FCC 47 CFR PART 15 SUBPART E

for

Dual-band Wifi Extender

Model: MX1200YZ (where Y can be A, B, C, D or blank, and Z can be A, B, C, D, or blank, for identical hardware models for marketing purposes only)

Brand: Motorola

Test Report Number: C161220Z01-RP1-2

Issued Date: December 30, 2016

Issued for

MTRLC LLC

P.O.Box 12147 Boston, Massachusetts 02112-1147 United States

Issued by:

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Reference No.: C161219Z09-RP1-2

Report No.: C161220Z01-RP1-2

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FCC ID: 2AF5PMX1200 Page 1 / 256

Revision History

Reference No.: C161219Z09-RP1-2 Report No.: C161220Z01-RP1-2

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	July 5, 2016	Initial Issue	ALL	Sabrina Wang
01	December 23, 2016	Updated	See Rev.01	Sabrina Wang
02	December 30, 2016	Updated	See Rev.02	Sabrina Wang

Rev.01: (C161219Z09-RP1-2)

- The applicant, the Manufacturer information, the product name, the model name, the brand name and the appearance are changed based on the test report No.: C160322Z02-RP1-2.
- 2. The difference between the new model and the original model is the appearance and the PCBA different. After reassessment, this change didn't affect the test result.
- 3. The other information, please refer to the test report No.: C160322Z02-RP1-2 and this report.

Rev.02: (C161220Z01-RP1-2)

- The applicant added the frequency range band II, band III basd on the test report No.: C161219Z09-RP1-2, after reassessement, all items were re-tested. And add the DFS report.
- 2. The other information, please refer to the test report No.: C161219Z09-RP1-2 and this report and C161220Z01-RP1-3 DFS report.

TABLE OF CONTENTS

1.	TE	EST CERTIFICATION	4
2.	El	UT DESCRIPTION	5
3.	TE	EST METHODOLOGY	8
	3.1	EUT CONFIGURATION	8
	3.2	EUT EXERCISE	
	3.3	GENERAL TEST PROCEDURES	
	3.4	FCC PART 15.205 RESTRICTED BANDS OF OPERATIONS	
	3.5	DESCRIPTION OF TEST MODES	
4.	SE	ETUP OF EQUIPMENT UNDER TEST	12
	4.1	DESCRIPTION OF SUPPORT UNITS	12
	4.2	CONFIGURATION OF SYSTEM UNDER TEST	12
5.	FÆ	ACILITIES AND ACCREDITATIONS	13
	5.1	FACILITIES	13
	5.2	EQUIPMENT	13
	5.3	ACCREDITATIONS	13
	5.4	MEASUREMENT UNCERTAINTY	14
6.	FC	CC PART 15 REQUIREMENTS	15
	6.1	26dB EMISSION BANDWIDTH	15
	6.2	6db Bandwidth Measurement	52
	6.3	ANTENNA GAIN	63
	6.4	OUTPUT POWER	65
	6.5	BAND EDGES MEASUREMENT	74
	6.6	PEAK POWER SPECTAL DENSITY	100
	6.7	RADIATED UNDESIABLE EMISSION	145
	6.8	CONDUCTED UNDESIRABLE EMISSION	202
	6.9	POWERLINE CONDUCTED EMISSIONS	225
	6.10	FREQUENCY STABILITY	229

1. TEST CERTIFICATION

Product	Dual-band Wifi Extender				
Model	MX1200YZ (where Y can be A, B, C, D or blank, and Z can be A, B, C, D, or blank, for identical hardware models for marketing purposes only)				
Brand	Motorola				
Tested	February 18~July 4, 2016 and December 20~29, 2016				
Applicant	MTRLC LLC P.O.Box 12147 Boston, Massachusetts 02112-1147 United States				
Manufacturer MTRLC LLC P.O.Box 12147 Boston, Massachusetts 02112-1147 United States					

APPLICABLE STANDARDS			
STANDARD TEST RESULT			
FCC 47 CFR Part 15 Subpart E	No non-compliance noted		

We hereby certify that:

Compliance Certification Services (Shenzhen) Inc. tested the above equipment. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in **ANSI C63.10**: **2013** and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits of FCC Rules Part 15.407. FCC 14-30.

The TEST RESULTS of this report relate only to the tested sample identified in this report.

Approved by:

Reviewed by:

Sunday Hu

Supervisor of EMC Dept.

Compliance Certification Services (Shenzhen) Inc.

Ruby Zhang

Supervisor of Report Dept.

Compliance Certification Services (Shenzhen) Inc.

Reference No.: C161219Z09-RP1-2

Report No.: C161220Z01-RP1-2

2. EUT DESCRIPTION

Product	Dual-band Wifi Extender				
Model Number	MX1200YZ (where Y can be A, B, C, D or blank, and Z can be A, B, C, D, or blank, for identical hardware models for marketing purposes only)				
Brand	Motorola				
Model Discrepancy	N/A				
Serial Number	C161220Z01-RP1-2				
Received Date	March 22, 2016				
Power Supply	Input: ~100-240V, 50/60Hz, 0.5A				
Frequency Range	UNII Band I: IEEE 802.11a, 802.11n HT20: IEEE 802.11n HT40: IEEE 802.11ac 80: UNII Band II IEEE 802.11a, 802.11n HT20: IEEE 802.11a, 802.11n HT20: IEEE 802.11ac 80: UNII Band III IEEE 802.11a, 802.11n HT20: IEEE 802.11a, 802.11n HT20: IEEE 802.11ac 80: UNII Band IV IEEE 802.11a, 802.11n HT20: IEEE 802.11a, 802.11n HT20: IEEE 802.11ac 80: UNII Band IV IEEE 802.11ac 80:	5190MHz ~ 5230MHz 5210MHz 720 : 5260MHz ~ 5320MHz 5270MHz ~ 5310MHz 5290MHz 720 : 5500MHz ~ 5700MHz 5510MHz ~ 5670MHz 5530MHz			
Transmit Power	UNII Band I: IEEE 802.11a: IEEE 802.11n HT 20 MHz mode: IEEE 802.11n HT 40 MHz mode: IEEE 802.11ac 80: UNII Band II IEEE 802.11a: IEEE 802.11n HT 20 MHz mode: IEEE 802.11n HT 40 MHz mode: IEEE 802.11ac 80: UNII Band III IEEE 802.11a: IEEE 802.11a: IEEE 802.11n HT 20 MHz mode: IEEE 802.11n HT 40 MHz mode: IEEE 802.11n HT 40 MHz mode: IEEE 802.11ac 80: UNII Band IV IEEE 802.11a: IEEE 802.11a: IEEE 802.11a: IEEE 802.11n HT 20 MHz mode: IEEE 802.11n HT 40 MHz mode: IEEE 802.11n HT 40 MHz mode: IEEE 802.11n HT 40 MHz mode:	11.76dBm (Antenna 0) 14.94dBm (Antenna 1) 19.20dBm (Combine with Antenna 0 and Antenna 1) 21.13dBm (Combine with Antenna 0 and Antenna 1) 19.38dBm (Combine with Antenna 0 and Antenna 1) 15.08dBm (Antenna 0) 14.71dBm (Antenna 1) 18.50dBm (Combine with Antenna 0 and Antenna 1) 18.05dBm (Combine with Antenna 0 and Antenna 1) 15.25dBm (Combine with Antenna 0 and Antenna 1) 15.08dBm (Antenna 0) 15.60dBm (Antenna 0) 15.60dBm (Combine with Antenna 0 and Antenna 1) 17.35dBm (Combine with Antenna 0 and Antenna 1) 15.88dBm (Combine with Antenna 0 and Antenna 1) 15.17dBm (Antenna 0) 15.17dBm (Antenna 0) 15.17dBm (Combine with Antenna 0 and Antenna 1) 18.02dBm (Combine with Antenna 0 and Antenna 1)			

FCC ID: 2AF5PMX1200 Page 5 / 256
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	IEEE 802.11ac 80:	16.24dBm (Combine with Antenna 0 and Antenna 1)		
Modulation Technique	OFDM (QPSK, BPSK, 16-QAM, 6	4-QAM)		
Transmit Data Rate	IEEE 802.11a mode: 48, 36, 24, 18, 12, 9, 6Mbps IEEE802.11n HT20MHz mode(800ns GI): 13,26,39,52,78,104,117,130Mbps IEEE802.11n HT40MHz mode(800ns GI): 27,54,81,108,162,216,243,270Mbps IEEE802.11ac VHT80MHz mode(800ns GI): 58.6,117,175.6,234,351,468,526.6, 585,702,780Mbps			
Number of Channels	UNII Band I: IEEE 802.11a, 802.11n HT20: IEEE 802.11n HT40: IEEE 802.11ac 80: UNII Band II IEEE 802.11a, 802.11n HT20: IEEE 802.11a, 802.11n HT20: IEEE 802.11ac 80: UNII Band III IEEE 802.11a, 802.11n HT20: IEEE 802.11a, 802.11n HT20: IEEE 802.11ac 80: UNII Band IV IEEE 802.11a, 802.11n HT20: IEEE 802.11a, 802.11n HT20: IEEE 802.11ac 80: UNII Band IV IEEE 802.11a, 802.11n HT20: IEEE 802.11ac 80:	1 Channels 5 Channels		
Antenna Specification	Embedded Antenna with 3.3dBi g	` '		
Channels Spacing	IEEE 802.11a, 802.11n HT20 : 20MHz IEEE 802.11n HT40: 40MHz IEEE 802.11ac 80: 80MHz			
Temperature Range	0°C ~ +40°C			
Hardware Version	V1.01			
Software Version	V1.0.0			

Note: 1. The sample selected for test was engineering sample that approximated to production product and was provided by manufacturer.

FCC ID: 2AF5PMX1200 Page 6 / 256

Operation Frequency:

UNLICENSED NATIONAL INFORMATION INFRASTRUCTURE (U-NII)					
CHANNEL	MHz				
36	5180				
38	5190				
40	5200				
42	5210				
44	5220				
46	5230				
48	5240				
52	5260				
54	5270				
56	5280				
58	5290				
60	5300				
62	5310				
64	5320				
100	5500				
102	5510				
104	5520				
106	5530				
108	5540				
110	5550				
112	5560				
116	5580				
132	5660				
134	5670				
136	5680				
140	5700				
149	5745				
151	5755				
153	5765				
155	5775				
157	5785				
159	5795				
161	5805				
165	5825				

Remark:

- 1. The sample selected for test was engineering sample that approximated to production product and was provided by manufacturer.
- 2. This submittal(s) (test report) is intended for FCC ID: 2AF5PMX1200 filing to comply with Section 15.407 of the FCC Part 15, Subpart E Rules and FCC 14-30.

FCC ID: 2AF5PMX1200 Page 7 / 256

3. TEST METHODOLOGY

Both conducted and radiated testing was performed according to the procedures in ANSI C63.10 Radiated testing was performed at an antenna to EUT distance 3 meters.

Reference No.: C161219Z09-RP1-2

Report No.: C161220Z01-RP1-2

The tests documented in this report were performed in accordance with ANSI C63.10: 2013 and FCC CFR 47 Part 15.207, 15.209, 15.407 and FCC 14-30.

Radio testing was performed according to KDB DA 02-2138、KDB 789033 D02、KDB 905462 D06:

3.1 EUT CONFIGURATION

The EUT configuration for testing is installed for RF field strength measurement to meet the Commissions requirement, and is operated in a manner intended to generate the maximum emission in a continuous normal application.

3.2 EUT EXERCISE

The EUT is operated in the engineering mode to fix the TX frequency for the purposes of measurement.

According to its specifications, the EUT must comply with the requirements of Section 15.407 under the FCC Rules Part 15 Subpart E.

3.3 GENERAL TEST PROCEDURES

Conducted Emissions

The EUT is placed on the turntable, which is positioned at 0.8 m above the ground plane. According to the requirements in Section 13.1.4.1 of ANSI C63.10, the conducted emission from the EUT is measured in the frequency range between 0.15 MHz and 30MHz, using the CISPR Quasi-Peak detector mode.

Radiated Emissions

The EUT is placed on the turntable, which is 0.8 m (below 1GHz) /1.5m (Above 1GHz) above the ground plane. The turntable is then rotated for 360 degrees to determine the proper orientation for the maximum emission level. The EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission level. And, each emission is to be maximized by changing the horizontal and vertical polarization of the receiving antenna. In order to find out the maximum emissions, exploratory radiated emission measurements were made according to the requirements in Section 13.1.4.1 of ANSI C63.10.

FCC ID: 2AF5PMX1200 Page 8 / 256
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Contipliance Certification Services (Shellzhell) Inc. Report No.: C161220Z01-RP1-2

3.4 FCC PART 15.205 RESTRICTED BANDS OF OPERATIONS

Reference No.: C161219Z09-RP1-2

(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz MHz		GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 -	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.52525	2655 - 2900	22.01 - 23.12
8.41425 - 8.41475	156.7 - 156.9	3260 - 3267	23.6 - 24.0
12.29 - 12.293	162.0125 - 167.17	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	167.72 - 173.2	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	240 - 285	3600 - 4400	(2)
13.36 - 13.41	322 - 335.4		

¹ Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

(b) Except as provided in paragraphs (d) and (e), the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

² Above 38.6

3.5 DESCRIPTION OF TEST MODES

The EUT is a 2x2 configuration spatial MIMO (2TX & 2RX) without beam forming function. Software used to control the EUT for staying in continuous transmitting mode was programmed.

Reference No.: C161219Z09-RP1-2 Report No.: C161220Z01-RP1-2

Test Item Test mode		Worse mode
Conducted Emission	Mode 1: Full System+1000Mbps 10%	Mode 1
Radiated Emission	Mode 1: TX	Mode 1

After verification, all tests were carried out with the worst case test modes as shown below except radiated spurious emission below 1GHz, which worst case was in normal link mode only.

UNII Band I:

IEEE 802.11a for 5180 ~ 5240MHz:

Channel Low (5180MHz), Channel Mid (5200MHz) and Channel High (5240MHz) with 6Mbps data rate were chosen for full testing.

IEEE 802.11n HT 20 MHz for 5180 ~ 5240MHz:

Channel Low (5180MHz), Channel Mid (5200MHz) and Channel High (5240MHz) with 13Mbps data rate were chosen for full testing.

IEEE 802.11n HT 40 MHz Channel for 5190 ~ 5230MHz:

Channel Low (5190MHz) and Channel High (5230MHz) with 27Mbps data rate were chosen for full testing.

IEEE 802.11ac 80 Channel for 5210MHz:

Channel Low (5210MHz) with 27Mbps data rate were chosen for full testing.

FCC ID: 2AF5PMX1200 Page 10 / 256

UNII Band II:

IEEE 802.11a for 5260 ~ 5320MHz:

Channel Low (5260MHz), Channel Mid (5300MHz) and Channel High (5320MHz) with 6Mbps data rate were chosen for full testing.

Reference No.: C161219Z09-RP1-2

Report No.: C161220Z01-RP1-2

IEEE 802.11n HT 20 MHz for 5260 ~ 5320MHz:

Channel Low (5260MHz), Channel Mid (5300MHz) and Channel High (5320MHz) with 13Mbps data rate were chosen for full testing.

IEEE 802.11n HT 40 MHz Channel for 5270~ 5310MHz:

Channel Low (5270MHz) and Channel High (5310MHz) with 27Mbps data rate were chosen for full testing.

IEEE 802.11ac 80 Channel for 5290MHz:

Channel Low (5290MHz) with 27Mbps data rate were chosen for full testing.

UNII Band III:

IEEE 802.11a for 5500 ~ 5700MHz:

Channel Low (5500MHz), Channel Mid (5580MHz) and Channel High (5700MHz) with 6Mbps data rate were chosen for full testing.

IEEE 802.11n HT 20 MHz for 5500 ~ 5700MHz:

Channel Low (5500MHz), Channel Mid (5580MHz) and Channel High (5700MHz) with 13Mbps data rate were chosen for full testing.

IEEE 802.11n HT 40 MHz Channel for 5510~ 5670MHz:

Channel Low (5510MHz) and Channel High (5670MHz) with 27Mbps data rate were chosen for full testing.

IEEE 802.11ac 80 Channel for 5530MHz:

Channel Low (5530MHz) with 27Mbps data rate were chosen for full testing.

UNII Band IV:

IEEE 802.11a for 5745 ~ 5825MHz:

Channel Low (5745MHz), Channel Mid (5785MHz) and Channel High (5825MHz) with 6Mbps data rate were chosen for full testing.

IEEE 802.11n HT 20 MHz for 5745 ~ 5825MHz:

Channel Low (5745MHz), Channel Mid (5785MHz) and Channel High (5825MHz) with 13Mbps data rate were chosen for full testing.

IEEE 802.11n HT 40 MHz Channel for 5755~ 5795MHz:

Channel Low (5755MHz) and Channel High (5795MHz) with 27Mbps data rate were chosen for full testing.

IEEE 802.11ac 80 Channel for 5775MHz:

Channel Low (5775MHz) with 27Mbps data rate were chosen for full testing.

FCC ID: 2AF5PMX1200 Page 11 / 256

4. SETUP OF EQUIPMENT UNDER TEST

4.1 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Report No.: C161220Z01-RP1-2

No.	Equipment	Model No.	Serial No.	FCC ID	Brand	Data Cable	Power Cord
1	Notebook	E335	R9-WN1EF	DoC	Thinkpad	Unshielded 1.50m (RJ45 Cable)	Shielded 1.60m (AC Cable) Unshielded 1.80m (DC Cable)

Note:

Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

4.2 CONFIGURATION OF SYSTEM UNDER TEST

See test photographs attached in Appendix II for the actual connections between EUT and support equipment.

FCC ID: 2AF5PMX1200 Page 12 / 256 This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

5. FACILITIES AND ACCREDITATIONS

5.1 FACILITIES

All measurement facilities used to collect the measurement data are located at No.10-1 Mingkeda Logistics park, No.18, Huanguan South Rd., Guan Lan Town, Baoan District, Shenzhen, China

The sites are constructed in conformance with the requirements of ANSI C63.10, ANSI C63.7 and CISPR Publication 22.

5.2 EQUIPMENT

Radiated emissions are measured with one or more of the following types of linearly polarized antennas: tuned dipole, biconical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with pre-selectors and quasi-peak detectors are used to perform radiated measurements.

Conducted emissions are measured with Line Impedance Stabilization Networks and EMI Test Receivers.

Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.

All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

5.3 ACCREDITATIONS

Our laboratories are accredited and approved by the following accreditation body according to ISO/IEC 17025.

USA A2LA China CNAS

The measuring facility of laboratories has been authorized or registered by the following approval agencies.

USA FCC

Japan VCCI(C-3478, R-3135, T-652, G-10624)

Canada INDUSTRY CANADA

Copies of granted accreditation certificates are available for downloading from our web site, http://www.ccssz.com

FCC ID: 2AF5PMX1200 Page 13 / 256

5.4 MEASUREMENT UNCERTAINTY

Parameter	Uncertainty
RF frequency	+/-1 * 10-5
RF power conducted	+/- 1,5 dB
RF power radiated	+/- 6 dB
Spurious emissions, conducted	+/- 3 dB
Spurious emissions, radiated	+/- 6 dB
Humidity	+/- 5 %
Temperature	+/- 1°C
Time	+/-10 %

Remark: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

FCC ID: 2AF5PMX1200 Page 14 / 256

6. FCC PART 15 REQUIREMENTS

6.1 26dB EMISSION BANDWIDTH

6.1.1 LIMIT

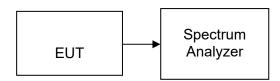
According to §15.403(c), for purposes of this subpart the emission bandwidth shall be determined by measuring the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, that are 26 dB down relative to the maximum level of the modulated carrier. Compliance with the emissions limits is based on the use of measurement instrumentation employing a peak detector function with an instrument resolutions bandwidth approximately equal to 1.0 percent of the emission bandwidth of the device under measurement.

6.1.2 MEASUREMENT EQUIPMENT USED

Name of Equipment	Equipment Manufacturer Model Serial Num		Serial Number	Last Calibration	Due Calibration
Spectrum Analyzer	Agilent	N9010A	MY52221469	02/21/2016	02/20/2017

Remark: Each piece of equipment is scheduled for calibration once a year.

6.1.3 TEST CONFIGURATION



6.1.4TEST PROCEDURE

- 1. Place the EUT on the table and set it in the transmitting mode.
- Remove the antenna from the EUT and then connect a low-loss RF cable from the 2. antenna port to the spectrum analyzer.
- Set the spectrum analyzer as RBW > 1%EBW, VBW > RBW, Span > 26dB bandwidth, Detector = Peak, and Sweep = auto.
- Mark the peak frequency and -26dB (upper and lower) frequency.
- Repeat until all the rest channels were investigated. 5.

FCC ID: 2AF5PMX1200 Page 15 / 256

6.1.5 TEST RESULTS

No non-compliance noted

Test Data

Test mode: IEEE 802.11a mode / 5180 ~ 5240MHz

Channel	Frequency		
	(MHz)	Antenna 0	Antenna 1
Low	5180	19.56	19.47
Mid	5200	19.36	19.43
High	5240	19.67	19.66

Test mode: IEEE 802.11a mode / 5260 ~ 5320MHz

Channel	Frequency	26dB Ban (M	dwidth(B) Hz)
	(MHz)	Antenna 0	Antenna 1
Low	5260	19.60	19.35
Mid	5300	19.27	19.40
High	5320	19.35	19.38

Test mode: IEEE 802.11a mode / 5500 ~ 5700MHz

Channel	Frequency (MHz)	26dB Bandwidth(B) (MHz)	
		Antenna 0	Antenna 1
Low	5500	19.61	19.36
Mid	5580	19.40	19.50
High	5700	19.57	19.75

FCC ID: 2AF5PMX1200 Page 16 / 256

Test mode: IEEE 802.11n HT 20 MHz mode / 5180 ~ 5240MHz

Channel	Frequency	26dB Ban (M	dwidth(B) Hz)
	(MHz)	Antenna 0	Antenna 1
Low	5180	19.91	19.68
Mid	5200	19.69	19.63
High	5240	19.75	19.87

Test mode: IEEE 802.11n HT 20 MHz mode / 5260 ~ 5320MHz

Channel	Frequency	26dB Bandwidth(B) (MHz)	
	(MHz)	Antenna 0	Antenna 1
Low	5260	19.66	19.91
Mid	5300	19.74	19.71
High	5320	20.02	19.91

Test mode: IEEE 802.11n HT 20 MHz mode / 5500 ~ 5700MHz

Channel	Frequency	26dB Bandwidth(B) (MHz)	
	(MHz)	Antenna 0	Antenna 1
Low	5500	19.79	19.75
Mid	5580	20.08	19.83
High	5700	19.76	19.76

Page 17 / 256 This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Test mode: IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz

Channel	Frequency	26dB Bandwidth(B) (MHz)	
	(MHz)	Antenna 0	Antenna 1
Low	5190	39.20	39.14
High	5230	39.04	38.93

Test mode: IEEE 802.11n HT 40 MHz mode / 5270 ~ 5310MHz

Channel	Frequency	26dB Bandwidth(B) (MHz)	
	(MHz)	Antenna 0	Antenna 1
Low	5270	39.15	39.13
High	5310	38.74	39.28

Test mode: IEEE 802.11n HT 40 MHz mode / 5510 ~ 5670MHz

Channel	Frequency	26dB Bandwidth(B) (MHz)	
	(MHz)	Antenna 0	Antenna 1
Low	5510	39.08	38.76
Mid	5550	39.18	39.31
High	5670	39.09	39.27

FCC ID: 2AF5PMX1200 Page 18 / 256
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Test mode: IEEE 802.11ac 80 mode / 5210MHz

Channel	Frequency (MHz)	26dB Bandwidth(B) (MHz)	
		Antenna 0	Antenna 1
	5210	78.89	78.88

Test mode: IEEE 802.11ac 80 mode / 5290MHz

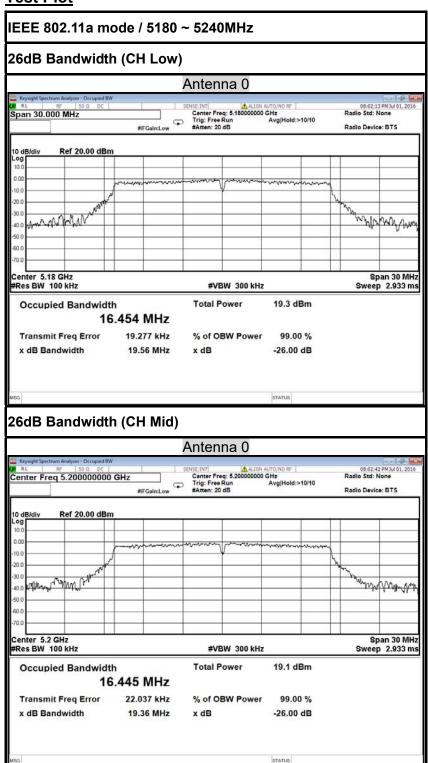
Channel	Frequency (MHz)	26dB Bandwidth(B) (MHz)	
		Antenna 0	Antenna 1
	5290	78.71	78.76

Test mode: IEEE 802.11ac 80 mode / 5530MHz

Channel	annel Frequency (MHz)	26dB Bandwidth(B) (MHz)	
o namo		Antenna 0	Antenna 1
	5530	78.77	78.76

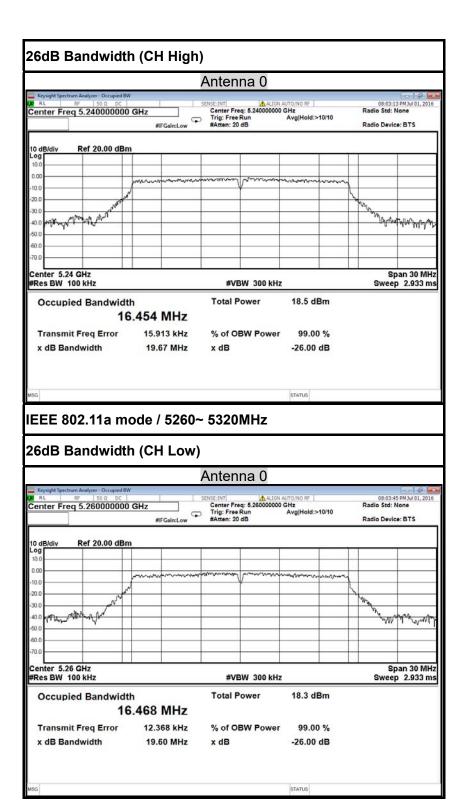
FCC ID: 2AF5PMX1200 Page 19 / 256

Test Plot



FCC ID: 2AF5PMX1200 Page 20 / 256 This report shall not be reproduced except in full, without the written approval of Compliance Certification Services. Compliance Certification Services (Shenzhen) Inc.

Reference No.: C161219Z09-RP1-2
Report No.: C161220Z01-RP1-2



26dB Bandwidth (CH Mid) Antenna 0 Center Freq: 5.300000000 GHz
Trig: Free Run Avg|Hold:>10/10
#Atten: 20 dB Ref 20.00 dBm White when #VBW 300 kHz Occupied Bandwidth **Total Power** 18.6 dBm 16.437 MHz Transmit Freq Error 24.717 kHz % of OBW Power 99.00 % 19.27 MHz x dB Bandwidth x dB -26.00 dB 26dB Bandwidth (CH High) Antenna 0 SENSE:INT ALTON AUTO/NO RF Center Freq: 5.320000000 GHz
Trig: Free Run Avg|Hold:>10/10 #Atten: 20 dB Center Freq 5.320000000 GHz Ref 20.00 dBm May My May Mary Center 5.32 GHz #Res BW 100 kHz **#VBW 300 kHz** Sweep 2.933 ms Occupied Bandwidth **Total Power** 18.5 dBm

Reference No.: C161219Z09-RP1-2 Report No.: C161220Z01-RP1-2

% of OBW Power

x dB

99.00 %

-26.00 dB

16.436 MHz

23.961 kHz

19.35 MHz

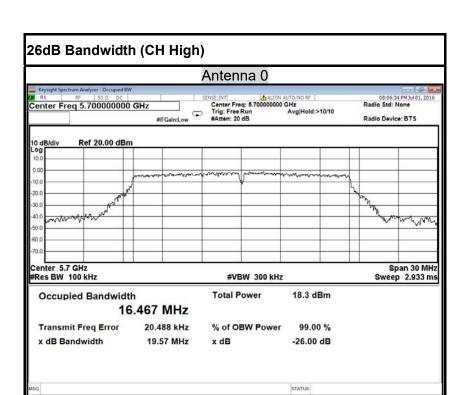
Transmit Freq Error

x dB Bandwidth

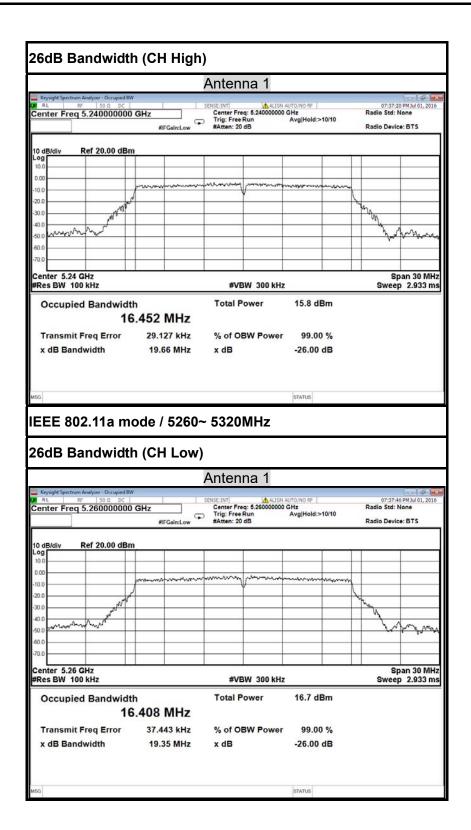
IEEE 802.11a mode / 5500 ~ 5700MHz 26dB Bandwidth (CH Low) Antenna 0 MSE:INT ALIGN AUTO/NO RF

Center Freq: 5.500000000 GHz

Trig: Free Run Avg|Hold:>10/10
#Atten: 20 dB 08:05:32 PMJul 01, 2016 Radio Std: None Center Freq 5.500000000 GHz Radio Device: BTS #IFGain:Low Ref 20.00 dBm Center 5.5 GHz Span 30 MHz Res BW 100 kHz **#VBW 300 kHz** Occupied Bandwidth **Total Power** 18.8 dBm 16.463 MHz Transmit Freq Error 28.823 kHz % of OBW Power 99.00 % x dB Bandwidth 19.61 MHz -26.00 dB STATUS 26dB Bandwidth (CH Mid) Antenna 0 SENSE:INT | ALIGN AUTO/NO RF |
Center Freq: 5.880000000 GHz
Trig: Free Run Avg|Hold:>10/10
#Atten: 20 dB Center Freq 5.580000000 GHz Radio Device: BTS Ref 20.00 dBm Center 5.58 GHz #Res BW 100 kHz Span 30 MHz **#VBW 300 kHz** Sweep 2.933 ms Occupied Bandwidth **Total Power** 20.2 dBm 16.428 MHz Transmit Freq Error 32.888 kHz % of OBW Power 99.00 % x dB Bandwidth 19.40 MHz -26.00 dB



IEEE 802.11a mode / 5180 ~ 5240MHz 26dB Bandwidth (CH Low) Antenna 1 Center Freq: 5.180000000 GHz
Trig: Free Run
#Atten: 20 dB
Auton auto/no RF
Auton Auto/no RF
Avg|Hold:>10/10 07:36:11 PMJul 01, 2016 Radio Std: None Span 30.000 MHz Radio Device: BTS Ref 20.00 dBm way brown they Center 5.18 GHz Span 30 MHz Res BW 100 kHz **#VBW 300 kHz** Occupied Bandwidth **Total Power** 20.2 dBm 16.471 MHz Transmit Freq Error 12.591 kHz % of OBW Power 99.00 % x dB Bandwidth -26.00 dB STATUS 26dB Bandwidth (CH Mid) Antenna 1 SENSE:INT | ALIGN AUTO/NO RF |
Center Freq: 5.20000000 GHz
Trig: Free Run Avg|Hold:>10/10
#Atten: 20 dB Center Freq 5.200000000 GHz Radio Device: BTS Ref 20.00 dBm Center 5.2 GHz #Res BW 100 kHz Span 30 MHz **#VBW 300 kHz** Sweep 2.933 ms Occupied Bandwidth **Total Power** 16.7 dBm 16.466 MHz Transmit Freq Error 11.120 kHz % of OBW Power 99.00 % x dB Bandwidth 19.43 MHz -26.00 dB

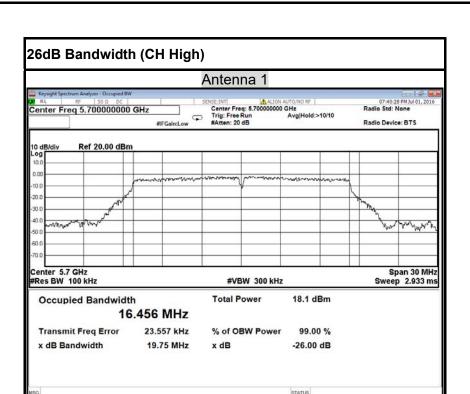


26dB Bandwidth (CH Mid) Antenna 1 Center Freq: 5.300000000 GHz
Trig: Free Run Avg|Hold:>10/10
#Atten: 20 dB #IFGain:Low Ref 20.00 dBm monuments Span 30 MH #VBW 300 kHz Occupied Bandwidth **Total Power** 16.7 dBm 16.438 MHz Transmit Freq Error 29.624 kHz % of OBW Power 99.00 % x dB Bandwidth 19.40 MHz x dB -26.00 dB 26dB Bandwidth (CH High) Antenna 1 SENSE:INT ALTON AUTO/NO RF Center Freq: 5.320000000 GHz
Trig: Free Run Avg|Hold:>10/10 #Atten: 20 dB Center Freq 5.320000000 GHz Ref 20.00 dBm mymynn Center 5.32 GHz #Res BW 100 kHz **#VBW 300 kHz** Sweep 2.933 ms Occupied Bandwidth **Total Power** 17.0 dBm 16.434 MHz Transmit Freq Error 25.126 kHz % of OBW Power 99.00 % x dB Bandwidth 19.38 MHz x dB -26.00 dB

IEEE 802.11a mode / 5500~ 5700MHz 26dB Bandwidth (CH Low) Antenna 1 MSE:INT ALIGN AUTO/NO RF

Center Freq: 5.500000000 GHz

Trig: Free Run Avg|Hold:>10/10
#Atten: 20 dB 07:39:18 PMJul 01, 2016 Radio Std: None Center Freq 5.500000000 GHz Radio Device: BTS #IFGain:Low Ref 20.00 dBm harmon ruh Center 5.5 GHz Span 30 MHz Res BW 100 kHz **#VBW 300 kHz** Occupied Bandwidth **Total Power** 16.6 dBm 16.428 MHz Transmit Freq Error 26.166 kHz % of OBW Power 99.00 % x dB Bandwidth 19.36 MHz -26.00 dB STATUS 26dB Bandwidth (CH Mid) Antenna 1 SENSE:INT | ALIGN AUTO/NO RF |
Center Freq: 5.880000000 GHz
Trig: Free Run Avg|Hold:>10/10
#Atten: 20 dB Center Freq 5.580000000 GHz Radio Device: BTS Ref 20.00 dBm Center 5.58 GHz #Res BW 100 kHz Span 30 MHz **#VBW 300 kHz** Sweep 2.933 ms Occupied Bandwidth **Total Power** 15.6 dBm 16.457 MHz Transmit Freq Error 22.711 kHz % of OBW Power 99.00 % x dB Bandwidth 19.50 MHz -26.00 dB



IEEE 802.11n HT 20 MHz mode / 5180 ~ 5240MHz 26dB Bandwidth (CH Low) Antenna 0 MSE:INT AUTO/INO RF Center Freq: 5.180000000 GHz
Trig: Free Run Avg|Hold:>10/10 #Atten: 20 dB Center Freq 5.180000000 GHz Radio Device: BTS #IFGain:Low Ref 20.00 dBm WARN Center 5.18 GHz Span 30 MHz Res BW 100 kHz **#VBW 300 kHz** Occupied Bandwidth **Total Power** 18.9 dBm 17.587 MHz Transmit Freq Error 35.283 kHz % of OBW Power 99.00 % x dB Bandwidth 19.91 MHz -26.00 dB STATUS 26dB Bandwidth (CH Mid) Antenna 0 SENSE:INT | ALIGN AUTO/NO RF |
Center Freq: 5.200000000 GHz
Trig: Free Run Avg|Hold:>10/10
#Atten: 20 dB Center Freq 5.200000000 GHz Radio Device: BTS Ref 20.00 dBm anum my WILLHAM Center 5.2 GHz #Res BW 100 kHz Span 30 MHz **#VBW 300 kHz** Sweep 2.933 ms Occupied Bandwidth **Total Power** 18.3 dBm 17.592 MHz Transmit Freq Error 34.720 kHz % of OBW Power 99.00 % x dB Bandwidth 19.69 MHz -26.00 dB

26dB Bandwidth (CH High) Antenna 0 SENSE:INT ALIGN AUTO/NO RF
Center Freq: 5.240000000 GHz
Trig: Free Run Avg|Hold:>10/10
#Atten: 20 dB Center Freq 5.240000000 GHz Radio Device: BTS Ref 20.00 dBm Center 5.24 GHz #Res BW 100 kHz Span 30 MHz Sweep 2.933 ms #VBW 300 kHz **Total Power** 17.7 dBm Occupied Bandwidth 17.584 MHz Transmit Freq Error 37.261 kHz % of OBW Power 99.00 % 19.75 MHz x dB Bandwidth x dB -26.00 dB IEEE 802.11n HT 20 MHz mode / 5260~ 5320MHz 26dB Bandwidth (CH Low) Antenna 0 SENSE:INT ALIGN AUTO/NO RF Center Freq: 6.260000000 GHz
Trig: Free Run Avg|Hold:>10/10
#Atten: 20 dB Center Freq 5.260000000 GHz Radio Device: BTS #IFGain:Low Ref 20.00 dBm Center 5.26 GHz #Res BW 100 kHz Span 30 MHz **#VBW 300 kHz** Sweep 2.933 ms **Total Power** Occupied Bandwidth 15.0 dBm 17.590 MHz

Reference No.: C161219Z09-RP1-2 Report No.: C161220Z01-RP1-2

% of OBW Power

x dB

99.00 %

-26.00 dB

STATUS

Transmit Freq Error

x dB Bandwidth

37.780 kHz

19.66 MHz

26dB Bandwidth (CH Mid) Antenna 0 Center Freq: 5.300000000 GHz
Trig: Free Run Avg|Hold:>10/10
#Atten: 20 dB #IFGain:Low Ref 20.00 dBm Span 30 MH #VBW 300 kHz Occupied Bandwidth **Total Power** 18.7 dBm 17.585 MHz Transmit Freq Error 33.555 kHz % of OBW Power 99.00 % x dB Bandwidth 19.74 MHz x dB -26.00 dB 26dB Bandwidth (CH High) Antenna 0 SENSE:INT ALIGN AUTO/NO RF
Center Freq: 5.320000000 GHz
Trig: Free Run Avg|Hold:>10/10
#Atten: 20 dB Center Freq 5.320000000 GHz Ref 20.00 dBm Center 5.32 GHz #Res BW 100 kHz **#VBW 300 kHz** Sweep 2.933 ms **Total Power** 18.2 dBm Occupied Bandwidth

Reference No.: C161219Z09-RP1-2 Report No.: C161220Z01-RP1-2

% of OBW Power

x dB

99.00 %

-26.00 dB

17.578 MHz

38.474 kHz

20.02 MHz

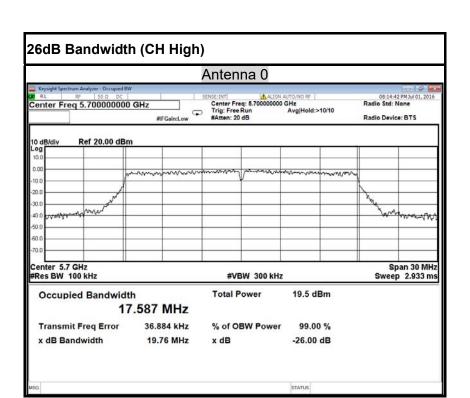
Transmit Freq Error

x dB Bandwidth

IEEE 802.11n HT 20 MHz mode / 5500 ~ 5700MHz 26dB Bandwidth (CH Low) Antenna 0 MSE:INT ALIGN AUTO/NO RF

Center Freq: 5.500000000 GHz

Trig: Free Run Avg|Hold:>10/10
#Atten: 20 dB 08:13:38 PMJul 01, 2016 Radio Std: None Center Freq 5.500000000 GHz Radio Device: BTS #IFGain:Low Ref 20.00 dBm Center 5.5 GHz Span 30 MHz Res BW 100 kHz **#VBW 300 kHz** Occupied Bandwidth **Total Power** 19.8 dBm 17.589 MHz Transmit Freq Error 44.589 kHz % of OBW Power 99.00 % x dB Bandwidth 19.79 MHz -26.00 dB STATUS 26dB Bandwidth (CH Mid) Antenna 0 SENSE:INT | ALIGN AUTO/NO RF |
Center Freq: 5.880000000 GHz
Trig: Free Run Avg|Hold:>10/10
#Atten: 20 dB Center Freq 5.580000000 GHz Radio Device: BTS Ref 20.00 dBm Center 5.58 GHz #Res BW 100 kHz Span 30 MHz **#VBW 300 kHz** Sweep 2.933 ms Occupied Bandwidth **Total Power** 21.0 dBm 17.615 MHz Transmit Freq Error 38.880 kHz % of OBW Power 99.00 % x dB Bandwidth 20.08 MHz -26.00 dB



IEEE 802.11n HT 20 MHz mode / 5180 ~ 5240MHz 26dB Bandwidth (CH Low) Antenna 1 SENSE:INT ALTON AUTO/NO RF Center Freq: 5.180000000 GHz
Trig: Free Run Avg|Hold:>10/10 #Atten: 20 dB 07:49:50 PMJul 01, 2016 Radio Std: None Center Freq 5.180000000 GHz #IFGain:Low Radio Device: BTS Ref 20.00 dBm Span 30 MHz enter 5.18 GHz Res BW 100 kHz #VBW 300 kHz Sweep 2.933 ms Occupied Bandwidth **Total Power** 18.0 dBm 17.591 MHz Transmit Freq Error 35.902 kHz % of OBW Power 99.00 % x dB Bandwidth 19.68 MHz STATUS 26dB Bandwidth (CH Mid) Antenna 1 SENSE:INT ALIGN AUTO/NO RF Center Freq: 5.20000000 GHz
Trig: Free Run Avg|Hold:>10/10
#Atten: 20 dB Center Freq 5.200000000 GHz Radio Device: BTS Ref 20.00 dBm Span 30 MHz enter 5.2 GHz Res BW 100 kHz **#VBW 300 kHz** Sweep 2.933 ms Occupied Bandwidth **Total Power** 19.8 dBm 17.581 MHz Transmit Freq Error 32.357 kHz % of OBW Power 99.00 % x dB Bandwidth 19.63 MHz -26.00 dB

26dB Bandwidth (CH High) Antenna 1 SENSE:INT ALIGN AUTO/NO RF
Center Freq: 5.240000000 GHz
Trig: Free Run Avg|Hold:>10/10
#Atten: 20 dB Center Freq 5.240000000 GHz Radio Device: BTS Ref 20.00 dBm Center 5.24 GHz #Res BW 100 kHz Span 30 MHz Sweep 2.933 ms #VBW 300 kHz **Total Power** 16.6 dBm Occupied Bandwidth 17.588 MHz Transmit Freq Error 34.863 kHz % of OBW Power 99.00 % x dB Bandwidth 19.87 MHz x dB -26.00 dB IEEE 802.11n HT 20 MHz mode / 5260~ 5320MHz 26dB Bandwidth (CH Low) Antenna 1 SENSE:INT ALIGN AUTO/NO RF Center Freq: 6.260000000 GHz
Trig: Free Run Avg|Hold:>10/10
#Atten: 20 dB 07:47:52 PMJul 01, 2016 Radio Std: None Center Freq 5.260000000 GHz Radio Device: BTS #IFGain:Low Ref 20.00 dBm MAM men Span 30 MHz **#VBW 300 kHz** Sweep 2.933 ms Occupied Bandwidth **Total Power** 16.6 dBm 17.584 MHz Transmit Freq Error 36.590 kHz % of OBW Power 99.00 %

Reference No.: C161219Z09-RP1-2 Report No.: C161220Z01-RP1-2

x dB

-26.00 dB

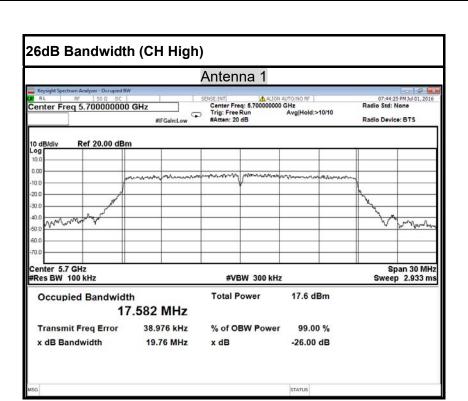
STATUS

x dB Bandwidth

19.91 MHz

26dB Bandwidth (CH Mid) Antenna 1 Center Freq: 5.300000000 GHz
Trig: Free Run Avg|Hold:>10/10
#Atten: 20 dB #IFGain:Low Ref 20.00 dBm Span 30 MH #VBW 300 kHz Occupied Bandwidth **Total Power** 12.9 dBm 17.576 MHz Transmit Freq Error 40.792 kHz % of OBW Power 99.00 % x dB Bandwidth 19.71 MHz x dB -26.00 dB 26dB Bandwidth (CH High) Antenna 1 SENSE:INT ALIGN AUTO/NO RF
Center Freq: 5.320000000 GHz
Trig: Free Run Avg|Hold:>10/10
#Atten: 20 dB Center Freq 5.320000000 GHz Ref 20.00 dBm Center 5.32 GHz #Res BW 100 kHz **#VBW 300 kHz** Sweep 2.933 ms Occupied Bandwidth **Total Power** 13.2 dBm 17.587 MHz Transmit Freq Error 36.090 kHz % of OBW Power 99.00 % x dB Bandwidth 19.91 MHz x dB -26.00 dB

IEEE 802.11n HT 20 MHz mode / 5500 ~ 5700MHz 26dB Bandwidth (CH Low) Antenna 1 Center Freq: 5.500000000 GHz
Trig: Free Run
#Atten: 20 dB
Auton auto/no RF
Auton Auto/no RF
Avg|Hold:>10/10 07:45:44 PMJul 01, 2016 Radio Std: None Center Freq 5.500000000 GHz Radio Device: BTS #IFGain:Low Ref 20.00 dBm moral march Center 5.5 GHz Span 30 MHz Res BW 100 kHz **#VBW 300 kHz** Occupied Bandwidth **Total Power** 16.6 dBm 17.587 MHz Transmit Freq Error 35.813 kHz % of OBW Power 99.00 % x dB Bandwidth 19.75 MHz -26.00 dB STATUS 26dB Bandwidth (CH Mid) Antenna 1 SENSE:INT | ALIGN AUTO/NO RF |
Center Freq: 5.880000000 GHz
Trig: Free Run Avg|Hold:>10/10
#Atten: 20 dB Center Freq 5.580000000 GHz Radio Device: BTS Ref 20.00 dBm mm Center 5.58 GHz #Res BW 100 kHz Span 30 MHz **#VBW 300 kHz** Sweep 2.933 ms Occupied Bandwidth **Total Power** 15.7 dBm 17.585 MHz Transmit Freq Error 34.853 kHz % of OBW Power 99.00 % x dB Bandwidth 19.83 MHz -26.00 dB



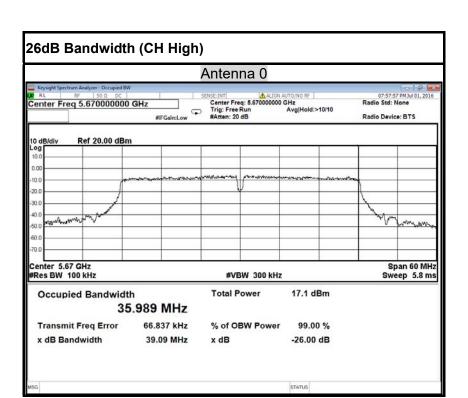
IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz 26dB Bandwidth (CH Low) Antenna 0 Center Freq: 5.190000000 GHz
Trig: Free Run
#Atten: 20 dB
Avg|Hold:>10/10 08:01:07 PMJul 01, 2016 Radio Std: None Center Freq 5.190000000 GHz Radio Device: BTS #IFGain:Low Ref 20.00 dBm Center 5.19 GHz Span 60 MHz Res BW 100 kHz **#VBW 300 kHz** Occupied Bandwidth **Total Power** 18.7 dBm 35.940 MHz Transmit Freq Error 14.302 kHz % of OBW Power 99.00 % x dB Bandwidth 39.20 MHz -26.00 dB STATUS 26dB Bandwidth (CH High) Antenna 0 SENSE:INT | ALIGN AUTO/NO RF |
Center Freq: 5.230000000 GHz
Trig: Free Run Avg|Hold:>10/10
#Atten: 20 dB Center Freq 5.230000000 GHz Radio Device: BTS Ref 20.00 dBm Span 60 MHz Center 5.23 GHz #Res BW 100 kHz **#VBW 300 kHz** Occupied Bandwidth **Total Power** 18.1 dBm 35.944 MHz Transmit Freq Error 16.195 kHz % of OBW Power 99.00 % x dB Bandwidth 39.04 MHz -26.00 dB

IEEE 802.11n HT 40 MHz mode / 5270 ~ 5310MHz 26dB Bandwidth (CH Low) Antenna 0 SENSE:INT ALIGN AUTO/NO RF
Center Freq: 5.270000000 GHz
Trig: Free Run Avg|Hold:>10/10
#Atten: 20 dB Center Freq 5.270000000 GHz Radio Device: BTS Ref 20.00 dBm and how many Center 5.27 GHz #Res BW 100 kHz Span 60 MHz #VBW 300 kHz Occupied Bandwidth **Total Power** 18.4 dBm 35.973 MHz Transmit Freq Error 17.932 kHz % of OBW Power 99.00 % x dB Bandwidth 39.15 MHz x dB -26.00 dB 26dB Bandwidth (CH High) Antenna 0 Center Freq: 5.310000000 GHz
Trig: Free Run
#Atten: 20 dB

Avg|Hold:>10/10 Center Freq 5.310000000 GHz #IFGain:Low Ref 20.00 dBm flow more Span 60 MHz #VBW 300 kHz **Total Power** 18.2 dBm Occupied Bandwidth 35.973 MHz Transmit Freq Error 41.577 kHz % of OBW Power 99.00 % x dB Bandwidth 38.74 MHz -26.00 dB x dB

IEEE 802.11n HT 40 MHz mode / 5510~ 5670MHz 26dB Bandwidth (CH Low) Antenna 0 SENSE:INT ALIGN AUTO/NO RF
Center Freq: 5.510000000 GHz
Trig: Free Run
#Atten: 20 dB
ALIGN AUTO/NO RF
ALIGN AUTO/NO RF
ALIGN AUTO/NO RF
ALIGN AUTO/NO RF Center Freq 5.510000000 GHz Radio Device: BTS Ref 20.00 dBm Mulum Center 5.51 GHz #Res BW 100 kHz Span 60 MHz #VBW 300 kHz Occupied Bandwidth **Total Power** 19.1 dBm 35.964 MHz Transmit Freq Error 89.728 kHz % of OBW Power 99.00 % x dB Bandwidth 39.08 MHz x dB -26.00 dB 26dB Bandwidth (CH Mid) Antenna 0 Center Freq: 5.590000000 GHz
Trig: Free Run
#Atten: 20 dB

Avg|Hold:>10/10 Center Freq 5.590000000 GHz #IFGain:Low Ref 20.00 dBm Center 5.55.GHz Span 60 MHz #VBW 300 kHz Res BW 100 kHz **Total Power** 17.1 dBm Occupied Bandwidth 35.939 MHz Transmit Freq Error -23.404 kHz % of OBW Power 99.00 % x dB Bandwidth 39.18 MHz -26.00 dB x dB



IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz 26dB Bandwidth (CH Low) Antenna 1 SENSE:INT ALIGN AUTO/NO RF Center Freq: 5.190000000 GHz
Trig: Free Run Avg|Hold:>10/10 #Atten: 20 dB enter Freq 5.190000000 GHz Radio Device: BTS Ref 20.00 dBm Center 5.19 GHz #Res BW 100 kHz Span 60 MHz **#VBW 300 kHz** Sweep 5.8 ms Occupied Bandwidth **Total Power** 18.3 dBm 35.970 MHz 30.223 kHz % of OBW Power Transmit Freq Error 99.00 % x dB Bandwidth 39.14 MHz x dB -26.00 dB 26dB Bandwidth (CH High) Antenna 1 AJEIN AUTO/NO RF

Center Freq: 5.230000000 GHz

Trig: Free Run Avg|Hold:>10/10
#Atten: 20 dB 07:51:19 PMJul 01, 2016 Radio Std: None Center Freq 5.230000000 GHz Radio Device: BTS #IFGain:Low Ref 20.00 dBm Center 5.23 GHz #Res BW 100 kHz Span 60 MHz **#VBW 300 kHz Total Power** Occupied Bandwidth 17.8 dBm 35.951 MHz Transmit Freq Error 34.151 kHz % of OBW Power 99.00 % x dB Bandwidth 38.93 MHz x dB -26.00 dB STATUS

IEEE 802.11n HT 40 MHz mode / 5270 ~ 5310MHz 26dB Bandwidth (CH Low) Antenna 1 SENSE:INT ALIGN AUTO/NO RF
Center Freq: 5.270000000 GHz
Trig: Free Run Avg|Hold:>10/10
#Atten: 20 dB Center Freq 5.270000000 GHz Radio Device: BTS Ref 20.00 dBm Center 5.27 GHz #Res BW 100 kHz Span 60 MHz **#VBW 300 kHz** Sweep 5.8 ms **Total Power** 17.3 dBm Occupied Bandwidth 35.964 MHz Transmit Freq Error 38.792 kHz % of OBW Power 99.00 % x dB Bandwidth 39.13 MHz x dB -26.00 dB STATUS 26dB Bandwidth (CH High) Antenna 1 SENSE:INT ALIGN AUTO/NO RF Center Freq: 5.310000000 GHz
Trig: Free Run Avg|Hold:>10/10
#Atten: 20 dB 07:52:23 PMJul 01, 2016 Radio Std: None Center Freq 5.310000000 GHz Radio Device: BTS Ref 20.00 dBm Span 60 MHz **#VBW 300 kHz Total Power** Occupied Bandwidth 17.4 dBm 35.973 MHz Transmit Freq Error 33.885 kHz % of OBW Power 99.00 % x dB Bandwidth 39.28 MHz x dB -26.00 dB

Reference No.: C161219Z09-RP1-2 Report No.: C161220Z01-RP1-2

STATUS

IEEE 802.11n HT 40 MHz mode / 5510~5670MHz 26dB Bandwidth (CH Low) Antenna 1 SEMSE:INT ALIGN AUTO/NO RF Center Freq: 5.510000000 GHz
Trig: Free Run Avg|Hold:>10/10 #Atten: 20 dB Center Freq 5.510000000 GHz Radio Device: BTS Ref 20.00 dBm Center 5.51 GHz #Res BW 100 kHz Span 60 MHz **#VBW 300 kHz** Sweep 5.8 ms **Total Power** 16.6 dBm Occupied Bandwidth 35.955 MHz Transmit Freq Error 13.643 kHz % of OBW Power 99.00 % x dB Bandwidth 38.76 MHz x dB -26.00 dB STATUS 26dB Bandwidth (CH Mid) Antenna 1 SENSE:INT ALIGN AUTO/NO RF Center Freq: 5.590000000 GHz
Trig: Free Run Avg|Hold:>10/10
#Atten: 20 dB 07:53:35 PMJul 01, 2016 Radio Std: None Center Freq 5.590000000 GHz Radio Device: BTS Ref 20.00 dBm Center 5.55.GHz #Res BW 100 kHz Span 60 MHz **#VBW 300 kHz Total Power** Occupied Bandwidth 17.0 dBm 35.970 MHz Transmit Freq Error 31.655 kHz % of OBW Power 99.00 % x dB Bandwidth 39.31 MHz x dB -26.00 dB

Reference No.: C161219Z09-RP1-2 Report No.: C161220Z01-RP1-2

STATUS

26dB Bandwidth (CH High) Antenna 1 M RL | RF | 50 Ω DC | Center Freq 5.6700000000 GHz SENSE:INT ALIGN AUTO/NO RF
Center Freq: 5.670000000 GHz
Trig: Free Run Avg|Hold:>10/10
#Atten: 20 dB Radio Device: BTS Ref 20.00 dBm Center 5.67 GHz #Res BW 100 kHz Span 60 MHz Sweep 5.8 ms #VBW 300 kHz **Total Power** 16.7 dBm Occupied Bandwidth 35.973 MHz Transmit Freq Error 66.235 kHz % of OBW Power 99.00 % x dB Bandwidth 39.27 MHz x dB -26.00 dB

IEEE 802.11ac 80 mode / 5210MHz 26dB Bandwidth Antenna 0 Center Freq: 5.210000000 GHz
Trig: Free Run
#Atten: 20 dB
Auton auto/no RF
Auton Auto/no RF
Avg|Hold:>10/10 08:25:37 PMJul 01, 2016 Radio Std: None Span 120.00 MHz Radio Device: BTS Ref 20.00 dBm Center 5.21 GHz Span 120 MHz Res BW 100 kHz **#VBW 300 kHz** Occupied Bandwidth **Total Power** 17.0 dBm 74.859 MHz Transmit Freq Error -124.74 kHz % of OBW Power 99.00 % x dB Bandwidth 78.89 MHz -26.00 dB STATUS IEEE 802.11ac 80 mode / 5290MHz 99% Bandwidth Antenna 0 Center Freq: 6.290000000 GHz
Trig: Free Run Avg|Hold:>10/10
#Atten: 20 dB Center Freq 5.290000000 GHz Radio Device: BTS Ref 20.00 dBm Center 5.29 GHz #Res BW 100 kHz Span 120 MHz Sweep 11.53 ms #VBW 300 kHz **Total Power** Occupied Bandwidth 74.821 MHz

Reference No.: C161219Z09-RP1-2 Report No.: C161220Z01-RP1-2

% of OBW Power

x dB

99.00 %

-26.00 dB

-14.749 kHz

78.71 MHz

Transmit Freq Error

x dB Bandwidth

IEEE 802.11ac 80 mode / 5530MHz 99% Bandwidth Antenna 0 Center Freq: 5.530000000 GHz
Trig: Free Run
#Atten: 20 dB
Avg|Hold:>10/10 08:26:39 PMJul 01, 2016 Radio Std: None Center Freq 5.530000000 GHz Radio Device: BTS #IFGain:Low Ref 20.00 dBm of the state of the state of Center 5.53 GHz #Res BW 100 kHz Span 120 MHz #VBW 300 kHz Occupied Bandwidth **Total Power** 17.3 dBm 74.813 MHz Transmit Freq Error 176.55 kHz % of OBW Power 99.00 % x dB Bandwidth 78.77 MHz -26.00 dB

STATUS

IEEE 802.11ac 80 mode / 5210MHz 26dB Bandwidth Antenna 1 Center Freq: 5.210000000 GHz
Trig: Free Run
#Atten: 20 dB
Auton auto/no RF
Auton Auto/no RF
Avg|Hold:>10/10 07:33:26 PMJul 01, 2016 Radio Std: None Center Freq 5.210000000 GHz Radio Device: BTS #IFGain:Low Ref 20.00 dBm W. Johnson Center 5.21 GHz Span 120 MHz Res BW 100 kHz **#VBW 300 kHz** Occupied Bandwidth **Total Power** 17.7 dBm 74.915 MHz Transmit Freq Error -77.432 kHz % of OBW Power 99.00 % x dB Bandwidth 78.88 MHz -26.00 dB STATUS IEEE 802.11ac 80 mode / 5290MHz 99% Bandwidth Antenna 1 Center Freq: 6.290000000 GHz
Trig: Free Run Avg|Hold:>10/10
#Atten: 20 dB Center Freq 5.290000000 GHz Radio Device: BTS Ref 20.00 dBm Center 5.29 GHz #Res BW 100 kHz Span 120 MHz Sweep 11.53 ms #VBW 300 kHz **Total Power** Occupied Bandwidth 74.884 MHz 15.764 kHz Transmit Freq Error % of OBW Power 99.00 % x dB Bandwidth 78.76 MHz -26.00 dB x dB

IEEE 802.11ac 80 mode / 5530MHz 26dB Bandwidth Antenna 1 MSE:INT AUTO/NO RF

Center Freq: 5.530000000 GHz

Trig: Free Run Avg|Hold:>10/10
#Atten: 20 dB 07:34:04 PMJul 01, 2016 Radio Std: None Center Freq 5.530000000 GHz Radio Device: BTS #IFGain:Low Ref 20.00 dBm Center 5.53 GHz #Res BW 100 kHz Span 120 MHz #VBW 300 kHz Occupied Bandwidth **Total Power** 15.9 dBm 74.862 MHz Transmit Freq Error -25.636 kHz % of OBW Power 99.00 % x dB Bandwidth 78.76 MHz -26.00 dB

STATUS

6.2 6dB BANDWIDTH MEASUREMENT

6.2.1 LIMITS

According to §15.407(e), Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

Report No.: C161220Z01-RP1-2

6.2.2 TEST INSTRUMENTS

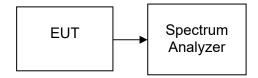
Name of Equipment	Manufacturer	Model	Serial Number	Last Calibration	Calibration Due
Spectrum Analyzer	Agilent	N9010A	MY52221469	02/21/2016	02/20/2017

6.2.3 TEST PROCEDURES (please refer to measurement standard)

8.1 Option 1:

- a) Set RBW = 100 kHz.
- b) Set the video bandwidth (VBW) \geq 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.

6.2.4 TEST SETUP



FCC ID: 2AF5PMX1200 Page 52 / 256 This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Reference No.: C161219Z09-RP1-2 Report No.: C161220Z01-RP1-2

6.2.5 TEST RESULTS

No non-compliance noted

Test Data

Test mode: IEEE 802.11a mode / 5745 ~ 5825MHz

Channel	Frequency	6dB Bandwidth(B) (MHz)		Limit	Test Result
	(MHz)	Antenna 0	Antenna 1	(kHz)	rootitoodit
Low	5745	16.54	16.55		PASS
Mid	5785	16.51	16.49	>500	PASS
High	5825	16.54	16.55		PASS

Test mode: IEEE 802.11n HT 20 MHz mode / 5745 ~ 5825MHz

Channel	Frequency	6dB Bandwidth(B) (MHz)		Limit	Test Result
	(MHz)	Antenna 0	Antenna 1	(kHz)	rest result
Low	5745	17.63	17.65		PASS
Mid	5785	17.67	17.67	>500	PASS
High	5825	17.67	17.67		PASS

Test mode: IEEE 802.11n HT 40 MHz mode / 5755 ~ 5795MHz

Channel	Frequency 6dB Band (M		dwidth(B) Hz)	Limit	Test Result
	(MHz)	Antenna 0	Antenna 1	(kHz)	
Low	5755	36.35	36.40	>500	PASS
High	5795	36.40	36.39		PASS

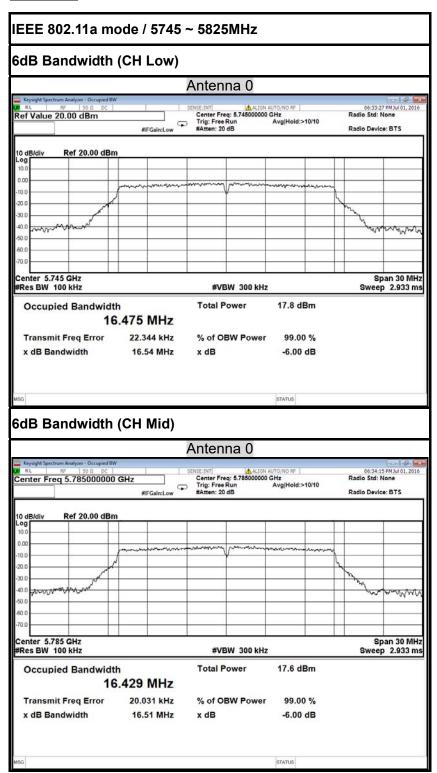
Test mode: IEEE 802.11ac 80 mode / 5775MHz

Channel			dwidth(B) Hz)	Limit	Test Result
	(MHz)	Antenna 0	Antenna 1	(kHz)	10001100011
	5775	75.51	75.29	>500	PASS

FCC ID: 2AF5PMX1200 Page 53 / 256
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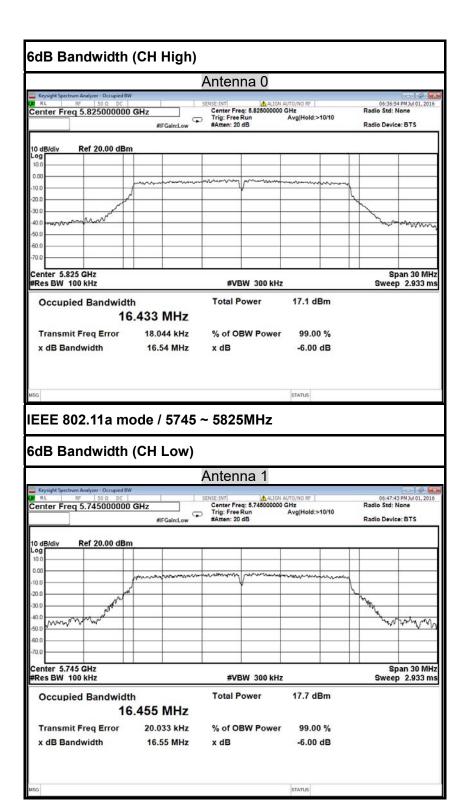
Reference No.: C161219Z09-RP1-2 Report No.: C161220Z01-RP1-2

Test Plot



FCC ID: 2AF5PMX1200 Page 54 / 256 This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Report No.: C161220Z01-RP1-2



6dB Bandwidth (CH Mid) Antenna 1 Center Freq: 5.785000000 GHz
Trig: Free Run Avg|Hold:>10/10
#Atten: 20 dB Center Freq 5.785000000 GHz Radio Device: BTS Ref 20,00 dBm Span 30 MHz Sweep 2.933 ms Center 5.785 GHz #Res BW 100 kHz **#VBW 300 kHz Total Power** 17.0 dBm Occupied Bandwidth 16.447 MHz Transmit Freq Error 18.074 kHz % of OBW Power 99.00 % 16.49 MHz x dB -6.00 dB x dB Bandwidth 6dB Bandwidth (CH High) Antenna 1 SENSE:INT ALIGN AUTO/NO RF Center Freq: 5.828000000 GHz

Trig: Free Run Avg|Hold:>10/10 #Atten: 20 dB Center Freq 5.825000000 GHz Radio Device: BTS Ref 20.00 dBm wanter may Span 30 MHz Sweep 2.933 ms Center 5.825 GHz #Res BW 100 kHz **#VBW 300 kHz Total Power** 16.3 dBm Occupied Bandwidth 16.451 MHz 14.630 kHz Transmit Freq Error % of OBW Power 99.00 %

Report No.: C161220Z01-RP1-2

x dB

-6.00 dB

x dB Bandwidth

16.55 MHz

IEEE 802.11n HT 20 MHz mode / 5745 ~ 5825MHz 6dB Bandwidth (CH Low) Antenna 0 MSE:INT ALIGN AUTO/NO RF Center Freq: 5.745000000 GHz
Trig: Free Run Avg|Hold:>10/10 #Atten: 20 dB 06:39:47 PMJul 01, 2016 Radio Std: None Center Freq 5.745000000 GHz Radio Device: BTS #IFGain:Low Ref 20.00 dBm Center 5.745 GHz Span 30 MHz Res BW 100 kHz **#VBW 300 kHz** Occupied Bandwidth **Total Power** 19.3 dBm 17.592 MHz Transmit Freq Error 38.023 kHz % of OBW Power 99.00 % x dB Bandwidth 17.63 MHz -6.00 dB STATUS 6dB Bandwidth (CH Mid) Antenna 0 Center Freq 5.785000000 GHz Radio Device: BTS Ref 20.00 dBm mounter Center 5.785 GHz #Res BW 100 kHz Span 30 MHz **#VBW 300 kHz** Sweep 2.933 ms Occupied Bandwidth **Total Power** 19.3 dBm 17.587 MHz Transmit Freq Error 39.601 kHz % of OBW Power 99.00 % x dB Bandwidth 17.67 MHz -6.00 dB STATUS