

FCC TEST REPORT
for
GSM/WiFi Dual-mode IP Media Phone
Model No.: WIGO 800I

of

Applicant: BCM Communication Co., Ltd.
Address: 8Fl., No. 3, Wolung Street Taipei 106, Taiwan

Tested and Prepared
by



ETS Product Service (Taiwan) Co., Ltd.

FCC Registration No.: 930600

Industry Canada filed test laboratory Reg. No. IC 5679

A2LA Accredited No.: 2300.01

PTCRB Accredited Type Certification Test House

FCC ID: RPW-WIGO800I

Report No.: W6M20707-8291-C-1

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Registration number: W6M20707-8291-C-1
 FCC ID: RPW-WIGO800I

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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 its 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 ETS Product Service (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 test sample is able to work according IEEE 802.11 b/g.

This report is related to FCC Part 15 C (DSSS and OFDM device).

Tester:

August 02, 2007

Jay Chaing



Date

ETS-Lab.

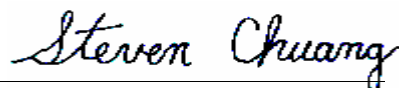
Name

Signature

Technical responsibility for area of testing:

August 02, 2007

Steven Chuang



Date

ETS

Name

Signature

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1.2 Testing laboratory

1.2.1 Location

OATS
No.5-1, Shuang Sing Village,
LiShuei Rd., Wanli Township,
Taipei County 207, Taiwan (R.O.C.)

Company
ETS Product Service (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: 2300.01

FCC filed test laboratory Reg. No. 930600

Industry Canada filed test laboratory Reg. No. IC 5679

PTCRB Accredited Type Certification Test House

1.3 Details of approval holder

Name	: BCM Communication Co., Ltd.
Street	: 8Fl., No. 3, Wolung Street
Town	: Taipei 106,
Country	: Taiwan
Telephone	: 886-8228-0218
Fax	: 886-8226-9895

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1.4 Application details

Date of receipt of test item : July 11, 2007
 Date of test : from July 12, 2007 to August 01, 2007

1.5 General information of Test item

Type of test item : GSM/WiFi Dual-mode IP Media Phone
 Model Number : WIGO 800I
 Brand Name : BCM
 Hardware : DP120 REV1.0
 Software : D.V1.00.08
 Multi-listing model number : without
 Photos : See Appendix

Technical data

Frequency band : 2.4 GHz – 2.4835 GHz
 Frequency (ch 1 or A) : 2.412 GHz
 Frequency (ch 6 or B) : 2.437 GHz
 Frequency (ch 11 or C) : 2.462 GHz
 Number of Channels : 11
 Operation modes : duplex
 Modulation Type : DSSS / OFDM

Fixed point-to-point operation: Yes / No

Type of Antenna : Embedded Antenna

Antenna gain : 2.76 dBi

Power supply adaptor Input : 100-240V 50/60Hz 0.15A
 Output : 5.0V 1.0A

Power supply battery : 3.7 VDC 1500mAh

Emission designator : DSSS: 15M9G1D
 OFDM: 16M7W7D

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Host device: none

Classification :

Fixed Device	<input type="checkbox"/>
Mobile Device (Human Body distance > 20cm)	<input type="checkbox"/>
Portable Device (Human Body distance < 20cm)	<input checked="" type="checkbox"/>

Transmitter

Unom

Mode A (DSSS)

Power (ch 1 or A) : Conducted: 20.15 dBm
 Power (ch 6 or B) : Conducted: 20.90 dBm
 Power (ch 11 or C) : Conducted: 21.39 dBm

Mode B (OFDM)

Power (ch 1 or A) : Conducted: 19.37 dBm
 Power (ch 6 or B) : Conducted: 19.87 dBm
 Power (ch 11 or C) : Conducted: 20.34 dBm

Manufacturer: (if applicable)

Name : ./.
 Street : ./.
 Town : ./.
 Country : ./.

Additional information: The sample is using WLAN technology according IEEE 802.11 b/g.
 There are two testing modes in the test report.
 Mode A: IEEE 802.11b
 Mode B: IEEE 802.11g
 The scheme for frequency generation, spectrum spreading,
 receiver parameters, synchronization procedure, and other parameters
 are determined by the mentioned standard above.

1.6 Test standards

Technical standard : FCC RULES PART 15 SUBPART B / SUBPART C § 15.247 (2007-05)

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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 2.5 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
Power supply adaptor	Input	: 100-240V 50/60Hz 0.15A
	Output	: 5.0V 1.0A
Power supply battery	:	3.7 VDC 1500mAh
Extreme conditions parameters	:	--

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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	2006/10/16	2007/10/15
ETSTW-CE 002	PREREULATOR MODE DC POWER SUPPLY	None	None		Function Test	
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	2006/10/16	2007/10/15
ETSTW-CE 005	Line-Impedance Stabilisation Network	NNBM 8126D	137	Schwarzbeck	2006/10/16	2007/10/15
ETSTW-CE 006	IMPULSBEGRENZER PULSE LIMITER	ESH3-Z2	100226	R&S	In House Certificate	
ETSTW-CE 008	ABSORBING CLAMP	MDS 21	3469	Schwarzbeck	2005/10/24	2007/10/23
ETSTW-CE 009	TEMP.&HUMIDITY CHAMBER	GTH-225-40-1P-U	MAA0305-009	GIANT FORCE	2006/8/17	2007/8/16
ETSTW-CE 013	CISPR 22 TWO BALANCED TELECOM PAIRS IMPEDANCE STABILIZATION NETWORK	FCC-TLISN-T4-02	20242	FCC	2005/12/8	2007/12/7
ETSTW-CE 014	CISPR 22 TWO BALANCED TELECOM PAIRS IMPEDANCE STABILIZATION NETWORK	FCC-TLISN-T2-02	20241	FCC	2005/12/7	2007/12/6
ETSTW-CE 015	CISPR 22 TWO BALANCED TELECOM PAIRS IMPEDANCE STABILIZATION NETWORK	FCC-TLISN-T8-02	20307	FCC	2006/11/7	2008/11/6
ETSTW-CE 016	TWO-LINE V-NETWORK	ENV216	100050	R&S	2006/11/21	2007/11/20
ETSTW-RE 002	Function Generator	33220A	MY43004982	Agilent	2005/10/14	2007/10/13
ETSTW-RE 003	EMI TEST RECEIVER	ESI 26	831438/001	R&S	2006/10/20	2007/10/19
ETSTW-RE 004	EMI TEST RECEIVER	ESI 40	832427/004	R&S	2006/10/30	2007/10/29
ETSTW-RE 005	EMI TEST RECEIVER	ESVS10	843207/020	R&S	2006/10/12	2007/10/11
ETSTW-RE 010	PROGRAMMABLE LINEAR POWER SUPPLY	LPS-305	30503070181	MOTECH	Function Test	
ETSTW-RE 011	PROGRAMMABLE LINEAR POWER SUPPLY	LPS-305	30503070165	MOTECH	Function Test	
ETSTW-RE 017	Log-Periodic Antenna	HL025	352886/001	R&S	2006/5/4	2008/5/3
ETSTW-RE 018	MICROWAVE HORN ANTENNA	AT4560	27212	AR	2004/11/8	2007/11/7
ETSTW-RE 020	MICROWAVE HORN ANTENNA	AT4002A	306915	AR	Function Test	
ETSTW-RE 021	SWEEP GENERATOR	SWM05	835130/010	R&S	2006/10/11	2007/10/10
ETSTW-RE 027	Passive Loop Antenna	6512	00034563	EMCO	In House Certificate	
ETSTW-RE 028	Log-Periodic DipoleArray Antenna	3148	34429	EMCO	2006/5/26	2008/5/25
ETSTW-RE 029	Biconical Antenna	3109	33524	EMCO	2006/5/26	2008/5/25
ETSTW-RE 030	Double-Ridged Guide Horn Antenna	3117	00035224	EMCO	2006/5/3	2008/5/2
ETSTW-RE 032	Millivoltmeter	URV 55	849086/013	R&S	2006/10/11	2007/10/10
ETSTW-RE 034	Power Sensor	URV5-Z4	839313/006	R&S	2005/10/17	2007/10/16
ETSTW-RE 042	Biconical Antenna	HK116	100172	R&S	2007/1/11	2009/1/10

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ETSTW-RE 043	Log-Periodic Dipole Antenna	HL223	100166	R&S	2006/5/8	2008/5/7
ETSTW-RE 044	Log-Periodic Antenna	HL050	100094	R&S	2006/5/29	2008/5/28
ETSTW-RE 048	Triple Loop Antenna	HXYZ 9170	HXYZ 9170-134	Schwarzbeck	2005/3/22	2008/3/21
ETSTW-RE 049	TRILOG Super Broadband test Antenna	VULB 9160	9160-3185	Schwarzbeck	2007/5/2	2009/5/1
ETSTW-RE 055	SPECTRUM ANALYZER	FSU-26	200074	R&S	2007/7/16	2008/7/15
ETSTW-RE 064	Bluetooth Test Set	MT8852B-042	6K00005709	Anritsu	Function Test	
ETSTW-RE 072	CELL SITE TEST SET	8921A	3339A00375	HP	2007/7/2	2009/7/1
ETSTW-GSM 01	SIM Simulator	IT3	B2004-50106	ORGA	2007/7/20	2008/7/19
ETSTW-GSM 02	Universal Radio Communication Tester	CMU 200	109439	R&S	2006/10/18	2007/10/17
ETSTW-GSM 03	Agilent 8960 Test Set 1	E5515C	GB44052675	Agilent	2006/6/26	2008/6/25
ETSTW-GSM 04	Agilent 8960 Test Set 2	E5515C	GB44052665	Agilent	2006/6/29	2008/6/28
ETSTW-GSM 05	Agilent 8960 Test Set 3	E5515C	GB44052652	Agilent	2006/7/11	2008/7/10
ETSTW-GSM 06	Agilent 8960 Test Set 4	E5515C	GB44052684	Agilent	2006/7/4	2008/4/3
ETSTW-GSM 07	Agilent 8960 Test Set 5	E5515C	GB44052658	Agilent	2006/7/12	2008/7/11
ETSTW-GSM 08	Agilent 8960 Test Set 6	E5515C	GB44052666	Agilent	2006/7/6	2008/7/5
ETSTW-GSM 09	Controller PC	Dell GX 270	700F61J	Dell	Function Test	
ETSTW-GSM 10	Anite Combiner	B4605/100	0053	Wessex / Anite	2006/9/22	2008/9/21
ETSTW-GSM 11	GSM 850,900,1800,1900 Test system	TS8950G	100039	R&S	2004/12/3	2007/12/2
ETSTW-GSM 12	Acoustical Calibrator	4231	2463874	Brüel&Kjær	2006/11/21	2007/11/20
ETSTW-GSM 13	Conditioning Amplifier	2690--0S2	2437856	Brüel&Kjær	2006/7/26	2007/8/3
ETSTW-GSM 14	Telephone Test Head	4602B	2465324	Brüel&Kjær	Function Test	
ETSTW-GSM 15	Mouth Simulator	4227	2462516	Brüel&Kjær	2006/7/26	2007/8/3
ETSTW-GSM 16	TEMP.&HUMIDITY CHAMBER	GTH-120-40-1P-U	MAA0501002	GIANT FORCE	2006/12/28	2007/12/27
ETSTW-GSM 17	ANTENNT COPLER	CMU-Z10	100988	R&S	Function Test	
ETSTW-GSM 18	AUDIO ANALYZER	UPL16	100173	R&S	2006/10/26	2007/10/25
ETSTW-GSM 23	SPLITTER	4901.19.A	None	SUHNER	Function Test	
ETSTW-GSM 24	Vibration Testing System	VS-100V	5494	Vibration	2006/12/19	2007/12/18
ETSTW-GSM 29	Microphone	4192	2458739	Brüel&Kjær	2006/7/26	2007/8/3
ETSTW-GSM 30	Ear Simulator	4195	2457416	Brüel&Kjær	2006/7/26	2007/8/3

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2.4 General Test Procedure

POWER LINE CONDUCTED INTERFERENCE: The procedure used was ANSI STANDARD C63.4-2003 using a 50 μ H LISN (if necessary). Both lines were observed. The bandwidth of the spectrum analyzer was 10 kHz with an appropriate sweep speed.

RADIATION INTERFERENCE: The test procedure used was according to ANSI STANDARD C63.4-2003 employing a spectrum analyzer. For investigated frequency is equal to or below 1GHz, the RBW and VBW of the spectrum analyzer was 100 kHz and 100kHz respectively with an appropriate sweep speed. For investigated frequency is above 1GHz, both of RBW and VBW of the spectrum analyzer were 1 MHz with an appropriate sweep speed. The analyzer was calibrated in dB above a microvolt at the output of the antenna.

FORMULA OF CONVERSION FACTORS: The Field Strength at 3m was established by adding the meter reading of the spectrum analyzer (which is set to read in units of dB μ V) to the antenna correction factor supplied by the antenna manufacturer. The antenna correction factors are stated in terms of dB.

Example:

Freq (MHz)	METER READING + ACF + CABLE LOSS (to the receiver) = FS
33	20 dB μ V + 10.36 dB + 6 dB = 36.36 dB μ V/m @3m

The UUT was placed on a table 80 cm high and with dimensions of 1m by 1.5m (non metallic table) and arranged according to ANSI C63.4-2000 Section 13.1.2. The table used for radiated measurements is capable of continuous rotation. The spectrum was scanned from 30 MHz to the frequency specified as follows:

- (1) If the intentional radiator operates below 10 GHz: to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.
- (2) If the intentional radiator operates at or above 10 GHz and below 30 GHz: to the fifth harmonic of the highest fundamental frequency or to 100 GHz, whichever is lower.
- (3) If the intentional radiator operates at or above 30 GHz: to the fifth harmonic of the highest fundamental frequency or to 200 GHz, whichever is lower, unless specified otherwise elsewhere in the rules.
- (4) If the intentional radiator contains a digital device, regardless of whether this digital device controls the functions of the intentional radiator or the digital device is used for additional control or function purposes other than to enable the operation of the intentional radiator, the frequency range shall be investigated up to the range specified in paragraphs (a)(1)-(a)(3) of this section or the range applicable to the digital device, as shown in paragraph (b)(1) of this Section, whichever is the higher frequency range of investigation.

For hand-held devices, a exploratory test was performed with three (3) orthogonal planes to determine the highest emissions.

Measurements were made by ETS Product Service (Taiwan) Co., Ltd. at the registered open field test site located at No.5-1, Shuang Sing Village, LiShuei Rd., Wanli Township, Taipei County 207, Taiwan (R.O.C.) The Registration Number: 930600.

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When an emission was found, the table was rotated to produce the maximum signal strength. At this point, the antenna was raised and lowered from 1m to 4m. The antenna was placed in both the horizontal and vertical planes.

When the radiated emission limits are expressed in terms of the average value of the emission, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value.

The formula is as follows:

Average = Peak + Duty Factor

Duty Factor = $20 \log(\text{dwell time}/T)$

T = 100ms when the pulse train period is over 100 ms or the period of the pulse train.

Modified Limits for peak according to 15.35 (b) = Max Permitted average Limits + 20dB

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3 Test results (enclosure)

TEST CASE	Para. Number	Required	Test passed	Test failed
Peak Output Power	15.247(b)(3)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Equivalent radiated Power	15.247(b)(3)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Spurious Emissions radiated – Transmitter operating	15.247(c)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Band Edge Measurement	15.247(c)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Minimum 6 dB Bandwidth	15.247(a)(2)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Peak Power Spectral Density	15.247(d)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Radiated Emission from Digital Part	15.109	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Power Line Conducted Emission	15.207	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

The follows is intended to leave blank.

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3.1 Peak Output Power (transmitter)

FCC Rule: 15.247(b)(3)

This measurement applies to equipment with an integral antenna and to equipment with an antenna connector and equipped with an antenna as declared by the applicant.

The power was measured with modulation (declared by the applicant).

Mode A

Test condition		Conducted Power		
		Channel A	Channel B	Channel C
$T_{nom} = 23^{\circ}C$	$V_{nom} = 3.7 \text{ V}$	[dBm]	[dBm]	[dBm]
		20.15	20.90	21.39

Mode B

Test condition		Conducted Power		
		Channel A	Channel B	Channel C
$T_{nom} = 23^{\circ}C$	$V_{nom} = 3.7 \text{ V}$	[dBm]	[dBm]	[dBm]
		19.37	19.87	20.34

Mode A

Test condition	Signal Field strength TX highest power mode dB μ V/m
$T_{nom} = 23^{\circ}C, V_{nom} = 3.7 \text{ V}$	
Frequency [MHz]	
2438	--

Mode B

Test condition	Signal Field strength TX highest power mode dB μ V/m
$T_{nom} = 23^{\circ}C, V_{nom} = 3.7 \text{ V}$	
Frequency [MHz]	
2438	--

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Limits:

Frequency MHz	Power dBm
902 - 928	30
2400 – 2483.5	30
5725 – 5850	30

In case of employing transmitter antennas having antenna gain > 6 dBi and using fixed point-to-point operation consider §15.247 (b)(4)

Test equipment used: ETSTW-RE 003 ETSTW-RE 004 ETSTW-RE 055

Explanation: The diagrams for the peak output power measurements are included in Appendix.

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3.2 Equivalent isotropic radiated power

FCC Rule: 15.247(b)(3)

EIRP = max. conducted output power + antenna gain
 EIRP = 21.39 dBm + 2.76 dBi
 = 24.15 dBm
 Limit: EIRP = +36 dBm for Antenna gain <6dBi

Test equipment used: ETSTW-RE 003 ETSTW-RE 004 ETSTW-RE 017 ETSTW-RE 021
 ETSTW-RE 028 ETSTW-RE 030 ETSTW-RE 043 ETSTW-RE 044

3.3 RF Exposure Compliance Requirements

FCC OET Bulletin 65 Edition 97.01 determines the equations for predicting RF fields and applicable limits.
 The prediction for power density 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	Remarks
P	mW	137.72095	Peak value
D	dB		
AG	dBi	2.76	
G		1.8	Calculated Value
R	cm	20	Assumed value
S	mW/cm ²	0.04	Calculated value

Limits:

Limit for General Population / Uncontrolled Exposure	
Frequency (MHz)	Power Density (mW/cm ²)
1500 – 100.000	1,0

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3.4 Transmitter Radiated Emissions in Restricted Bands

FCC Rules: 15.247 (c), 15.205, 15.209, 15.35

Radiated emission measurements were performed from 30 MHz to 26500 MHz.

For radiated emission tests, the analyzer setting was as followings:

Frequency \leq 1 GHz, RBW:100 kHz, VBW: 100 kHz (Peak measurements)

Frequency $>$ 1 GHz, RBW: 1 MHz, VBW: 1 MHz (Peak measurements)

Frequency $>$ 1 GHz , RBW:1 MHz , VBW: 10 Hz (Average measurements)

Limits.

For frequencies below 1GHz:

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

For frequencies above 1GHz (Average measurements).

Guidance on Measurement of Digit Transmission Systems:

“If the emission is pulsed, modify the unit for continuous operation, use the setting shown above, then correct the reading by subtracting the peak-average correction factor, derived from the appropriate duty cycle calculation.”

The correction factor, based on the total channel dwell time in a 100 ms period, may be mathematically applied to a measurement made with an average detector, to further reduce the value.

Duty cycle correction = $20 \log (\text{dwell time} / 100\text{ms})$

Note: No duty cycle correction was added to the reading of this EUT.

Explanation: See attached diagrams in Appendix.

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3.5 Spurious Emissions (tx)

Spurious emission was measured with modulation (declared by manufacturer).

In any 100 kHz bandwidth outside the frequency band in which the intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in § 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c))

FCC Rule: 15.247(c), 15.35

For out of band emissions that are close to or that exceed the 20 dB attenuation requirement described in the specification, radiated measurements were performed at a 3 m separation distance to determine whether these emissions complied with the general radiated emission requirement.

Limits:

Max. reading – 20 dB

Guidance on Measurement of Digit Transmission Systems:

“If the emission is pulsed, modify the unit for continuous operation, use the settings shown above, then correct the reading by subtracting the peak-average correction factor, derived from the appropriate duty cycle calculation.”

The correction factor, based on the total channel dwell time in a 100 ms period, may be mathematically applied to a measurement made with an average detector, to further reduce the value.

Duty Cycle correction = $20 \log(\text{dwell time}/100\text{ms})$

For frequencies above 1GHz (Peak measurements).

Modified Limit for peak according to 15.35 (b) = Max Permitted average Limits + 20dB

For frequencies above 1GHz (Average measurements).

Max. reading – 20dB

Note: No duty cycle correction was added to the reading of EUT.

Test equipment used: ETSTW-RE 003 ETSTW-RE 004 ETSTW-RE 017 ETSTW-RE 028
ETSTW-RE 029 ETSTW-RE 030 ETSTW-RE 042 ETSTW-RE 043
ETSTW-RE 044

Registration number: W6M20707-8291-C-1
 FCC ID: RPW-WIGO800I

SAMPLE CALCULATION OF LIMIT. All results will be updated by an automatic measuring system in accordance with point 2.3.

Calculation of test results:

Such factors like antenna correction, cable loss, external attenuation etc. are already included in the provided measurement results. This is done by using validated test software and calibrated test system according the accreditation requirements.

The peak and average spurious emission plots was measured with the average limits.

In the Table being listed the critical peak and average value and exhibit the compliance with the above calculated Limits.

If in the column's correction factor states a value then the max. Field strength in the same row is corrected by a value gained from the "Duty-Cycle Correction Factor".

Summary table with radiated data of the test plots

Model: WIGO 800I Date: 2007/7/17
 Mode: 802.11b CH1 TX Temperature: 26 °C Engineer: Danny
 Polarization: Horizontal Humidity: 60 %

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (m)	Note
108.457	14.59	peak	12.23	26.82	43.5	-16.68	225	350	
282.685	14.48	peak	14.89	29.37	46	-16.63	230	256	
608.617	7.95	peak	22.22	30.17	46	-15.83	80	174	

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (m)	Note
114.950	17.98	peak	12.88	30.86	43.5	-12.64	124	144	
124.148	17.77	peak	13.70	31.47	43.5	-12.03	125	151	
612.826	6.25	peak	22.24	28.49	46	-17.51	150	327	

Model: WIGO 800I Date: 2007/7/17
 Mode: 802.11b CH1 TX Temperature: 26 °C Engineer: Danny
 Polarization: Horizontal Humidity: 60 %

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (m)	Note
	Peak	Ave.		Peak	Ave.	Peak	Ave.				
1991.984	51.95	---	-8.55	43.4	---	74	54	-30.6	209	158	
2368.738	56.89	---	-7.62	49.27	---	74	54	-24.73	224	141	
4825.651	46.25	---	-2.40	43.85	---	74	54	-30.15	231	132	

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (m)	Note
	Peak	Ave.		Peak	Ave.	Peak	Ave.				
1993.988	51.56	---	-8.54	43.02	---	74	54	-30.98	216	158	
2352.705	54.35	---	-7.65	46.7	---	74	54	-27.3	221	142	
4817.635	48.71	---	-2.44	46.27	---	74	54	-27.73	235	130	

Registration number: W6M20707-8291-C-1
 FCC ID: RPW-WIGO800I

Model: WIGO 800I Date: 2007/7/17
 Mode: 802.11b CH6 TX Temperature: 26 °C Engineer: Danny
 Polarization: Horizontal Humidity: 60 %

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (m)	Note
38.116	9.47	peak	13.42	22.89	40	-17.11	129	389	
111.703	14.01	peak	12.54	26.55	43.5	-16.95	127	357	
610.020	7.58	peak	22.22	29.8	46	-16.2	89	188	

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (m)	Note
124.148	17.71	peak	13.70	31.41	43.5	-12.09	231	138	
126.854	17.16	peak	13.88	31.04	43.5	-12.46	227	144	
403.808	11.47	peak	17.87	29.34	46	-16.66	148	275	

Model: WIGO 800I Date: 2007/7/17
 Mode: 802.11b CH6 TX Temperature: 26 °C Engineer: Danny
 Polarization: Horizontal Humidity: 60 %

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (m)	Note
	Peak	Ave.		Peak	Ave.	Peak	Ave.				
1987.976	51.46	---	-8.58	42.88	---	74	54	-31.12	217	153	
2356.713	56.27	---	-7.64	48.63	---	74	54	-25.37	225	142	
4873.748	47.66	---	-2.18	45.48	---	74	54	-28.52	237	129	

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (m)	Note
	Peak	Ave.		Peak	Ave.	Peak	Ave.				
1757.515	52.91	---	-10.15	42.76	---	74	54	-31.24	220	138	
2352.705	52.87	---	-7.65	45.22	---	74	54	-28.78	231	141	
4873.748	48.03	---	-2.18	45.85	---	74	54	-28.15	239	134	

Registration number: W6M20707-8291-C-1
 FCC ID: RPW-WIGO800I

Model: WIGO 800I Date: 2007/7/17
 Mode: 802.11b CH11 TX Temperature: 26 °C Engineer: Danny
 Polarization: Horizontal Humidity: 60 %

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (m)	Note
114.950	13.52	peak	12.88	26.4	43.5	-17.1	234	258	
283.768	14.05	peak	14.92	28.97	46	-17.03	220	330	
402.405	10.74	peak	17.84	28.58	46	-17.42	85	238	

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (m)	Note
124.148	17.94	peak	13.70	31.64	43.5	-11.86	120	135	
126.854	16.95	peak	13.88	30.83	43.5	-12.67	126	146	
608.617	5.63	peak	22.22	27.85	46	-18.15	154	328	

Model: WIGO 800I Date: 2007/7/17
 Mode: 802.11b CH11 TX Temperature: 26 °C Engineer: Danny
 Polarization: Horizontal Humidity: 60 %

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (m)	Note
	Peak	Ave.		Peak	Ave.	Peak	Ave.				
1993.988	51.26	---	-8.54	42.72	---	74	54	-31.28	208	149	
2348.697	54.71	---	-7.66	47.05	---	74	54	-26.95	228	145	
4921.844	45.12	---	-1.96	43.16	---	74	54	-30.84	136	134	

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (m)	Note
	Peak	Ave.		Peak	Ave.	Peak	Ave.				
1987.976	51.7	---	-8.58	43.12	---	74	54	-30.88	218	156	
2360.721	52.92	---	-7.63	45.29	---	74	54	-28.71	225	143	
4921.844	48.12	---	-1.96	46.16	---	74	54	-27.84	231	132	

Registration number: W6M20707-8291-C-1
 FCC ID: RPW-WIGO800I

Model: WIGO 800I Date: 2007/7/17
 Mode: 802.11g CH1 TX Temperature: 26 °C Engineer: Danny
 Polarization: Horizontal Humidity: 60 %

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (m)	Note
108.457	14.45	peak	12.23	26.68	43.5	-16.82	233	334	
111.703	14.02	peak	12.54	26.56	43.5	-16.94	237	337	
402.405	11.84	peak	17.84	29.68	46	-16.32	83	227	

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (m)	Note
124.148	17.77	peak	13.70	31.47	43.5	-12.03	127	165	
126.854	18.41	peak	13.88	32.29	43.5	-11.21	122	163	
409.419	10.26	peak	17.98	28.24	46	-17.76	153	284	

Model: WIGO 800I Date: 2007/7/17
 Mode: 802.11g CH1 TX Temperature: 26 °C Engineer: Danny
 Polarization: Horizontal Humidity: 60 %

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (m)	Note
	Peak	Ave.		Peak	Ave.	Peak	Ave.				
1925.852	51.26	---	-9.00	42.26	---	74	54	-31.74	216	154	
2372.746	59.33	---	-7.61	51.72	---	74	54	-22.28	225	146	
4825.651	44.49	---	-2.40	42.09	---	74	54	-31.91	237	133	

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (m)	Note
	Peak	Ave.		Peak	Ave.	Peak	Ave.				
1991.984	51.67	---	-8.55	43.12	---	74	54	-30.88	210	153	
2372.746	54.95	---	-7.61	47.34	---	74	54	-26.66	227	143	
4825.651	46.71	---	-2.40	44.31	---	74	54	-29.69	235	136	

Registration number: W6M20707-8291-C-1
 FCC ID: RPW-WIGO800I

Model: WIGO 800I Date: 2007/7/17
 Mode: 802.11g CH6 TX Temperature: 26 °C Engineer: Danny
 Polarization: Horizontal Humidity: 60 %

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (m)	Note
38.116	10.49	peak	13.42	23.91	40	-16.09	231	387	
114.950	14.15	peak	12.88	27.03	43.5	-16.47	234	345	
406.613	11.41	peak	17.93	29.34	46	-16.66	84	235	

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (m)	Note
124.148	18.13	peak	13.70	31.83	43.5	-11.67	124	158	
130.100	16.69	peak	14.10	30.79	43.5	-12.71	127	162	
406.613	10.16	peak	17.93	28.09	46	-17.91	154	267	

Model: WIGO 800I Date: 2007/7/17
 Mode: 802.11g CH6 TX Temperature: 26 °C Engineer: Danny
 Polarization: Horizontal Humidity: 60 %

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (m)	Note
	Peak	Ave.		Peak	Ave.	Peak	Ave.				
1991.984	51.35	---	-8.55	42.8	---	74	54	-31.2	211	155	
2328.657	56.65	---	-7.71	48.94	---	74	54	-25.06	223	147	
4873.748	44.8	---	-2.18	42.62	---	74	54	-31.38	237	136	

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (m)	Note
	Peak	Ave.		Peak	Ave.	Peak	Ave.				
1991.984	51.39	---	-8.55	42.84	---	74	54	-31.16	210	156	
2328.657	53.74	---	-7.71	46.03	---	74	54	-27.97	225	142	
4873.748	47.6	---	-2.18	45.42	---	74	54	-28.58	231	130	

Registration number: W6M20707-8291-C-1
 FCC ID: RPW-WIGO800I

Model: WIGO 800I Date: 2007/7/17
 Mode: 802.11g CH11 TX Temperature: 26 °C Engineer: Danny
 Polarization: Horizontal Humidity: 60 %

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (m)	Note
38.116	9.19	peak	13.42	22.61	40	-17.39	220	384	
112.245	13.37	peak	12.60	25.97	43.5	-17.53	233	336	
406.613	11.38	peak	17.93	29.31	46	-16.69	87	239	

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (m)	Note
124.148	17.69	peak	13.70	31.39	43.5	-12.11	121	134	
133.347	15.90	peak	14.33	30.23	43.5	-13.27	128	138	
612.826	8.12	peak	22.24	30.36	46	-15.64	151	330	

Model: WIGO 800I Date: 2007/7/17
 Mode: 802.11g CH11 TX Temperature: 26 °C Engineer: Danny
 Polarization: Horizontal Humidity: 60 %

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (m)	Note
	Peak	Ave.		Peak	Ave.	Peak	Ave.				
1873.748	52.83	---	-9.36	43.47	---	74	54	-30.53	201	154	
2356.713	54.9	---	-7.64	47.26	---	74	54	-26.74	220	146	
4921.844	44.57	---	-1.96	42.61	---	74	54	-31.39	235	128	

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (m)	Note
	Peak	Ave.		Peak	Ave.	Peak	Ave.				
1989.98	51.28	---	-8.57	42.71	---	74	54	-31.29	204	161	
2352.705	52.79	---	-7.65	45.14	---	74	54	-28.86	218	139	
4921.844	48.75	---	-1.96	46.79	---	74	54	-27.21	230	133	

- Note**
1. Correction Factor = Antenna factor + Cable loss - Preamplifier
 2. The formula of measured value as: Test Result = Reading + Correction Factor
 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. See attached diagram as appendix.

TEST RESULT (Transmitter): The unit DOES meet the FCC requirements.

Test equipment used: ETSTW-RE003 ETSTW-RE 004 ETSTW-RE 017 ETSTW-RE 028
 ETSTW-RE029 ETSTW-RE 030 ETSTW-RE 042 ETSTW-RE 043 ETSTW-RE 044

Registration number: W6M20707-8291-C-1
 FCC ID: RPW-WIGO800I

3.6 Radiated Emission on the band edge

According to FCC rules part 15 subpart C §15.247(c) in any 100 kHz bandwidth outside the frequency band in which the intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in § 15.209(a) is not required.

In addition radiated emission which fall in the restricted bands, as defined in section 15.205(a), must also with the radiated emission limits.

Mode A

Test conditions		Attenuation at or outside band-edges	
		Lower Band-edge	Upper Band-edge
$T_{nom} = 23^{\circ}C$	$V_{nom} = 3.7 V$	38.32 dB	53.20 dB

Mode B

Test conditions		Attenuation at or outside band-edges	
		Lower Band-edge	Upper Band-edge
$T_{nom} = 23^{\circ}C$	$V_{nom} = 3.7 V$	33.89 dB	43.98 dB

Limit:

Frequency Range / MHz	Limit
902 –928	- 20 dB
2400 – 2483.5	
5725 - 5850	

Test equipment used: ETSTW-RE 003 ETSTW-RE 004 ETSTW-RE 017 ETSTW-RE 028
 ETSTW-RE 030 ETSTW-RE 043 ETSTW-RE 044

Explanation: Please see attached diagram as appendix.

Registration number: W6M20707-8291-C-1
 FCC ID: RPW-WIGO800I

3.7 Minimum 6 dB Bandwidth

The analyzer ResBW was set to 100 kHz. For each RF output channel investigated, the spectrum analyzer center frequency was set to the channel carrier. A PEAK reading was taken, two markers were set 6 dB below the maximum level on the right and the left side of the emission. The 6 dB bandwidth is the frequency difference between the two markers.

Mode A

Test conditions		6 dB Bandwidth		
		Channel 1	Channel 6	Channel 11
$T_{nom} = 23^{\circ}C$	$V_{nom} = 3.7 V$	8.621794872 MHz	8.621794872 MHz	8.621794872 MHz

Mode B

Test conditions		6 dB Bandwidth		
		Channel 1	Channel 6	Channel 11
$T_{nom} = 23^{\circ}C$	$V_{nom} = 3.7 V$	16.602564103 MHz	16.570512821 MHz	16.602564103 MHz

Limits:

Frequency Range MHz	Limits
902-928	min 500 kHz
2400-2483.5	min 500 kHz
5725-5850	min 500 kHz

Test equipment used: ETSTW-RE 003 ETSTW-RE 004 ETSTW-RE 055

Explanation: See attached diagrams in Appendix.

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 FCC ID: RPW-WIGO800I

3.8 Peak Power Spectral Density

Peak Power Spectral density is a measured at low, middle and high channel. The peak output power is measured with a measurement bandwidth of 10 MHz and displayed on diagram together with Peak Power Spectral Density result which was measured with a bandwidth of 3 kHz, appreciate frequency span and sweep time.

Mode A

Test conditions		Peak Power Spectral Density (3 kHz)		
		Channel 1 [dBm]	Channel 6 [dBm]	Channel 11 [dBm]
$T_{nom} = 23^{\circ}C$	$V_{nom} = 3.7 V$	-12.22	-11.75	-11.31

Mode B

Test conditions		Peak Power Spectral Density (3 kHz)		
		Channel 1 [dBm]	Channel 6 [dBm]	Channel 11 [dBm]
$T_{nom} = 23^{\circ}C$	$V_{nom} = 3.7 V$	-14.98	-15.25	-13.91

Limits:

Frequency Range MHz	dBm
902-928	8
2400-2483,5	8
5725-5850	8

Test equipment used: ETSTW-RE 003 ETSTW-RE 004 ETSTW-RE 055

Explanation: See attached diagrams in Appendix.

Registration number: W6M20707-8291-C-1
 FCC ID: RPW-WIGO800I

3.9 Radiated Emission from Digital Part

FCC Rule: 15.109

Hynix mode

Model: WIGO 800I Date: 2007/7/23
 Mode: WIFI Temperature: 26 °C Engineer: Jason
 Polarization: Horizontal Humidity: 60 %

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (m)	Note
31.082	9.05	peak	13.03	22.08	30	-7.92	320	320	
136.593	2.01	peak	14.57	16.58	30	-13.42	310	350	
206.393	4.59	peak	12.26	16.85	30	-13.15	280	250	
371.543	1.32	peak	17.02	18.34	37	-18.66	120	350	
595.992	-1.11	peak	22.06	20.95	37	-16.05	320	320	
910.220	-1.48	peak	26.47	24.99	37	-12.01	250	315	

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (m)	Note
132.264	0.07	peak	14.26	14.33	30	-15.67	310	120	
202.064	4.82	peak	12.18	17	30	-13	280	160	
277.274	7.17	peak	14.74	21.91	37	-15.09	250	115	
363.126	5.46	peak	16.78	22.24	37	-14.76	300	120	
608.617	-0.88	peak	22.22	21.34	37	-15.66	310	140	
805.010	0.08	peak	25.22	25.3	37	-11.7	310	100	

Infineon mode

Model: WIGO 800I Date: 2007/7/23
 Mode: WIFI Temperature: 26 °C Engineer: Jason
 Polarization: Horizontal Humidity: 60 %

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (m)	Note
30.013	10.48	peak	13.03	23.51	30	-6.49	270	345	
136.593	2.01	peak	14.57	16.58	30	-13.42	175	320	
206.393	4.59	peak	12.26	16.85	30	-13.15	300	286	
367.335	5.26	peak	16.90	22.16	37	-14.84	270	275	
716.633	1.03	peak	23.89	24.92	37	-12.08	95	240	
854.108	-0.64	peak	25.62	24.98	37	-12.02	180	205	

Registration number: W6M20707-8291-C-1
 FCC ID: RPW-WIGO800I

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (m)	Note
132.265	0.07	peak	14.26	14.33	30	-15.67	245	165	
230.200	4.85	peak	13.06	17.91	37	-19.09	260	245	
277.275	7.17	peak	14.74	21.91	37	-15.09	300	280	
374.349	1.12	peak	17.10	18.22	37	-18.78	100	268	
517.435	1.38	peak	20.06	21.44	37	-15.56	206	270	
827.455	-1.84	peak	25.54	23.7	37	-13.3	168	320	

- Note**
- 1. Correction Factor = Antenna factor + Cable loss - Preamplifier**
 - 2. The formula of measured value as: Test Result = Reading + Correction Factor**
 - 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. See attached diagram as appendix.**

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 003 ETSTW-RE 004 ETSTW-RE 017 ETSTW-RE 028 ETSTW-RE 029
 ETSTW-RE 030 ETSTW-RE 042 ETSTW-RE 043 ETSTW-RE 044

Registration number: W6M20707-8291-C-1
 FCC ID: RPW-WIGO800I

3.10 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.

Frequency	Level (dBμV)	
	quasi-peak	average
150 kHz	lower limit line	Lower limit line

Model: WIGO 800I Date: 2007/7/23
 Mode: Hynix WIFI Engineer: Jason
 Temperature: 26 °C Humidity: 60 %
 Polarization: N

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result (dBuV)		Limit (dBuV)		Margin (dB)	Note
	QP	Ave.		QP	Ave.	QP	Ave.		
0.1846	35.38	28.48	10.00	45.48	38.58	64.28	54.28	-15.7	
0.43	31.24	25.38	10.00	41.34	35.48	57.25	47.25	-11.77	
0.67	31.45	25.37	10.00	41.55	35.47	56	46	-10.53	
1.47	27.92	18.95	10.00	38.02	29.05	56	46	-16.95	
2.27	27.74	10.12	10.00	37.84	20.22	56	46	-18.16	
11.3333	22.15	6.97	10.00	32.25	17.07	60	50	-27.75	

Polarization: L1

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result (dBuV)		Limit (dBuV)		Margin (dB)	Note
	QP	Ave.		QP	Ave.	QP	Ave.		
0.1842	35.43	29.62	10.00	45.53	39.72	64.29	87.27	-18.76	
0.3666	33.66	29.45	10.00	43.76	39.55	58.58	87.27	-14.82	
0.615	31.85	23.9	10.00	41.95	34	56	87.27	-14.05	
1.405	29.57	23.51	10.00	39.67	33.61	56	87.27	-16.33	
1.96	30.03	16.67	10.00	40.13	26.77	56	87.27	-15.87	
13.5833	21.47	8.14	10.00	31.57	18.24	60	87.27	-28.43	

Registration number: W6M20707-8291-C-1
 FCC ID: RPW-WIGO8001

Model: WIGO 800I Date: 2007/7/23
 Mode: Infineon WIFI Engineer: Jason
 Temperature: 26 °C Humidity: 60 %
 Polarization: N

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result (dBuV)		Limit (dBuV)		Margin (dB)	Note
	QP	Ave.		QP	Ave.	QP	Ave.		
0.1838	35.18	29	10.00	45.28	39.1	64.31	54.31	-15.21	
0.4316	28.68	21.84	10.00	38.78	31.94	57.22	47.22	-15.28	
0.615	28.35	22.84	10.00	38.45	32.94	56	46	-13.06	
1.47	23.35	15.55	10.00	33.45	25.65	56	46	-20.35	
2.875	22.84	13.6	10.00	32.94	23.7	56	46	-22.3	
13.1389	19.87	9.31	10.00	29.97	19.41	60	50	-30.03	

Polarization: L1

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result (dBuV)		Limit (dBuV)		Margin (dB)	Note
	QP	Ave.		QP	Ave.	QP	Ave.		
0.1846	35.31	29	10.00	45.41	39.1	64.28	54.28	-15.18	
0.3682	31.91	26.53	10.00	42.01	36.63	58.54	48.54	-11.91	
0.61	29.16	24.99	10.00	39.26	35.09	56	46	-10.91	
1.16	26.9	19.72	10.00	37	29.82	56	46	-16.18	
2.015	27.38	18.43	10.00	37.48	28.53	56	46	-17.47	
25.6388	21.06	8.31	10.00	31.16	18.41	60	50	-28.84	

- 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, AVG = Average**
- 4. All not in the table noted test results are more than 20 dB below the relevant limits.**

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 003 ETSTW-CE 004 ETSTW-CE 006
 ETSTW-CE 011

Registration number: W6M20707-8291-C-1
FCC ID: RPW-WIGO800I

Appendix

Measurement diagrams

1. Peak Output Power

2. Spurious Emissions radiated

(The measurement diagrams plots attached below are preliminary wideband scan with a peak detector for reference only. The final test results are listed on section 3.5)

3. Band Edge Measurement

4. Minimum 6dB Bandwidth

5. Peak Power Spectral Density

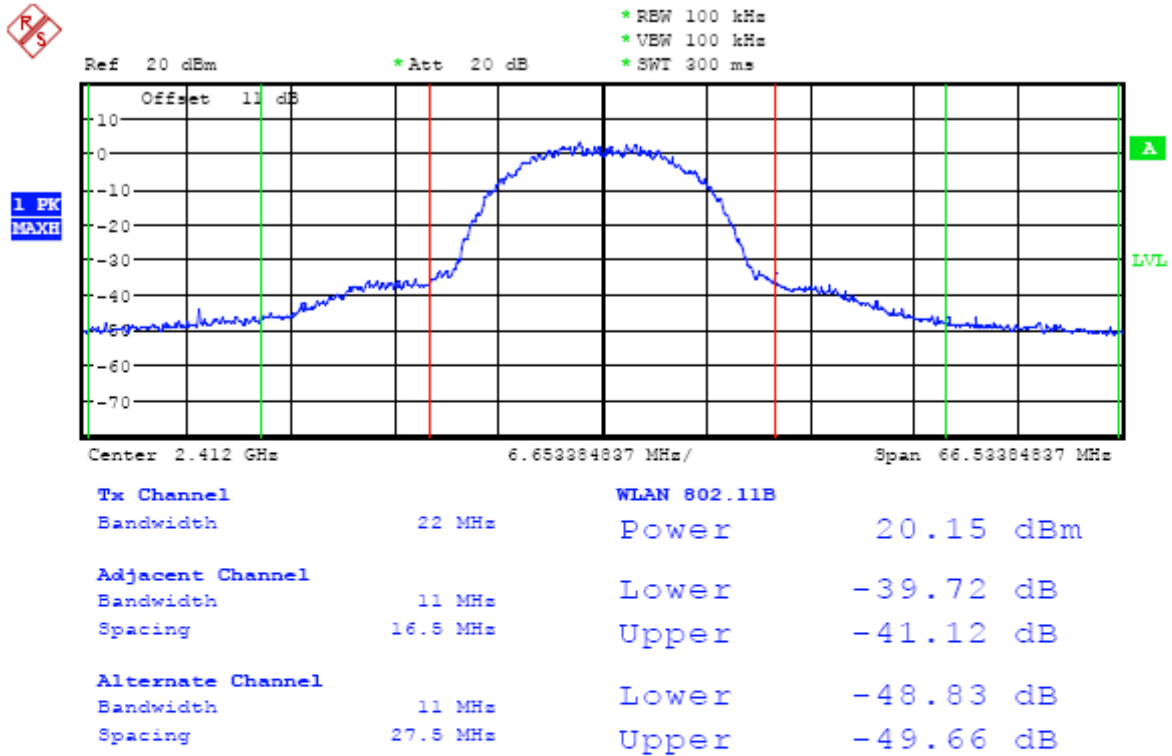
6. Radiated Emissions from Digital Part

(The measurement diagrams plots attached below are preliminary wideband scan with a peak detector and for reference only. The final test results are listed on section 3.9)

7. Power Line Conducted Emission

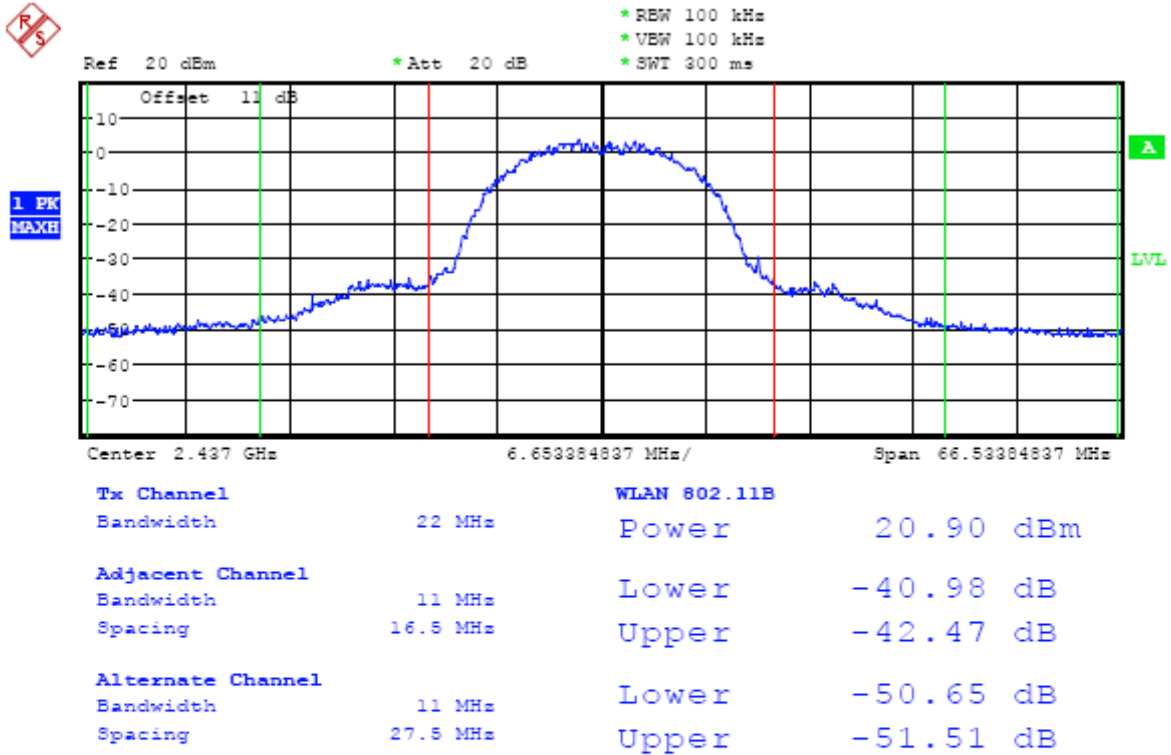
(The measurement diagrams plots attached below are preliminary wideband scan with a peak and average detector for reference only. The final test results are listed on section 3.10)

Registration number: W6M20707-8291-C-1
 FCC ID: RPW-WIGO800I



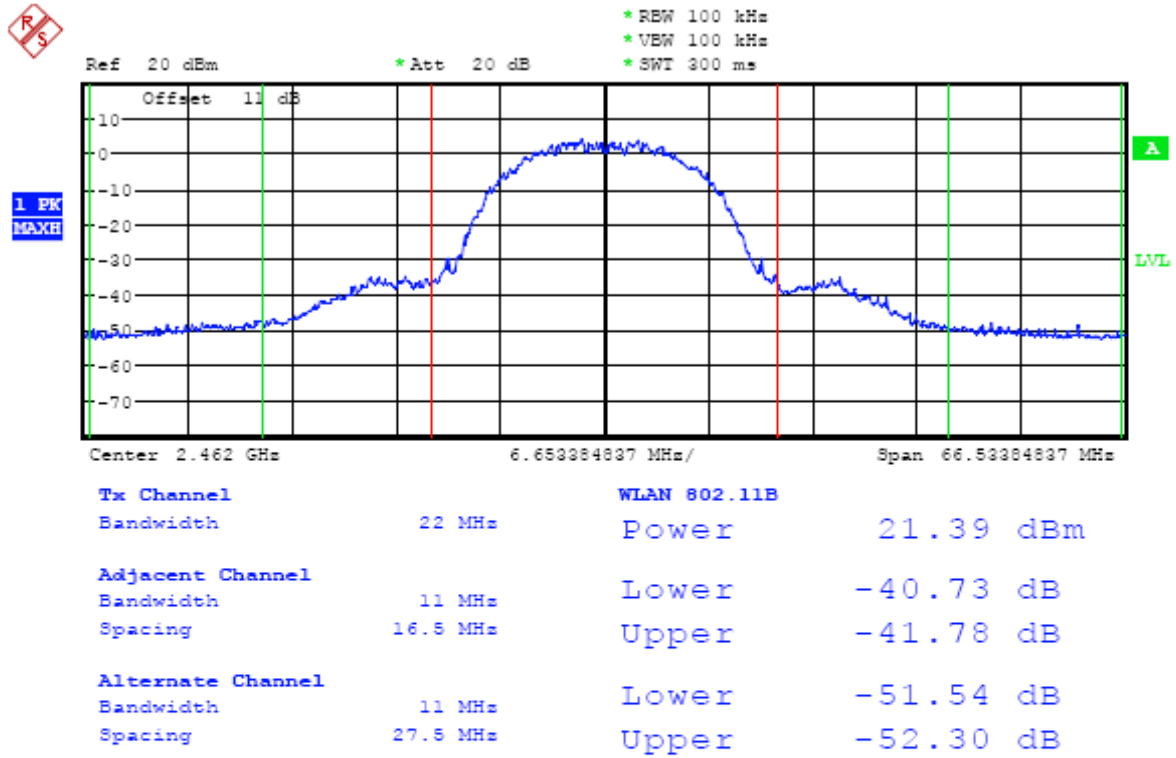
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 Date: 18.JUL.2007 20:03:48

Registration number: W6M20707-8291-C-1
 FCC ID: RPW-WIGO800I



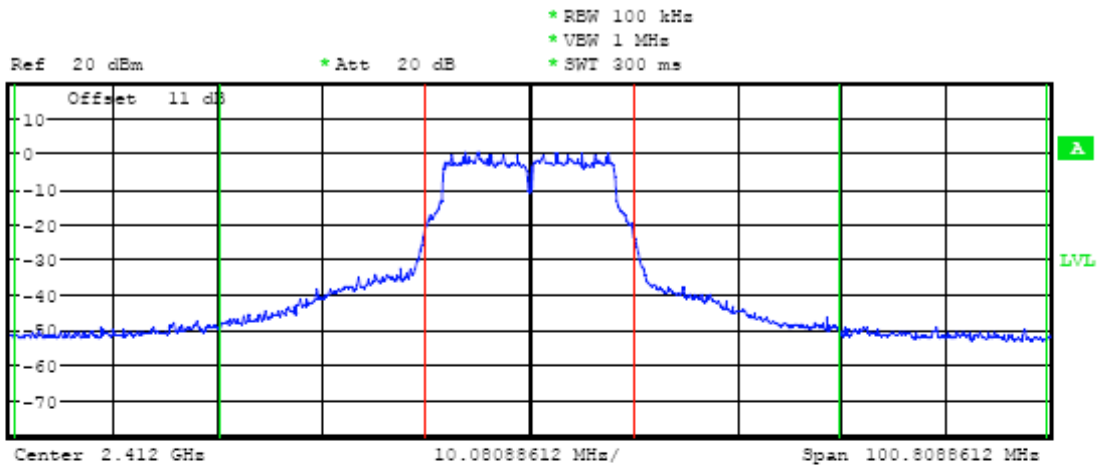
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 FCC ID: RPW-WIGO800I



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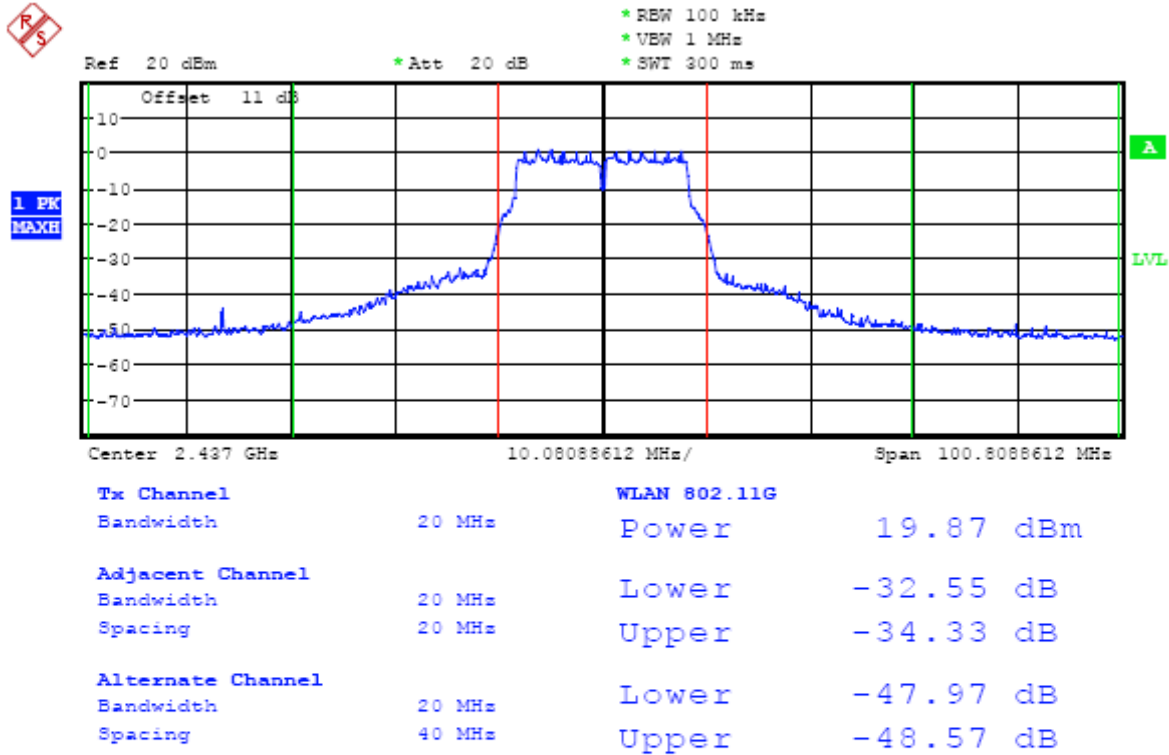
Registration number: W6M20707-8291-C-1
 FCC ID: RPW-WIGO800I



Tx Channel		WLAN 802.11G	
Bandwidth	20 MHz	Power	19.37 dBm
Adjacent Channel		Lower	-32.59 dB
Bandwidth	20 MHz	Upper	-34.83 dB
Spacing	20 MHz		
Alternate Channel		Lower	-47.51 dB
Bandwidth	20 MHz	Upper	-48.26 dB
Spacing	40 MHz		

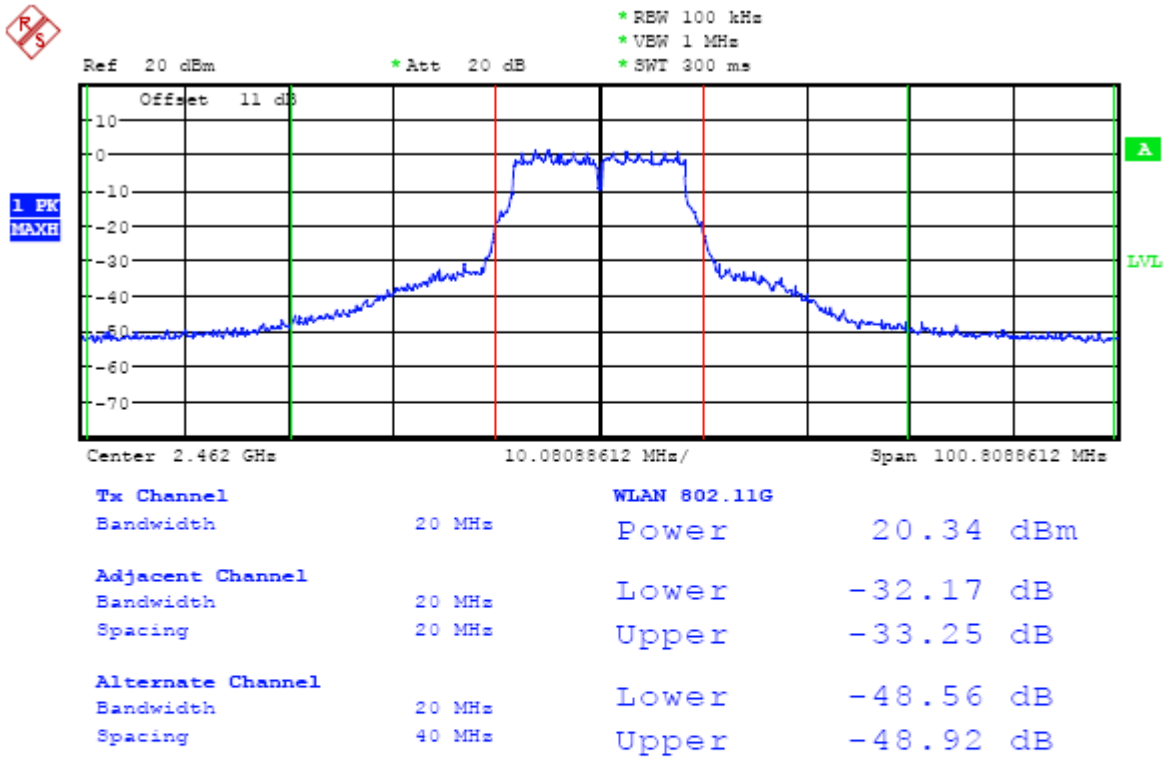
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Registration number: W6M20707-8291-C-1
 FCC ID: RPW-WIGO800I



MAX OUTPUT POWER 802.11g CH6
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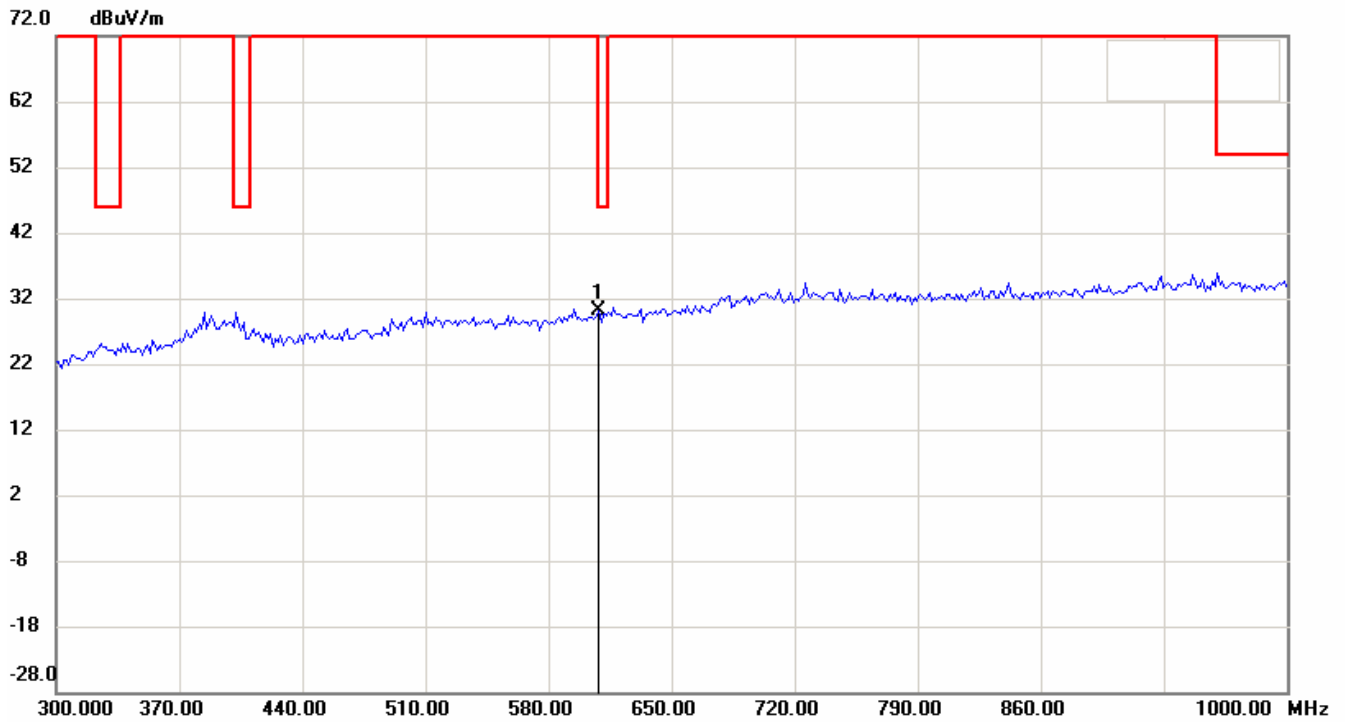
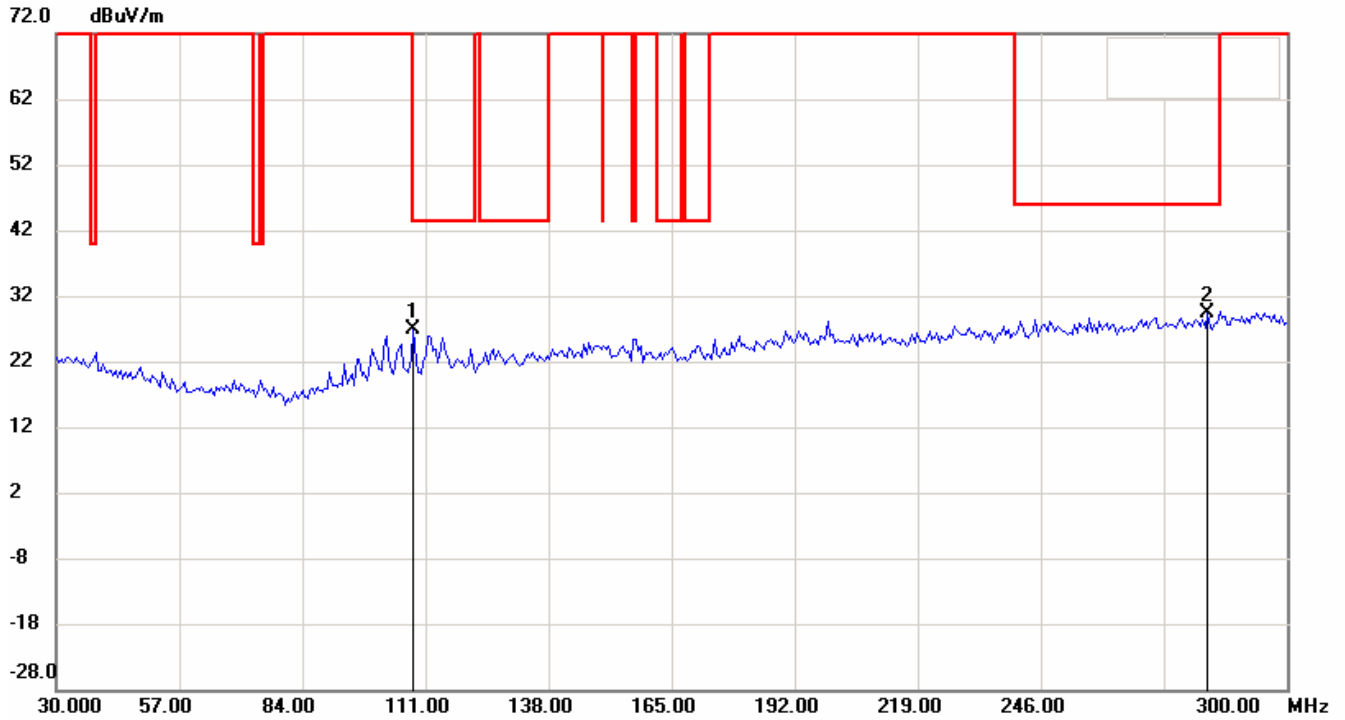
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 FCC ID: RPW-WIGO800I



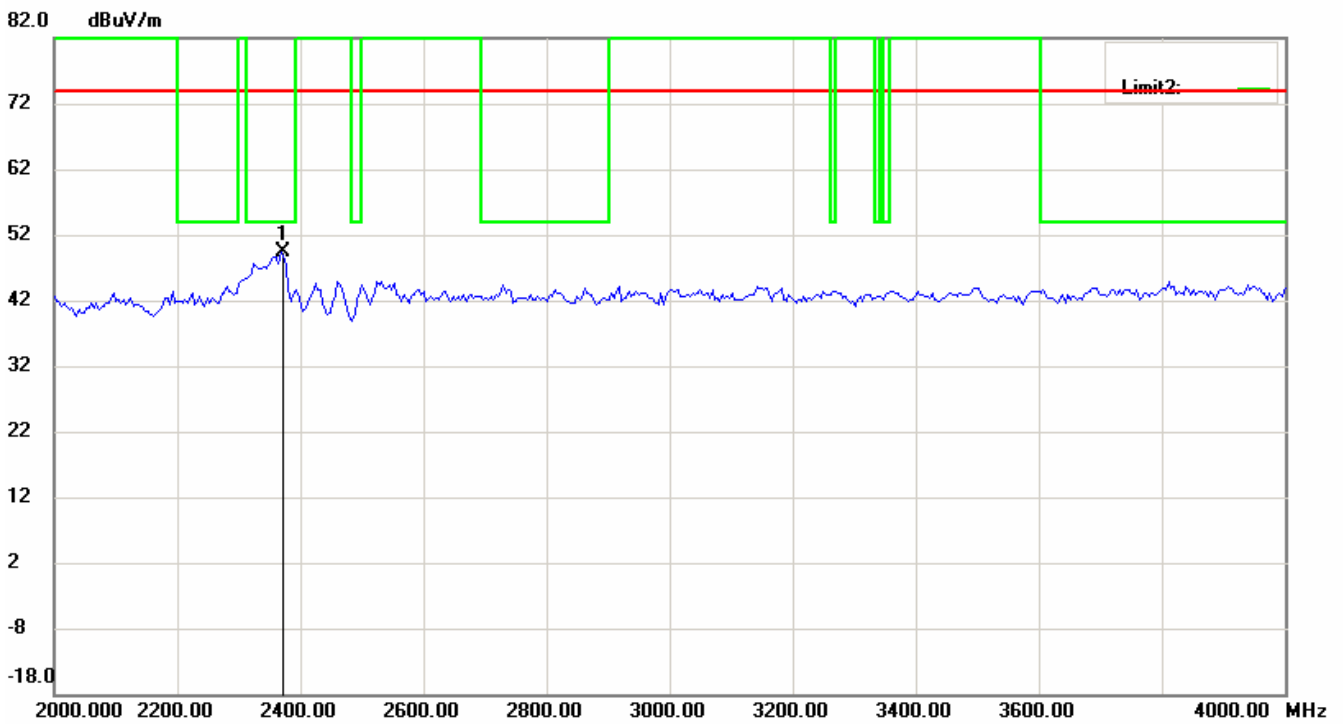
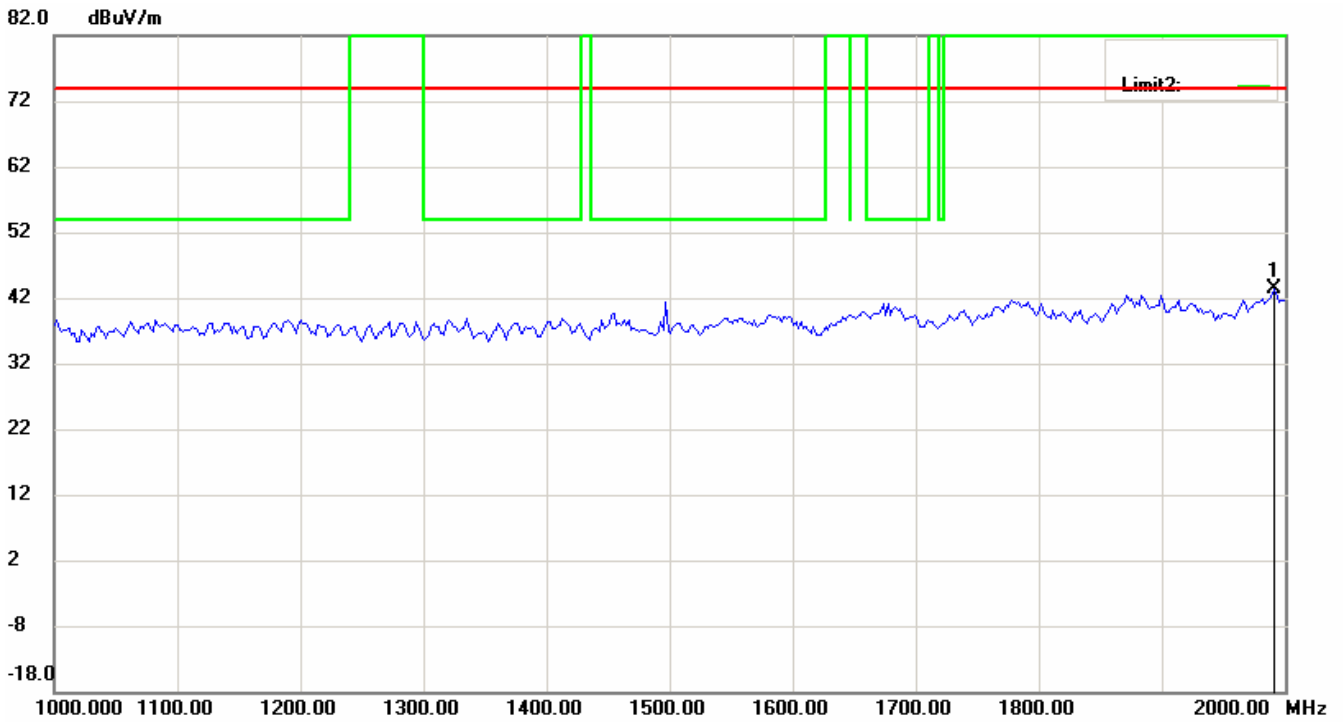
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FCC ID: RPW-WIGO800I

Antenna Polarization H (11b_CH 1)

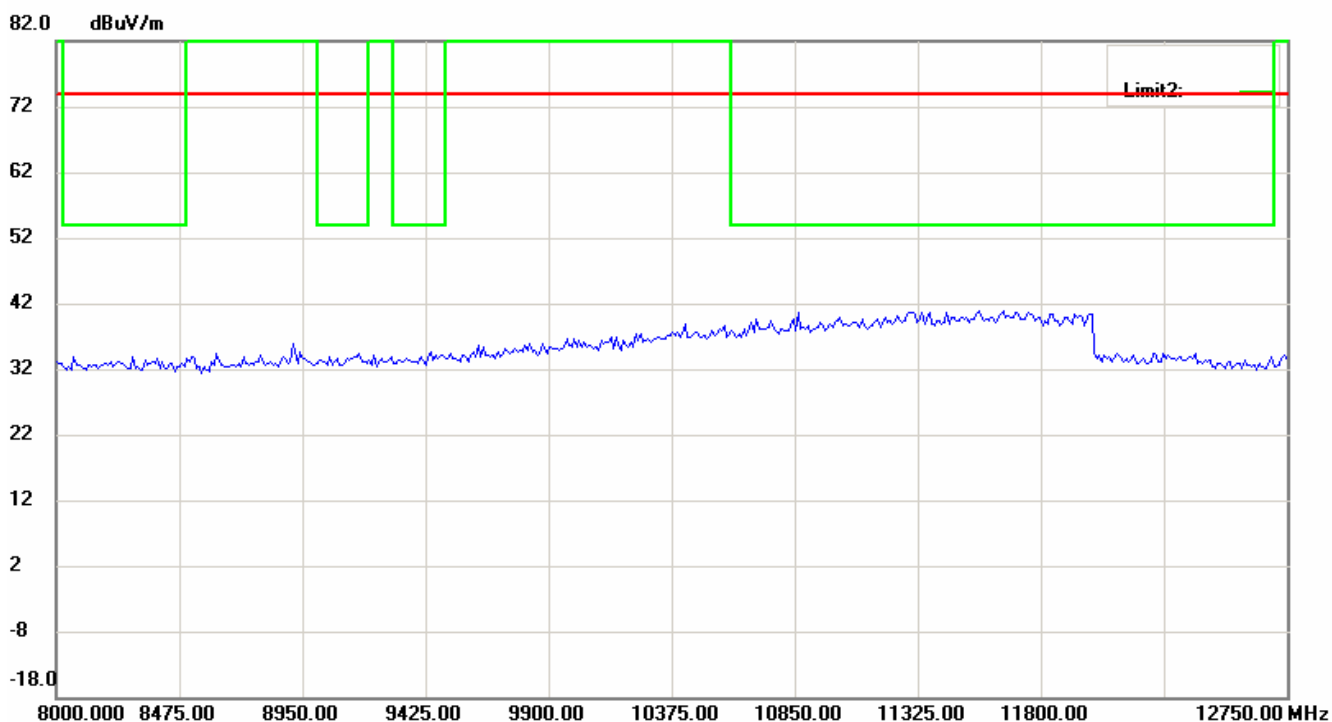
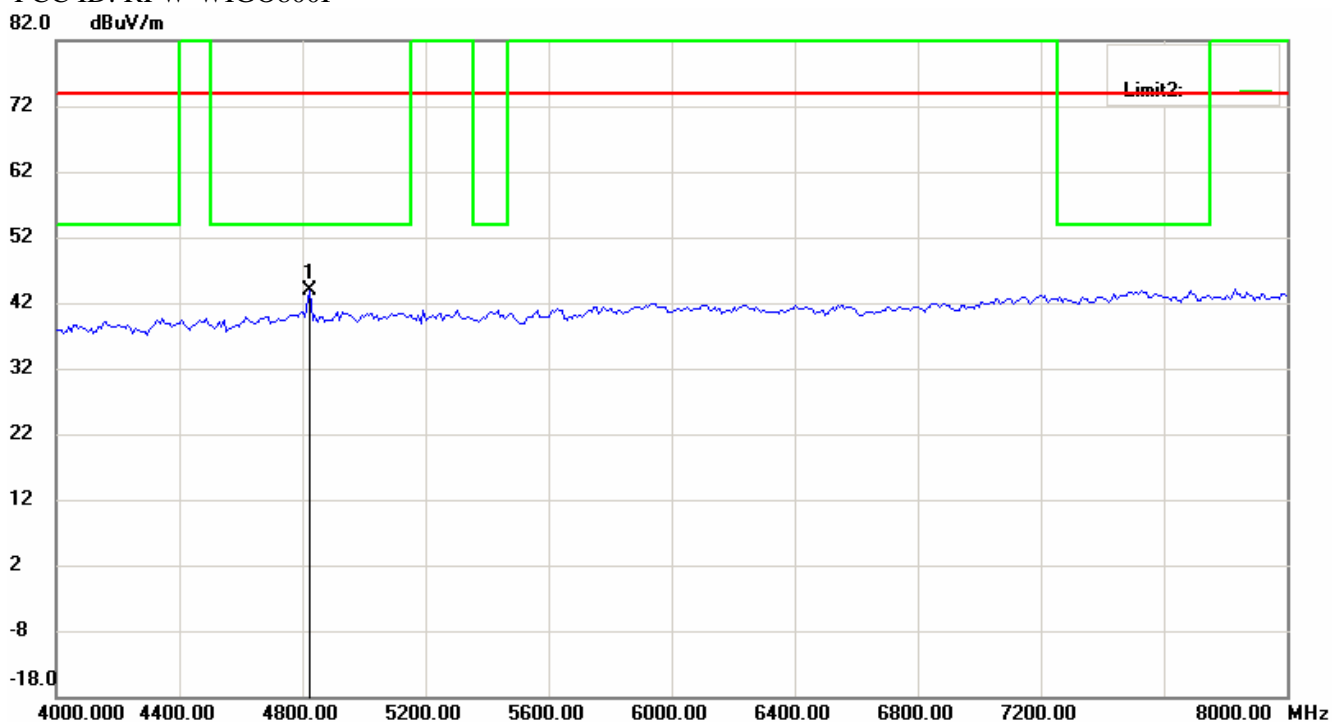


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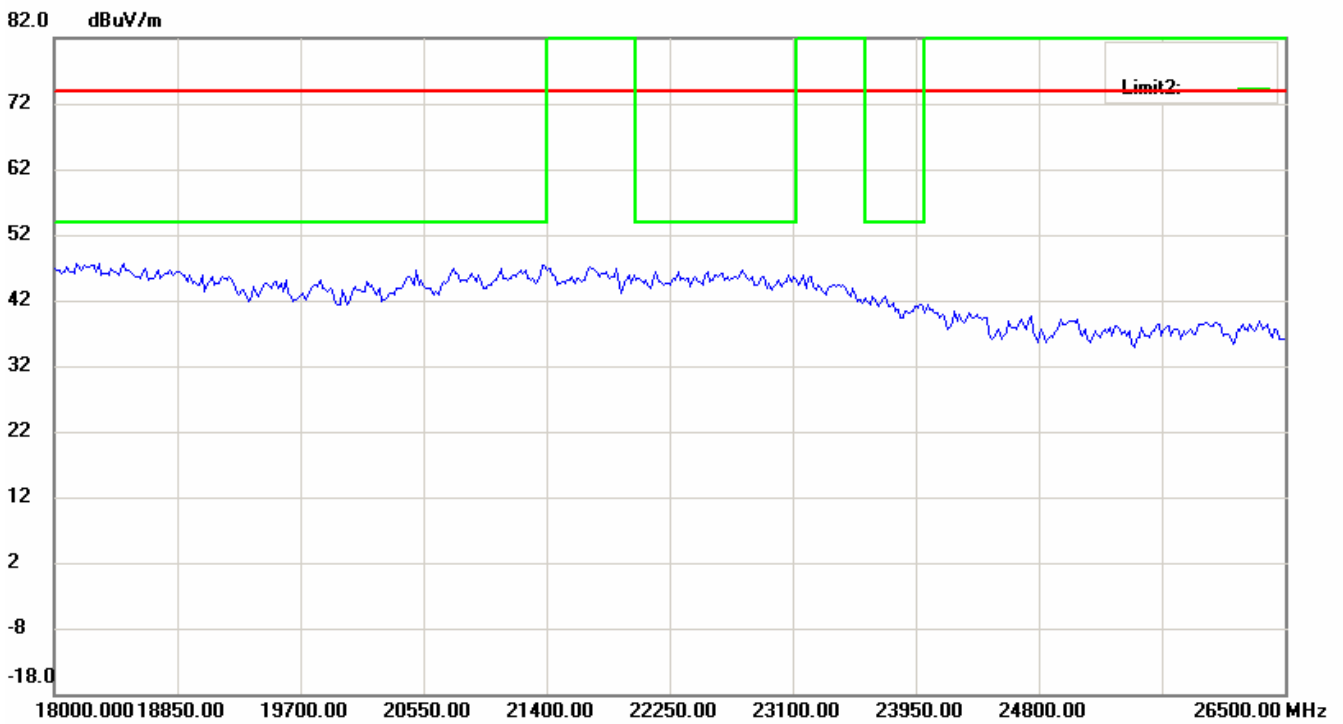
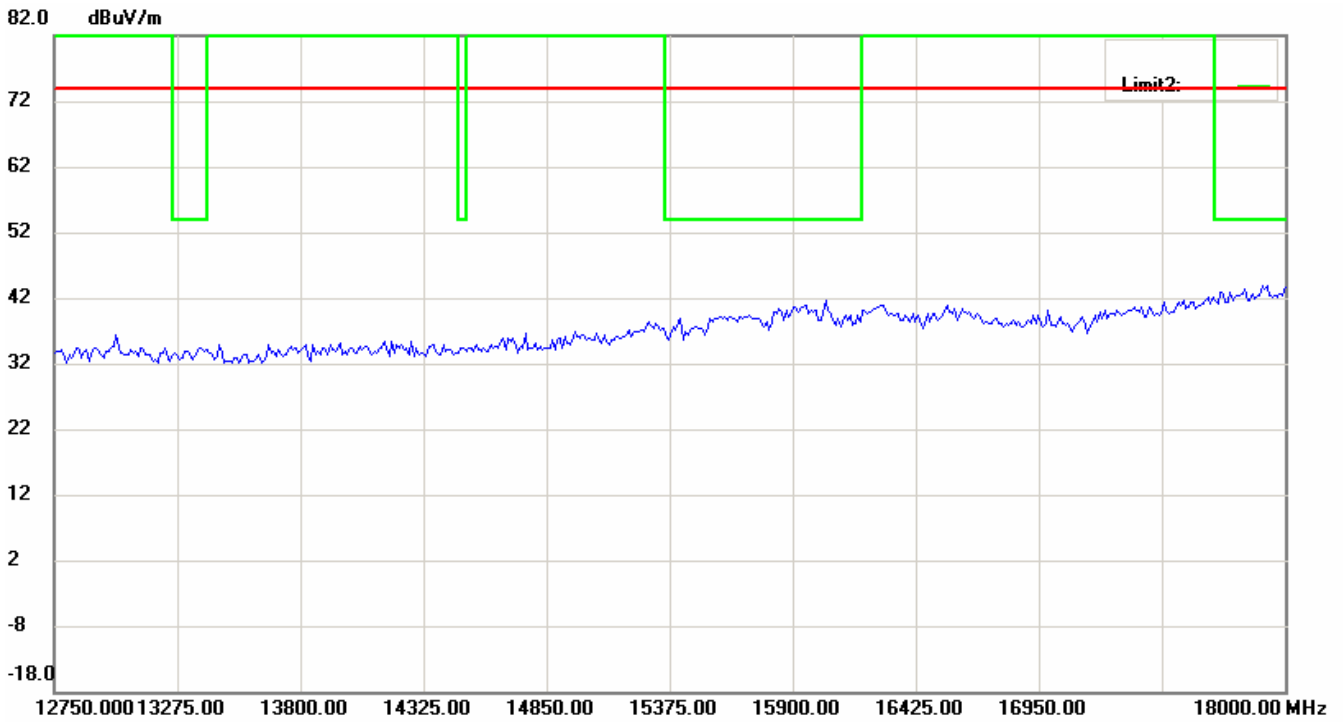


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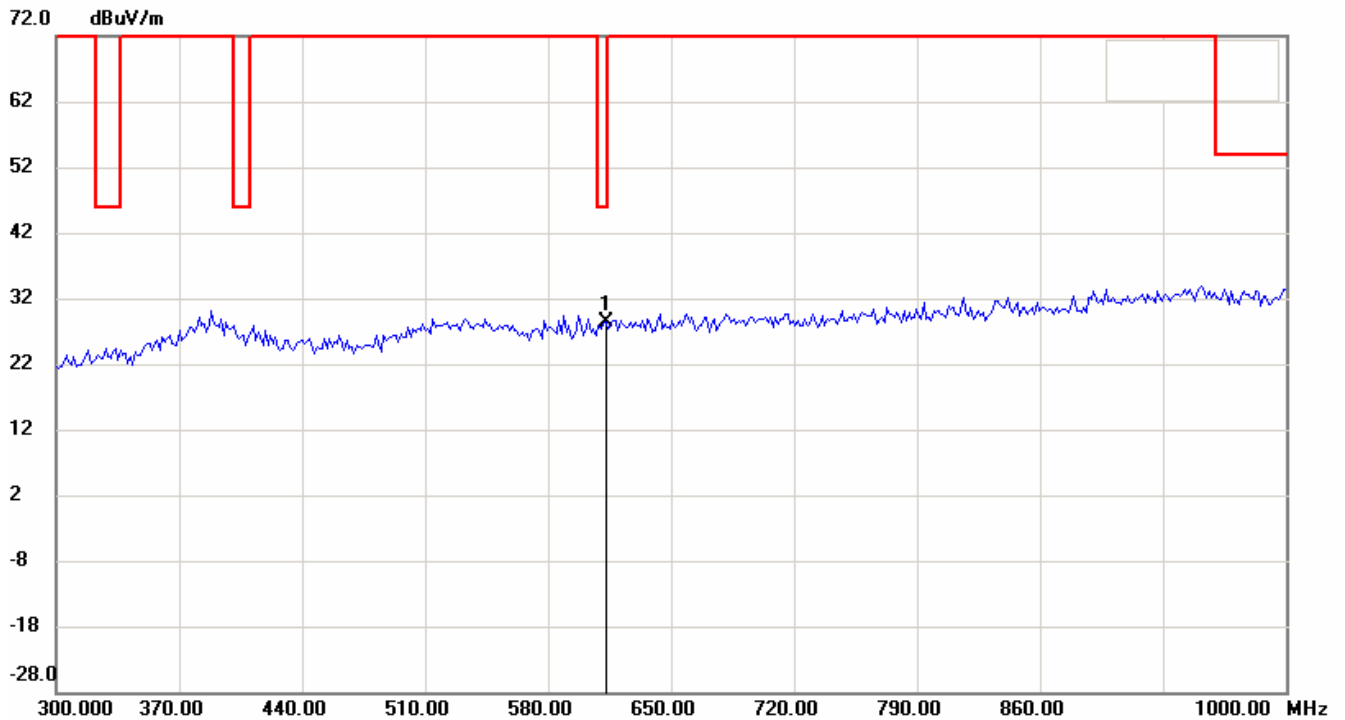
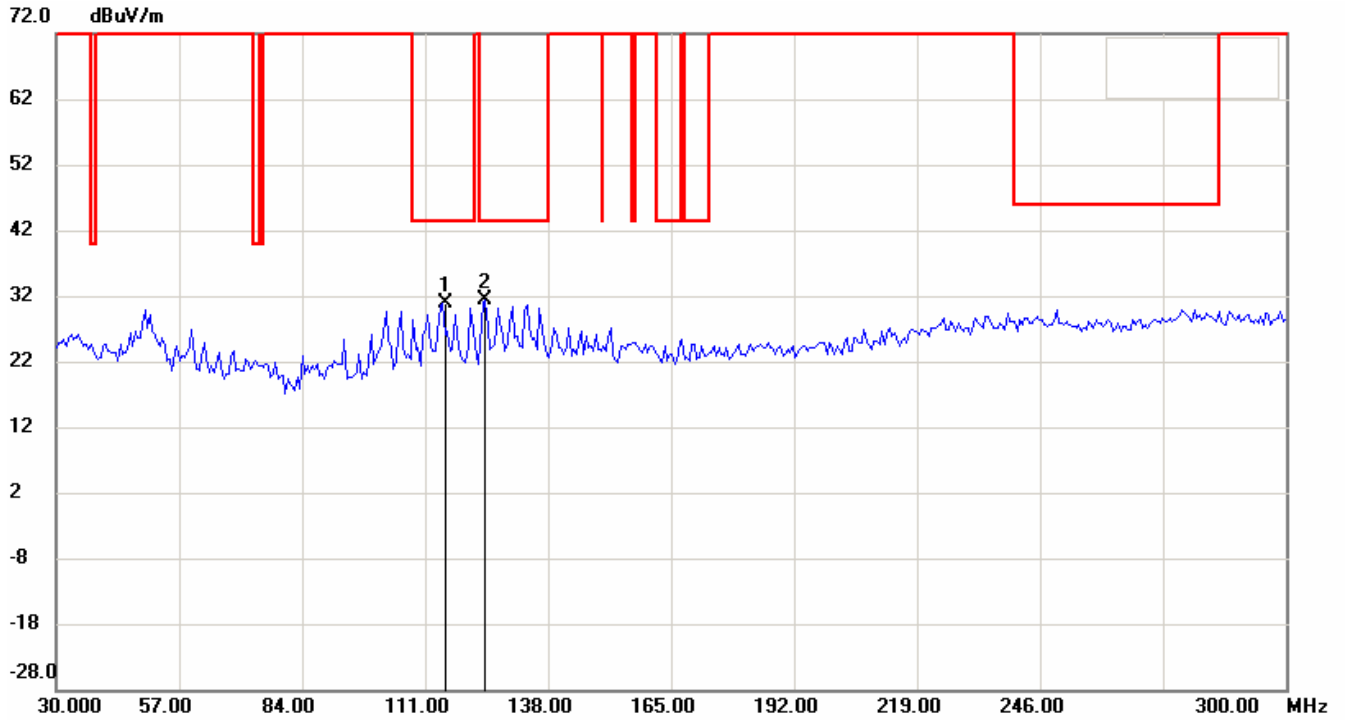


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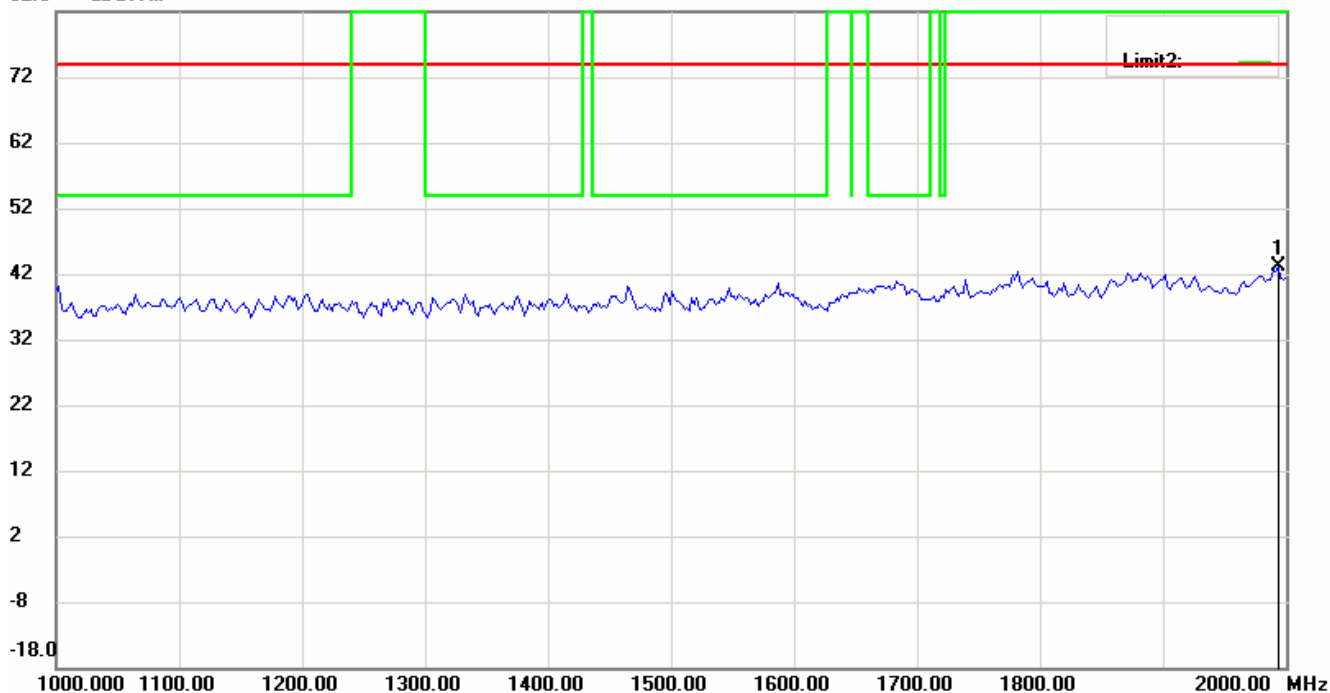
Antenna Polarization V



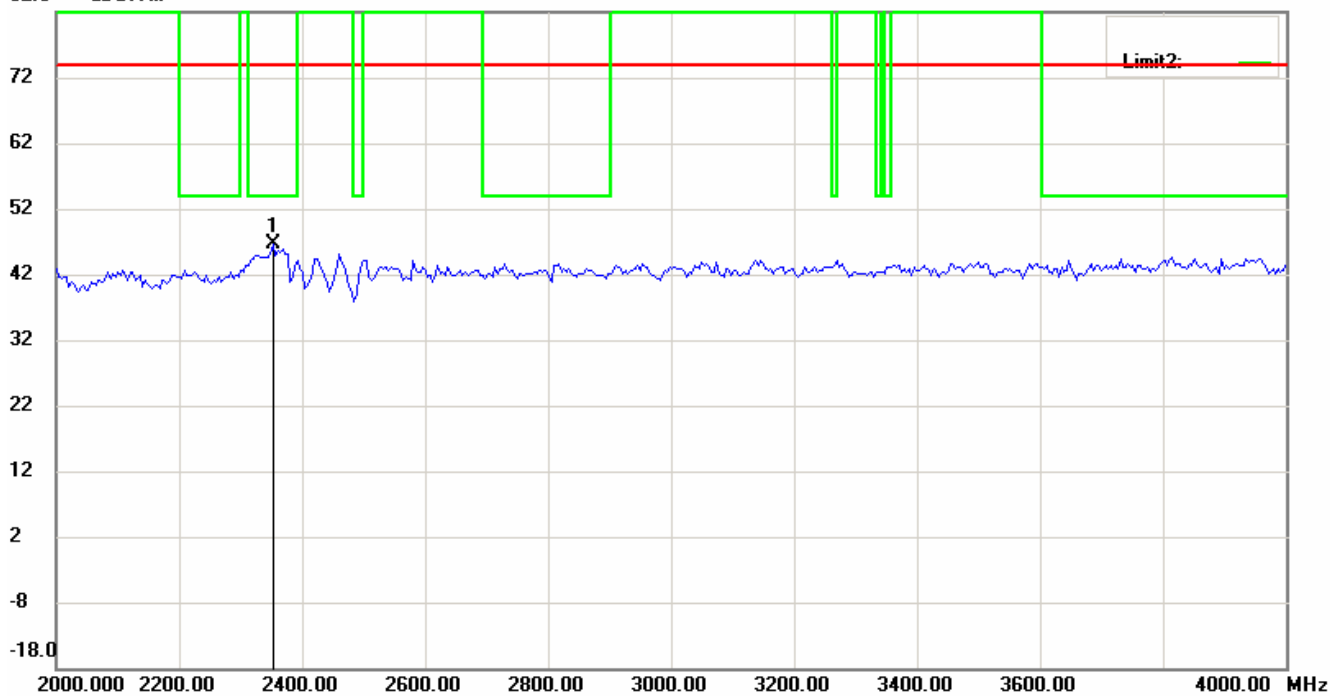
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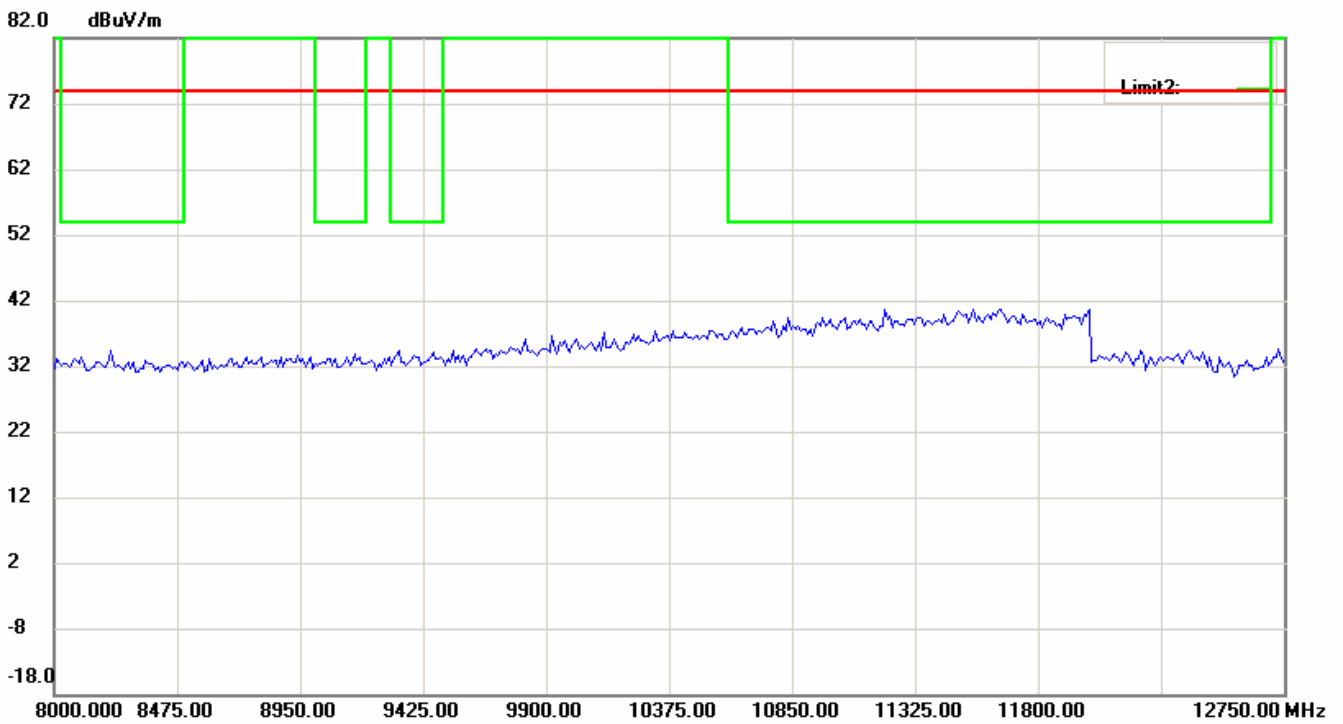
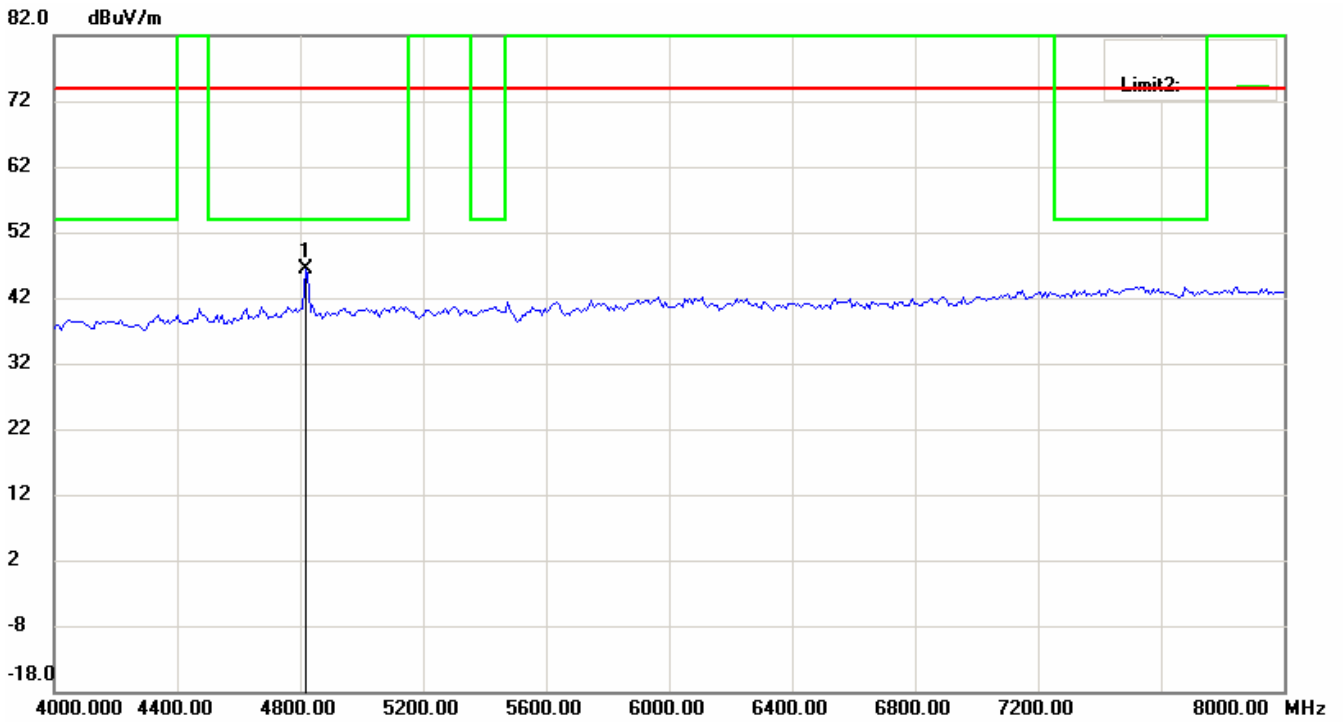
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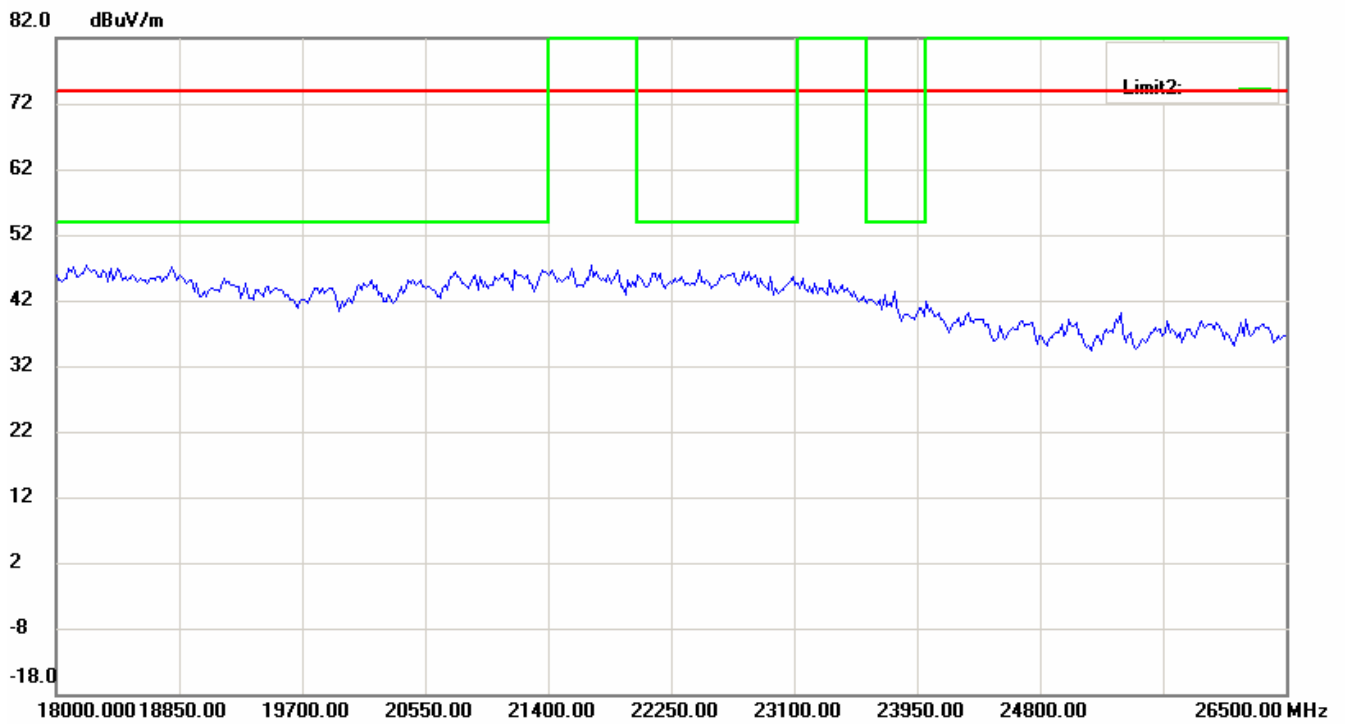
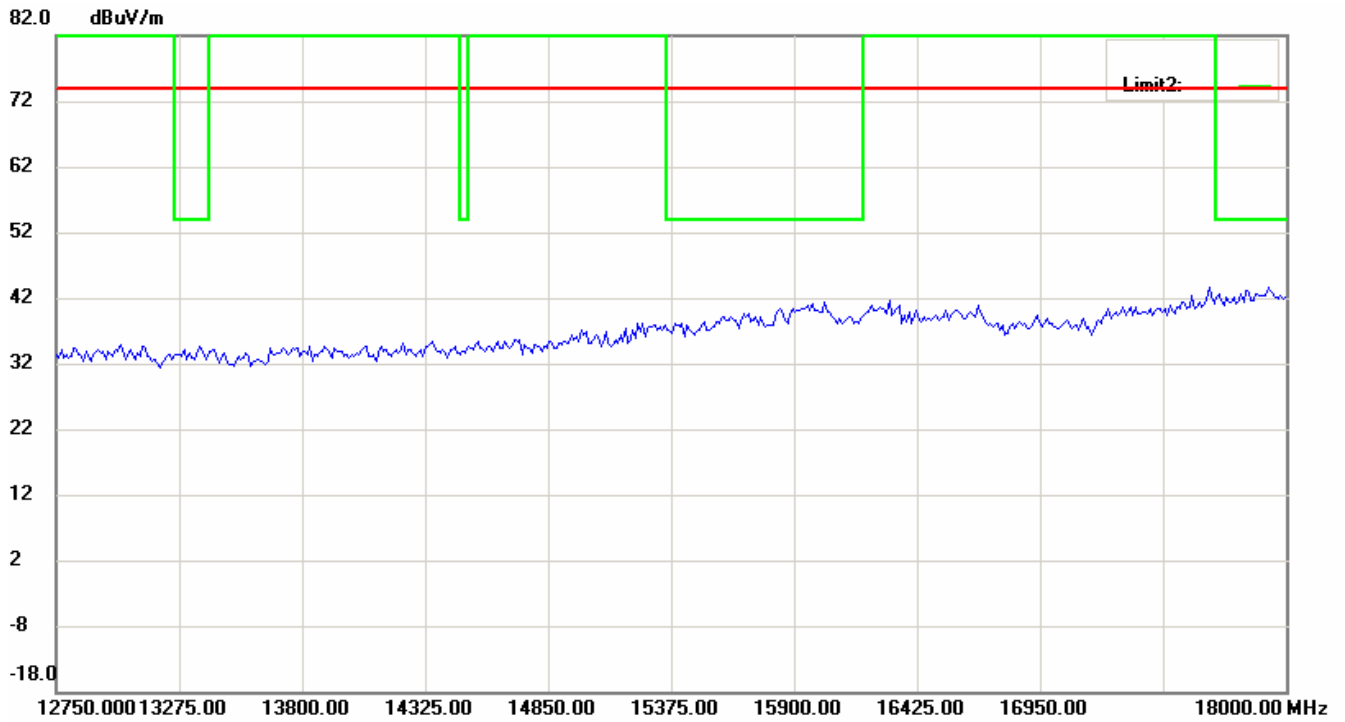
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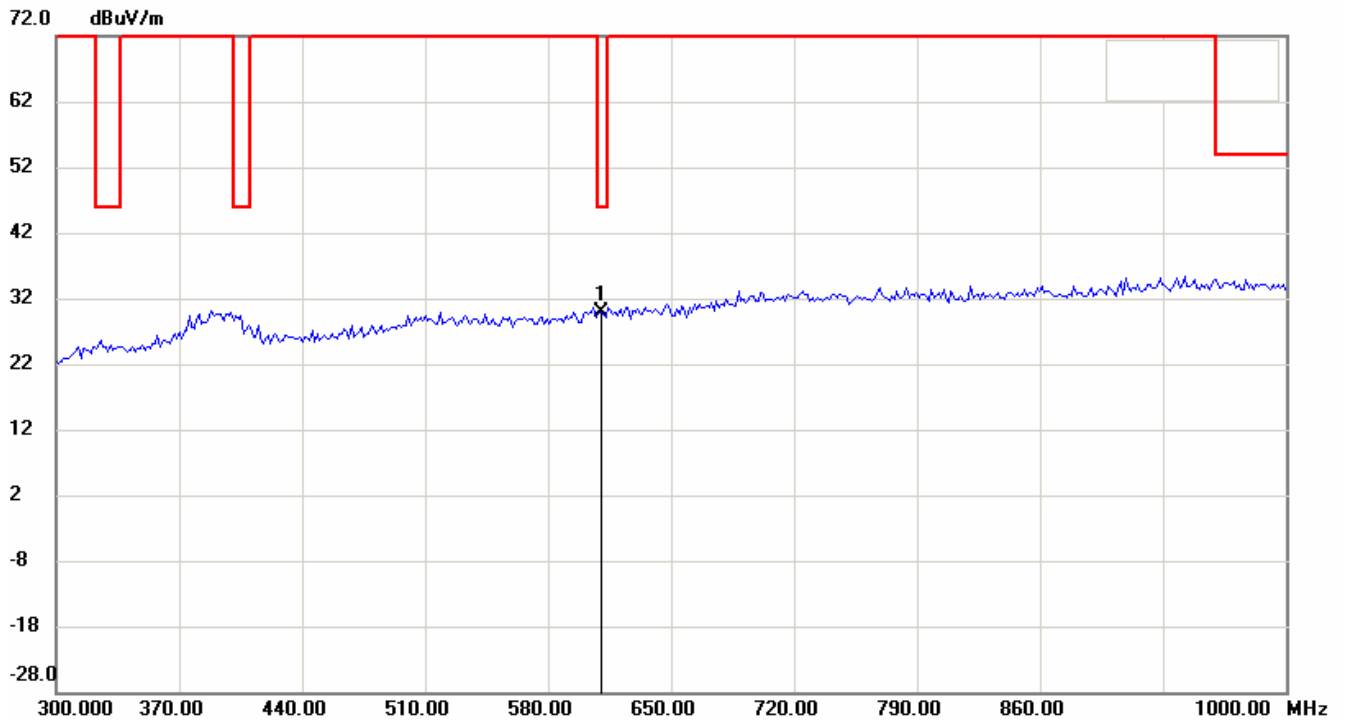
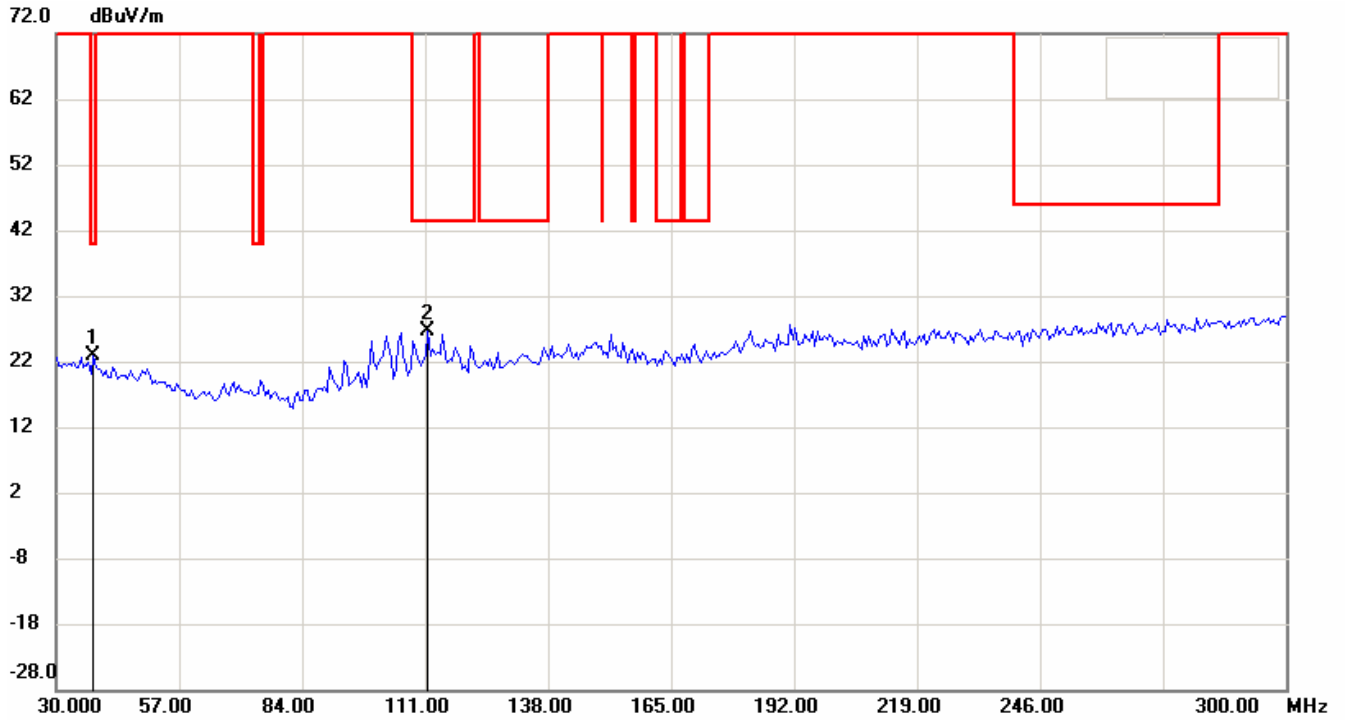


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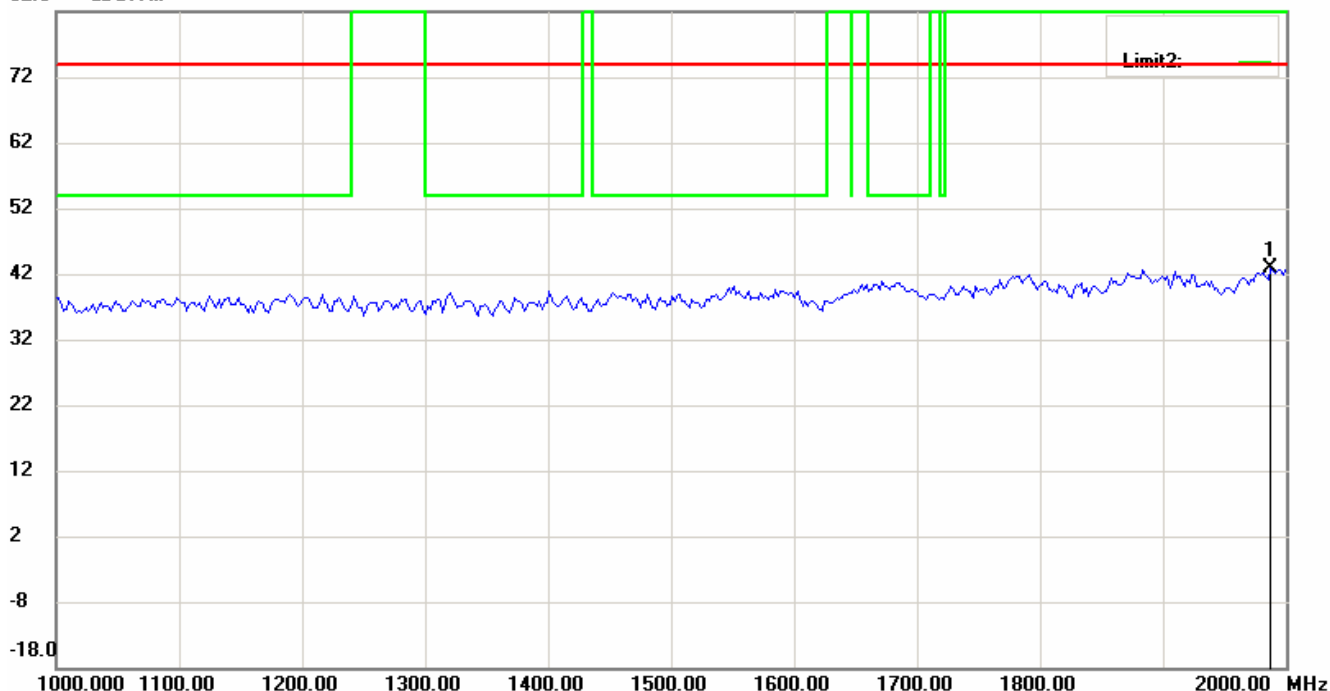
Antenna Polarization H (11b_CH 6)



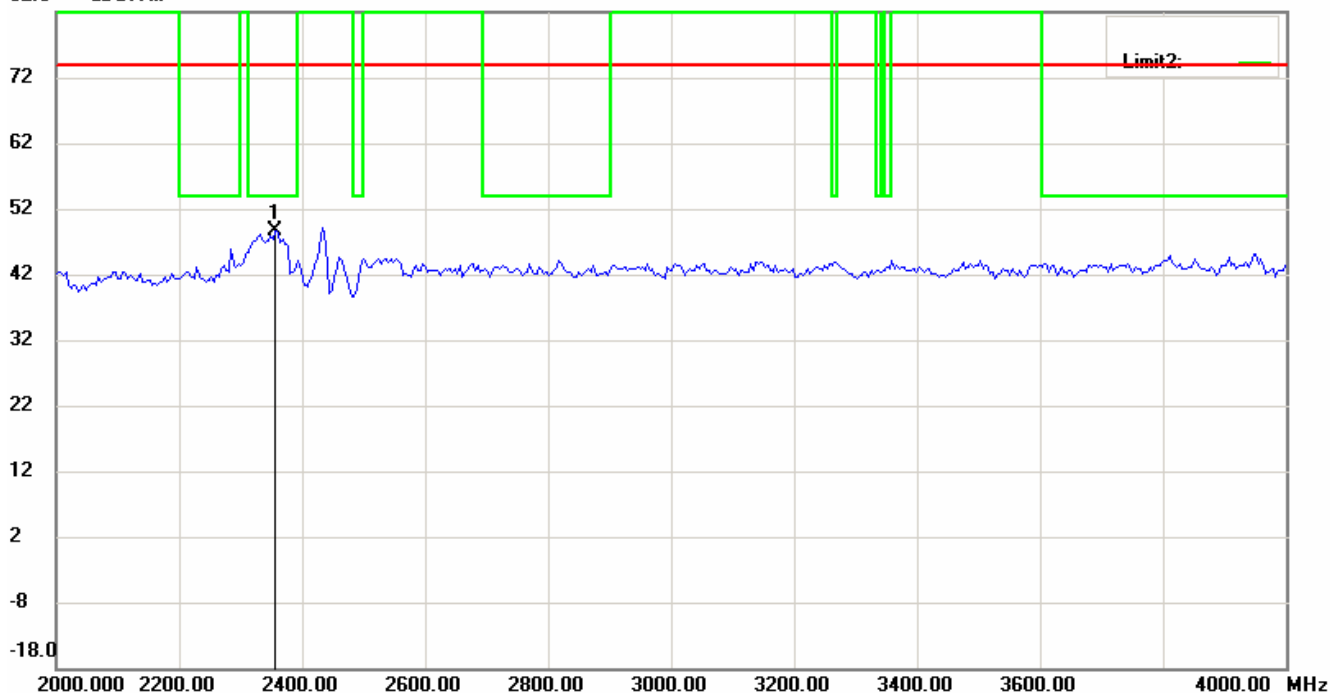
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82.0 dBuV/m



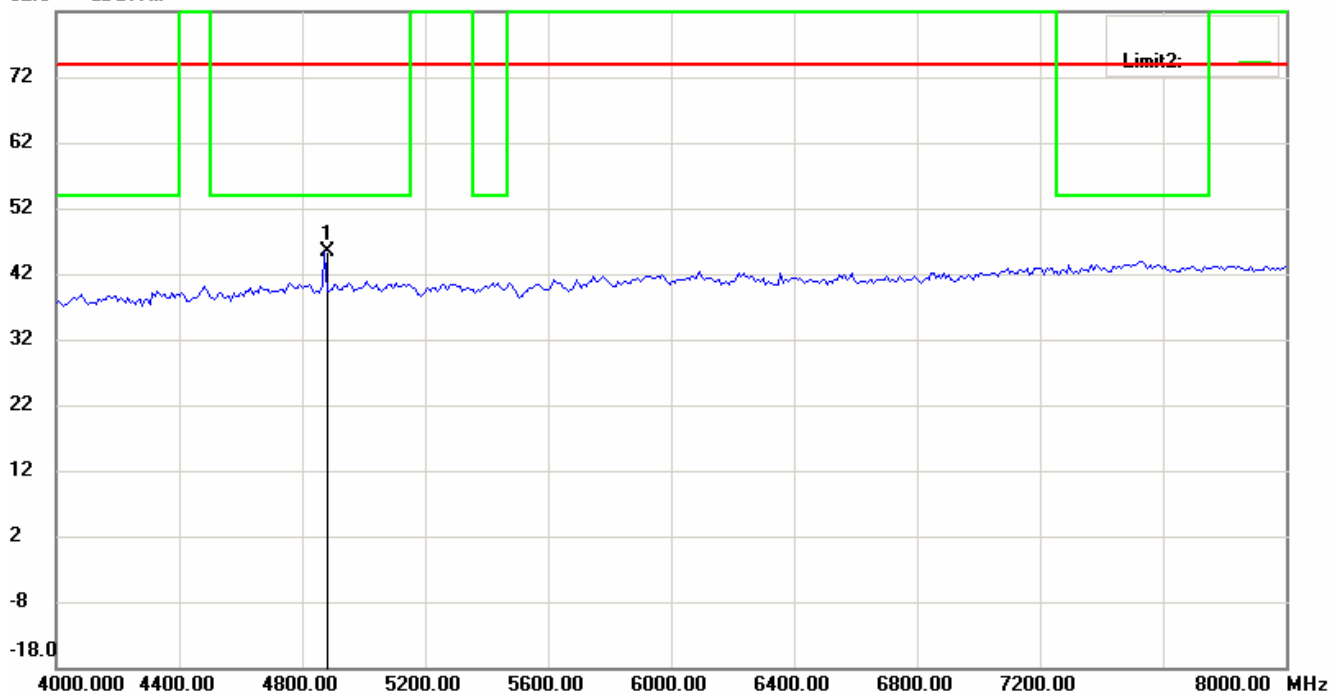
82.0 dBuV/m



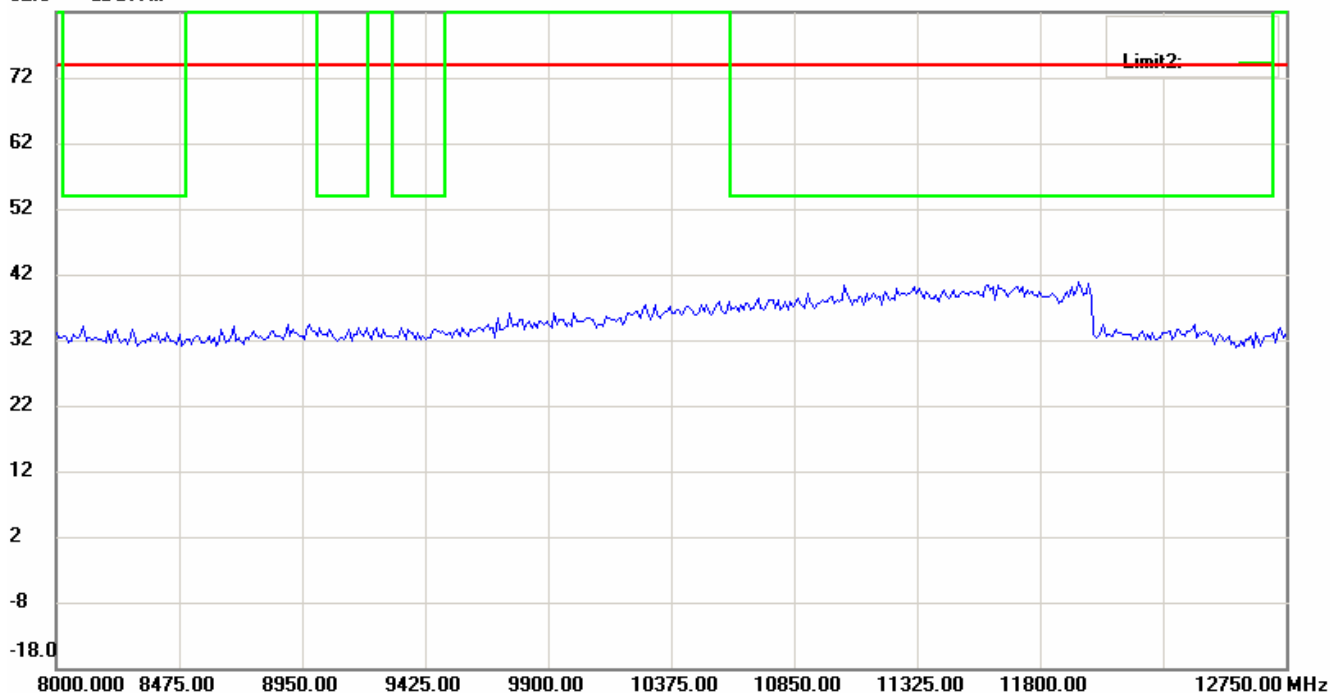
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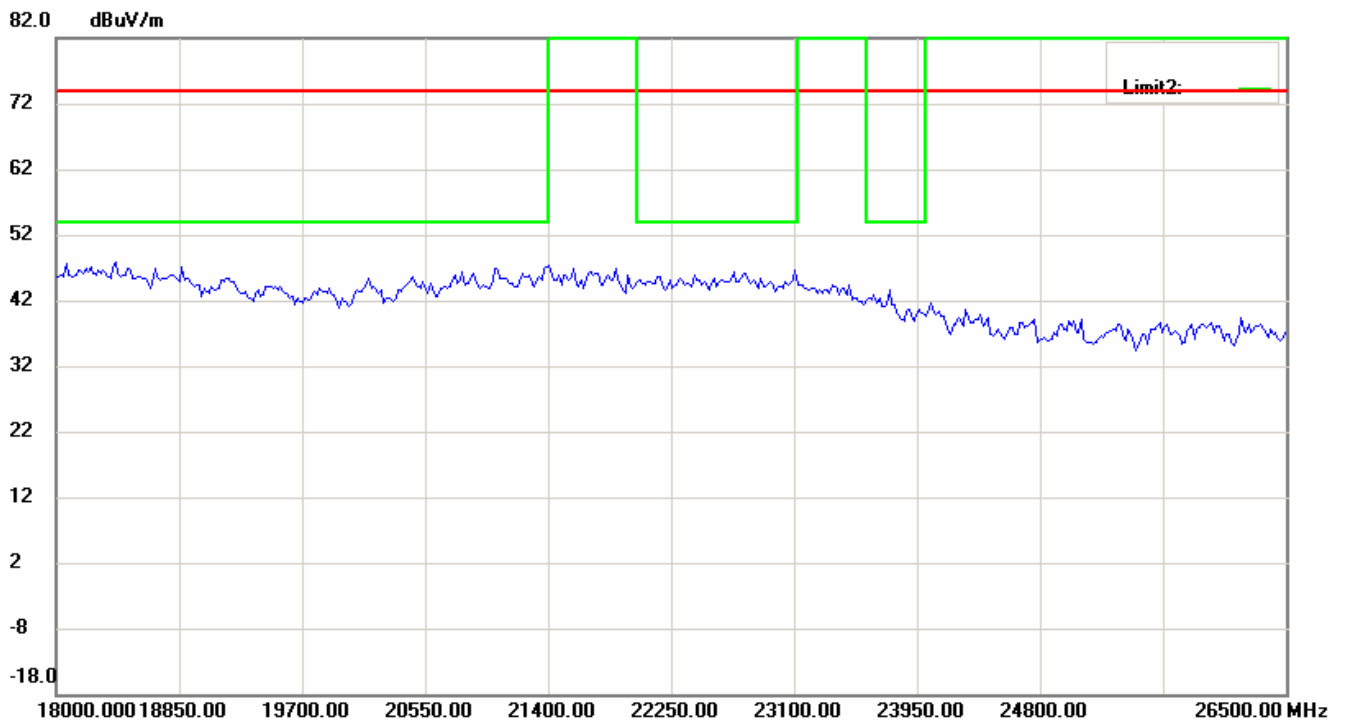
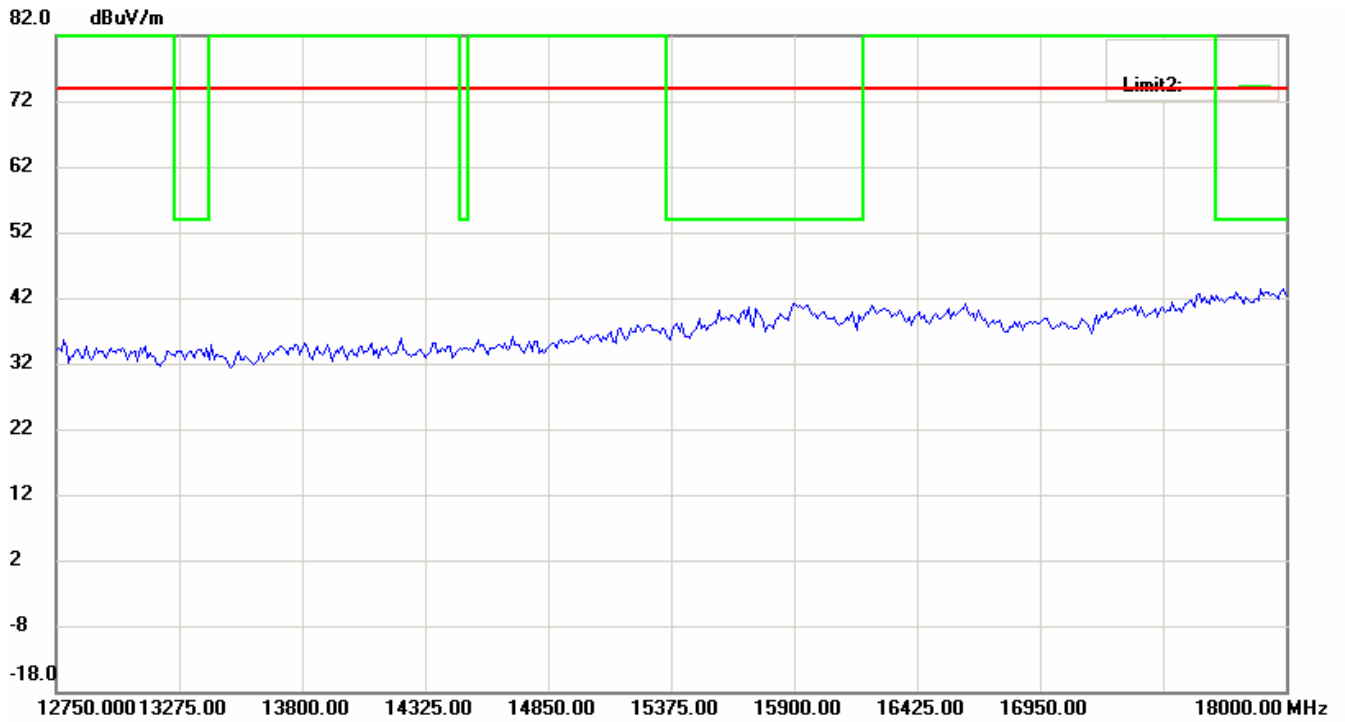
82.0 dBuV/m



82.0 dBuV/m

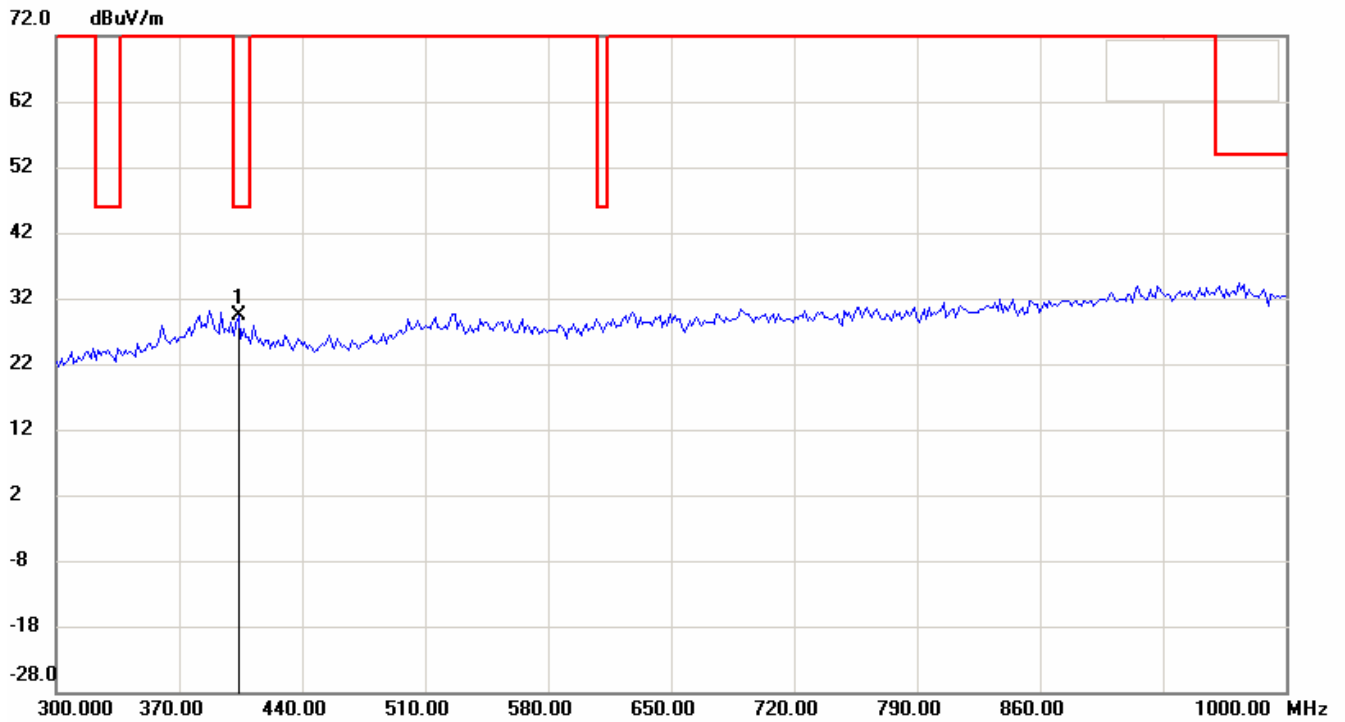
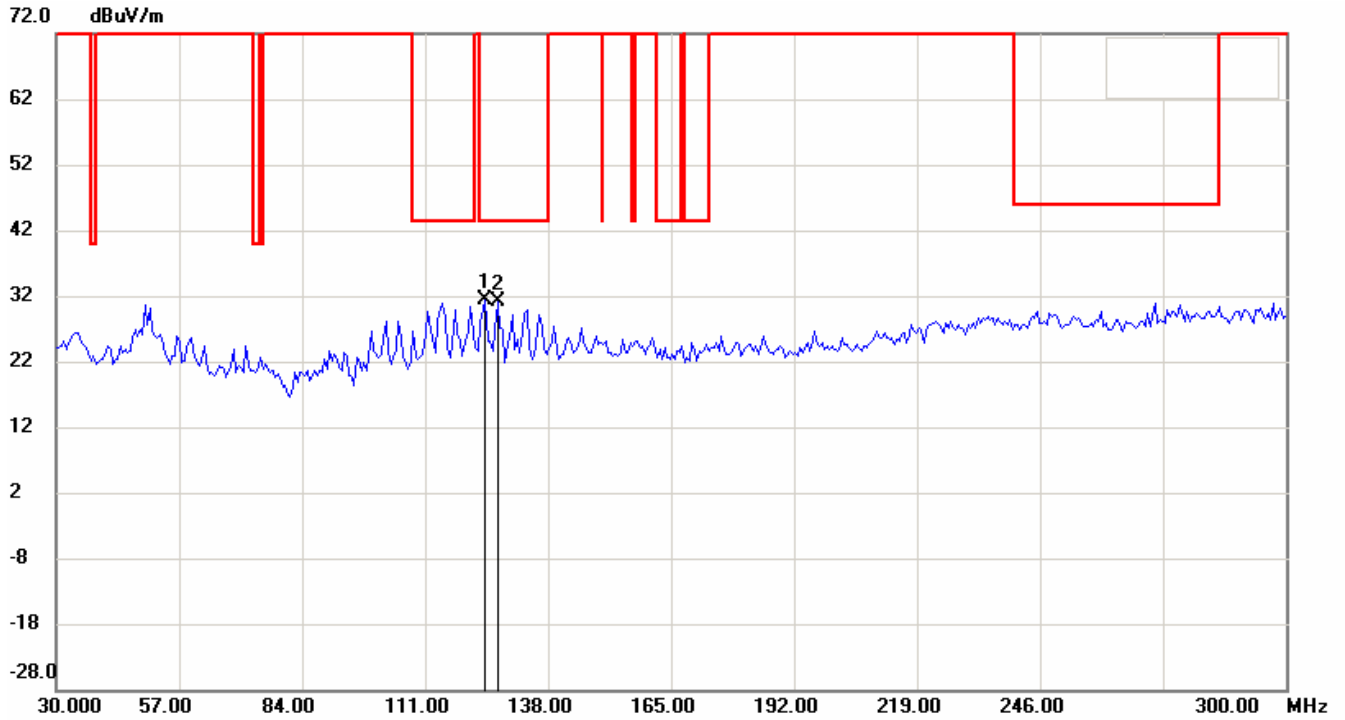


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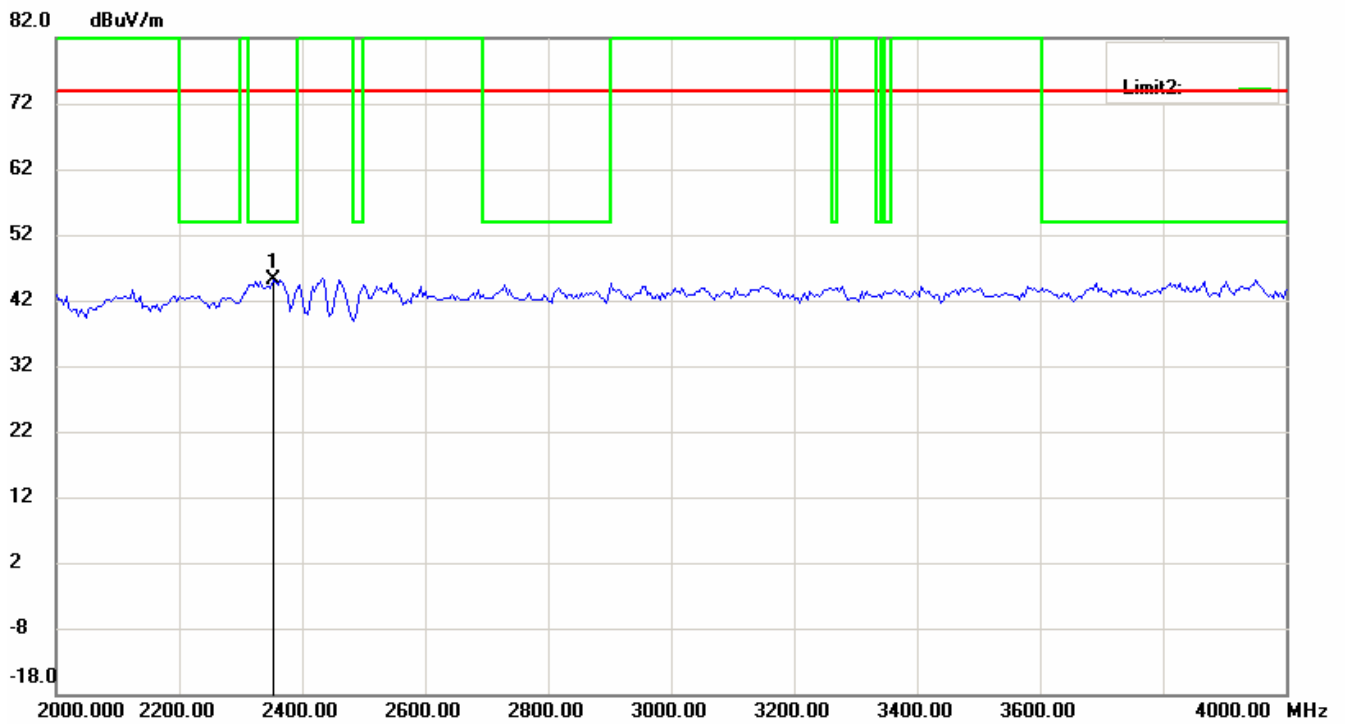
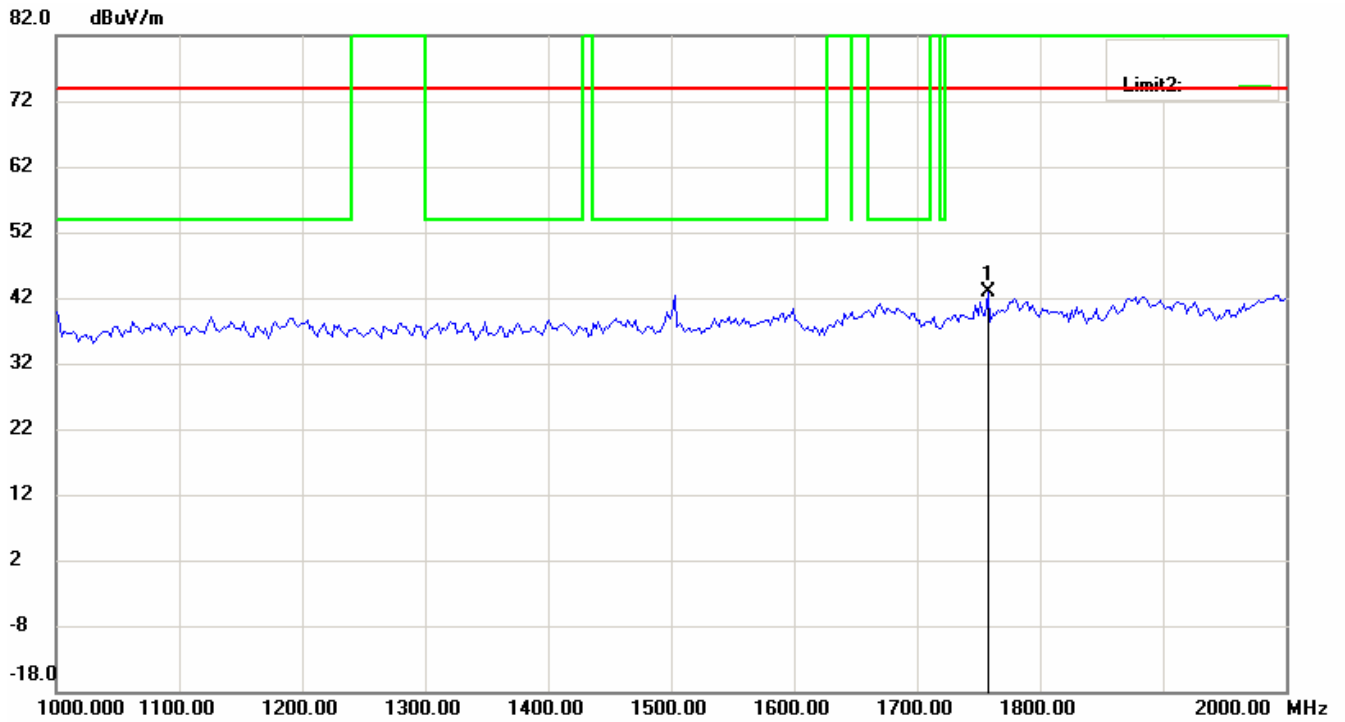


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Antenna Polarization V



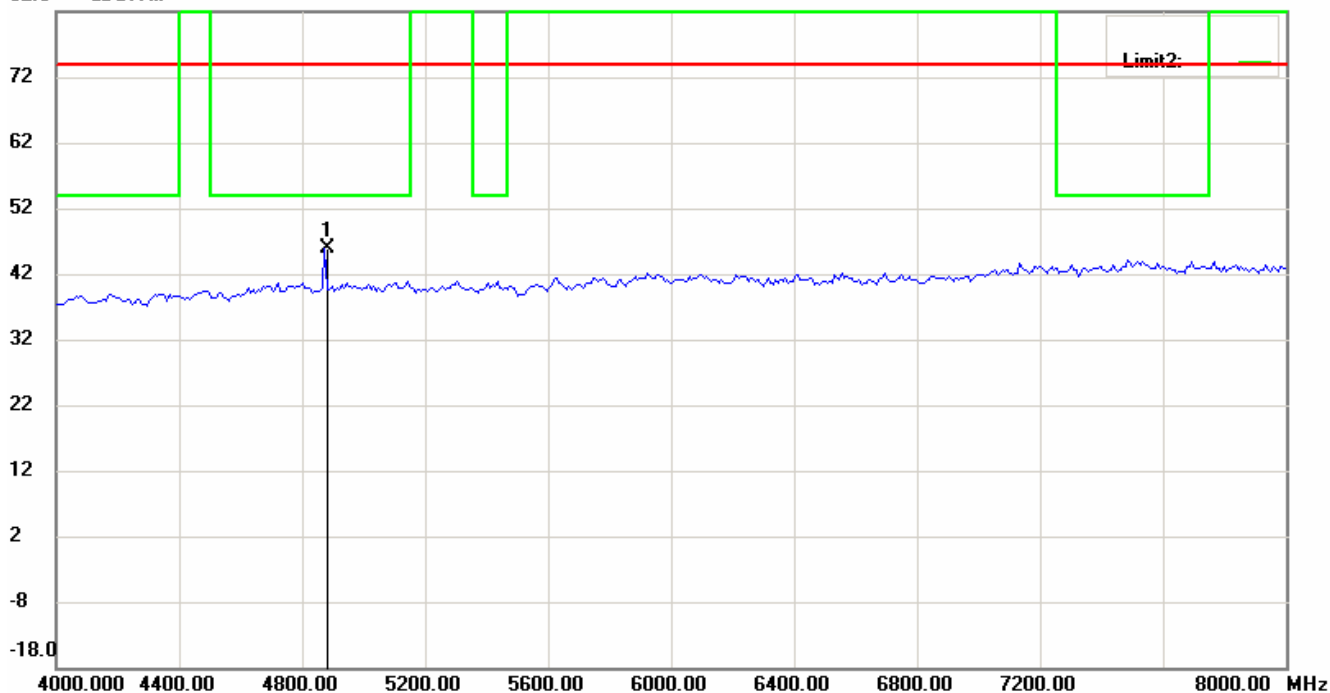
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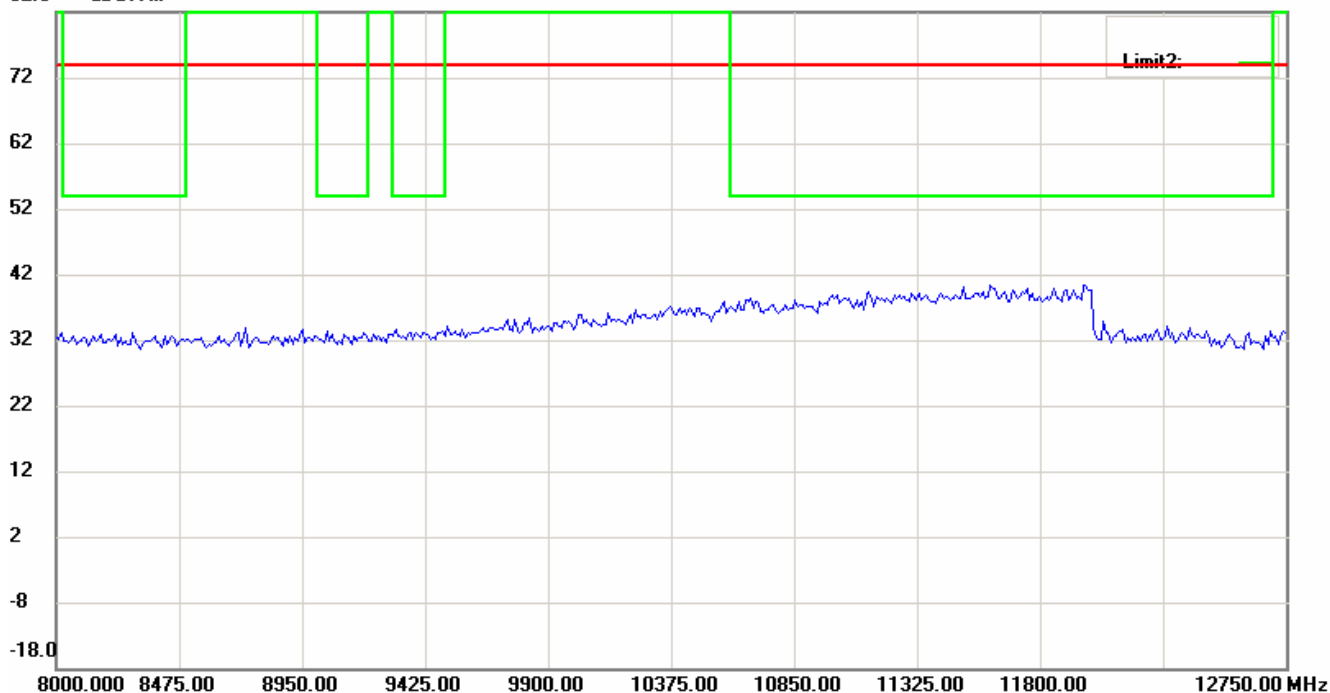
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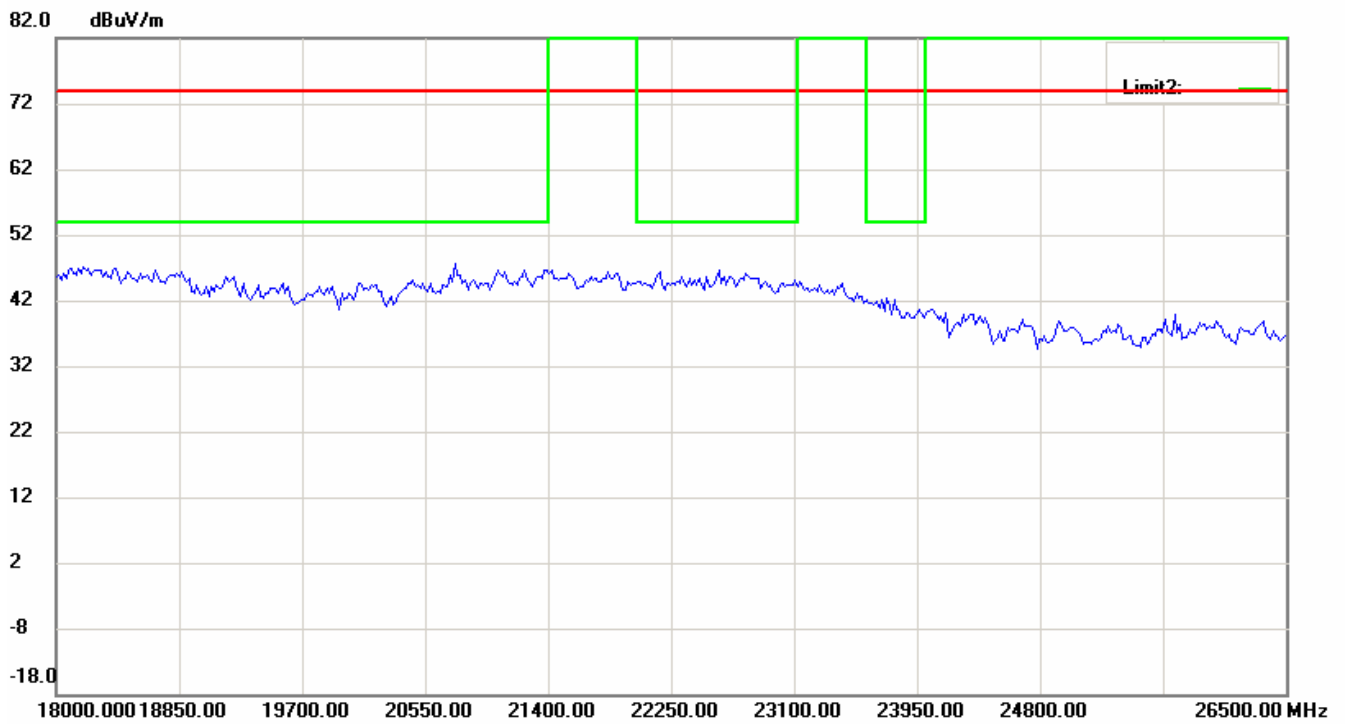
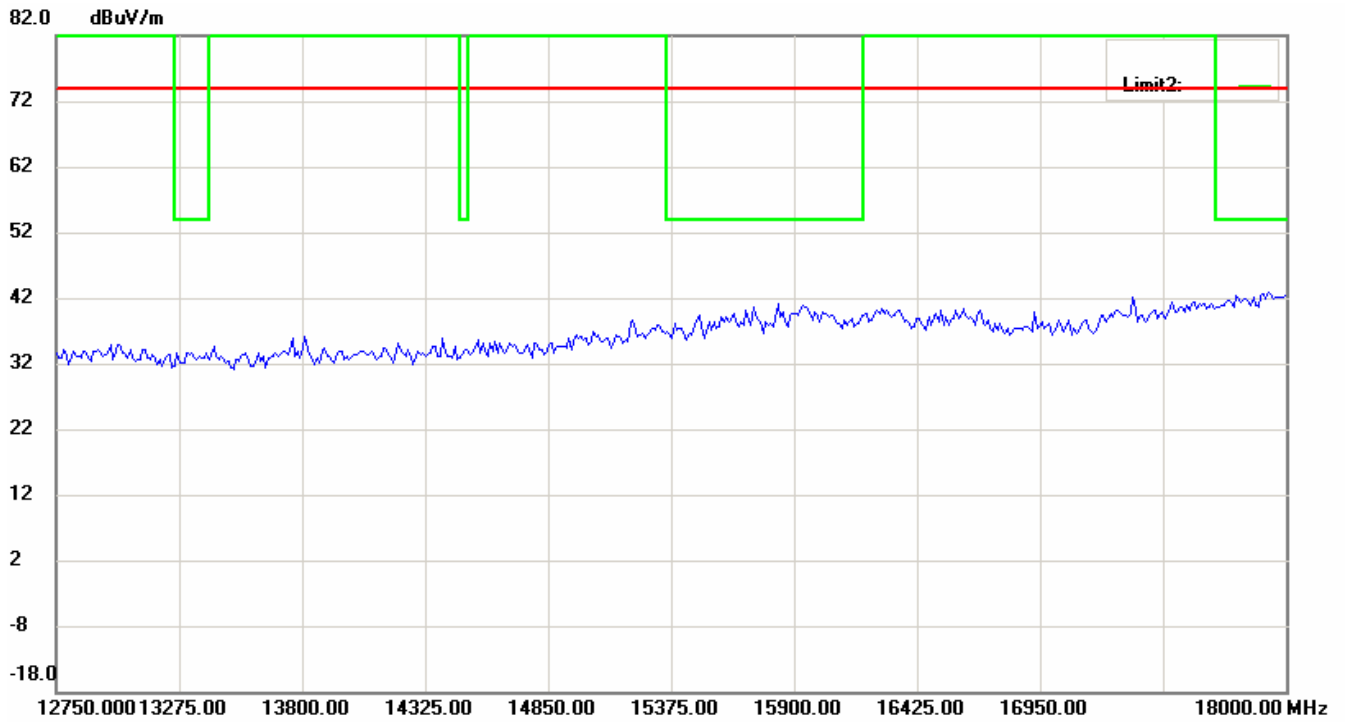
82.0 dBuV/m



82.0 dBuV/m

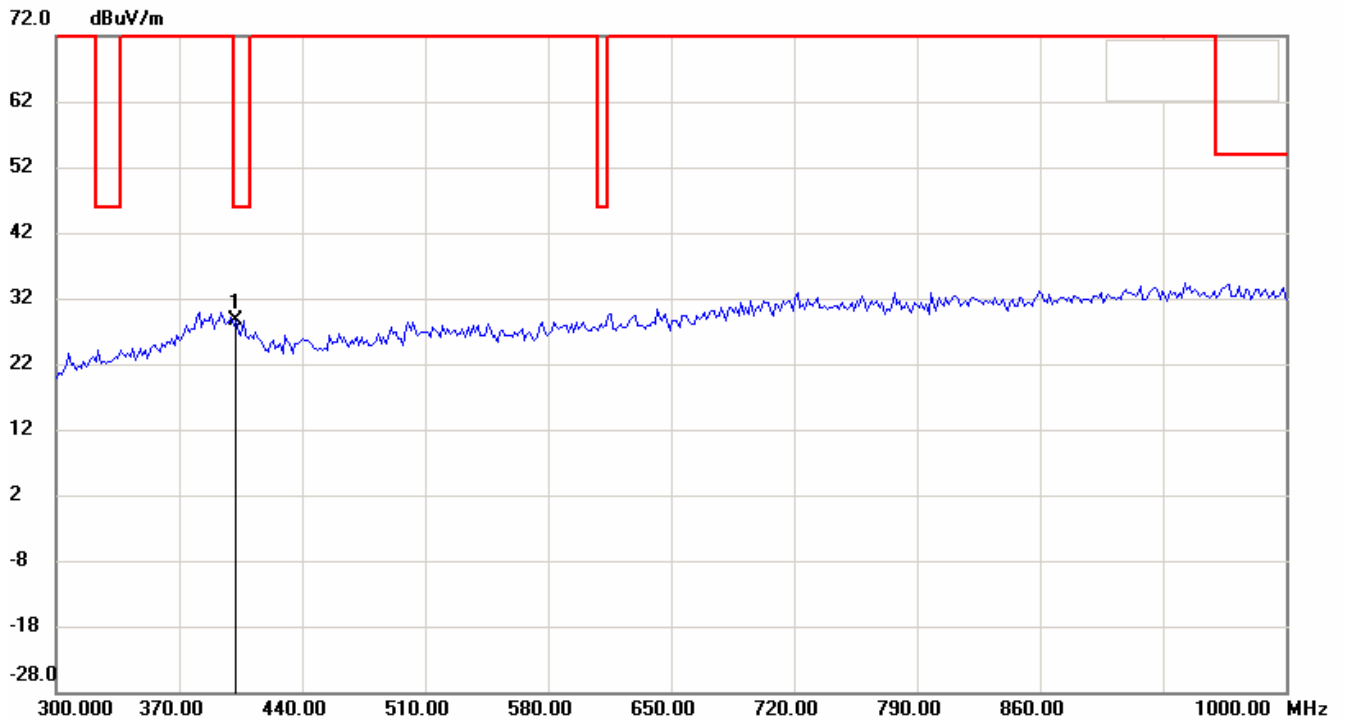
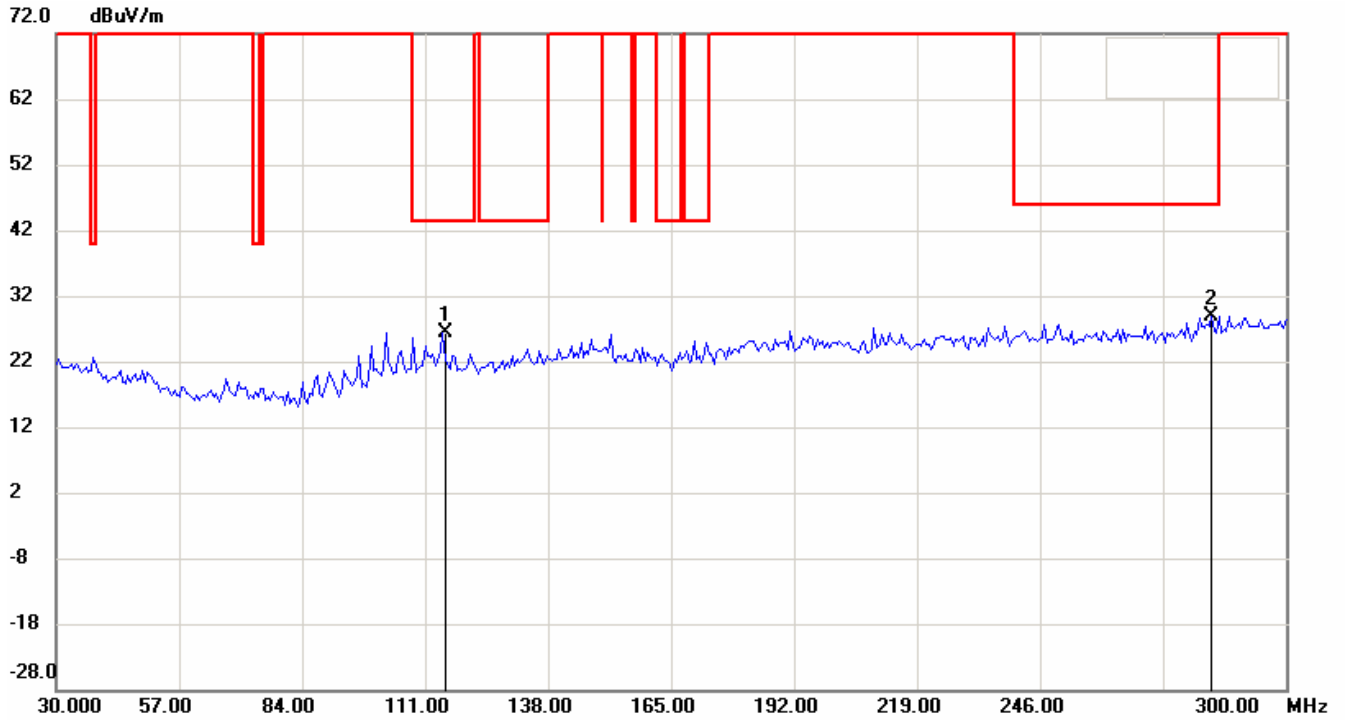


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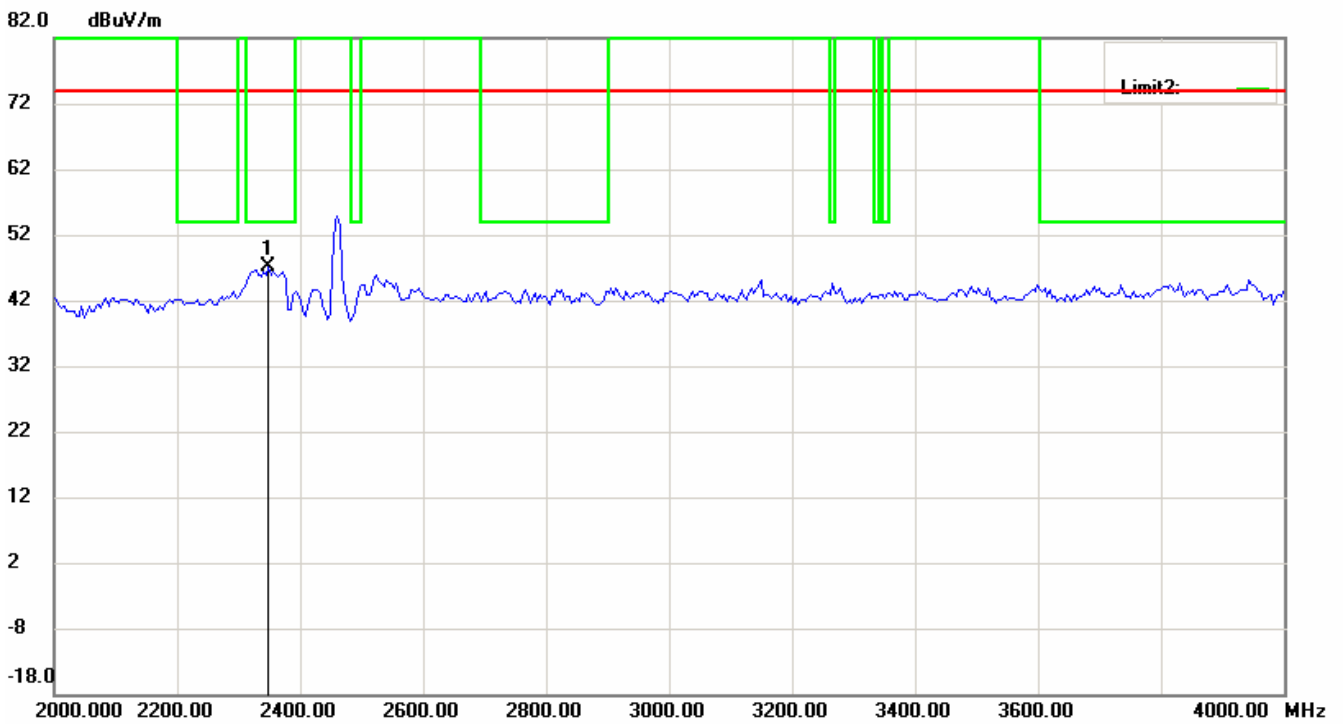
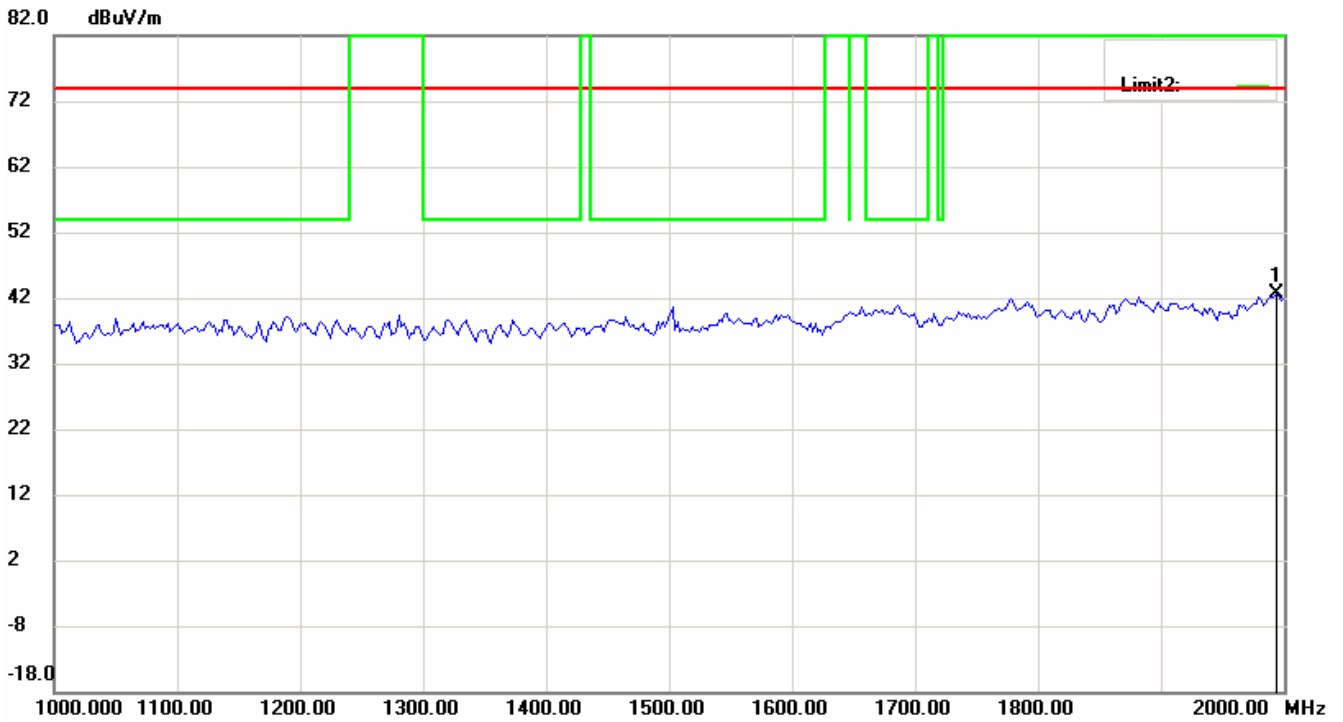


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FCC ID: RPW-WIGO800I

Antenna Polarization H (11b_CH 11)



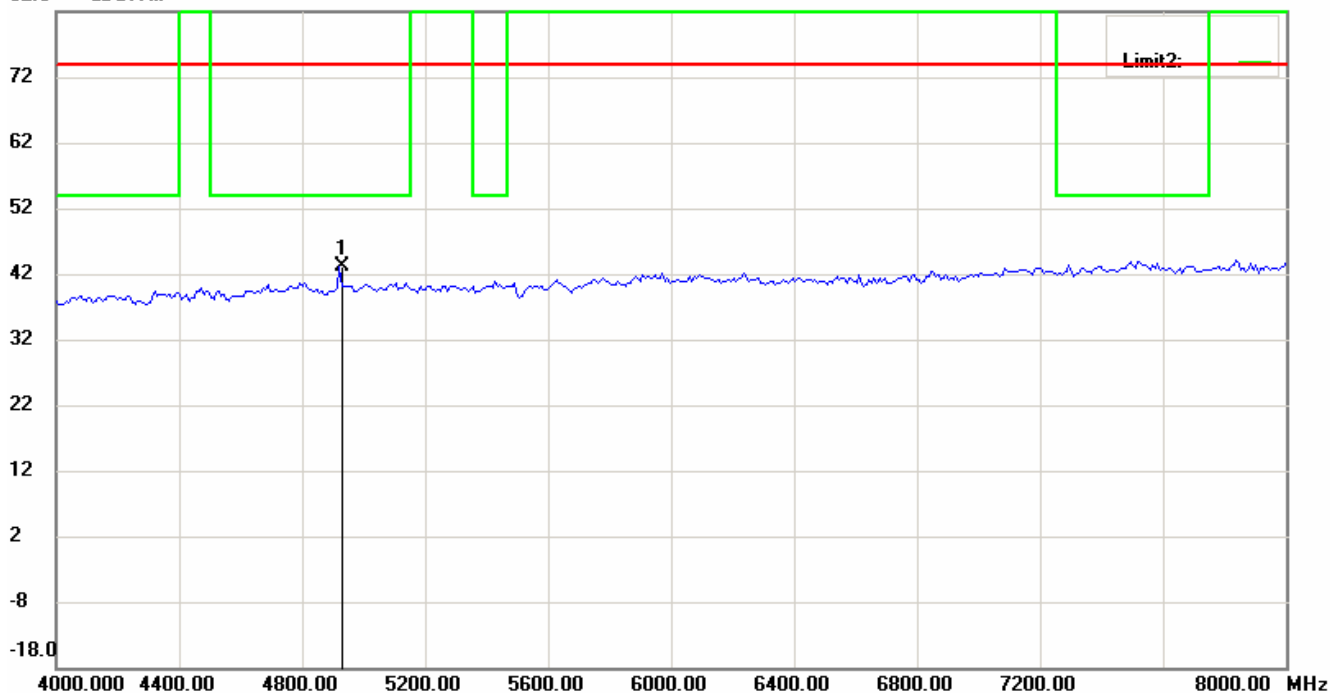
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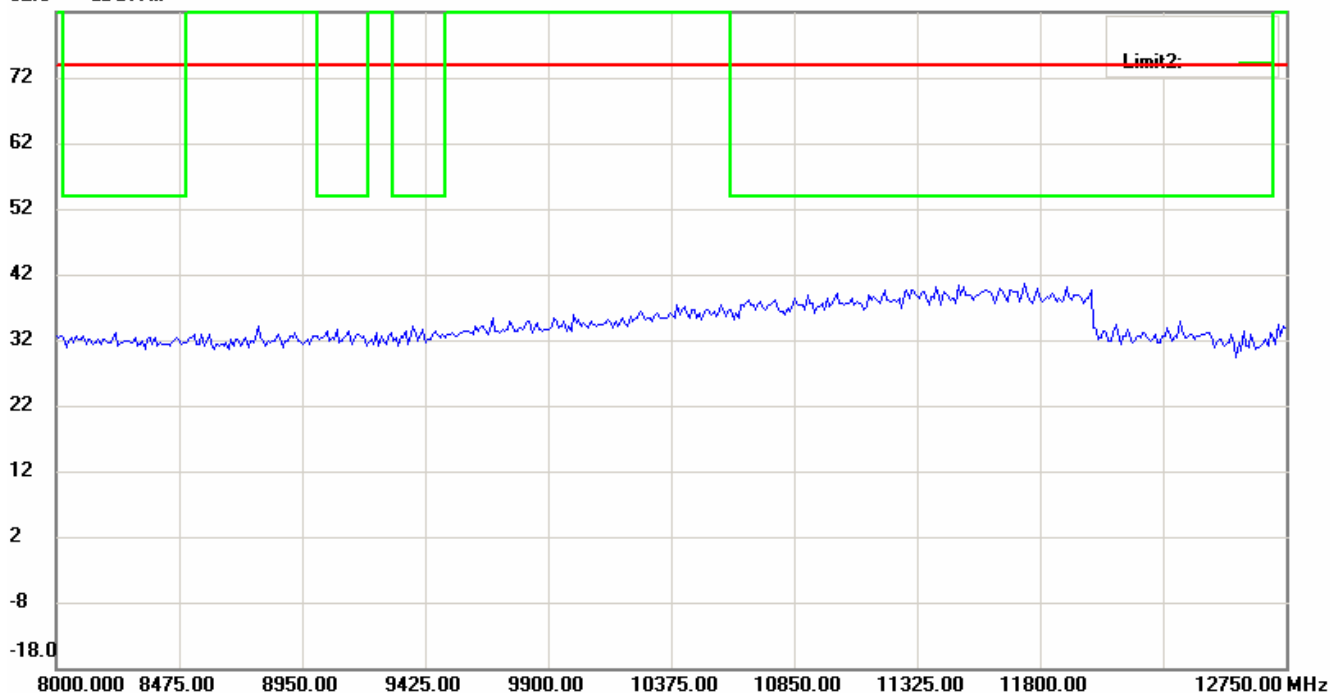
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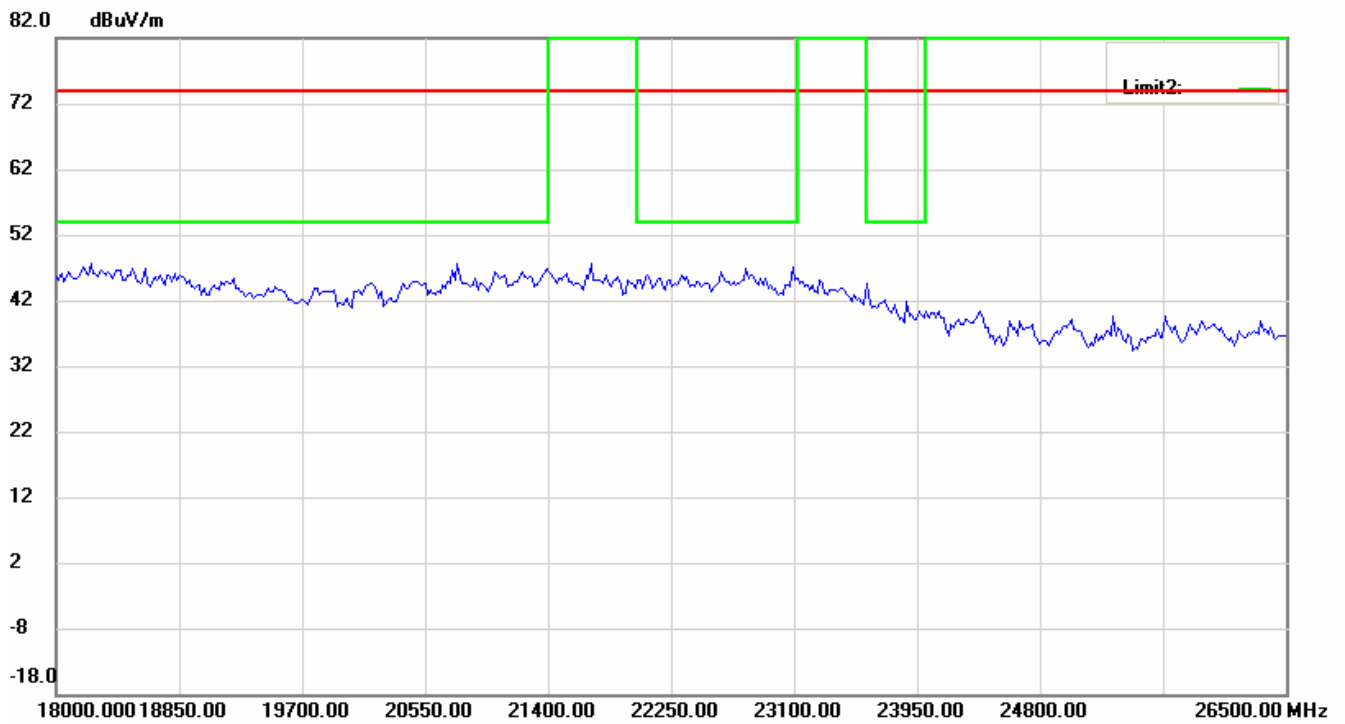
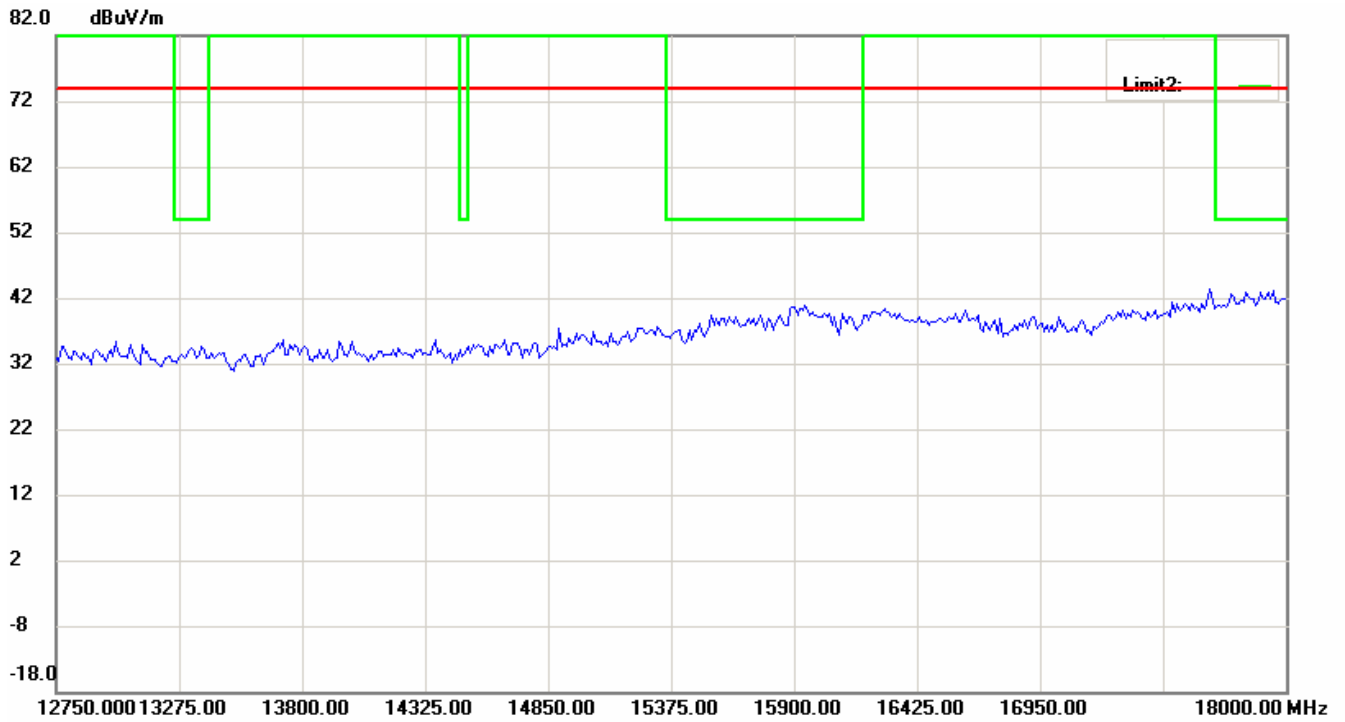
82.0 dBuV/m



82.0 dBuV/m

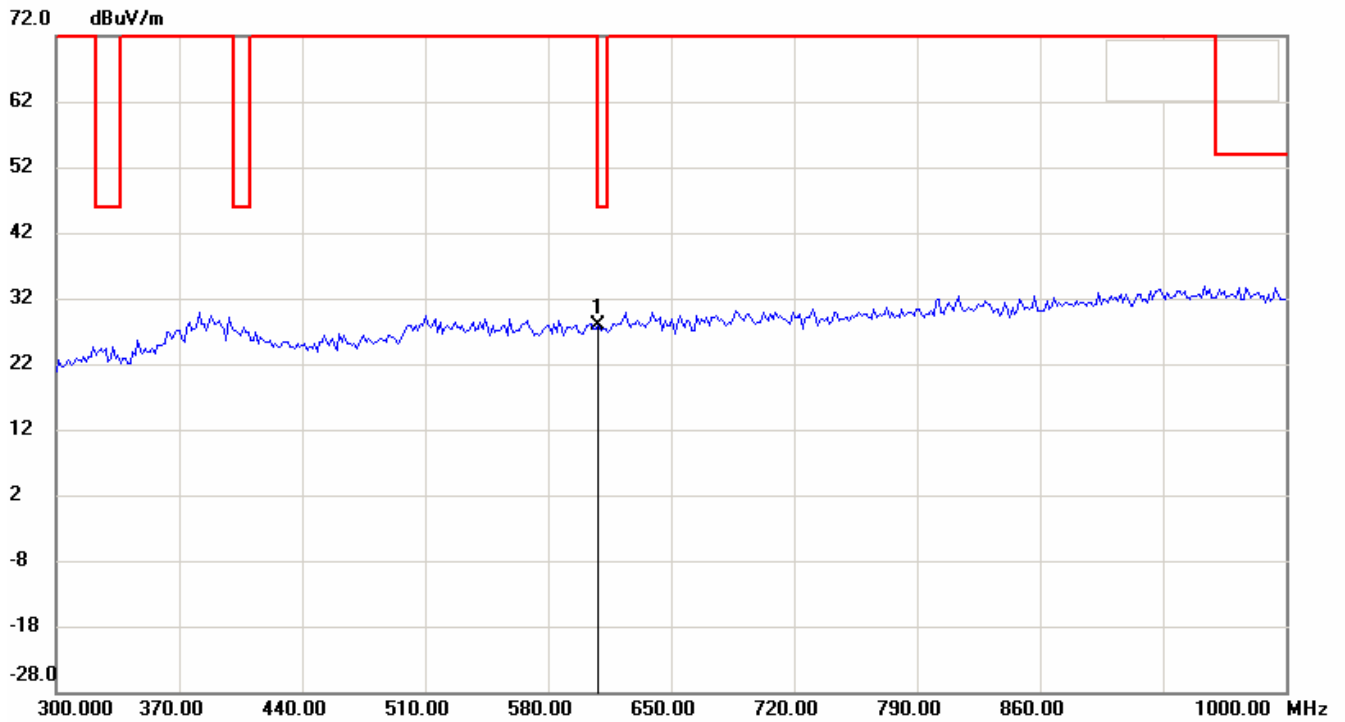
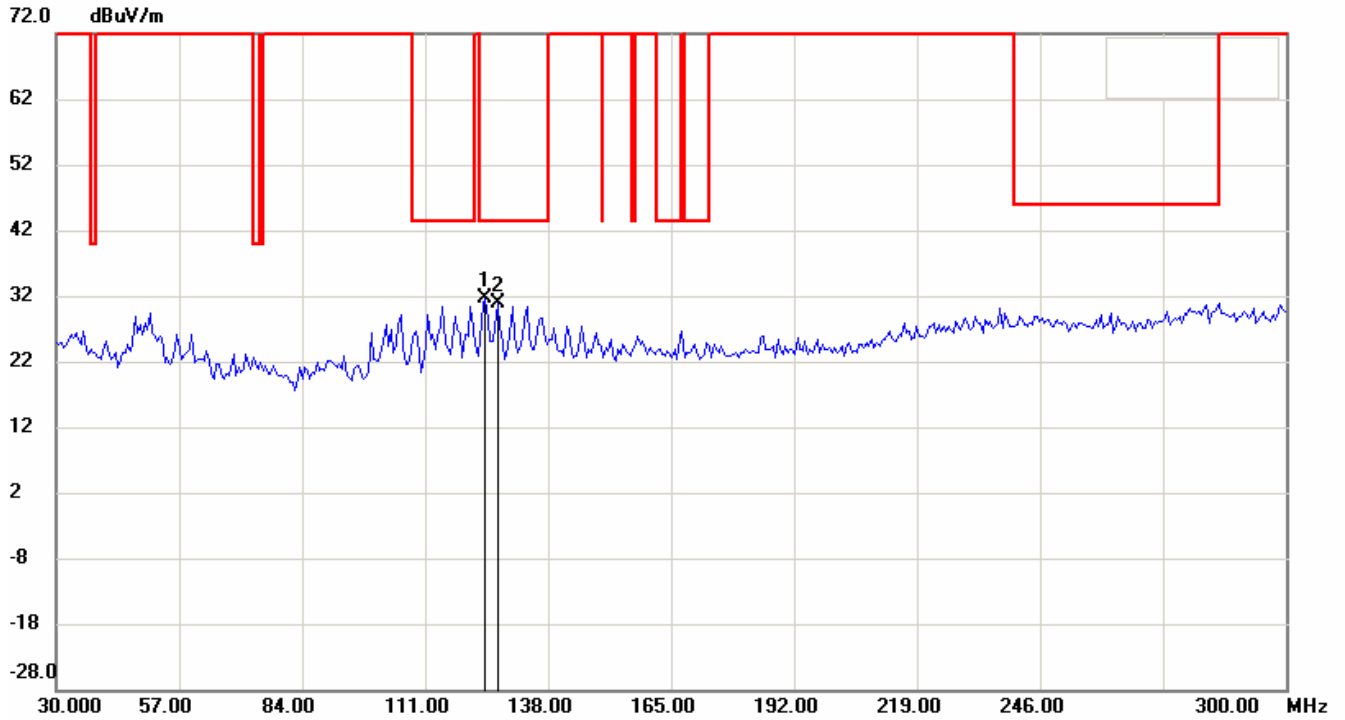


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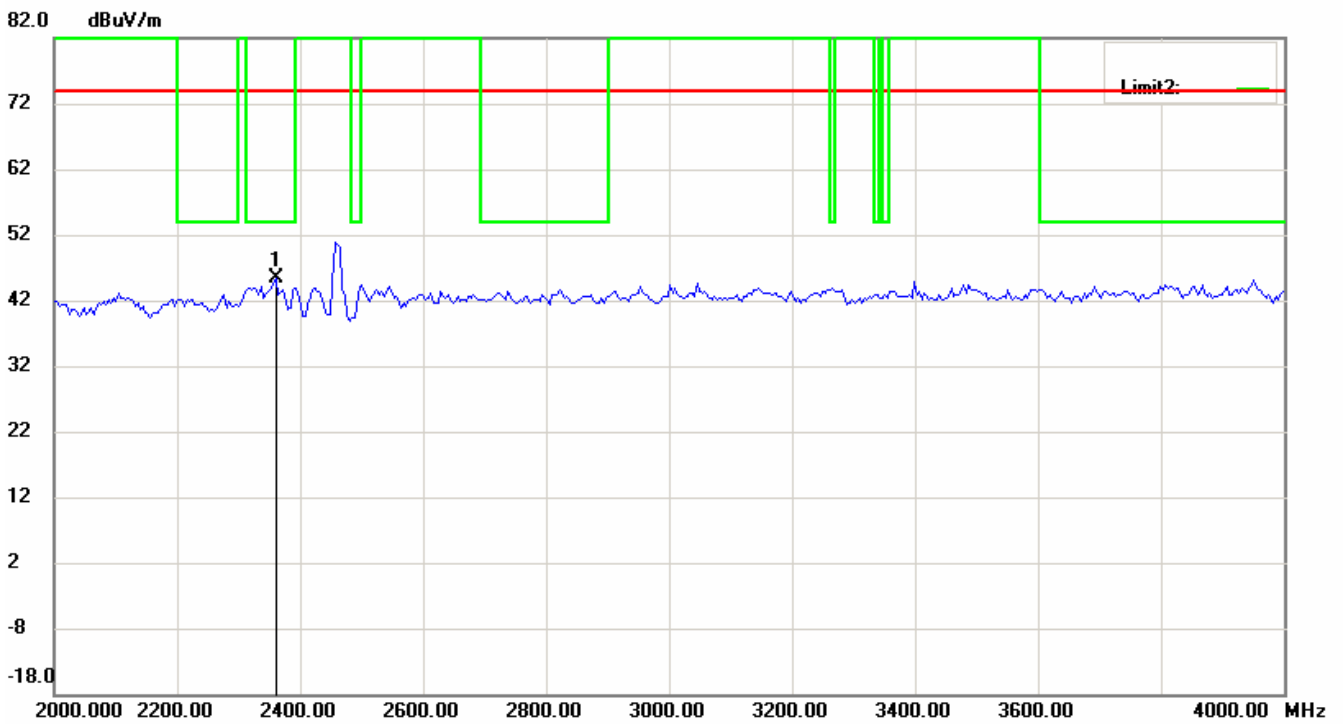
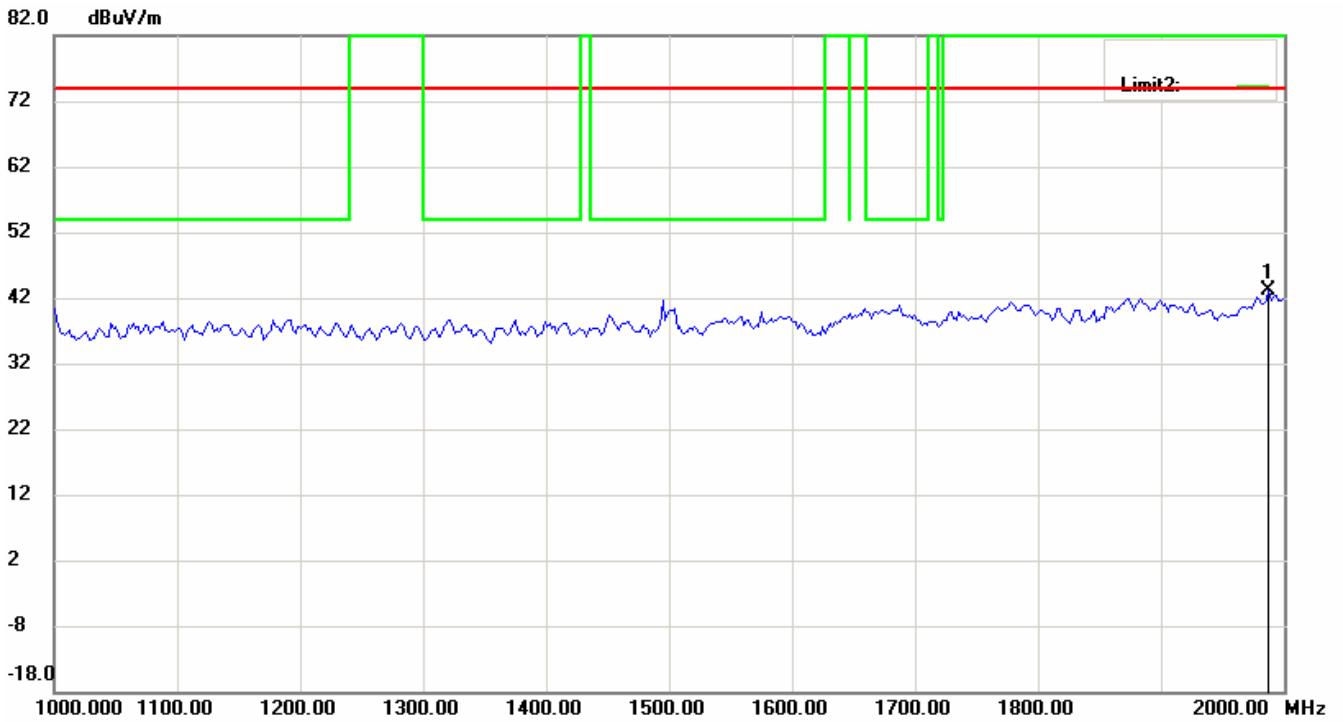


Registration number: W6M20707-8291-C-1
FCC ID: RPW-WIGO800I

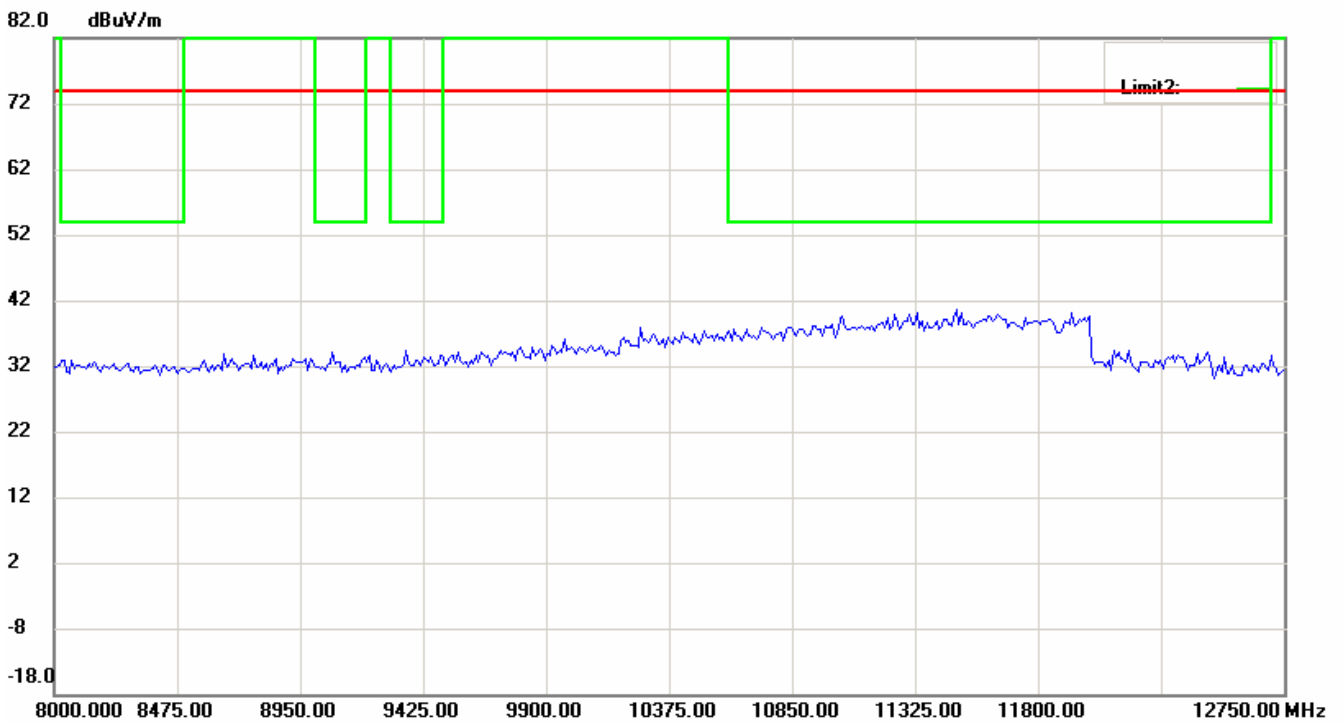
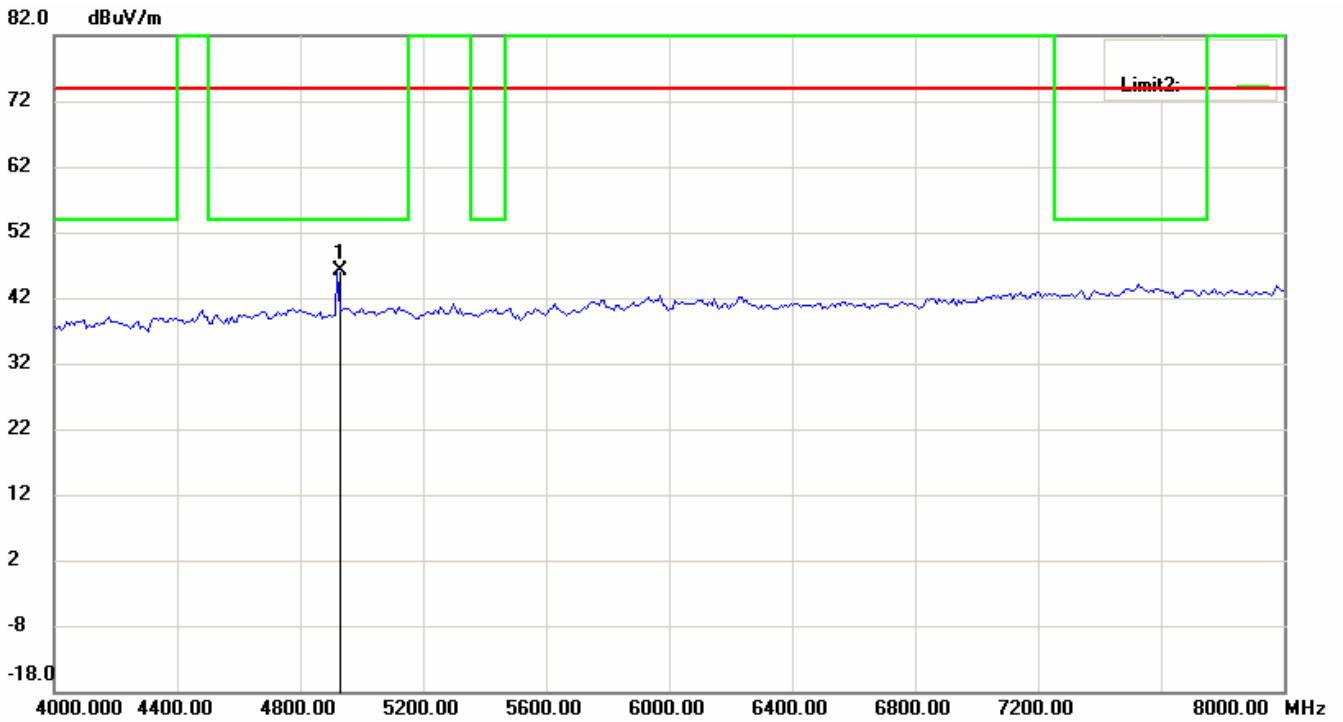
Antenna Polarization V



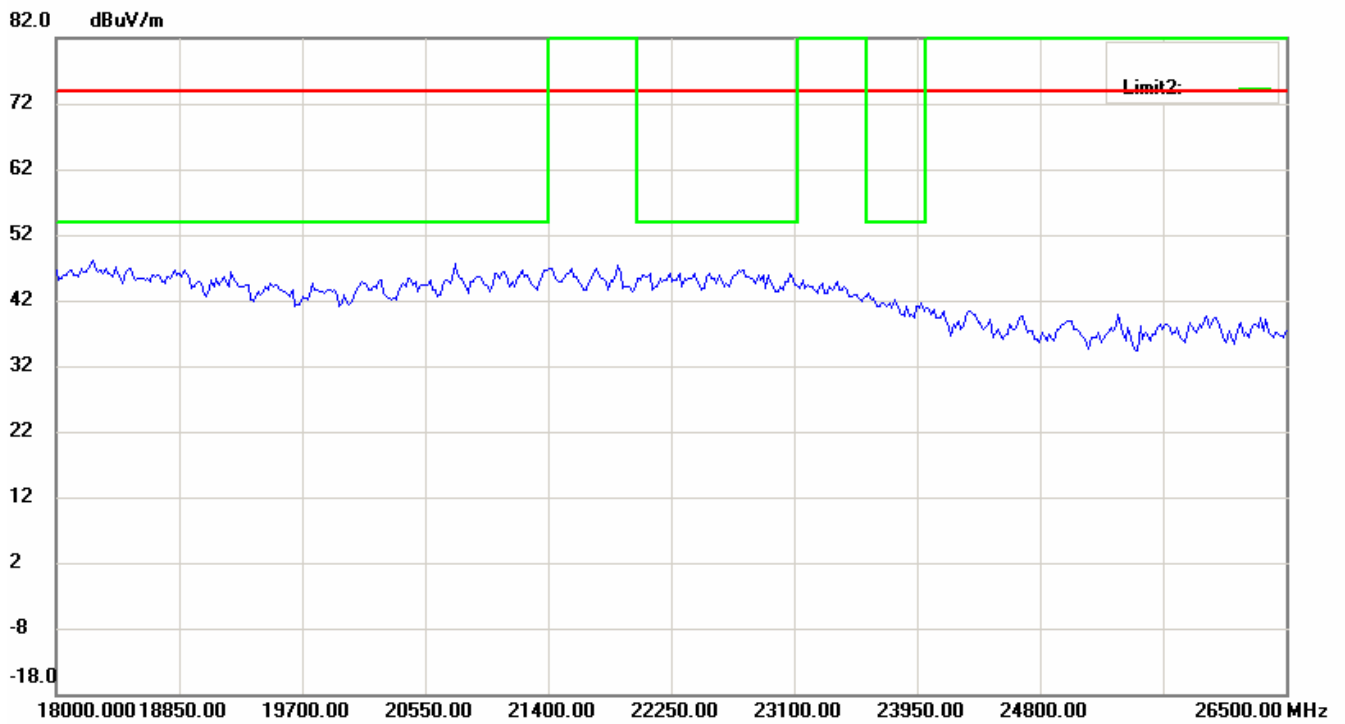
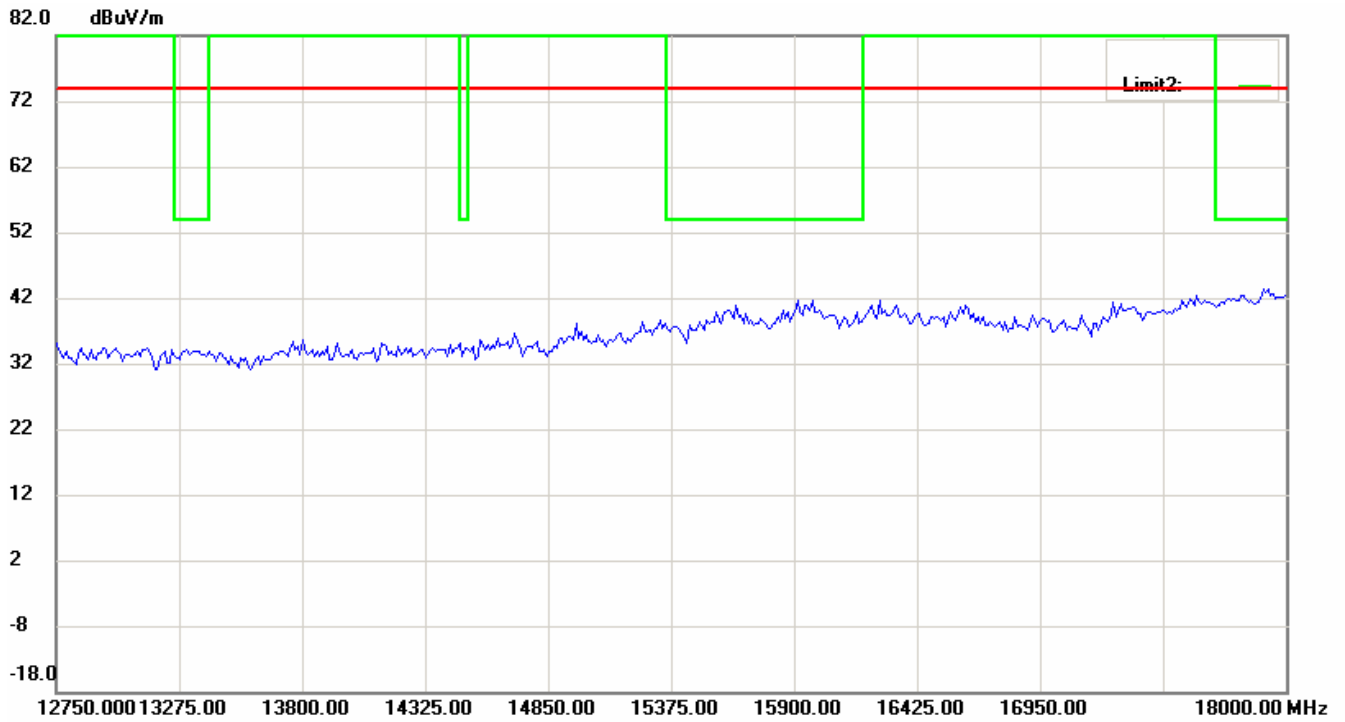
Registration number: W6M20707-8291-C-1
FCC ID: RPW-WIGO800I



Registration number: W6M20707-8291-C-1
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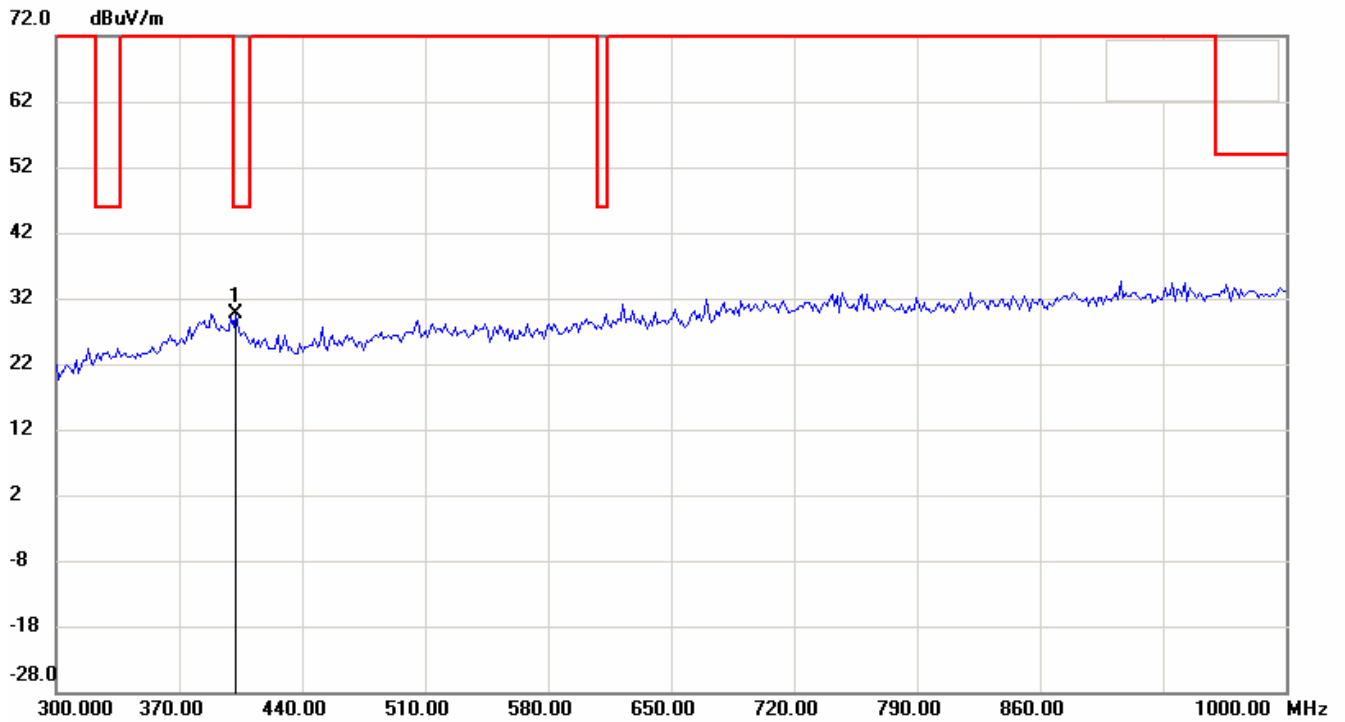
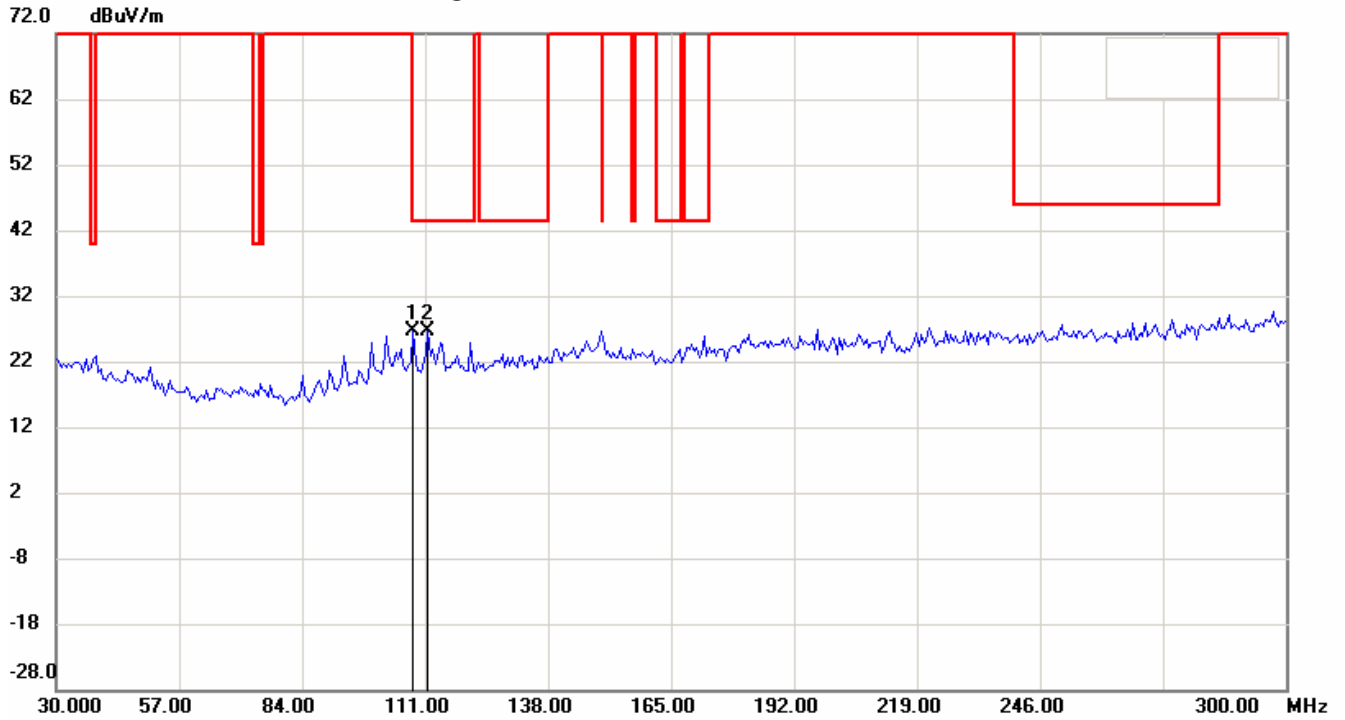


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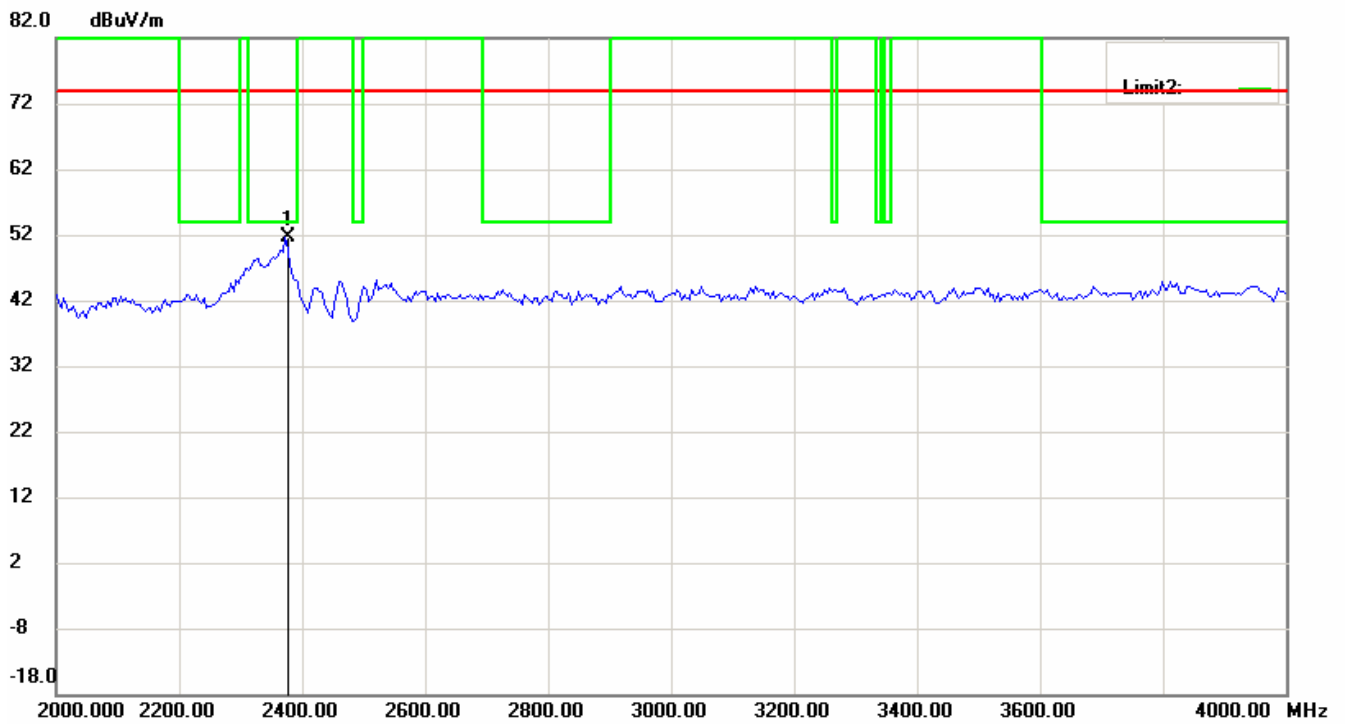
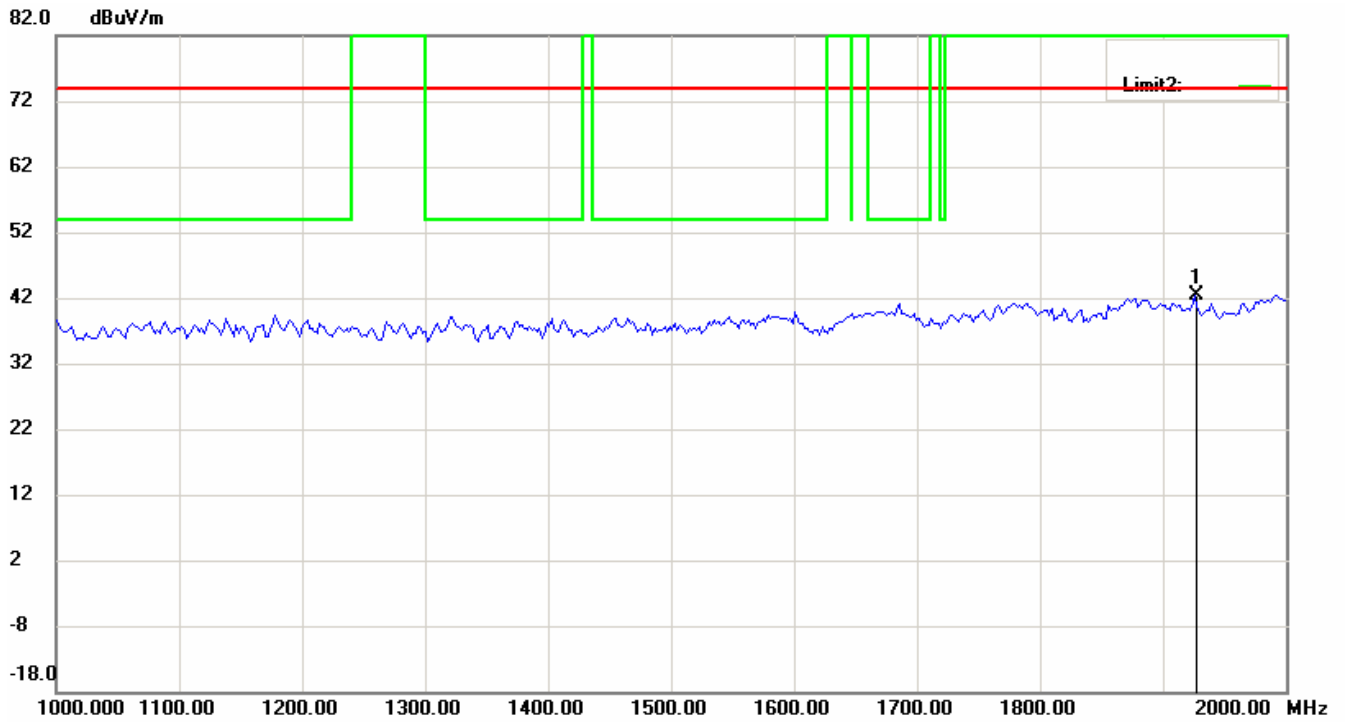


Registration number: W6M20707-8291-C-1
FCC ID: RPW-WIGO800I

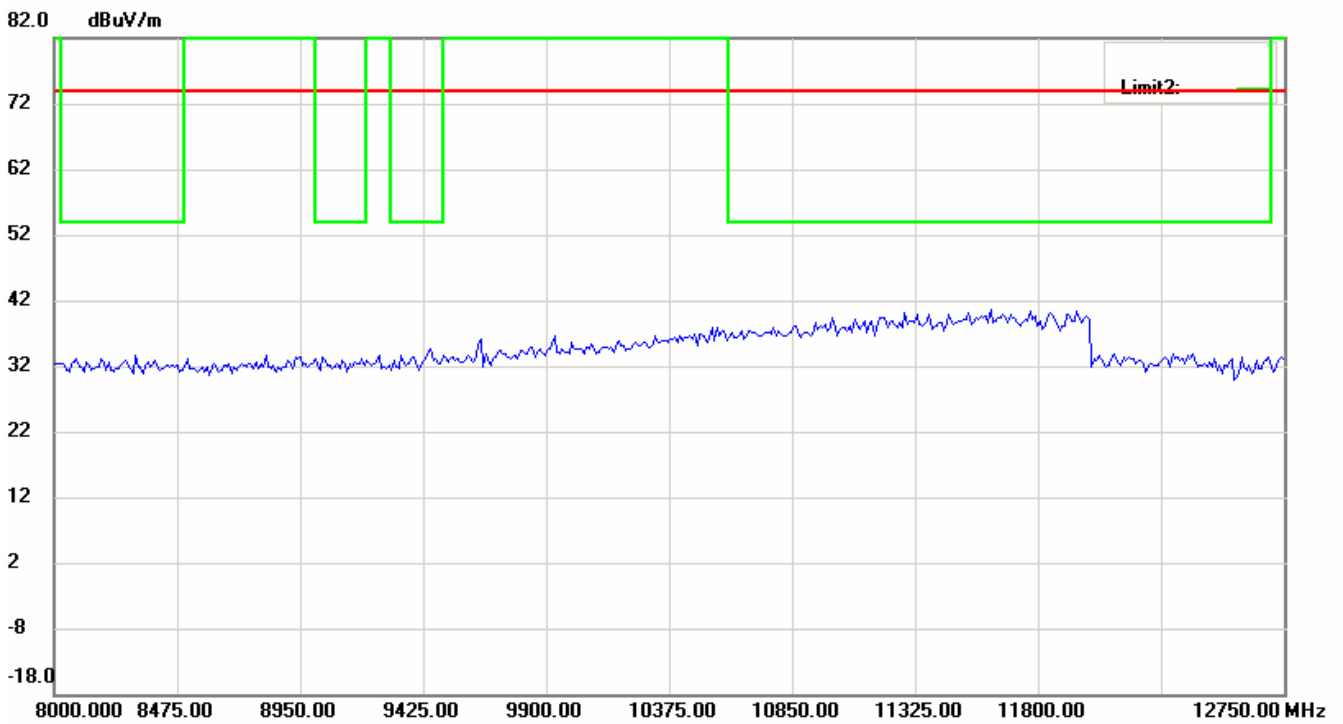
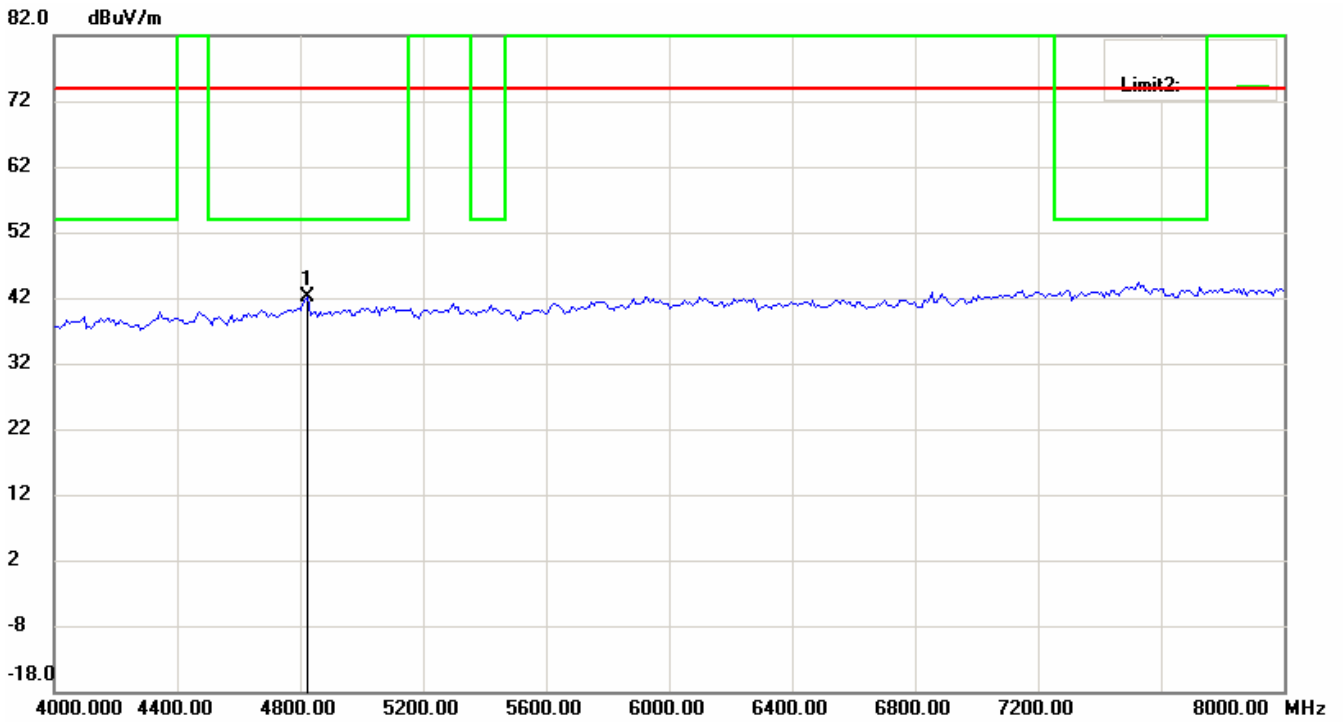
Antenna Polarization H (11g_CH 1)



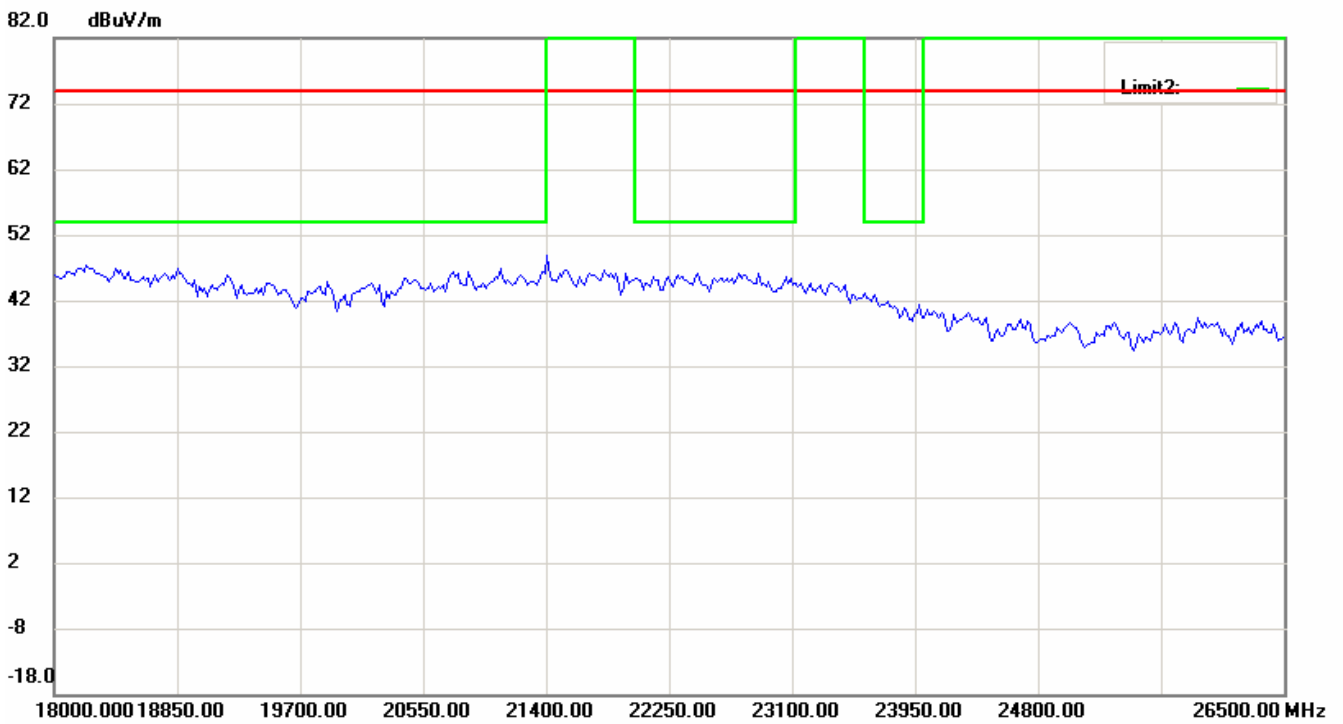
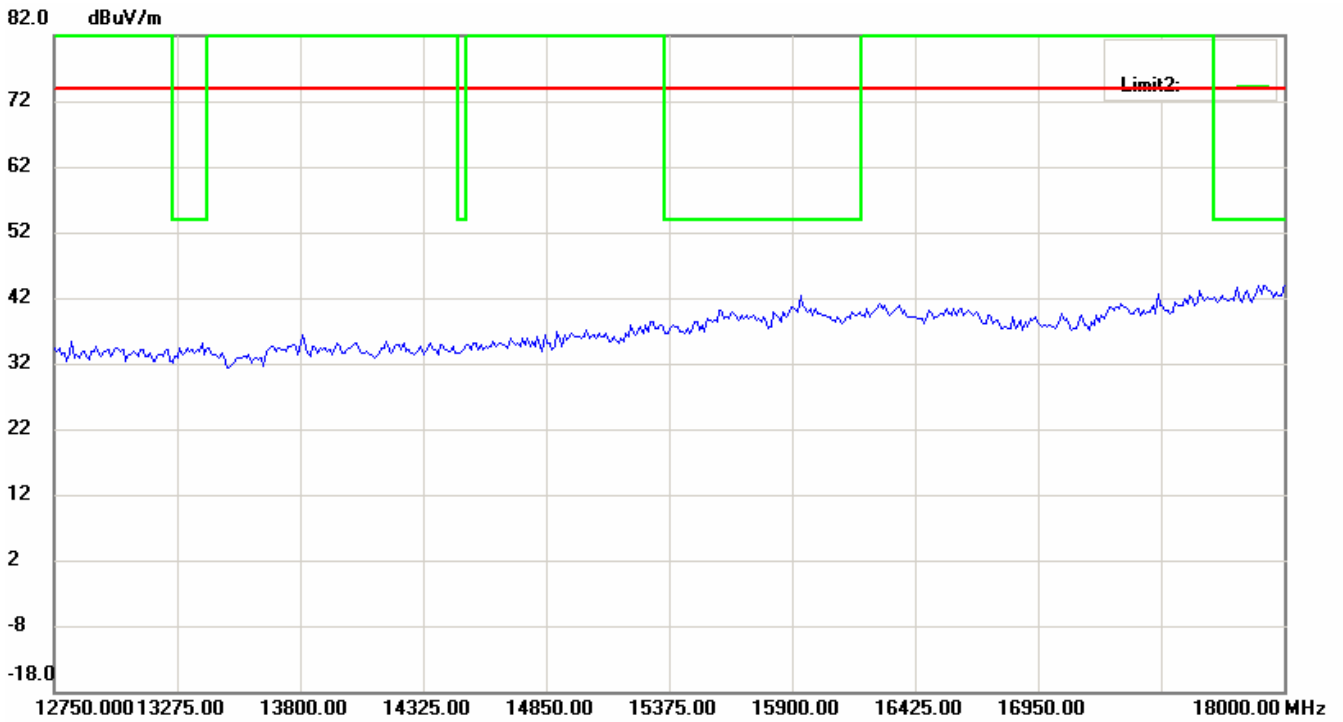
Registration number: W6M20707-8291-C-1
FCC ID: RPW-WIGO800I



Registration number: W6M20707-8291-C-1
FCC ID: RPW-WIGO800I

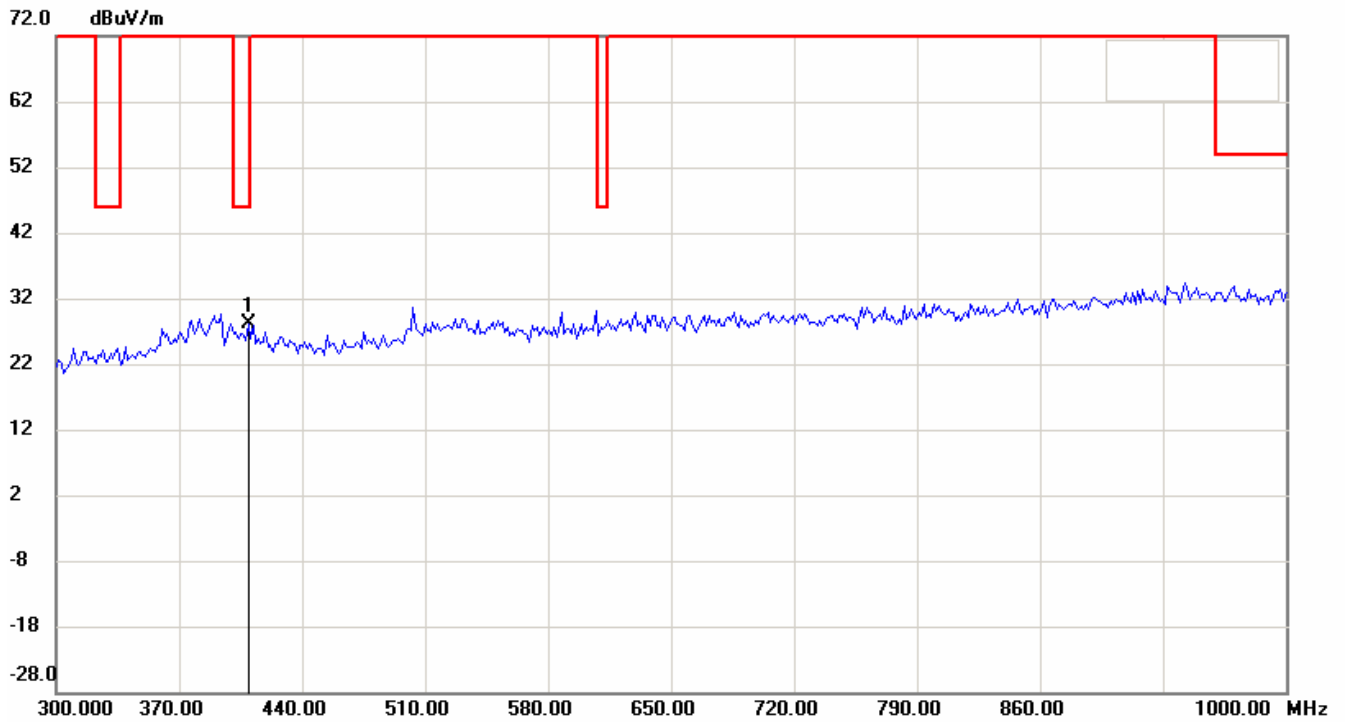
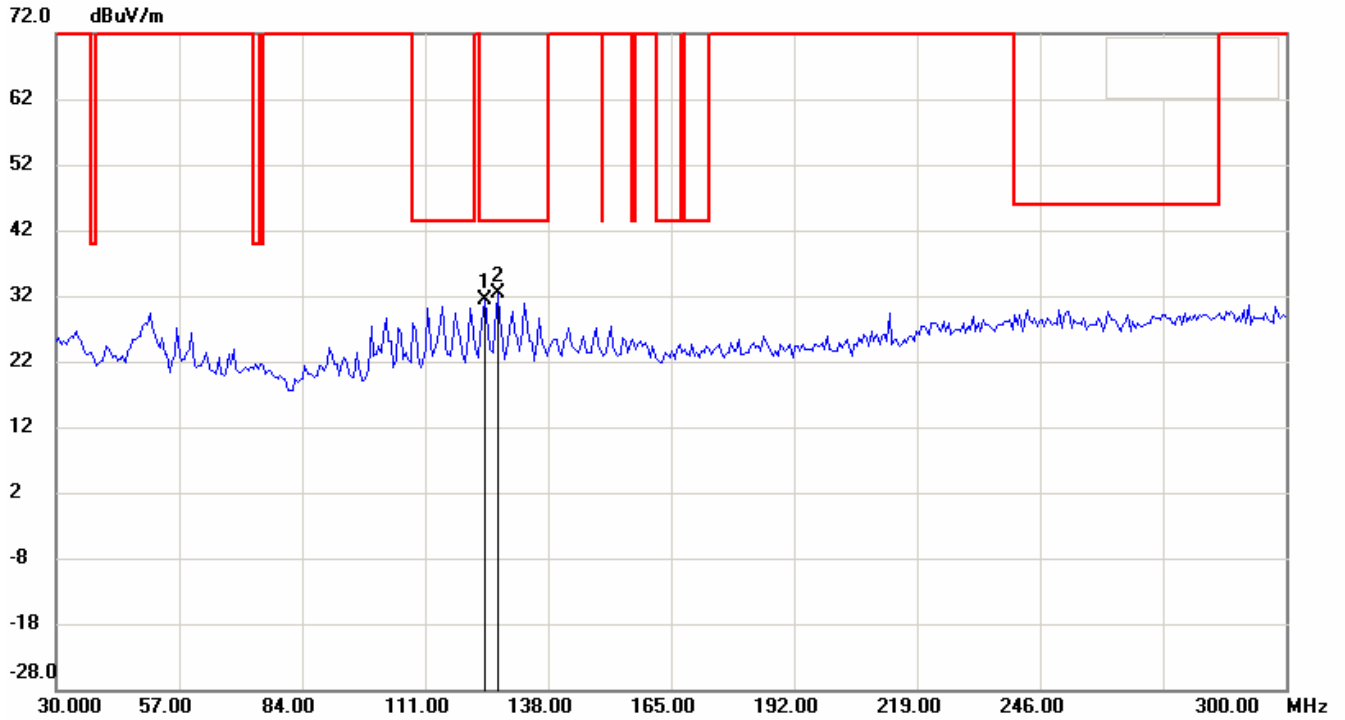


Registration number: W6M20707-8291-C-1
FCC ID: RPW-WIGO800I

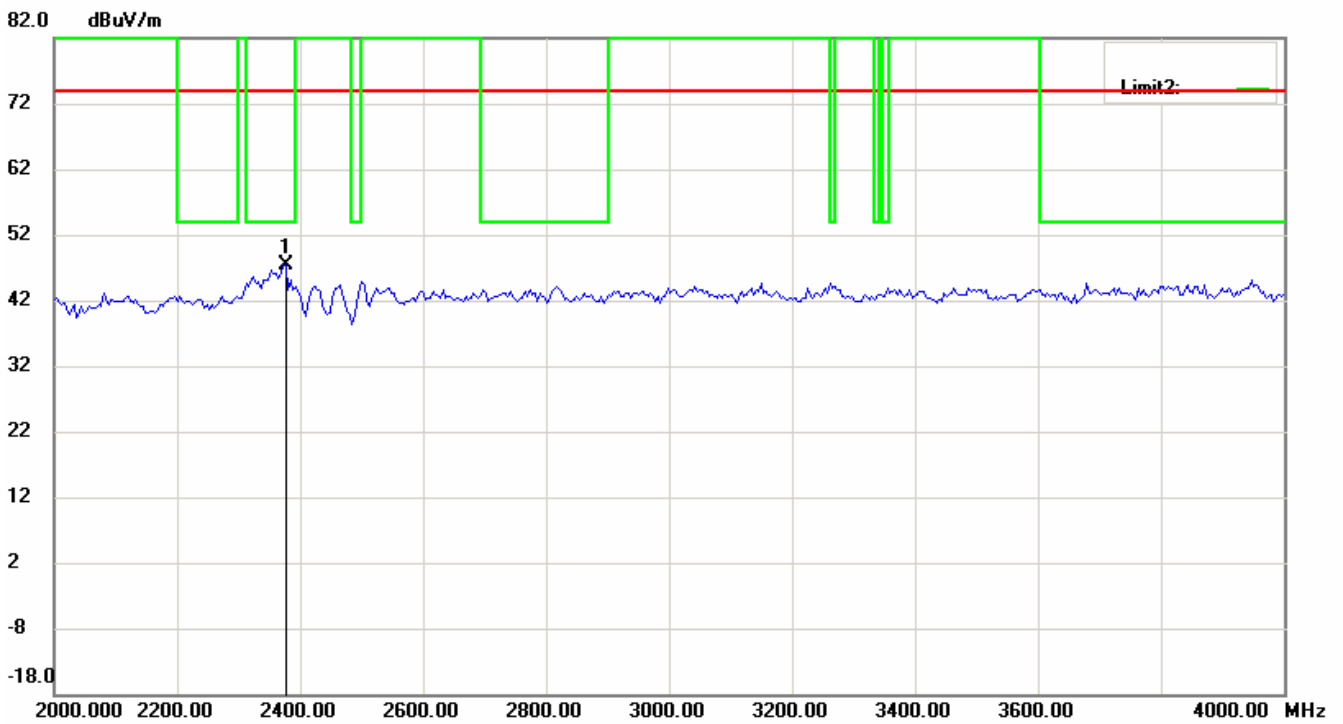
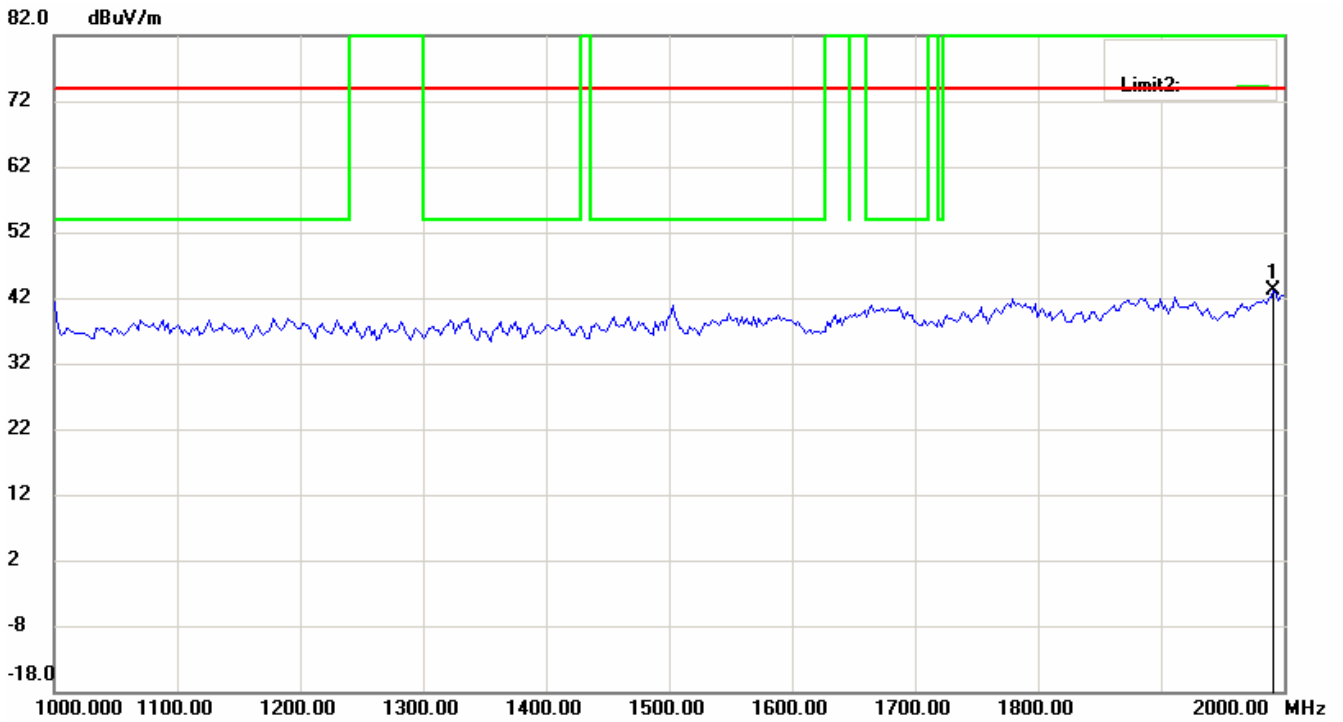


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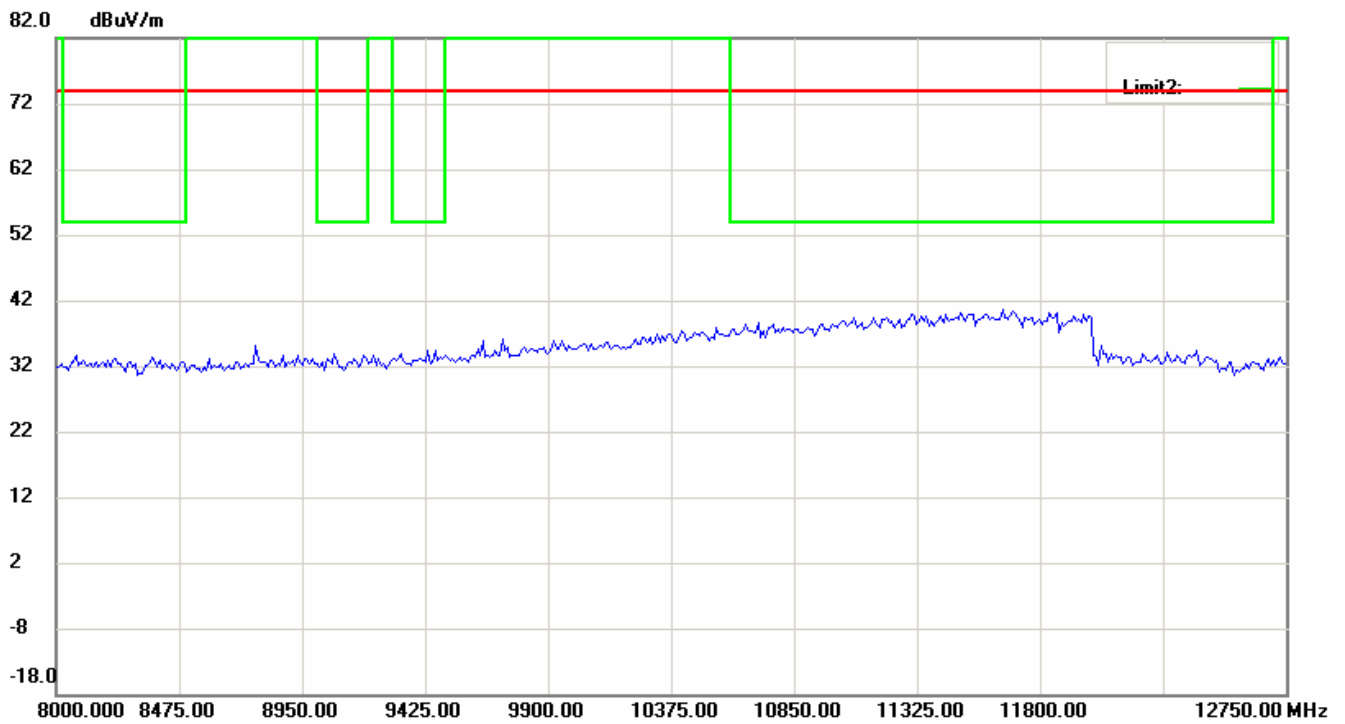
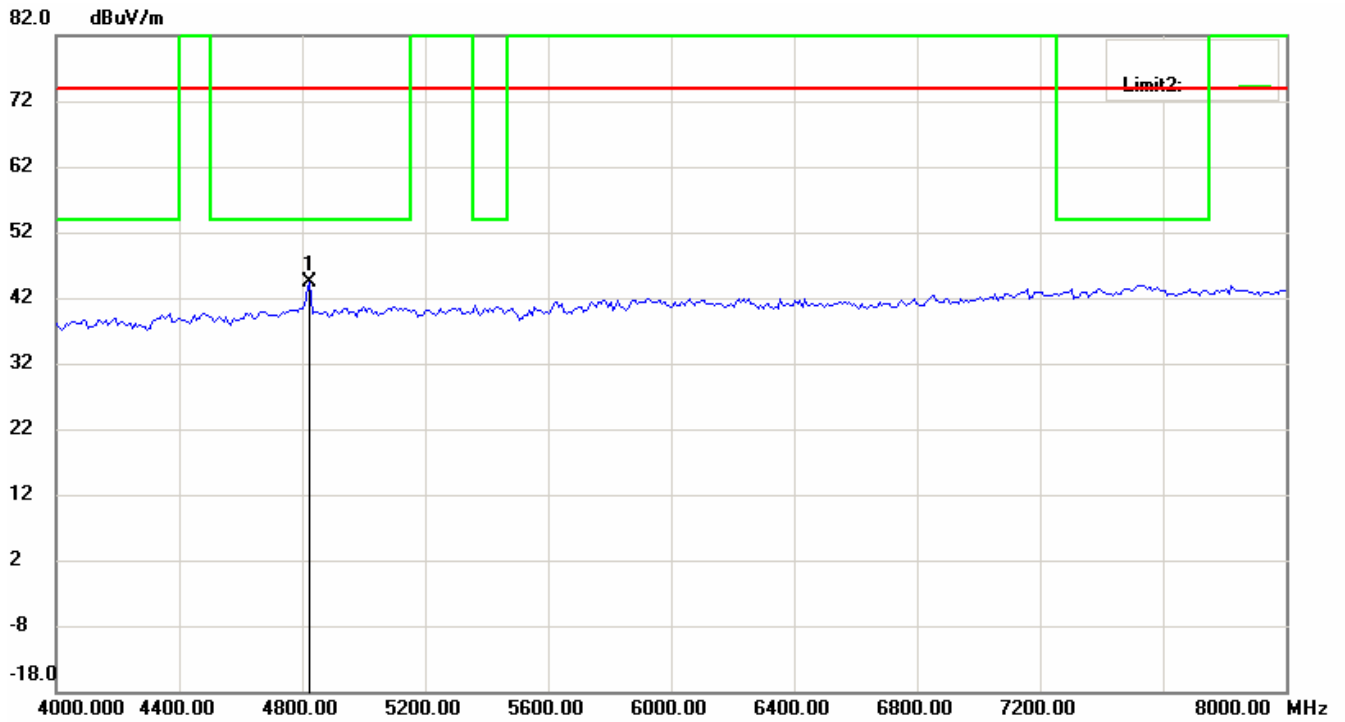
Antenna Polarization V



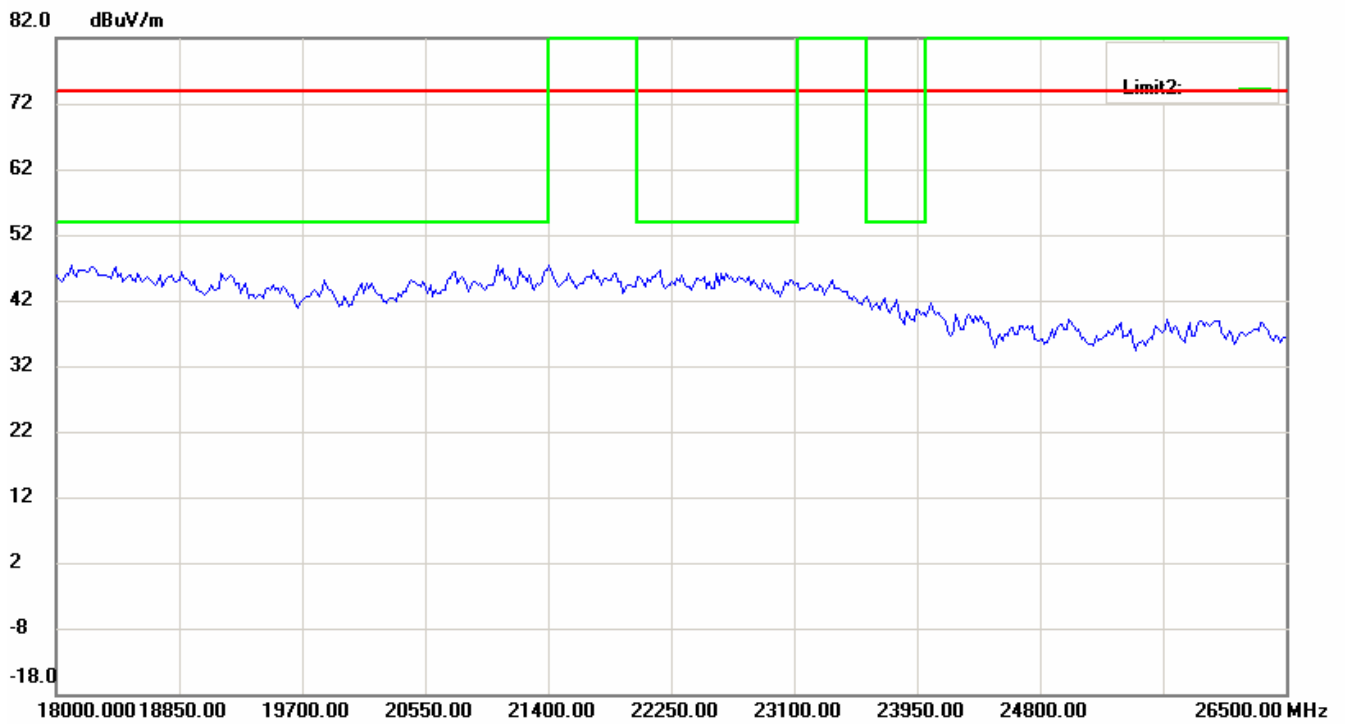
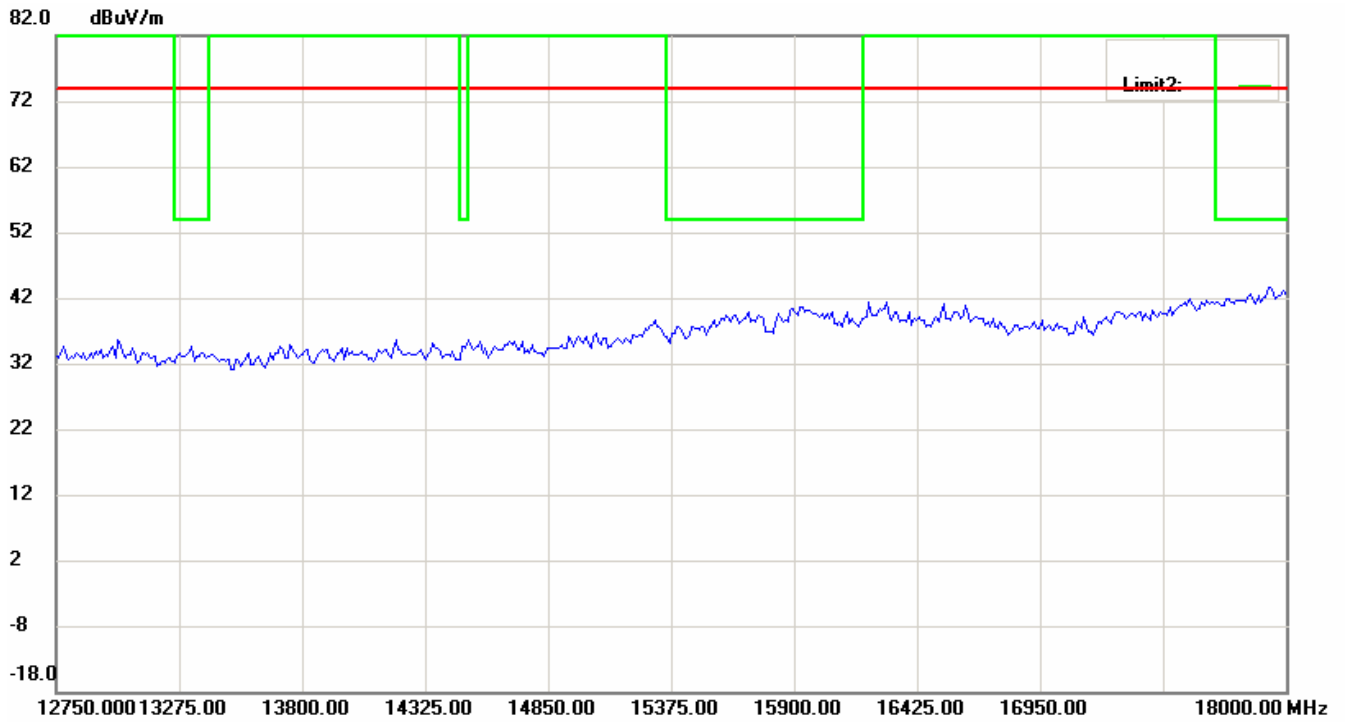
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Registration number: W6M20707-8291-C-1
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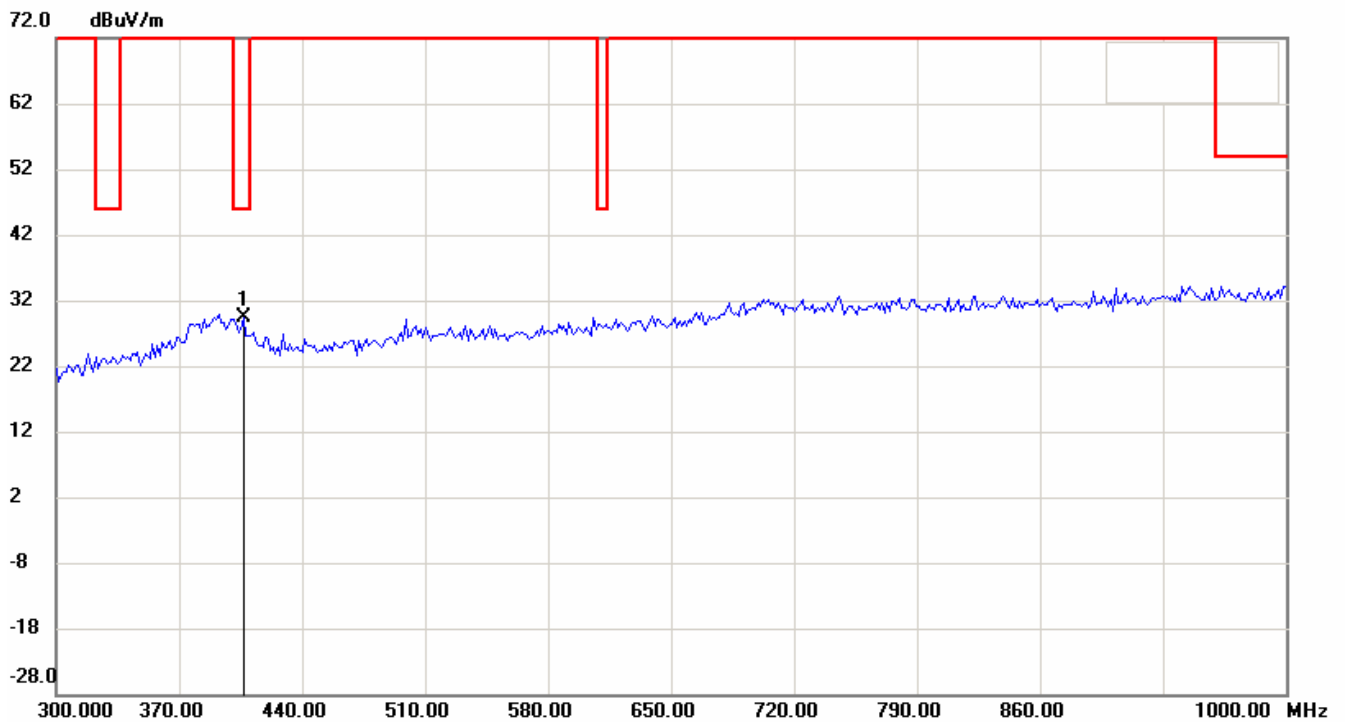
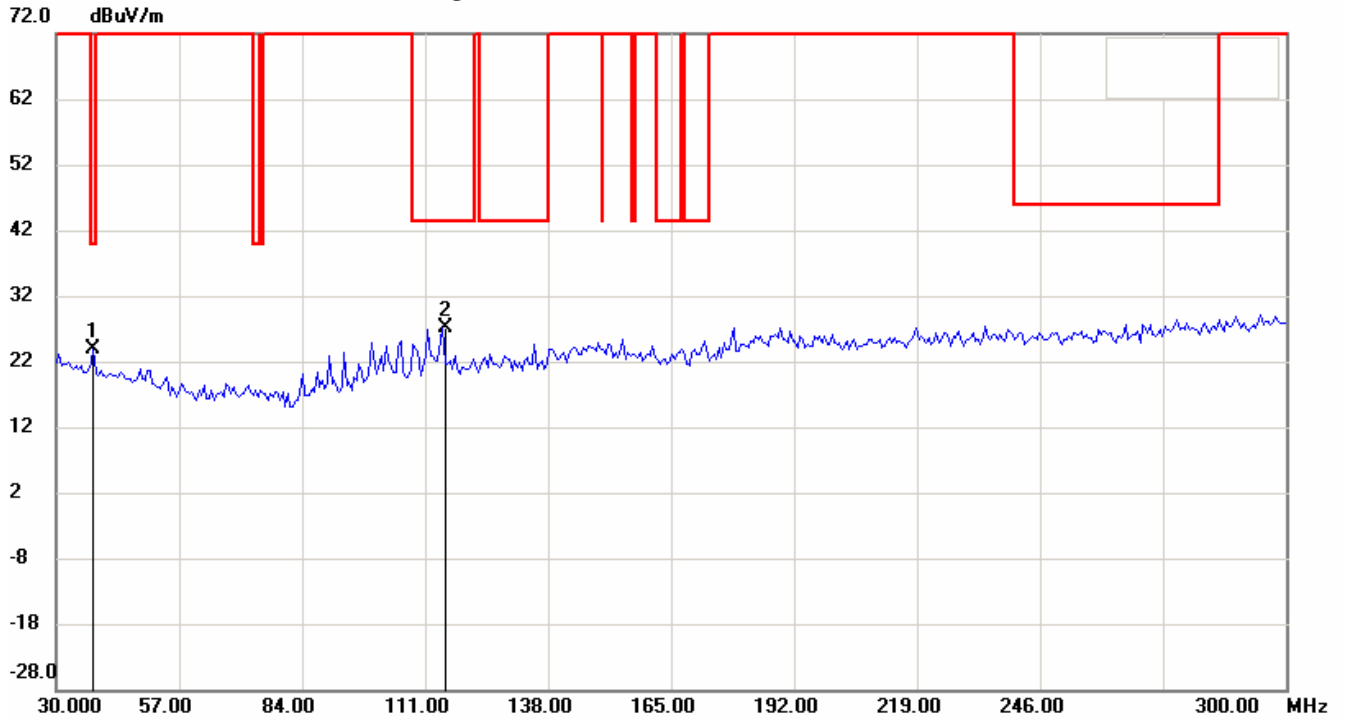


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Registration number: W6M20707-8291-C-1
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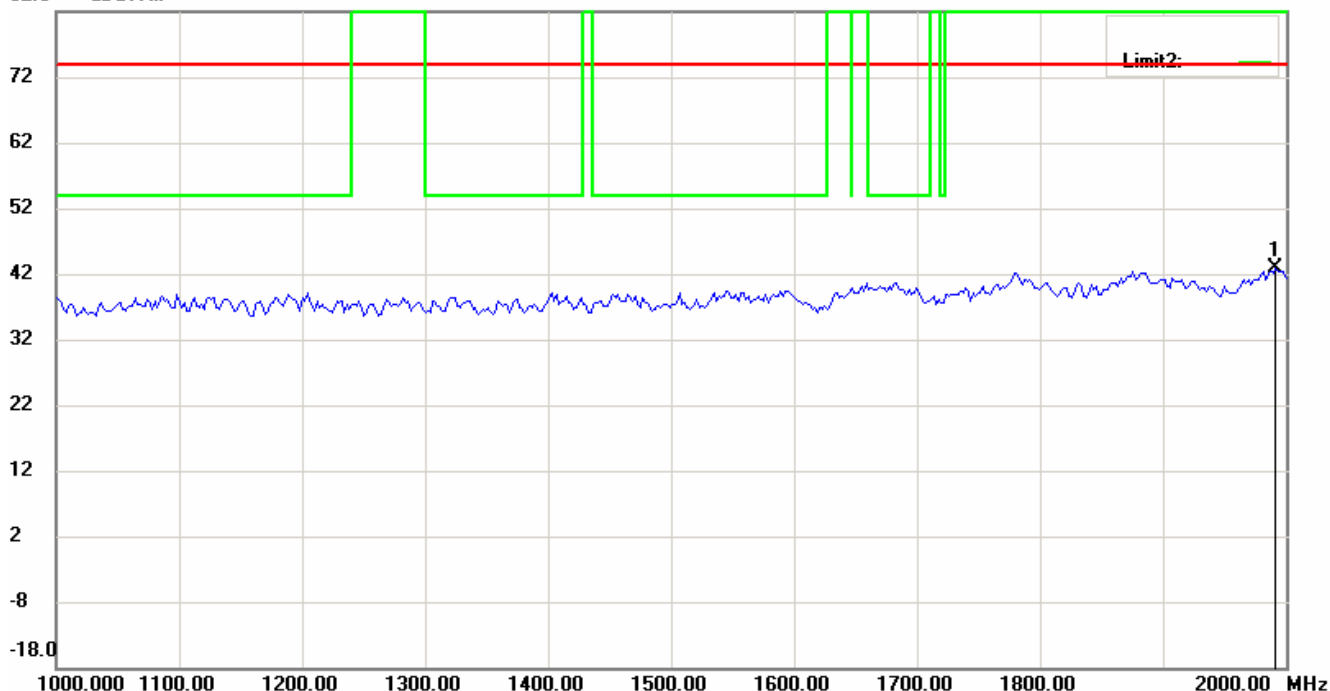
Antenna Polarization H (11g_CH 6)



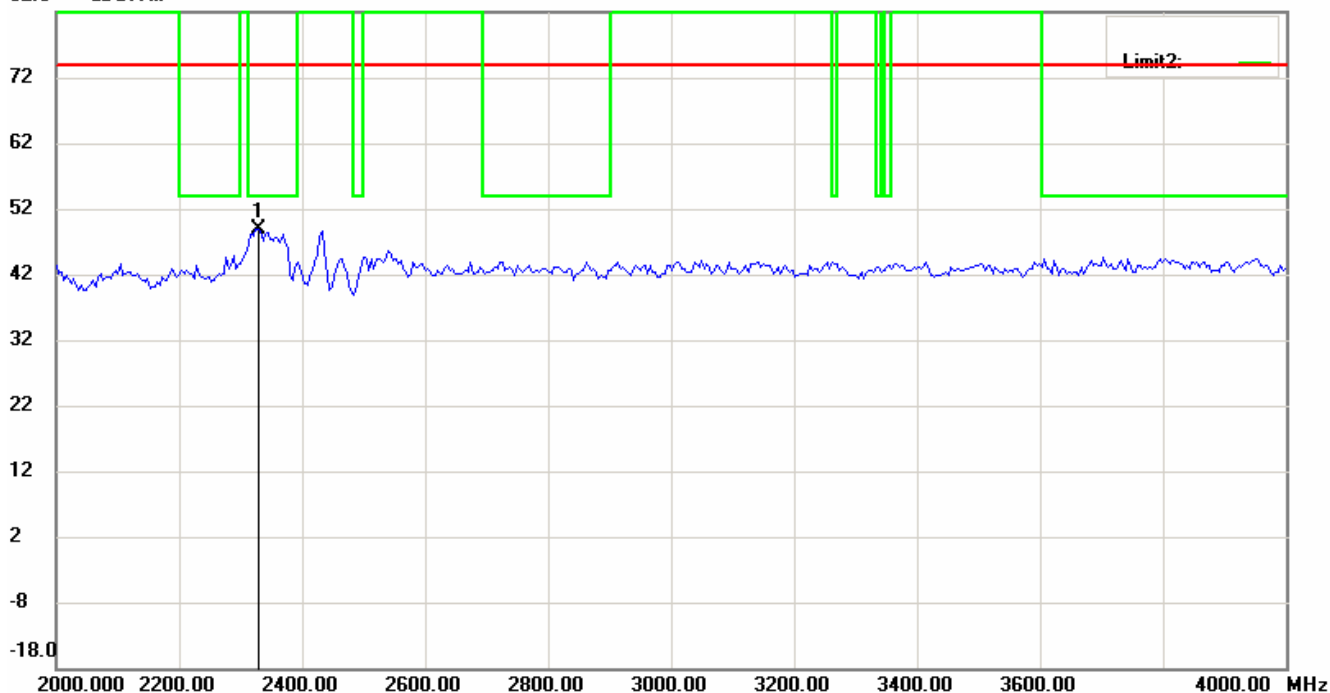
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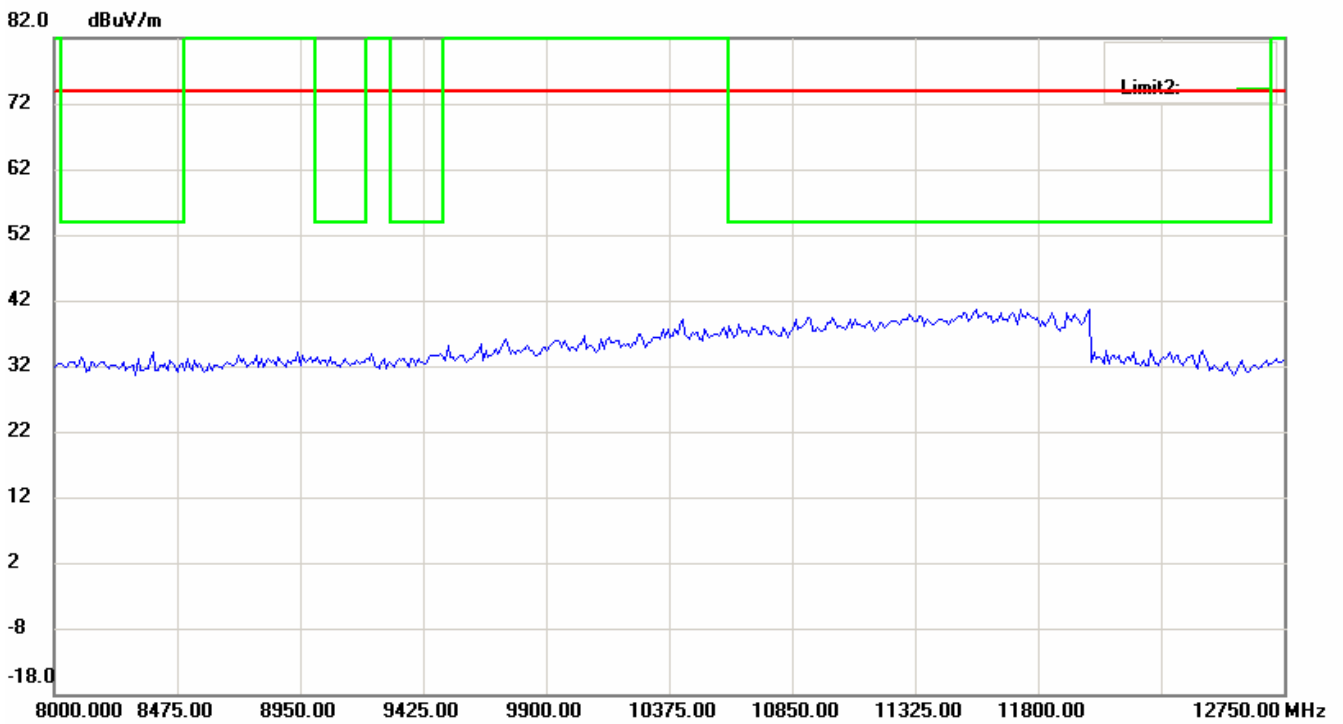
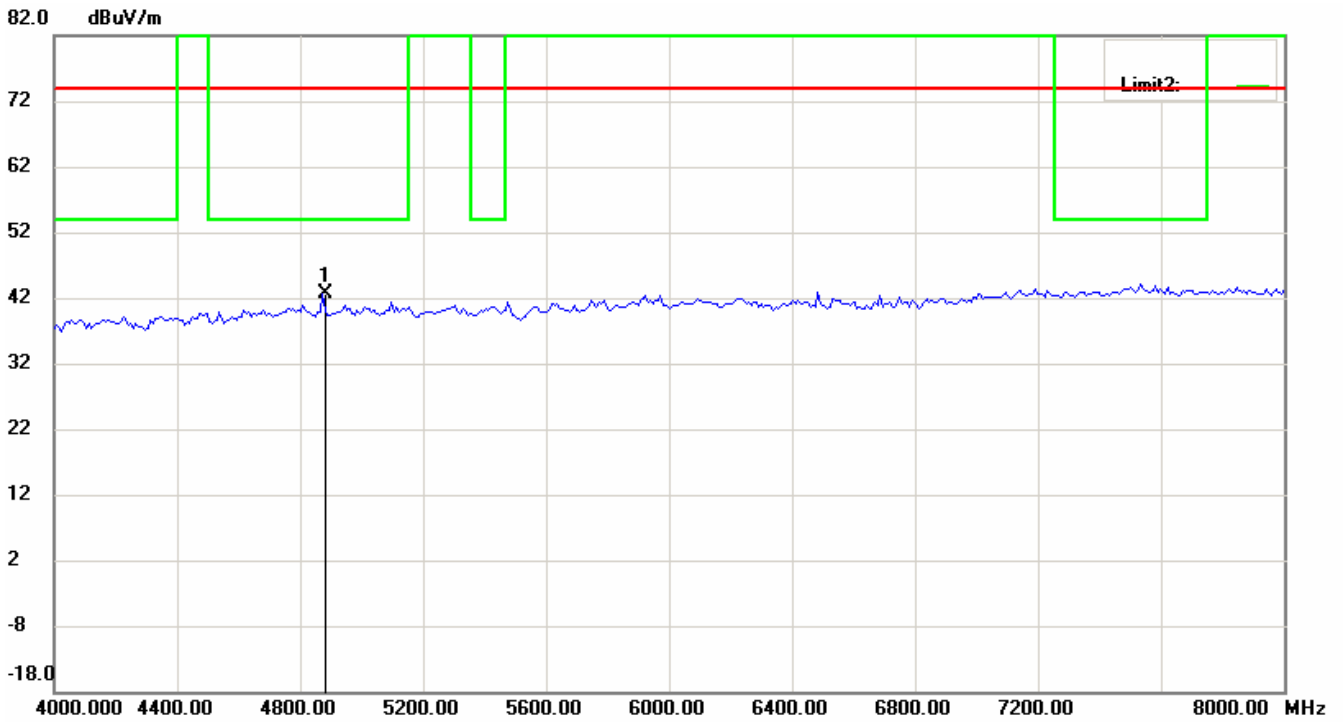
82.0 dBuV/m



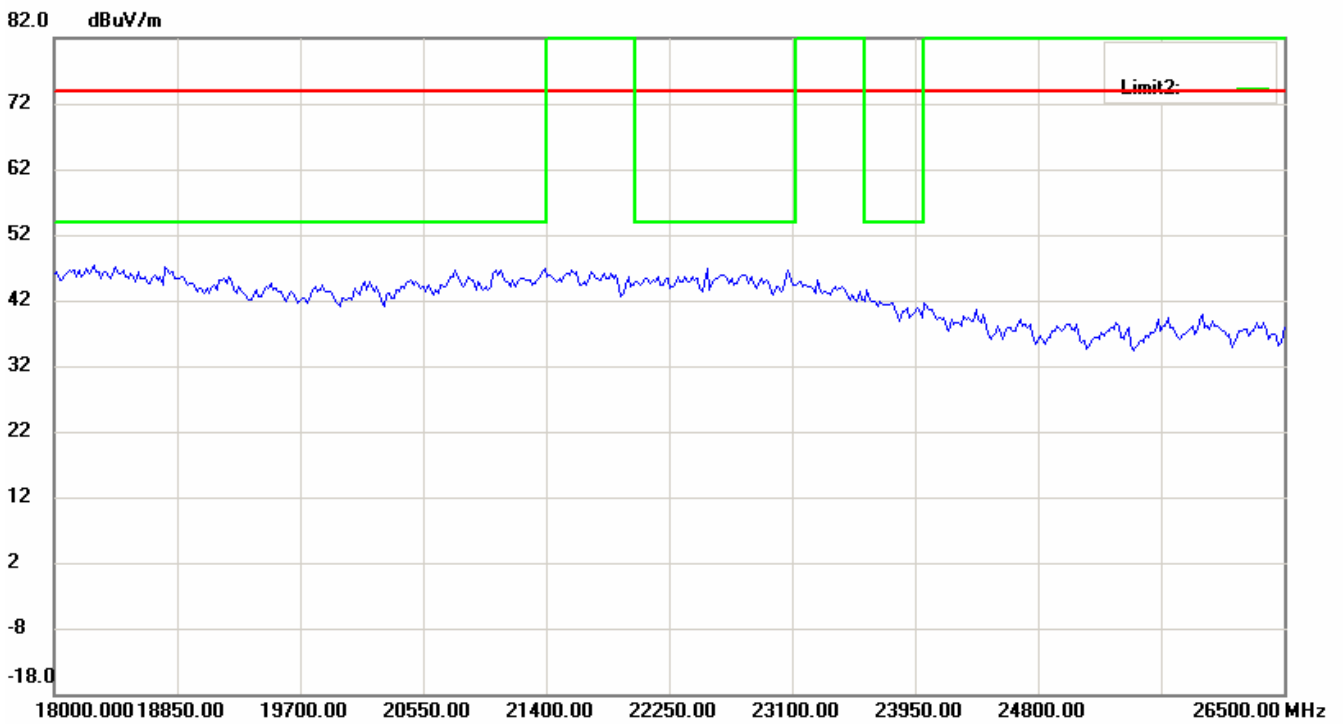
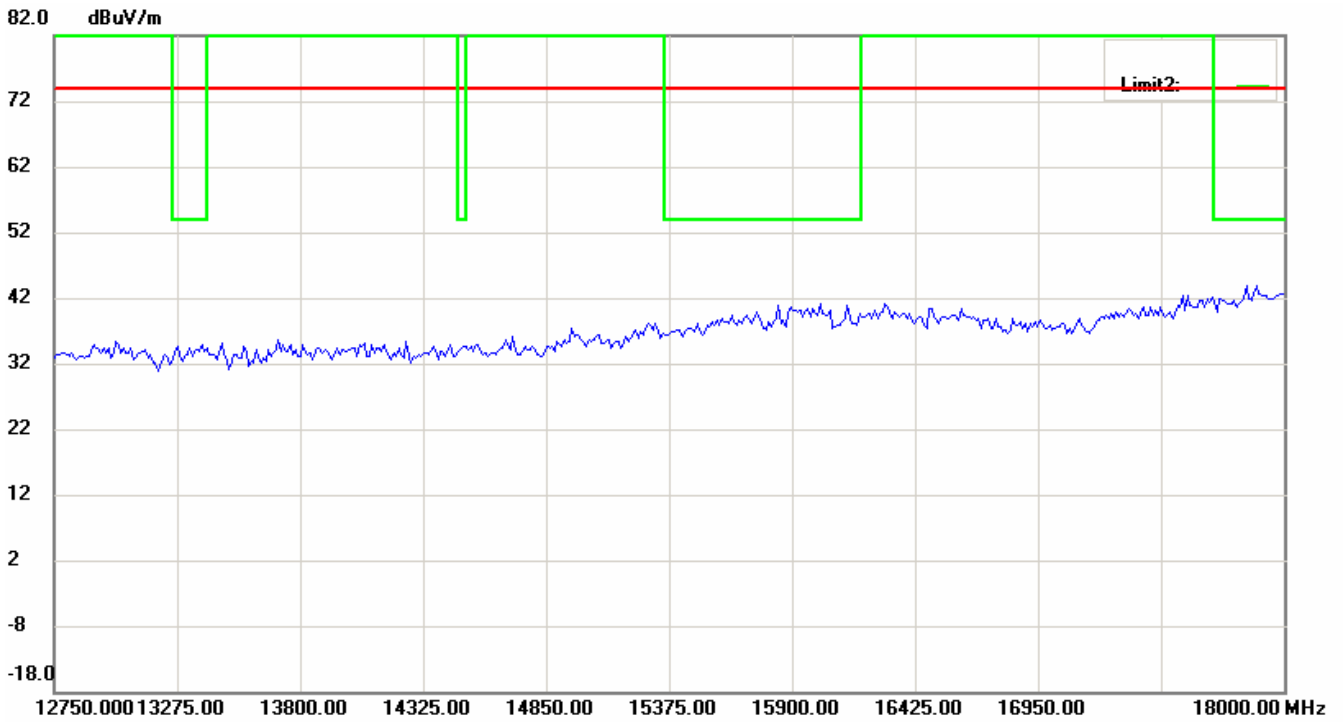
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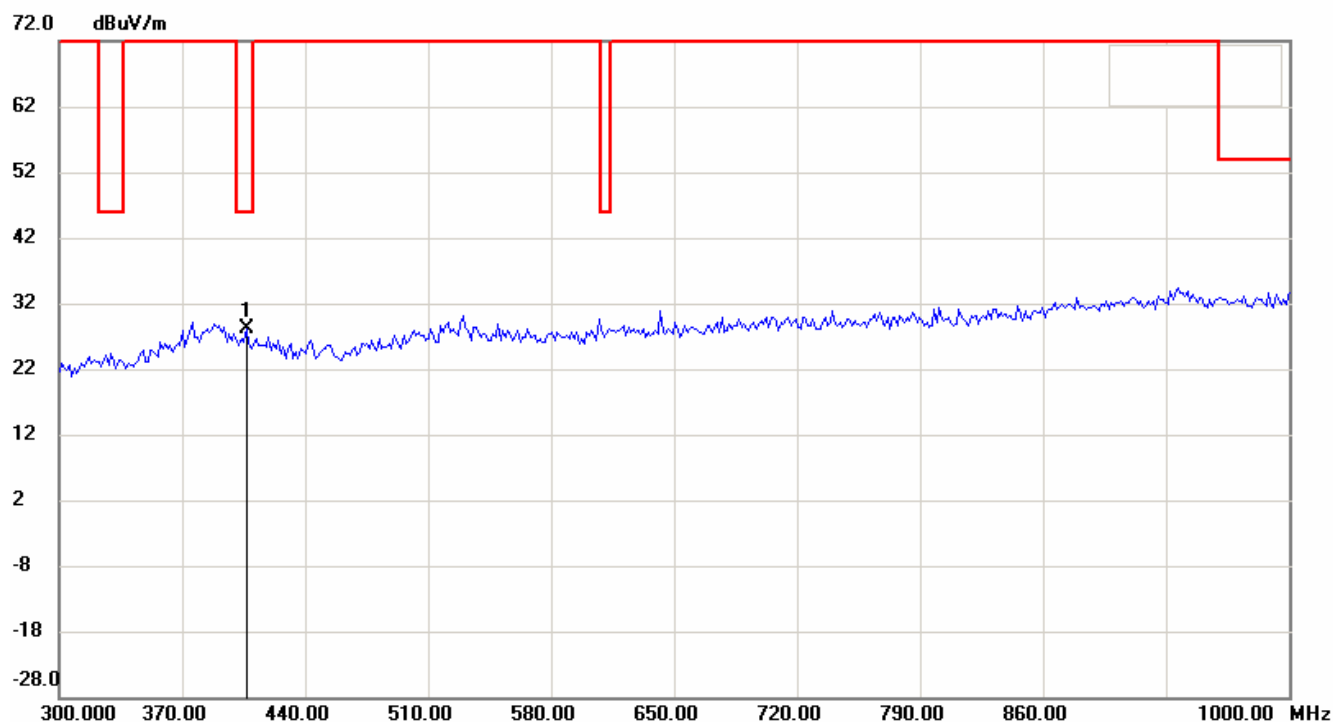
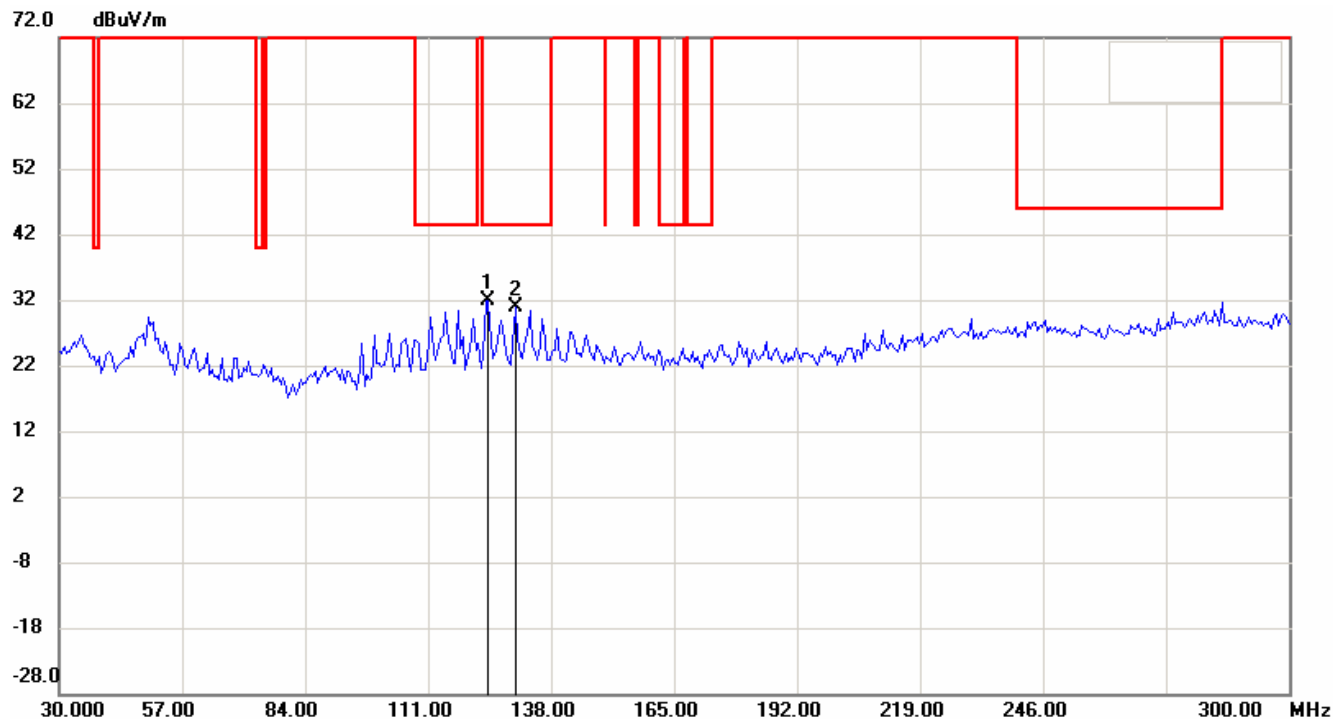
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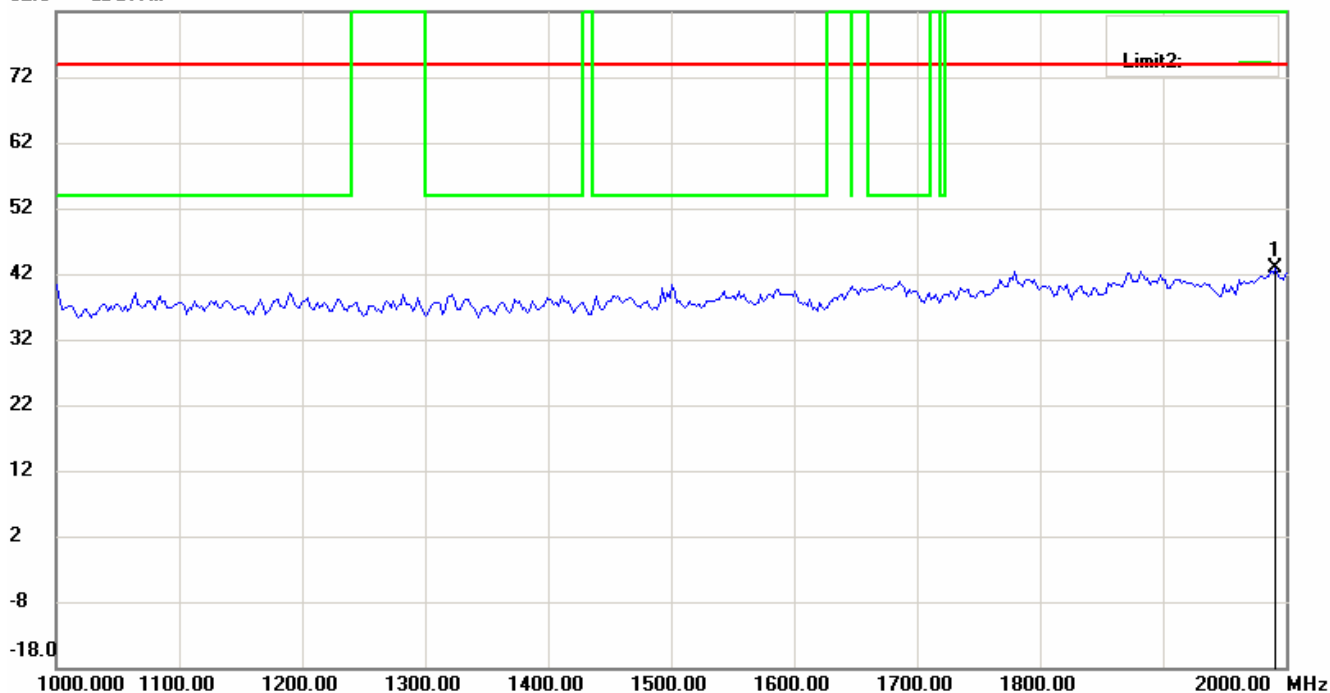
Antenna Polarization V



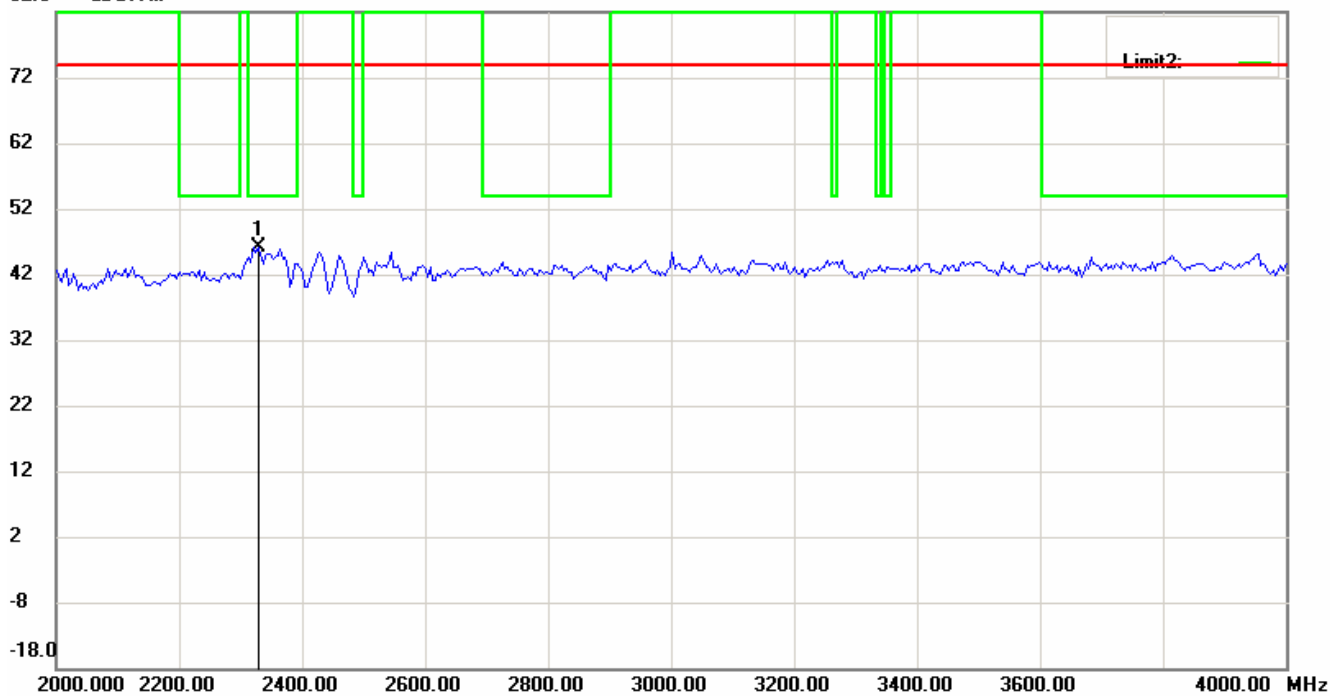
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FCC ID: RPW-WIGO800I

82.0 dBuV/m



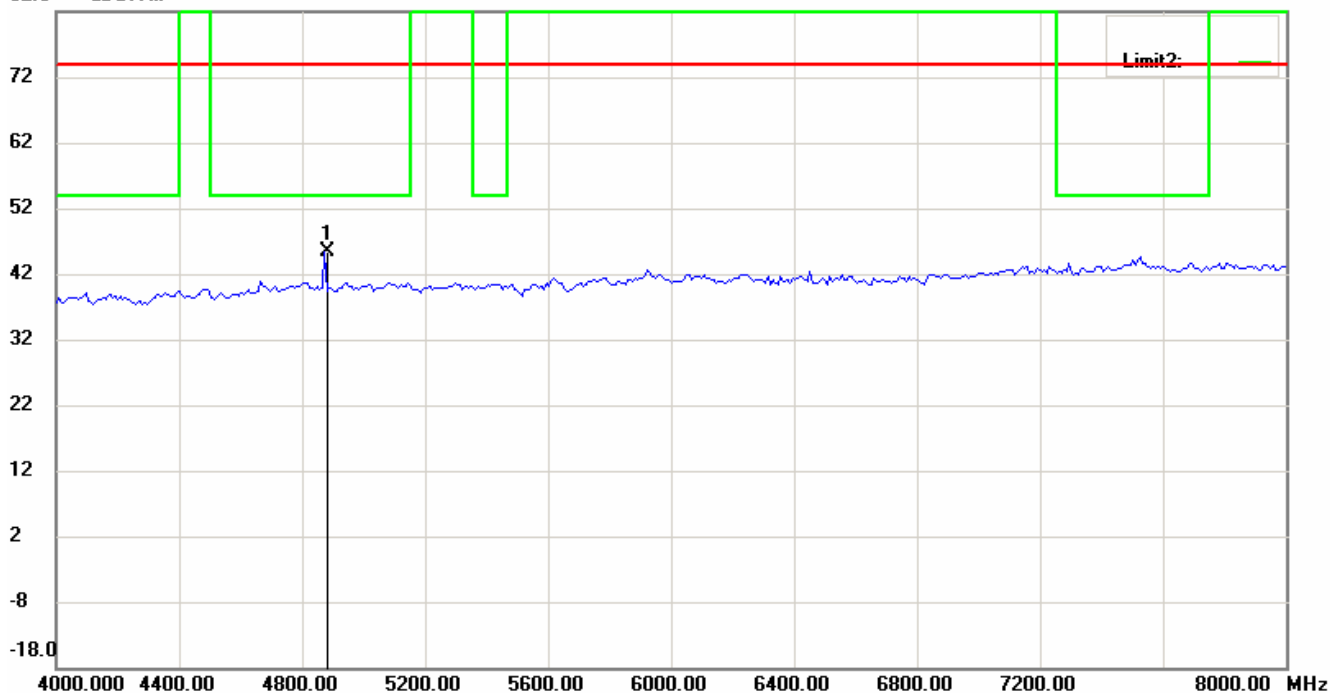
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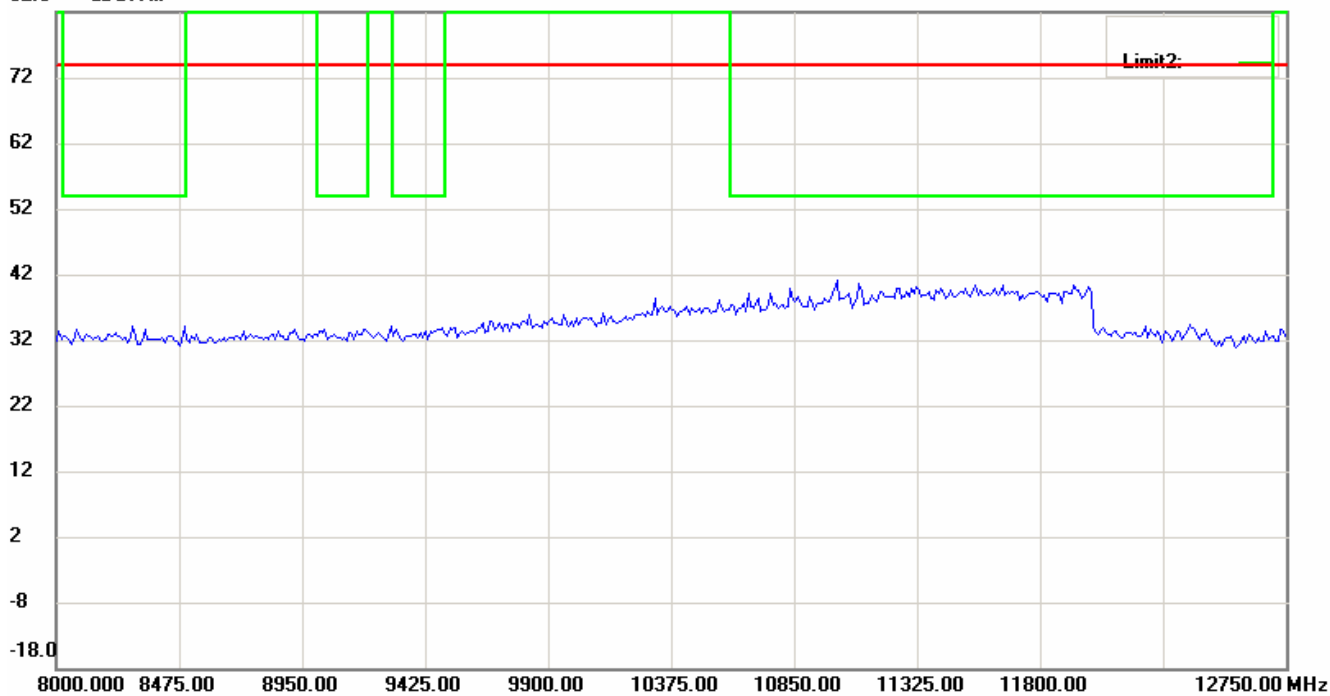
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FCC ID: RPW-WIGO800I

82.0 dBuV/m

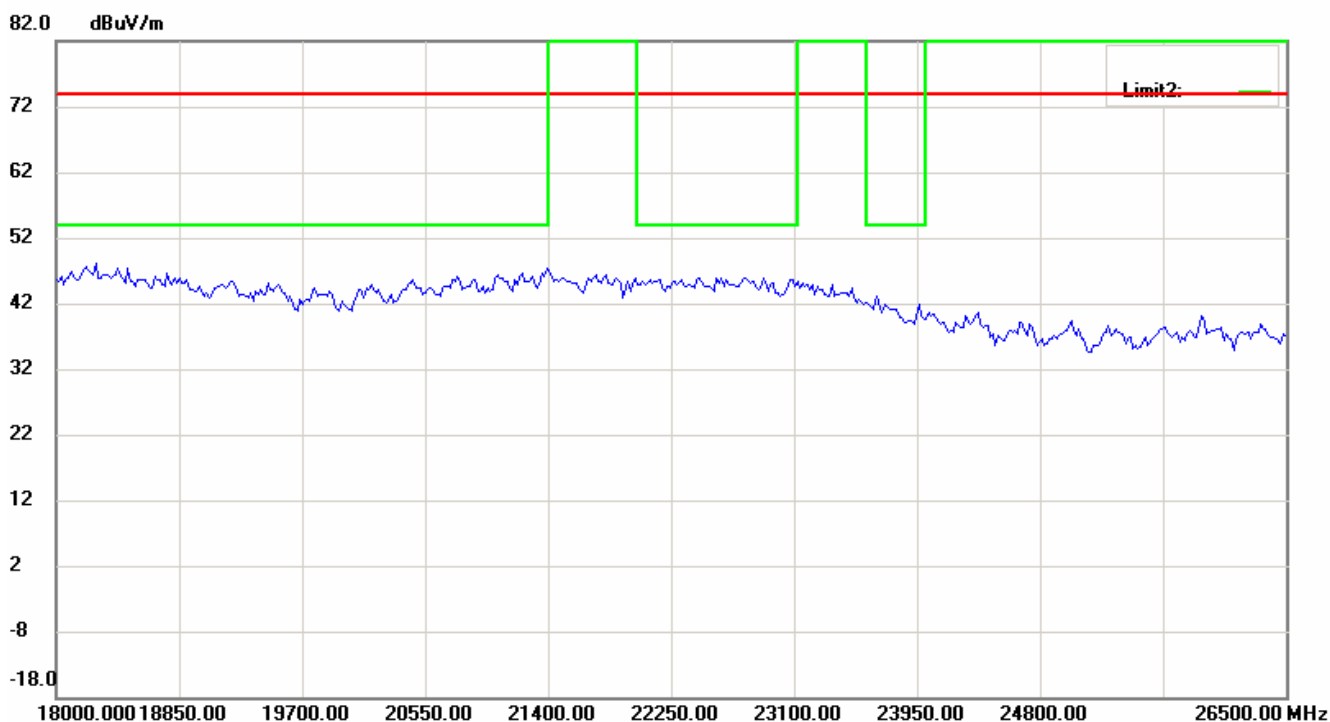
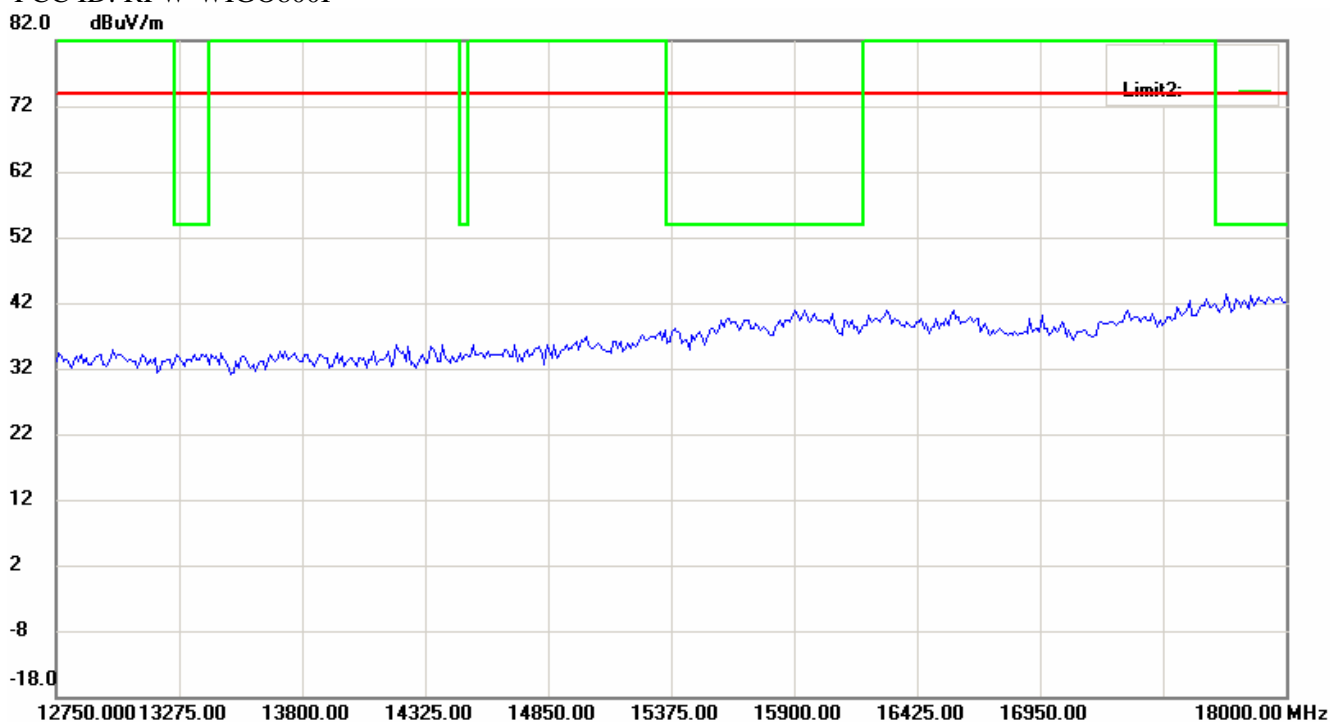


82.0 dBuV/m



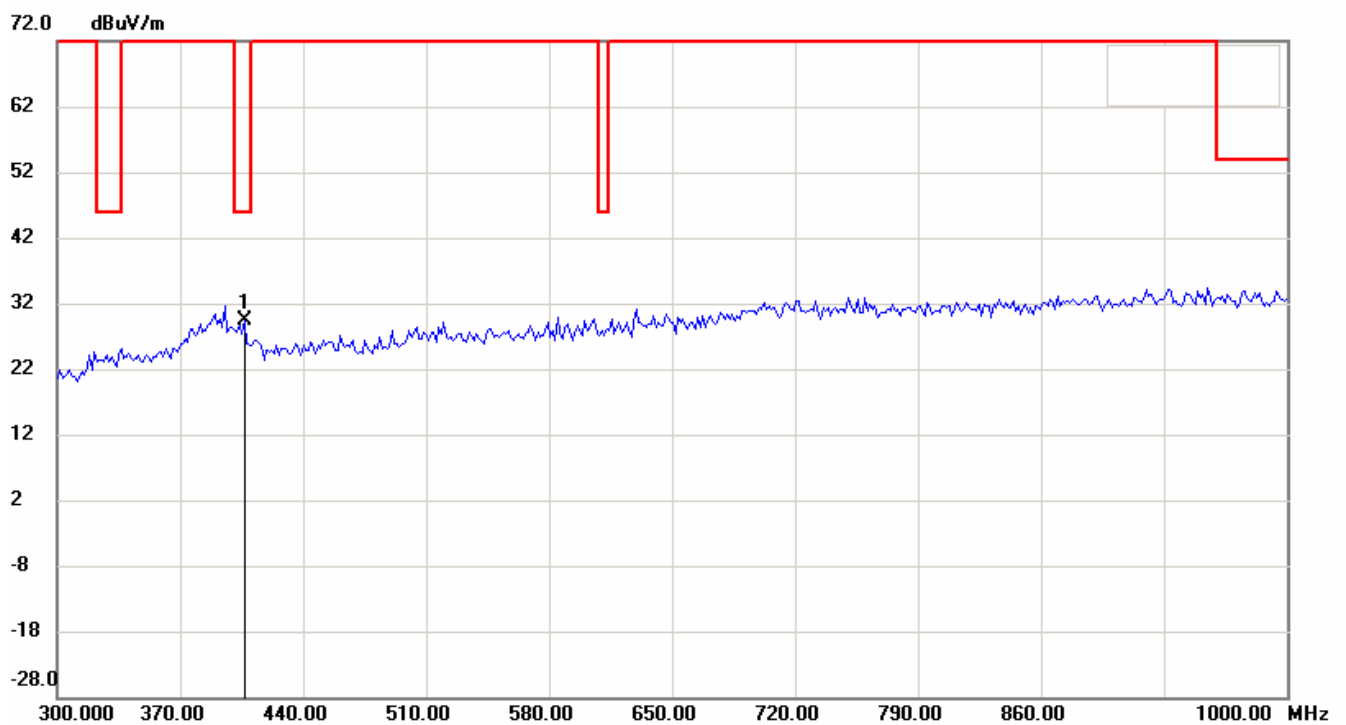
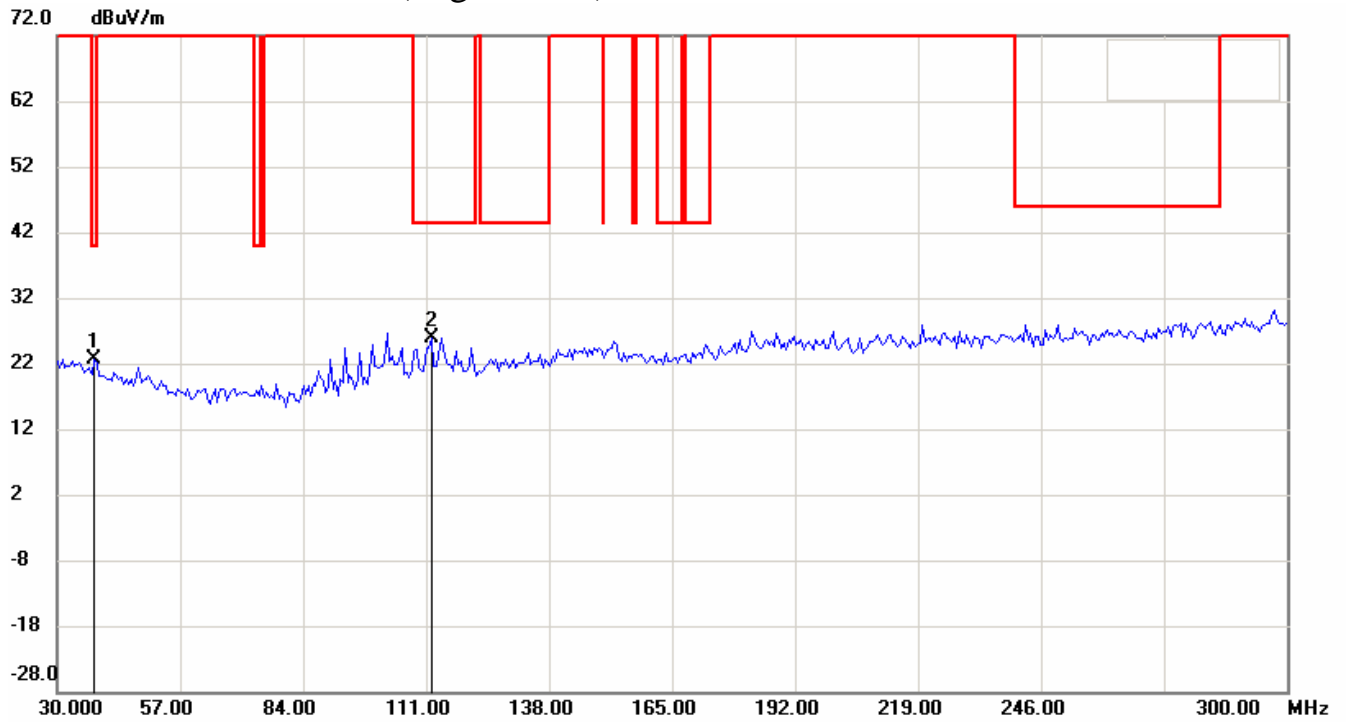
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Registration number: W6M20707-8291-C-1
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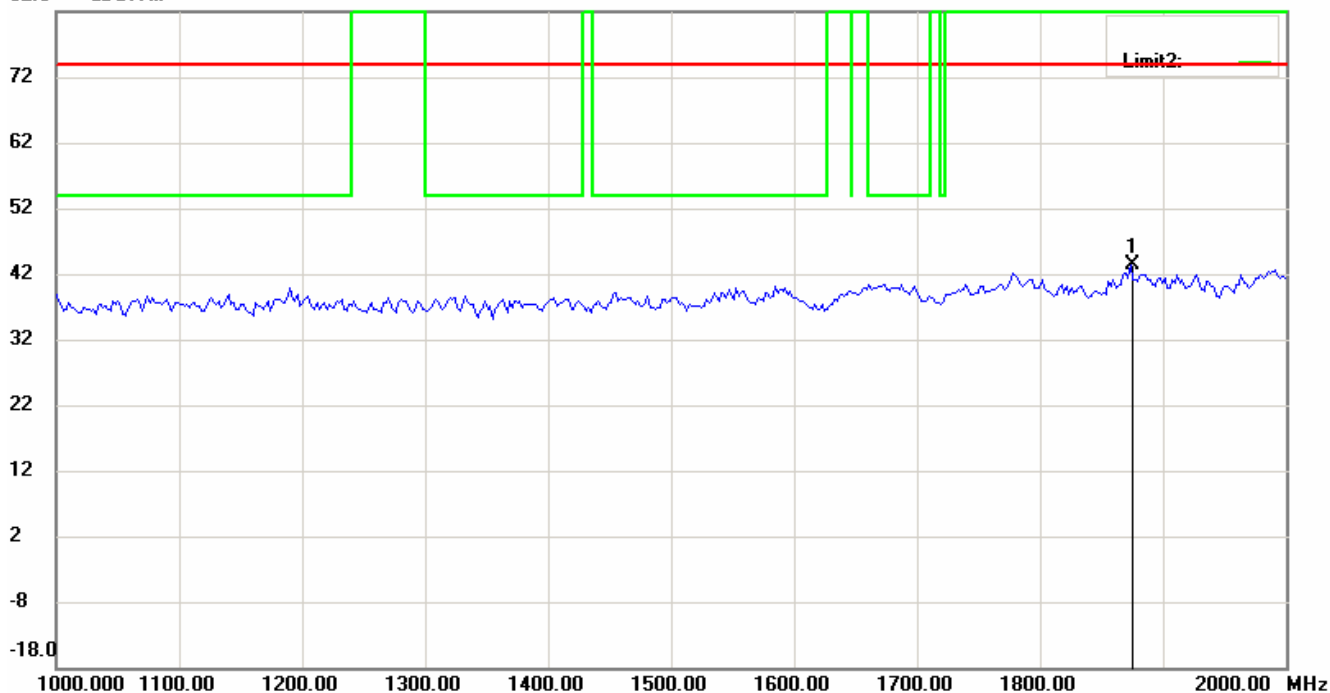
Antenna Polarization H (11g_CH 11)



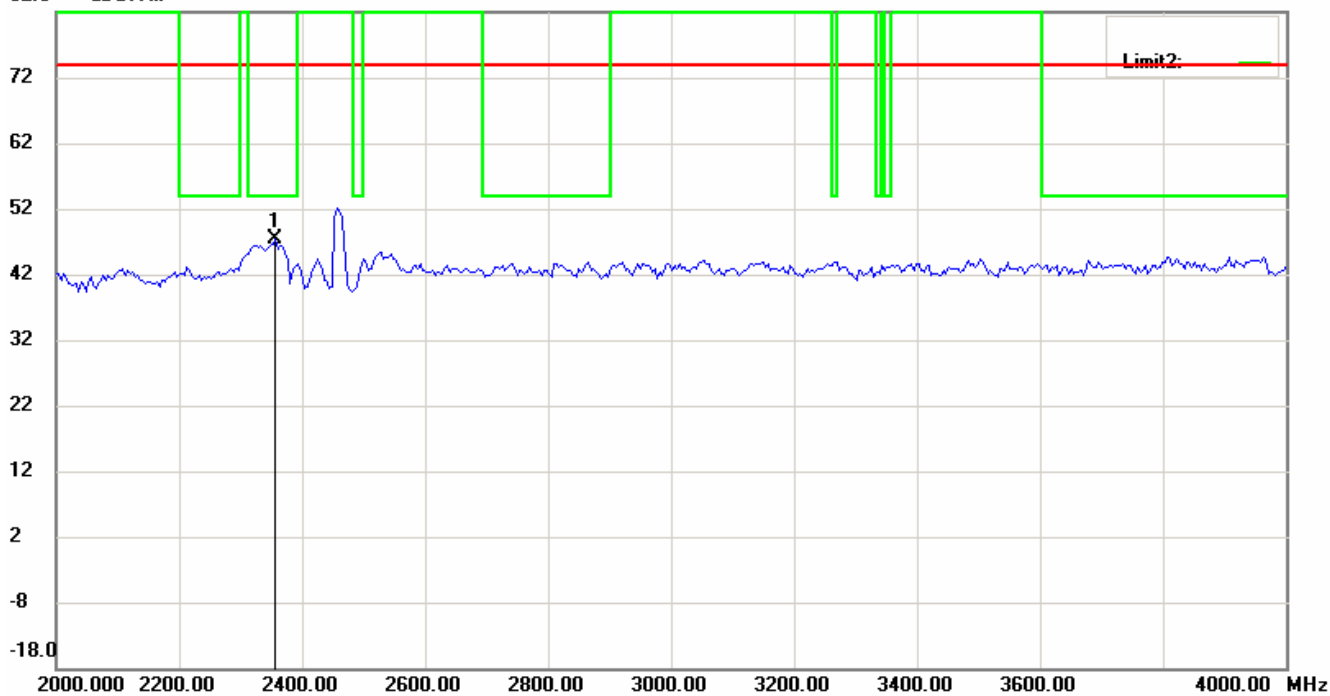
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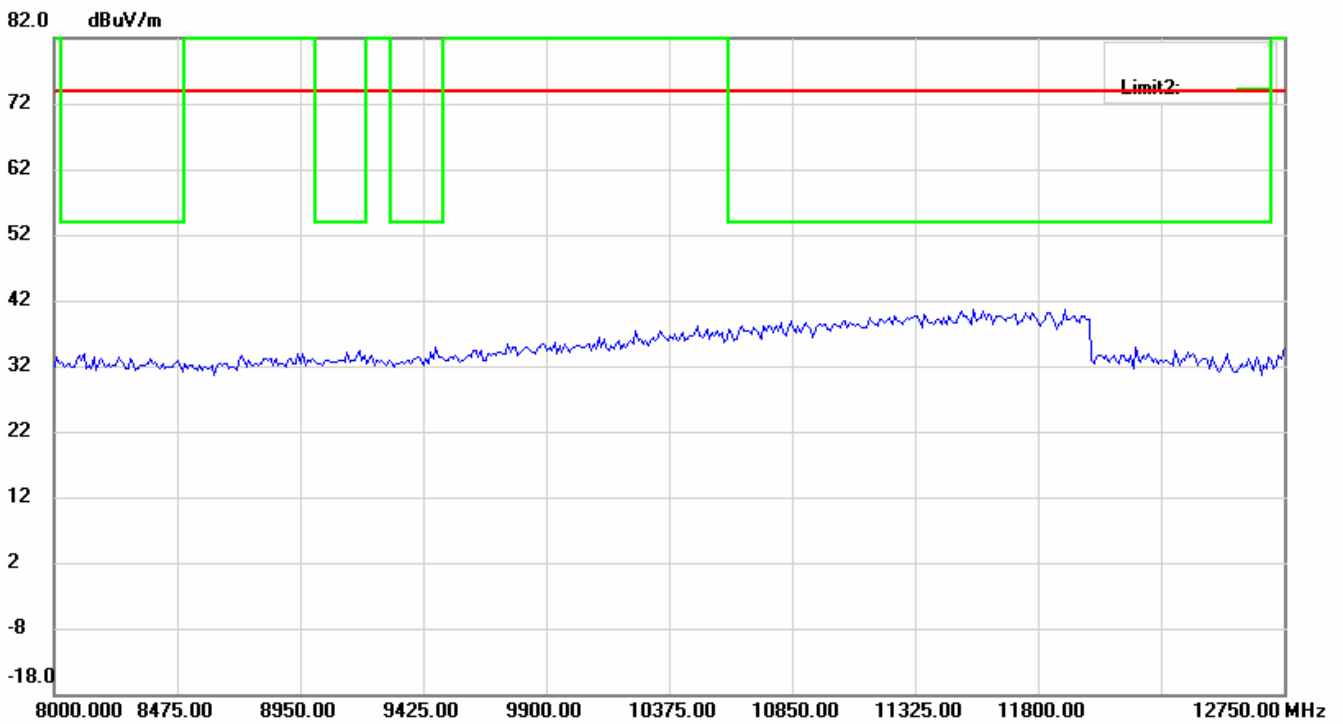
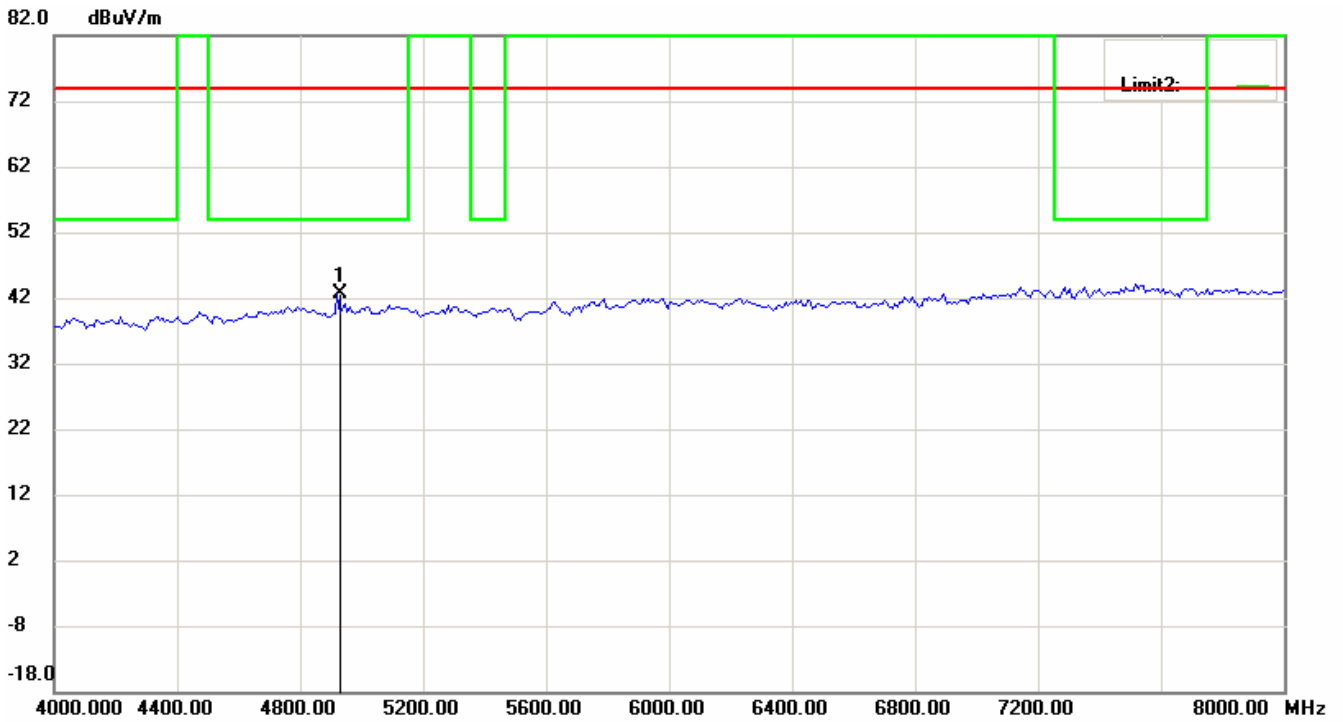
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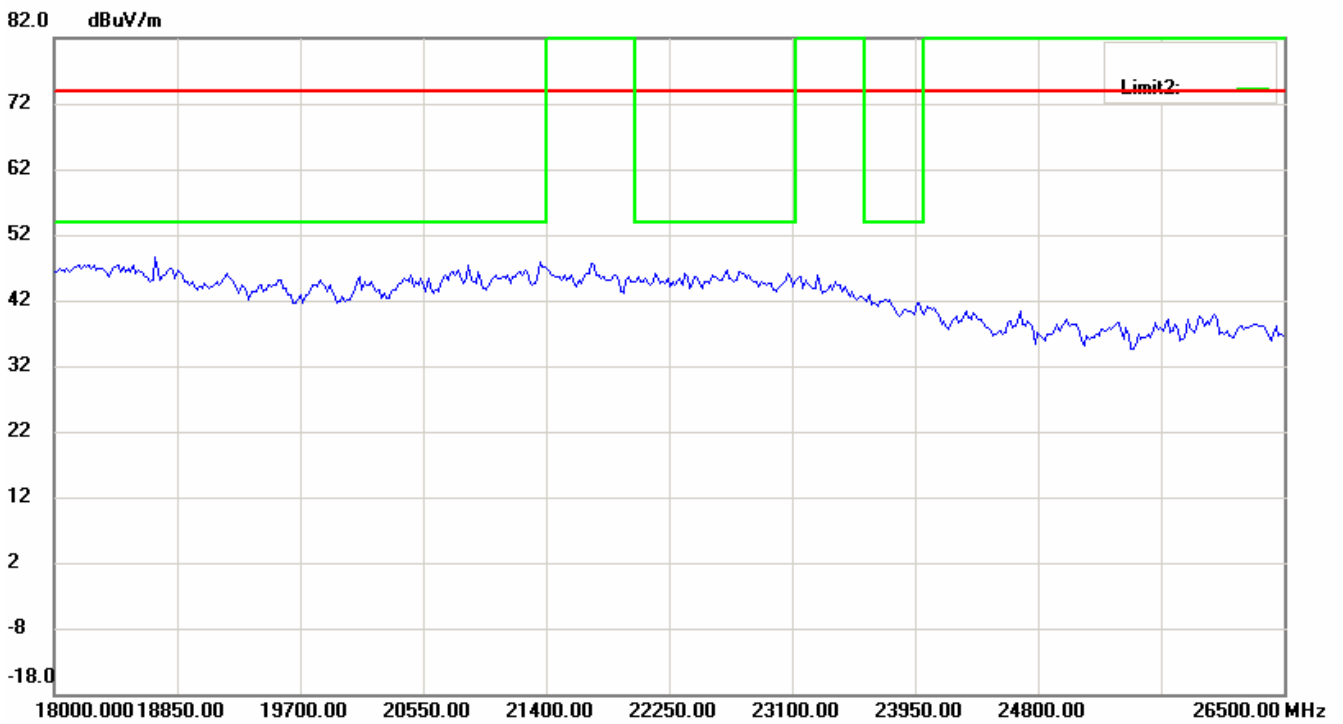
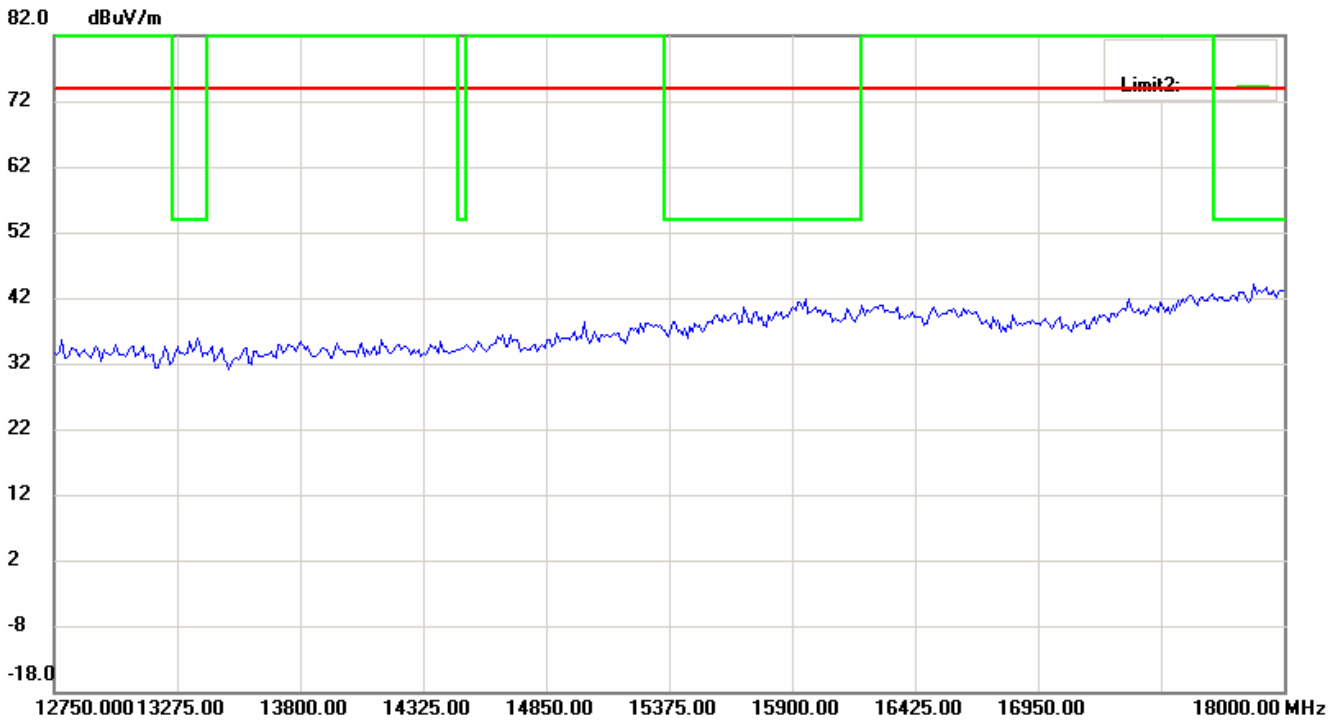
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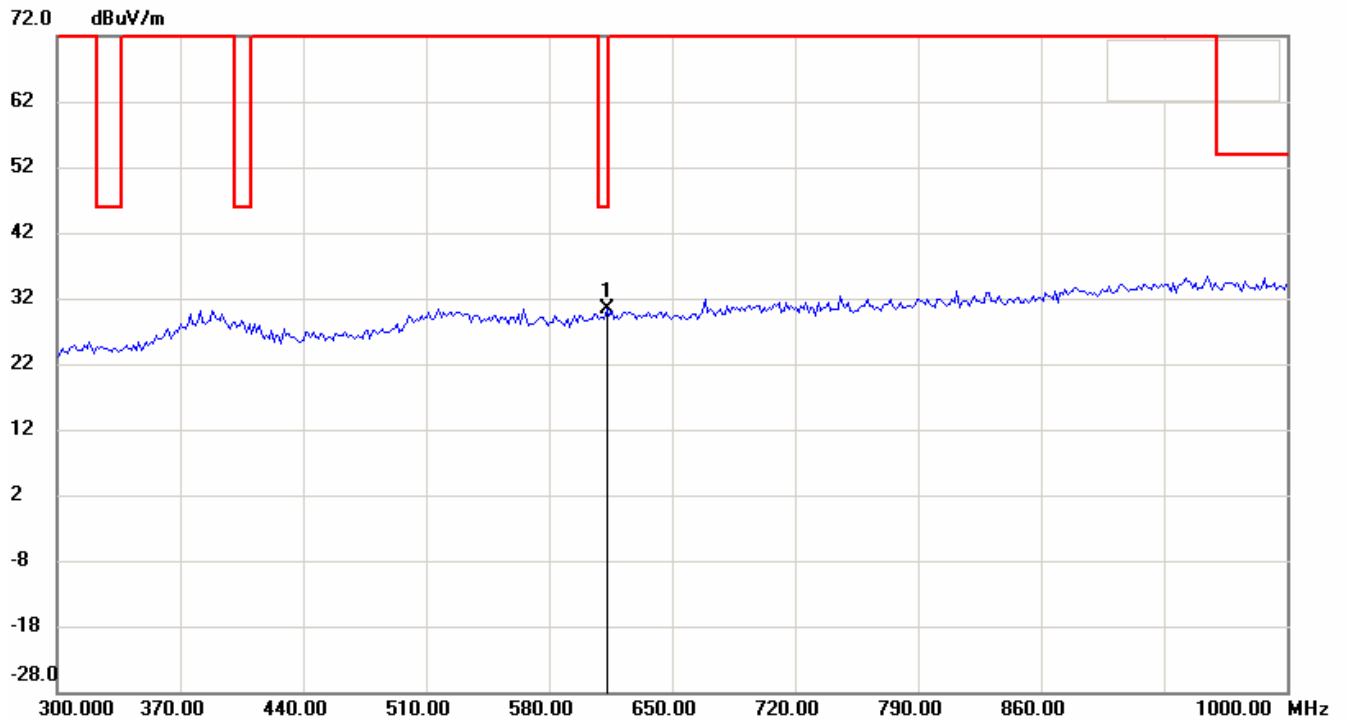
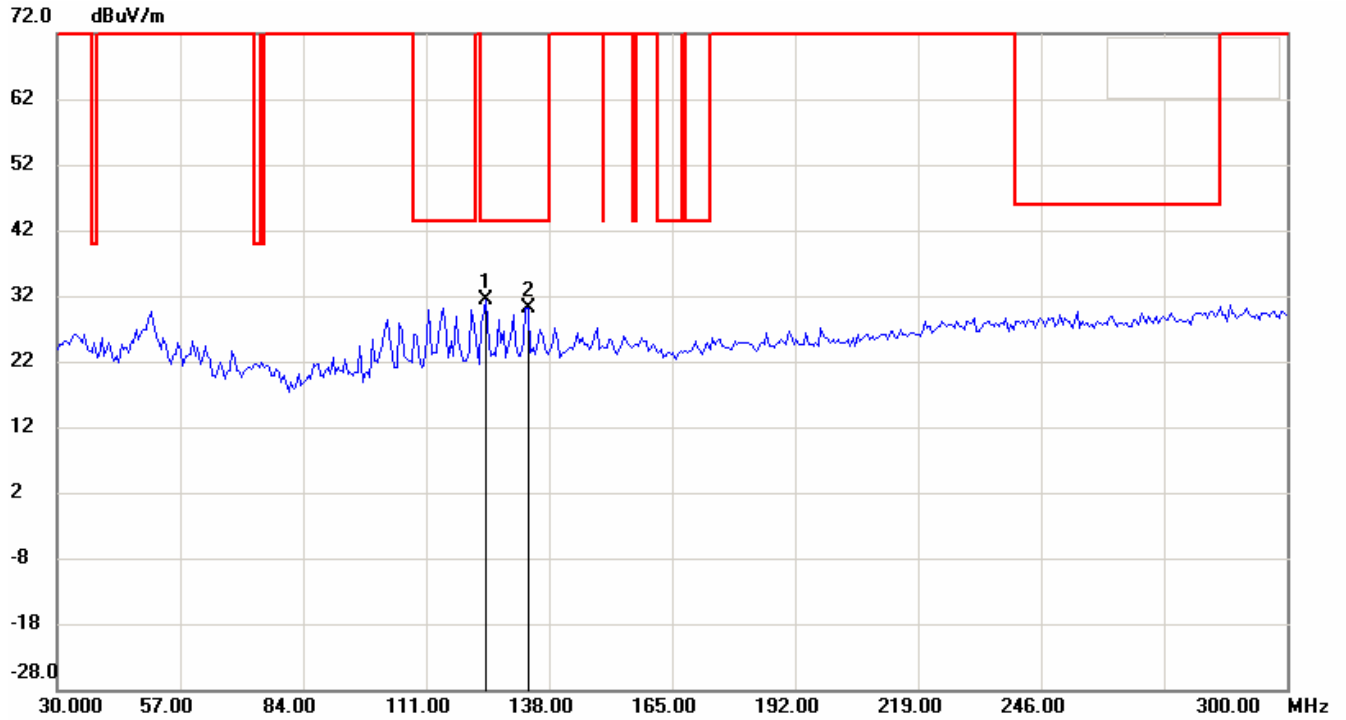


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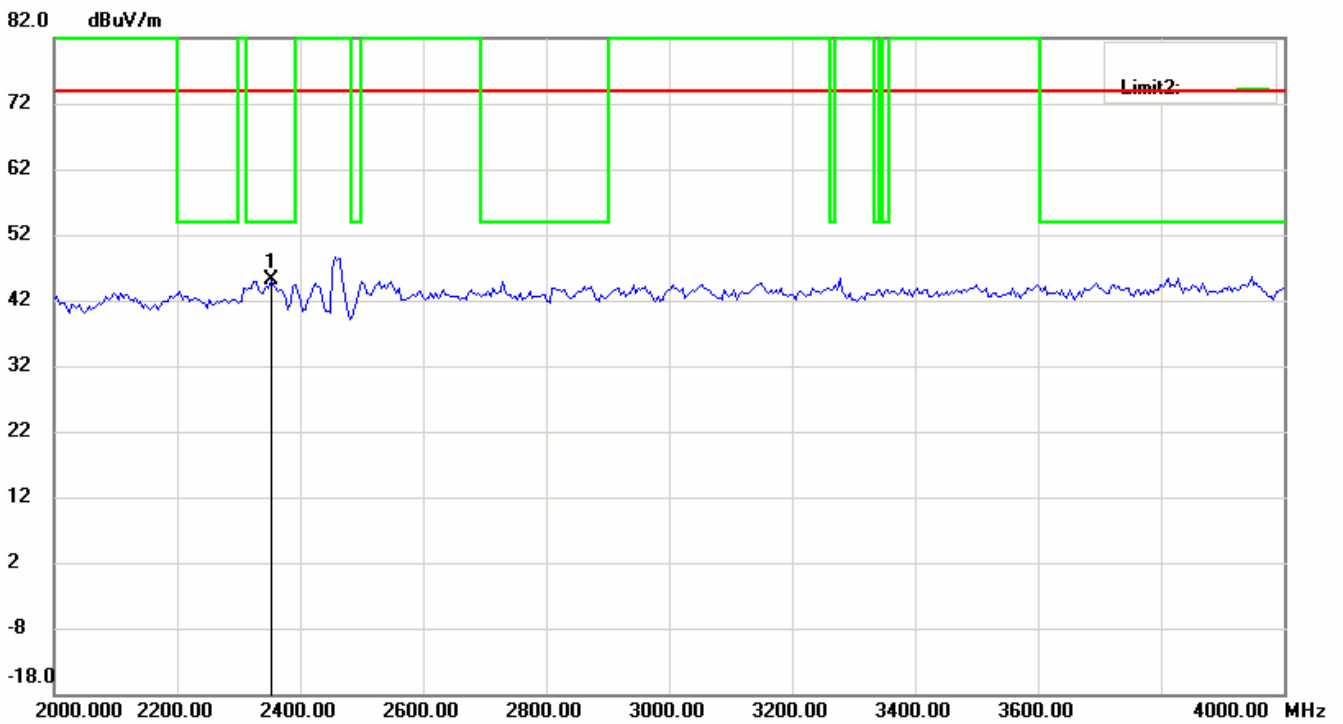
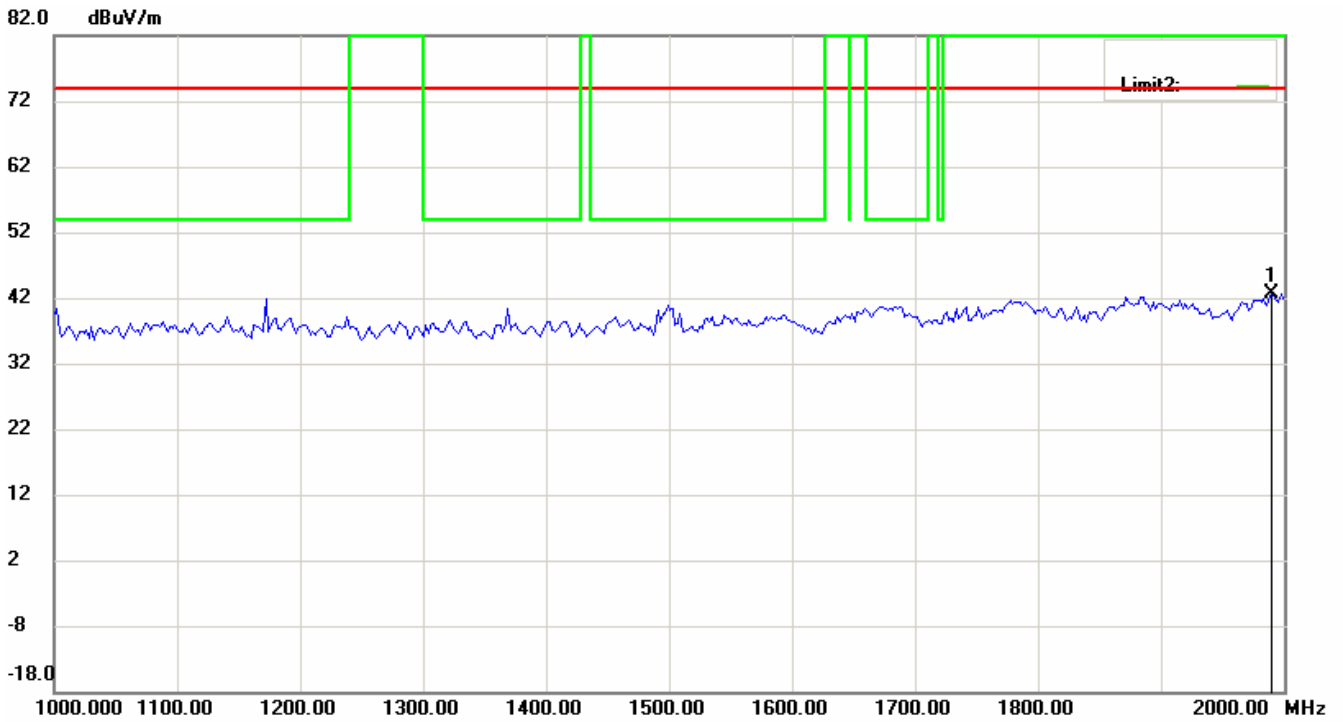


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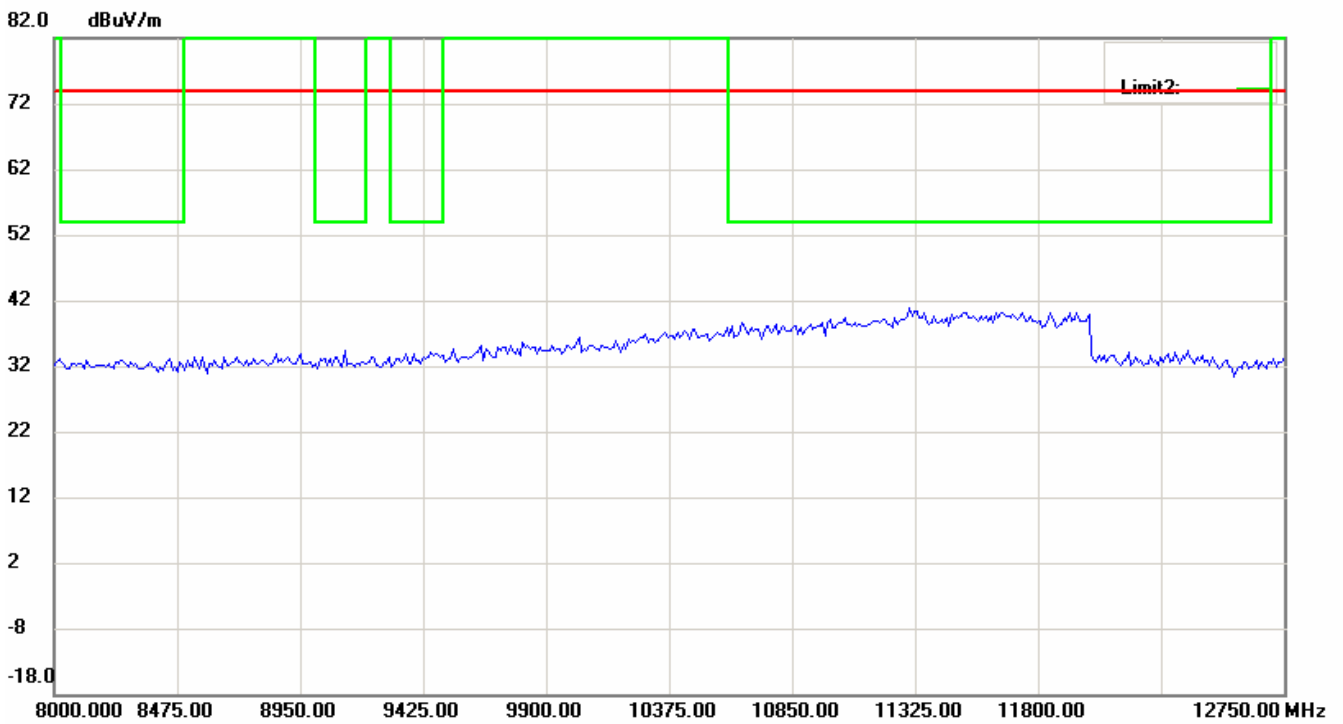
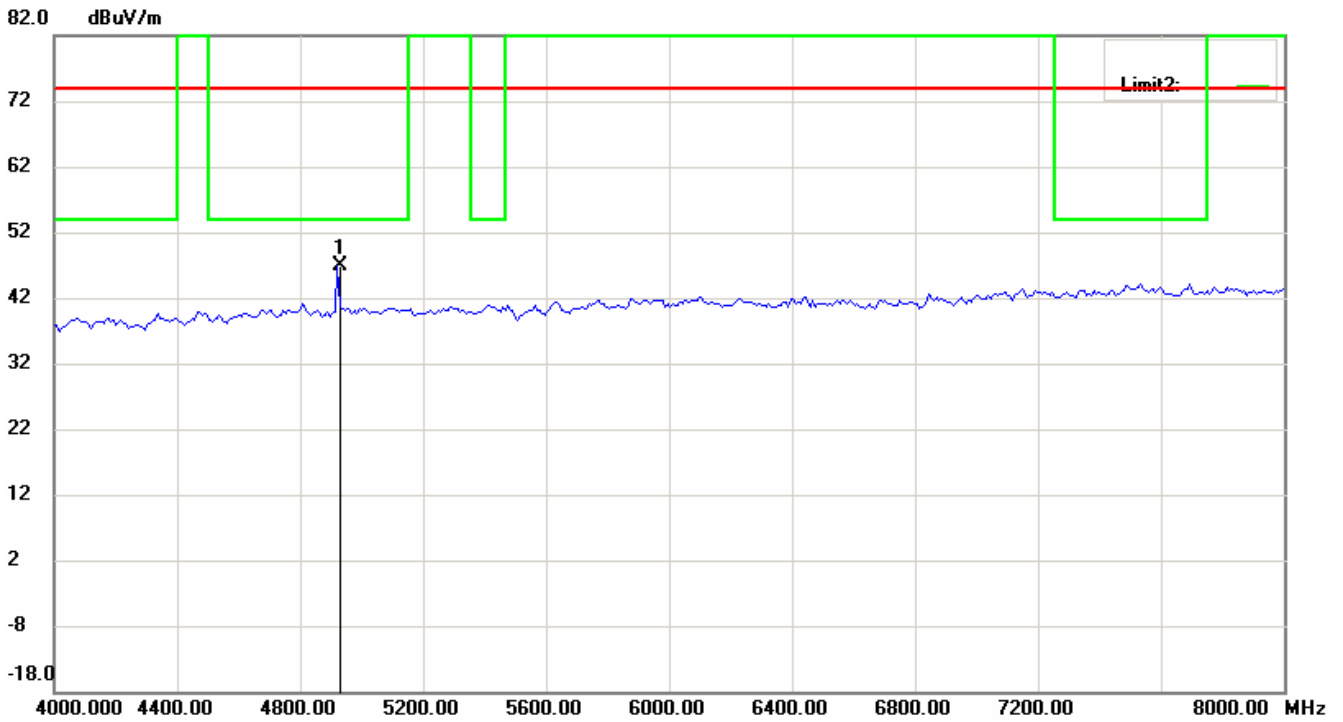
Antenna Polarization V



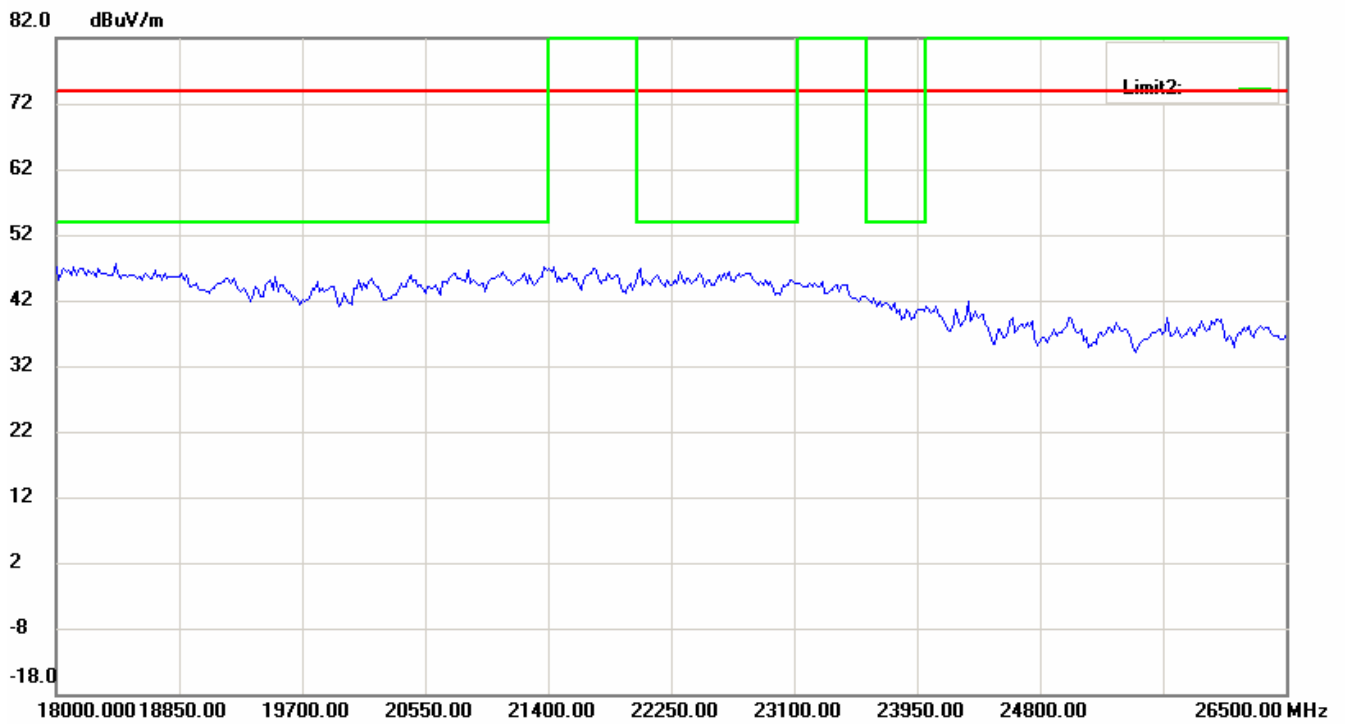
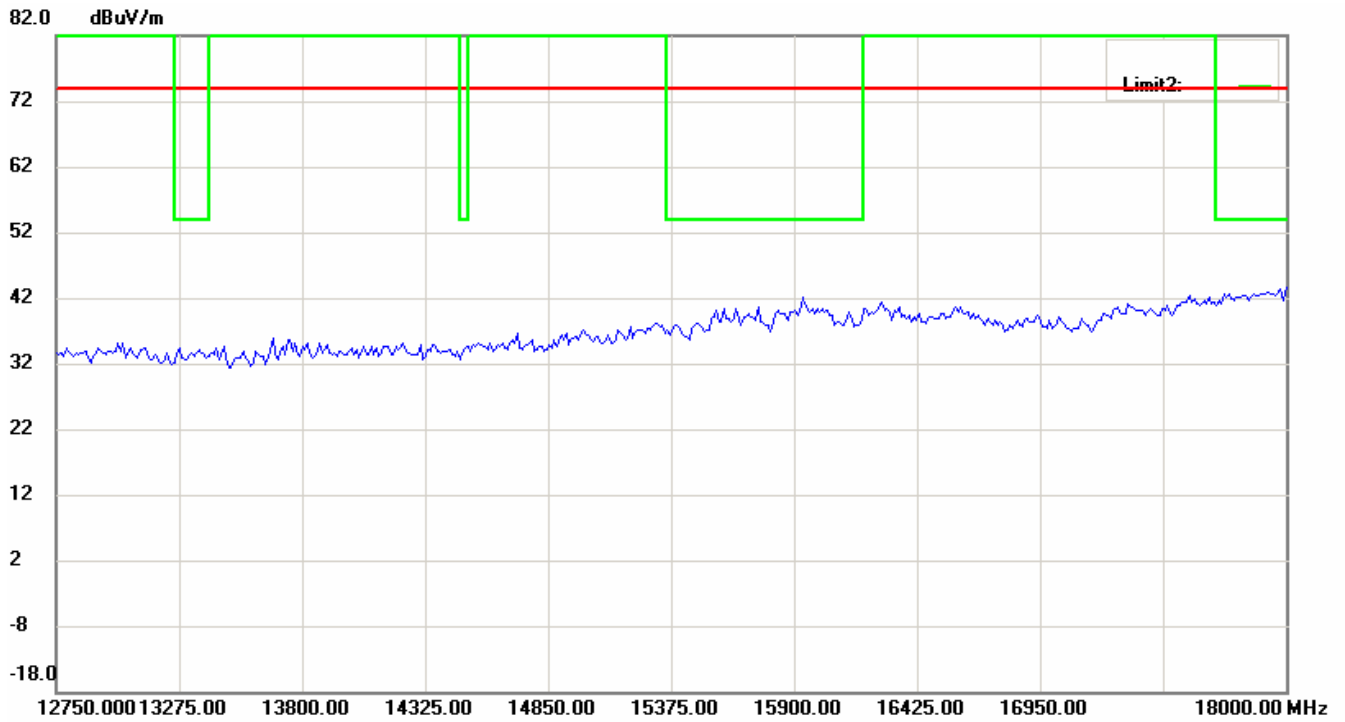
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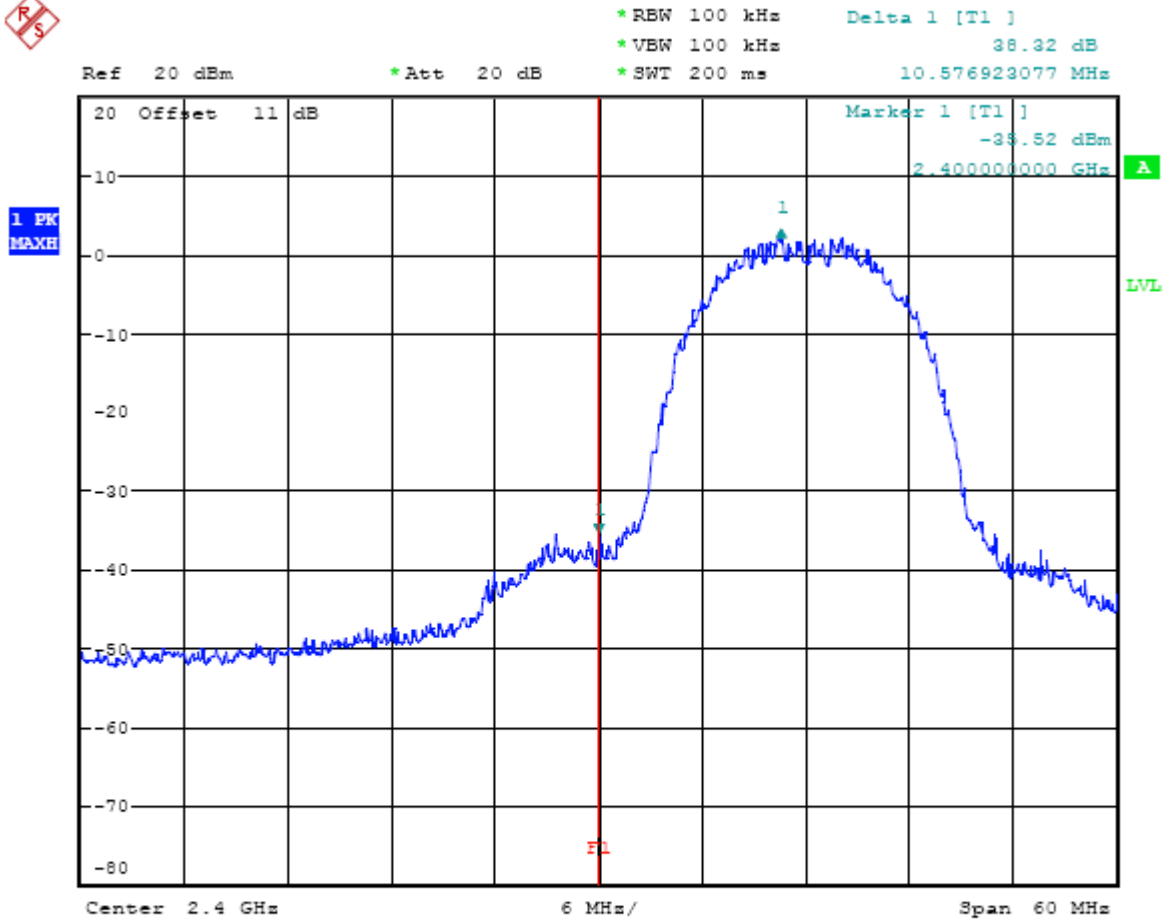
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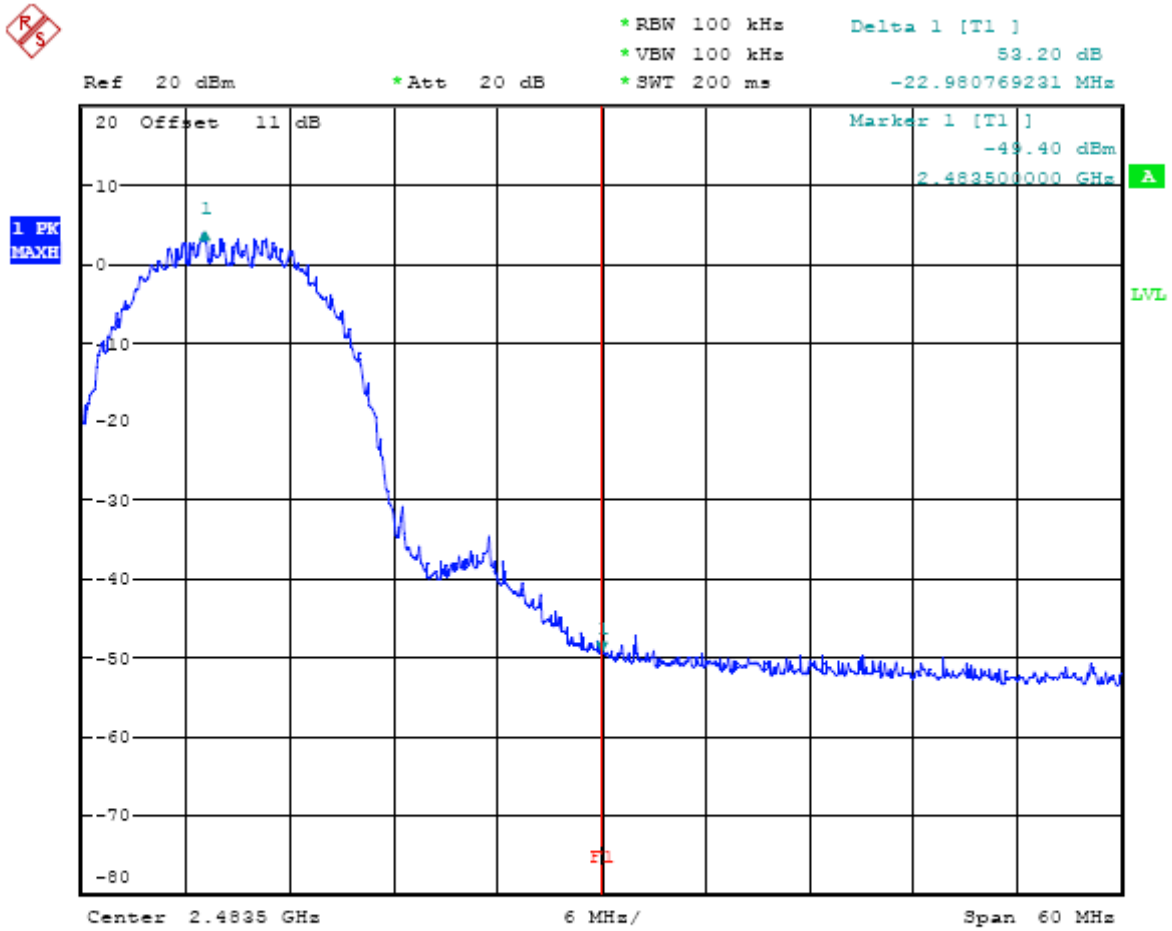


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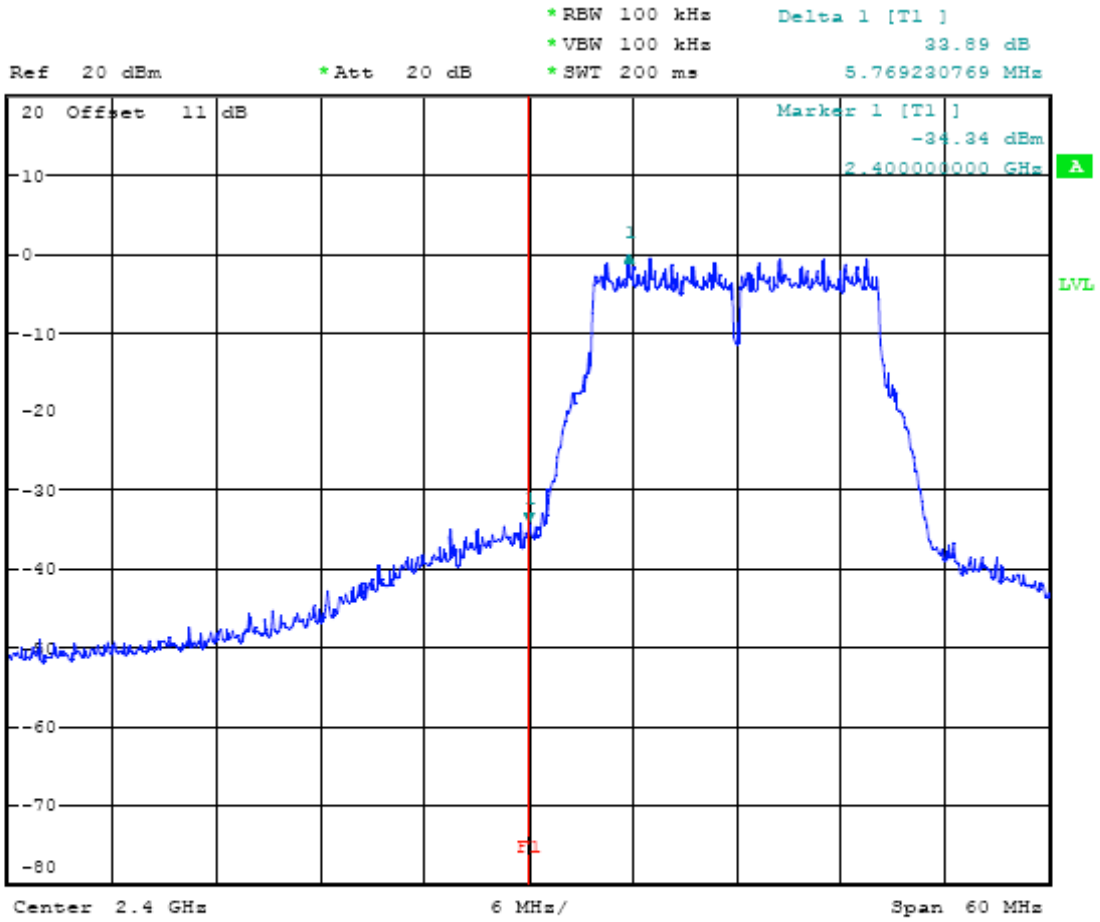
BANDEDGE 802.11b CH1
Date: 18.JUL.2007 20:15:16

Registration number: W6M20707-8291-C-1
FCC ID: RPW-WIGO800I



BANDEDGE 802.11b CH11
Date: 18.JUL.2007 20:14:45

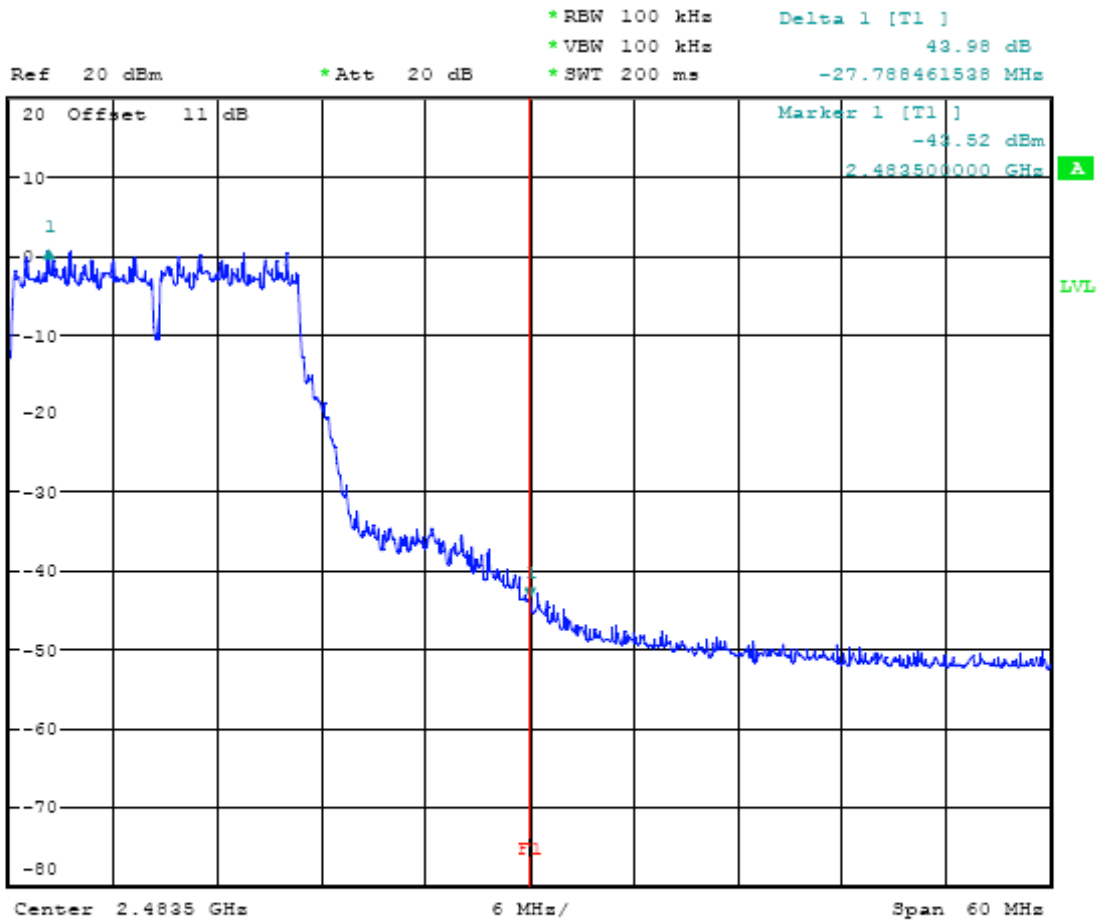
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FCC ID: RPW-WIGO800I



BANDEGE 802.11g CH1

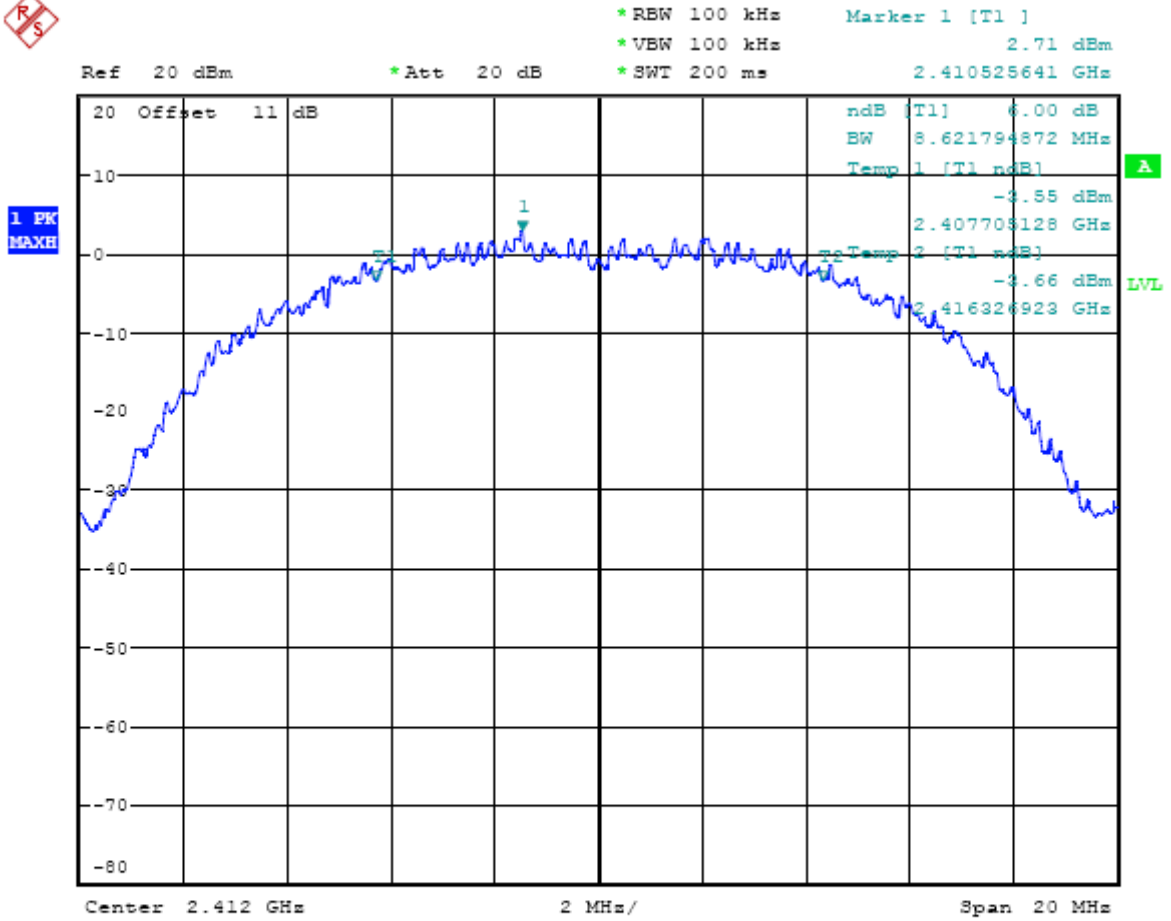
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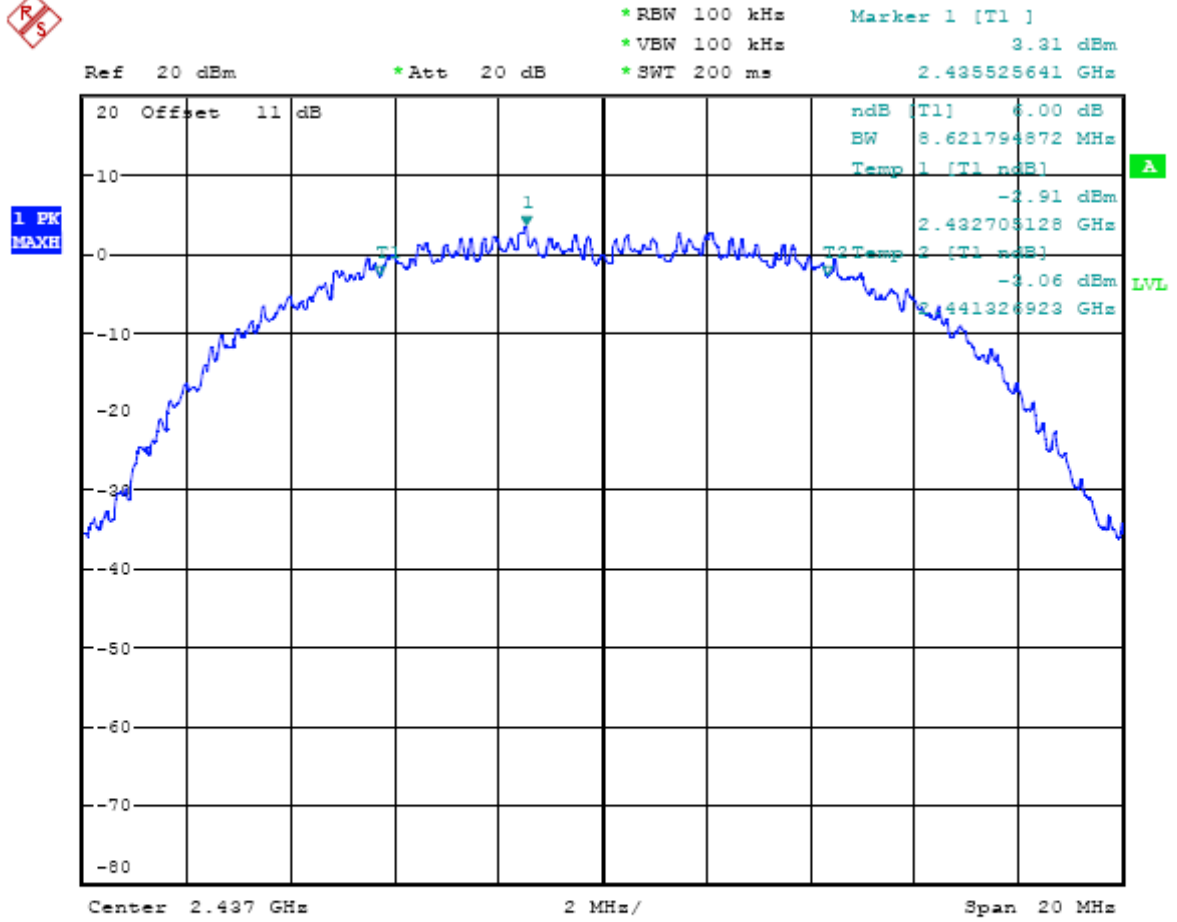
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Registration number: W6M20707-8291-C-1
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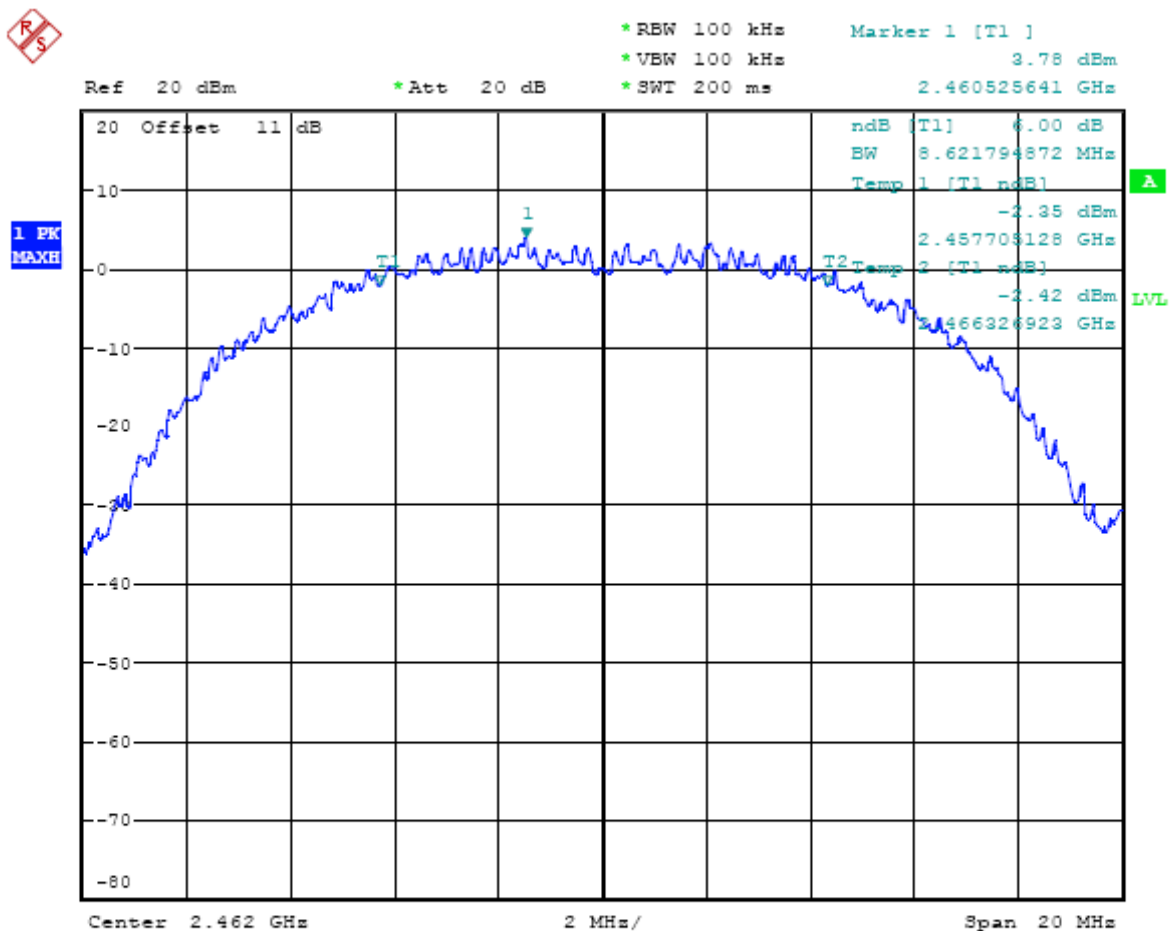
6DB BANDWIDTH 802.11b CH1
 Date: 18.JUL.2007 20:17:51

Registration number: W6M20707-8291-C-1
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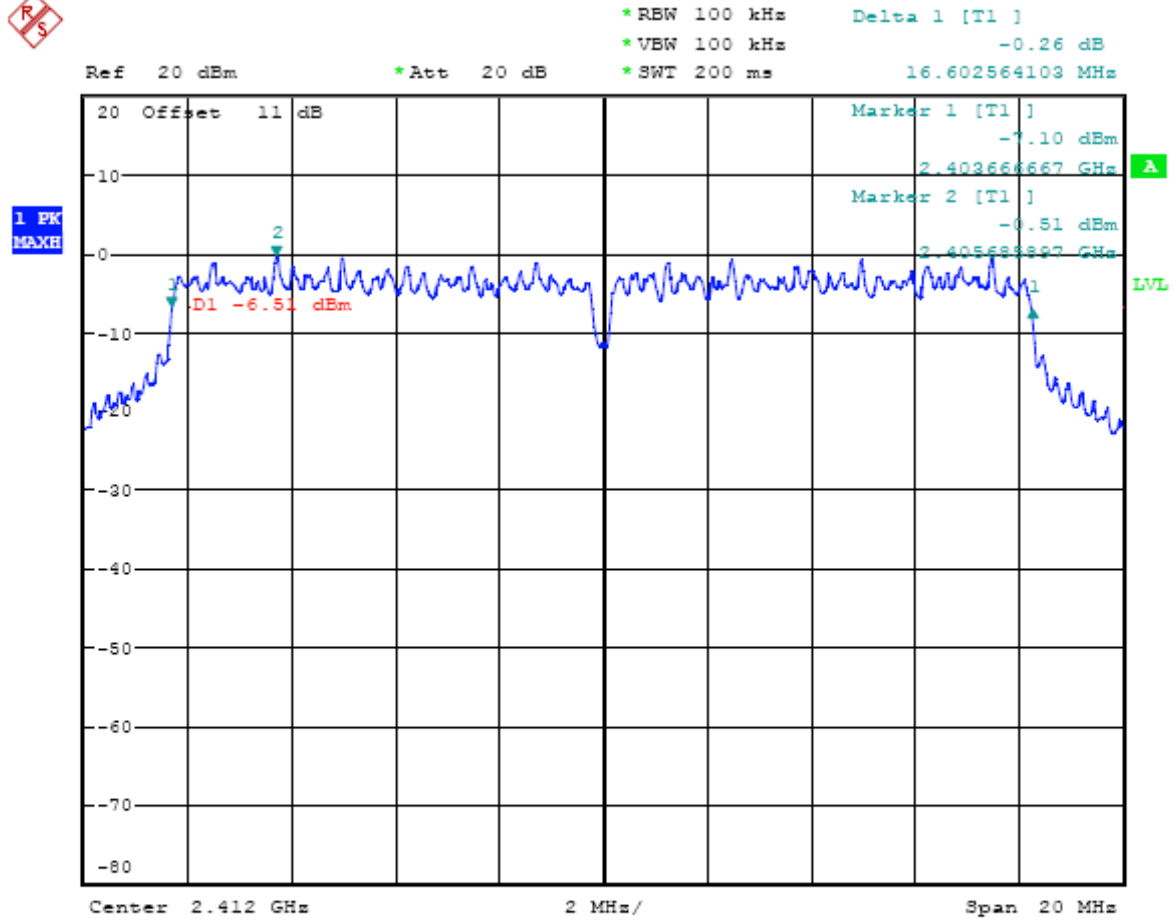
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 Date: 18.JUL.2007 20:18:19

Registration number: W6M20707-8291-C-1
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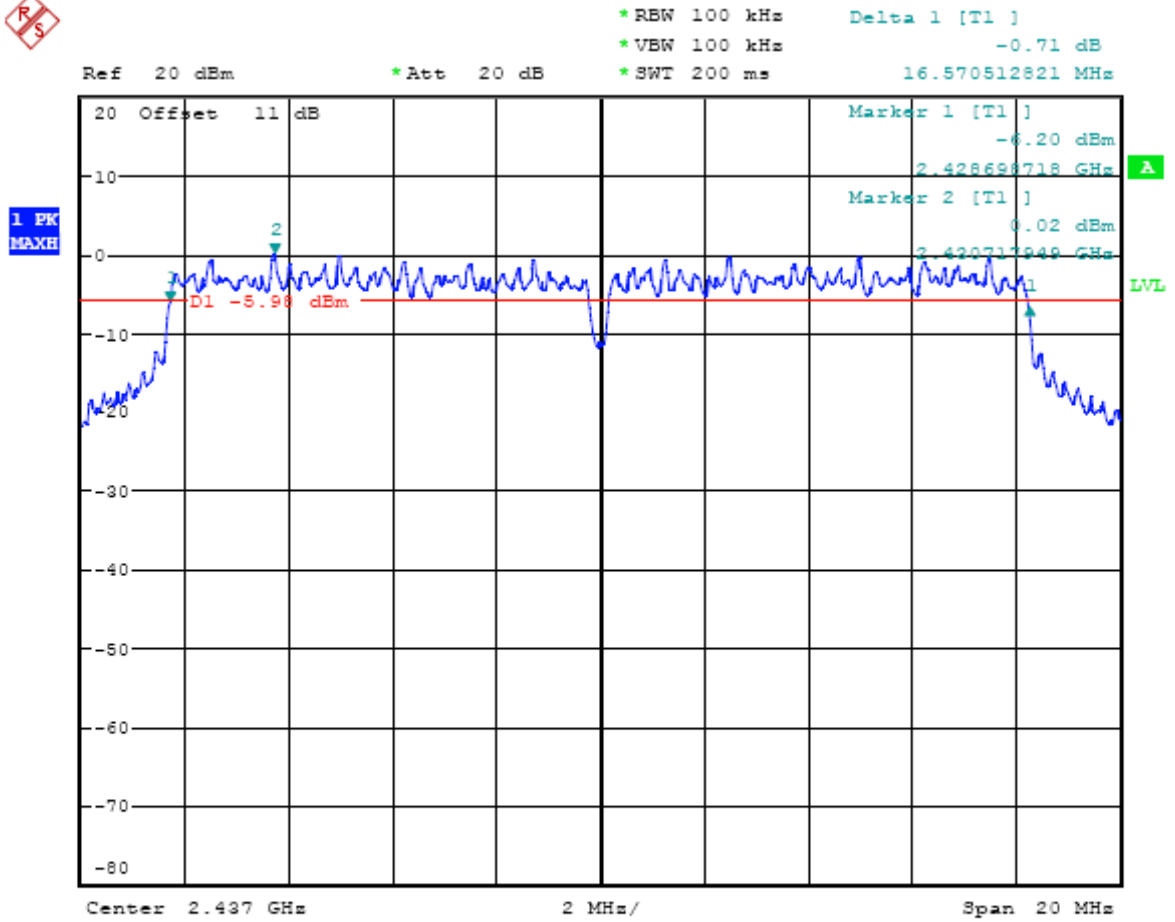
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 Date: 18.JUL.2007 20:18:43

Registration number: W6M20707-8291-C-1
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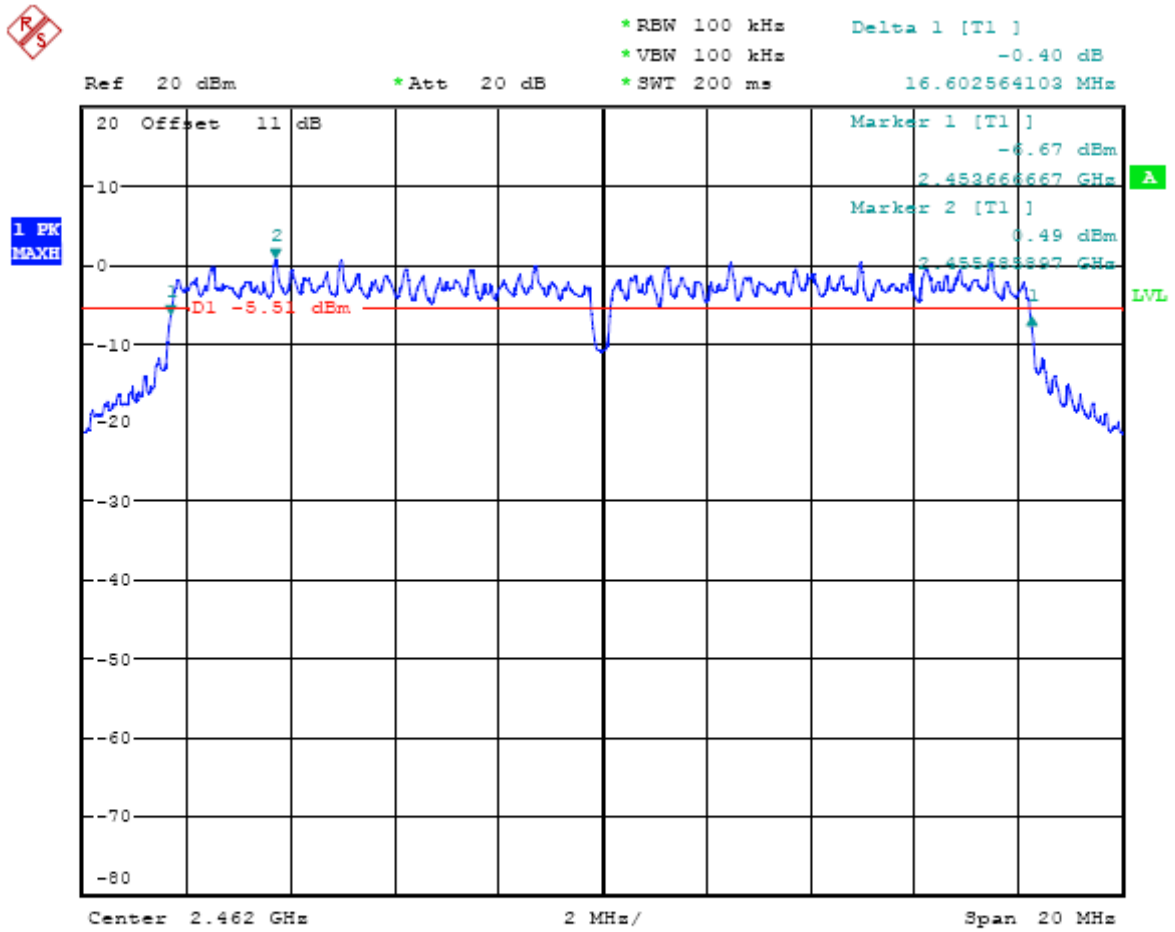
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Registration number: W6M20707-8291-C-1
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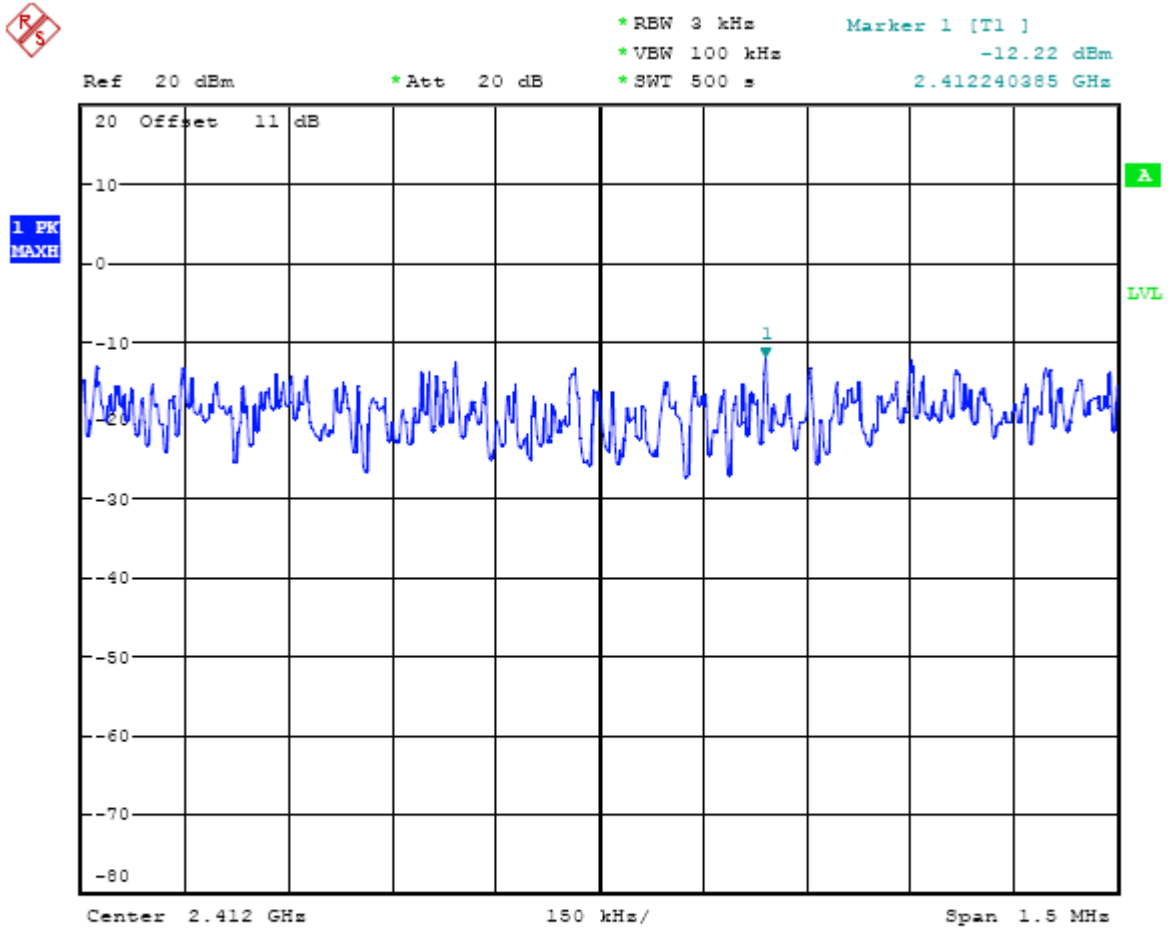
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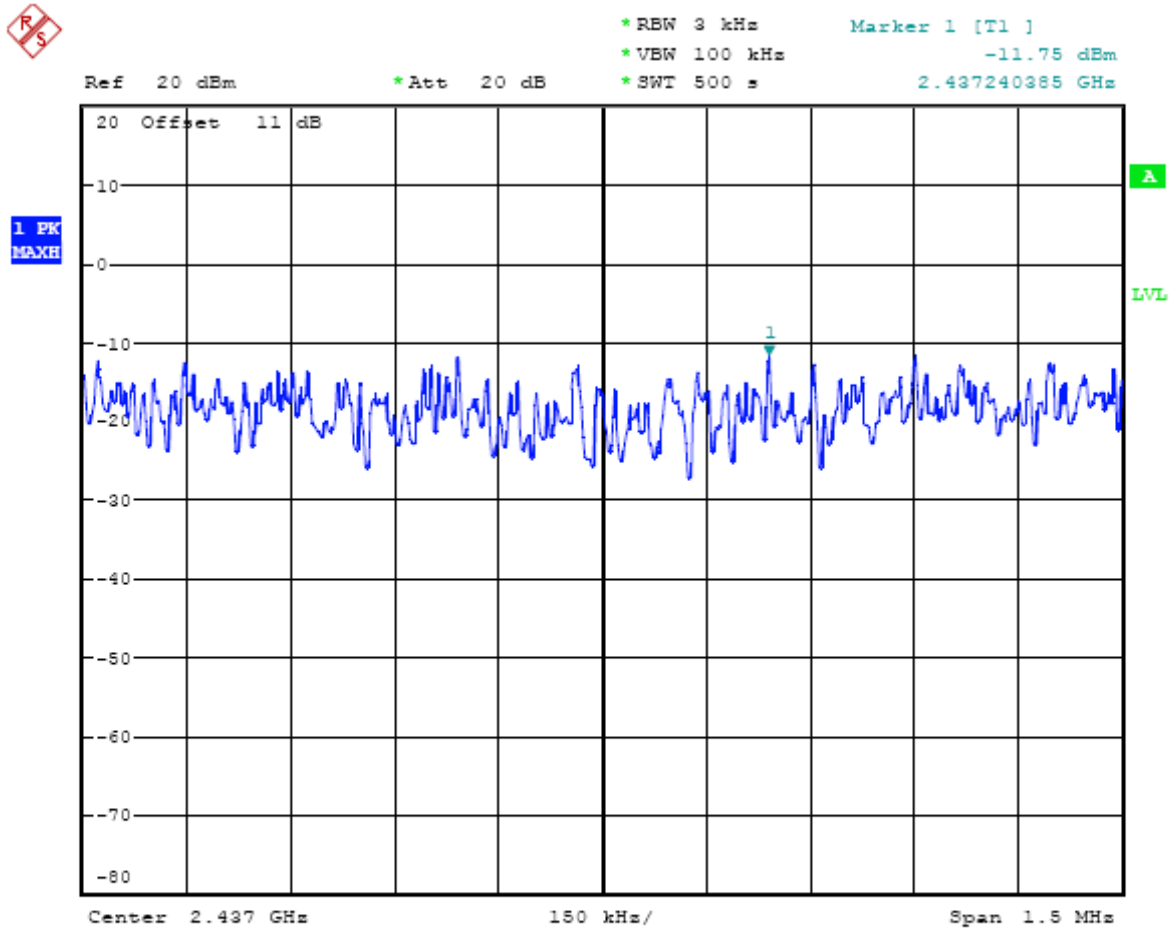
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 Date: 18.JUL.2007 20:19:44

Registration number: W6M20707-8291-C-1
FCC ID: RPW-WIGO800I



POWER DENSITY 802.11b CH1
Date: 18.JUL.2007 20:10:43

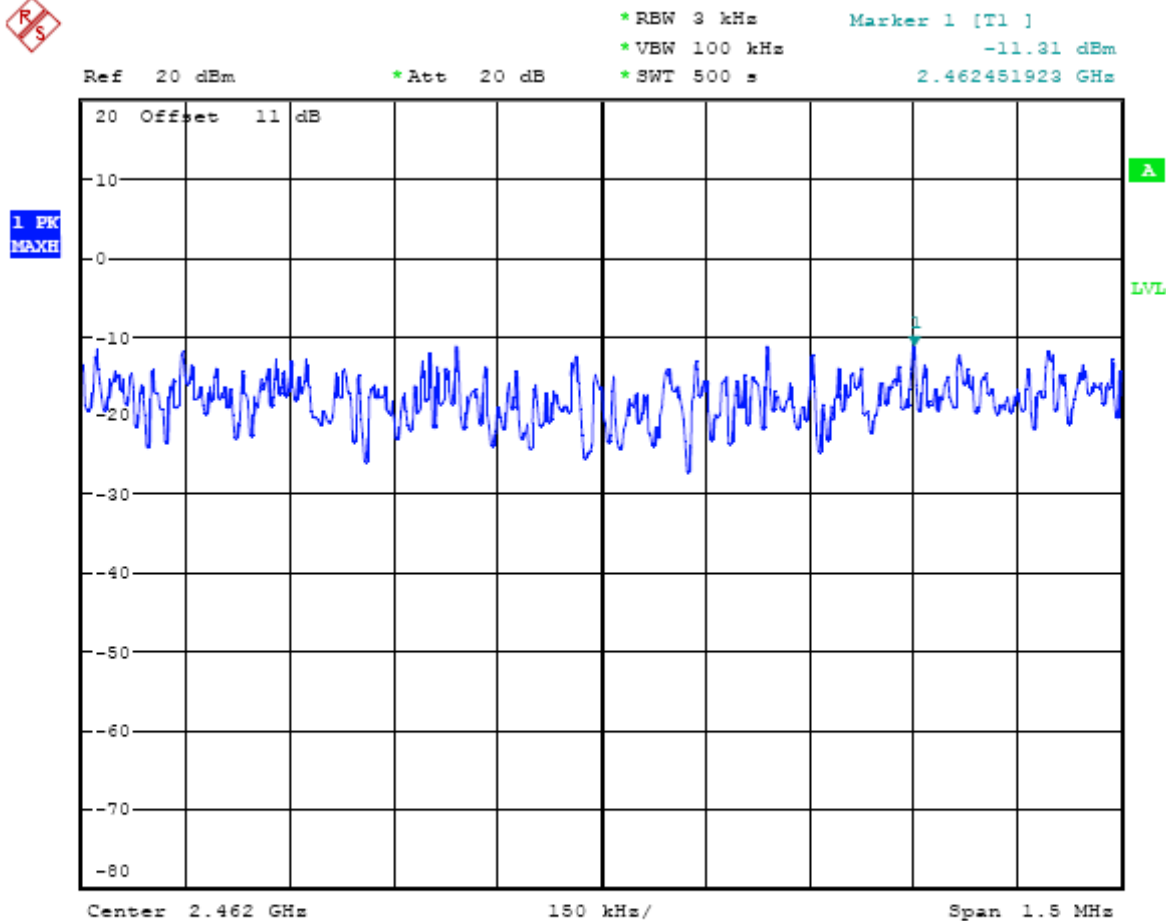
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FCC ID: RPW-WIGO800I



POWER DENSITY 802.11b CH6

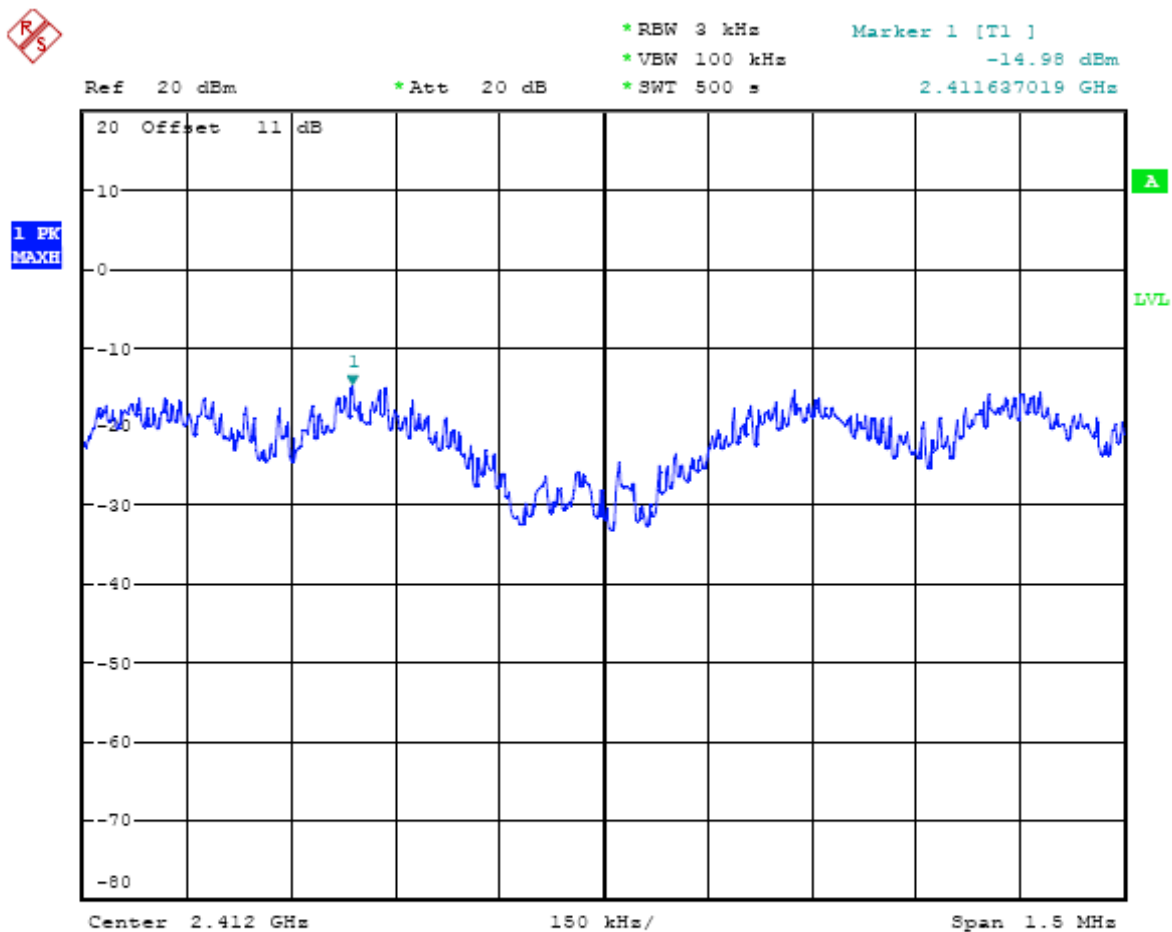
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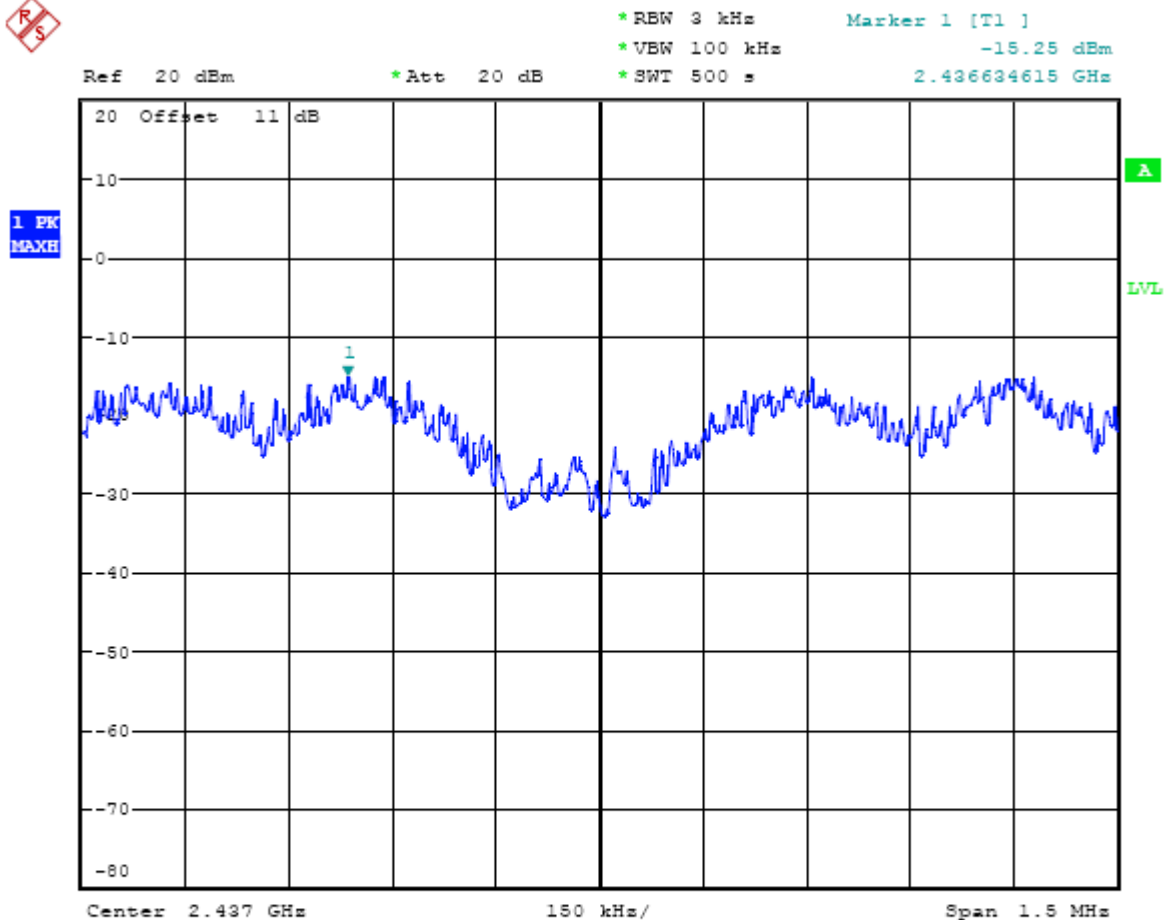
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Date: 18.JUL.2007 20:12:35

Registration number: W6M20707-8291-C-1
FCC ID: RPW-WIGO800I



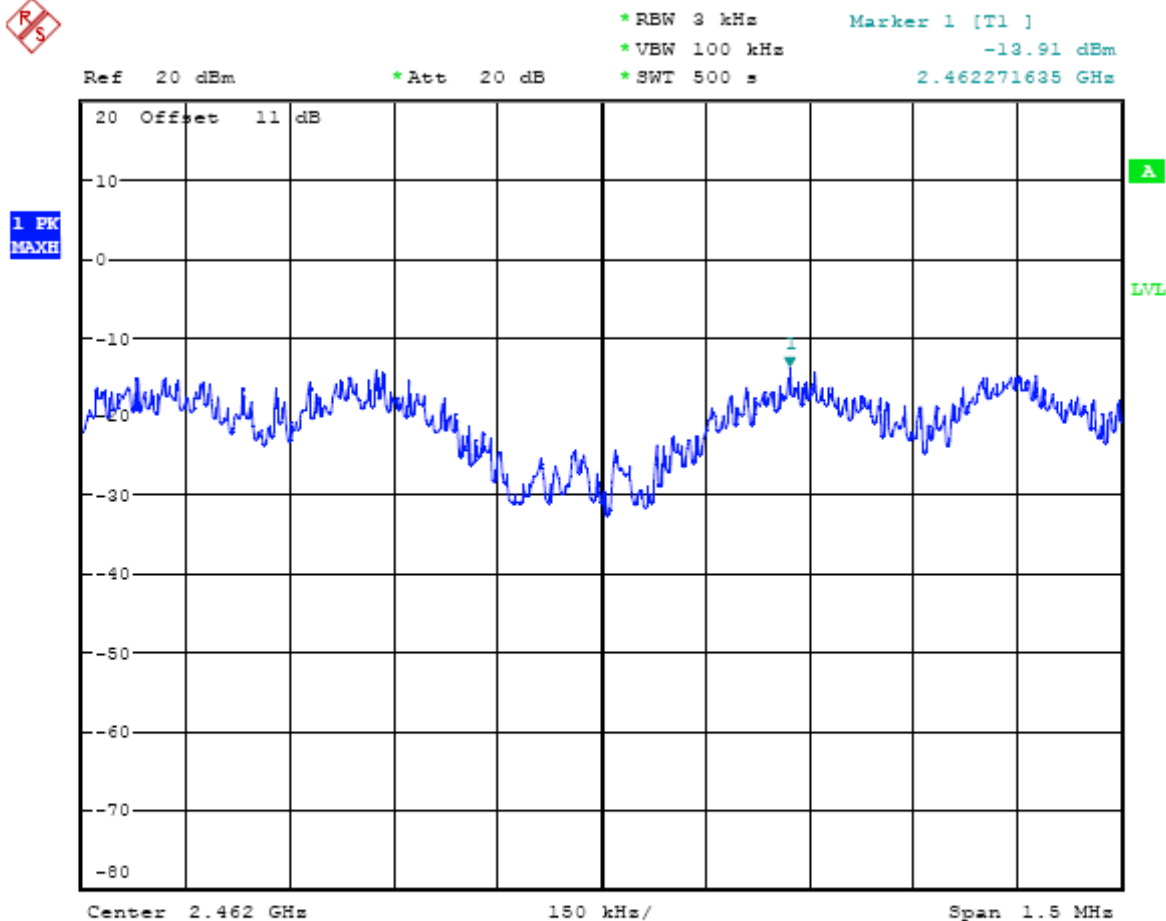
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Date: 18.JUL.2007 20:09:51

Registration number: W6M20707-8291-C-1
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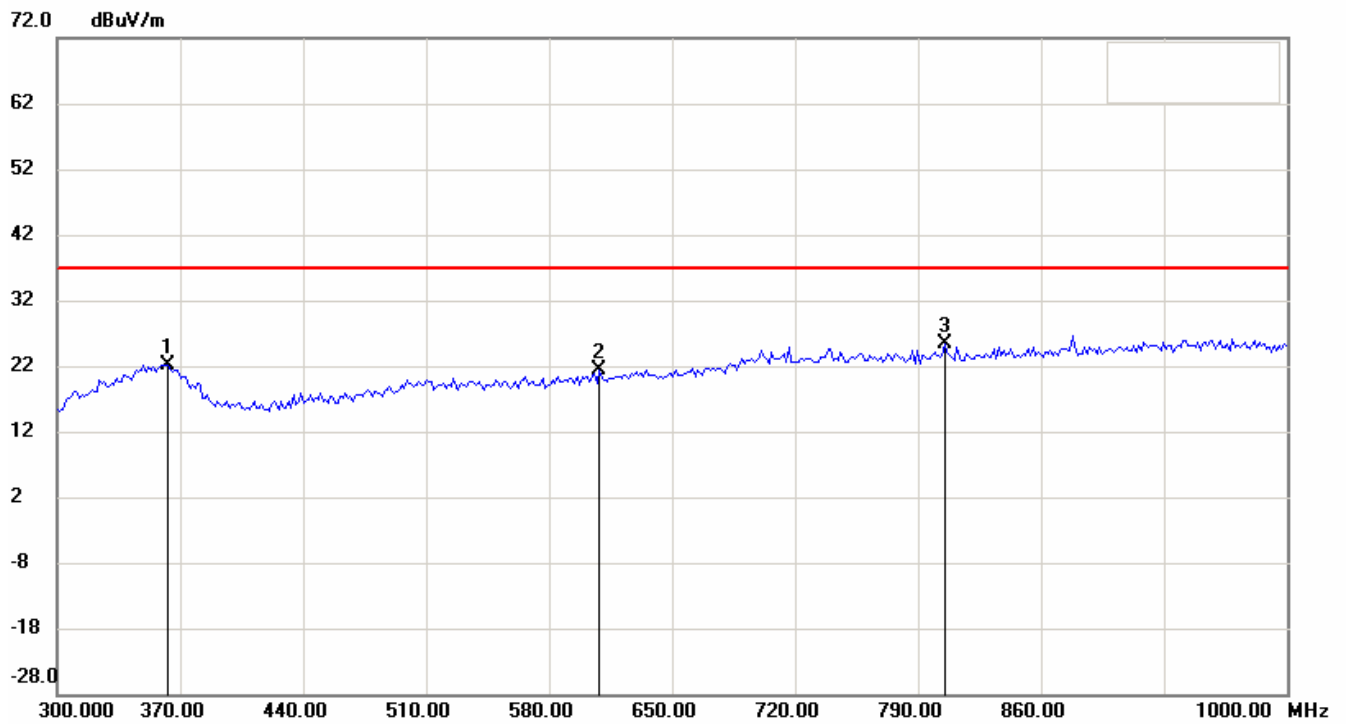
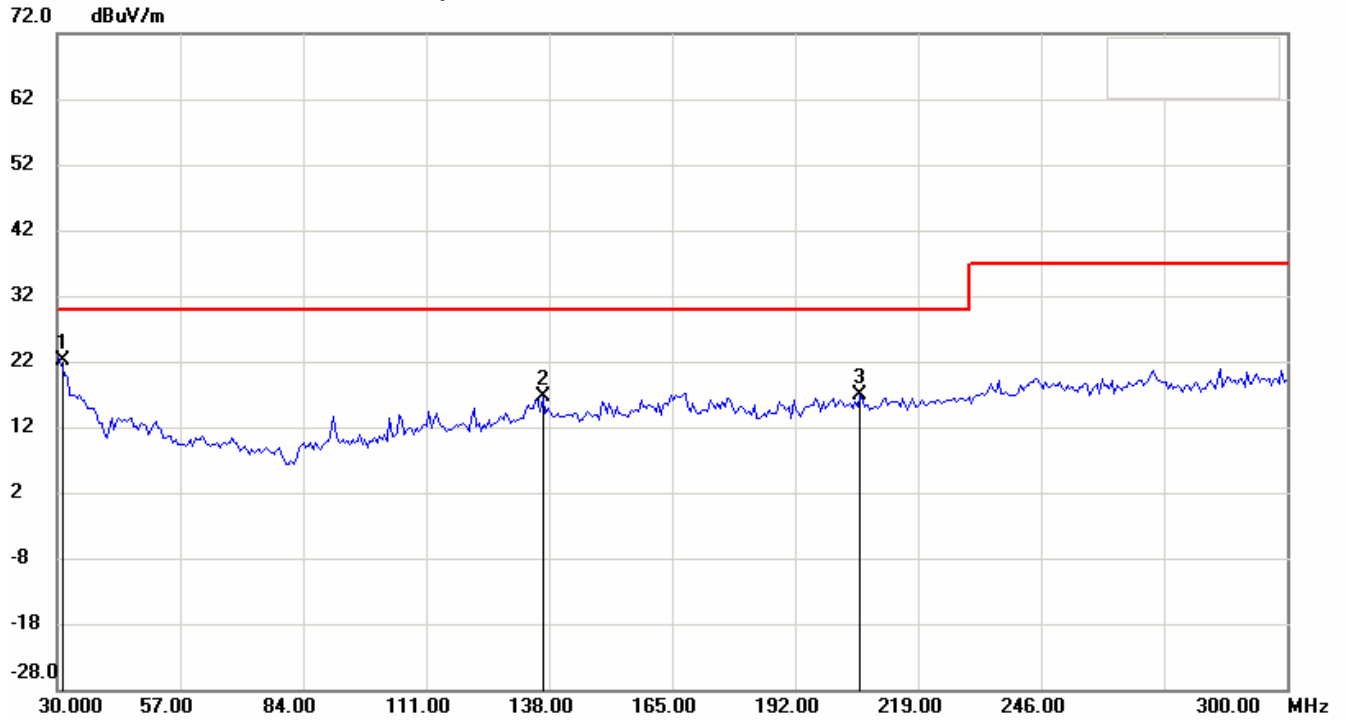
Registration number: W6M20707-8291-C-1
FCC ID: RPW-WIGO800I



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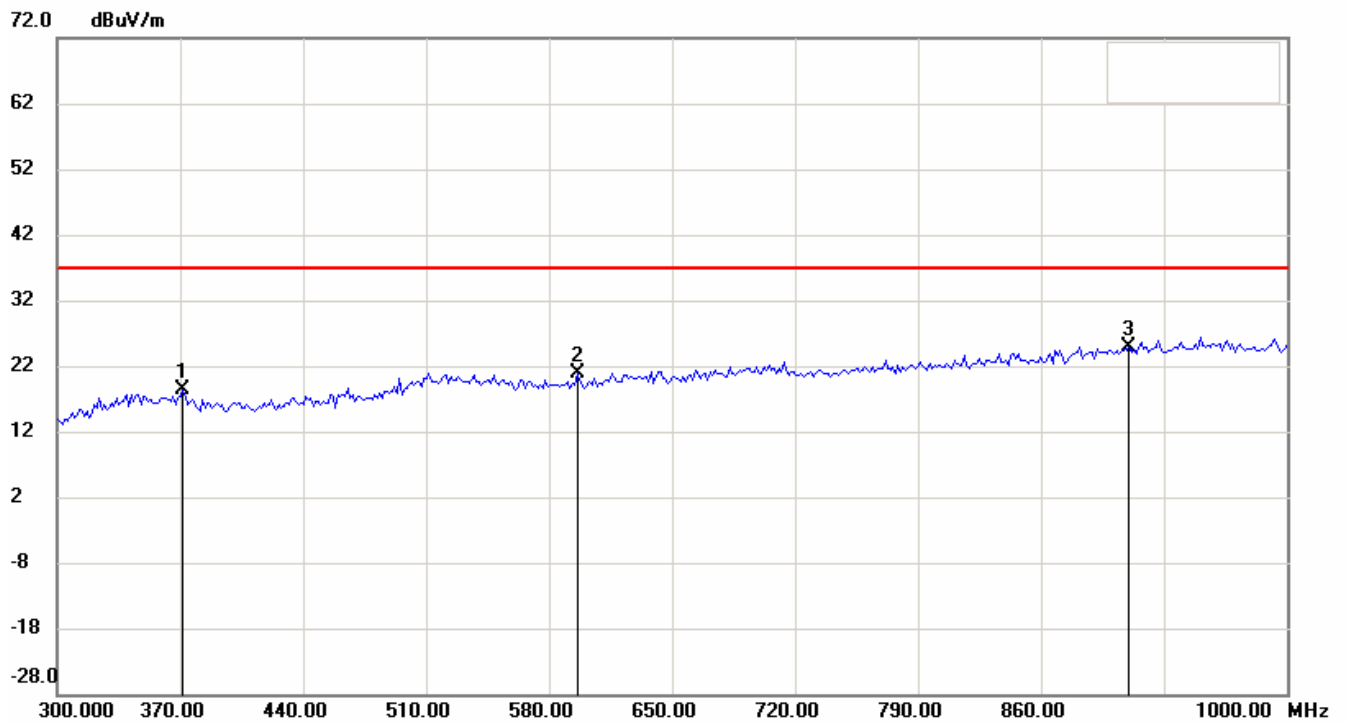
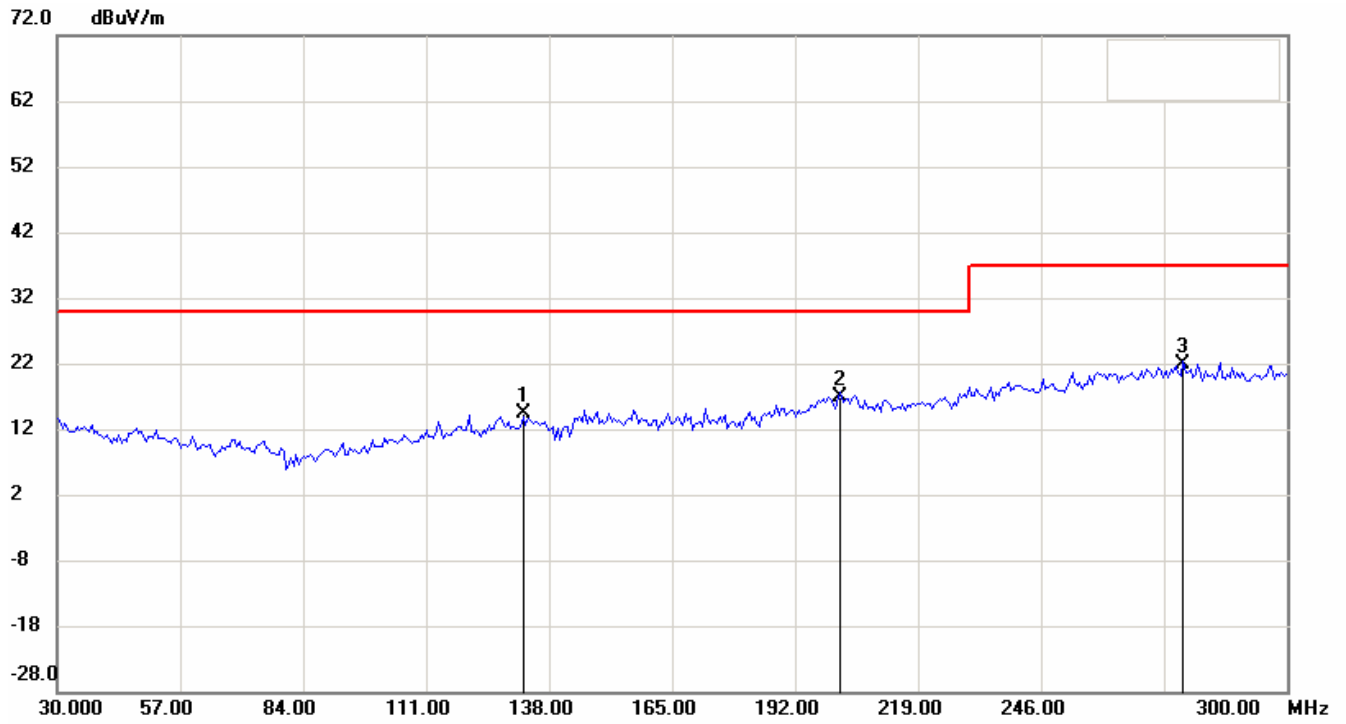
Registration number: W6M20707-8291-C-1
FCC ID: RPW-WIGO800I

Antenna Polarization H (Hynix mode)



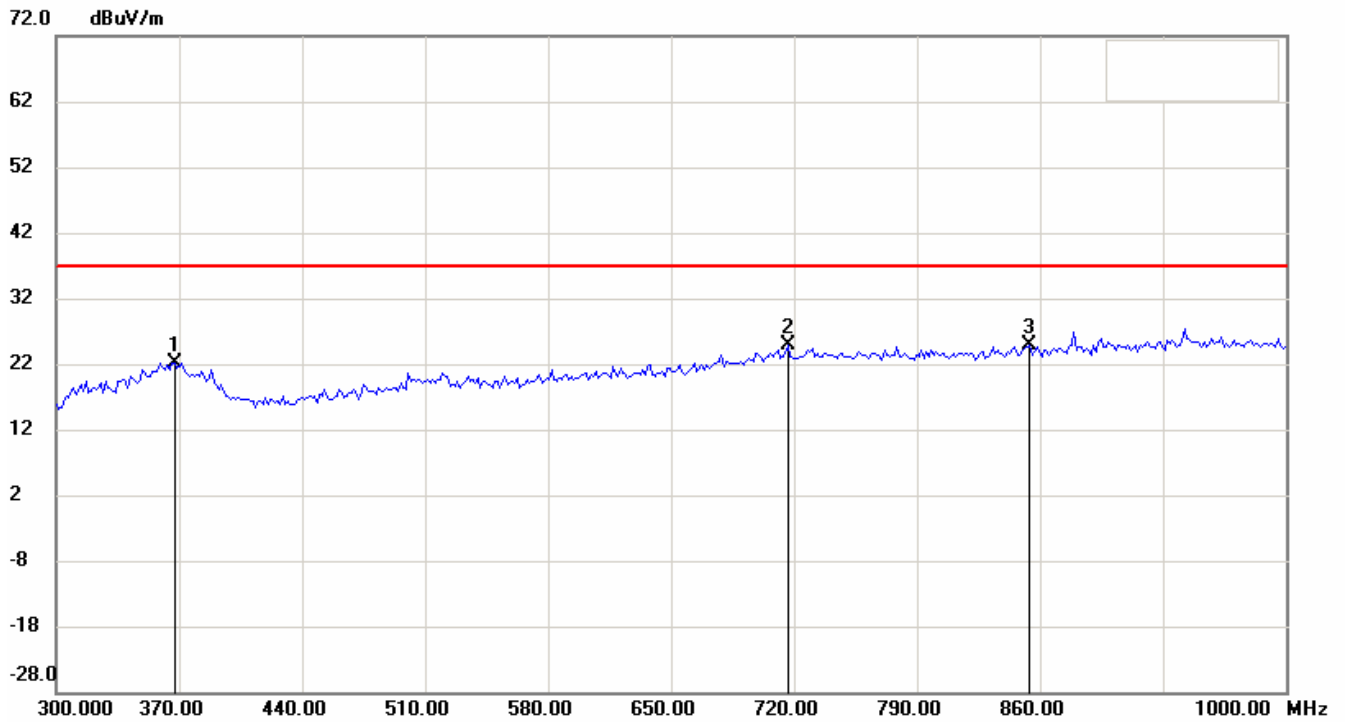
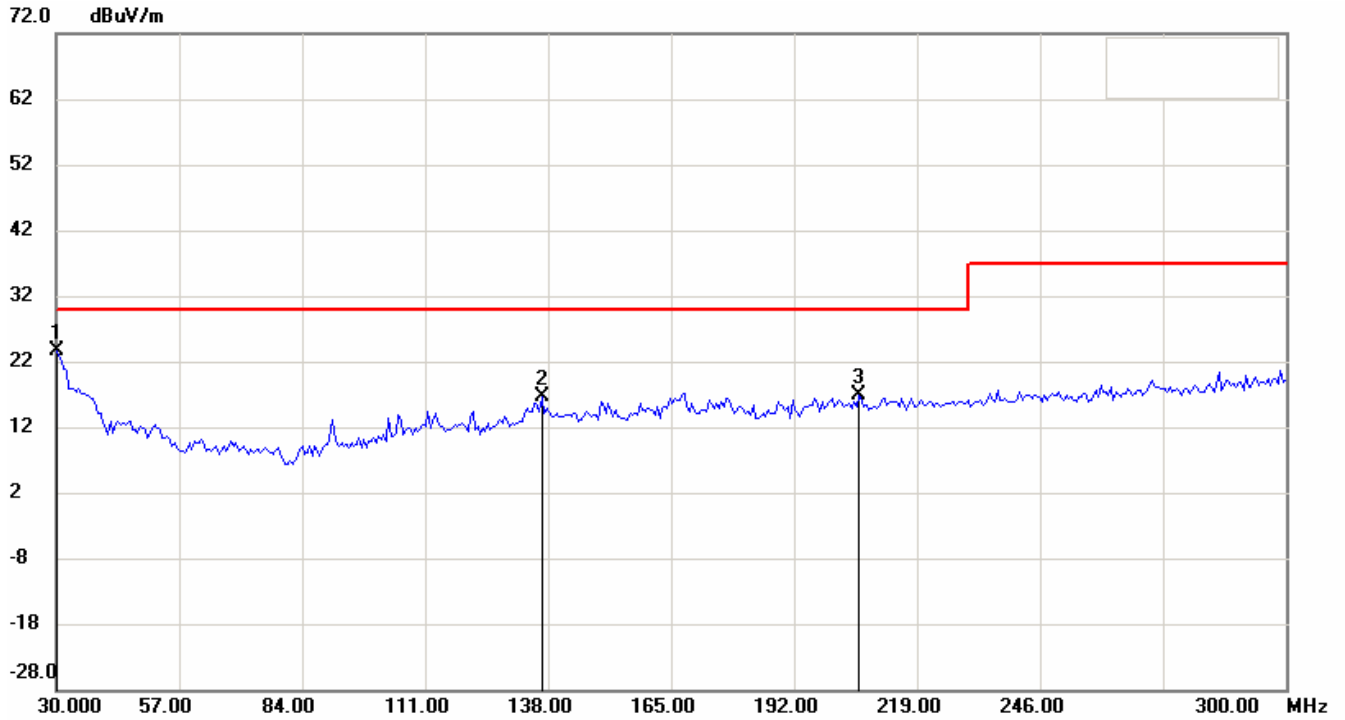
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FCC ID: RPW-WIGO800I

Antenna Polarization V



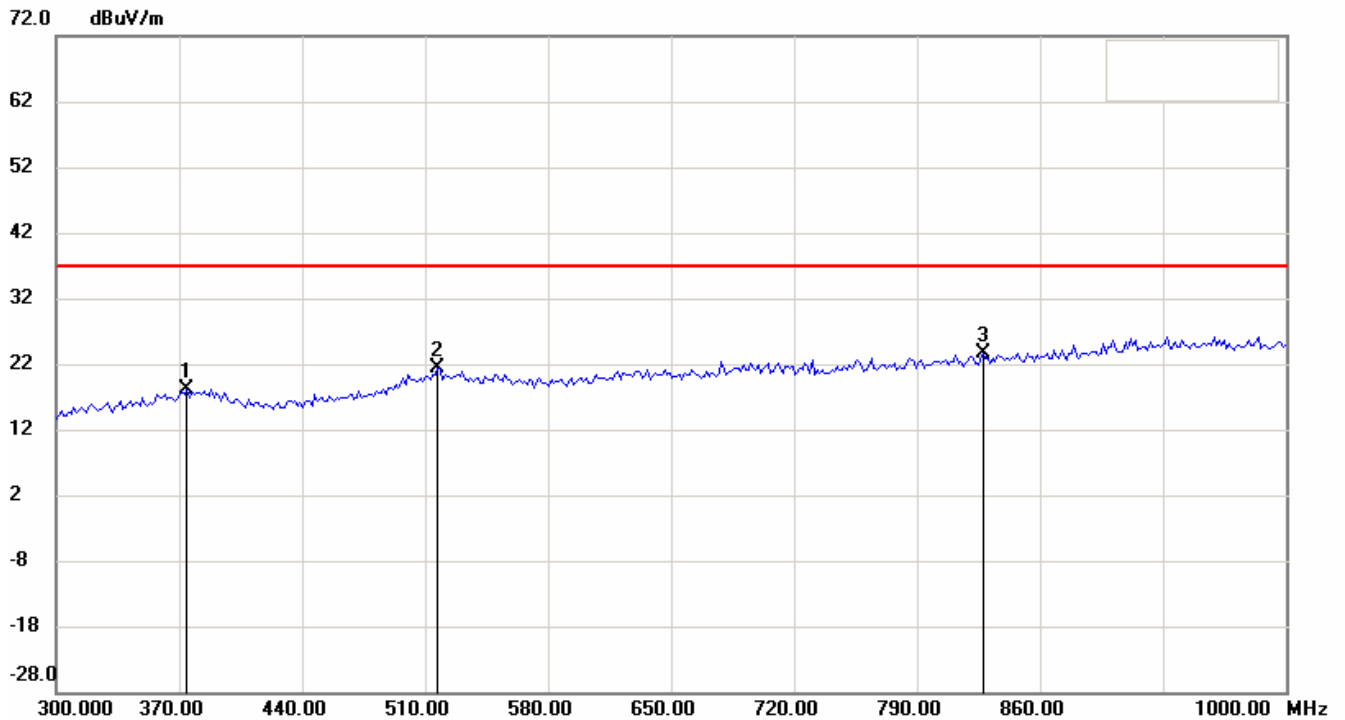
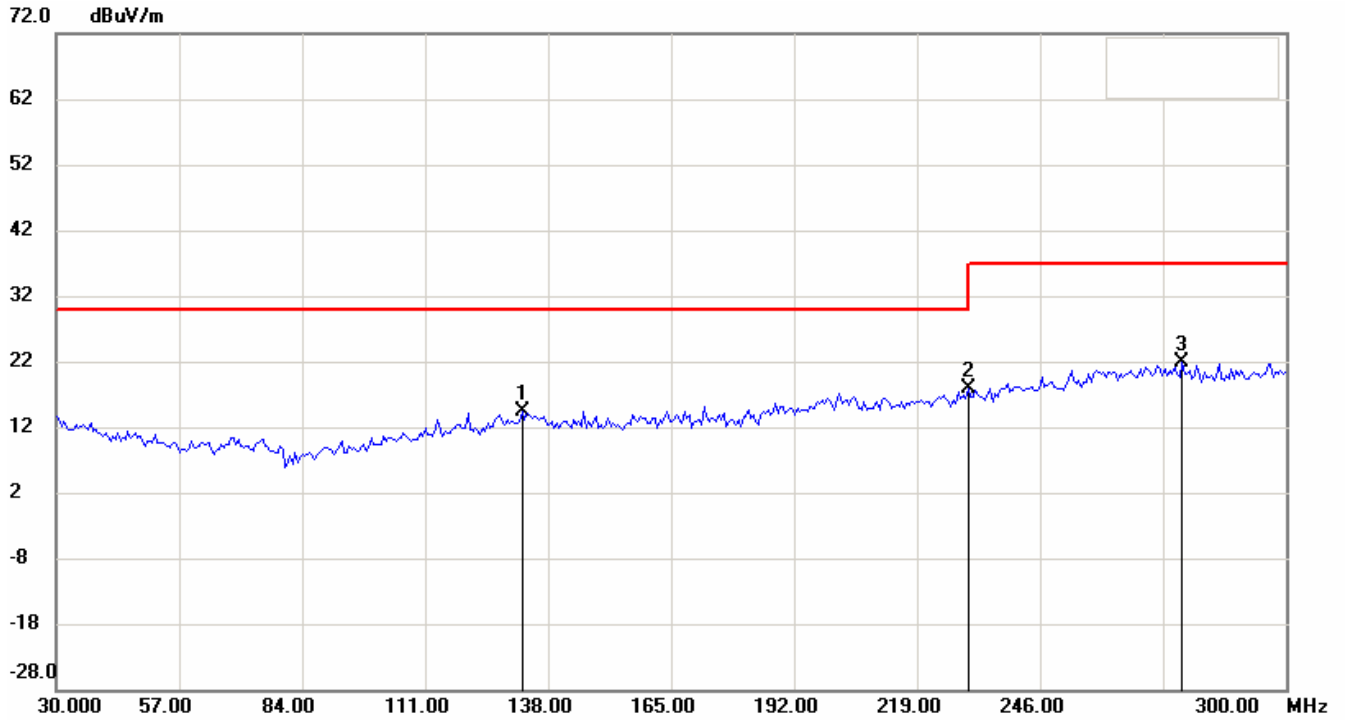
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FCC ID: RPW-WIGO800I

Antenna Polarization H (Infineon mode)



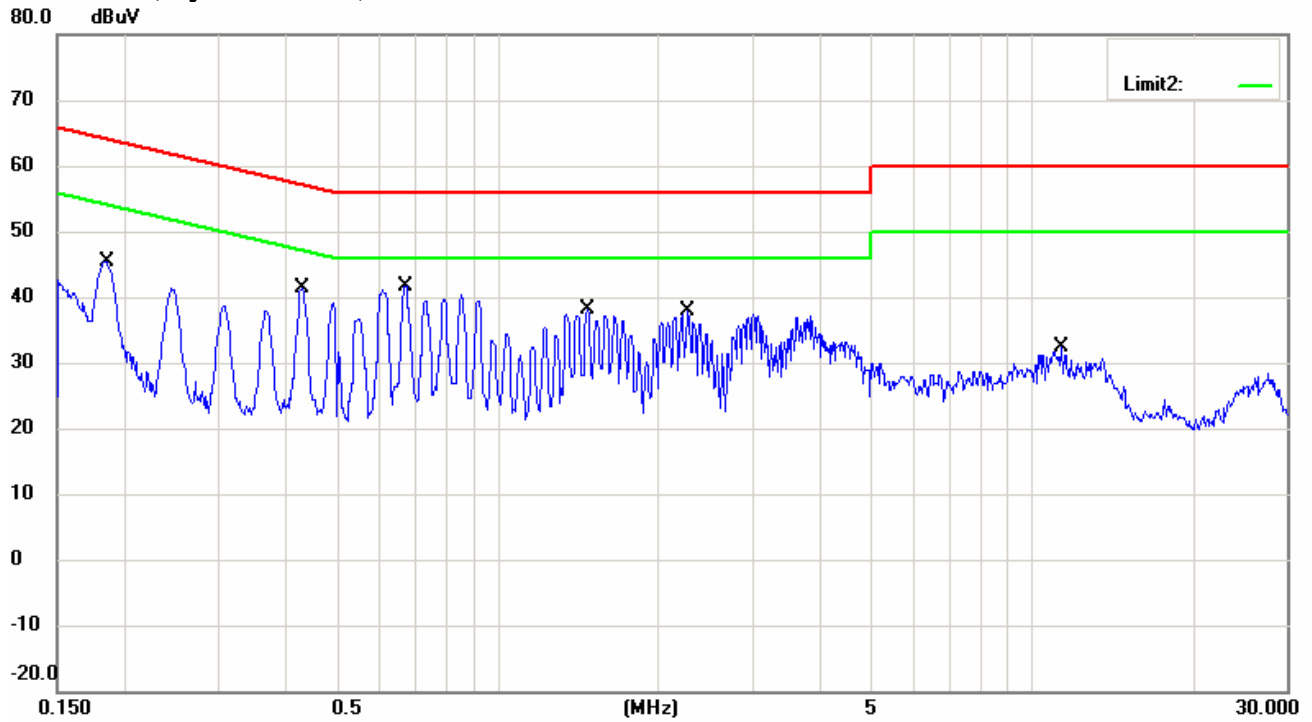
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FCC ID: RPW-WIGO800I

Antenna Polarization V

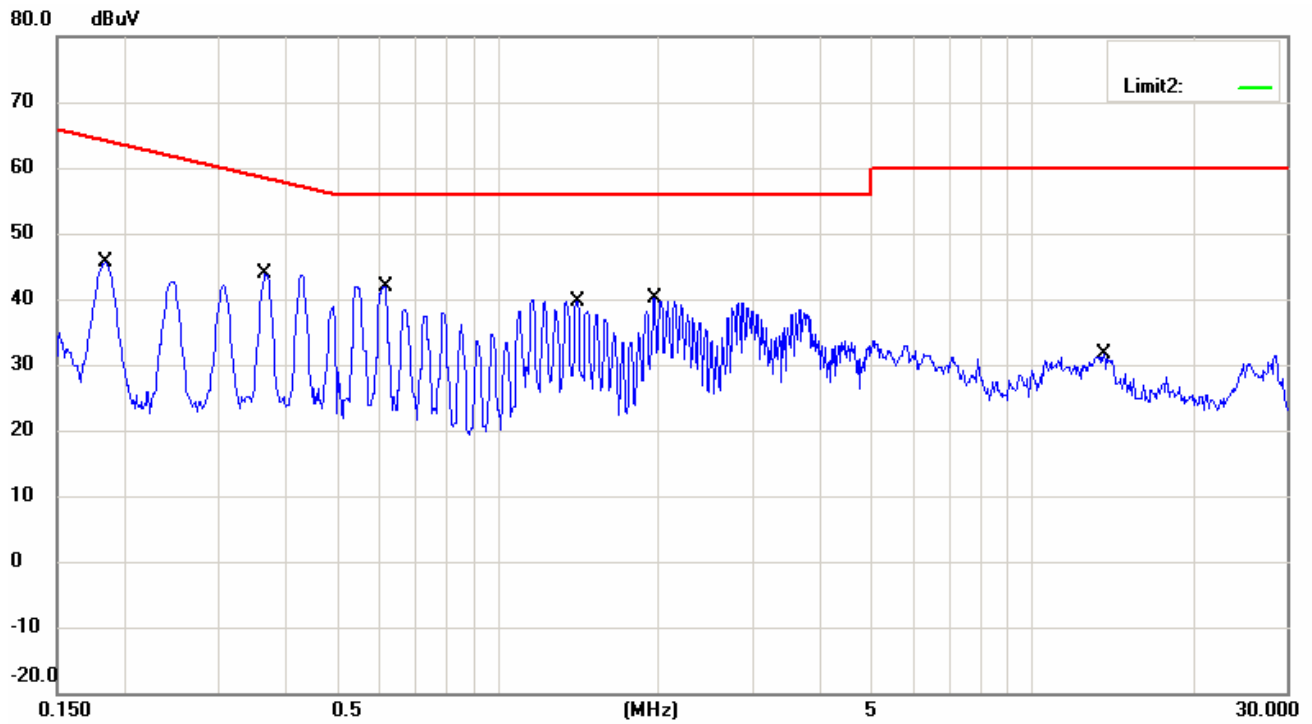


Registration number: W6M20707-8291-C-1
FCC ID: RPW-WIGO800I

LISN N (Hynix mode)

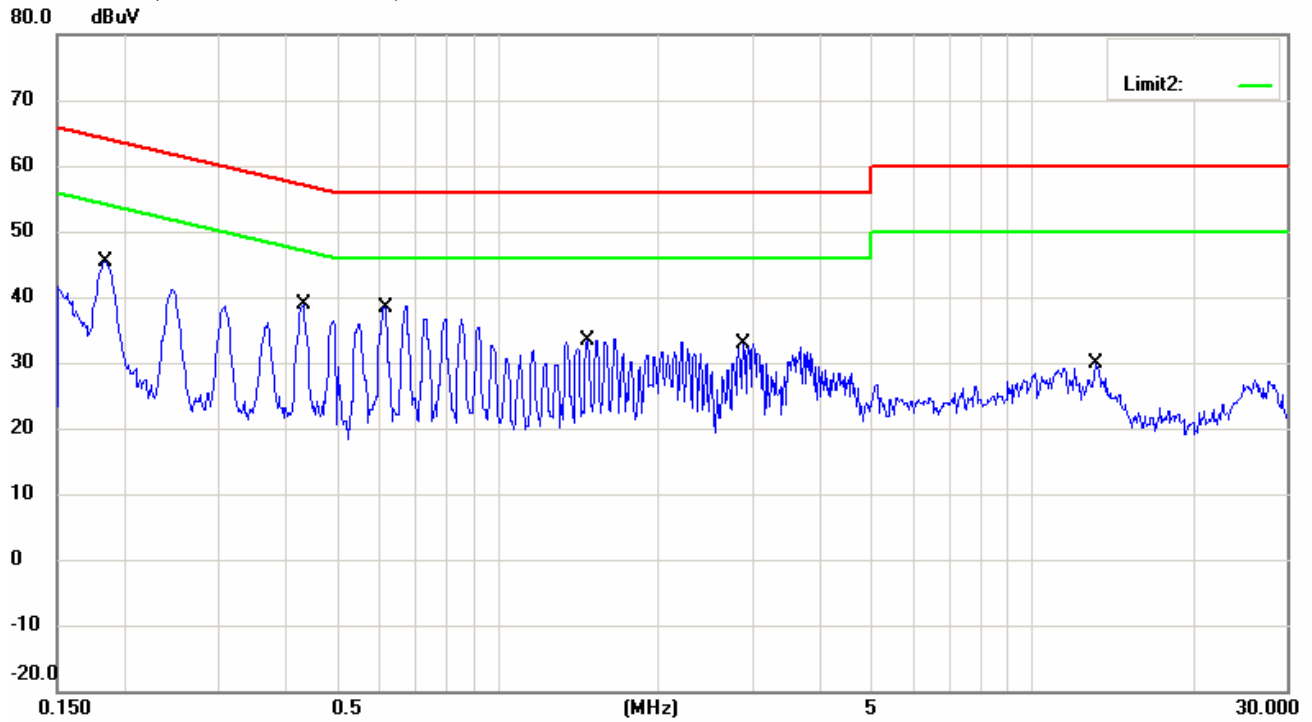


LISN L1



Registration number: W6M20707-8291-C-1
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LISN N (Infineon mode)



LISN L1

