

Huntwise Inc.

Rectangular Transmitter

Model Number: HW-129

Prepared for : Huntwise Inc.
2984 New Monroe Road Bastrop,
Louisiana 71220, USA

Prepared By : Audix Technology (Shenzhen) Co., Ltd.
No. 6, Ke Feng Rd., 52 Block,
Shenzhen Science & Industrial Park,
Nantou, Shenzhen, Guangdong, China

Tel: (0755) 26639496

Report Number : ACS-F04267
Date of Test : Aug.09~10, 2004
Date of Report : Aug.30, 2004

TABLE OF CONTENTS

Description	Page
Test Report Declaration	
1. GENERAL INFORMATION	1-1
1.1. Description of Device (EUT)	1-1
1.2. Test Facility	1-2
1.3. Measurement Uncertainty	1-2
2. POWER LINE CONDUCTED EMISSION TEST	2-1
3. RADIATED EMISSION TEST	3-1
3.1. Test Equipment.....	3-1
3.2. Block Diagram of Test Setup	3-1
3.3. Radiated Emission Limit (Class C)	3-2
3.4. EUT Configuration on Test.....	3-2
3.5. Operating Condition of EUT	3-3
3.6. Test Procedure	3-3
3.7. Radiated Emission Test Results	3-4
4. BANDWIDTH TEST	4-1
4.1. Test Equipment.....	4-1
4.2. Test Standard.....	4-1
4.3. Bandwidth Limit.....	4-1
4.4. Test Procedure	4-1
5. DEVIATION TO TEST SPECIFICATIONS	5-1
6. PHOTOGRAPH.....	6-1
6.1. Photos of Radiated Emission Test (In Anechoic Chamber).....	6-1
6.2. Photo of Bandwidth Test.....	6-4

APPENDIX I

(5 pages)

TEST REPORT DECLARATION

Applicant : Huntwise Inc.
 Manufacturer : Huntwise Inc.
 EUT Description : Rectangular Transmitter
 (A) MODEL NO. : HW-129
 (B) SERIAL NO. : F2004083001
 (C) POWER SUPPLY : DC 12V

Test Procedure Used:

FCC Rules and Regulations Part 15 Subpart C Apr, 2004.

The device described above is tested by Audix Technology (Shenzhen) Co., Ltd. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C limits for radiated and conducted emissions. The test results are contained in this test report and Audix Technology (Shenzhen) Co., Ltd. is assumed full responsibility for the accuracy and completeness of tests. Also, this report shows that EUT is technically compliant with FCC requirements.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of Audix Technology (Shenzhen) Co., Ltd. This report must not be used by the applicant to claim product endorsement by NVLAP or any agency of the U.S. Government.

Date of Test : Aug.09~10, 2004

Prepared by :

Elsa Wu

Elsa Wu / Assistant

Reviewer :

Lake Wang

Lake Wang / Supervisor



Approved & Authorized Signer :

Alex Deng / Assistant Manager

Name of the Representative of the Responsible Party :

Signature :

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

Description	:	Rectangular Transmitter
Model Number	:	HW-129
Applicant	:	Huntwise Inc. 2984 New Monroe Road Bastrop, Louisiana 71220, USA
Manufacturer	:	Huntwise Inc. 2984 New Monroe Road Bastrop, Louisiana 71220, USA
Date of Test	:	Aug.09~10, 2004

1.2. Test Facility

Site Description

3m Anechoic Chamber	:	Certificated by FCC, USA Registration Number : 90454 Aug. 15, 2003
3m & 10m Anechoic Chamber	:	Certificated by FCC, USA Registration Number : 794232 Mar. 15, 2004
EMC Lab.	:	Certificated by DATech, German Registration Number : DAT-P-091/99-01 Feb. 02, 2004
		Certificated by NVLAP, USA NVLAP Code: 200372-0 Mar. 31, 2004
		Certificated by Nemko, Norway Aut. No.: ELA135 April. 22, 2004
Name of Firm	:	Audix Technology (Shenzhen) Co., Ltd.
Site Location	:	No. 6, Ke Feng Rd., 52 Block, Shenzhen Science & Industrial Park, Nantou, Shenzhen, Guangdong, China

1.3. Measurement Uncertainty

Conducted Emission Uncertainty	=	$\pm 2.66\text{dB}$
Radiated Emission Uncertainty	=	$\pm 4.26\text{dB}$

2. POWER LINE CONDUCTED EMISSION TEST

According to Paragraph (f) of FCC Part 15 section 15.107, Tests to demonstrate compliance with the conducted limits are not required for devices which only employ battery power for operation and which do not operate from the AC power lines or contain provisions for operation while connected to the AC power lines.

3. RADIATED EMISSION TEST

3.1. Test Equipment

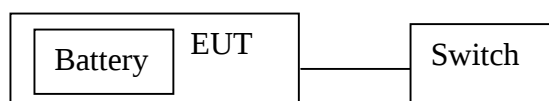
The following test equipments are used during the radiated emission Test :

3.1.1. For Anechoic Chamber

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	EMI Analyzer	HP	8591EM	3628A00914	May 24,04	1 Year
2.	Test Receiver	Rohde & Schwarz	ESVS20	830350/005	May 24,04	1 Year
3.	Amplifier	HP	8447D	2944A07794	Mar.17, 04	1/2 Year
4.	Bilog Antenna	Schaffner	CBL6111C	2598	Jan. 13, 04	1 Year
5.	PC	N/A	586ATX3	N/A	N/A	N/A
6.	Printer	HP	Laserjet6P	SGCF019673	N/A	N/A
7.	RF Cable	MIYAZAKI	5D-2W	3# Chamber No.1	July 31, 04	1/2 Year
8.	RF Cable	MIYAZAKI	5D-2W	3# Chamber No.2	July 31, 04	1/2 Year
9.	RF Cable	FUJIKURA	RG-55/U	3# Chamber No.3	July 31, 04	1/2 Year
10.	RF Cable	FUJIKURA	RG-55/U	3# Chamber No.4	July 31, 04	1/2 Year
11.	Coaxial Switch	Anritsu	MP59B	M73989	May.27, 04	1/2 Year

3.2. Block Diagram of Test Setup

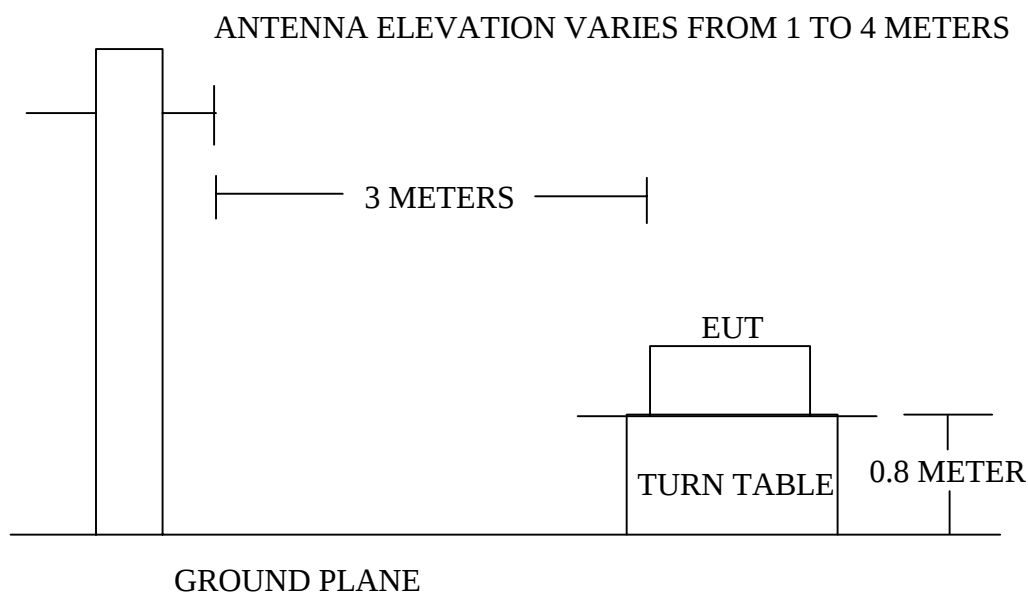
3.2.1. Block Diagram of connection between EUT and simulators



(EUT: Rectangular Transmitter)

3.2.2. Anechoic Chamber Setup Diagram

ANTENNA TOWER



3.3. Radiated Emission Limit (Class C)

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		$\mu\text{V}/\text{m}$	$\text{dB}(\mu\text{V})/\text{m}$
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0
Above 1000	3	74.0 $\text{dB}(\mu\text{V})/\text{m}$ (Peak) 54.0 $\text{dB}(\mu\text{V})/\text{m}$ (Average)	

- Remark :
- (1) Emission level $\text{dB}\mu\text{V} = 20 \log$ Emission level $\mu\text{V}/\text{m}$
 - (2) The smaller limit shall apply at the cross point between two frequency bands.
 - (3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

3.4. EUT Configuration on Test

The following equipment are installed on Radiated Emission Test to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

3.4.1. Rectangular Transmitter (EUT)

Model Number : HW-129
 Serial Number : F2004083001
 Manufacturer : Huntwise Inc.

3.5. Operating Condition of EUT

3.5.1. Setup the EUT as shown in Section 3.2..

3.5.2. Let the EUT work in test modes (Transmitting) and test it.

3.6. Test Procedure

The EUT and its simulators are placed on a turn table, which is 0.8 meter high above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna. Both horizontal and vertical polarization of the antenna is set on Test. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4-2001 on radiated emission Test.

The bandwidth of the EMI test receiver (R&S ESVS20) is set at 120KHz.

The frequency range from 30MHz to 1000MHz and above 1000MHz are checked.

The test modes (Transmitting) is tested in Anechoic Chamber and all the scanning waveforms are attached in Appendix I.

3.7. Radiated Emission Test Results

PASS.

The frequency range from 30MHz to 1000MHz is investigated.
Please see the following pages.

Date of Test :	Aug.09, 2004	Temperature :	22°C
EUT :	Rectangular Transmitter	Humidity :	50%
Model No. :	HW-129	Test Mode :	Transmitting
Test Engineer:	Pebble		

Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading Horizontal dBμV	Emission Level Horizontal dBμV/m	Over Limits dBμV/m	Limits dBμV/m	Remark
315.051	13.82	3.95	43.45	61.22	-14.38	75.60	Average
630.120	19.54	6.48	15.76	41.78	-4.22	46.00	QP
945.160	23.08	7.99	8.13	39.20	-6.80	46.00	QP

Remark: 1. All readings are Average and QP values.
2. Emission Level = Antenna Factor + Meter Reading+Cable Loss
3.The bandwidth of the RBW is set at 120KHz and VBW is set at 300KHz.

Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading Vertical dBμV	Emission Level Vertical dBμV/m	Over Limits dBμV/m	Limits dBμV/m	Remark
315.050	13.05	3.95	41.38	58.38	-17.22	75.60	Average
630.110	19.38	6.48	12.98	38.84	-7.16	46.00	QP
945.150	23.97	7.98	3.69	35.64	-10.36	46.00	QP

Remark: 1. All readings are Average and QP values.
2. Emission Level = Antenna Factor + Meter Reading+Cable Loss
3.The bandwidth of the RBW is set at 120KHz and VBW is set at 300KHz.

Reviewer:

Choke Wang



AUDIX TECHNOLOGY (SHENZHEN) CO., LTD.

Shenzhen Science & Ind. Park

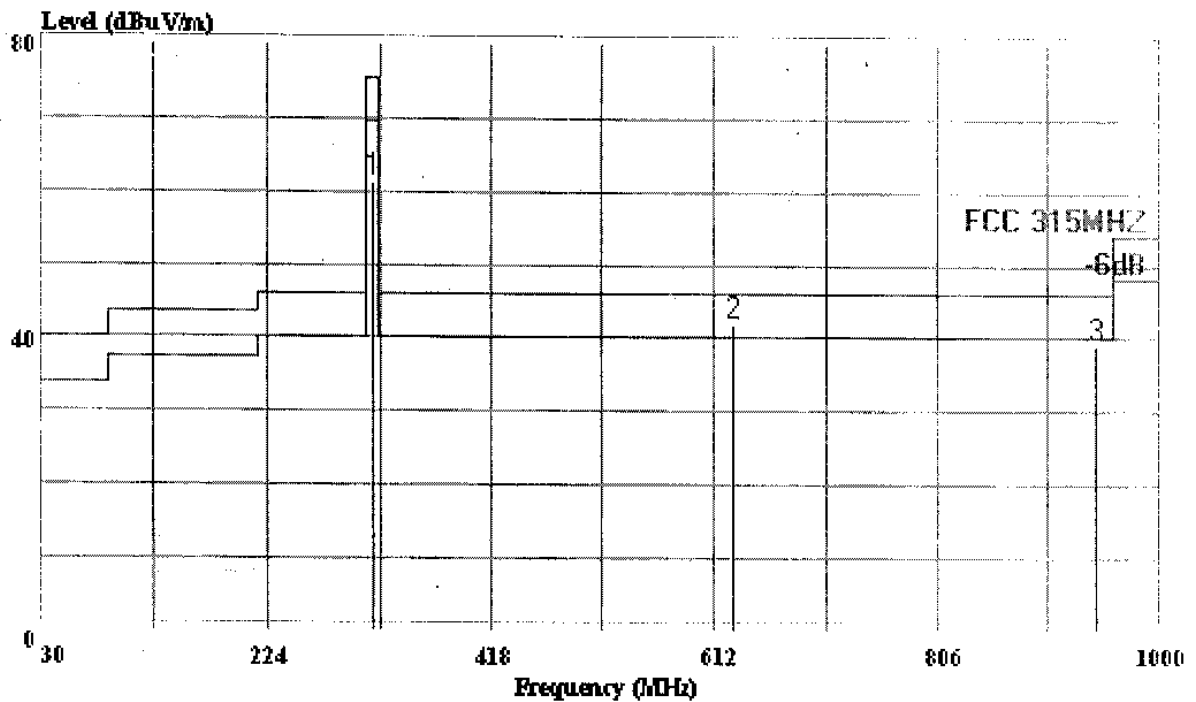
Tel: 0755-26639495~7

Fax: 0755-26632877

Data#: 2

File#: Huntwise.EMI

Date: 2004-08-09 Time: 17:14:03



AUDIX TECHNOLOGY (SHENZHEN) CO., LTD. (3# Chamber)

Trace:

Ref Trace:

Condition: FCC 315MHZ 3m 2598FACTOR HORIZONTAL

EUT: Rectangular Transmitter

M/N: HW-129

Power: DC 12V

Engineer: Pebble

Test Mode: Transmitting

Memo: Temp:22'C Humi:50%

: H:1.8m Deg:305'

Page: 1

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	
1	315.051	61.22	-14.38	75.60	43.45	13.82	3.95	Average
2	630.120	41.78	-4.22	46.00	15.76	19.54	6.48	QP
3	945.160	39.20	-6.80	46.00	8.13	23.08	7.99	QP



AUDIX TECHNOLOGY (SHENZHEN) CO., LTD.

Shenzhen Science & Ind. Park

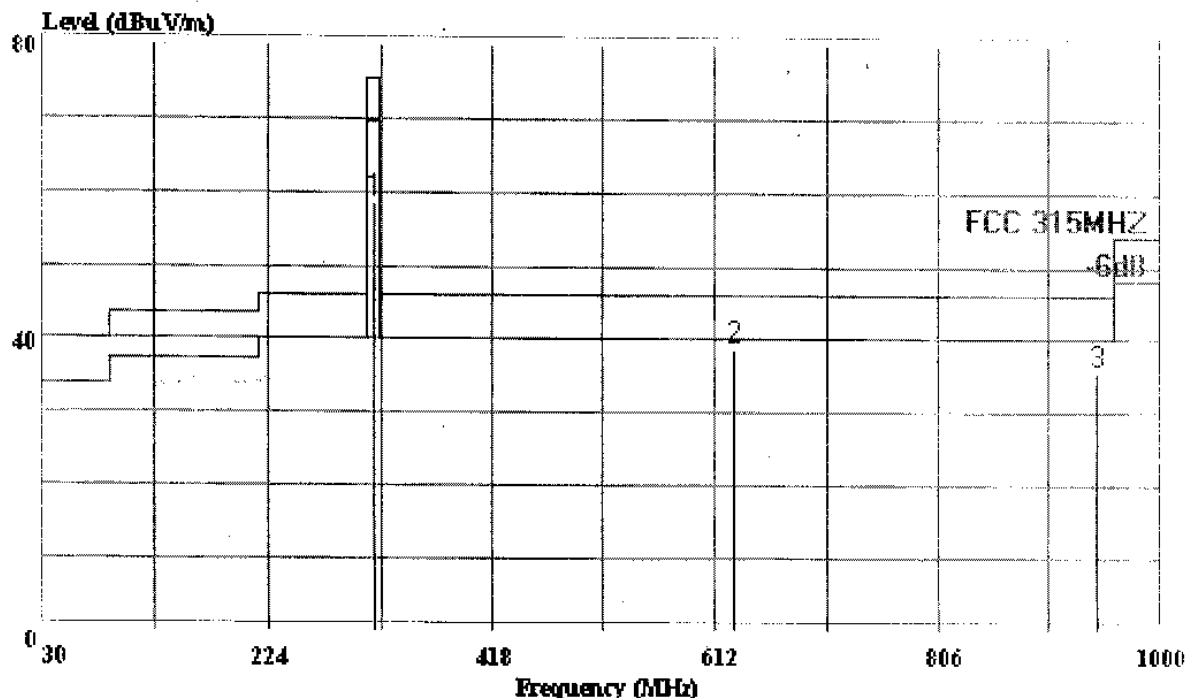
Tel: 0755-26639495~7

Fax: 0755-26632877

Data#: 4

File#: Huntwise.EMI

Date: 2004-08-09 Time: 17:37:23



AUDIX TECHNOLOGY (SHENZHEN) CO., LTD. (3# Chamber)

Trace:

Ref Trace:

Condition: FCC 315MHZ 3m 2598FACTOR VERTICAL

EUT : Rectangular Transmitter

M/N : HW-129

Power : DC 12V

Engineer : Pebble

Test Mode: Transmitting

Memo : Temp:22'C Humi:50%

: H:1.2m Deg:60'

Page: 1

	Freq	Level	Over	Limit	Read	Probe	Cable	
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Remark
			dB	dBuV/m	dBuV	dB	dB	
1	315.050	58.38	-17.22	75.60	41.38	13.05	3.95	Average
2	630.110	38.84	-7.16	46.00	12.98	19.38	6.48	OP
3	945.150	35.64	-10.36	46.00	3.69	23.97	7.98	QP

4. BANDWIDTH TEST

4.1. Test Equipment

The following test equipments are used during the bandwidth test:

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum	Agilent	E4407B	MY41440292	May 24, 04	1 Y
2.	Antenna	EMCO	3115	9607-4877	Jun 15, 04	1.5 Y

4.2. Test Standard

The test completeness FCC 15C (231).

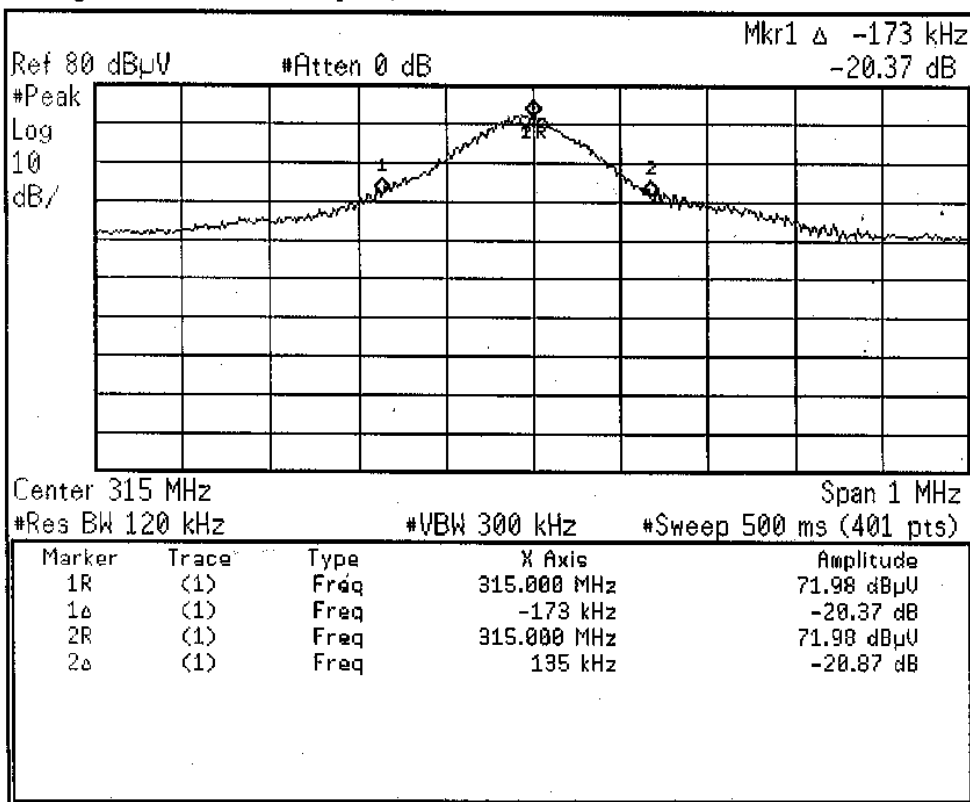
4.3. Bandwidth Limit

The minimum 20dB bandwidth shall be at least 0.25% of the center frequency.

4.4. Test Procedure

* Agilent 17:23:19 Aug 10, 2004

L



Marker

Select Marker

1 2 3 4

Normal

Delta

Delta Pair
(Tracking Ref)
Ref Delta

Span Pair
Span Center

Off

More
1 of 2

5. DEVIATION TO TEST SPECIFICATIONS

[NONE]

APPENDIX I



AUDIX TECHNOLOGY (SHENZHEN) CO., LTD.

Shenzhen Science & Ind. Park

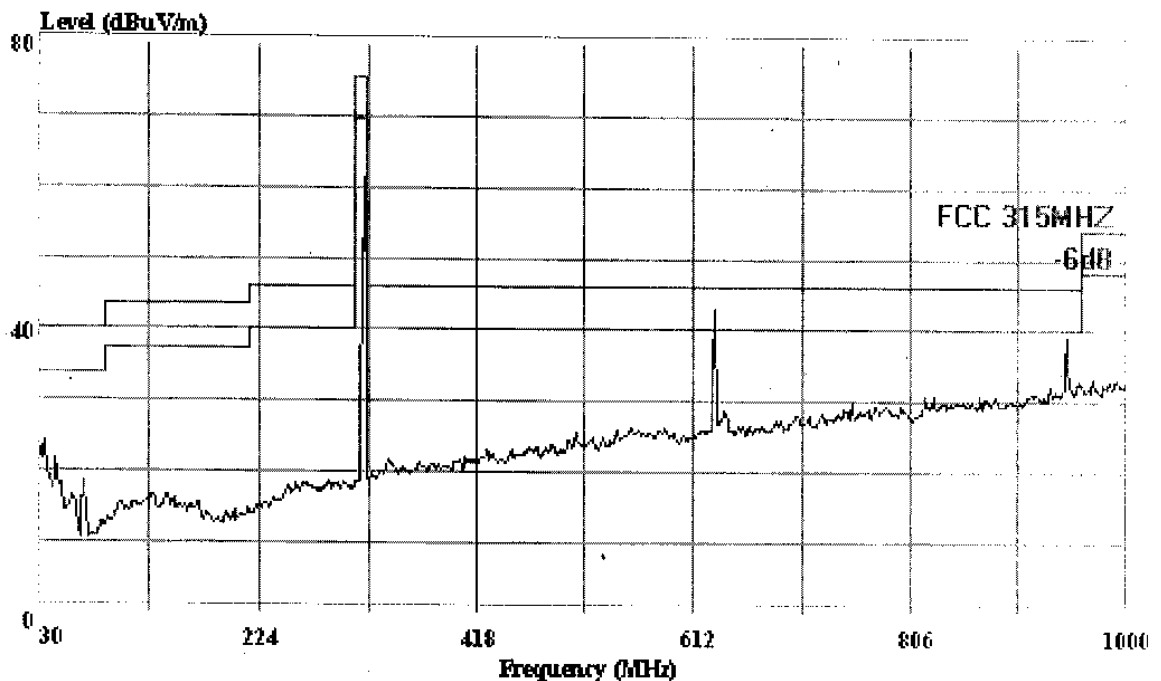
Tel: 0755-26639495~7

Fax: 0755-26632877

Data#: 1

File#: Huntwise.EMI

Date: 2004-08-09 Time: 17:09:52



AUDIX TECHNOLOGY (SHENZHEN) CO., LTD. (3# Chamber)

Trace:

Ref Trace:

Condition: FCC 315MHZ 3m 2598FACTOR HORIZONTAL

EUT : Rectangular Transmitter

M/N : HW-129

Power : DC 12V

Engineer : Pebble

Test Mode: Transmitting

Memo : Temp:22'C Humi:50%



AUDIX TECHNOLOGY (SHENZHEN) CO., LTD.

Shenzhen Science & Ind. Park

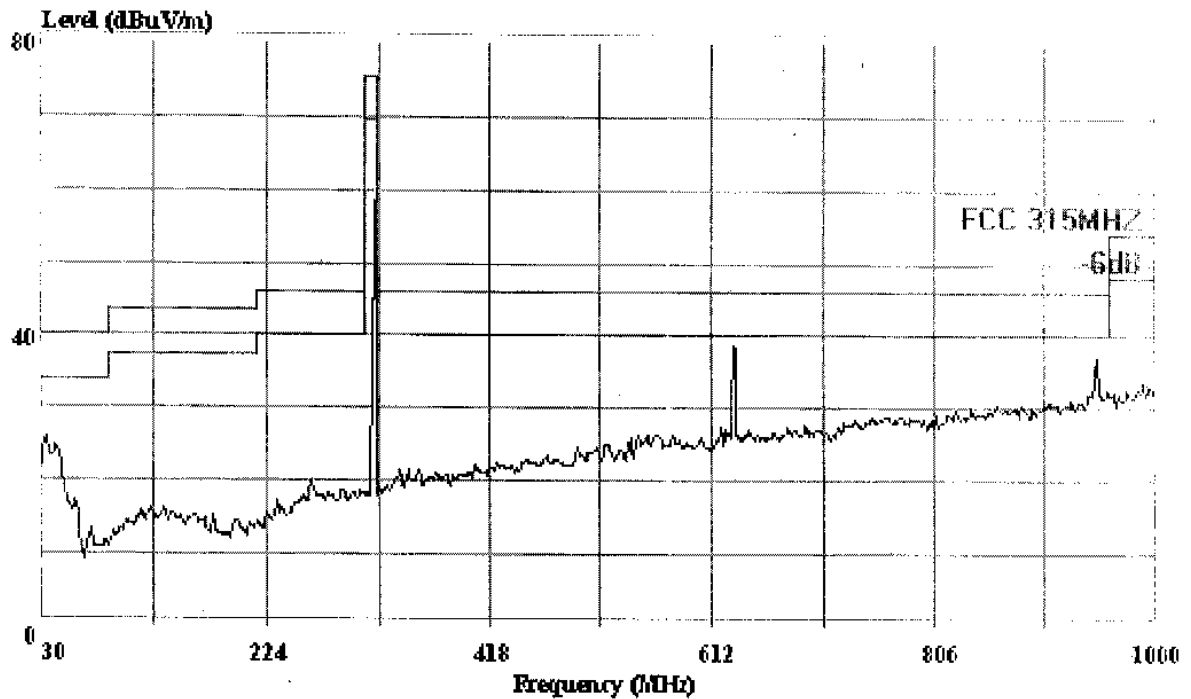
Tel: 0755-26639495~7

Fax: 0755-26632877

Data#: 3

File#: Huntwise.EMI

Date: 2004-08-09 Time: 17:21:06



AUDIX TECHNOLOGY (SHENZHEN) CO., LTD. (3# Chamber)

Trace:

Ref Trace:

Condition: FCC 315MHZ 3m 2598FACTOR VERTICAL

EUT : Rectangular Transmitter

M/N : HW-129

Power : DC 12V

Engineer : Pebble

Test Mode: Transmitting

Memo : Temp:22'C Humi:50%

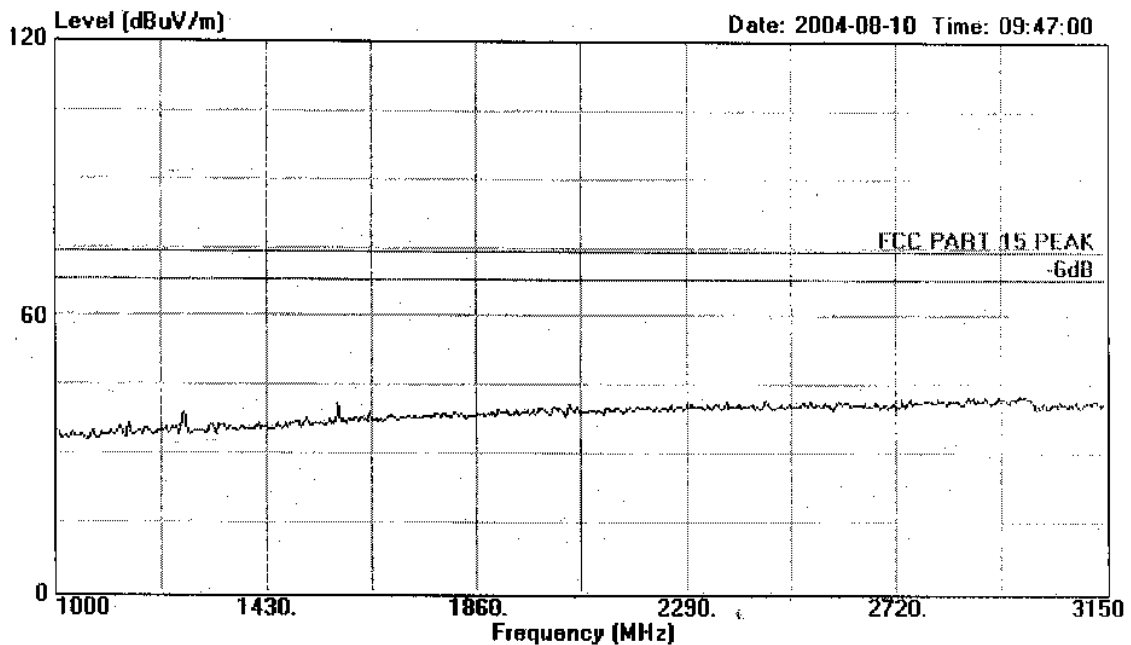


信華科技(深圳)有限公司

AUDIX Technology (Shenzhen) Co., Ltd.

No. 6, Ke Feng Road, Block 52,
Shenzhen Science & Industry Park
Nantou, Shenzhen, Guangdong, China
Tel: +86-755-26639496 Fax: +86-755-26632877

Data#: 2 File#: C:\EMI TEST DATA\H\Huntwise.EMI



Site : 1# Chamber
Condition : FCC PART 15 PEAK 3m 3115 FACTOR HORIZONTAL
EUT : Rectangular Transmitter
M/N : HW-129
Power : DC 12V
Test Engineer : Pebble
Test Mode : Transmitting
Memo : Temp:22°C Humi:50%

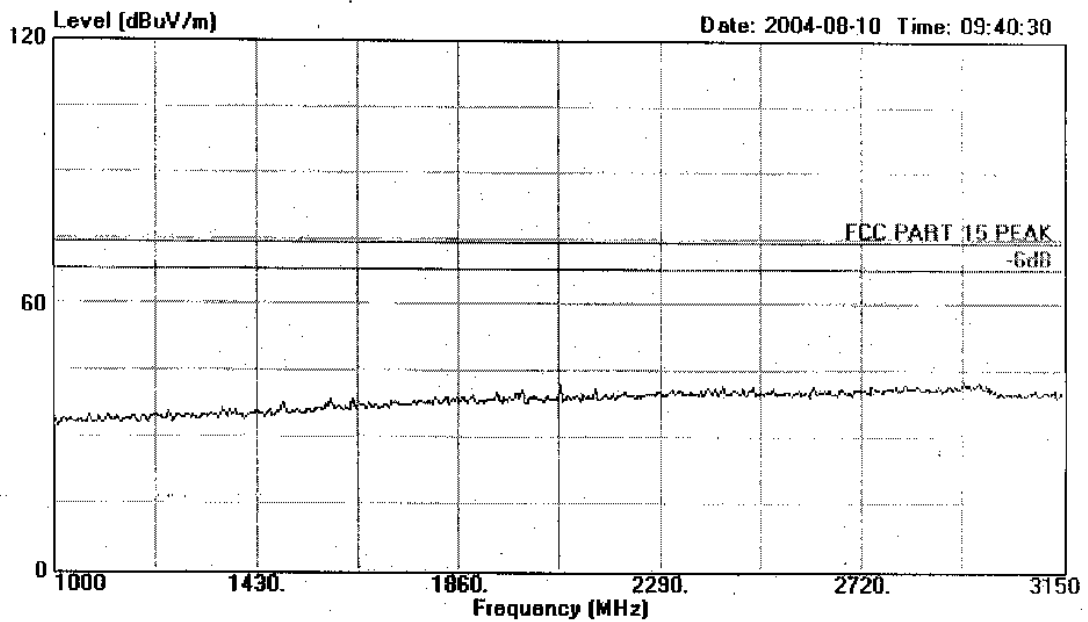


信華科技(深圳)有限公司

AUDIX Technology (Shenzhen) Co., Ltd.

No. 6, Ke Feng Road, Block 52,
Shenzhen Science & Industry Park
Nantou, Shenzhen, Guangdong, China
Tel: +86-755-26639496 Fax: +86-755-26632877

Data#: 1 File#: C:\EMI TEST DATA\H\Huntwise.EMI



Site : 1# Chamber
Condition : FCC PART 15 PEAK 3m 3115 FACTOR VERTICAL
EUT : Rectangular Transmitter
M/N : HW-129
Power : DC 12V
Test Engineer : Pebble
Test Mode : Transmitting
Memo : Temp:22'C Humi:50%