FCC PART 15 SUBPART C TEST REPORT

For

iShowCast

Model No.: MTV2000

of

Applicant: **iCIRROUND Inc.**
Address: **4F., No.14, Ln. 123, Sec. 6, Minquan E. Rd., Neihu Dist., Taipei City 114, Taiwan**

Tested and Prepared

by

Worldwide Testing Services (Taiwan) Co., Ltd.

FCC Registration No.: 930600

Industry Canada filed test laboratory Reg. No. IC 5679A-1

A2LA Accredited No.: 2732.01

Report No.: W6M21308-13478-C-54

6F, NO. 58, LANE 188, RUEY-KUANG RD., NEIHU TAIPEI 114, TAIWAN, R.O.C.
TEL: 886-2-66068877 FAX: 886-2-66068879 E-mail: wts@wts-lab.com

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1 General Information

1.1 Notes

The purpose of conformity testing is to increase the probability of adherence to the essential requirements or conformity specifications, as appropriate.
The complexity of the technical specifications, however, means that full and thorough testing is impractical for both technical and economic reasons.
Furthermore, there is no guarantee that a test sample which has passed all the relevant tests conforms to a specification.
Neither is there any guarantee that such a test sample will interwork with other genuinely open systems.
The existence of the tests nevertheless provides the confidence that the test sample possesses the qualities as maintained and that is performance generally conforms to representative cases of communications equipment.

The test results of this test report relate exclusively to the item tested as specified in 1.5.
The test report may only be reproduced or published in full.
Reproduction or publication of extracts from the report requires the prior written approval of the Worldwide Testing Services(Taiwan) Co., Ltd.

Specific Conditions:
Usage of the hereunder tested device in combination with other integrated or external antennas requires at least additional output power measurements, spurious emission measurements, conducted emission measurements (AC supply lines) and radio frequency exposure evaluations for each individual configuration performed, for certification by FCC.
The EUT is compliance with IEEE 802.11 a/b/g/n Standard.
This report applies for frequency bands 5150 MHz– 5250 MHz.

Tester:

Date	WTS-Lab.	Name	Signature
November 14, 2013		Rick Chen	Rick Chen.

Technical responsibility for area of testing:

Date	WTS	Name	Signature
November 14, 2013		Kevin Wang	Kevin Wang

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478

1.2 Testing laboratory

1.2.1 Location

OATS
No.5-1, Lishui, Shuang Sing Village,
Wanli Dist., New Taipei City 207,
Taiwan (R.O.C.)
3 meter semi-anechoic chamber
No.35, Aly. 21, Ln. 228, Ankang Rd., Neihu Dist., Taipei City 114, Taiwan (R.O.C.)
TEL:886-2-6613-0228
FAX:886-2-2791-5046

Company
Worldwide Testing Services(Taiwan) Co., Ltd.
6F, NO. 58, LANE 188, RUEY-KUANG RD.
NEIHU, TAIPEI 114, TAIWAN R.O.C.
Tel : 886-2-66068877
Fax : 886-2-66068879

1.2.2 Details of accreditation status

Accredited testing laboratory
A2LA accredited number: 2732.01
FCC filed test laboratory Reg. No. 930600
Industry Canada filed test laboratory Reg. No. IC 5679A-1

Test location, where different from Worldwide Testing Services (Taiwan) Co., Ltd. :

Name:	./.
Accredited number:	./.
Street:	./.
Town:	./.
Country:	./.
Telephone:	./.
Fax:	./.

1.3 Details of approval holder

Name:	iCIRROUND Inc.
Street:	4F., No.14, Ln. 123, Sec. 6, Minquan E. Rd., Neihu Dist.,
Town:	Taipei City 114,
Country:	Taiwan
Telephone:	02-7745-5562
Fax:	02-2797-7419

1.4 Application details

Date of receipt of test item:	September 18, 2013
Date of test:	from September 23, 2013 to November 13, 2013

1.5 General information of Test item

Type of test item:	iShowCast
Model Number:	MTV2000
Brand Name:	iCIRROUND
Multi-listing model number:	./.
Photos:	see Appendix

Technical data

Frequency band :	5150 MHz ~ 5250 MHz
802.11a:	Low Channel (CH36): 5180 MHz Middle Channel (CH40): 5200 MHz High Channel (CH48): 5240 MHz
802.11n 20MHz:	Low Channel (CH36): 5180 MHz Middle Channel (CH40): 5200 MHz High Channel (CH48): 5240 MHz
802.11n 40MHz:	Low Channel (CH38): 5190 MHz High Channel (CH46): 5230 MHz
Numbers of channel:	802.11a: 4 channels 802.11n 20 MHz: 4 channels 802.11n 40 MHz: 2 channels
Operating modes:	duplex
Type of modulation:	OFDM
Fixed point to point operation:	Yes / No
Antenna:	PCB Antenna
Antenna gain:	ANT A (ANT 1): 4.2 dBi / ANT B (ANT 2): 3.2 dBi
Directional gain:	6.72 dBi
Power supply:	Adapter: (I/P: 100-240V~ / 50-60Hz / 0.2A; O/P: +5V / 1A)
Emission designator:	802.11a: 16M9D1D 802.11n 20 MHz: 18M0D1D 802.11n 40 MHz: 36M4D1D

Note: Tests were performed under worst case mode 802.11a 54 Mbps, 802.11n 20 MHz (MCS15) and 802.11n 40 MHz (MCS15).

Classification:

Fixed Device	☒
Mobile Device (Human Body distance ＞ 20cm)	☐
Portable Device (Human Body distance ＜ 20cm)	☐

Manufacturer: (if applicable)

Name:	Shen Shen Electronic Co., Ltd.
Street:	No.28, Ln. 285, Yingtao Rd., Yingge Dist.,
Town:	New Taipei City 23943,
Country:	Taiwan (R.O.C.)

1.6 Test standards

Technical standard : FCC RULES PART 15 E (2011-10)

2 Technical test

2.1 Summary of test results

No deviations from the technical specification(s) were ascertained in the course of the tests performed. ☒

or

The deviations as specified in 3 were ascertained in the course of the tests performed. ☐

2.2 Test environment

Temperature:	23 °C
Relative humidity content:	20 ... 75 %
Air pressure:	86 ... 103 kPa
Details of power supply:	Adapter: (I/P: 100-240V~ / 50-60Hz / 0.2A; O/P: +5V / 1A)

2.3 Test Equipment List

No.	Test equipment	Type	Serial No.	Manufacturer	Cal. Date	Next Cal. Date
ETSTW-CE 001	EMI TEST RECEIVER	ESHS10	842121/013	R&S	2013/9/2	2014/9/1
ETSTW-CE 003	AC POWER SOURCE	APS-9102	D161137	GW	Function Test	
ETSTW-CE 004	ZWEILEITER-V-NETZNACHBILDUNG TWO-LINE V-NETWORK	ESH3-Z5	840731/011	R&S	2012/12/21	2013/12/20
ETSTW-CE 006	IMPULSBEGRENZER PULSE LIMITER	ESH3-Z2	100226	R&S	2013/3/4	2014/3/3
ETSTW-CE 007	SPECTRUM ANALYZER 5GHz	FSB	849670/001	R&S	Pre-test Use	
ETSTW-CE 008	HF-EICHLEITUNG RF STEP ATTENUATOR 139dB DPSP	334.6010.02	844581/024	R&S	Function Test	
ETSTW-CE 009	TEMP.&HUMIDITY CHAMBER	GTH-225-40-1P-U	MAA0305-009	GIANT FORCE	2013/7/10	2014/7/9
ETSTW-RE 004	EMI TEST RECEIVER	ESI 40	832427/004	R&S	2013/9/2	2014/9/1
ETSTW-RE 005	EMI TEST RECEIVER	ESVS10	843207/020	R&S	2013/9/2	2014/9/1
ETSTW-RE 012	TUNABLE BANDREJECT FILTER	D.C 0309	146	K&L	Function Test	
ETSTW-RE 013	TUNABLE BANDREJECT FILTER	D.C 0336	397	K&L	Function Test	
ETSTW-RE 018	MICROWAVE HORN ANTENNA	AT4560	27212	AR	2013/10/15	2014/10/14
ETSTW-RE 027	Passive Loop Antenna	6512	00034563	ETS-Lindgren	2013/7/3	2014/7/2
ETSTW-RE 030	Double-Ridged Guide Horn Antenna	3117	00035224	EMCO	2013/3/4	2014/3/3
ETSTW-RE 045	ESA-E SERIES SPECTRUM ANALYZER	E4404B	MY45111242	Agilent	Pre-test Use	
ETSTW-RE 049	TRILOG Super Broadband test Antenna	VULB 9160	9160-3185	Schwarzbeck	2013/3/21	2014/3/20
ETSTW-RE 050	Attenuator 10dB	50HF-010-1	None	JFW	2013/3/4	2014/3/3
ETSTW-RE 051	Attenuator 6dB	50HF-006-1	None	JFW	2013/3/4	2014/3/3
ETSTW-RE 053	Attenuator 3dB	50HF-003-1	None	JFW	2013/3/4	2014/3/3
ETSTW-RE 055	SPECTRUM ANALYZER	FSU 26	200074	R&S	2013/5/31	2014/5/30
ETSTW-RE 060	Attenuator 30dB	5015-30	F651012z-01	ATM	2013/3/4	2014/3/3
ETSTW-RE 062	Amplifier Module	CHC 2	None	KMIC	2012/11/28	2013/11/27
ETSTW-RE 064	Bluetooth Test Set	MT8852B-042	6K00005709	Anritsu	Function Test	
ETSTW-RE 069	Double-Ridged Guide Horn Antenna	3117	00069377	EMCO	Function Test	
ETSTW-RE 072	CELL SITE TEST SET	8921A	3339A00375	HP	2013/10/7	2014/10/6
ETSTW-RE 088	SOLID STATE AMPLIFIER	KMA180265A01	99057	KMIC	2013/10/11	2014/10/10
ETSTW-RE 099	DC Block	50DB-007-1	None	JFW	2013/3/4	2014/3/3
ETSTW-RE 106	Humidity Temperature Meter	TES-1366	091011113	TES	2012/12/4	2013/12/3
ETSTW-RE 111	TRILOG Super Broadband test Antenna	VULB 9160	9160-3309	Schwarz beck	2012/12/13	2013/12/12
ETSTW-RE 112	AC POWER SOURCE	TFC-1005	None	T-Power	Function test	
ETSTW-RE 115	2.4GHz Notch Filter	N0124411	473874	MICROWAVE CIRCUITS	2013/1/11	2014/1/10
ETSTW-RE 120	RF Player	MP9200	MP9210-111022	ADIVIC	Function test	

ETSTW-RE 122	SIGNAL GENERATOR	SMF100A	102149	R&S	2013/6/28	2014/6/27
ETSTW-RE 125	5GHz Notch filter	5NSL11-5200/E221.3-O/O	1	K&L Microwave	2013/8/16	2014/8/15
ETSTW-RE 126	5GHz Notch filter	5NSL11-5800/E221.3-O/O	1	K&L Microwave	2013/8/16	2014/8/15
ETSTW-RE 127	RF Switch Box	RFS-01	None	WTS	2013/3/4	2014/3/3
ETSTW-RE 128	5.3GHz Notch filter	N0153001	SN487233	Microwave Circits	2013/8/13	2014/8/12
ETSTW-RE 129	5.5GHz Notch filter	N0555984	SN487234	Microwave Circits	2013/8/13	2014/8/12
ETSTW-GSM 002	Universal Radio Communication Tester	CMU 200	109439	R&S	2013/10/7	2014/10/6
ETSTW-GSM 019	Band Reject Filter	WRCTF824/849-822/851-40 /12+9SS	3	WI	2013/1/11	2014/1/10
ETSTW-GSM 020	Band Reject Filter	WRCD1747/1748-1743/1752-32/5SS	1	WI	2013/1/11	2014/1/10
ETSTW-GSM 021	Band Reject Filter	WRCD1879.5/1880.5-1875.5/1884.5-32/5SS	3	WI	2013/1/11	2014/1/10
ETSTW-GSM 022	Band Reject Filter	WRCT901.9/903.1-904.25-50/8SS	1	WI	2013/1/11	2014/1/10
ETSTW-GSM 023	Power Divider	4901.19.A	None	SUHNER	2013/9/18	2014/9/17
ETSTW-Cable 010	BNC Cable	5 M BNC Cable	None	JYE BAO CO.,LTD.	2013/3/4	2014/3/3
ETSTW-Cable 011	BNC Cable	BNC Cable 1	None	JYE BAO CO.,LTD.	Pre-test Use NCR	
ETSTW-Cable 012	N TYPE To SMA Cable	Cable 012	None	JYE BAO CO.,LTD.	2013/3/4	2014/3/3
ETSTW-Cable 016	BNC Cable	Switch Box	B Cable 1	Schwarz beck	2013/3/4	2014/3/3
ETSTW-Cable 017	BNC Cable	X Cable	B Cable 2	Schwarz beck	2013/3/4	2014/3/3
ETSTW-Cable 018	BNC Cable	Y Cable	B Cable 3	Schwarz beck	2013/3/4	2014/3/3
ETSTW-Cable 019	BNC Cable	Z Cable	B Cable 4	Schwarz beck	2013/3/4	2014/3/3
ETSTW-Cable 022	N TYPE Cable	5006	0002	JYE BAO CO.,LTD.	2013/3/26	2014/3/25
ETSTW-Cable 026	Microwave Cable	SUCOFLEX 104	279075	HUBER+SUHNER	2013/3/4	2014/3/3
ETSTW-Cable 027	Microwave Cable	SUCOFLEX 104	279083	HUBER+SUHNER	2013/3/4	2014/3/3
ETSTW-Cable 028	Microwave Cable	FA147A0015M2020	30064-2	UTIFLEX	2013/10/11	2014/10/10
ETSTW-Cable 029	Microwave Cable	FA147A0015M2020	30064-3	UTIFLEX	2013/10/11	2014/10/10
ETSTW-Cable 030	Microwave Cable	SUCOFLEX 104（S_Cable 9）	279067	HUBER+SUHNER	2013/3/4	2014/3/3
ETSTW-Cable 031	Microwave Cable	SUCOFLEX 104（S_Cable 10）	238092	HUBER+SUHNER	2012/11/28	2013/11/27
ETSTW-Cable 043	Microwave Cable	SUCOFLEX 104	317576	HUBER+SUHNER	2012/11/28	2013/11/27
ETSTW-Cable 047	Microwave Cable	SUCOFLEX 104	325518	HUBER+SUHNER	2012/11/28	2013/11/27
ETSTW-Cable 053	N TYPE To SMA Cable	RG142	None	JYE BAO CO.,LTD.	2013/3/26	2014/3/25
ETSTW-Cable 058	Microwave Cable	SUCOFLEX 104	none	HUBER+SUHNER	2013/6/20	2014/6/19
WTSTW-SW 002	EMI TEST SOFTWARE	EZ_EMC	None	Farad	Version ETS-03A1	

2.4 Test Procedure

The test procedures are performed following the test stands ANSI STANDARD C63.4 and FCC KDB 789033 D01 General UNII Test Procedures v01r03.

■ Emission bandwidth

1. Set RBW = approximately 1% of the emission bandwidth.
2. Set the VBW > RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Measure the maximum width of the emission that is 26 dB down from the peak of the emission.

■ 99 Percent Occupied Bandwidth

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

■ Maximum conducted output power

1. Set span to encompass the entire 26-dB emission bandwidth (EBW)
2. Set RBW = 1 MHz.
3. Set VBW ≥ 3 MHz.
4. Number of points in sweep ≥ 2 Span / RBW. (This ensures that bin-to-bin spacing is ≤ RBW/2, so that narrowband signals are not lost between frequency bins.)
5. Sweep time = auto.
6. Detector = RMS
7. Trace Average = 100 times.
8. Compute power by integrating the spectrum across the 26 dB EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal using the instrument's band power measurement function with band limits set equal to the EBW (or occupied bandwidth) band edges.

■ Power Density

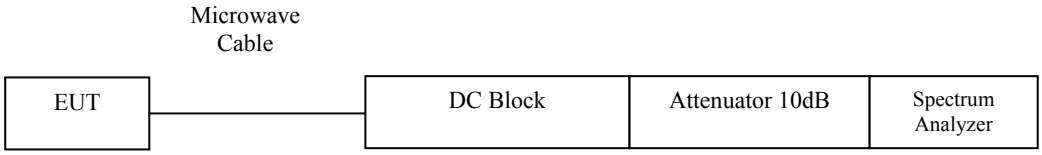
1. Set span to encompass the entire 26-dB emission bandwidth (EBW)
2. Set RBW = 1 MHz.
3. Set VBW ≥ 3 MHz.
4. Number of points in sweep ≥ 2 Span / RBW. (This ensures that bin-to-bin spacing is ≤ RBW/2, so that narrowband signals are not lost between frequency bins.)
5. Sweep time = auto.
6. Detector = RMS
7. Trace Average = 100times
8. Use the peak search function on the instrument to find the peak of the spectrum.

■ Peak Excursion

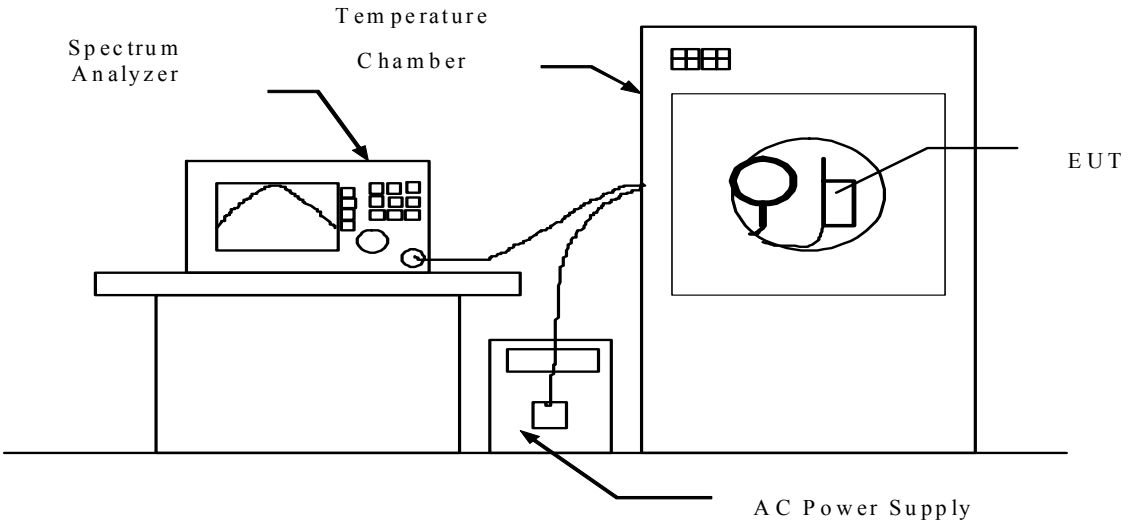
1. Set span to encompass the entire 26-dB emission bandwidth (EBW)
2. Peak Trace, Set RBW=1MHz, VBW=3MHz, Max hold
3. Average Trace, Set RBW=1MHz, VBW=30KHz, Max hold
4. Detector = Peak Trace(Peak) 、 Average Trace(RMS)
5. Trace = Peak Trace(Max Hold) 、 Average Trace(sweep Count 100)

Test Setup

The setup diagram below is for Duty cycle, Peak Transmit Power, 26-dB emission bandwidth, 99% Occupied Bandwidth, Peak Power Spectral Density, Ratio of Peak Excursion of the modulation envelope, and Band edge.



Frequency Stability test setup



3 Test results (enclosure)

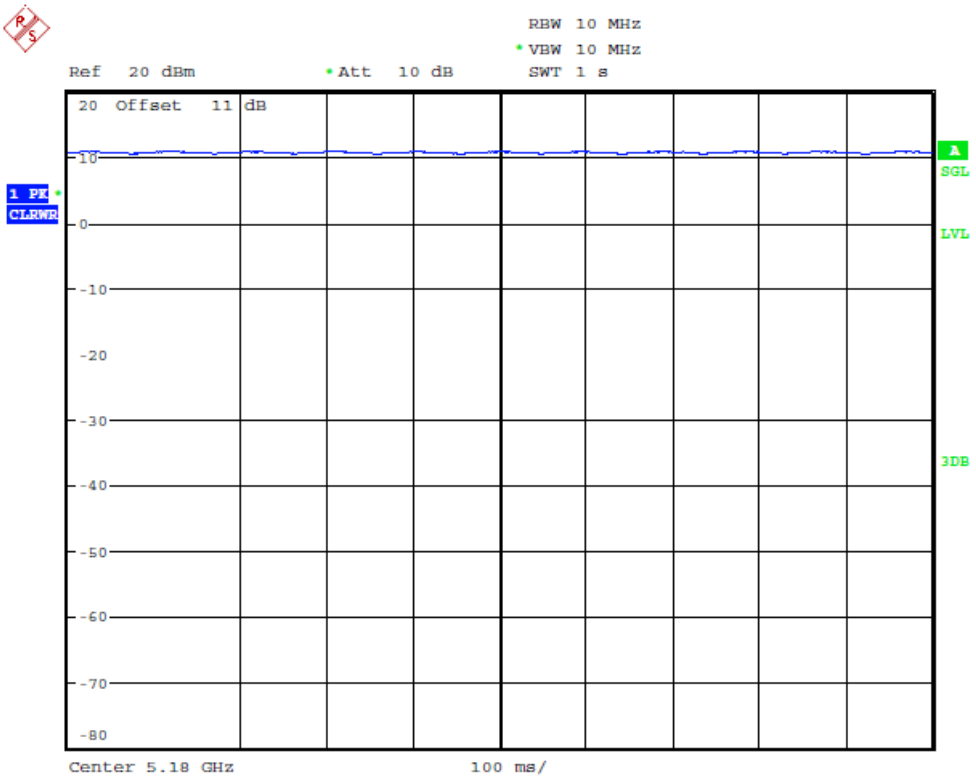
Test case	Para. Number	Required	Test passed	Test failed
Duty cycle	KDB 789033 D01 General UNII Test Procedures	☒	☒	☐
Peak Transmit Power	15.407(a)	☒	☒	☐
26-dB emission bandwidth	15.407(a)	☒	☒	☐
99 % Occupied Bandwidth	KDB 789033 D01 General UNII Test Procedures	☒	☒	☐
Peak Power Spectral Density	15.407(a)	☒	☒	☐
Ratio of Peak Excursion of the modulation envelope	15.407(a)(6)	☒	☒	☐
Undesirable emission limits	15.407(b)	☒	☒	☐
Band edge	15.407(b)	☒	☒	☐
Radio Frequency Exposure	15.407(f)	☒	☒	☐
Frequency Stability	15.407(g)	☒	☒	☐
Radiated Emission from Receiver Part	15.109	☐	☐	☐
AC Conducted Emissions	15.207	☒	☒	☐

The following is intentionally left blank.

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478

3.1 Duty Cycle

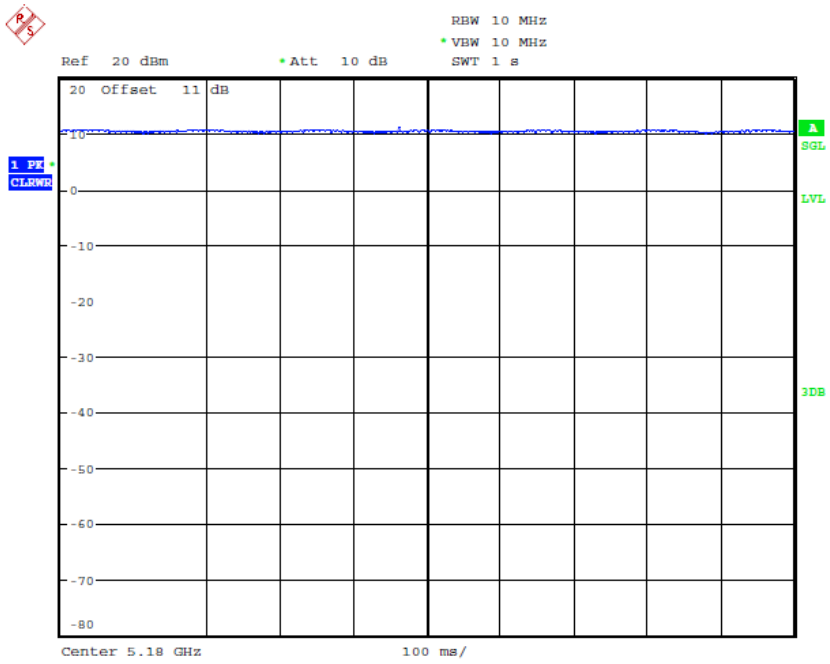
ANT A (ANT 1)



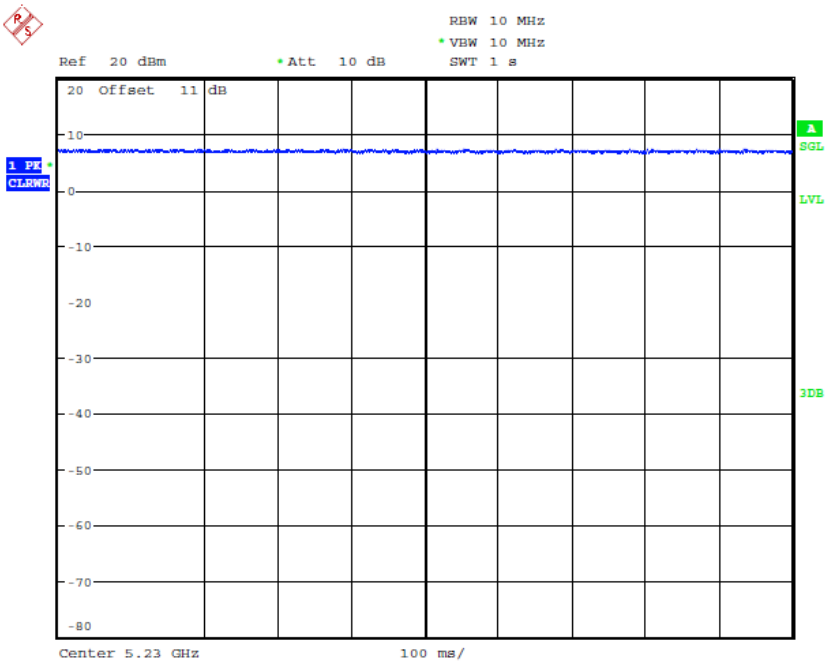
802.11A Duty cycle 100%

Date: 24.OCT.2013 11:31:40

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478



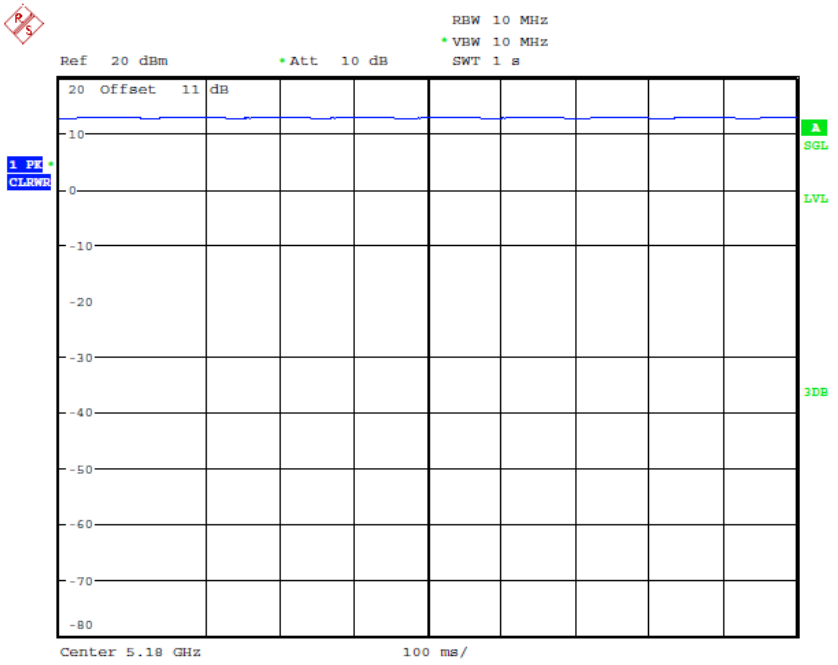
802.11N 20MHz Duty cycle 100%
Date: 24.OCT.2013 11:30:00



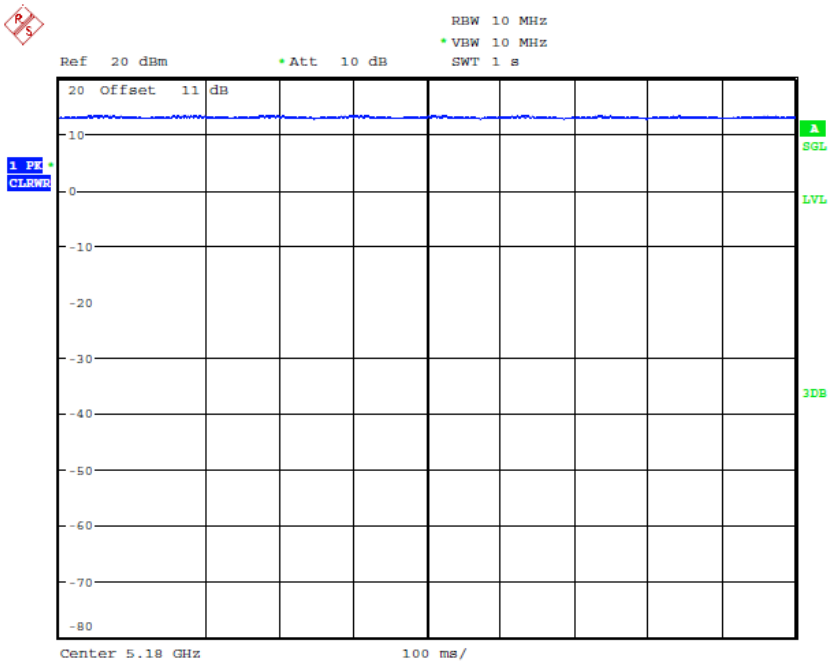
802.11N 40MHz Duty cycle 100%
Date: 24.OCT.2013 11:26:20

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478

ANT B (ANT 2)

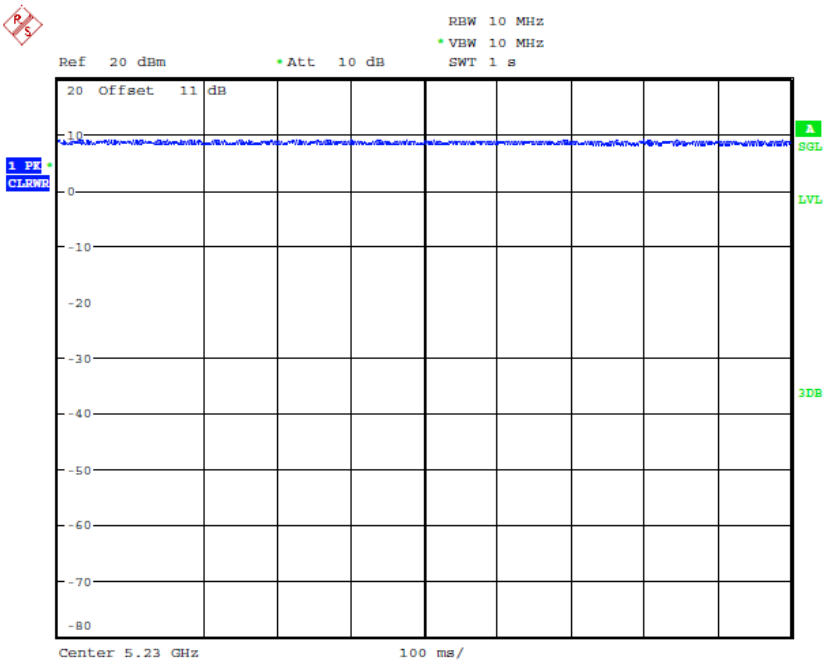


802.11A Duty cycle 100%
Date: 24.OCT.2013 13:20:12



802.11N 20MHz Duty cycle 100%
Date: 24.OCT.2013 13:22:30

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478



802.11N 40MHz Duty cycle 100%
Date: 24.OCT.2013 13:37:50

Test equipment used: ETSTW-RE 055

3.2 Peak Transmit Power, FCC 15.407 (a)

According to §15.407(a)

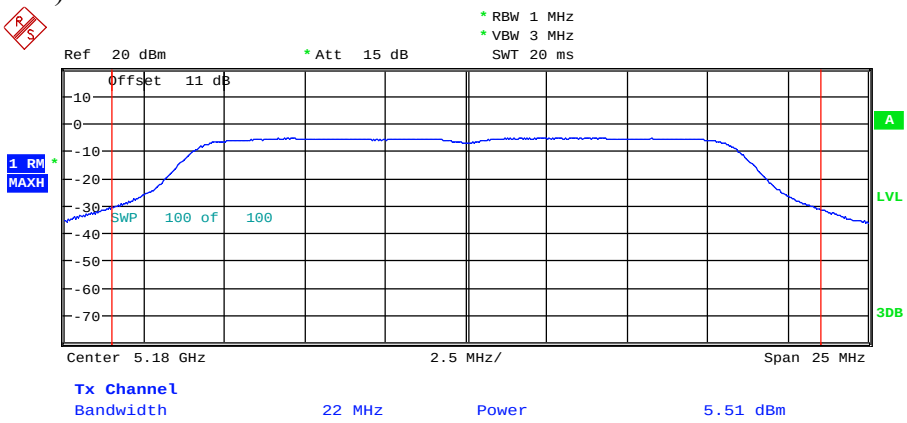
1. For the band 5.15-5.25 GHz, the maximum conducted power over the frequency of operation shall not exceed the lesser of 50 mW (17dBm) or 4 dBm + 10log B.

2. For the band 5.25-5.35 GHz and 5.47-5.725GMHz, the maximum conducted power over the frequency of operation shall not exceed the lesser of 250 mW (24dBm) or 11 dBm + 10log B.

3. For the band 5.725-5.825 GHz, the maximum conducted power over the frequency of op-eration shall not exceed the lesser of 1W (30dBm) or 17 dBm + 10log B.

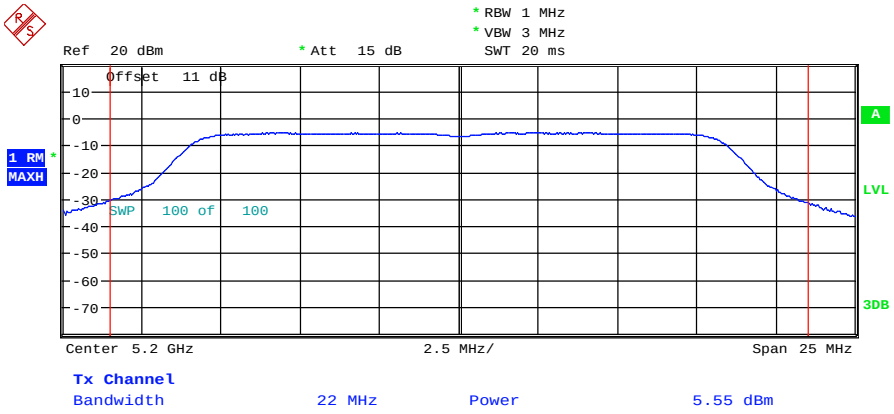
where B is the 26-dB emission bandwidth in MHz.

ANT A (ANT 1)



MAX OUTPUT POWER 802.11A CH36
Date: 24.OCT.2013 19:38:29

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478



MAX OUTPUT POWER 802.11A CH40

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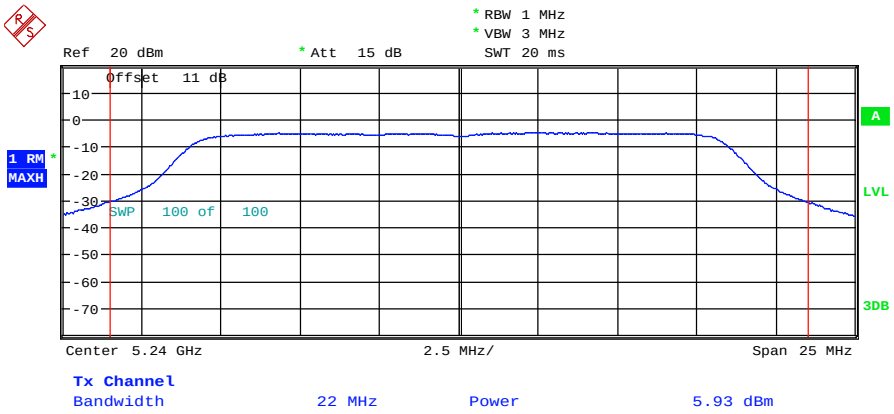
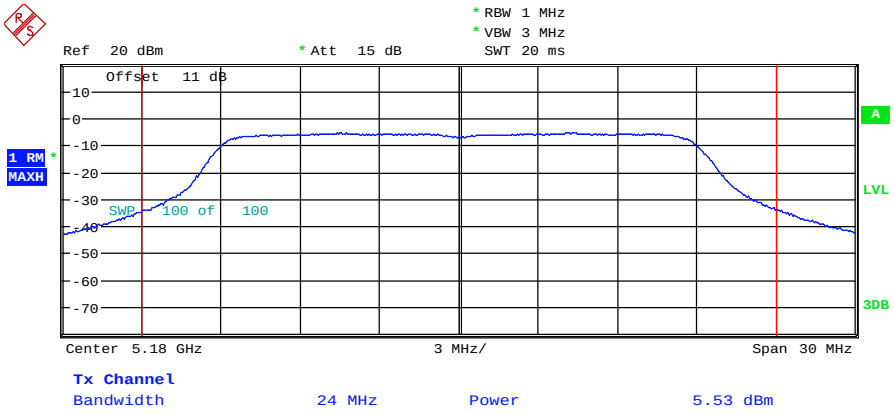


MAX OUTPUT POWER 802.11A CH48

Date: 24.OCT.2013 19:41:12

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478



MAX OUTPUT POWER 802.11N 20MHZ CH36

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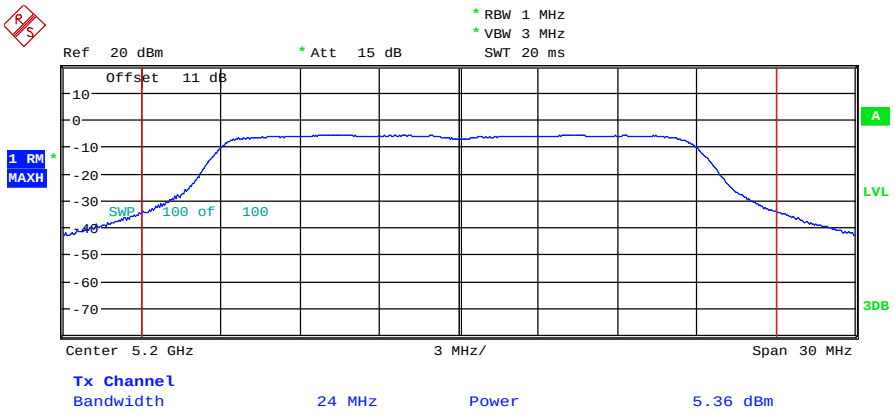

MAX OUTPUT POWER 802.11N 20MHZ CH40

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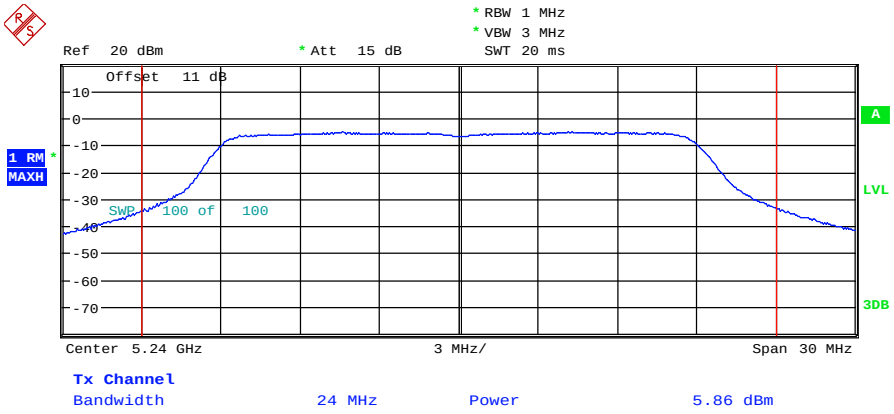
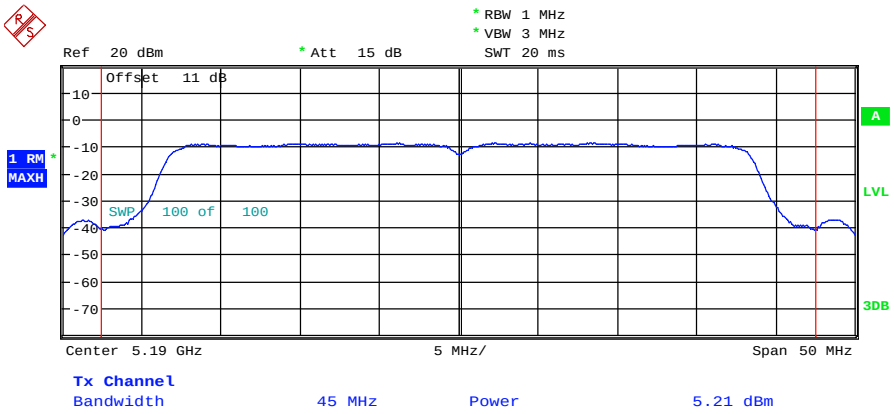


MAX OUTPUT POWER 802.11N 20MHZ CH48

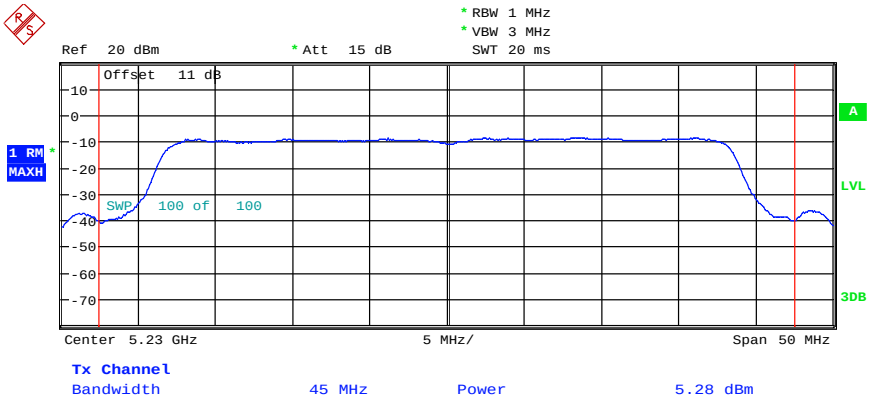
Date: 24.OCT.2013 19:47:57



MAX OUTPUT POWER 802.11N 40MHZ CH38

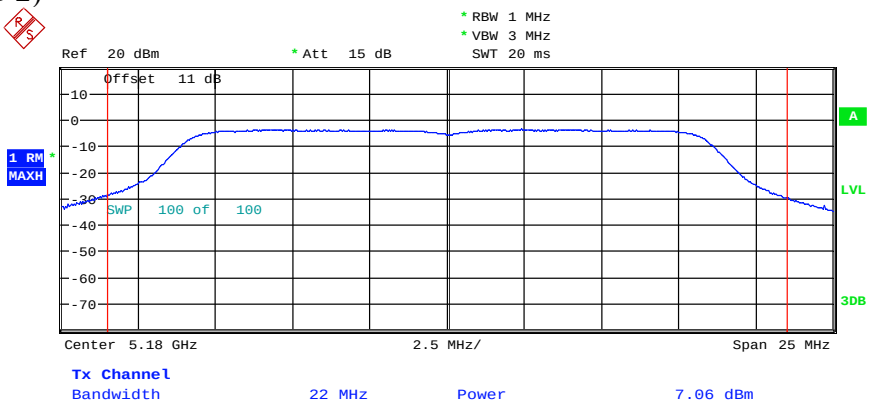
Date: 24.OCT.2013 19:50:35

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478



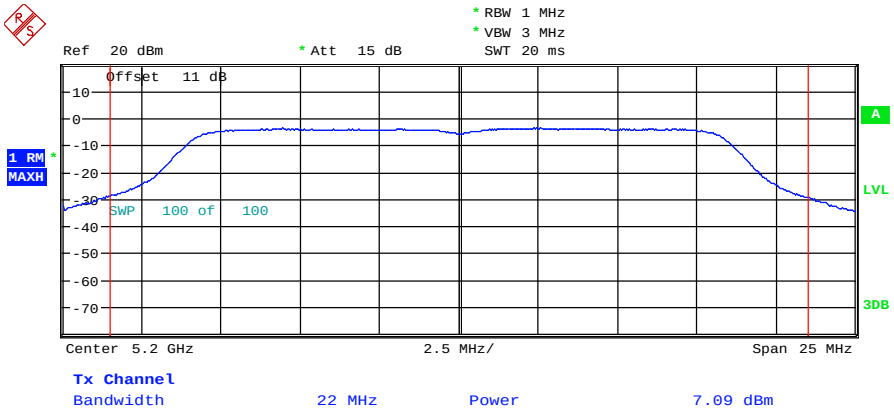
MAX OUTPUT POWER 802.11N 40MHZ CH46
Date: 24.OCT.2013 19:51:48

ANT B (ANT 2)



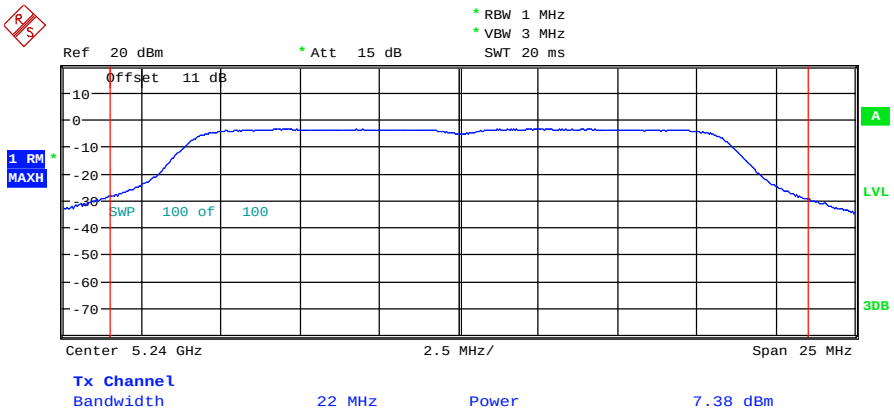
MAX OUTPUT POWER 802.11A CH36
Date: 24.OCT.2013 21:25:02

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478



MAX OUTPUT POWER 802.11A CH40

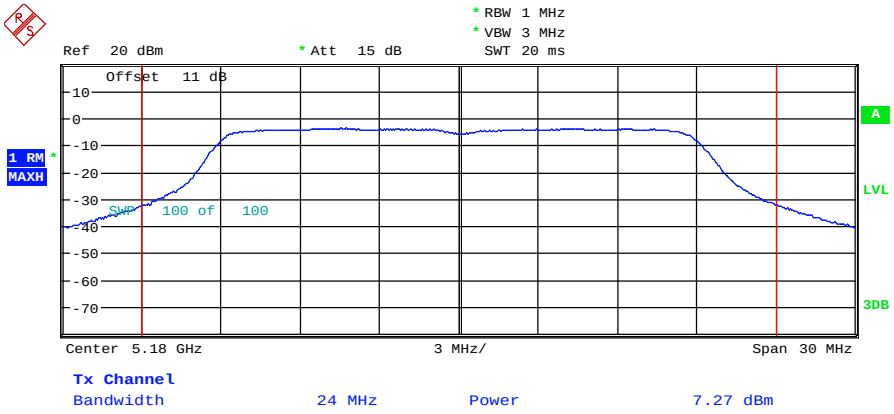
Date: 24.OCT.2013 21:26:20



MAX OUTPUT POWER 802.11A CH48

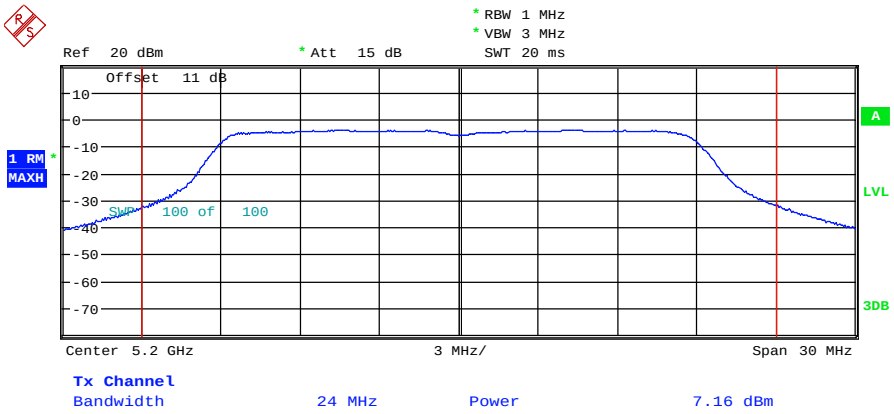
Date: 24.OCT.2013 21:27:18

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478



MAX OUTPUT POWER 802.11N 20MHZ CH36

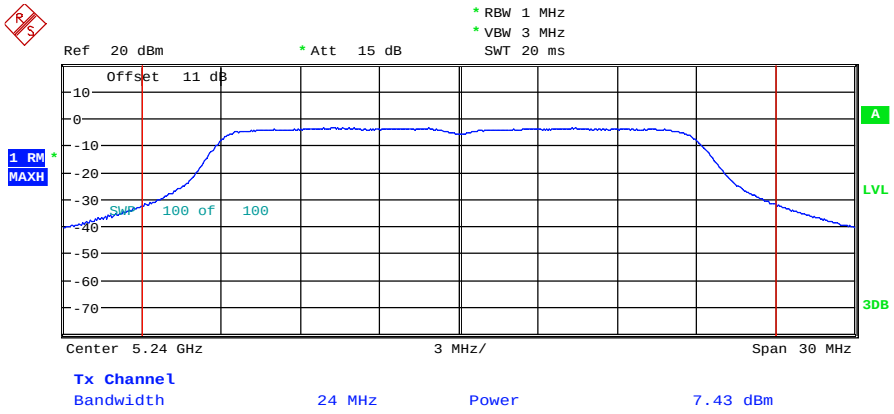
Date: 24.OCT.2013 21:28:51



MAX OUTPUT POWER 802.11N 20MHZ CH40

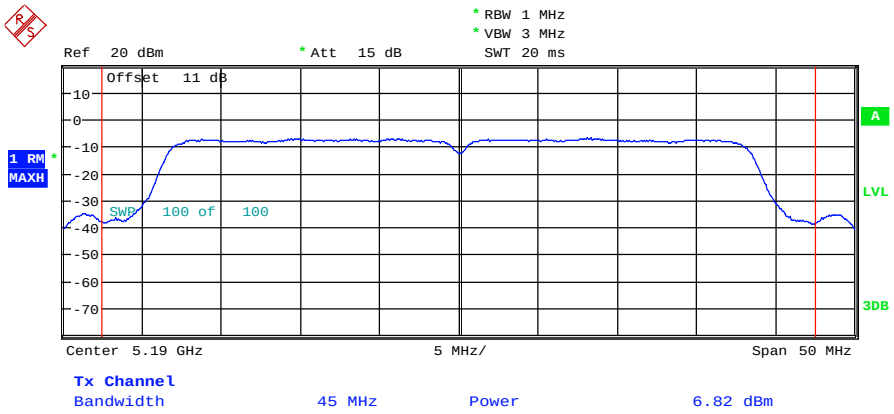
Date: 24.OCT.2013 21:29:54

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478



MAX OUTPUT POWER 802.11N 20MHZ CH48

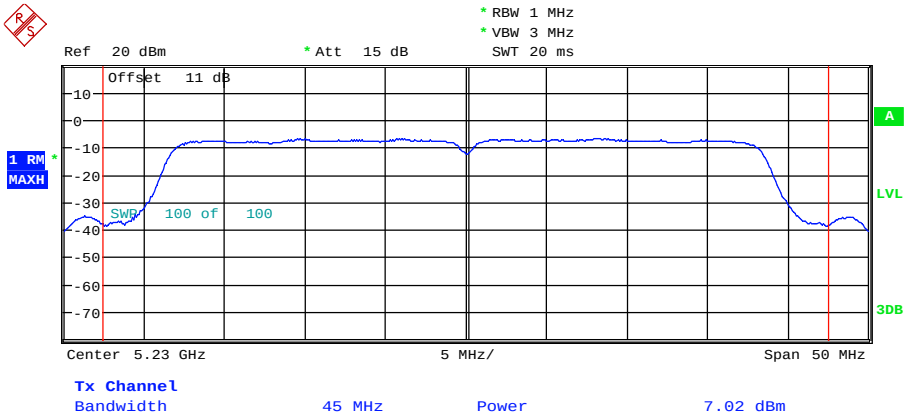
Date: 24.OCT.2013 21:30:49



MAX OUTPUT POWER 802.11N 40MHZ CH38

Date: 24.OCT.2013 21:32:36

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478



MAX OUTPUT POWER 802.11N 40MHZ CH46
Date: 24.OCT.2013 21:33:54

ANT A (ANT 1)	mW			dBm		
	Ch Low	Ch Mid	Ch High	Ch Low	Ch Mid	Ch High
802.11n 20MHz	3.57	3.44	3.85	5.53	5.36	5.86
802.11n 40MHz	3.32	./.	3.37	5.21	./.	5.28
ANT B (ANT 2)	mW			dBm		
	Ch Low	Ch Mid	Ch High	Ch Low	Ch Mid	Ch High
802.11n 20MHz	5.33	5.20	5.53	7.27	7.16	7.43
802.11n 40MHz	4.81	./.	5.04	6.82	./.	7.02
Combine	mW			dBm		
	Ch Low	Ch Mid	Ch High	Ch Low	Ch Mid	Ch High
802.11n 20MHz	8.90	8.64	9.38	9.49	9.37	9.72
802.11n 40MHz	8.13	./.	8.41	9.10	./.	9.25

Test equipment used: ETSTW-RE 055, ETSTW-RE 050

3.3 26-dB emission bandwidth, FCC 15.407 (a)

According to §15.407(a). No Limit required.

Result:
ANT A (ANT 1)

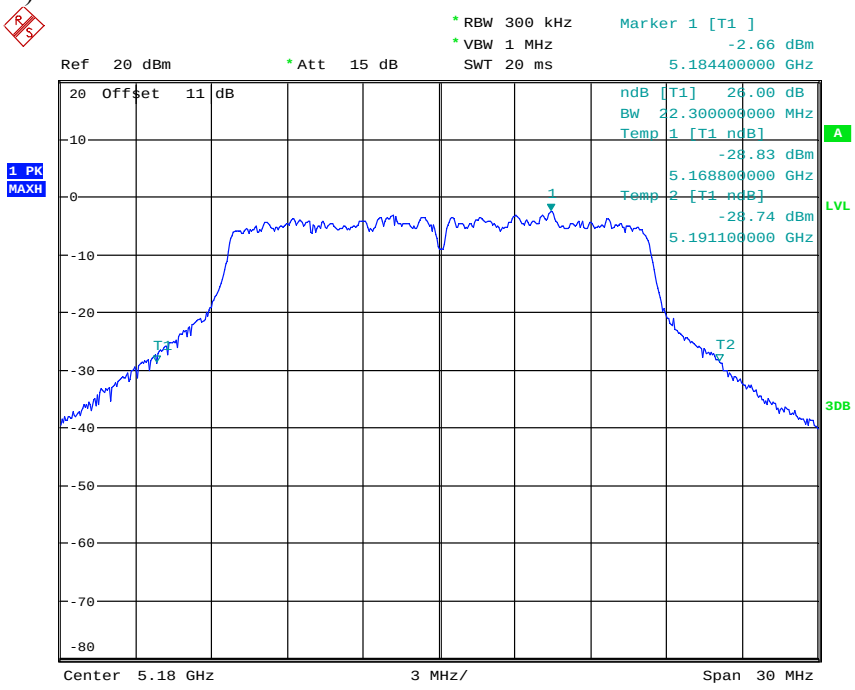
802.11a mode		
Frequency (MHz)	26 dB Bandwidth (MHz)	10 Log (B) (dB)
5180 MHz	22.30	13.48
5200 MHz	22.25	13.47
5240 MHz	22.50	13.52
802.11n 20 mode		
Frequency (MHz)	26 dB Bandwidth (MHz)	10 Log (B) (dB)
5180 MHz	22.85	13.59
5200 MHz	22.55	13.53
5240 MHz	22.65	13.55
802.11n 40 mode		
Frequency (MHz)	26 dB Bandwidth (MHz)	10 Log (B) (dB)
5190 MHz	40.00	16.02
5230 MHz	39.92	16.01

ANT B (ANT 2)

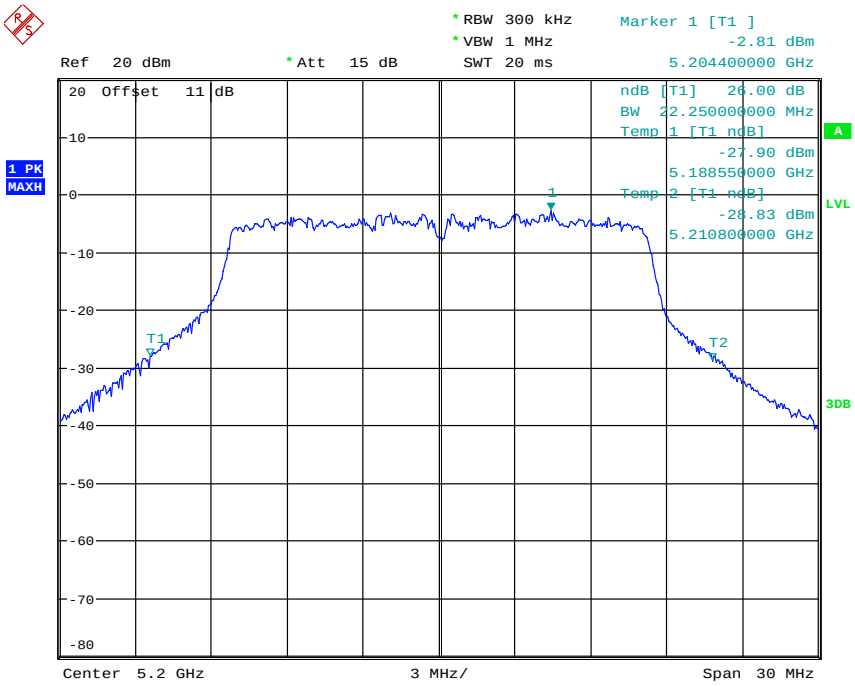
802.11a mode		
Frequency (MHz)	26 dB Bandwidth (MHz)	10 Log (B) (dB)
5180 MHz	22.70	13.56
5200 MHz	23.00	13.62
5240 MHz	21.90	13.40
802.11n 20 mode		
Frequency (MHz)	26 dB Bandwidth (MHz)	10 Log (B) (dB)
5180 MHz	22.80	13.58
5200 MHz	22.80	13.58
5240 MHz	22.80	13.58
802.11n 40 mode		
Frequency (MHz)	26 dB Bandwidth (MHz)	10 Log (B) (dB)
5190 MHz	40.83	16.11
5230 MHz	40.58	16.08

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478

ANT A (ANT 1)

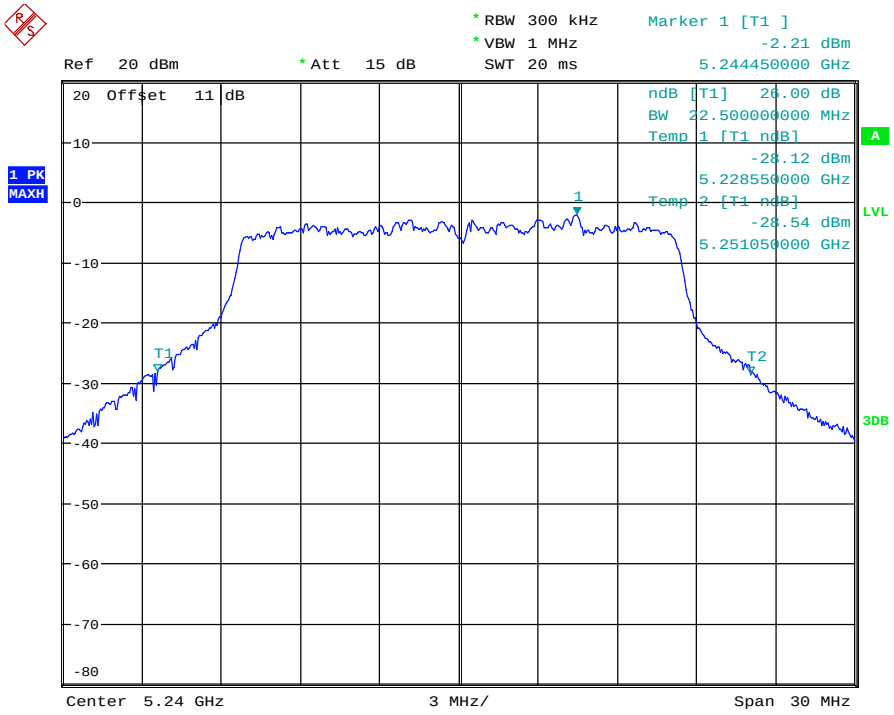


26DB BANDWIDTH 802.11A CH36
Date: 24.OCT.2013 19:38:47

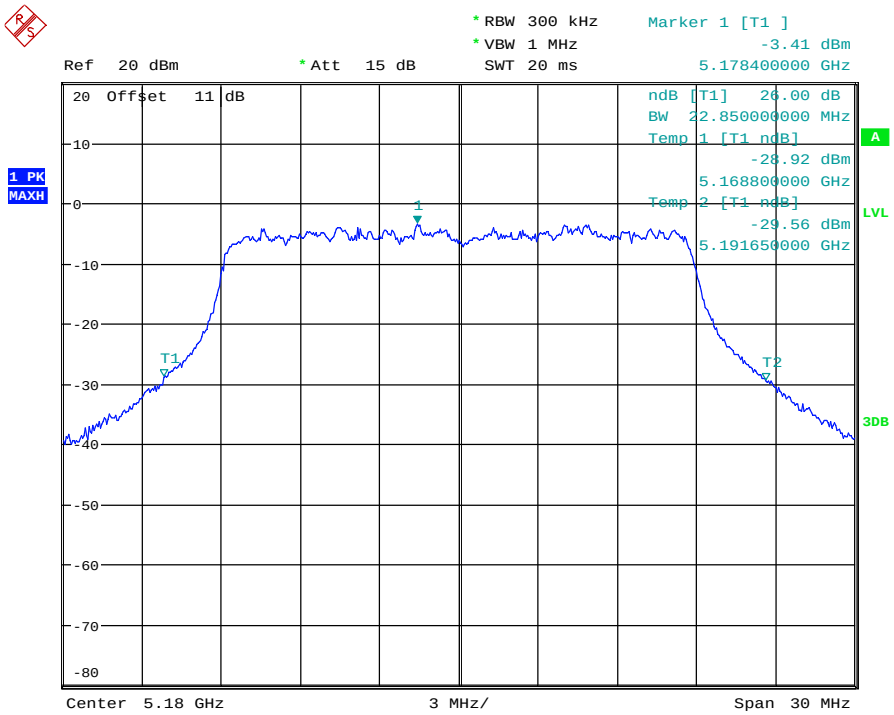


26DB BANDWIDTH 802.11A CH40
Date: 24.OCT.2013 19:40:23

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478

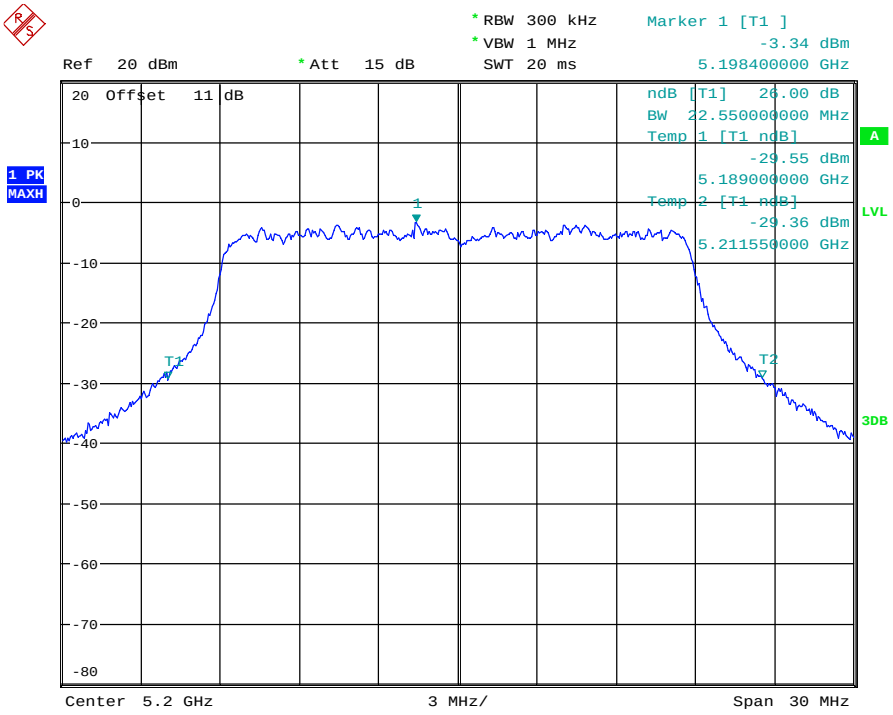


26DB BANDWIDTH 802.11A CH48
Date: 24.OCT.2013 19:41:29

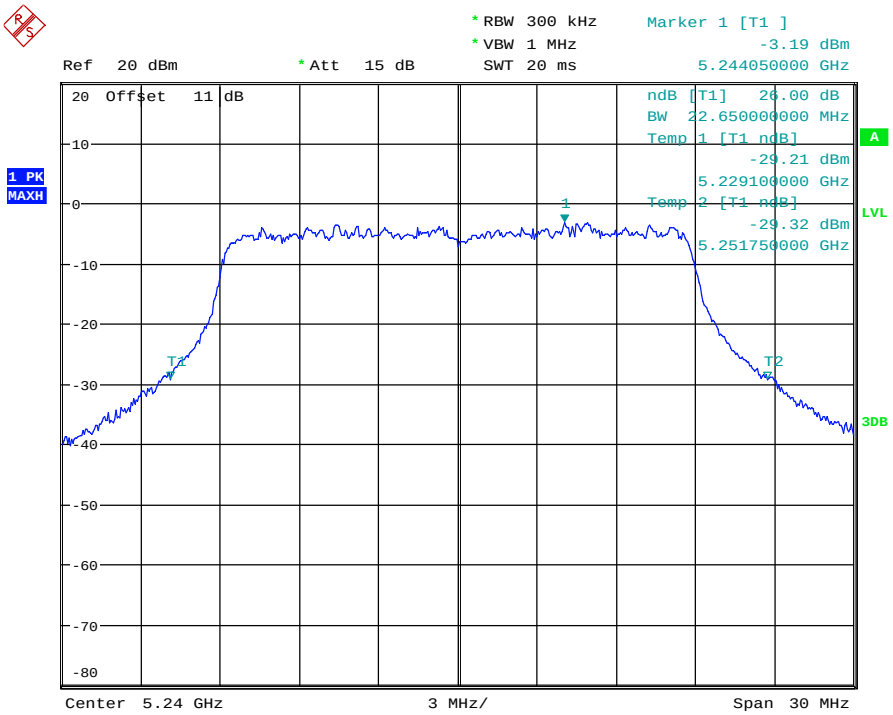


26DB BANDWIDTH 802.11N 20MHZ CH36
Date: 24.OCT.2013 19:43:53

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478

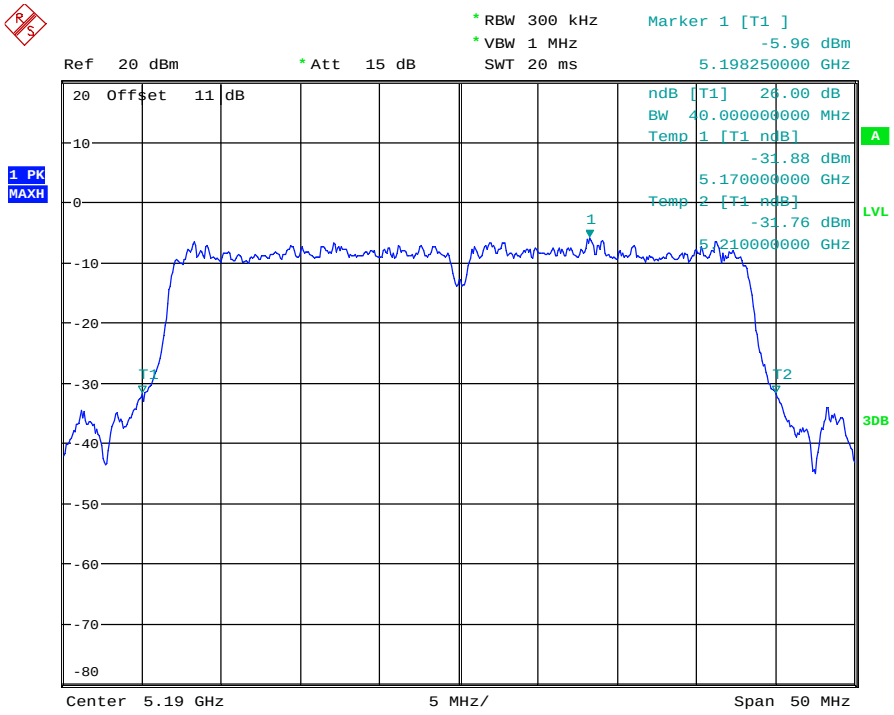


26DB BANDWIDTH 802.11N 20MHZ CH40
Date: 24.OCT.2013 19:46:20

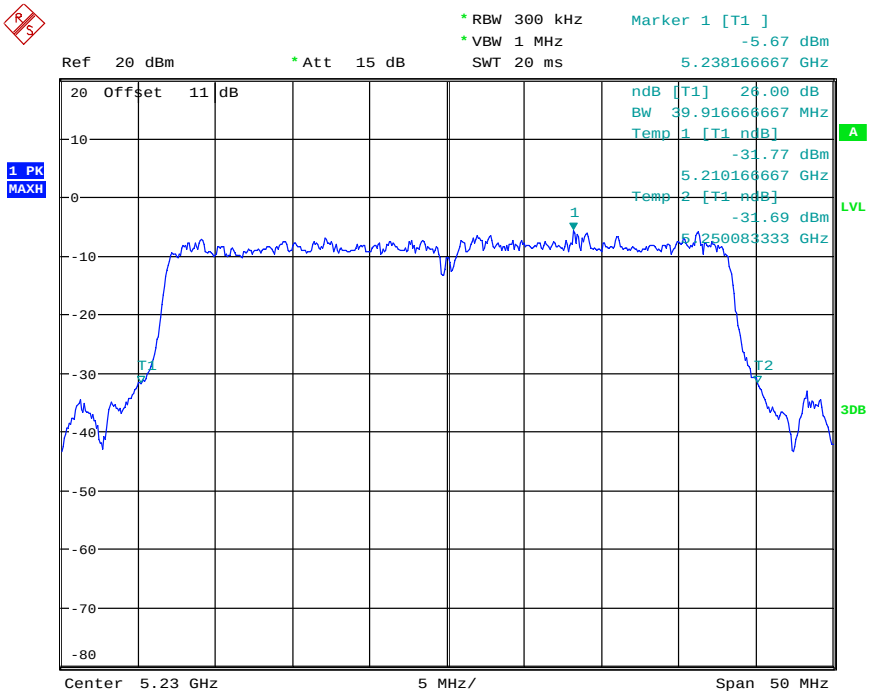


26DB BANDWIDTH 802.11N 20MHZ CH48
Date: 24.OCT.2013 19:48:15

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478



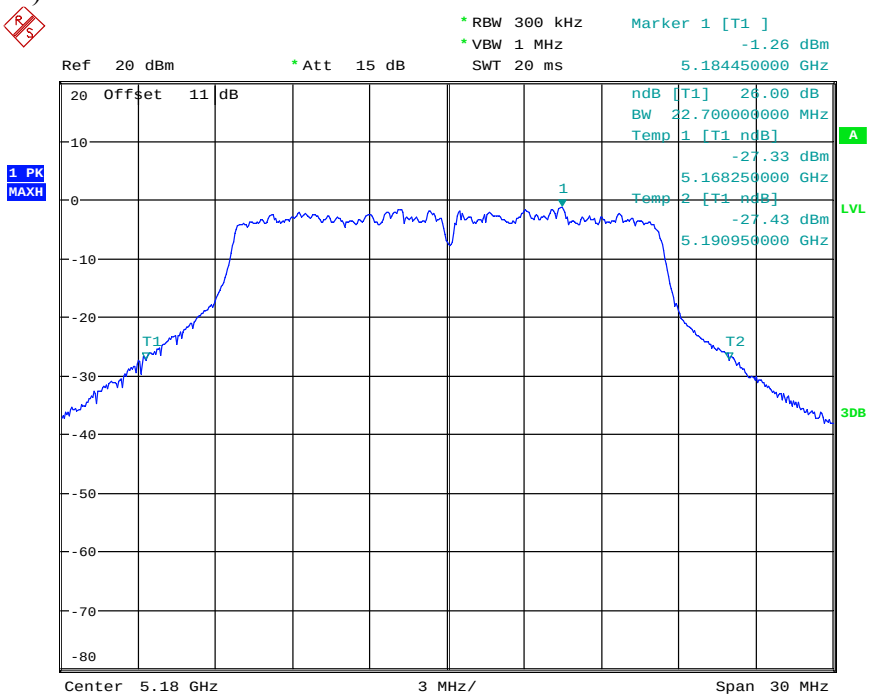
26DB BANDWIDTH 802.11N 40MHZ CH38
Date: 24.OCT.2013 19:50:52



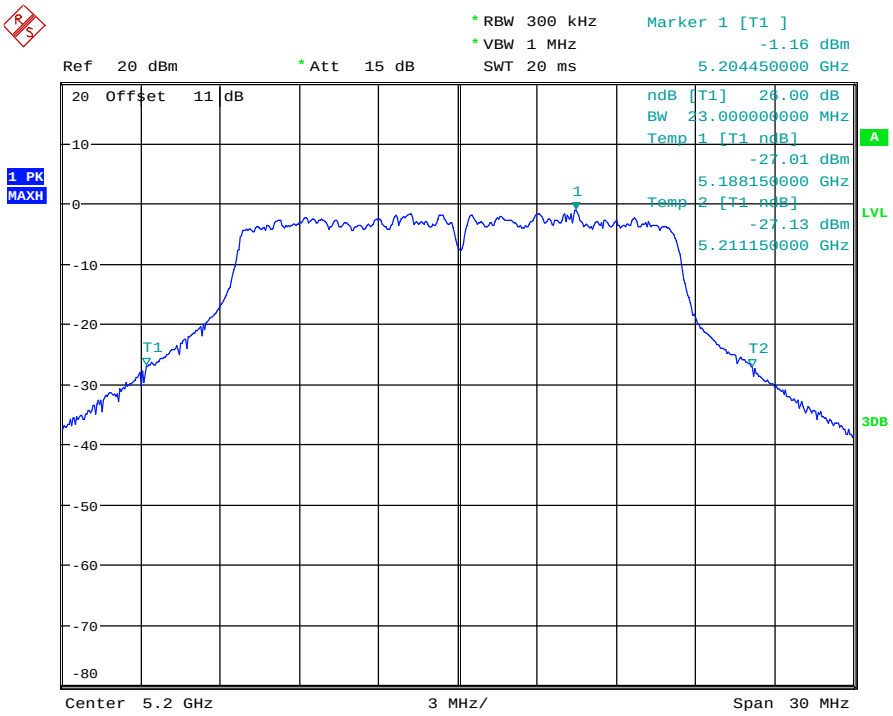
26DB BANDWIDTH 802.11N 40MHZ CH46
Date: 24.OCT.2013 19:52:05

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478

ANT B (ANT 2)

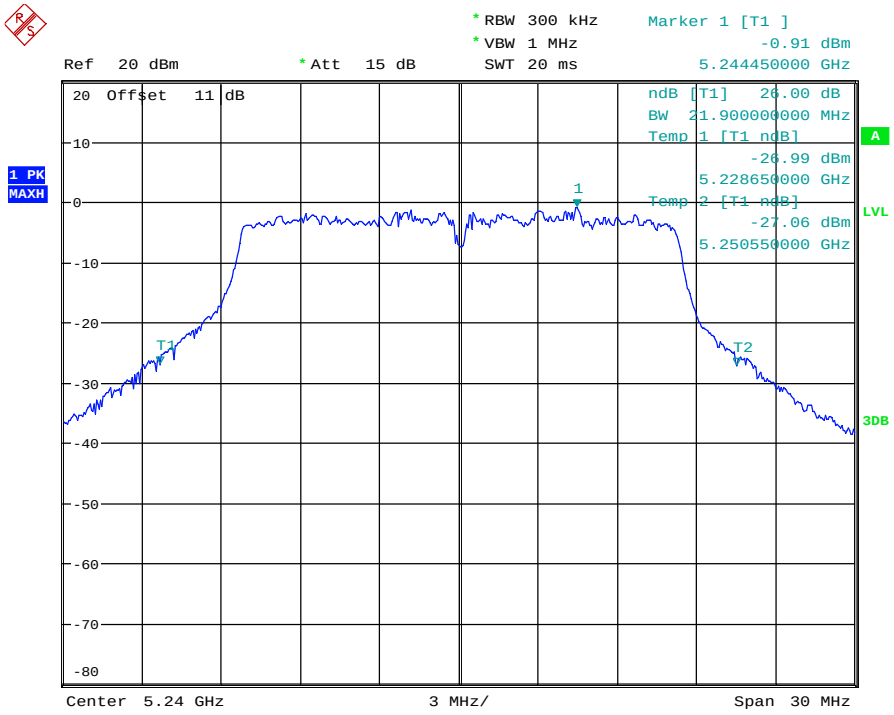


26DB BANDWIDTH 802.11A CH36
Date: 24.OCT.2013 21:25:20

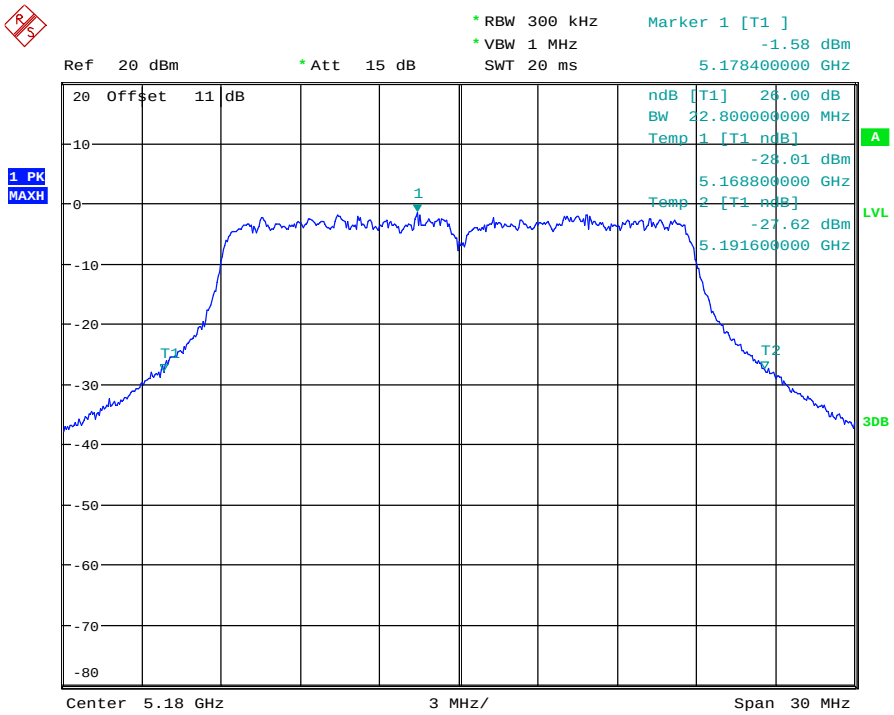


26DB BANDWIDTH 802.11A CH40
Date: 24.OCT.2013 21:26:38

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478

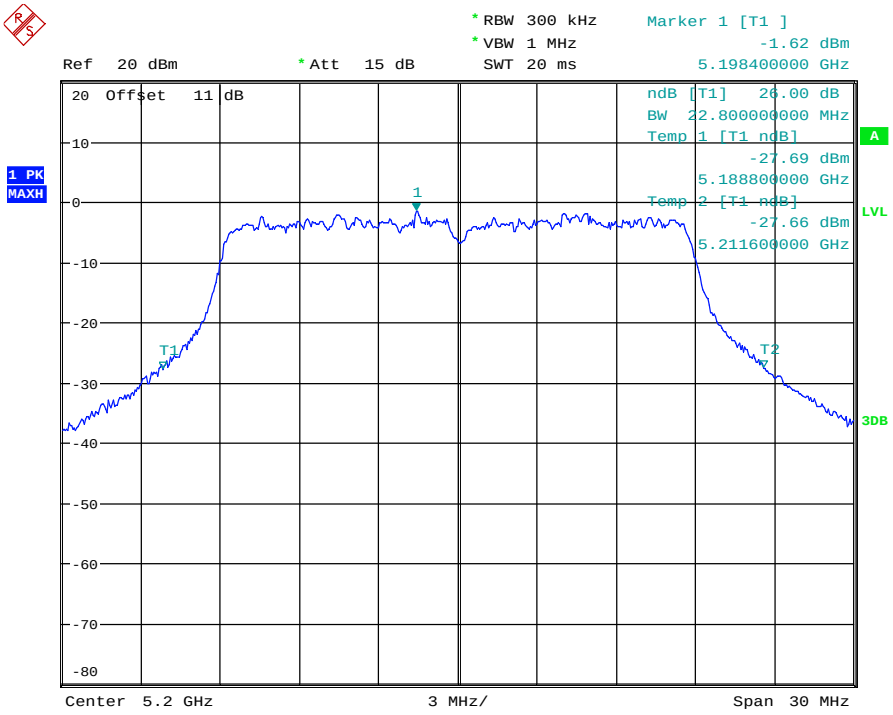


26DB BANDWIDTH 802.11A CH48
Date: 24.OCT.2013 21:27:35

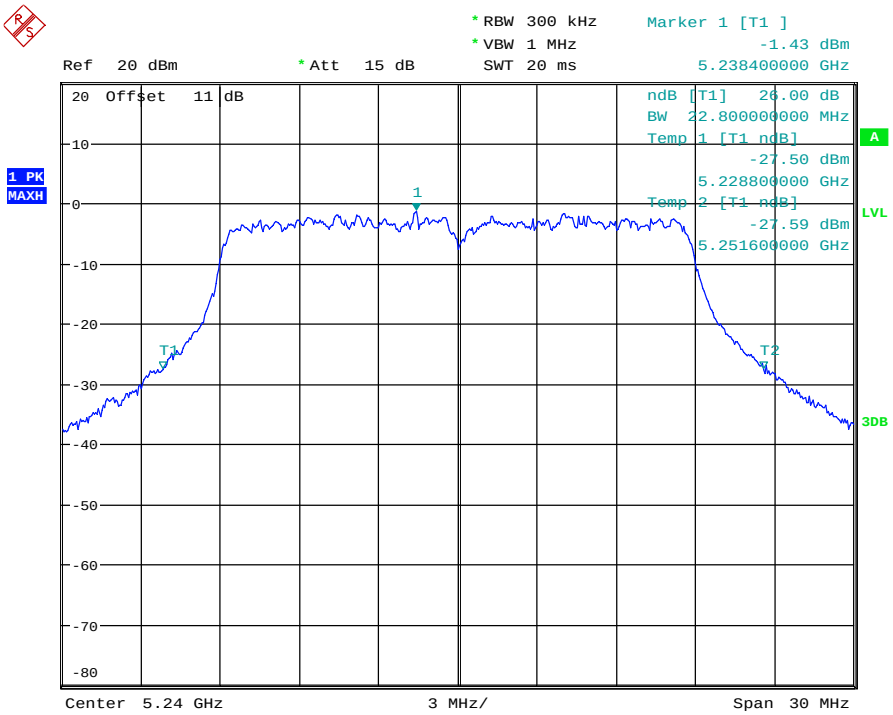


26DB BANDWIDTH 802.11N 20MHZ CH36
Date: 24.OCT.2013 21:29:08

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478

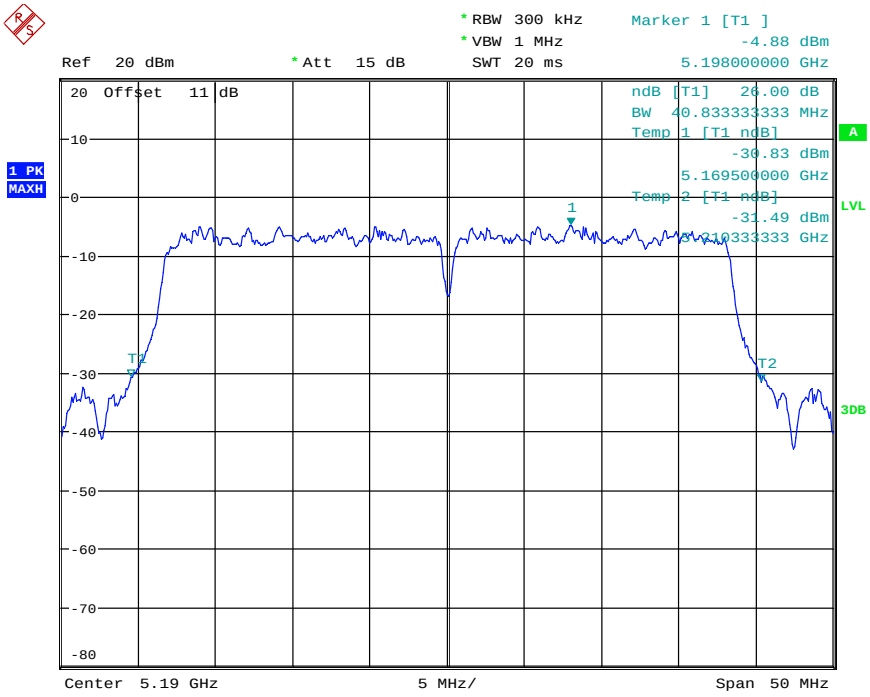


26DB BANDWIDTH 802.11N 20MHZ CH40
Date: 24.OCT.2013 21:30:11

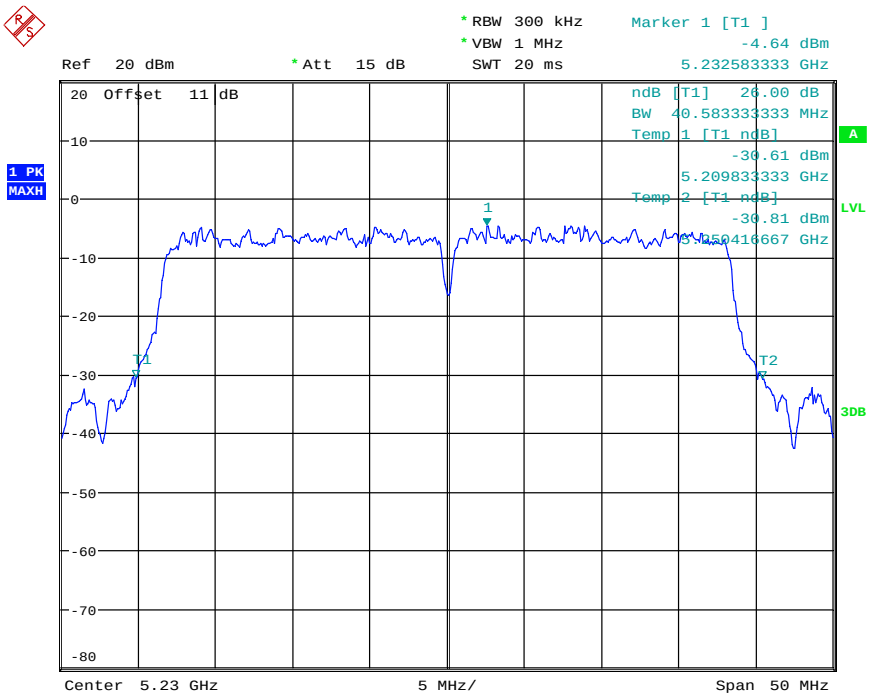


26DB BANDWIDTH 802.11N 20MHZ CH48
Date: 24.OCT.2013 21:31:06

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478



26DB BANDWIDTH 802.11N 40MHZ CH38
Date: 24.OCT.2013 21:32:53



26DB BANDWIDTH 802.11N 40MHZ CH46
Date: 24.OCT.2013 21:34:11

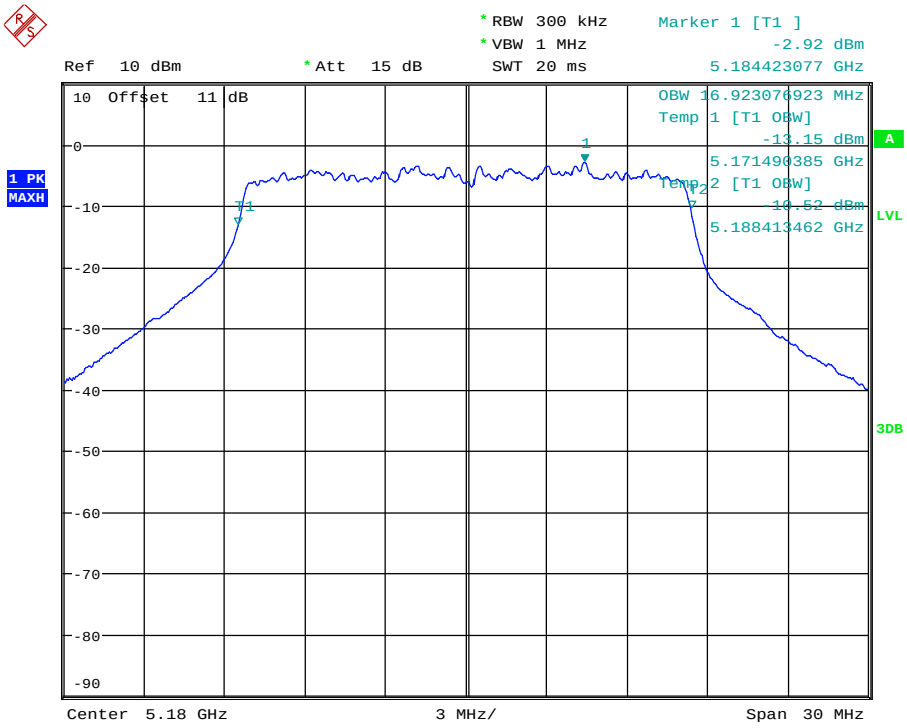
Test equipment used: ETSTW-RE 055, ETSTW-RE 050

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478

3.4 99 % Occupied Bandwidth

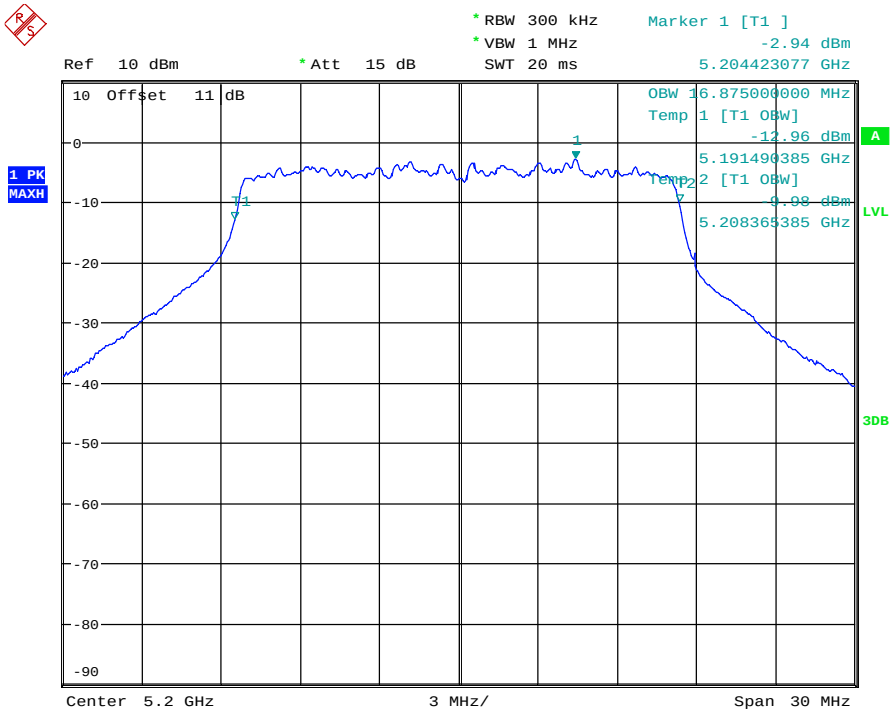
According to KDB 789033 D01 General UNII Test Procedures v01r03.

ANT A (ANT 1)

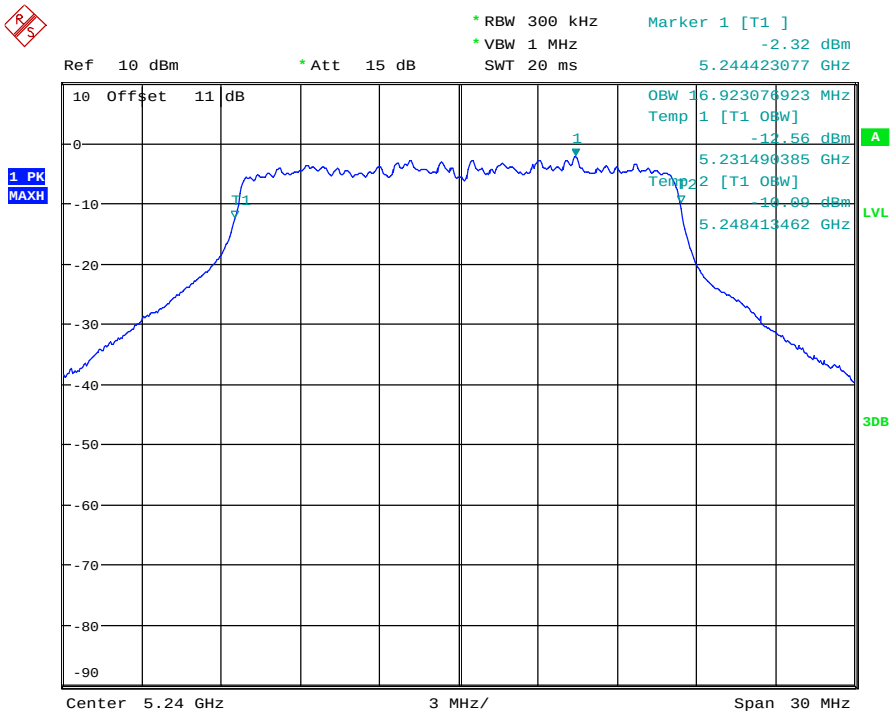


OCCUPIED BANDWIDTH 802.11A CH36
Date: 24.OCT.2013 21:03:47

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478

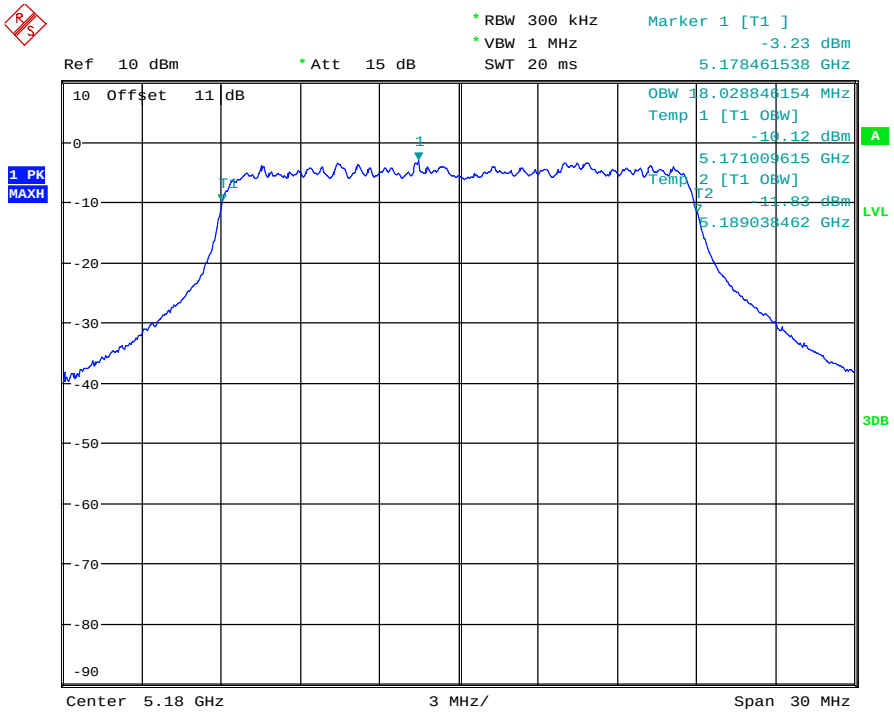


OCCUPIED BANDWIDTH 802.11A CH40
Date: 24.OCT.2013 21:04:32

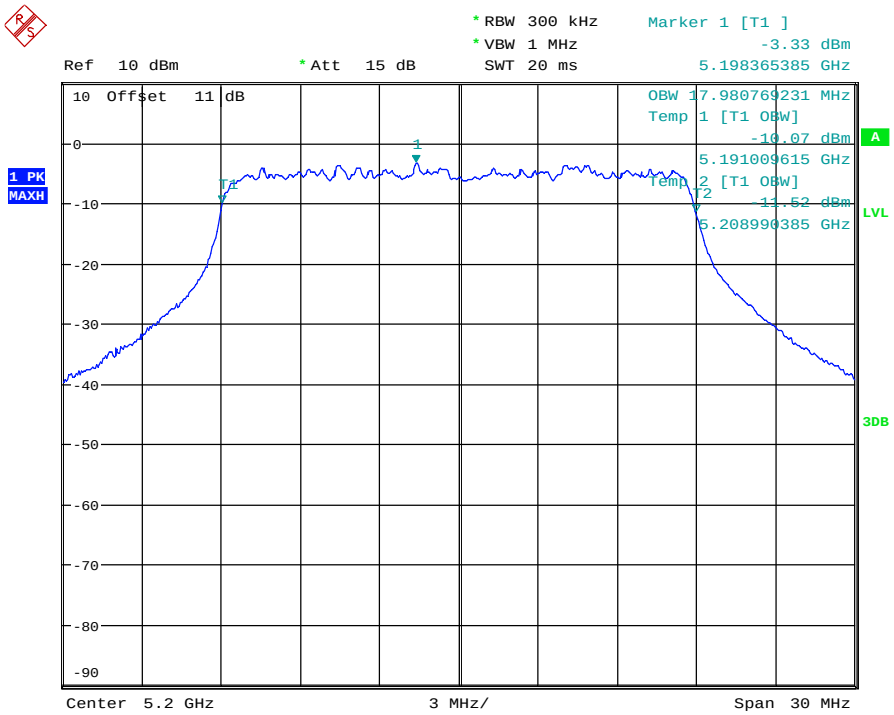


OCCUPIED BANDWIDTH 802.11A CH48
Date: 24.OCT.2013 21:05:06

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478

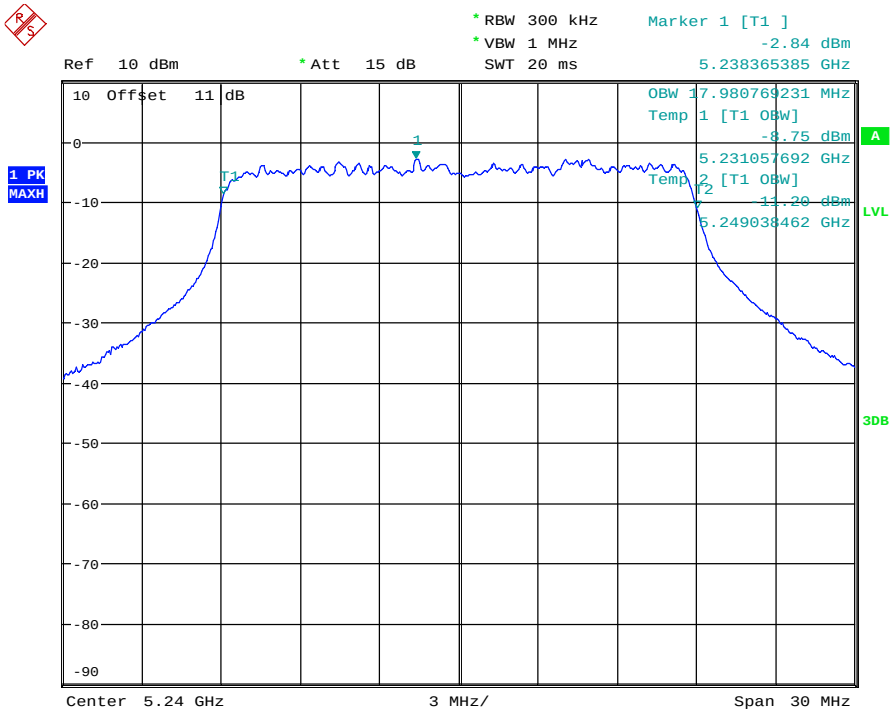


OCCUPIED BANDWIDTH 802.11N 20MHZ CH36
Date: 24.OCT.2013 21:07:08

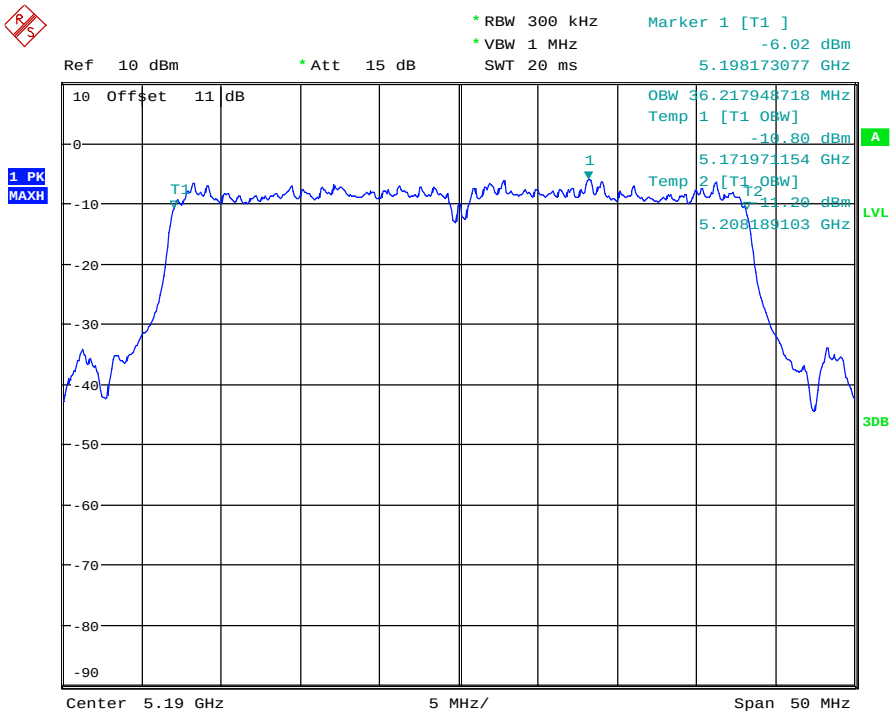


OCCUPIED BANDWIDTH 802.11N 20MHZ CH40
Date: 24.OCT.2013 21:06:36

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478

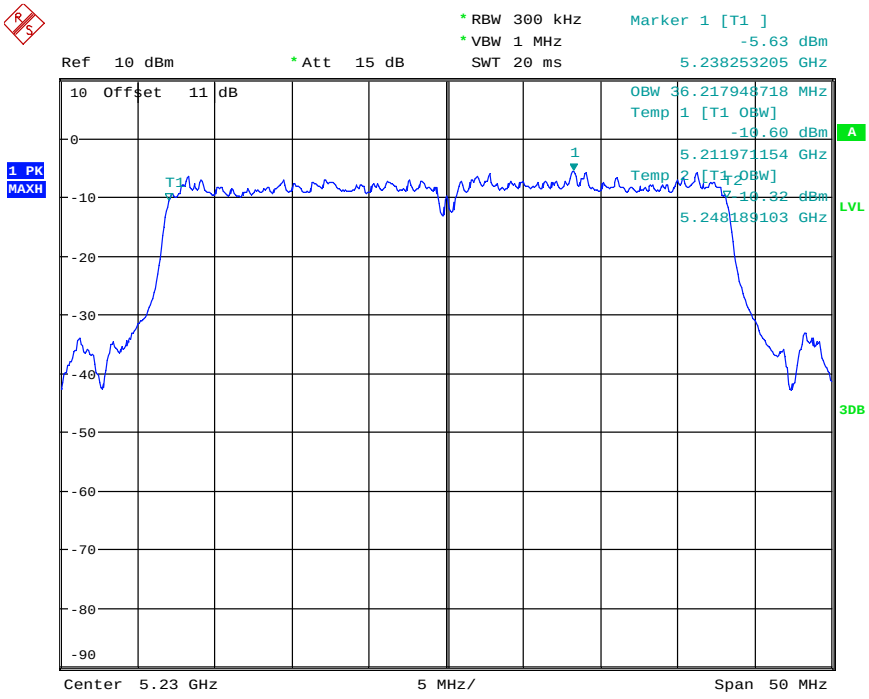


OCCUPIED BANDWIDTH 802.11N 20MHZ CH48
Date: 24.OCT.2013 21:06:03



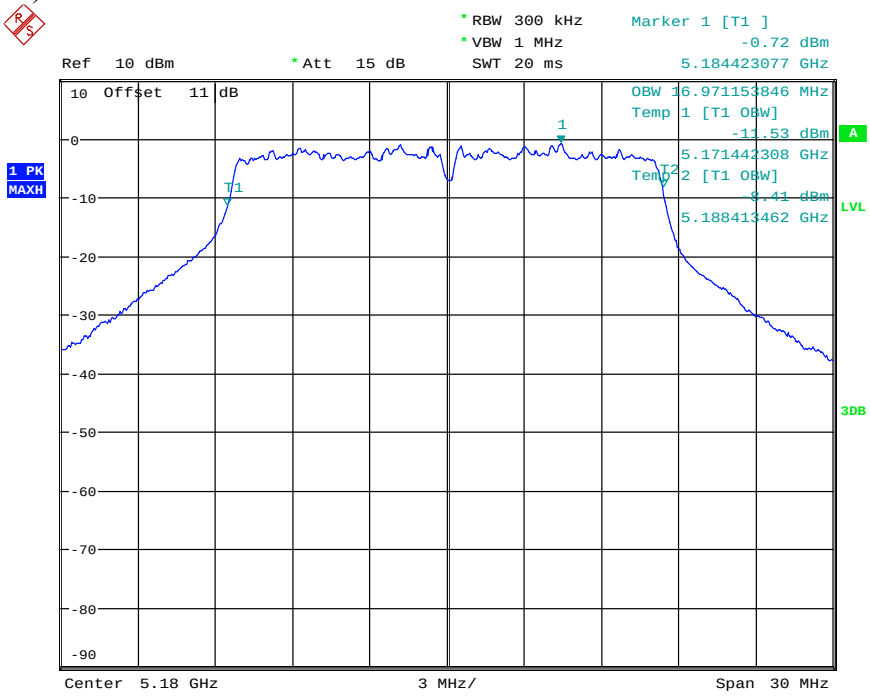
OCCUPIED BANDWIDTH 802.11N 40MHZ CH38
Date: 24.OCT.2013 21:12:08

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478



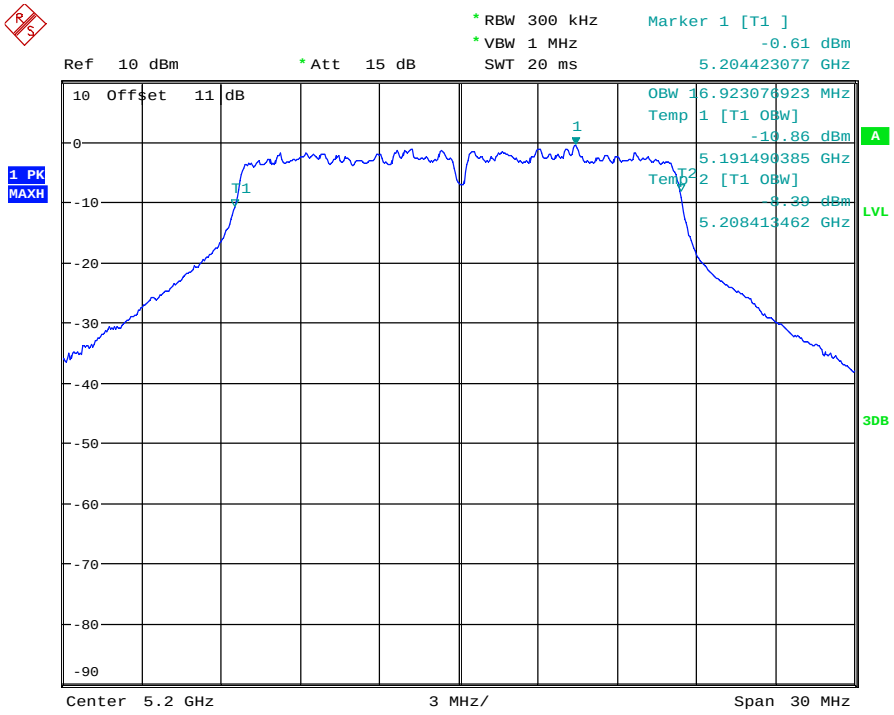
OCCUPIED BANDWIDTH 802.11N 40MHZ CH46
Date: 24.OCT.2013 21:12:54

ANT B (ANT 2)

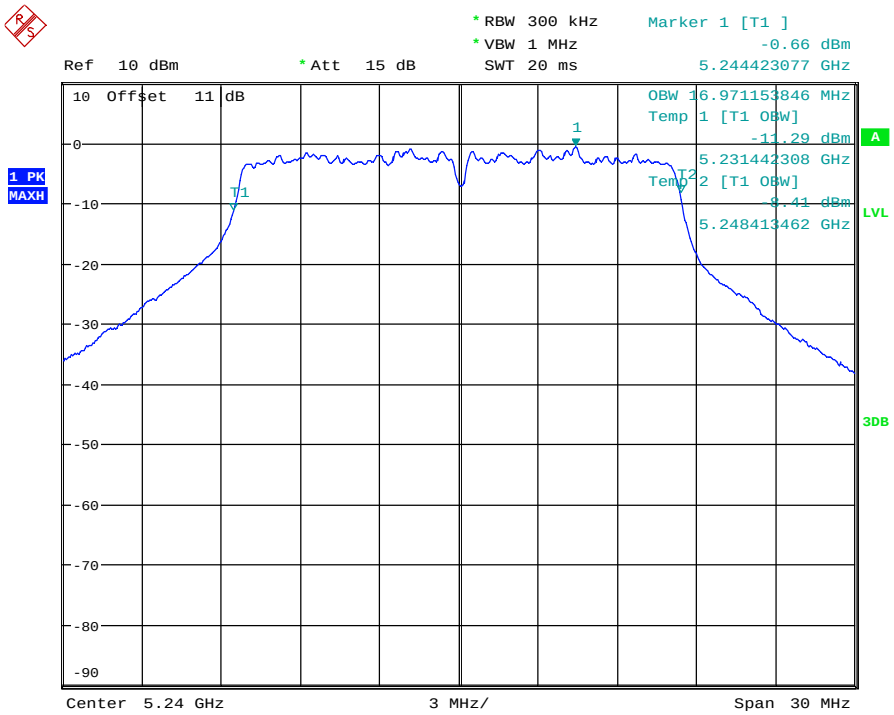


OCCUPIED BANDWIDTH 802.11A CH36
Date: 24.OCT.2013 21:23:36

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478

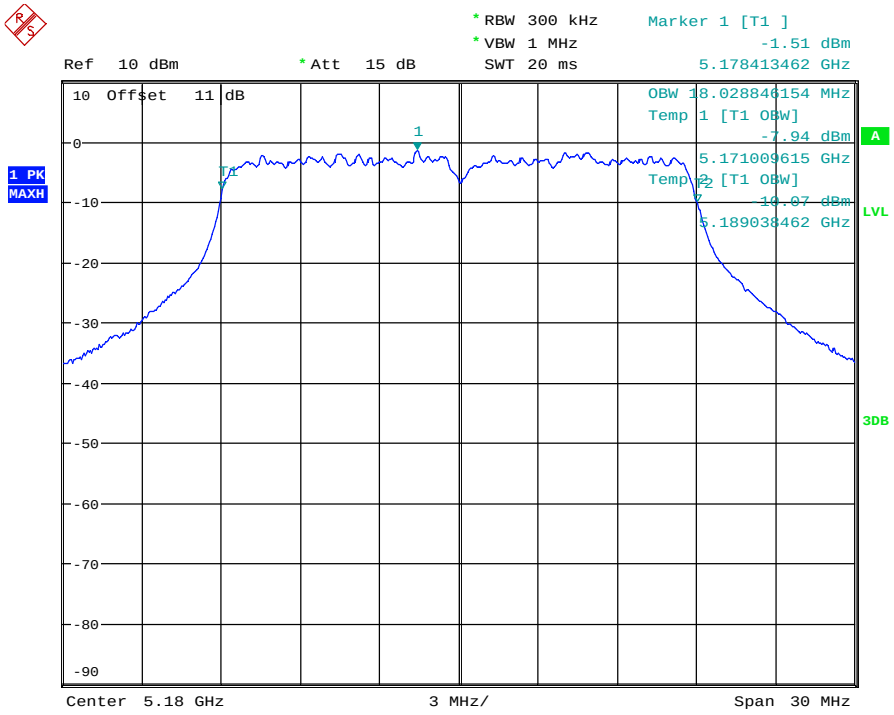


OCCUPIED BANDWIDTH 802.11A CH40
Date: 24.OCT.2013 21:22:57

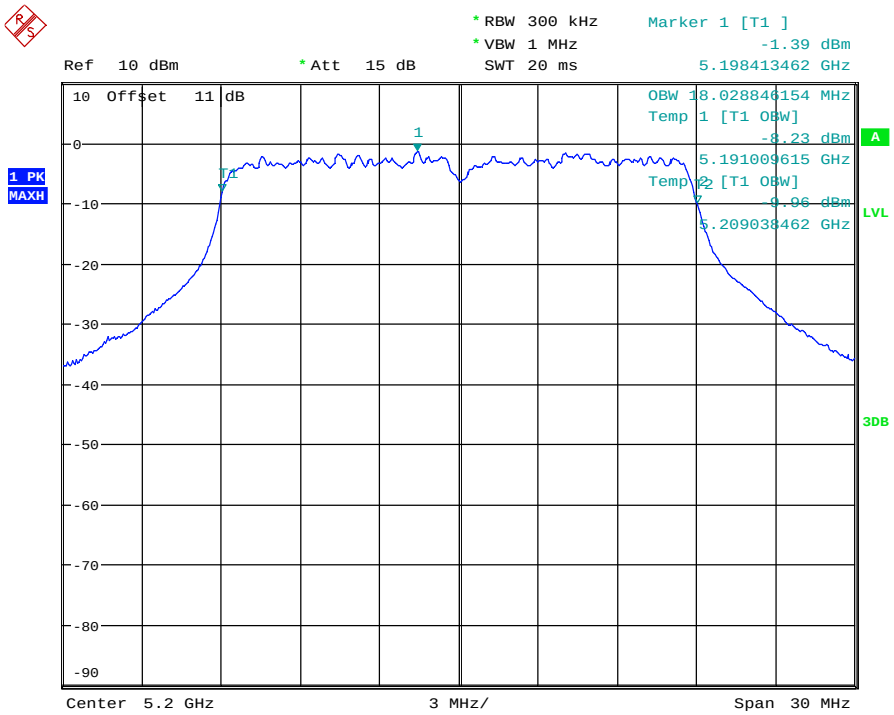


OCCUPIED BANDWIDTH 802.11A CH48
Date: 24.OCT.2013 21:22:11

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478

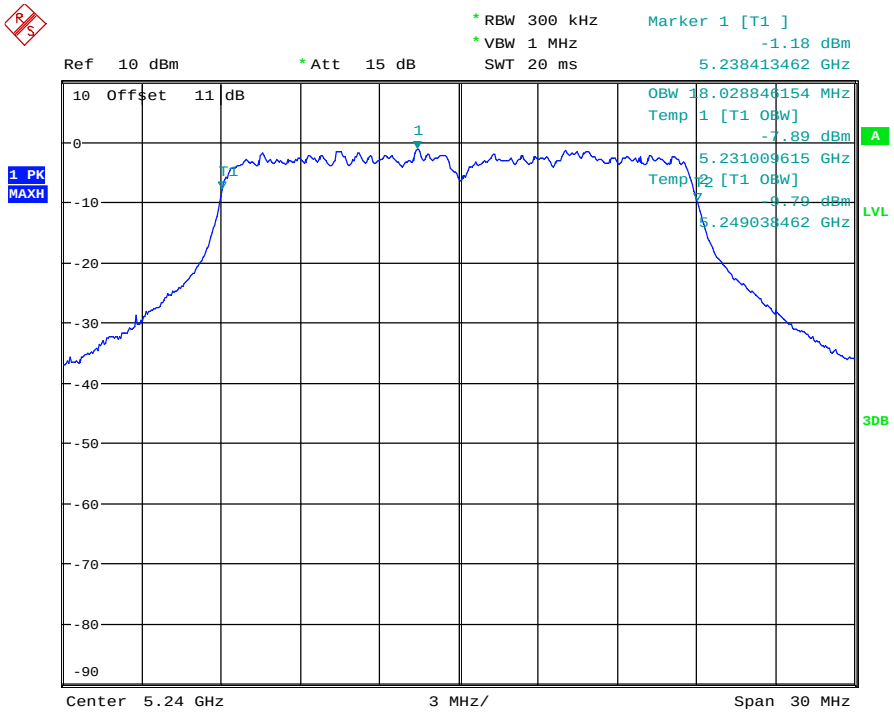


OCCUPIED BANDWIDTH 802.11N 20MHZ CH36
Date: 24.OCT.2013 21:18:34

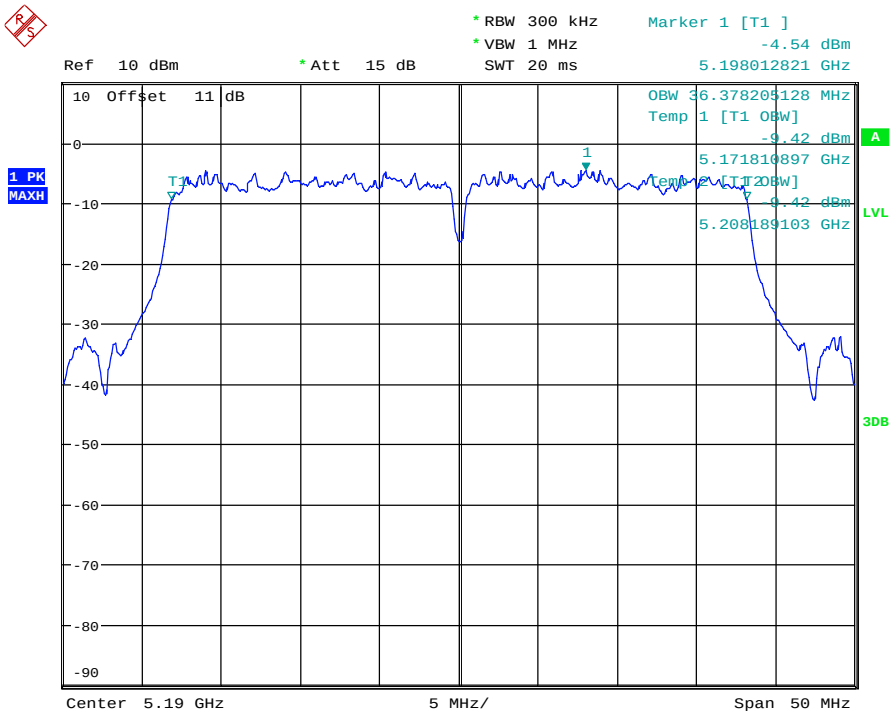


OCCUPIED BANDWIDTH 802.11N 20MHZ CH40
Date: 24.OCT.2013 21:20:34

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478

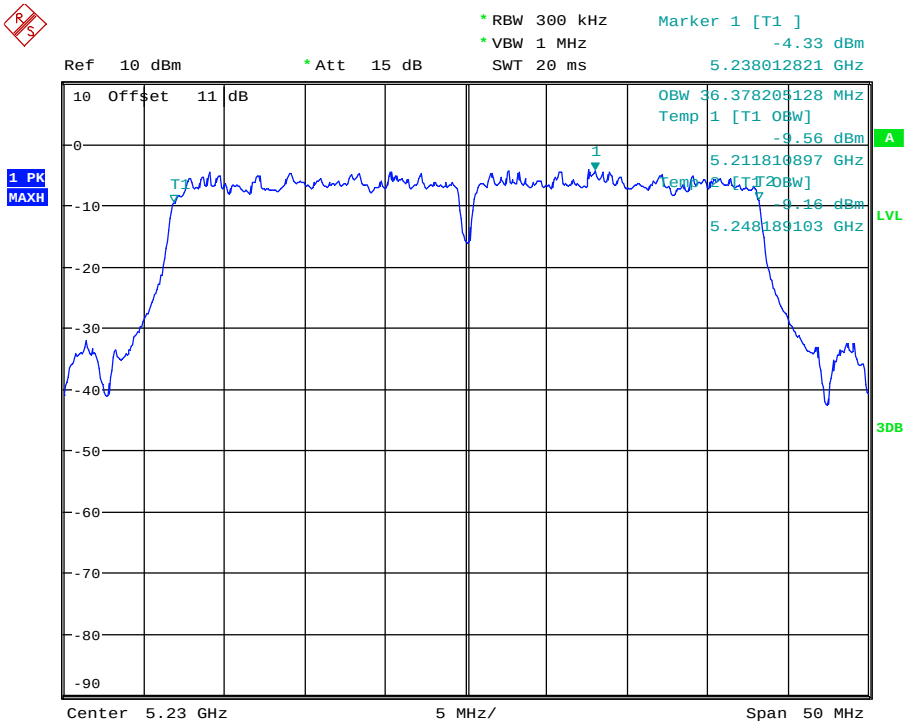


OCCUPIED BANDWIDTH 802.11N 20MHZ CH48
Date: 24.OCT.2013 21:21:09



OCCUPIED BANDWIDTH 802.11N 40MHZ CH38
Date: 24.OCT.2013 21:16:35

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478



OCCUPIED BANDWIDTH 802.11N 40MHZ CH46
Date: 24.OCT.2013 21:15:57

Test equipment used: ETSTW-RE 055, ETSTW-RE 050

3.5 Peak Power Spectral Density, FCC 15.407 (a)

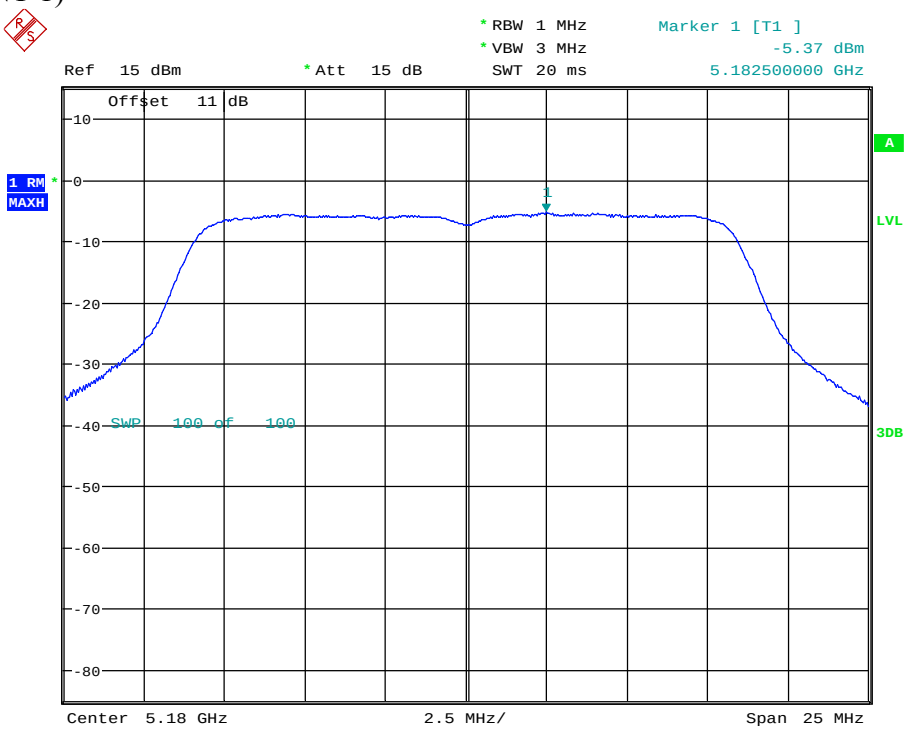
According to §15.407(a)

1. For the band 5.15-5.25 GHz, the peak power spectral density shall not exceed 4 dBm in any 1-MHz band.

2. For the band 5.25-5.35 GHz and 5.47-5.725GMHz, the peak power spectral density shall not exceed 11 dBm in any 1-MHz band.

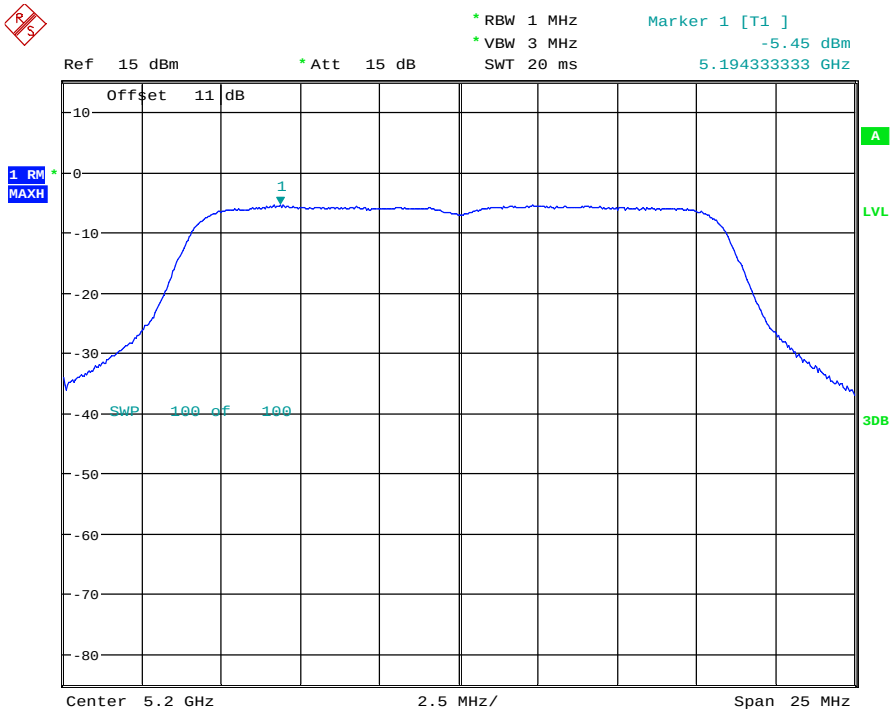
3. For the band 5.725-5.825 GHz, the peak power spectral density shall not exceed 17 dBm in any 1-MHz band.

ANT A (ANT 1)

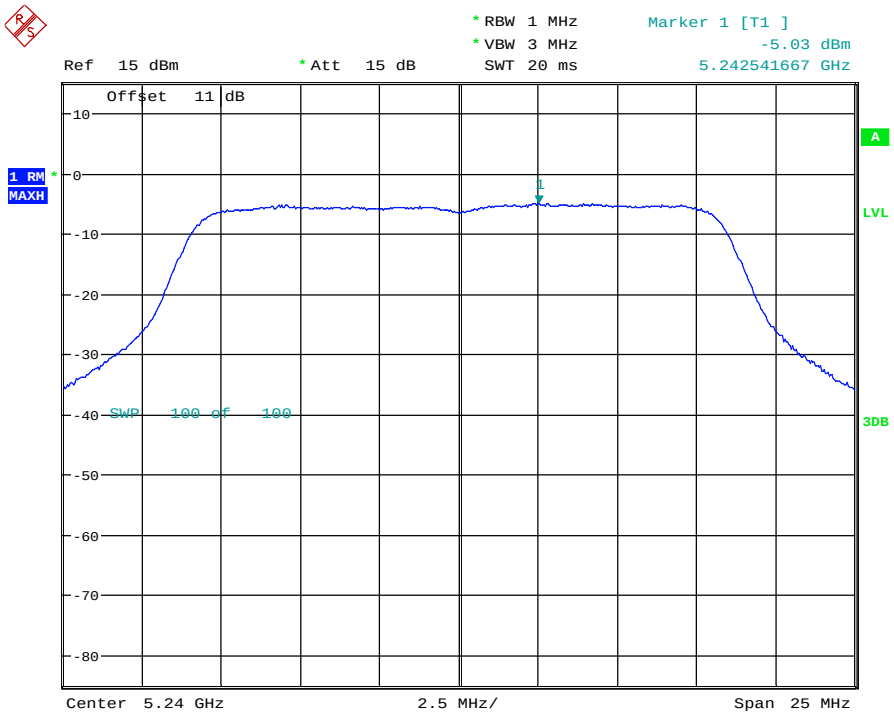


POWER DENSITY 802.11A CH36
Date: 24.OCT.2013 19:38:41

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478

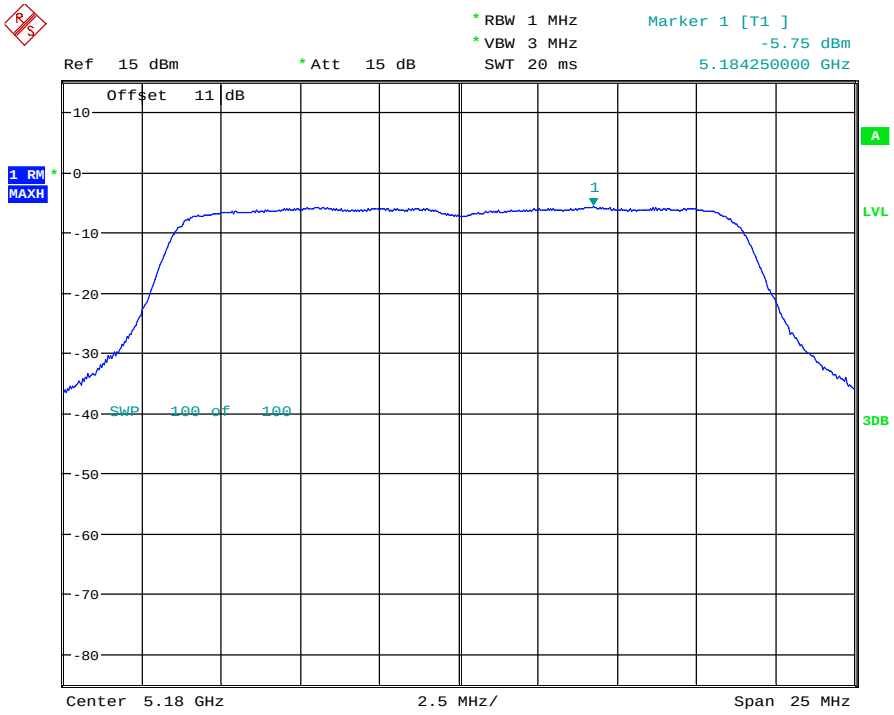


POWER DENSITY 802.11A CH40
Date: 24.OCT.2013 19:40:18

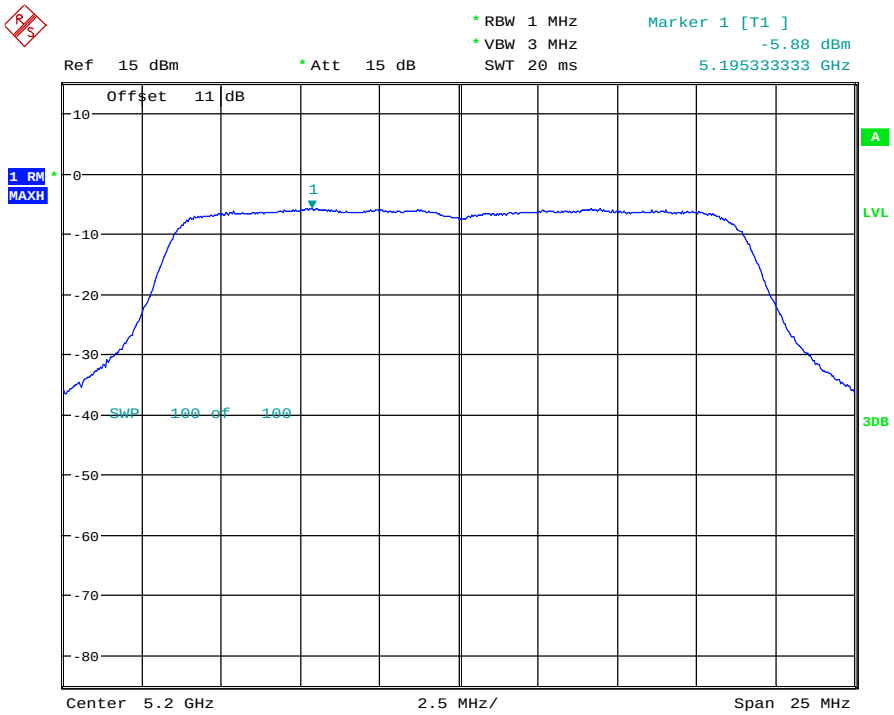


POWER DENSITY 802.11A CH48
Date: 24.OCT.2013 19:41:24

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478

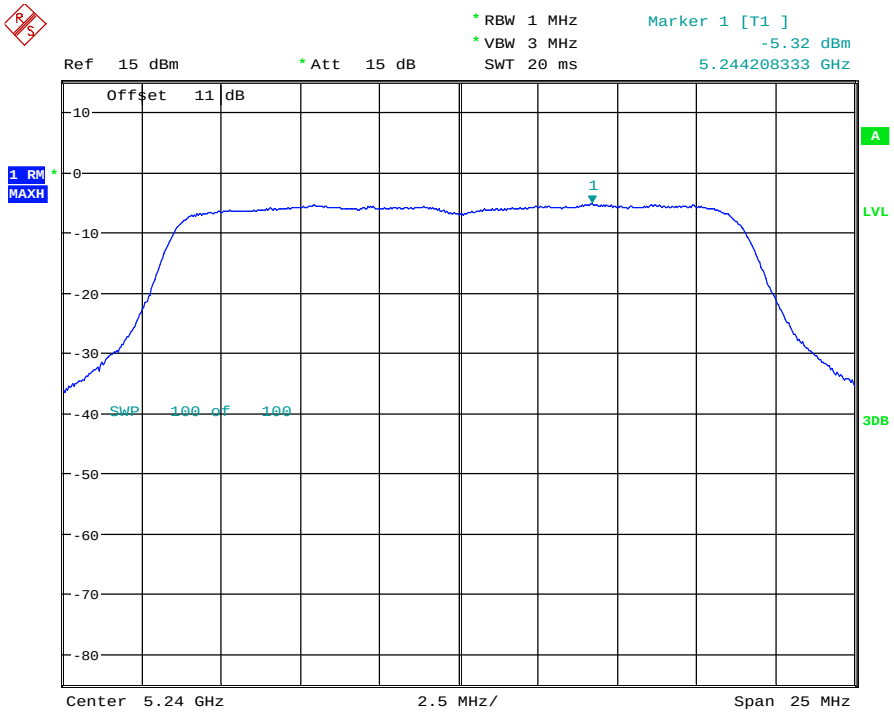


POWER DENSITY 802.11N 20MHZ CH36
Date: 24.OCT.2013 19:43:48

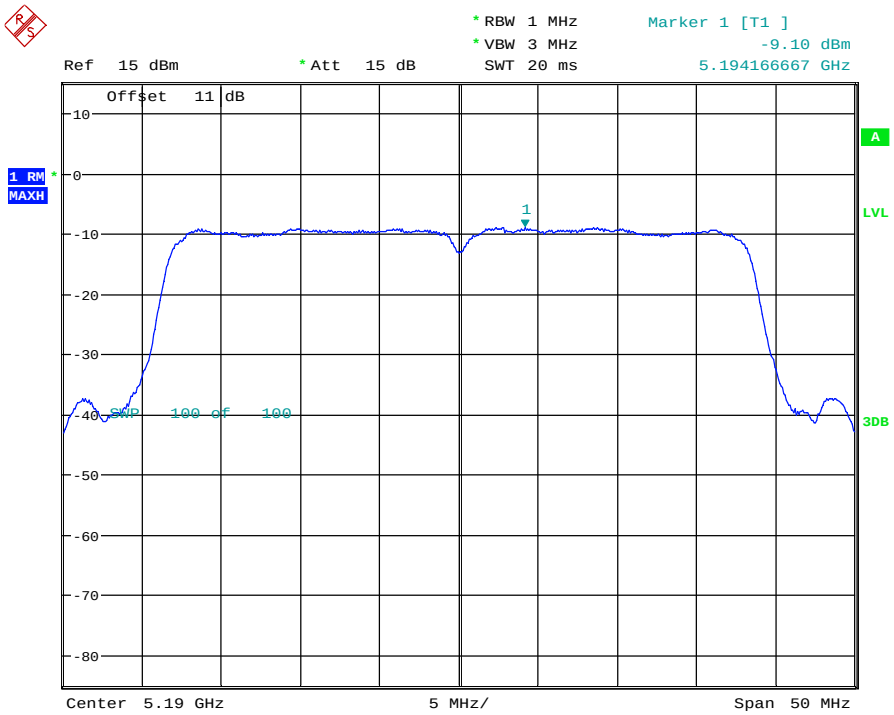


POWER DENSITY 802.11N 20MHZ CH40
Date: 24.OCT.2013 19:46:15

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478

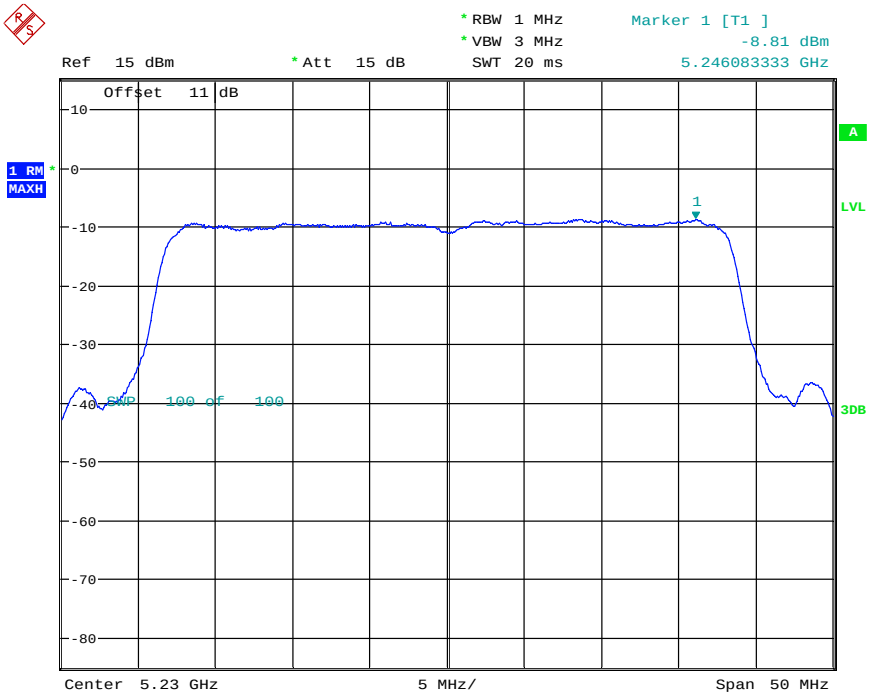


POWER DENSITY 802.11N 20MHZ CH48
Date: 24.OCT.2013 19:48:09



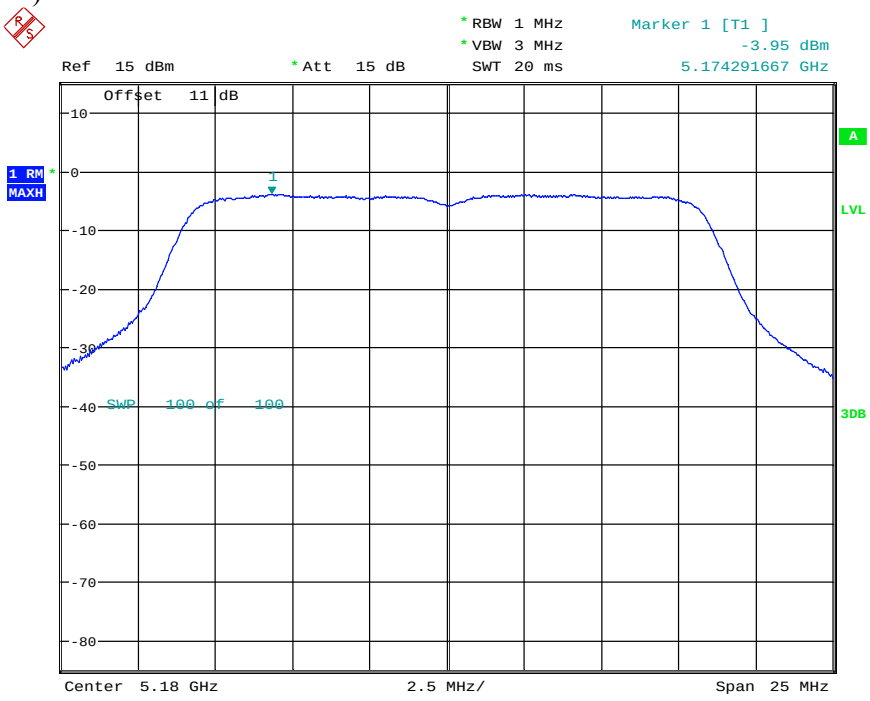
POWER DENSITY 802.11N 40MHZ CH38
Date: 24.OCT.2013 19:50:47

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478



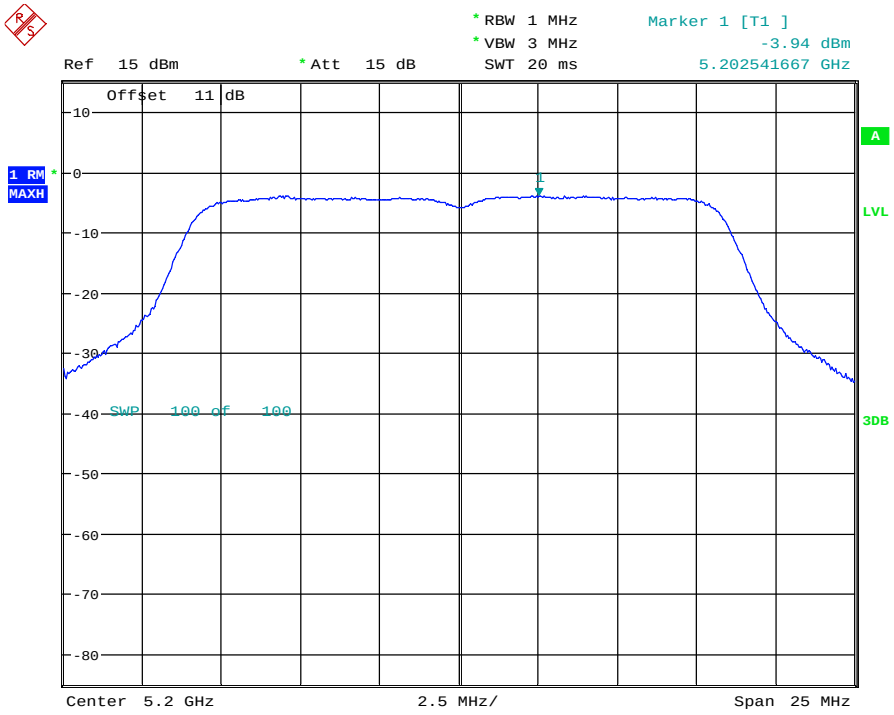
POWER DENSITY 802.11N 40MHZ CH46
Date: 24.OCT.2013 19:52:00

ANT B (ANT 2)



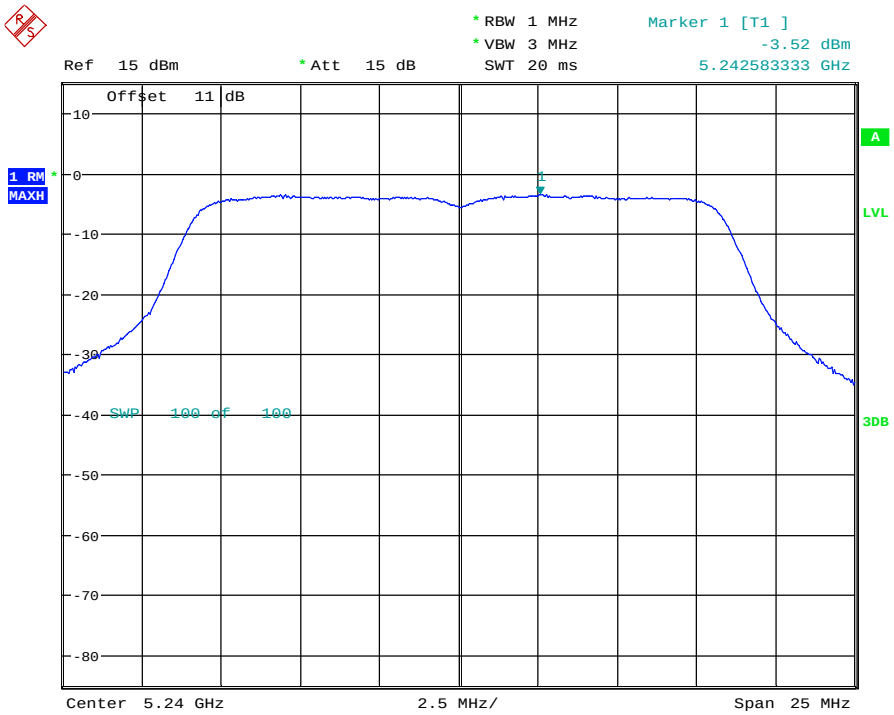
POWER DENSITY 802.11A CH36
Date: 24.OCT.2013 21:25:14

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478



POWER DENSITY 802.11A CH40

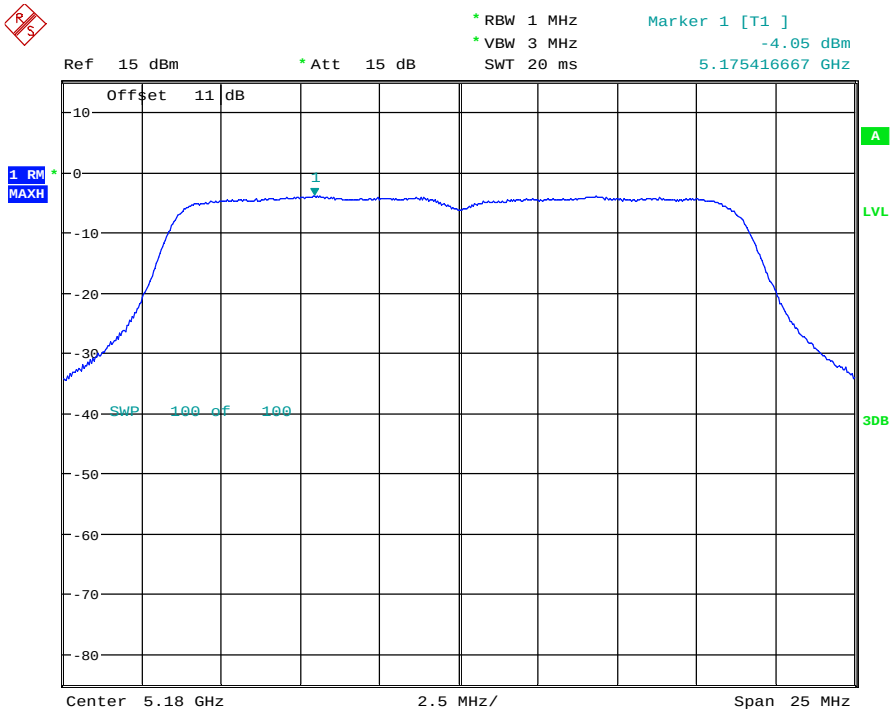
Date: 24.OCT.2013 21:26:32



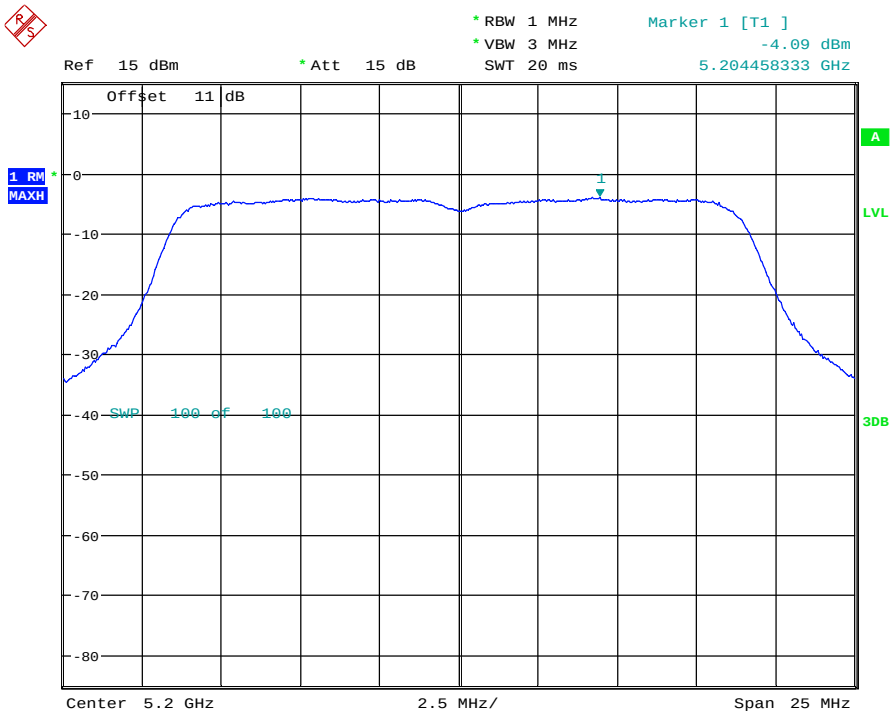
POWER DENSITY 802.11A CH48

Date: 24.OCT.2013 21:27:30

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478

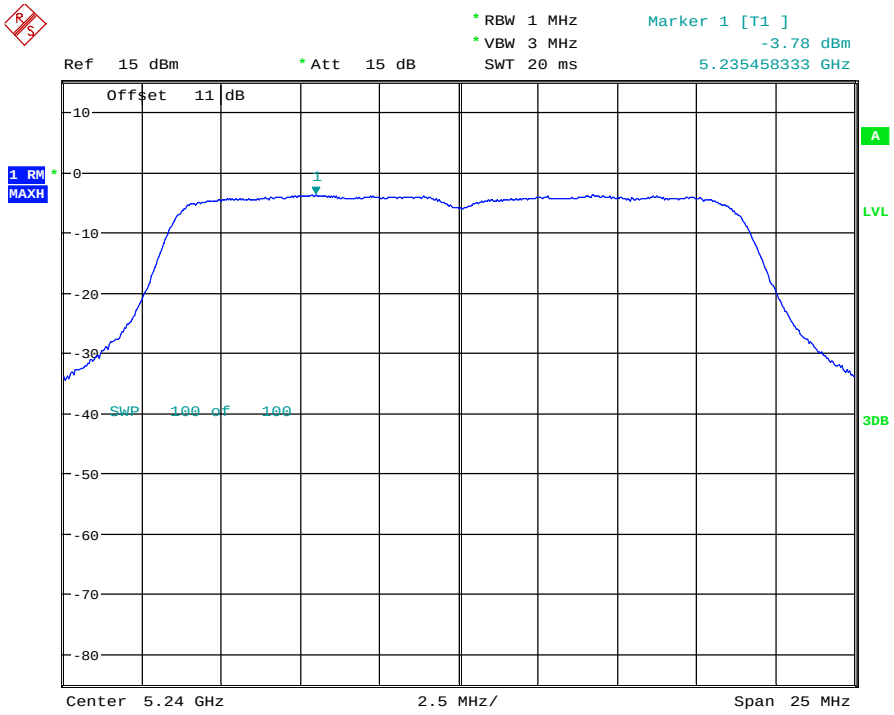


POWER DENSITY 802.11N 20MHZ CH36
Date: 24.OCT.2013 21:29:03

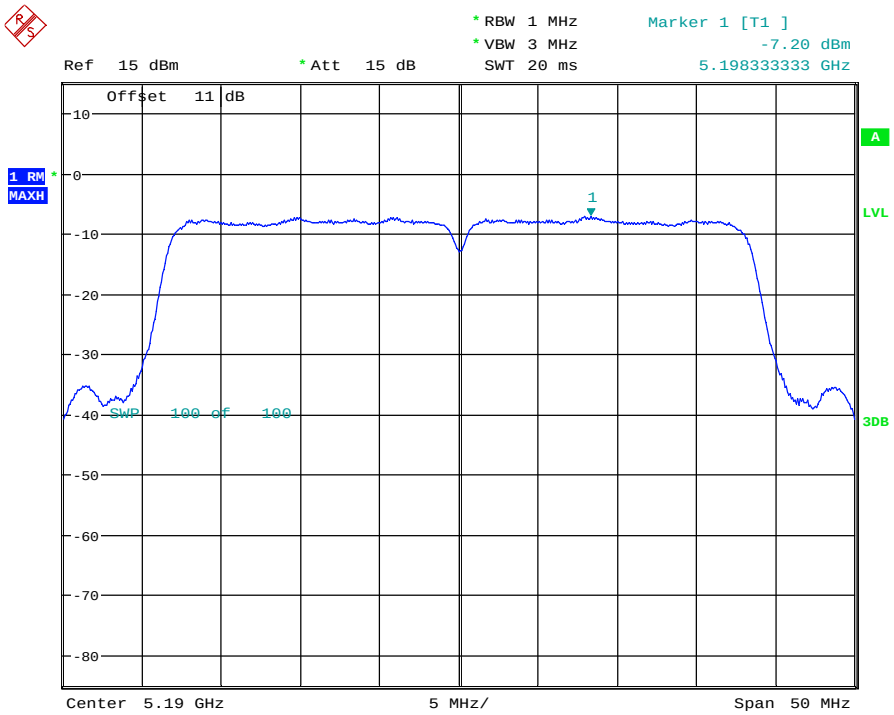


POWER DENSITY 802.11N 20MHZ CH40
Date: 24.OCT.2013 21:30:06

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478

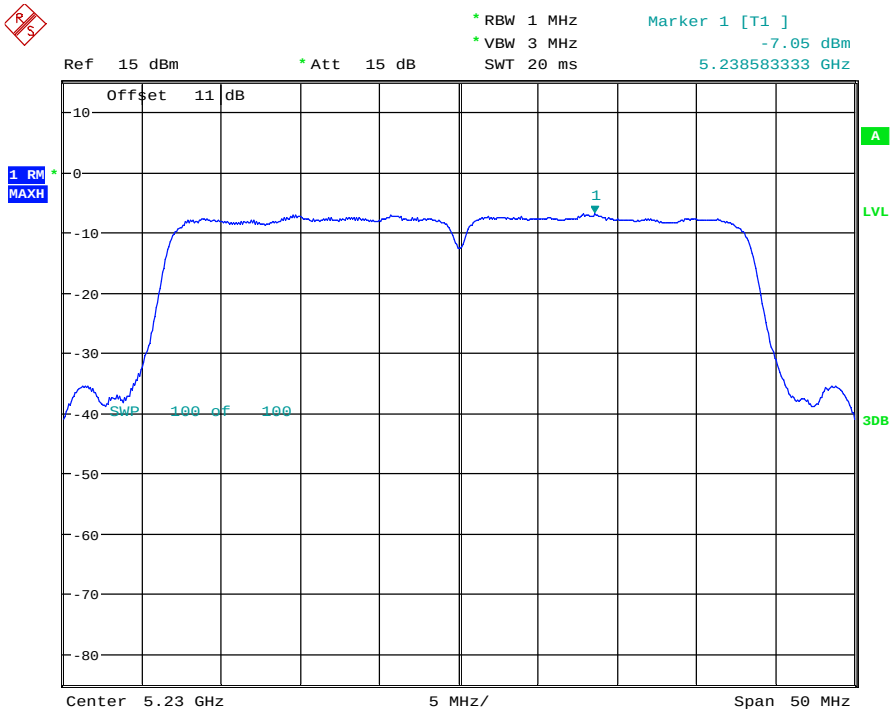


POWER DENSITY 802.11N 20MHZ CH48
Date: 24.OCT.2013 21:31:01



POWER DENSITY 802.11N 40MHZ CH38
Date: 24.OCT.2013 21:32:48

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478



POWER DENSITY 802.11N 40MHZ CH46
Date: 24.OCT.2013 21:34:06

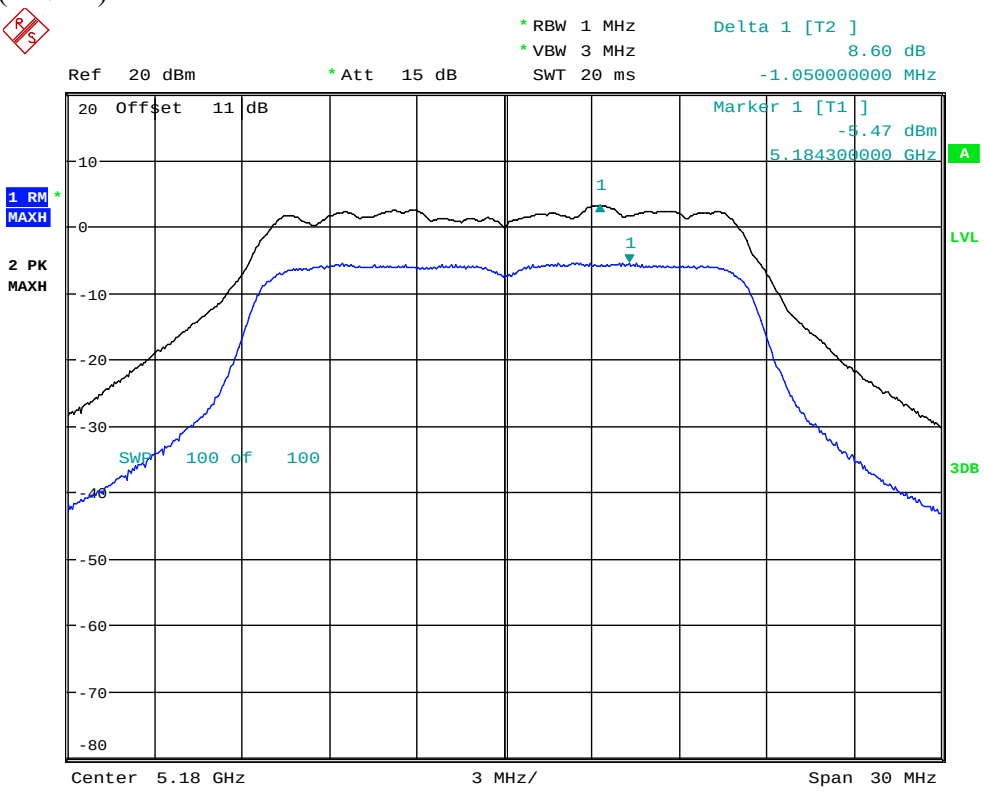
ANT A (ANT 1)	mW			dBm		
	Ch Low	Ch Mid	Ch High	Ch Low	Ch Mid	Ch High
802.11n 20MHz	0.266	0.258	0.294	-5.75	-5.88	-5.32
802.11n 40MHz	0.123	./.	0.132	-9.10	./.	-8.81
ANT B (ANT 2)	mW			dBm		
	Ch Low	Ch Mid	Ch High	Ch Low	Ch Mid	Ch High
802.11n 20MHz	0.394	0.390	0.419	-4.05	-4.09	-3.78
802.11n 40MHz	0.191	./.	0.197	-7.20	./.	-7.05
Combine	mW			dBm		
	Ch Low	Ch Mid	Ch High	Ch Low	Ch Mid	Ch High
802.11n 20MHz	0.660	0.648	0.713	-1.81	-1.88	-1.47
802.11n 40MHz	0.314	./.	0.329	-5.03	./.	-4.83

Test equipment used: ETSTW-RE 055, ETSTW-RE 050

3.6 Ratio of the Peak Excursion of the modulation envelope, FCC 15.407 (a)(6)

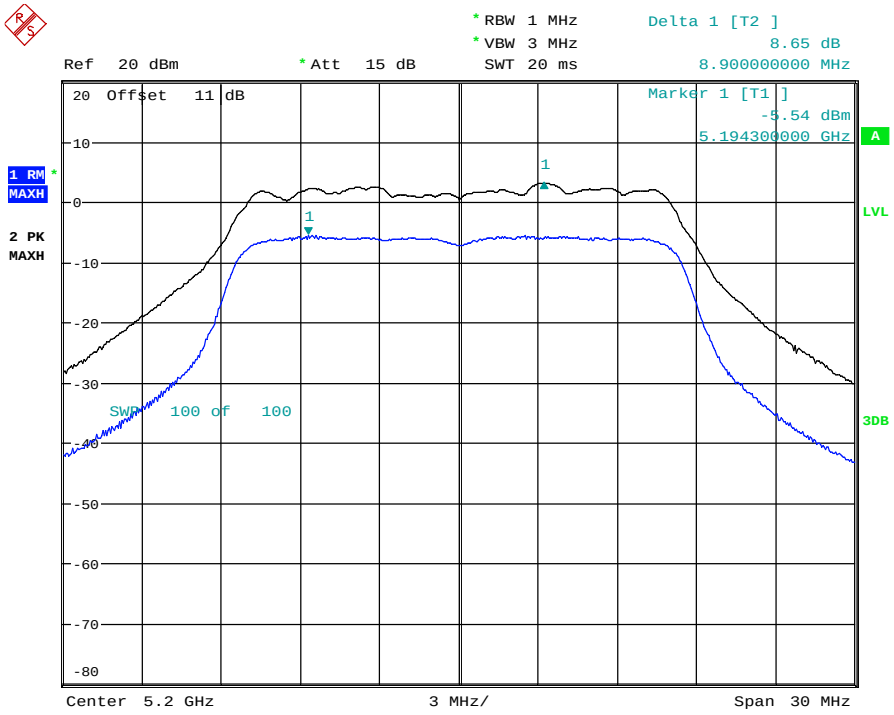
The ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the peak transmit power (measured as specified above) shall not exceed 13 dB across any 1 MHz bandwidth or the emission bandwidth whichever is less.

ANT A (ANT 1)

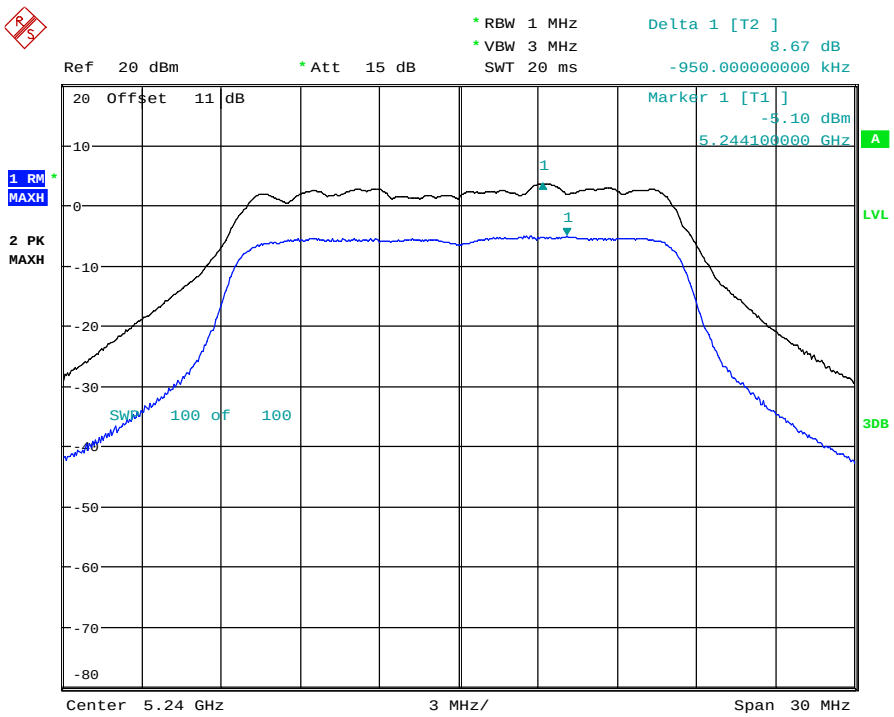


PEAK EXCURSION 802.11A CH36
Date: 24.OCT.2013 19:39:00

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478

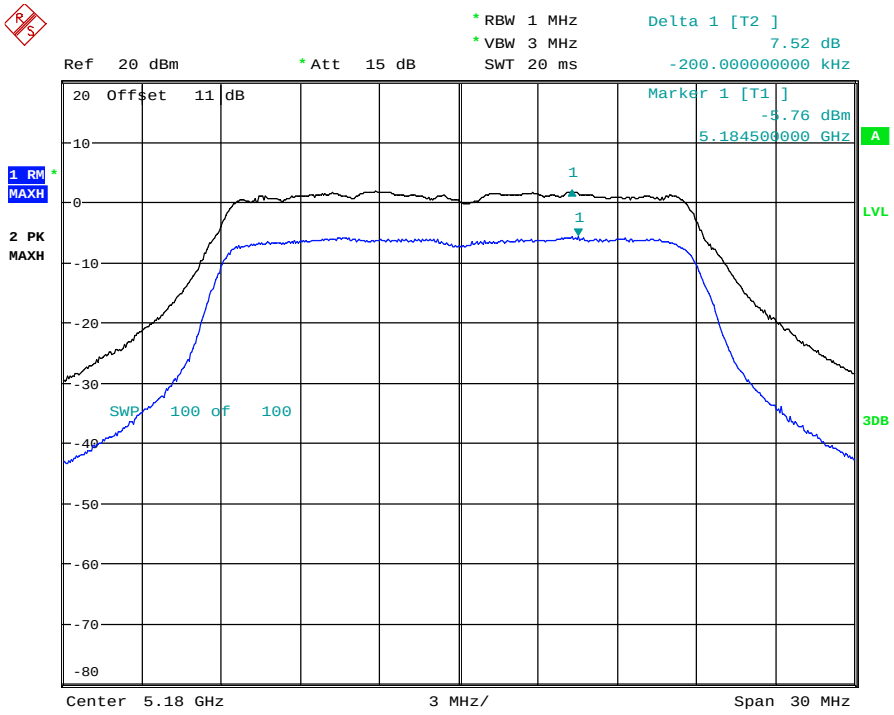


PEAK EXCURSION 802.11A CH40
Date: 24.OCT.2013 19:40:36

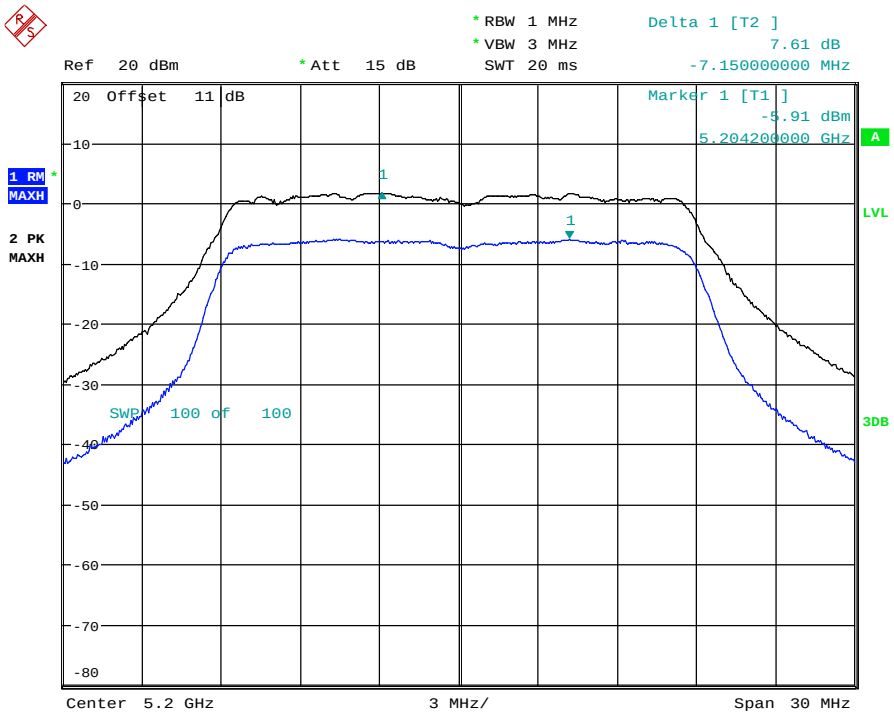


PEAK EXCURSION 802.11A CH48
Date: 24.OCT.2013 19:41:42

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478

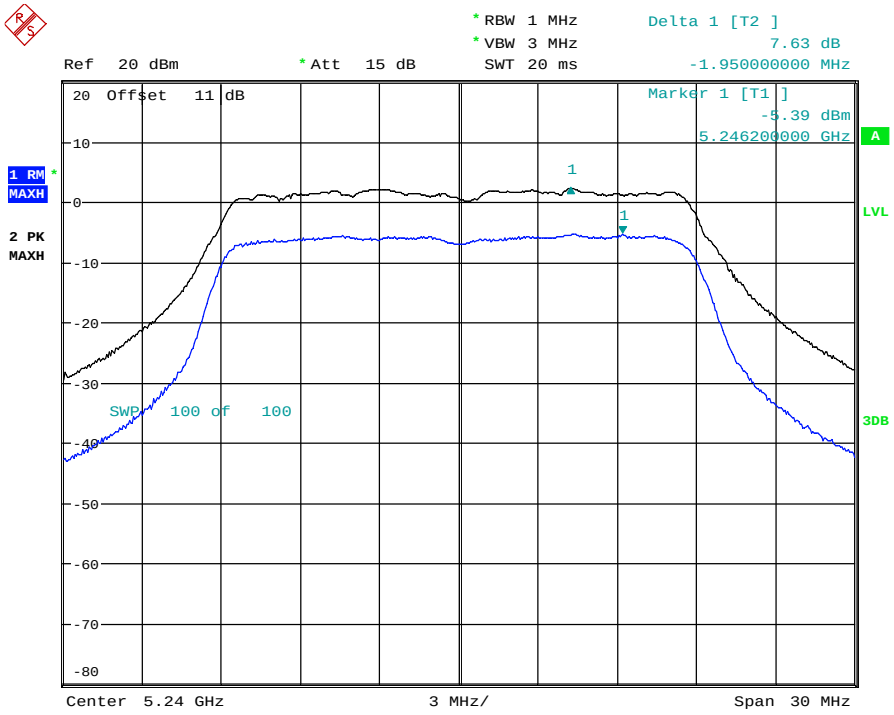


PEAK EXCURSION 802.11N 20MHZ CH36
Date: 24.OCT.2013 19:44:06

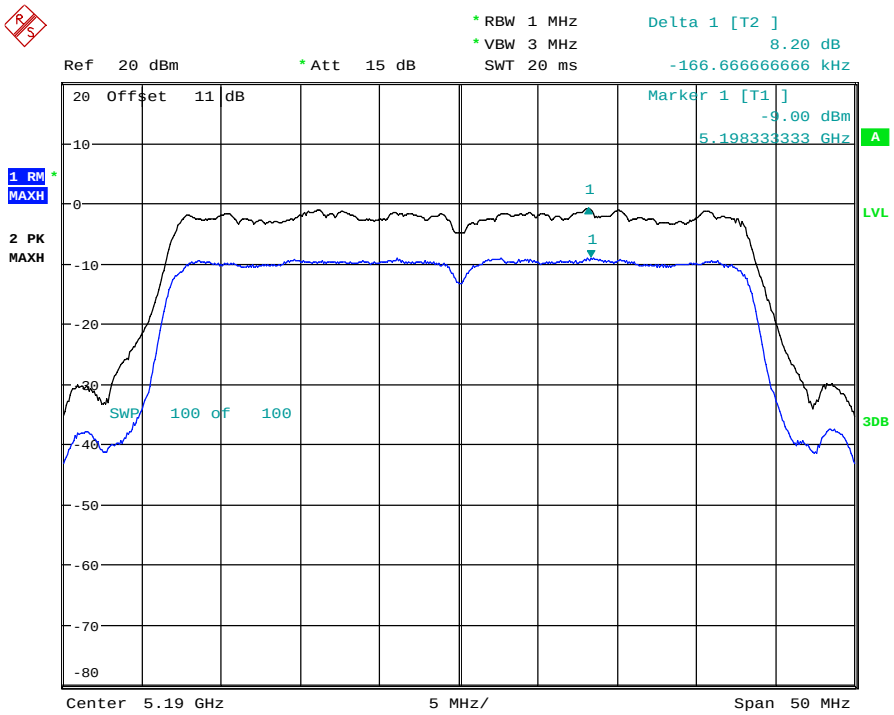


PEAK EXCURSION 802.11N 20MHZ CH40
Date: 24.OCT.2013 19:46:33

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478

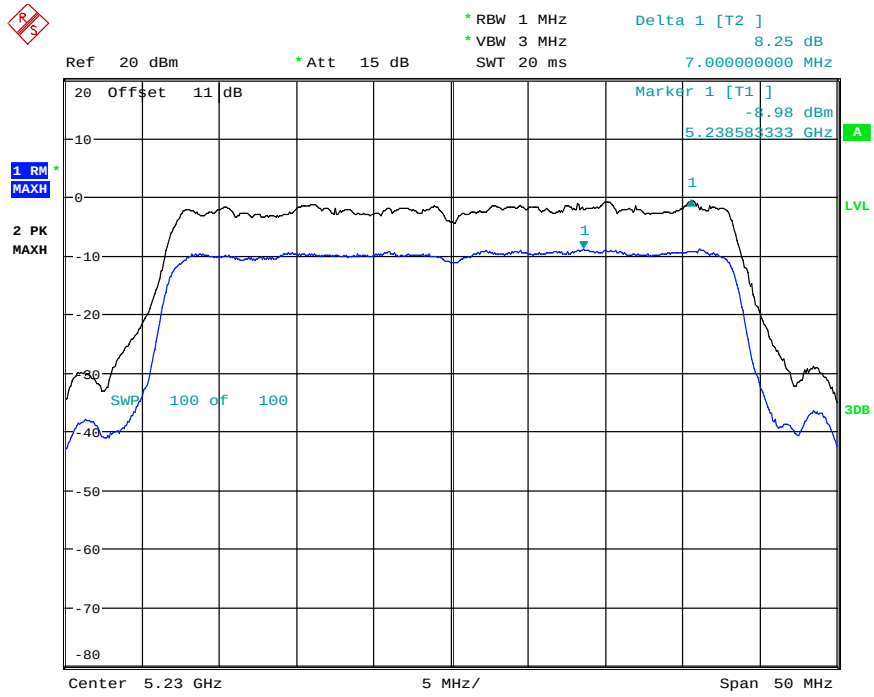


PEAK EXCURSION 802.11N 20MHZ CH48
Date: 24.OCT.2013 19:48:28



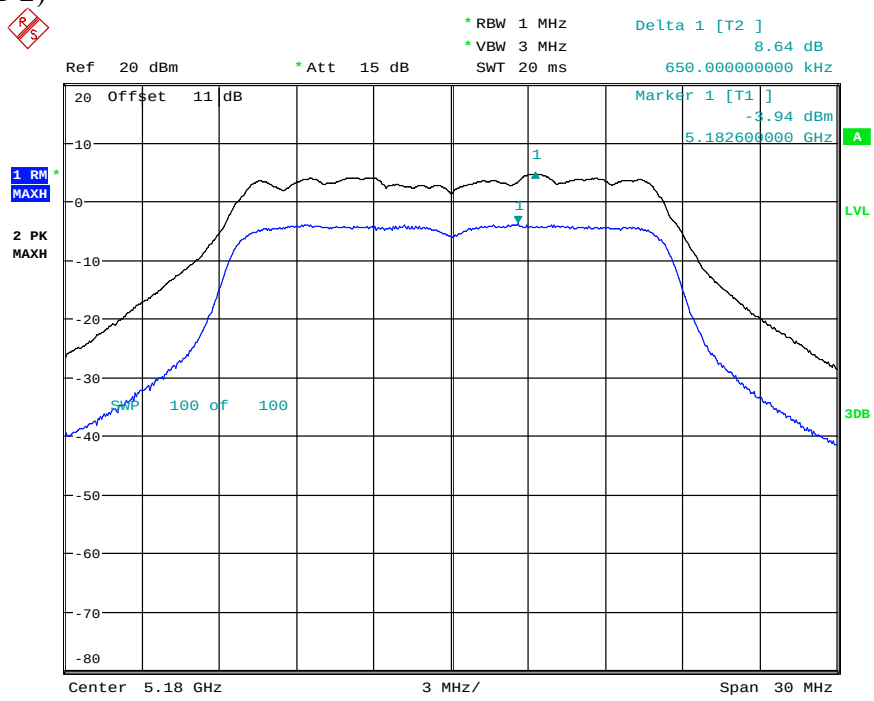
PEAK EXCURSION 802.11N 40MHZ CH38
Date: 24.OCT.2013 19:51:05

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478



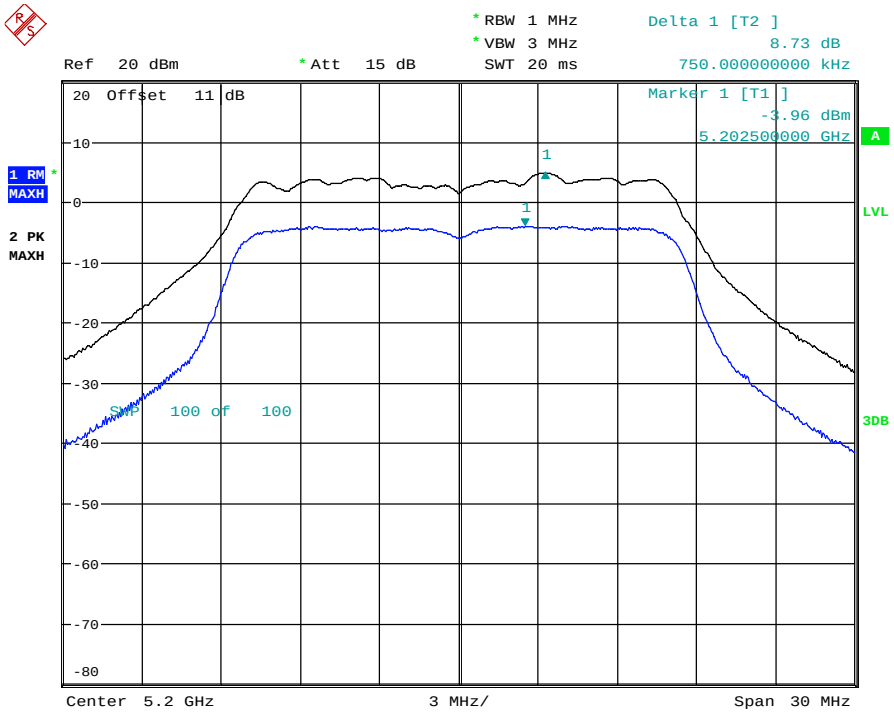
PEAK EXCURSION 802.11N 40MHZ CH46
Date: 24.OCT.2013 19:52:18

ANT B (ANT 2)

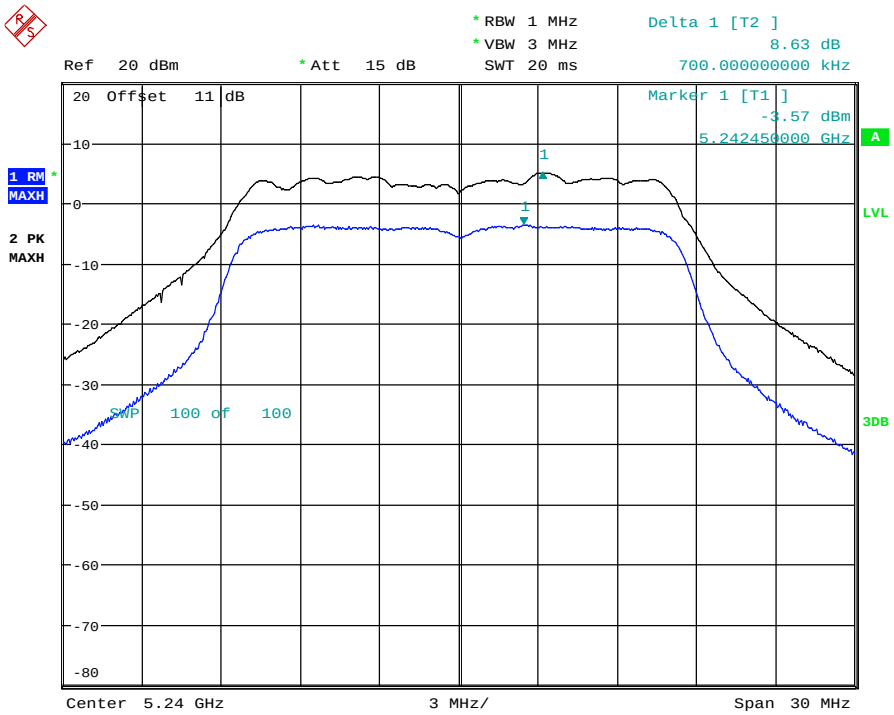


PEAK EXCURSION 802.11A CH36
Date: 24.OCT.2013 21:25:33

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478

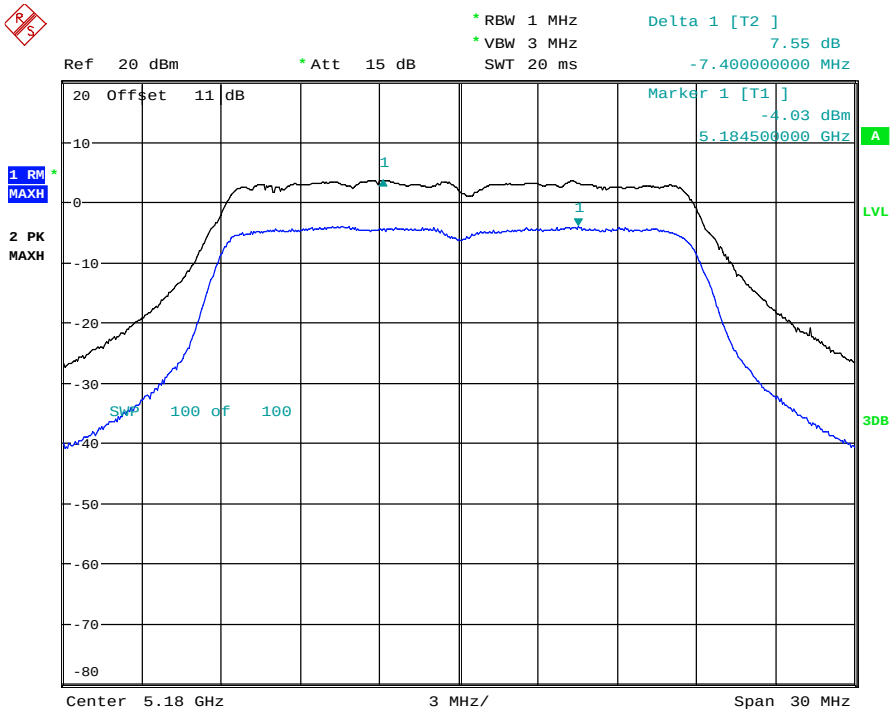


PEAK EXCURSION 802.11A CH40
Date: 24.OCT.2013 21:26:51

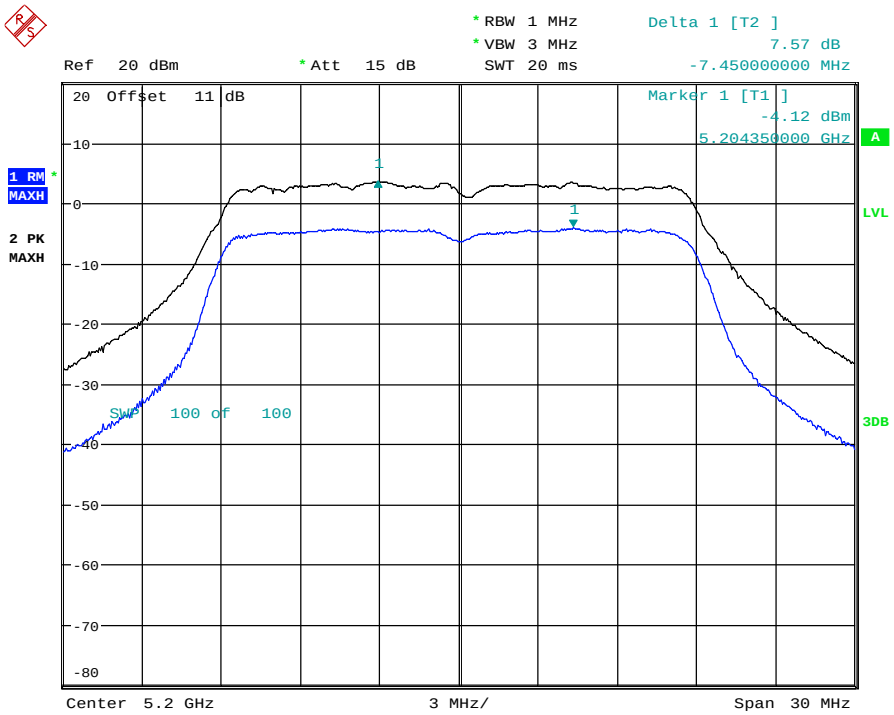


PEAK EXCURSION 802.11A CH48
Date: 24.OCT.2013 21:27:48

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478

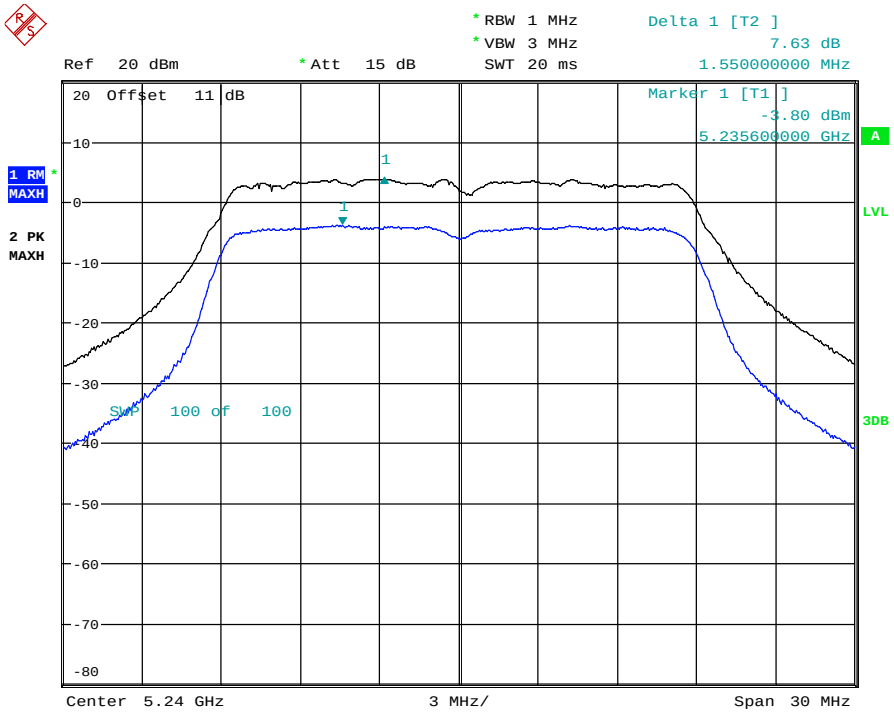


PEAK EXCURSION 802.11N 20MHZ CH36
Date: 24.OCT.2013 21:29:21

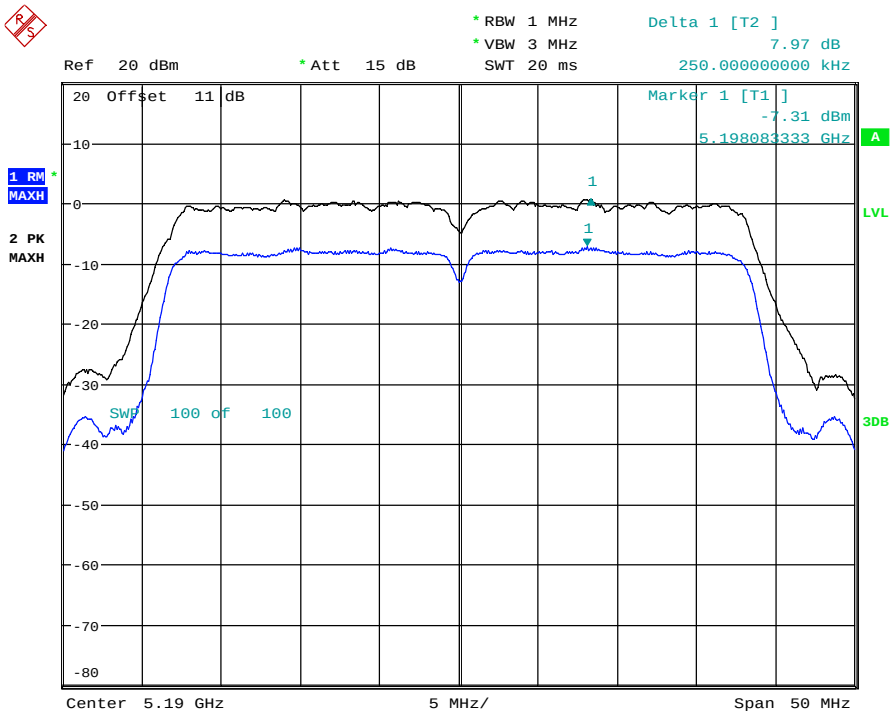


PEAK EXCURSION 802.11N 20MHZ CH40
Date: 24.OCT.2013 21:30:24

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478

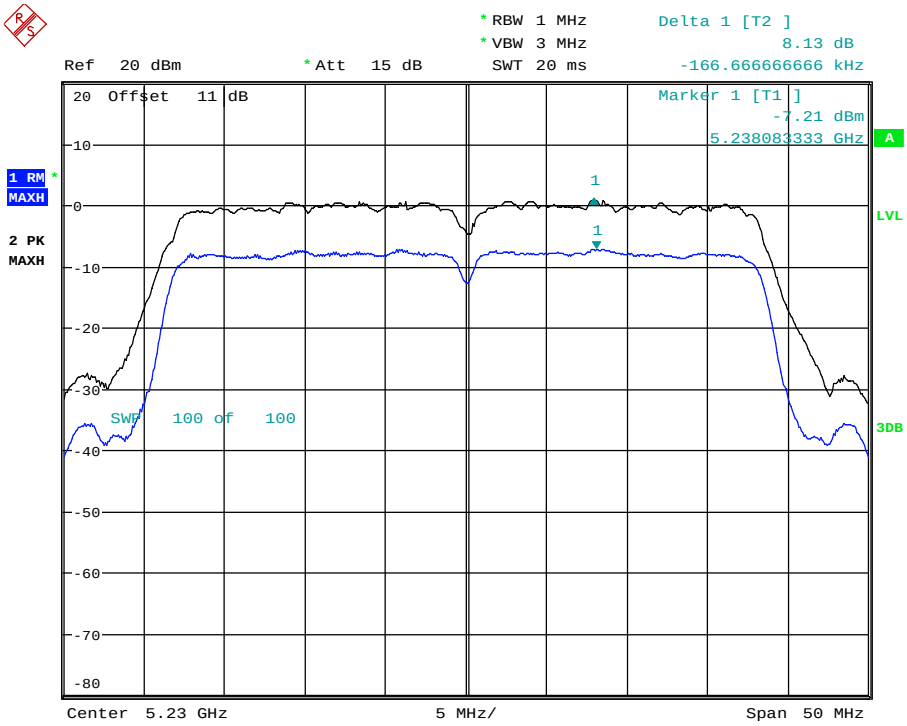


PEAK EXCURSION 802.11N 20MHZ CH48
Date: 24.OCT.2013 21:31:19



PEAK EXCURSION 802.11N 40MHZ CH38
Date: 24.OCT.2013 21:33:06

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478



PEAK EXCURSION 802.11N 40MHZ CH46
Date: 24.OCT.2013 21:34:24

ANT A (ANT 1)

		6M	18M	36M	54M
802.11a	CH36	7.9	7.51	8.19	8.6
	CH40	8	7.61	8.17	8.65
	CH48	7.96	7.62	8.2	8.67

		BPSK	QPSK	16-QAM	64-QAM
802.11n (20MHz)	CH36	7.94	8.07	7.67	7.52
	CH40	8.06	7.99	7.83	7.61
	CH48	8.29	8.02	7.94	7.63
802.11n (40MHz)	CH38	7.88	9.02	8.65	8.2
	CH46	8.04	9.43	8.92	8.25

ANT B (ANT 2)

		6M	18M	36M	54M
802.11a	CH36	7.98	7.16	8.22	8.64
	CH40	7.99	7.46	8.12	8.73
	CH48	8.08	7.66	8.22	8.63

		BPSK	QPSK	16-QAM	64-QAM
802.11n (20MHz)	CH36	8.33	7.91	7.92	7.55
	CH40	8.37	8.09	7.79	7.67
	CH48	8.47	8.11	8	7.63
802.11n (40MHz)	CH38	7.86	9.07	8.75	7.97
	CH46	7.91	9.33	8.7	8.13

Test equipment used: ETSTW-RE 055, ETSTW-RE 050

3.7 Undesirable emission limits, FCC 15.407 (b)

1. For transmitters operating in the 5.15–5.25 GHz band: all emissions out-side of the 5.15–5.35 GHz band shall not exceed an EIRP of –27 dBm/MHz.
2. For transmitters operating in the 5.25–5.35 GHz band: all emissions out-side of the 5.15–5.35 GHz band shall not exceed an EIRP of –27 dBm/MHz. De-vices operating in the 5.25–5.35 GHz band that generate emissions in the 5.15–5.25 GHz band must meet all appli-cable technical requirements for operation in the 5.15–5.25 GHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of -27 dBm/MHz in the 5.15–5.25 GHz band.
3. For transmitters operating in the 5.47–5.725 GHz band: all emissions out-side of the 5.47–5.725 GHz band shall not exceed an EIRP of -27 dBm/MHz.
4. For transmitters operating in the 5.725–5.825 GHz band: all emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an EIRP of -17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an EIRP of -27 dBm/MHz.
5. The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.
6. Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in § 15.209.
7. According to According to KDB 789033 D01 General UNII Test Procedures v01r03, as specified in 15.407(b), emissions above 1000 MHz that are outside of the restricted bands are subject to a peak emission limit of -27 dBm/MHz (or -17 dBm/MHz as specified in 15.407(b)(4)). However, an out-of-band emission that complies with both the average and peak limits of 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz peak emission limit.
8. If radiated measurements are performed, field strength is then converted to EIRP as follows:
   (i) EIRP = ((E*d)^2) / 30, where: E is the field strength in V/m; d is the measurement distance in meters.

Applicable to	Limit	
☒	FIELD STRENGTH at 3m (dBμV/m)	
	PK	AV
	74	54
☐	EIRP LIMIT (dBm)	EQUIVALENT FIELD STRENGTH at 3m (dBμV/m)
	PK	PK
	-27	68.3

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478

ANT A (ANT 1)

Model: MTV2000 Date: 2013/9/20
Mode: 802.11a CH36 TX Temperature: 24 °C Engineer: Leon
Polarization: Horizontal Humidity: 60 %

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
31.9438	18.39	peak	13.30	31.69	40.00	-8.31	110	100
144.6894	6.89	peak	15.16	22.05	43.50	-21.45	40	100
300.2004	14.81	peak	15.91	30.72	46.00	-15.28	35	100
445.9920	18.70	peak	19.97	38.67	46.00	-7.33	185	100

Frequency (MHz)	Reading (dBuV) Peak	Reading (dBuV) Ave.	Factor (dB) Corr.	Result (dBuV/m) Peak	Result (dBuV/m) Ave.	Limit (dBuV/m) Peak	Limit (dBuV/m) Ave.	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
10360.0000	36.07	---	10.22	46.29	---	74.00	54.00	-27.71	155	100
15540.0000	28.92	---	19.53	48.45	---	74.00	54.00	-25.55	235	100

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
31.9440	25.19	QP	13.30	38.49	40.00	-1.51	0	100
113.5872	17.97	peak	13.06	31.03	43.50	-12.47	35	100
445.9920	16.00	peak	19.97	35.97	46.00	-10.03	140	100
743.4068	9.79	peak	24.82	34.61	46.00	-11.39	110	100

Frequency (MHz)	Reading (dBuV) Peak	Reading (dBuV) Ave.	Factor (dB) Corr.	Result (dBuV/m) Peak	Result (dBuV/m) Ave.	Limit (dBuV/m) Peak	Limit (dBuV/m) Ave.	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
10360.0000	35.59	---	10.22	45.81	---	74.00	54.00	-28.19	175	100
15540.0000	28.70	---	19.53	48.23	---	74.00	54.00	-25.77	180	100

Mode: 802.11a CH40 TX
Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
31.9438	20.14	peak	13.30	33.44	40.00	-6.56	120	100
103.8676	11.26	peak	11.65	22.91	43.50	-20.59	70	100
300.2004	14.92	peak	15.91	30.83	46.00	-15.17	145	100
445.9920	18.71	peak	19.97	38.68	46.00	-7.32	25	100

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FCC ID: 2AA4J-W6M2130813478

Frequency (MHz)	Reading (dBuV) Peak	Reading (dBuV) Ave.	Factor (dB) Corr.	Result (dBuV/m) Peak	Result (dBuV/m) Ave.	Limit (dBuV/m) Peak	Limit (dBuV/m) Ave.	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
10400.0000	34.61	---	9.97	44.58	---	74.00	54.00	-29.42	75	100
15600.0000	28.72	---	19.78	48.50	---	74.00	54.00	-25.50	235	100

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
31.9440	24.93	QP	13.30	38.23	40.00	-1.77	0	100
103.8677	20.07	peak	11.65	31.72	43.50	-11.78	90	100
296.3126	17.74	peak	15.87	33.61	46.00	-12.39	135	100
445.9920	15.88	peak	19.97	35.85	46.00	-10.15	110	100

Frequency (MHz)	Reading (dBuV) Peak	Reading (dBuV) Ave.	Factor (dB) Corr.	Result (dBuV/m) Peak	Result (dBuV/m) Ave.	Limit (dBuV/m) Peak	Limit (dBuV/m) Ave.	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
10400.0000	34.27	---	9.97	44.24	---	74.00	54.00	-29.76	125	100
15600.0000	30.21	---	19.78	49.99	---	74.00	54.00	-24.01	215	100

Mode: 802.11a CH48 TX
Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
31.9438	20.03	peak	13.30	33.33	40.00	-6.67	110	100
140.8015	7.03	peak	15.06	22.09	43.50	-21.41	120	100
304.0881	14.97	peak	16.02	30.99	46.00	-15.01	140	100
445.9920	18.58	peak	19.97	38.55	46.00	-7.45	75	100

Frequency (MHz)	Reading (dBuV) Peak	Reading (dBuV) Ave.	Factor (dB) Corr.	Result (dBuV/m) Peak	Result (dBuV/m) Ave.	Limit (dBuV/m) Peak	Limit (dBuV/m) Ave.	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
10480.0000	35.16	---	10.32	45.48	---	74.00	54.00	-28.52	155	100
15720.0000	28.69	---	17.50	46.19	---	74.00	54.00	-27.81	230	100

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
31.9440	25.33	QP	13.30	38.63	40.00	-1.37	0	100
74.7094	18.59	peak	10.78	29.37	40.00	-10.63	70	100
117.4750	18.34	peak	13.36	31.70	43.50	-11.80	140	100
445.9920	16.23	peak	19.97	36.20	46.00	-9.80	115	100

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478

Frequency (MHz)	Reading (dBuV) Peak	Reading (dBuV) Ave.	Factor (dB) Corr.	Result (dBuV/m) Peak	Result (dBuV/m) Ave.	Limit (dBuV/m) Peak	Limit (dBuV/m) Ave.	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
10480.0000	35.51	---	10.32	45.83	---	74.00	54.00	-28.17	145	100
15720.0000	28.54	---	17.50	46.04	---	74.00	54.00	-27.96	170	100

ANT B (ANT 2)

Mode: 802.11a CH36 TX

Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
31.9438	19.20	peak	13.30	32.50	40.00	-7.50	140	100
140.8015	7.13	peak	15.06	22.19	43.50	-21.31	130	100
300.2004	15.45	peak	15.91	31.36	46.00	-14.64	80	100
445.9920	18.58	peak	19.97	38.55	46.00	-7.45	155	100

Frequency (MHz)	Reading (dBuV) Peak	Reading (dBuV) Ave.	Factor (dB) Corr.	Result (dBuV/m) Peak	Result (dBuV/m) Ave.	Limit (dBuV/m) Peak	Limit (dBuV/m) Ave.	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
10360.0000	35.63	---	10.22	45.85	---	74.00	54.00	-28.15	80	100
15540.0000	29.11	---	19.53	48.64	---	74.00	54.00	-25.36	165	100

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
31.9440	25.34	QP	13.30	38.64	40.00	-1.36	5	100
103.8677	20.68	peak	11.65	32.33	43.50	-11.17	120	100
445.9920	15.91	peak	19.97	35.88	46.00	-10.12	180	100
593.7274	13.54	peak	22.91	36.45	46.00	-9.55	230	100

Frequency (MHz)	Reading (dBuV) Peak	Reading (dBuV) Ave.	Factor (dB) Corr.	Result (dBuV/m) Peak	Result (dBuV/m) Ave.	Limit (dBuV/m) Peak	Limit (dBuV/m) Ave.	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
10360.0000	35.55	---	10.22	45.77	---	74.00	54.00	-28.23	140	100
15540.0000	29.25	---	19.53	48.78	---	74.00	54.00	-25.22	220	100

Mode: 802.11a CH40 TX

Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
31.9438	18.18	peak	13.30	31.48	40.00	-8.52	130	100
103.8676	11.92	peak	11.65	23.57	43.50	-19.93	40	100
304.0881	15.39	peak	16.02	31.41	46.00	-14.59	215	100
445.9920	18.43	peak	19.97	38.40	46.00	-7.60	80	100

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478

Frequency (MHz)	Reading (dBuV) Peak	Ave.	Factor (dB) Corr.	Result (dBuV/m) Peak	Ave.	Limit (dBuV/m) Peak	Ave.	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
10400.0000	34.53	---	9.97	44.50	---	74.00	54.00	-29.50	175	100
15600.0000	28.74	---	19.78	48.52	---	74.00	54.00	-25.48	245	100

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
31.9440	25.46	QP	13.30	38.76	40.00	-1.24	10	100
74.7094	19.05	peak	10.78	29.83	40.00	-10.17	90	100
115.5311	18.88	peak	13.21	32.09	43.50	-11.41	155	100
445.9920	15.42	peak	19.97	35.39	46.00	-10.61	120	100

Frequency (MHz)	Reading (dBuV) Peak	Ave.	Factor (dB) Corr.	Result (dBuV/m) Peak	Ave.	Limit (dBuV/m) Peak	Ave.	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
10400.0000	34.71	---	9.97	44.68	---	74.00	54.00	-29.32	140	100
15600.0000	29.15	---	19.78	48.93	---	74.00	54.00	-25.07	130	100

Mode: 802.11a CH48 TX
Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
31.9438	18.51	peak	13.30	31.81	40.00	-8.19	210	100
304.0881	15.14	peak	16.02	31.16	46.00	-14.84	130	100
445.9920	18.25	peak	19.97	38.22	46.00	-7.78	85	100
743.4067	8.92	peak	24.82	33.74	46.00	-12.26	140	100

Frequency (MHz)	Reading (dBuV) Peak	Ave.	Factor (dB) Corr.	Result (dBuV/m) Peak	Ave.	Limit (dBuV/m) Peak	Ave.	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
10480.0000	35.41	---	10.32	45.73	---	74.00	54.00	-28.27	130	100
15720.0000	28.82	---	17.50	46.32	---	74.00	54.00	-27.68	200	100

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
31.9440	25.31	QP	13.30	38.61	40.00	-1.39	25	100
74.7094	18.69	peak	10.78	29.47	40.00	-10.53	130	100
103.8677	20.11	peak	11.65	31.76	43.50	-11.74	140	100
445.9920	16.01	peak	19.97	35.98	46.00	-10.02	55	100

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Frequency (MHz)	Reading (dBuV) Peak	Reading (dBuV) Ave.	Factor (dB) Corr.	Result (dBuV/m) Peak	Result (dBuV/m) Ave.	Limit (dBuV/m) Peak	Limit (dBuV/m) Ave.	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
10480.0000	34.21	---	10.32	44.53	---	74.00	54.00	-29.47	55	100
15720.0000	28.36	---	17.50	45.86	---	74.00	54.00	-28.14	210	100

ANT A (ANT 1)+ANT B (ANT 2)

Mode: 802.11n 20MHz CH36 TX

Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
31.9436	20.20	peak	13.30	33.50	40.00	-6.50	200	100
140.8015	7.63	peak	15.06	22.69	43.50	-20.81	120	100
302.1442	13.72	peak	15.96	29.68	46.00	-16.32	130	100
445.9920	17.08	peak	19.97	37.05	46.00	-8.95	175	100

Frequency (MHz)	Reading (dBuV) Peak	Reading (dBuV) Ave.	Factor (dB) Corr.	Result (dBuV/m) Peak	Result (dBuV/m) Ave.	Limit (dBuV/m) Peak	Limit (dBuV/m) Ave.	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
15540.0000	29.32	---	19.53	48.85	---	74.00	54.00	-25.15	55	100
15540.0000	29.32	---	19.53	48.85	---	74.00	54.00	-25.15	55	100

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
31.9435	25.09	QP	13.30	38.39	40.00	-1.61	255	100
101.9235	22.17	peak	11.29	33.46	43.50	-10.04	130	100
445.9920	16.41	peak	19.97	36.38	46.00	-9.62	140	100
593.7273	14.54	peak	22.91	37.45	46.00	-8.55	110	100

Frequency (MHz)	Reading (dBuV) Peak	Reading (dBuV) Ave.	Factor (dB) Corr.	Result (dBuV/m) Peak	Result (dBuV/m) Ave.	Limit (dBuV/m) Peak	Limit (dBuV/m) Ave.	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
10360.0000	35.25	---	10.22	45.47	---	74.00	54.00	-28.53	95	100
15540.0000	28.84	---	19.53	48.37	---	74.00	54.00	-25.63	170	100

Mode: 802.11n 20MHz CH40 TX

Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
30.0000	19.46	peak	13.17	32.63	40.00	-7.37	70	100
103.8675	11.92	peak	11.65	23.57	43.50	-19.93	130	100
304.0880	16.39	peak	16.02	32.41	46.00	-13.59	45	100
445.9920	19.43	peak	19.97	39.40	46.00	-6.60	80	100

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478

Frequency (MHz)	Reading (dBuV) Peak	Ave.	Factor (dB) Corr.	Result (dBuV/m) Peak	Ave.	Limit (dBuV/m) Peak	Ave.	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
10400.0000	34.62	---	9.97	44.59	---	74.00	54.00	-29.41	75	100
15600.0000	27.99	---	19.78	47.77	---	74.00	54.00	-26.23	55	100

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
31.9437	25.01	QP	13.30	38.31	40.00	-1.69	175	100
115.5310	18.88	peak	13.21	32.09	43.50	-11.41	160	100
445.9920	16.92	peak	19.97	36.89	46.00	-9.11	130	100
593.7273	9.93	peak	22.91	32.84	46.00	-13.16	80	100

Frequency (MHz)	Reading (dBuV) Peak	Ave.	Factor (dB) Corr.	Result (dBuV/m) Peak	Ave.	Limit (dBuV/m) Peak	Ave.	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
10400.0000	35.35	---	9.97	45.32	---	74.00	54.00	-28.68	120	100
15600.0000	29.41	---	19.78	49.19	---	74.00	54.00	-24.81	180	100

Mode: 802.11n 20MHz CH48 TX
Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
31.9437	19.51	peak	13.30	32.81	40.00	-7.19	135	100
304.0880	16.14	peak	16.02	32.16	46.00	-13.84	80	100
445.9920	19.75	peak	19.97	39.72	46.00	-6.28	220	100
743.4067	9.92	peak	24.82	34.74	46.00	-11.26	70	100

Frequency (MHz)	Reading (dBuV) Peak	Ave.	Factor (dB) Corr.	Result (dBuV/m) Peak	Ave.	Limit (dBuV/m) Peak	Ave.	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
10480.0000	35.24	---	10.32	45.56	---	74.00	54.00	-28.44	215	100
15720.0000	28.39	---	17.50	45.89	---	74.00	54.00	-28.11	90	100

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
31.9437	24.96	QP	13.30	38.26	40.00	-1.74	75	100
103.8675	21.61	peak	11.65	33.26	43.50	-10.24	235	100
445.9920	18.01	peak	19.97	37.98	46.00	-8.02	110	100
743.4067	9.20	peak	24.82	34.02	46.00	-11.98	15	100

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FCC ID: 2AA4J-W6M2130813478

Frequency (MHz)	Reading (dBuV) Peak	Reading (dBuV) Ave.	Factor (dB) Corr.	Result (dBuV/m) Peak	Result (dBuV/m) Ave.	Limit (dBuV/m) Peak	Limit (dBuV/m) Ave.	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
10480.0000	34.33	---	10.32	44.65	---	74.00	54.00	-29.35	220	100
15720.0000	28.84	---	17.50	46.34	---	74.00	54.00	-27.66	55	100

Mode: 802.11n 40MHz CH38 TX
Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
31.9436	21.20	peak	13.30	34.50	40.00	-5.50	70	100
300.2004	17.45	peak	15.91	33.36	46.00	-12.64	110	100
445.9920	19.08	peak	19.97	39.05	46.00	-6.95	130	100
743.4067	9.12	peak	24.82	33.94	46.00	-12.06	45	100

Frequency (MHz)	Reading (dBuV) Peak	Reading (dBuV) Ave.	Factor (dB) Corr.	Result (dBuV/m) Peak	Result (dBuV/m) Ave.	Limit (dBuV/m) Peak	Limit (dBuV/m) Ave.	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
10380.0000	35.15	---	10.10	45.25	---	74.00	54.00	-28.75	130	100
15570.0000	29.80	---	19.66	49.46	---	74.00	54.00	-24.54	115	100

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
31.9435	24.73	QP	13.30	38.03	40.00	-1.97	105	100
103.8675	23.68	peak	11.65	35.33	43.50	-8.17	30	100
445.9920	14.91	peak	19.97	34.88	46.00	-11.12	110	100
593.7273	16.54	peak	22.91	39.45	46.00	-6.55	70	100

Frequency (MHz)	Reading (dBuV) Peak	Reading (dBuV) Ave.	Factor (dB) Corr.	Result (dBuV/m) Peak	Result (dBuV/m) Ave.	Limit (dBuV/m) Peak	Limit (dBuV/m) Ave.	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
10380.0000	34.86	---	10.10	44.96	---	74.00	54.00	-29.04	65	100
15570.0000	29.03	---	19.66	48.69	---	74.00	54.00	-25.31	90	100

Mode: 802.11n 40MHz CH46 TX
Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
31.9437	19.18	peak	13.30	32.48	40.00	-7.52	135	100
103.8675	14.42	peak	11.65	26.07	43.50	-17.43	110	100
304.0880	15.89	peak	16.02	31.91	46.00	-14.09	75	100
445.9920	18.93	peak	19.97	38.90	46.00	-7.10	160	100

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478

Frequency (MHz)	Reading (dBuV) Peak	Reading (dBuV) Ave.	Factor (dB) Corr.	Result (dBuV/m) Peak	Result (dBuV/m) Ave.	Limit (dBuV/m) Peak	Limit (dBuV/m) Ave.	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
10460.0000	35.04	---	10.23	45.27	---	74.00	54.00	-28.73	155	100
15690.0000	28.95	---	17.68	46.63	---	74.00	54.00	-27.37	230	100

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
31.9437	25.31	QP	13.30	38.61	40.00	-1.39	70	100
74.7094	20.04	peak	10.78	30.82	40.00	-9.18	110	100
115.5310	19.88	peak	13.21	33.09	43.50	-10.41	155	100
445.9920	15.92	peak	19.97	35.89	46.00	-10.11	120	100

Frequency (MHz)	Reading (dBuV) Peak	Reading (dBuV) Ave.	Factor (dB) Corr.	Result (dBuV/m) Peak	Result (dBuV/m) Ave.	Limit (dBuV/m) Peak	Limit (dBuV/m) Ave.	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
10460.0000	34.90	---	10.23	45.13	---	74.00	54.00	-28.87	120	100
15690.0000	29.51	---	17.68	47.19	---	74.00	54.00	-26.81	155	100

Test equipment used: ETSTW-RE 004, ETSTW-RE 030, ETSTW-RE 111, ETSTW-RE 088, ETSTW-RE 018

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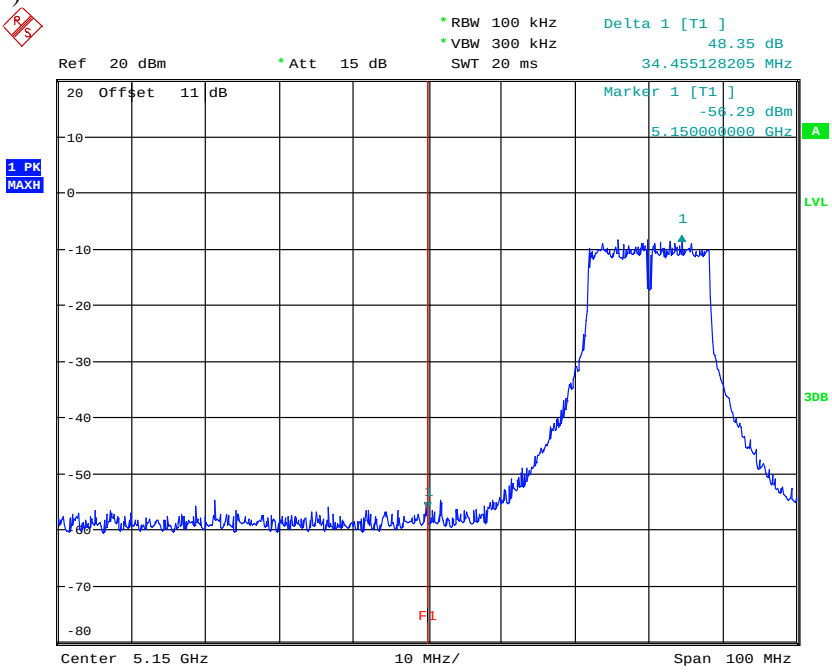
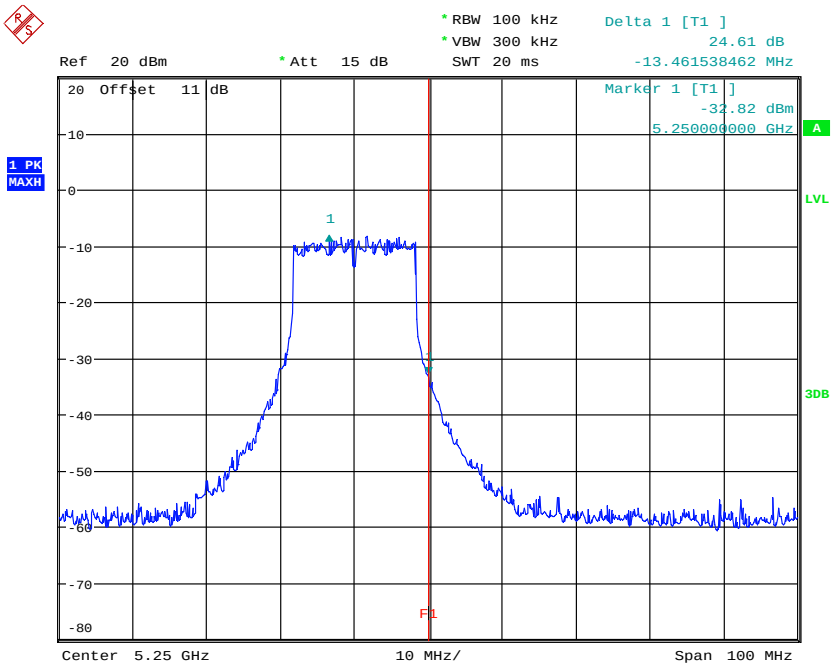
3.8 Band edge

ANT A (ANT 1)

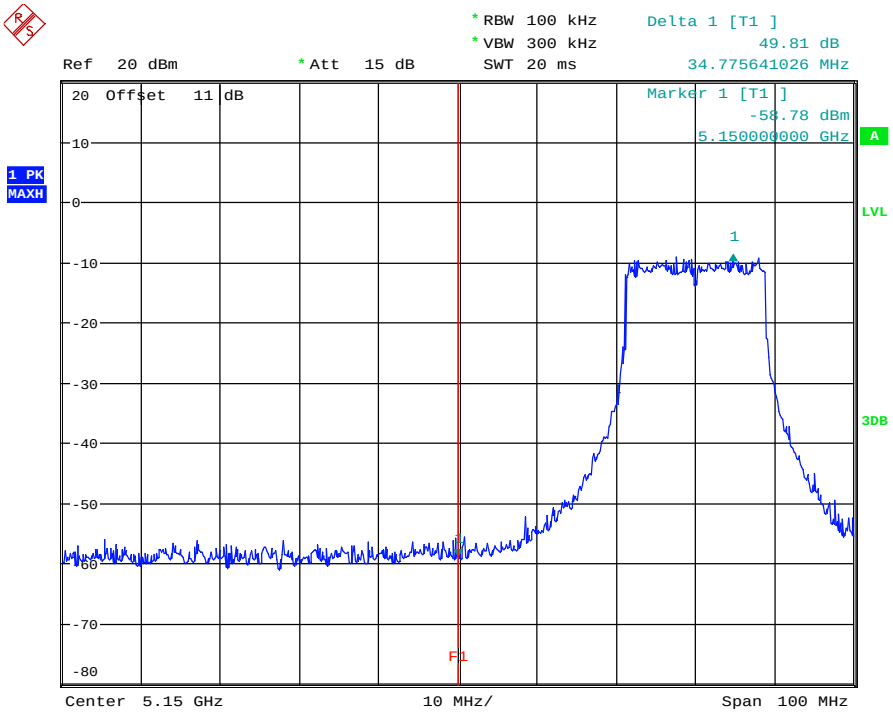


BANDEDGE 802.11A CH36
Date: 24.OCT.2013 19:39:06

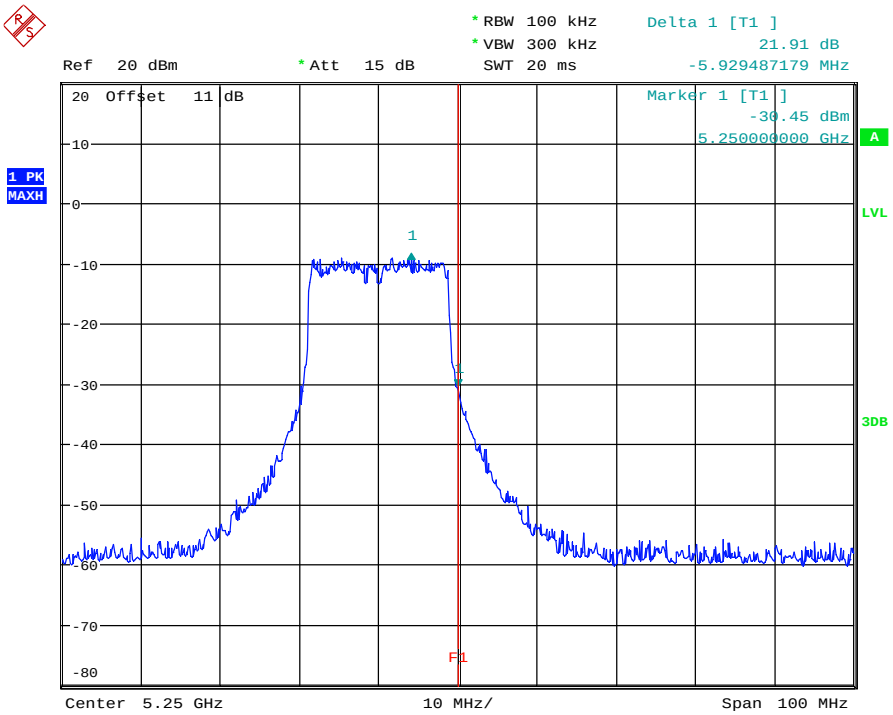


BANDEDGE 802.11A CH48
Date: 24.OCT.2013 19:41:48

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478

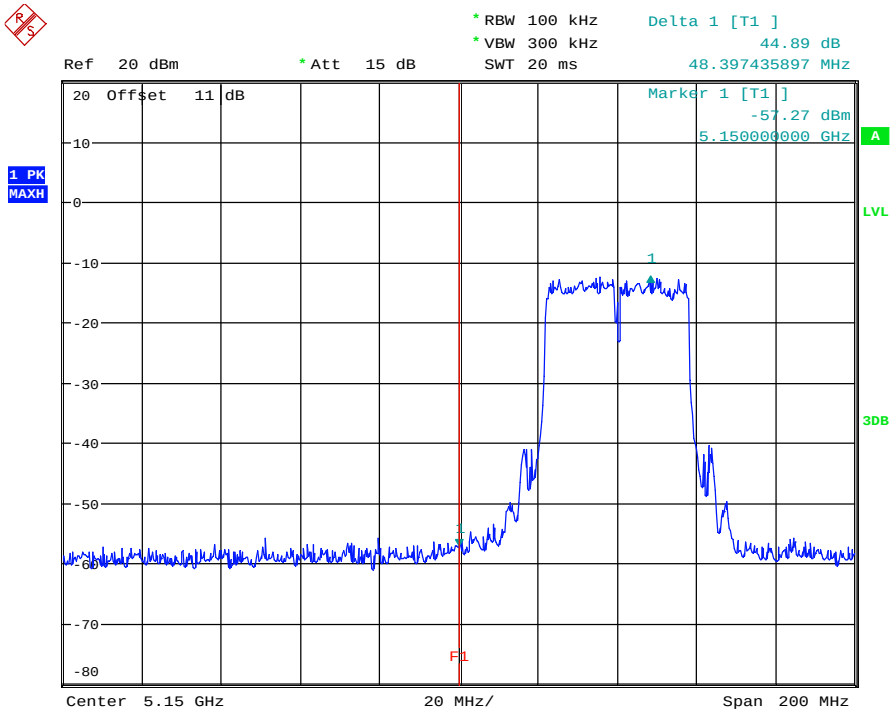


BANDEDGE 802.11N 20MHZ CH36
Date: 24.OCT.2013 19:44:13



BANDEDGE 802.11N 20MHZ CH48
Date: 24.OCT.2013 19:48:34

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478



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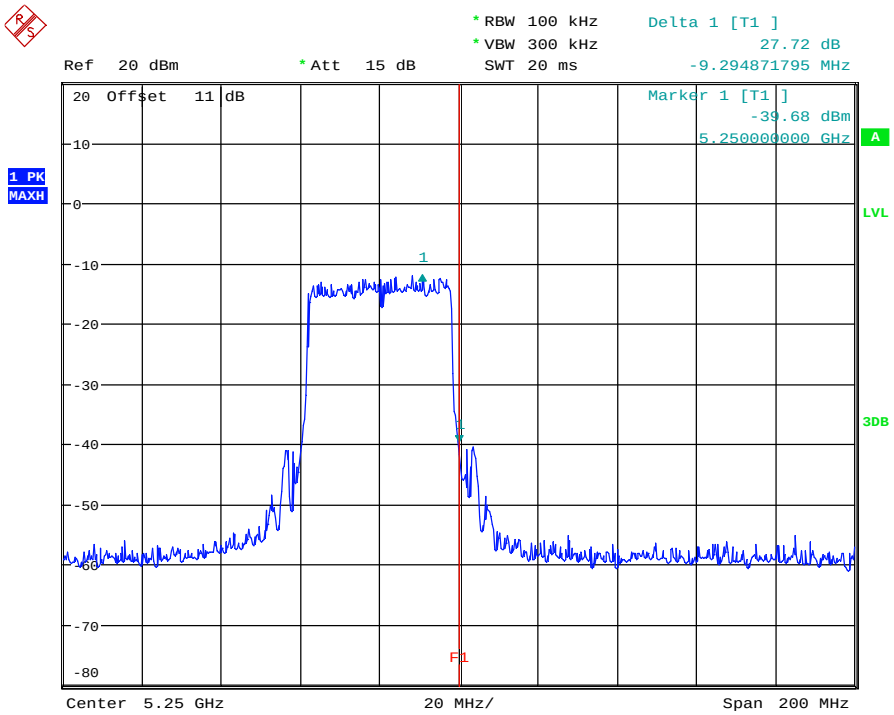
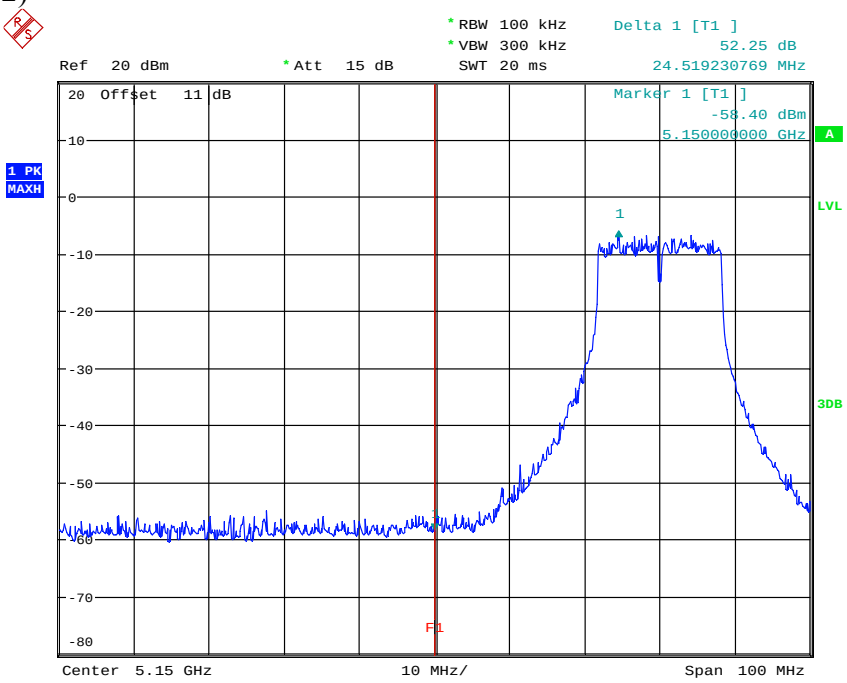
Date: 24.OCT.2013 19:51:11



BANDEDGE 802.11N 40MHZ CH46
Date: 24.OCT.2013 19:52:24

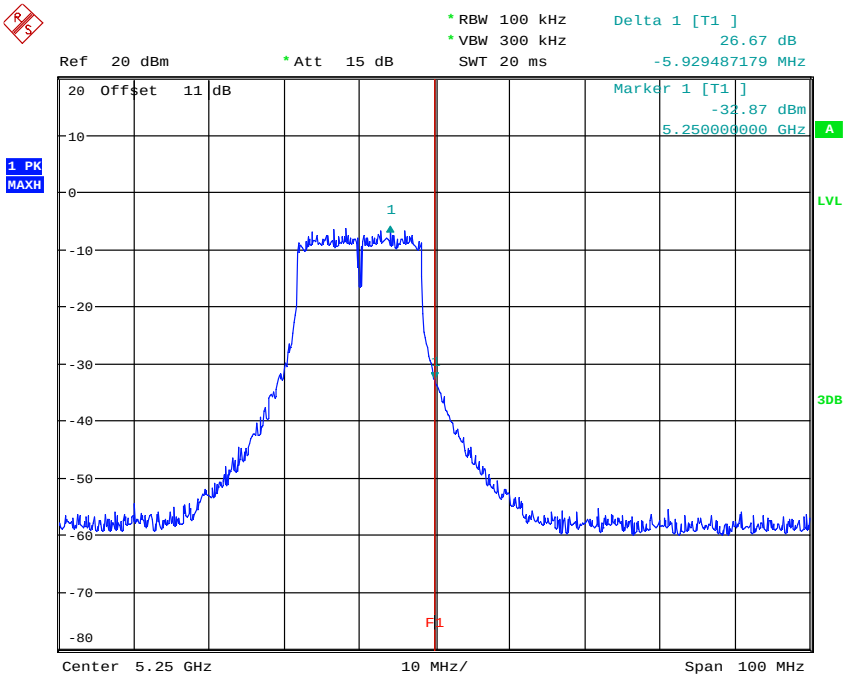
Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478

ANT B (ANT 2)



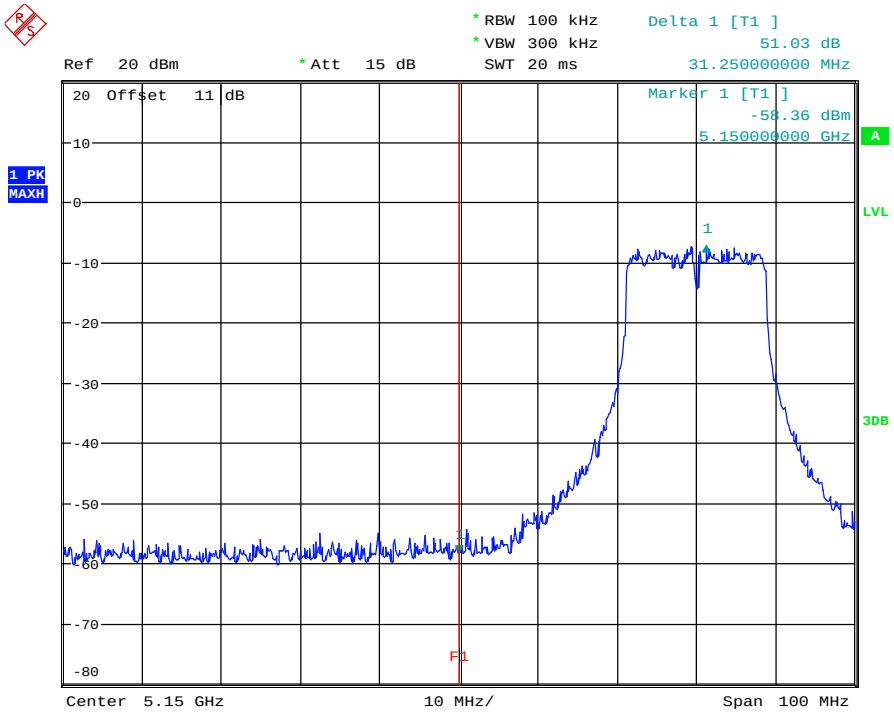
BANDEDGE 802.11A CH36

Date: 24.OCT.2013 21:25:39



BANDEDGE 802.11A CH48

Date: 24.OCT.2013 21:27:54



BANDEDGE 802.11N 20MHZ CH36
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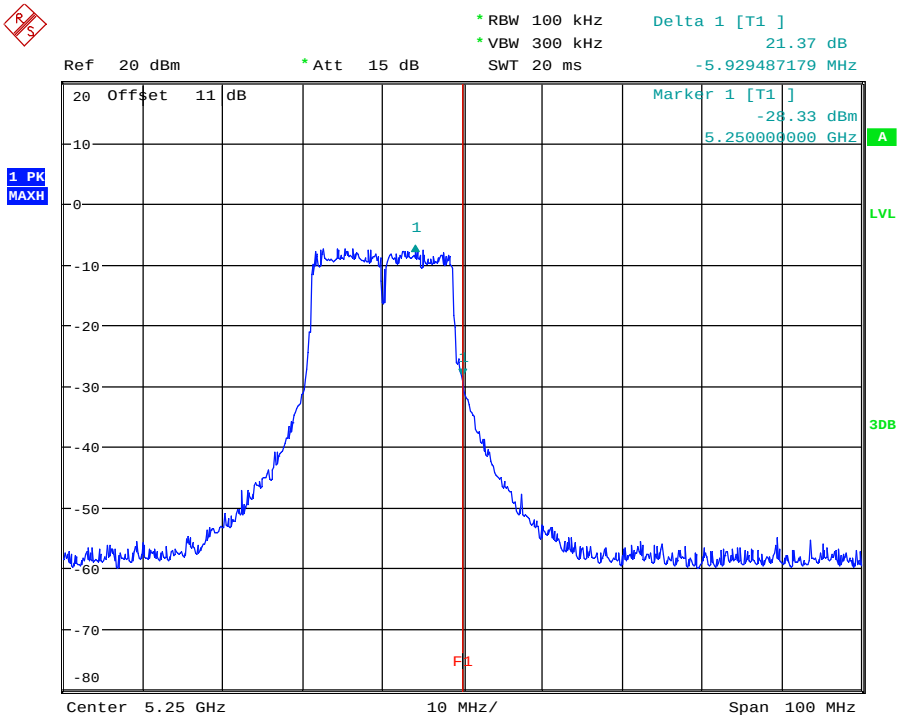

BANDEDGE 802.11N 20MHZ CH48
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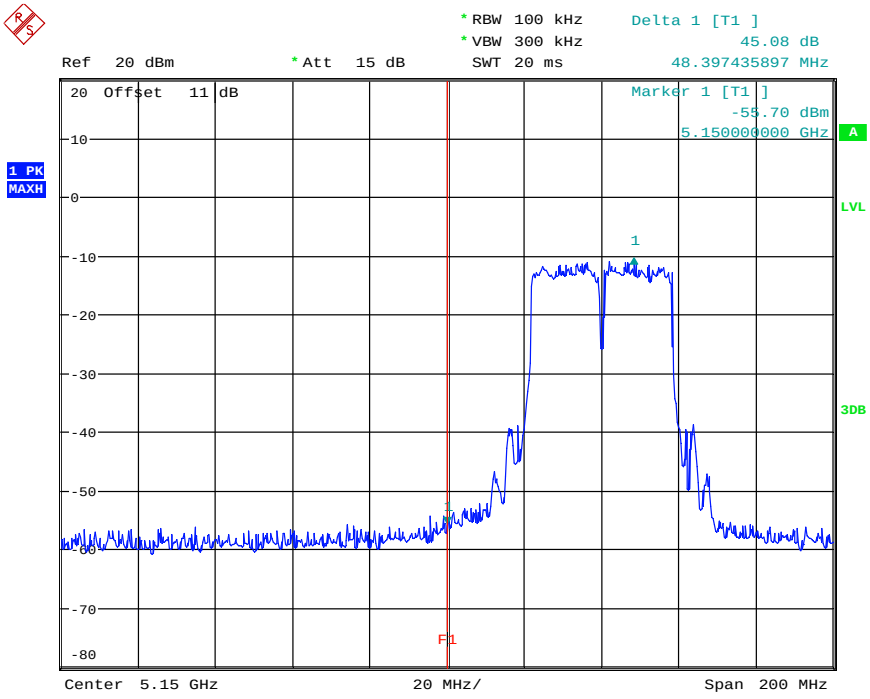
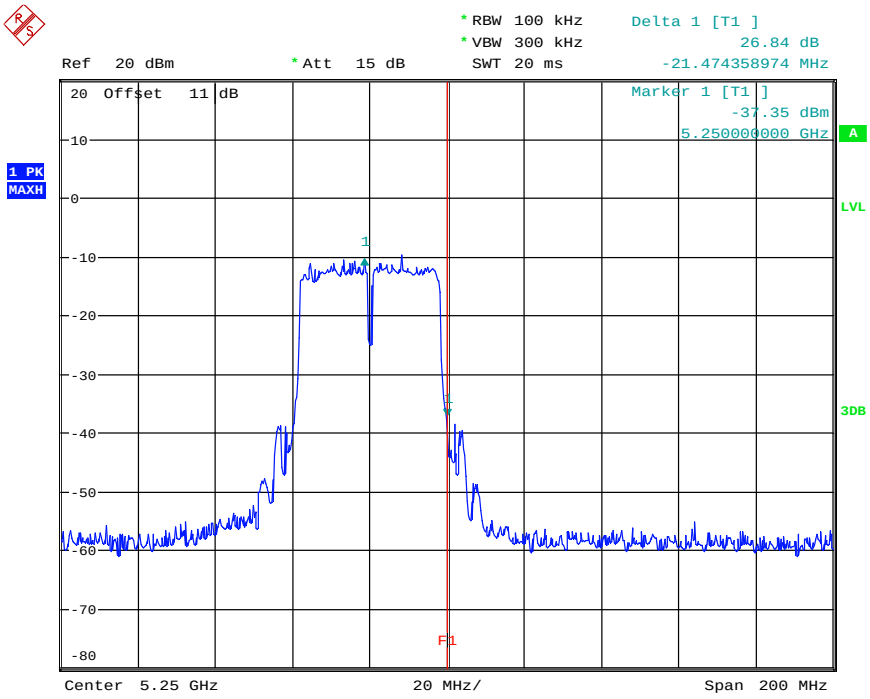
Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478



BANDEDGE 802.11N 40MHZ CH38
Date: 24.OCT.2013 21:33:12



BANDEDGE 802.11N 40MHZ CH46
Date: 24.OCT.2013 21:34:31

Test equipment used: ETSTW-RE 055, ETSTW-RE 050

3.9 Automatic Discontinuation of transmission, FCC 15.407 (c)

The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure.
This function will be declared by manufacturer.

3.10 Reserved, FCC 15.407 (d)

3.11 Indoor Operation Restriction, FCC 15.407 (e)

Within the 5.15–5.25 GHz band, U- NII devices will be restricted to indoor operations to reduce any potential for harmful interference to co-channel MSS operations. This equipment has to be declared by manufacturer of the final product as content of the user manual.

3.12 Radio Frequency Radiation Exposure, FCC 15.407 (f)

Because the intended use of the test sample as a fixed device a theoretical MPE related evaluation
As an example is done below, for information purposes.
FCC OET Bulletin 65 Edition 97.01 determines the equations for predicting RF field and applicable limits.
The prediction for power density in the far-field of the antenna can be made by the general equation below.
The equation is generally accurate in the far-field but will over-predict power density in the near field, where it could be used for walking a "worst case" or conservative prediction.

$$S = \frac{PG}{4\pi R^2}$$

S – Power Density
P – Output power ERP
R – Distance
D – Cable Loss
AG – Antenna Gain G = AG-D

Item	Unit	Value	Explanation
P	mW	9.38	Peak value
D	dB		
AG	dBi	6.72	
G		4.699	Calculated Value
R	cm	20	Assumed value
S	mW/cm^2	0.0088	Calculated value

Limits:

Limit for General Population / Uncontrolled Exposure	
Frequency (MHz)	Power Density (mW/cm^2)
1500 – 100.000	1.0

3.13 Frequency Stability, FCC 15.407 (g)

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the users manual.

ANT A (ANT 1)

Test frequency__5200MHz_____

	Minute	Carrier Freq.	Deviation	Result
Frequency in Normal Condition ___5___V	0 min	5200.000000	0.000	0 ppm
	*2min	5200.000000	0.000	0 ppm
	5min	5200.000000	0.000	0 ppm
	10min	5200.000000	0.000	0 ppm
	Minute	Carrier Freq.	Deviation	Result
Frequency in battery operating end point __4.25_V	0 min	5199.998400	-1.600	-0.31 ppm
	2min	5199.998400	-1.600	-0.31 ppm
	5min	5199.998400	-1.600	-0.31 ppm
	10min	5199.998400	-1.600	-0.31 ppm
	Minute	Carrier Freq.	Deviation	Result
Frequency in battery operating end point __5.75_V	0 min	5199.998900	-1.100	-0.21 ppm
	2min	5199.998900	-1.100	-0.21 ppm
	5min	5199.998900	-1.100	-0.21 ppm
	10min	5199.998900	-1.100	-0.21 ppm

*Standard test frequency

Test frequency __5200MHz_____

Test Temperature	Minute	Carrier Freq.	Deviation	Result
50℃	0 min	5200.001900	1.900	0.37 ppm
50℃	2min	5200.001900	1.900	0.37 ppm
50℃	5min	5200.001900	1.900	0.37 ppm
50℃	10min	5200.001900	1.900	0.37 ppm
40℃	0 min	5200.001500	1.500	0.29 ppm
40℃	2min	5200.001500	1.500	0.29 ppm
40℃	5min	5200.001500	1.500	0.29 ppm
40℃	10min	5200.001500	1.500	0.29 ppm
30℃	0 min	5200.000000	0.000	0 ppm
30℃	2min	5200.000000	0.000	0 ppm
30℃	5min	5200.000000	0.000	0 ppm
30℃	10min	5200.000000	0.000	0 ppm
20℃	0 min	5200.000000	0.000	0 ppm
*20℃	2min	5200.000000	0.000	0 ppm
20℃	5min	5200.000000	0.000	0 ppm
20℃	10min	5200.000000	0.000	0 ppm

10℃	0 min	5200.000000	0.000	0 ppm
10℃	2min	5200.000000	0.000	0 ppm
10℃	5min	5200.000000	0.000	0 ppm
10℃	10min	5200.000000	0.000	0 ppm
0℃	0 min	5199.999400	-0.600	-0.12 ppm
0℃	2min	5199.999400	-0.600	-0.12 ppm
0℃	5min	5199.999400	-0.600	-0.12 ppm
0℃	10min	5199.999400	-0.600	-0.12 ppm
-10℃	0 min	5199.999200	-0.800	-0.15 ppm
-10℃	2min	5199.999200	-0.800	-0.15 ppm
-10℃	5min	5199.999200	-0.800	-0.15 ppm
-10℃	10min	5199.999200	-0.800	-0.15 ppm
-20℃	0 min	5199.998100	-1.900	-0.37 ppm
-20℃	2min	5199.998100	-1.900	-0.37 ppm
-20℃	5min	5199.998100	-1.900	-0.37 ppm
-20℃	10min	5199.998100	-1.900	-0.37 ppm

*Standard test frequency

ANT B (ANT 2)

Test frequency __5200MHz_____

Frequency in Normal Condition ___5___V	Minute	Carrier Freq.	Deviation	Result
	0 min	5199.999500	0.000	0 ppm
	*2min	5199.999500	0.000	0 ppm
	5min	5199.999500	0.000	0 ppm
	10min	5199.999500	0.000	0 ppm
Frequency in battery operating end point __4.25_V	Minute	Carrier Freq.	Deviation	Result
	0 min	5199.999100	-0.400	-0.08 ppm
	2min	5199.999100	-0.400	-0.08 ppm
	5min	5199.999100	-0.400	-0.08 ppm
	10min	5199.999100	-0.400	-0.08 ppm
Frequency in battery operating end point __5.75_V	Minute	Carrier Freq.	Deviation	Result
	0 min	5200.000000	0.500	0.1 ppm
	2min	5200.000000	0.500	0.1 ppm
	5min	5200.000000	0.500	0.1 ppm
	10min	5200.000000	0.500	0.1 ppm

*Standard test frequency

Test frequency __5200MHz_____

Test Temperature	Minute	Carrier Freq.	Deviation	Result
50℃	0 min	5199.998000	-1.200	-0.23 ppm
50℃	2min	5199.998000	-1.200	-0.23 ppm

50℃	5min	5199.998000	-1.200	-0.23 ppm
50℃	10min	5199.998000	-1.200	-0.23 ppm
40℃	0 min	5199.998400	-0.800	-0.15 ppm
40℃	2min	5199.998400	-0.800	-0.15 ppm
40℃	5min	5199.998400	-0.800	-0.15 ppm
40℃	10min	5199.998400	-0.800	-0.15 ppm
30℃	0 min	5199.999200	0.000	0 ppm
30℃	2min	5199.999200	0.000	0 ppm
30℃	5min	5199.999200	0.000	0 ppm
30℃	10min	5199.999200	0.000	0 ppm
20℃	0 min	5199.999200	0.000	0 ppm
*20℃	2min	5199.999200	0.000	0 ppm
20℃	5min	5199.999200	0.000	0 ppm
20℃	10min	5199.999200	0.000	0 ppm
10℃	0 min	5200.000000	0.800	0.15 ppm
10℃	2min	5200.000000	0.800	0.15 ppm
10℃	5min	5200.000000	0.800	0.15 ppm
10℃	10min	5200.000000	0.800	0.15 ppm
0℃	0 min	5200.000200	1.000	0.19 ppm
0℃	2min	5200.000200	1.000	0.19 ppm
0℃	5min	5200.000200	1.000	0.19 ppm
0℃	10min	5200.000200	1.000	0.19 ppm
-10℃	0 min	5200.000800	1.600	0.31 ppm
-10℃	2min	5200.000800	1.600	0.31 ppm
-10℃	5min	5200.000800	1.600	0.31 ppm
-10℃	10min	5200.000800	1.600	0.31 ppm
-20℃	0 min	5200.000120	0.920	0.18 ppm
-20℃	2min	5200.000120	0.920	0.18 ppm
-20℃	5min	5200.000120	0.920	0.18 ppm
-20℃	10min	5200.000120	0.920	0.18 ppm

*Standard test frequency

The displayed frequency stability will ensure that emission is maintained within the band of operation.

Test equipment used: ETSTW-RE 055, ETSTW-CE 009

3.14 Radiated Emissions from Receiver Part

FCC Rule: 15.109

Except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Frequency of Emission (MHz)	Field Strength (microvolts/meter)	Field Strength (dBmicrovolts/meter)
30 – 88	100	40.0
88 – 216	150	43.5
216 – 960	200	46.0
Above 960	500	54.0

Test equipment used: ETSTW-RE 004, ETSTW-RE 030, ETSTW-RE 111, ETSTW-RE 088, ETSTW-RE 018

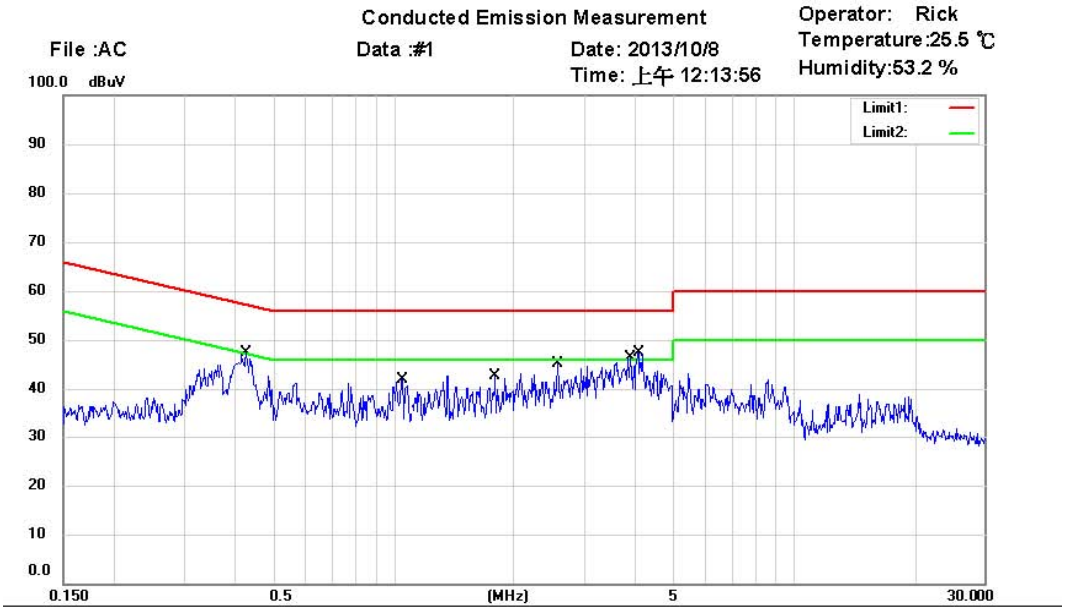
Explanation: The test results are listed in the separated test report no.: W6M21308-13478-P-15B.

3.15 Power Line Conducted Emission

For an intentional radiator which is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the table bellows with this provision shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminals.

This measurement was transact first with instrumentation using an average and peak detector and a 10 kHz bandwidth. If the peak detector achieves a calculated level, the measurement is repeated by an instrumentation using a quasi-peak detector.

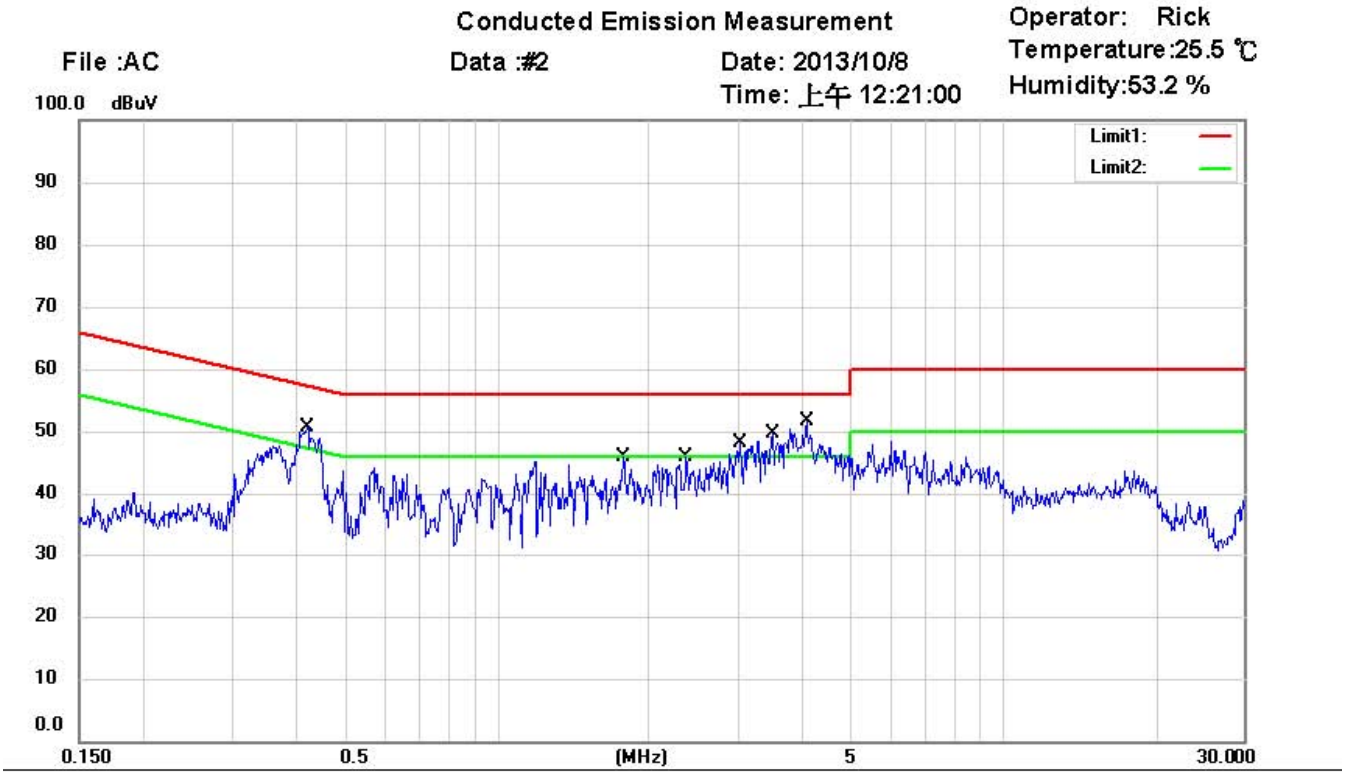
DLNA(iShowCast)



Site : Chamber_03
Condition : FCC Part 15 Class B Conduction (QP)
Phase: N
EUT : W6M21308-13478
Power : 120VAC
M/N: MTV2000
Test Mode : DLAN(iShowCast)
Note :

Mk.	Frequency (MHz)	Reading (dBuV)	Detector	Corrected factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Comment
	0.4275	30.55	QP	10.11	40.66	57.30	-16.64	
*	0.4275	23.66	AVG	10.11	33.77	47.30	-13.53	
	1.0444	22.26	QP	10.14	32.40	56.00	-23.60	
	1.0444	11.80	AVG	10.14	21.94	46.00	-24.06	
	1.7938	22.32	QP	10.17	32.49	56.00	-23.51	
	1.7938	14.14	AVG	10.17	24.31	46.00	-21.69	
	2.5678	23.40	QP	10.21	33.61	56.00	-22.39	
	2.5678	15.17	AVG	10.21	25.38	46.00	-20.62	
	3.8953	27.66	QP	10.31	37.97	56.00	-18.03	
	3.8953	19.09	AVG	10.31	29.40	46.00	-16.60	
	4.0708	27.98	QP	10.32	38.30	56.00	-17.70	
	4.0708	19.73	AVG	10.32	30.05	46.00	-15.95	

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478



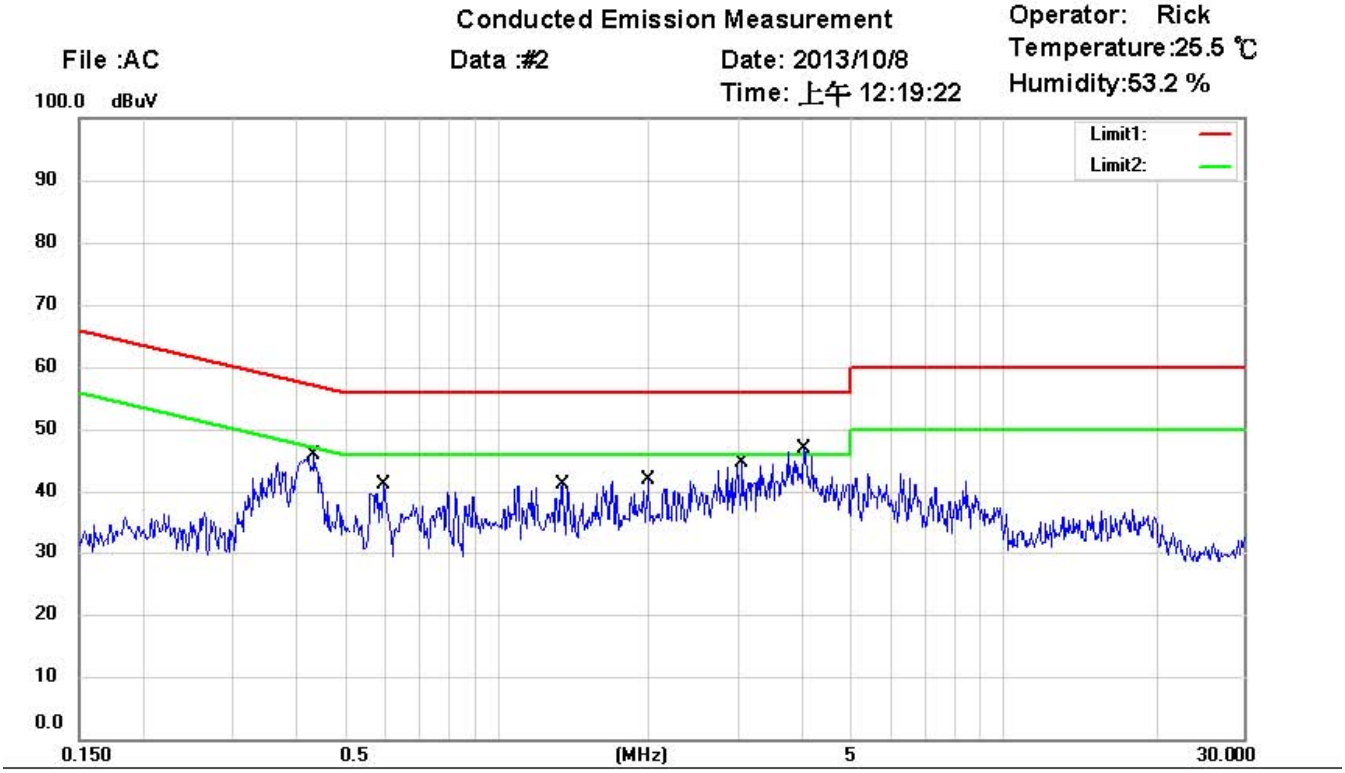
Site : Chamber_03
Condition : FCC Part 15 Class B Conduction (QP)
EUT : W6M21308-13478
M/N: MTV2000
Test Mode : DLAN(iShowCast)
Note :

Phase: L1
Power : 120VAC

Mk.	Frequency (MHz)	Reading (dBuV)	Detector	Corrected factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Comment
	0.4214	33.69	QP	10.11	43.80	57.42	-13.62	
*	0.4214	26.74	AVG	10.11	36.85	47.42	-10.57	
	1.7803	26.97	QP	10.18	37.15	56.00	-18.85	
	1.7803	17.13	AVG	10.18	27.31	46.00	-18.69	
	2.3653	28.29	QP	10.22	38.51	56.00	-17.49	
	2.3653	17.83	AVG	10.22	28.05	46.00	-17.95	
	3.0178	29.03	QP	10.26	39.29	56.00	-16.71	
	3.0178	18.98	AVG	10.26	29.24	46.00	-16.76	
	3.5060	30.81	QP	10.30	41.11	56.00	-14.89	
	3.5060	20.73	AVG	10.30	31.03	46.00	-14.97	
	4.0775	33.60	QP	10.35	43.95	56.00	-12.05	
	4.0775	23.08	AVG	10.35	33.43	46.00	-12.57	

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478

DLNA(USB)



Site : Chamber_03
Condition : FCC Part 15 Class B Conduction (QP)
EUT : W6M21308-13478
M/N: MTV2000
Test Mode : DLNA(USB)
Note :

Phase: N
Power : 120VAC

Mk.	Frequency (MHz)	Reading (dBuV)	Detector	Corrected factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Comment
	0.4348	32.25	QP	10.11	42.36	57.16	-14.80	
*	0.4348	26.74	AVG	10.11	36.85	47.16	-10.31	
	0.5967	23.50	QP	10.12	33.62	56.00	-22.38	
	0.5967	14.23	AVG	10.12	24.35	46.00	-21.65	
	1.3482	22.00	QP	10.15	32.15	56.00	-23.85	
	1.3482	12.49	AVG	10.15	22.64	46.00	-23.36	
	1.9940	22.57	QP	10.18	32.75	56.00	-23.25	
	1.9940	12.60	AVG	10.18	22.78	46.00	-23.22	
	3.0492	26.91	QP	10.24	37.15	56.00	-18.85	
	3.0492	18.41	AVG	10.24	28.65	46.00	-17.35	
	4.0505	27.65	QP	10.32	37.97	56.00	-18.03	
	4.0505	19.13	AVG	10.32	29.45	46.00	-16.55	

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478

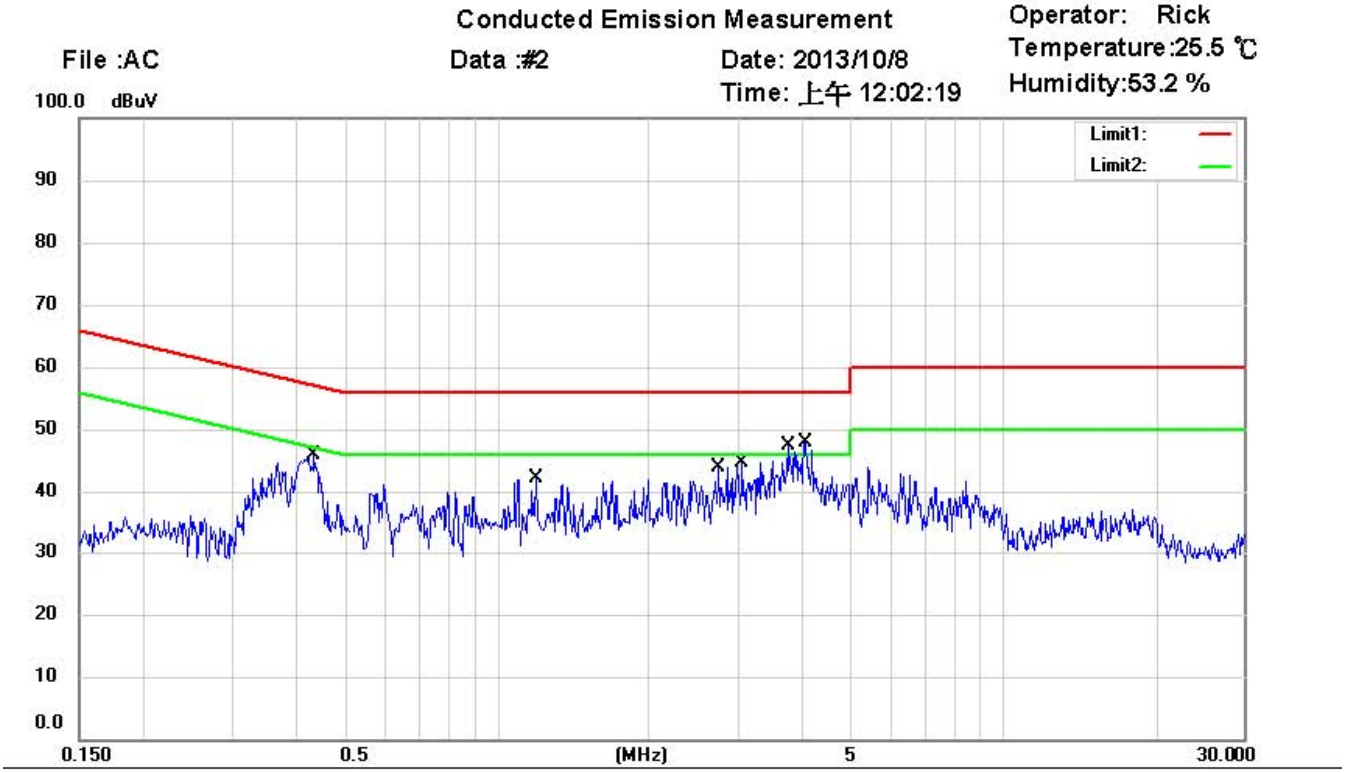
Site : Chamber_03
Condition : FCC Part 15 Class B Conduction (QP)
EUT : W6M21308-13478
M/N: MTV2000
Test Mode : DLNA(USB)
Note :

Phase: L1
Power : 120VAC

Mk.	Frequency (MHz)	Reading (dBuV)	Detector	Corrected factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Comment
	0.3751	31.54	QP	10.11	41.65	58.39	-16.74	
	0.3751	20.74	AVG	10.11	30.85	48.39	-17.54	
	0.4200	35.54	QP	10.11	45.65	57.45	-11.80	
*	0.4200	26.57	AVG	10.11	36.68	47.45	-10.77	
	1.1930	31.20	QP	10.15	41.35	56.00	-14.65	
	1.1930	20.47	AVG	10.15	30.62	46.00	-15.38	
	2.4485	31.14	QP	10.22	41.36	56.00	-14.64	
	2.4485	22.43	AVG	10.22	32.65	46.00	-13.35	
	3.8591	33.49	QP	10.33	43.82	56.00	-12.18	
	3.8591	23.24	AVG	10.33	33.57	46.00	-12.43	
	6.1875	31.84	QP	10.51	42.35	60.00	-17.65	
	6.1875	23.06	AVG	10.51	33.57	50.00	-16.43	

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478

Miracast



Site : Chamber_03
Condition : FCC Part 15 Class B Conduction (QP)
EUT : W6M21308-13478
M/N: MTV2000
Test Mode : Miracast
Note :

Phase: N
Power : 120VAC

Mk.	Frequency (MHz)	Reading (dBuV)	Detector	Corrected factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Comment
	0.4350	29.59	QP	10.11	39.70	57.16	-17.46	
*	0.4350	23.01	AVG	10.11	33.12	47.16	-14.04	
	1.1975	22.11	QP	10.15	32.26	56.00	-23.74	
	1.1975	15.29	AVG	10.15	25.44	46.00	-20.56	
	2.7478	23.46	QP	10.22	33.68	56.00	-22.32	
	2.7478	15.59	AVG	10.22	25.81	46.00	-20.19	
	3.0493	24.09	QP	10.24	34.33	56.00	-21.67	
	3.0493	16.44	AVG	10.24	26.68	46.00	-19.32	
	3.7490	27.60	QP	10.30	37.90	56.00	-18.10	
	3.7490	19.02	AVG	10.30	29.32	46.00	-16.68	
	4.0505	27.96	QP	10.32	38.28	56.00	-17.72	
	4.0505	19.00	AVG	10.32	29.32	46.00	-16.68	

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478

Site : Chamber_03
Condition : FCC Part 15 Class B Conduction (QP)
Phase: L1
EUT : W6M21308-13478
Power : 120VAC
M/N: MTV2000
Test Mode : Miracast
Note :

Mk.	Frequency (MHz)	Reading (dBuV)	Detector	Corrected factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Comment
	0.3526	29.78	QP	10.11	39.89	58.90	-19.01	
	0.3526	21.74	AVG	10.11	31.85	48.90	-17.05	
	0.4200	34.92	QP	10.11	45.03	57.45	-12.42	
*	0.4200	28.92	AVG	10.11	39.03	47.45	-8.42	
	0.6845	26.00	QP	10.13	36.13	56.00	-19.87	
	0.6845	17.84	AVG	10.13	27.97	46.00	-18.03	
	2.1493	28.08	QP	10.20	38.28	56.00	-17.72	
	2.1493	17.18	AVG	10.20	27.38	46.00	-18.62	
	3.3035	30.23	QP	10.28	40.51	56.00	-15.49	
	3.3035	20.12	AVG	10.28	30.40	46.00	-15.60	
	4.0663	33.09	QP	10.35	43.44	56.00	-12.56	
	4.0663	22.57	AVG	10.35	32.92	46.00	-13.08	

Note: 1. The formula of measured value as: Test Result = Reading + Correction Factor
2. The Correction Factor = Cable Loss + LISN Insertion Loss + Pulse Limit Loss
3. Detector function in the form : PK = Peak, QP = Quasi Peak, AV = Average
4. All not in the table noted test results are more than 20 dB below the relevant limits.
5. Measurement uncertainty = ±1.60 dB; Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.
6. Up Line: QP Limit Line, Down Line: Ave Limit Line.

Limits:

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

Test equipment used: ETSTW-CE 001, ETSTW-CE 004, ETSTW-CE 006, ETSTW-RE 045

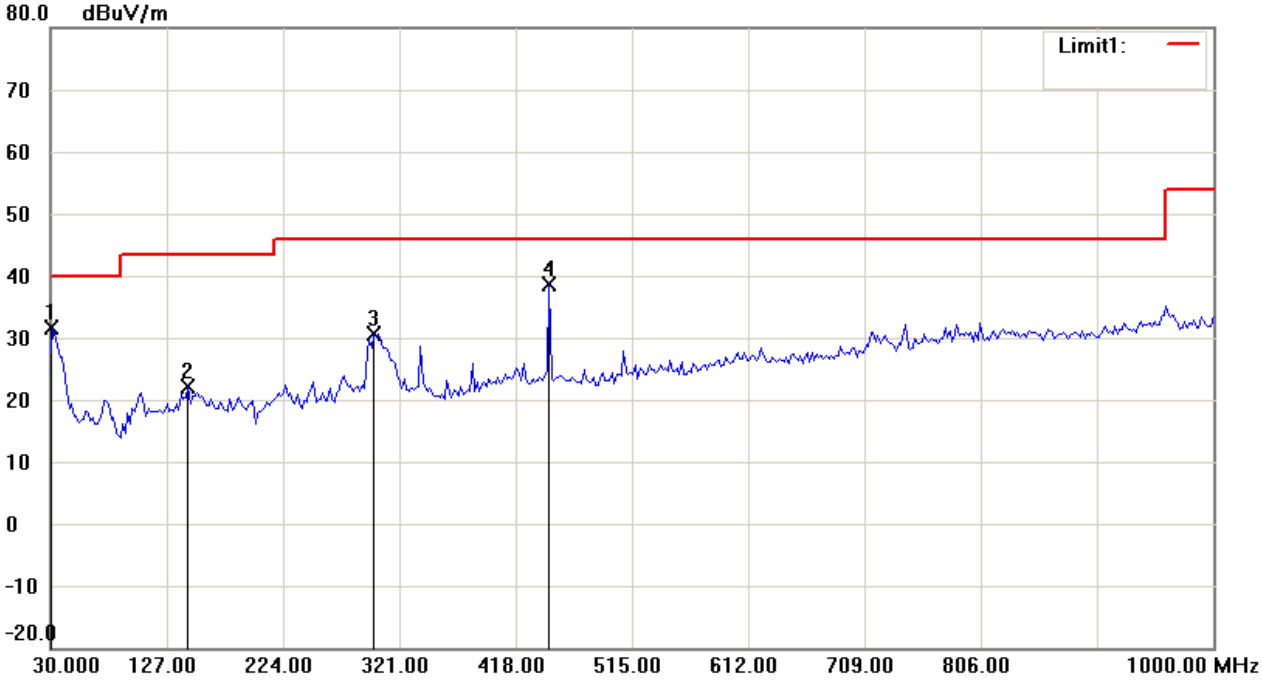
Appendix

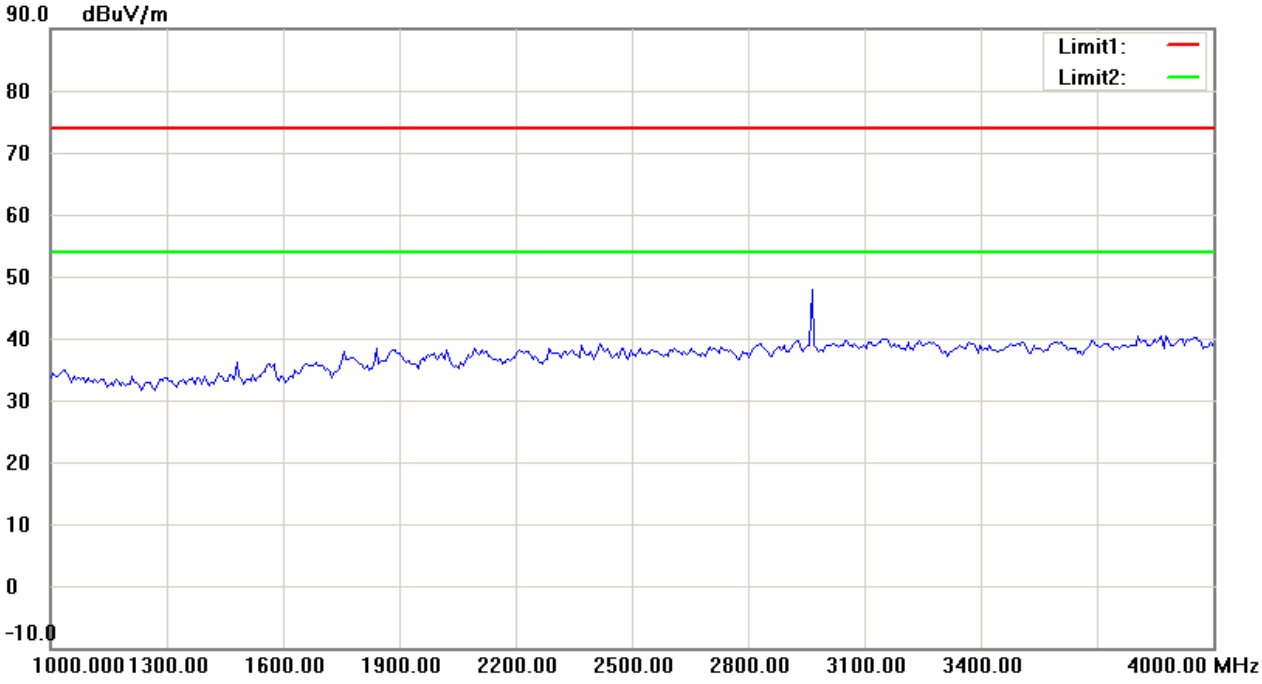
Measurement diagrams

Spurious Emissions radiated

Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478

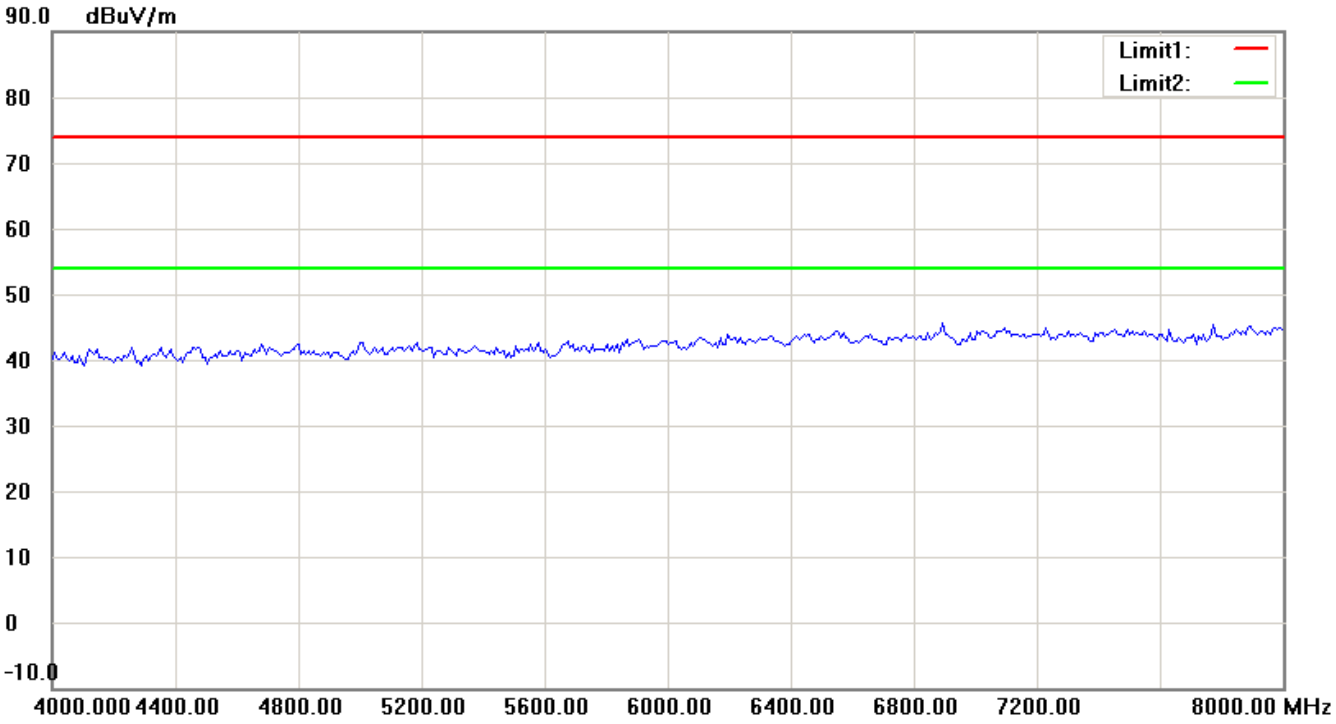
Spurious Emissions radiated_Transmitter
ANT A (ANT 1)
802.11a CH36 TX
Antenna Polarization H

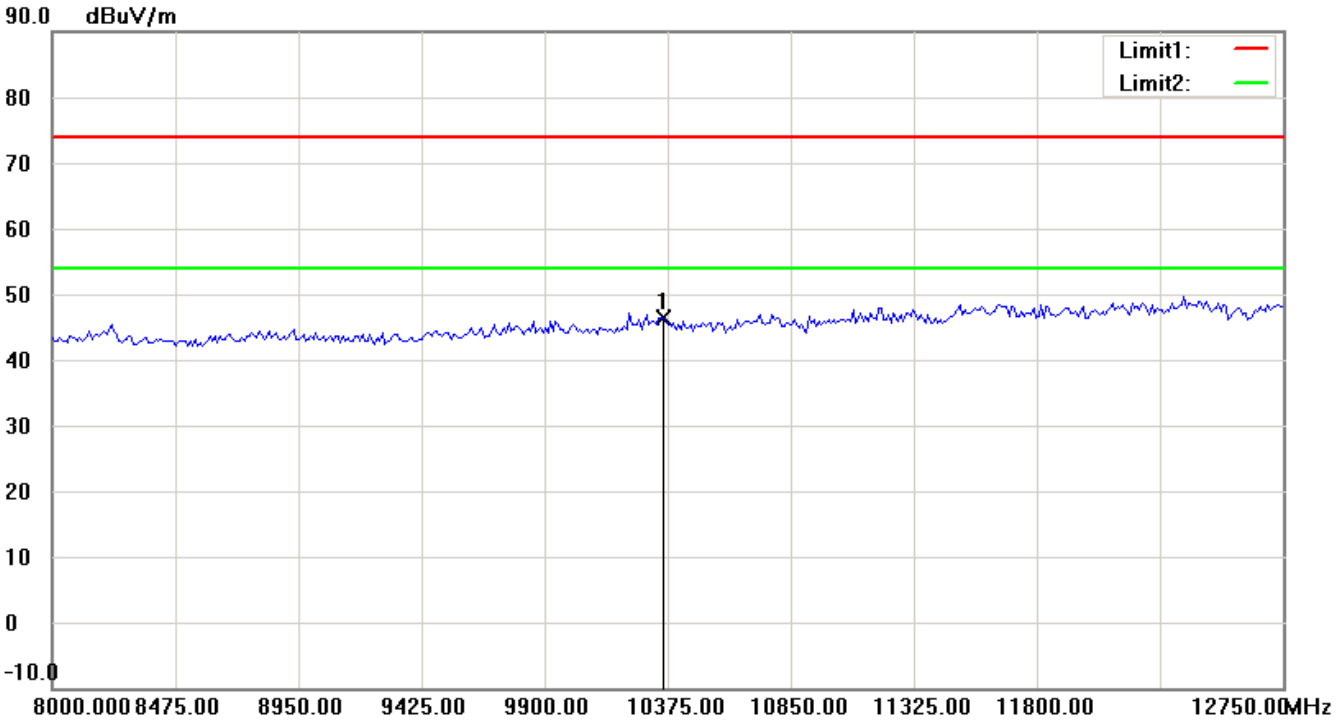




Note
Up Line: Peak Limit Line Down Line: Ave Limit Line

1. **The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.**
2. **The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.**
3. **For corrected test results are listed in the relevant table of radiated test data of this test report.**





Note
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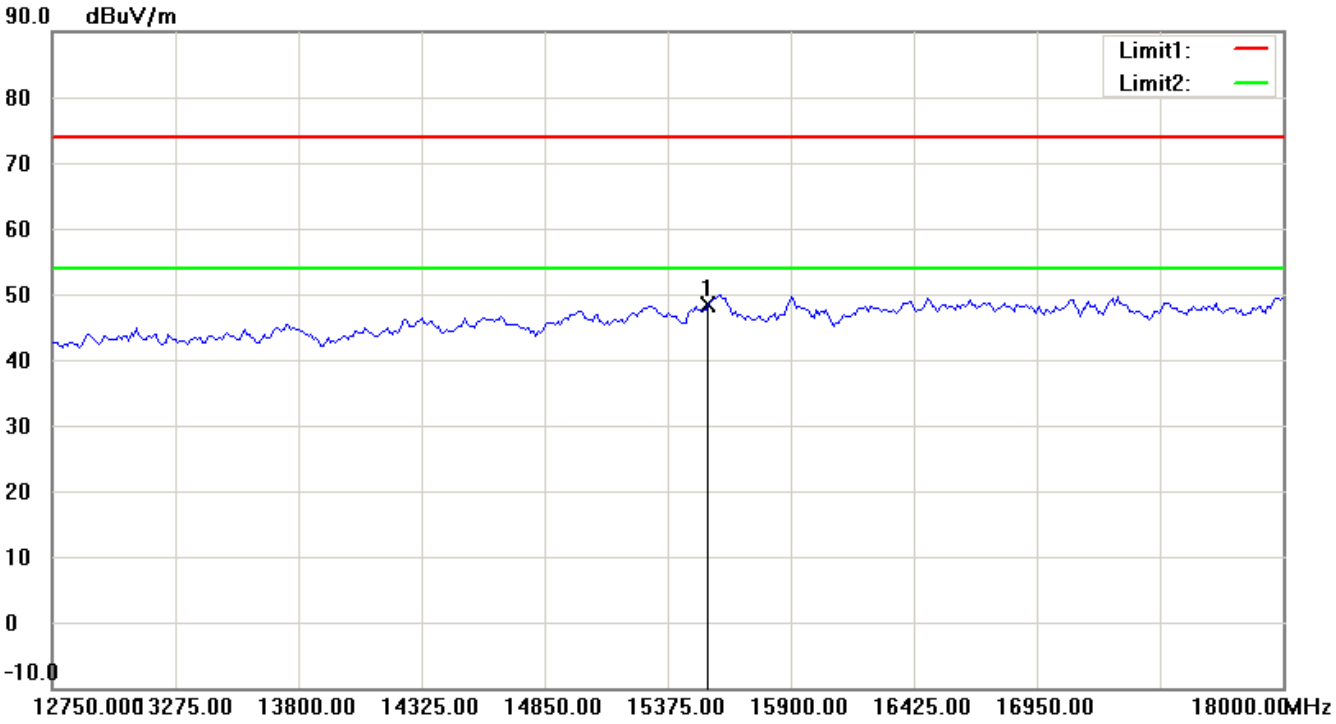
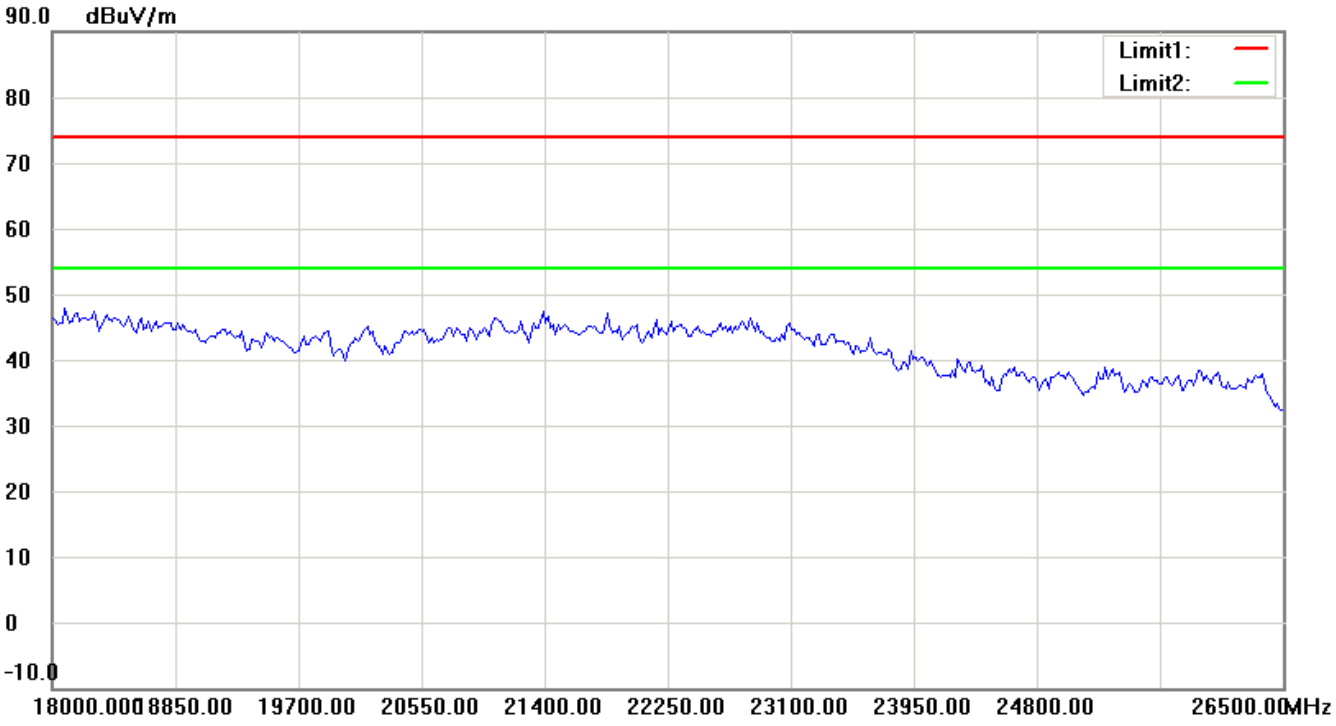
Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478





Note
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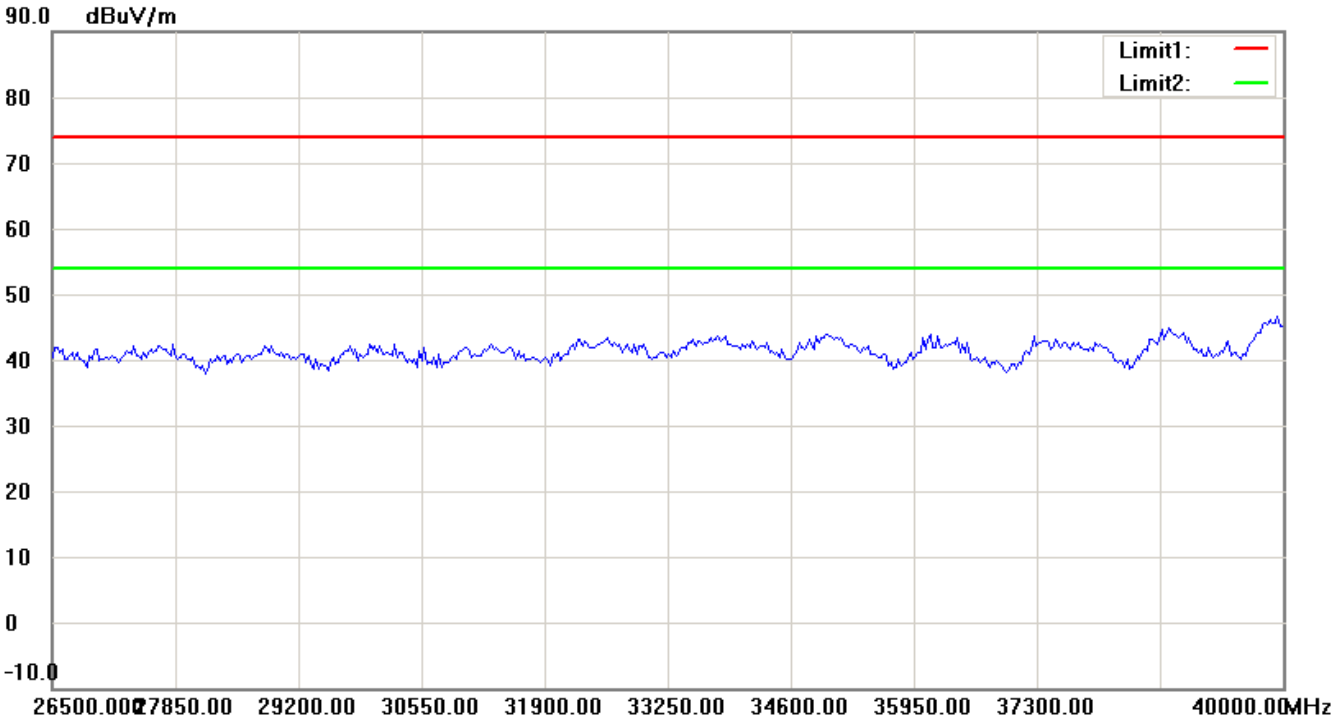
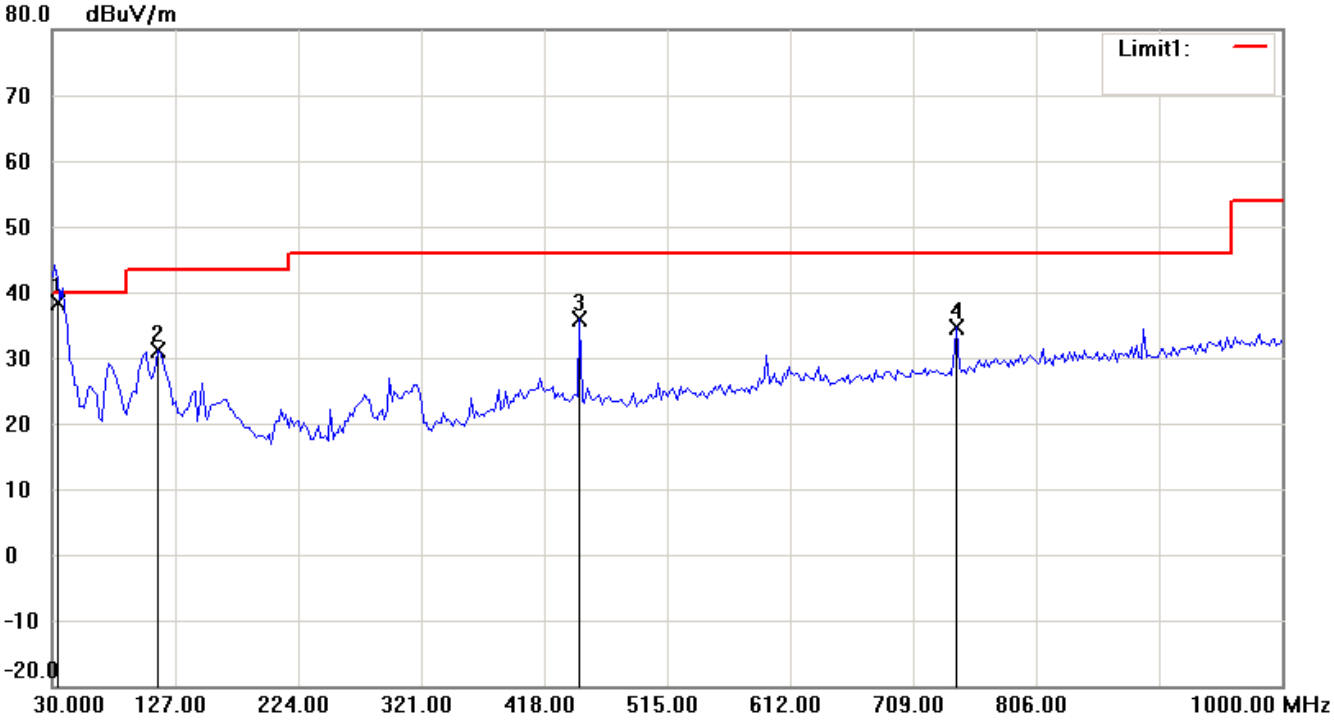
FCC ID: 2AA4J-W6M2130813478



Antenna Polarization V



Note
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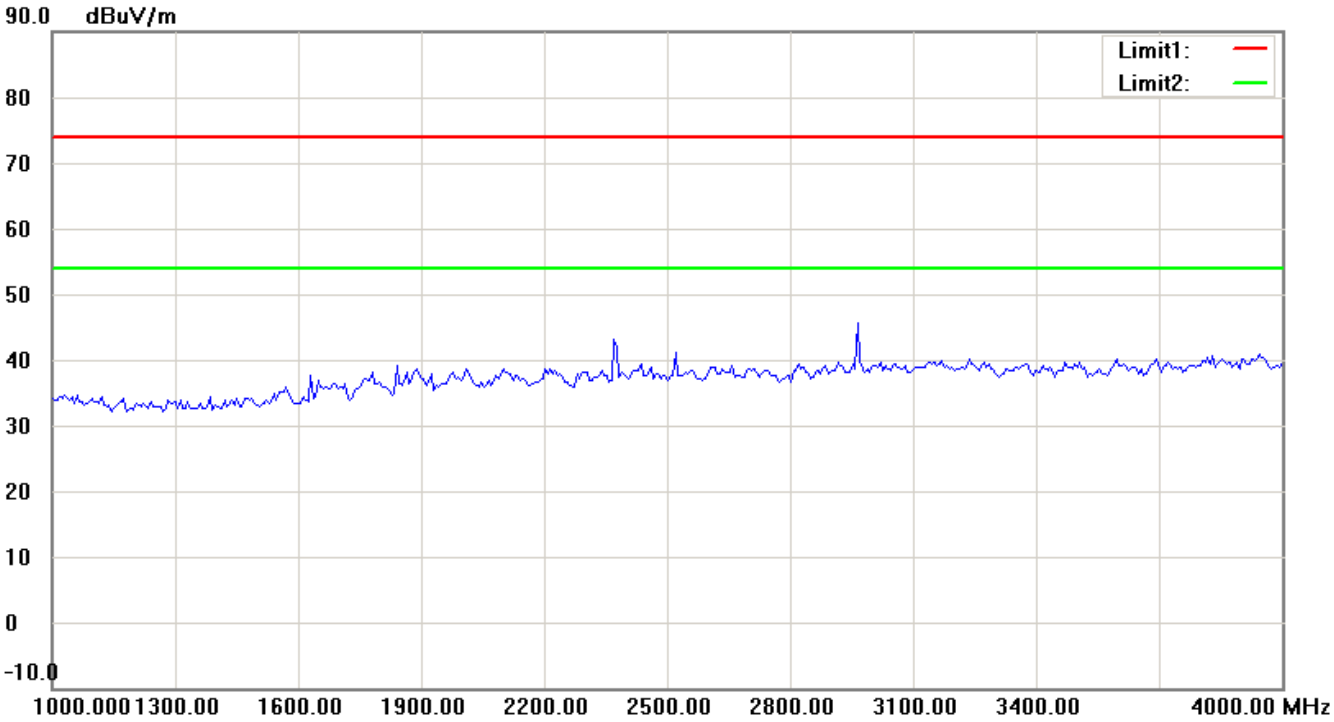

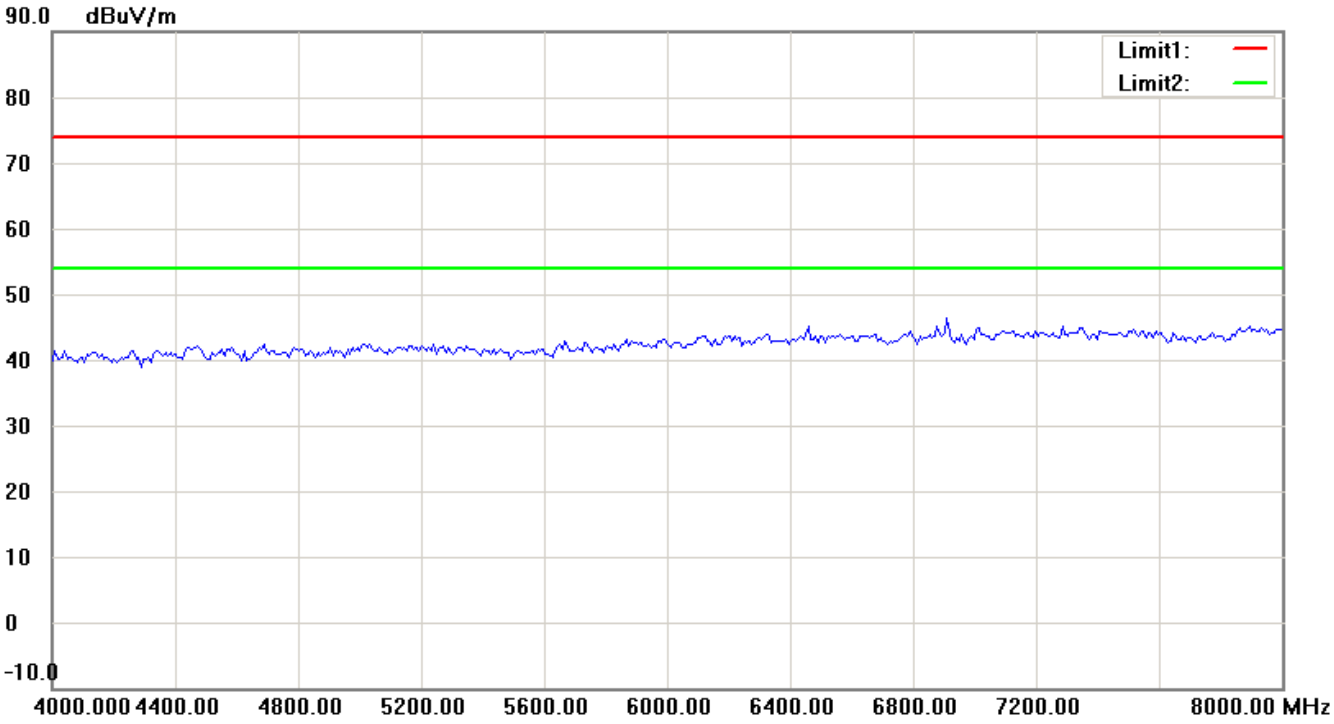

Note
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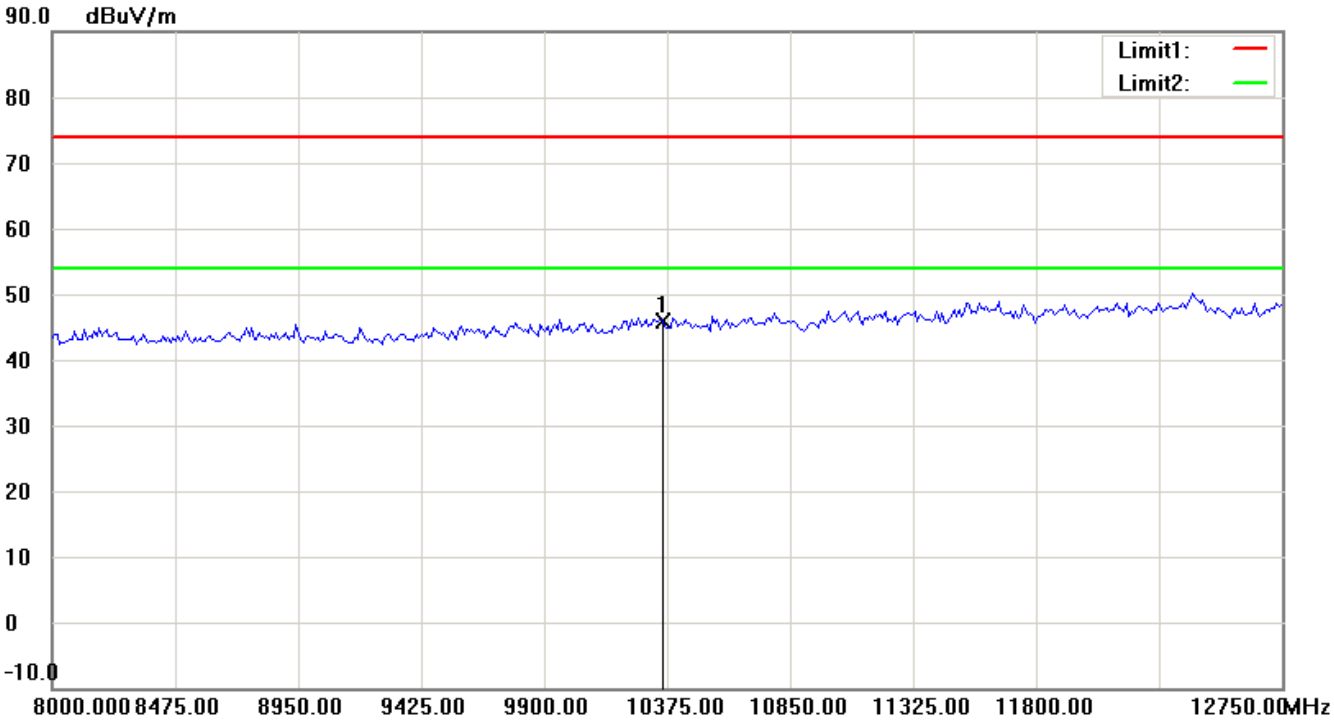
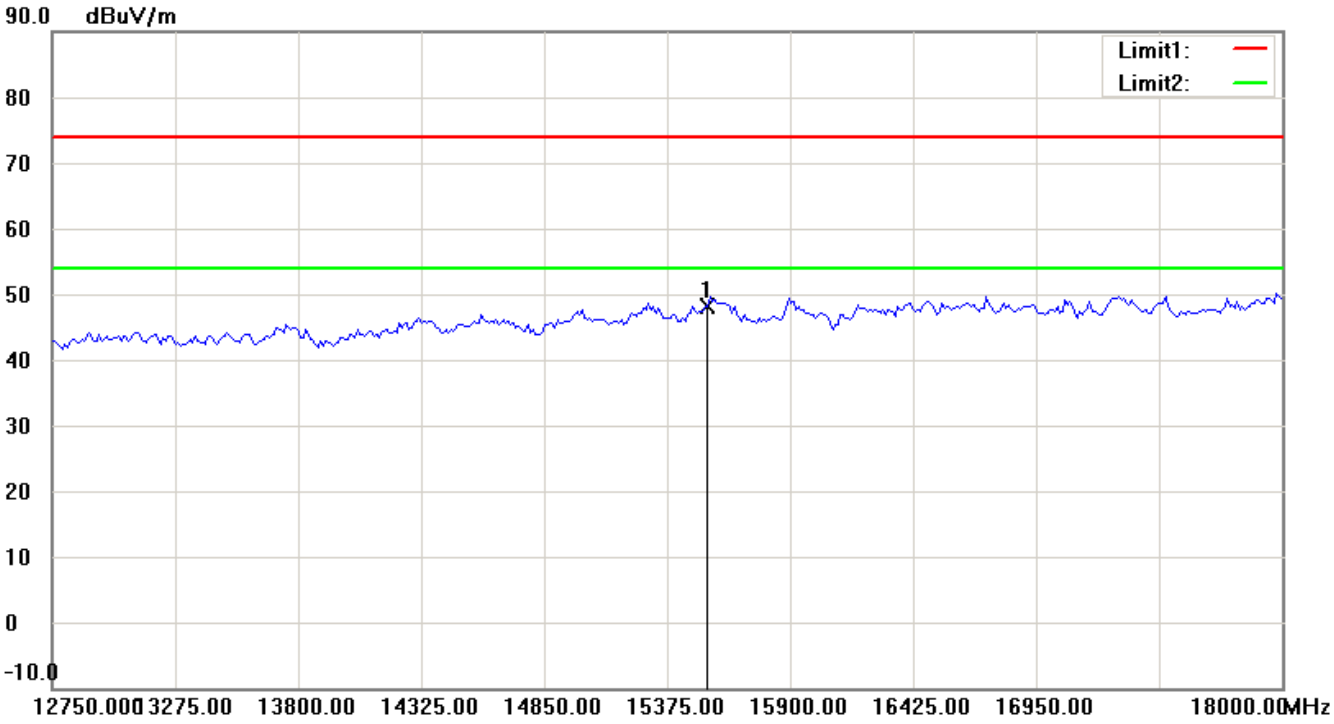
FCC ID: 2AA4J-W6M2130813478





Note
Up Line: Peak Limit Line Down Line: Ave Limit Line

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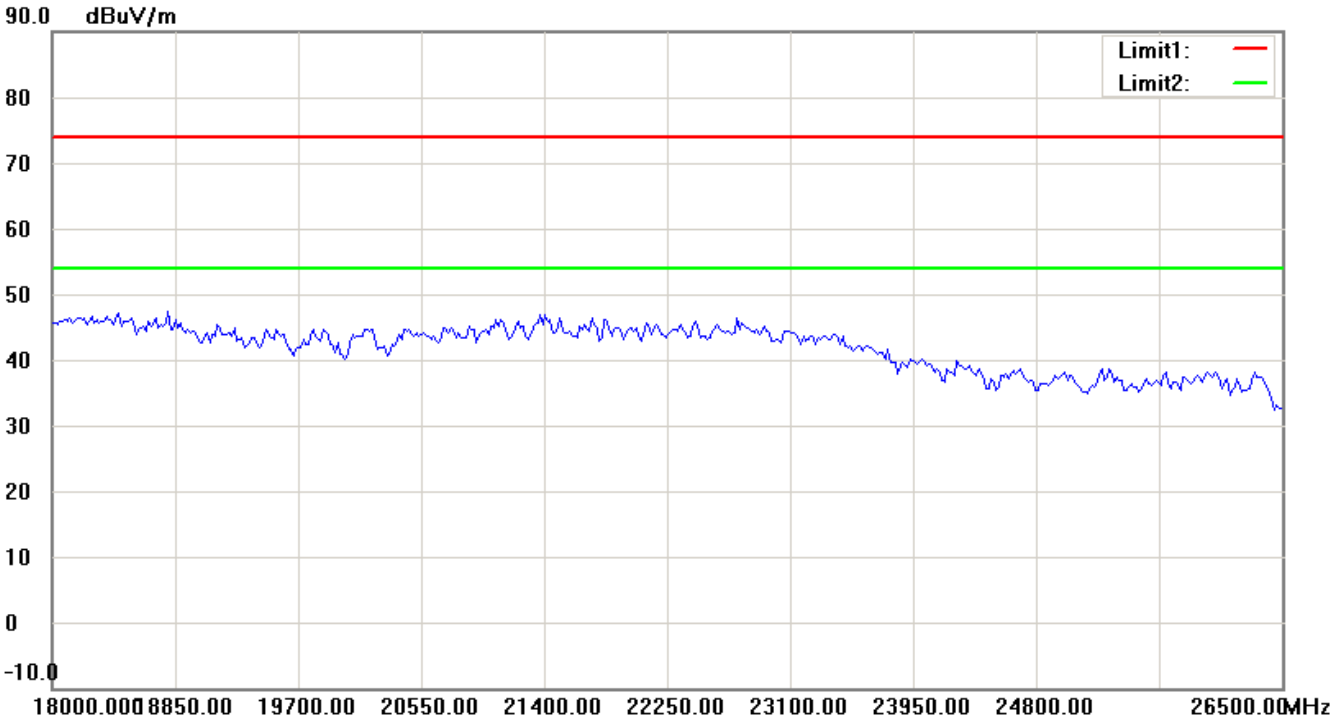

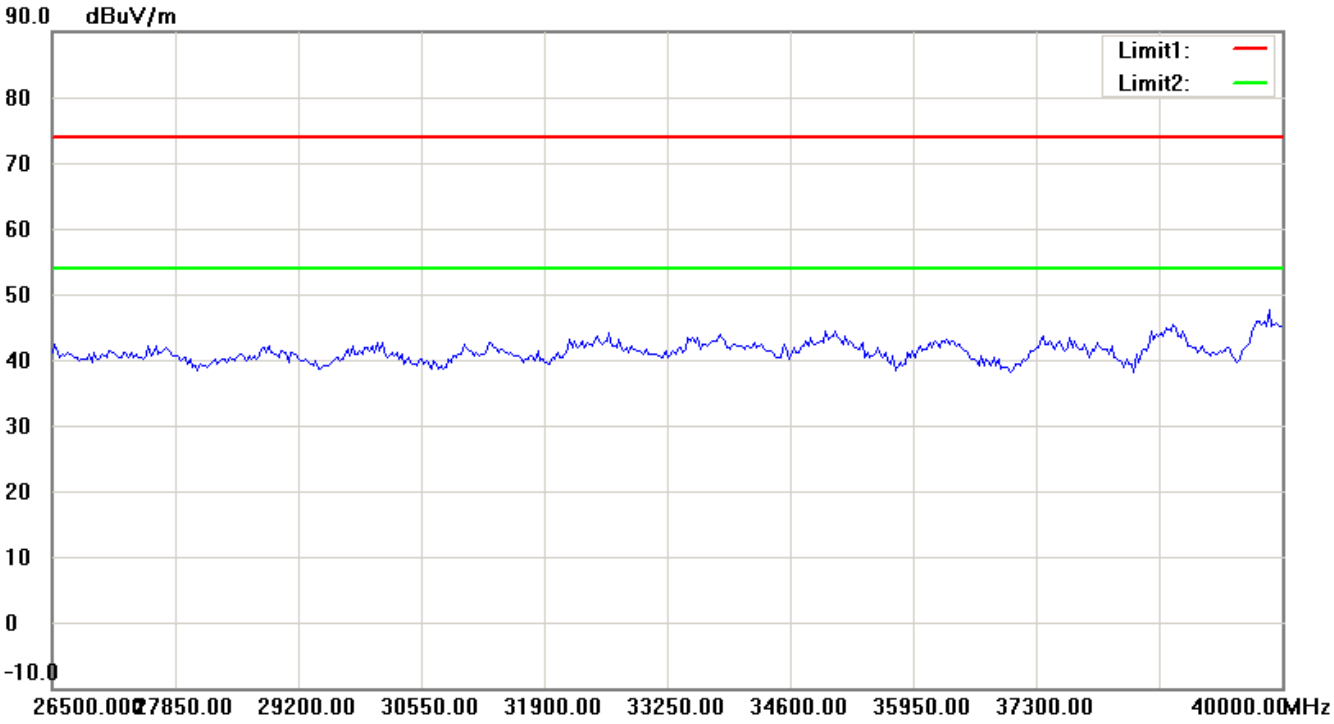

Note
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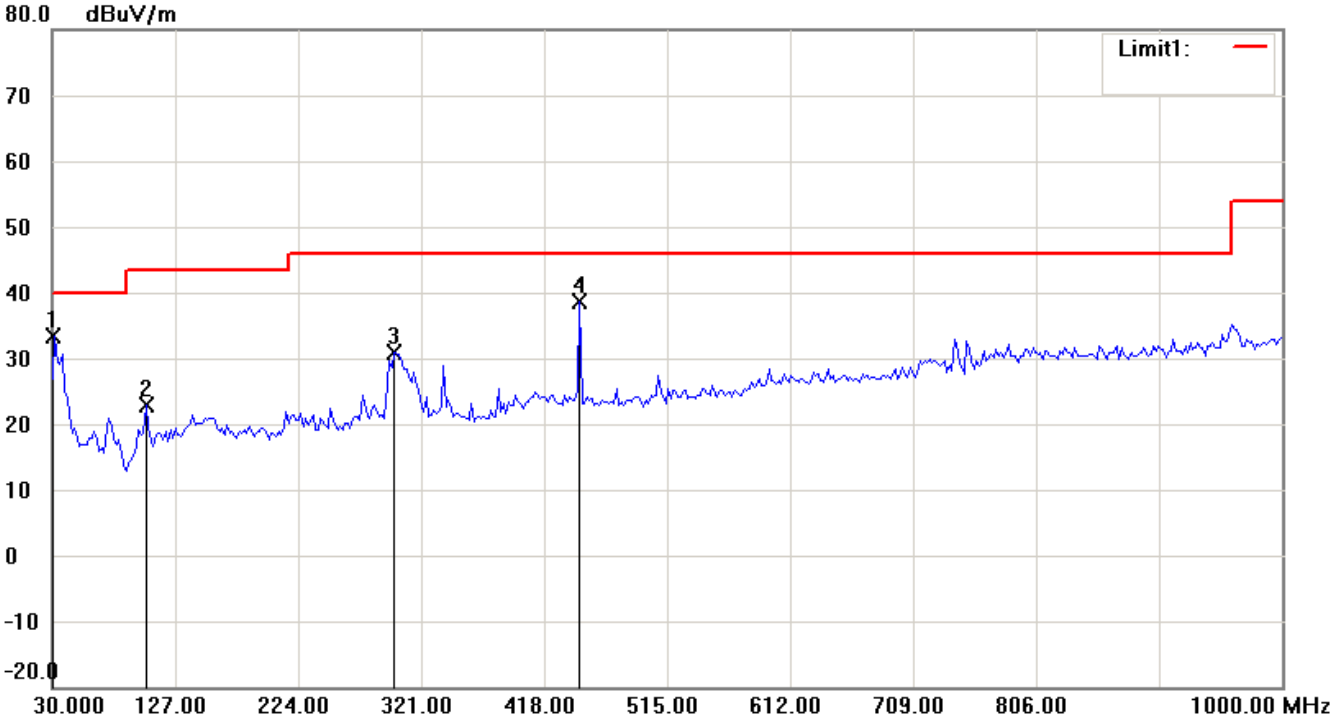
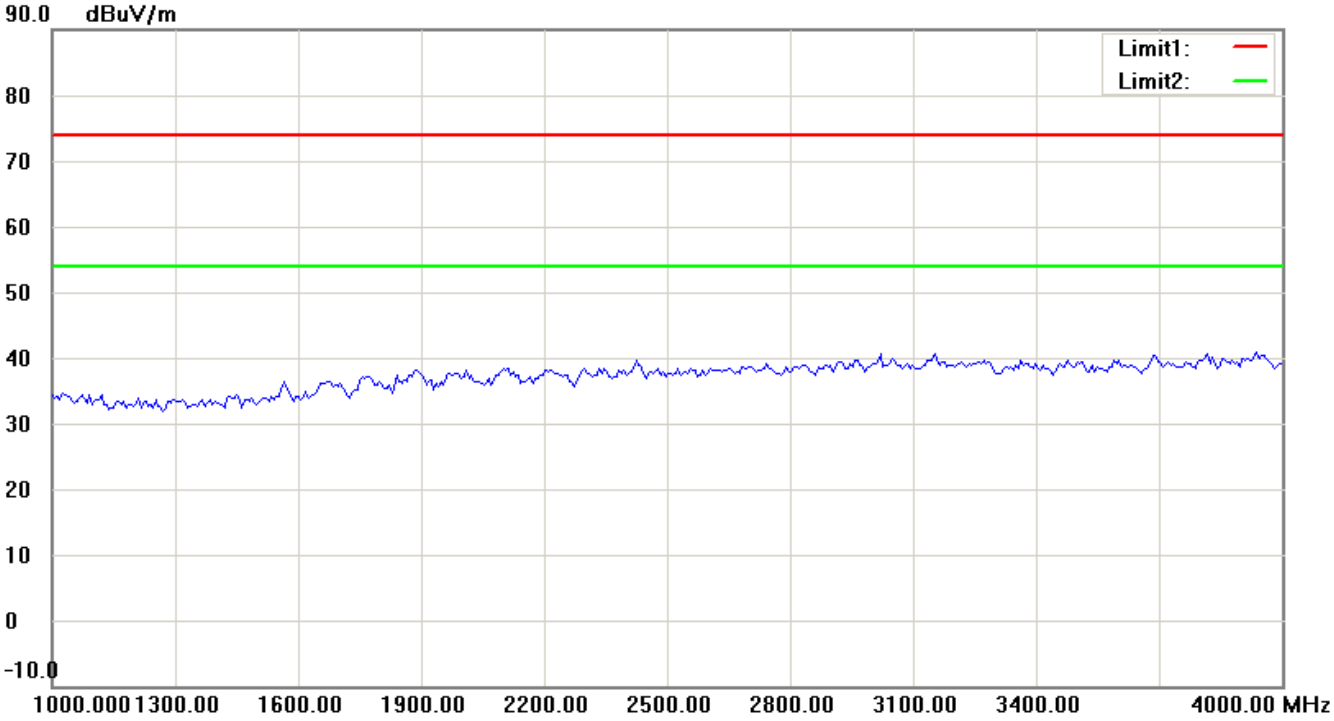
Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478

802.11a CH40 TX
Antenna Polarization H





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Up Line: Peak Limit Line Down Line: Ave Limit Line

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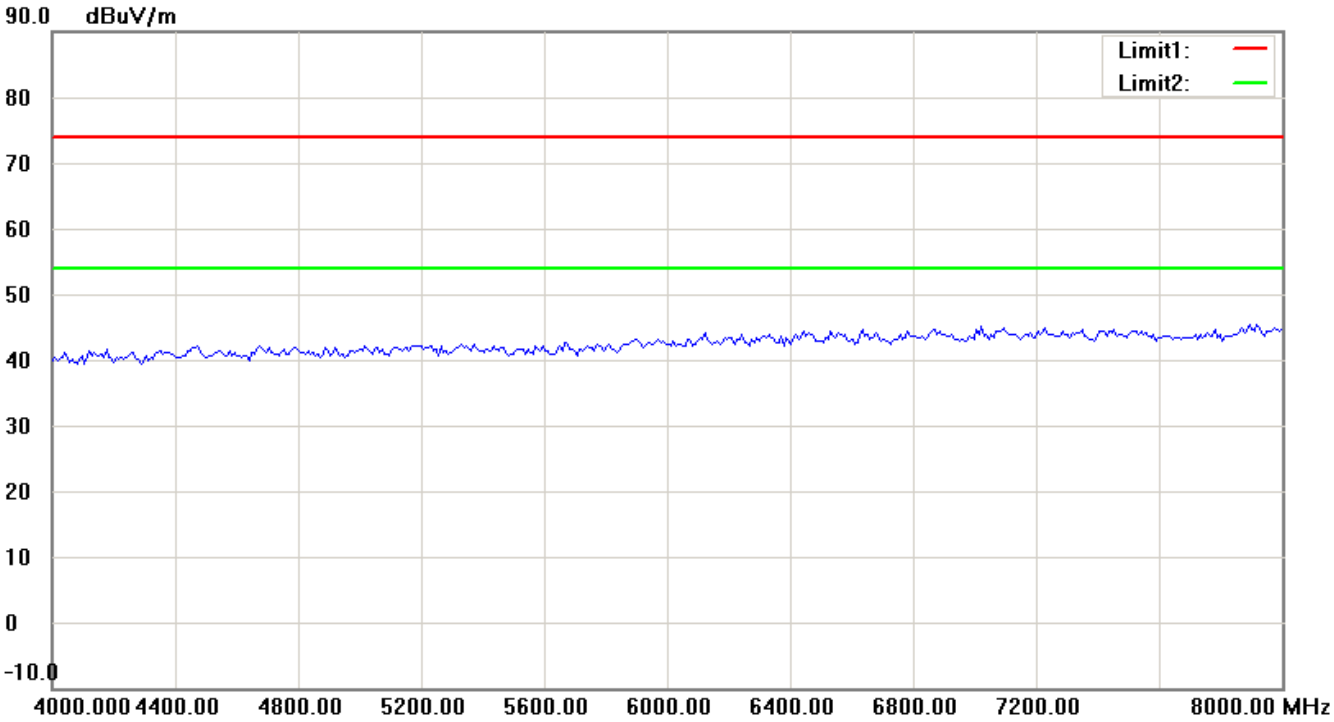

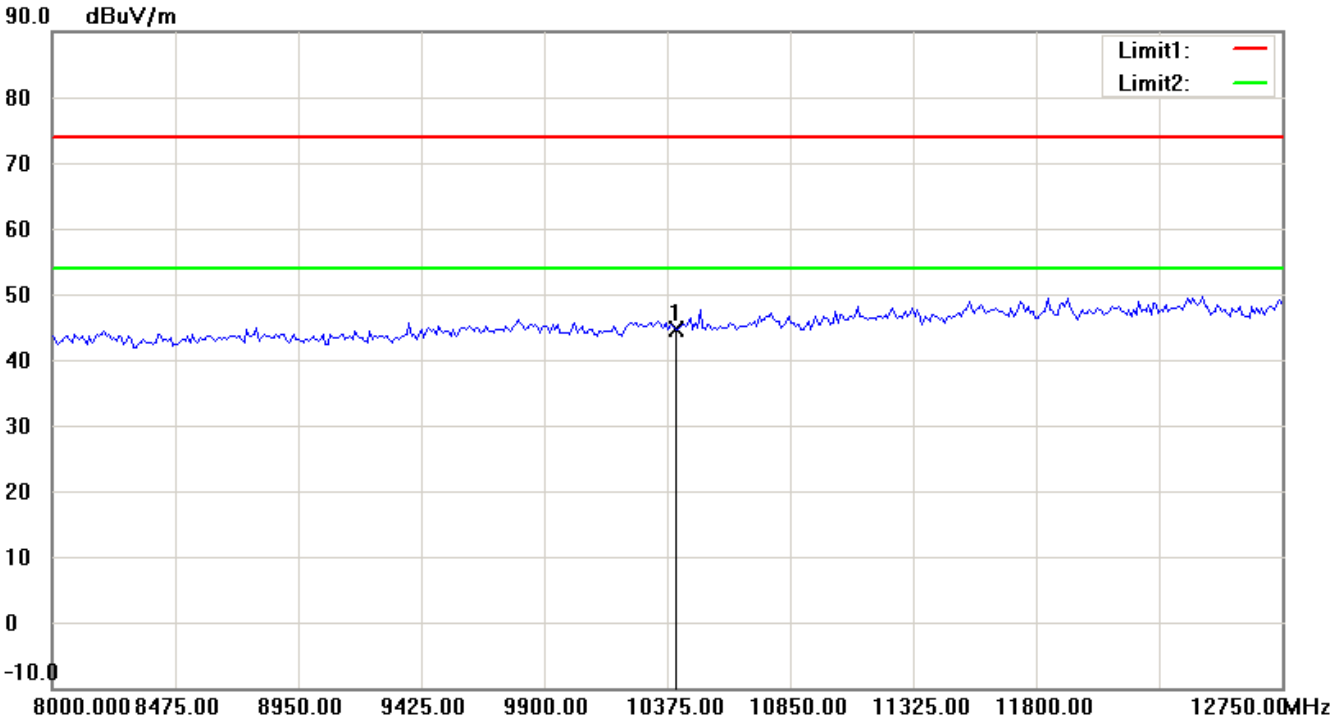

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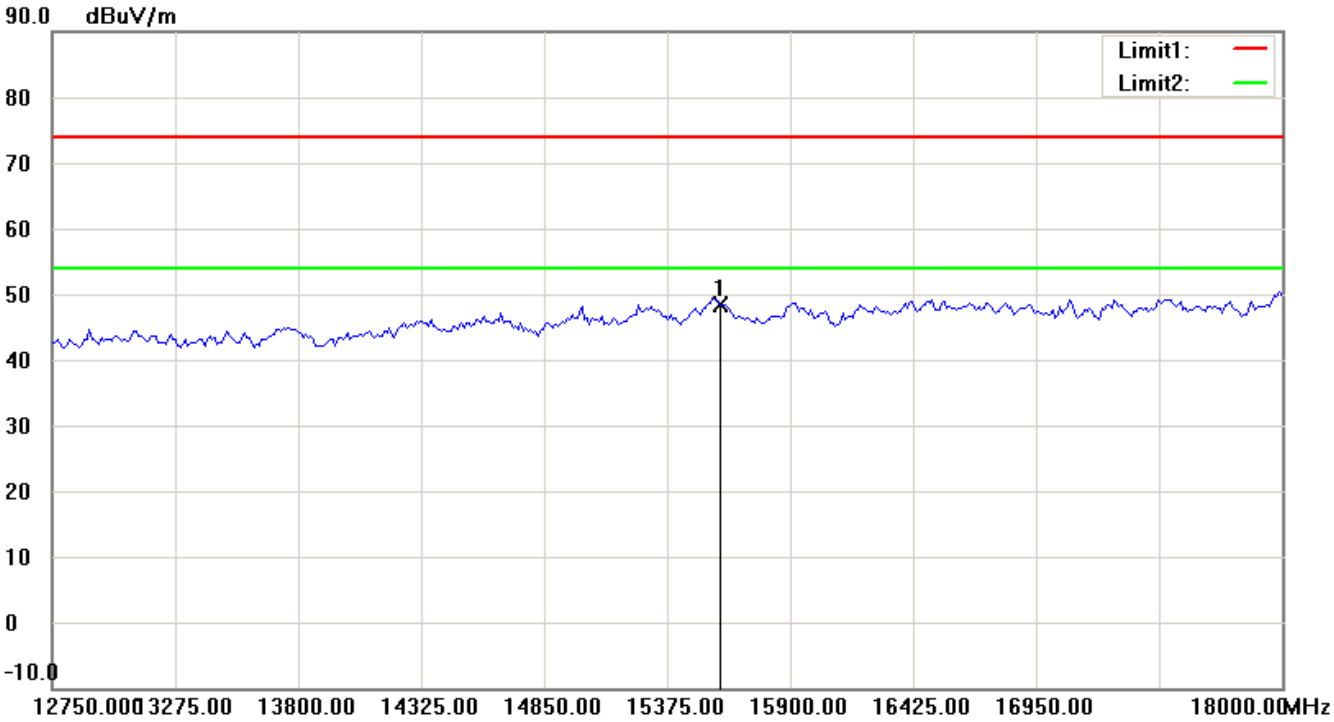

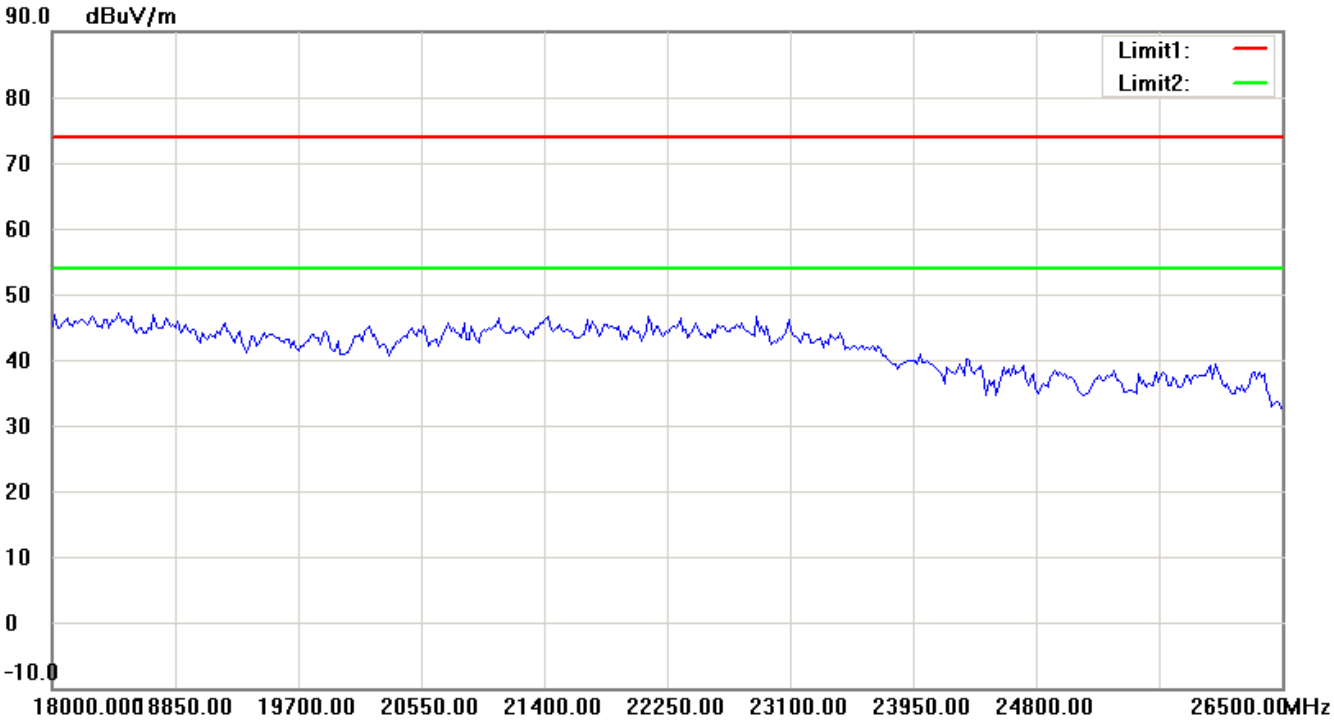

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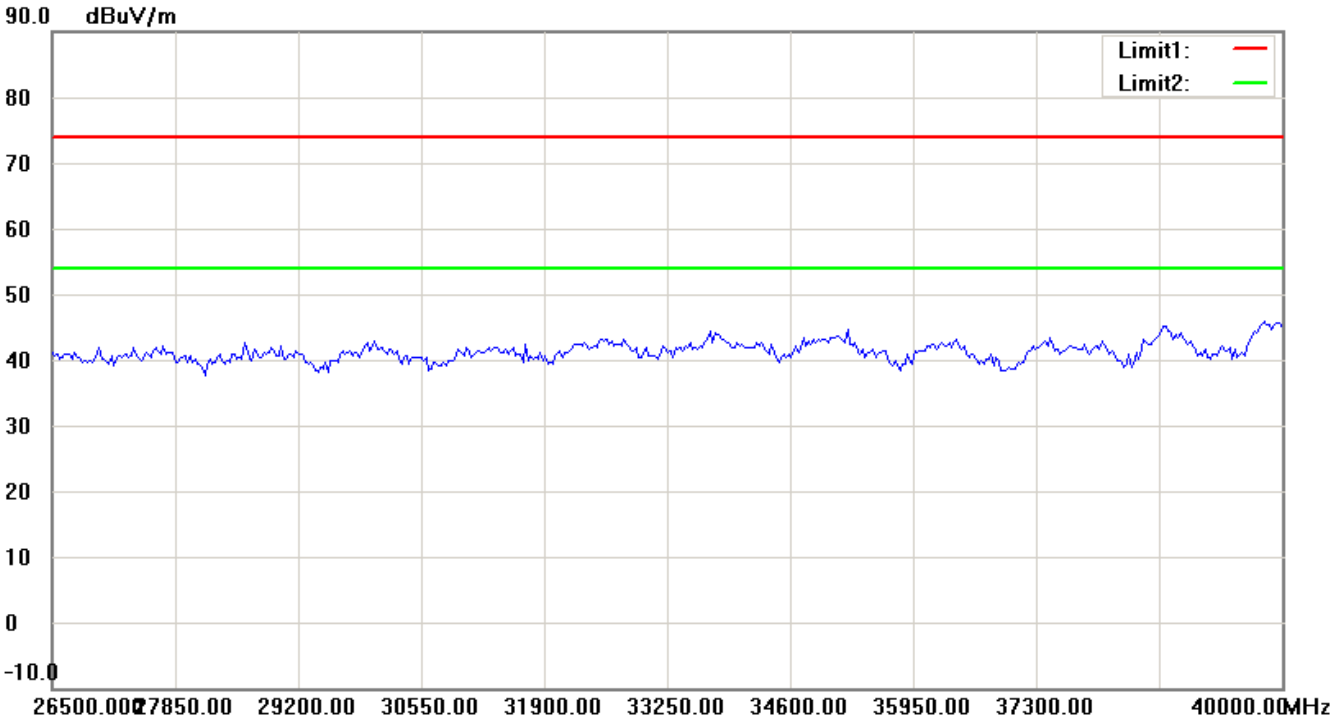
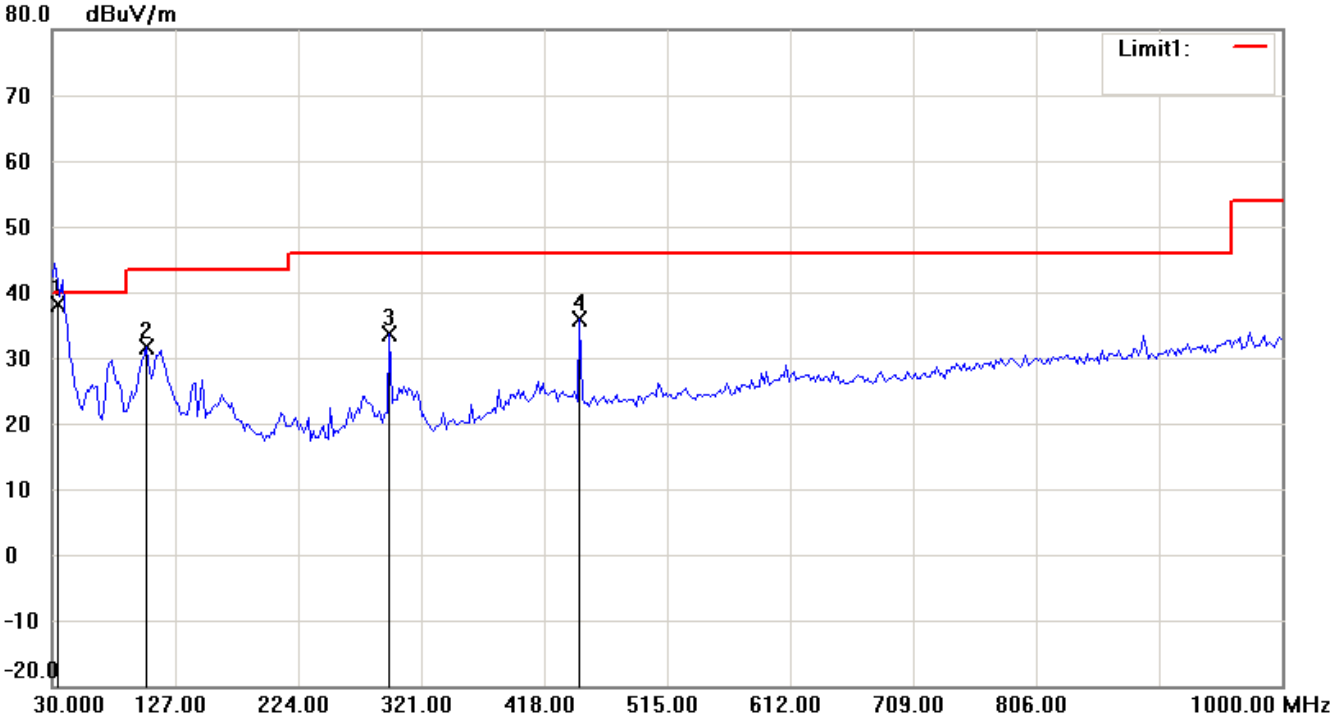


Antenna Polarization V



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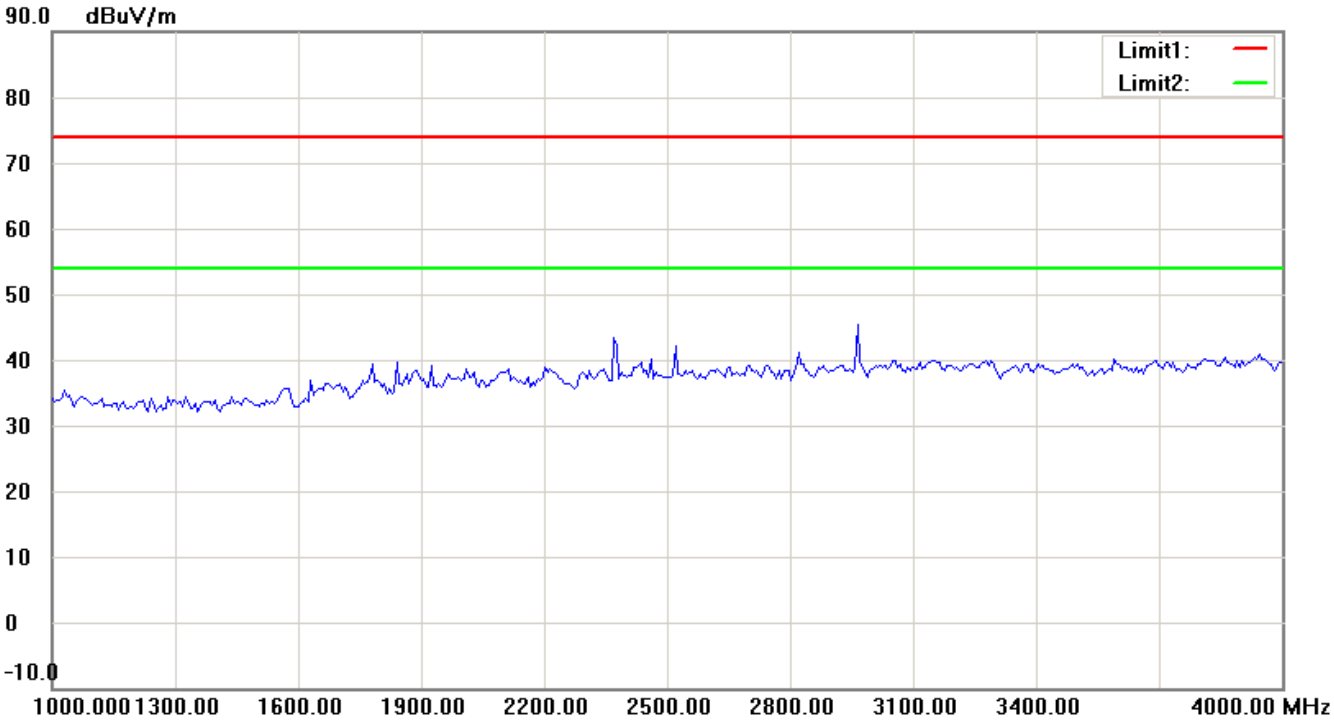

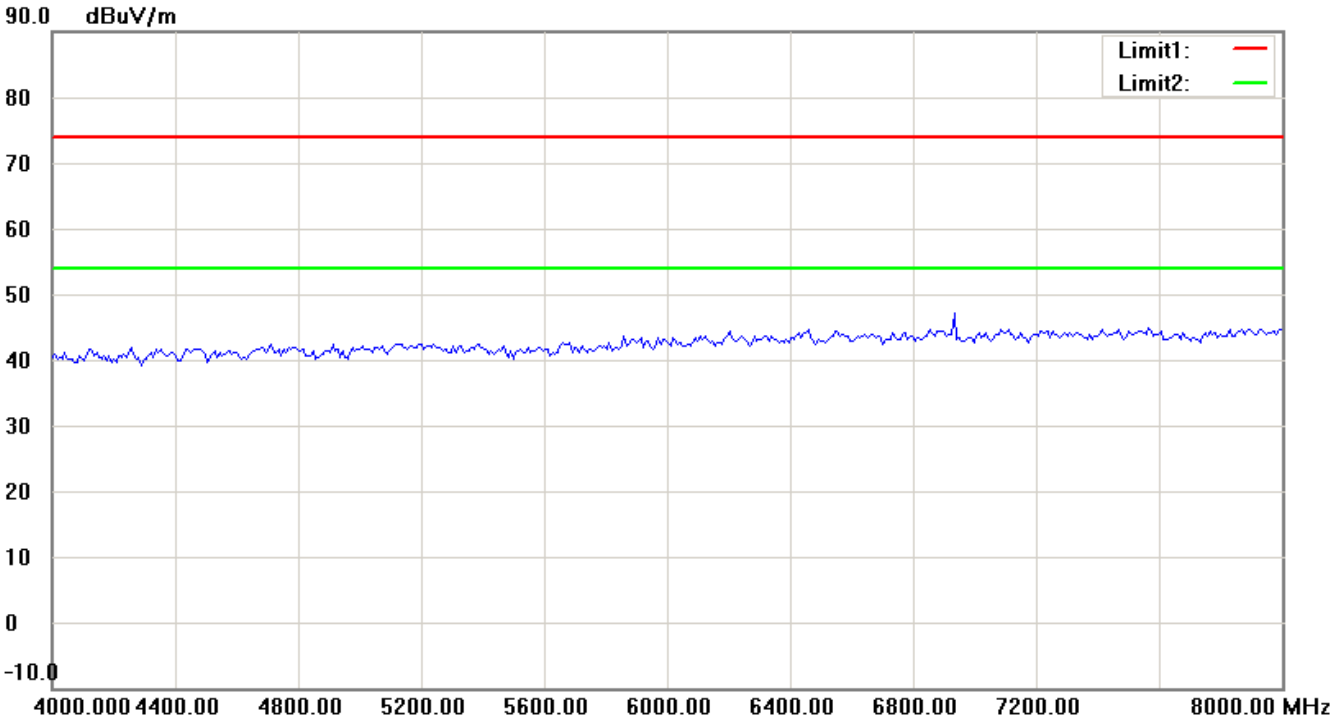

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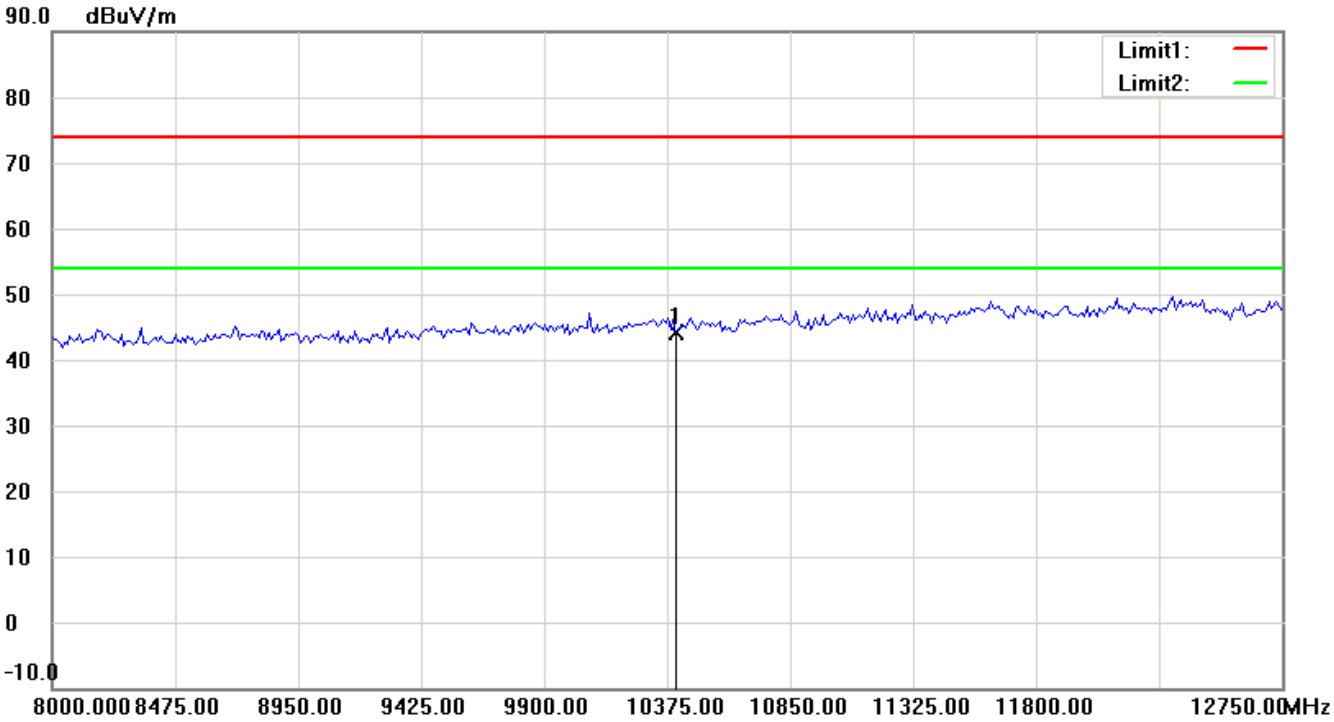

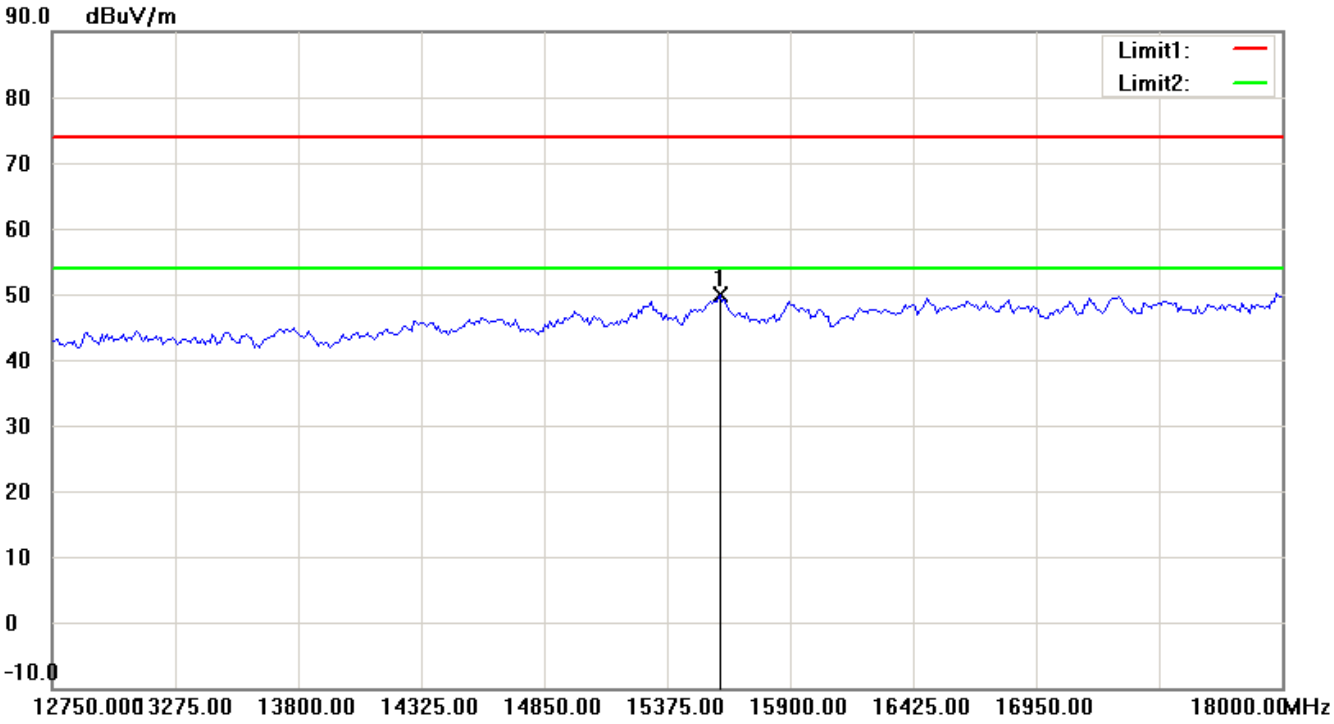

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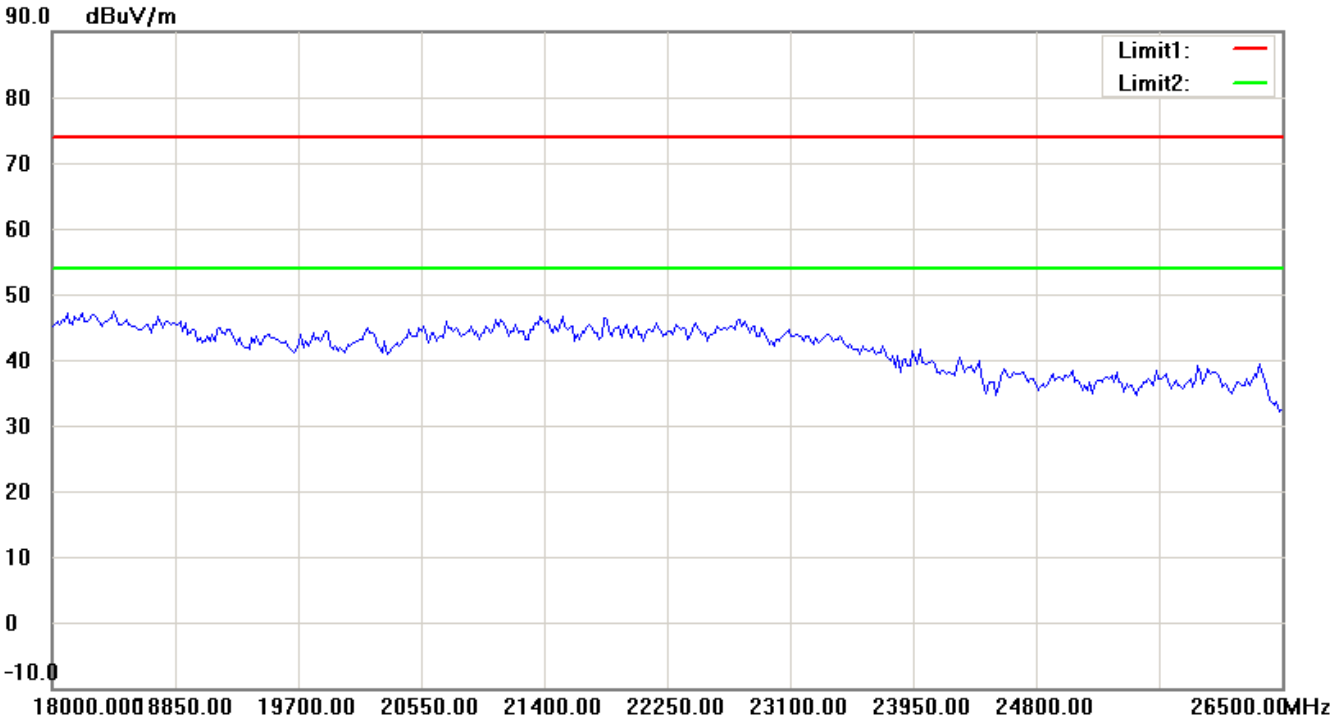

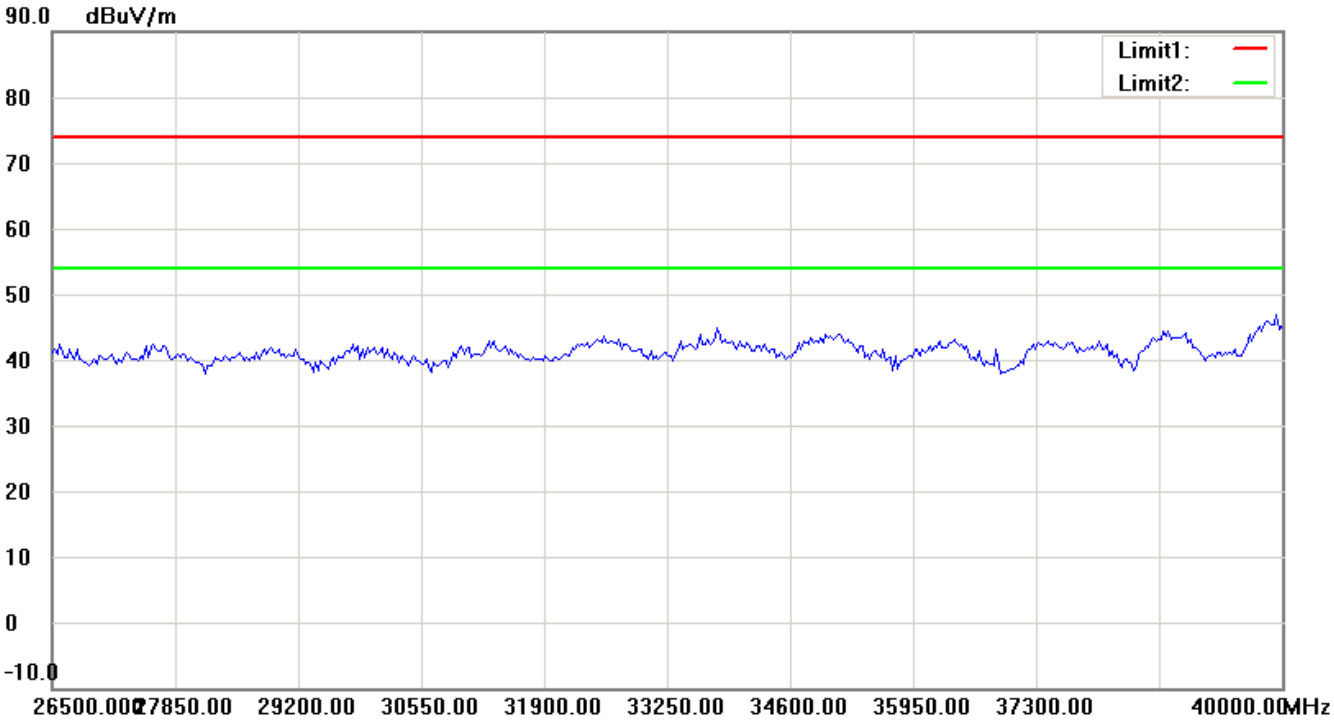

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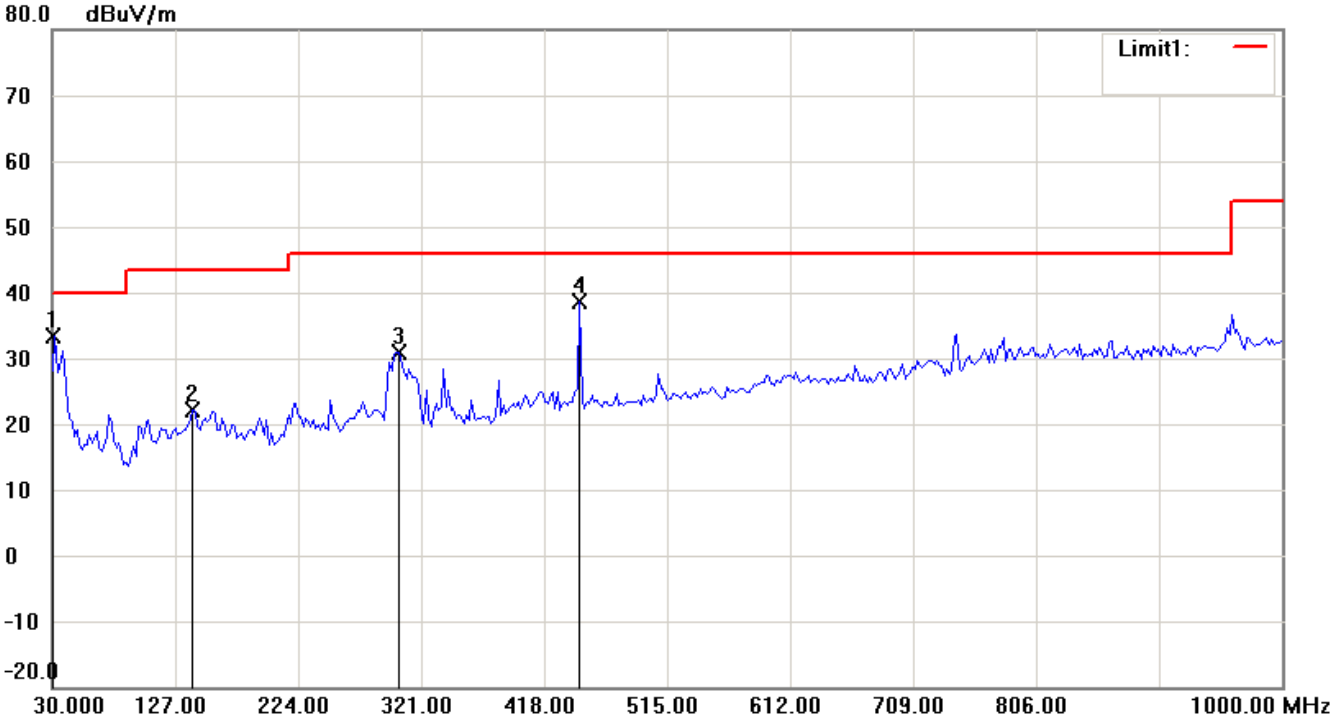
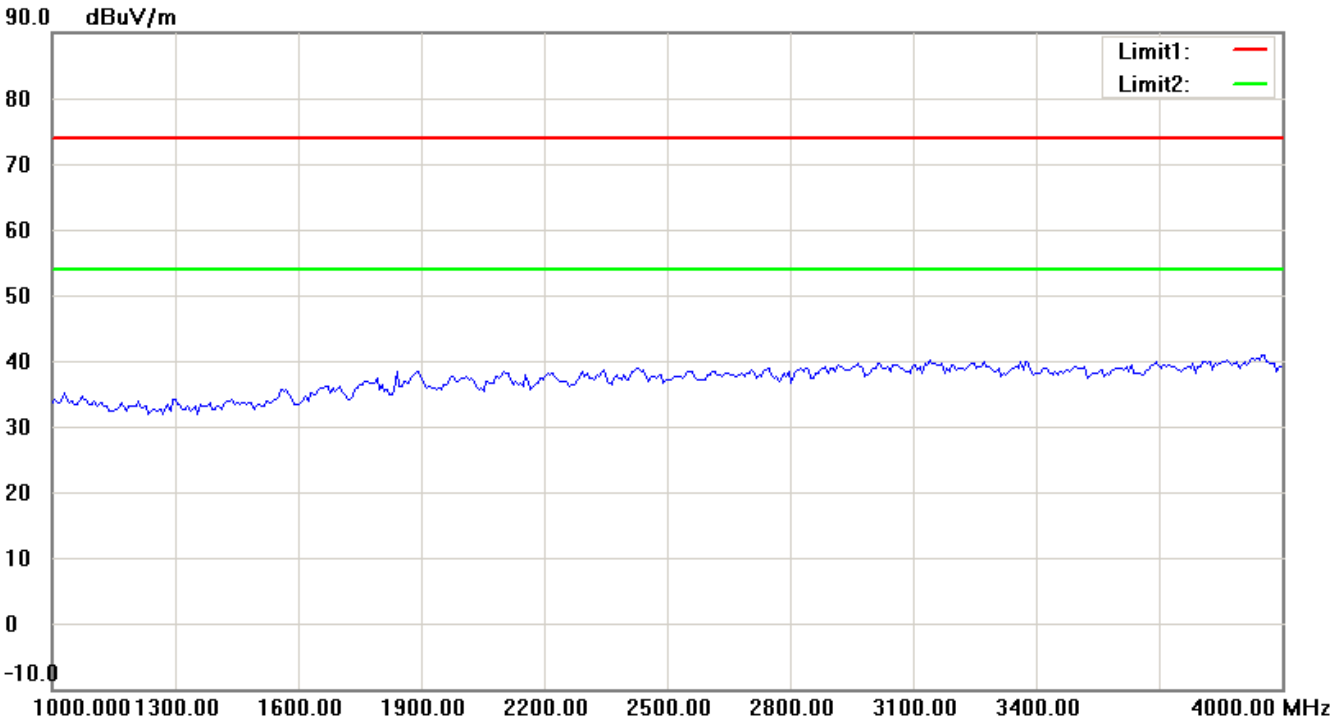
Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478

802.11a CH48 TX
Antenna Polarization H





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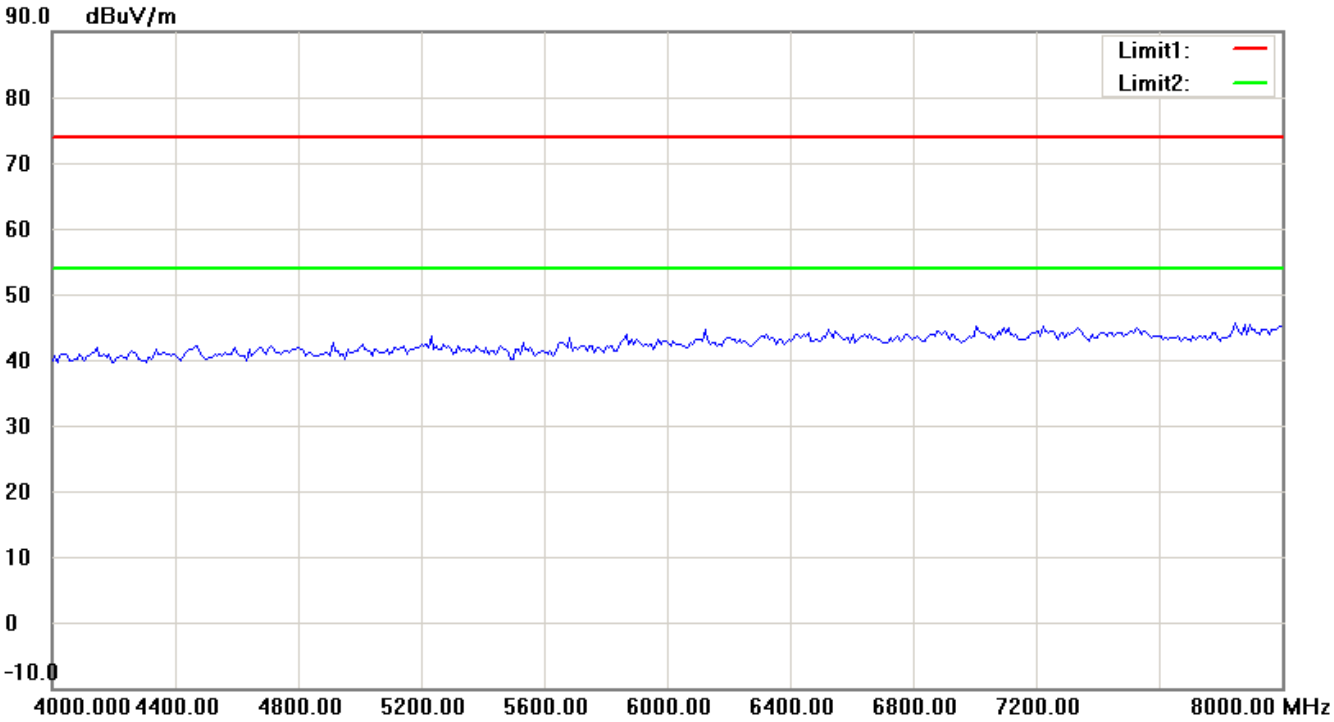

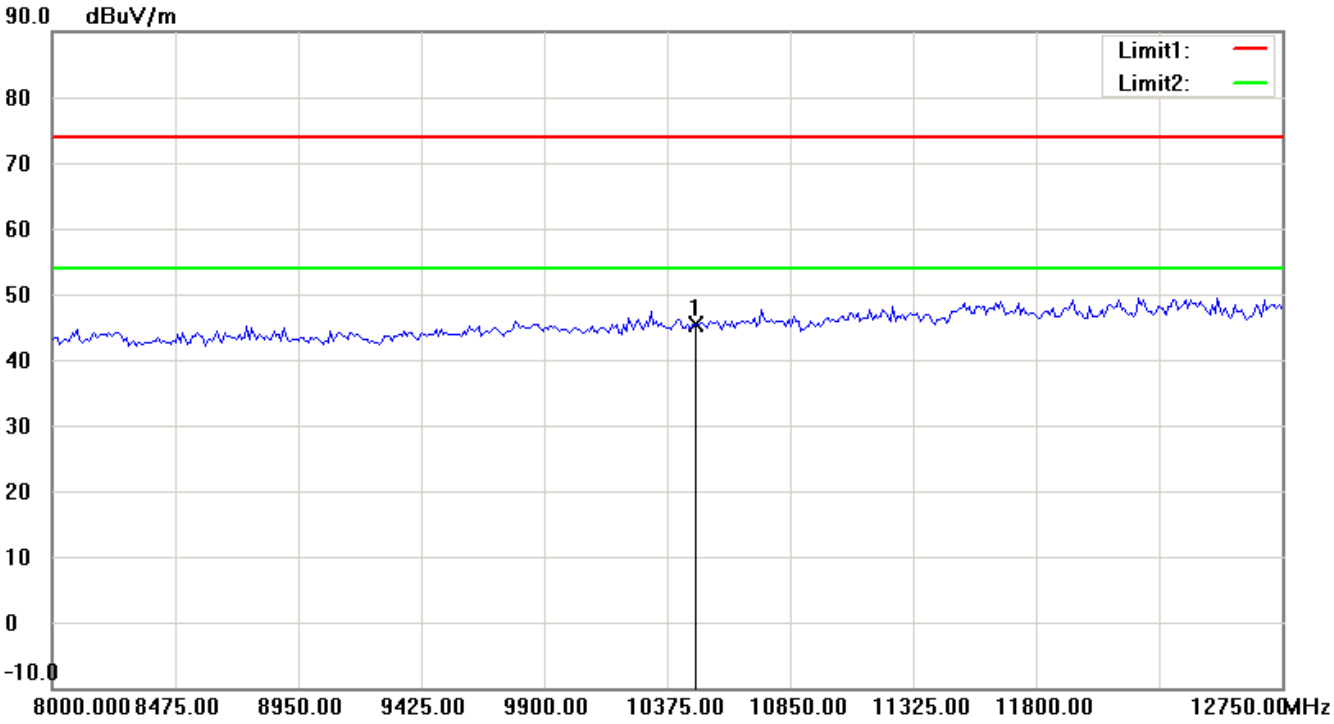

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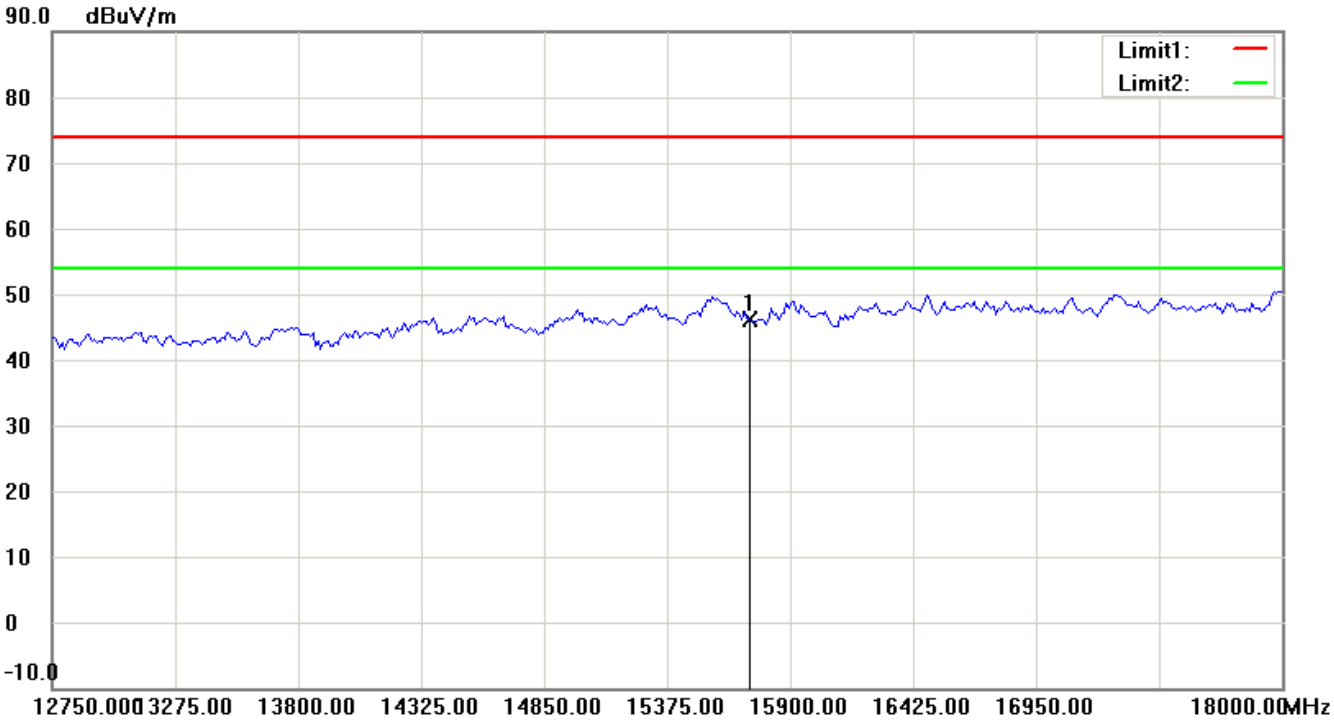

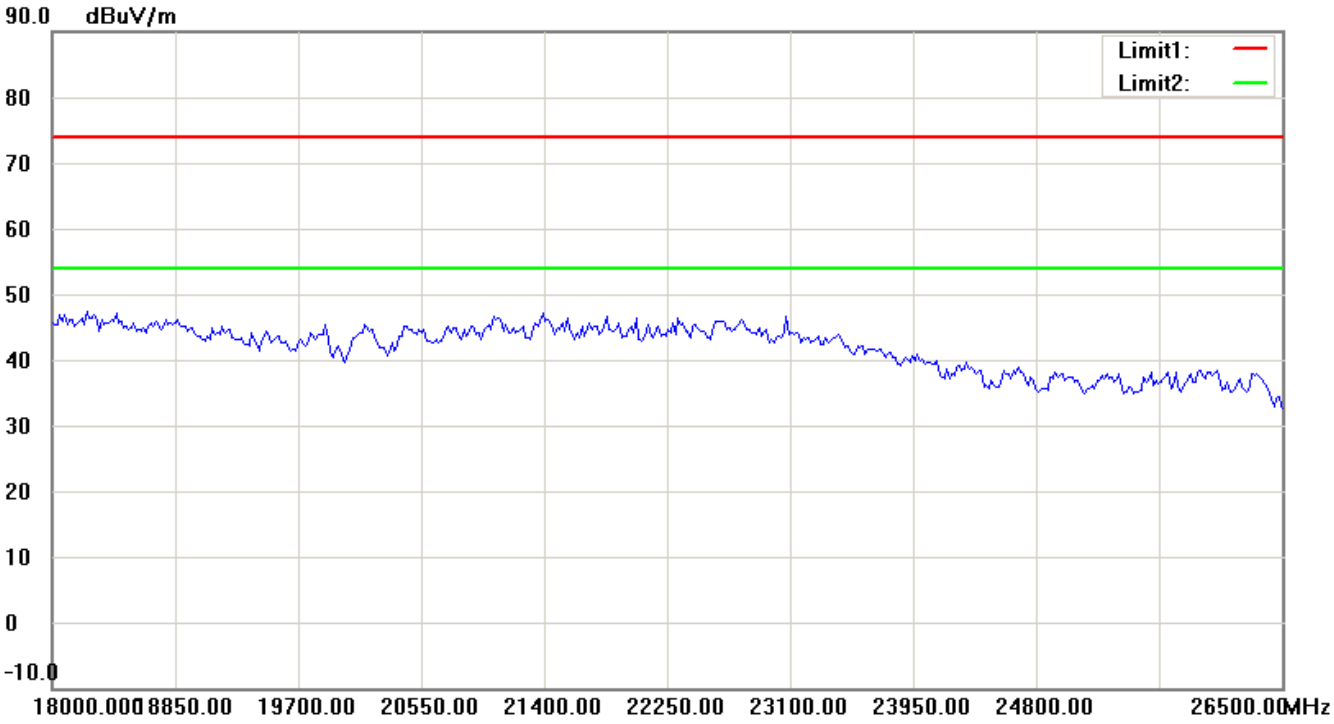

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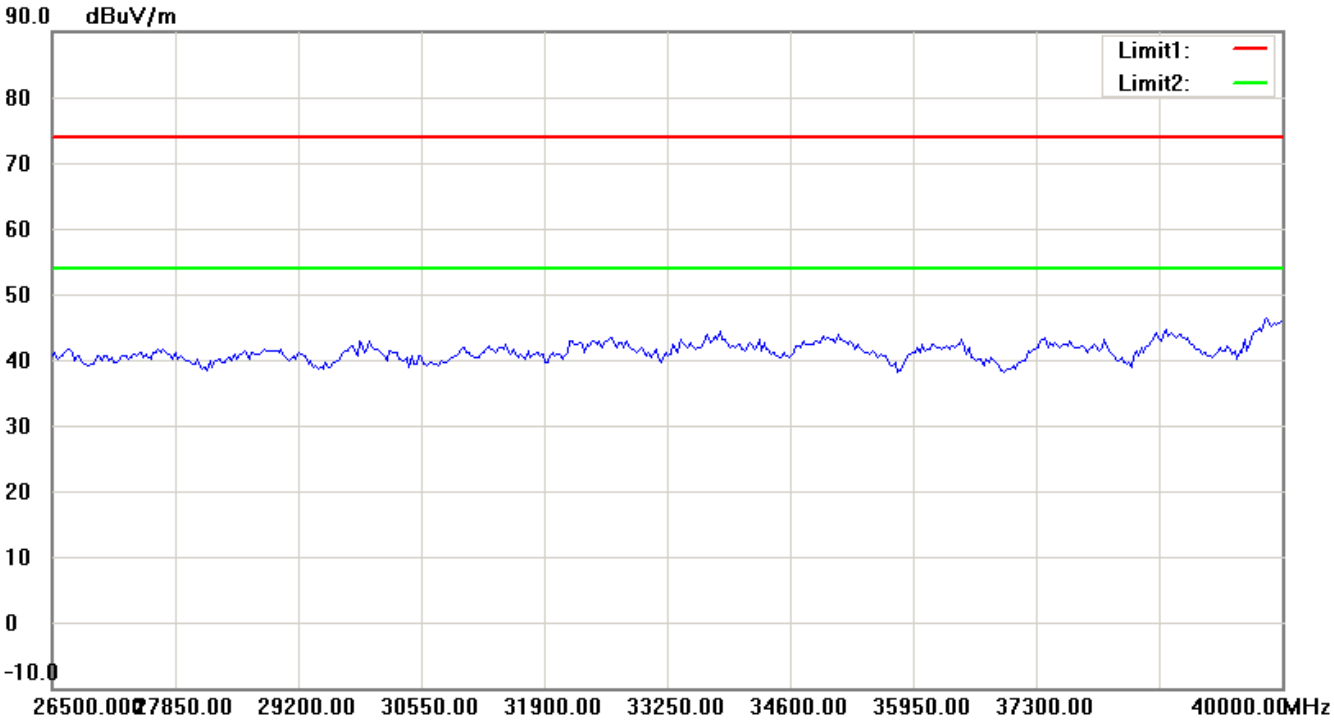
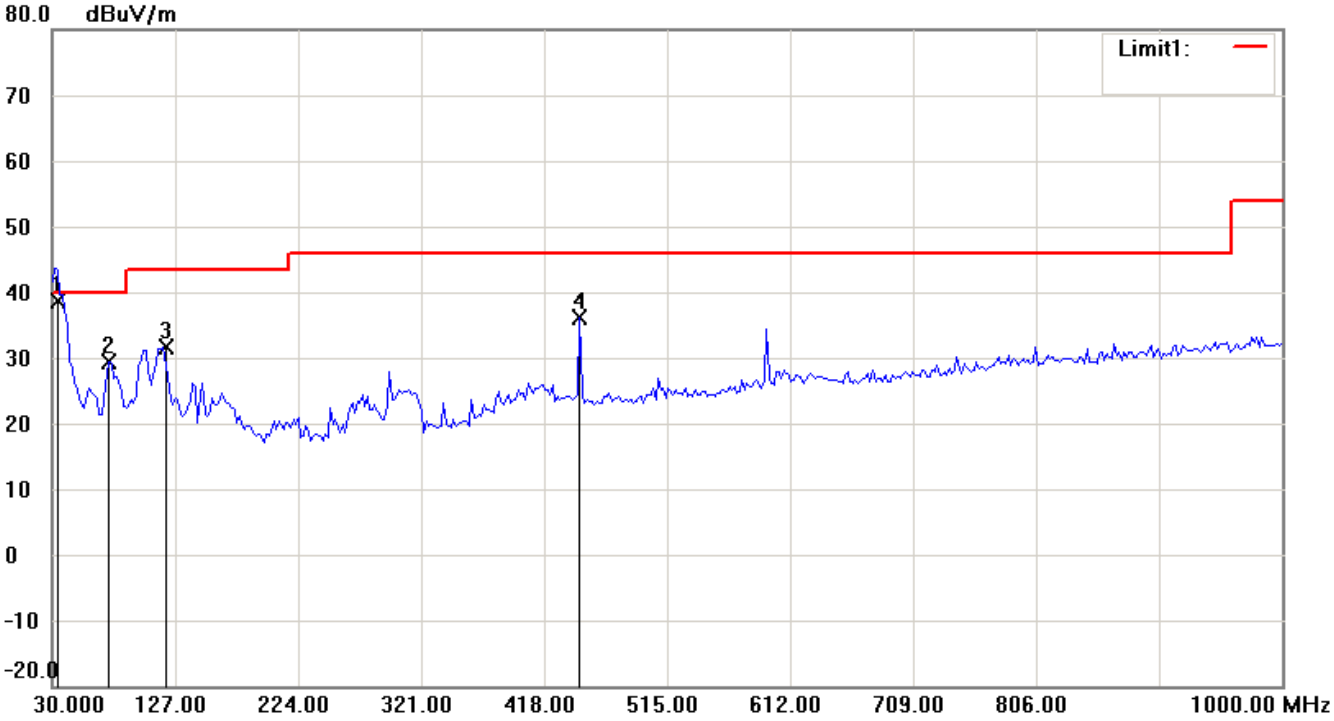


Antenna Polarization V



Note
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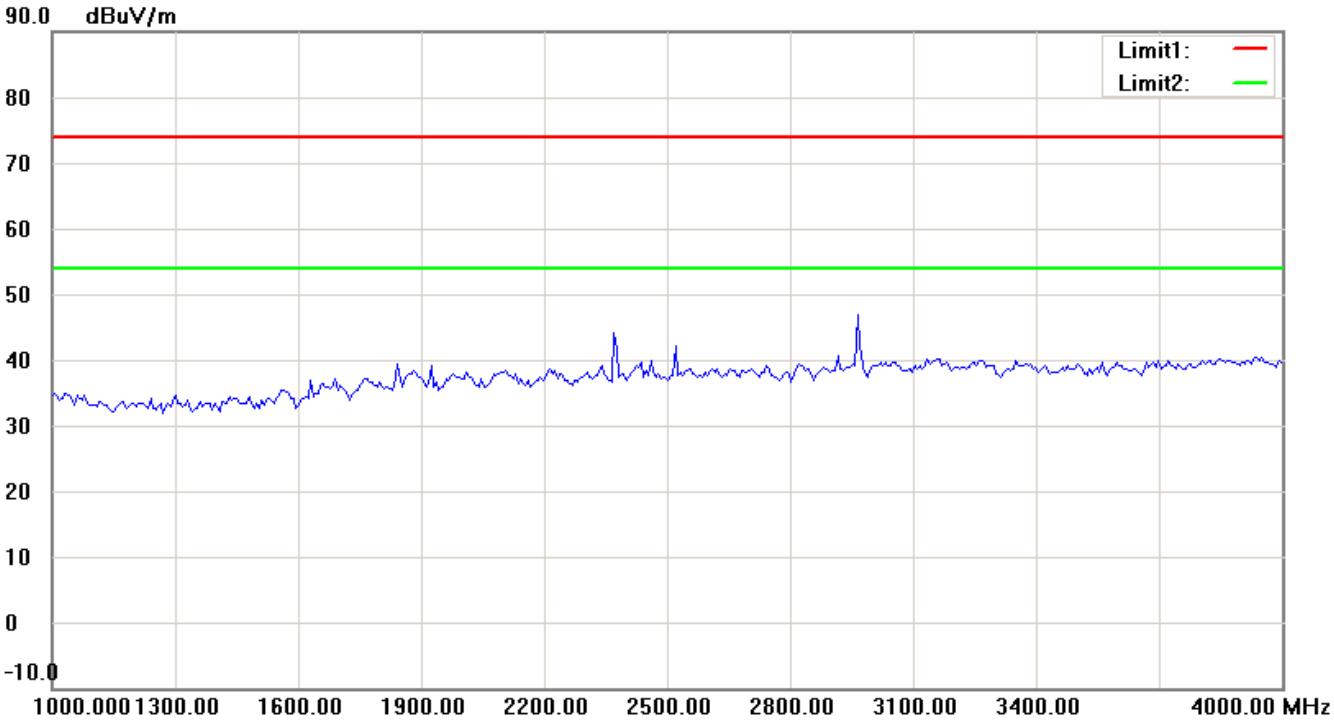

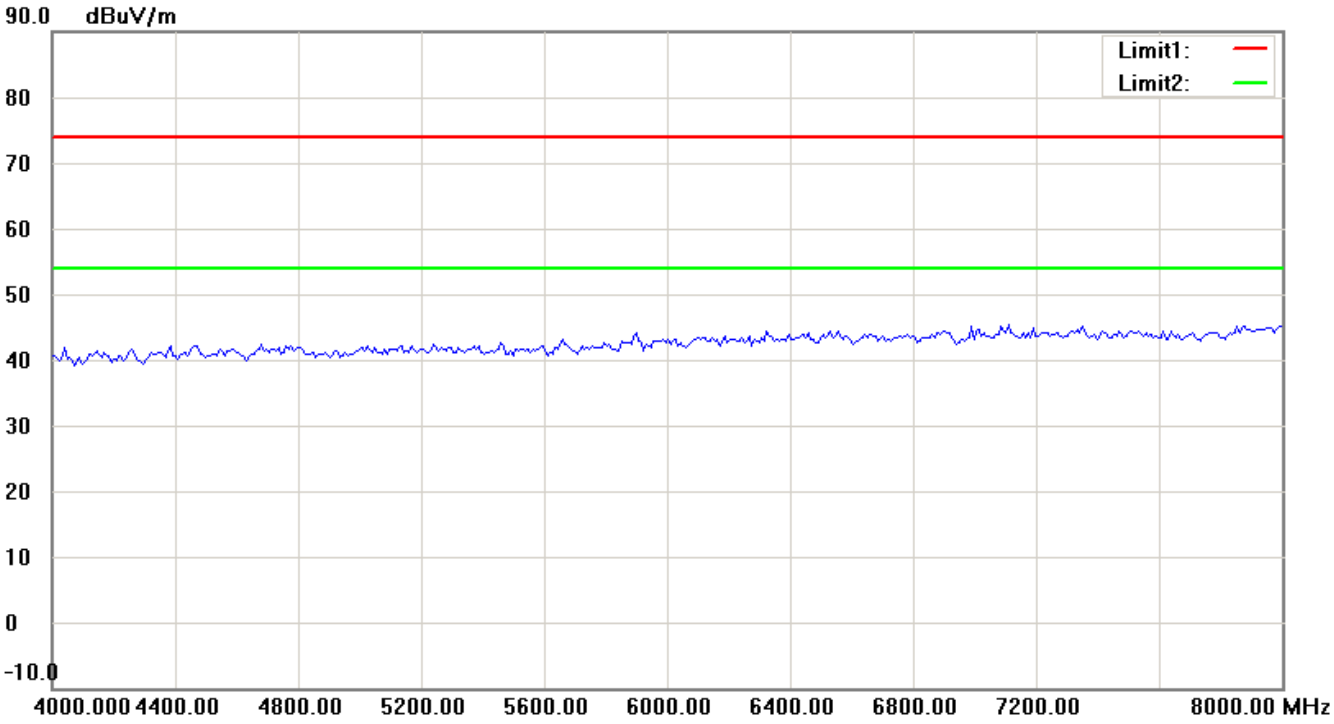

Note
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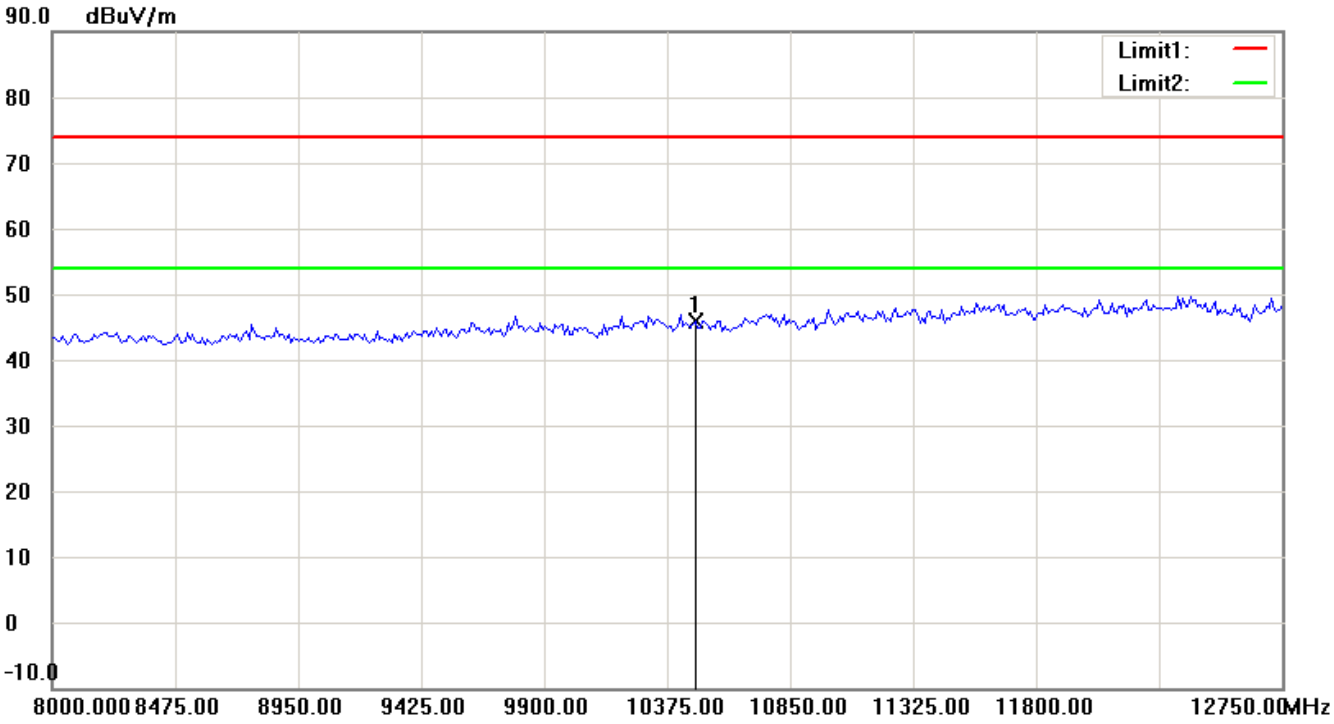

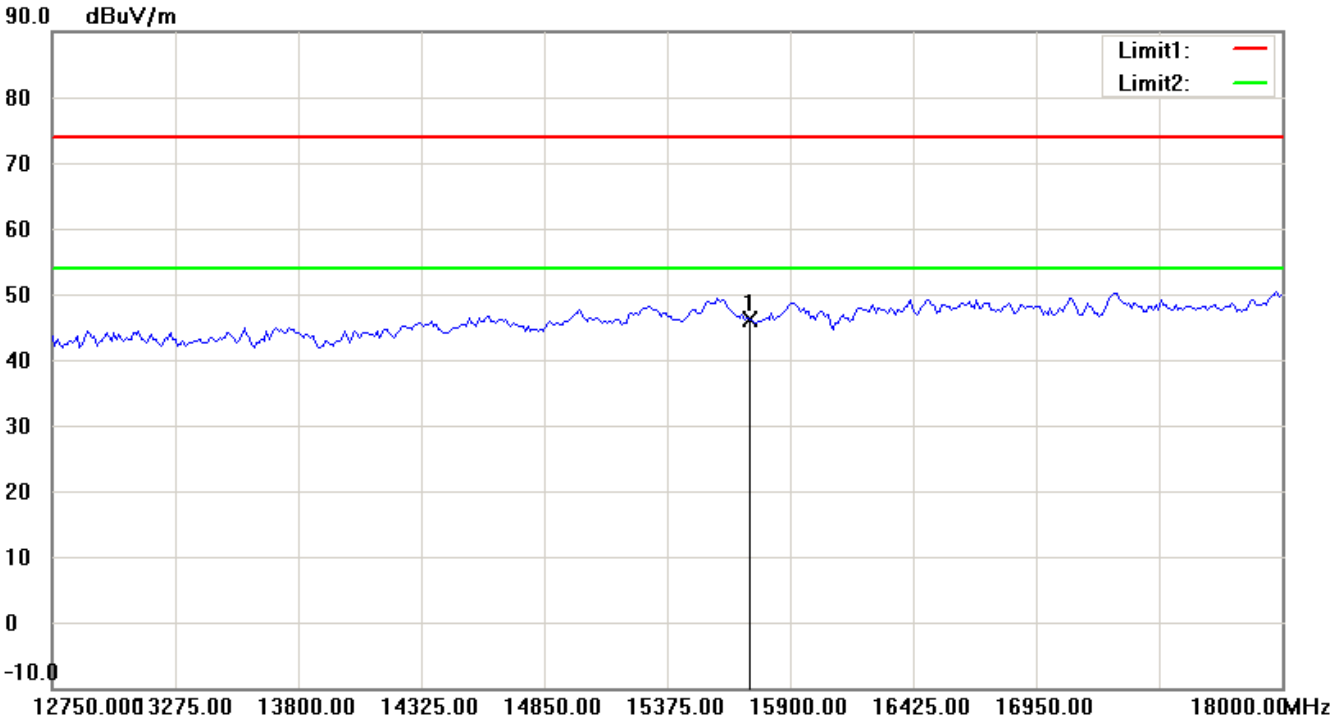

Note
Up Line: Peak Limit Line Down Line: Ave Limit Line

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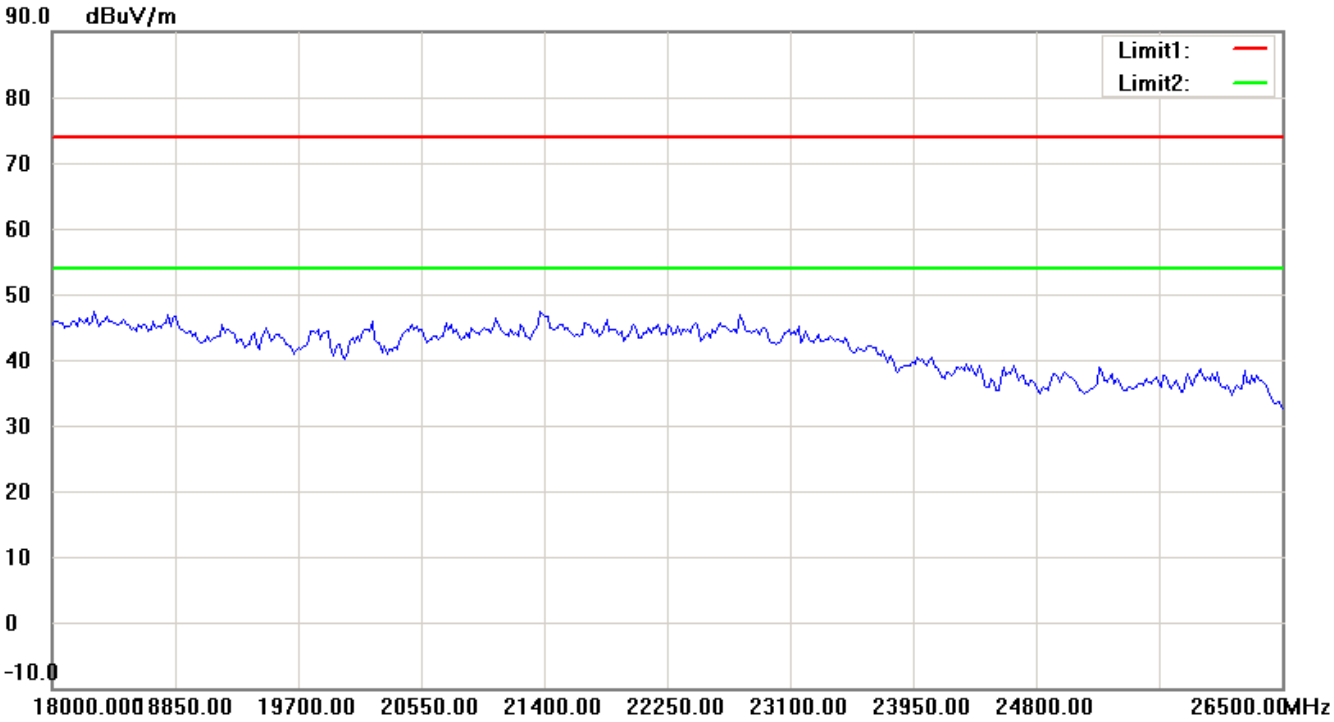

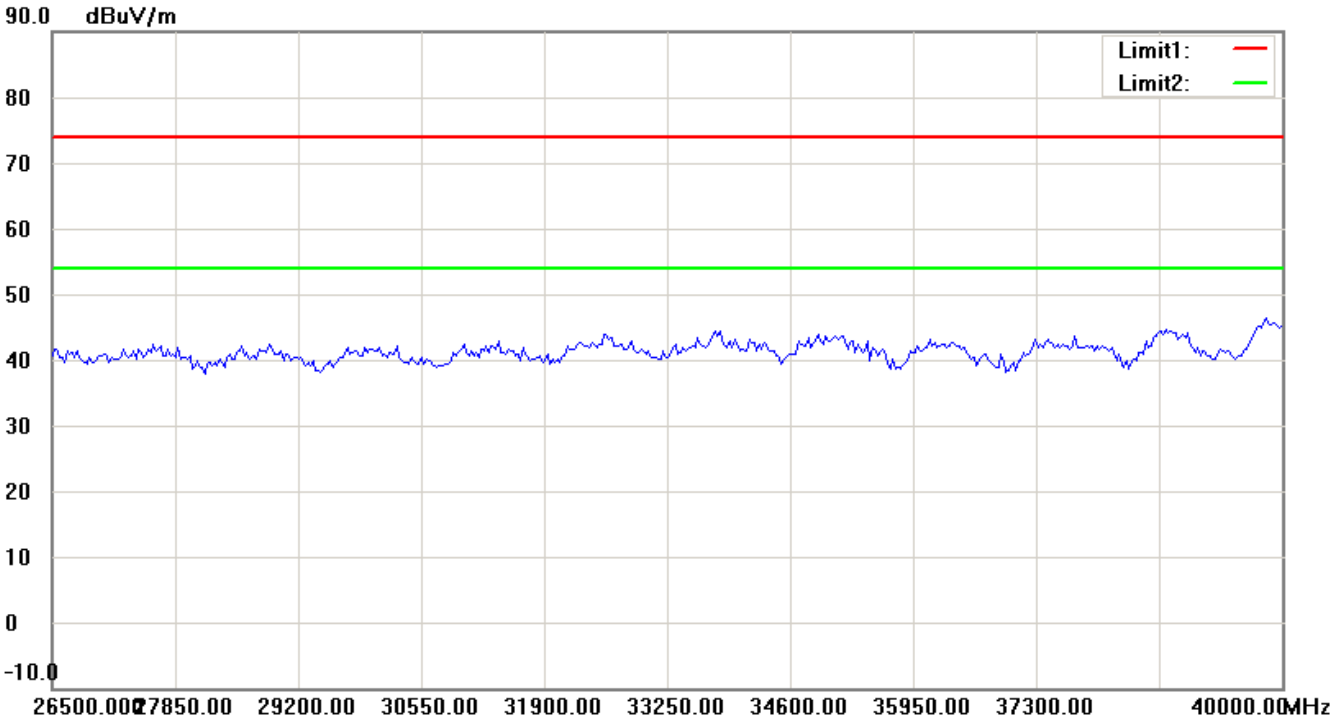

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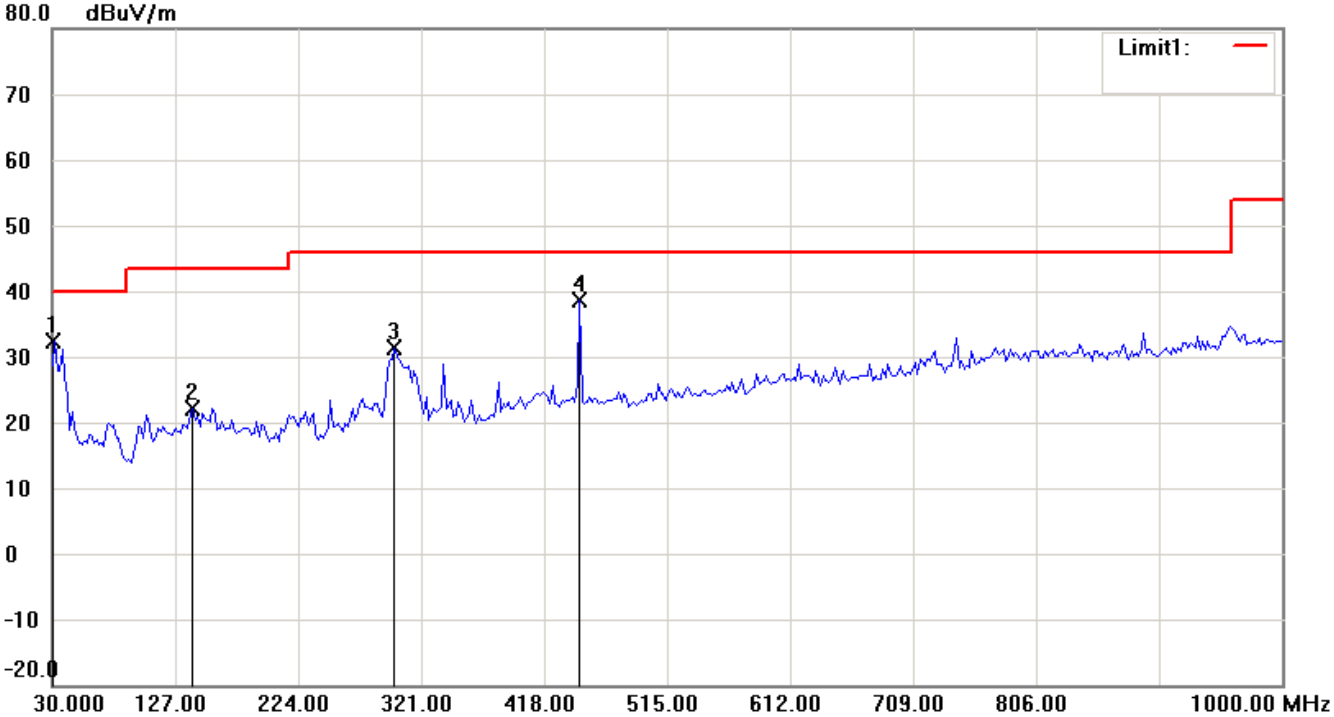
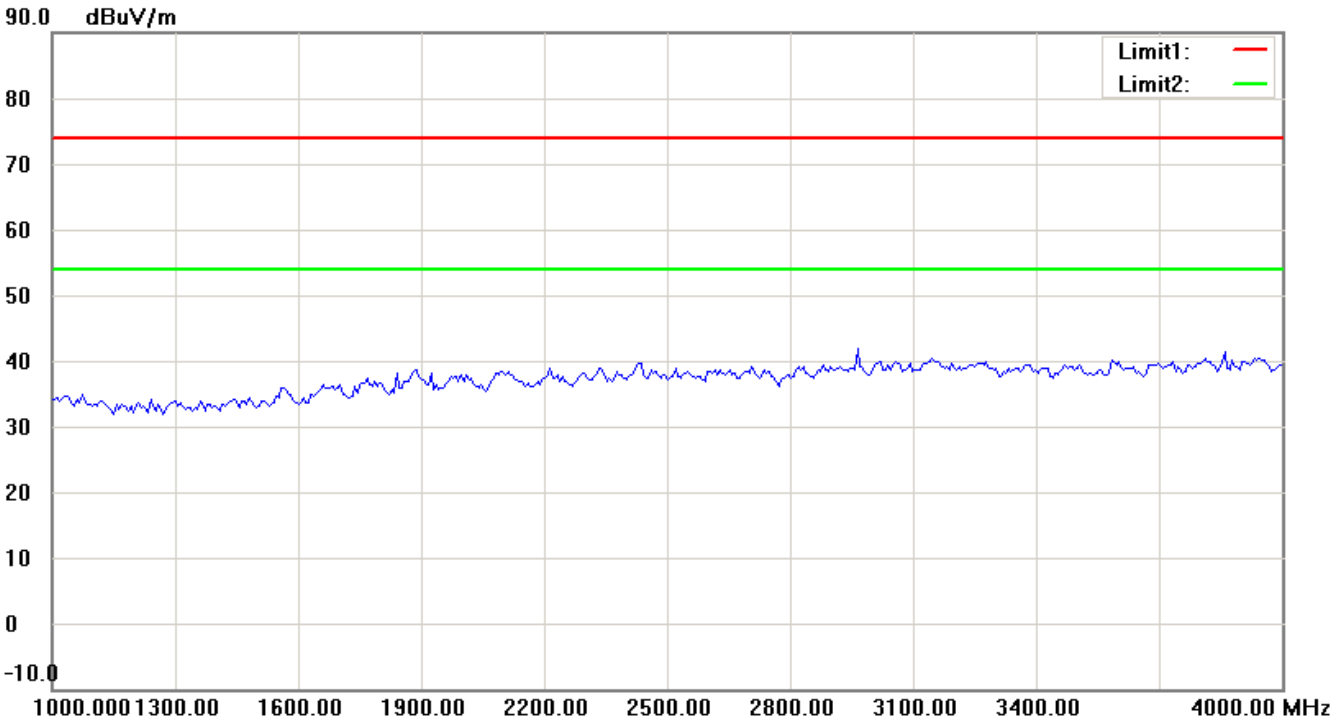
Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478

ANT B (ANT 2)

802.11a CH36 TX
Antenna Polarization H





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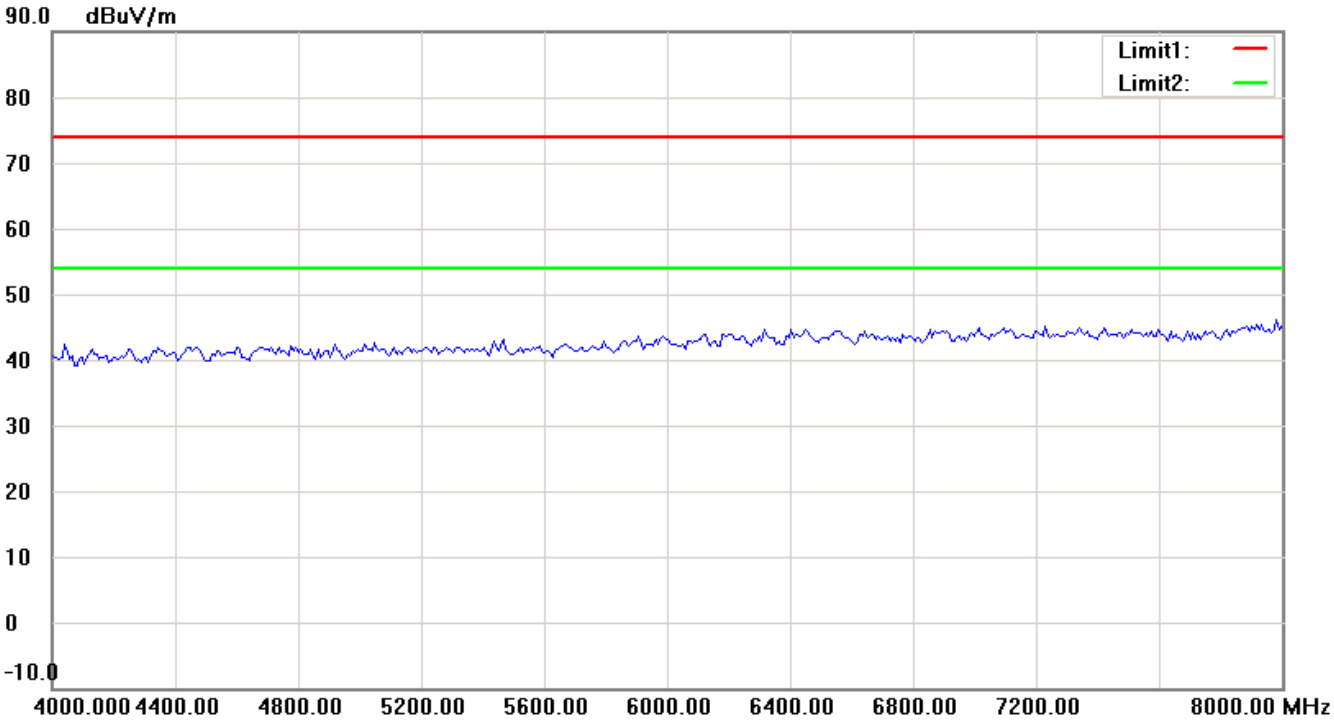

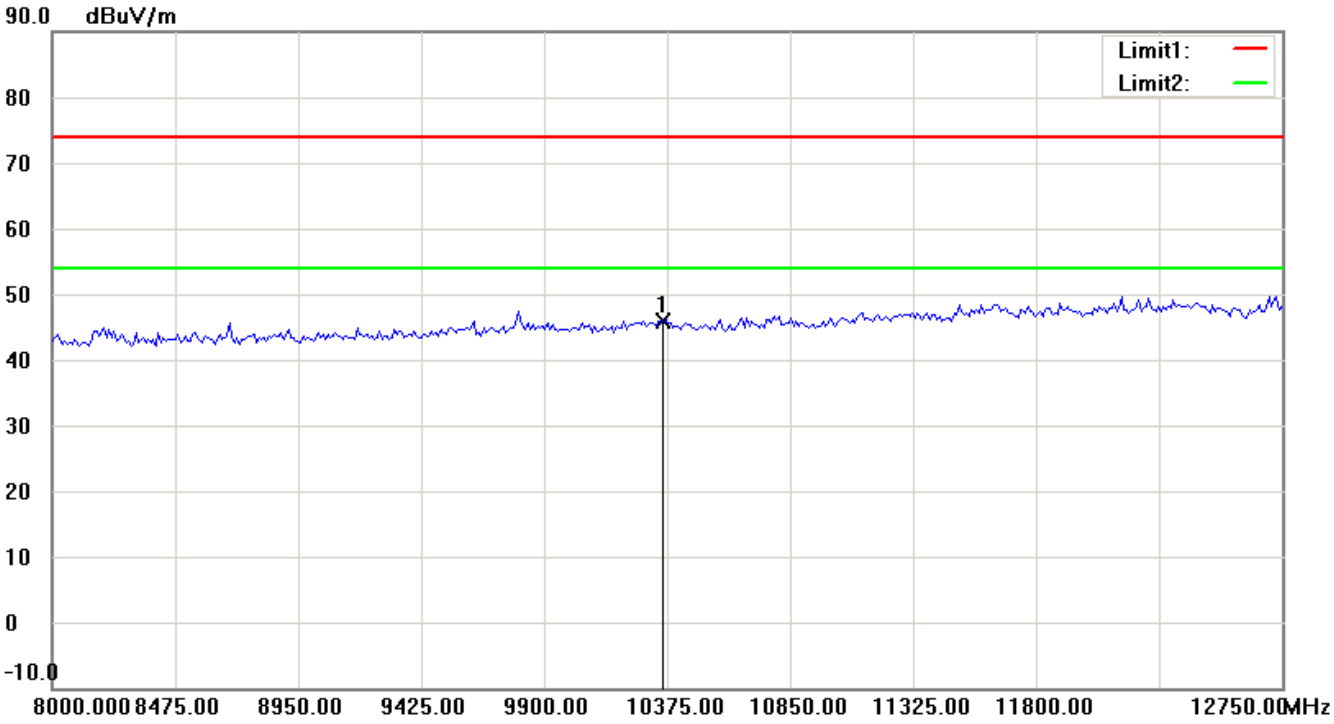

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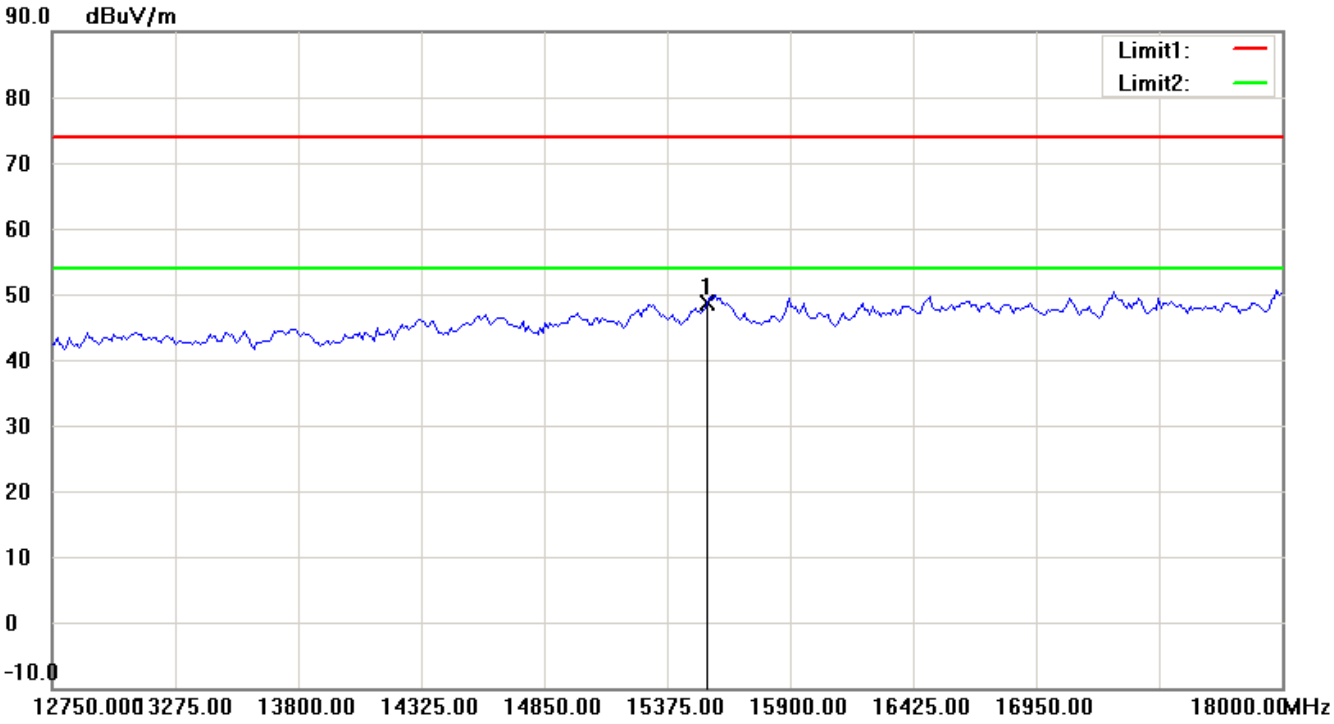

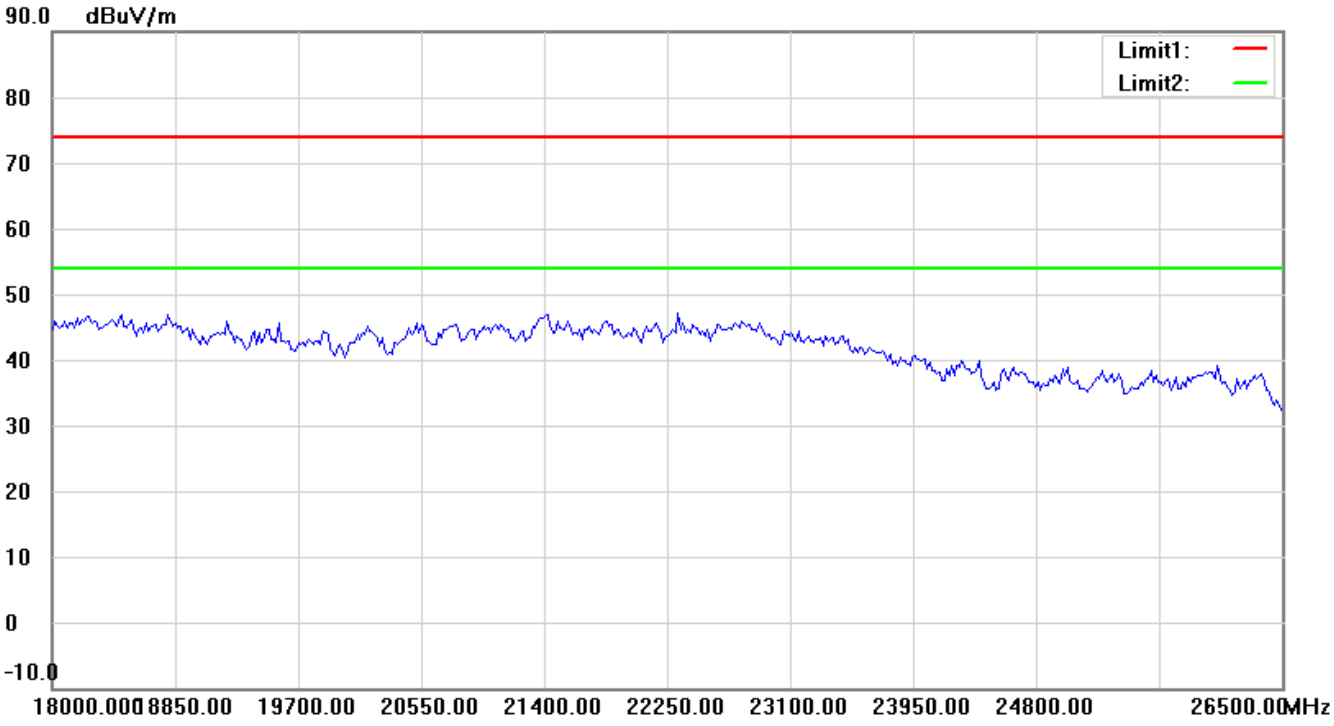

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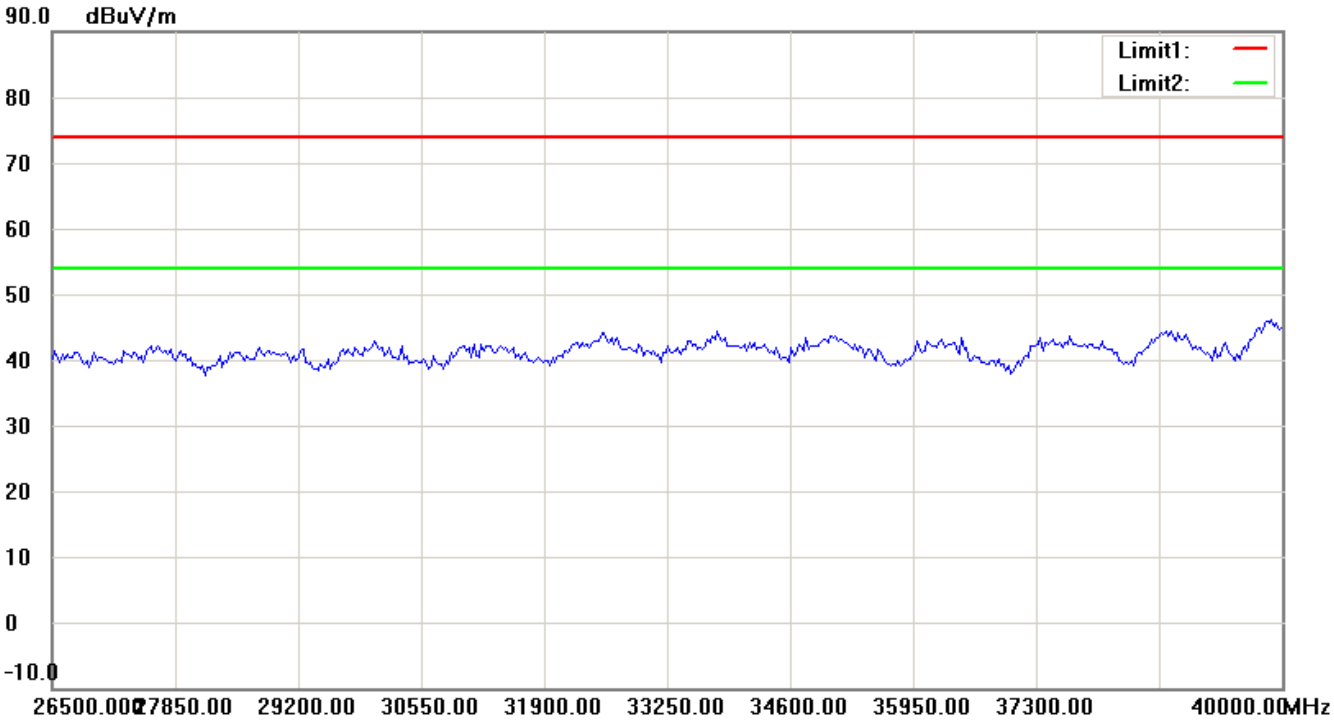
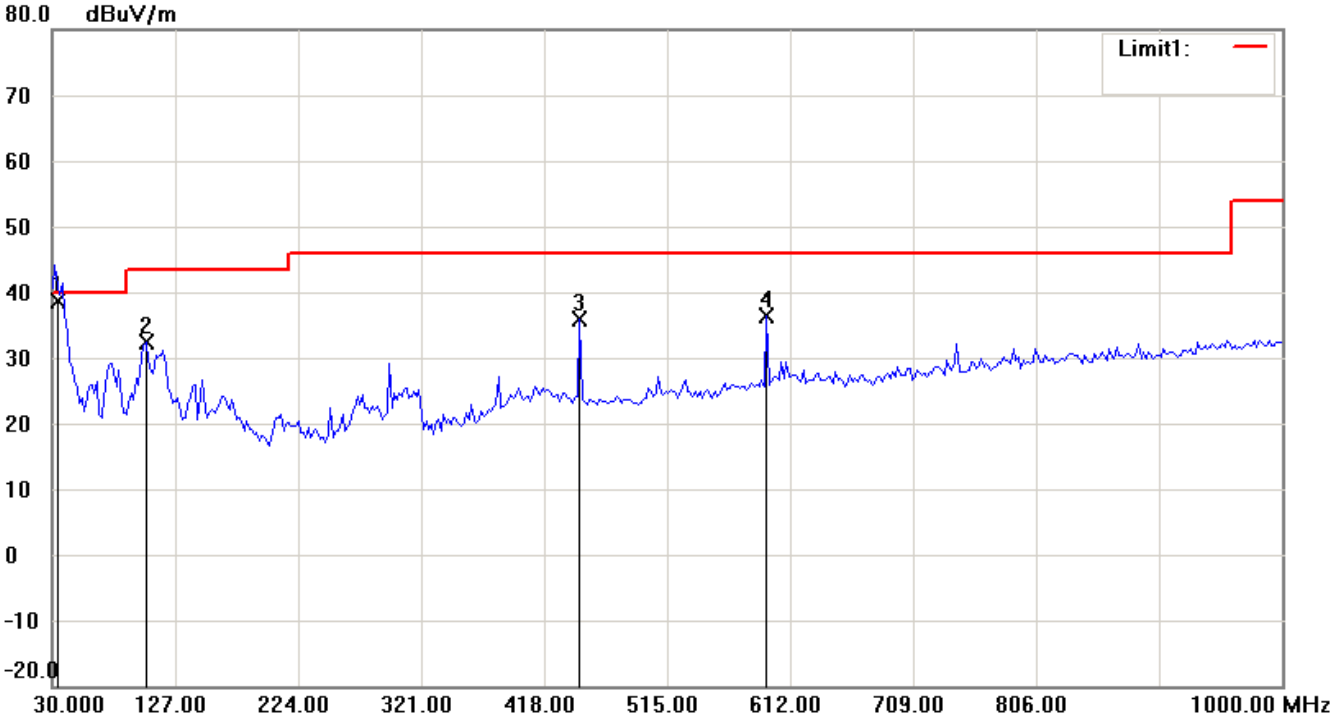
FCC ID: 2AA4J-W6M2130813478



Antenna Polarization V



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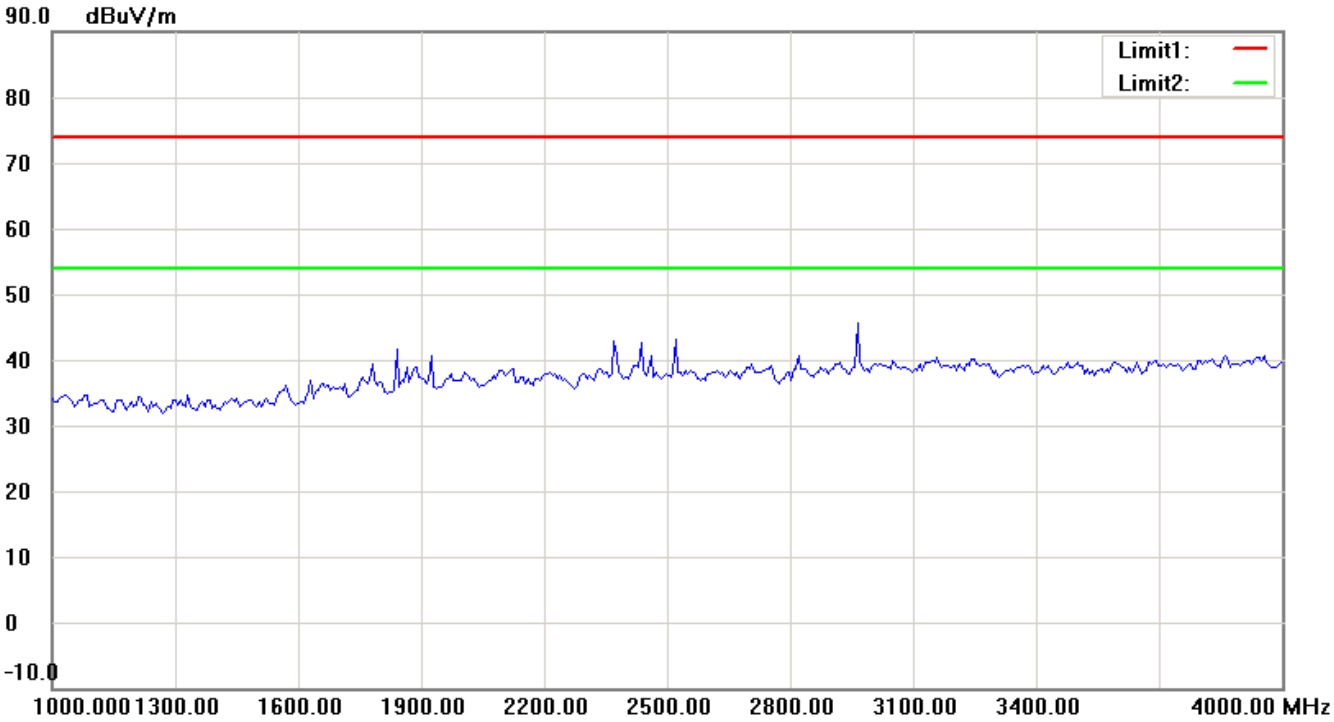

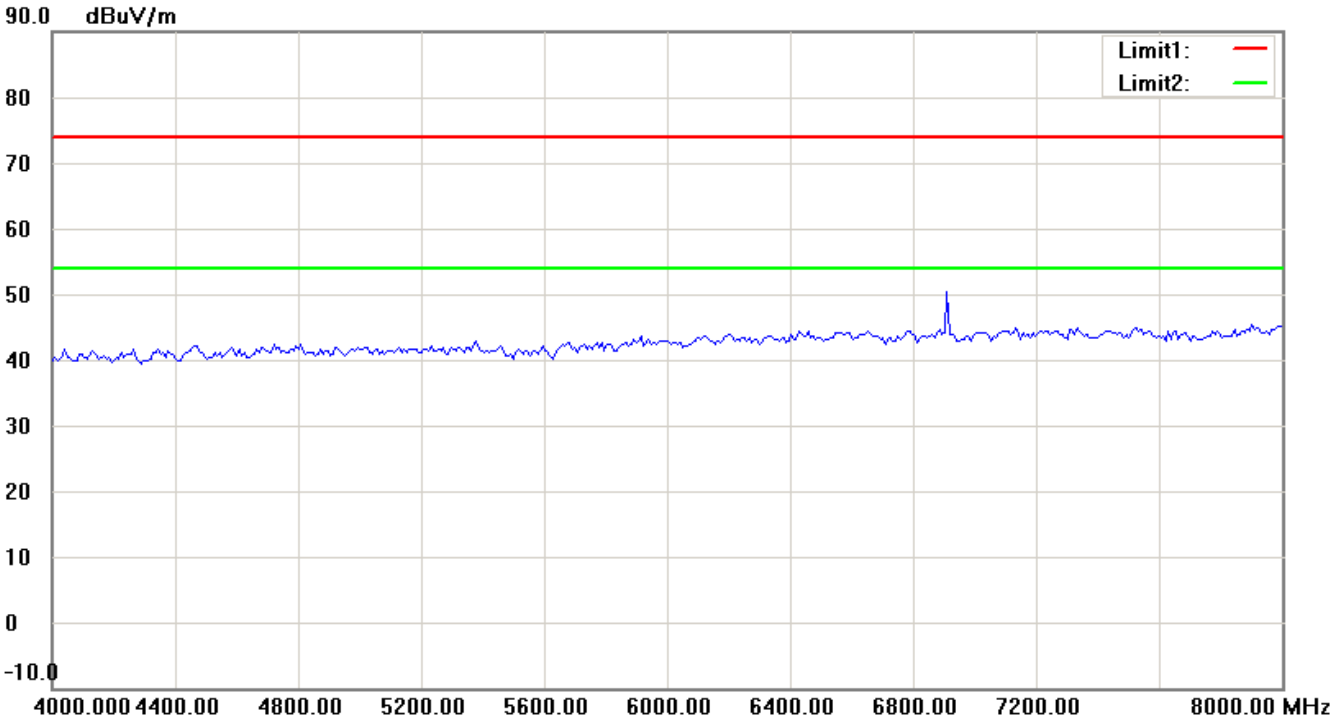

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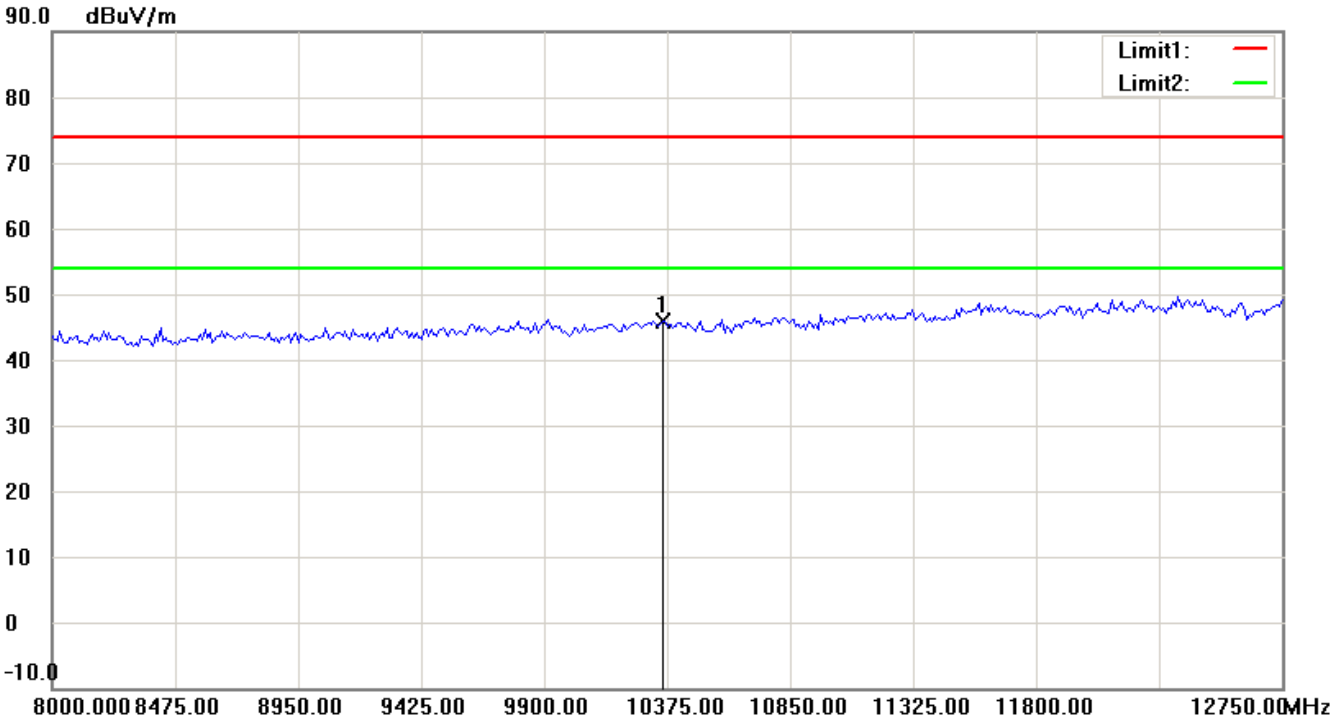

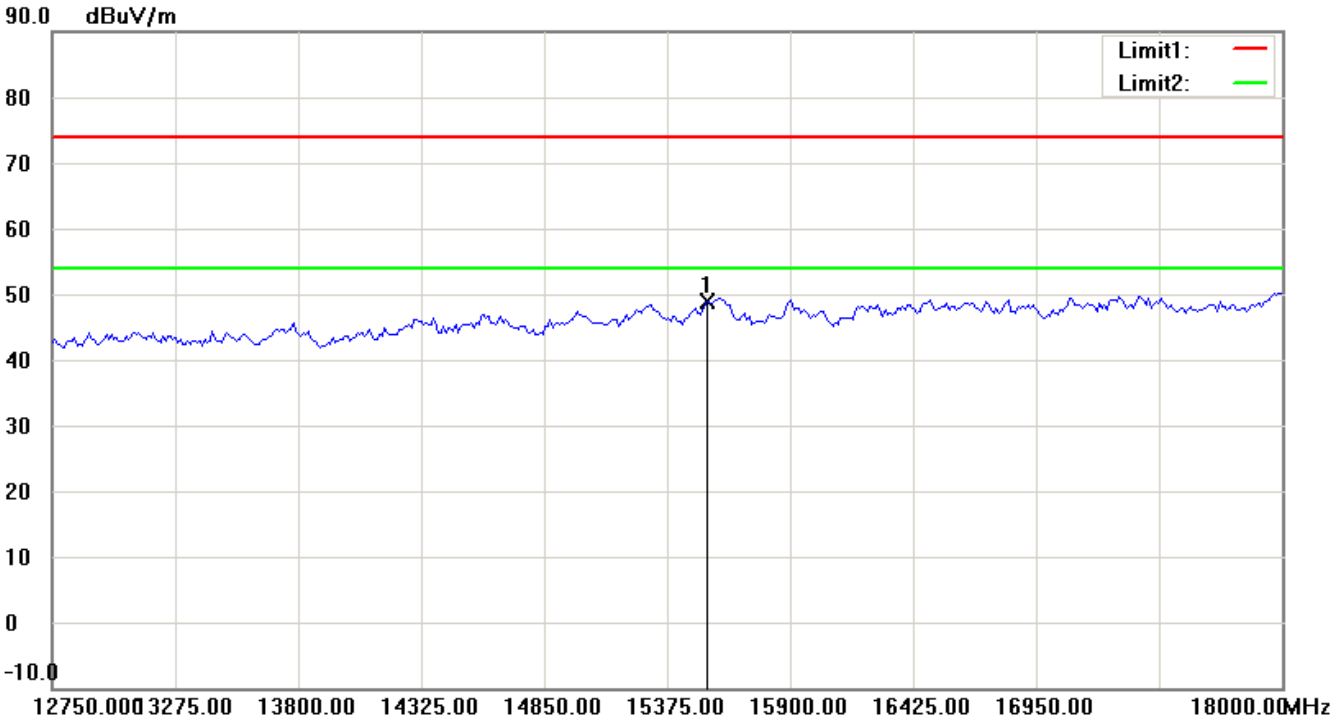

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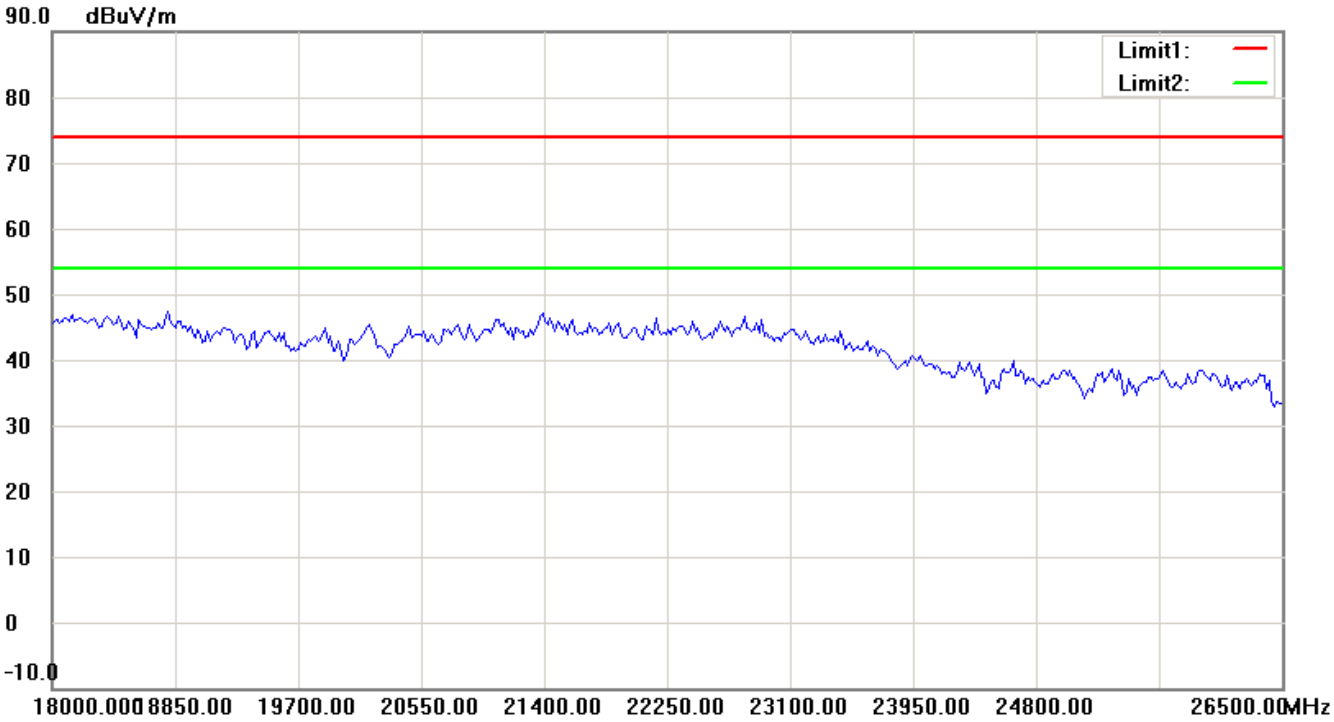
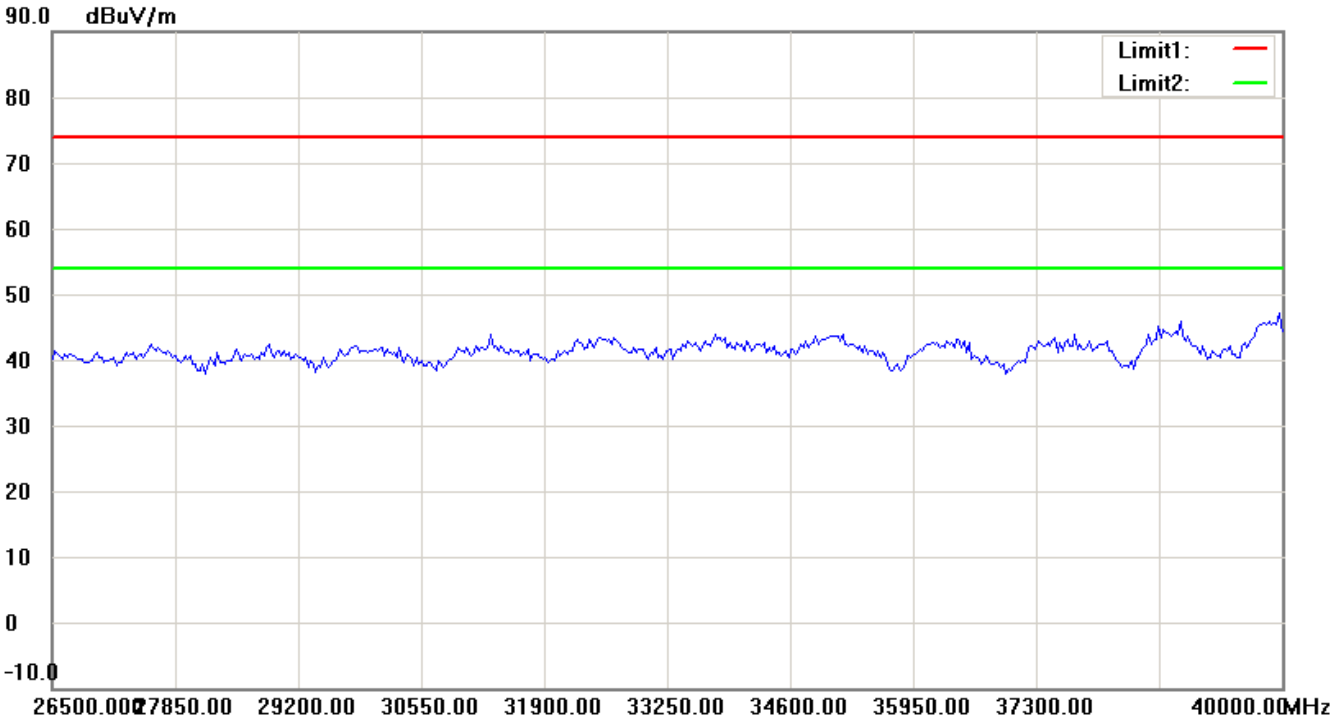
FCC ID: 2AA4J-W6M2130813478





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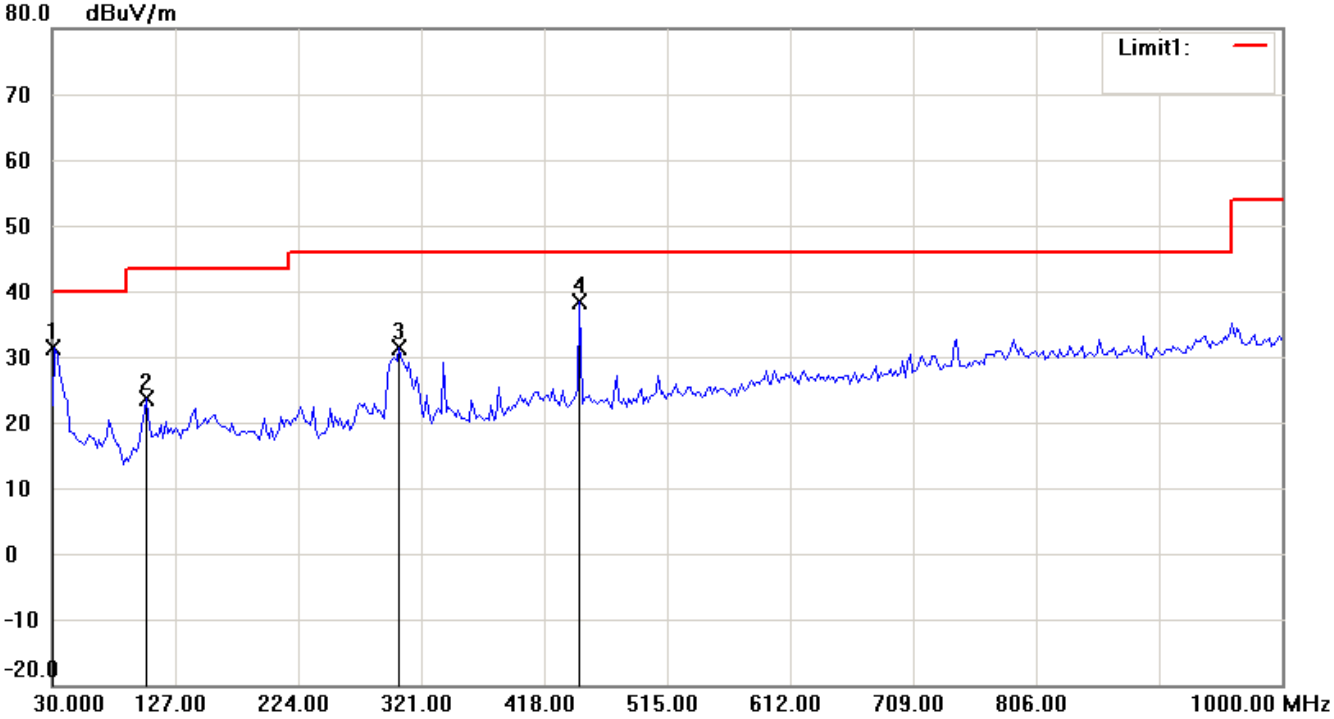
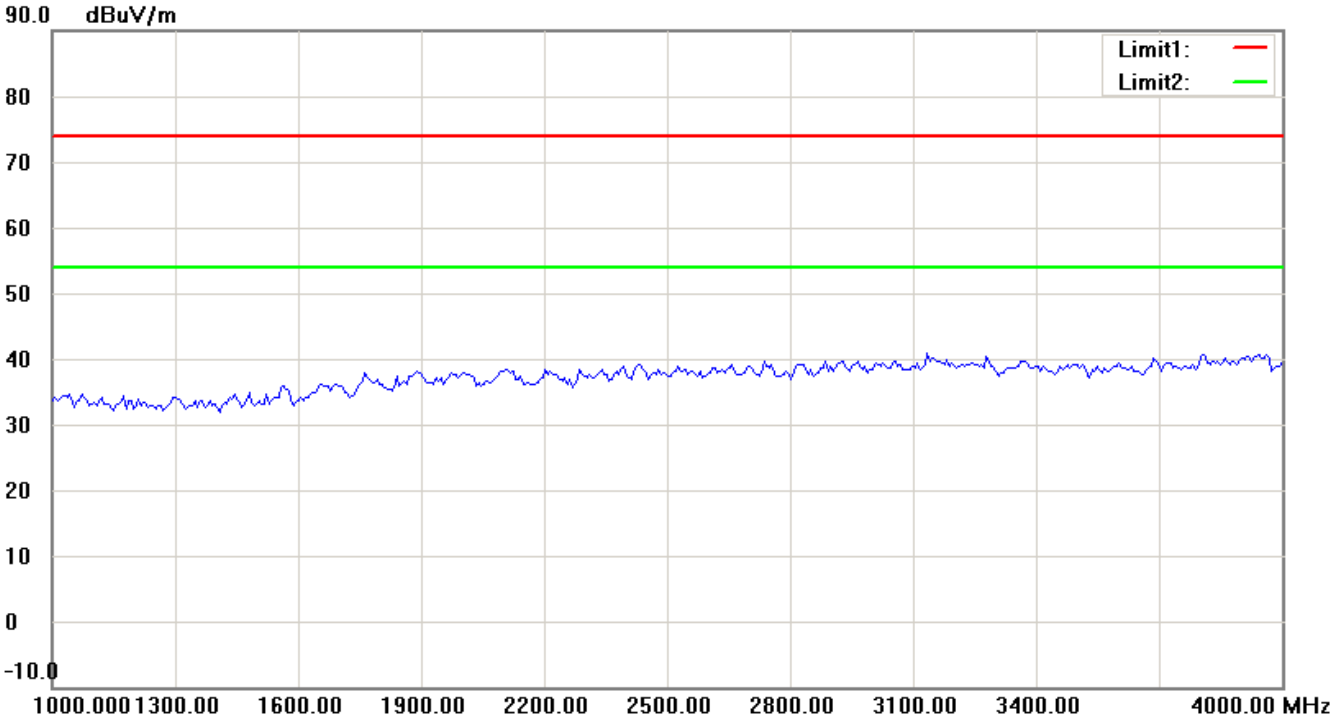
Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478

802.11a CH40 TX
Antenna Polarization H





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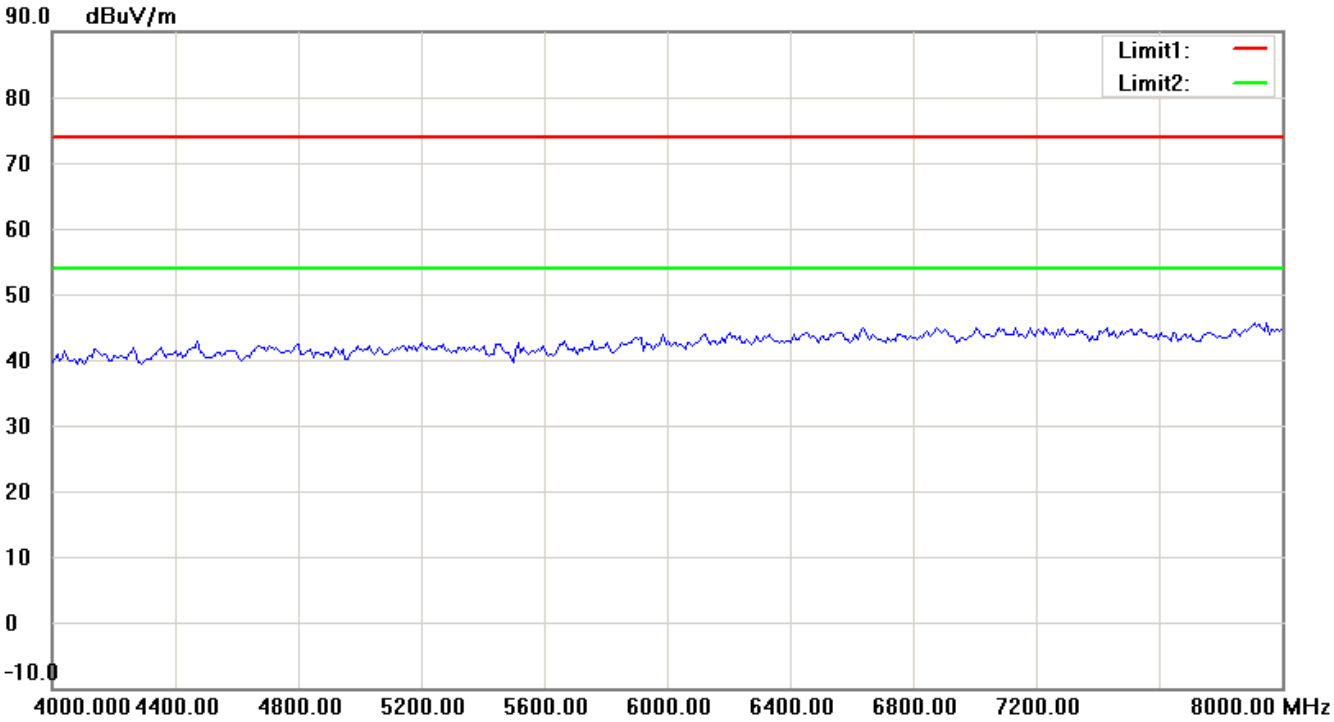

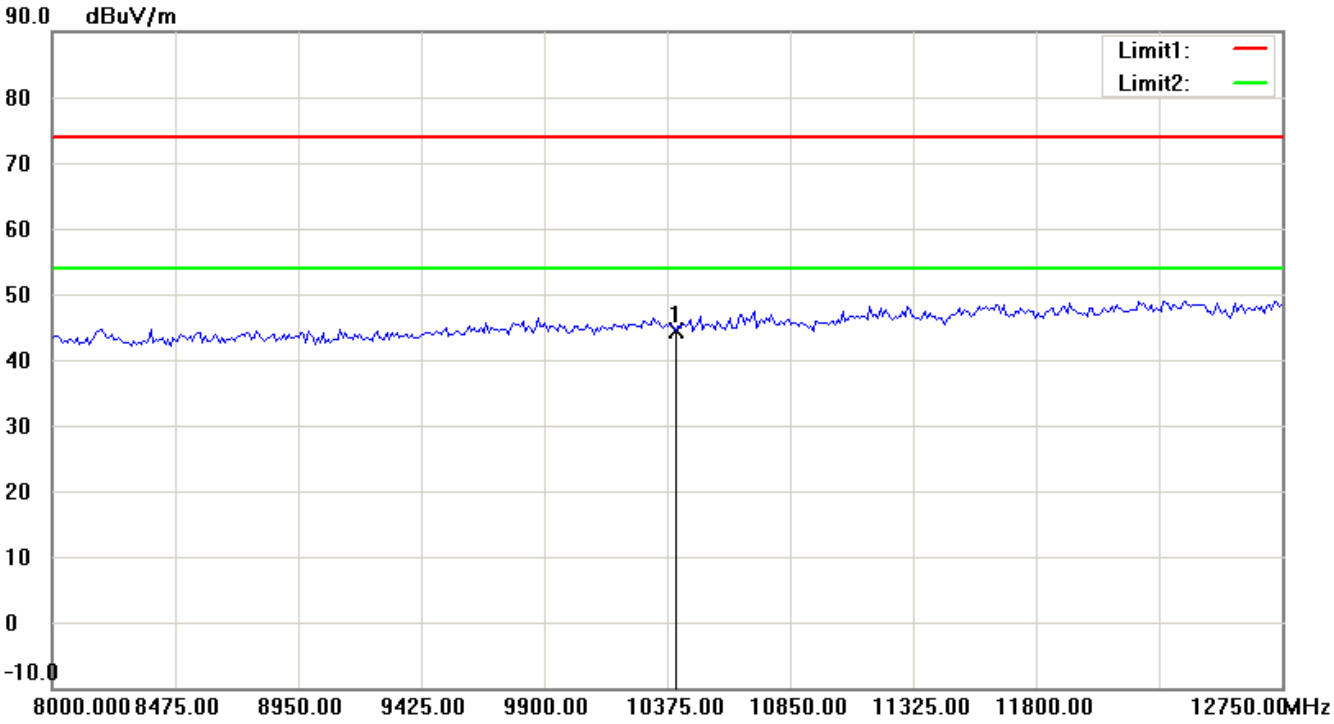

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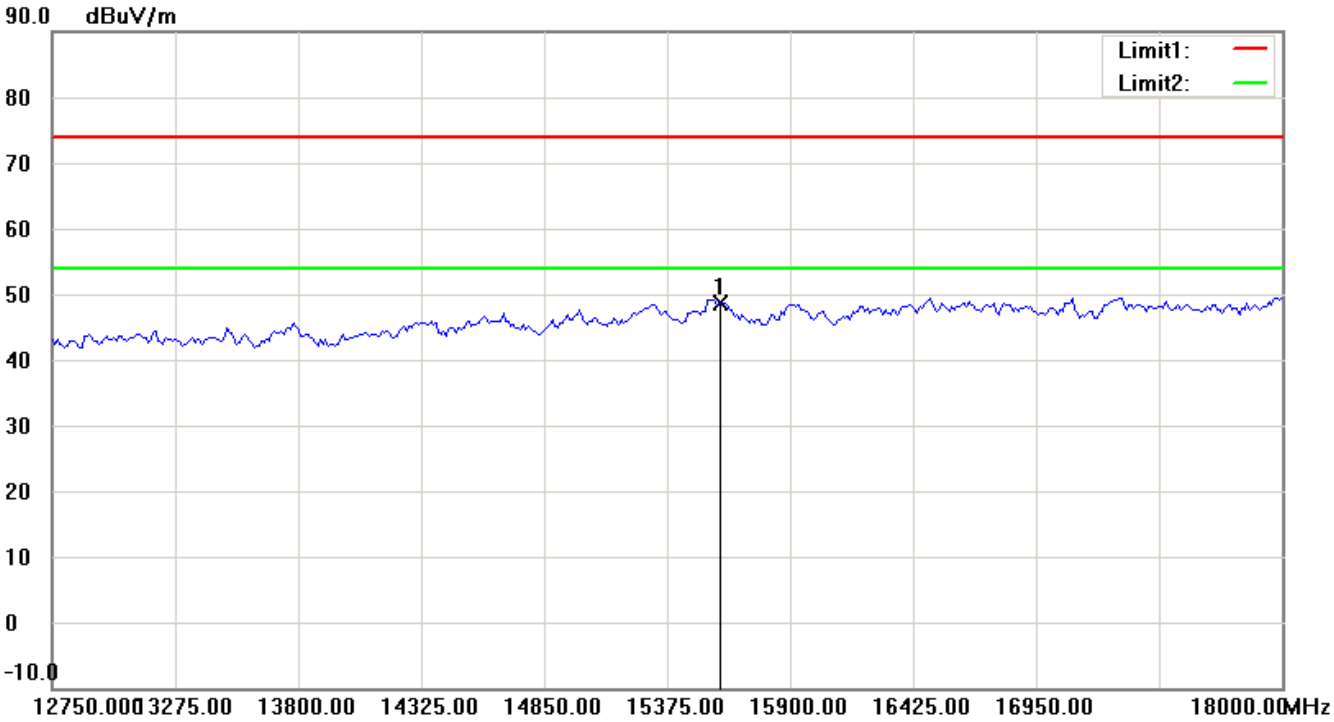

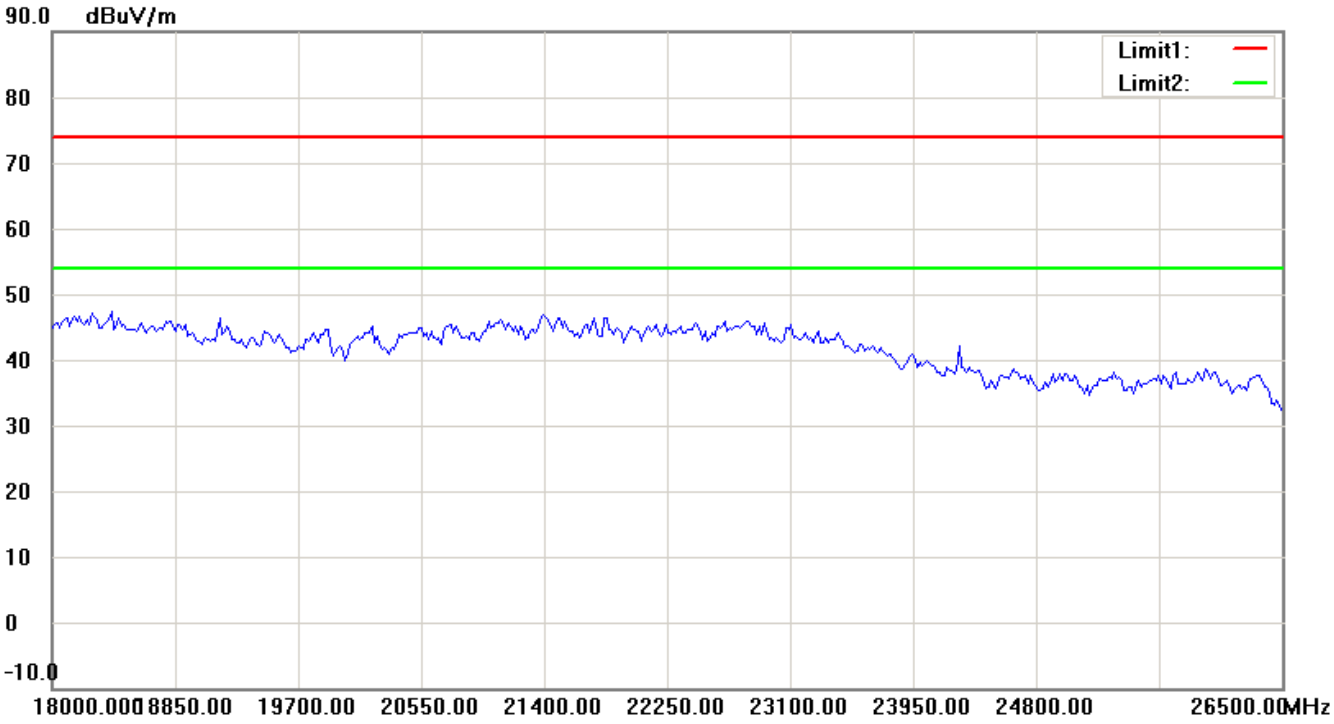

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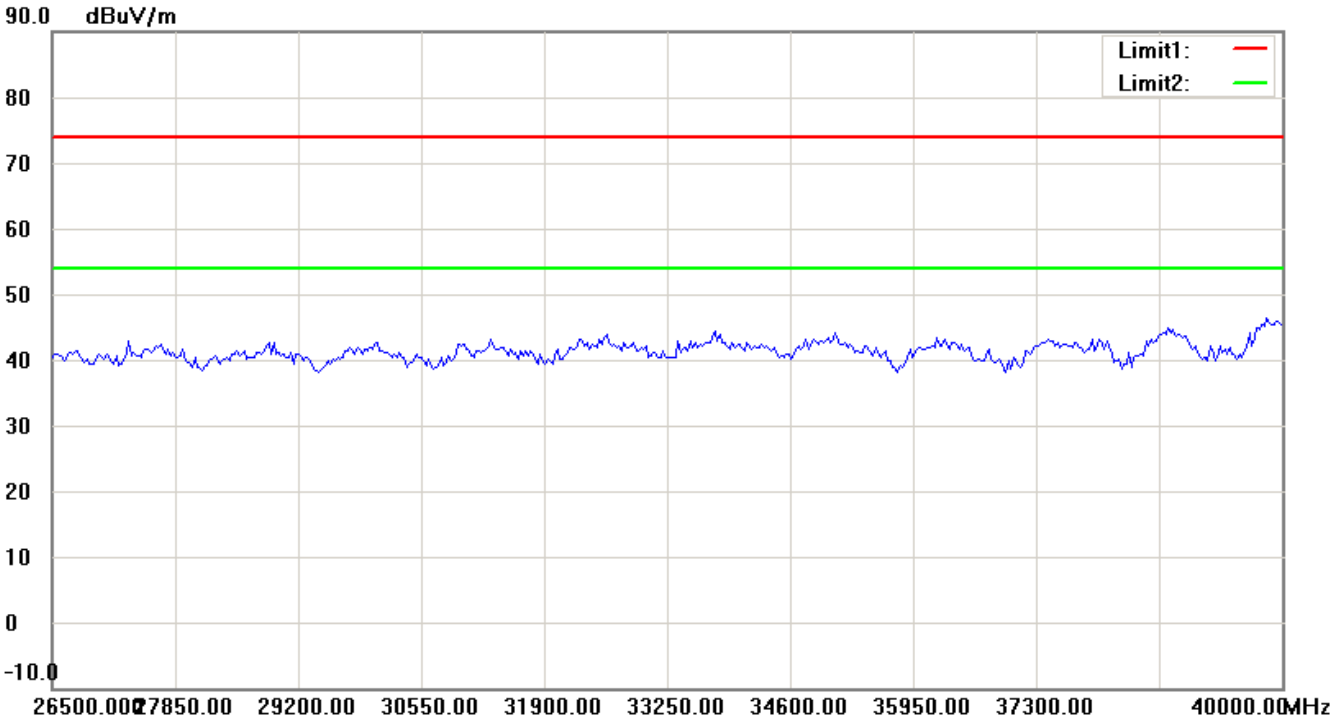
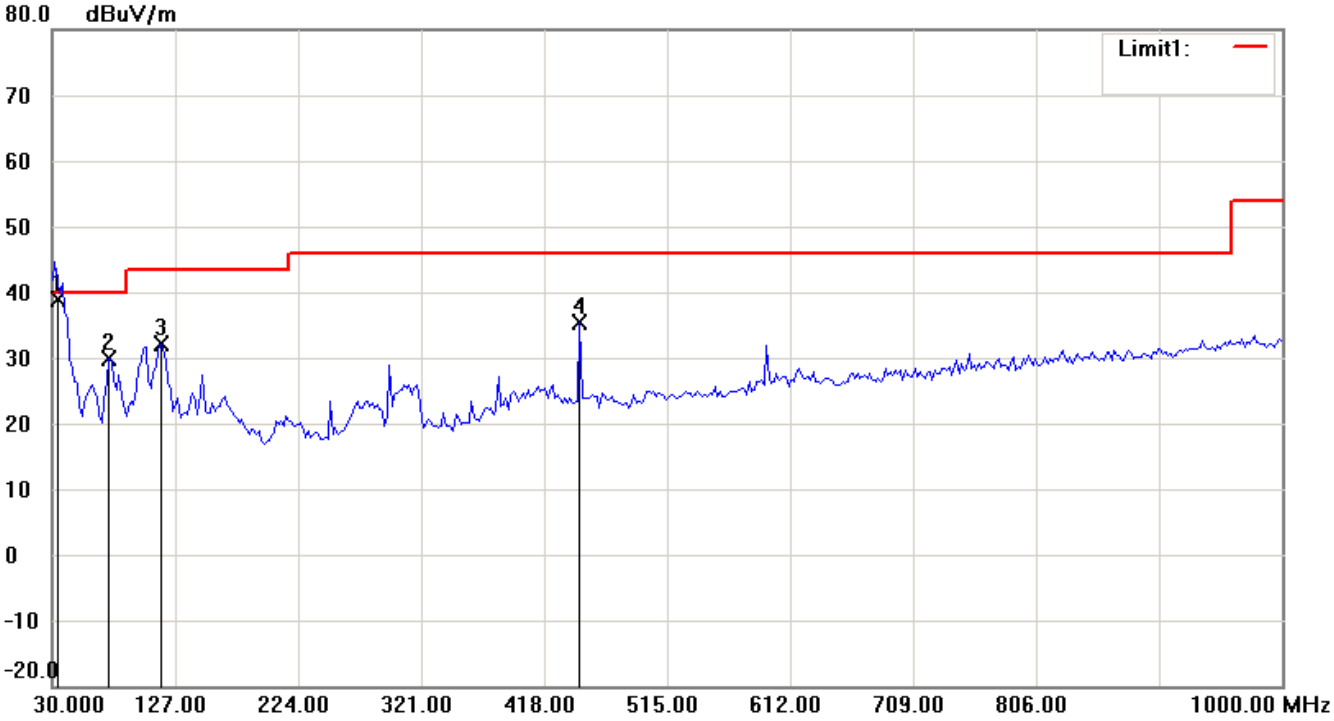


Antenna Polarization V



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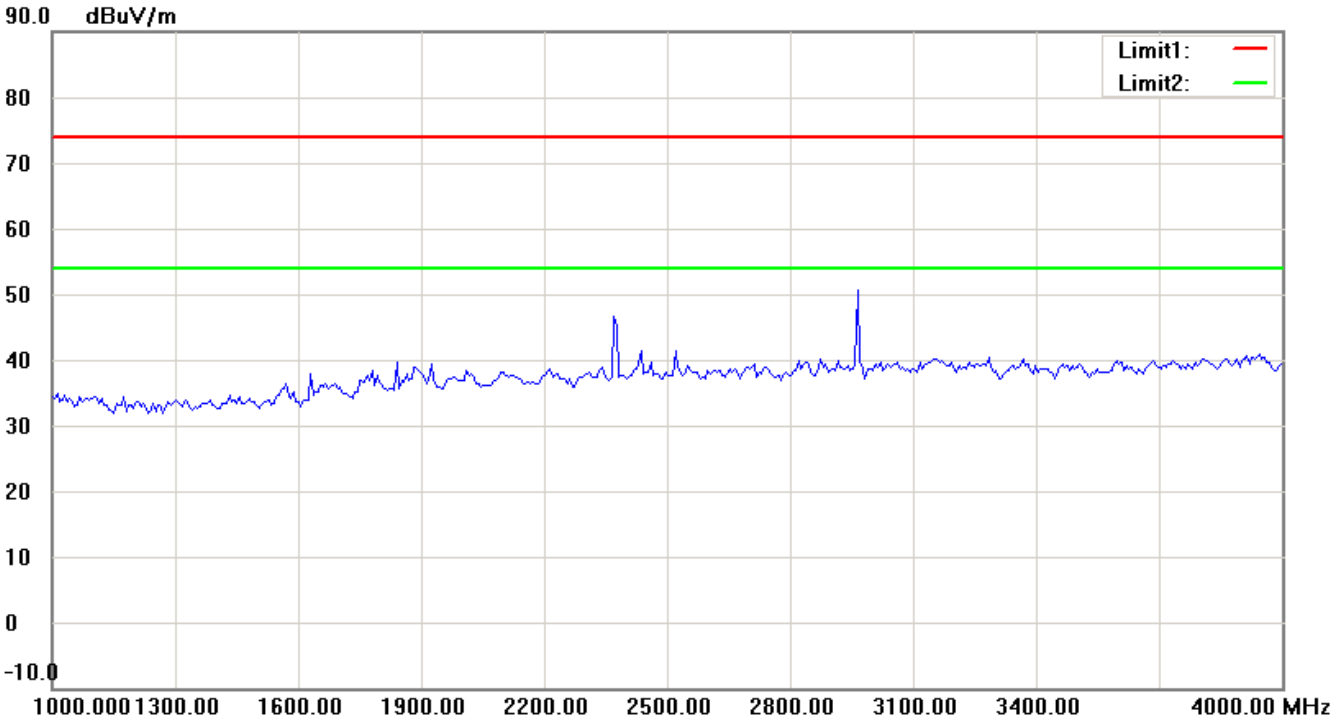

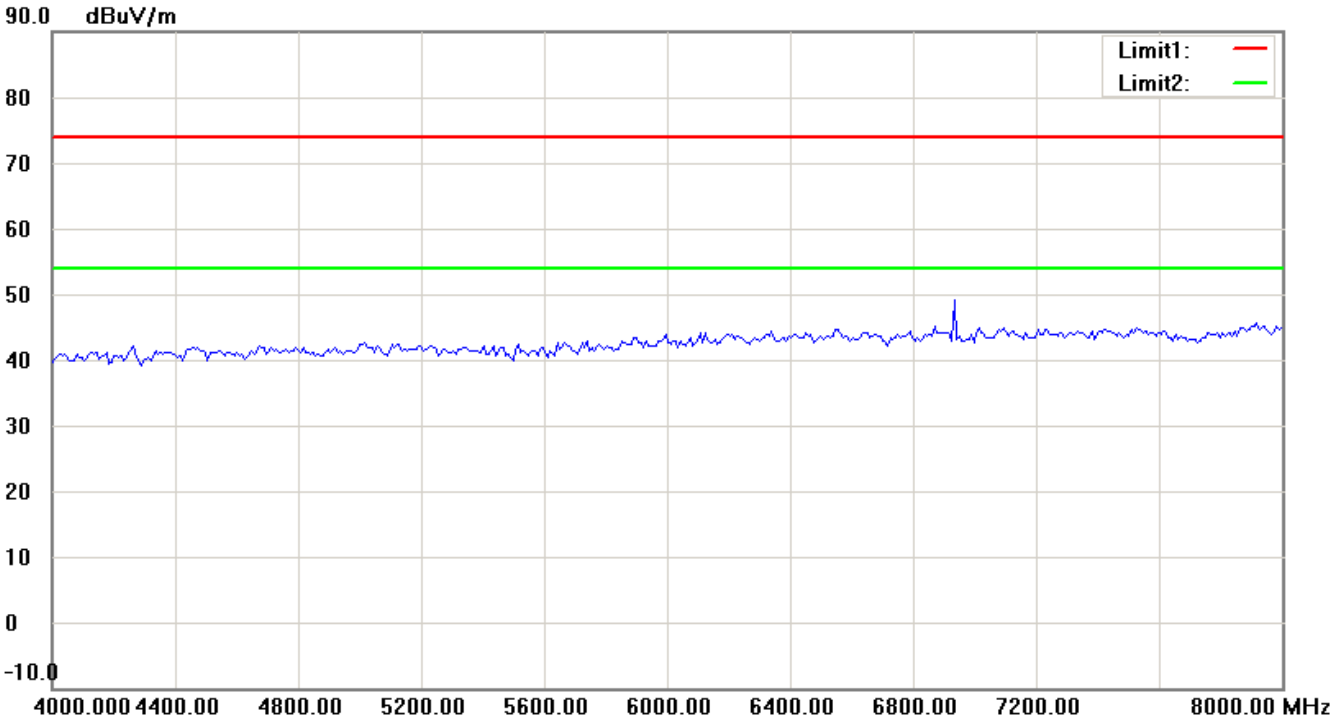

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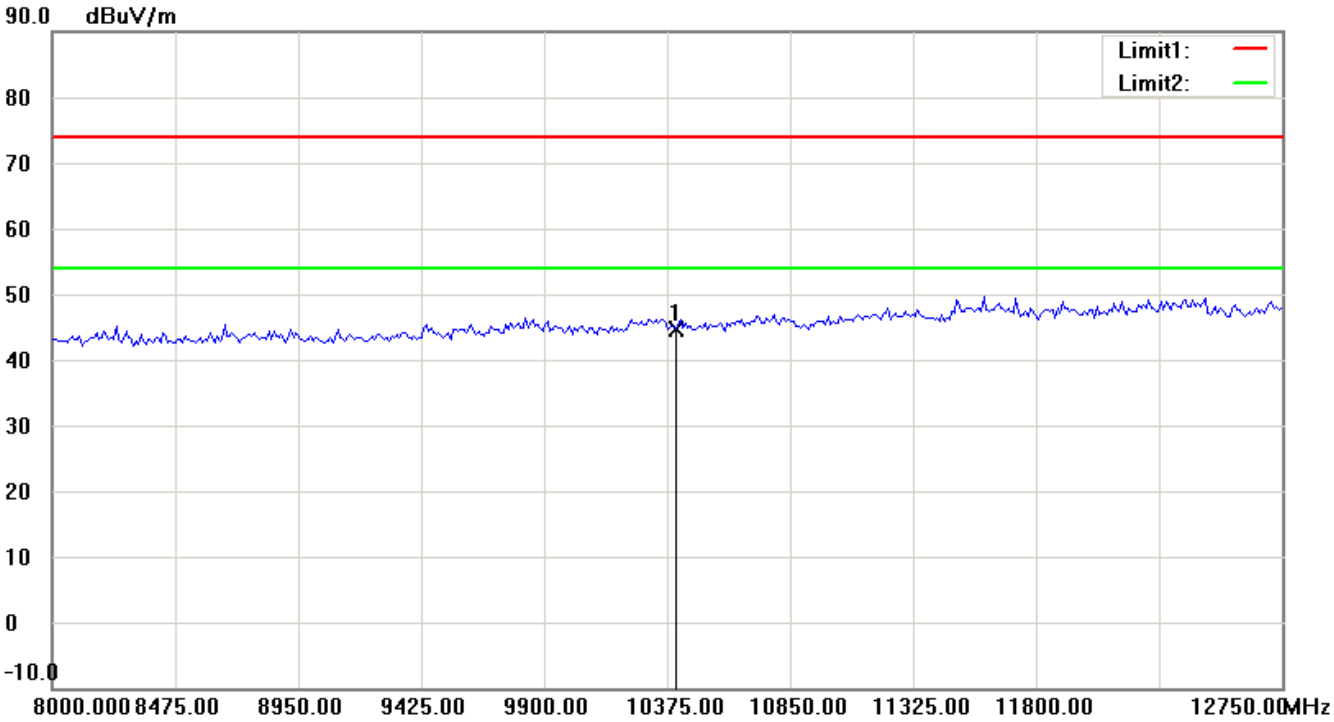

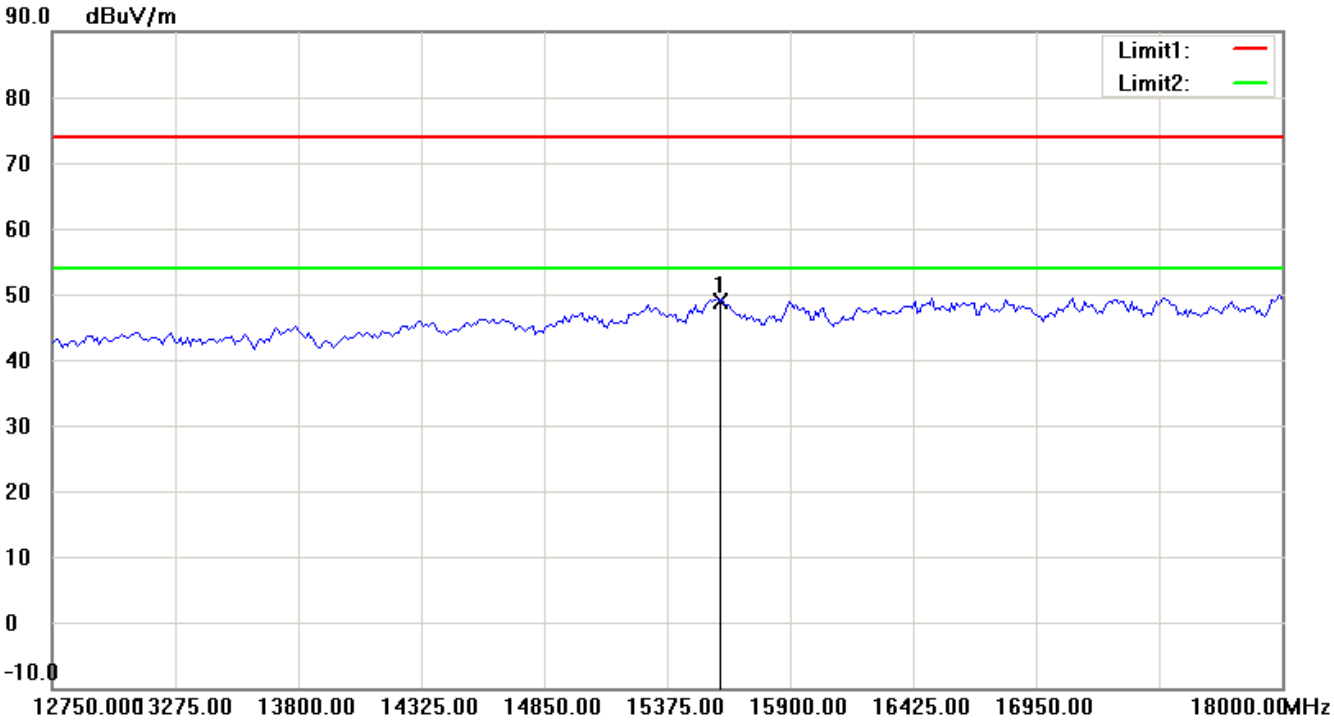

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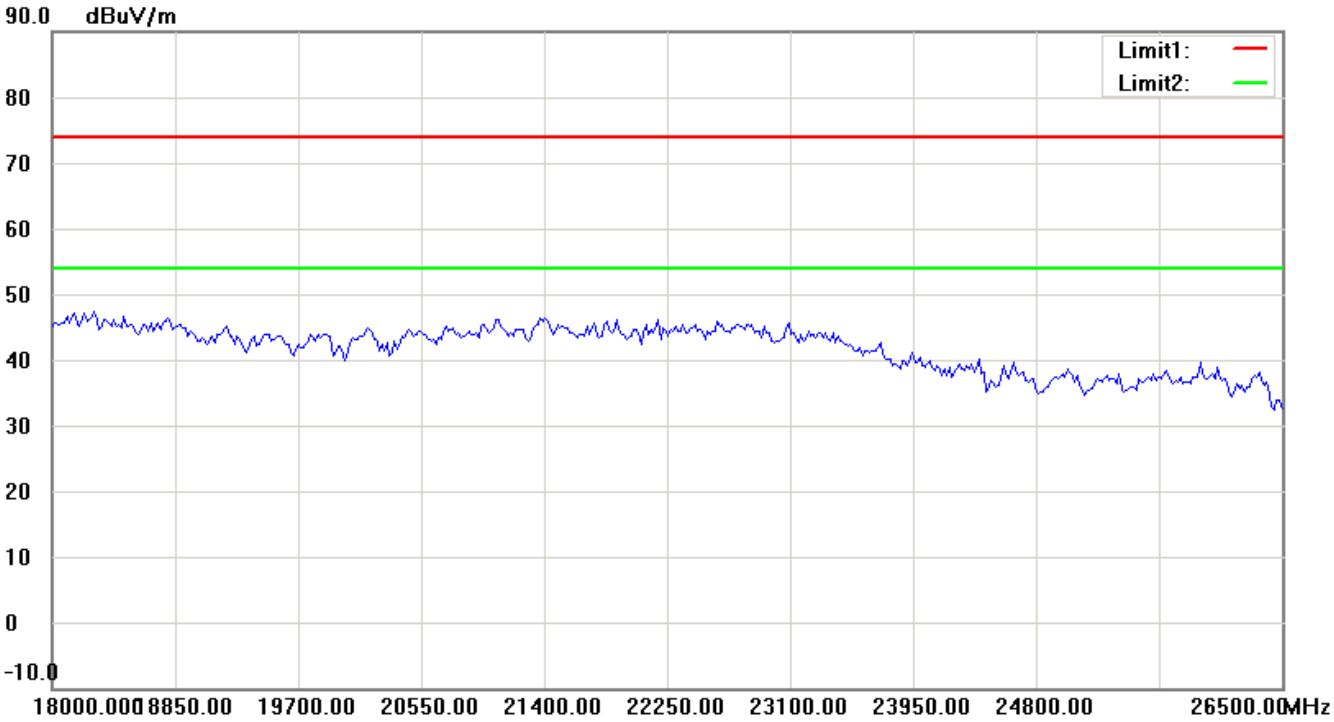

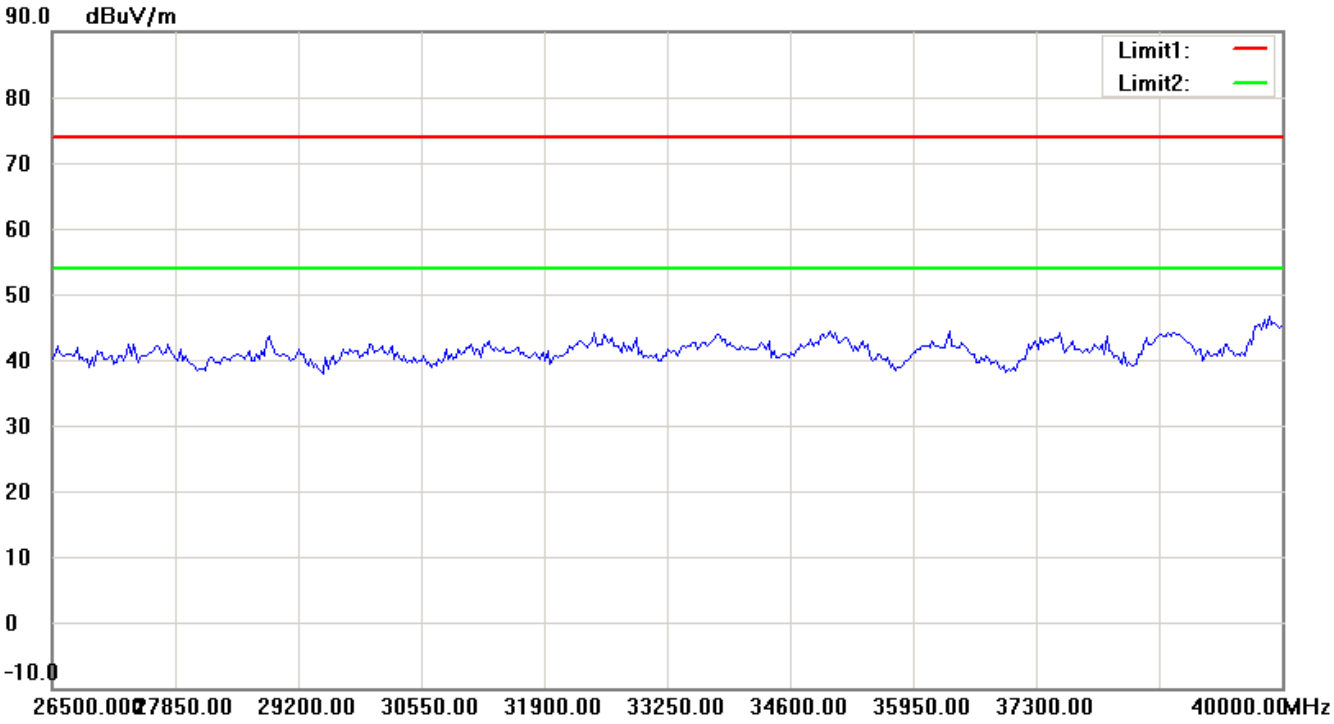

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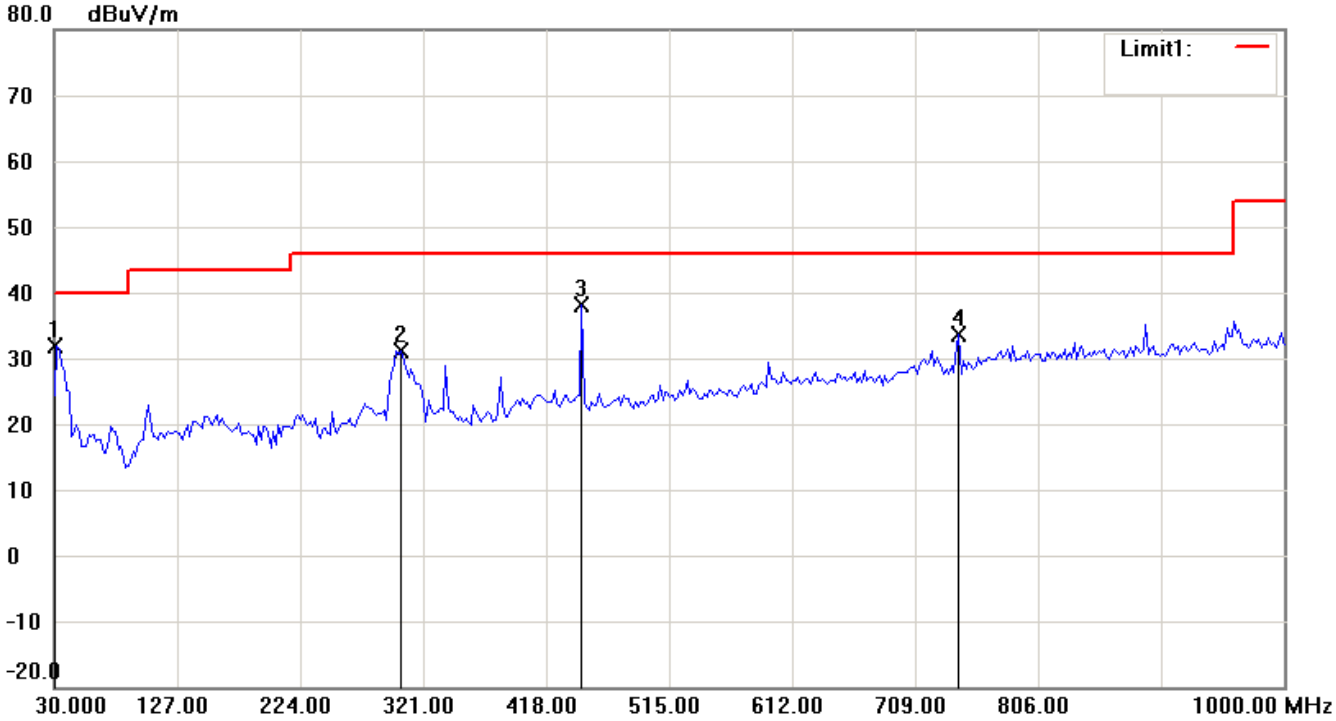
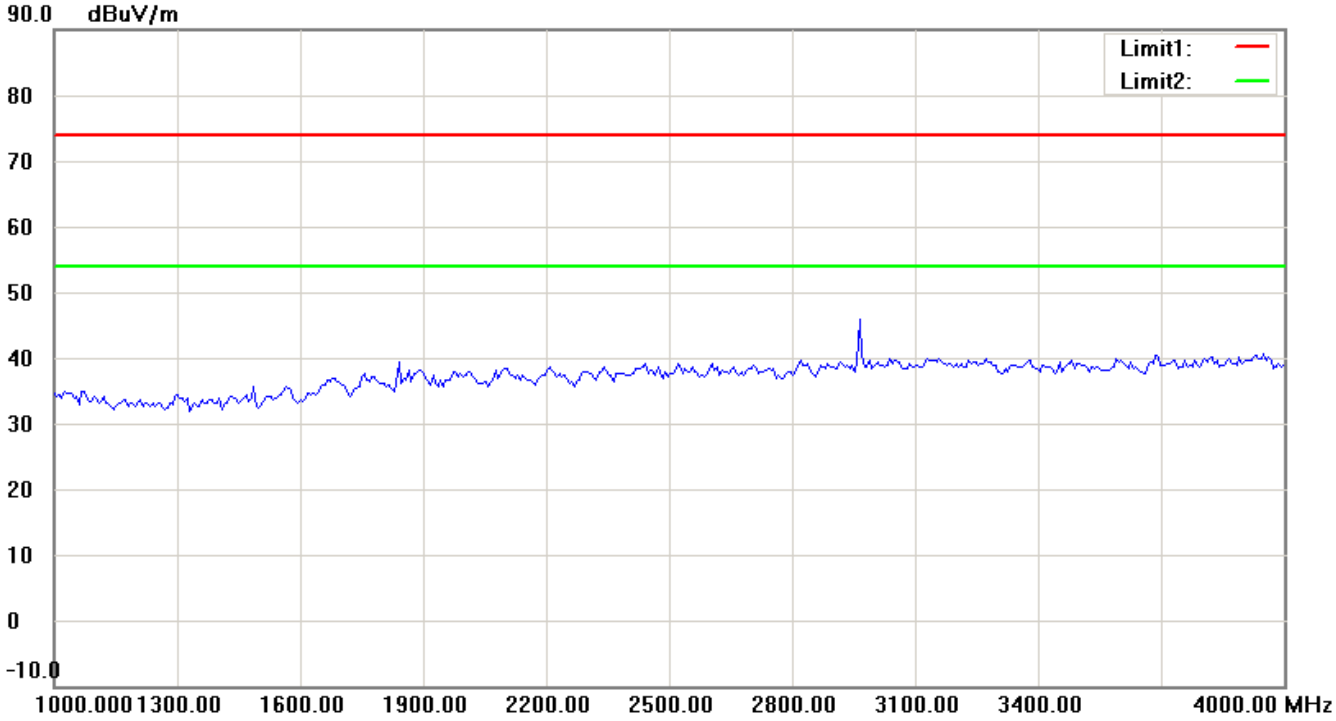
FCC ID: 2AA4J-W6M2130813478

802.11a CH48 TX
Antenna Polarization H





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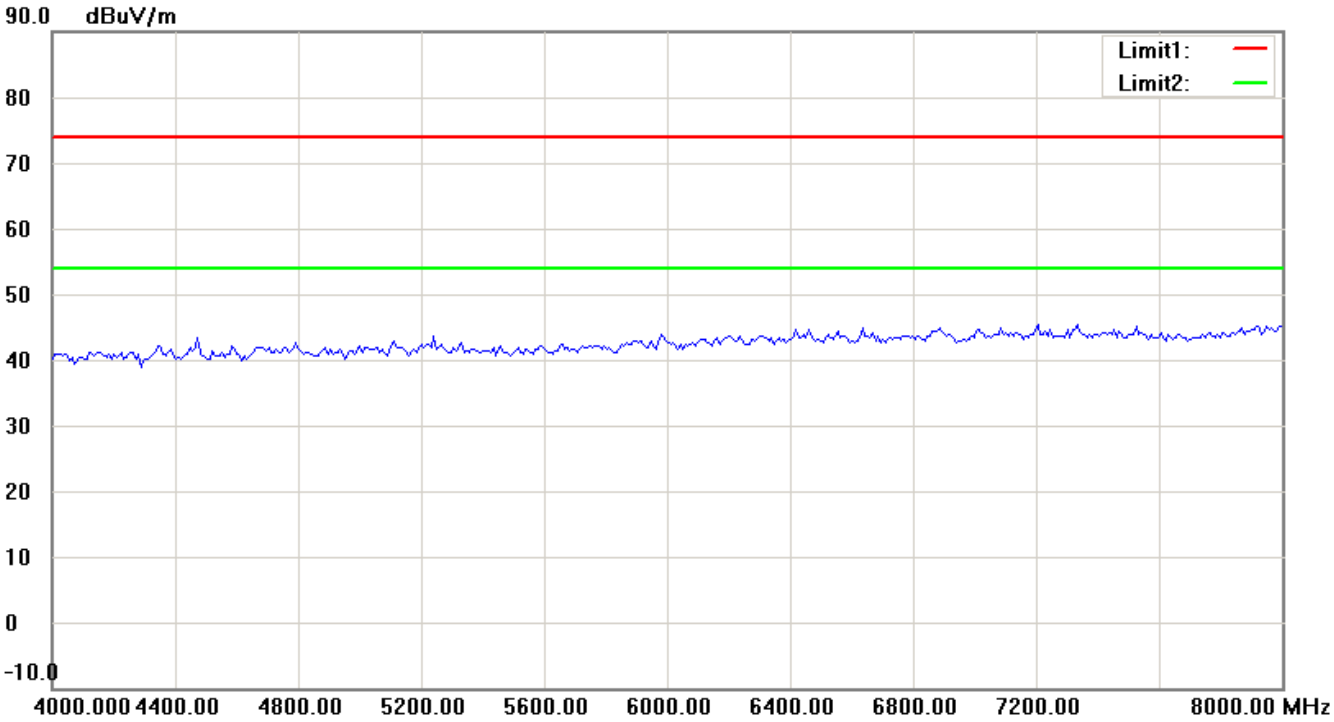

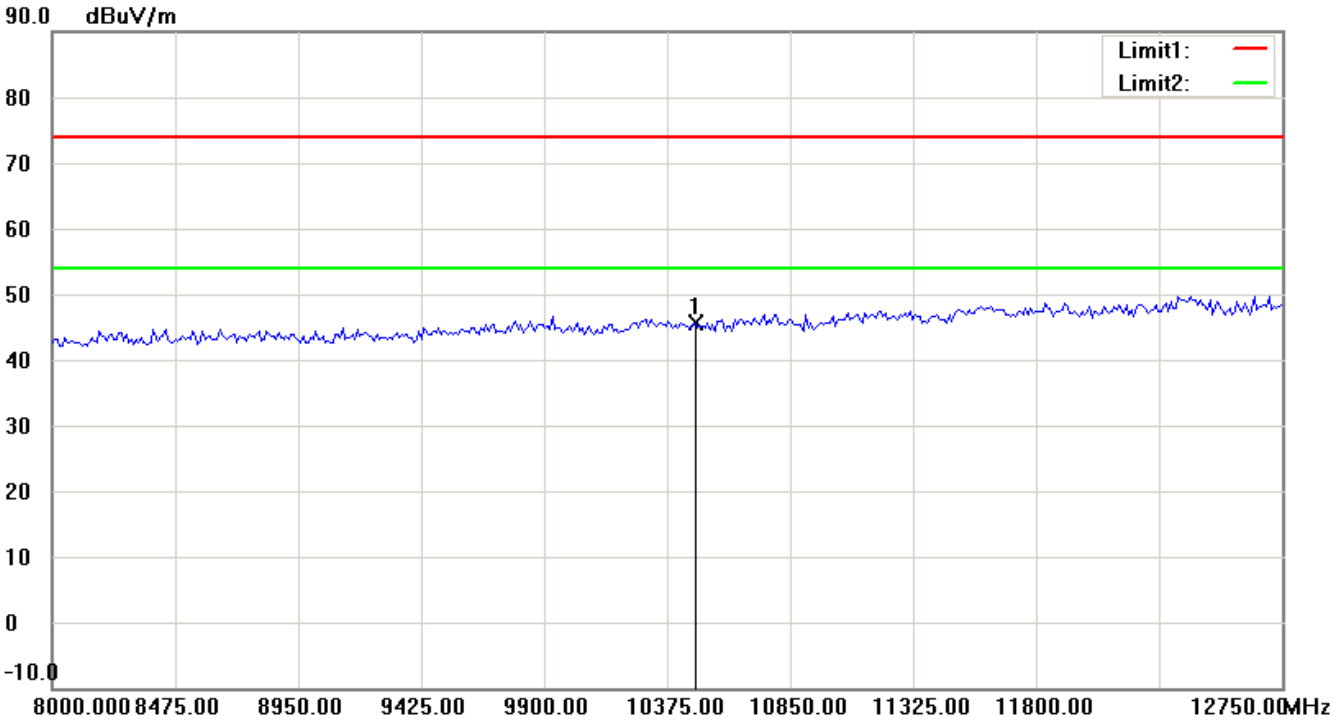

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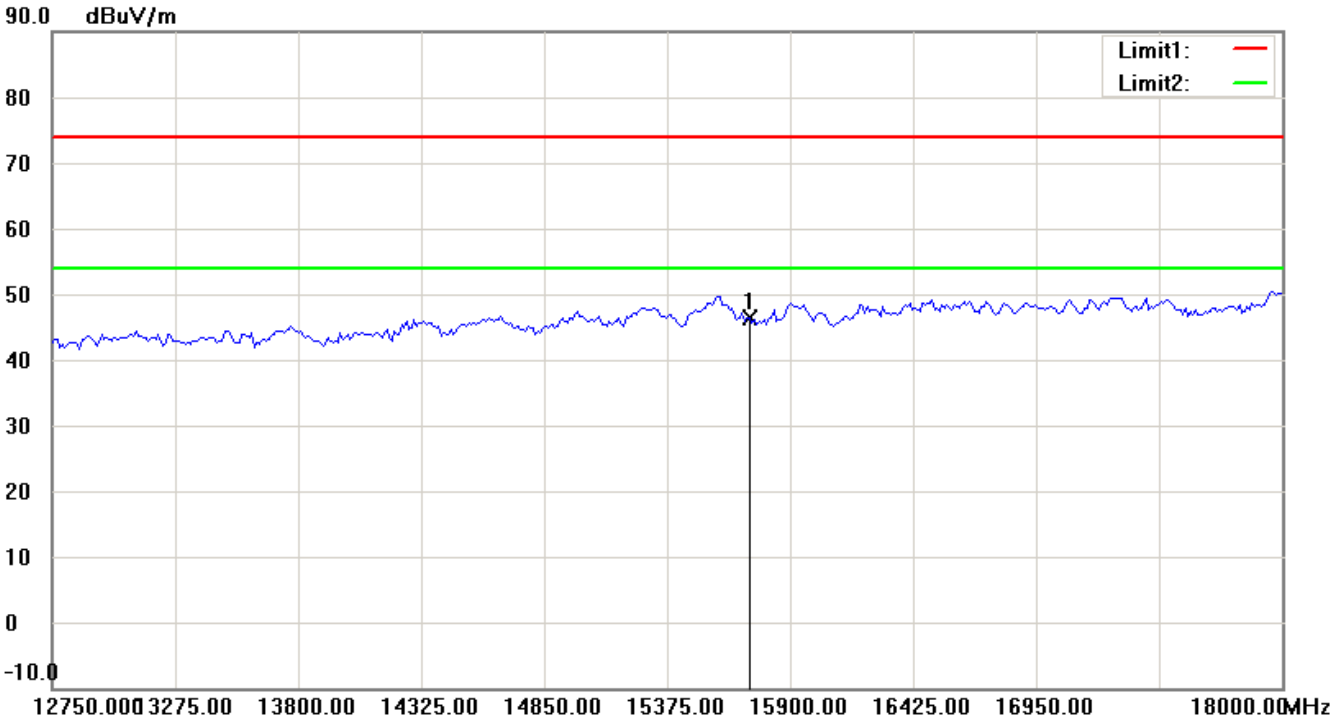

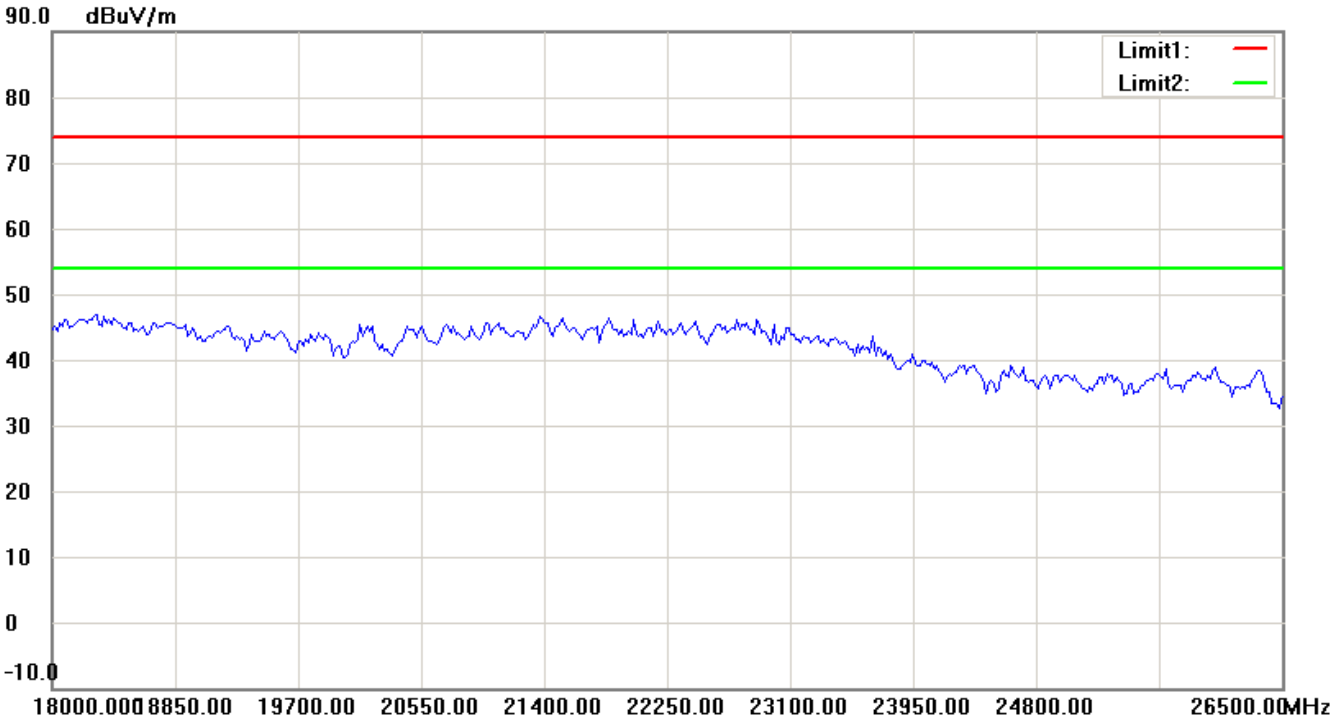

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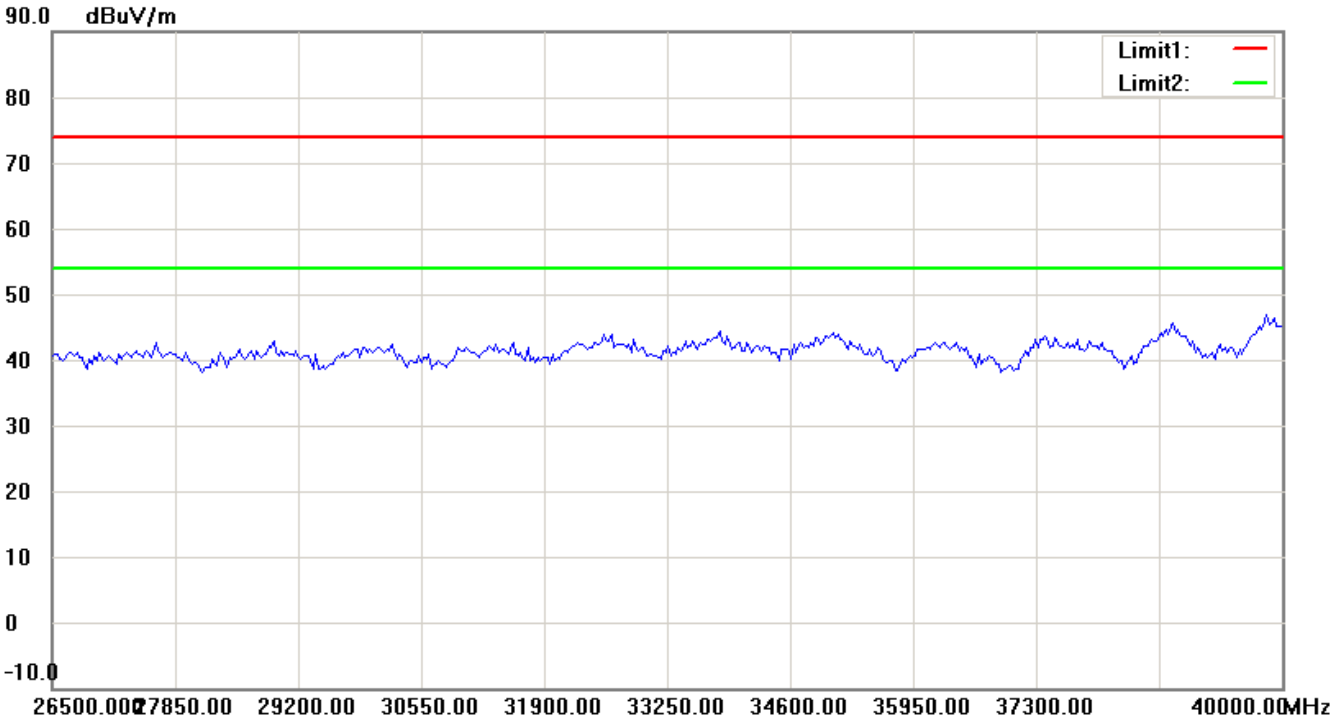
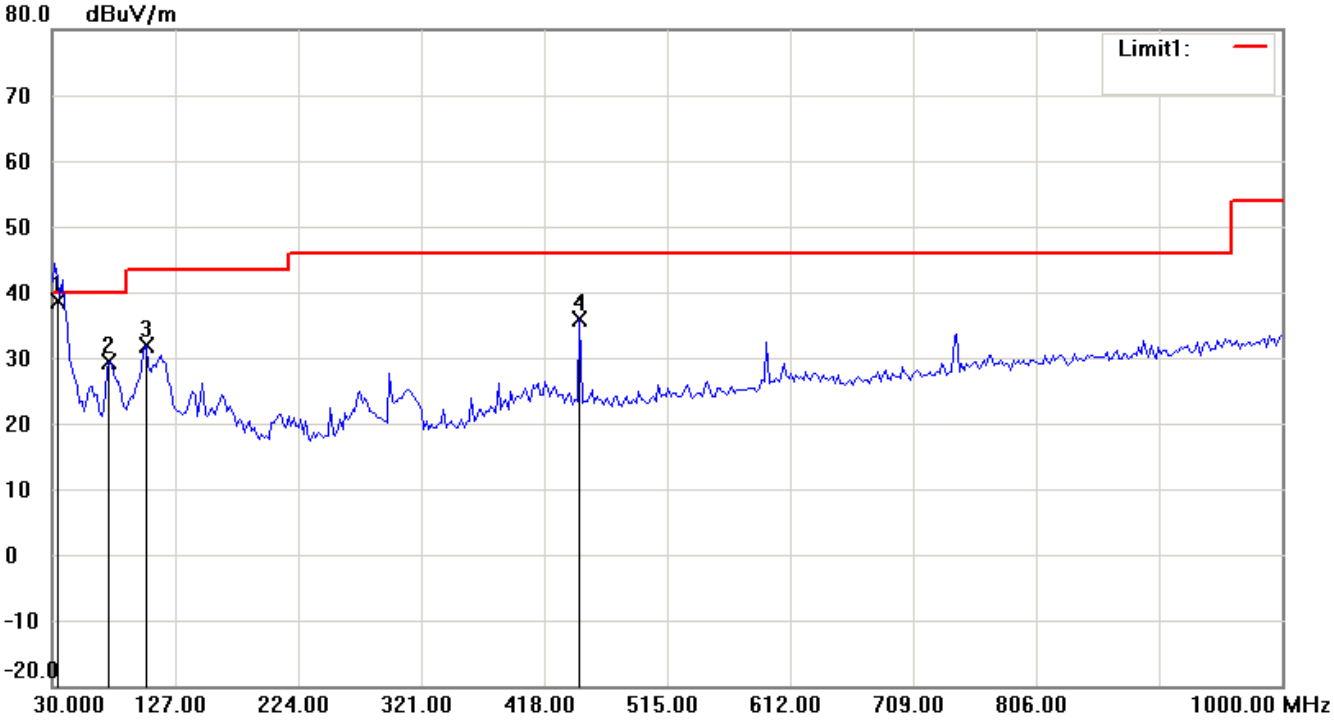


Antenna Polarization V



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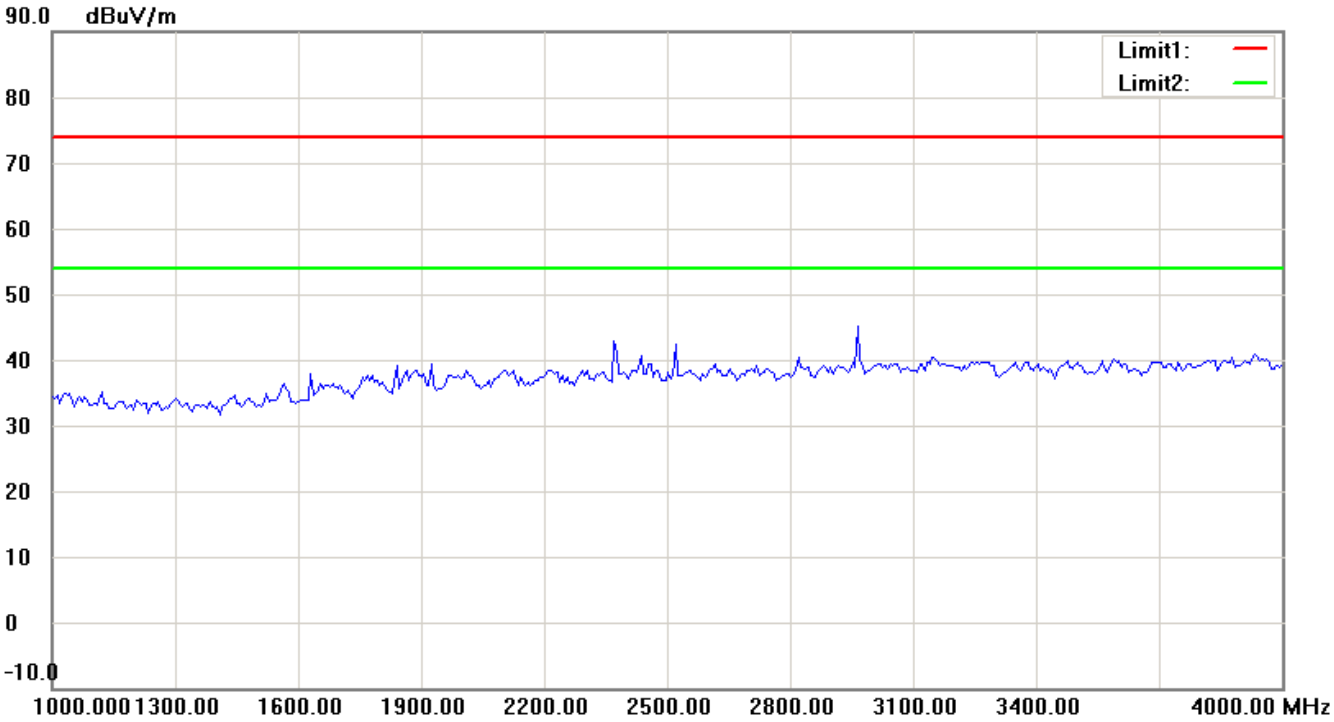

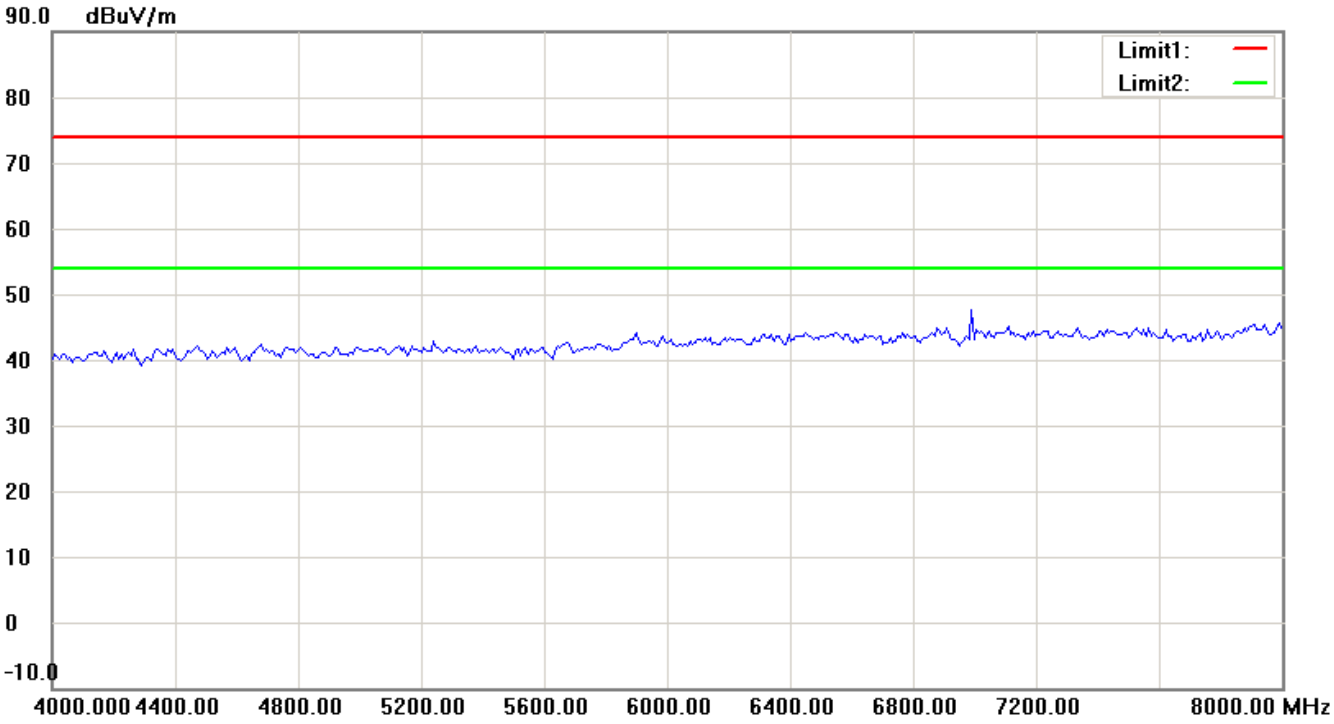

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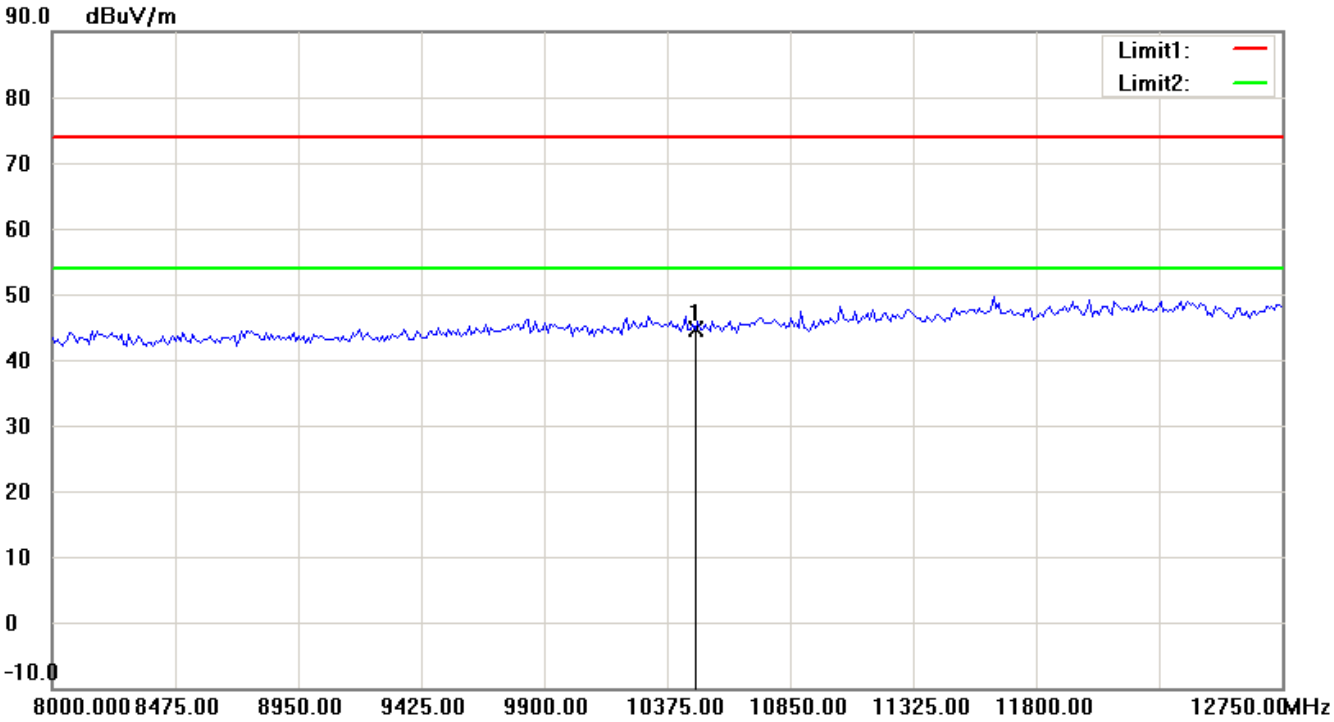

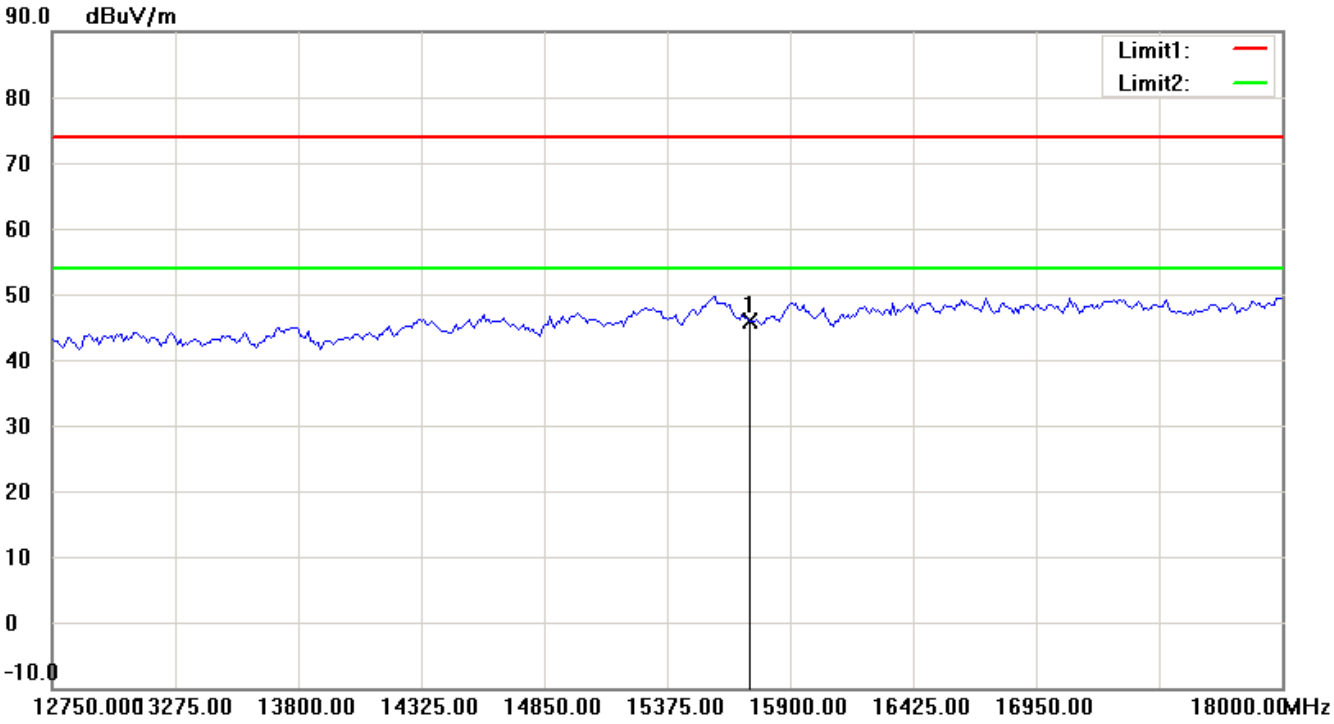

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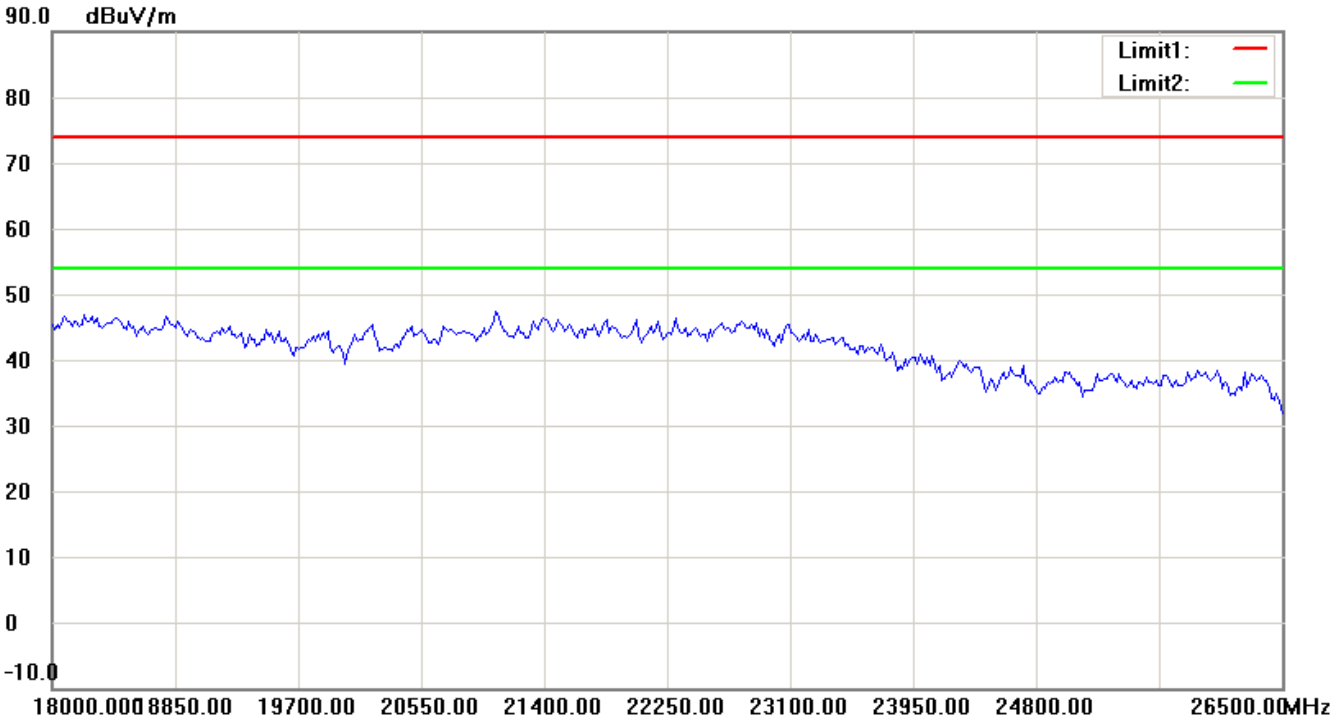

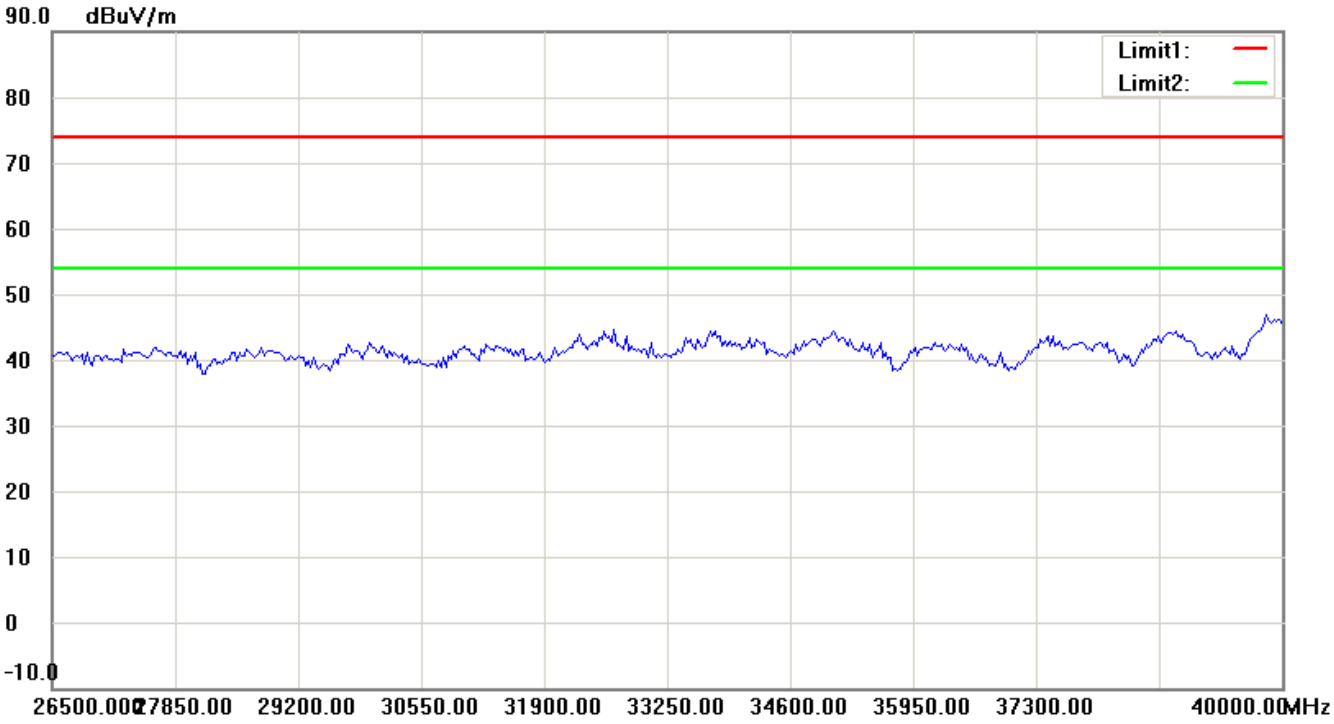

Note
Up Line: Peak Limit Line Down Line: Ave Limit Line

1. **The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.**
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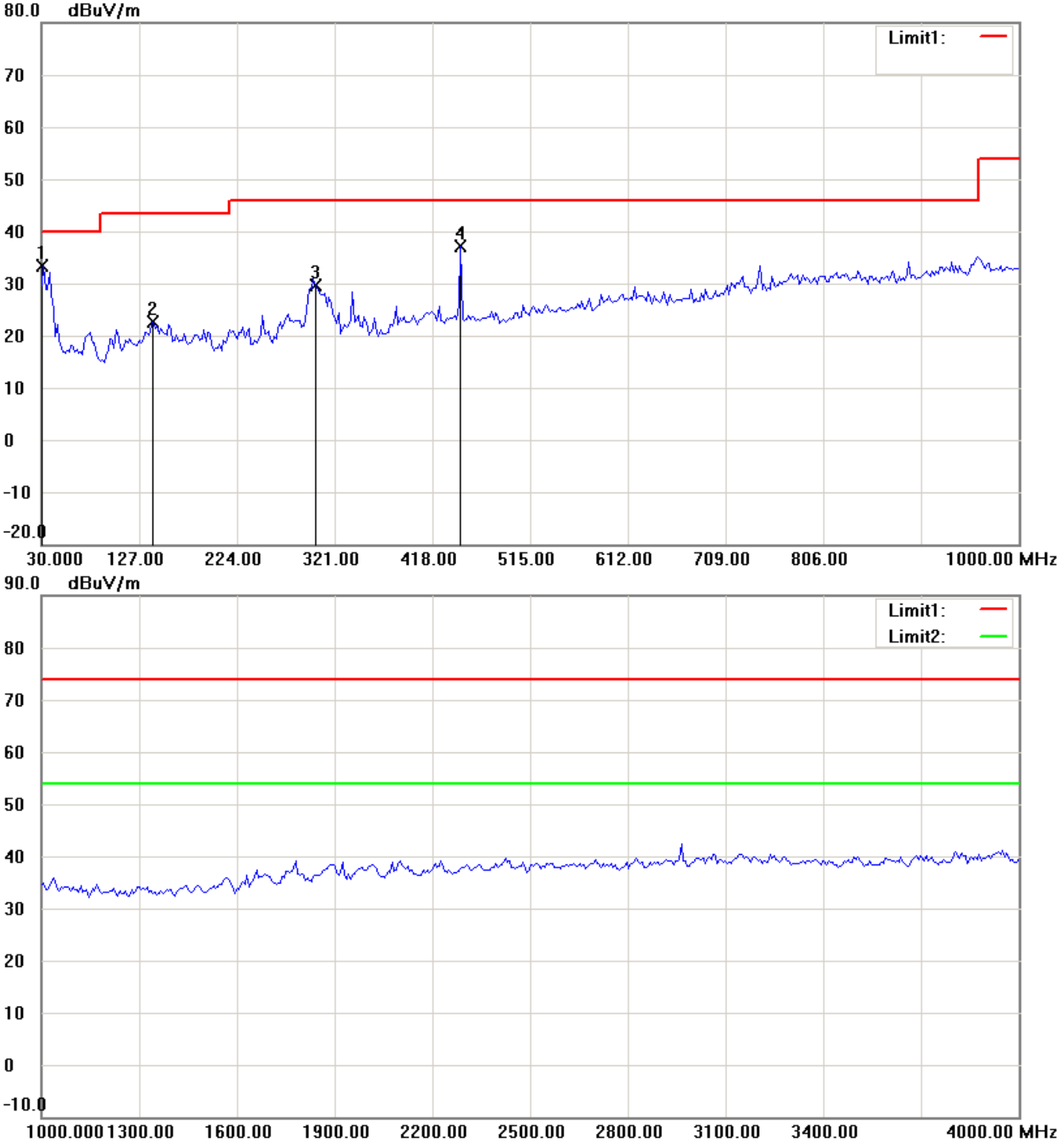
Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478

ANT A (ANT 1)+ANT B (ANT 2)

802.11n 20MHz CH36 TX
Antenna Polarization H



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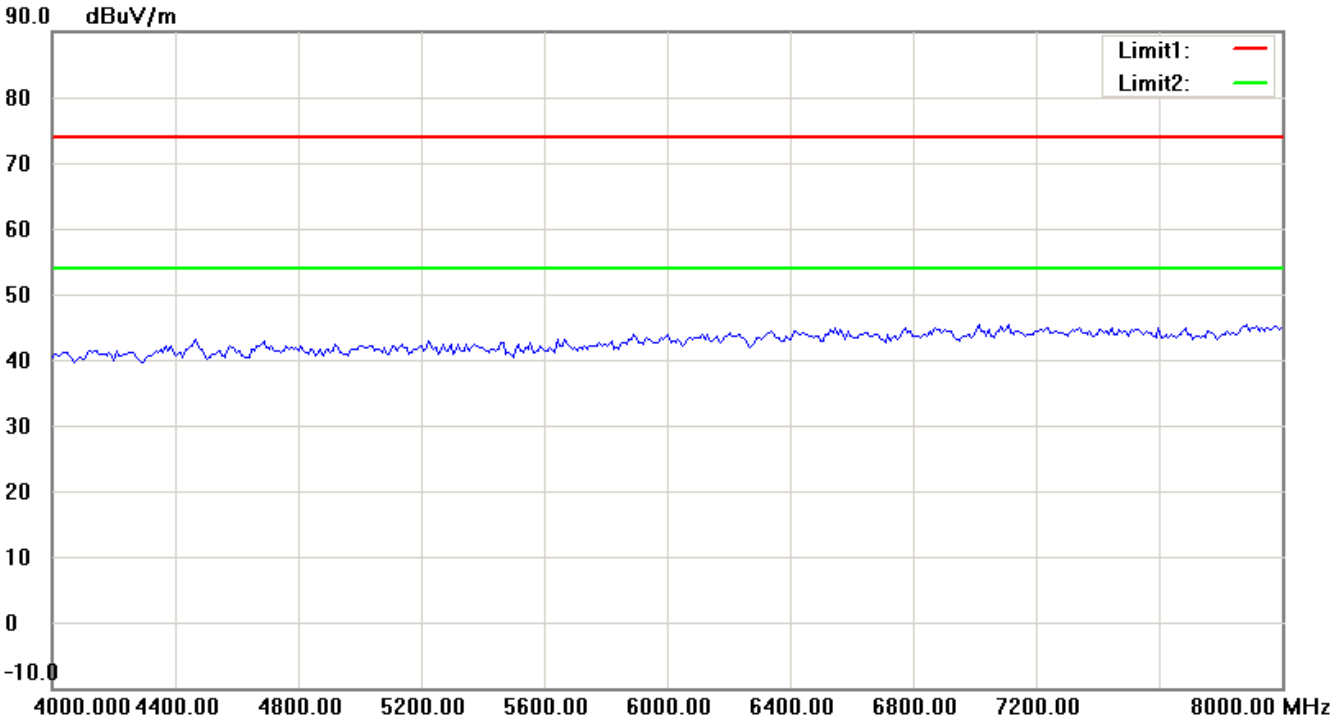

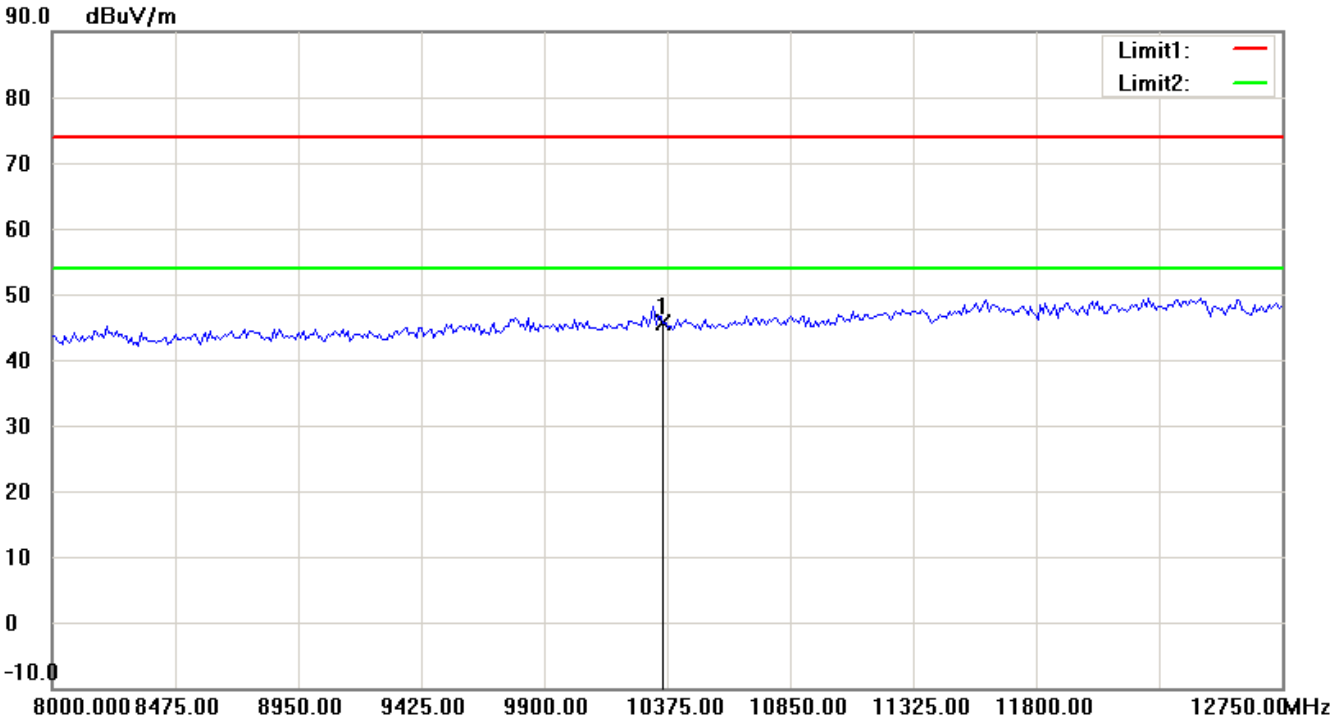

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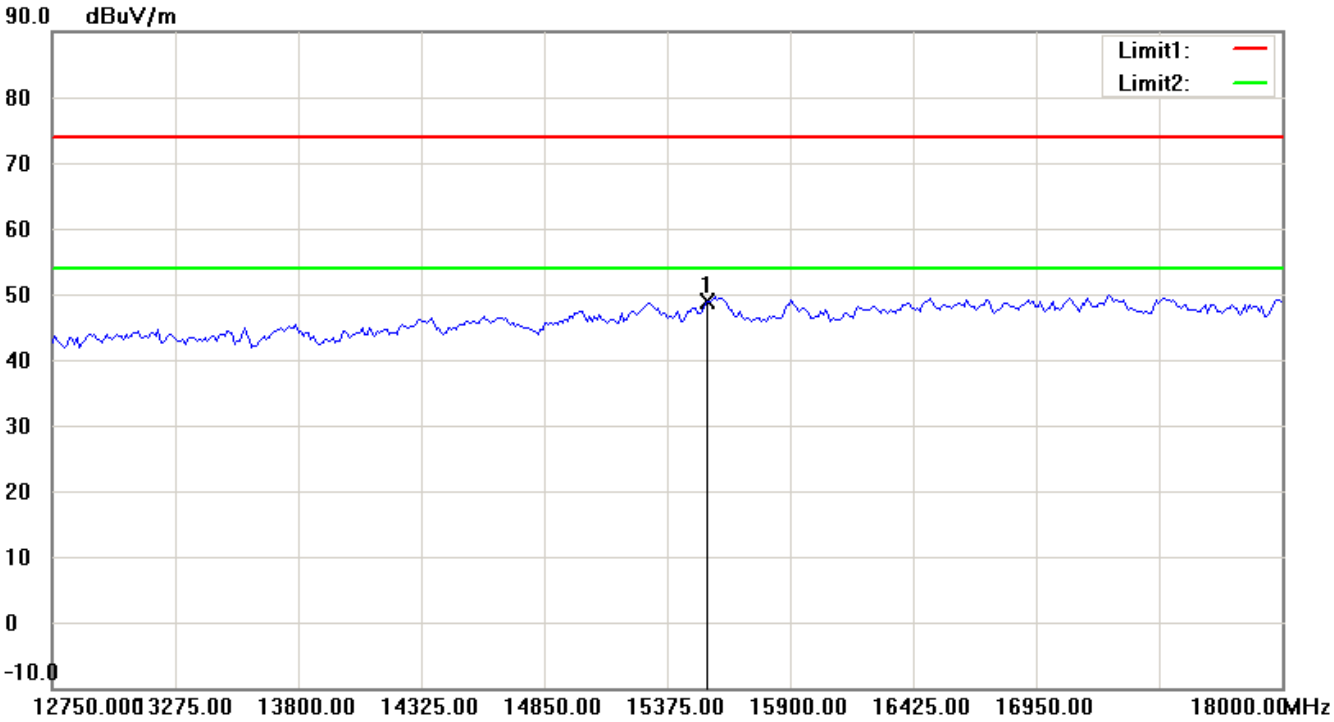

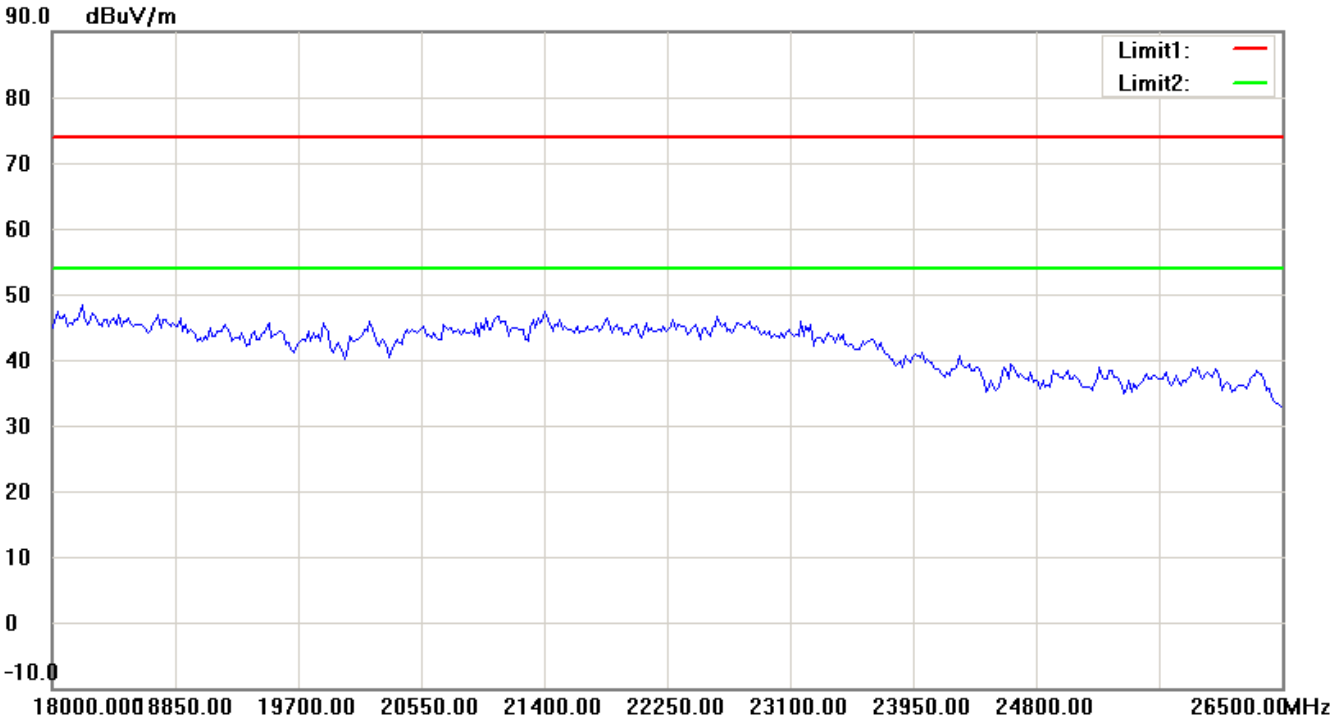

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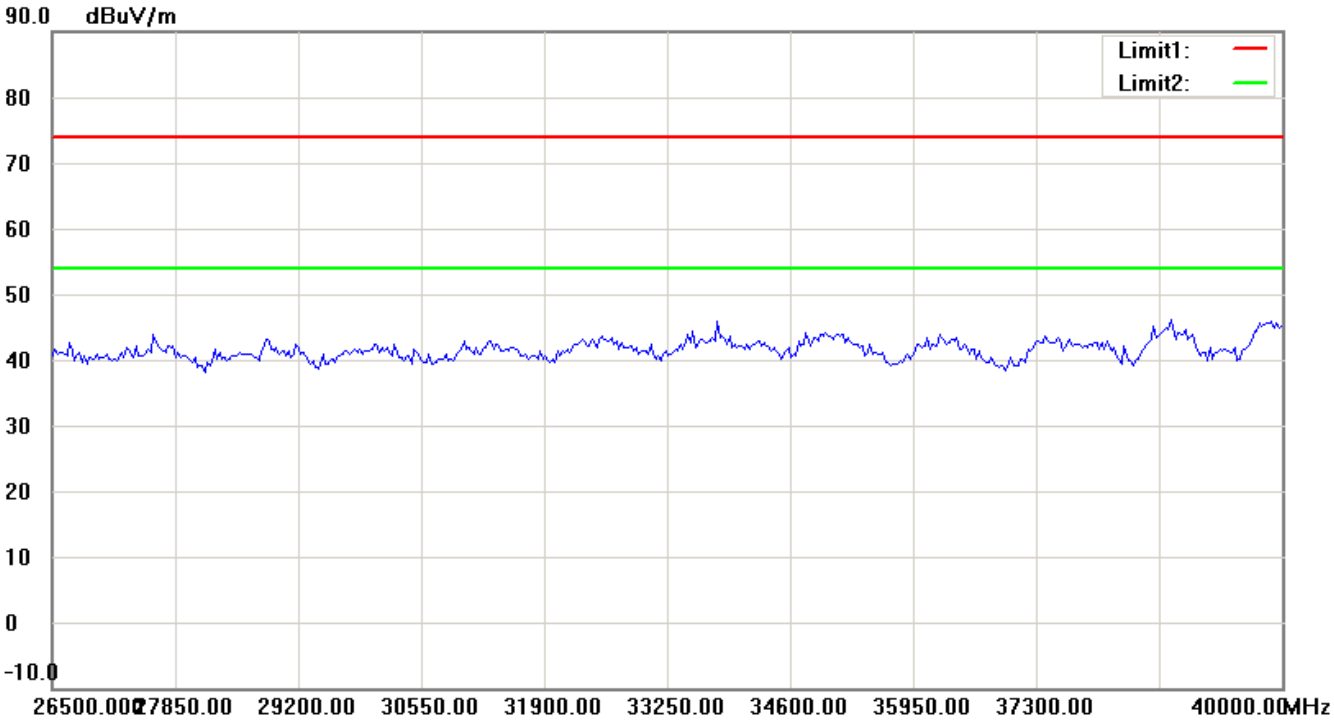
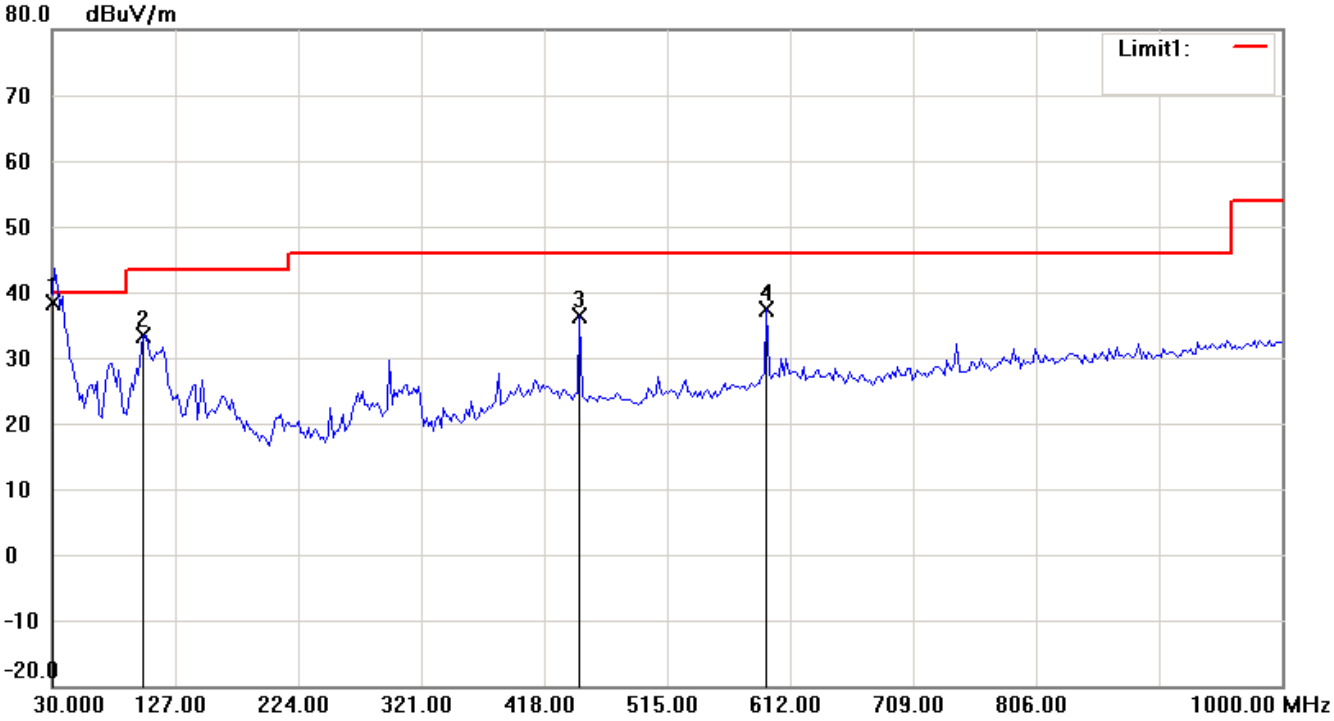
Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478



Antenna Polarization V



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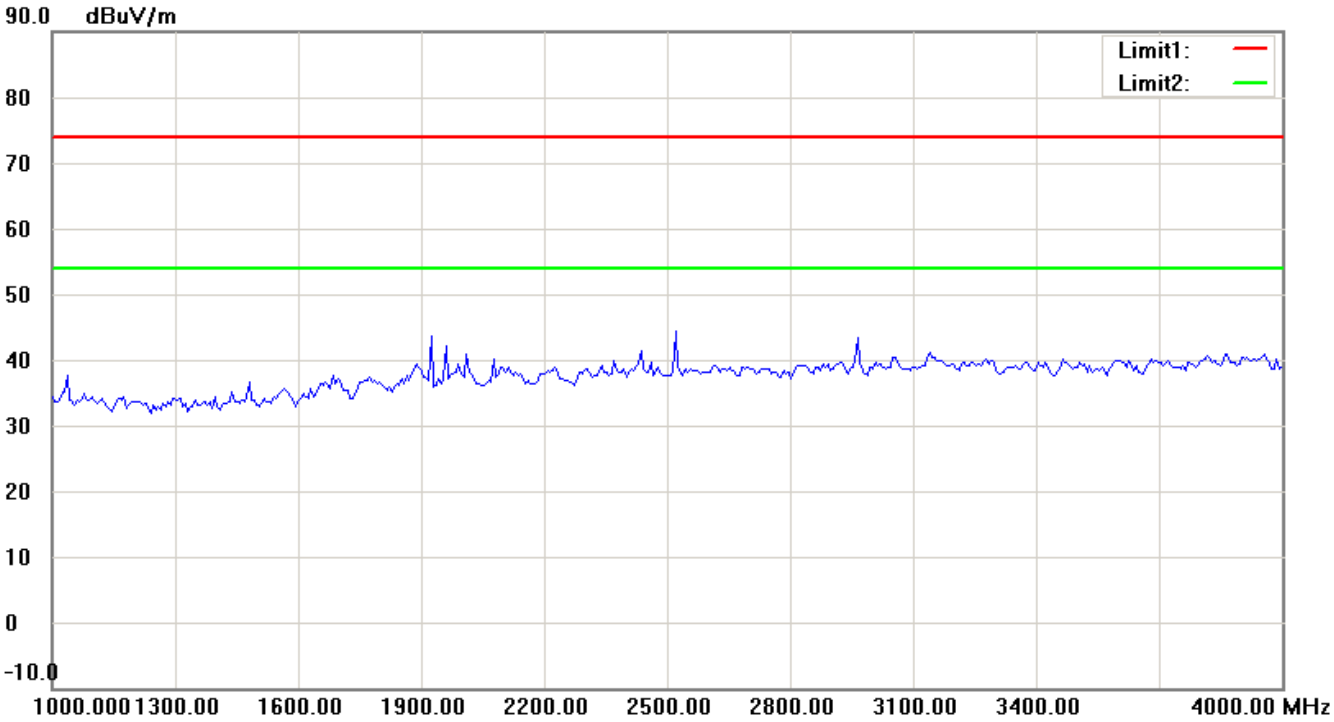

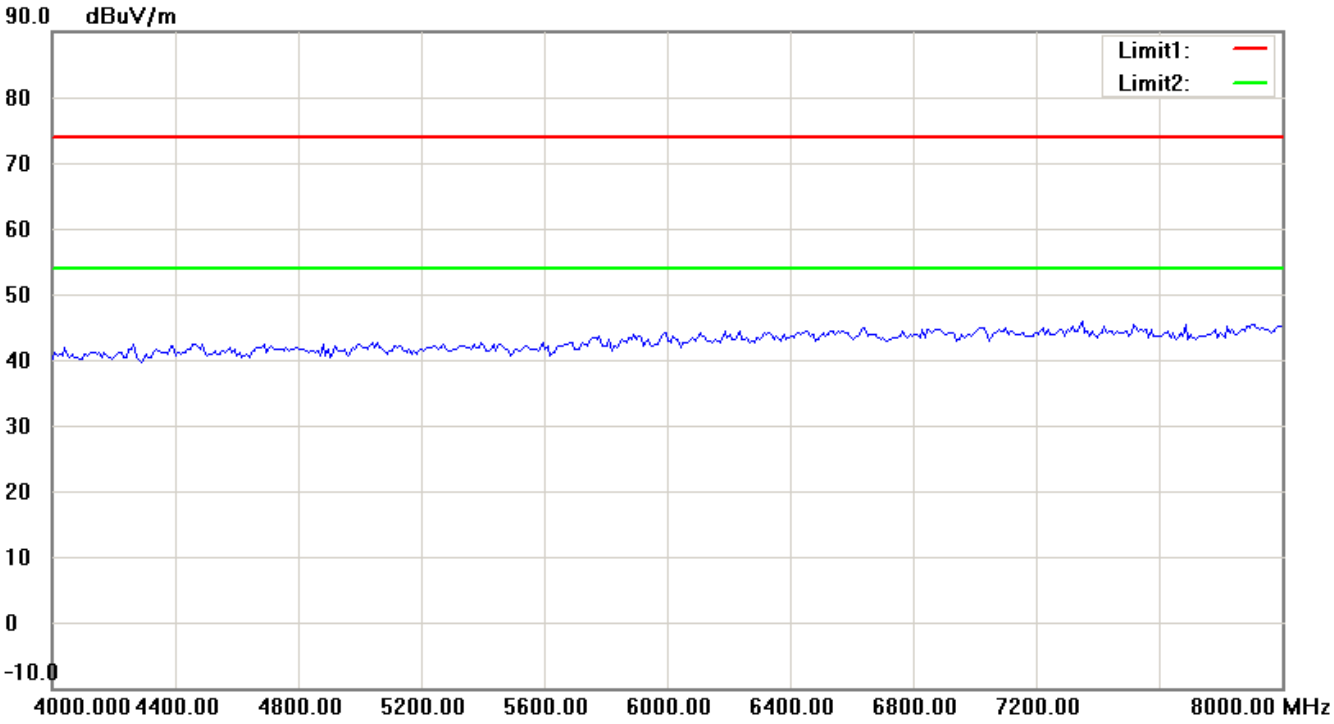

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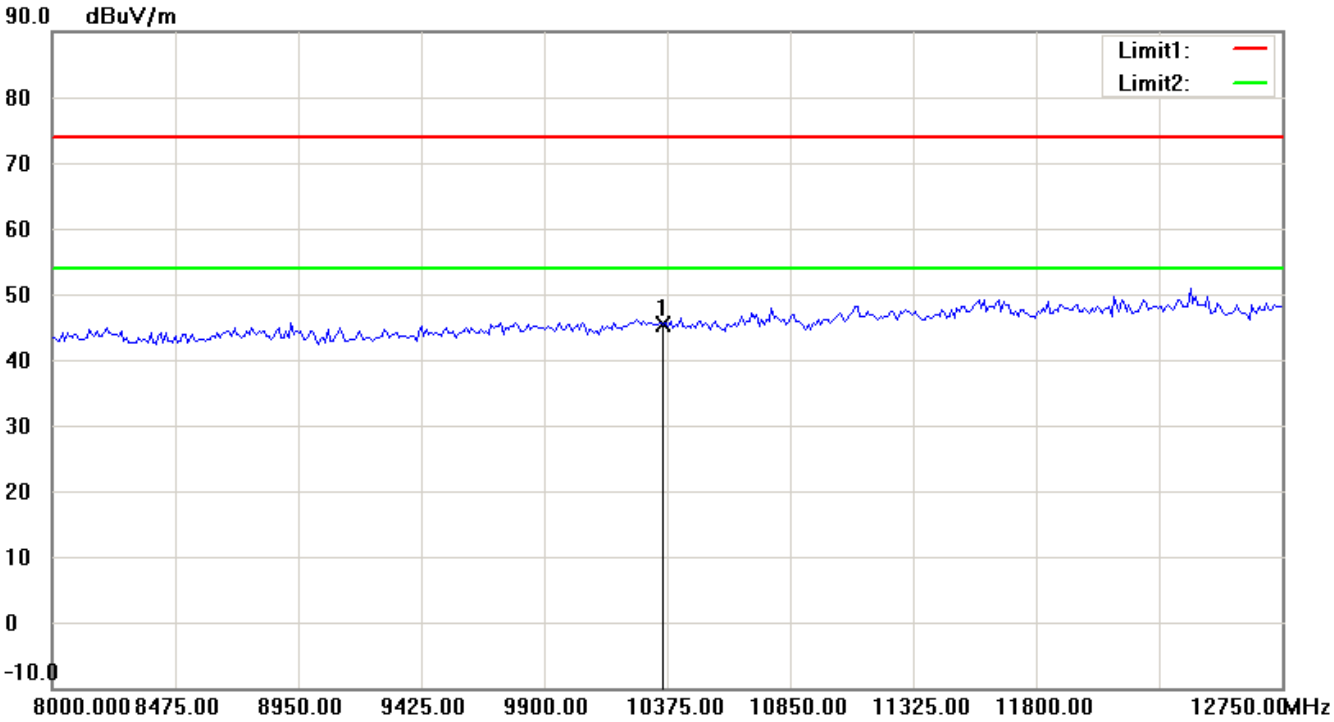
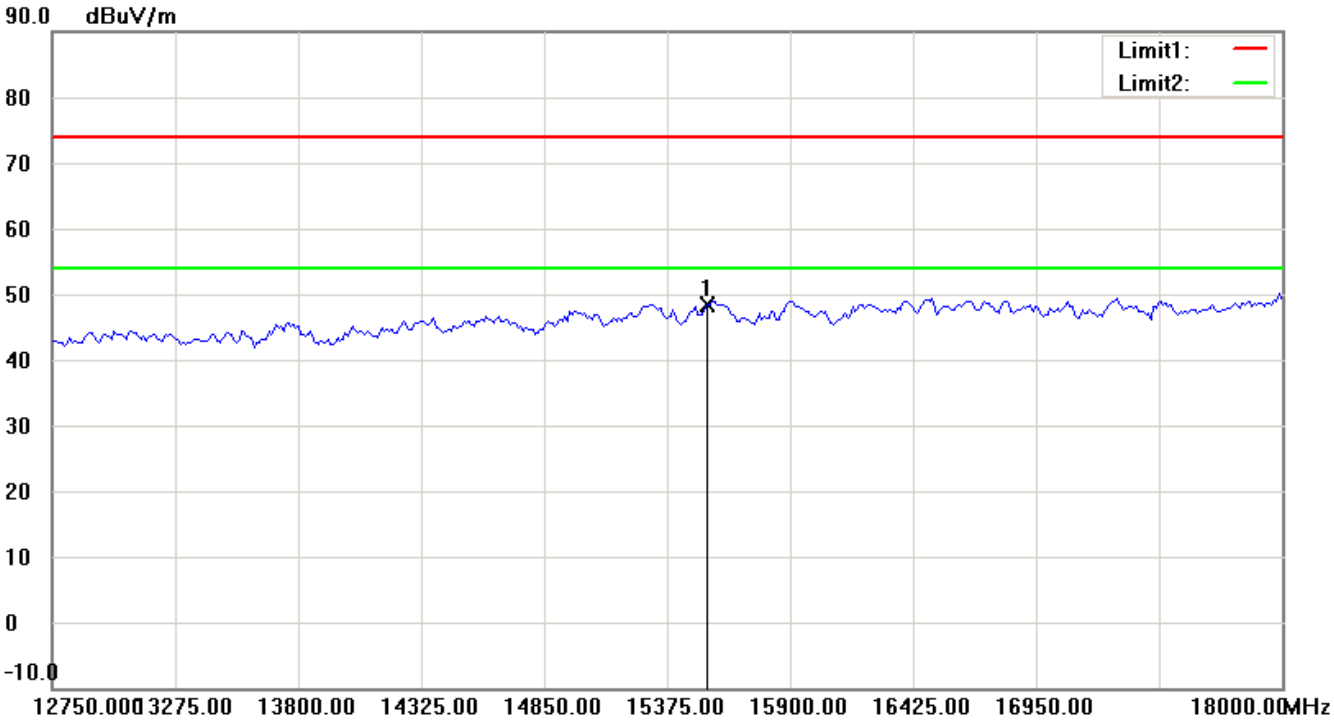
FCC ID: 2AA4J-W6M2130813478





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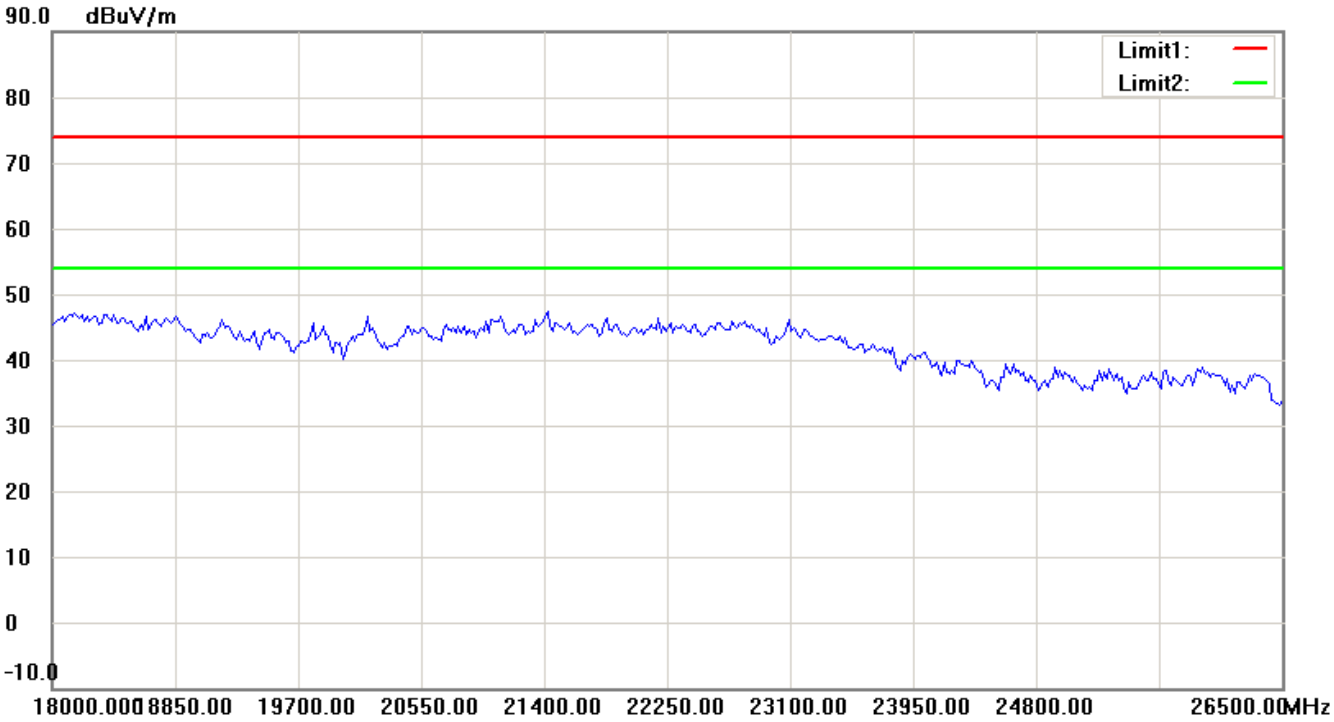

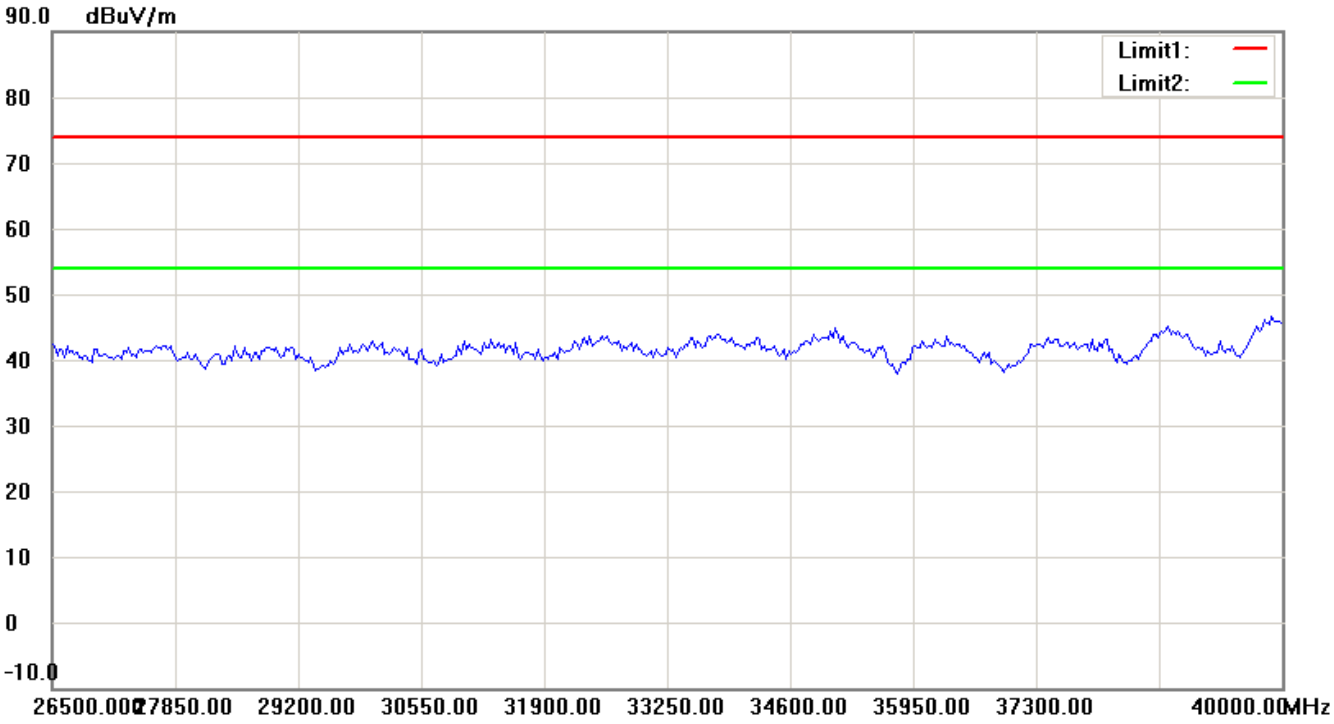

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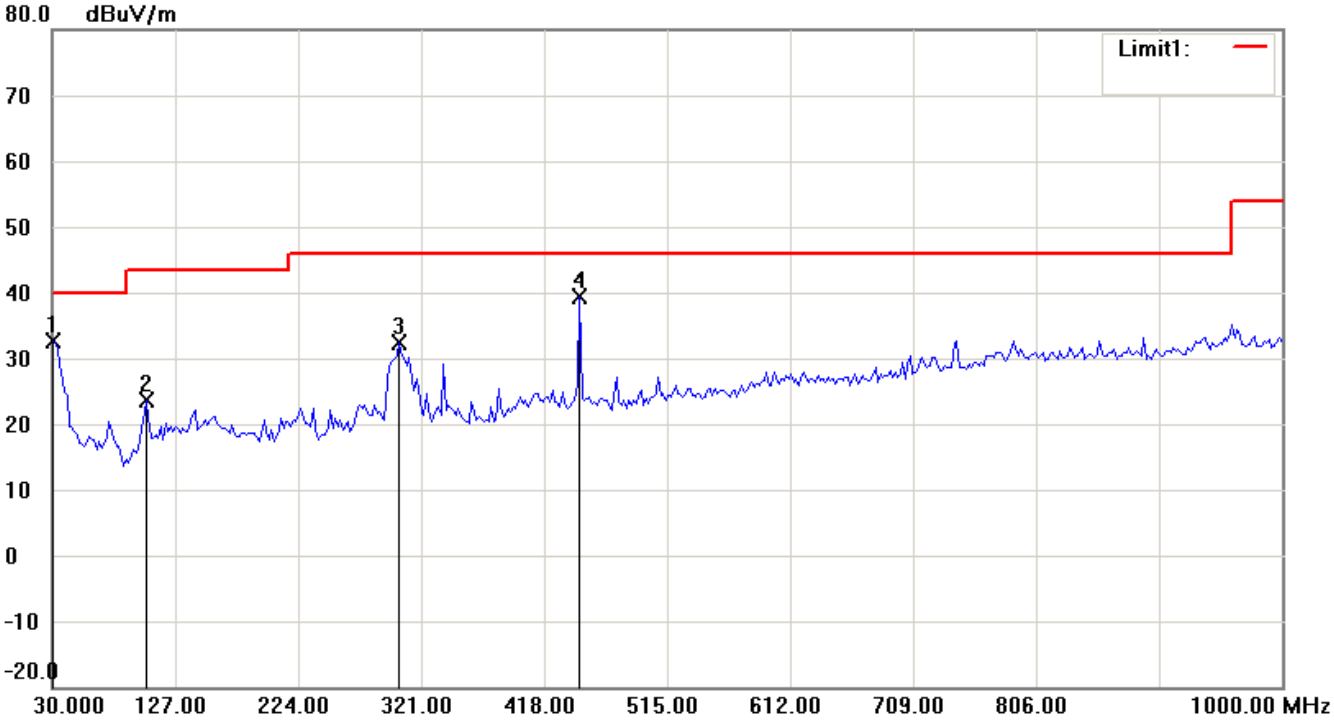
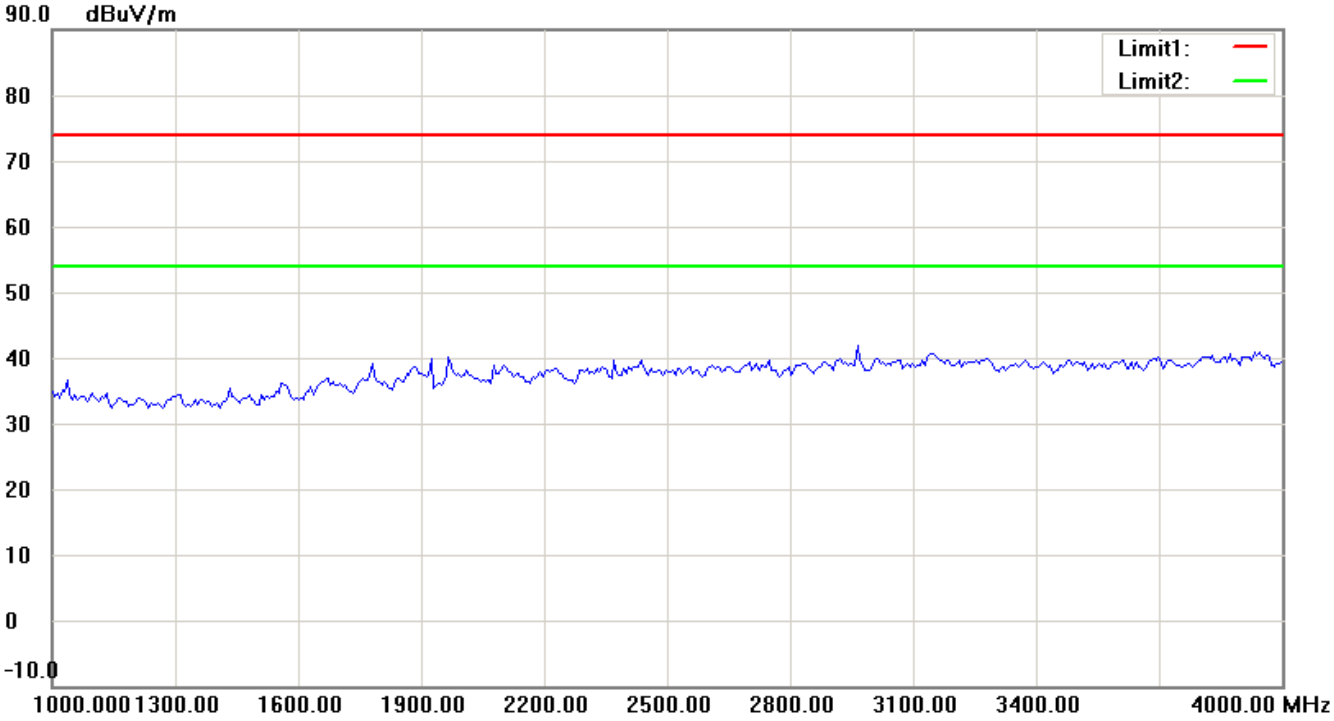
Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478

802.11n 20MHz CH40 TX
Antenna Polarization H





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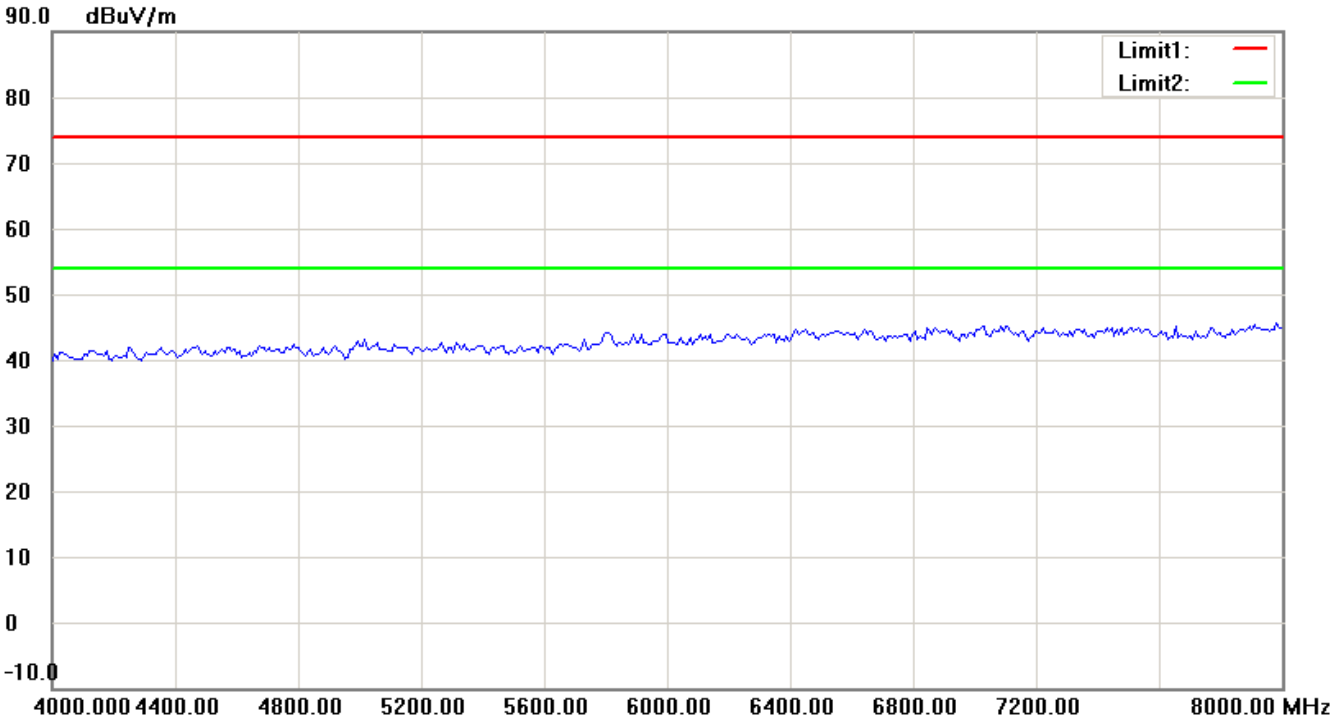

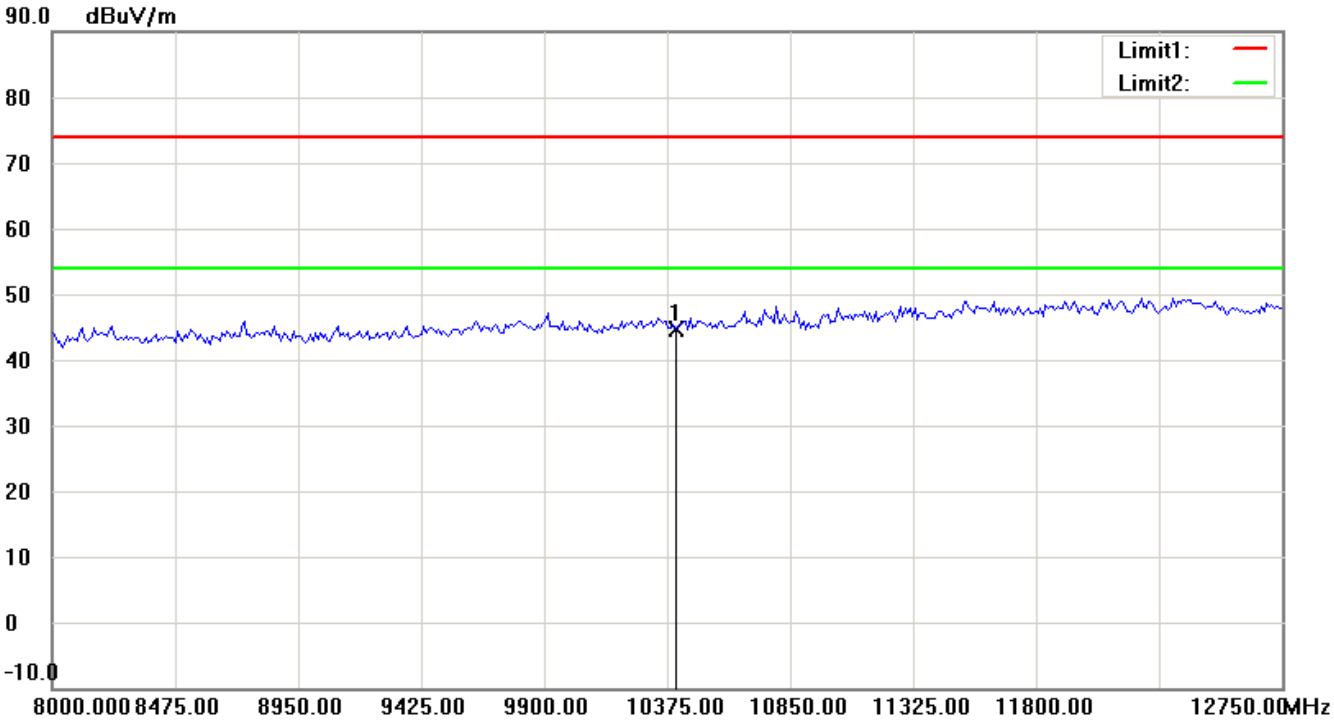

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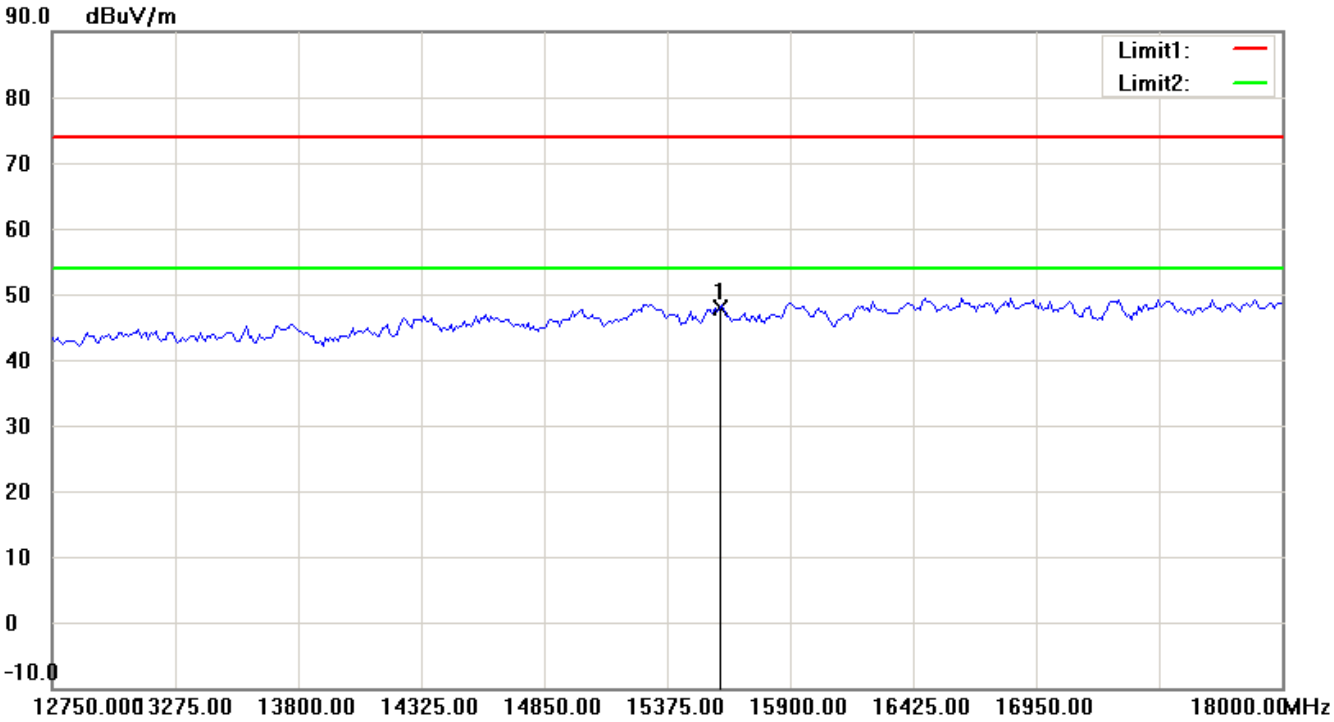

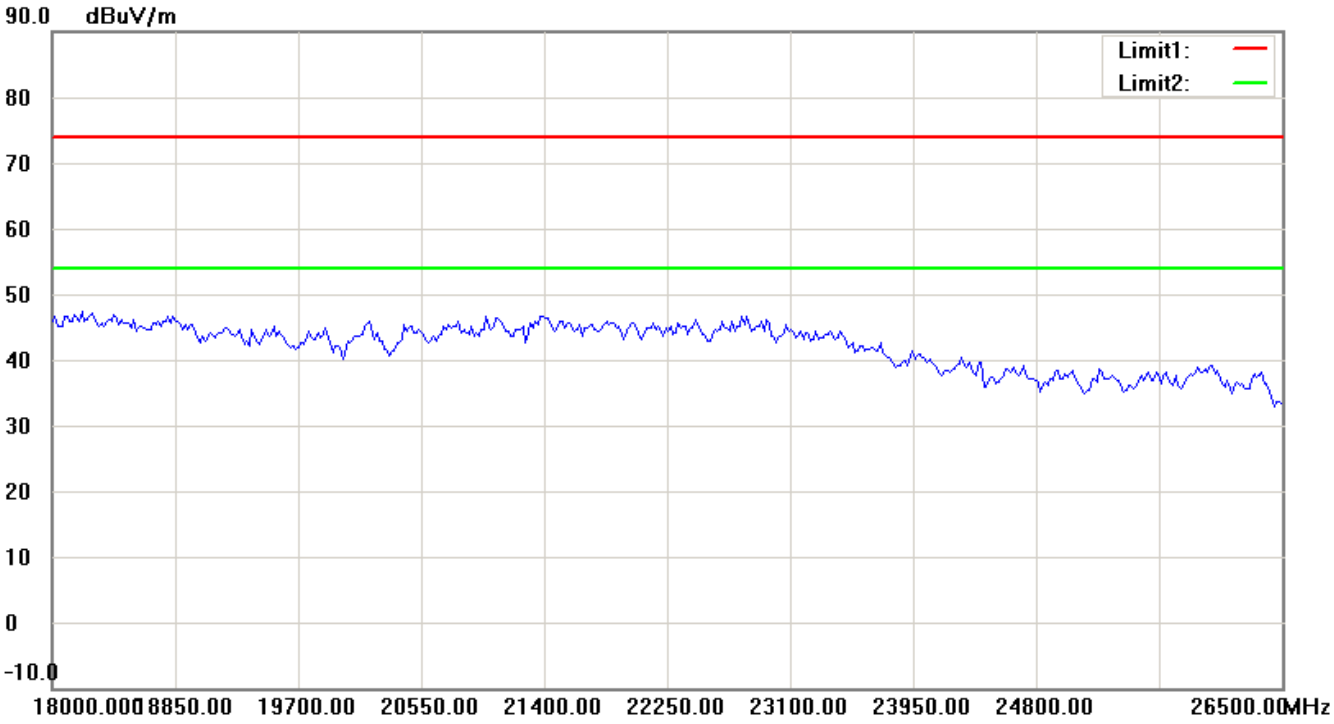

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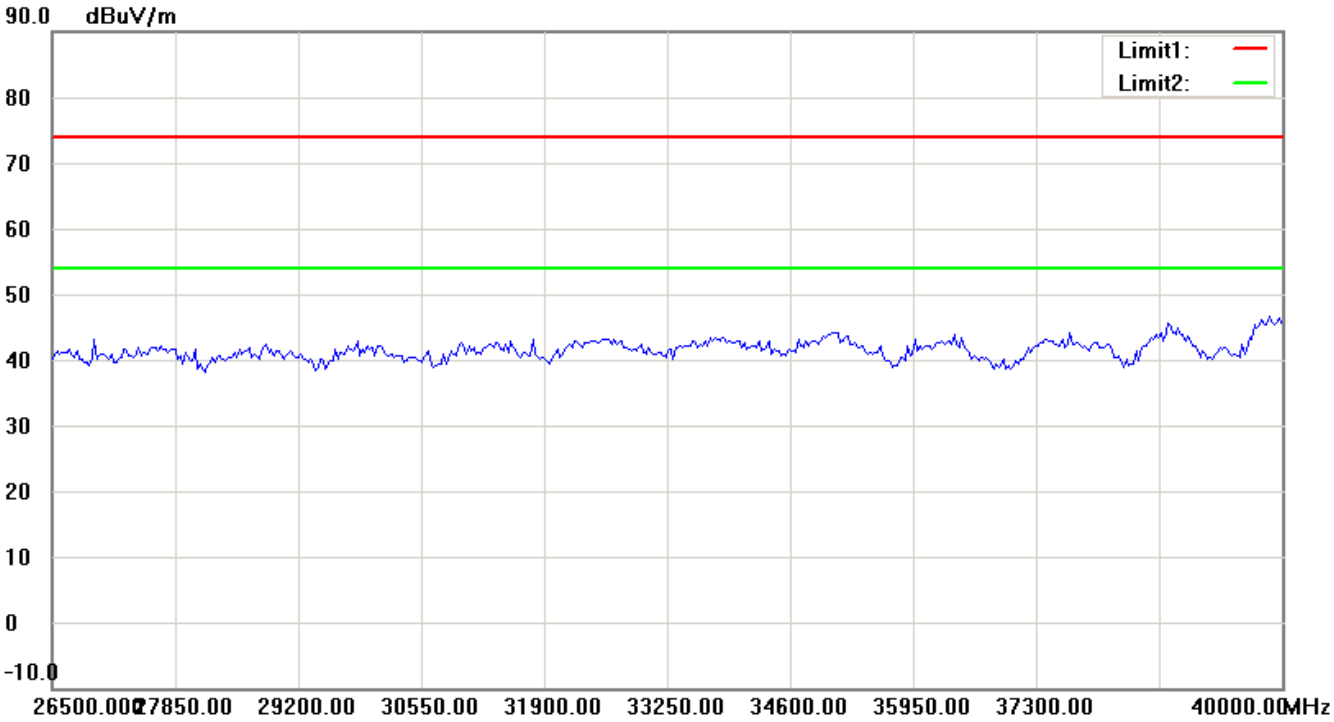
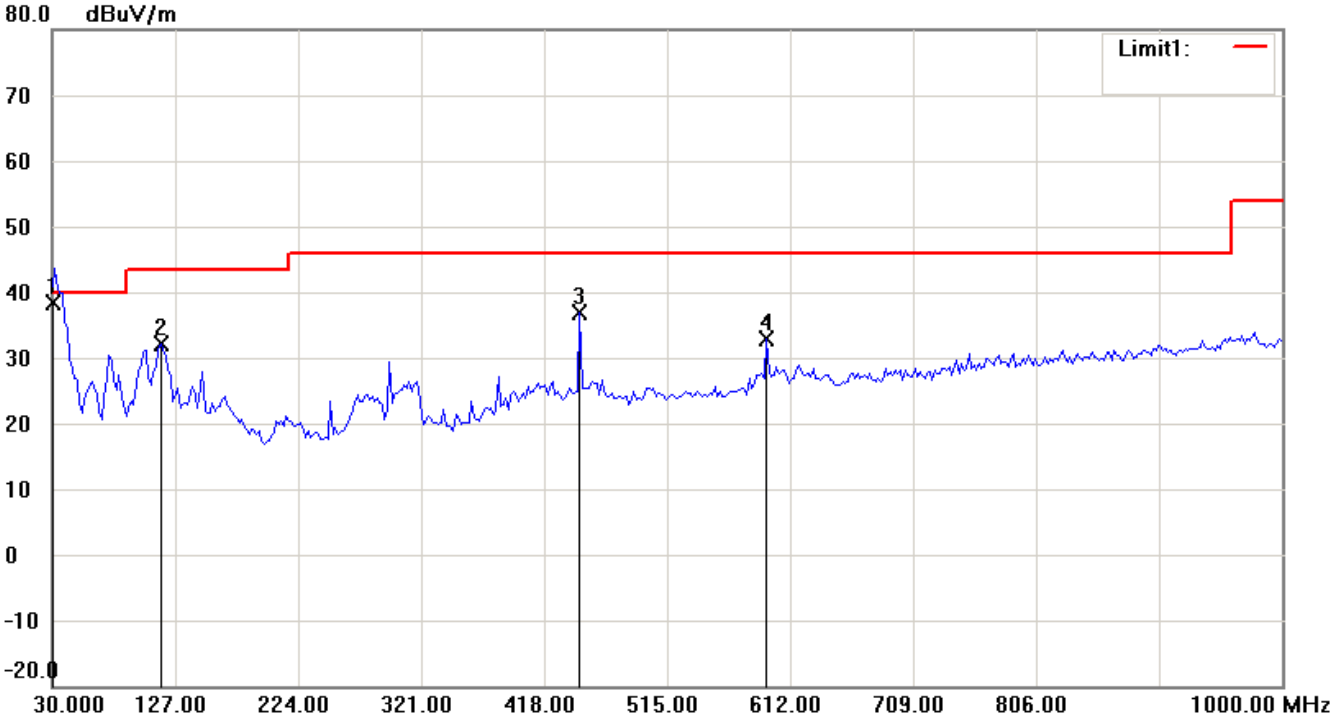


Antenna Polarization V



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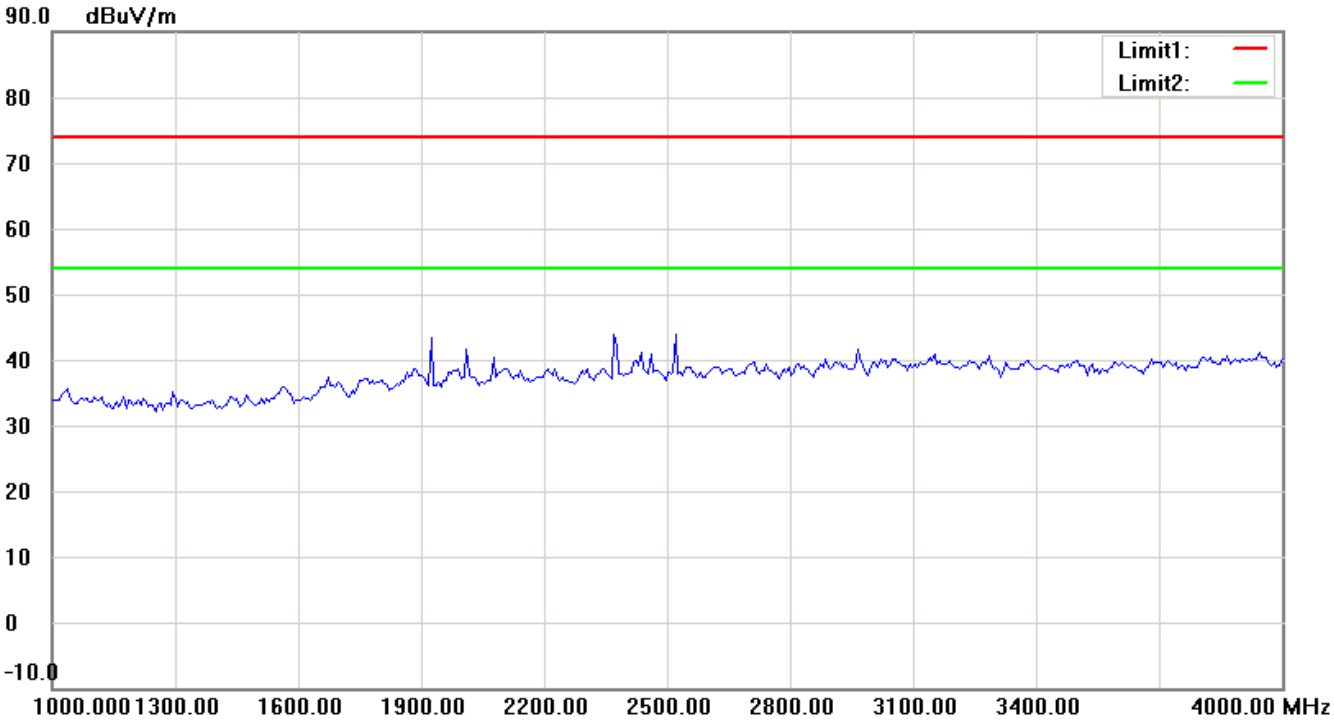

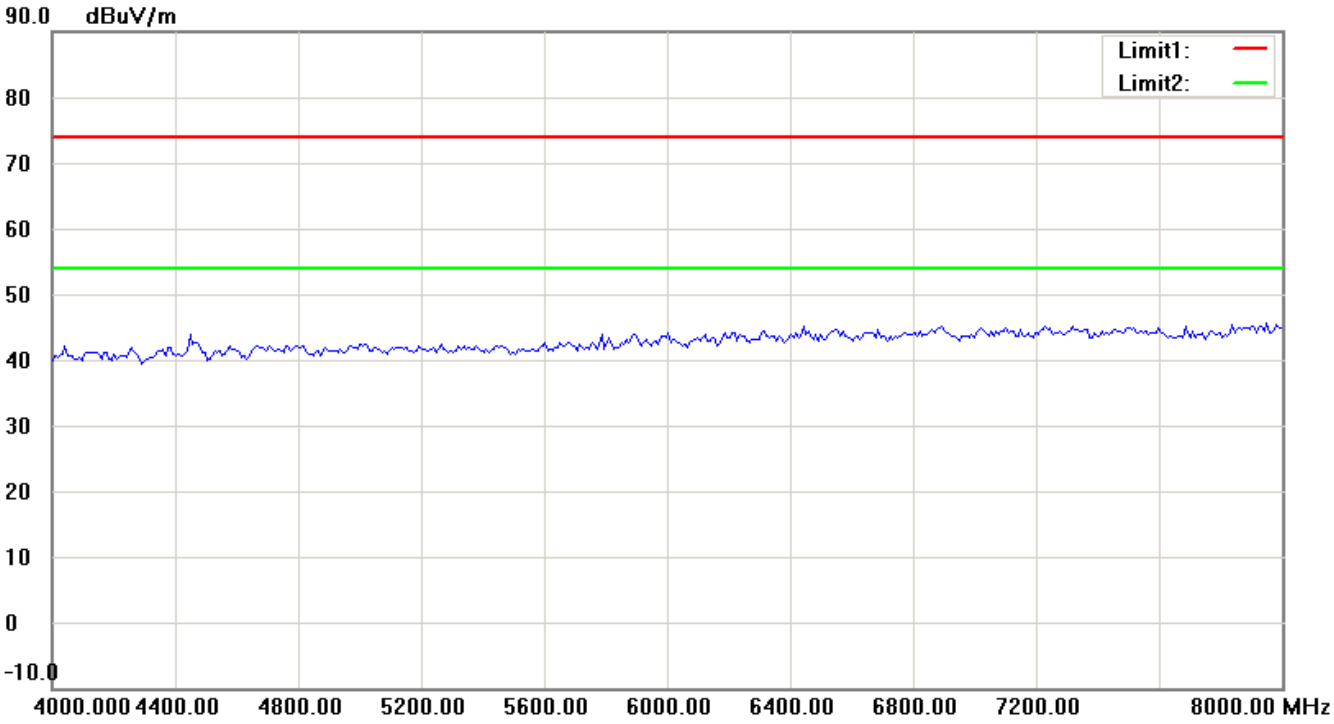

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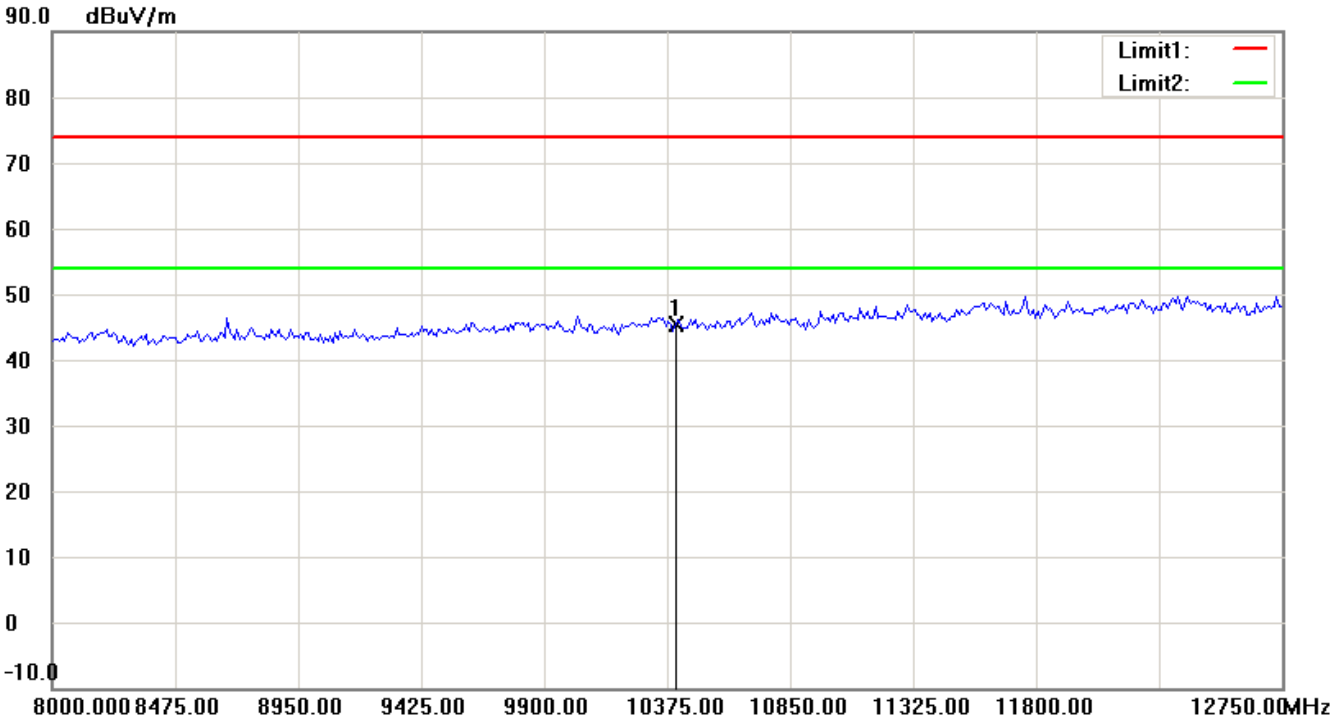

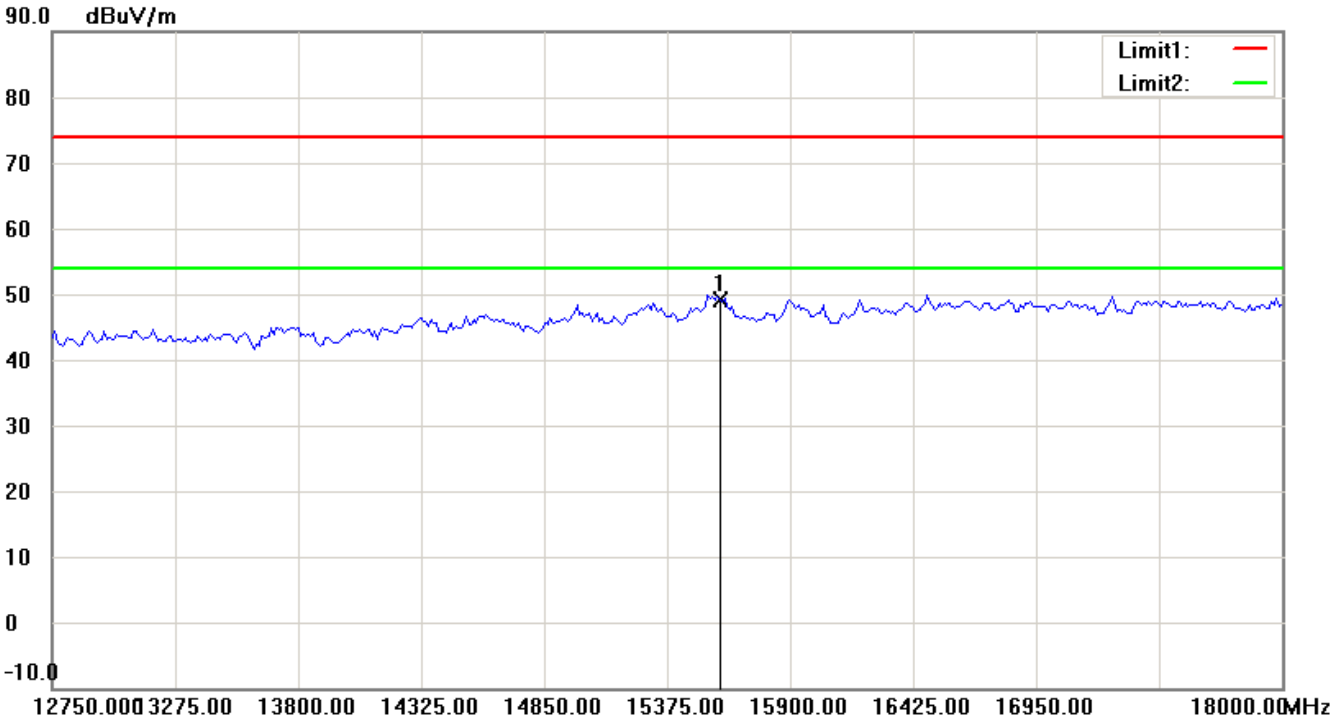

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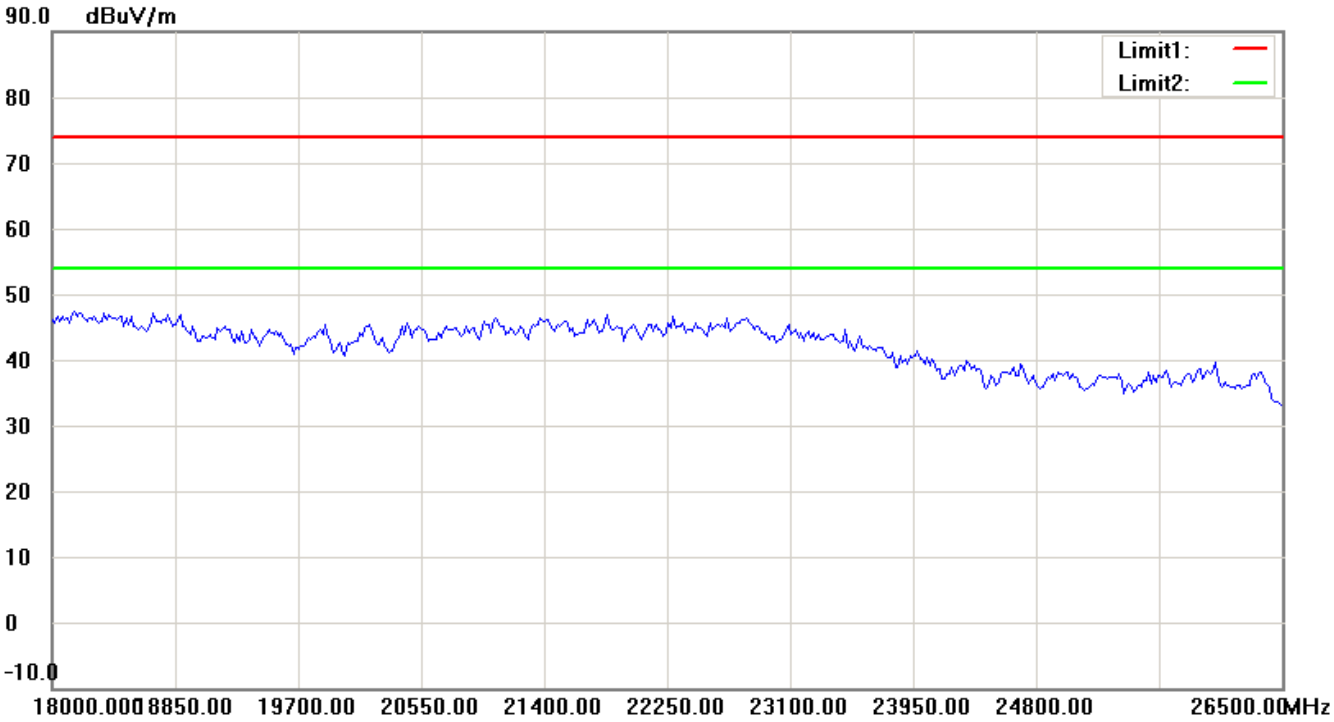

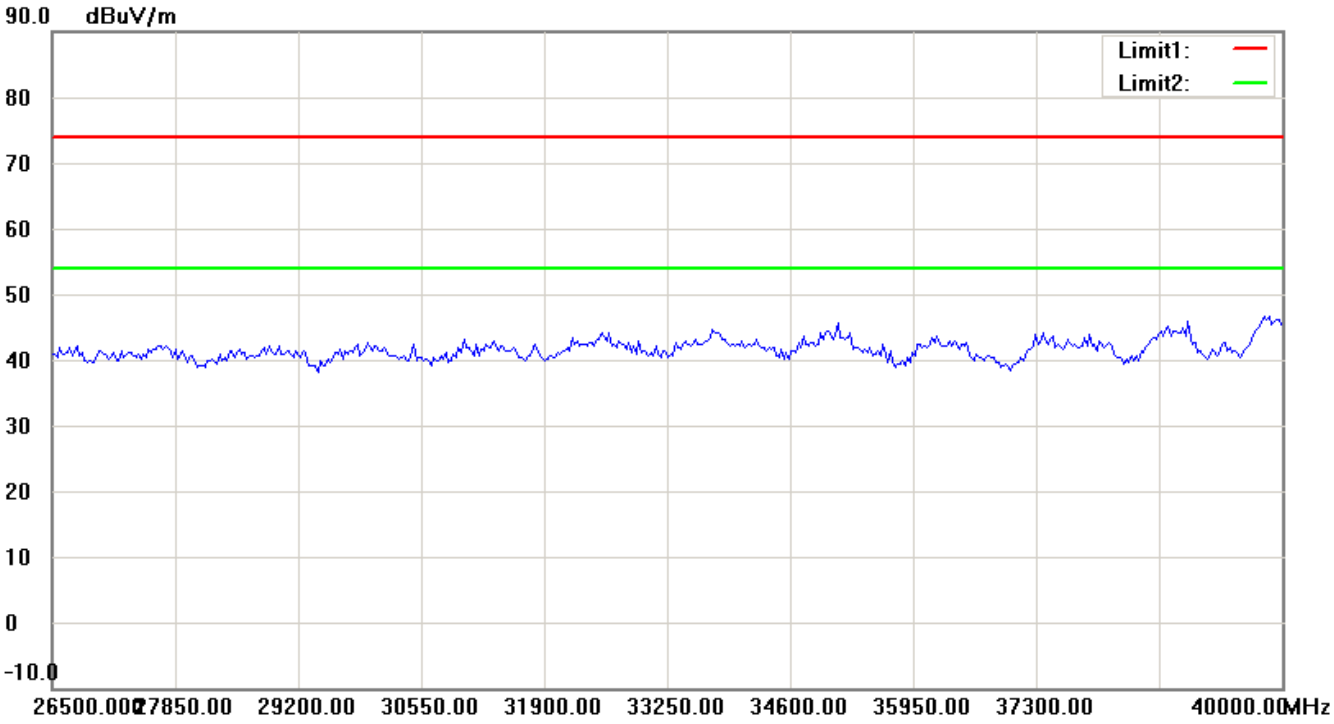

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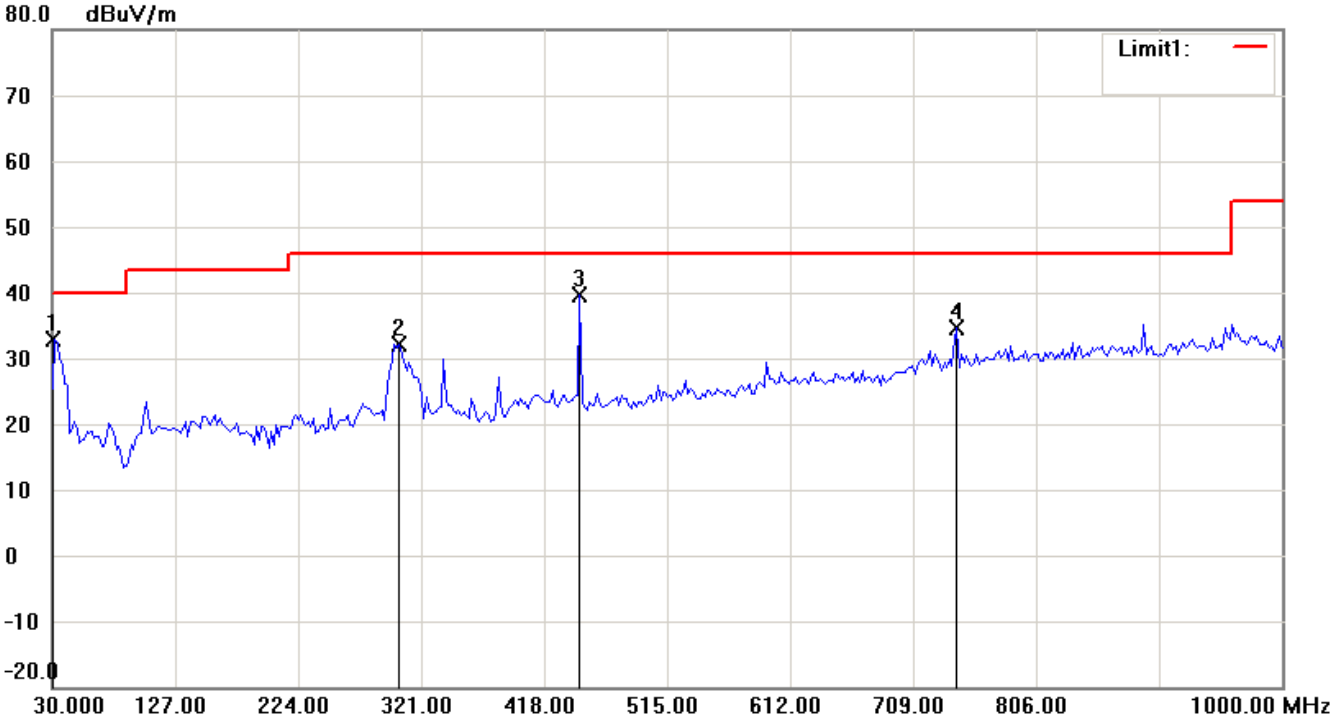
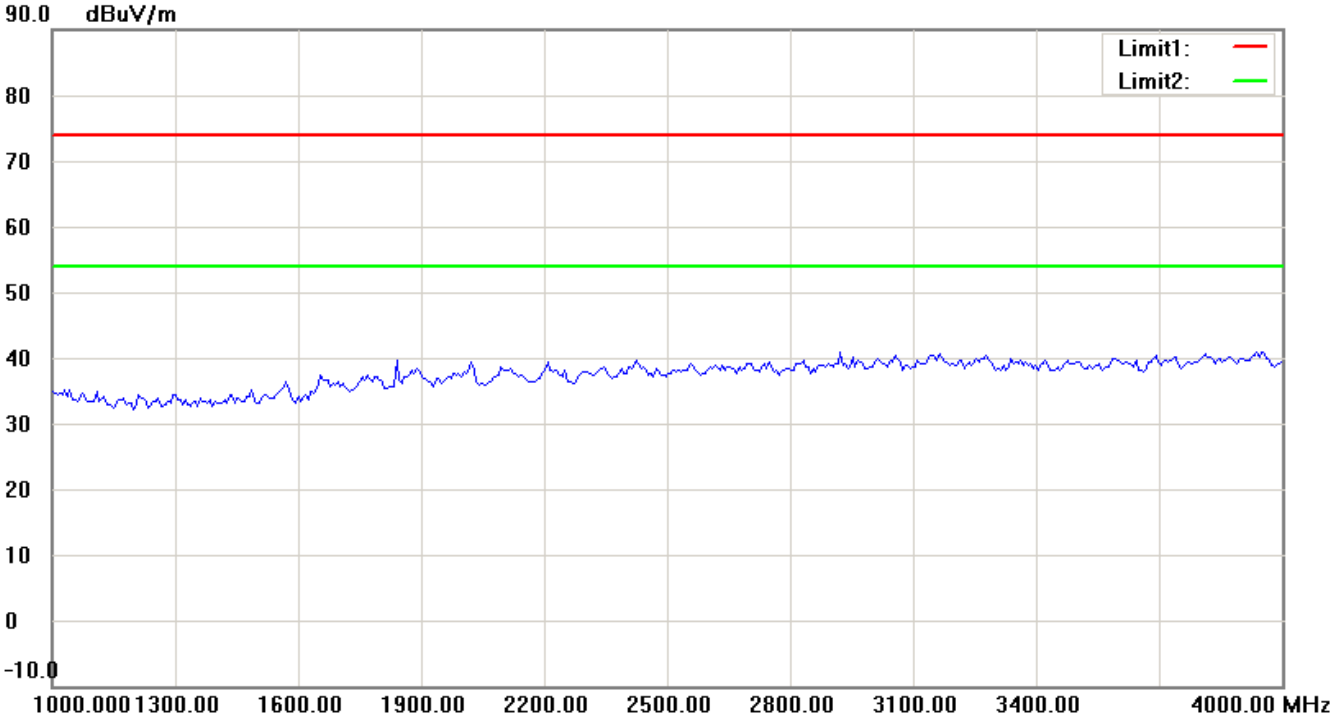
Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478

802.11n 20MHz CH48 TX
Antenna Polarization H





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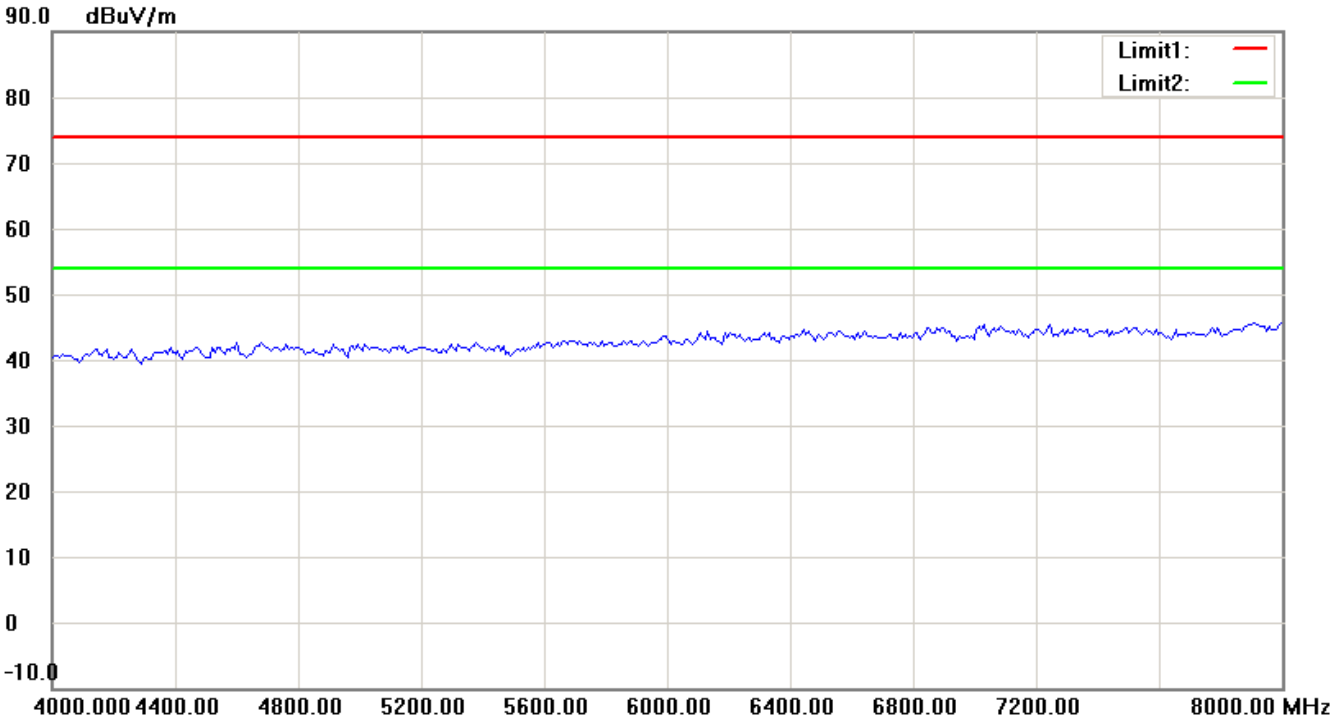

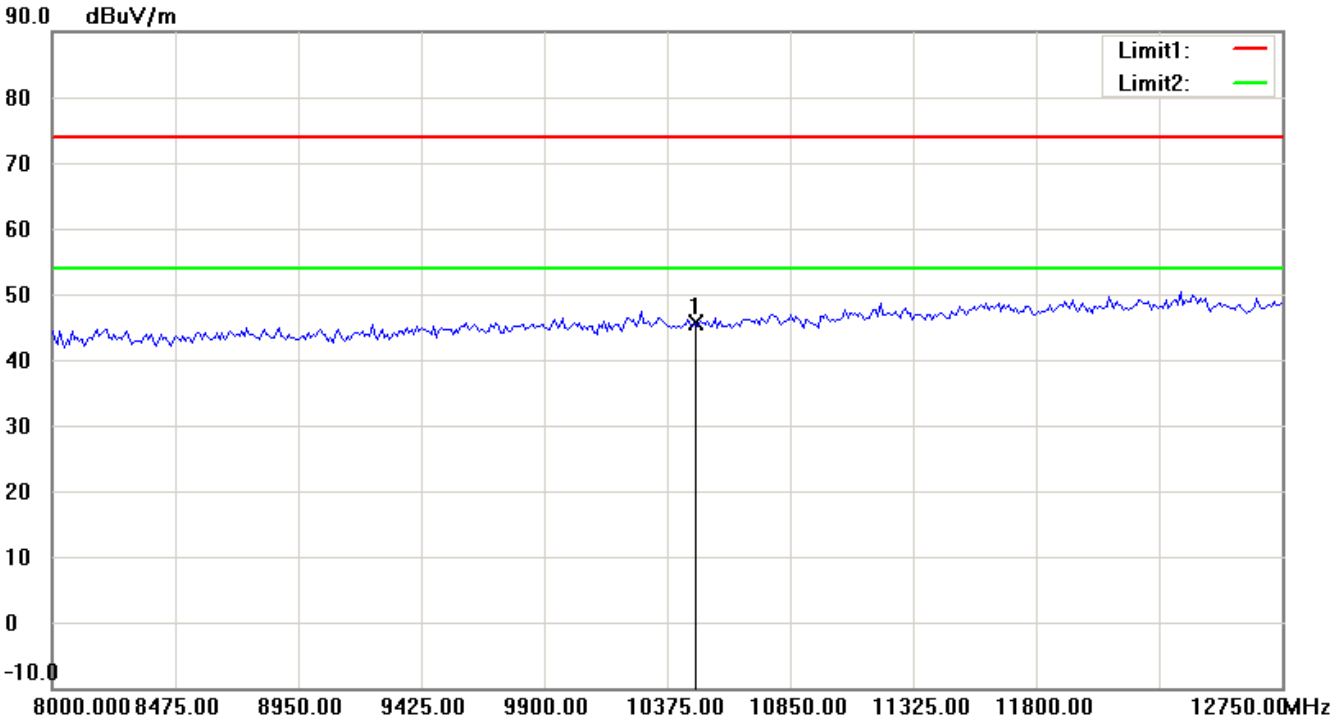

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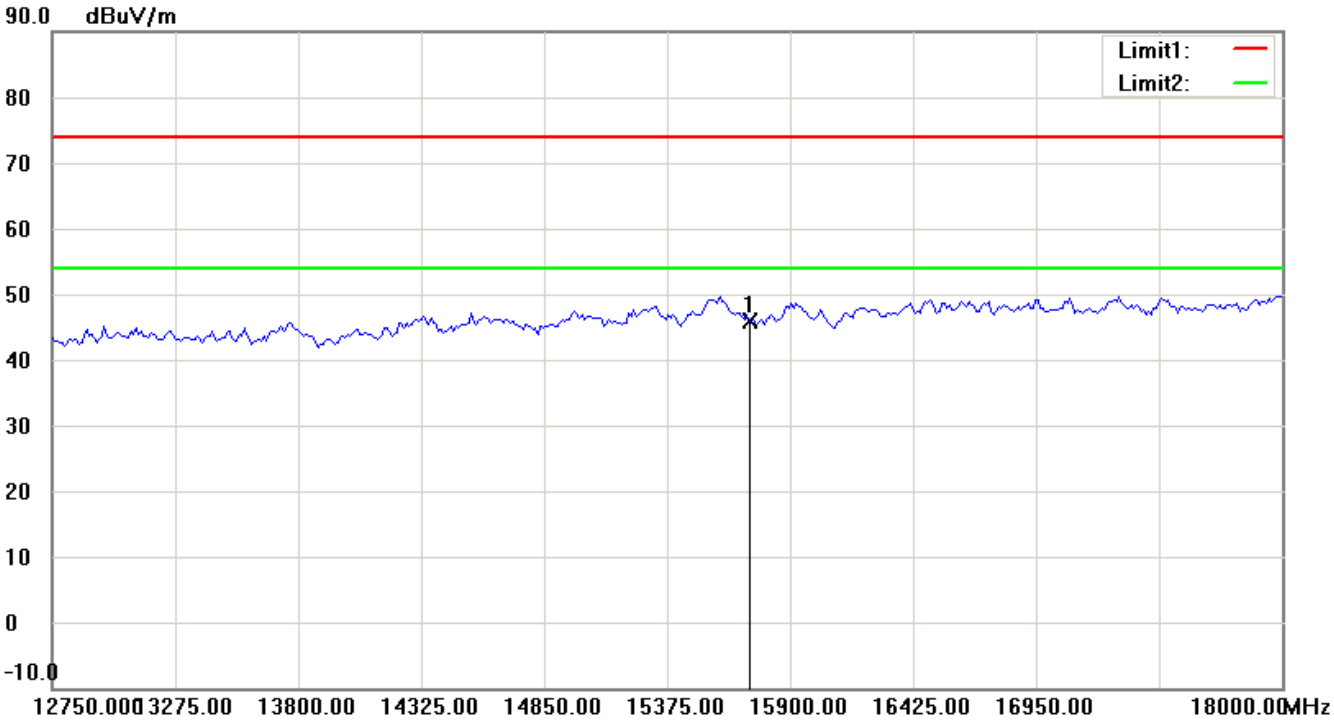

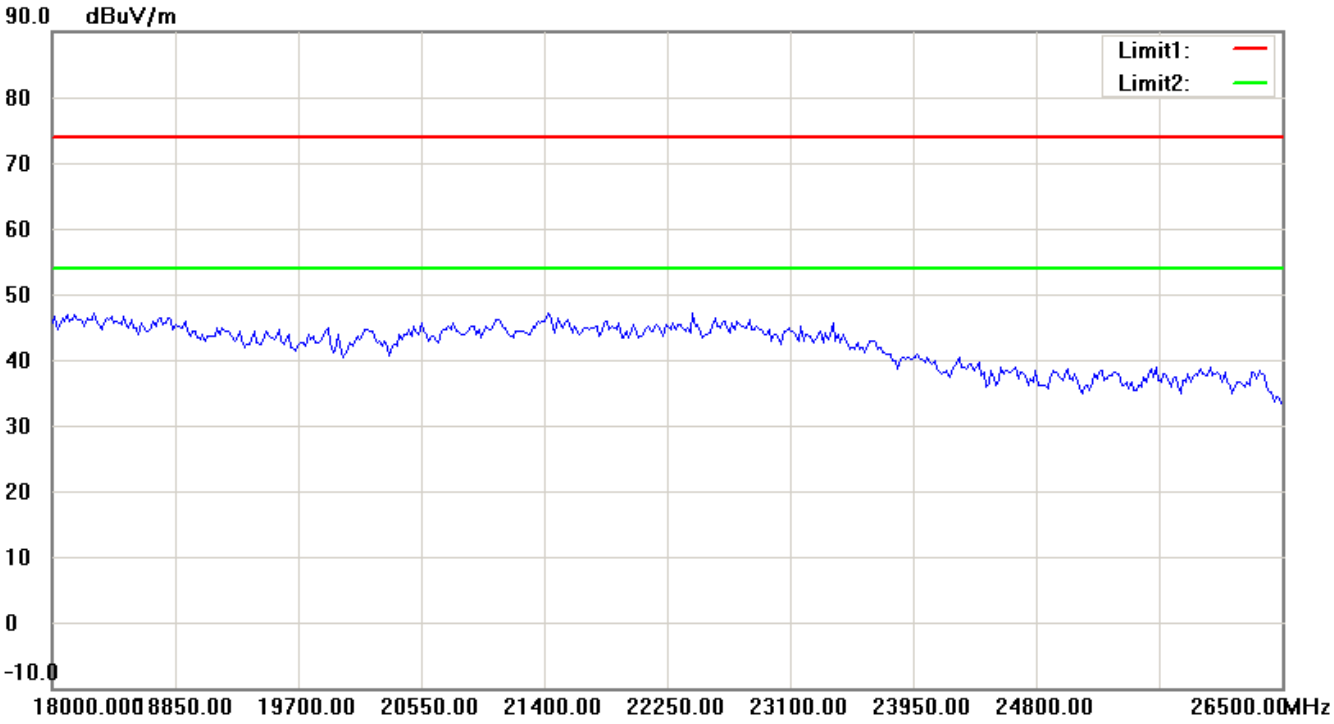

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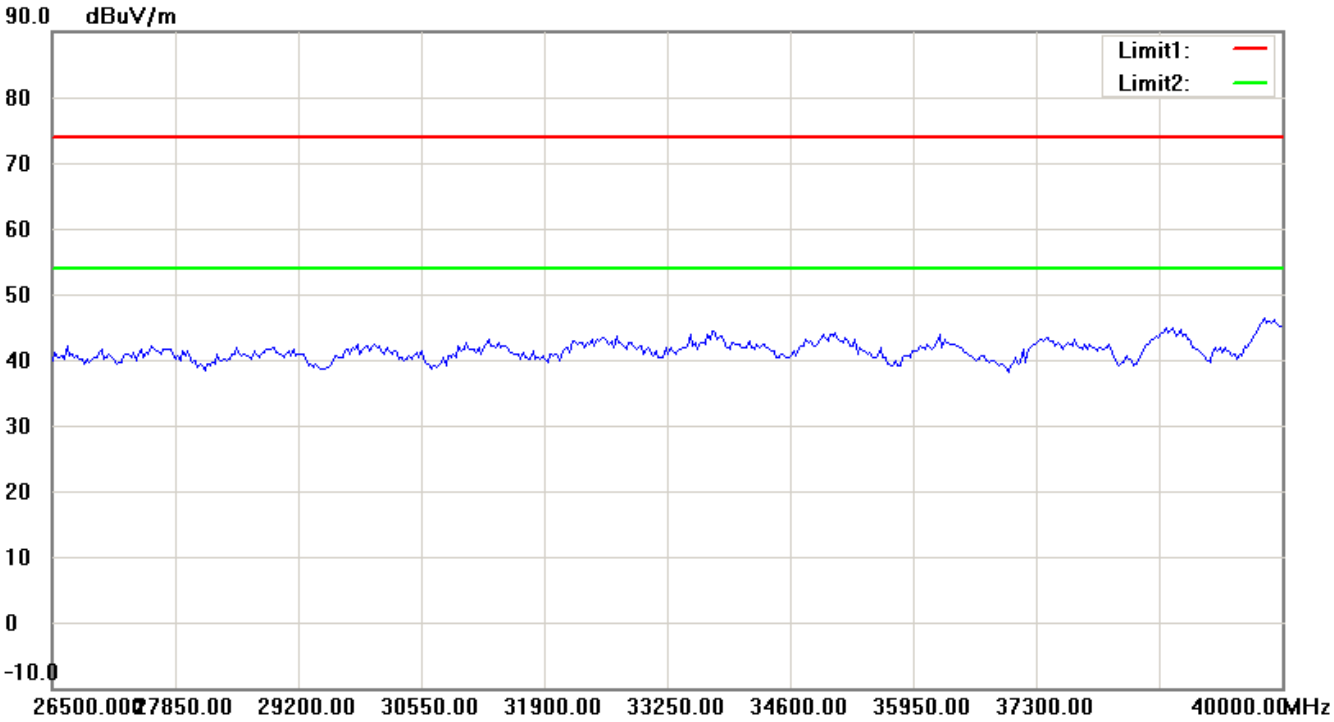
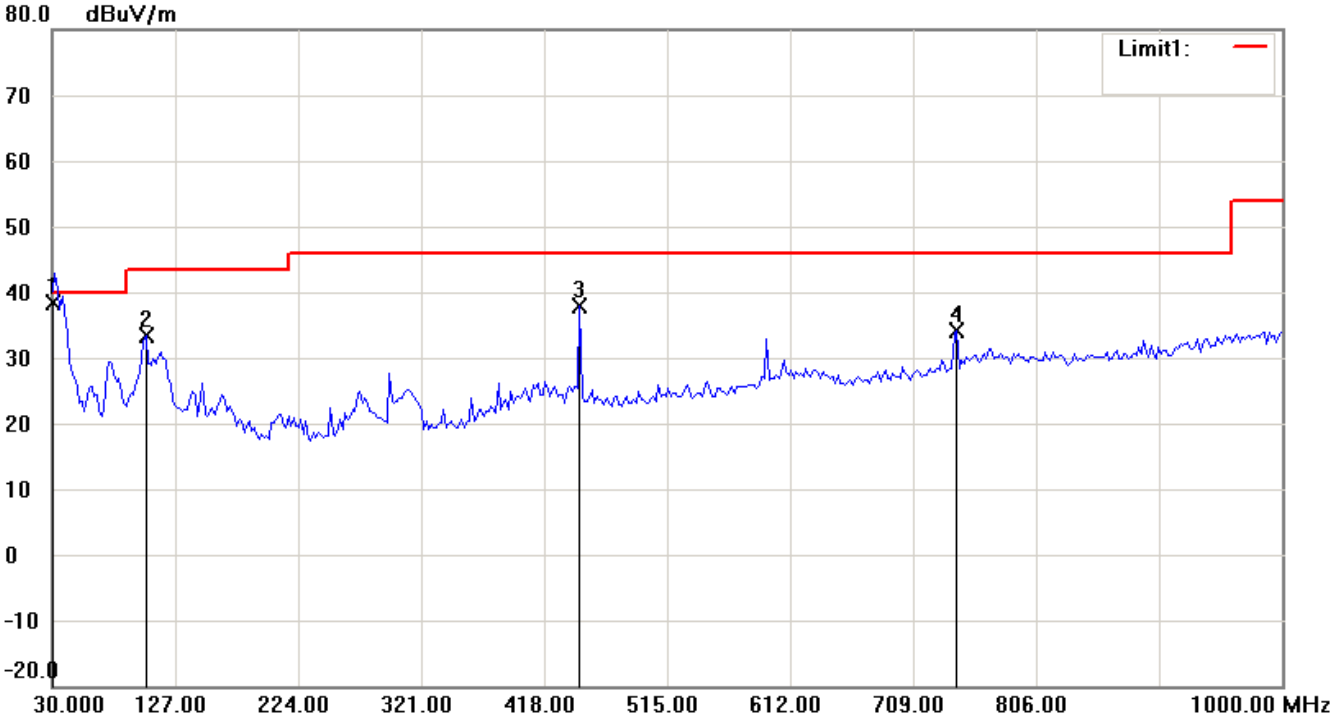


Antenna Polarization V



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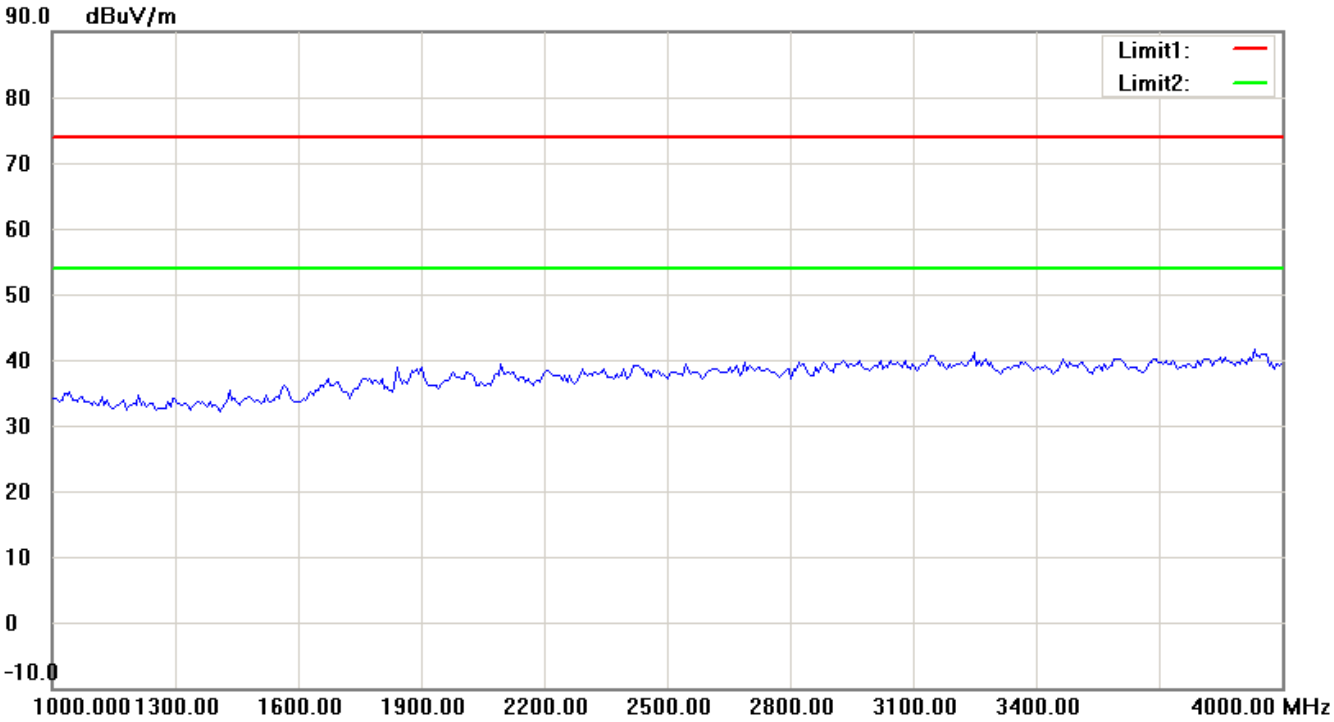

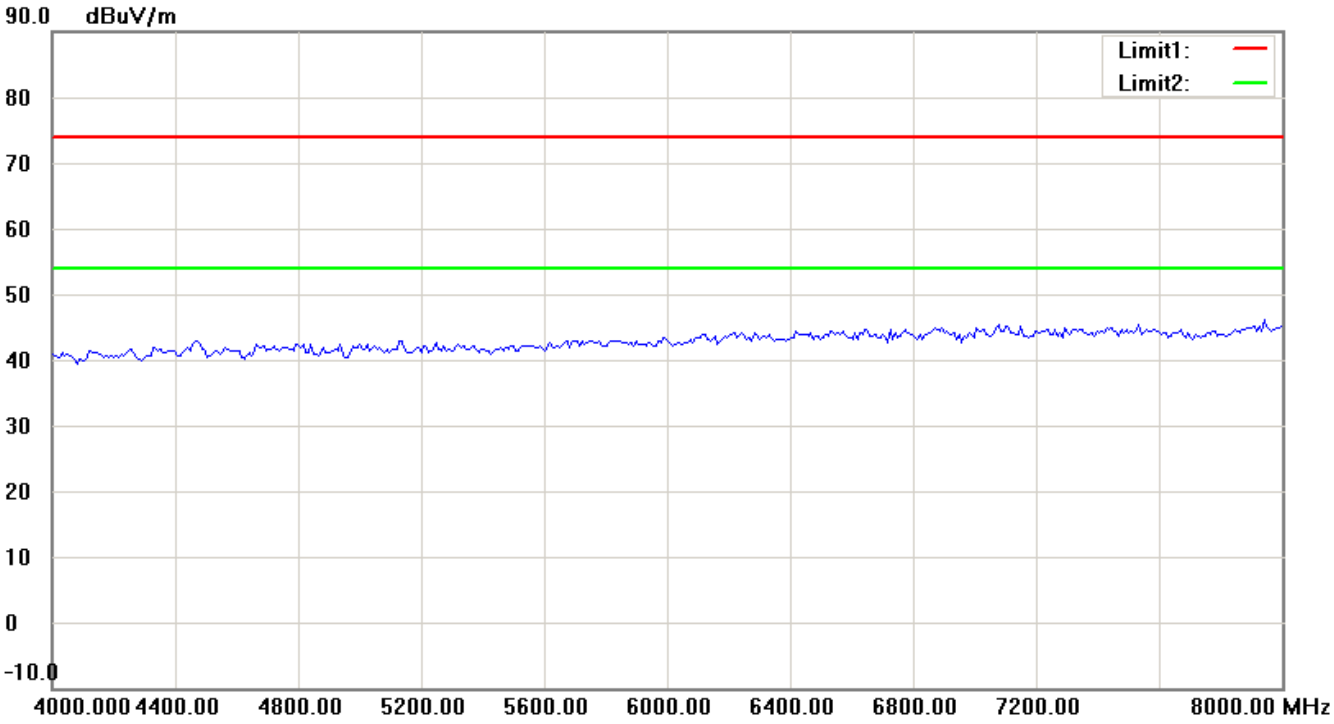

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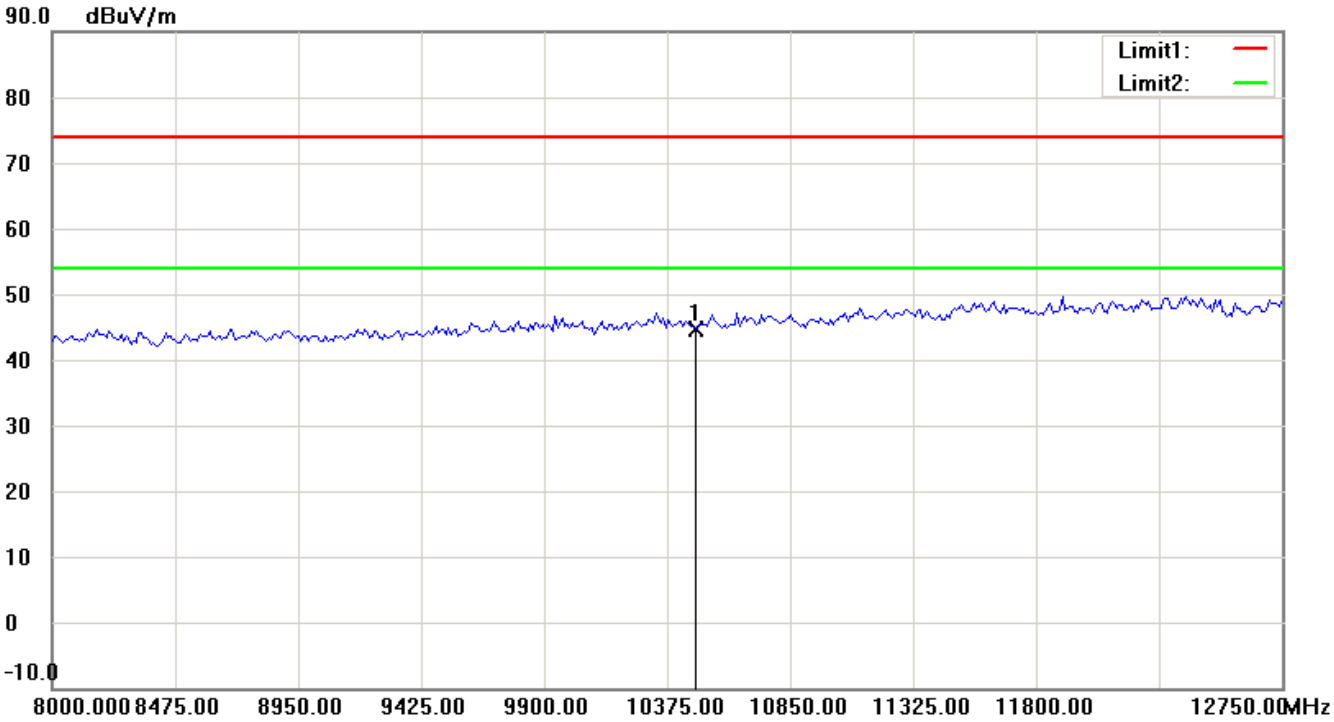

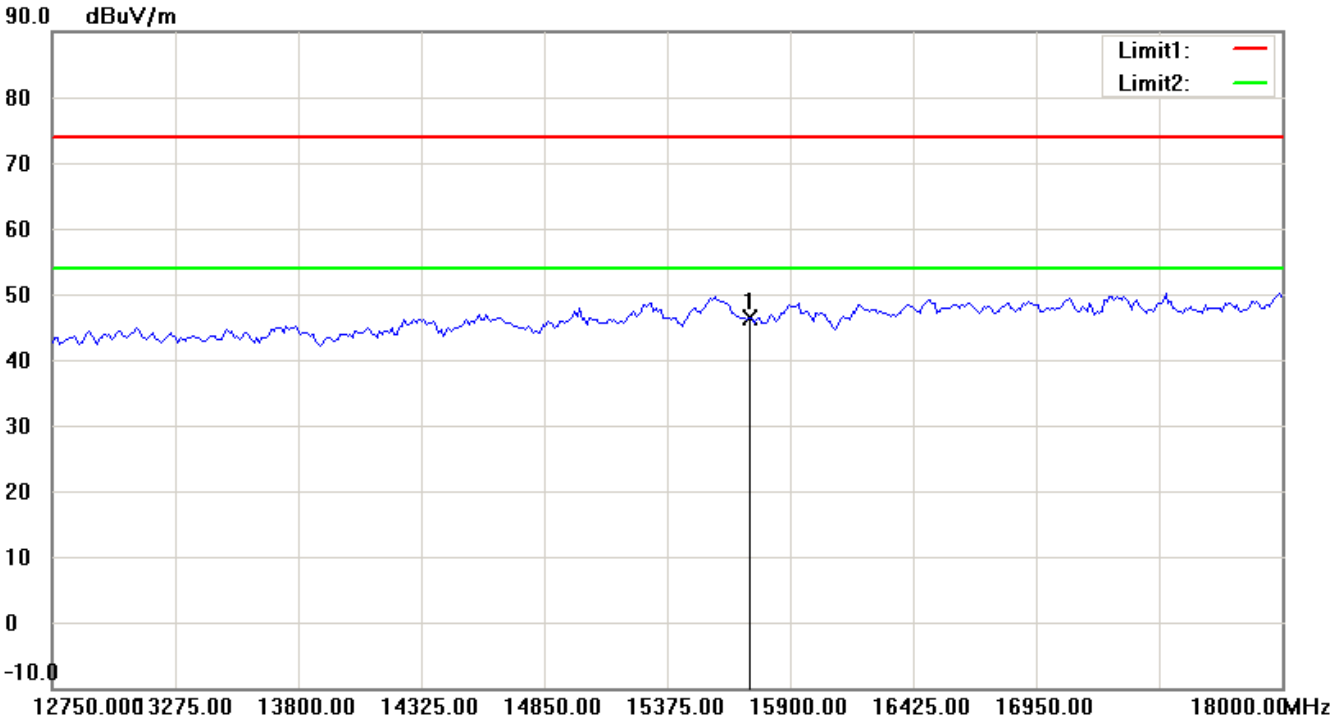

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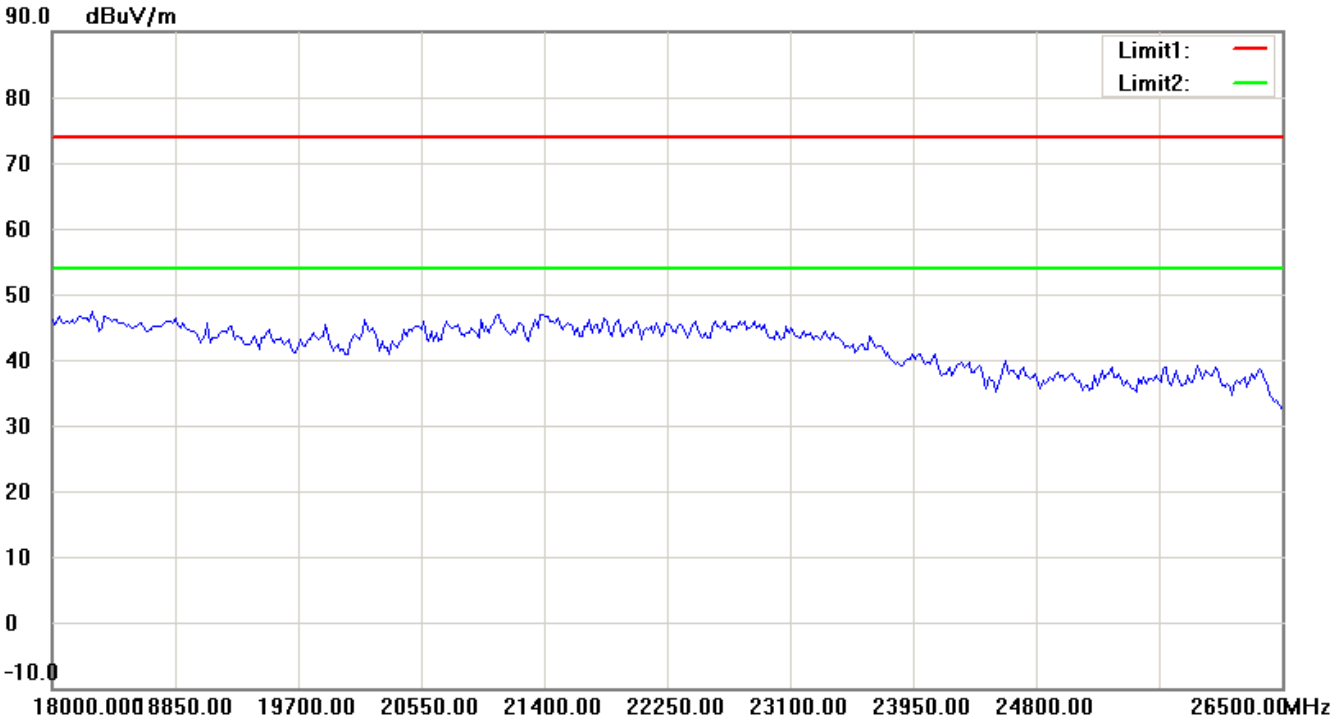

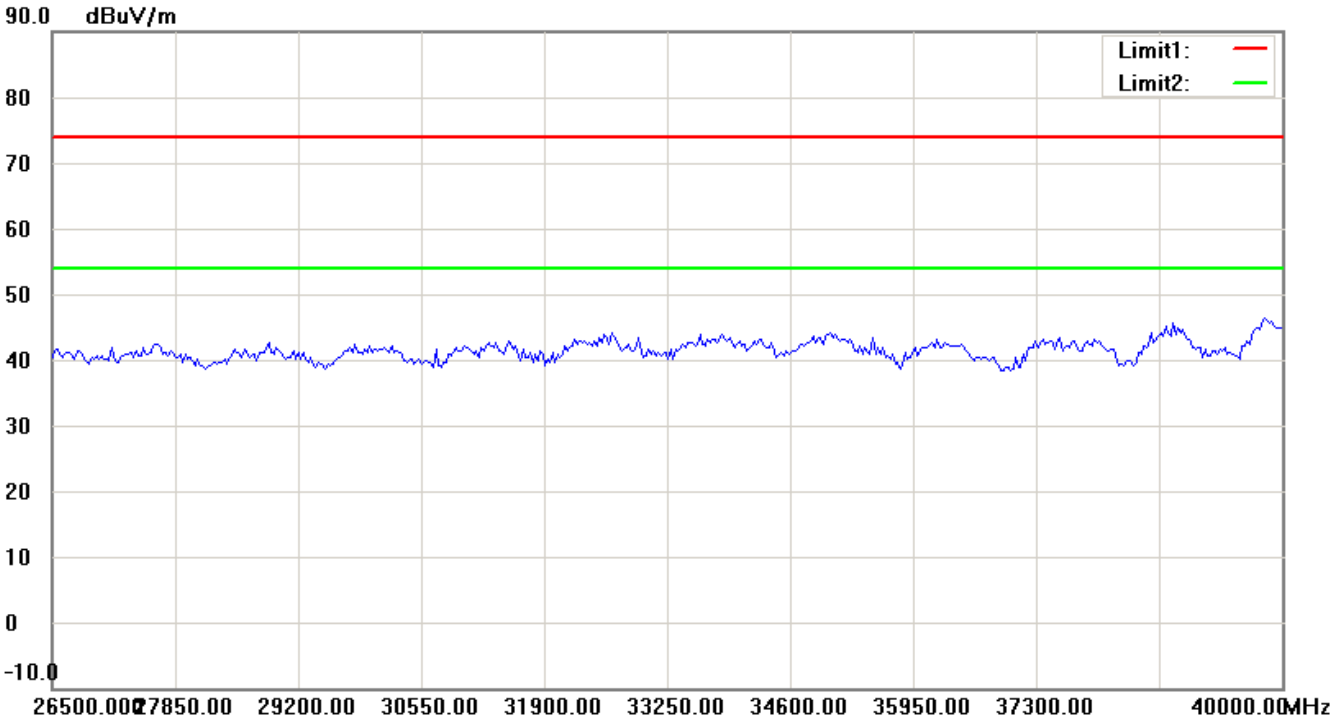

Note
Up Line: Peak Limit Line Down Line: Ave Limit Line

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2. **The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.**
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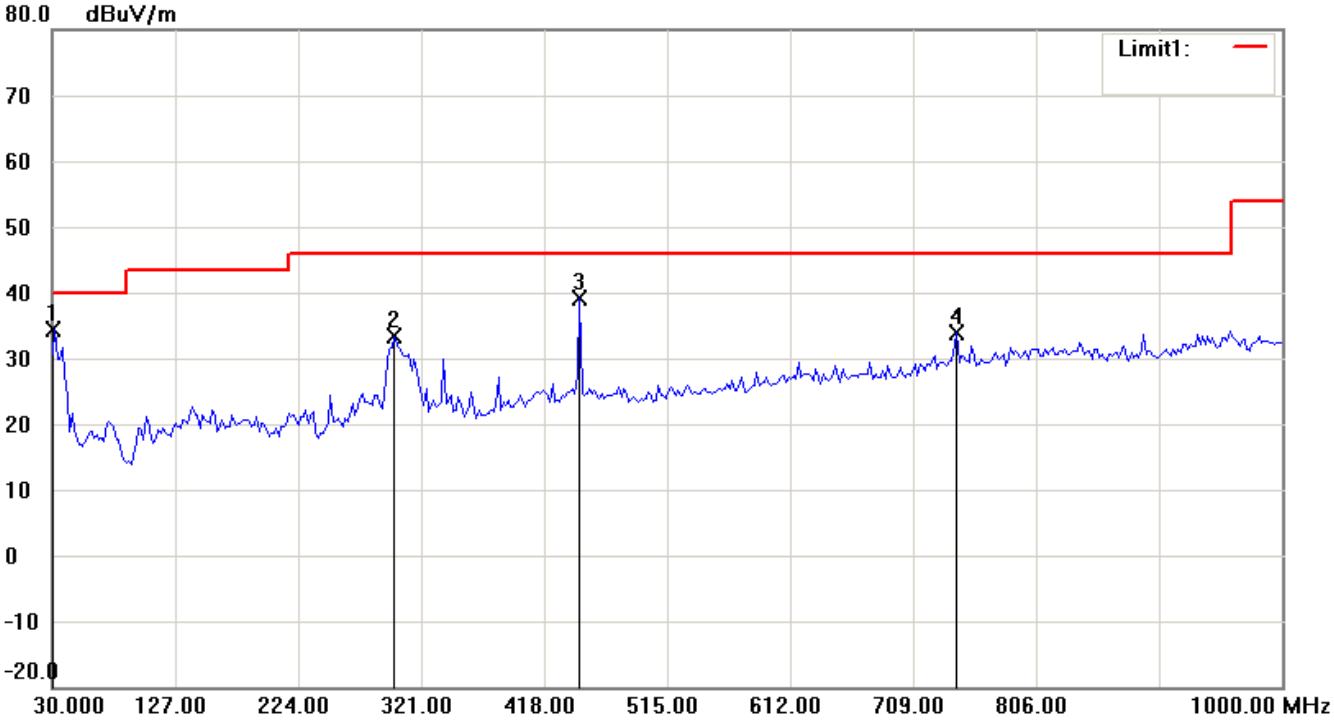
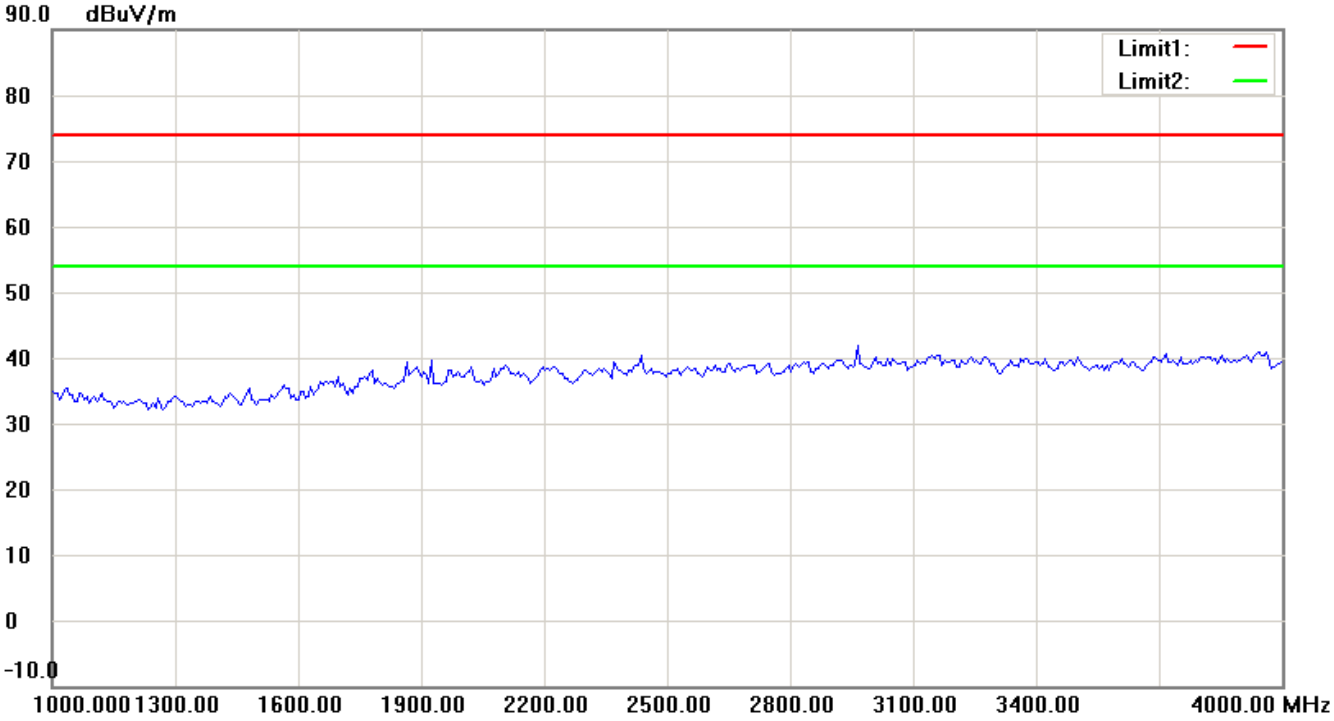
Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478

802.11n 40MHz CH38 TX
Antenna Polarization H





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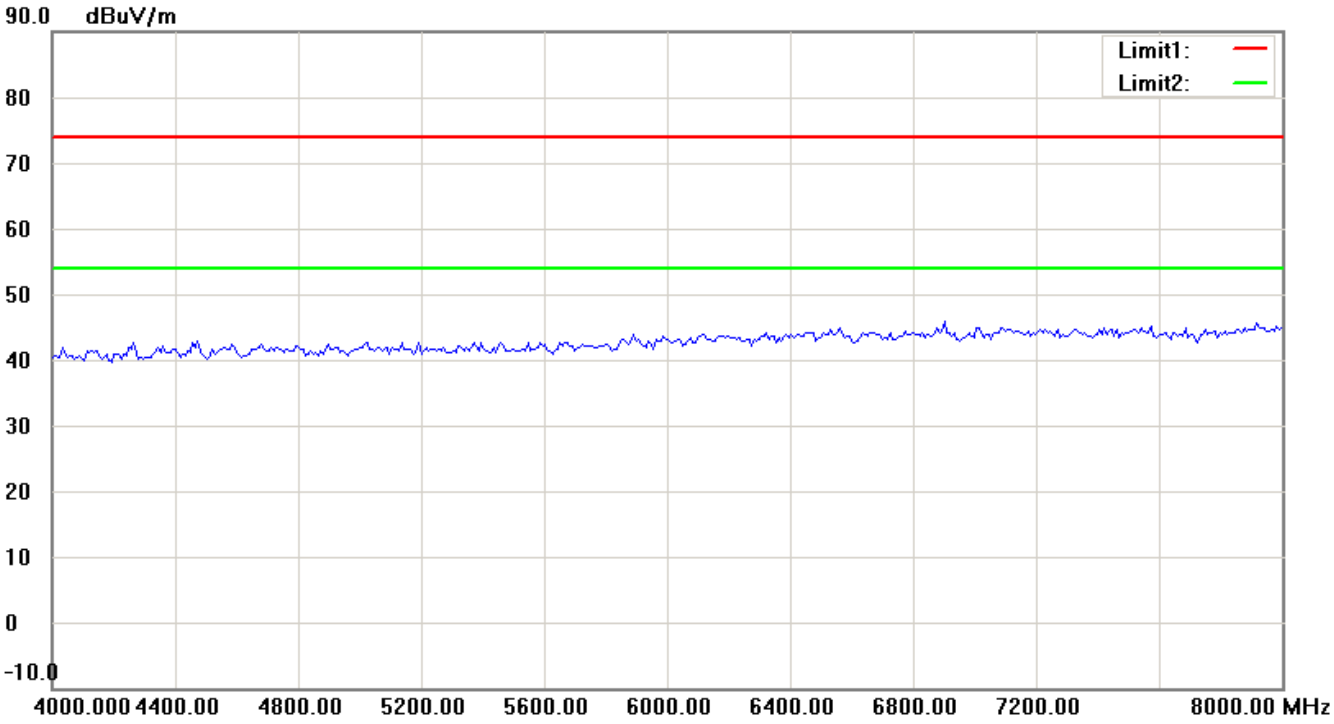

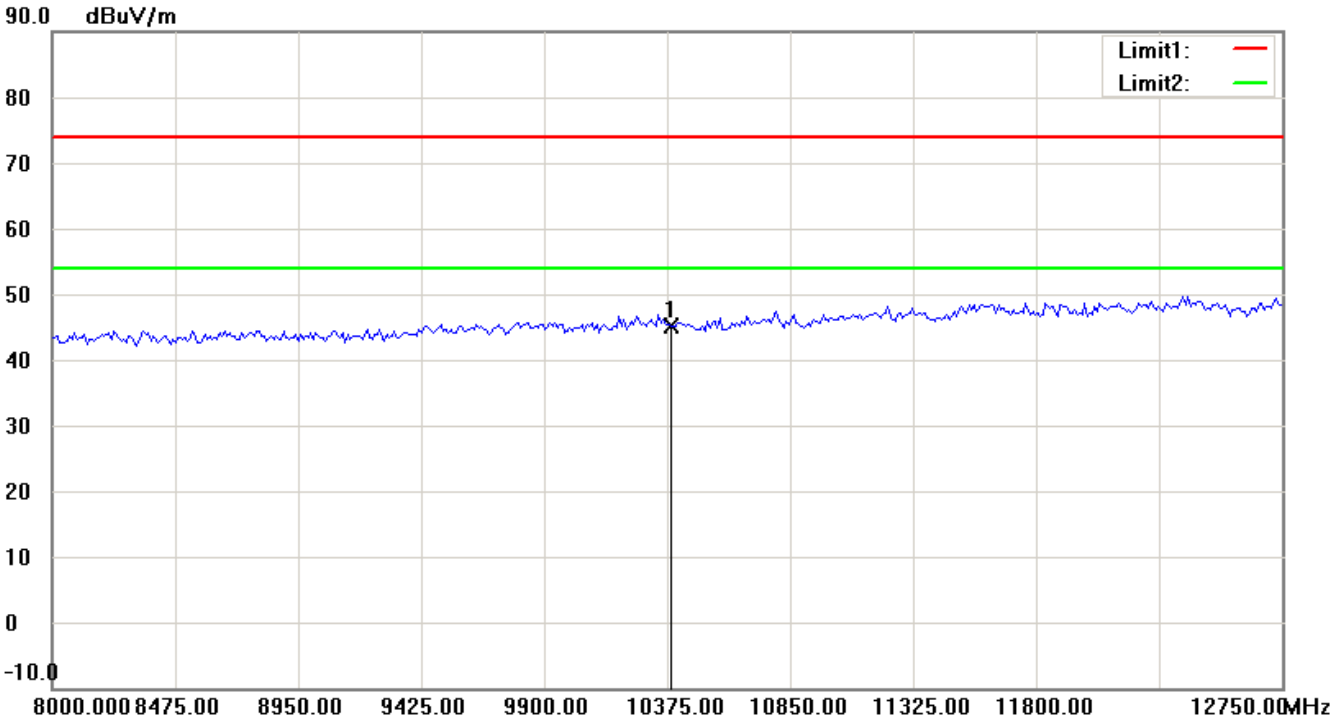

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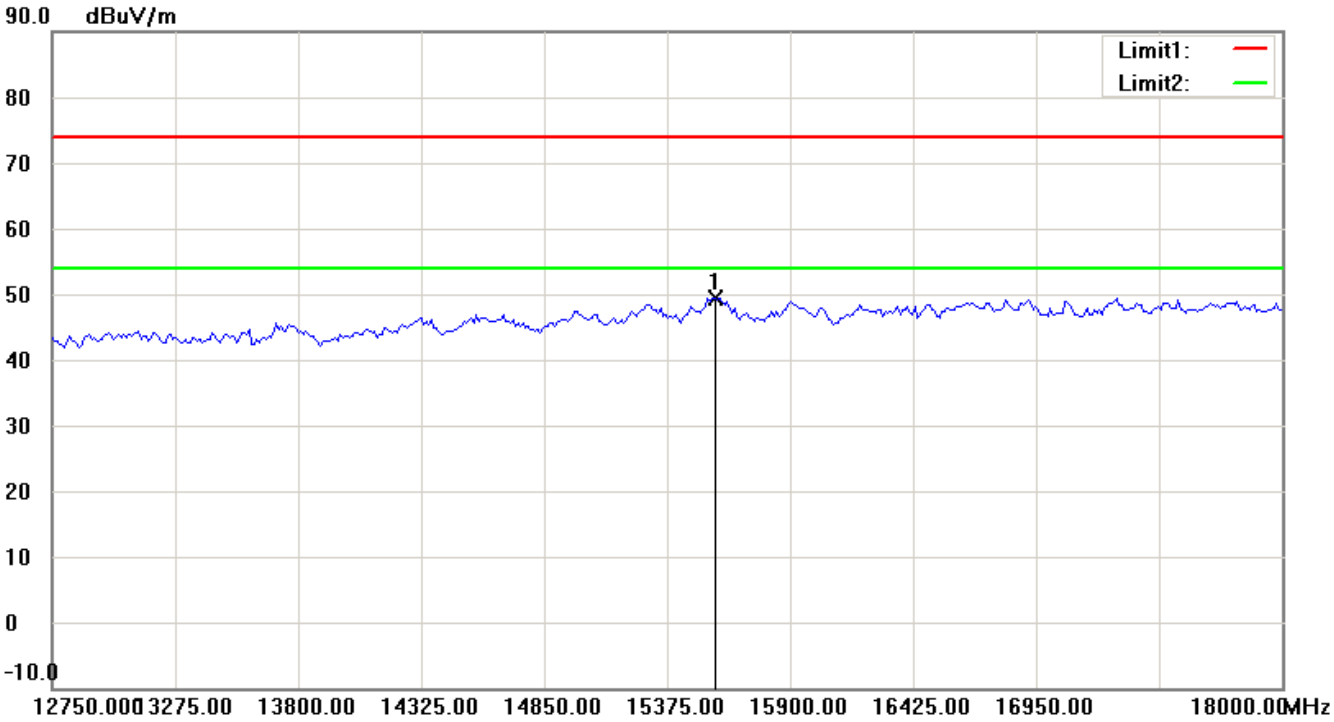

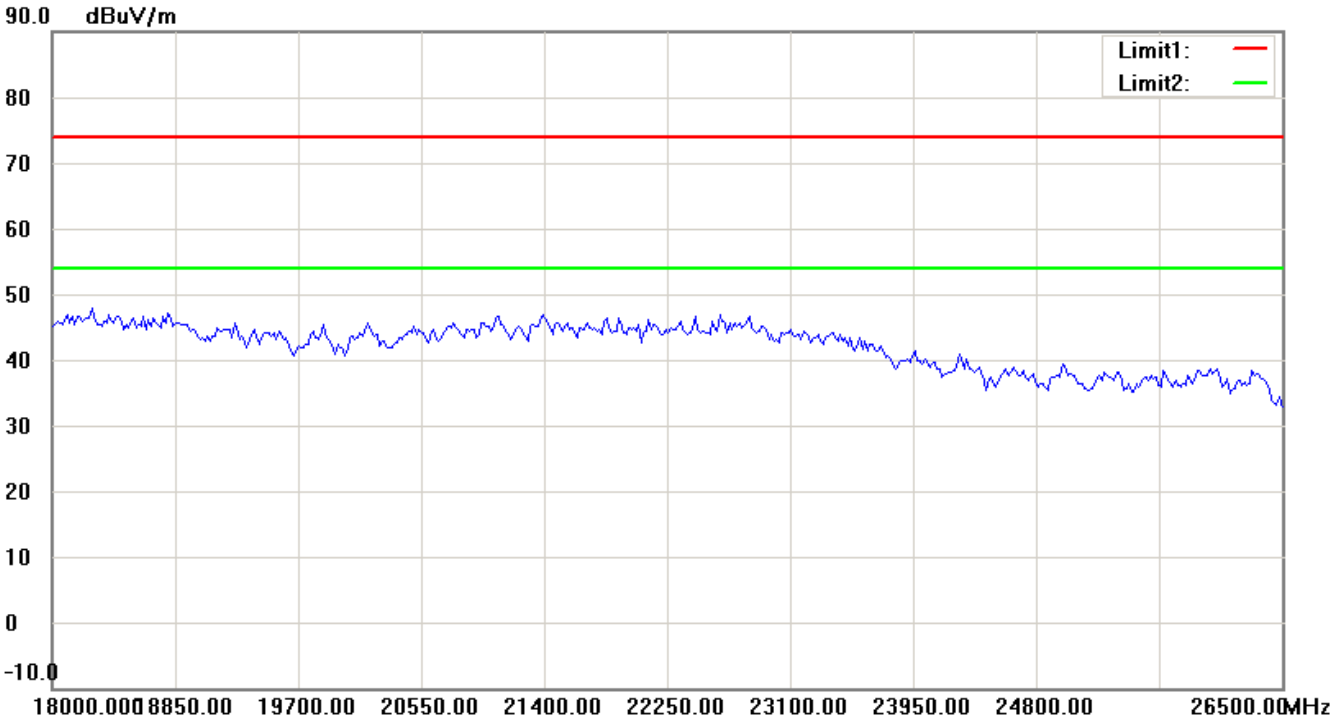

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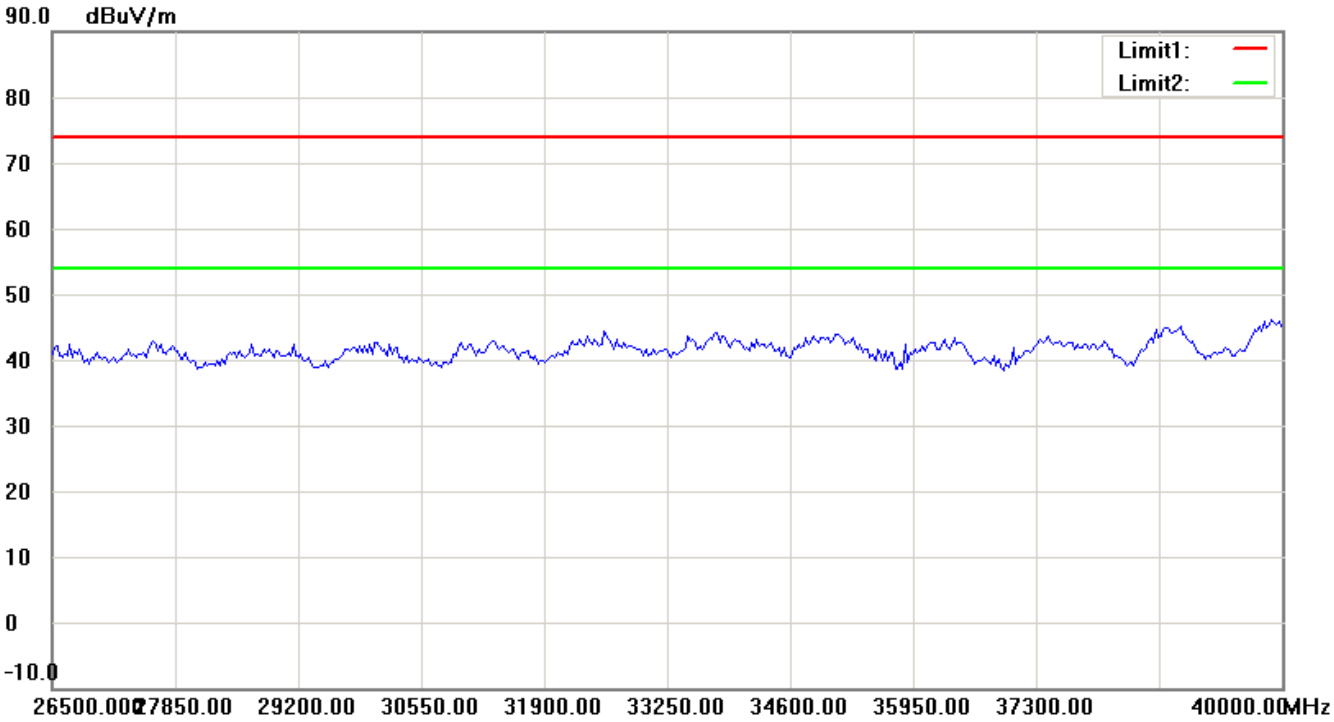
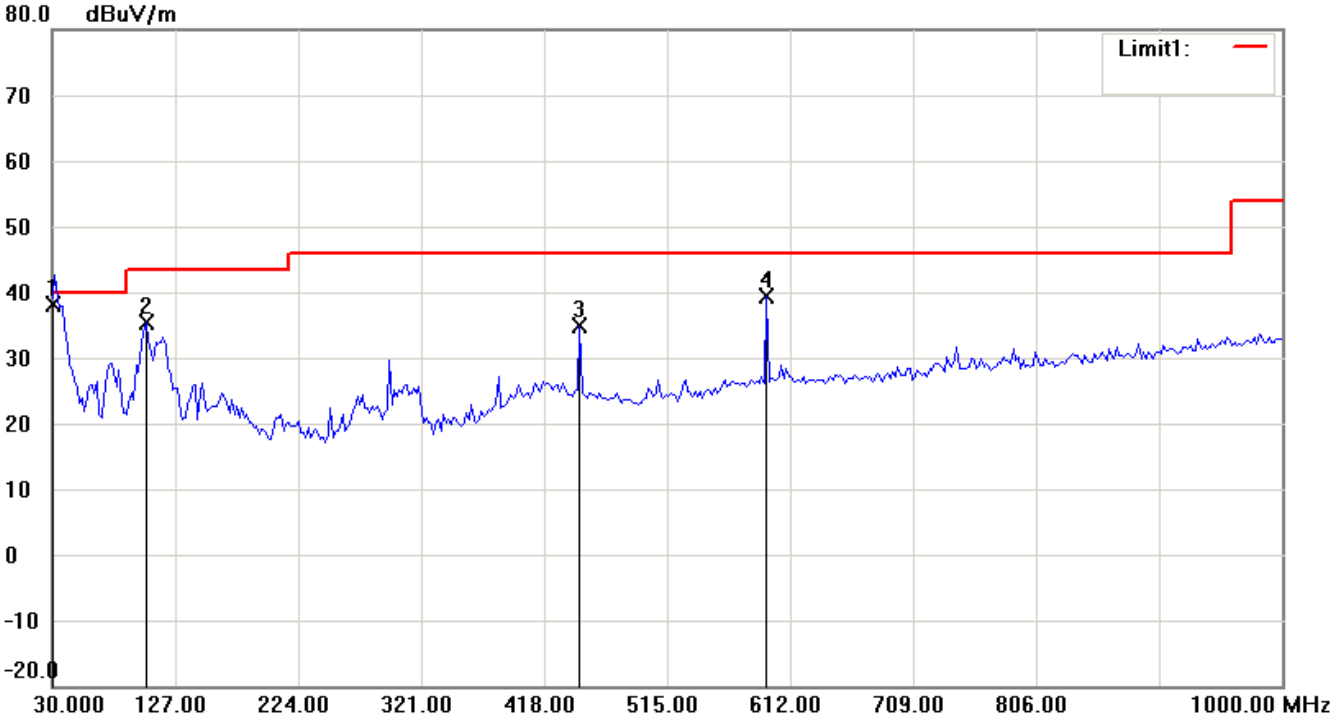
Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478



Antenna Polarization V



Note
Up Line: Peak Limit Line Down Line: Ave Limit Line

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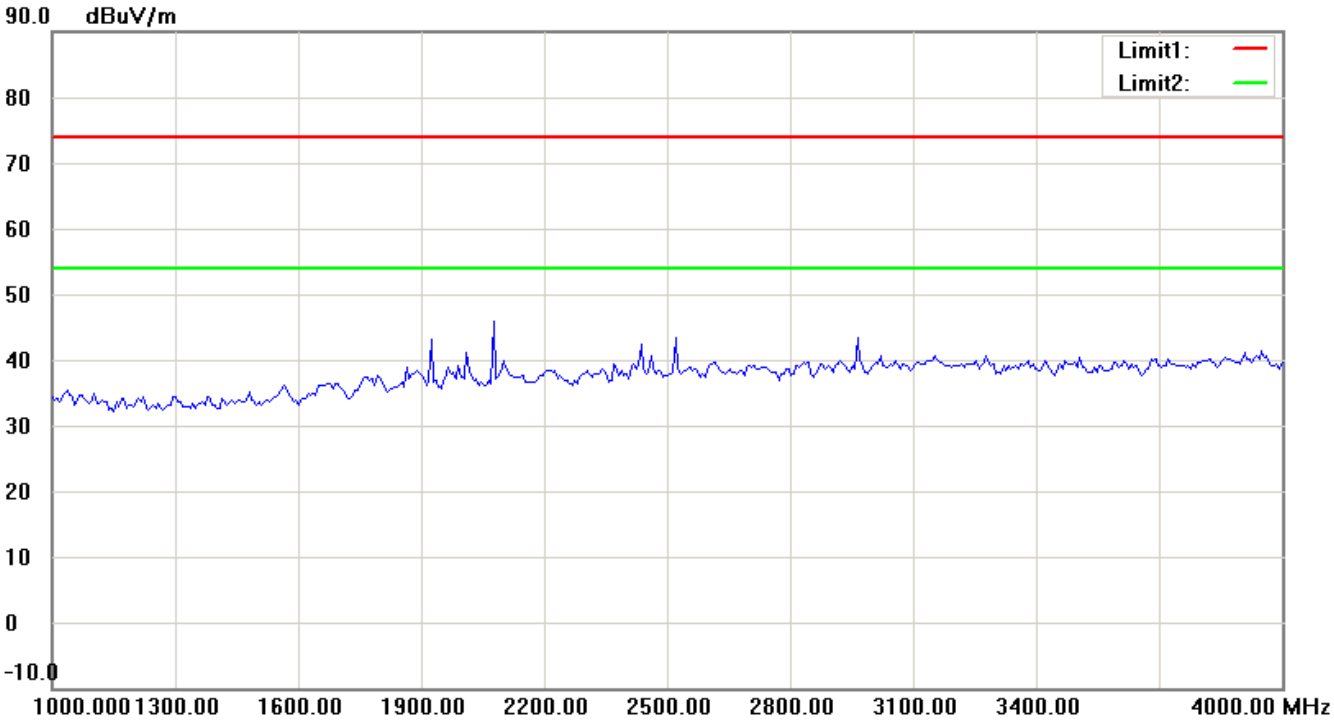

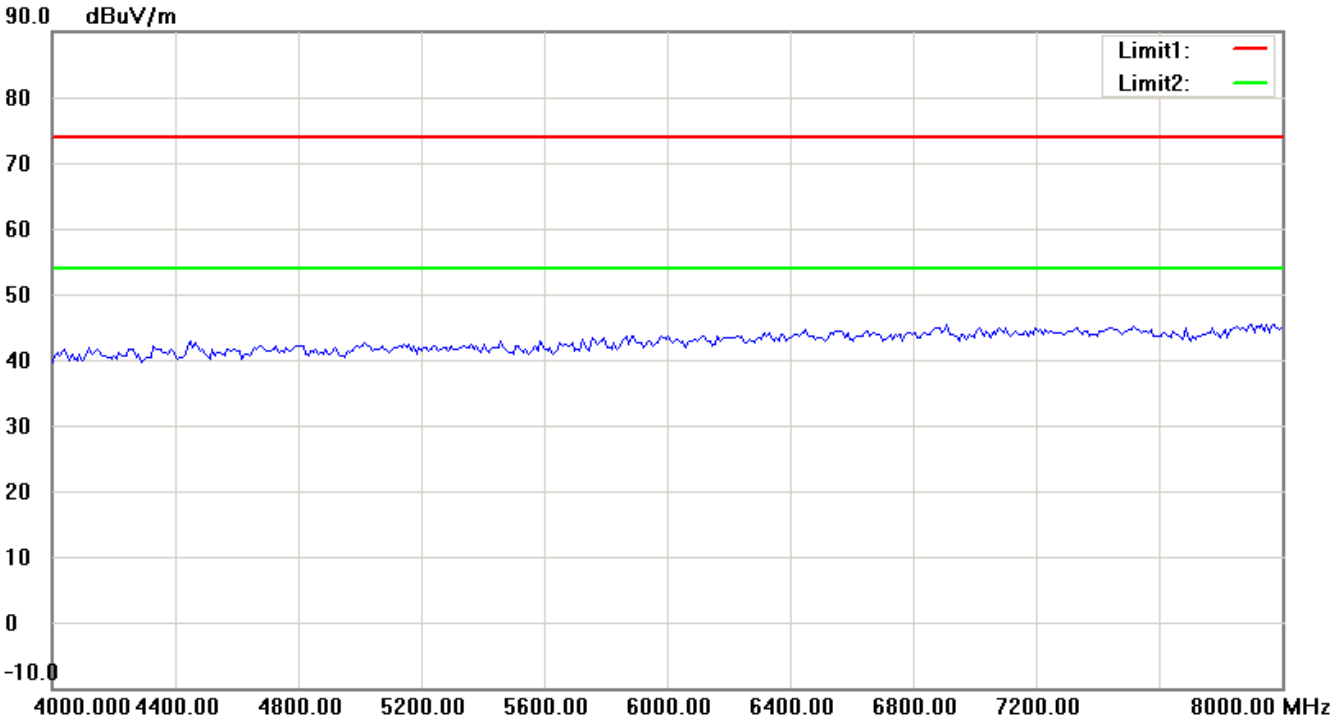

Note
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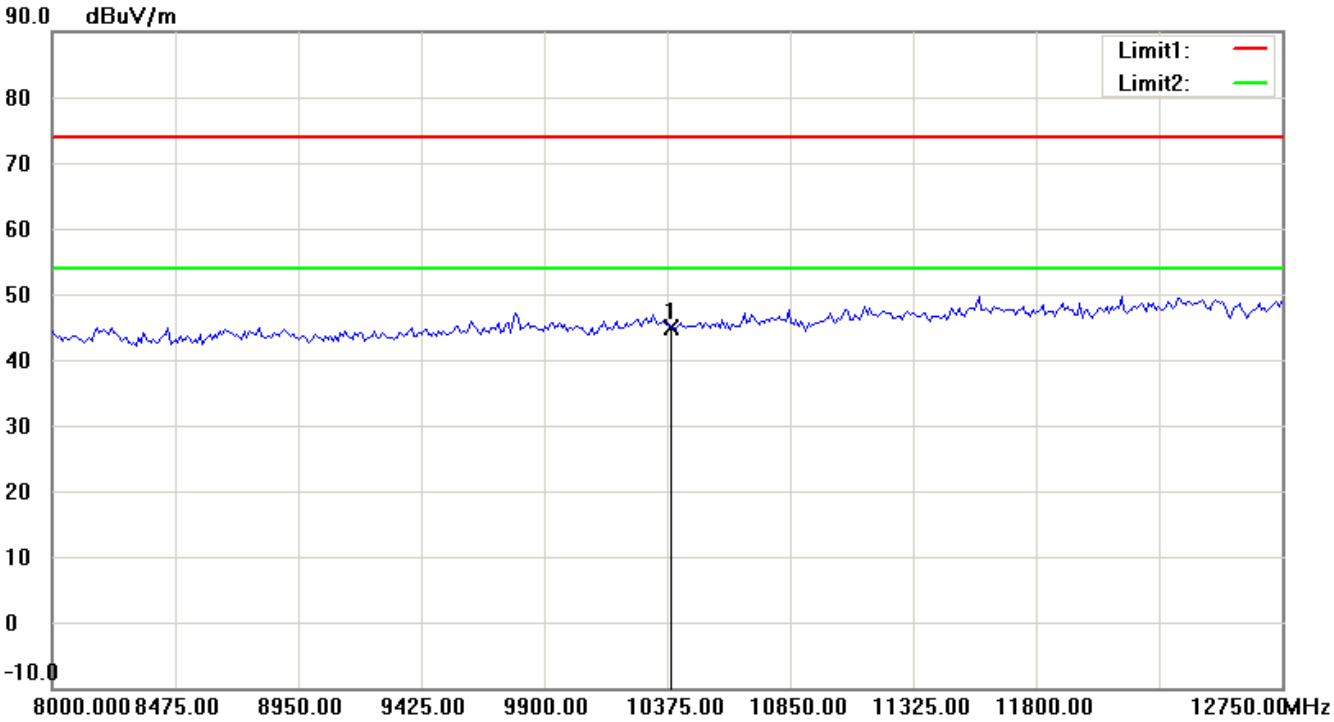

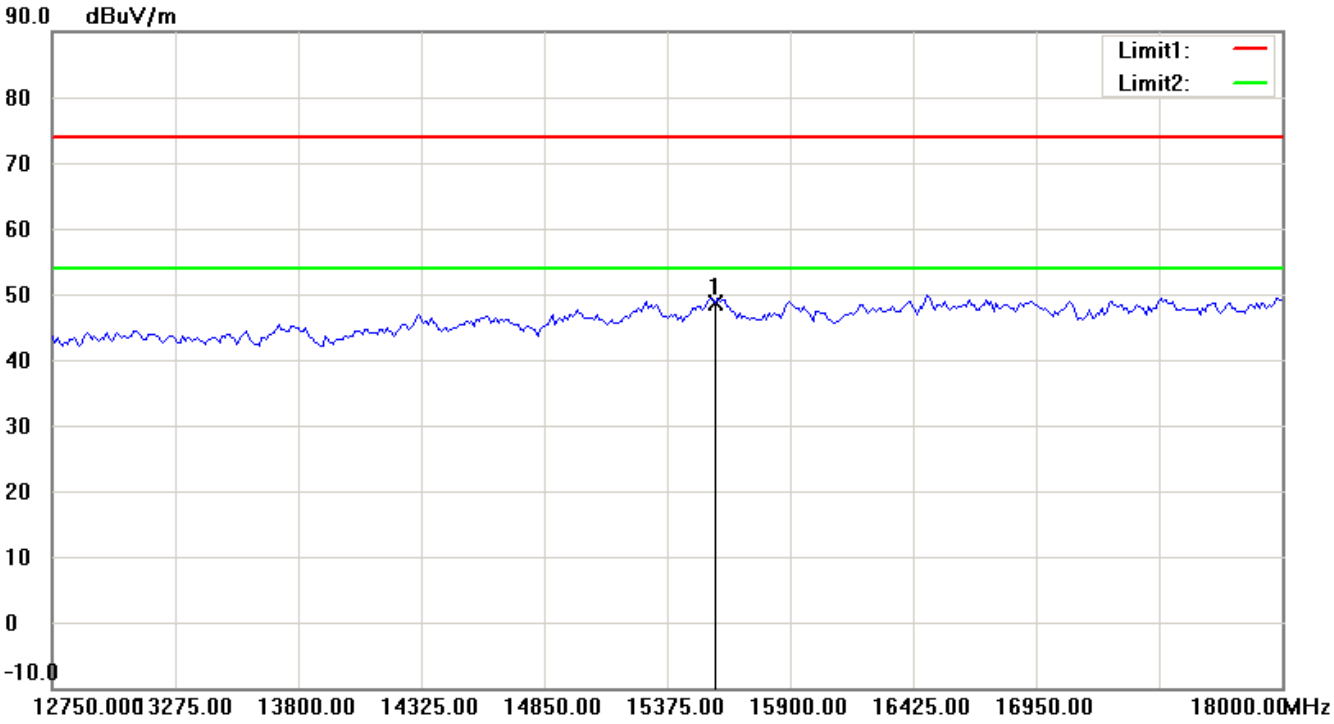

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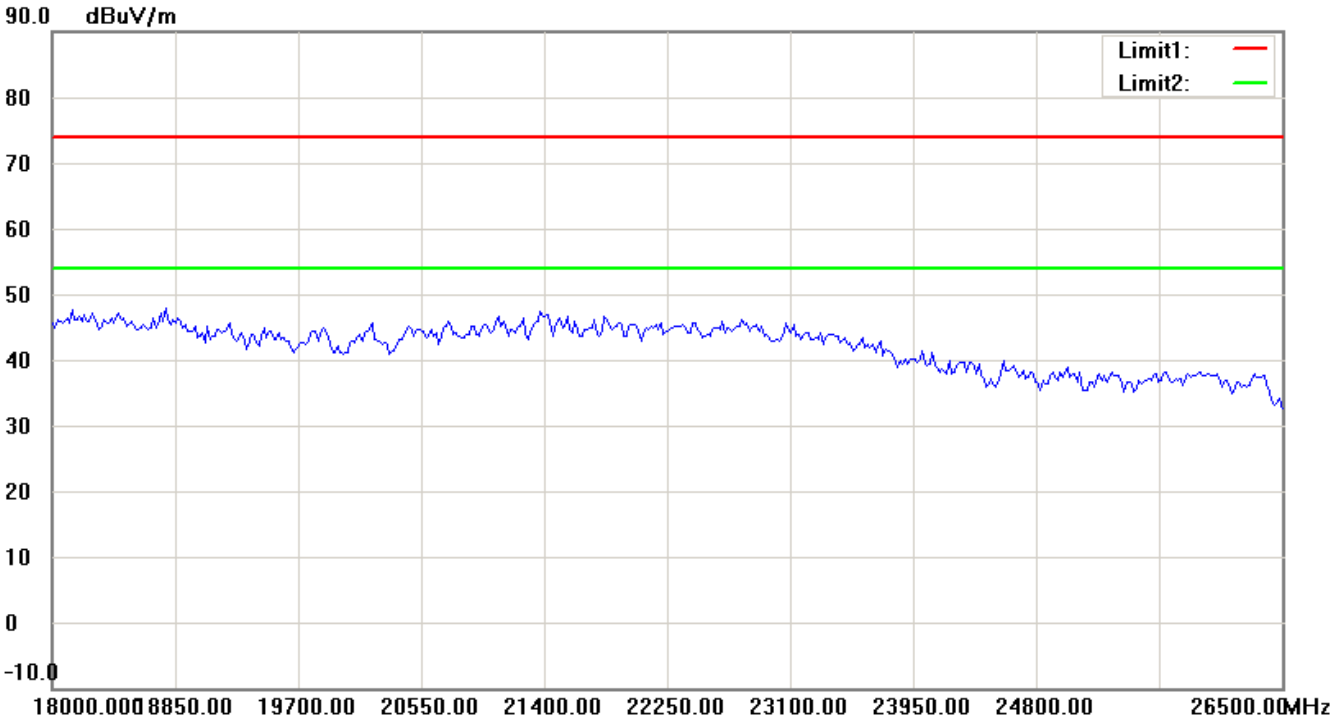
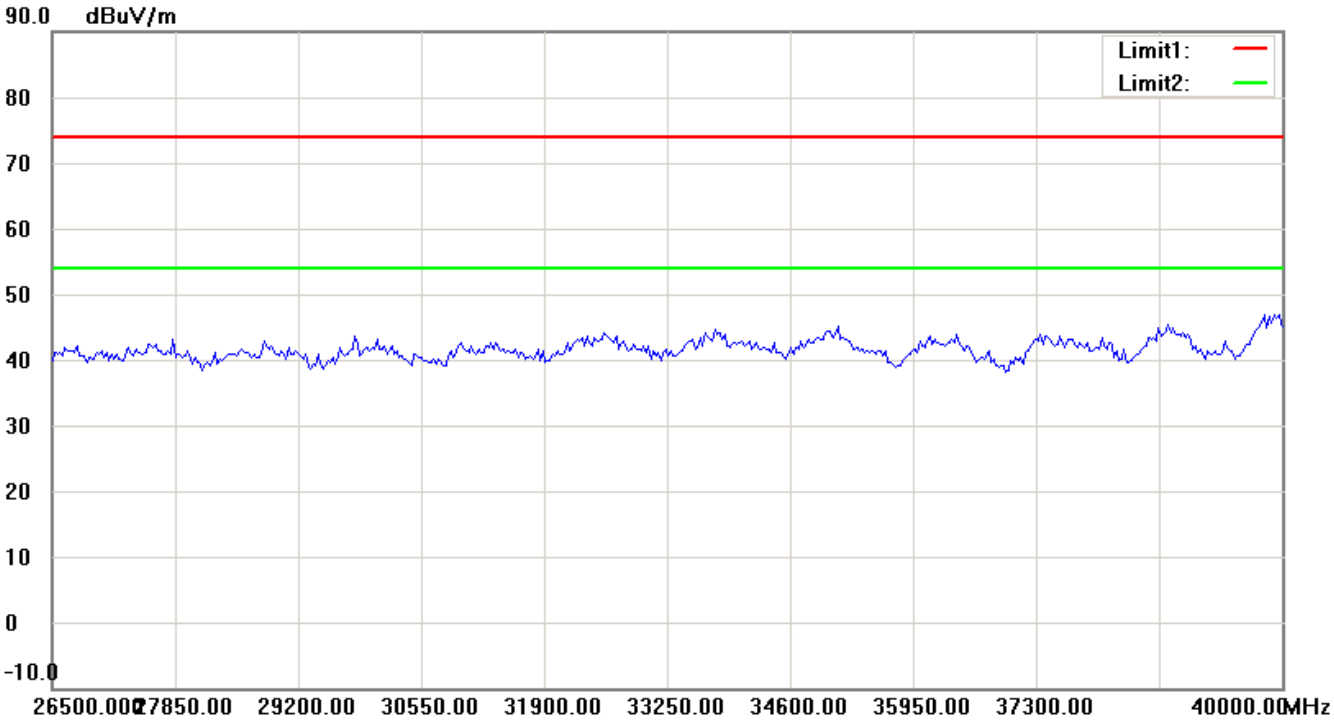
Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478





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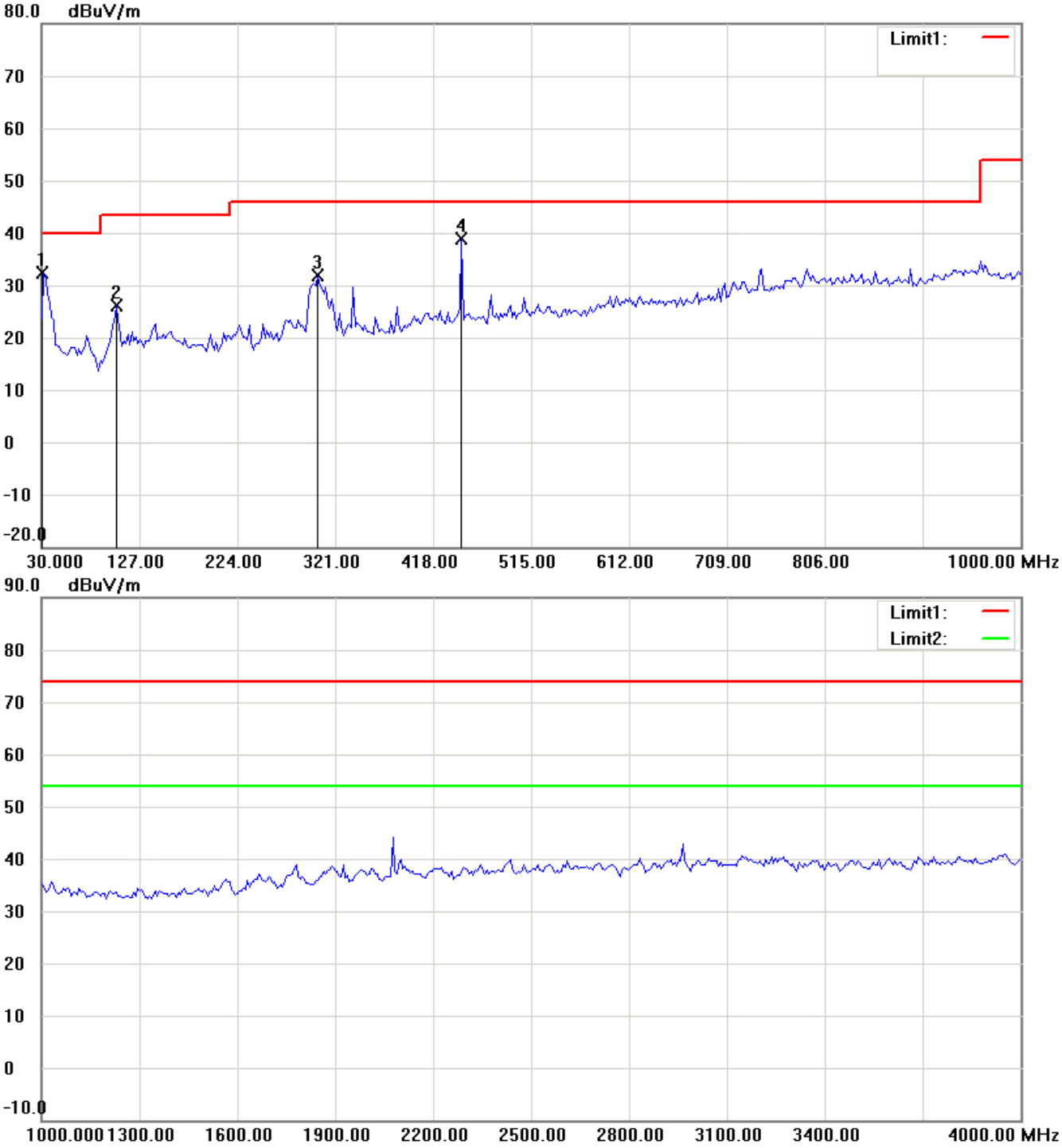
Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478

802.11n 40MHz CH46 TX
Antenna Polarization H



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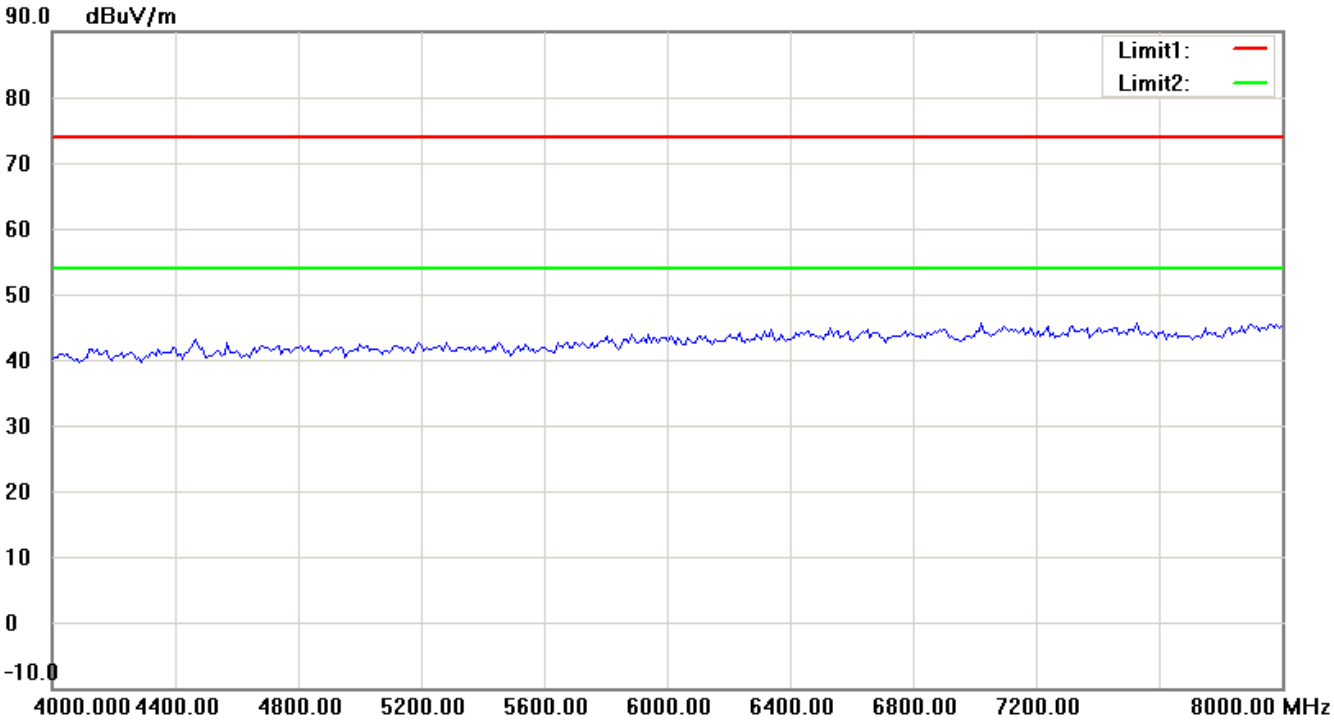

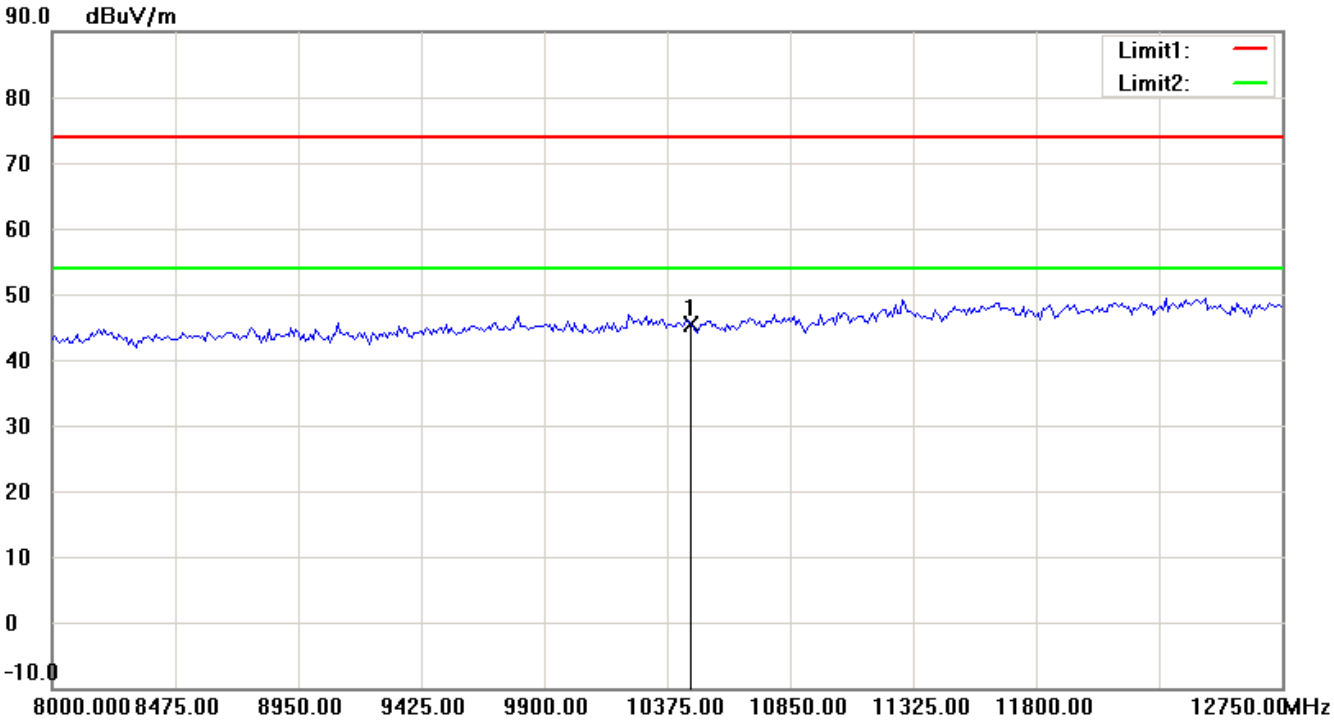

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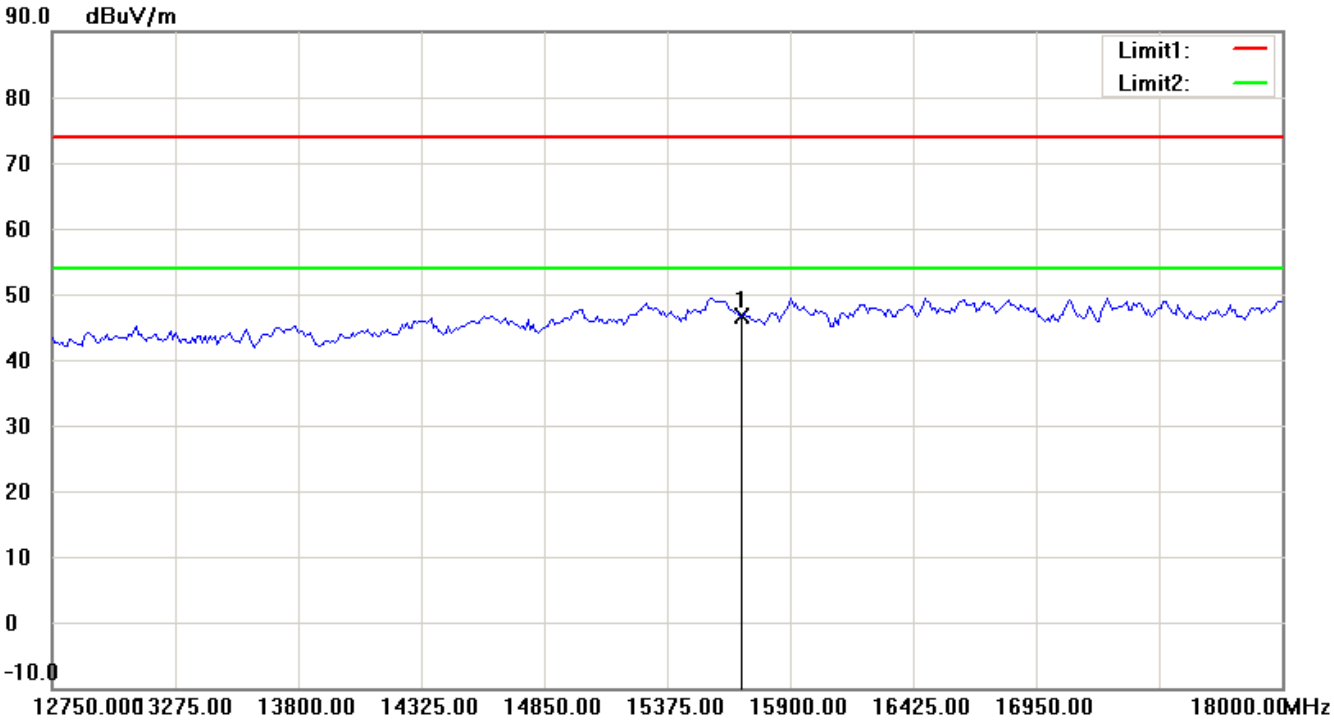

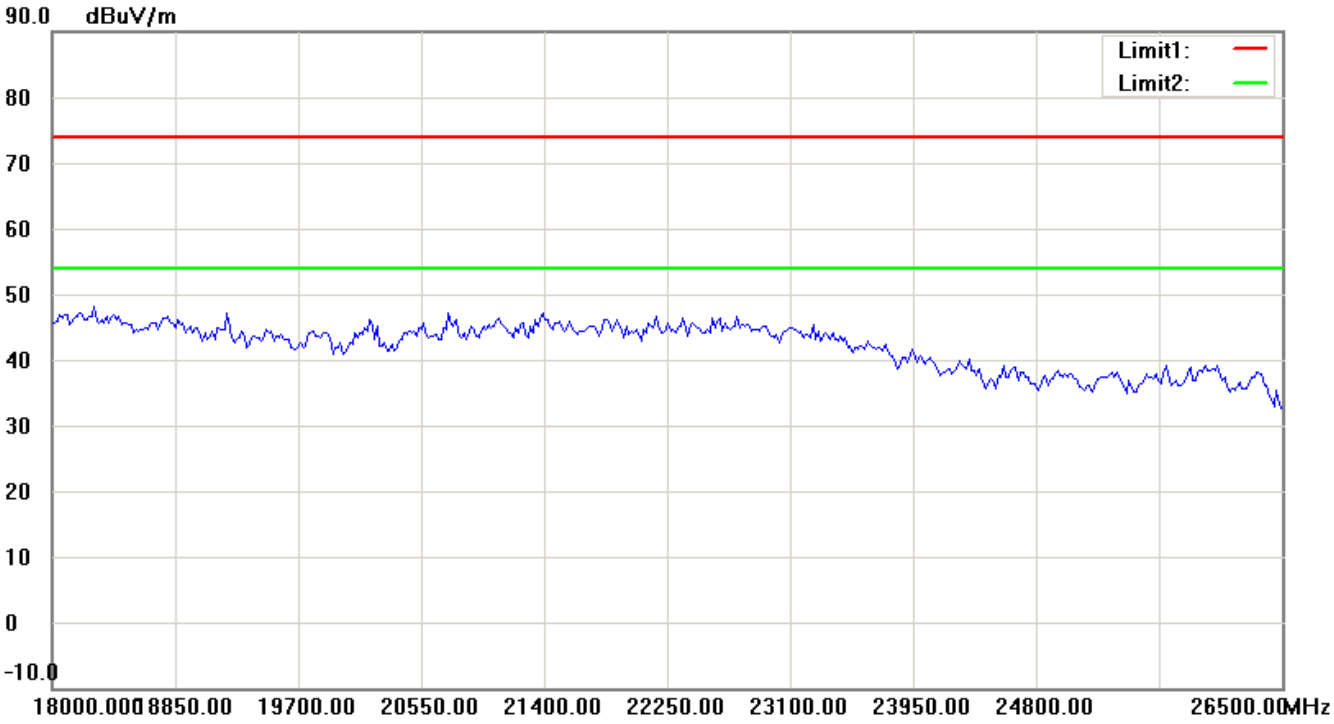

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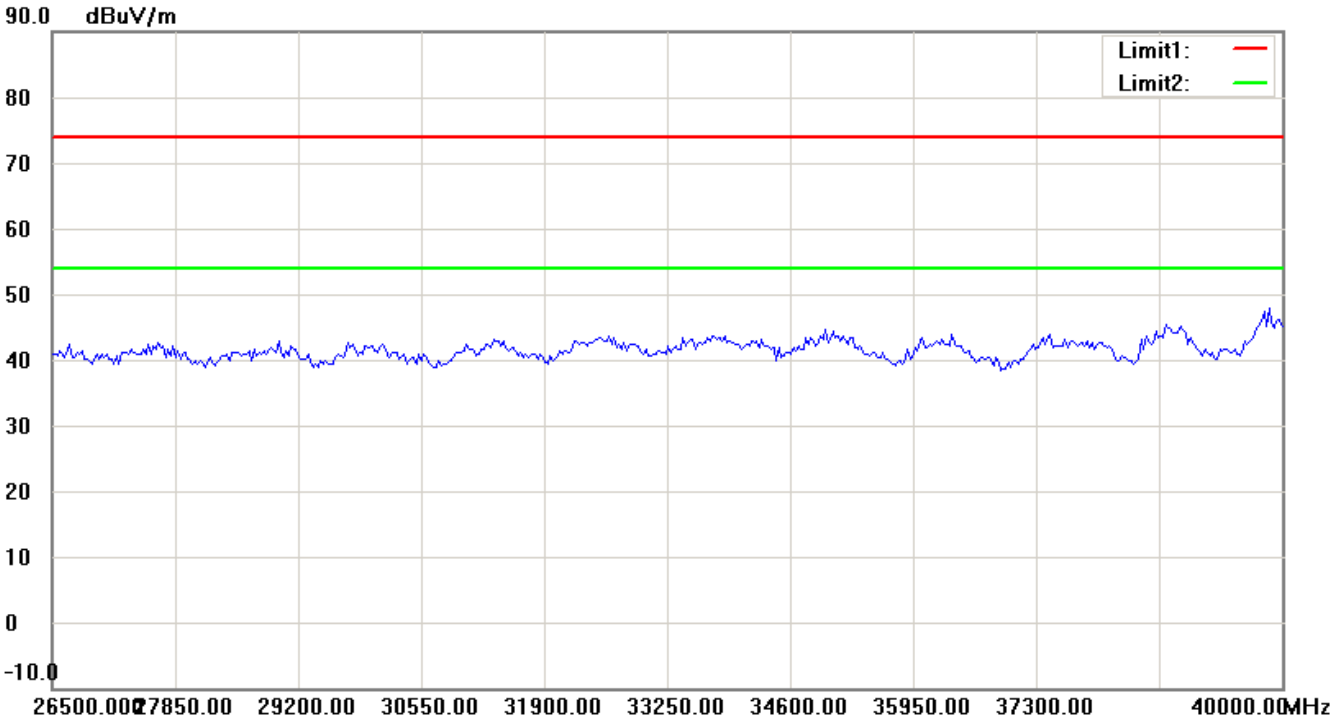
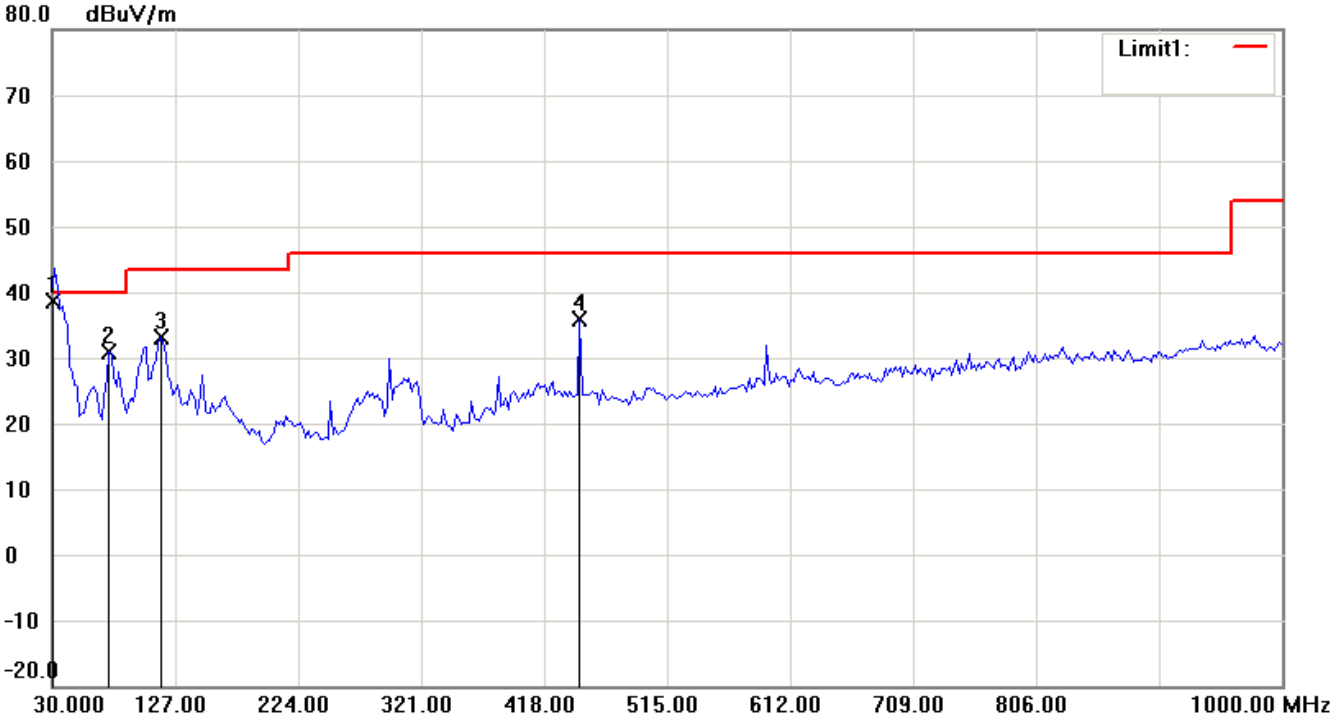
Registration number: W6M21308-13478-C-54
FCC ID: 2AA4J-W6M2130813478



Antenna Polarization V



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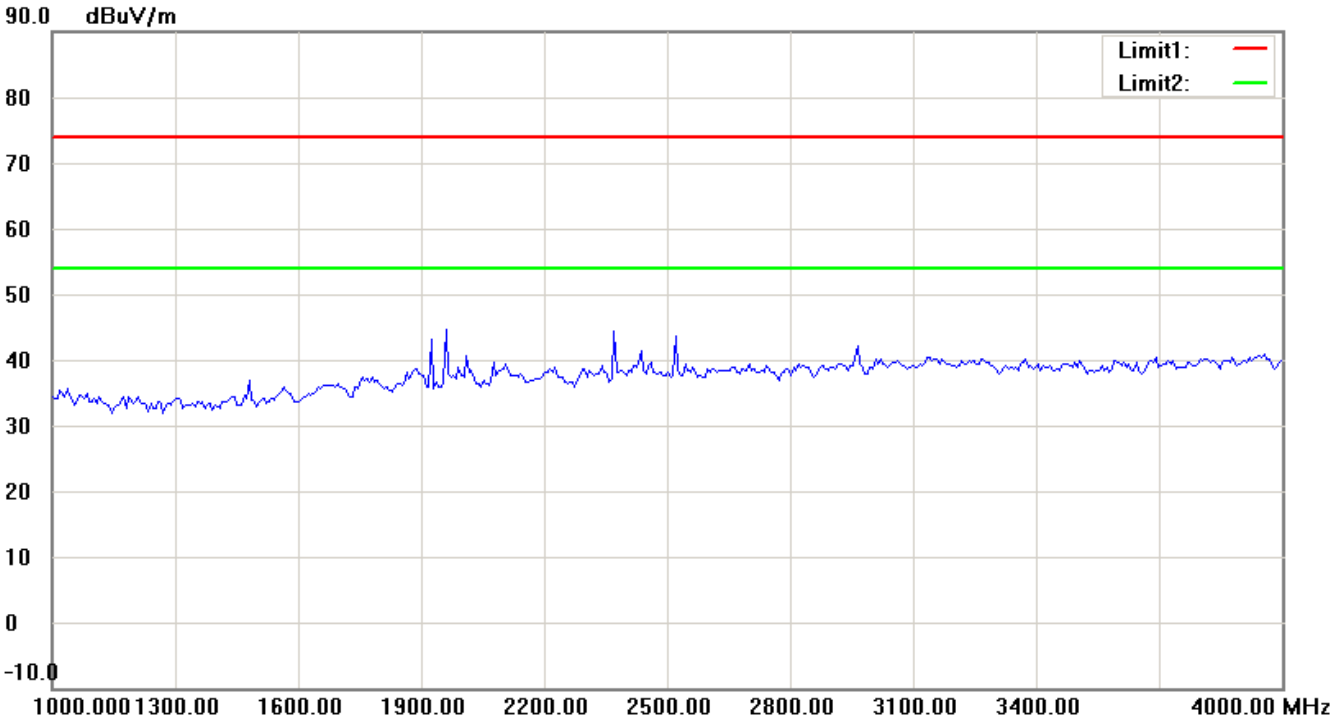

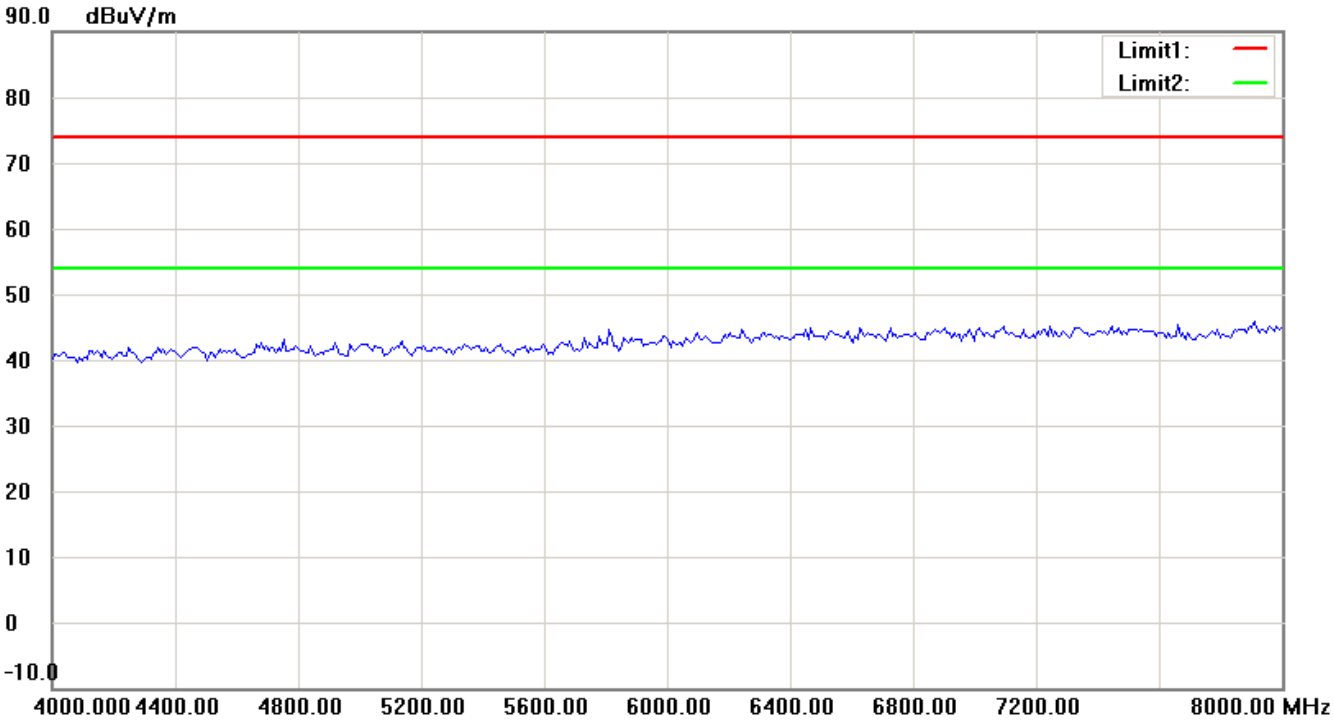

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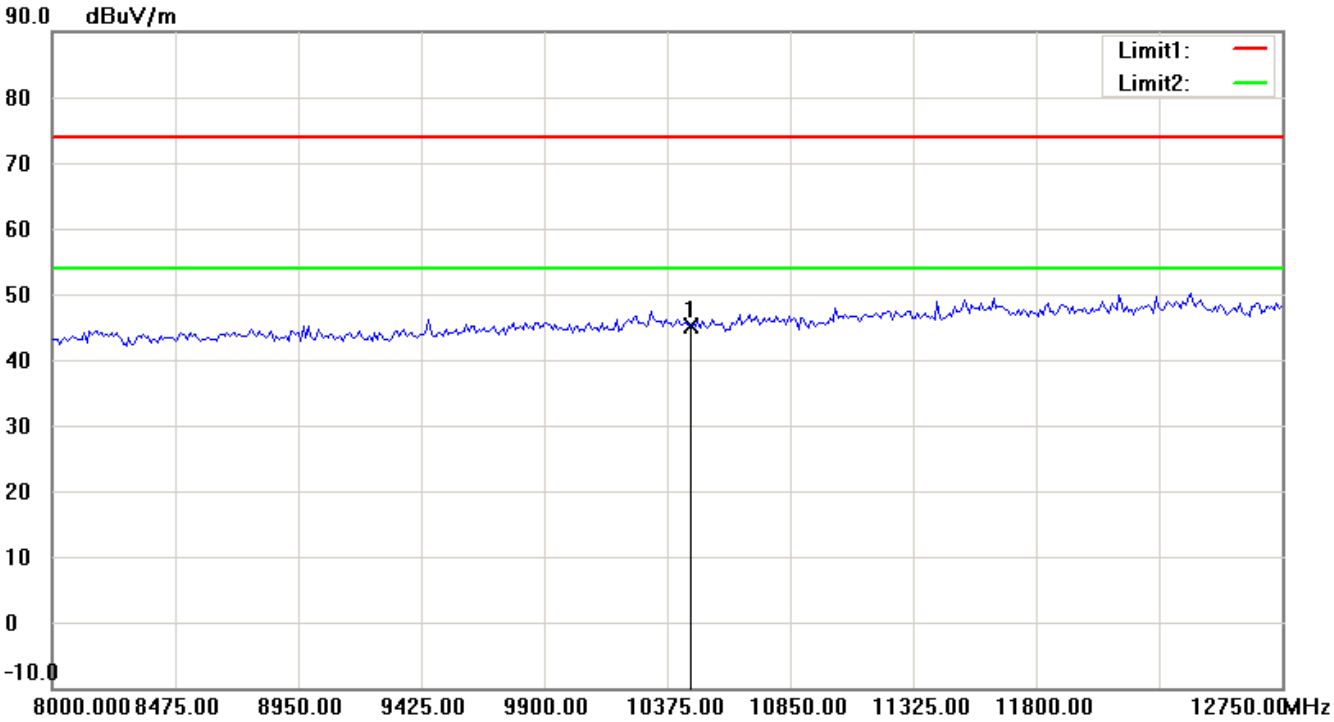

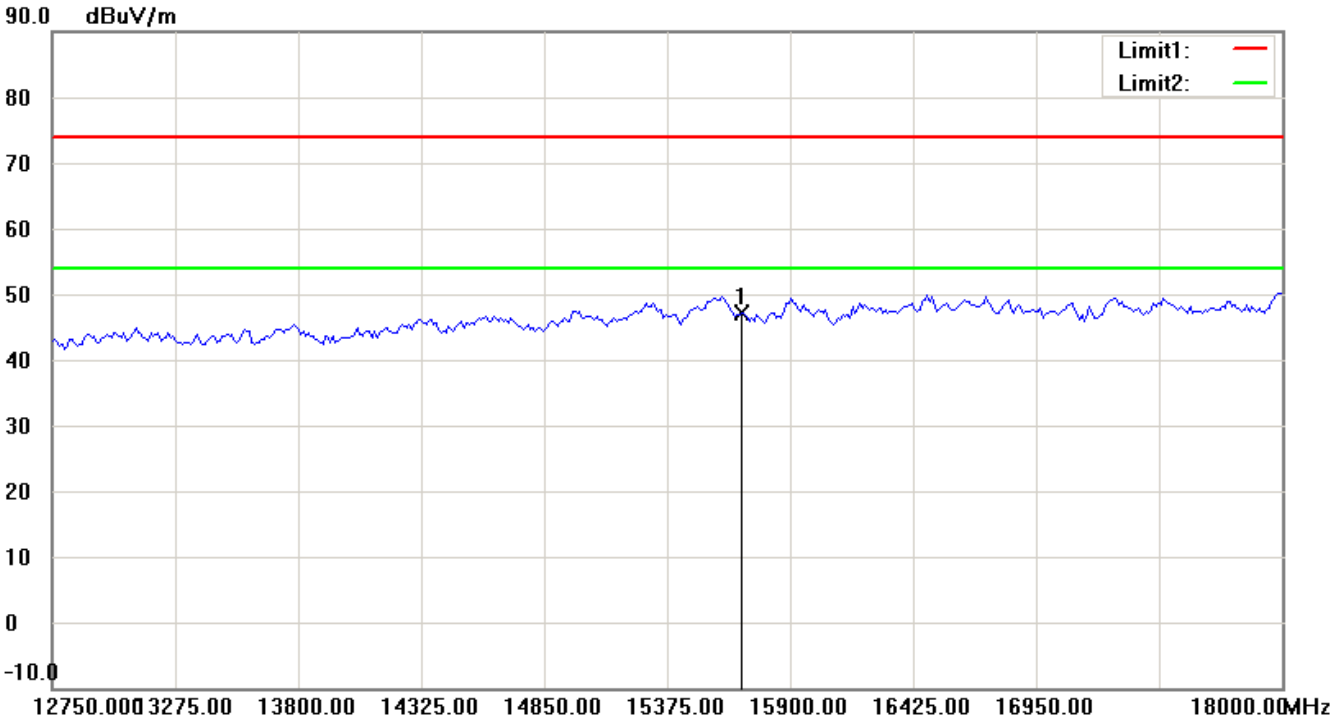

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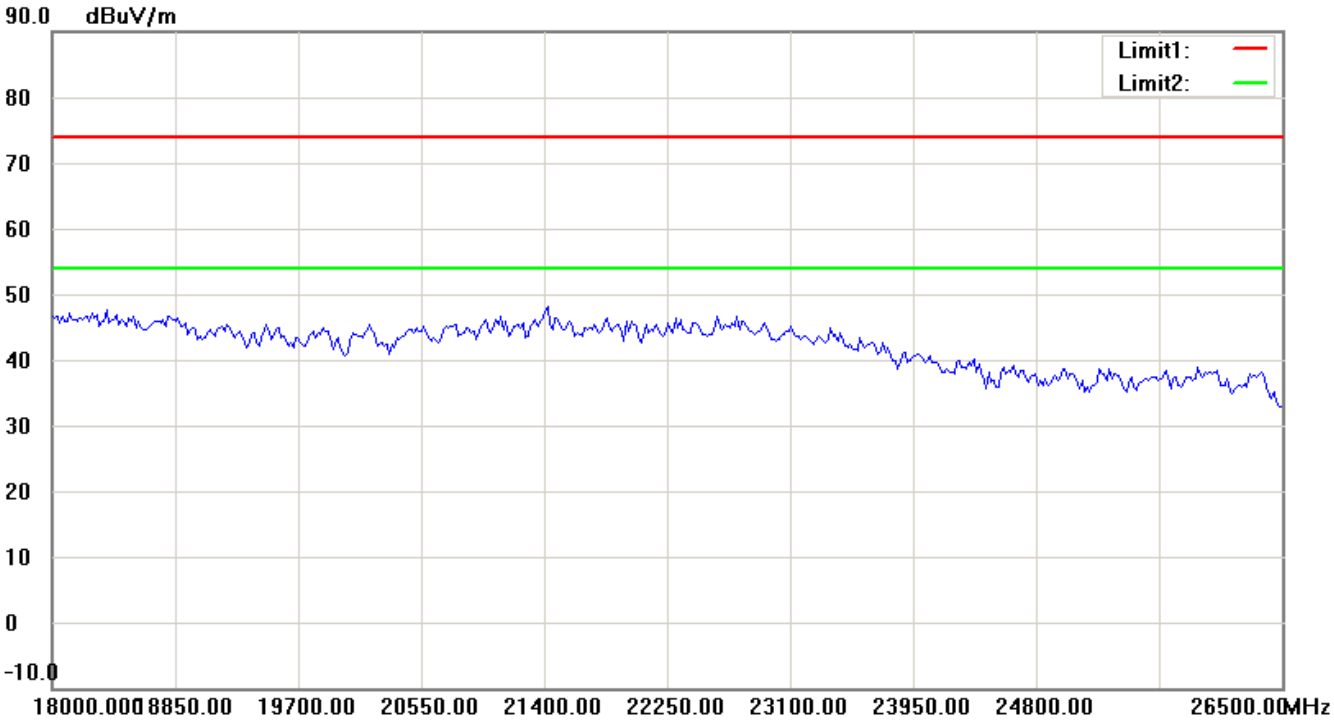

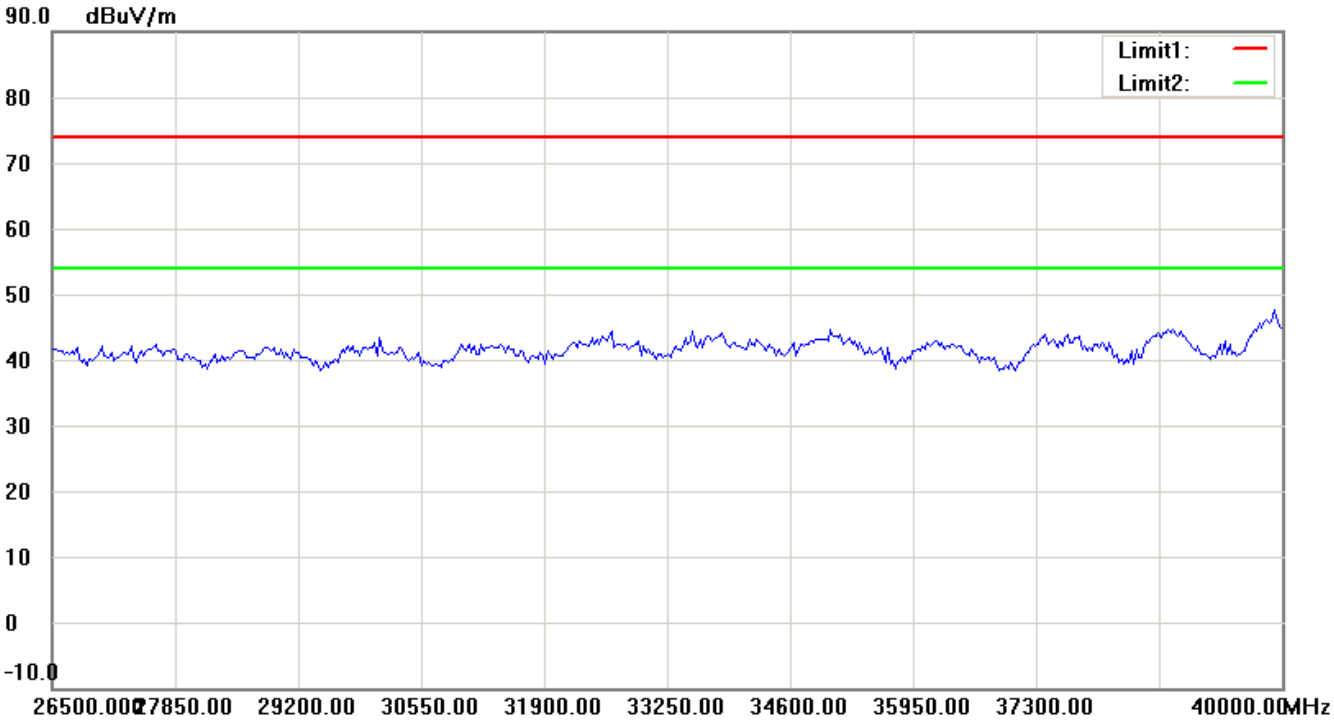

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