

APPLICATION FOR CERTIFICATION

On Behalf of  
Chang An Hop Yee Toys Mfy  
Wireless Control Car

Model : 168

Prepared for : Chang An Hop Yee Toys Mfy  
Jie Kou Management Region, Chang An,  
Dongguan, Guangdong Province, China.

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

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Report Number : ACS-F01069  
Date of Test : Nov. 19, 2001  
Date of Report : Dec. 06, 2001

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## TEST REPORT CERTIFICATION

Applicant : Chang An Hop Yee Toys Mfy  
 Manufacturer : Chang An Hop Yee Toys Mfy  
 EUT Description : Wireless Control Car  
                           (A) MODEL NO. : 168  
                           (B) POWER SUPPLY : 9V DC Battery

Measurement Procedure Used:

FCC Rules and Regulations Part 15 Subpart C October 1998 & ANSI C63.4-1992

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 measurement results are contained in this test report and AUDIX TECHNOLOGY (SHENZHEN) CO., LTD. is assumed full responsibility for the accuracy and completeness of these measurements. 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.

Date of Test : Nov.19, 2001

Prepared by :

Sunny Sang  
(Sunny Sang / Assistant)

Reviewer :

Labe Wang  
For (Labe Wang / Supervisor)  
AUDIX TECHNOLOGY (SHENZHEN) CO., LTD.

Approved & Authorized Signer :

Alex Deng  
(Alex Deng / Authorized Signer)

## 1. GENERAL INFORMATION

### 1.1. Description of Device (EUT)

Description	:	Wireless Control Car This report is about transmitter FCC ID and the receiver FCC DOC report please refer to AUDIX Number ACS-F01183
Model Number	:	168
Applicant	:	Chang An Hop Yee Toys Mfy  Jie Kou Management Region, Chang An, Dongguan, Guangdong Province, China.
Manufacturer	:	Chang An Hop Yee Toys Mfy  Jie Kou Management Region, Chang An, Dongguan, Guangdong Province, China.
Date of Test	:	Nov 19, 2001

## 1.2. Test Facility

### Site Description

3m Anechoic Chamber : Certificated by FCC, USA  
Aug. 20, 2000  
Registration Number: 90454

3m & 10m Open Site : Certificated by FCC, USA  
Jan. 29, 2001

EMC Lab. Certificated by VCCI, Japan  
Oct. 29, 1998

Certificated by DATech, German  
Feb. 02, 1999

Certificated by NVLAP, USA  
NVLAP Code: 200372-0

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

Conduction Uncertainty =  $\pm 2.66\text{dB}$

Radiation Uncertainty =  $\pm 4.26\text{dB}$

## **2. POWER LINE CONDUCTED MEASUREMENT**

According to Paragraph (f) of FCC Part 15 section 15.207, 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 MEASUREMENT

#### 3.1. Test Equipment

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

##### 3.1.1. For Chamber #3

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analyzer	HP	85422E	3625A00181	Jun. 03, 01	1 Year
2.	Test Receiver	Rohde & Schwarz	ESVS20	830350/005	Jun. 03, 01	1 Year
3.	Amplifier	HP	8447D	2944A07794	Dec. 01, 01	1/2 Year
4.	Bilog Antenna	Chase	CBL6112A	2176	Mar. 25, 01	1 Year
5.	Computer	N/A	N/A	N/A	N/A	N/A
6.	Printer	NEC	P3800	568101448	N/A	N/A
7.	Coaxial Switch	Anritsu	MP59B	M20531	Jun. 03, 01	1 Year
8.	FR Cable	MIYAZAKI	5D-2W	3# Chamber No.1	Sep. 26, 01	1/2 Year
9.	FR Cable	MIYAZAKI	5D-2W	3# Chamber No.2	Sep. 26, 01	1/2 Year
10.	FR Cable	FUJIKURA	RG-55/U	3# Chamber No.3	Sep. 26, 01	1/2 Year
11.	FR Cable	FUJIKURA	RG-55/U	3# Chamber No.4	Sep. 26, 01	1/2 Year

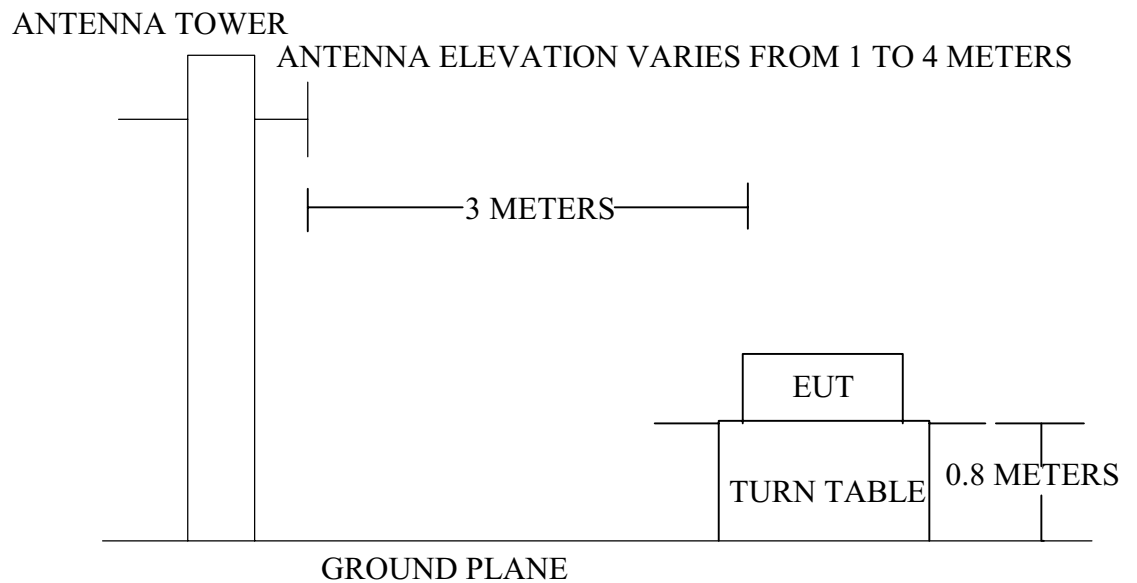
#### 3.2. Block Diagram of Test Setup

##### 3.2.1. diagram of connection between the EUT and simulators

EUT

(EUT: Wireless Control Car)

### 3.2.2. Chamber # 3 Test Setup Diagram



### 3.3. Radiated Emission Limit (Class B)

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		$\mu\text{V/m}$	$\text{dB}(\mu\text{V})/\text{m}$
Fundamental Frequency	3	10000	80
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
Above 960	3	500	54.0

- Remark :
- (1) Emission level  $(\text{dB})\mu\text{V} = 20 \log \text{Emission level } \mu\text{V/m}$
  - (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 Measurement

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

#### 3.4.1. Wireless Control Car (EUT)

Model Number : 168  
Manufacturer : Chang An Hop Yee Toys Mfy



### 3.5. Operating Condition of EUT

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

### 3.6. Test Procedure

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. EUT is set 3.0 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1.0 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 measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4-1992 on radiated emission measurement.

The bandwidth of the EMI test receiver (R&S ESVS20) is set at 120KHz in the 30-1000MHz and 1MHz had been set in above 1000MHz Range.

The frequency range from 30MHz to 1000MHz is checked.

The test mode (On) 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.



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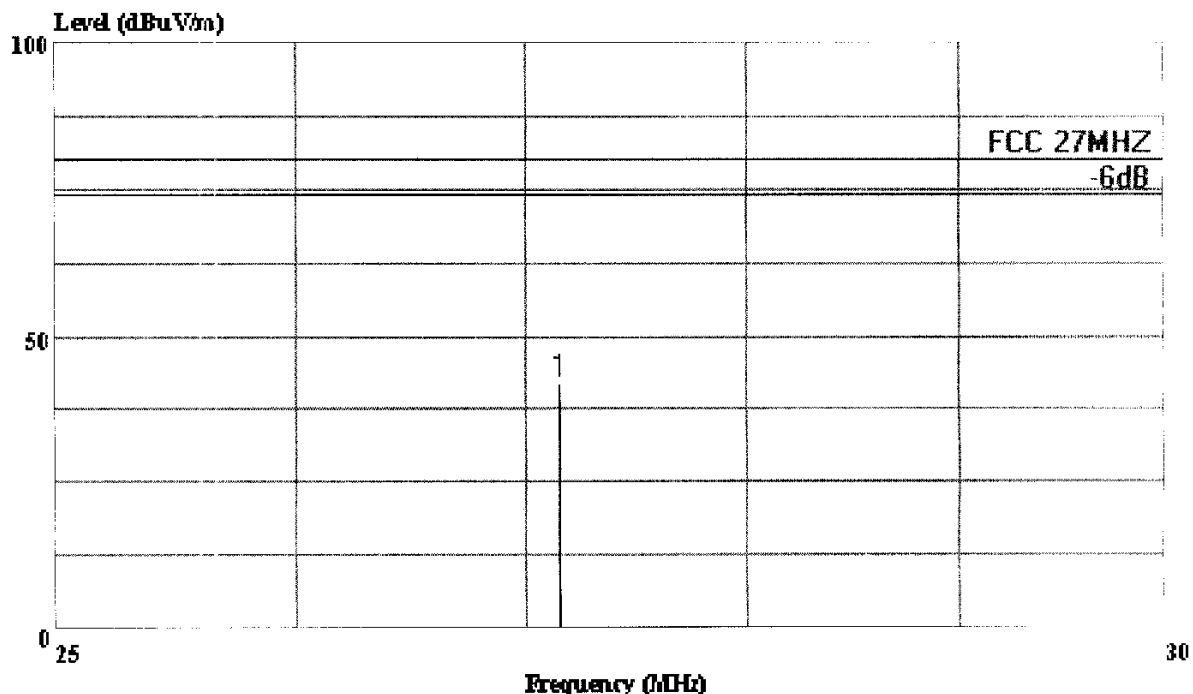
Shenzhen Science &amp; Ind. Park

Tel: 0755-6639495~7

Fax: 0755-6632877

Data#: 20 File#: hop yee.EMI

Date: 2001-11-19 Time: 19:59:45



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

Trace:

Ref Trace:

Condition: FCC 27MHZ 3m 25-30/2176H HORIZONTAL

EUT: : Wireless Control Car

M/N: : 168

POWER: : Battery DC 9V

OF COND: : On

MEMO: : TX

Page: 1

	Freq	Level	Over Limit	Limit Line	Read Level	Factor	Probe Factor	Cable Loss	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB	
1	27.151	41.85	-38.15	80.00	20.41	21.44	20.65	0.79	Averag



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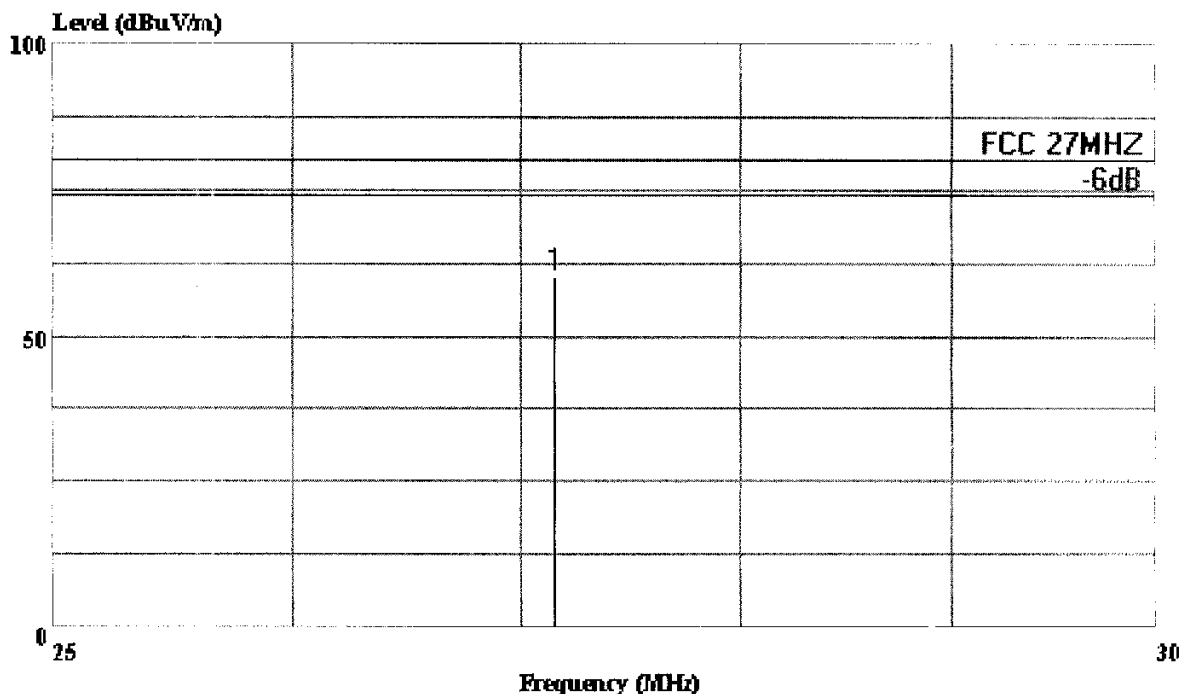
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Data#: 18 File#: hop yee.EMI

Date: 2001-11-19 Time: 19:48:01



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

Trace:

Ref Trace:

Condition: FCC 27MHZ 3m 25-30/2176V VERTICAL

EUT: : Wireless Control Car

M/N: : 168

POWER: : Battery DC 9V

OF COND: : On

MEMO: : TX

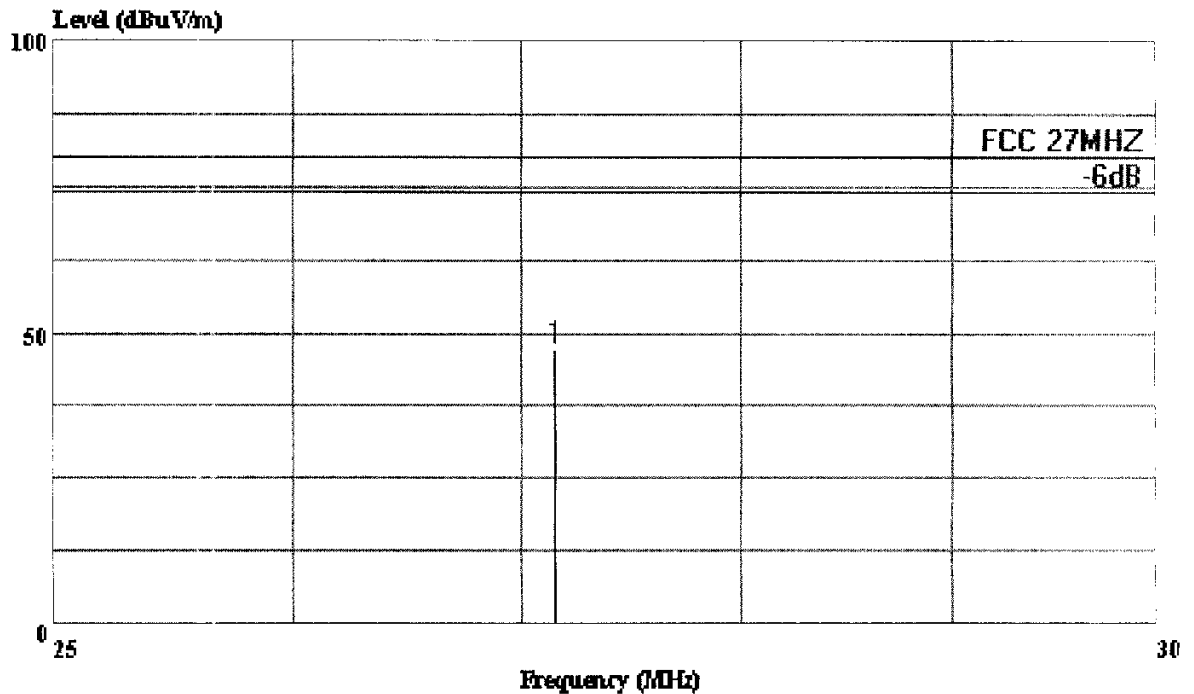
Page: 1

	Freq	Level	Over Limit	Limit Line	Read Level	Factor	Probe Factor	Cable Loss	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB	
1	27.149	60.22	-19.78	80.00	39.03	21.19	20.40	0.79	Averag



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Data#: 19      File#: hop yee.EMI      Date: 2001-11-19    Time: 19:57:26



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

Trace:

Ref Trace:

Condition: FCC 27MHZ 3m 25-30/2176H HORIZONTAL

EUT: : Wireless Control Car

M/N: : 168

POWER: : Battery DC 9V

OF COND: : On

MEMO: : TX

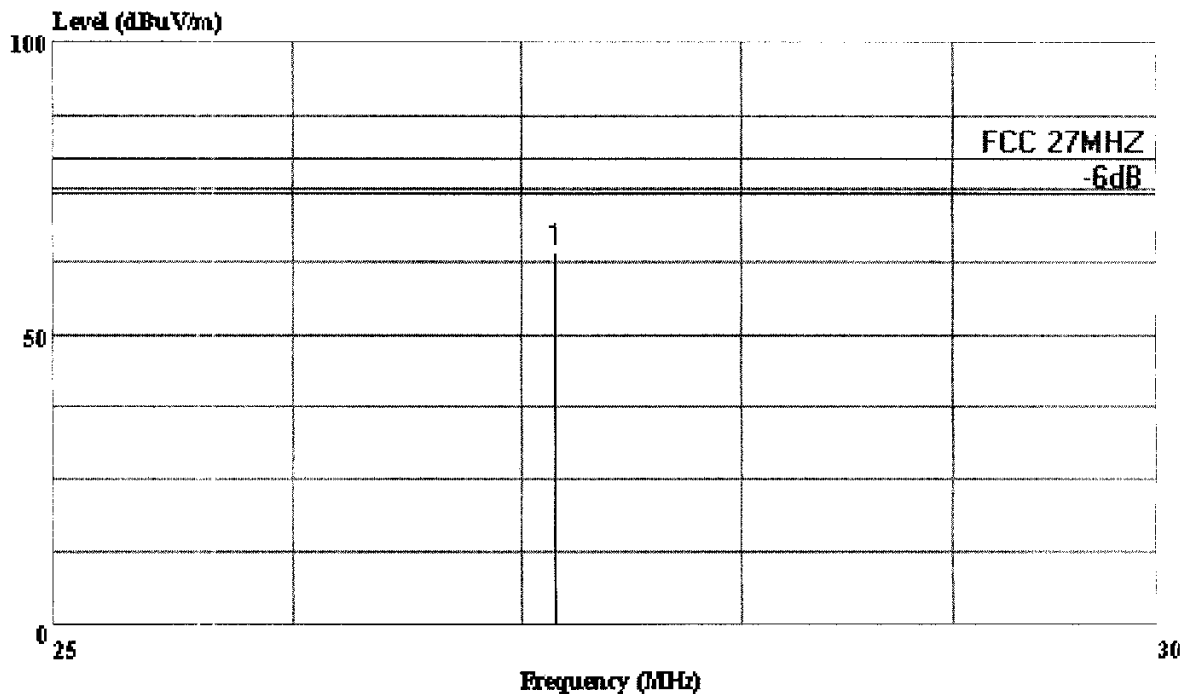
Page: 1

	Freq	Level	Over Limit	Limit Line	Read Level	Factor	Probe Factor	Cable Loss	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB	
1	27.146	46.98	-33.02	80.00	25.53	21.45	20.66	0.79	Peak



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Data#: 17      File#: hop yee.EMI      Date: 2001-11-19    Time: 19:47:22



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

Trace:

Ref Trace:

Condition: FCC 27MHZ 3m 25-30/2176V VERTICAL  
EUT: : Wireless Control Car  
M/N: : 168  
POWER: : Battery DC 9V  
OF COND:: On  
MEMO: : TX

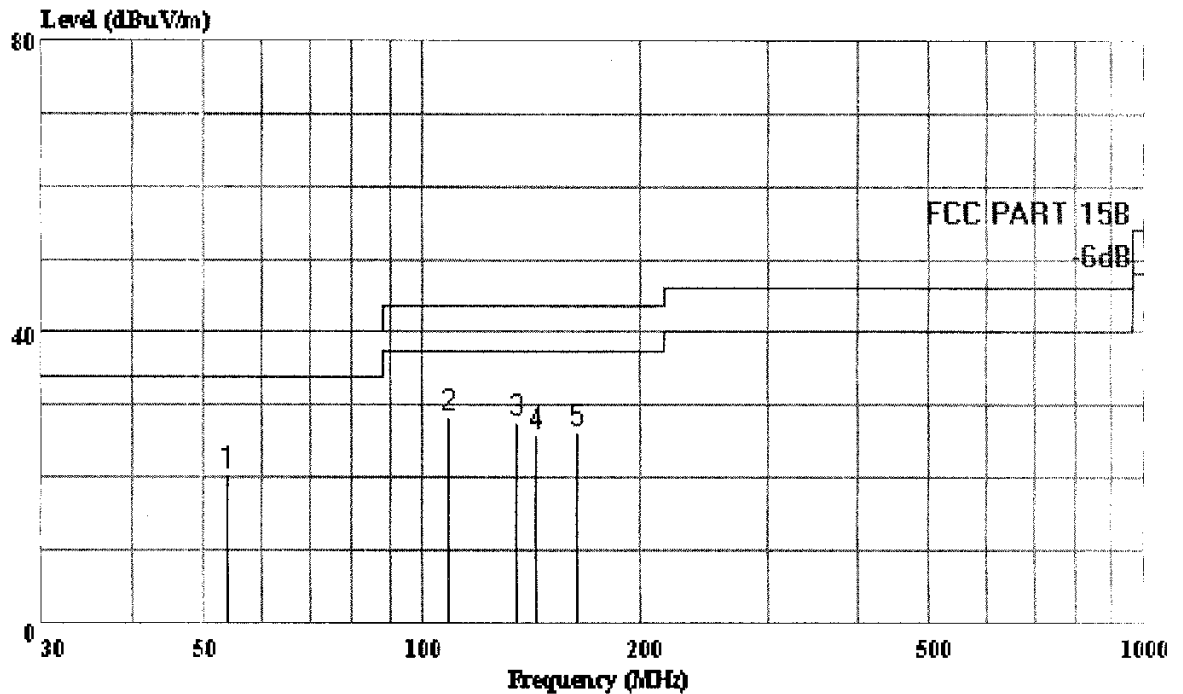
Page: 1

	Freq	Level	Over	Limit	Read	Probe	Cable	
			Limit	Line	Level			
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB
1	27.149	64.16	-15.84	80.00	42.97	21.19	20.40	0.79 Peak

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Data#: 26 File#: hop yee.EMI Date: 2001-11-19 Time: 20:35:10



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Trace:

Ref Trace:

Condition: FCC PART 15B 3m 2598FACTOR HORIZONTAL

EUT: : Wireless Control Car

M/N: : 168

POWER: : Battery DC 9V

OF COND: : On

MEMO: : TX

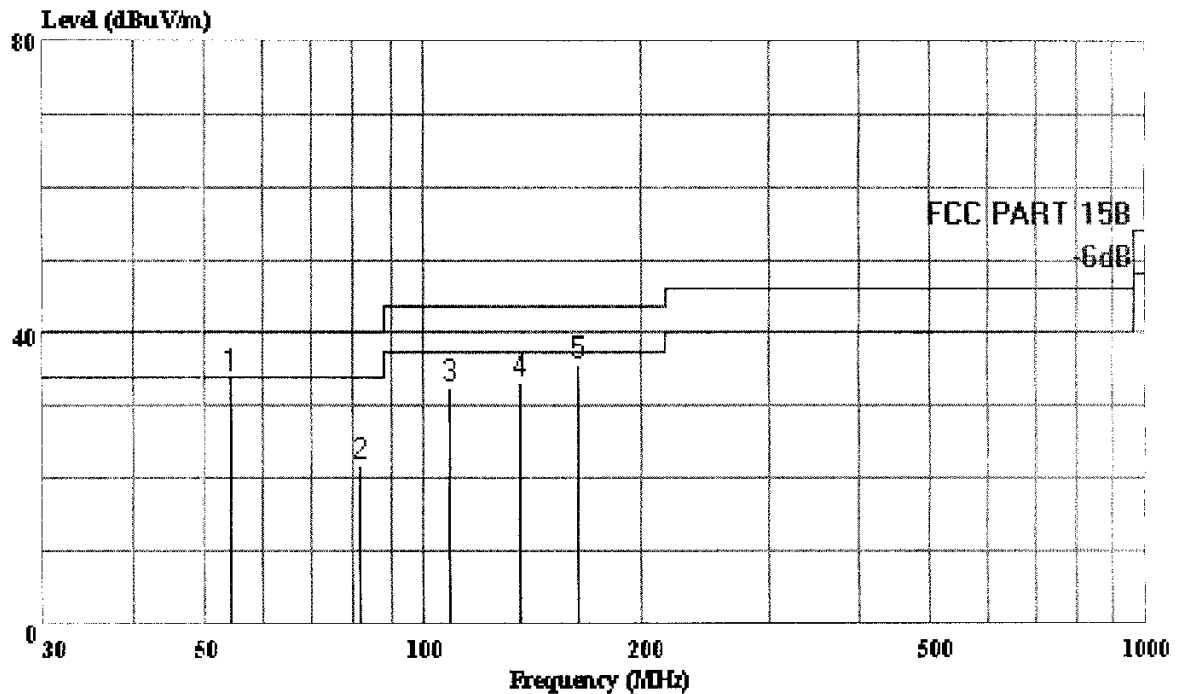
Page: 1

	Freq	Level	Over Limit	Limit Line	Read Level	Factor	Probe Factor	Cable Loss	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB	
1	54.002	20.46	-19.54	40.00	11.63	8.83	7.13	1.70	
2	108.256	28.32	-15.18	43.50	12.69	15.63	12.89	2.74	
3	135.025	27.71	-15.79	43.50	12.68	15.03	11.97	3.07	
4	143.220	25.82	-17.68	43.50	10.98	14.84	11.68	3.16	
5	162.875	26.28	-17.22	43.50	11.23	15.05	11.69	3.35	



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Data#: 25 File#: hop yee.EMI Date: 2001-11-19 Time: 20:30:49



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Trace:

Ref Trace:

Condition: FCC PART 15B 3m 2598FACTOR VERTICAL

EUT: : Wireless Control Car

M/N: : 168

POWER: : Battery DC 9V

OF COND: : On

MEMO: : TX

Page: 1

	Freq	Level	Over Limit	Limit Line	Read Level	Factor	Probe Factor	Cable Loss	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB	
1	54.290	33.85	-6.15	40.00	23.90	9.95	8.24	1.71	
2	81.428	21.65	-18.35	40.00	11.98	9.67	7.36	2.31	
3	108.588	32.49	-11.01	43.50	16.75	15.74	12.99	2.75	
4	135.738	33.27	-10.23	43.50	19.35	13.92	10.84	3.08	
5	162.875	35.53	-7.97	43.50	21.65	13.88	10.53	3.35	

# **APPENDIX I**

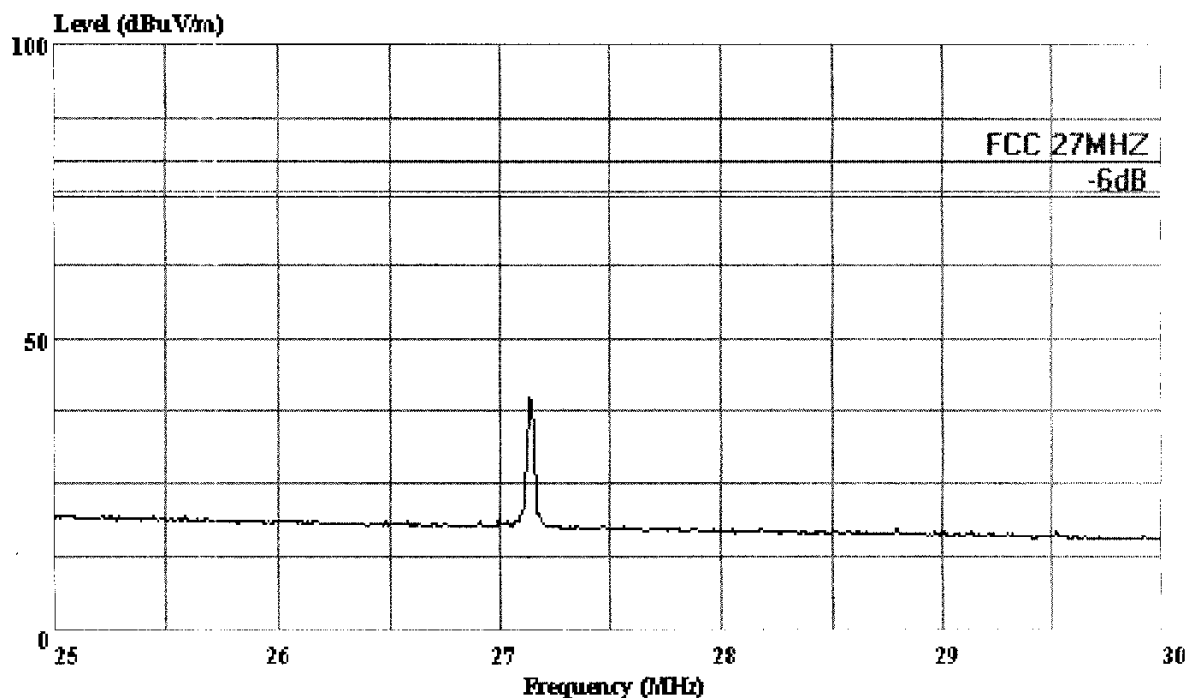


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Date: 2001-11-19 Time: 20:26:41



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

Trace:

Ref Trace:

Condition: FCC 27MHZ 3m 25-30/2176H HORIZONTAL

EUT: : Wireless Control Car

M/N: : 168

POWER: : Battery DC 9V

OF COND: : On

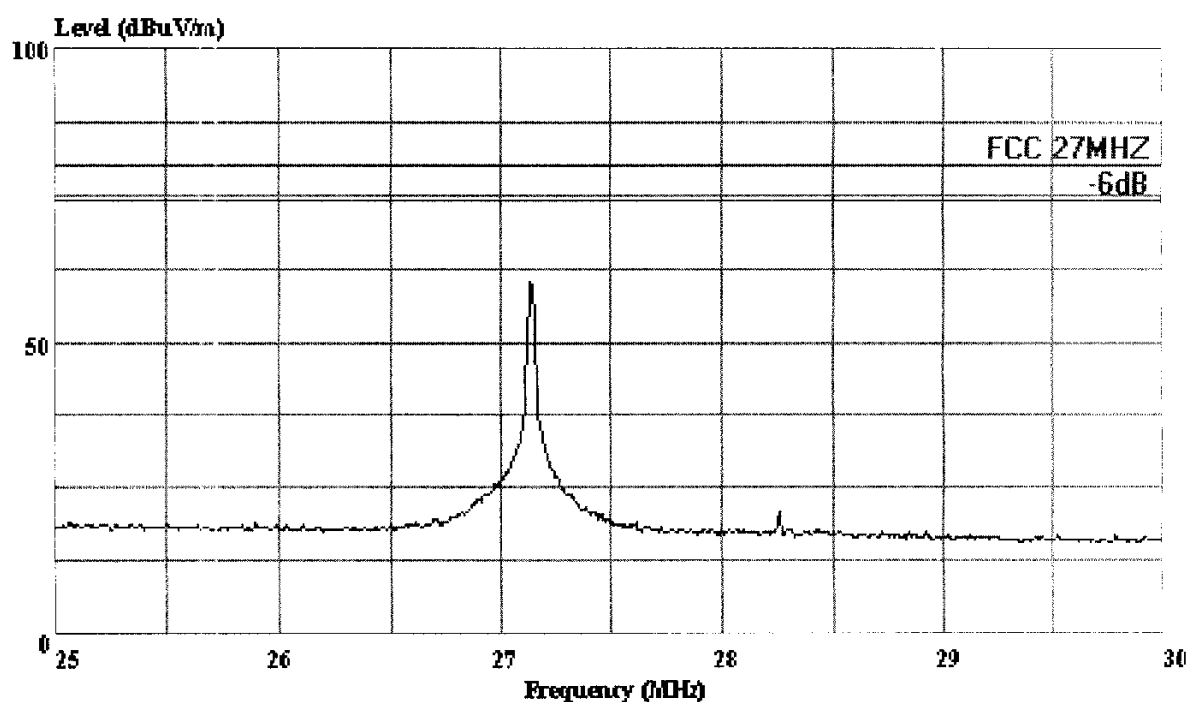
MEMO: : TX

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Data#: 21 File#: hop yee.EMI

Date: 2001-11-19 Time: 20:24:51



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Trace:

Ref Trace:

Condition: FCC 27MHZ 3m 25-30/2176V VERTICAL

EUT: : Wireless Control Car

M/N: : 168

POWER: : Battery DC 9V

OF COND: : On

MEMO: : TX



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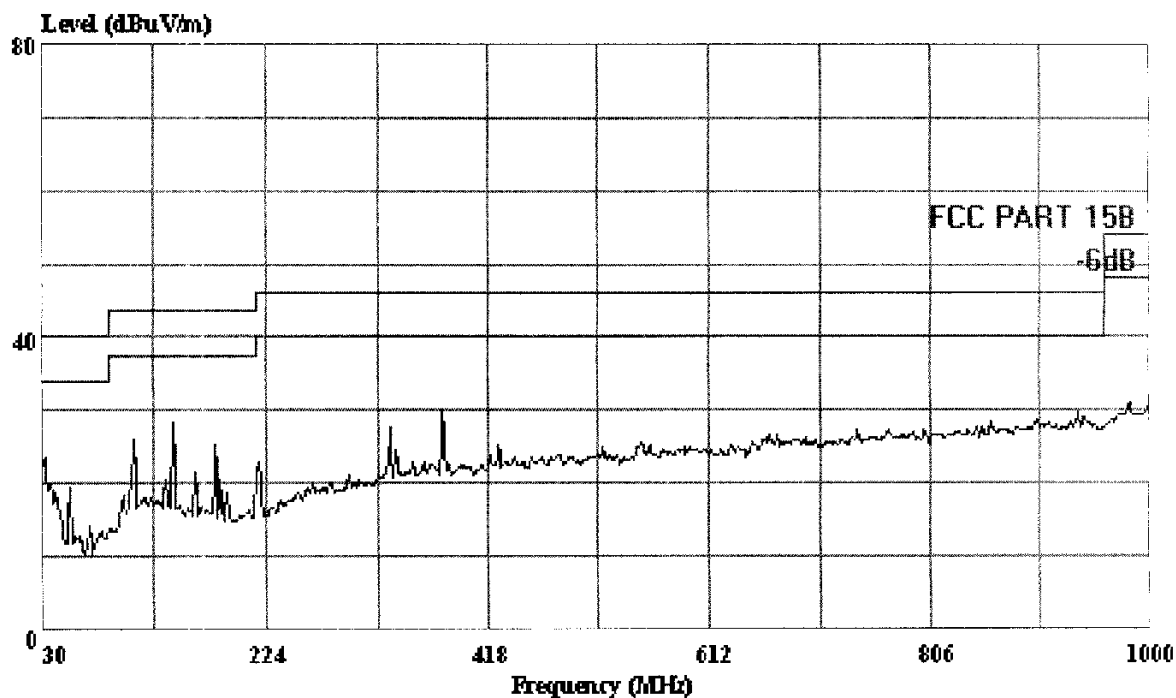
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Date: 2001-11-19 Time: 20:29:28



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

Trace:

Ref Trace:

Condition: FCC PART 15B 3m 2598FACTOR HORIZONTAL

EUT: : Wireless Control Car

M/N: : 168

POWER: : Battery DC 9V

OF COND: : On

MEMO: : TX



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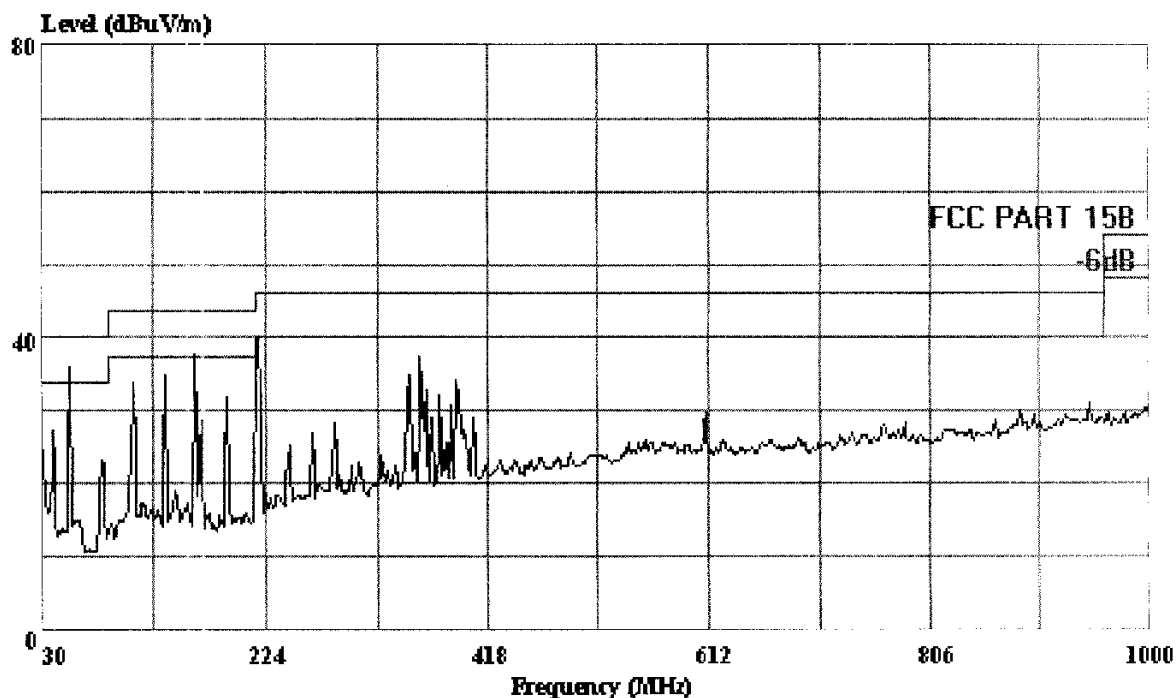
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Date: 2001-11-19 Time: 20:30:21



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

Trace:

Ref Trace:

Condition: FCC PART 15B 3m 2598FACTOR VERTICAL

EUT: : Wireless Control Car

M/N: : 168

POWER: : Battery DC 9V

OF COND: : On

MEMO: : TX