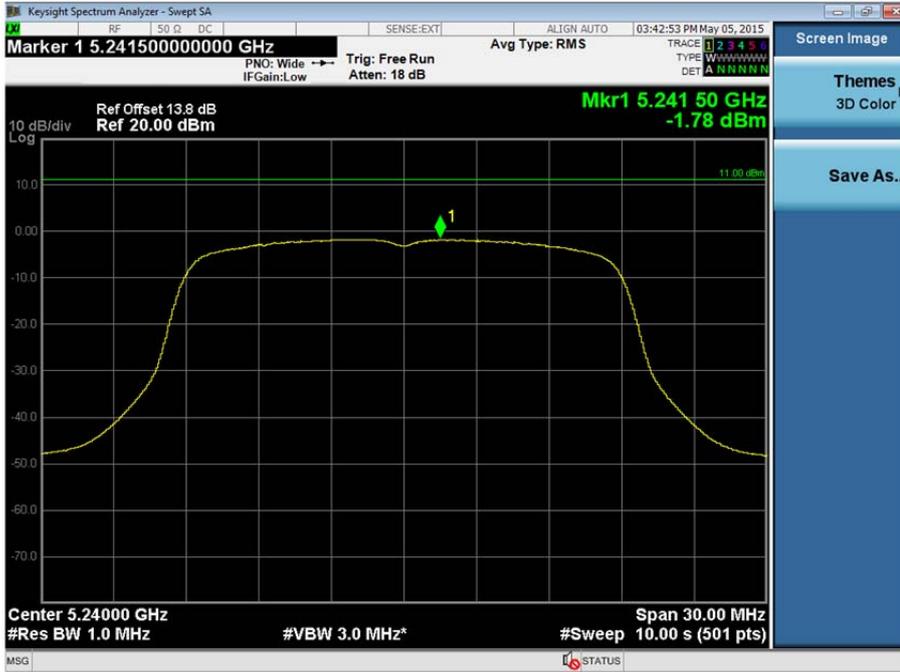
802.11n - 5 GHz 20 MHz Bandwidth, 5240 MHz, 64-QAM, MCS0, Frequency Band 1, Peak Power Spectral Density Plot





Product Service

802.11n - 5 GHz 20 MHz Bandwidth, 5240 MHz, 64-QAM, MCS0, Frequency Band 1, Peak Power Spectral Density Plot



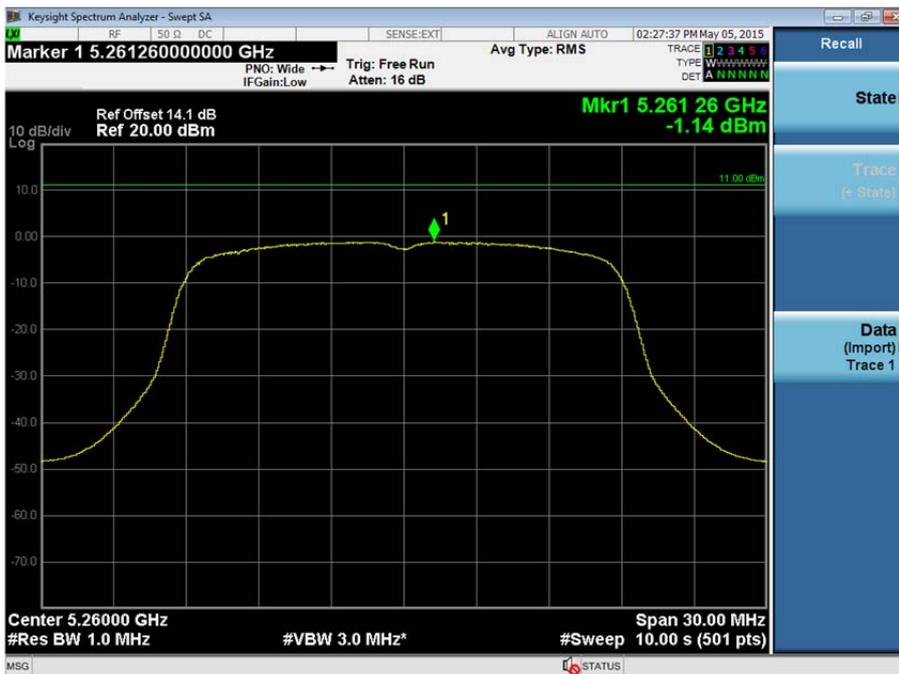


Product Service

802.11n - 5 GHz 20 MHz Bandwidth, 5260 MHz, 64-QAM, MCS0, Frequency Band 2, Peak Power Spectral Density Results

5260 MHz		
dBm		
Port A	Port B	Total Power
-1.14	-1.71	1.59

802.11n - 5 GHz 20 MHz Bandwidth, 5260 MHz, 64-QAM, MCS0, Frequency Band 2, Port A, Peak Power Spectral Density Plot





Product Service

802.11n - 5 GHz 20 MHz Bandwidth, 5260 MHz, 64-QAM, MCS0, Frequency Band 2, Port B, Peak Power Spectral Density Plot





Product Service

802.11n - 5 GHz 20 MHz Bandwidth, 5300 MHz, 64-QAM, MCS0, Frequency Band 2, Peak Power Spectral Density Results

5300 MHz		
dBm		
Port A	Port B	Total Power
-0.63	-1.19	2.11

802.11n - 5 GHz 20 MHz Bandwidth, 5300 MHz, 64-QAM, MCS0, Frequency Band 2, Port A, Peak Power Spectral Density Plot





Product Service

802.11n - 5 GHz 20 MHz Bandwidth, 5300 MHz, 64-QAM, MCS0, Frequency Band 2, Port B, Peak Power Spectral Density Plot





Product Service

802.11n - 5 GHz 20 MHz Bandwidth, 5320 MHz, 64-QAM, MCS0, Frequency Band 2, Peak Power Spectral Density Results

5320 MHz		
dBm		
Port A	Port B	Total Power
-0.49	-1.21	2.18

802.11n - 5 GHz 20 MHz Bandwidth, 5320 MHz, 64-QAM, MCS0, Frequency Band 2, Peak Power Spectral Density Plot

