Registration
No.910917

TEST REPORT FOR WLAN TESTING

Report No.: SRTC2016-9004(F)-0010

Product Name: GSM/GPRS/EGPRS/UMTS/LTE Digital Mobile Phone with Bluetooth and WiFi

Product Model: Philips Xenium V787

Applicant: Shenzhen Sang Fei Consumer Communications Co.,Ltd.

Manufacturer: Shenzhen Sang Fei Consumer Communications Co.,Ltd.

Specification: FCC Part 15 (August 20, 2015 edition)

FCC ID: VQRCTV787

The State Radio_monitoring_center Testing Center (SRTC)

No.80 Beilishi Road Xicheng District Beijing, China

Tel: 86-10-57996181 Fax: 86-10-57996288

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1. GENERAL INFORMATION

1.1 Notes of the test report

The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written permission of The State Radio_monitoring_center Testing Center (SRTC).
The test results relate only to individual items of the samples which have been tested.

1.2 Information about the testing laboratory

Company:	The State Radio_monitoring_center Testing Center (SRTC)
Address:	No.80 Beilishi Road, Xicheng District
City:	Beijing
Country or Region:	P.R.China
Contacted person:	Liu jia
Tel:	+86 10 5799 6181
Fax:	+86 10 5799 6288
Email:	liujiaf@srtc.org.cn

1.3 Applicant's details

Company:	Shenzhen Sang Fei Consumer Communications Co.,Ltd.
Address:	11 Science & Technology Rd., Shenzhen Hi-tech Industrial Park, Nanshan District
City:	Shenzhen
Country or Region:	P.R.China
Grantee Code:	VQR
Contacted person:	linda zhang
Tel:	010-68300097
Fax:	010-68300097
Email:	linda.zhang@sangfei.com

1.4 Manufacturer's details

Company:	Shenzhen Sang Fei Consumer Communications Co.,Ltd.
Address:	11 Science & Technology Rd., Shenzhen Hi-tech Industrial Park, Nanshan District
City:	Shenzhen
Country or Region:	P.R.China
Contacted person:	linda zhang
Tel:	010-68300097
Fax:	010-68300097
Email:	linda.zhang@sangfei.com

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1.5 Test Environment

Date of Receipt of test sample at SRTC:	2016.01.21
Testing Start Date:	2016.03.15
Testing End Date:	2016.03.25

Environmental Data:	Temperature (°C)	Humidity (%)
Ambient	25	38
Maximum Extreme	55	80
Minimum Extreme	-10	---

Normal Supply Voltage (V d.c.):	3.80
Maximum Extreme Supply Voltage (V d.c.):	4.35
Minimum Extreme Supply Voltage (V d.c.):	3.50

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2 DESCRIPTION OF THE DEVICE UNDER TEST

2.1Final Equipment Build Status

Frequency Range	5150MHz~5250MHz 5250MHz~5350MHz 5725MHz~5850MHz
Modulation Type	BPSK/QPSK/16QAM/64QAM
Duplex Mode	TDD
Channel Spacing	5MHz
Data Rate	6Mbps/9Mbps/12Mbps /18Mbps/24Mbps/36Mbps/48Mbps/54Mbps/6.5Mbps /13.0Mbps/13.5Mbps/19.5Mbps/26.0Mbps/27.0Mbps /39.0Mbps/40.5Mbps/52.0Mbps/58.5Mbps/65Mbps /81.0Mbps/108.0Mbps/121.5Mbps/135.0Mbps
Duty Cycles	98%
Antenna Type	Fixed Internal
Power Supply	Battery or Charger
Rated Power Supply Voltage	3.8V
HW Version	WMCVc
SW Version	Philips_V787_1553_V01_AG_FCC
IMEI	866636024833570

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2.2 Support Equipment

The following support equipment was used to exercise the DUT during testing:

Equipment	Battery
Manufacturer	Zhongshan Tianmao Battery Co.
Model Number	AB5000AWML
Serial Number	---

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3 REFERENCE SPECIFICATION

Specification	Version	Title
15.35	Mar. 6, 2014	Measurement detector functions and bandwidths.
15.209	Oct. 30, 1997	Radiated emission limits; general requirements.
15.407	Dec. 23, 2014	General technical requirements

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4 KEY TO NOTES AND RESULT CODES

The following are the definition of the test result.

Code	Meaning
PASS	Test result shows that the requirements of the relevant specification have been met.
FAIL	Test result shows that the requirements of the relevant specification have not been met.
N/T	Test case is not tested.
NTC	Nominal voltage, Normal Temperature
HV	High voltage, Normal Temperature
LV	Low voltage, Normal Temperature
HTHV	high voltage, High Temperature
LTHV	High voltage, Low Temperature
HTLV	Low voltage, High Temperature
LTLV	Low voltage, Low Temperature

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5 RESULT SUMMARY

No.	Test case	FCC reference	Verdict
1.	Peak Power Output	15.407(a)(1) 15.407(a)(2) 15.407(a)(3)	Pass
2.	Occupied Bandwidth	---	Pass
3.	Emission Bandwidth	---	Pass
4.	6dB Bandwidth	15.407(e)	Pass
5.	Transmitter Power Spectral Density	15.407(a)(1) 15.407(a)(2) 15.407(a)(3)	Pass
6.	Unwanted Conducted Emission Measurement	15.407(b)	Pass
7.	Unwanted Radiated Emission Measurement	15.205 15.209 15.35(b)	Pass
8.	AC Power line Conducted Emission	15.207(a)	Pass
9.	DFS	15.407(h)	Pass

This Test Report Is Issued by: Mr. Tao Hongbo	Checked by: Mr. Li Boyu
Tested by: Mr. Jiang Shuo	Issued date: 2016/3/25

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6 TEST RESULT

6.1 Peak Power Output

6.1.1 Ambient condition

Temperature	Relative humidity	Pressure
22°C	30%	101.5kPa

6.1.2 Test Description

A transmitter antenna terminal of EUT is connected to the power meter. Measurement is made using a broadband power meter capable of making peak and average measurements while the EUT is operating at its maximum duty cycle (>98%), at maximum power, and at the appropriate frequencies.

6.1.3 Test limit

FCC Part15.407(a)(1)
For the band 5.15–5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 50 mW or 4.0 dBm + 10 log B, where B is the 26–dB emission bandwidth in MHz. In addition, the peak power spectral density shall not exceed 4.0 dBm in any 1–MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
FCC Part15.407(a)(2)
For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11.0 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11.0 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
FCC Part15.407(a)(3)
For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30.0 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

6.1.4 Test Procedure Used

KDB 789033 D01 v01r03, Section E.3.a (Method PM).

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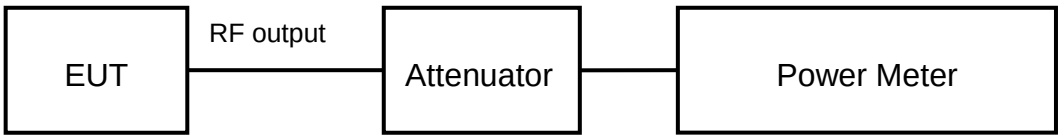
6.1.5 Test Settings

The maximum peak conducted output power may be measured using a broadband peak RF power meter. The power meter shall have a video bandwidth that is greater than or equal to the DTS bandwidth and shall utilize a fast-responding diode detector.

6.1.6 Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.



6.1.7 Test result

5150MHz~5250MHz

Average power output (dBm)				
Test Mode	Data Rate (Mbps)	Test Result (dBm)		
		5180 MHz	5200 MHz	5240MHz
802.11a	6	**4.12**	**4.60**	**5.34**
	9	4.09	4.15	5.21
	12	4.05	4.08	5.16
	18	3.62	3.77	4.71
	24	2.46	2.62	3.84
	36	1.98	2.05	3.24
	48	1.45	1.78	2.62
	54	0.89	1.03	1.36
802.11n (HT20)	6.5	**4.65**	**4.24**	**4.99**
	13	4.53	4.11	4.81
	19.5	4.34	3.98	4.54
	26	3.38	3.51	3.62
	39	2.14	3.22	2.48
	52	1.54	2.67	1.72
	58.5	0.34	2.13	0.67
	65	-1.62	1.02	-0.13
Test Mode	Data Rate (Mbps)	Test Result (dBm)		
		5190 MHz	---	5230 MHz
802.11n (HT40)	13.5	**3.89**	**---**	**4.04**
	27	3.11	---	3.15
	40.5	2.67	---	2.71
	54	2.04	---	2.11
	81	0.13	---	0.32
	108	-1.02	---	-0.89
	121.5	-2.45	---	-2.28
	135	-3.90	---	-4.87

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5150MHz~5250MHz

Peak power output (dBm)				
Test Mode	Data Rate (Mbps)	Test Result (dBm)		
		5180 MHz	5200 MHz	5240MHz
802.11a	6	**12.15**	**11.07**	**12.94**
	9	12.02	11.02	12.87
	12	12.01	10.98	12.65
	18	11.98	11.00	12.58
	24	12.11	10.89	12.71
	36	12.08	10.88	12.64
	48	12.13	10.82	12.68
	54	12.09	10.80	12.75
802.11n (HT20)	6.5	**11.87**	**10.62**	**11.96**
	13	11.75	10.60	11.87
	19.5	11.81	10.43	11.76
	26	11.62	10.56	11.91
	39	11.61	10.38	11.77
	52	11.57	10.27	11.86
	58.5	11.72	10.33	11.90
	65	11.85	10.25	11.91
Test Mode	Data Rate (Mbps)	Test Result (dBm)		
		5190 MHz	---	5230 MHz
802.11n (HT40)	13.5	**11.06**	**---**	**11.60**
	27	11.01	---	11.04
	40.5	10.98	---	11.13
	54	10.88	---	11.45
	81	10.93	---	11.34
	108	11.02	---	11.27
	121.5	10.99	---	11.31
	135	10.75	---	11.17

* The data rate 6Mbps, 6.5Mbps, 13.5Mbps are selected as worse condition, and the following cases are performed with this condition.

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5250MHz~5350MHz

Average power output (dBm)				
Test Mode	Data Rate (Mbps)	Test Result (dBm)		
		5260 MHz	5280 MHz	5320 MHz
802.11a	6	**4.40**	**4.89**	**5.29**
	9	4.14	4.44	5.14
	12	4.26	4.34	5.01
	18	3.98	4.08	4.56
	24	3.33	3.76	3.70
	36	3.08	3.39	3.05
	48	2.76	2.82	2.41
	54	2.57	2.38	1.22
802.11n (HT20)	6.5	**4.24**	**4.38**	**4.95**
	13	4.00	4.04	4.77
	19.5	3.87	3.92	4.47
	26	3.34	3.56	3.56
	39	3.00	3.07	2.37
	52	2.89	2.96	1.66
	58.5	2.43	2.57	0.59
	65	1.18	1.35	-0.19
Test Mode	Data Rate (Mbps)	Test Result (dBm)		
		5270 MHz	---	5310 MHz
802.11n (HT40)	13.5	**4.26**	**---**	**4.89**
	27	3.34	---	3.67
	40.5	3.00	---	3.11
	54	2.52	---	2.67
	81	0.67	---	0.98
	108	-0.32	---	-0.13
	121.5	-1.90	---	-1.78
	135	-2.88	---	-2.75

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5250MHz~5350MHz

Peak power output (dBm)				
Test Mode	Data Rate (Mbps)	Test Result (dBm)		
		5260 MHz	5280 MHz	5320 MHz
802.11a	6	**11.14**	**10.67**	**12.48**
	9	11.11	10.66	12.13
	12	11.12	10.45	12.31
	18	11.03	10.57	12.09
	24	11.00	10.59	12.18
	36	10.78	10.60	12.22
	48	10.89	10.55	12.35
	54	10.75	10.53	12.41
802.11n (HT20)	6.5	**10.92**	**10.47**	**12.70**
	13	10.88	10.65	12.56
	19.5	10.90	10.72	12.43
	26	10.67	10.52	12.21
	39	10.72	10.64	12.55
	52	10.43	10.28	12.61
	58.5	10.29	10.11	12.58
	65	9.95	9.88	12.64
Test Mode	Data Rate (Mbps)	Test Result (dBm)		
		5270 MHz	---	5310 MHz
802.11n (HT40)	13.5	**10.07**	**---**	**11.62**
	27	10.00	---	11.21
	40.5	10.05	---	11.34
	54	10.02	---	11.41
	81	9.99	---	11.52
	108	9.95	---	11.23
	121.5	9.88	---	11.18
	135	9.89	---	11.42

* The data rate 6Mbps, 6.5Mbps, 13.5Mbps are selected as worse condition, and the following cases are performed with this condition.

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5725MHz~5850MHz

Average power output (dBm)				
Test Mode	Data Rate (Mbps)	Test Result (dBm)		
		5745 MHz	5785MHz	5825 MHz
802.11a	6	**10.50**	**10.38**	**9.28**
	9	10.16	9.92	8.99
	12	9.67	9.55	8.56
	18	9.44	9.27	8.30
	24	9.03	8.80	7.88
	36	8.36	7.88	7.49
	48	10.52	10.40	9.85
	54	10.39	10.26	10.00
802.11n (HT20)	6.5	**10.14**	**10.03**	**9.58**
	13	9.67	9.54	9.30
	19.5	9.18	8.90	8.66
	26	8.43	8.15	7.91
	39	8.03	7.63	7.26
	52	6.61	6.41	6.22
	58.5	10.50	10.38	9.28
	65	10.16	9.92	8.99
Test Mode	Data Rate (Mbps)	Test Result (dBm)		
		5755 MHz	---	5795 MHz
802.11n (HT40)	13.5	**10.46**	**---**	**9.89**
	27	10.04	---	9.79
	40.5	9.57	---	9.40
	54	9.03	---	8.90
	81	8.41	---	8.19
	108	7.52	---	7.12
	121.5	6.44	---	6.21
	135	4.98	---	4.80

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5725MHz~5850MHz

Peak power output (dBm)				
Test Mode	Data Rate (Mbps)	Test Result (dBm)		
		5745 MHz	5785MHz	5825 MHz
802.11a	6	**18.09**	**17.90**	**16.84**
	9	18.04	17.88	16.80
	12	18.00	17.67	16.79
	18	17.98	17.73	16.80
	24	18.01	17.76	16.77
	36	17.88	17.66	16.73
	48	17.83	17.82	16.78
	54	17.76	17.45	16.69
802.11n (HT20)	6.5	**17.45**	**17.26**	**16.68**
	13	17.40	17.24	16.56
	19.5	17.41	17.22	16.62
	26	17.38	17.24	16.55
	39	17.35	17.15	16.59
	52	17.32	17.22	16.60
	58.5	17.29	17.20	16.57
	65	17.25	17.11	16.52
Test Mode	Data Rate (Mbps)	Test Result (dBm)		
		5755 MHz	---	5795 MHz
802.11n (HT40)	13.5	**17.02**	**---**	**16.32**
	27	16.99	---	16.29
	40.5	16.87	---	16.18
	54	16.93	---	16.30
	81	16.69	---	16.22
	108	16.77	---	16.28
	121.5	16.82	---	16.13
	135	16.58	---	16.05

* The data rate 6Mbps, 6.5Mbps, 13.5Mbps are selected as worse condition, and the following cases are performed with this condition.

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6.2 Occupied Bandwidth

6.2.1 Ambient condition

Temperature	Relative humidity	Pressure
22°C	30%	101.5kPa

6.2.2 Test Description

A transmitter antenna terminal of EUT is connected to the Spectrum Analyzer. Which connected to the transmitter antenna terminal of the EUT while the EUT is operating at maximum power and at the appropriate frequencies. All modes of operation were investigated and the worst case configuration results are reported in this section.

6.2.3 Test limit

None.

6.2.4 Test Procedure Used

KDB 789033 D01 v01r03, Section D.

6.2.5 Test Settings

a) Set RBW = 1 % to 5 % of the OBW
b) Set VBW ≥ 3 · RBW
c) Detector = Peak.
d) Trace mode = max hold.
e) Sweep = auto couple.
f) Allow the trace to stabilize.
g) Use the 99 % power bandwidth function of the instrument

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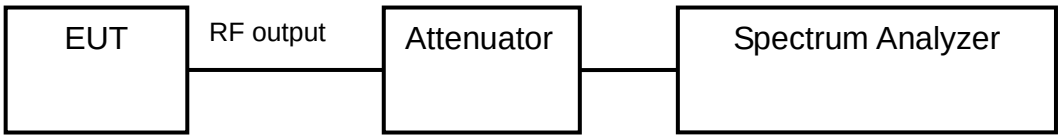
6.2.6 Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.

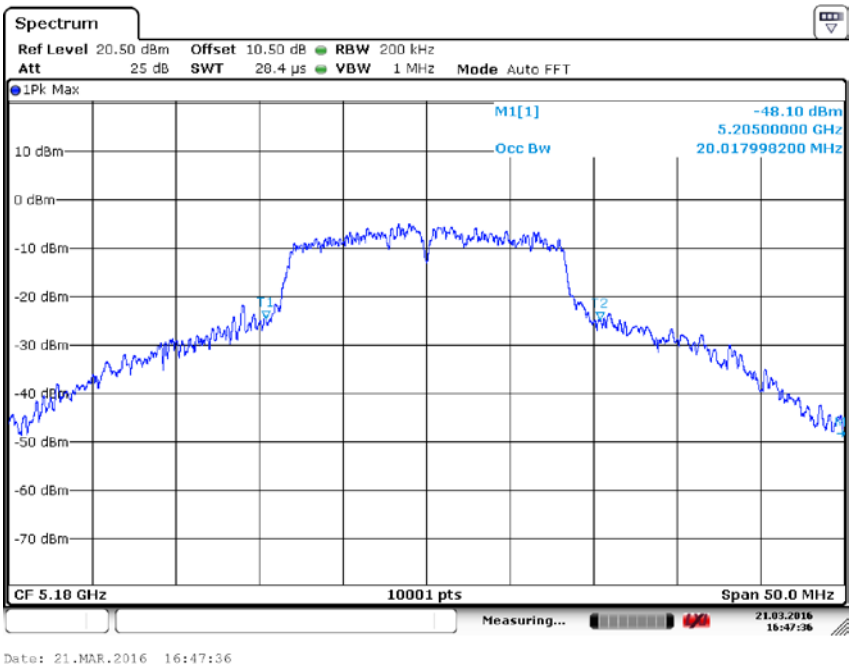


6.2.7 Test result

5150MHz~5250MHz

Test Mode: 802.11a

Carrier frequency (MHz)	Channel No.	Occupied Bandwidth(MHz)
5180	36	20.018
5200	40	23.008
5240	48	18.993



Carrier frequency (MHz): 5180
Channel No.:36
Test Mode: 802.11a

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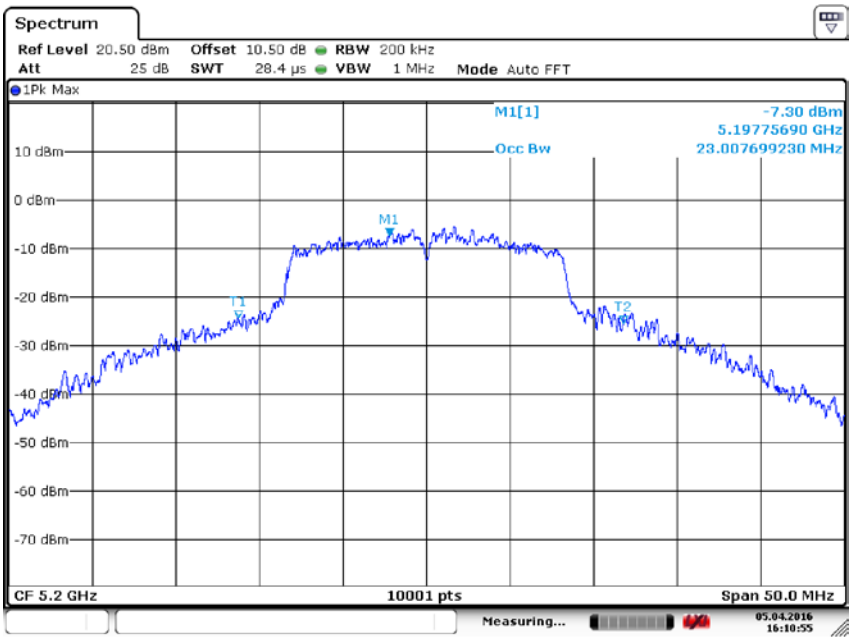
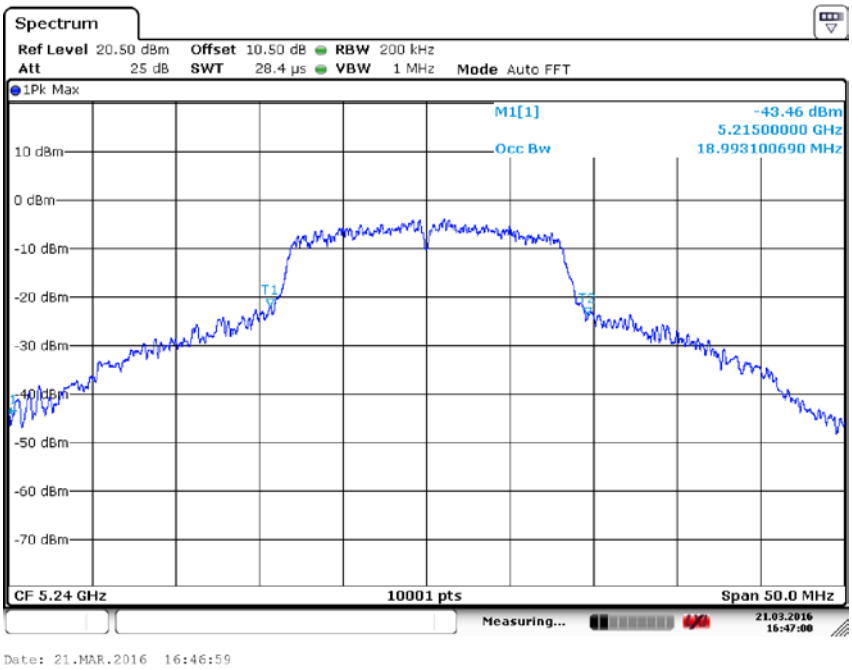


Carrier frequency (MHz): 5200
Channel No.:40
Test Mode: 802.11a



Carrier frequency (MHz): 5240
Channel No.:48
Test Mode: 802.11a

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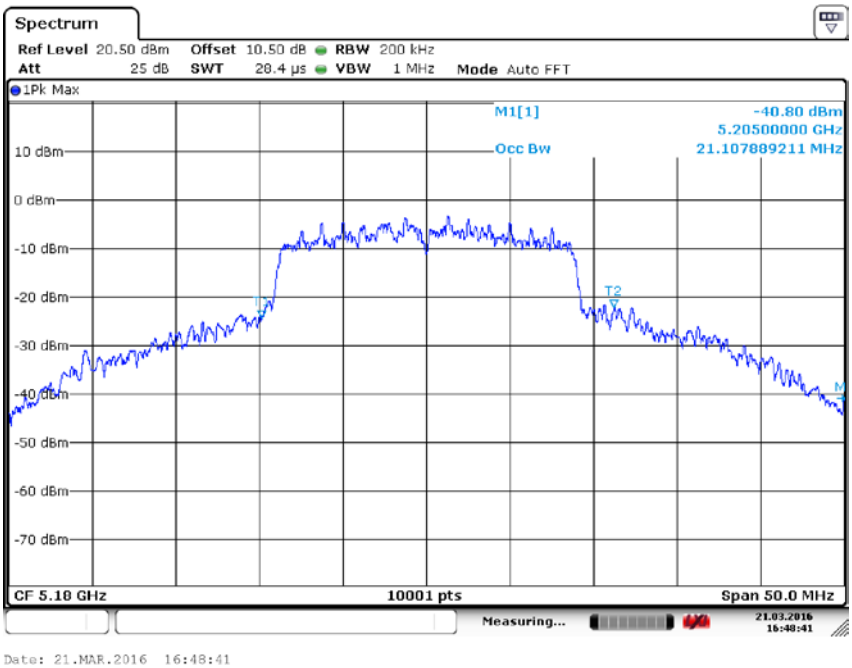
Test Mode: 802.11n (HT20)

Carrier frequency (MHz)	Channel No.	Occupied Bandwidth(MHz)
5180	36	21.108
5200	40	23.168
5240	48	19.853



Carrier frequency (MHz): 5180
Channel No.:36
Test Mode: 802.11n (HT20)

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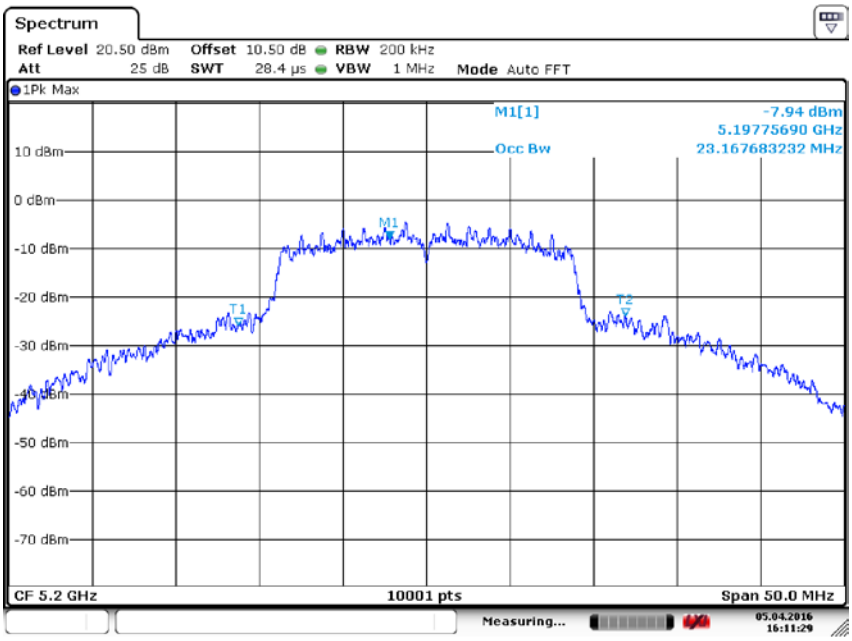
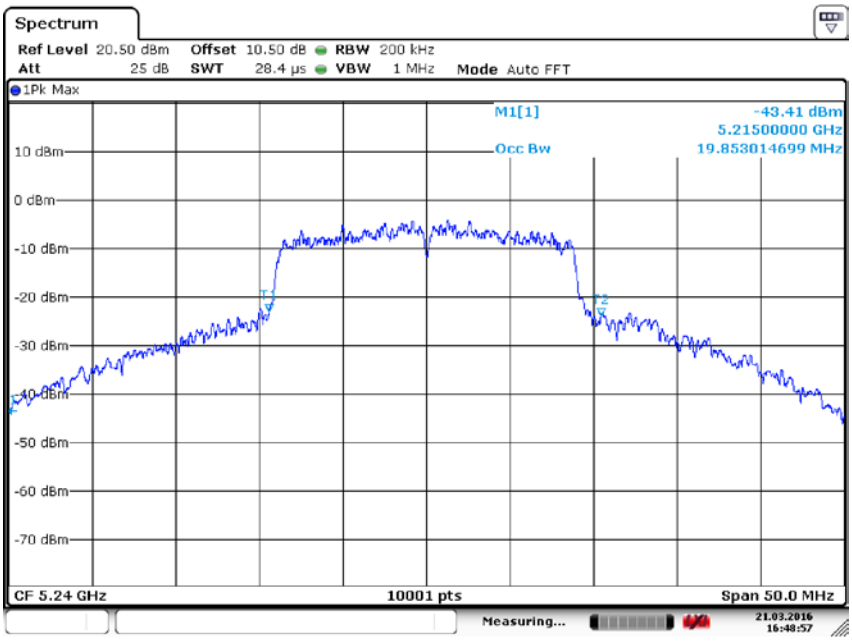


Date: 5.APR.2016 16:11:29

Carrier frequency (MHz): 5200
Channel No.:40
Test Mode: 802.11n (HT20)



Date: 21.MAR.2016 16:48:56

Carrier frequency (MHz): 5240
Channel No.:48
Test Mode: 802.11n (HT20)

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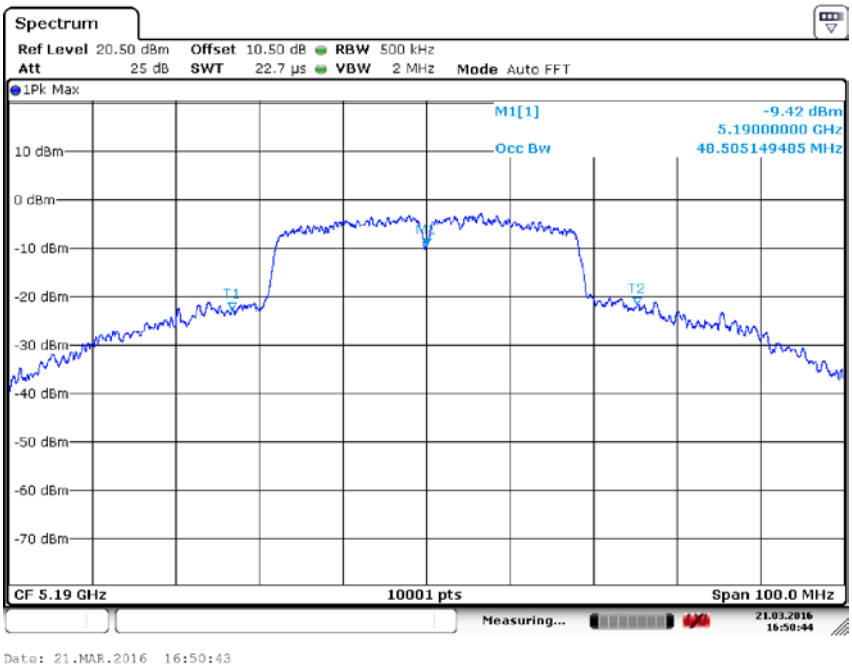
Test Mode: 802.11n (HT40)

Carrier frequency (MHz)	Channel No.	Occupied Bandwidth(MHz)
5190	38	48.505
5230	46	40.746



Carrier frequency (MHz): 5190
Channel No.:38
Test Mode: 802.11n (HT40)

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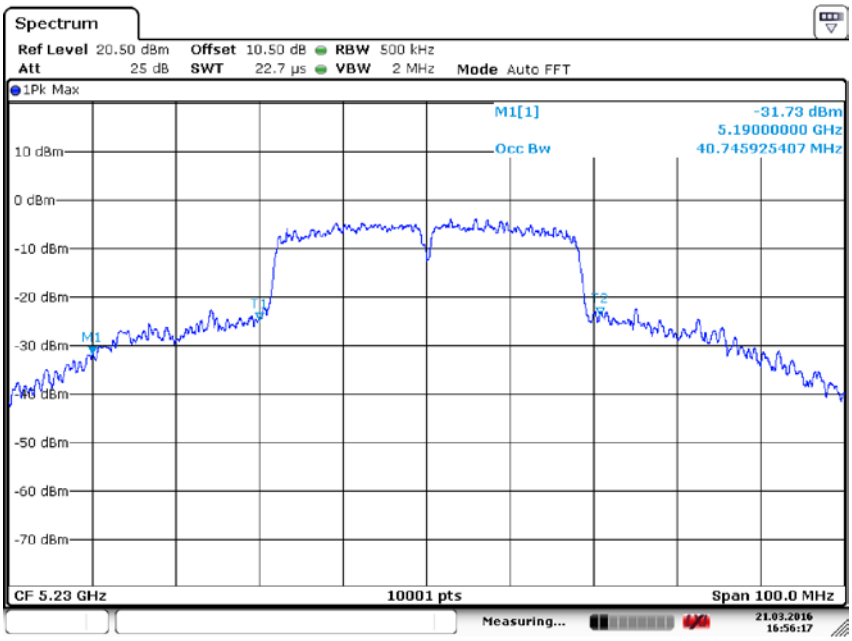

Date: 21.MAR.2016 16:56:17

Carrier frequency (MHz): 5230
Channel No.:46
Test Mode: 802.11n(HT40)

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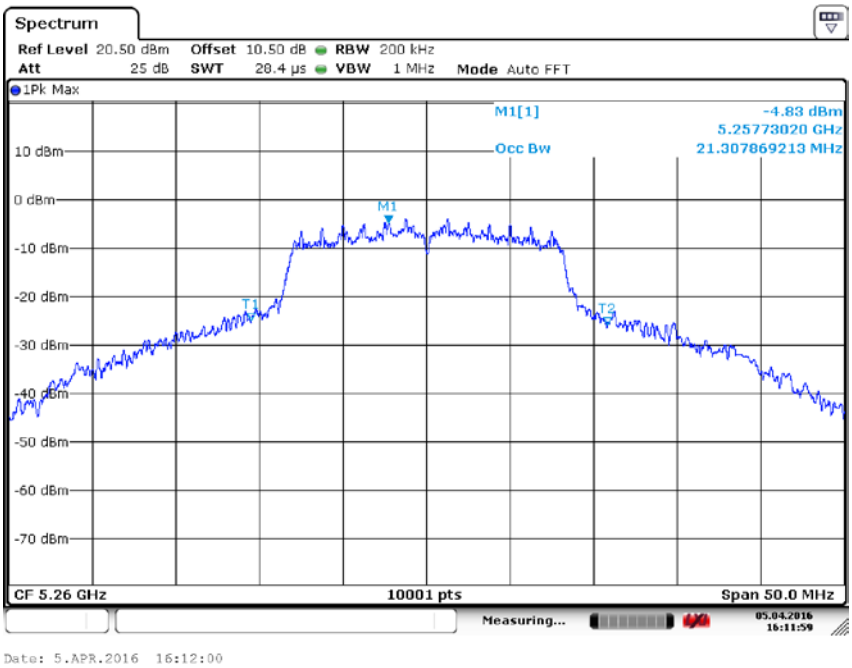
5250MHz~5350MHz

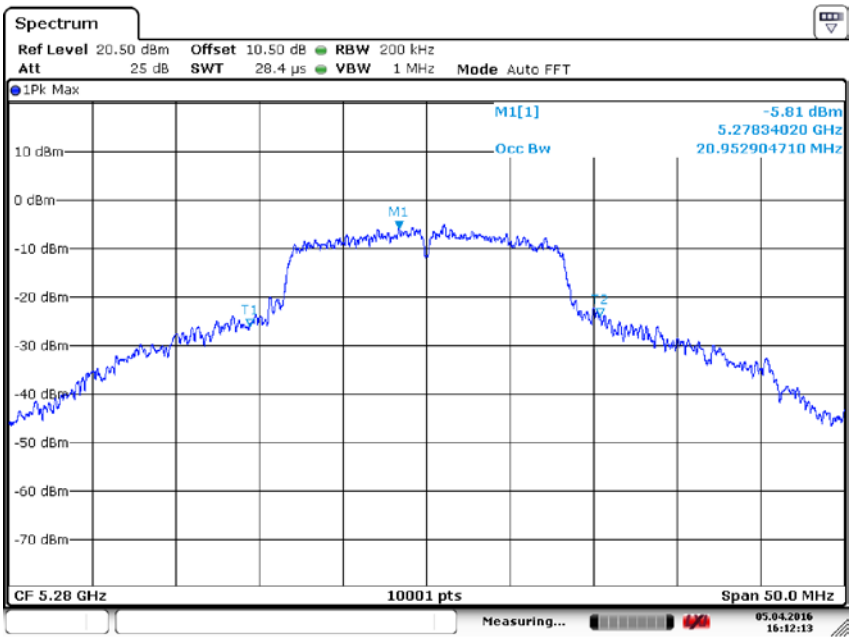
Test Mode: 802.11a

Carrier frequency (MHz)	Channel No.	Occupied Bandwidth(MHz)
5260	52	21.308
5280	56	20.953
5320	64	17.198

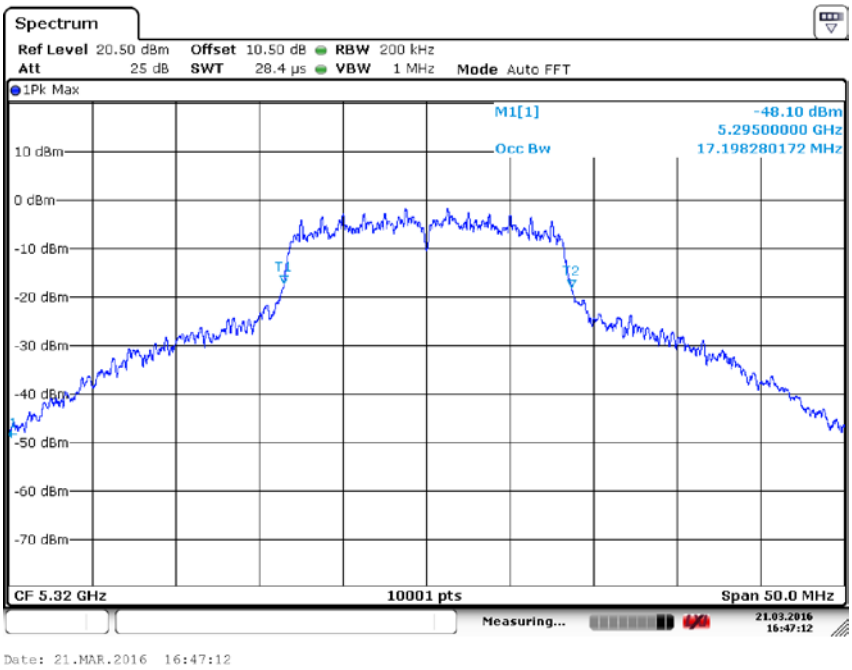


Carrier frequency (MHz): 5260
Channel No.:52
Test Mode: 802.11a

Copyright © SRTC



Carrier frequency (MHz): 5280
Channel No.:56
Test Mode: 802.11a



Carrier frequency (MHz): 5320
Channel No.:64
Test Mode: 802.11a

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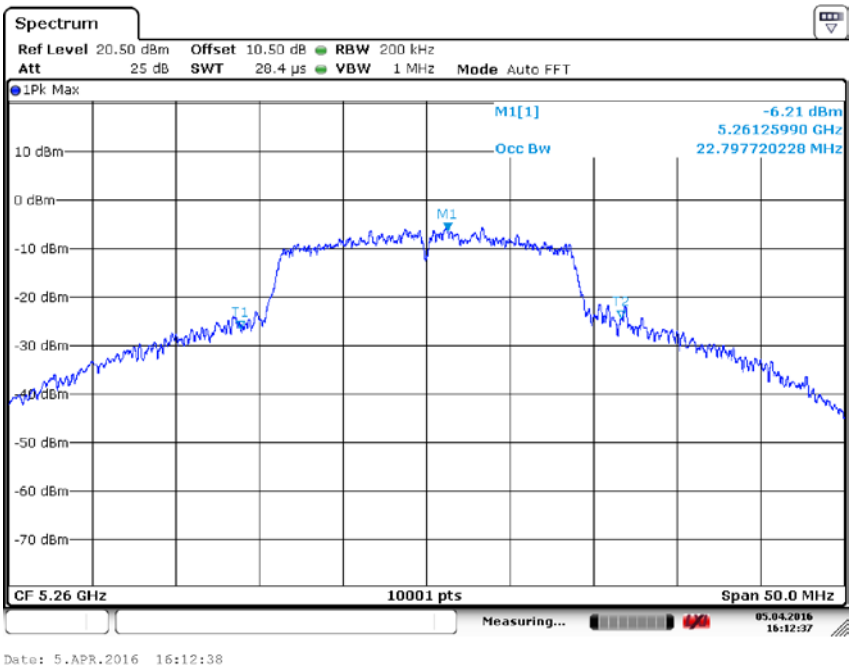
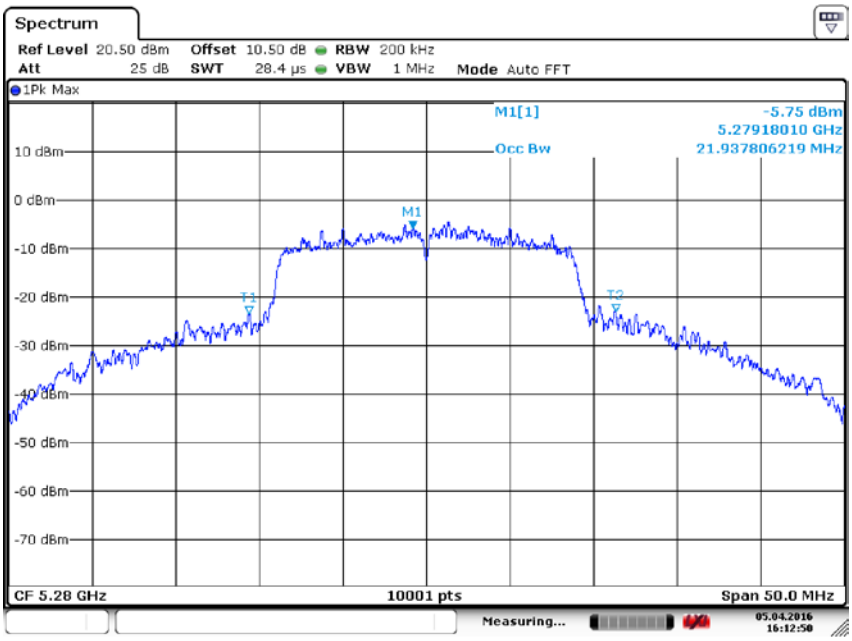
Test Mode: 802.11n (HT20)

Carrier frequency (MHz)	Channel No.	Occupied Bandwidth(MHz)
5260	52	22.798
5280	56	21.938
5320	64	18.463

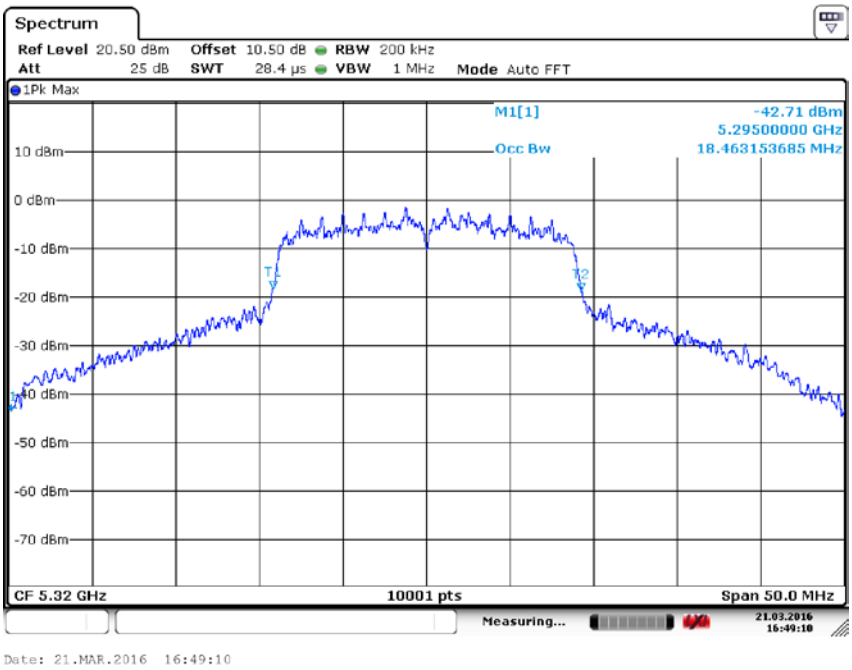


Carrier frequency (MHz): 5260
Channel No.:52
Test Mode: 802.11n (HT20)

Copyright © SRTC



Carrier frequency (MHz): 5280
Channel No.:56
Test Mode: 802.11n (HT20)



Carrier frequency (MHz): 5320
Channel No.:64
Test Mode: 802.11n (HT20)

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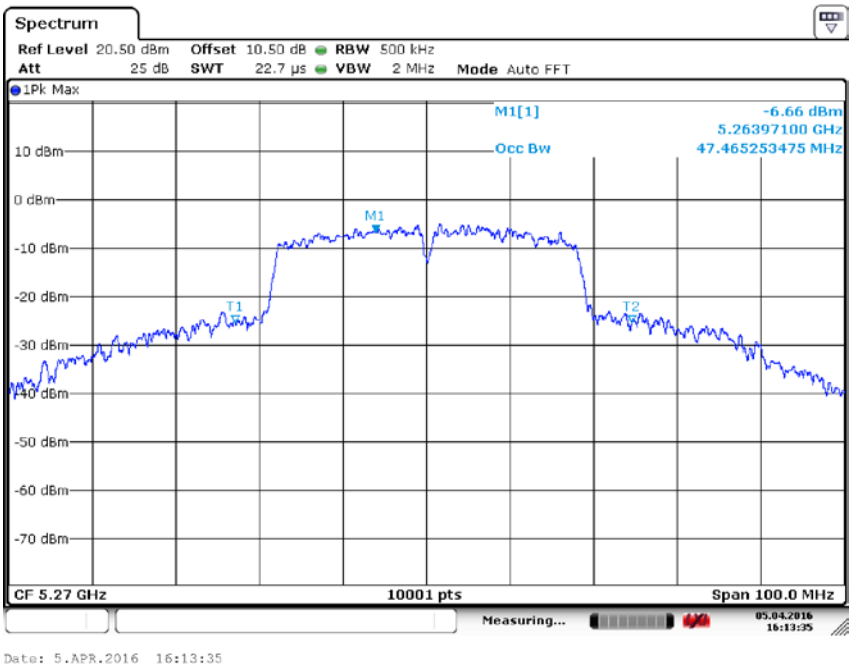
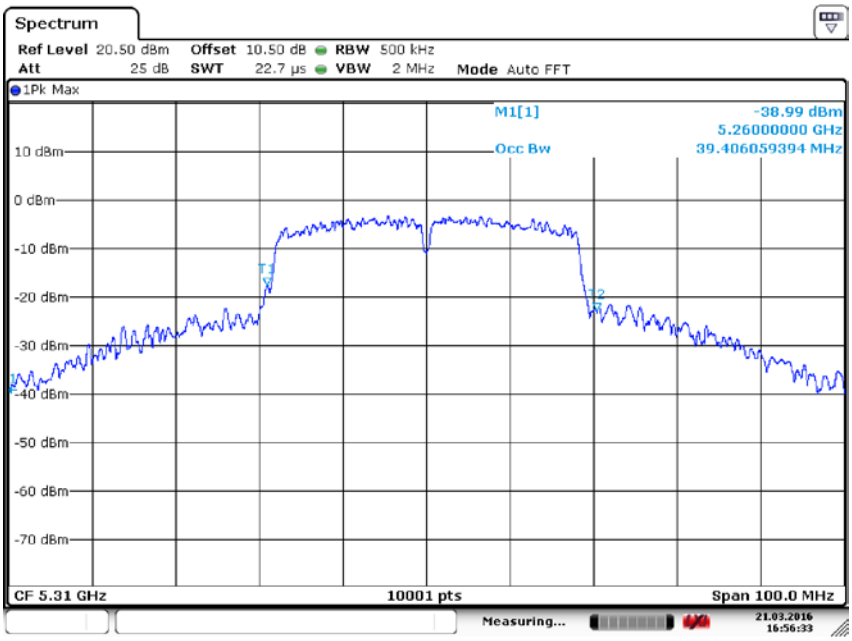
Test Mode: 802.11n (HT40)

Carrier frequency (MHz)	Channel No.	Occupied Bandwidth(MHz)
5270	54	47.465
5310	62	39.406



Carrier frequency (MHz): 5270
Channel No.:54
Test Mode: 802.11n (HT40)

Copyright © SRTC



Carrier frequency (MHz): 5310
Channel No.:62
Test Mode: 802.11n(HT40)

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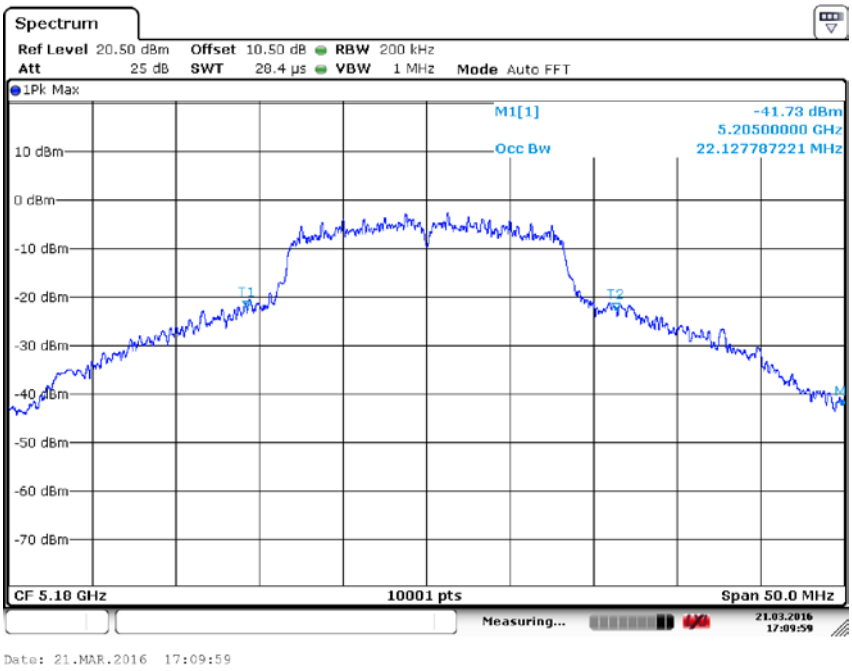
5725MHz~5850MHz

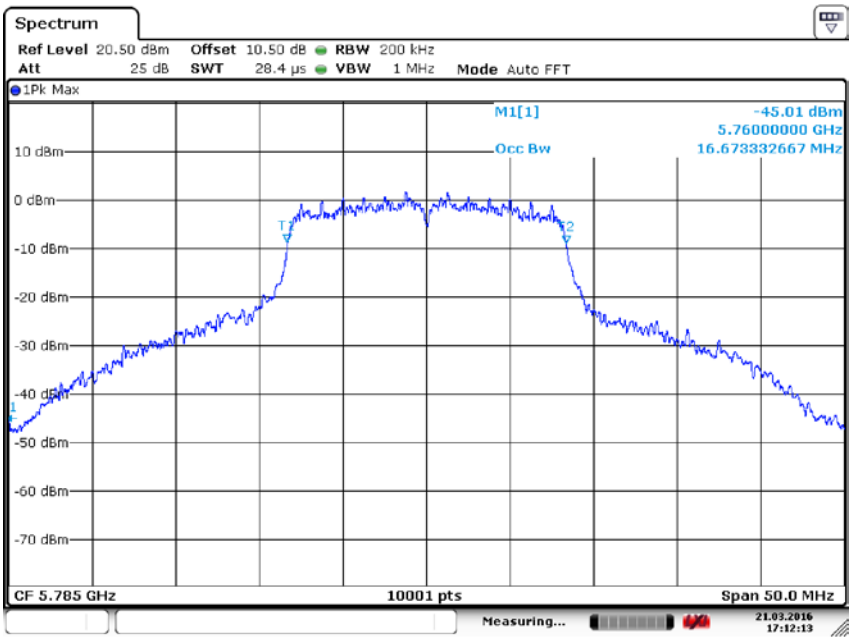
Test Mode: 802.11a

Carrier frequency (MHz)	Channel No.	Occupied Bandwidth(MHz)
5745	149	22.128
5785	157	16.673
5825	165	16.698

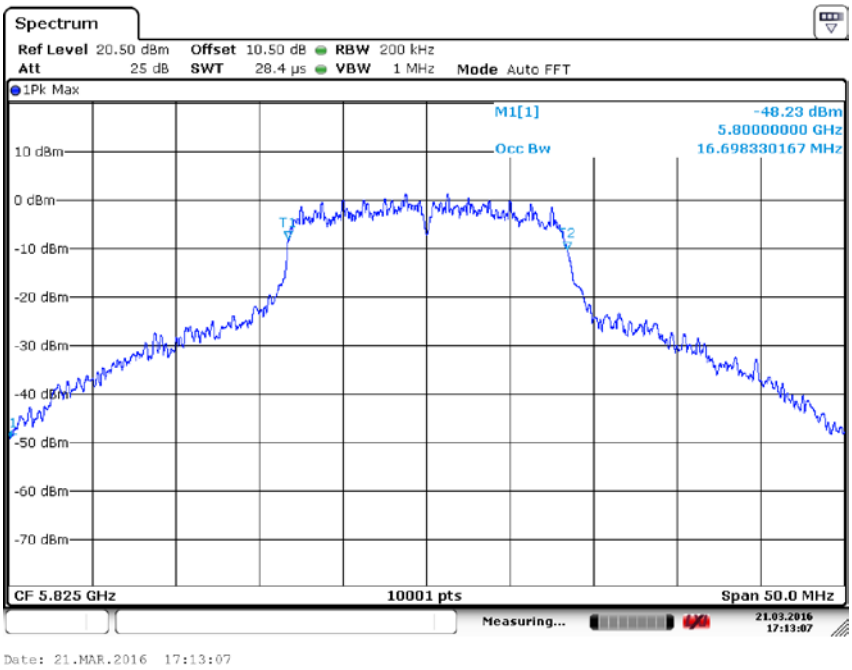


Carrier frequency (MHz): 5745
Channel No.:149
Test Mode: 802.11a

Copyright © SRTC



Carrier frequency (MHz): 5785
Channel No.:157
Test Mode: 802.11a



Carrier frequency (MHz): 5825
Channel No.:165
Test Mode: 802.11a

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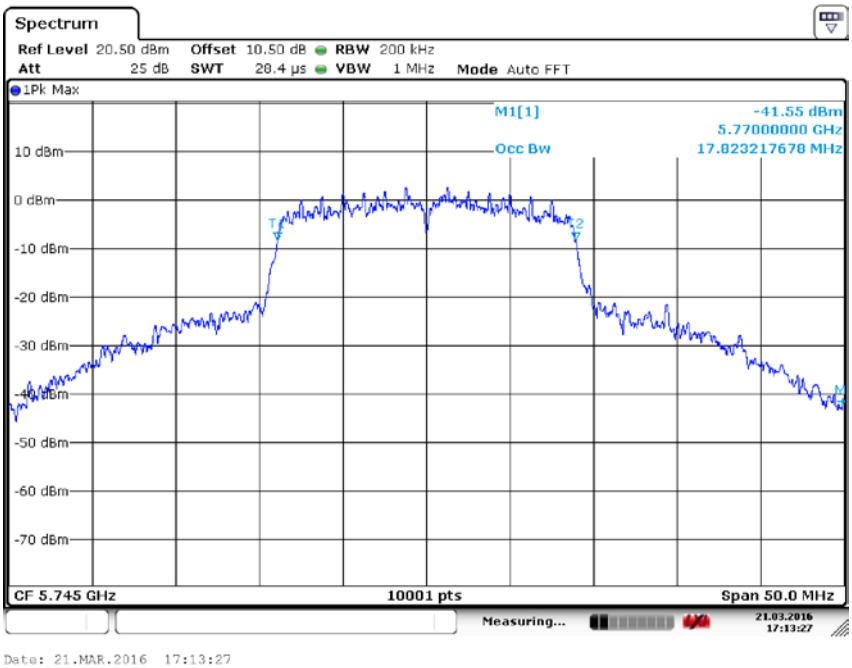
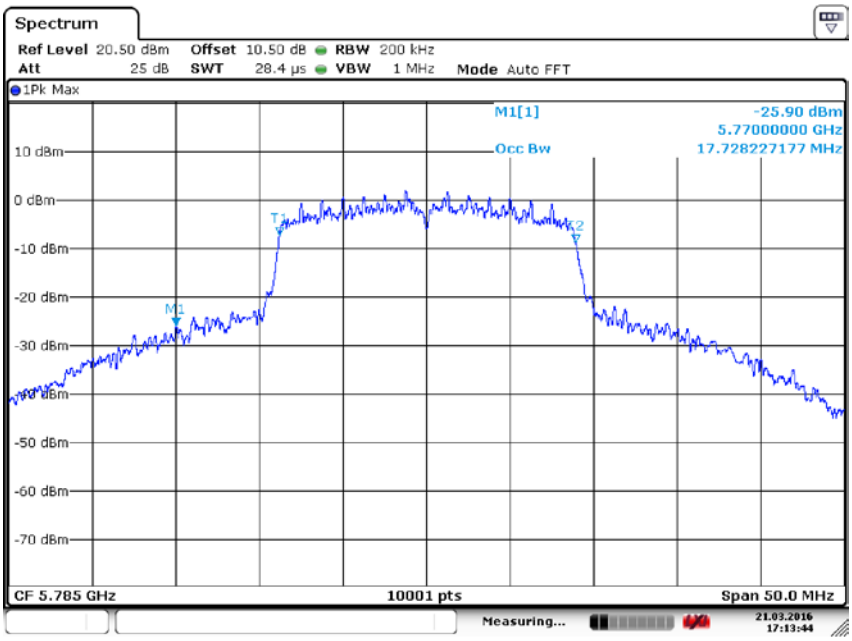
Test Mode: 802.11n (HT20)

Carrier frequency (MHz)	Channel No.	Occupied Bandwidth(MHz)
5745	149	17.823
5785	157	17.728
5825	165	17.923



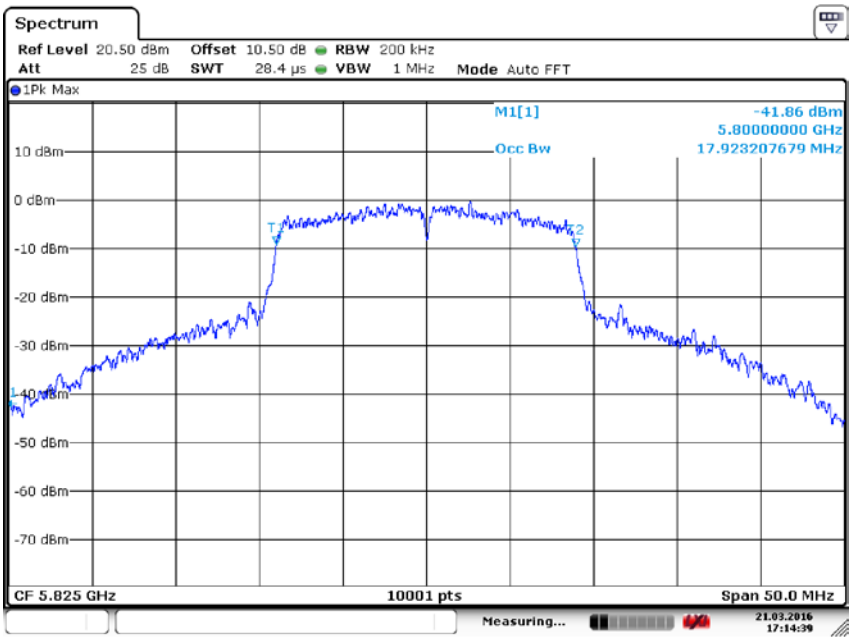
Carrier frequency (MHz): 5745
Channel No.:149
Test Mode: 802.11n (HT20)

Copyright © SRTC



Date: 21.MAR.2016 17:13:44

Carrier frequency (MHz): 5785
Channel No.:157
Test Mode: 802.11n (HT20)



Date: 21.MAR.2016 17:14:38

Carrier frequency (MHz): 5825
Channel No.:165
Test Mode: 802.11n (HT20)

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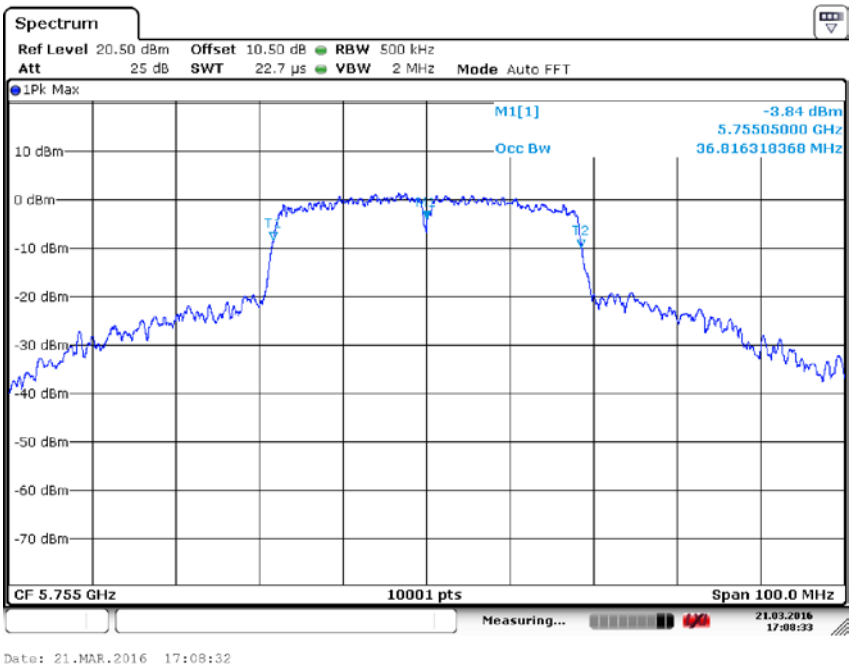
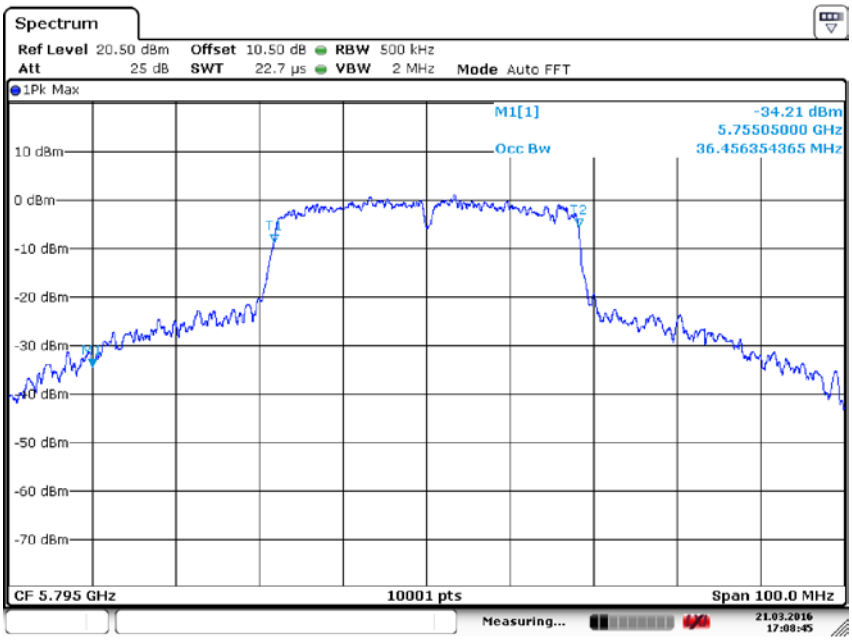
Test Mode: 802.11n (HT40)

Carrier frequency (MHz)	Channel No.	Occupied Bandwidth(MHz)
5755	151	36.816
5795	159	36.456



Carrier frequency (MHz): 5755
Channel No.:151
Test Mode: 802.11n (HT40)

Copyright © SRTC



Date: 21.MAR.2016 17:08:45

Carrier frequency (MHz): 5795
Channel No.:159
Test Mode: 802.11n(HT40)

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6.3 Emission Bandwidth

6.3.1 Ambient condition

Temperature	Relative humidity	Pressure
22°C	30%	101.5kPa

6.3.2 Test Description

A transmitter antenna terminal of EUT is connected to the Spectrum Analyzer. Which connected to the transmitter antenna terminal of the EUT while the EUT is operating at maximum power and at the appropriate frequencies. All modes of operation were investigated and the worst case configuration results are reported in this section.

6.3.3 Test limit

None.

6.3.4 Test Procedure Used

KDB 789033 D01 v01r03, Section C.

6.3.5 Test Settings

a) Set RBW = approximately 1% of the emission bandwidth.
b) Set the VBW > RBW.
c) Detector = Peak.
d) Trace mode = max hold.
e) Sweep = auto couple.
f) Allow the trace to stabilize.
g) Measure the maximum width of the emission that is 26 dB down from the maximum of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

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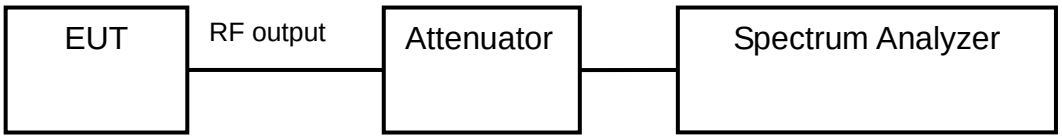
6.3.6 Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.

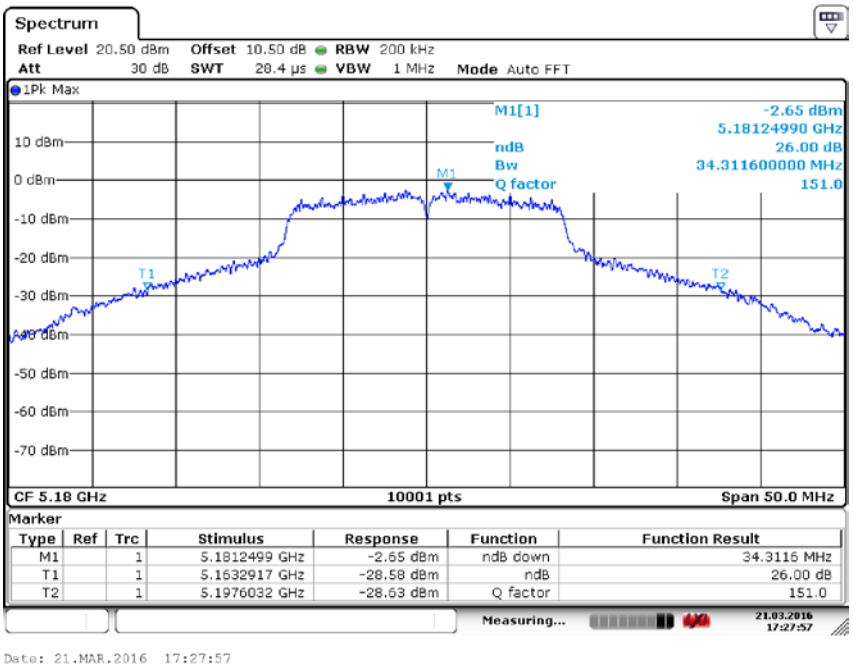


6.3.7 Test result

5150MHz~5250MHz

Test Mode: 802.11a

Carrier frequency (MHz)	Channel No.	Emission Bandwidth(MHz)
5180	36	34.312
5200	40	35.286
5240	48	28.692



Carrier frequency (MHz): 5180
Channel No.:36
Test Mode: 802.11a

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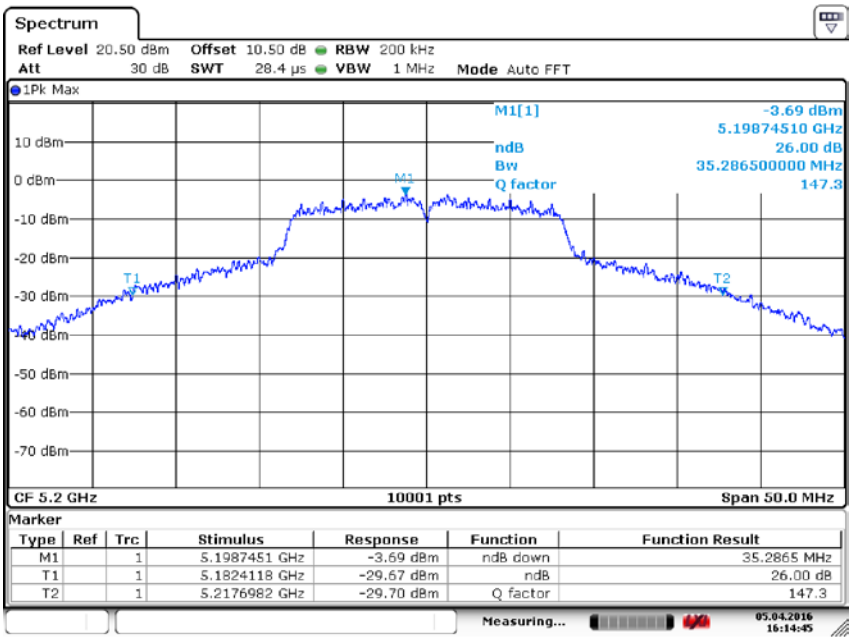
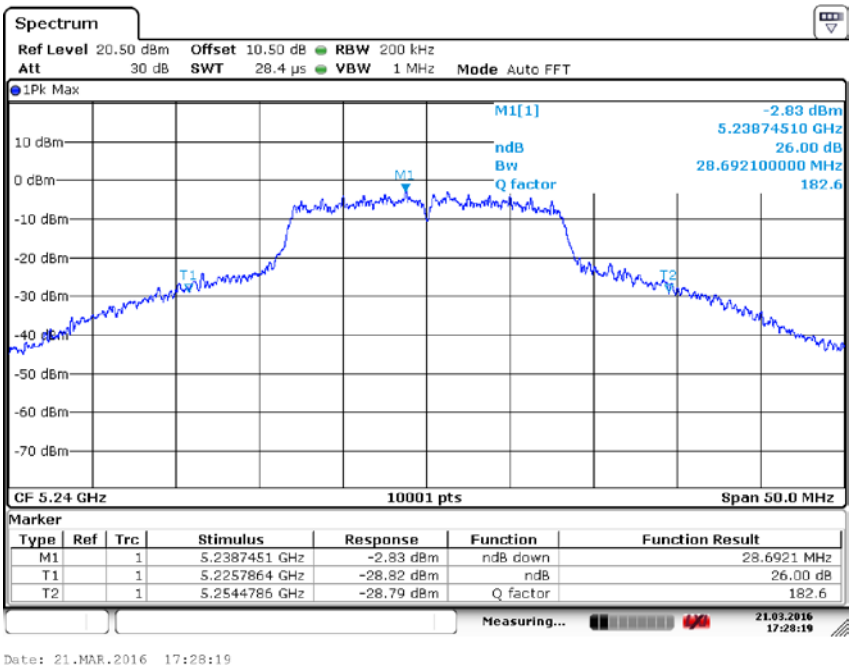


Carrier frequency (MHz): 5200
Channel No.:40
Test Mode: 802.11a



Carrier frequency (MHz): 5240
Channel No.:48
Test Mode: 802.11a

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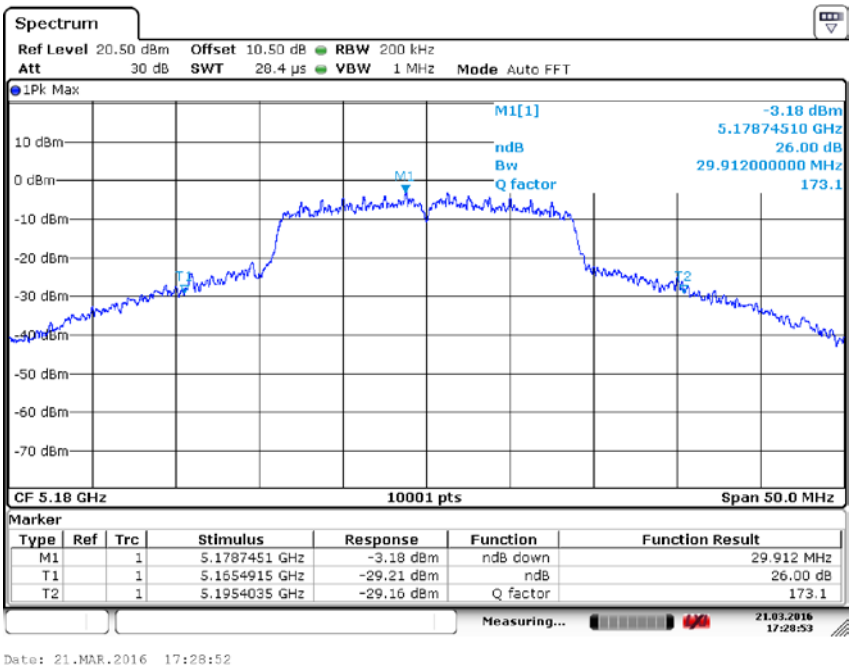
Test Mode: 802.11n (HT20)

Carrier frequency (MHz)	Channel No.	Occupied Bandwidth(MHz)
5180	36	29.912
5200	40	36.996
5240	48	31.732



Carrier frequency (MHz): 5180
Channel No.:36
Test Mode: 802.11n (HT20)

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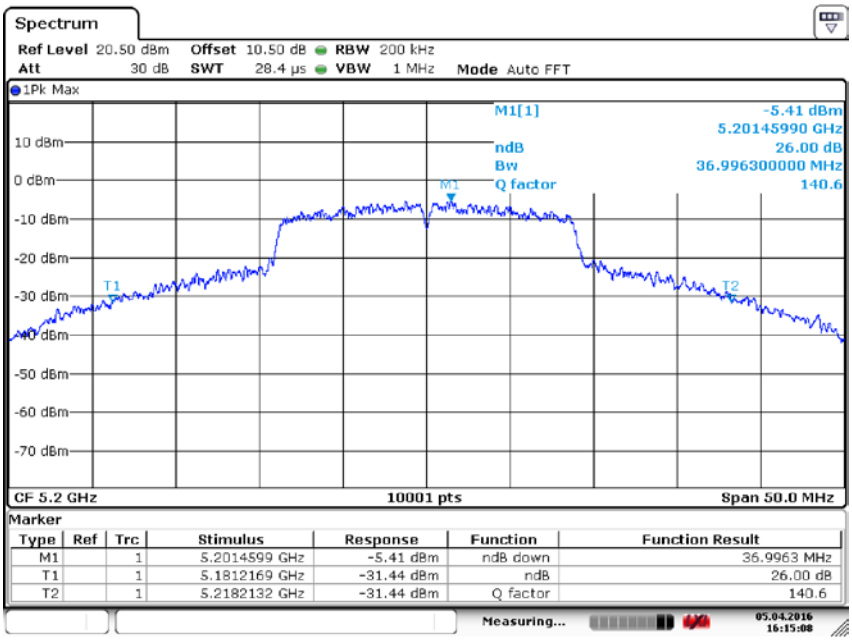
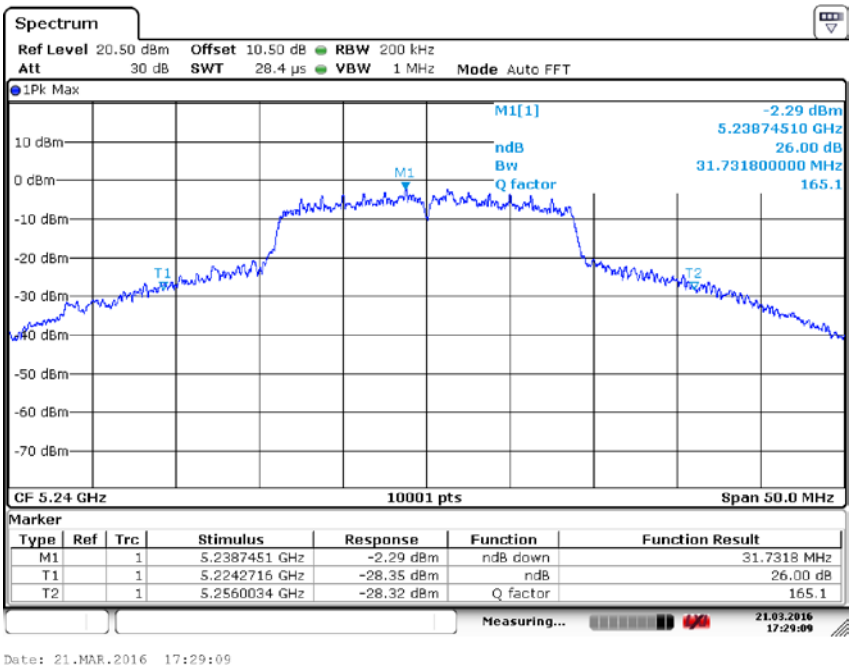


Carrier frequency (MHz): 5200
Channel No.:40
Test Mode: 802.11n (HT20)



Carrier frequency (MHz): 5240
Channel No.:48
Test Mode: 802.11n (HT20)

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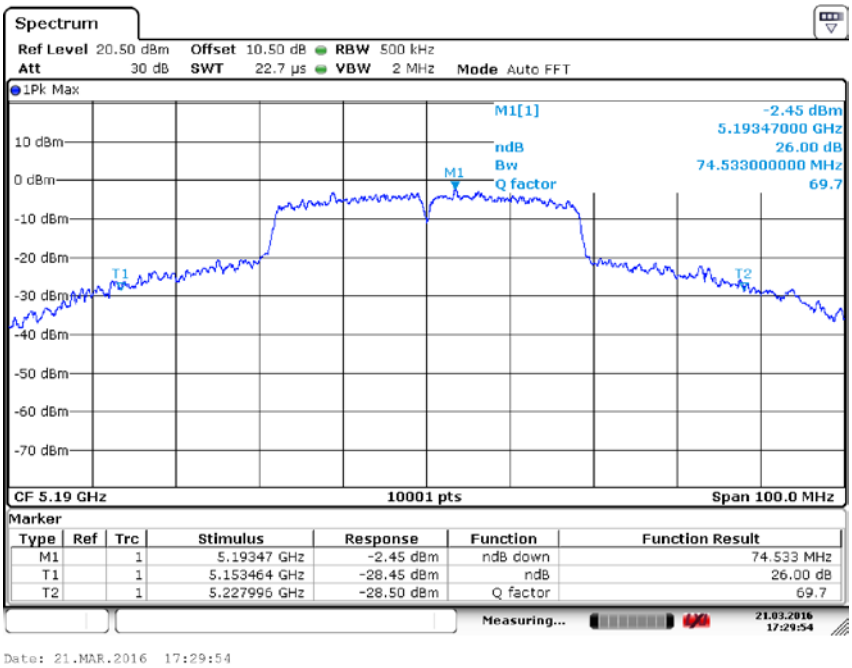
Test Mode: 802.11n (HT40)

Carrier frequency (MHz)	Channel No.	Occupied Bandwidth(MHz)
5190	38	74.533
5230	46	68.613



Carrier frequency (MHz): 5190
Channel No.:38
Test Mode: 802.11n (HT40)

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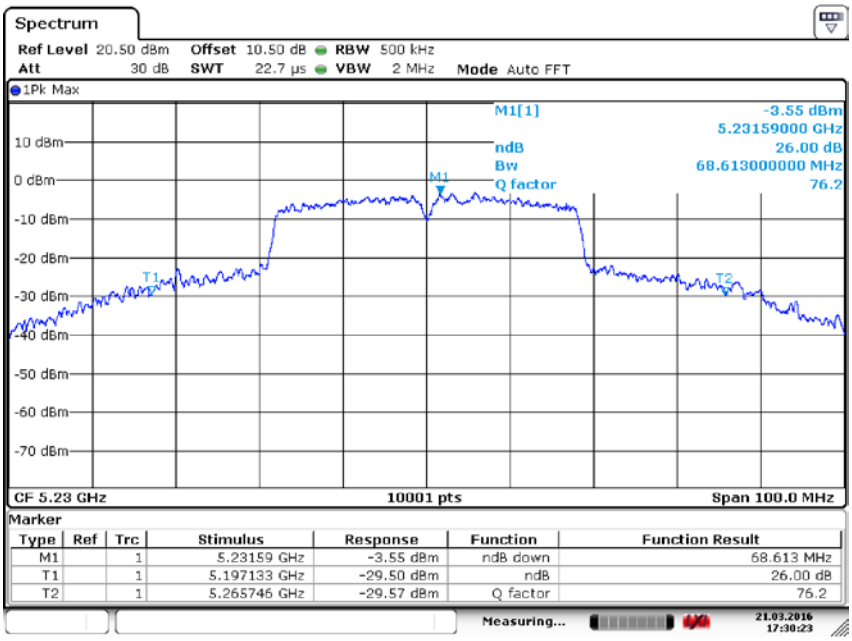

Carrier frequency (MHz): 5230
Channel No.:46
Test Mode: 802.11n(HT40)

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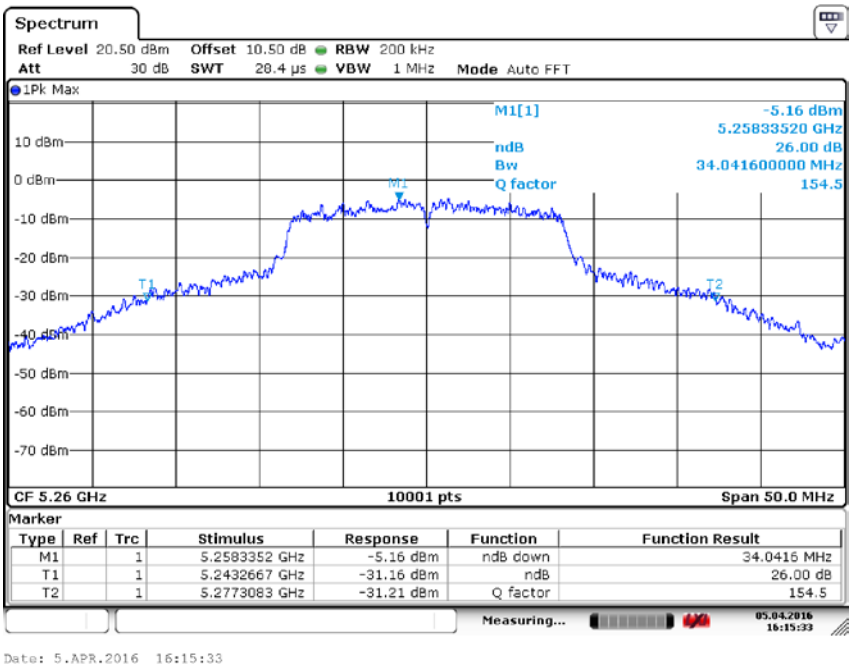
5250MHz~5350MHz

Test Mode: 802.11a

Carrier frequency (MHz)	Channel No.	Emission Bandwidth(MHz)
5260	52	34.042
5280	56	32.167
5320	64	25.208



Carrier frequency (MHz): 5260
Channel No.:52
Test Mode: 802.11a

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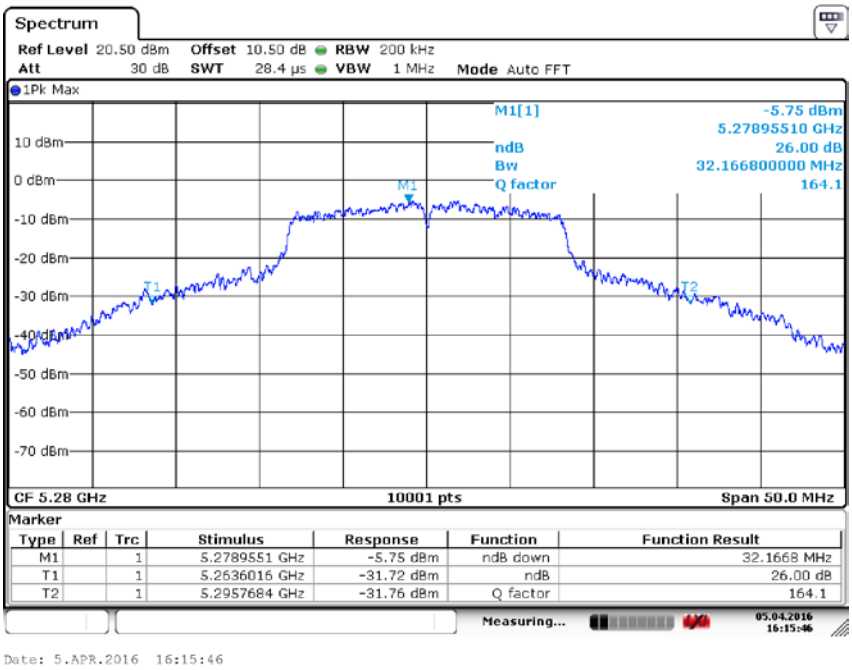
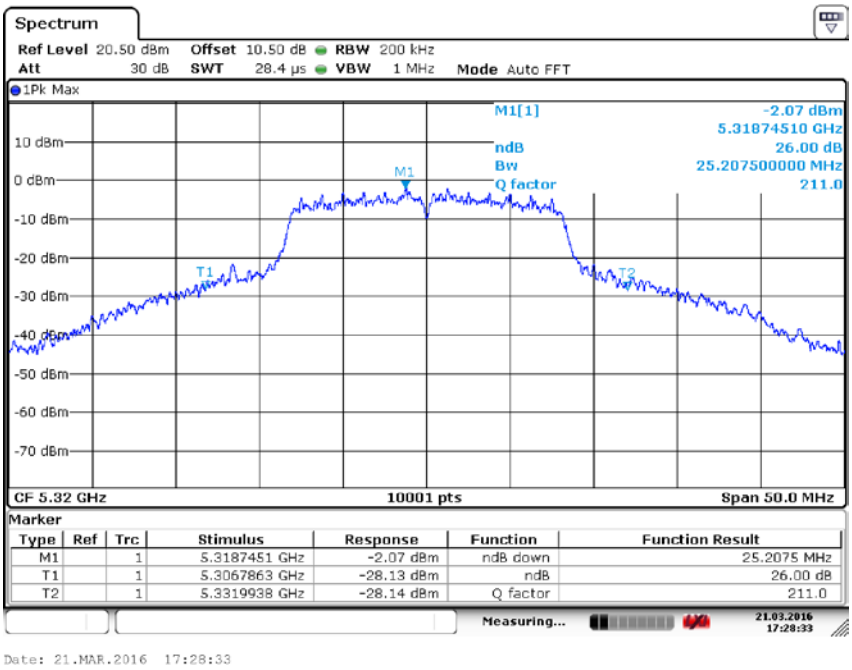


Carrier frequency (MHz): 5280
Channel No.:56
Test Mode: 802.11a



Carrier frequency (MHz): 5320
Channel No.:64
Test Mode: 802.11a

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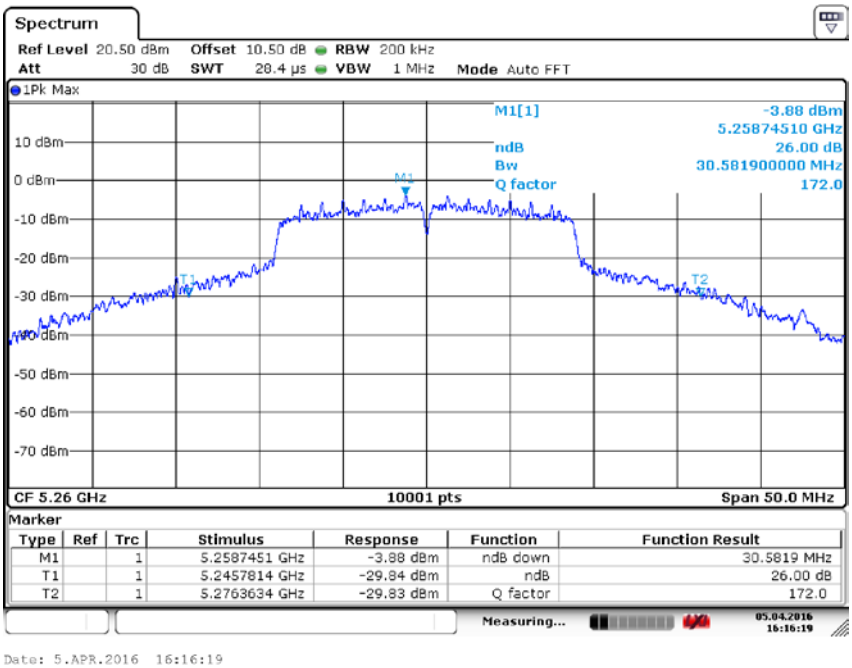
Test Mode: 802.11n (HT20)

Carrier frequency (MHz)	Channel No.	Occupied Bandwidth(MHz)
5260	52	30.582
5280	56	31.252
5320	64	25.263



Carrier frequency (MHz): 5260
Channel No.:52
Test Mode: 802.11n (HT20)

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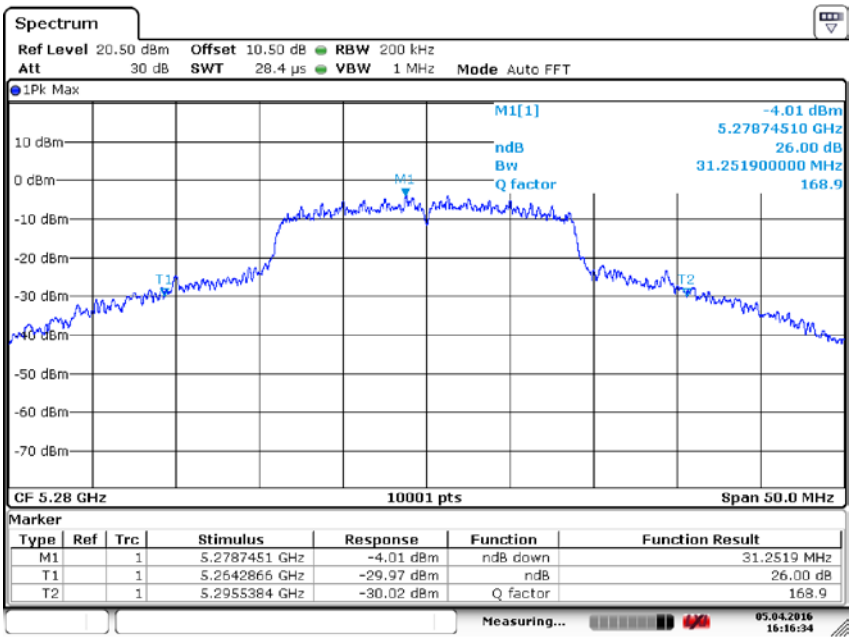
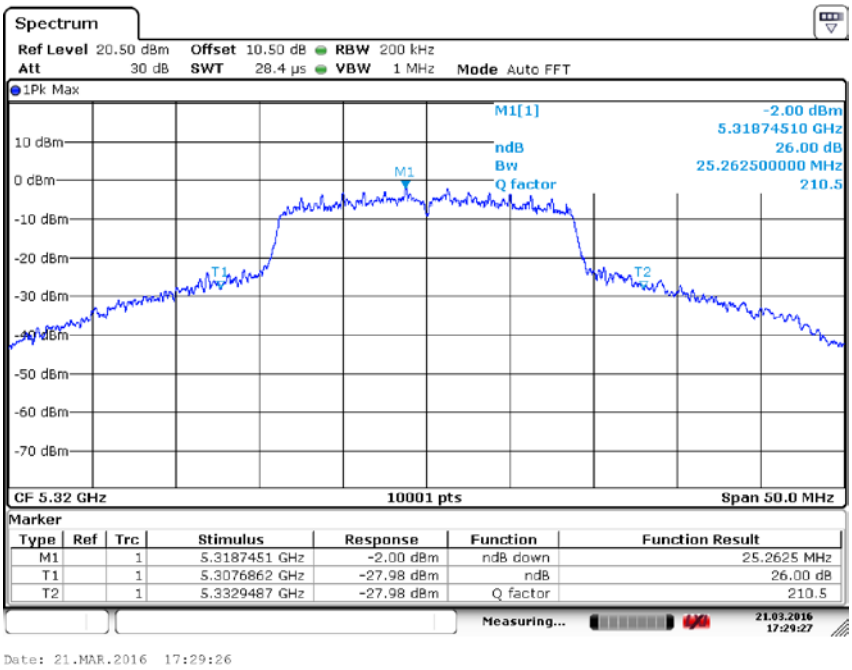


Carrier frequency (MHz): 5280
Channel No.:56
Test Mode: 802.11n (HT20)



Carrier frequency (MHz): 5320
Channel No.:64
Test Mode: 802.11n (HT20)

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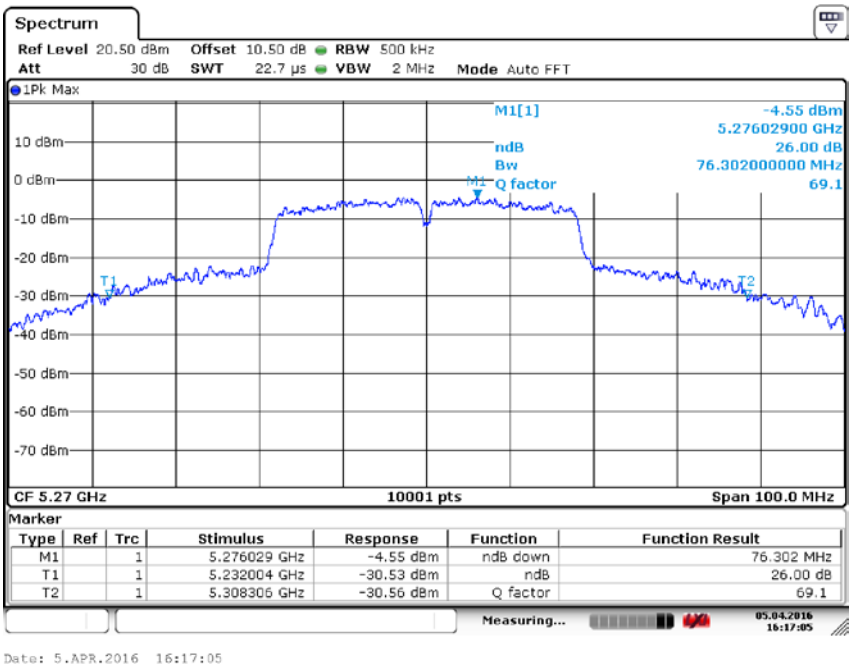
Test Mode: 802.11n (HT40)

Carrier frequency (MHz)	Channel No.	Occupied Bandwidth(MHz)
5270	54	76.302
5310	62	69.683



Carrier frequency (MHz): 5270
Channel No.:54
Test Mode: 802.11n (HT40)

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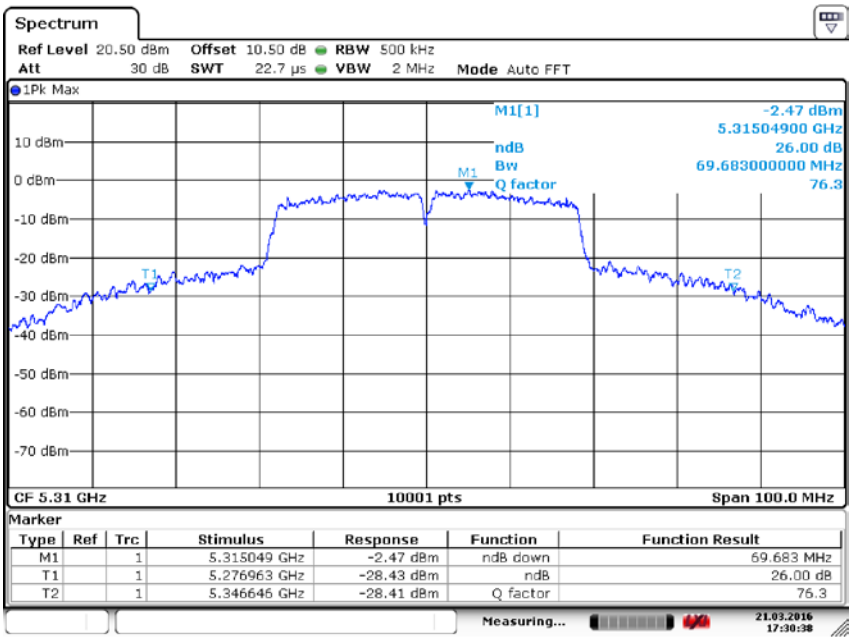

Date: 21.MAR.2016 17:30:38

Carrier frequency (MHz): 5310
Channel No.:62
Test Mode: 802.11n(HT40)

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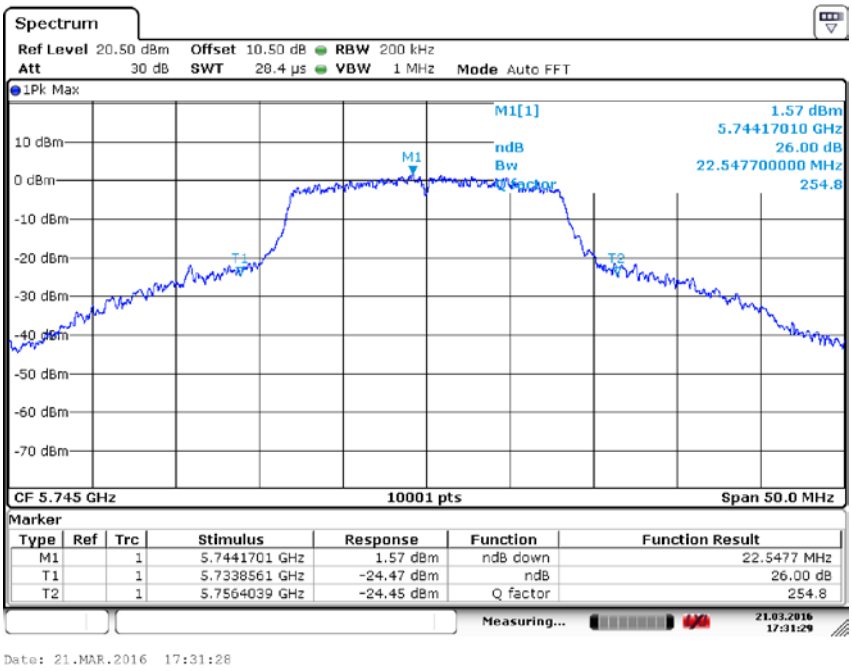
5725MHz~5850MHz

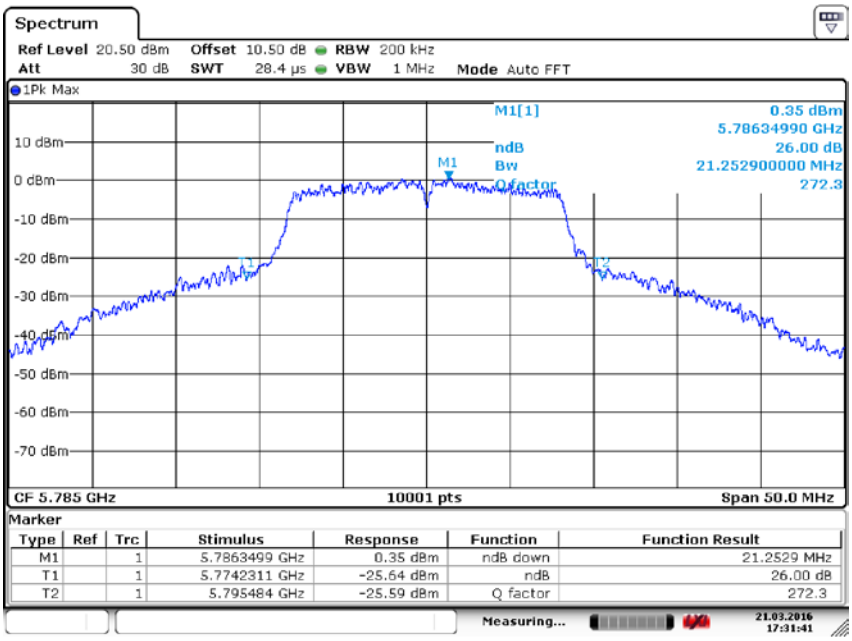
Test Mode: 802.11a

Carrier frequency (MHz)	Channel No.	Occupied Bandwidth(MHz)
5745	149	22.548
5785	157	21.253
5825	165	22.213

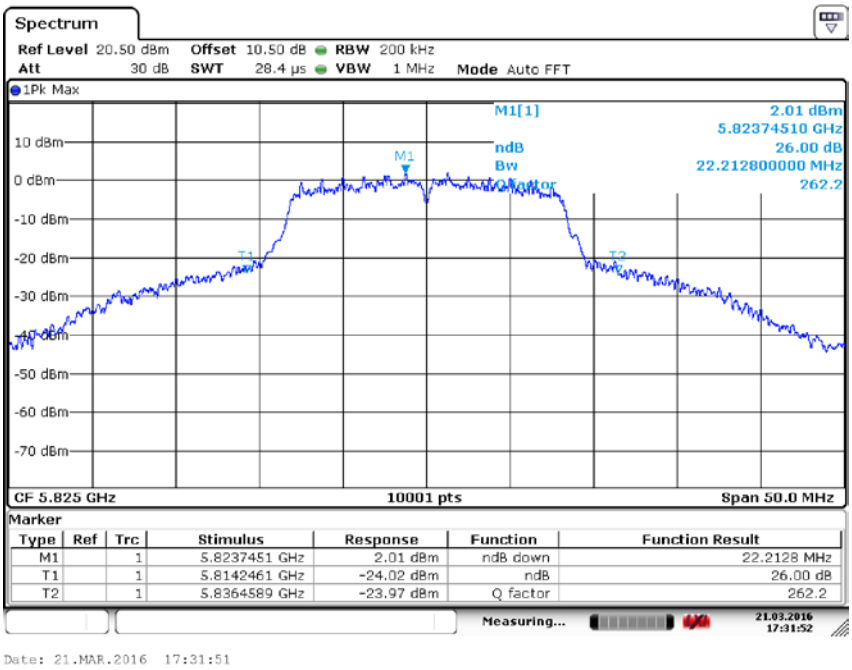


Carrier frequency (MHz): 5745
Channel No.:149
Test Mode: 802.11a

Copyright © SRTC



Carrier frequency (MHz): 5785
Channel No.:157
Test Mode: 802.11a



Carrier frequency (MHz): 5825
Channel No.:165
Test Mode: 802.11a

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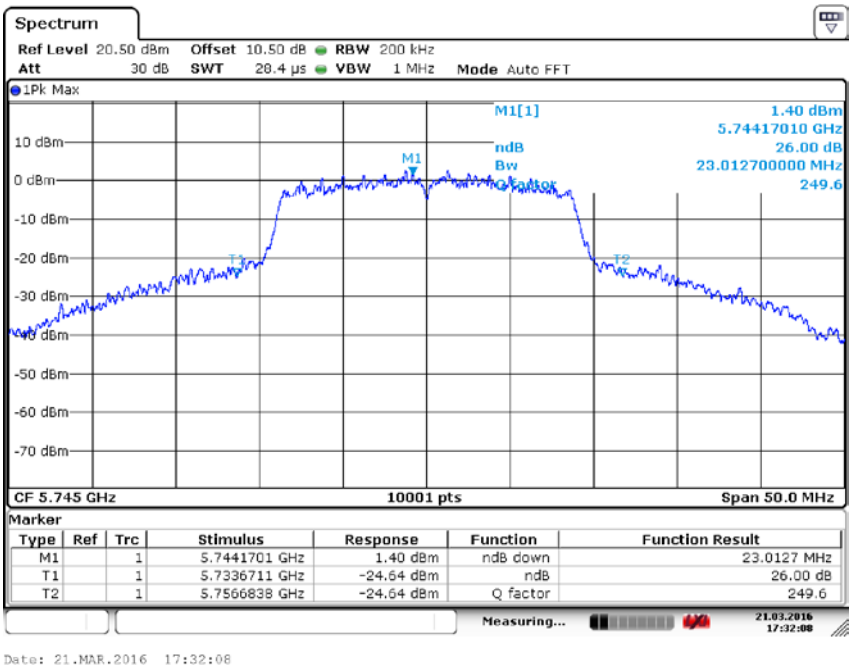
Test Mode: 802.11n (HT20)

Carrier frequency (MHz)	Channel No.	Occupied Bandwidth(MHz)
5745	149	23.013
5785	157	20.933
5825	165	21.168



Carrier frequency (MHz): 5745
Channel No.:149
Test Mode: 802.11n (HT20)

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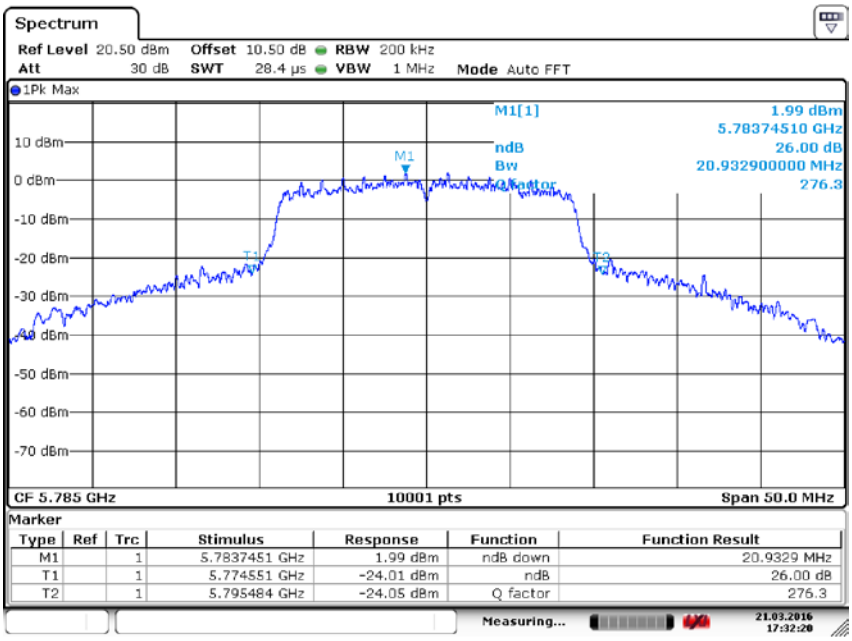
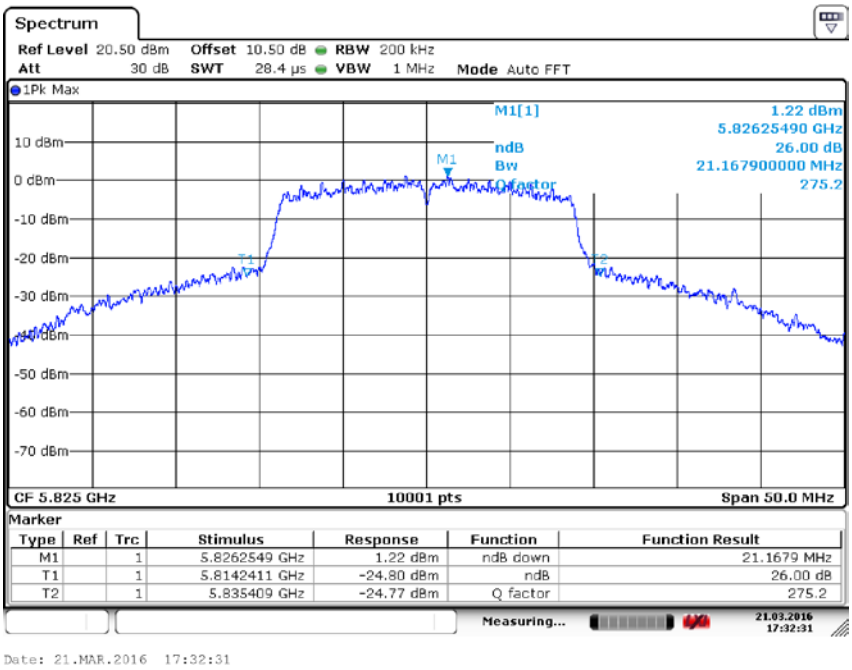


Carrier frequency (MHz): 5785
Channel No.:157
Test Mode: 802.11n (HT20)



Carrier frequency (MHz): 5825
Channel No.:165
Test Mode: 802.11n (HT20)

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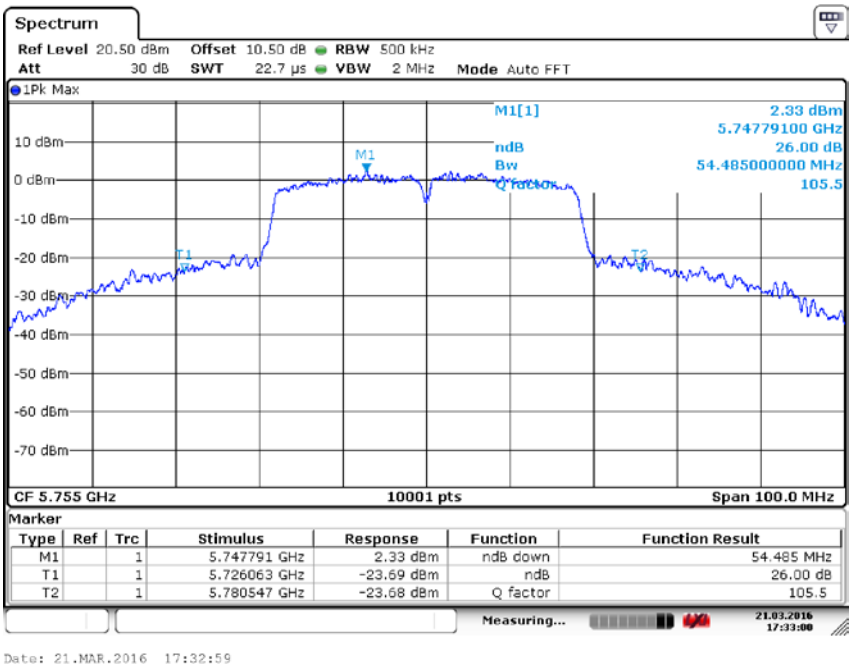
Test Mode: 802.11n (HT40)

Carrier frequency (MHz)	Channel No.	Occupied Bandwidth(MHz)
5755	151	54.485
5795	159	51.465



Carrier frequency (MHz): 5755
Channel No.:151
Test Mode: 802.11n (HT40)

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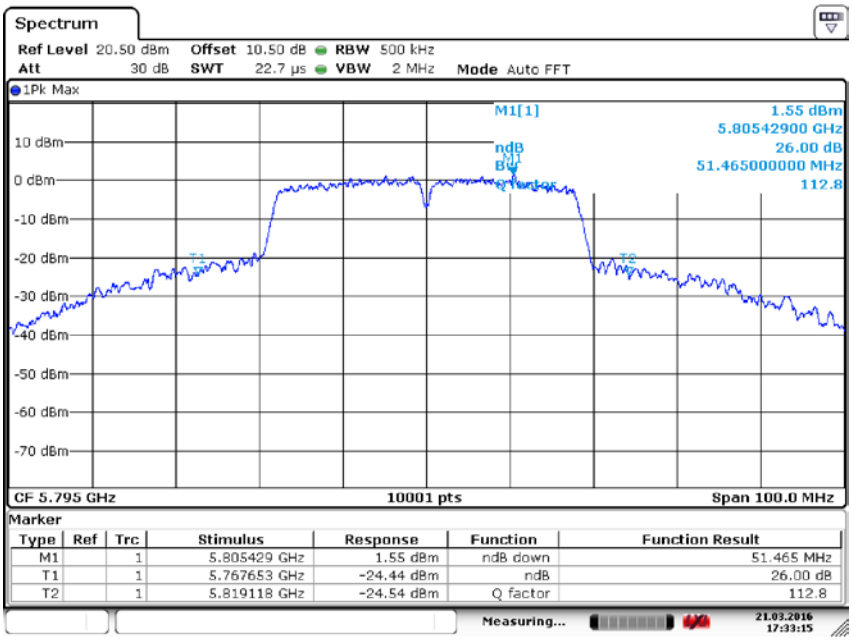

Date: 21.MAR.2016 17:33:14

Carrier frequency (MHz): 5795
Channel No.:159
Test Mode: 802.11n(HT40)

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6.4 6dB Bandwidth

6.4.1 Ambient condition

Temperature	Relative humidity	Pressure
22°C	40%	101.5kPa

6.4.2 Test Description

The bandwidth at 6dB down from the highest in-band spectral density is measured with a spectrum analyzer and Bluetooth test set via a power splitter with a known loss. Which connected to the transmitter antenna terminal of the EUT while the EUT is operating at maximum power and at the appropriate frequencies. All modes of operation were investigated and the worst case configuration results are reported in this section.

6.4.3 Test limit

FCC Part15.247(e)
Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

6.4.4 Test Procedure Used

KDB 789033 D01 v01r03, Section C.

6.4.5 Test Settings

a) Set RBW = 100 kHz.
b) Set the video bandwidth (VBW) ≥ 3 x RBW.
c) Detector = Peak.
d) Trace mode = max hold.
e) Sweep = auto couple.
f) Allow the trace to stabilize.
g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

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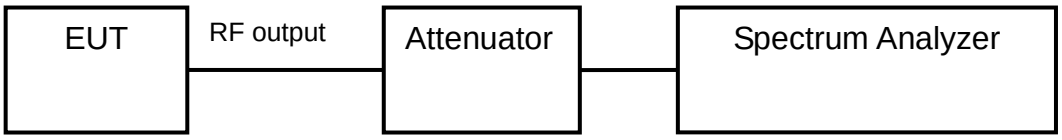
6.4.6 Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.

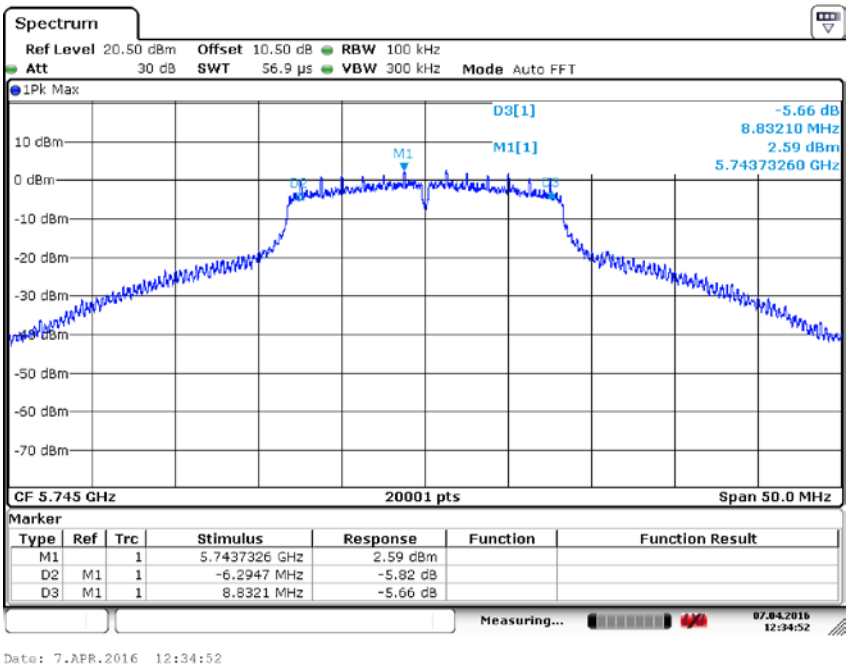


6.4.7 Test result

5725MHz~5850MHz

Test Mode: 802.11a

Carrier frequency (MHz)	Channel No.	6dB Bandwidth(MHz)
5745	149	15.127
5785	157	15.126
5825	165	15.119



Carrier frequency (MHz): 5745
Channel No.:149
Test Mode: 802.11a

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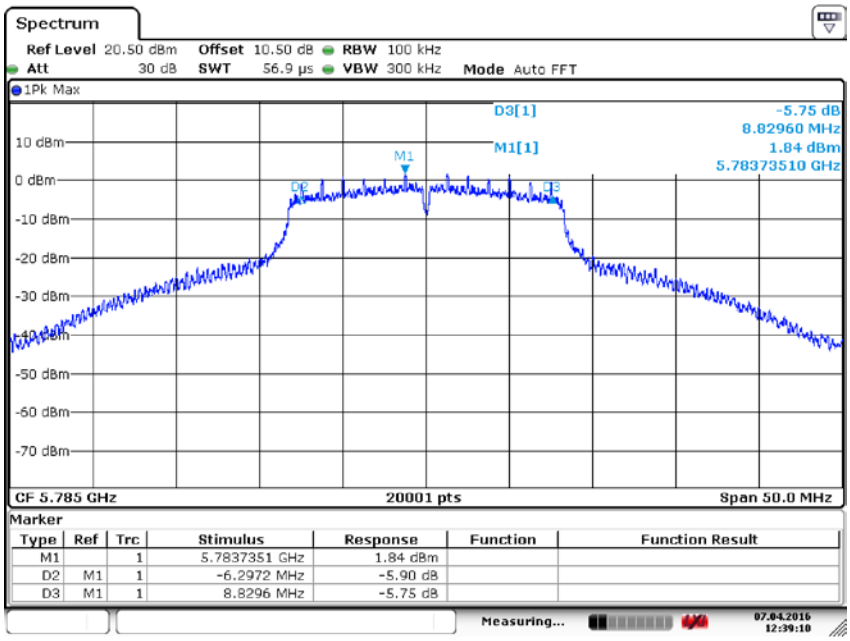
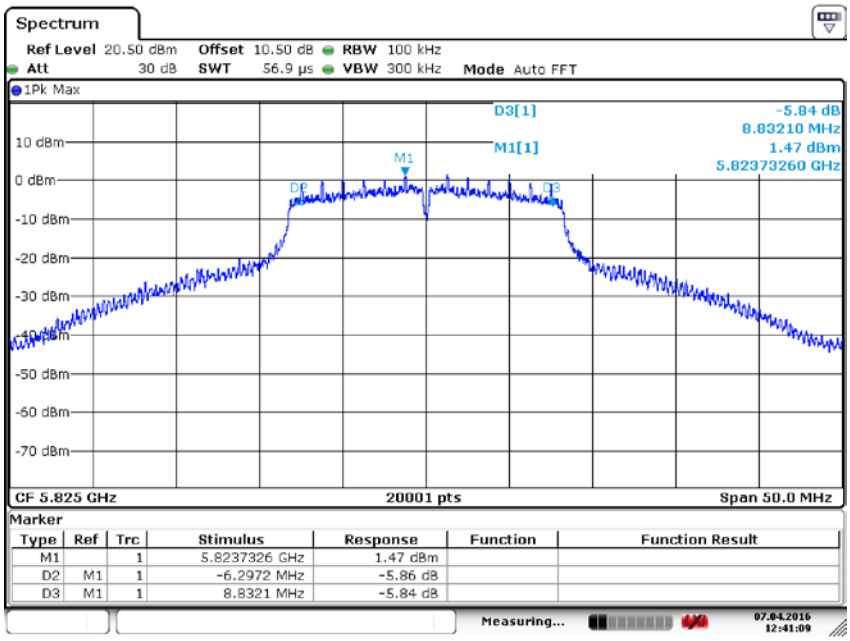


Date: 7.APR.2016 12:39:10

Carrier frequency (MHz): 5785
Channel No.:157
Test Mode: 802.11a



Date: 7.APR.2016 12:41:09

Carrier frequency (MHz): 5825
Channel No.:165
Test Mode: 802.11a

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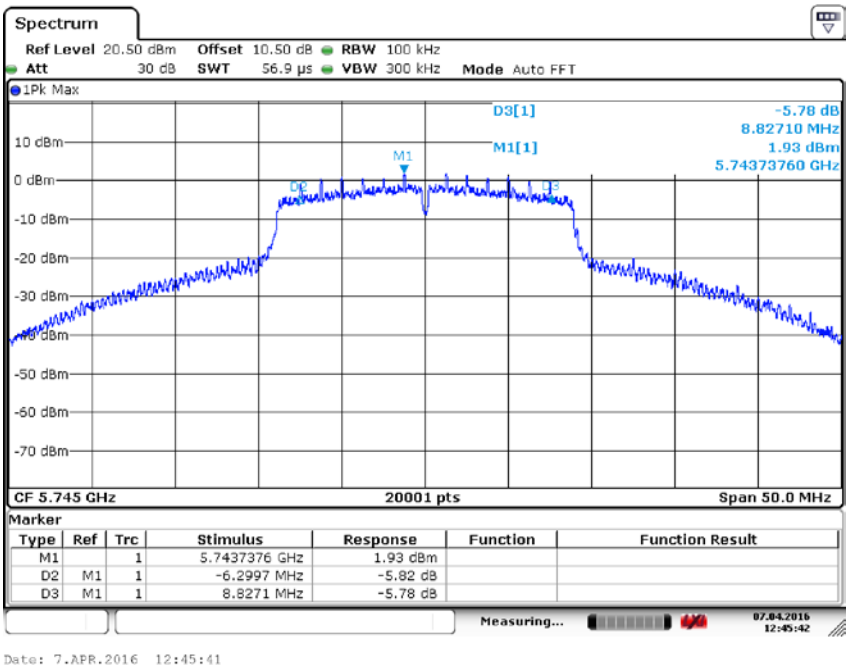
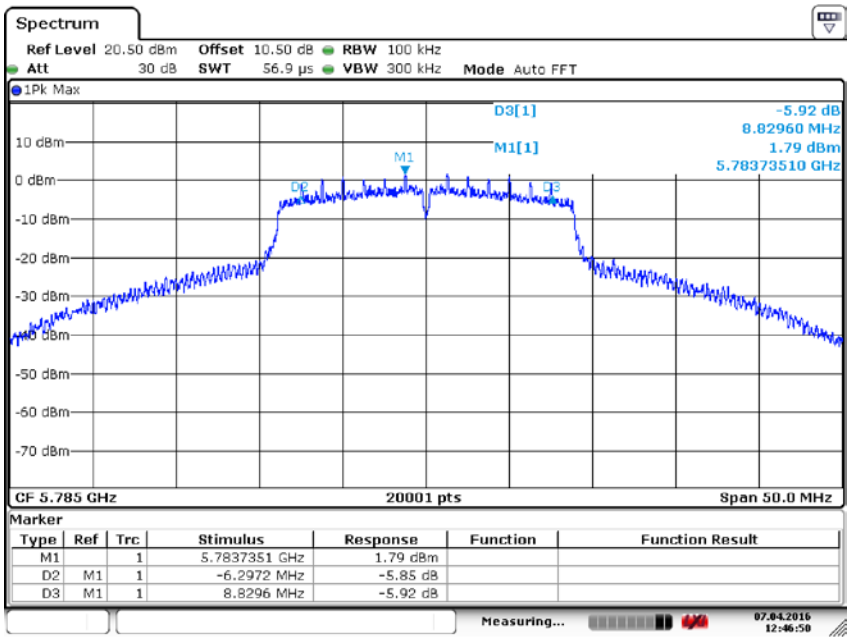
Test Mode: 802.11n (HT20)

Carrier frequency (MHz)	Channel No.	6dB Bandwidth(MHz)
5745	149	15.127
5785	157	15.127
5825	165	15.117

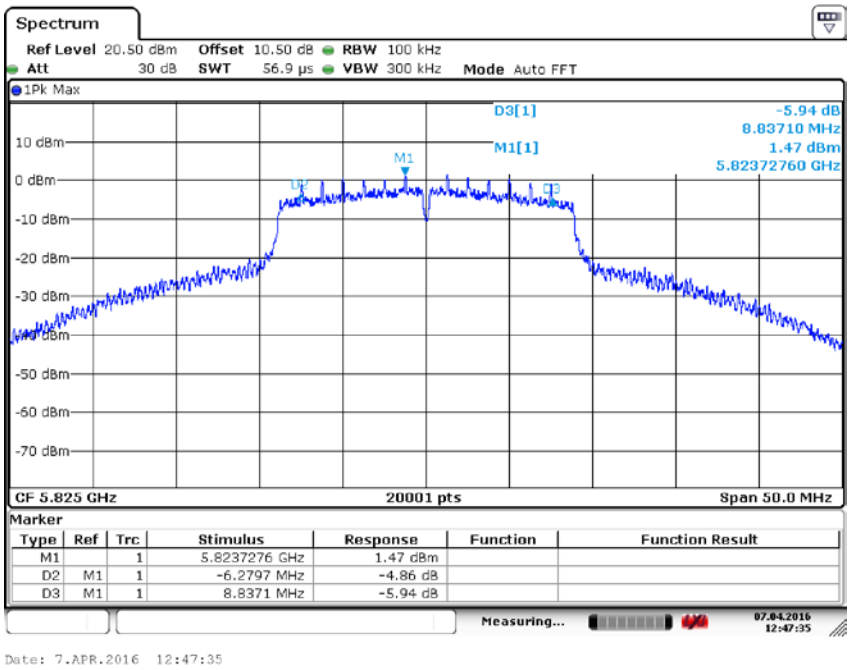


Carrier frequency (MHz): 5745
Channel No.:149
Test Mode: 802.11n (HT20)

Copyright © SRTC



Carrier frequency (MHz): 5785
Channel No.:157
Test Mode: 802.11n (HT20)



Carrier frequency (MHz): 5825
Channel No.:165
Test Mode: 802.11n (HT20)

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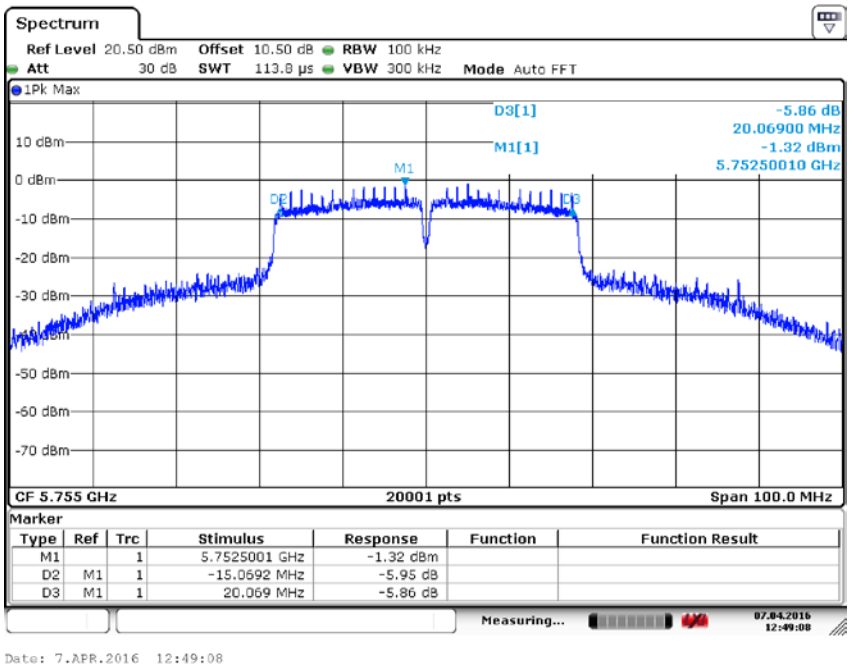
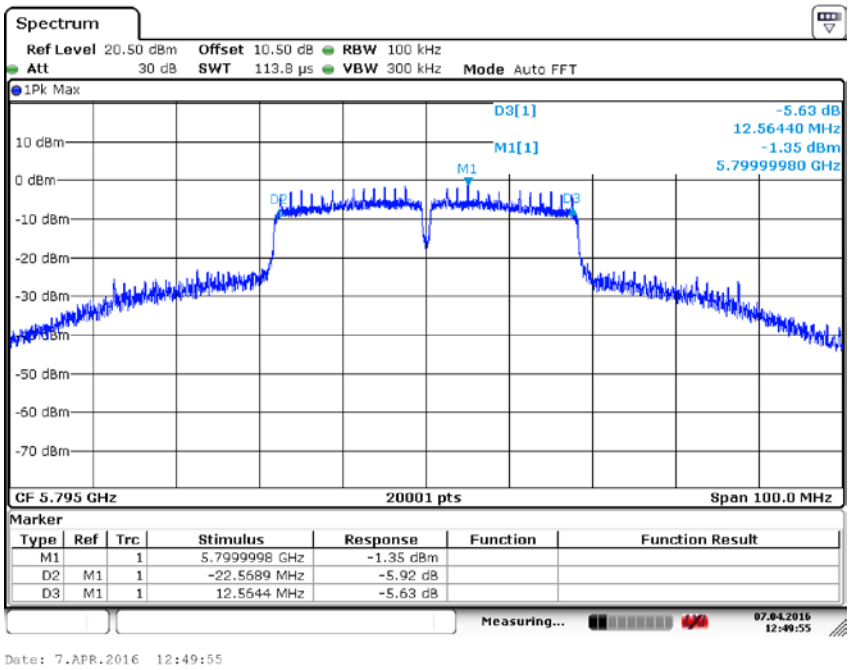
Test Mode: 802.11n (HT40)

Carrier frequency (MHz)	Channel No.	6dB Bandwidth(MHz)
5755	151	35.138
5795	159	35.133



Carrier frequency (MHz): 5755
Channel No.:151
Test Mode: 802.11n (HT40)

Copyright © SRTC



Carrier frequency (MHz): 5795
Channel No.:159
Test Mode: 802.11n(HT40)

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6.5 Transmitter Power Spectral Density

6.5.1 Ambient condition

Temperature	Relative humidity	Pressure
22°C	30%	101.5kPa

6.5.2 Test Description

The peak power density is measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at its maximum duty cycle (>98%), at maximum power, and at the appropriate frequencies. All data rates were investigated and the worst case configuration results are reported in this section.

6.5.3 Test limit

FCC Part15.407(a)(1)
For the band 5.15–5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 50 mW or 4.0 dBm + 10 log B, where B is the 26–dB emission bandwidth in MHz. In addition, the peak power spectral density shall not exceed 4.0 dBm in any 1–MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
FCC Part15.407(a)(2)
For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11.0 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
FCC Part15.407(a)(3)
For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30.0 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

6.5.4 Test Procedure Used

KDB 789033 D01 v01r03, Section F.

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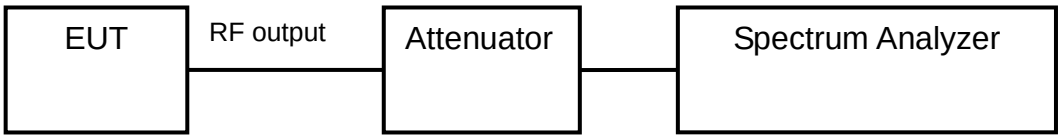
6.5.5 Test Settings

a) Set analyzer center frequency to DTS channel center frequency.
b) Set the span to 1.5 times the DTS bandwidth.
c) Set the RBW to: 1MHz(5.15-5.7GHz) 500kHz(5.725-5.85GHz)
d) Set the VBW ≥ 3 x RBW.
e) Detector = peak.
f) Sweep time = auto couple.
g) Trace mode = max hold.
h) Allow trace to fully stabilize.
i) Use the peak search function on the instrument to find the peak of the spectrum and record its value.

6.5.6 Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.



6.5.7 Test result

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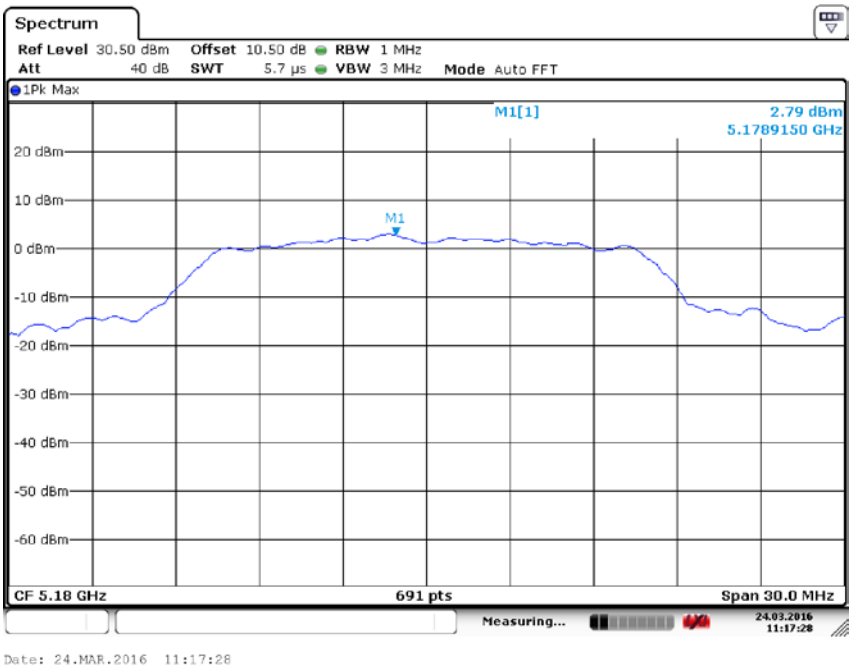
5150MHz~5250MHz

Test Mode: 802.11a

Carrier frequency (MHz)	Channel No	Power Density (dBm)
5180	36	2.79
5200	40	2.19
5240	48	2.34



Carrier frequency (MHz): 5180
Channel No.36
Test Mode: 802.11a

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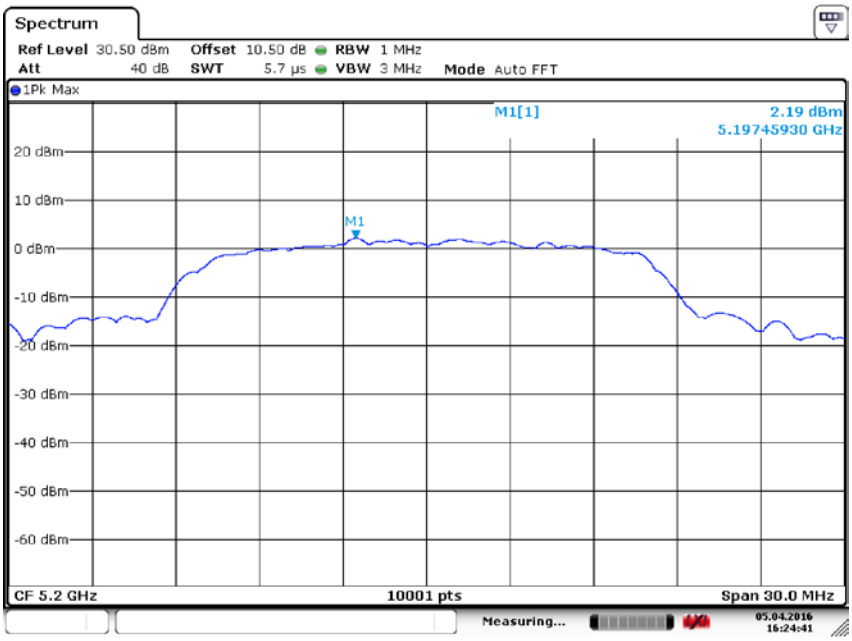
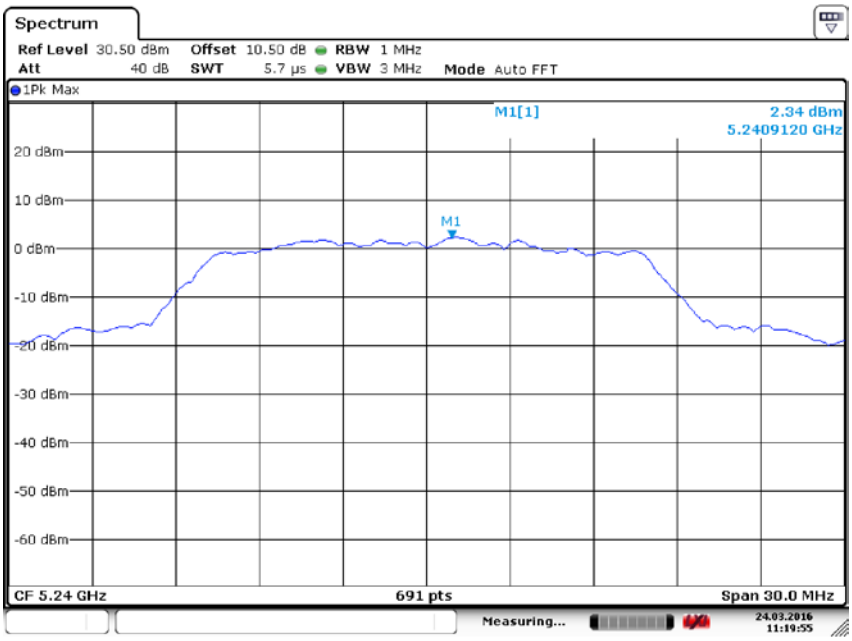


Date: 5.APR.2016 16:24:40

Carrier frequency (MHz): 5200
Channel No.40
Test Mode: 802.11a



Date: 24.MAR.2016 11:19:55

Carrier frequency (MHz): 5240
Channel No.48
Test Mode: 802.11a

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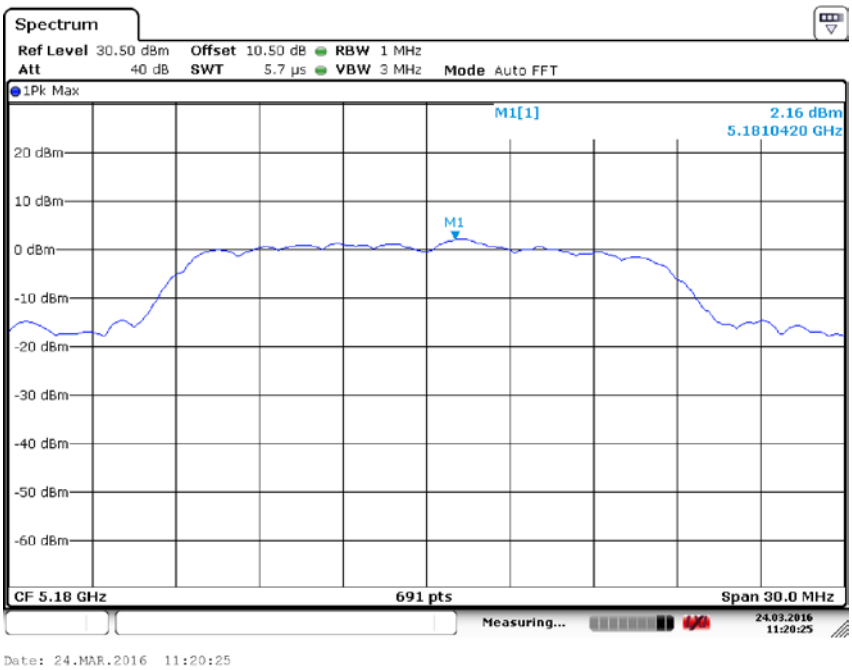
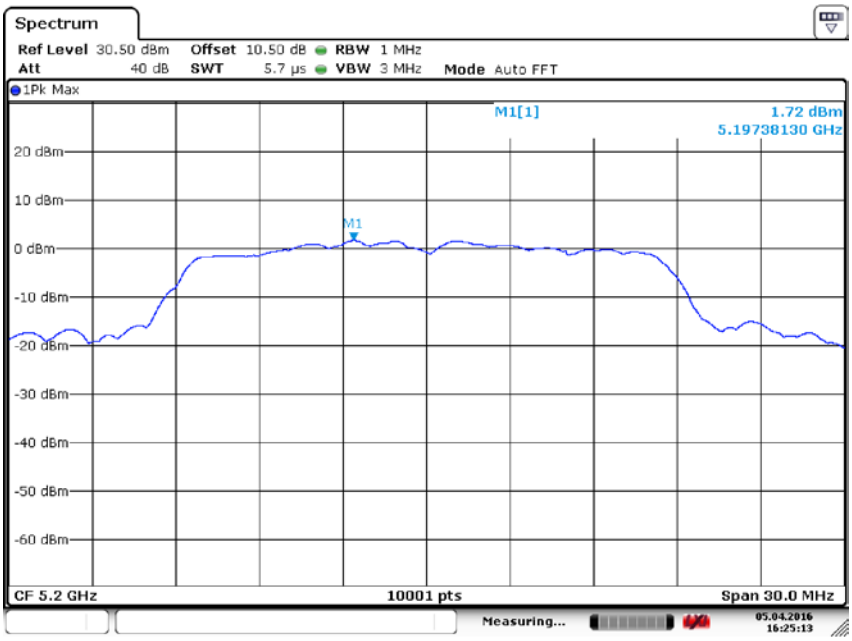
Test Mode: 802.11n (HT20)

Carrier frequency (MHz)	Channel No	Power Density (dBm)
5180	36	2.16
5200	40	1.72
5240	48	1.91



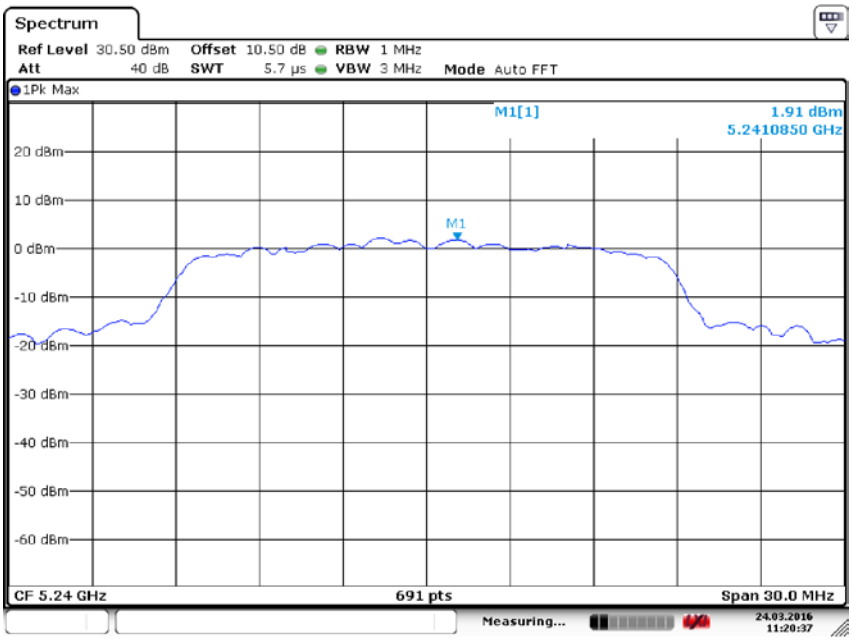
Carrier frequency (MHz): 5180
Channel No.:36
Test Mode: 802.11n (HT20)

Copyright © SRTC



Date: 5.APR.2016 16:25:12

Carrier frequency (MHz): 5200
Channel No.:40
Test Mode: 802.11n (HT20)



Date: 24.MAR.2016 11:20:38

Carrier frequency (MHz): 5240
Channel No.:48
Test Mode: 802.11n (HT20)

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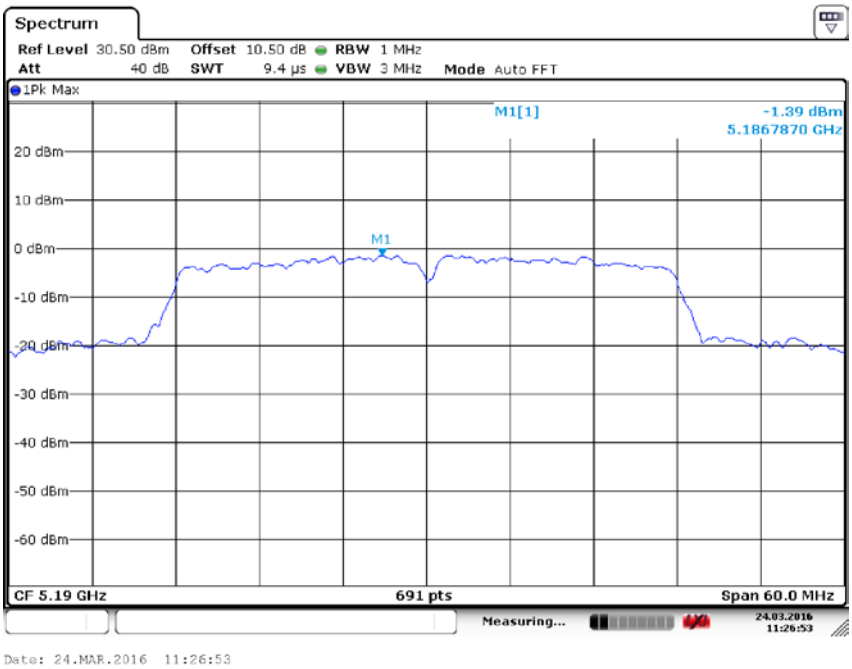
Test Mode: 802.11n (HT40)

Carrier frequency (MHz)	Channel No	Power Density (dBm)
5190	38	-1.39
5230	46	-0.91



Carrier frequency (MHz): 5190
Channel No.:38
Test Mode: 802.11n (HT40)

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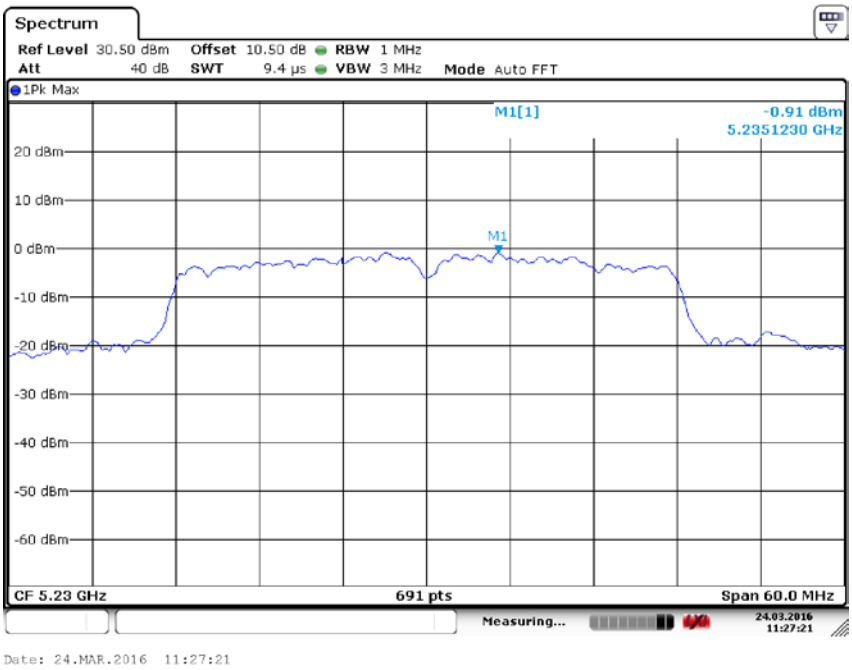

Carrier frequency (MHz): 5230
Channel No.:46
Test Mode: 802.11n(HT40)

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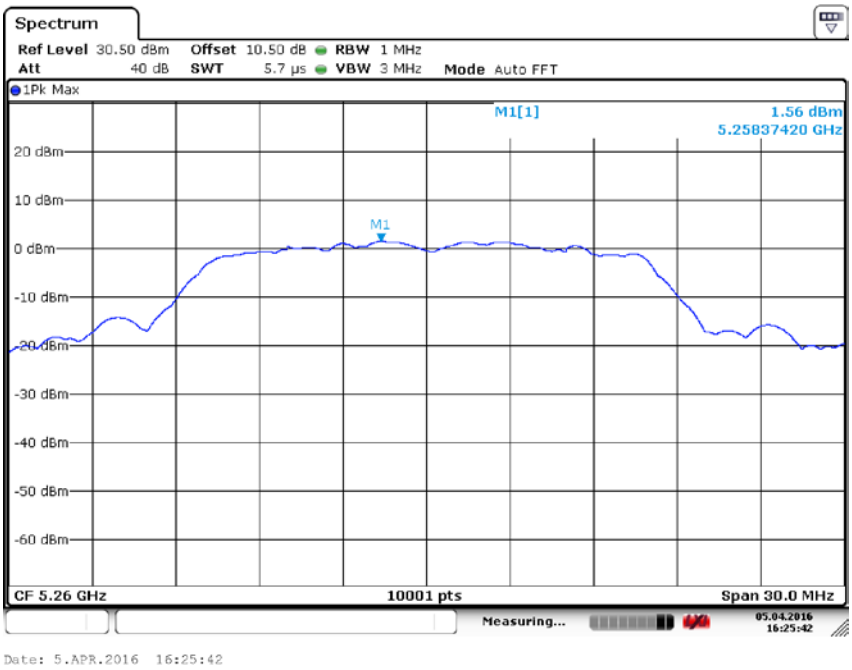
5250MHz~5350MHz

Test Mode: 802.11a

Carrier frequency (MHz)	Channel No	Power Density (dBm)
5260	52	1.56
5280	56	2.20
5320	64	3.16



Carrier frequency (MHz): 5260
Channel No.52
Test Mode: 802.11a

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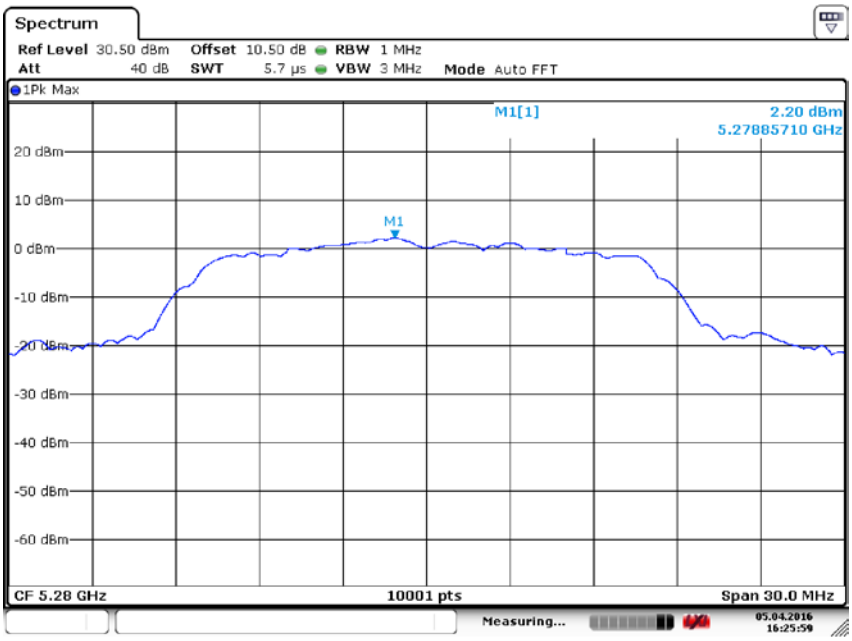
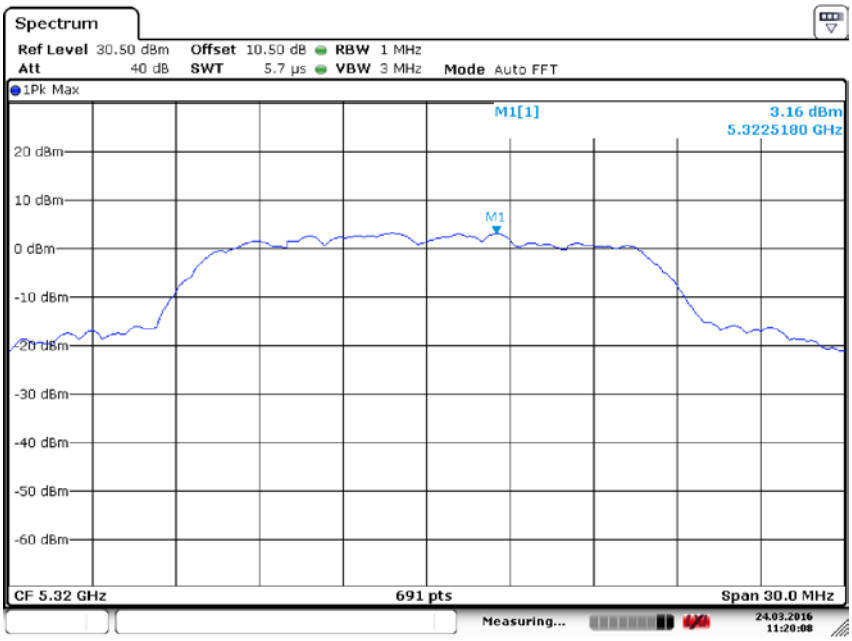


Date: 5.APR.2016 16:25:58

Carrier frequency (MHz): 5280
Channel No.56
Test Mode: 802.11a



Date: 24.MAR.2016 11:20:08

Carrier frequency (MHz): 5320
Channel No.64
Test Mode: 802.11a

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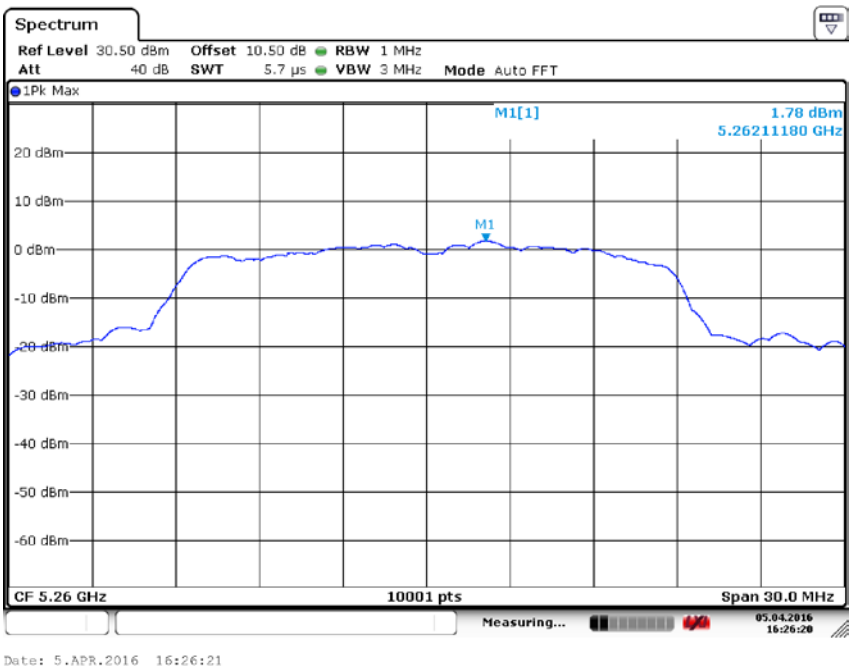
Test Mode: 802.11n (HT20)

Carrier frequency (MHz)	Channel No	Power Density (dBm)
5260	52	1.78
5280	56	1.22
5320	64	2.47



Carrier frequency (MHz): 5260
Channel No.:52
Test Mode: 802.11n (HT20)

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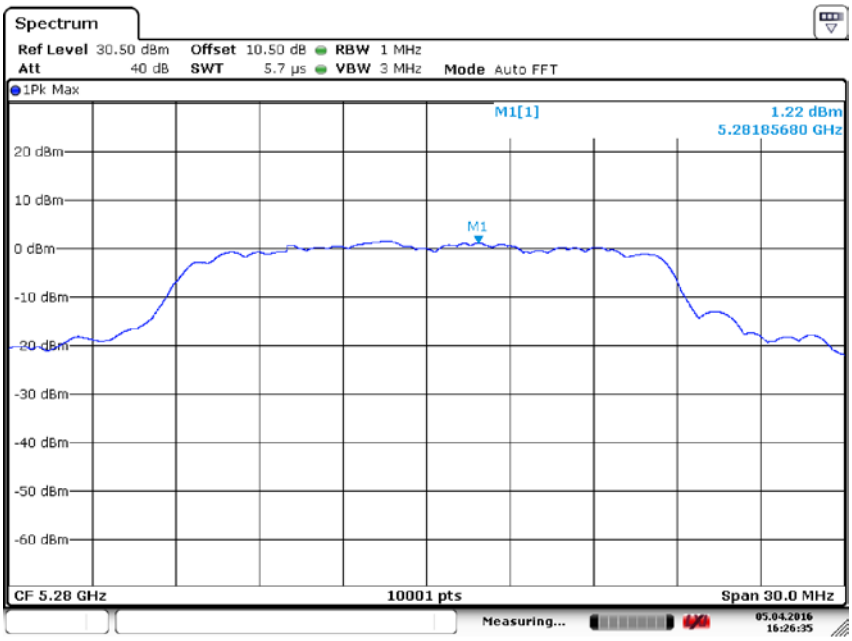
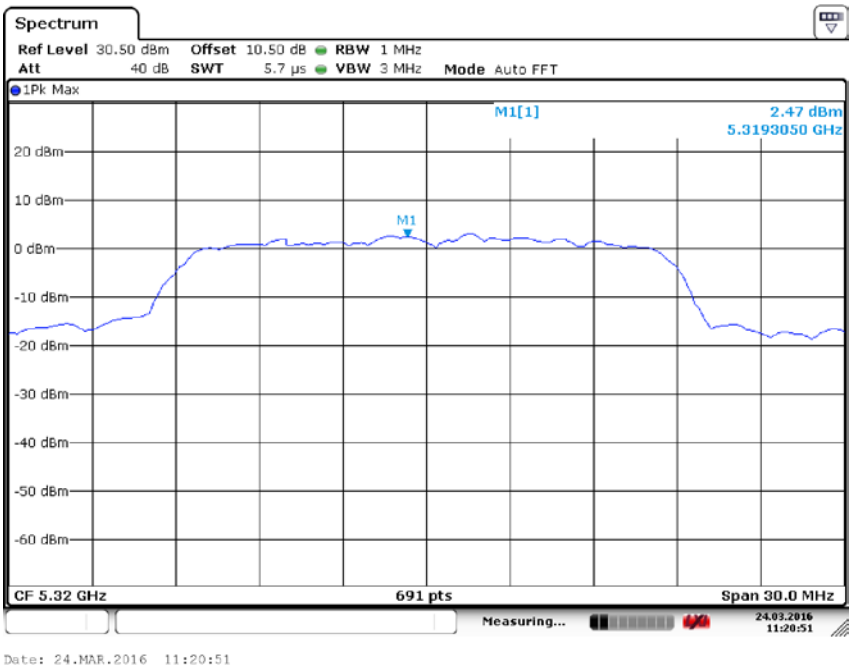


Carrier frequency (MHz): 5280
Channel No.:56
Test Mode: 802.11n (HT20)



Carrier frequency (MHz): 5320
Channel No.:64
Test Mode: 802.11n (HT20)

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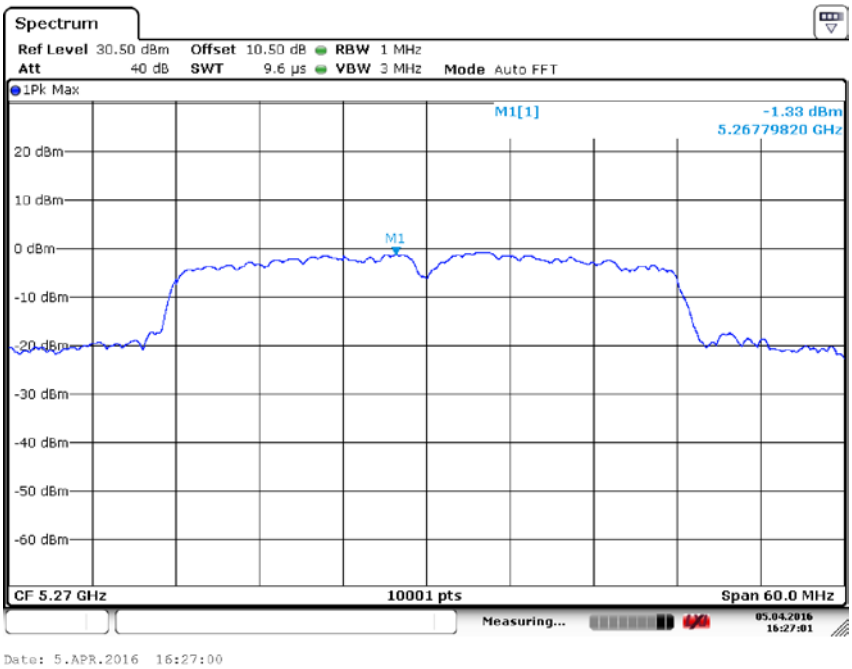
Test Mode: 802.11n (HT40)

Carrier frequency (MHz)	Channel No	Power Density (dBm)
5270	54	-1.33
5310	62	0.07



Carrier frequency (MHz): 5270
Channel No.:54
Test Mode: 802.11n (HT40)

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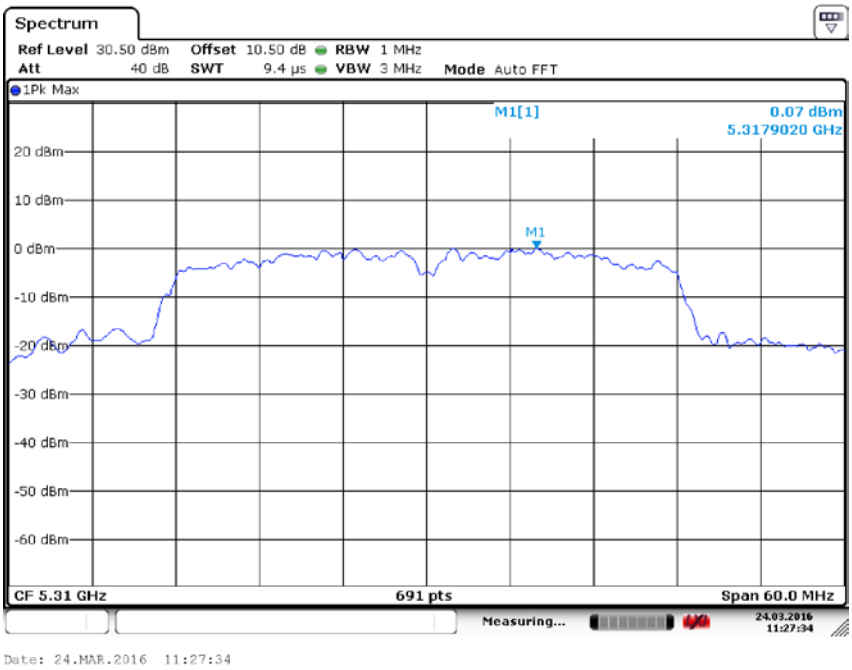

Carrier frequency (MHz): 5310
Channel No.:62
Test Mode: 802.11n(HT40)

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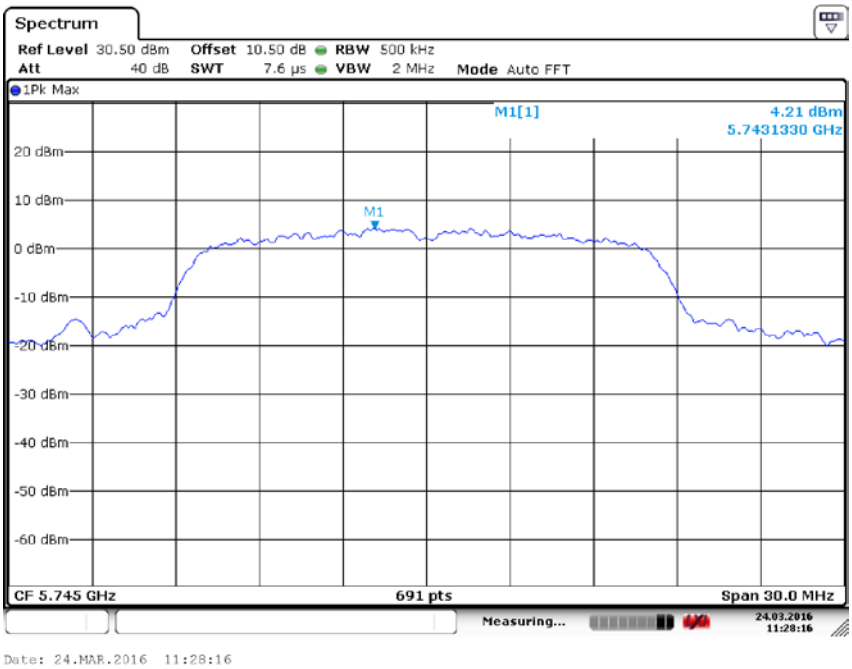
5725MHz~5850MHz

Test Mode: 802.11a

Carrier frequency (MHz)	Channel No	Power Density (dBm)
5745	149	4.21
5785	157	2.90
5825	165	3.35



Carrier frequency (MHz): 5745
Channel No.149
Test Mode: 802.11a

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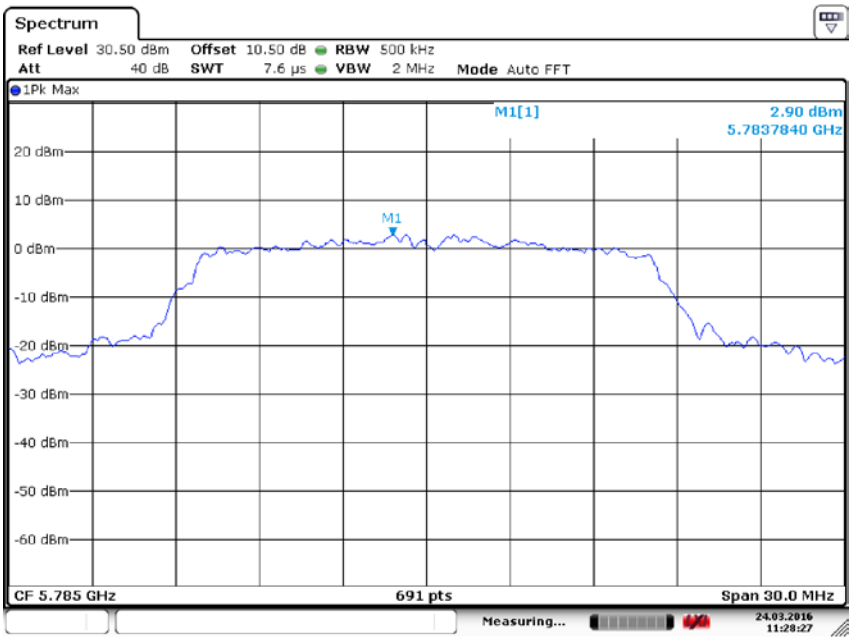
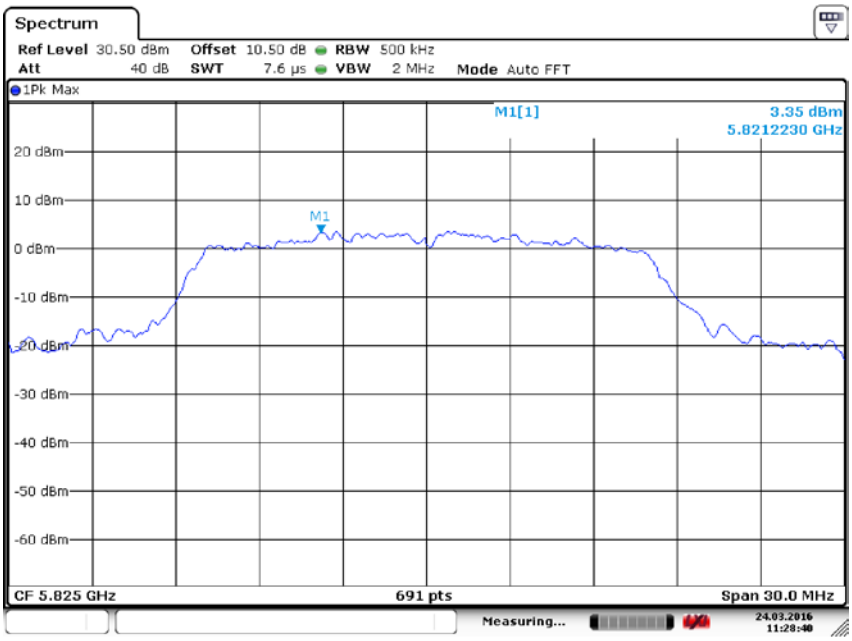


Date: 24.MAR.2016 11:28:27

Carrier frequency (MHz): 5785
Channel No.157
Test Mode: 802.11a



Date: 24.MAR.2016 11:28:40

Carrier frequency (MHz): 5825
Channel No.165
Test Mode: 802.11a

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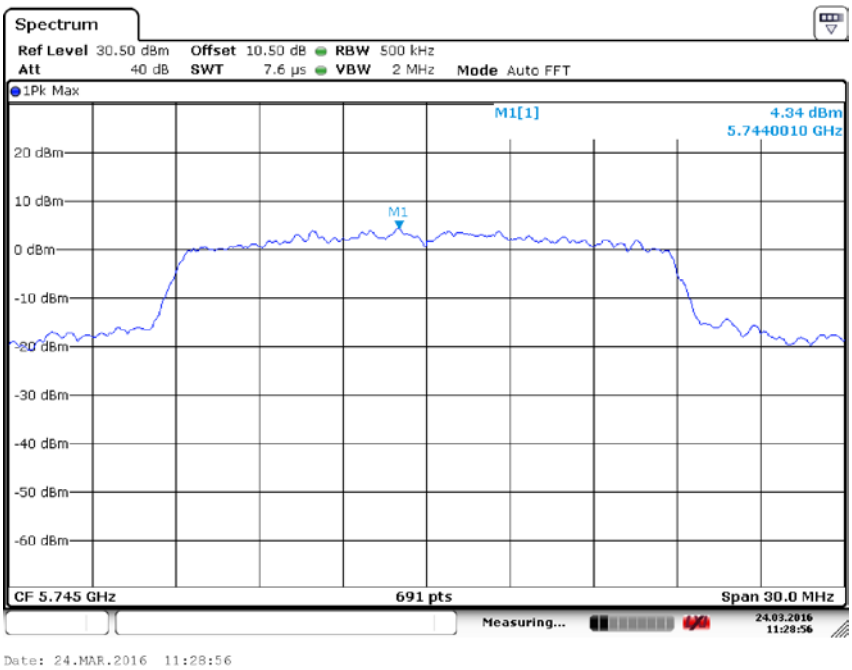
Test Mode: 802.11n (HT20)

Carrier frequency (MHz)	Channel No	Power Density (dBm)
5745	149	4.34
5785	157	3.54
5825	165	2.49



Carrier frequency (MHz): 5745
Channel No.:149
Test Mode: 802.11n (HT20)

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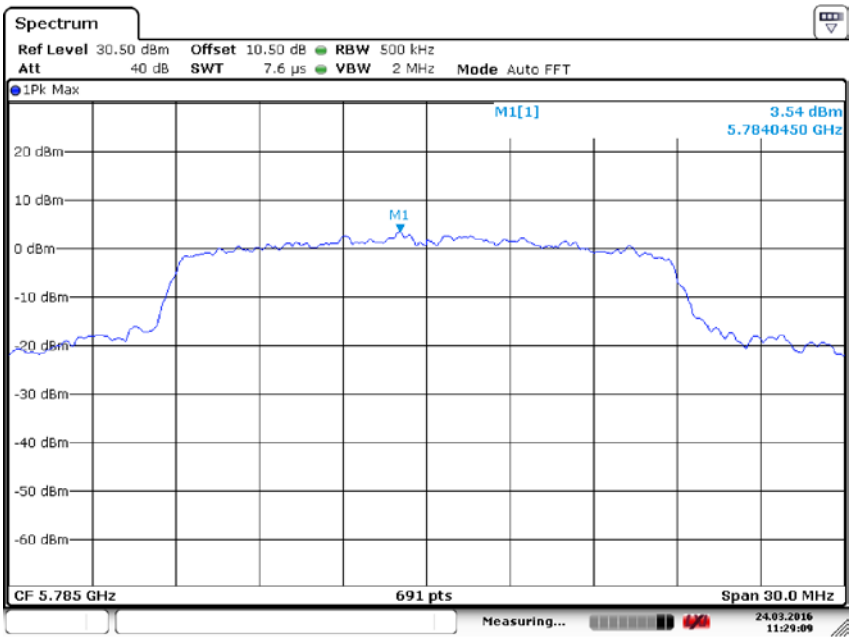
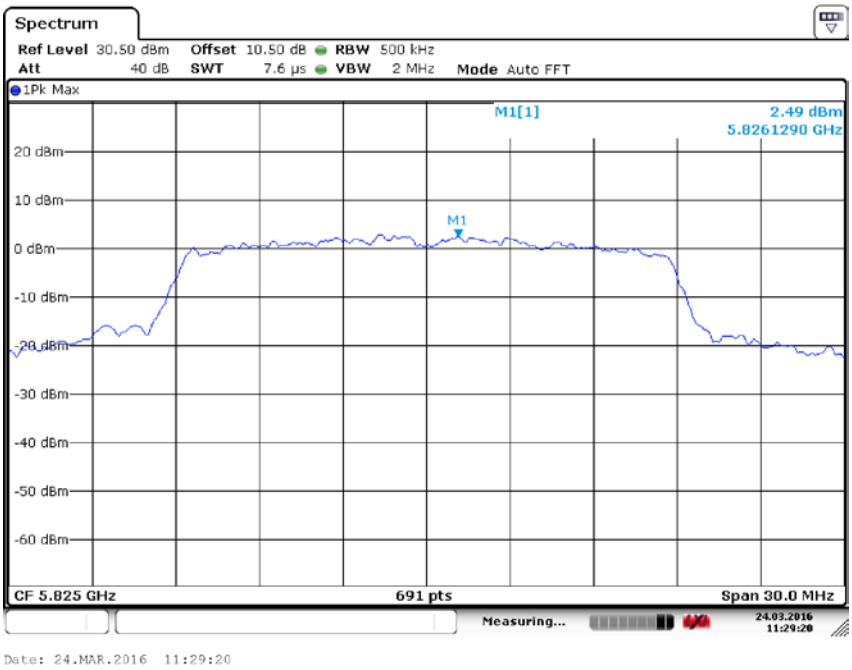


Carrier frequency (MHz): 5785
Channel No.:157
Test Mode: 802.11n (HT20)



Carrier frequency (MHz): 5825
Channel No.:165
Test Mode: 802.11n (HT20)

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