

APPLICATION FOR CERTIFICATION
On Behalf of

IDT Electronic Products Limited

Find One, Find All Locator

Model Number: 63-1220

Prepared for : IDT Electronic Products Limited
Block C,9/F., Kaiser Estate, Phase 1,41 Man Yue Street,
Hung Hom, Kowloon, Hong Kong.

Prepared By : Audix Technology (Shenzhen) Co., Ltd.
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Report Number : ACS-F05176
Date of Test : May.30~Jun.06, 2005
Date of Report : Jun.09, 2005

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APPENDIX I (17 pages)

TEST REPORT DECLARATION

Applicant : IDT Electronic Products Limited
 Manufacturer : IDT Electronic Products Limited
 EUT Description : Find One, Find All Locator
 (A) MODEL NO. : 63-1220
 (B) SERIAL NO. : F2005060901
 (C) POWER SUPPLY : Battery DC3V

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 both 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 these tests. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the 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.

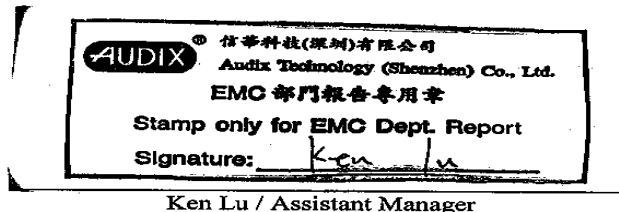
This report must not be used by the applicant to claim product endorsement by NVLAP or any agency of the U.S. Government.

Date of Test : May.30~Jun.06, 2005

Prepared by : Annie Wu
 Annie Wu / Assistant

Reviewer : Lake Wang
 Lake Wang / Supervisor

Approved & Authorized Signer :



Ken Lu / Assistant Manager

Name of the Representative of the Responsible Party : _____

Signature : _____

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

Description	:	Find One, Find All Locator
Model Number	:	63-1220
Applicant	:	IDT Electronic Products Limited Block C, 9/F., Kaiser Estate, Phase 1, 41 Man Yue Street, Hunghom, Kowloon, Hong Kong.
Manufacturer	:	IDT Electronic Products Limited Block C, 9/F., Kaiser Estate, Phase 1, 41 Man Yue Street, Hunghom, Kowloon, Hong Kong.
Date of Test	:	May.30~Jun.06, 2005

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
- Certificated by Industry Canada
Registration Number: IC 5183
Jul. 28, 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

No.	Item	Uncertainty	Remark
1.	Uncertainty for Conducted Emission Test	1.22dB	
2.	Uncertainty for Radiated Emission Test	3.14dB	3m Chamber
3.	Uncertainty for Radiated Emission Test	3.18dB	10m Chamber
4.	Uncertainty for Power Clamp Test	1.38dB	

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

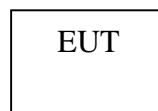
The following test equipments are used during the radiated emission test:

3.1.1. For Anechoic Chamber

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	EMI Spectrum	HP	85422E	3625A00181	May 16, 05	1 Year
2.	Test Receiver	Rohde & Schwarz	ESVS20	830350/005	May 16, 05	1 Year
3.	Amplifier	HP	8447D	2944A07794	Mar.15, 05	1/2 Year
4.	Bilog Antenna	Schaffner	CBL6111C	2598	Jan. 12, 05	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	Jan.30, 05	1/2 Year
8.	RF Cable	MIYAZAKI	5D-2W	3# Chamber No.2	Jan.30, 05	1/2 Year
9.	RF Cable	FUJIKURA	RG-55/U	3# Chamber No.3	Jan.30, 05	1/2 Year
10.	RF Cable	FUJIKURA	RG-55/U	3# Chamber No.4	Jan.30, 05	1/2 Year
11.	Coaxial Switch	Anritsu	MP59B	M73989	May 25,05	1/2 Year

3.2. Block Diagram of Test Setup

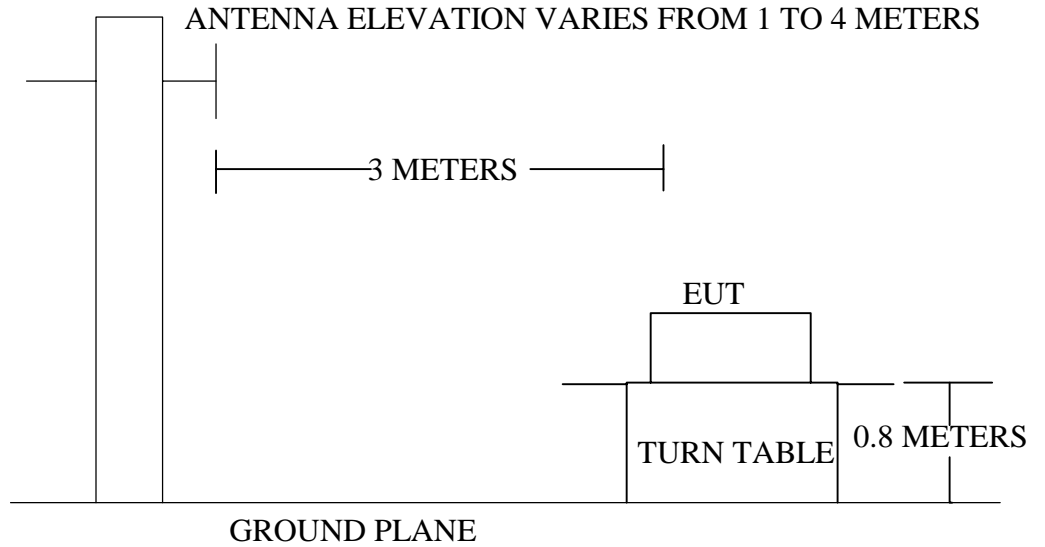
3.2.1. Block diagram of connection between the EUT and simulators



(EUT: Find One, Find All Locator)

3.2.2.In Anechoic Chamber

ANTENNA TOWER



3.3.Radiated Emission Limit: FCC 15.231

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		μV/m	dB(μV)/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
Local Oscillator:	3	114.0 dB(μV)/m (Peak) 94.0 dB(μV)/m (Average)	
Harmonic :		74.0 dB(μV)/m (Peak) 54.0 dB(μV)/m (Average)	

- Remark :
- (1) Emission level (dB)μV = 20 log Emission level μV/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.Find One, Find All Locator (EUT)

Model Number : 63-1220
Serial Number : F2005060901
Manufacturer : IDT Electronic Products Limited

3.4.2.Support Equipment : As Tested Supporting System Detail, in Section 1.2.

3.5.Operating Condition of EUT

1. Setup the EUT as shown in Section 3.2..
2. Let the EUT work in test mode (TX) and test it.

3.6.Test Procedure

According to paragraph of FCC Part15 Section 15.231.

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. Power on the EUT and let it work normally, we use a keyboard test soft ware, let EUT working in test mode, then test it. EUT is set 3 meters away from the receiving antenna, which is mounted on a 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 are set on 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 mode (TX) is tested in Anechoic Chamber, and all the scanning waveforms are attached in Appendix I.

3.7.Radiated Emission Test Result

PASS.

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

Date of Test :	<u>May.30, 2005</u>	Temperature :	<u>23.8°C</u>
EUT :	<u>Find One, Find All Locator</u>	Humidity :	<u>57%</u>
Model No. :	<u>63-1220</u>	Test Mode :	<u>TX</u>
Test Engineer:	<u>Victor</u>	Test Standard :	<u>FCC Part15B 15.231</u>

Frequency	Antenna	Cable	Meter Reading	Emission Level	Over	Limits
MHz	Factor	Loss	Horizontal	Horizontal	Limits	
	dB/m	dB	dB μ V	dB μ V/m	dB	dB μ V/m
433.600	16.71	4.90	44.55	66.15	-14.67	80.82

Remark: 1. All readings are Peak values.

2. Emission Level = Antenna Factor + Cable Loss + Meter Reading

3. The worst emission was detected at 433.600MHz with corrected signal level of 66.15dB μ V/m (Limit is 80.82dB μ V/m) when the antenna was at horizontal polarization and at 1.0m high and the turn table was at 0° .

4. 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.

Reviewer :

lake Wang

Date of Test :	May.30, 2005	Temperature :	23.8°C
EUT :	Find One, Find All Locator	Humidity :	57%
Model No. :	63-1220	Test Mode :	TX
Test Engineer:	Victor	Test Standard :	FCC Part15B 15.231

Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading Vertical dB μ V	Emission Level Vertical dB μ V/m	Over Limits dB	Limits dB μ V/m
433.600	16.30	4.92	28.73	49.95	-30.87	80.82
867.200	22.29	7.11	5.26	34.66	-26.16	60.82

- Remark: 1. All readings are Peak values.
 2. Emission Level = Antenna Factor + Cable Loss + Meter Reading
 3. The worst emission was detected at 867.200MHz with corrected signal level of 34.66dB μ V/m (Limit is 60.82dB μ V/m) when the antenna was at vertical polarization and at 1.1m high and the turn table was at 0° .
 4. 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.

Reviewer :

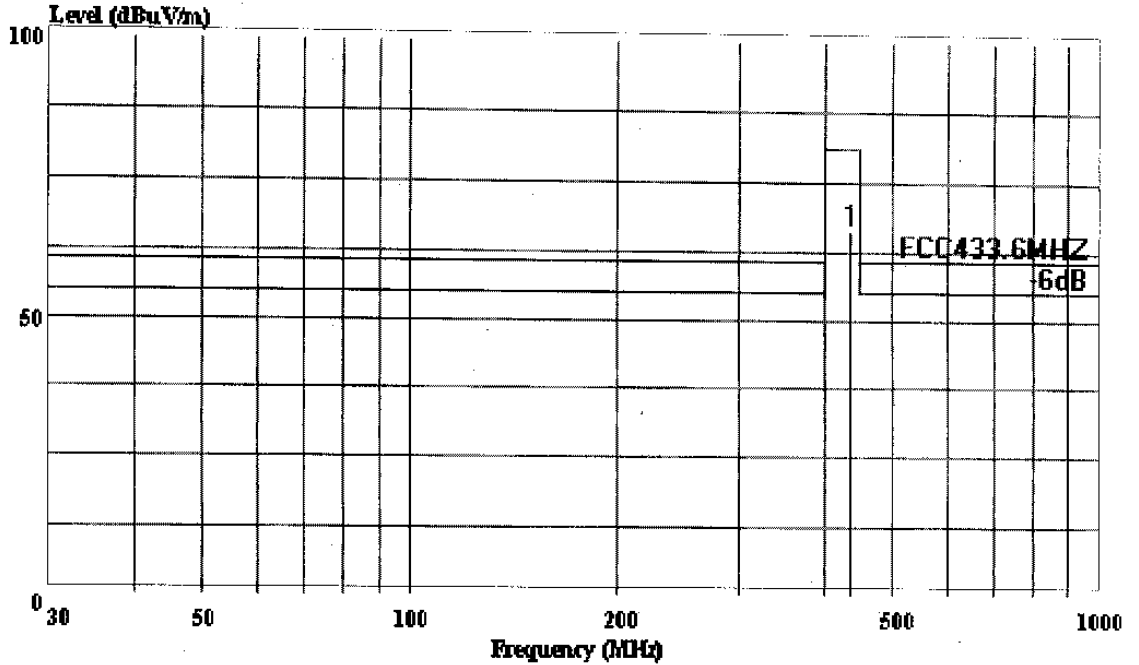
lake Wang



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 Fax: 0755-26632877

Data#: 92 File#: Idt.emi Date: 2005-05-30 Time: 20:09:05



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

Trace:

Ref Trace:

Condition: FCC433.6MHZ 3m 2598FACTOR HORIZONTAL
 EUT : Find One,Find All Locator
 M/N : 63-1220
 Power : BATTERY DC3V
 Engineer: VICTOR
 Comment : Temp:23.8'C Humi:57%
 Memo : TX
 : H:1.0m Deg:0'

Page: 1

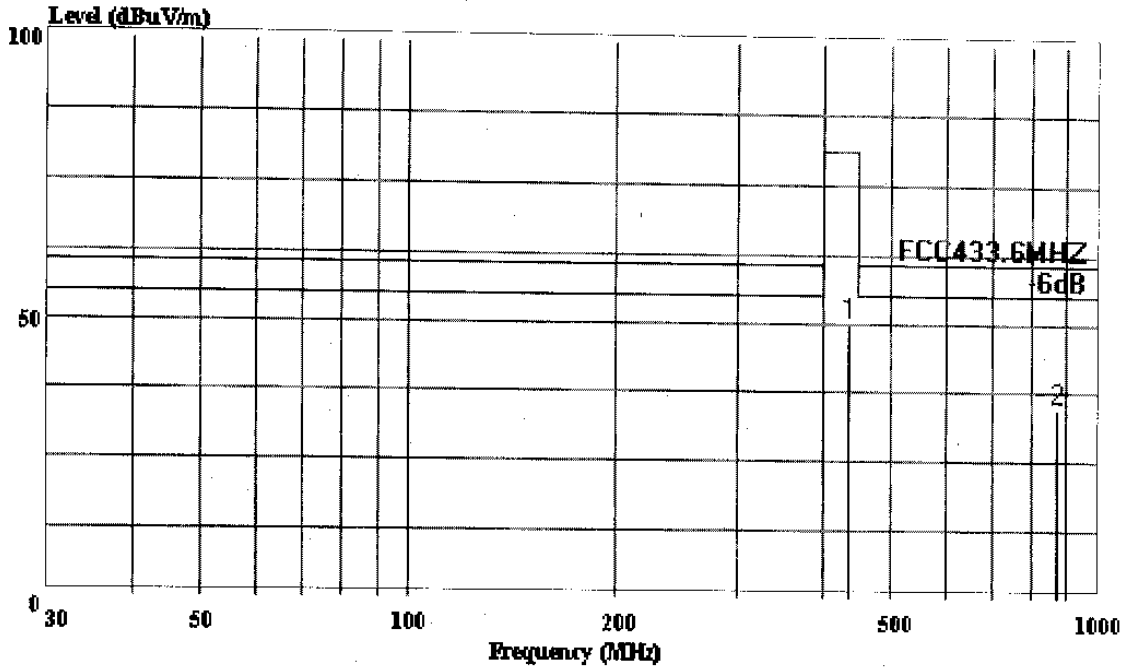
	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB
1	433.600	66.15	-14.67	80.82	44.55	16.71	4.90



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Data#: 94 File#: Idt.emi Date: 2005-05-30 Time: 20:16:32



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

Trace:

Ref Trace:

Condition: FCC433.6MHZ 3m 2598FACTOR VERTICAL
 EUT : Find One, Find All Locator
 M/N : 63-1220
 Power : BATTERY DC3V
 Engineer: VICTOR
 Comment : Temp:23.8'C Humi:57%
 Memo : TX
 : H:1.1m Deg:0'

Page: 1

	Freq	Level	Over Limit	Limit	Read	Probe	Cable
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB
1	433.600	49.95	-30.87	80.82	28.73	16.30	4.92
2	867.200	34.66	-26.16	60.82	5.26	22.29	7.11

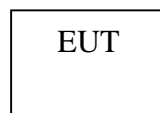
4. BAND EDGES MEASUREMENT

4.1. Test Equipment

The following test equipment were used during the Emission Bandwidth Test :

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum	Agilent	E4407B	MY41440292	May 16, 05	1 Year
2.	Amp	HP	8449B	3008A00863	May 16, 05	1 Year
3.	Antenna	EMCO	3115	9607-4877	Jun. 15, 04	1.5 Year
4.	HF Cable	Hubersuhne	Sucoflex104	-	May 16, 05	1 Year

4.2. Block Diagram of Test Setup



(EUT: Find One, Find All Locator)

4.3. Test Standard

The test completeness FCC 15C (231).

4.4. Bandwidth Limit

200KHz wide centered on the operation frequency.

4.5. Test Procedure

PASS.

The testing data was attached in the next pages.

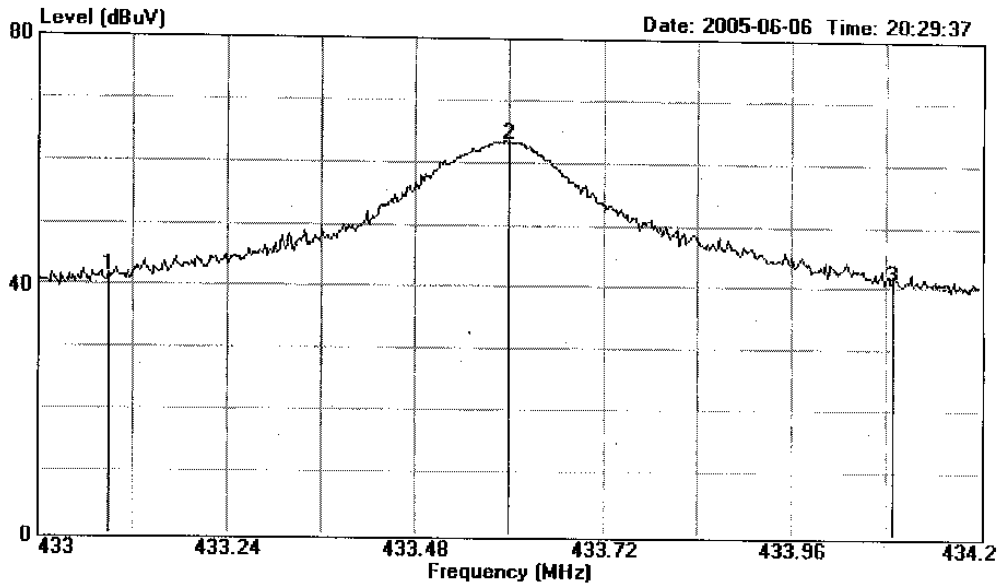


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Data#: 27 File#: C:\EMI TEST DATA\I\idt.EMI



Site : 1# Chamber
Condition :
EUT : Find One, Find All Locator
M/N : 63-1220
Power : BATTERY DC3.0V
Test Engineer : Seco
Memo : Temp:24 Humi:54%

	Freq	Level	Over Limit	Limit Line	Read Level	Cable Loss	Probe Factor	Preamp Factor	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	dB	
1	433.090	41.54	-----	-----	41.54	0.00	0.00	0.00	Peak
2	433.600	63.32	-----	-----	63.32	0.00	0.00	0.00	Peak
3	434.090	41.08	-----	-----	41.08	0.00	0.00	0.00	Peak

5. DEVIATION TO TEST SPECIFICATIONS

[None.]

APPENDIX I

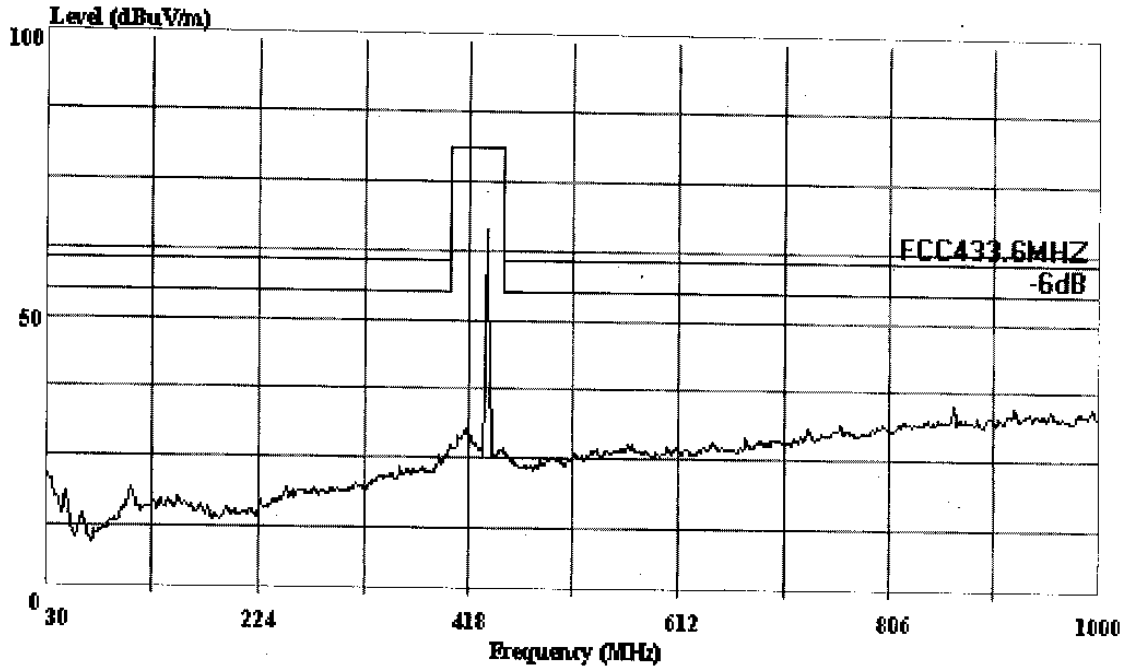


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Data#: 91 File#: Idt.emi

Date: 2005-05-30 Time: 19:58:19



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

Trace:

Ref Trace:

Condition: FCC433.6MHZ 3m 2598FACTOR HORIZONTAL
 EUT : Find One, Find All Locator
 M/N : 63-1220
 Power : BATTERY DC3V
 Engineer: VICTOR
 Comment : Temp:23.8'C Humi:57%
 Memo : TX

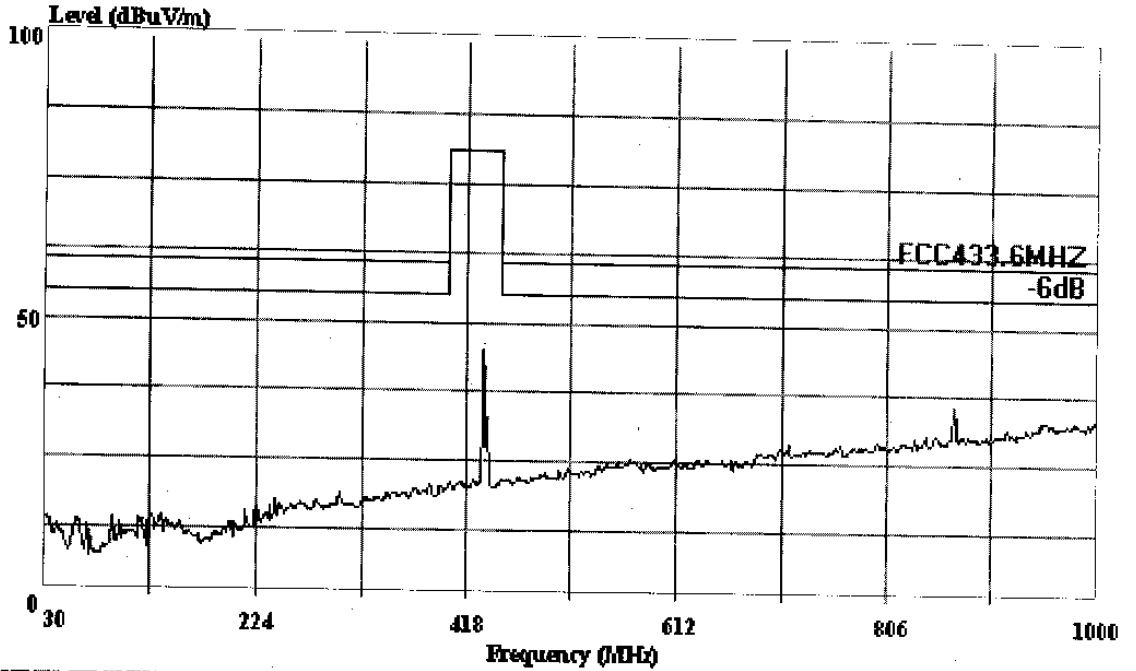


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Data#: '93 File#: Idt.emi

Date: 2005-05-30 Time: 20:14:30



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

Trace:

Ref Trace:

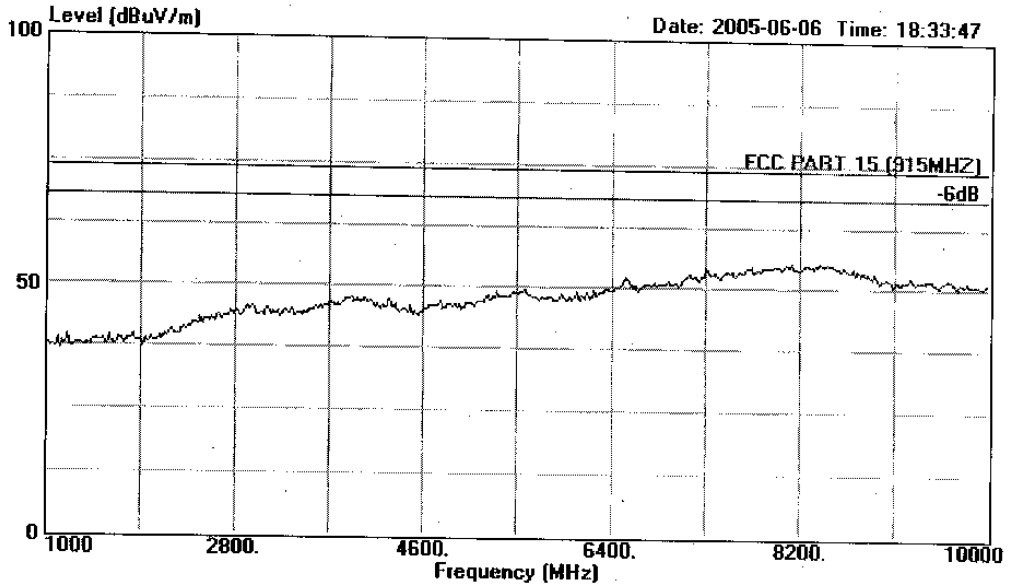
Condition: FCC433.6MHZ 3m 2598FACTOR VERTICAL
 EUT : Find One, Find All Locator
 M/N : 63-1220
 Power : BATTERY DC3V
 Engineer: VICTOR
 Comment : Temp:23.8'C Humi:57%
 Memo : TX



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Data#: 25 File#: C:\EMI TEST DATA\I\idt.EMI



Site : 1# Chamber
 Condition : FCC PART 15 (915MHZ) 3m 3115 FACTOR HORIZONTAL
 EUT : Find One, Find All Locator
 M/N : 63-1220
 Power : BATTERY DC3.0V
 Test Engineer : Seco
 Memo : Temp:24 Humi:54%

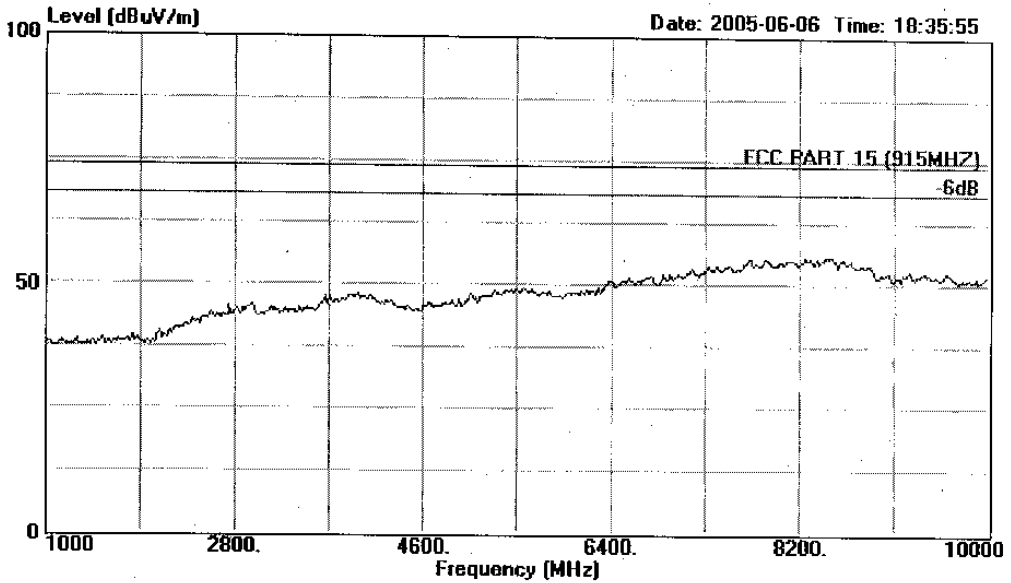


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Data#: 26 File#: C:\EMI TEST DATA\I\idt.EMI



Site : 1# Chamber
 Condition : FCC PART 15 (915MHZ) 3m 3115 FACTOR VERTICAL
 EUT : Find One, Find All Locator
 M/N : 63-1220
 Power : BATTERY DC3.0V
 Test Engineer : Seco
 Memo : Temp:24 Humi:54%