Test Report

FCC PART 15 Subpart E

Product Name	:	iPal
Model No.	:	iPal-B (iPal-P/ iPal-S/ iPal-GD/ iPal-GN)
FCC ID/IC ID	:	2APZJ-IPAL/23929-IPAL

Applicant	:	Nanjing AvatarMind Robot Technology Co., Ltd.
Address	:	3 Gutan Road, Gaochun Economic Development Zone, Nanjing, Jiangsu

Date of Receipt	:	26/02/2018
Test Date	:	26/03/2018~25/04/2018
Issued Date	:	25/04/2018
Report No.	:	YZ180129-AFDJ-0001-4
Report Version	:	V1.0

Test Report Certification

Issued Date : 25/04/2018
Report No. : YZ180129-AFDJ-0001-4

江苏扬子检验认证有限公司
Jiangsu Yangtze Testing and Certification Co.,Ltd

Product Name	:	iPal
Applicant	:	Nanjing AvatarMind Robot Technology Co., Ltd.
Address	:	3 Gutan Road, Gaochun Economic Development Zone, Nanjing, Jiangsu
Manufacturer	:	Nanjing AvatarMind Robot Technology Co., Ltd.
Address	:	3 Gutan Road, Gaochun Economic Development Zone, Nanjing, Jiangsu
Model No.	:	iPal-B (iPal-P/ iPal-S/ iPal-GD/ iPal-GN)
Brand Name	:	AvatarMind
EUT Voltage	:	+24V, 3.75A
Applicable Standard	:	FCC CFR Title 47 Part 15 Subpart E: 2017 ANSI C63.4: 2014; ANSI C63.10: 2013 ICES-003 Issue 6 RSS 247 Issue 2 RSS-Gen Issue 4
Test Result	:	Complied
Performed Location	:	JIANGSU YANGTZE TESTING, CERTIFICATION AND INSPECTION CORPORATION No.6-3, Xingzhi Road, Xingzhi Technology Park Xingang Economic Development Zone Nanjing City, Jiangsu Province, 210046, People's Republic of China TEL: +86-025-86797034

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Approved By : Wei An
(Manager: Wei An)

Laboratory Information

We, **YTC Corporation**, are an independent EMC and safety consultancy that was established the whole facility in our laboratories. The test facility has been accredited/accepted(audited or listed) by the following related bodies in compliance with ISO 17025 and specified testing scope:

The address and introduction of YTC Corporation's laboratories can be founded in our Web site : http://www.yztcic.com/
If you have any comments, Please don't hesitate to contact us.

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1. General Information

1.1. EUT Description

Product Name	iPal
Brand Name	AvatarMind
Model No.	iPal-B (iPal-P/ iPal-S/ iPal-GD/ iPal-GN)
EUT Voltage	+24V, 3.75A
Frequency Range	**For 2.4GHz Band** 802.11b/g/n(20MHz): 2412~2462MHz **For 5.0GHz Band** 802.11a/n/ac(20MHz): 5180~5240MHz, 5745~5825MHz 802.11n/ac(40MHz): 5190~5230MHz, 5755~5795MHz 802.11ac(80MHz): 5210~5775MHz **Bluetooth v3.0 + EDR** 2402MHz~2480MHz **Bluetooth v4.0 + LE** 2402MHz~2480MHz
Channel Number	For 2.4GHz Band 802.11b/g/n(20MHz): 11 For 5.0GHz Band 802.11a/n/ac(20MHz): 9 802.11n/ac(40MHz): 4 802.11ac(80MHz):2 Bluetooth v3.0 + EDR: 79 Bluetooth v4.0 + LE: 40
Type of Modulation	Bluetooth v3.0 + EDR: GFSK, π/4-DQPSK, 8-DPSK
	Bluetooth v4.0 + LE: GFSK
	802.11a/g: 6/9/12/18/24/36/48/54 Mbps
	802.11b: 1/2/5.5/11 Mbps
Data Rate	802.11n: up to 300 Mbps
	802.11ac: MCS 0/1/2/3/4/5/6/7/8/9
	Bluetooth v3.0 + EDR: 1/2/3 Mbps
	Bluetooth v4.0 + LE: 1Mbps
	Bluetooth v3.0 + EDR: GFSK、π/4-DQPSK, 8-DPSK
	Bluetooth v4.0 + LE: GFSK
Channel Control	Auto
Antenna Delivery	Tx + Rx
Antenna Type	Integral antenna

Peak Antenna Gain	1 dBi
Components	
Adapter	Brand Name: Channel Well Technology Model: 2AAL090m Input: 100-240V~1.5A 50/60Hz Output: 24V, 3.75A

For 5.0GHz Band

802.11a/n/ac(20MHz) Working Frequency of Each Channel:							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
36	5180 MHz	40	5200 MHz	44	5220 MHz	48	5240 MHz
149	5745 MHz	153	5765 MHz	157	5785 MHz	161	5805 MHz
165	5825 MHz	N/A	N/A	N/A	N/A	N/A	N/A
802.11n/ac(40MHz) Working Frequency of Each Channel:							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz	151	5755 MHz	159	5795 MHz
802.11ac(80MHz) Working Frequency of Each Channel:							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
42	5210MHz	155	5775MHz	N/A	N/A	N/A	N/A

802.11a/b/g/n Antenna List

Antenna	Manufacturer	Model No.	Peak Gain
Antenna 1	N/A	N/A	2dBi for 2.4GHz, 1dBi for 5GHz

1.2. Mode of Operation

YTC has verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was shown in this test report and defined as:

Test Mode
Mode 1: Transmit by 802.11a
Mode 2: Transmit by 802.11n(20 MHz)
Mode 3: Transmit by 802.11n(40 MHz)
Mode 4: Transmit by 802.11ac (20MHz)
Mode 5: Transmit by 802.11ac (40MHz)
Mode 6: Transmit by 802.11ac (80MHz)

Note:

1. Regards to the frequency band operation: the lowest、middle and highest frequency of channel were selected to perform the test, then shown on this report.

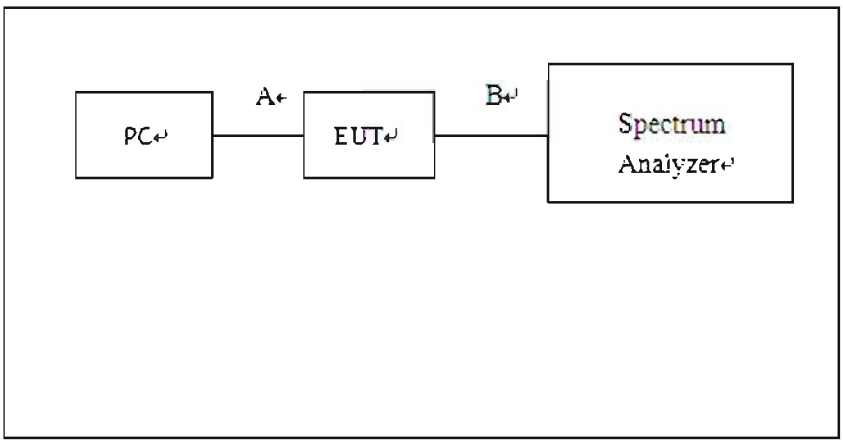
1.3. Tested System Details

The types for all equipments, plus descriptions of all cables used in the tested system (including inserted cards) are:

Product		Manufacturer	Model No.	Serial No.	Power Cord
1	PC	Lenovo	B41	/	Non-Shielded, 1.8m

1.4. Configuration of Tested System

Connection Diagram



Signal Cable Type		Signal cable Description
A	USB Cable	Shielded, >10m
B	LAN Cable	Shielded, 0.5m

1.5. EUT Exercise Software

1	Setup the EUT and simulators as shown on above.
2	Turn on the power of equipment.
3	Execute some commands on the PC provided by applicant.
4	Setup the test channel and the test mode press ok to start the continue transmit.

2. Technical Test

2.1. Summary of Test Result

☒ No deviations from the test standards
☐ Deviations from the test standards as below description:

Performed Test Item	Normative References	Test Performed	Deviation
Conducted Emission	FCC CFR Title 47 Part 15 Subpart C: 2017 Section 15.207 RSS Gen Issue 4	Yes	No
Radiated Emission	FCC CFR Title 47 Part 15 Subpart C: 2017 Section 15.209 RSS Gen Issue 4	Yes	No
6dB Bandwidth	FCC CFR Title 47 Part 15 Subpart C: 2017 Section 15.407(e) RSS 247 Issue 2	Yes	No
99% Occupied Bandwidth	KDB 789033 RSS 247 Issue 2	Yes	No
Duty Cycle	—	No Limit	—
Power Output	FCC CFR Title 47 Part 15 Subpart C: 2017 Section 15.407(a) RSS 247 Issue 2	Yes	No
Power Spectral Density	FCC CFR Title 47 Part 15 Subpart C: 2017 Section 15.407(a) RSS 247 Issue 2	Yes	No
Conducted Band Edges	FCC CFR Title 47 Part 15 Subpart C: 2017 Section 15.407(b) RSS 247 Issue 2	Yes	No

2.2. Test Environment

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	21
Humidity (%RH)	25-75	50
Barometric pressure (mbar)	860-1060	950-1000

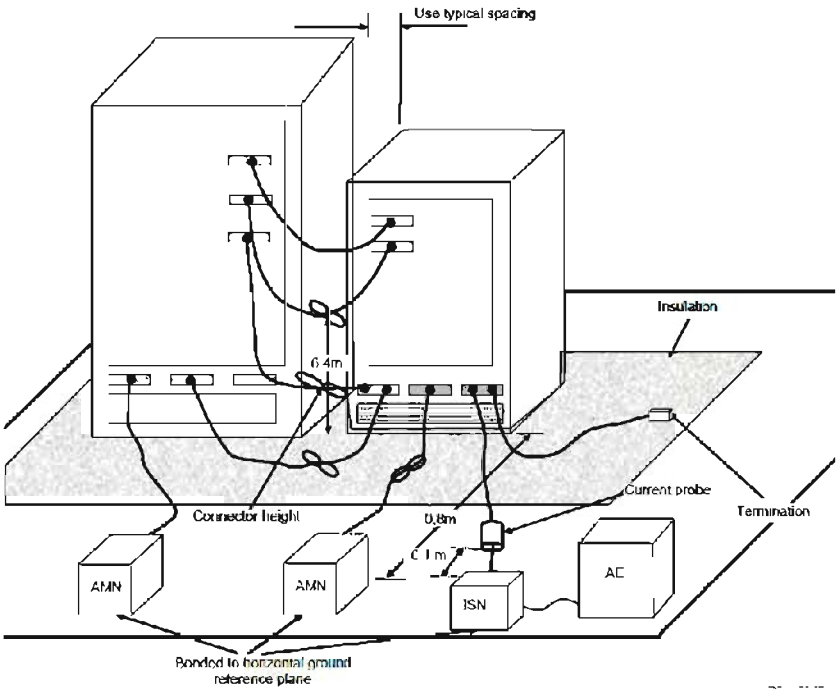
3. Conducted Emission

3.1. Test Equipment

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
EMI Test Receiver	R&S	ESCI	100862	2017.10.23
Two-Line V-Network	R&S	ENV216	102024	2017.10.23
Temperature/Humidity Meter	/	HTC-1	/	2017.11.08
Shielding Room No. 2	EMC	8m*4m*3m	/	2016.08

Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

3.2. Test Setup



3.3. Limit

FCC Part 15 Subpart C Paragraph 15.207 Limits		
Frequency (MHz)	QP (dBμV)	AV (dBμV)
0.15 - 0.50	66 - 56	56 – 46
0.50 - 5.0	56	46
5.0 - 30	60	50

Note 1: The lower limit shall apply at the transition frequencies.

Note 2: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

3.4. Test Procedure

The EUT was setup according to ANSI C63.4: 2014 and tested according to ANSI C63.10: 2013 for compliance to FCC 47CFR 15.247 requirements. The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 10 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from any other grounded conducting surface. The EUT and simulators are connected to the main power through a line impedance stabilization network (LISN). The LISN provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN. (Please refer to the block diagram of the test setup and photographs) Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor, was individually connected through a LISN to the input power source.

The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length.

Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.

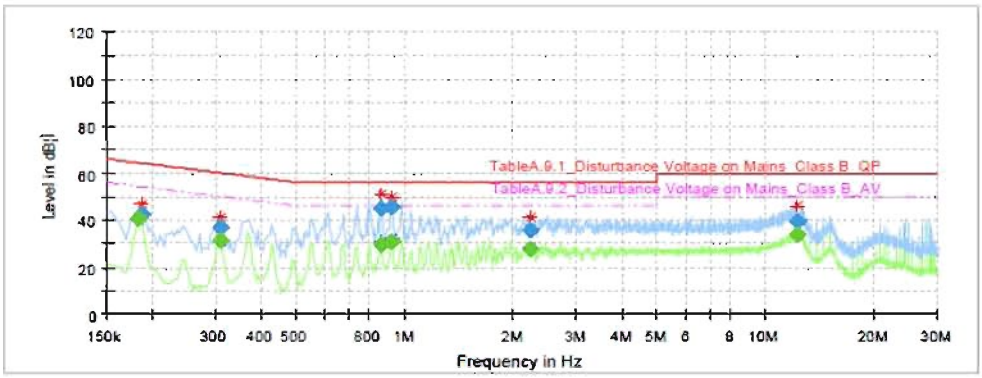
3.5. Uncertainty

The measurement uncertainty is defined as ± 2.02 dB

Note. Conducted emission was conducted at both 120V and 230V, and emission at 230V represents the worst case.

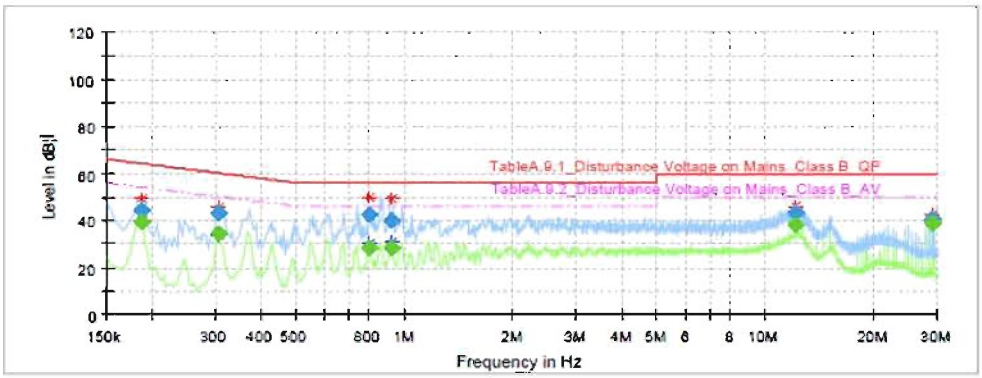
3.6. Test Result

Test Mode: Mode 7	Phase: L



Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.182000	---	40.47	54.39	13.93	1000.0	9.000	L1	ON	10.1
0.186000	42.66	---	64.21	21.55	1000.0	9.000	L1	ON	10.1
0.310000	---	31.14	49.97	18.83	1000.0	9.000	L1	ON	10.1
0.310000	37.01	---	59.97	22.97	1000.0	9.000	L1	ON	10.1
0.858000	---	29.75	46.00	16.25	1000.0	9.000	L1	ON	10.2
0.858000	44.83	---	56.00	11.17	1000.0	9.000	L1	ON	10.2
0.918000	---	30.68	46.00	15.32	1000.0	9.000	L1	ON	10.2
0.922000	45.84	---	56.00	10.16	1000.0	9.000	L1	ON	10.2
2.230000	35.89	---	56.00	20.11	1000.0	9.000	L1	ON	10.2
2.230000	---	27.97	46.00	18.03	1000.0	9.000	L1	ON	10.2
12.234000	39.56	---	60.00	20.44	1000.0	9.000	L1	ON	10.5
12.246000	---	33.85	50.00	16.15	1000.0	9.000	L1	ON	10.5

Test Mode: Mode 7	Phase: N



Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.186000	---	39.32	54.21	14.89	1000.0	9.000	N	ON	10.1
0.186000	44.10	---	64.21	20.11	1000.0	9.000	N	ON	10.1
0.306000	---	34.76	50.08	15.32	1000.0	9.000	N	ON	10.1
0.306000	42.79	---	60.08	17.29	1000.0	9.000	N	ON	10.1
0.794000	---	28.39	46.00	17.61	1000.0	9.000	N	ON	10.2
0.794000	42.68	---	56.00	13.32	1000.0	9.000	N	ON	10.2
0.922000	39.77	---	56.00	16.23	1000.0	9.000	N	ON	10.2
0.922000	---	28.32	46.00	17.68	1000.0	9.000	N	ON	10.2
12.134000	43.09	---	60.00	16.91	1000.0	9.000	N	ON	10.5
12.134000	---	38.32	50.00	11.68	1000.0	9.000	N	ON	10.5
28.894000	---	38.48	50.00	11.52	1000.0	9.000	N	ON	10.8
28.894000	40.55	---	60.00	19.45	1000.0	9.000	N	ON	10.8

4. Radiated Emission

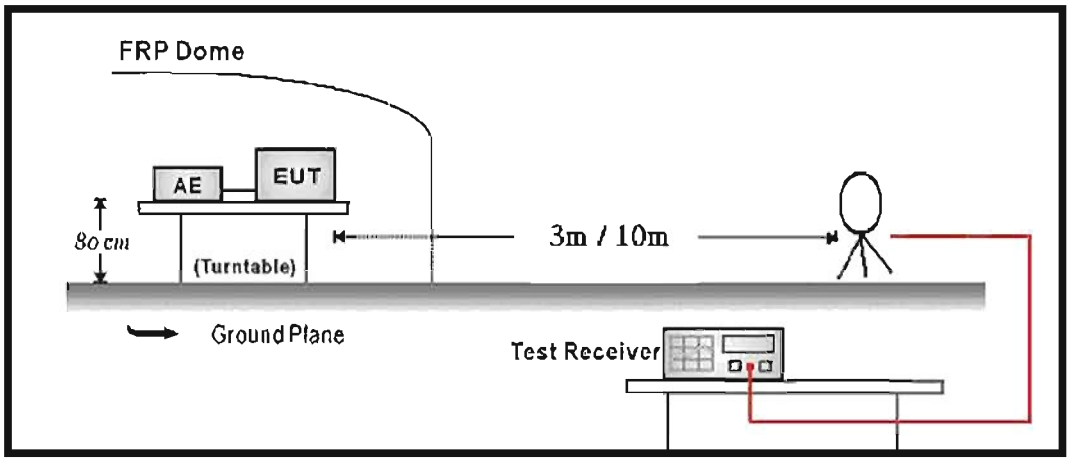
4.1. Test Equipment

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
EMI Test Receiver	R&S	ESR7	100573	2017.10.24
Loop Antenna	R&S	HFH2-Z2	100477	2017.11.05
Ultralog Antenna	R&S	HL562E	100833	2017.02.28
Broad-Band Horn Antenna	R&S	HF907	102500	2017.11.28
Chamber No. 1	EMC	9m*6m*6m	/	2016.08
Temperature/Humidity Meter	/	HTC-1	/	2017.11.08

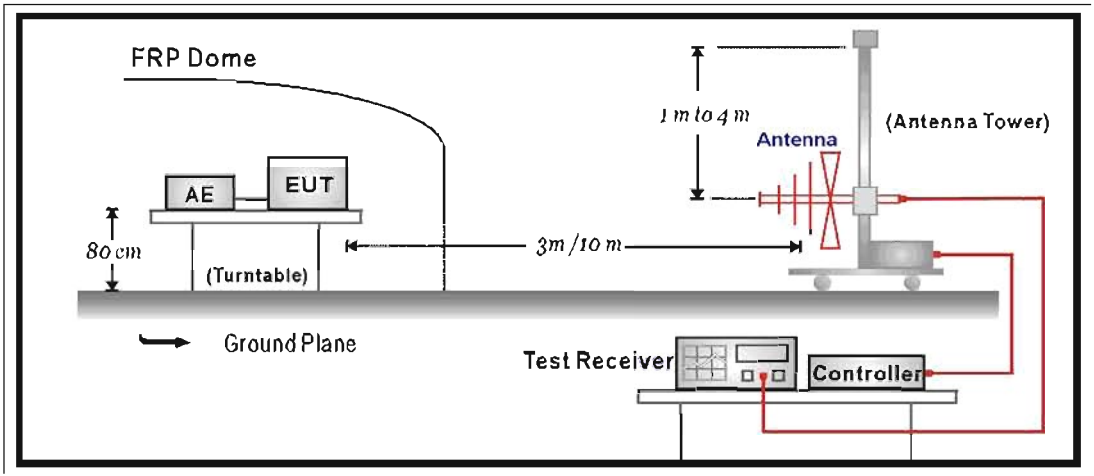
Note 1: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

4.2. Test Setup

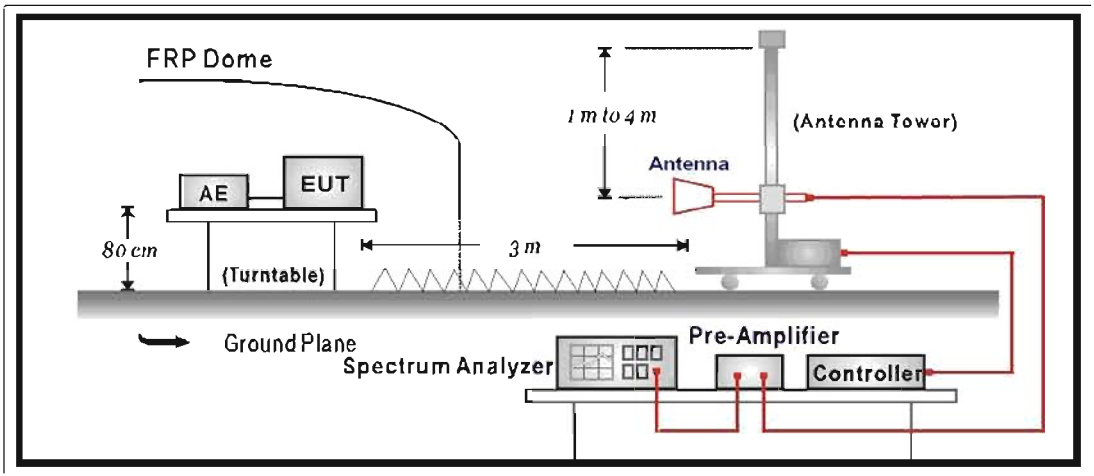
Below 30MHz Test Setup:



Below 1GHz Test Setup:



Above 1GHz Test Setup:



4.3. Limit

FCC Part 15 Subpart C Paragraph 15.209		
Frequency (MHz)	Distance (m)	Level (dBμV/m)
30 - 88	3	40
88 - 216	3	43.5
216 - 960	3	46
Above 960	3	54

Note 1: The lower limit shall apply at the transition frequency.

Note 2: Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

Note 3: E field strength (dBμV/m) = 20 log E field strength (μV/m)

4.4. Test Procedure

The EUT was setup according to ANSI C63.4: 2014 and tested according to ANSI C63.10: 2013 and KDB 558074 for compliance to FCC 47CFR 15.247 requirements.

The EUT is placed on a turn table which is 0.1 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.4: 2014 on radiated measurement.

The resolution bandwidth below 1GHz setting on the field strength meter is 120 kHz and above 1GHz is 1MHz.

The frequency range from 30MHz to 10th harmonic is checked.

Note: When doing emission measurement above 1GHz, the horn antenna will be bended down a little (as horn antenna has the narrow beamwidth) in order to keeping the antenna in the "cone of radiation" of EUT. The 3dB beamwidth is 60 degrees for H-plane and 90 degrees for E-plane.

4.5. Uncertainty

The measurement uncertainty above 1G is defined as ± 3.9 dB

below 1G is defined as ± 3.8 dB

4.6. Test Result

All of the test result shown indicates the worst case, and spectrum analyzer parameters setting as shown below:

Peak detector: RBW = 1MHz, VBW = 3MHz, sweep time = 200ms;

Average detector: RBW = 1MHz, VBW = 10Hz, sweep time = auto.

Measure Level = Reading Level + Cable Loss + Antenna Factor - Preamplifier Gain

9kHz-30MHz

Frequency(MHz)	Reading(dBμV/m)	Limit(dBμV/m)	Margin(dB)	Pass/Fail
—	—	—	—	Pass
—	—	—	—	Pass

Note: The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Distance extrapolation factor =40 log (specific distance/test distance)(dB);

Limit line = specific limits(dBμv) + distance extrapolation factor.

30MHz-1GHz

Polar (H/V)	Frequency (MHz)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
V	74.4530	36.97	40.00	-3.03	QP
V	109.4352	40.11	43.50	-3.39	QP
V	167.7828	39.60	43.50	-3.80	QP
V	254.2845	40.98	46.00	-5.02	QP
V	340.1935	36.11	46.00	-9.89	QP
V	673.3879	40.13	46.00	-5.87	QP
H	78.7086	36.12	40.00	-3.88	QP
H	150.8397	39.74	43.50	-3.76	QP
H	215.4586	37.84	43.50	-5.66	QP
H	338.1084	37.15	46.00	-8.85	QP
H	419.1871	35.46	46.00	-10.54	QP
H	611.1627	38.72	46.00	-7.28	QP

Note: 802.11a mode is the worst mode.

Above 1GHz

802.11a

Polar (H/V)	Frequency (MHz)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
Low Channel(5180MHz)					
V	10360	60.83	74	-13.17	Pk
V	10360	46.51	54	-7.49	Av
V	15540	58.74	74	-15.26	Pk
H	10360	60.78	74	-13.22	Pk

H	10360	47.02	54	-6.98	Av
H	15540	59.03	74	-14.97	Pk
Mid Channel(5200MHz)					
V	10400	59.81	74	-14.19	Pk
V	15600	60.15	74	-12.85	Pk
H	10400	60.09	74	-13.91	Pk
H	15600	59.73	74	-14.27	Pk
High Channel(5240MHz)					
V	10480	60.14	74	-13.86	Pk
V	15720	60.77	74	-13.23	Pk
H	10480	61.44	74	-12.56	Pk
H	15720	59.92	74	-14.08	Pk
Low Channel(5745MHz)					
V	11490	60.39	74	-13.61	Pk
V	17235	58.94	74	-15.06	Av
H	11490	59.84	74	-14.16	Pk
H	17235	60.08	74	-13.92	Pk
Mid Channel(5785MHz)					
V	11570	59.93	74	-14.07	Pk
V	17355	58.97	74	-15.03	Av
H	11570	59.48	74	-14.52	Pk
H	17355	60.06	74	-13.94	Pk
Low Channel(5825MHz)					
V	11650	60.01	74	-13.99	Pk
V	17475	59.21	74	-14.79	Av
H	11650	58.94	74	-15.06	Pk
H	17475	60.35	74	-13.65	Pk

802.11n (20MHz)

Polar (H/V)	Frequency (MHz)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
Low Channel(5180MHz)					
V	10360	60.80	74	-13.20	Pk
V	10360	46.31	54	-7.69	Av
V	15540	58.64	74	-15.36	Pk
H	10360	60.17	74	-13.83	Pk
H	10360	47.01	54	-6.99	Av
H	15540	59.12	74	-14.88	Pk
Mid Channel(5200MHz)					
V	10400	59.71	74	-14.29	Pk
V	15600	60.05	74	-12.95	Pk
H	10400	60.11	74	-13.89	Pk
H	15600	59.44	74	-14.56	Pk

High Channel(5240MHz)					
V	10480	60.04	74	-13.96	Pk
V	15720	60.37	74	-13.63	Pk
H	10480	61.28	74	-12.72	Pk
H	15720	59.65	74	-14.35	Pk
Low Channel(5745MHz)					
V	11490	60.26	74	-13.74	Pk
V	17235	58.85	74	-15.15	Av
H	11490	59.49	74	-14.51	Pk
H	17235	60.04	74	-13.96	Pk
Mid Channel(5785MHz)					
V	11570	59.83	74	-14.17	Pk
V	17355	58.89	74	-15.11	Av
H	11570	59.58	74	-14.42	Pk
H	17355	59.97	74	-14.03	Pk
Low Channel(5825MHz)					
V	11650	60.02	74	-13.98	Pk
V	17475	59.13	74	-14.87	Av
H	11650	58.51	74	-15.49	Pk
H	17475	60.27	74	-13.73	Pk

802.11n (40MHz)

Polar (H/V)	Frequency (MHz)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
Low Channel(5190MHz)					
V	10380	60.79	74	-13.21	Pk
V	10380	46.31	54	-7.69	Av
V	15570	58.64	74	-15.36	Pk
H	10380	60.17	74	-13.83	Pk
H	10380	47.01	54	-6.99	Av
H	15570	59.12	74	-14.88	Pk
High Channel(5230MHz)					
V	10460	59.71	74	-14.29	Pk
V	15690	60.05	74	-12.95	Pk
H	10460	60.11	74	-13.89	Pk
H	15690	59.44	74	-14.56	Pk
Low Channel(5755MHz)					
V	11510	60.04	74	-13.96	Pk
V	17265	60.37	74	-13.63	Pk
H	11510	61.28	74	-12.72	Pk
H	17265	59.65	74	-14.35	Pk
High Channel(5795MHz)					
V	11590	60.26	74	-13.74	Pk

V	17385	58.85	74	-15.15	Av
H	11590	59.49	74	-14.51	Pk
H	17385	60.04	74	-13.96	Pk

802.11ac (20MHz)

Polar (H/V)	Frequency (MHz)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
Low Channel(5180MHz)					
V	10360	60.81	74	-13.19	Pk
V	10360	46.51	54	-7.49	Av
V	15540	58.47	74	-15.53	Pk
H	10360	60.08	74	-13.92	Pk
H	10360	46.71	54	-7.29	Av
H	15540	59.16	74	-14.84	Pk
Mid Channel(5200MHz)					
V	10400	59.63	74	-14.37	Pk
V	15600	60.02	74	-12.98	Pk
H	10400	60.17	74	-13.83	Pk
H	15600	59.25	74	-14.75	Pk
High Channel(5240MHz)					
V	10480	60.07	74	-13.93	Pk
V	15720	60.62	74	-13.38	Pk
H	10480	61.16	74	-12.84	Pk
H	15720	59.71	74	-14.29	Pk
Low Channel(5745MHz)					
V	11490	60.16	74	-13.94	Pk
V	17235	58.58	74	-15.42	Av
H	11490	59.37	74	-14.63	Pk
H	17235	60.03	74	-13.97	Pk
Mid Channel(5785MHz)					
V	11570	59.78	74	-14.22	Pk
V	17355	58.49	74	-15.51	Av
H	11570	59.18	74	-14.92	Pk
H	17355	59.36	74	-14.64	Pk
Low Channel(5825MHz)					
V	11650	60.11	74	-13.89	Pk
V	17475	59.03	74	-14.97	Av
H	11650	58.41	74	-15.59	Pk
H	17475	60.05	74	-13.95	Pk

802.11ac (40MHz)

Polar (H/V)	Frequency (MHz)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type

Low Channel(5190MHz)					
V	10380	60.77	74	-13.23	Pk
V	10380	47.01	54	-6.99	Av
V	15570	58.54	74	-15.46	Pk
H	10380	60.15	74	-13.85	Pk
H	10380	47.31	54	-6.69	Av
H	15570	59.23	74	-14.77	Pk
High Channel(5230MHz)					
V	10460	59.69	74	-14.31	Pk
V	15690	60.75	74	-12.25	Pk
H	10460	60.08	74	-13.92	Pk
H	15690	59.34	74	-14.66	Pk
Low Channel(5755MHz)					
V	11510	59.94	74	-14.06	Pk
V	17265	60.28	74	-13.72	Pk
H	11510	61.01	74	-12.99	Pk
H	17265	59.77	74	-14.23	Pk
High Channel(5795MHz)					
V	11590	60.12	74	-13.98	Pk
V	17385	59.05	74	-14.95	Av
H	11590	59.37	74	-14.63	Pk
H	17385	59.99	74	-14.01	Pk

802.11ac (80MHz)

Polar (H/V)	Frequency (MHz)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
Low Channel(5210MHz)					
V	10420	59.80	74	-14.20	Pk
V	10420	46.13	54	-7.87	Av
V	15630	58.42	74	-15.58	Pk
H	10420	60.07	74	-13.93	Pk
H	10420	47.01	54	-6.99	Av
H	15630	59.03	74	-14.97	Pk
High Channel(5775MHz)					
V	11550	58.71	74	-15.29	Pk
V	17325	59.94	74	-14.06	Pk
H	11550	59.11	74	-14.89	Pk
H	17325	59.71	74	-14.29	Pk

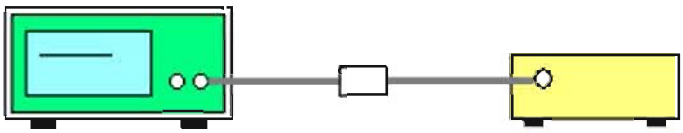
5. 6dB Bandwidth

5.1. Test Equipment

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	R&S	FSV40	101155	2017.10.24
Shielding Room No. 1	EMC	9m*4m*3m	/	2016.08
Temperature/Humidity Meter	/	HTC-1	/	2017.11.08

Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

5.2. Test Setup



5.3. Limit

Within the 5.725-5.85GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

5.4. Test Procedure

1. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
2. Set to the maximum power setting and enable the EUT transmit continuously.
3. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100kHz.Set the Video bandwidth (VBW) = 300 kHz. In order to make an accurate measurement, the 6dB bandwidth must be greater than 500 kHz.

5.5. Uncertainty

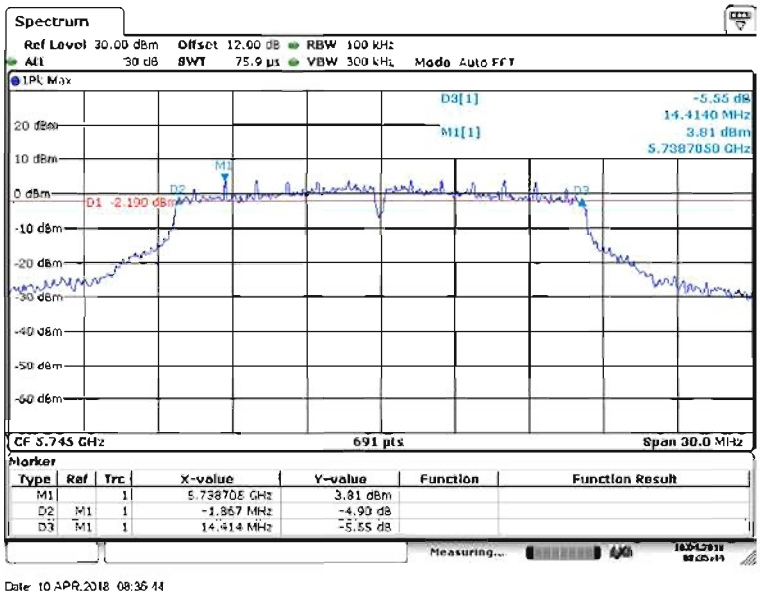
The measurement uncertainty is defined as ± 1.27 dB.

5.6. Test Result

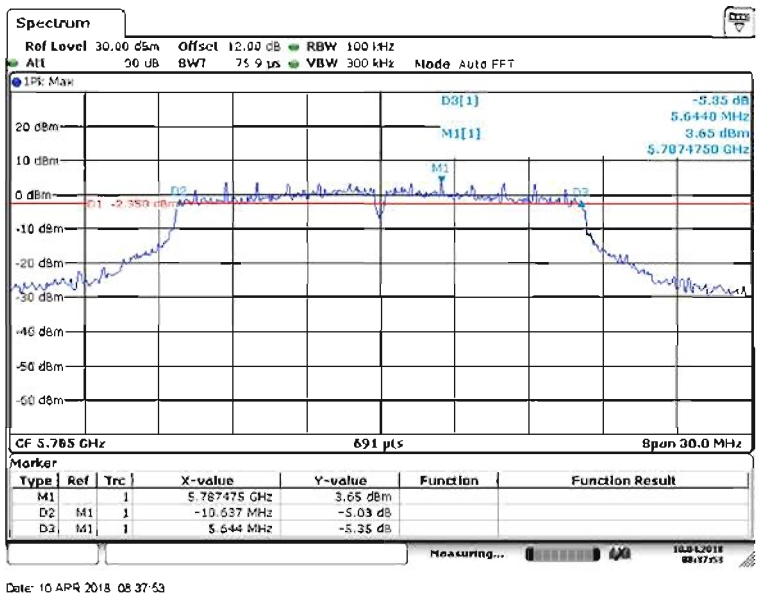
Test Item	: 6 dB Bandwidth
Test Mode	: Mode 1: Transmit by 802.11a

Channel	Frequency(MHz)	6dB Bandwidth(MHz)	Limit(MHz)	Pass/Fail
149	5745	16.281	0.5	Pass
157	5785	16.281	0.5	Pass
165	5825	16.367	0.5	Pass

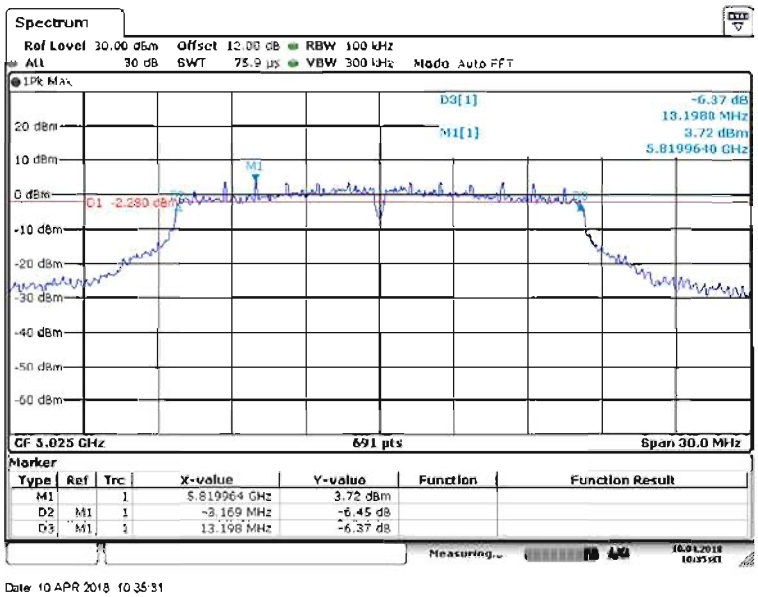
Channel 149 (5745MHz)



Channel 157 (5785MHz)



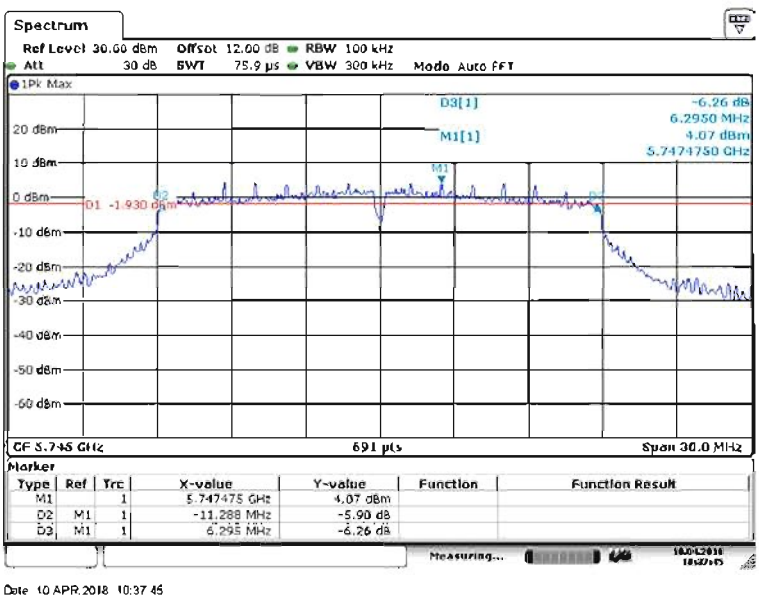
Channel 165 (5825MHz)



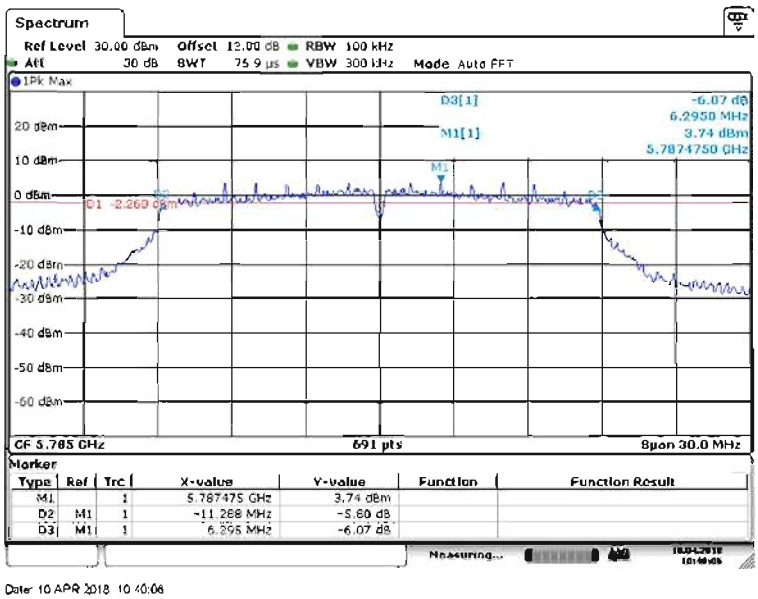
Test Item	: 6 dB Bandwidth
Test Mode	: Mode 2: Transmit by 802.11n(20MHz)

Channel	Frequency(MHz)	6dB Bandwidth(MHz)	Limit(MHz)	Pass/Fail
149	5745	17.583	0.5	Pass
157	5785	17.583	0.5	Pass
165	5825	17.583	0.5	Pass

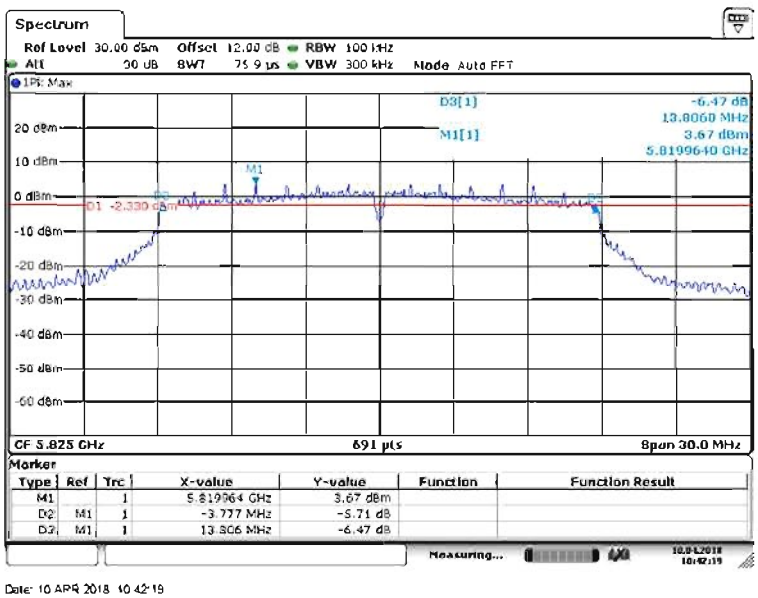
Channel 149 (5745MHz)



Channel 157 (5785MHz)



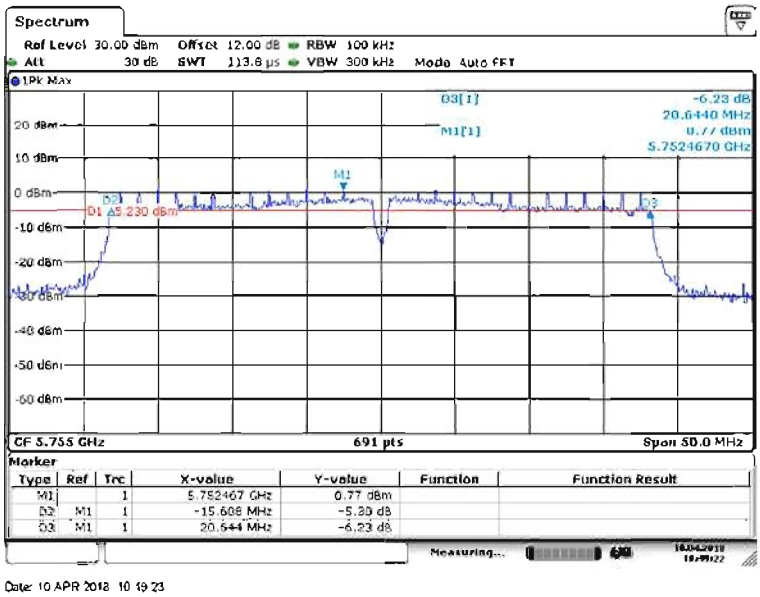
Channel 165 (5825MHz)



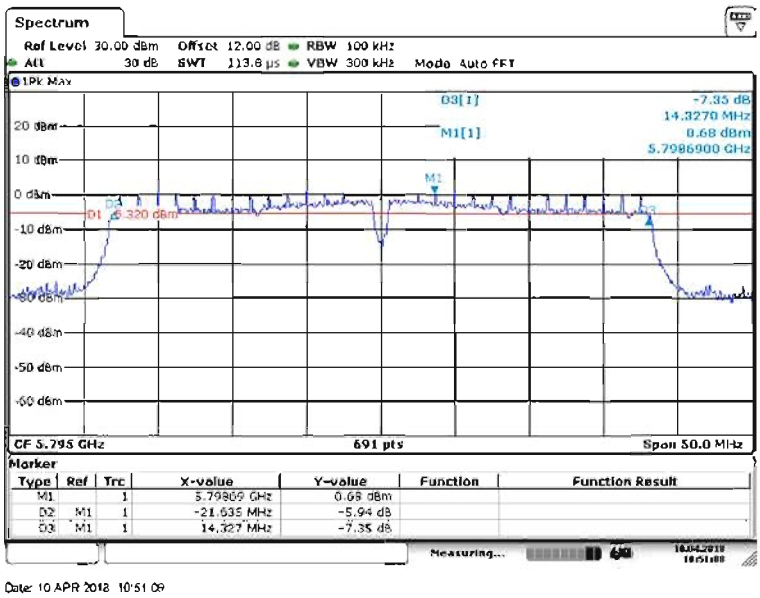
Test Item	: 6 dB Bandwidth
Test Mode	: Mode 3: Transmit by 802.11n(40MHz)

Channel	Frequency(MHz)	6dB Bandwidth(MHz)	Limit(MHz)	Pass/Fail
151	5755	36.252	0.5	Pass
159	5795	35.962	0.5	Pass

Channel 151 (5755MHz)



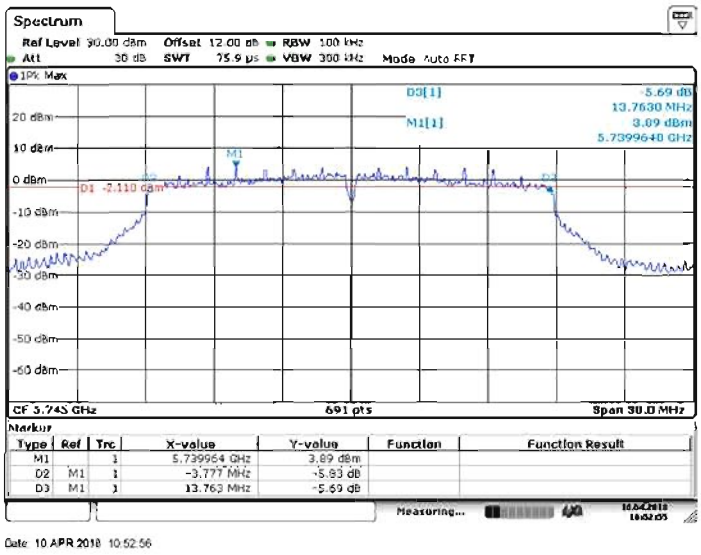
Channel 159 (5795MHz)



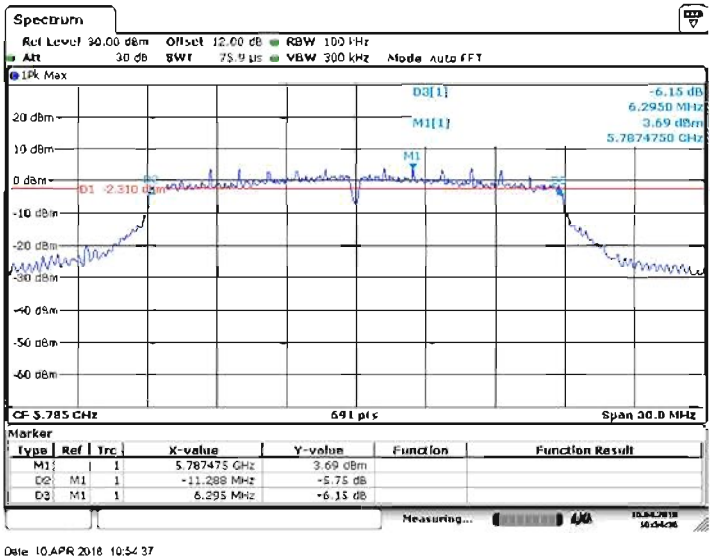
Test Item	: 6 dB Bandwidth
Test Mode	: Mode 4: Transmit by 802.11ac(20MHz)

Channel	Frequency(MHz)	6dB Bandwidth(MHz)	Limit(MHz)	Pass/Fail
149	5745	17.54	0.5	Pass
157	5785	17.583	0.5	Pass
165	5825	17.583	0.5	Pass

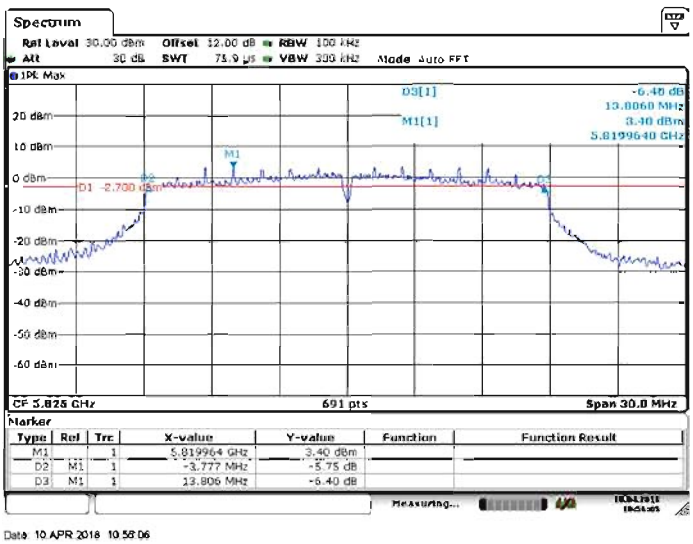
Channel 149 (5745MHz)



Channel 157 (5785MHz)



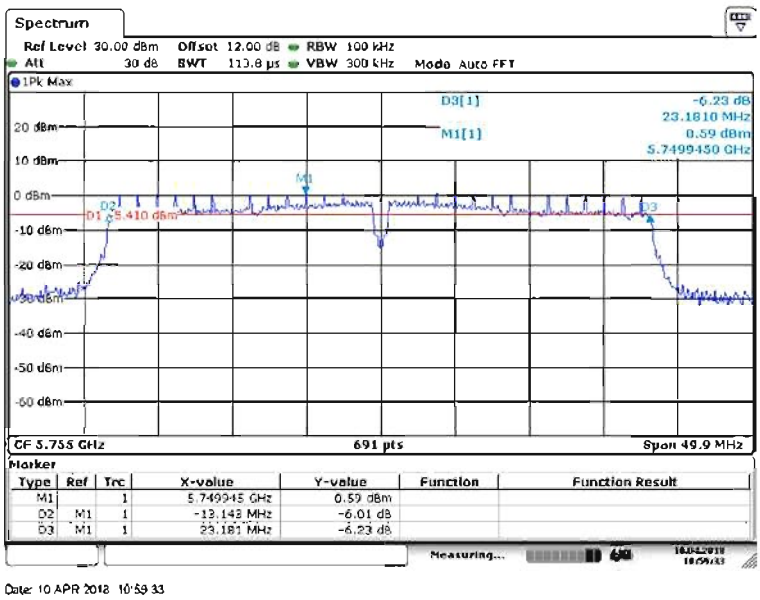
Channel 165 (5825MHz)



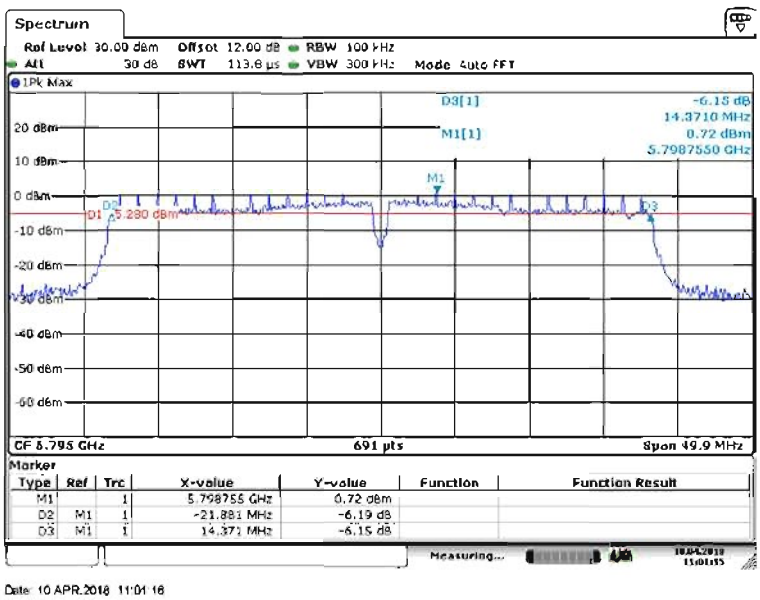
Test Item	: 6 dB Bandwidth
Test Mode	: Mode 5: Transmit by 802.11ac(40MHz)

Channel	Frequency(MHz)	6dB Bandwidth(MHz)	Limit(MHz)	Pass/Fail
151	5755	36.324	0.5	Pass
159	5795	36.252	0.5	Pass

Channel 151 (5755MHz)



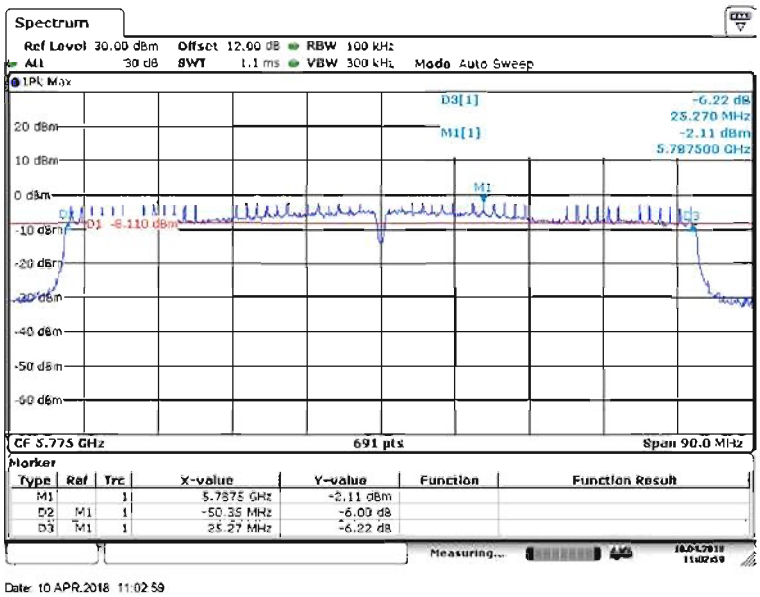
Channel 159 (5795MHz)



Test Item	: 6 dB Bandwidth
Test Mode	: Mode 6: Transmit by 802.11ac(80MHz)

Channel	Frequency(MHz)	6dB Bandwidth(MHz)	Limit(MHz)	Pass/Fail
155	5775	75.62	0.5	Pass

Channel 155 (5775MHz)



6. 99% Occupied Bandwidth

6.1. Test Equipment

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	R&S	FSV40	101155	2017.10.24
Shielding Room No. 1	EMC	9m*4m*3m	/	2016.08
Temperature/Humidity Meter	/	HTC-1	/	2017.11.08

Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

6.2. Test Setup

6.3. Limit

N/A

6.4. Test Procedure

The EUT was tested according to KDB 789033 for compliance to FCC 47CFR 15.407 requirements.

- Set center frequency to the nominal EUT channel center frequency.
- Set span = 1.5 times to 5.0 times the OBW.
- Set RBW = 1% to 5% of the OBW.
- Set the VBW ≥ 3RBW
- Use a peak detector.
- Use the 99% power bandwidth function of the instrument.

6.5. Uncertainty

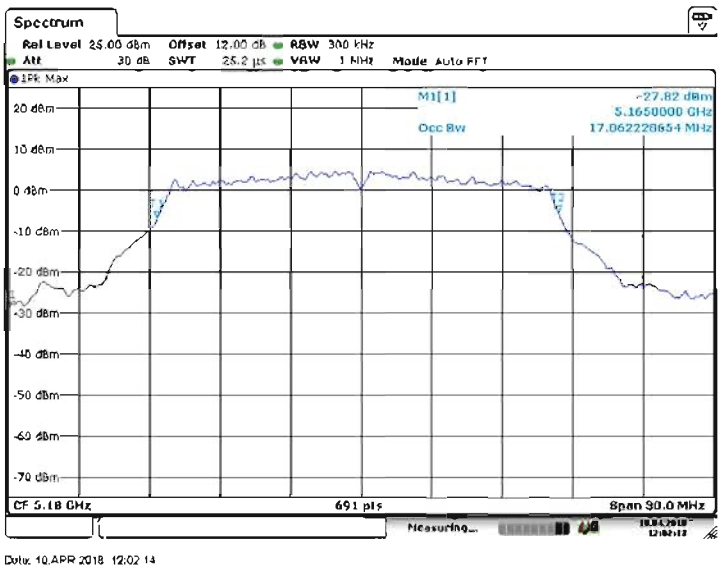
The measurement uncertainty is defined as ± 1 kHz.

6.6. Test Result

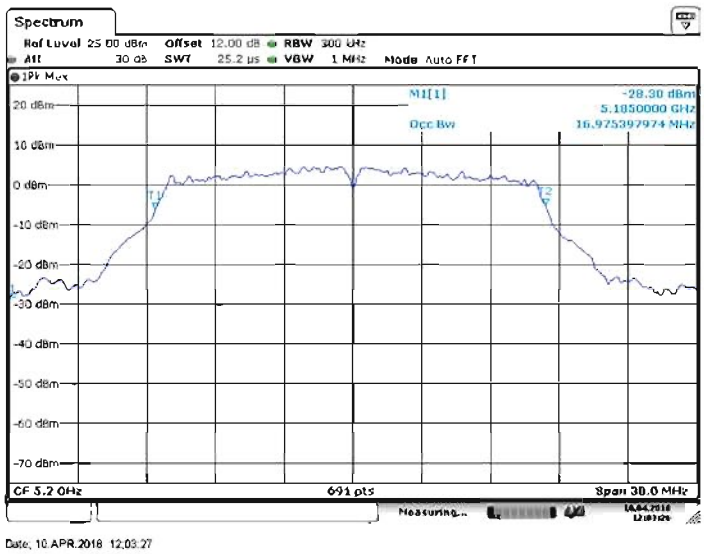
Test Item	: 99% Occupied Bandwidth
Test Mode	: Mode 1: Transmit by 802.11a

Channel	Frequency(MHz)	99% Occupied Bandwidth(MHz)
36	5180	17.062
40	5200	16.975
48	5240	16.932
149	5745	17.149
157	5785	17.149
165	5825	17.106

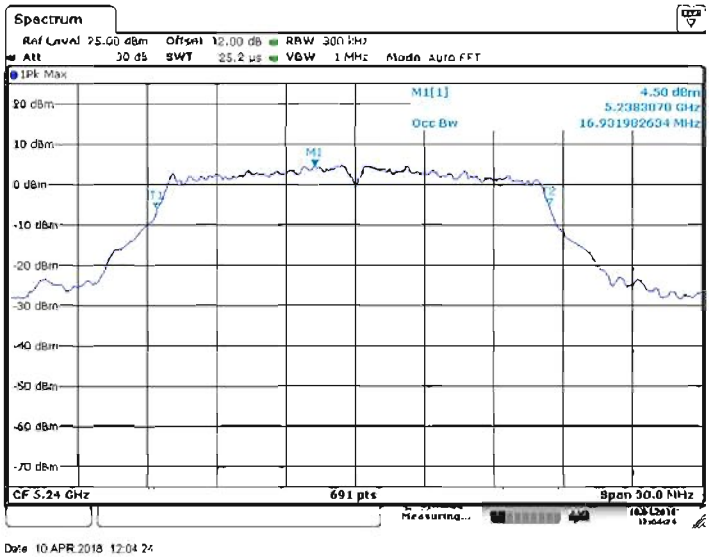
Channel 36 (5180MHz)



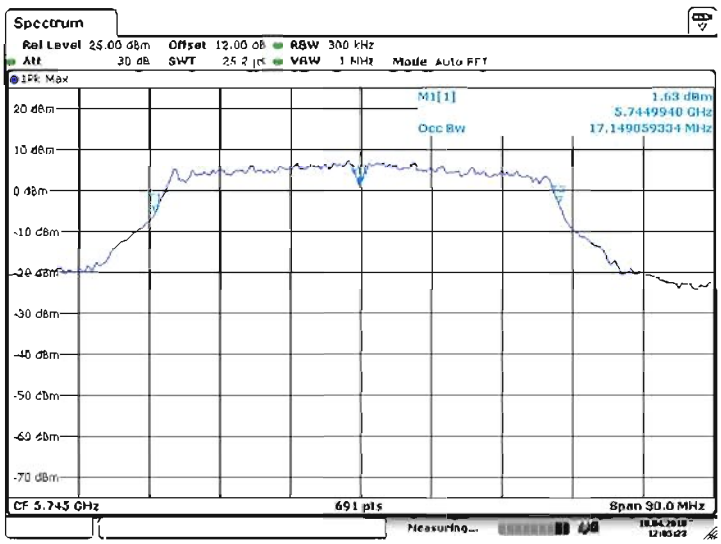
Channel 40 (5200MHz)



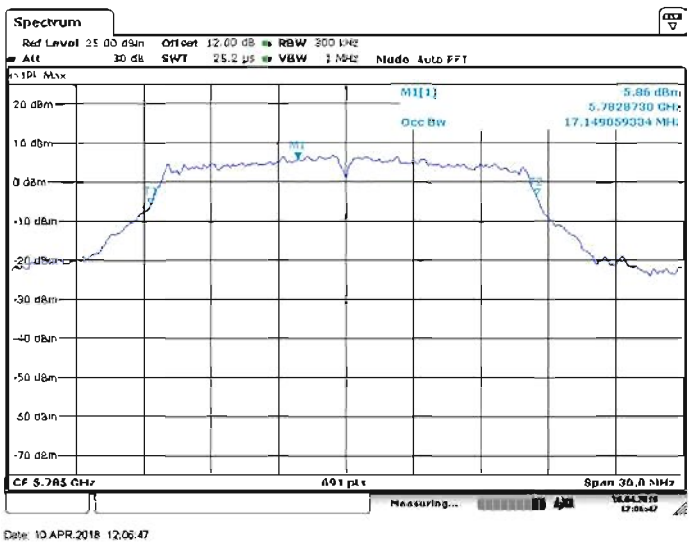
Channel 48 (5240MHz)



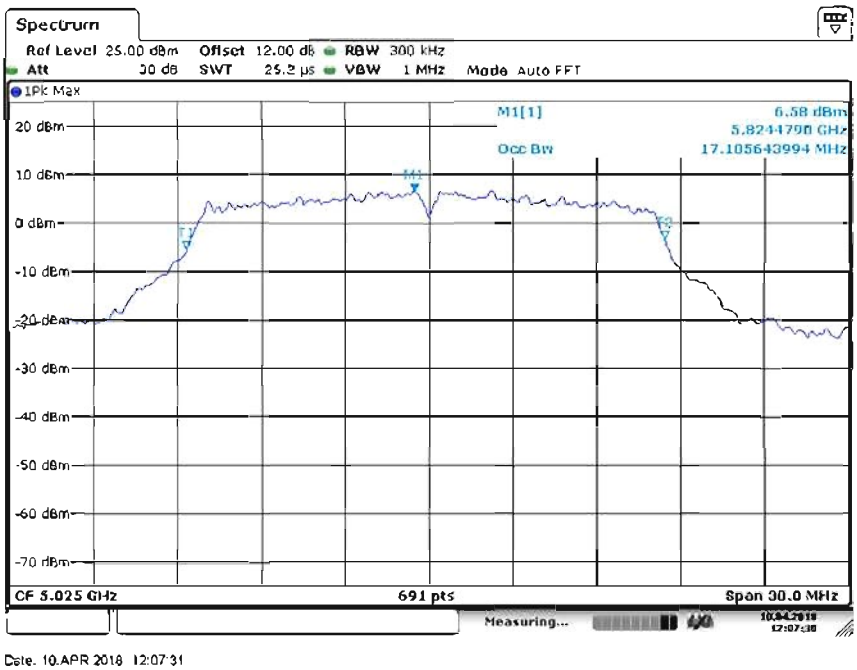
Channel 149 (5745MHz)



Channel 157 (5785MHz)



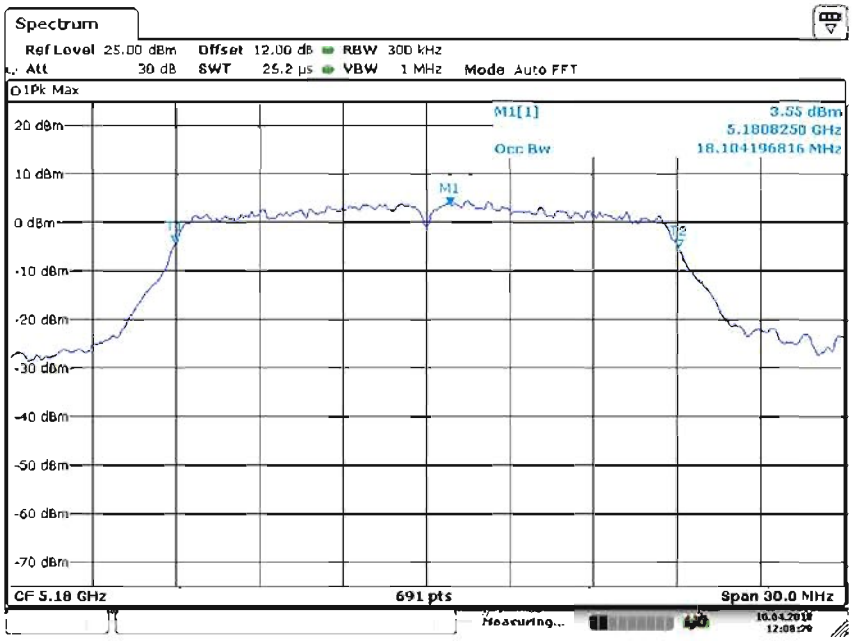
Channel 165 (5825MHz)



Test Item	: 99% Occupied Bandwidth
Test Mode	: Mode 2: Transmit by 802.11n(20MHz)

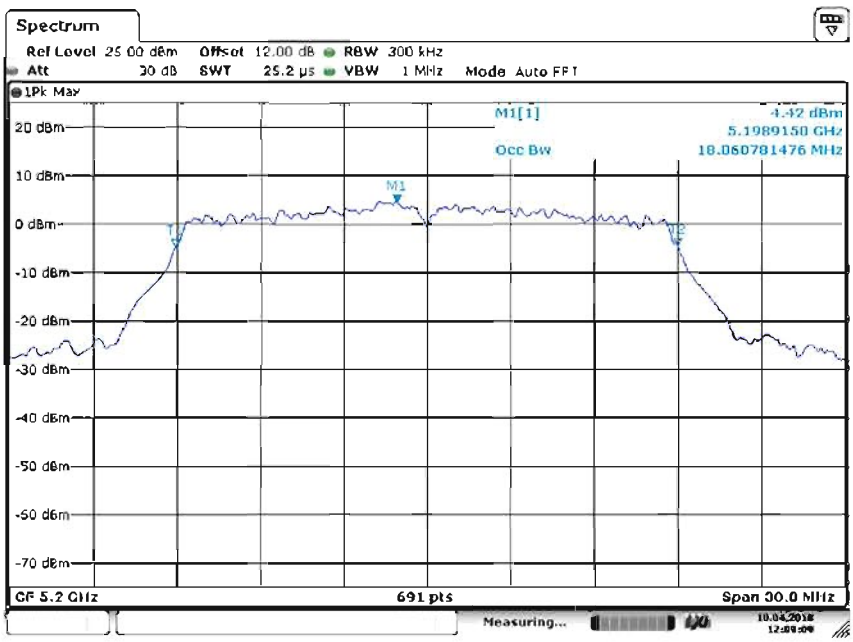
Channel	Frequency(MHz)	99% Occupied Bandwidth(MHz)
36	5180	18.104
40	5200	18.061
48	5240	18.278
149	5745	18.321
157	5785	18.234
165	5825	18.104

Channel 36 (5180MHz)



Date 10.APR.2018 12:08:29

Channel 40 (5200MHz)



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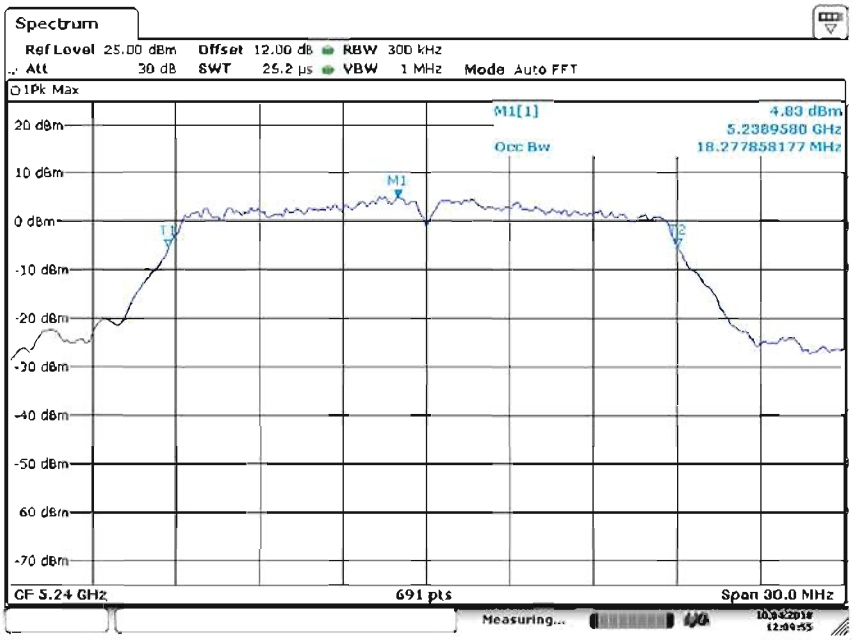
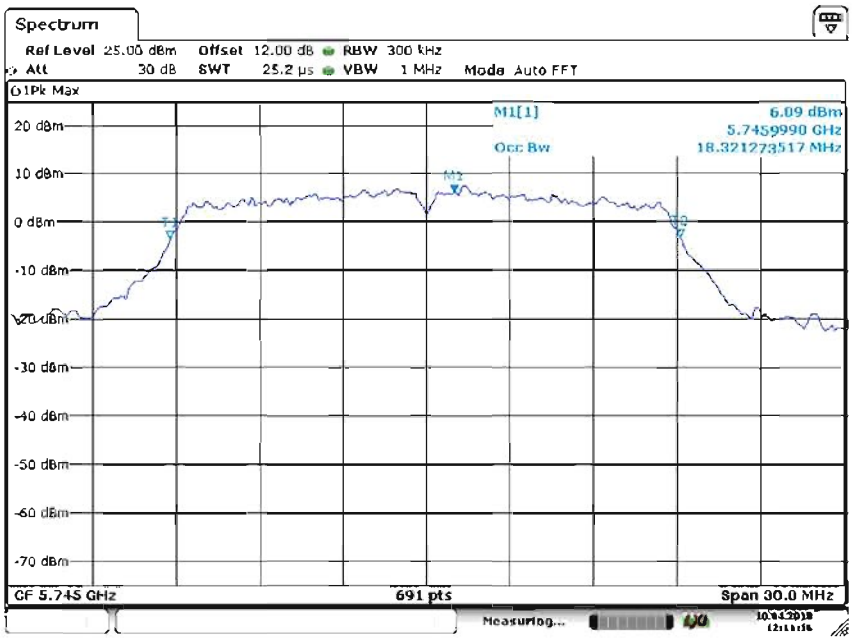
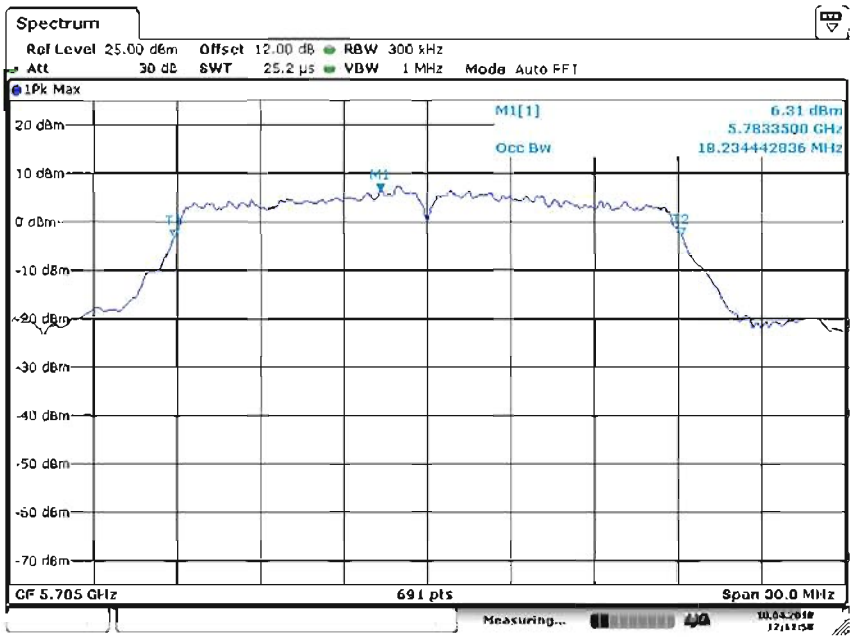
Channel 48 (5240MHz)



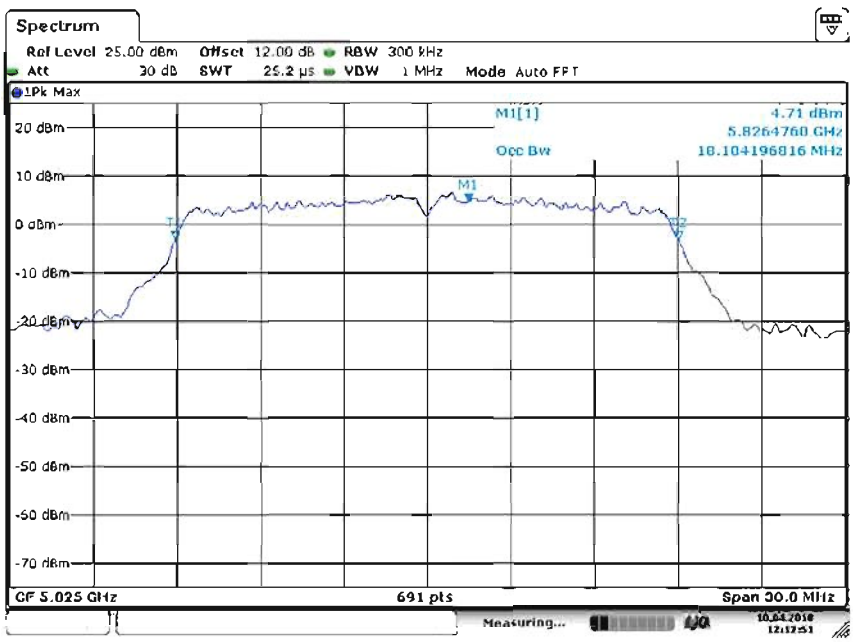
Channel 149 (5745MHz)



Channel 157 (5785MHz)



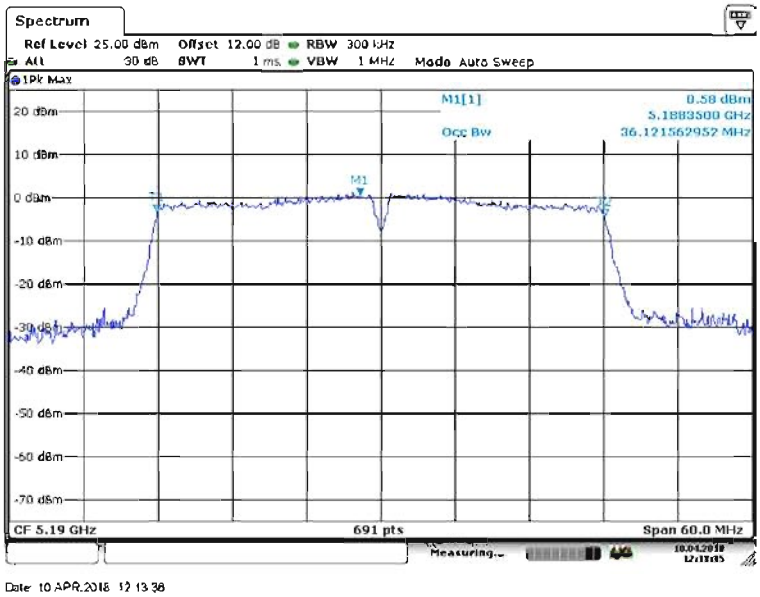
Channel 165 (5825MHz)



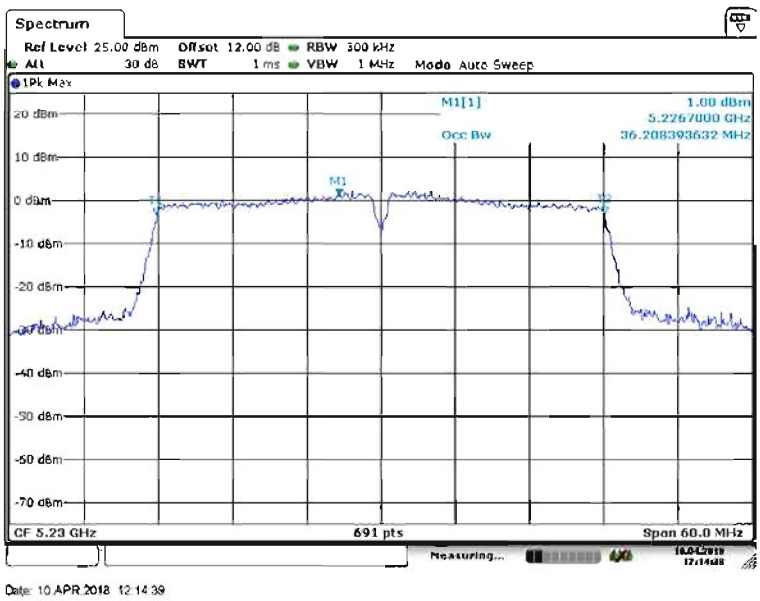
Test Item	: 99% Occupied Bandwidth
Test Mode	: Mode 3: Transmit by 802.11n(40MHz)

Channel	Frequency(MHz)	99% Occupied Bandwidth(MHz)
38	5190	36.122
46	5230	36.208
151	5755	36.295
159	5795	36.295

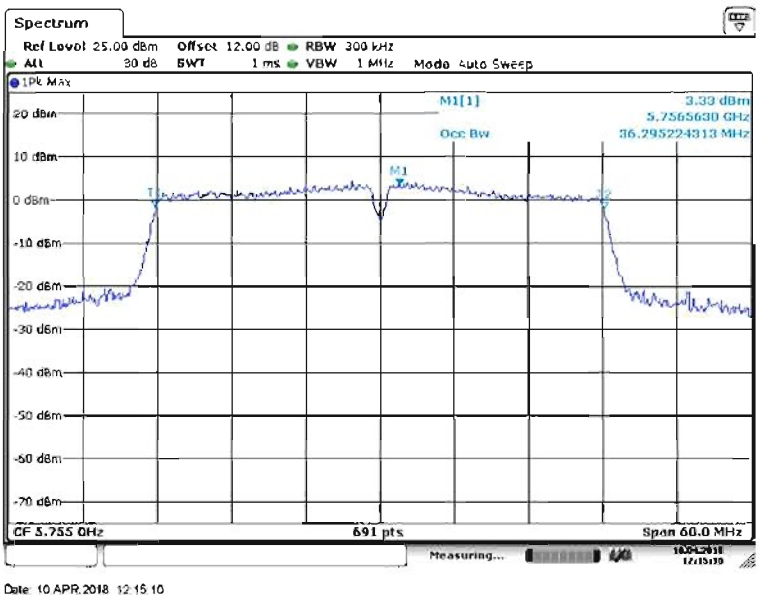
Channel 38 (5190MHz)



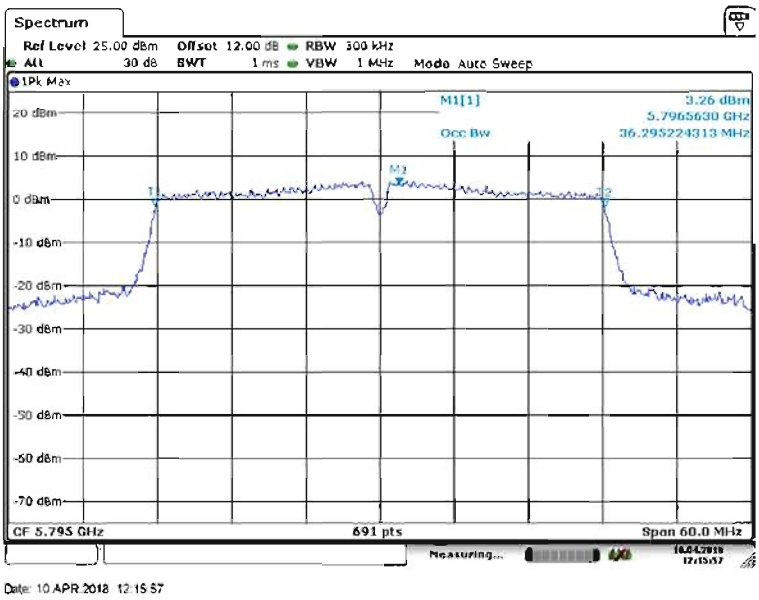
Channel 46 (5230MHz)



Channel 151 (5755MHz)



Channel 159 (5795MHz)

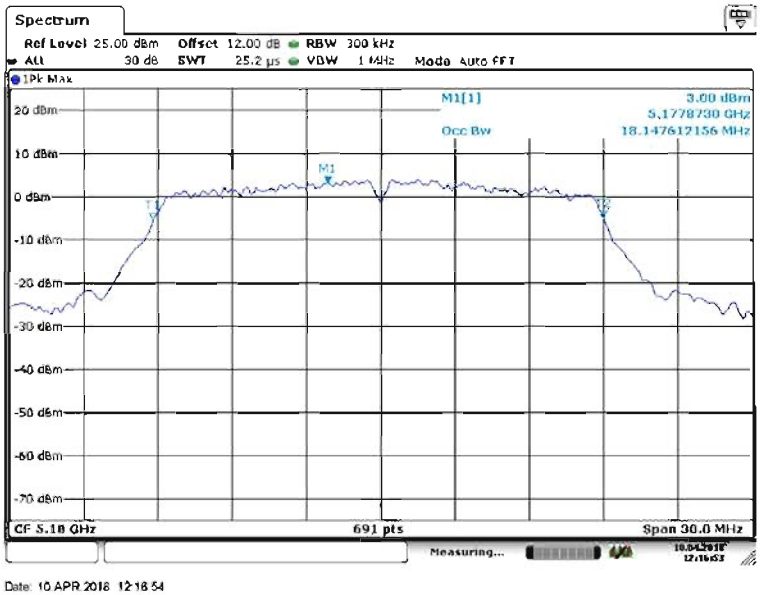


Test Item	: 99% Occupied Bandwidth
Test Mode	: Mode 4: Transmit by 802.11ac(20MHz)

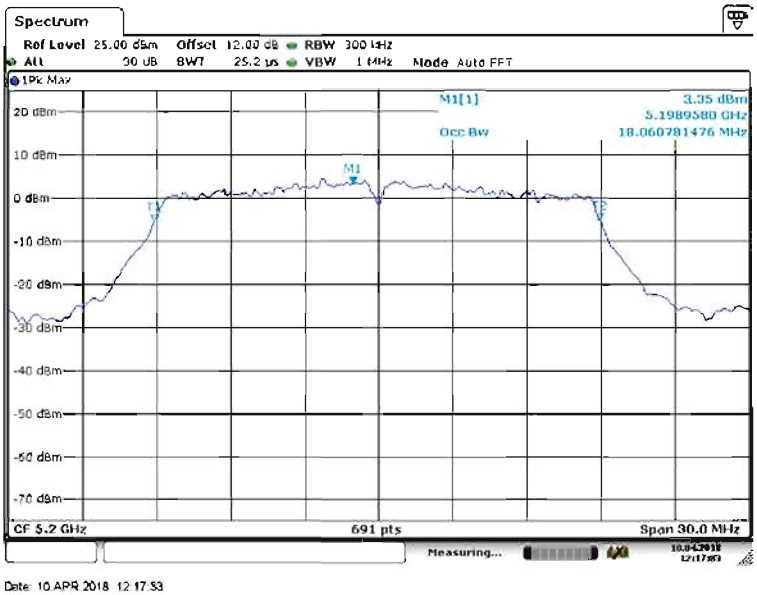
Channel	Frequency(MHz)	99% Occupied Bandwidth(MHz)
36	5180	18.148
40	5200	18.061
48	5240	18.061

149	5745	18.148
157	5785	18.104
165	5825	18.321

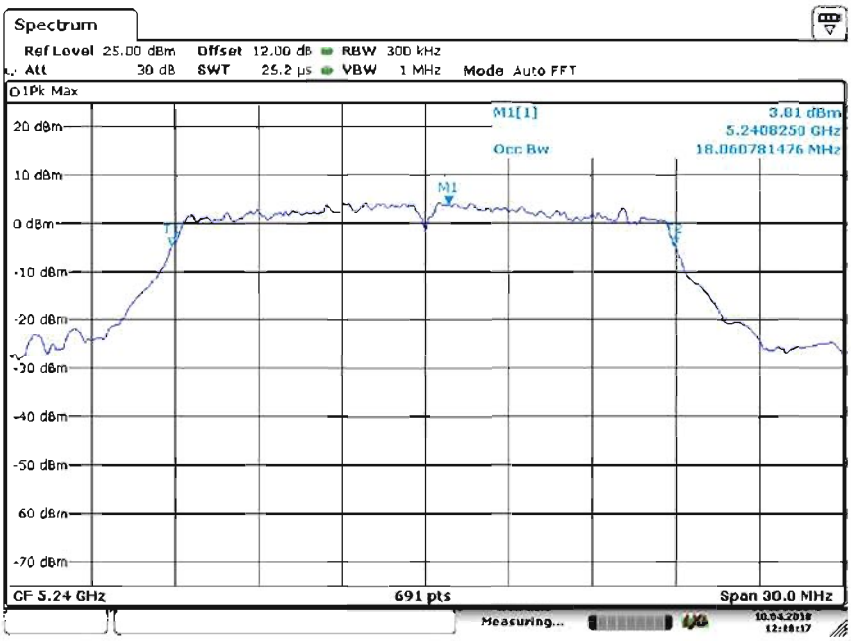
Channel 36 (5180MHz)



Channel 40 (5200MHz)

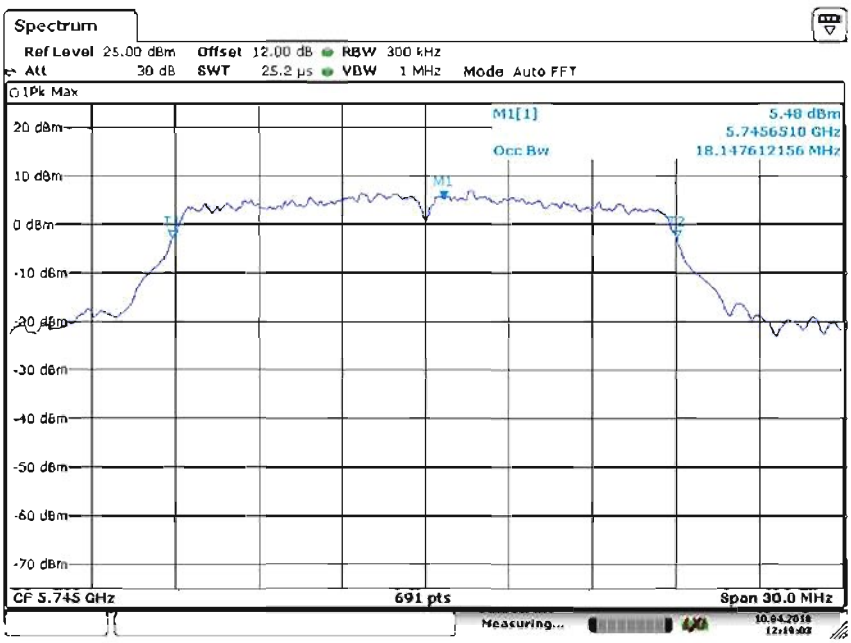


Channel 48 (5240MHz)



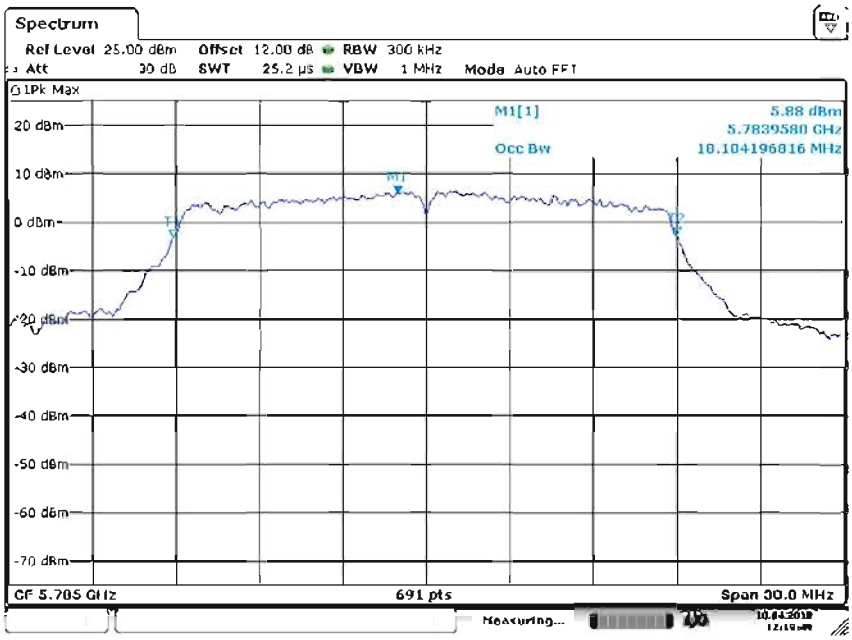
Date 10.APR.2018 12:18:18

Channel 149 (5745MHz)

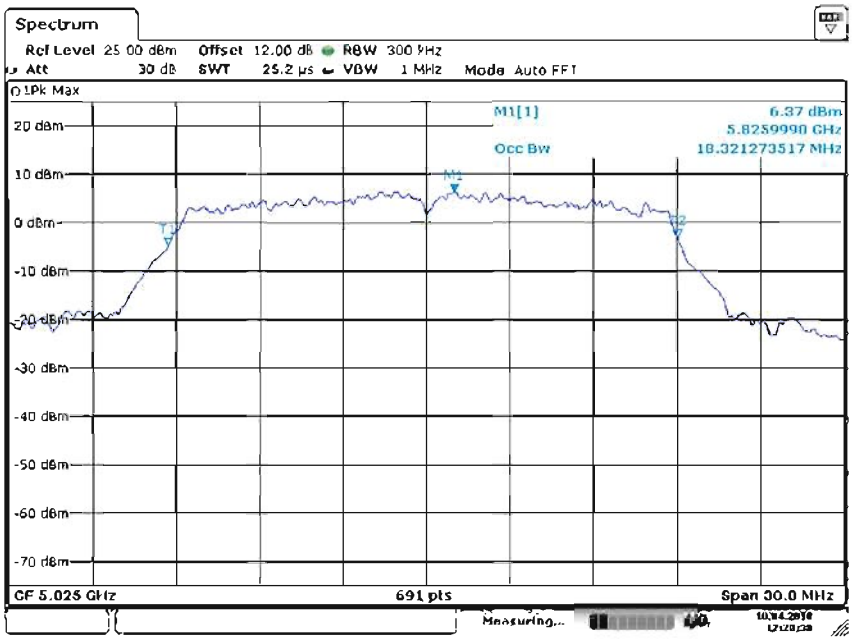


Date 10.APR.2018 12:19:03

Channel 157 (5785MHz)



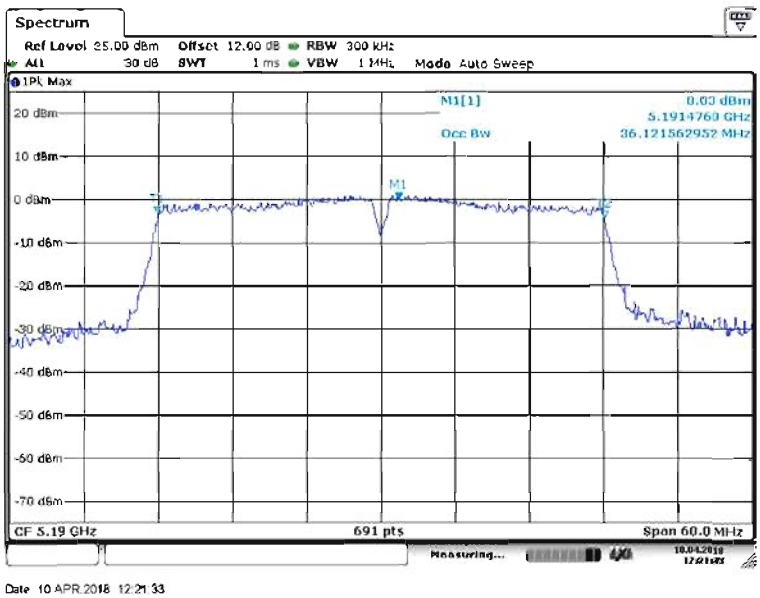
Channel 165 (5825MHz)



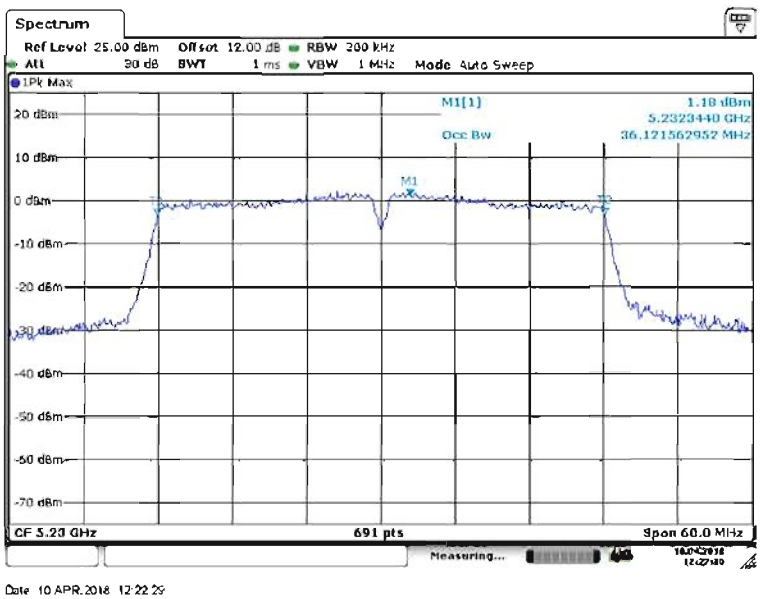
Test Item	: 99% Occupied Bandwidth
Test Mode	: Mode 5: Transmit by 802.11ac(40MHz)

Channel	Frequency(MHz)	99% Occupied Bandwidth(MHz)
38	5190	36.122
46	5230	36.122
151	5755	36.208
159	5795	36.295

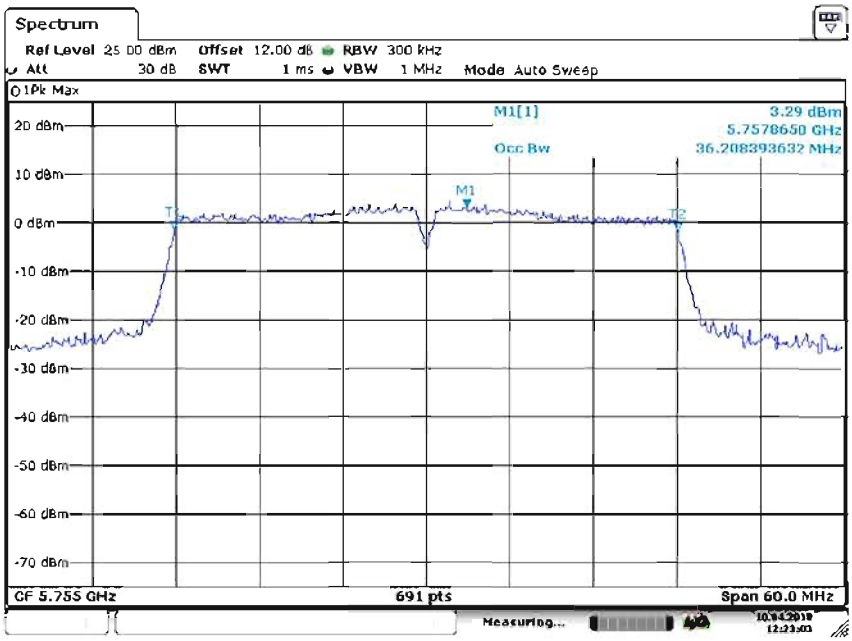
Channel 38 (5190MHz)



Channel 46 (5230MHz)

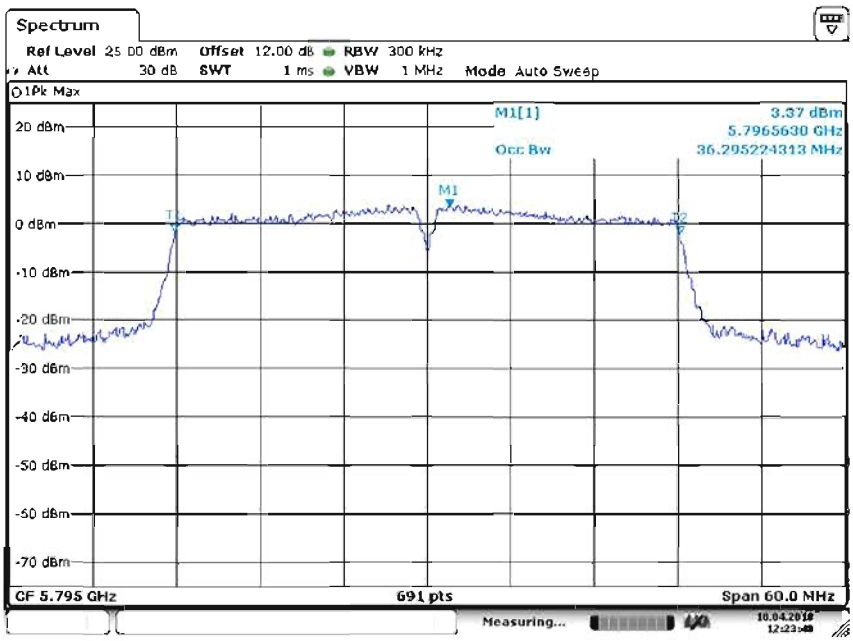


Channel 151 (5755MHz)



Date: 10.APR.2018 12:23:04

Channel 159 (5795MHz)

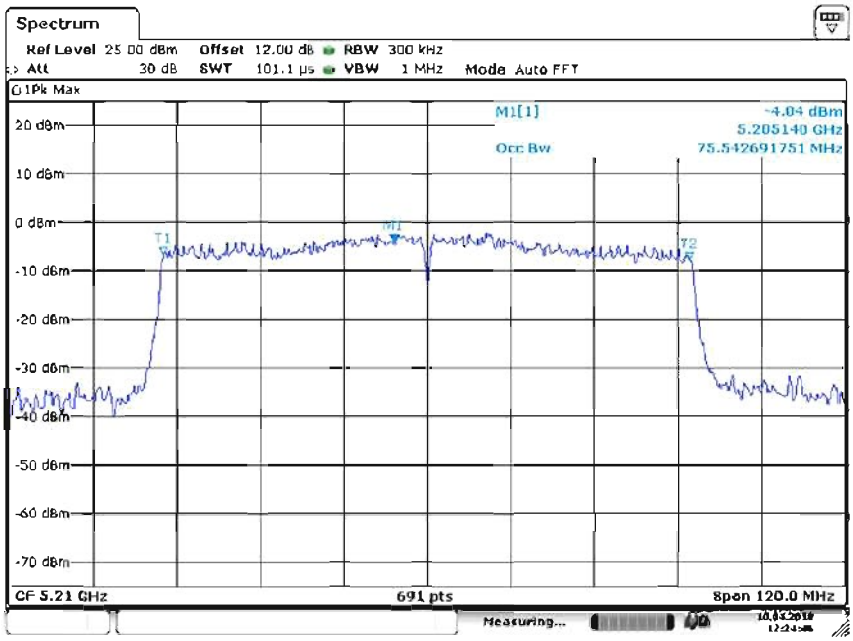


Date: 10.APR.2018 12:23:46

Test Item	: 99% Occupied Bandwidth
Test Mode	: Mode 6: Transmit by 802.11ac(80MHz)

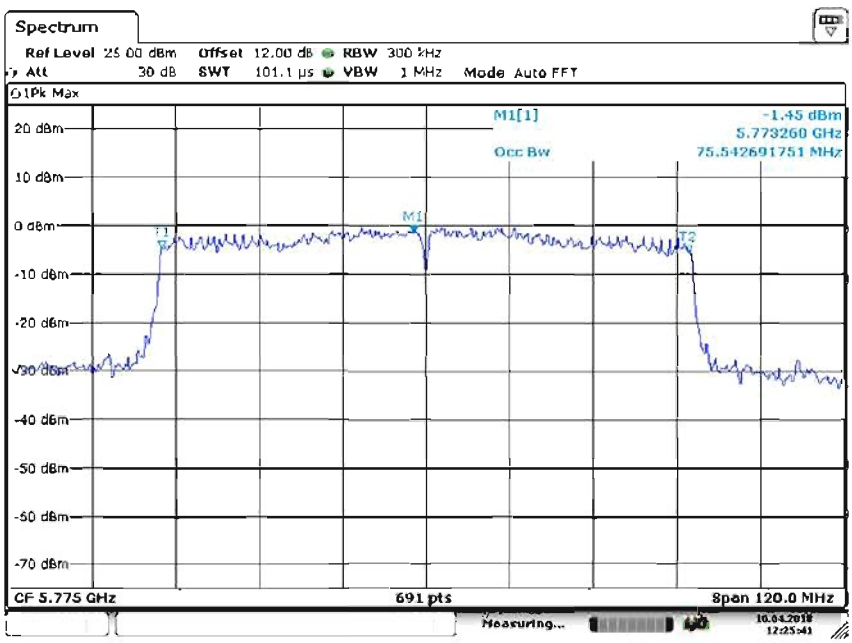
Channel	Frequency(MHz)	99% Occupied Bandwidth(MHz)
42	5210	75.543
155	5775	75.543

Channel 42 (5210MHz)



Date 10.APR.2018 12:24:46

Channel 155 (5775MHz)



Date 10.APR.2018 12:25:42

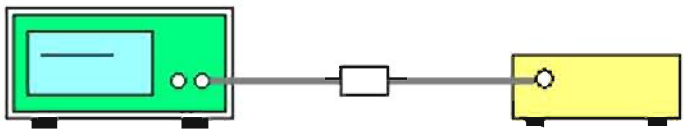
7. Duty Cycle

7.1. Test Equipment

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	R&S	FSV40	101155	2017.10.24
Shielding Room No. 1	EMC	9m*4m*3m	/	2016.08
Temperature/Humidity Meter	/	HTC-1	/	2017.11.08

Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

7.2. Test Setup



7.3. Limit

N/A

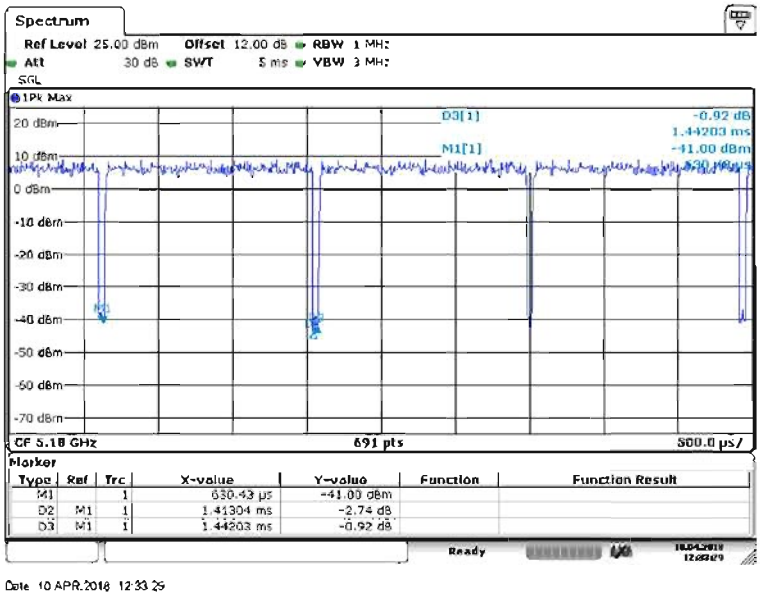
7.4. Test procedure

- A diode detector and an oscilloscope that together have sufficiently short response time to permit accurate measurements of the on and off times of the transmitted signal.
- The zero-span mode on a spectrum analyzer or EMI receiver, if the response time and spacing between bins on the sweep are sufficient to permit accurate measurements of the on and off times of the transmitted signal. Set the center frequency of the instrument to the center frequency of the transmission. Set RBW ≥ EBW if possible; otherwise, set RBW to the largest available value. Set VBW ≥ RBW. Set detector = peak or average. The zero-span measurement method shall not be used unless both RBW and VBW are > 50/*T*, where *T* is defined in II.B.1.a), and the number of sweep points across duration *T* exceeds 100. (For example, if VBW and/or RBW are limited to 3 MHz, then the zero-span method of measuring duty cycle shall not be used if *T* ≤ 16.7 microseconds.)
- Duty cycle = $T_{on}/(T_{on}+ T_{off})$

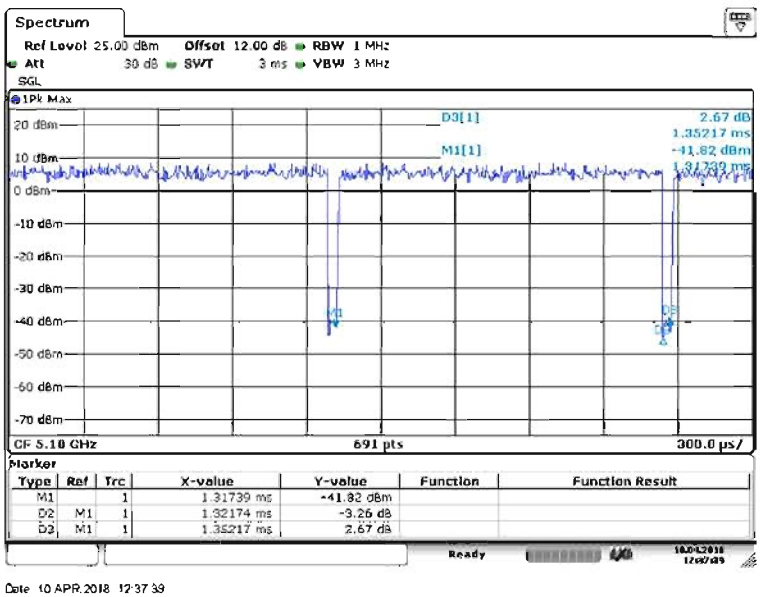
7.5. Test Result

Mode	Duty Cycle
802.11a	97.99%
802.11n(20MHz)	97.75%
802.11n(40MHz)	95.40%
802.11ac(20MHz)	97.65%
802.11ac(40MHz)	95.44%
802.11ac(80MHz)	90.87%

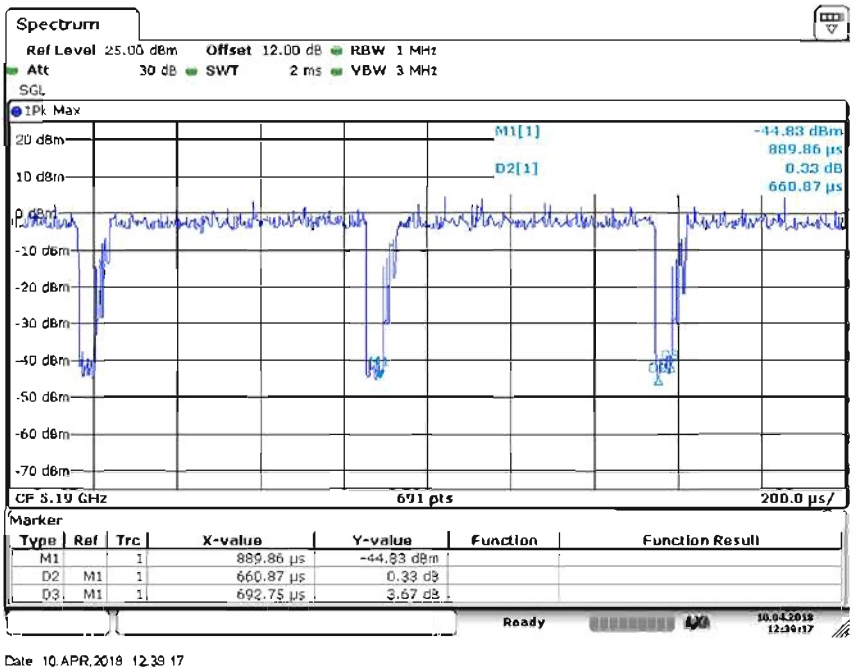
802.11a



802.11n (20MHz)

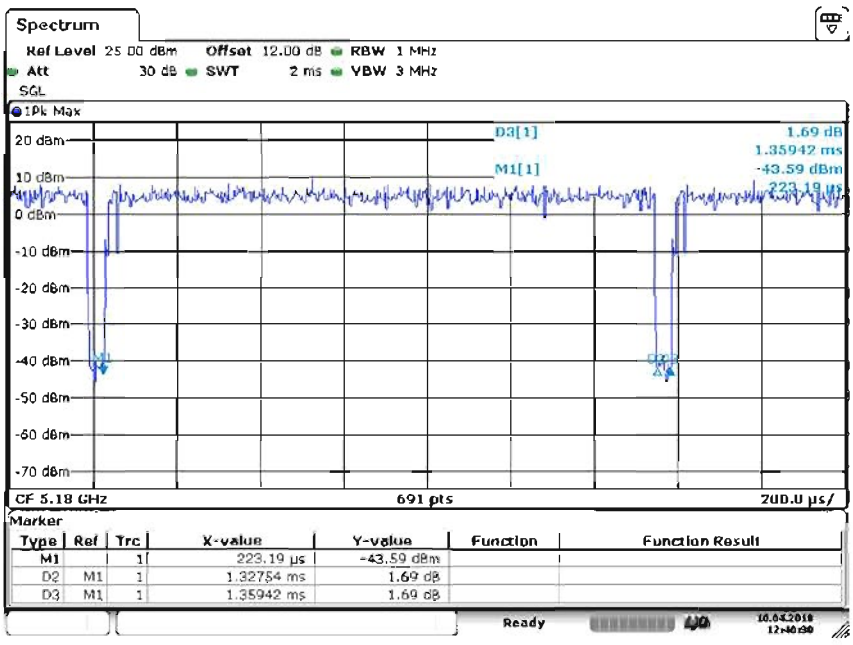


802.11n (40MHz)



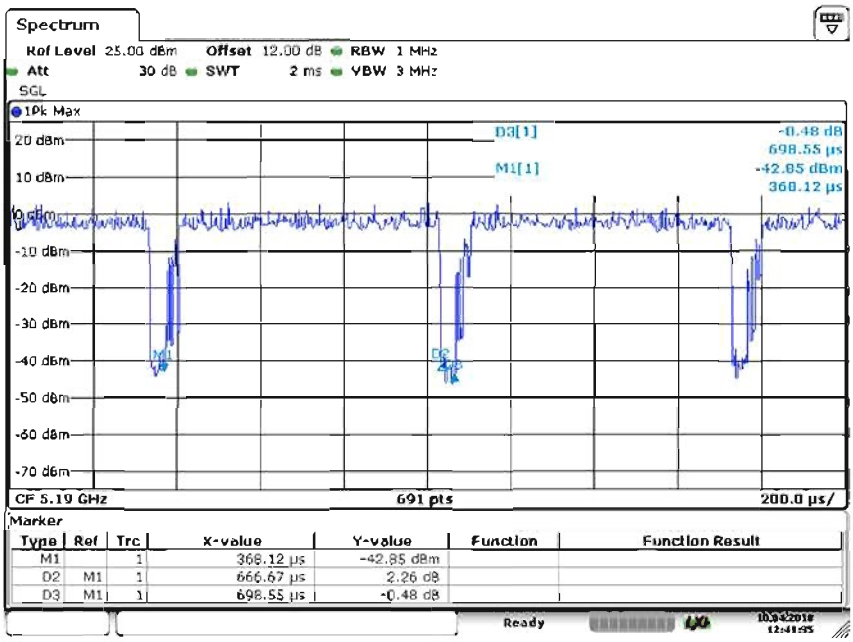
Date 10.APR.2018 12:39:17

802.11ac (20MHz)



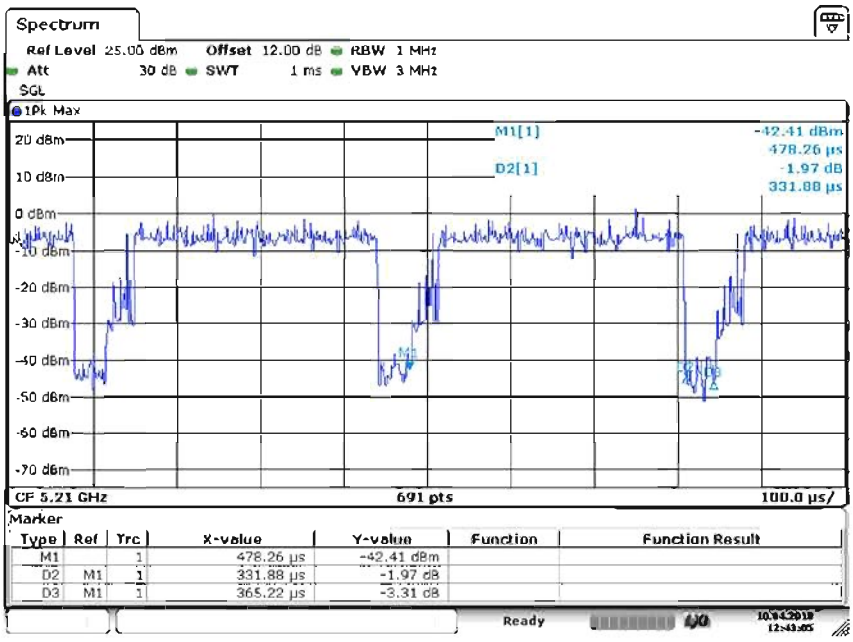
Date 10.APR.2018 12:40:30

802.11ac (40MHz)



Date 10.APR.2018 12:41:35

802.11ac (80MHz)



Date 10.APR.2018 12:43:05

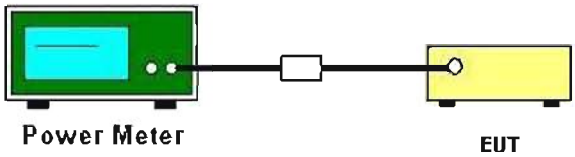
8. Power Output

8.1. Test Equipment

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Power Meter	R&S	NRP2	104761	2017.10.24
Shielding Room No. 1	EMC	9m*4m*3m	/	2016.08
Temperature/Humidity Meter	/	HTC-1	/	2017.11.08

Note 1: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

8.2. Test Setup



8.3. Limit

- For the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 250mW provided the maximum antenna gain does not exceed 6dBi. If transmitting antennas of directional gain greater than 6dBi 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 6dBi.
- For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. If transmitting antennas of directional gain greater than 6dBi 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 6dBi.

8.4. Test Procedure

- The EUT was tested according to ANSI C63.10: 2013 and KDB 789033 for compliance to FCC 47CFR 15.407 requirements.
- Use the wideband power meter to test peak power and record the result.

8.5. Uncertainty

The measurement uncertainty above 1G is defined as ± 1.27 dB.

8.6. Test Result

Test Mode	Channel	Frequency(MHz)	Power Output(dBm)	Max Limit(dBm)	Pass/Fil
802.11a	36	5180	17.40	24	Pass
	40	5200	17.50	24	Pass
	48	5240	17.57	24	Pass
	149	5745	20.03	30	Pass
	157	5785	19.86	30	Pass
	165	5825	19.89	30	Pass
802.11n (20MHz)	36	5180	17.71	24	Pass
	40	5200	17.80	24	Pass
	48	5240	18.14	24	Pass
	149	5745	20.29	30	Pass
	157	5785	20.18	30	Pass
	165	5825	20.10	30	Pass
802.11n (40MHz)	38	5190	17.27	24	Pass
	46	5230	17.72	24	Pass
	151	5755	20.05	30	Pass
	159	5795	20.02	30	Pass
802.11ac (20MHz)	36	5180	17.66	24	Pass
	40	5200	17.66	24	Pass
	48	5240	18.08	24	Pass
	149	5745	20.31	30	Pass
	157	5785	20.18	30	Pass
	165	5825	20.15	30	Pass
802.11ac (40MHz)	38	5190	17.29	24	Pass
	46	5230	17.74	24	Pass
	151	5755	20.13	30	Pass
	159	5795	20.10	30	Pass
802.11ac (80MHz)	42	5210	17.32	24	Pass
	155	5775	19.97	30	Pass

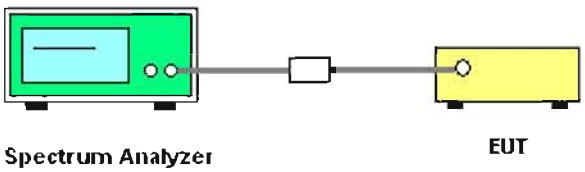
9. Power Spectral Density

9.1. Test Equipment

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	R&S	FSV40	101155	2017.10.24
Shielding Room No. 1	EMC	9m*4m*3m	/	2016.08
Temperature/Humidity Meter	/	HTC-1	/	2017.11.08

Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

9.2. Test Setup



9.3. Limit

- For the band 5.15-5.25 GHz, the peak power spectral density shall not exceed 11dBm in any 1MHz band. If transmitting antennas of directional gain greater than 6dBi are used, the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.
- For the band 5.725-5.825 GHz, the peak power spectral density shall not exceed 30dBm in any 500 kHz band. If transmitting antennas of directional gain greater than 6dBi are used, the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

9.4. Test Procedure

- The EUT was tested according to ANSI C63.10: 2013 and KDB 789033 for compliance to FCC 47CFR 15.407 requirements.
- For devices operating in the bands 5.15–5.25 GHz, the preceding procedures make use of 1 MHz RBW to satisfy directly the 1 MHz reference bandwidth specified in Section 15.407(a)(5). For devices operating in the band 5.725-5.85 GHz, the rules specify a measurement bandwidth of 500 kHz.
- Set RBW ≥ 1/*T*, where *T* is defined in II.B.1.a).
- Set VBW ≥ 3 RBW.

- If measurement bandwidth of Maximum PSD is specified in 500 kHz, add 10 log (500 kHz/RBW) to the measured result, whereas RBW (<500 kHz) is the reduced resolution bandwidth of the spectrum analyzer set during measurement.
- If measurement bandwidth of Maximum PSD is specified in 1 MHz, add 10 log (1MHz/RBW) to the measured result, whereas RBW (< 1 MHz) is the reduced resolution bandwidth of spectrum analyzer set during measurement.
- Care must be taken to ensure that the measurements are performed during a period of continuous transmission or are corrected upward for duty cycle.

9.5. Uncertainty

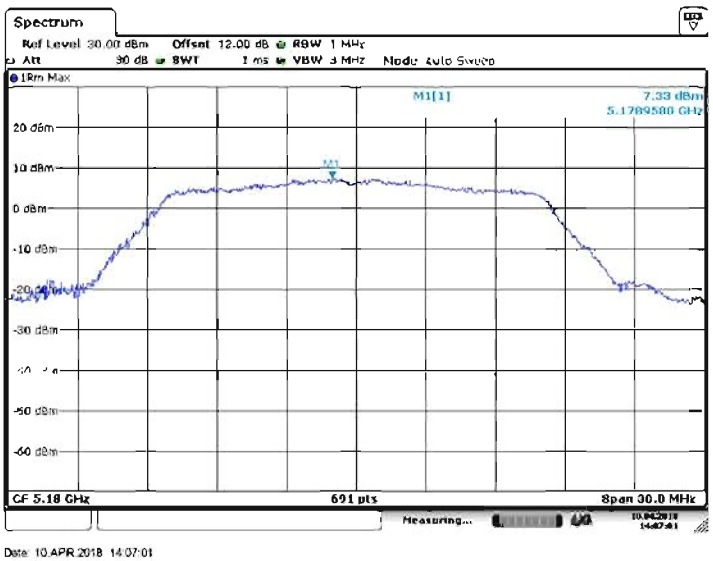
The measurement uncertainty is defined as ± 1.27 dB.

9.6. Test Result

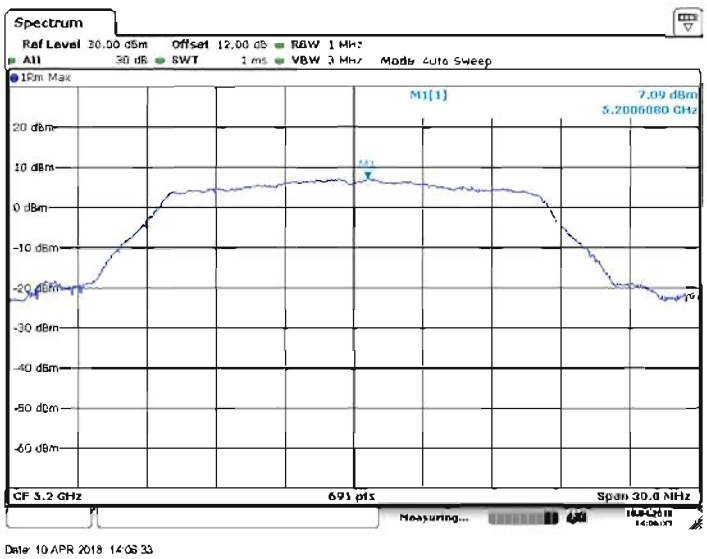
Test Item	: Power Spectral Density
Test Mode	: Mode 1: Transmit by 802.11a

Channel	Frequency(MHz)	Power Spectral Density (dBm)	Limit(dBm)	Pass/Fail
36	5180	7.33	11	Pass
40	5200	7.09	11	Pass
48	5240	7.49	11	Pass
149	5745	8.46	30	Pass
157	5785	8.33	30	Pass
165	5825	8.29	30	Pass

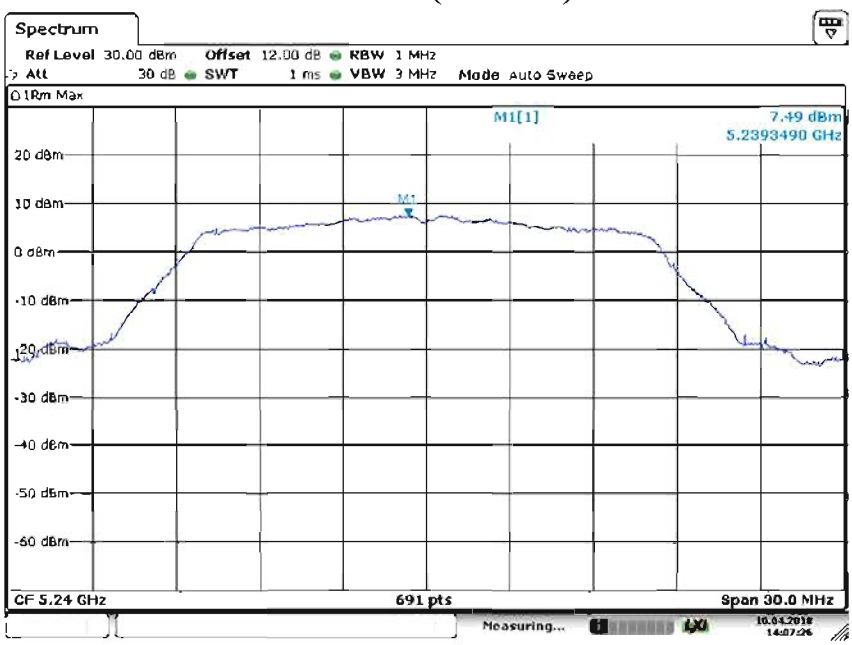
Channel 36 (5180MHz)



Channel 40 (5200MHz)

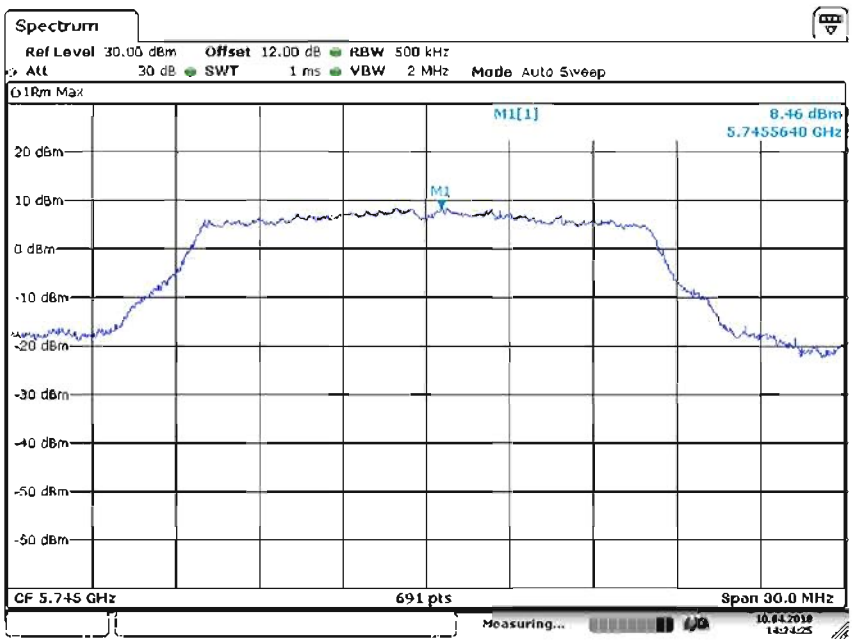


Channel 48 (5240MHz)



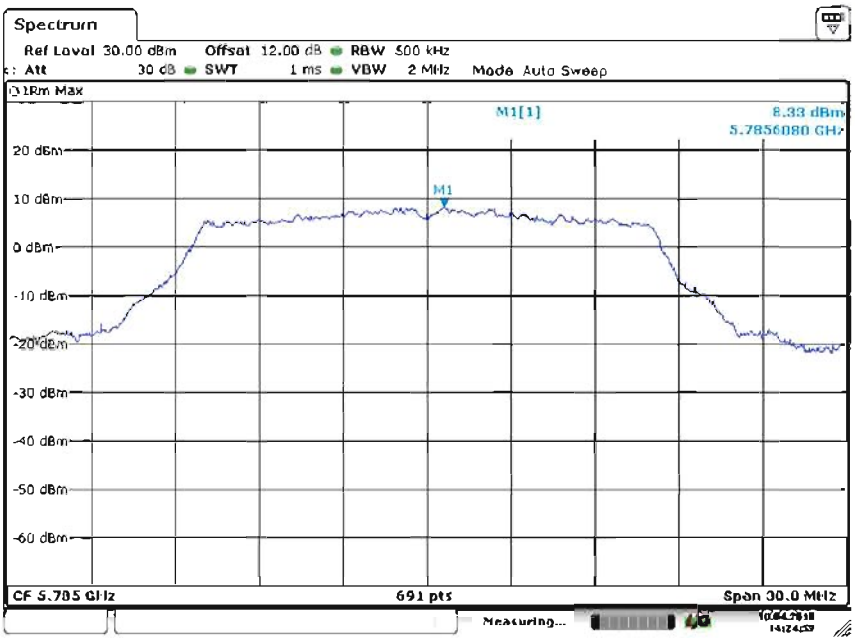
Date 10.APR.2018 14:07:25

Channel 149 (5745MHz)

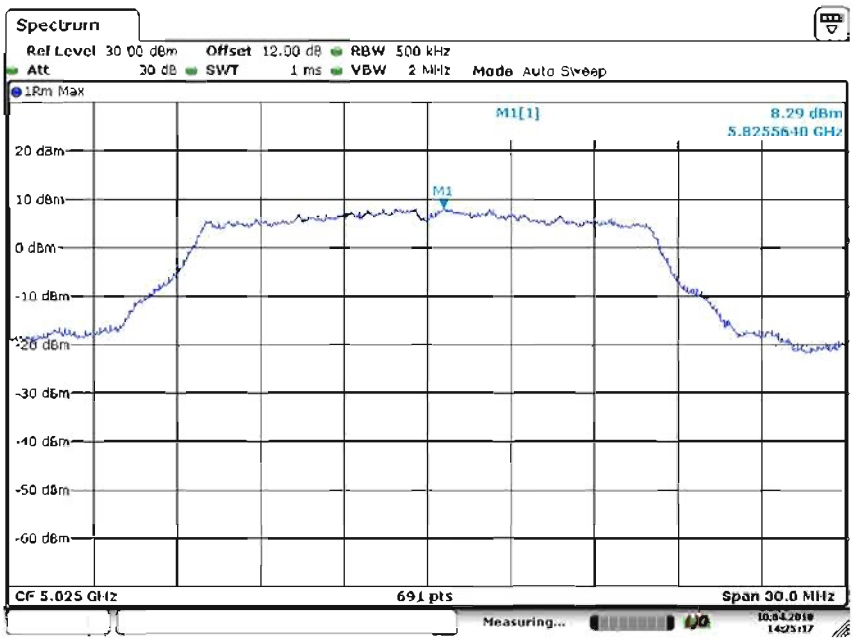


Date 10.APR.2018 14:24:25

Channel 157 (5785MHz)



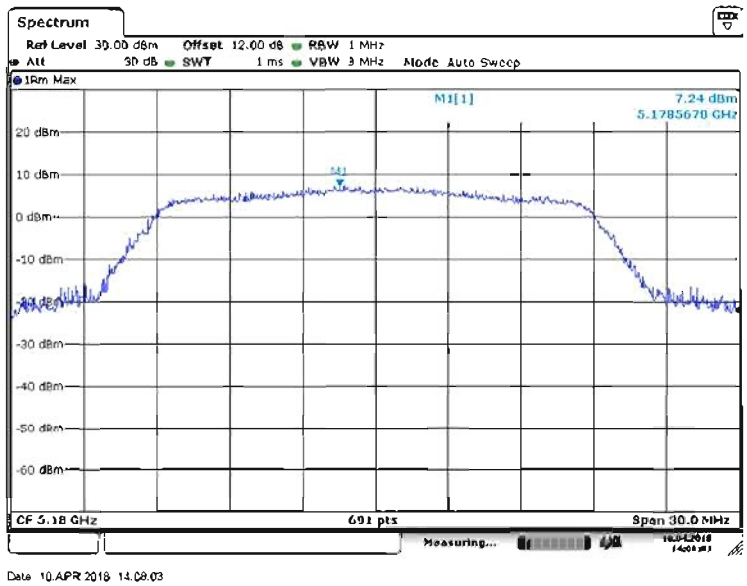
Channel 165 (5825MHz)



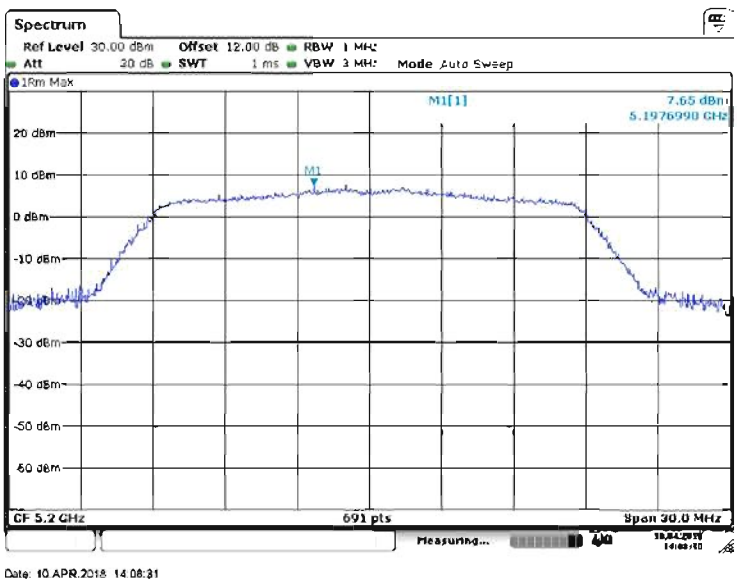
Test Item	: Power Spectral Density
Test Mode	: Mode 2: Transmit by 802.11n(20MHz)

Channel	Frequency(MHz)	Power Spectral Density (dBm)	Limit(dBm)	Pass/Fail
36	5180	7.24	11	Pass
40	5200	7.65	11	Pass
48	5240	7.36	11	Pass
149	5745	8.29	30	Pass
157	5785	8.43	30	Pass
165	5825	7.83	30	Pass

Channel 36 (5180MHz)



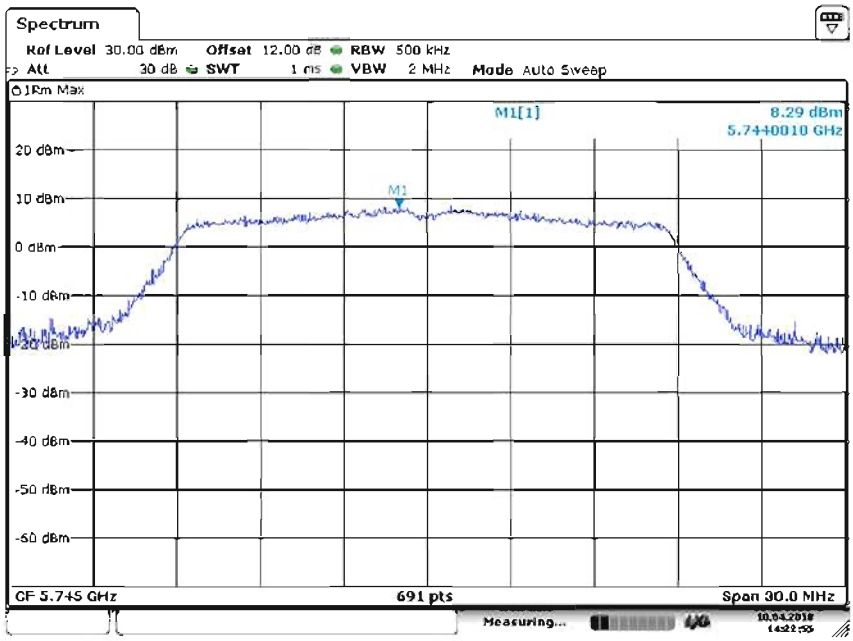
Channel 40 (5200MHz)



Channel 48 (5240MHz)

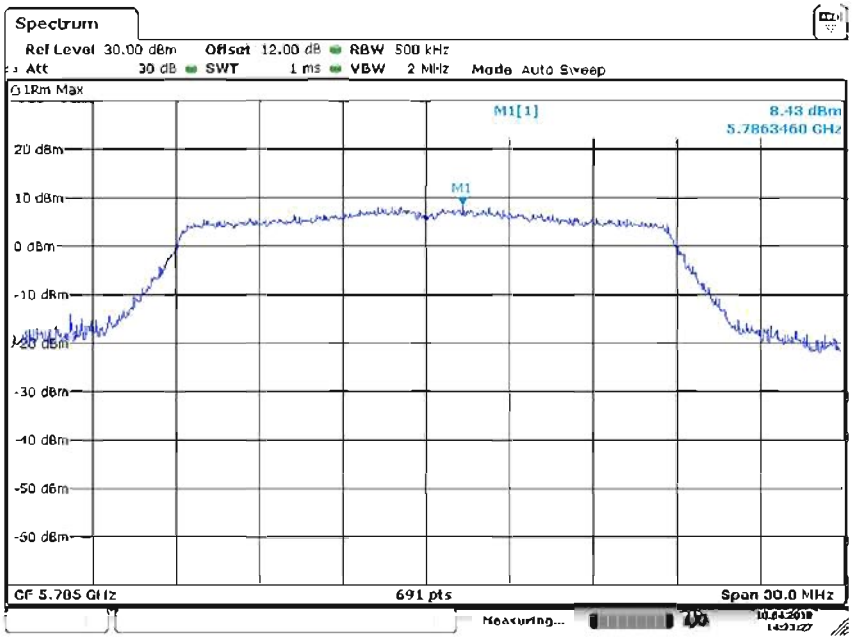
Date 10.APR.2018 14:08:53

Channel 149 (5745MHz)

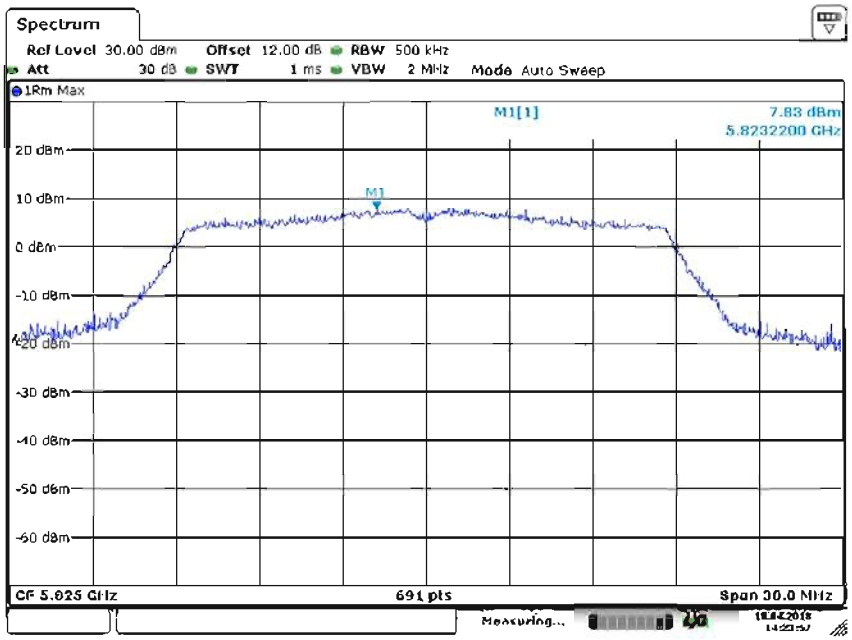


Date 10.APR.2018 14:22:56

Channel 157 (5785MHz)



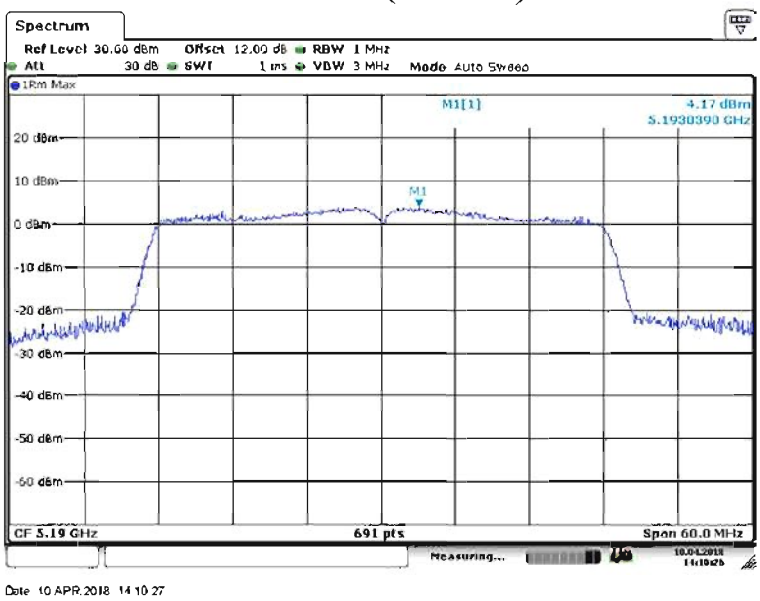
Channel 165 (5825MHz)



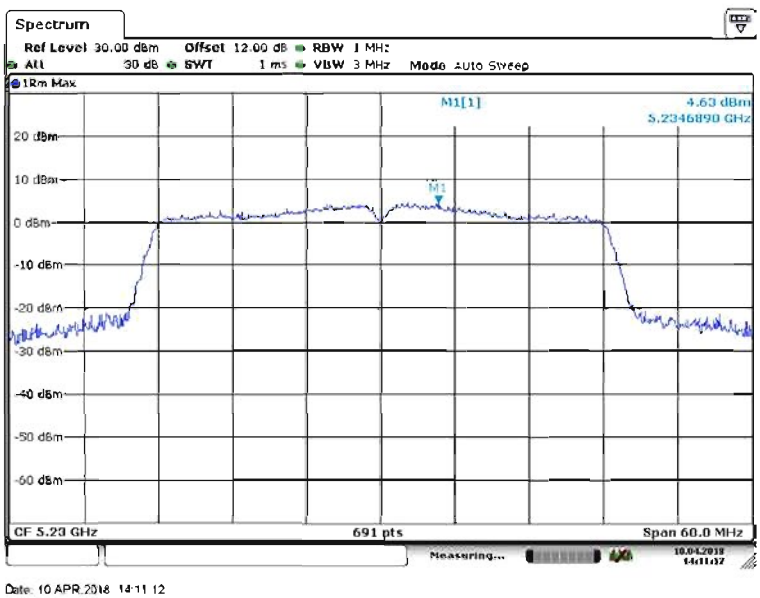
Test Item	: Power Spectral Density
Test Mode	: Mode 3: Transmit by 802.11n(40MHz)

Channel	Frequency(MHz)	Power Spectral Density (dBm)	Limit(dBm)	Pass/Fail
38	5190	4.17	11	Pass
46	5230	4.63	11	Pass
151	5755	5.47	30	Pass
159	5795	5.14	30	Pass

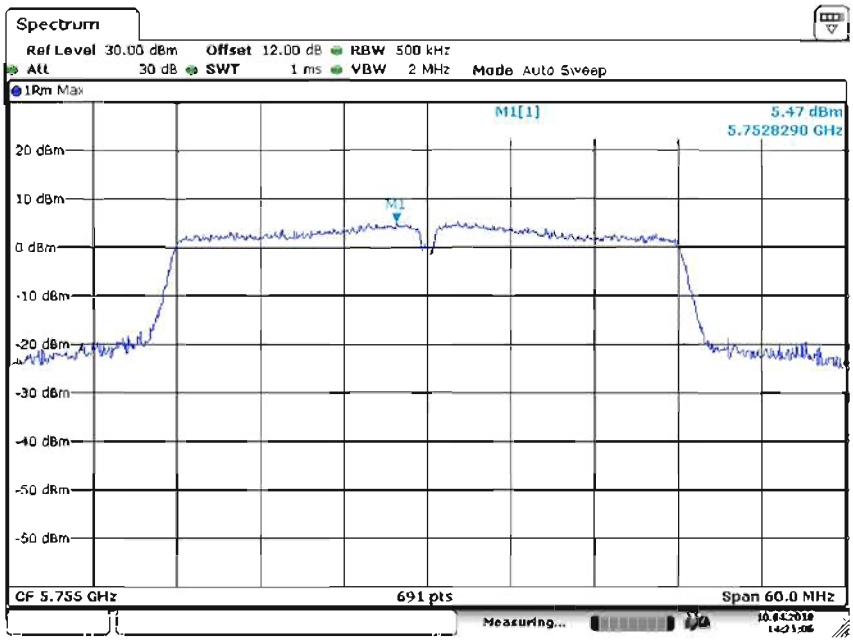
Channel 38 (5190MHz)



Channel 46 (5230MHz)



Channel 151 (5755MHz)



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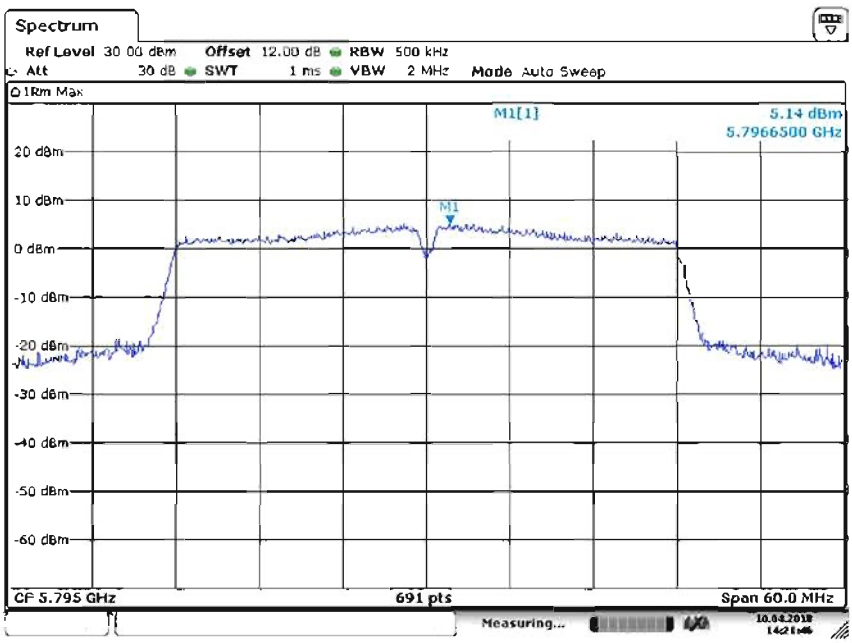
Channel 159 (5795MHz)

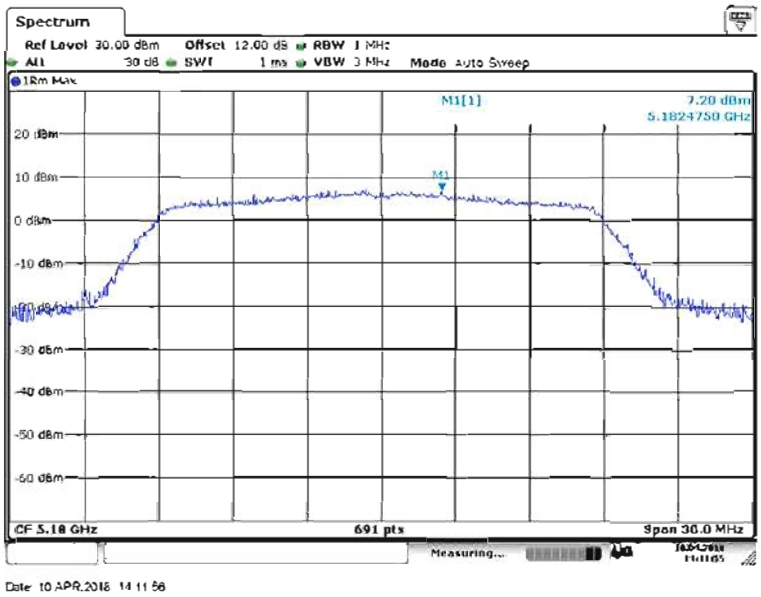


Date: 10.APR.2018 14:21:47

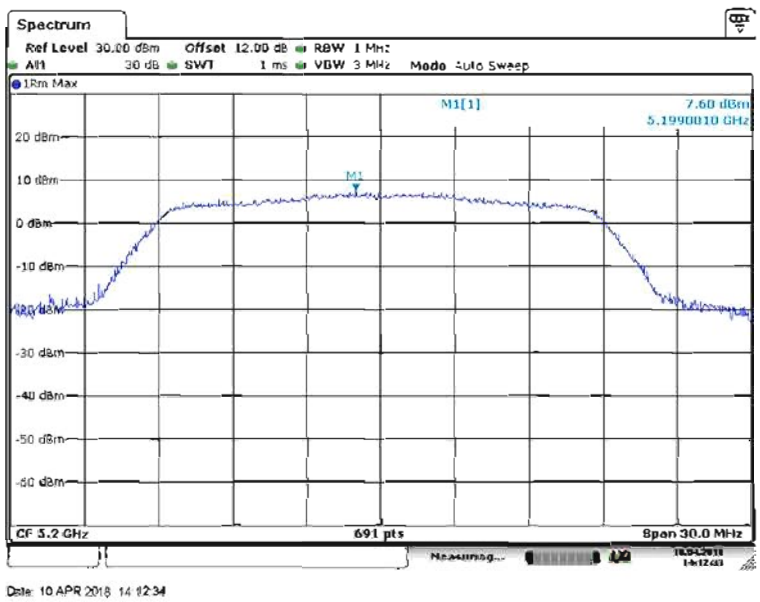
Test Item	: Power Spectral Density
Test Mode	: Mode 4: Transmit by 802.11ac(20MHz)

Channel	Frequency(MHz)	Power Spectral Density (dBm)	Limit(dBm)	Pass/Fail
36	5180	7.20	11	Pass
40	5200	7.60	11	Pass
48	5240	7.57	11	Pass
149	5745	8.48	30	Pass
157	5785	8.39	30	Pass
165	5825	8.12	30	Pass

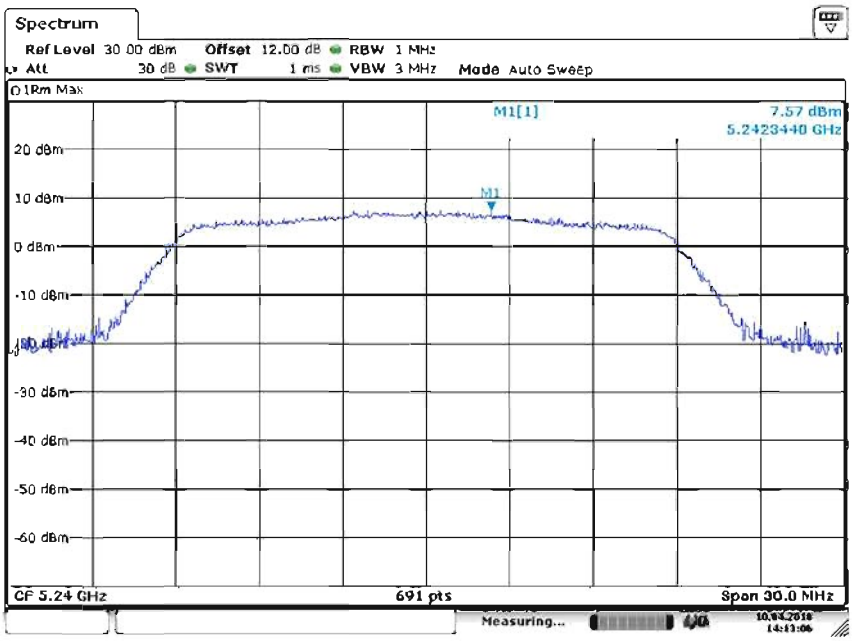
Channel 36 (5180MHz)



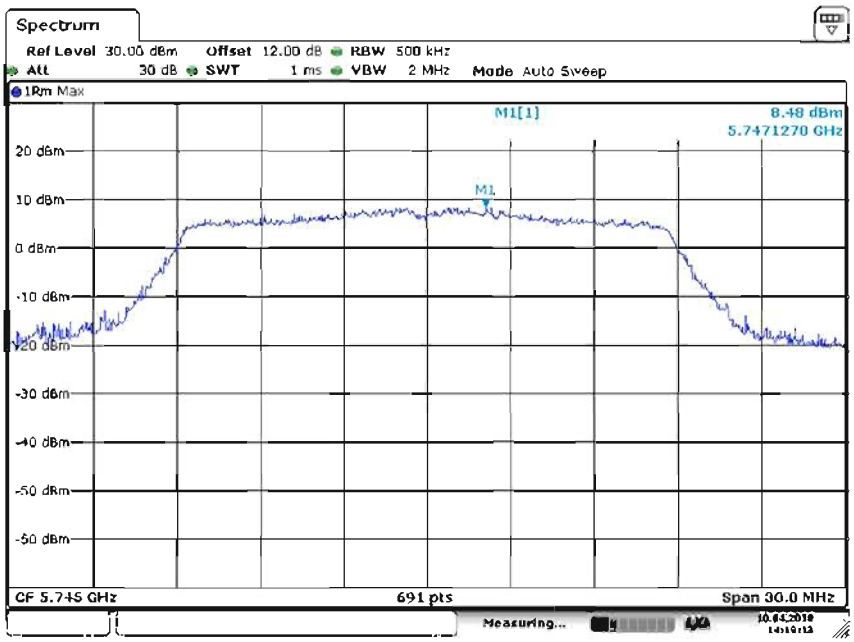
Channel 40 (5200MHz)



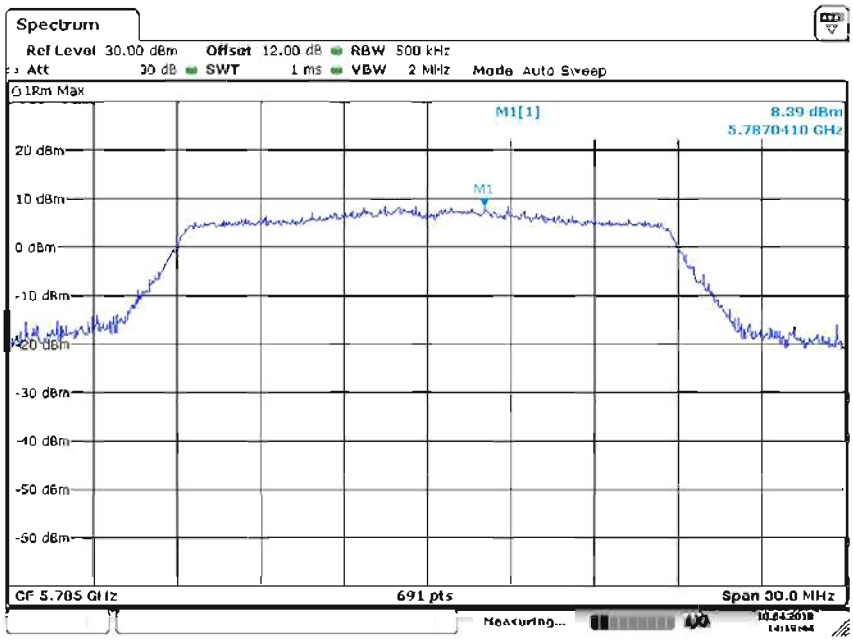
Channel 48 (5240MHz)



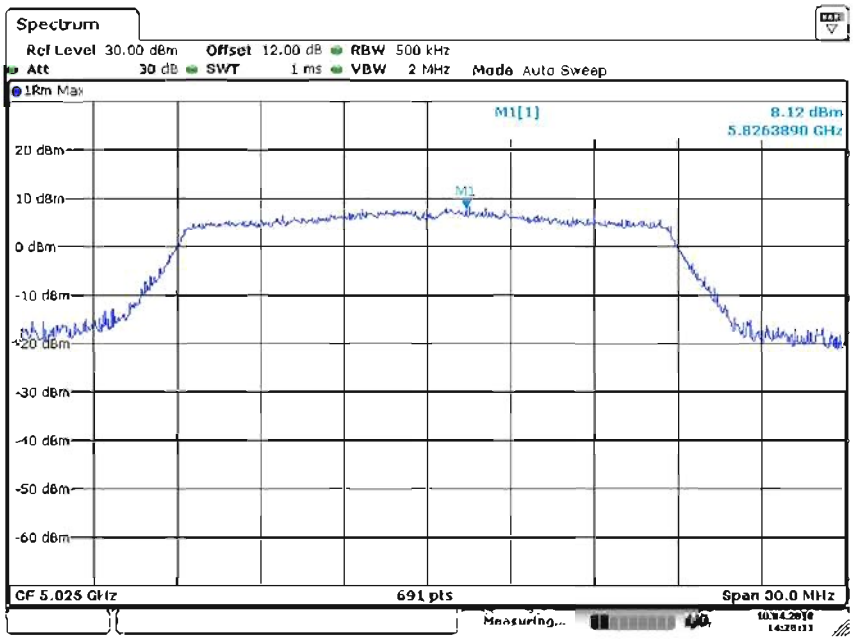
Channel 149 (5745MHz)



Channel 157 (5785MHz)



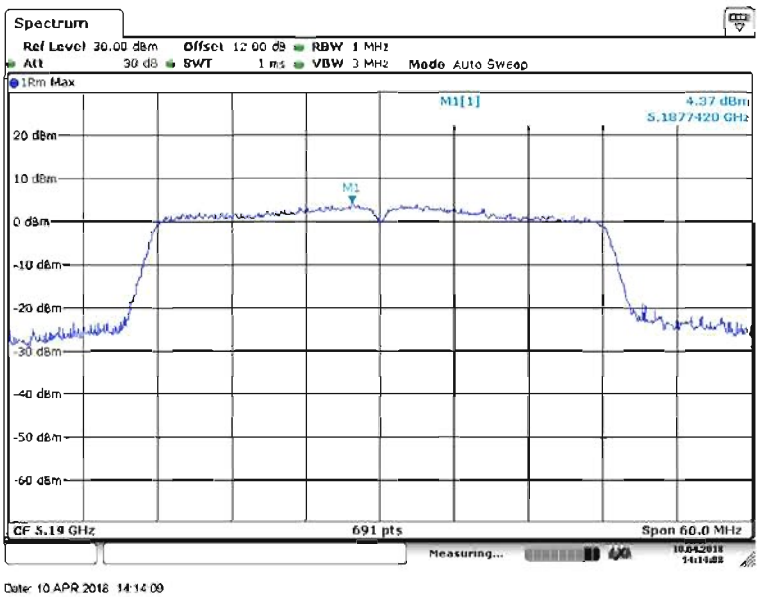
Channel 165 (5825MHz)



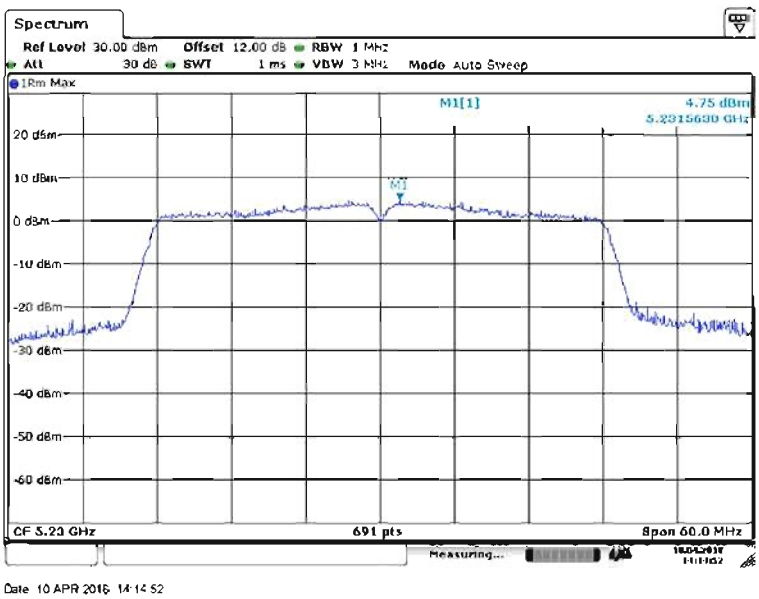
Test Item	: Power Spectral Density
Test Mode	: Mode 5: Transmit by 802.11ac(40MHz)

Channel	Frequency(MHz)	Power Spectral Density (dBm)	Limit(dBm)	Pass/Fail
38	5190	4.37	11	Pass
46	5230	4.75	11	Pass
151	5755	5.51	30	Pass
159	5795	5.45	30	Pass

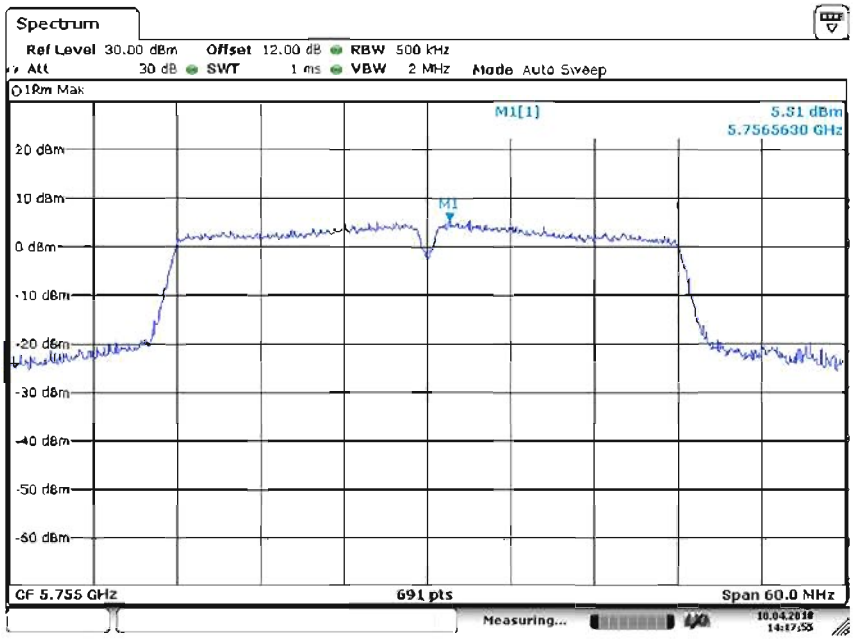
Channel 38 (5190MHz)



Channel 46 (5230MHz)

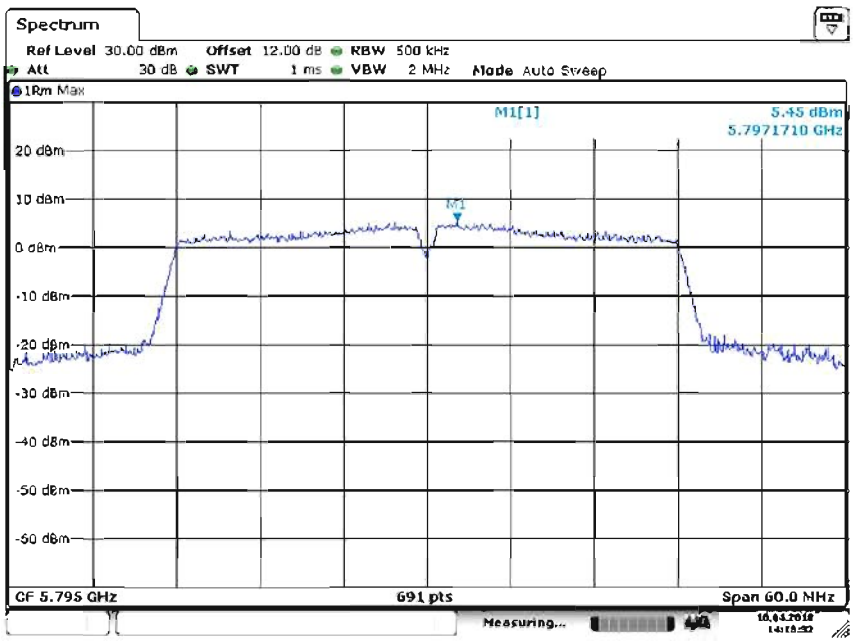


Channel 151 (5755MHz)



Date 10.APR.2018 14:17:56

Channel 159 (5795MHz)

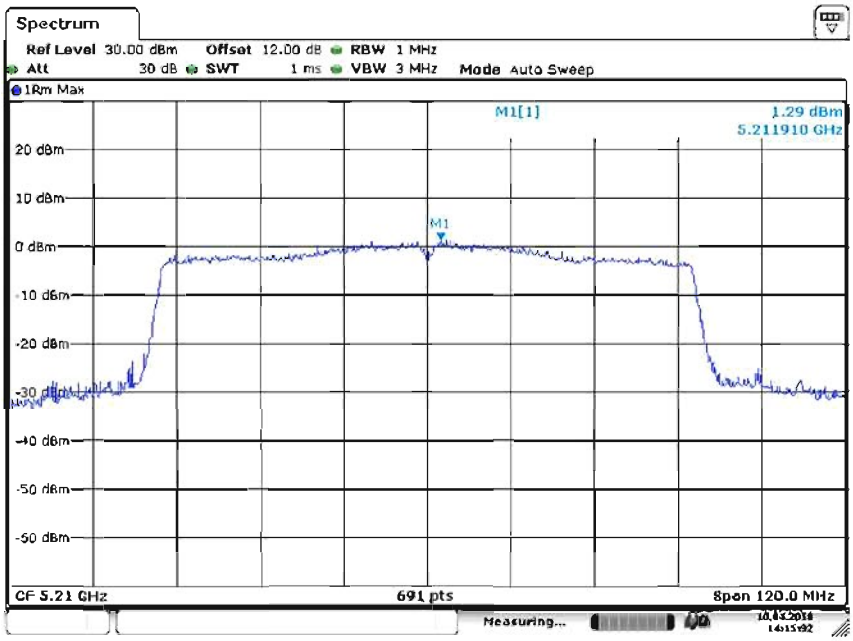


Date 10.APR.2018 14:18:32

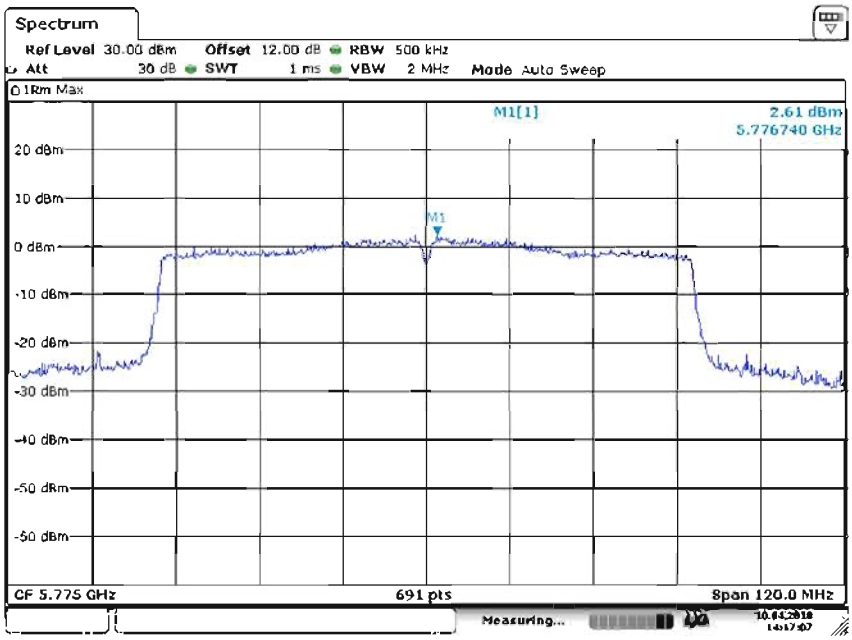
Test Item	: Power Spectral Density
Test Mode	: Mode 6: Transmit by 802.11ac(80MHz)

Channel	Frequency(MHz)	Power Spectral Density (dBm)	Limit(dBm)	Pass/Fail
42	5210	1.29	11	Pass
155	5775	2.61	30	Pass

Channel 42 (5210MHz)



Channel 155 (5775MHz)



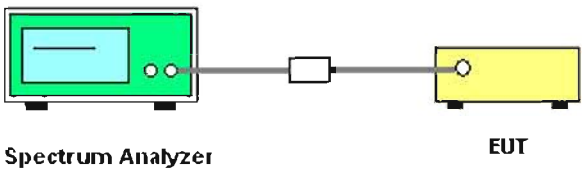
10. Conducted Band Edge

10.1. Test Equipment

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	R&S	FSV40	101155	2017.10.24
Shielding Room No. 1	EMC	9m*4m*3m	/	2016.08
Temperature/Humidity Meter	/	HTC-1	/	2017.11.08

Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

10.2. Test Setup



10.3. Limit

- For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.
- For transmitters operating in the 5.725-5.85 GHz band: All emissions shall be limited to a level of−27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

10.4. Test Procedure

Maximum emission levels are measured by setting the analyzer as follows:

- RBW = 1 MHz
- VBW ≥ 3 MHz
- Detector = Peak.
- Sweep time = auto.
- Trace mode = max hold.
- Allow sweeps to continue until the trace stabilizes. Note that if the transmission is not continuous, the time required for the trace to stabilize will increase by a factor

of approximately 1/x, where x is the duty cycle. For example, at 50% duty cycle, the measurement time will increase by a factor of two relative to measurement time for continuous transmission.

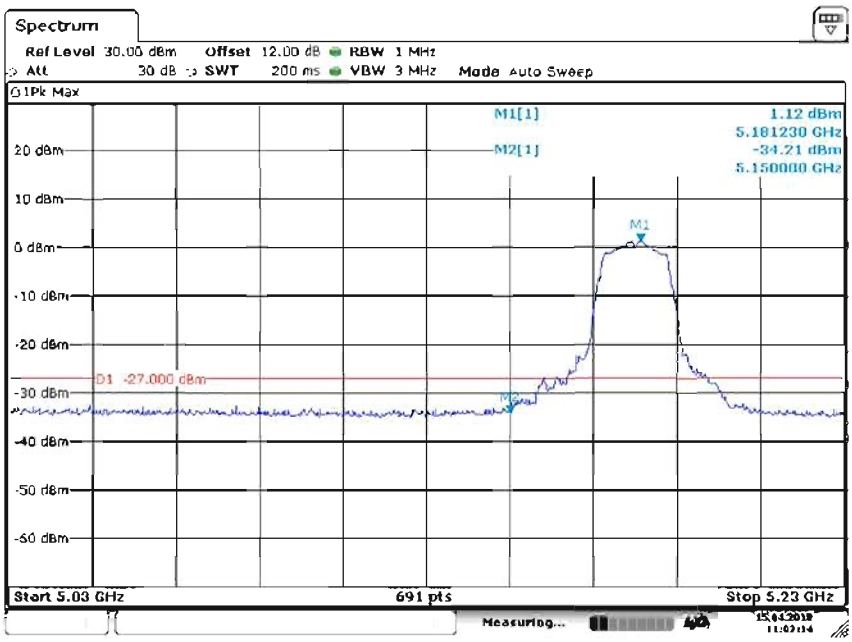
10.5. Uncertainty

The measurement uncertainty is defined as ± 1.27 dB.

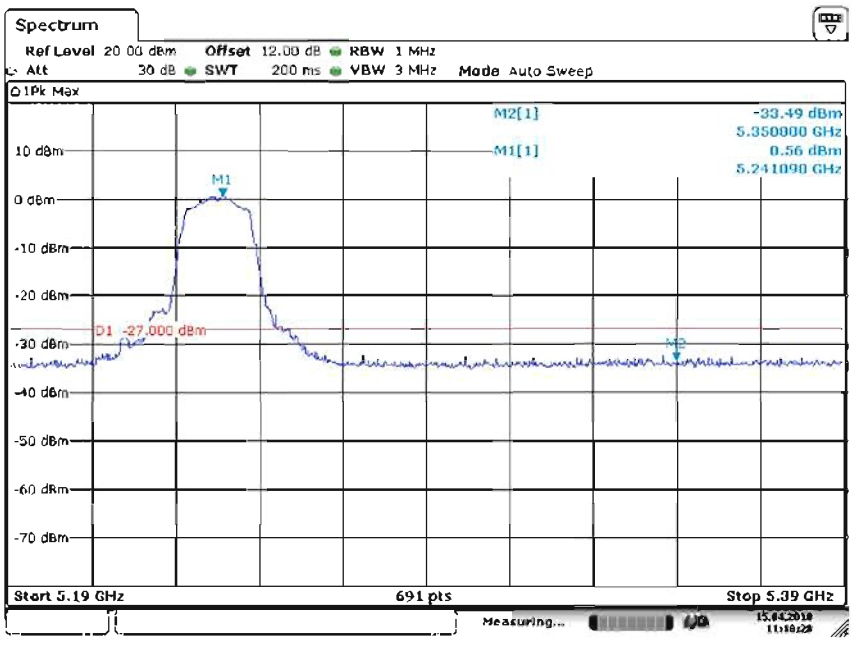
10.6. Test Result

Test Item	: Conducted Band Edge
Test Mode	: Mode 1: Transmit by 802.11a

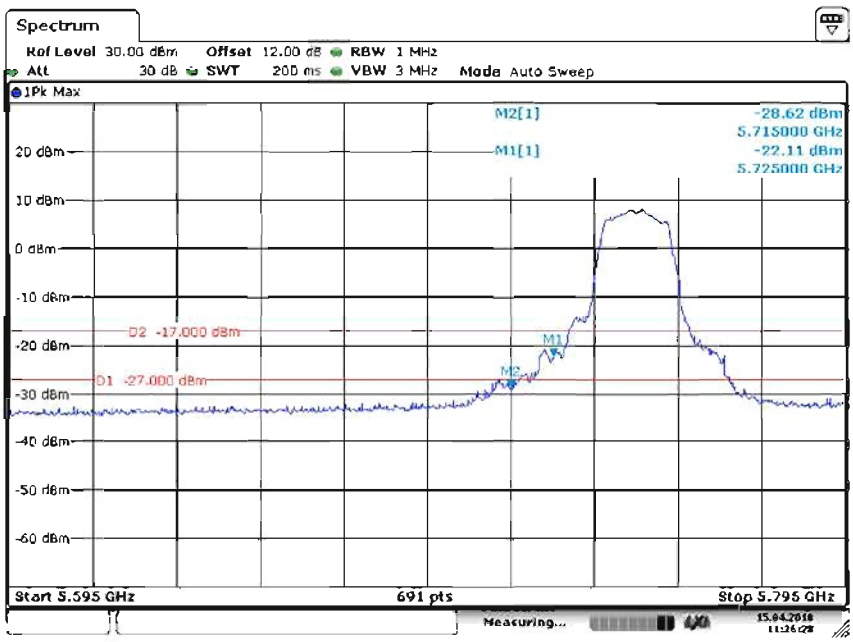
Channel 36 (5180MHz)



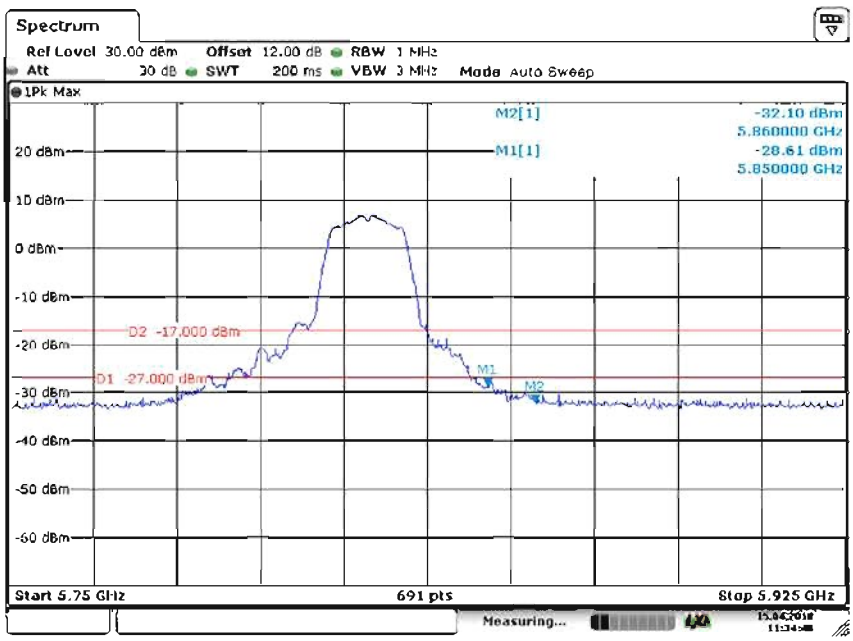
Channel 48 (5240MHz)



Channel 149 (5745MHz)

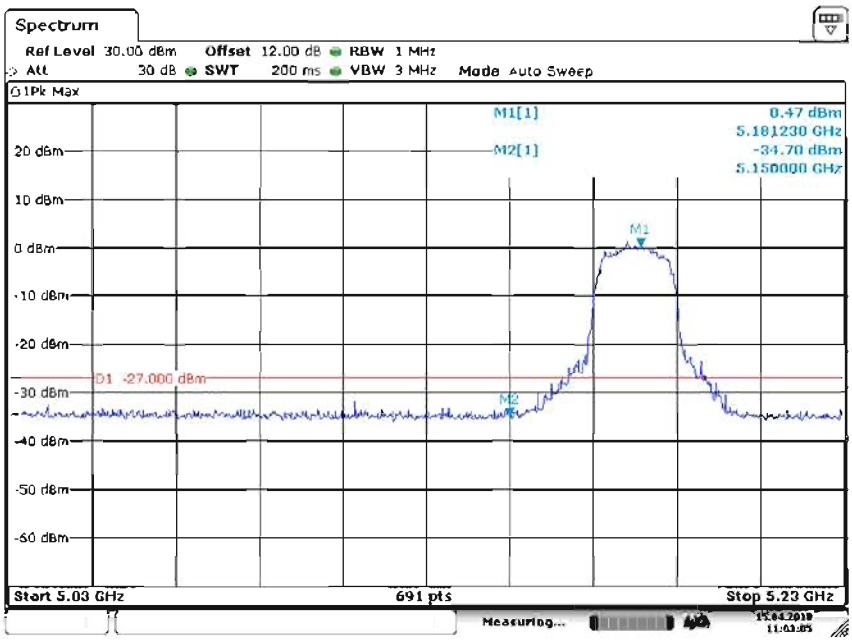


Channel 165 (5825MHz)

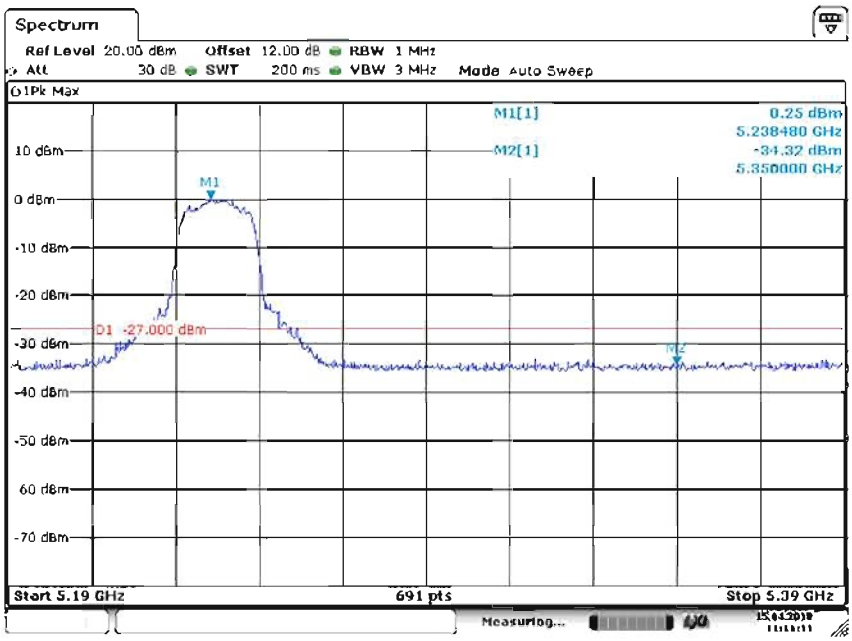


Test Item	: Conducted Band Edge
Test Mode	: Mode 2: Transmit by 802.11n(20MHz)

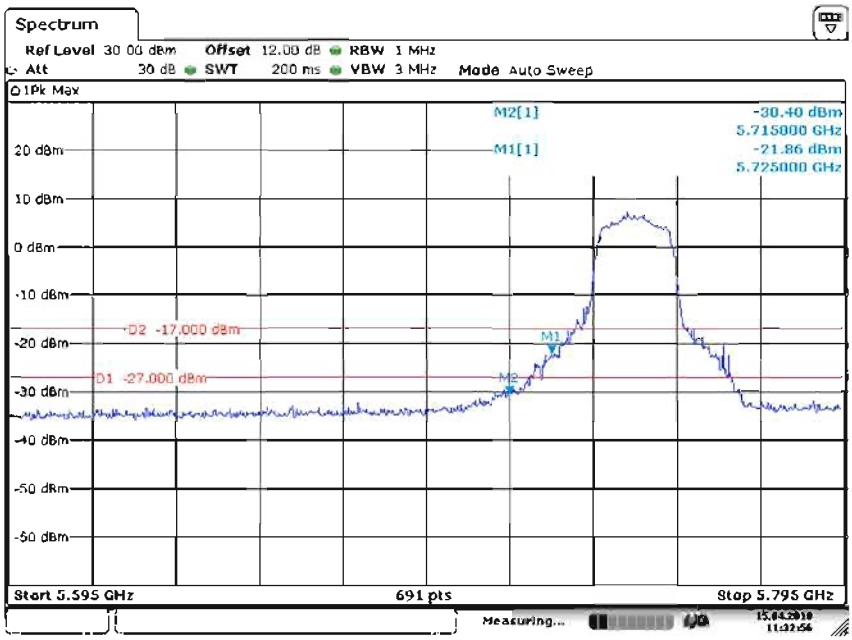
Channel 36 (5180MHz)



Channel 48 (5240MHz)

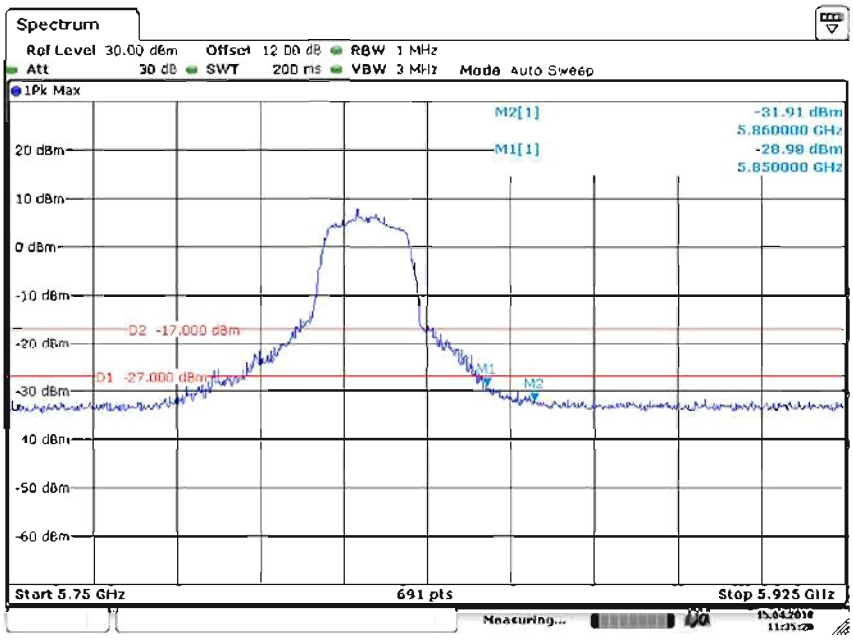


Channel 149 (5745MHz)



Date 15.APR.2018 11.32.57

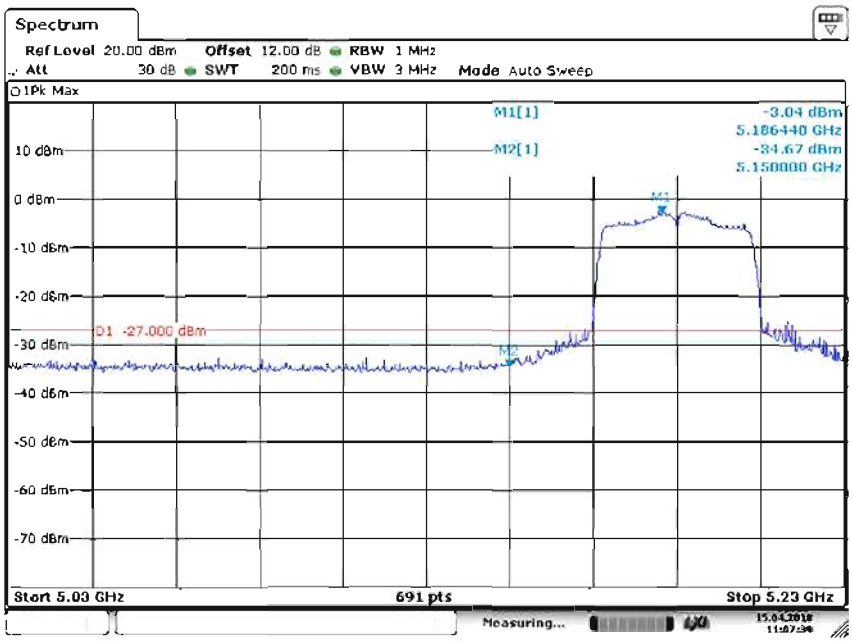
Channel 165 (5825MHz)



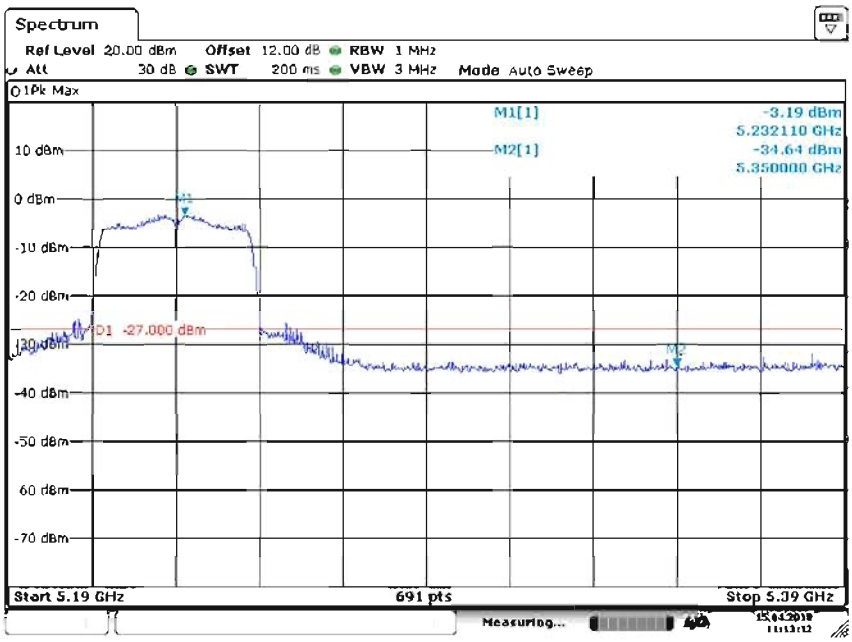
Date 15.APR.2018 11.35.21

Test Item	: Power Spectral Density
Test Mode	: Mode 3: Transmit by 802.11n(40MHz)

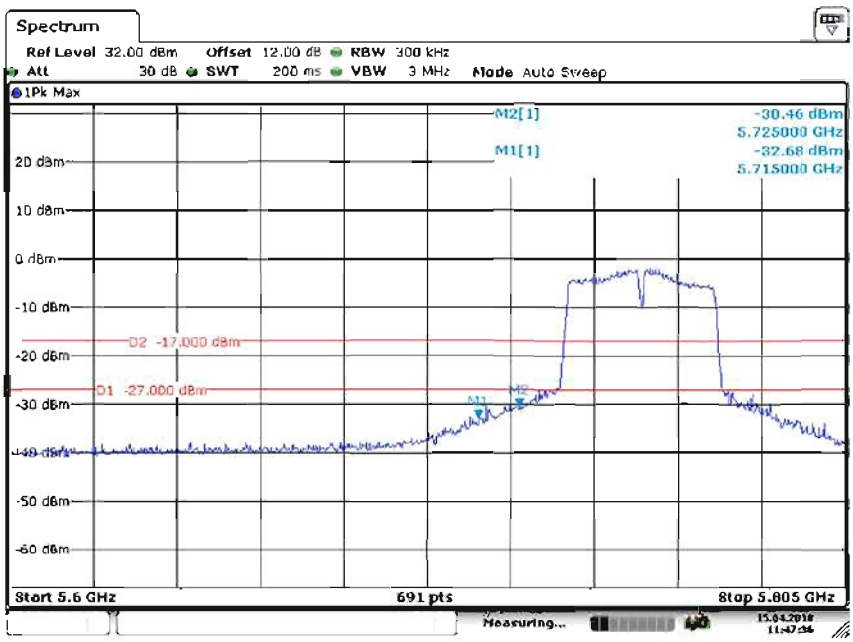
Channel 38 (5190MHz)



Channel 46 (5230MHz)

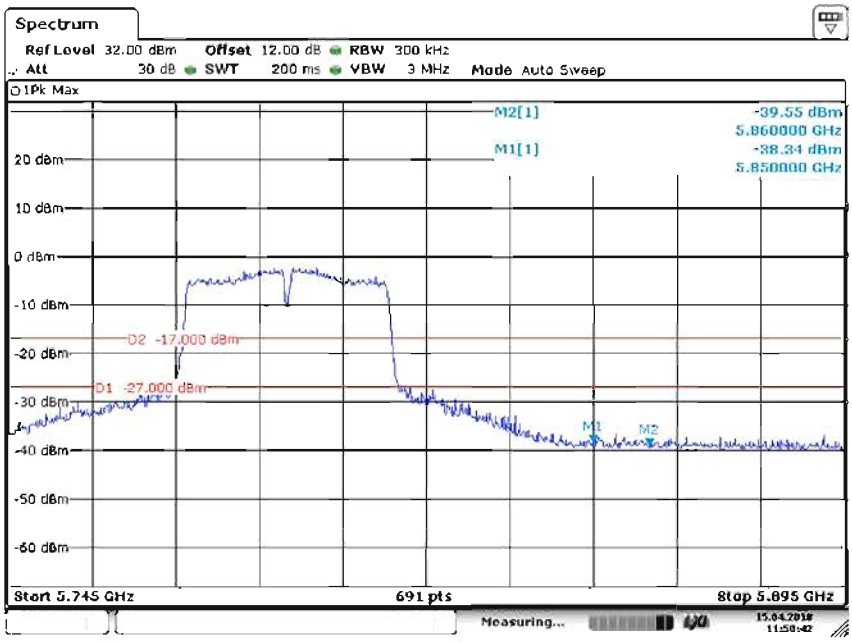


Channel 151 (5755MHz)



Date 15.APR.2018 11:47:37

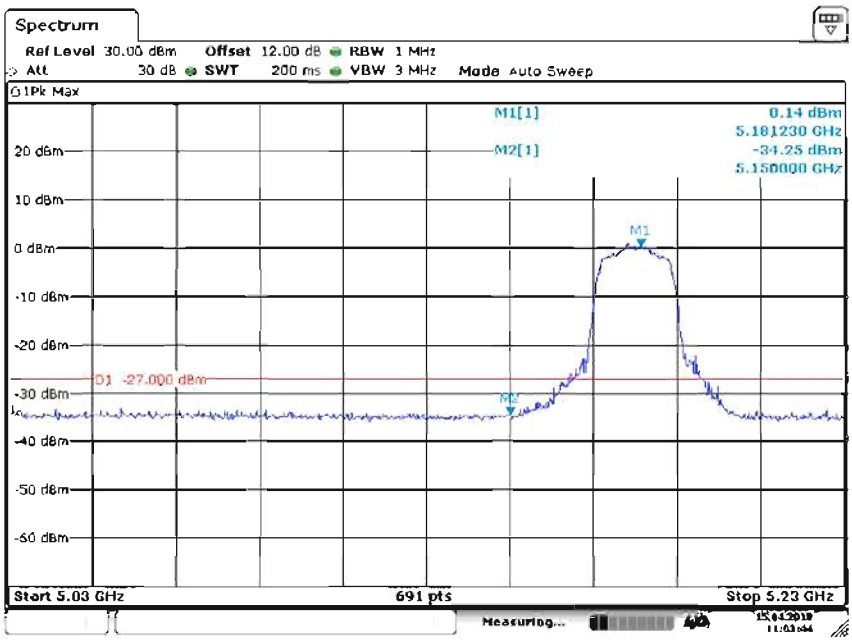
Channel 159 (5795MHz)



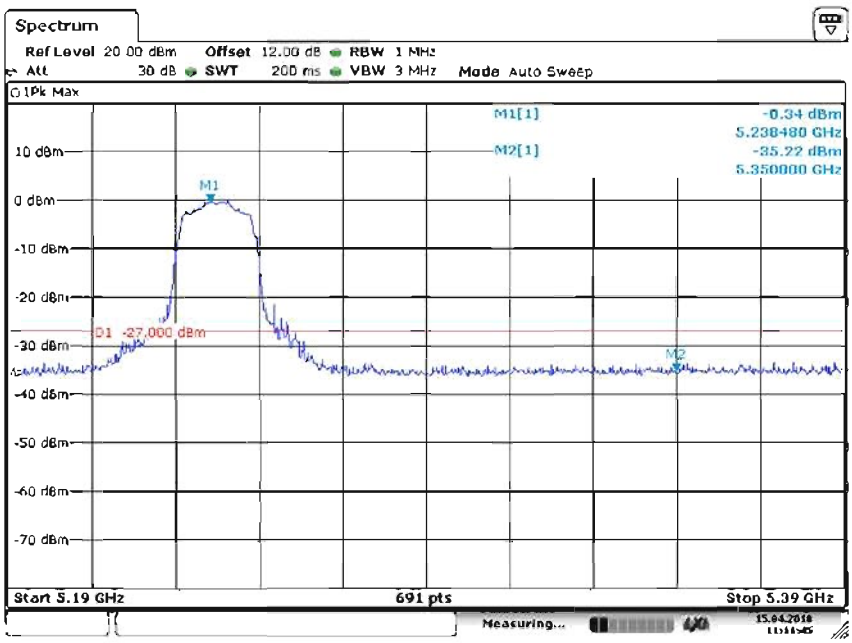
Date 15.APR.2018 11:50:43

Test Item	: Power Spectral Density
Test Mode	: Mode 4: Transmit by 802.11ac(20MHz)

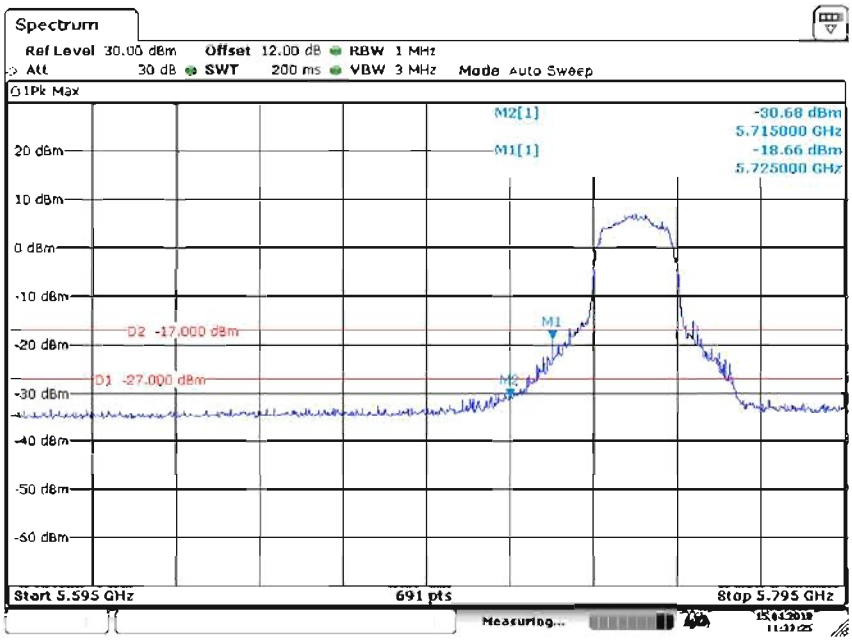
Channel 36 (5180MHz)



Channel 48 (5240MHz)

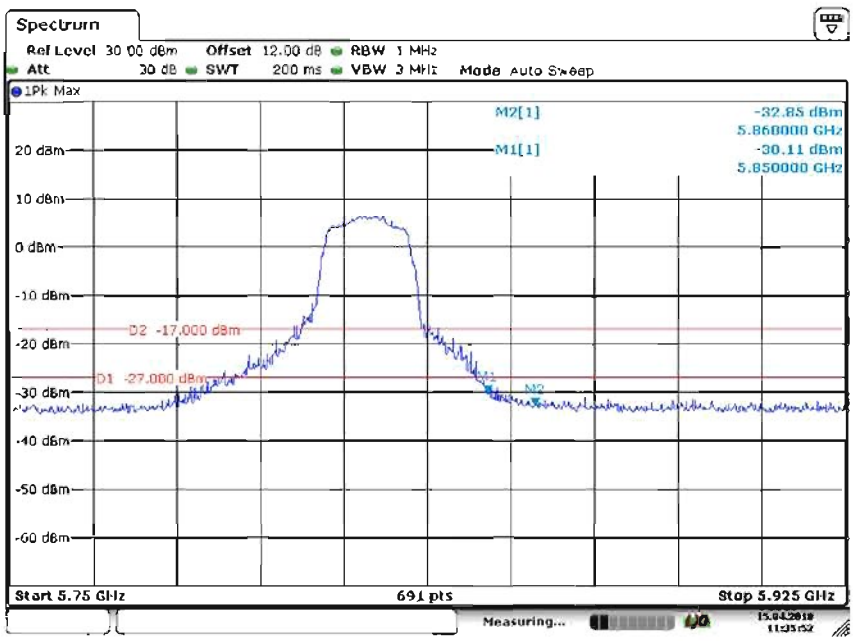


Channel 149 (5745MHz)



Date 15.APR.2018 11:32:25

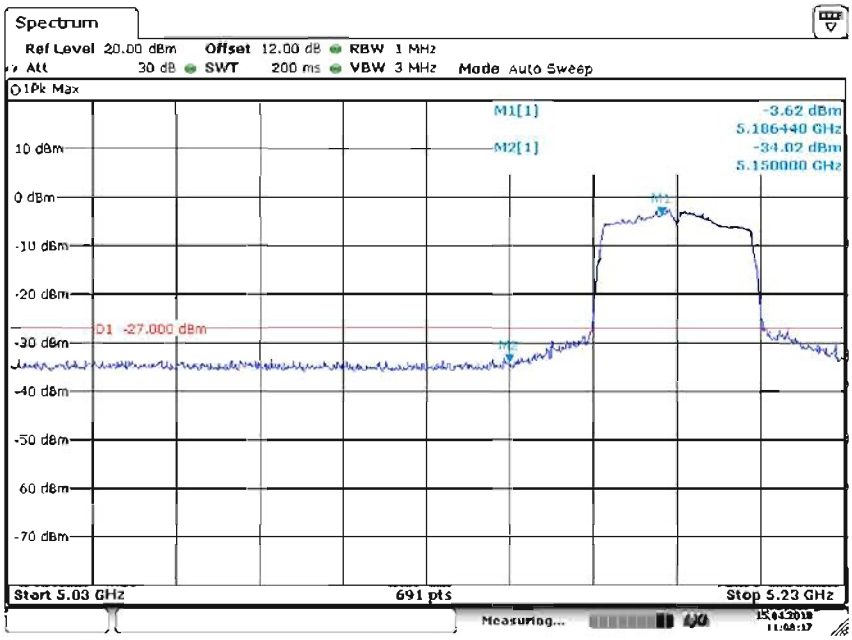
Channel 165 (5825MHz)



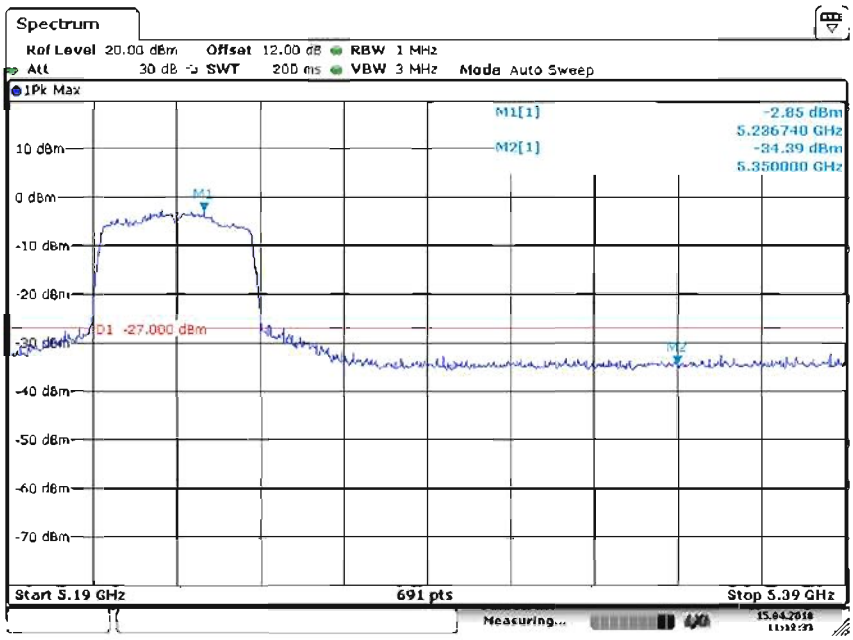
Date 15.APR.2018 11:35:52

Test Item	: Power Spectral Density
Test Mode	: Mode 5: Transmit by 802.11ac(40MHz)

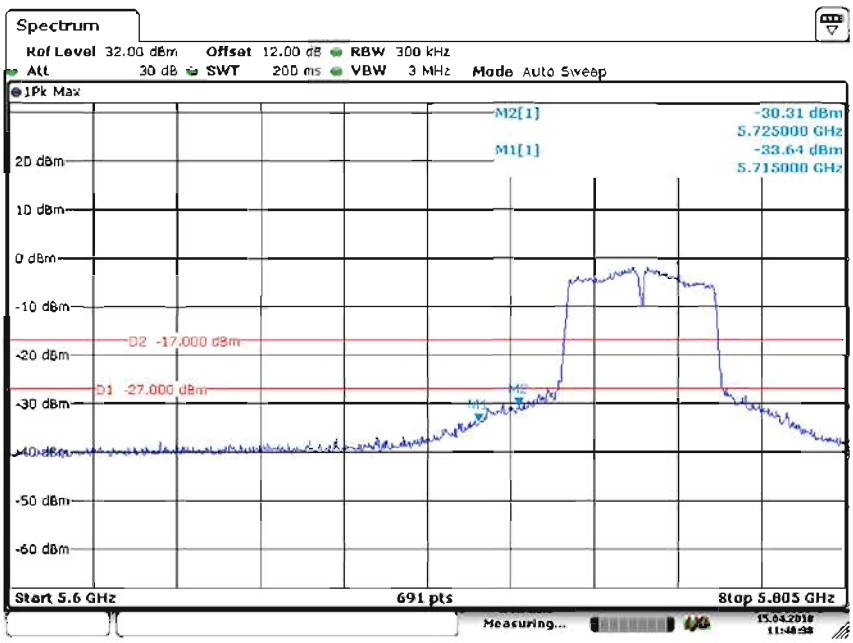
Channel 38 (5190MHz)



Channel 46 (5230MHz)

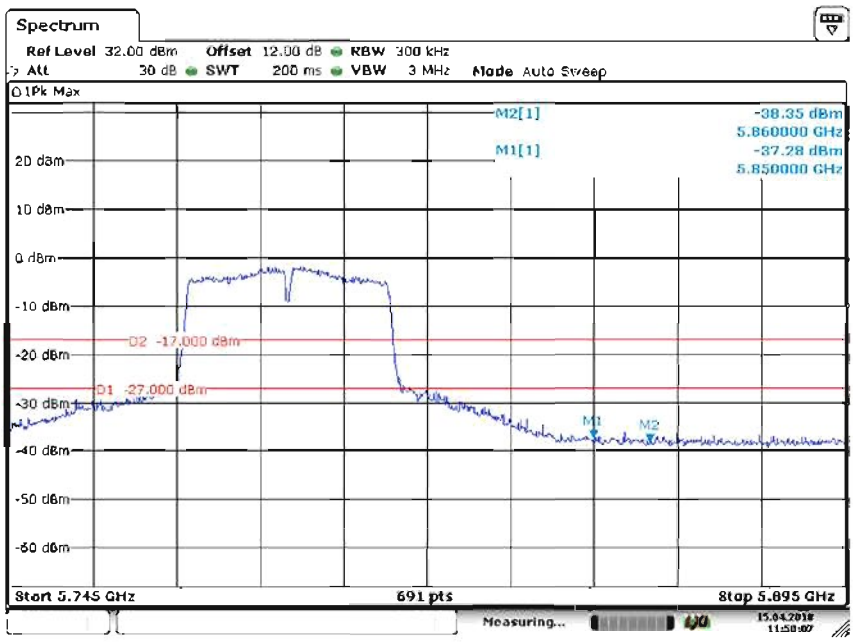


Channel 151 (5755MHz)



Date 15.APR.2018 11:48:39

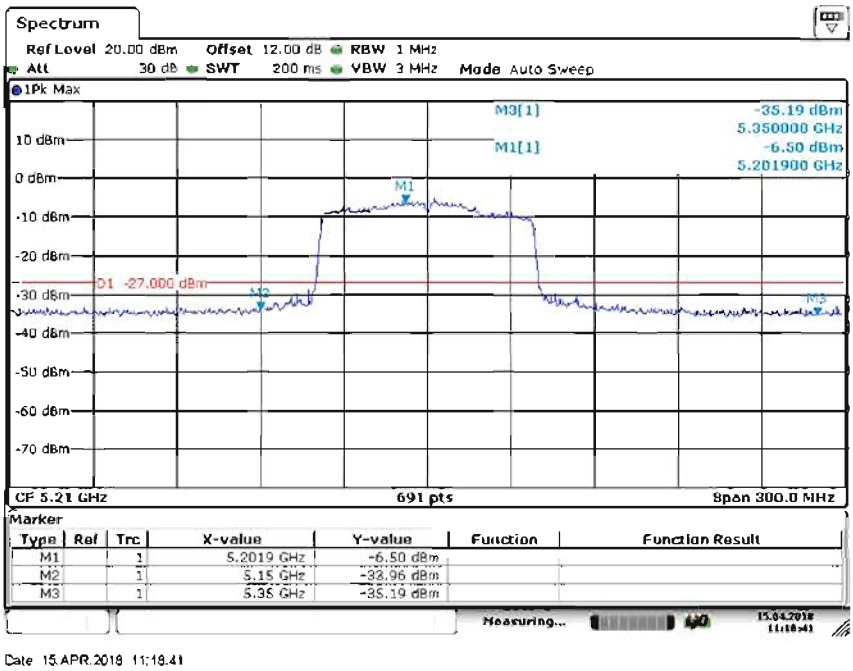
Channel 159 (5795MHz)



Date 15.APR.2018 11:50:07

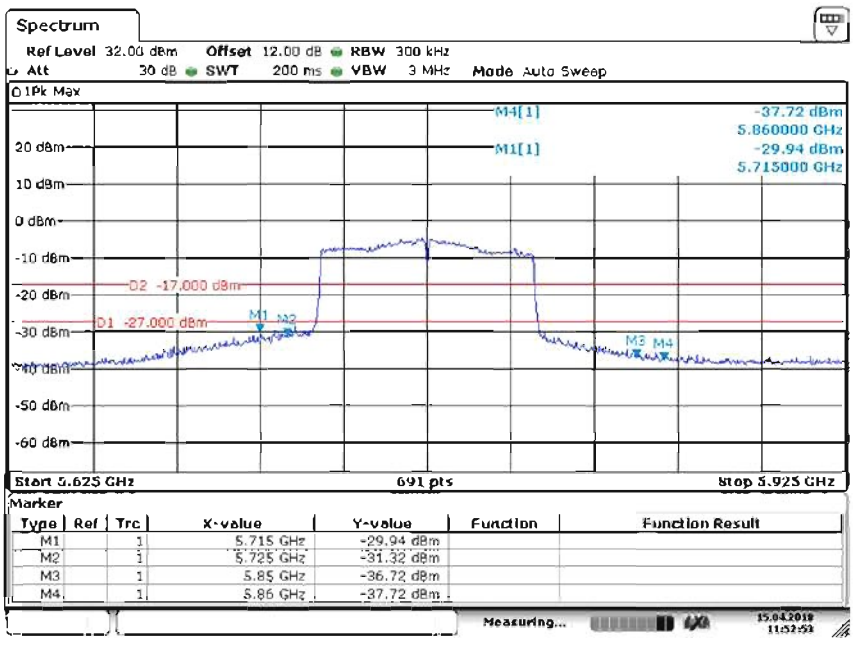
Test Item	: Power Spectral Density
Test Mode	: Mode 6: Transmit by 802.11ac(80MHz)

Channel 42 (5210MHz)



Date 15.APR.2018 11:18:41

Channel 155 (5775MHz)



Date 15.APR.2018 11:52:53

11. Antenna requirement

11.1. The requirement

According to section 15.203, an intentional radiator shall be designed to ensure that no antenna other than the furnished by the responsible party shall be used with the device

11.2. Antenna construction

Device is equipped with permanent attached antenna, which isn't displaced by other antenna. The max antenna gain of EUT is 1dBi. Therefore, the equipment complies with the antenna requirement of section 15.203.