APPLICATION FOR CERTIFICATION
On Behalf of
G.Tech Technology. Ltd.
RF Cordless Mouse

Model : GT908

Prepared for : G.Tech Technology. Ltd.
7/F, Dongqu Bld., 7, Hai Hong Rd.,
Xiang Zhou, Zhuhai Sze,
Guangdong, China.

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

Tel: (0755)663-9496

Report Number	ACS-F99068
Date of Test	Nov. 02/13, 1999
Date of Report	Nov. 15, 1999

TABLE OF CONTENTS

Description Page

TEST REPORT CERTIFICATION

Applicant	G.Tech Technology. Ltd.
Manufacturer	G.Tech Technology. Ltd.
EUT Description	RF Cordless Mouse
	(A) MODEL NO. : GT908
	(B) SERIAL NO. : N/A
	(C) POWER SUPPLY : +3V DC

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. 02/11, 1999

Prepared by : Fanny Yang 18/11
(ASSISTANT: Fanny Yang)

Reviewer : Martin Lu 18/11
(SUPERVISOR: MARTIN LU)

For and on behalf of
AUDIX TECHNOLOGY (SHENZHEN) CO.,LTD.

Approved & Authorized Signer : Alan Liao Nov-18-99
Authorized Signature(s)
(DEPUTY MANAGER: ALAN LIAO)

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

Description	:	RF Cordless Mouse (This report is about transmitter and the receiver FCC DOC report please refer to AUDIX Number F99070.)
Model Number	:	GT908
Applicant	:	G.Tech Technology. Ltd. 7/F, Dongqu Bld., 7, Hai Hong Rd, Xiang Zhou, Zhuhai Sze, Guangdong, China
Manufacturer	:	G.Tech Technology. Ltd. 7/F, Dongqu Bld., 7, Hai Hong Rd, Xiang Zhou, Zhuhai Sze, Guangdong, China
Date of Test	:	Nov 02 / 11, 1999

1.2. Tested Supporting System Details

1.2.1. PERSONAL COMPUTER

Model Number		P2L97
Serial Number		No.1
FCC		Doc
Manufacturer		Asus Computer International Co.
Switching Power Supply		Model FSP300-60GT Sparkle Power Int'l Ltd
Floppy Driver		Teac Corp Model FC-235HF
Hard Disk Driver		Quantum, Model 7218A2C
Disk Ctrl Card		Within Mother Board
Serial/Parallel Card		Within Mother Board
Power Cord		Nonshielded, Detachable, 1.8m
VGA CARD		
Model Number		DSV3365
Serial Number		E601604161
Manufacturer		Dataexpert CO.,LTD
FCC ID	:	LUT-DSV3365

1.2.2. MONITOR

Model Number	KS-M1421
Serial Number	120954
FCC ID	KVCKS-M1421
Manufacturer	KSAI Electronics Co., Ltd.
Data	Shielded, Undetachable,1.2m
Power Cord	Nonshielded, Undetachable, 1.2m

1.2.3. KEYBOARD

Model Number	2151B
Serial Number	N/A
FCC ID	FPW2151B-68W
Manufacturer	Legend
Data Cable	Shielded, Undetachable, 1.9m

1.2.4. PRINTER

Model Number	2225C+
Serial Number	22937S56660
FCC ID	BS46XU2225C
Manufacturer	Hewlett Packard
Power Adapter	Hewlett Packard, Model 82241A
Data Cable	Shielded, Detachable, 1.5m

1.2.5. MODEM#1

Model Number	MODEM 1414
Serial Number	980013578
FCC ID	IFAXDM1414
Manufacturer	Aceex
Data Cable	Shielded, Detachable, 1.5m
AC Adapter	M/N: SCP41-91000A

1.2.6. MODEM#2

Model Number	MODEM 1200AT
Serial Number	AT 112153
FCC ID	EF56A5 1200AT
Manufacturer	Team Technology, Inc.
Data Cable	Shielded, Detachable, 1.5m
Power Adapter	Team, Model DV-1215A

1.3. Test Facility

Site Description

3m Anechoic Chamber	:	certificated by FCC, USA Aug. 18, 1997
3m & 10m Open Site	:	certificated by FCC, USA Feb. 13, 1998
EMC Lab.		certificated by VCCI, Japan Oct. 29, 1998
		certificated by DATech, German Feb. 02, 1999
		certificated by NVLAP, USA until Mar. 03, 2000 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

1.4. Measurement Uncertainty

Conduction Uncertainty	=	±2.66dB
Radiation Uncertainty	=	±4.26dB

2. POWER LINE CONDUCTED MEASUREMENT

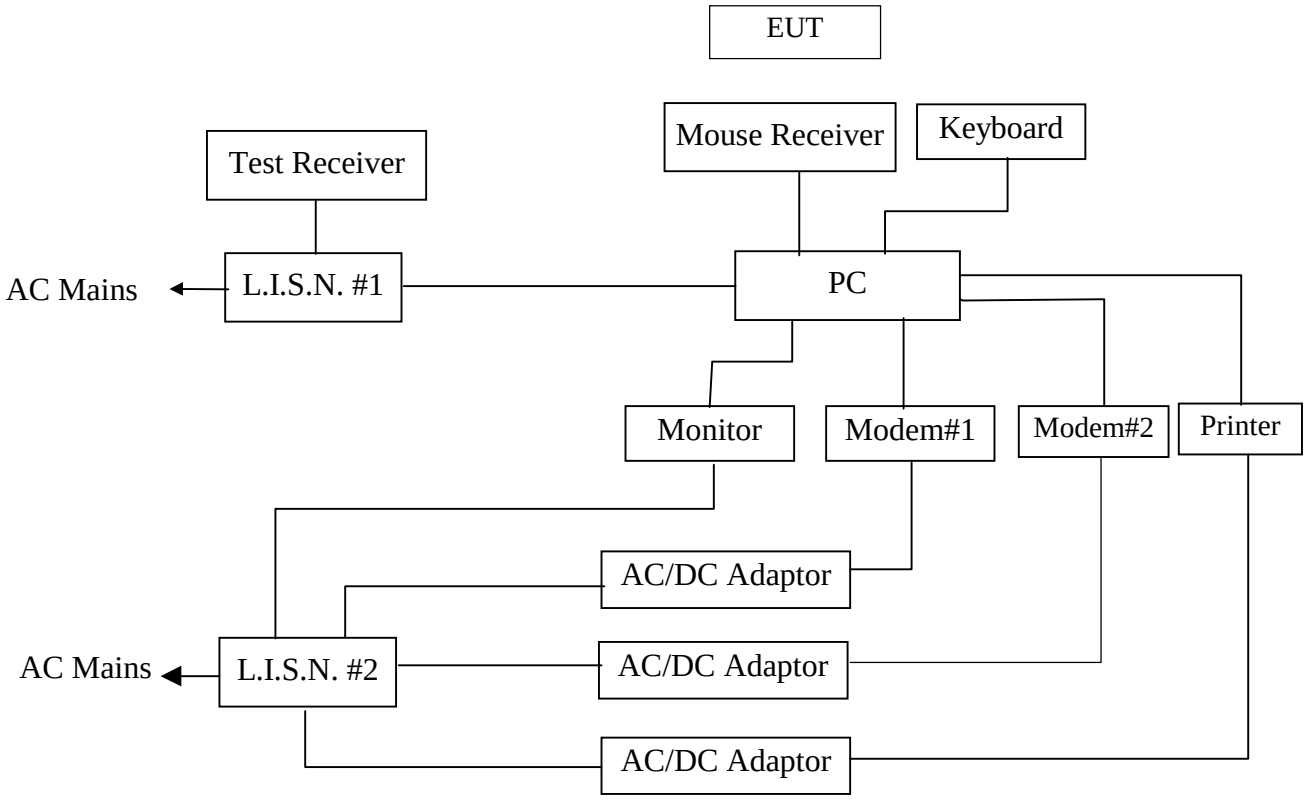
2.1. Test Equipment

The following test equipments are used during the power line conducted measurement:

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde & Schwarz	ESHS20	836600/006	Jun. 06, 99	1 Year
2.	L.I.S.N. #1	Kyoritsu	KNW-407	8-541-4	Jun. 06, 99	1 Year
3.	L.I.S.N. #2	EMCO	3825/2	9006-1660	Jun. 06, 99	1 Year
4.	Terminator	N/A	50Ω	No. 1	Jun. 06, 99	1 Year
5.	Terminator	N/A	50Ω	No. 2	Jun. 06, 99	1 Year
6.	RF Cable	FUJIKURA	RG-55/U	LISN Cable	Aug. 31, 99	1/2 Year
7.	Coaxial Switch	Anritsu	MP59B	M73989	Jun. 06, 99	1/2 Year

2.2. Block Diagram of Test Setup

2.2.1. Block diagram of connection between the EUT and simulators



(EUT: RF Cordless Mouse)

2.3. Power Line Conducted Emission Measurement Limits (Class B)

Frequency MHz	Maximum RF Line Voltage	
	μV	dB(μV)
0.45 ~ 30.00	250	48

Remarks: RF Line Voltage (dB(μV)) = 20 log RF Line Voltage (μV)

2.4. Configuration of EUT on Measurement

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

2.4.1. RF Cordless Mouse (EUT)

Model Number	:	GT908
Serial Number	:	N/A
Manufacturer	:	G.Tech Technology. Ltd.

2.5. Operating Condition of EUT

2.5.1. Setup the EUT and simulator as shown as Section 2.2.
2.5.2. Turn on the power of all equipment.
2.5.3. Let the EUT work in test mode (Running) and measure it.

2.6. Test Procedure

The EUT is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm coupling impedance for the EUT. Please refer the block diagram of the test setup and photographs. Both sides of AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.4-1992 on Conducted Emission Measurement.

The bandwidth of test receiver (R & S ESHS20) is set at 10KHz.

The frequency range from 450KHz to 30MHz is checked.

The test result are reported on Section 2.7., all the scanning waveforms for Conducted Emission Measurement are attached in Appendix I.

2.7. Power Line Conducted Emission Measurement Results

PASS.

The frequency range from 450KHz to 30 MHz is investigated.
As the peak value is too low against the limit, So the Quasi-peak value has been omitted, The scanning waveforms put in appendix I.

3. RADIATED EMISSION MEASUREMENT

3.1. Test Equipment

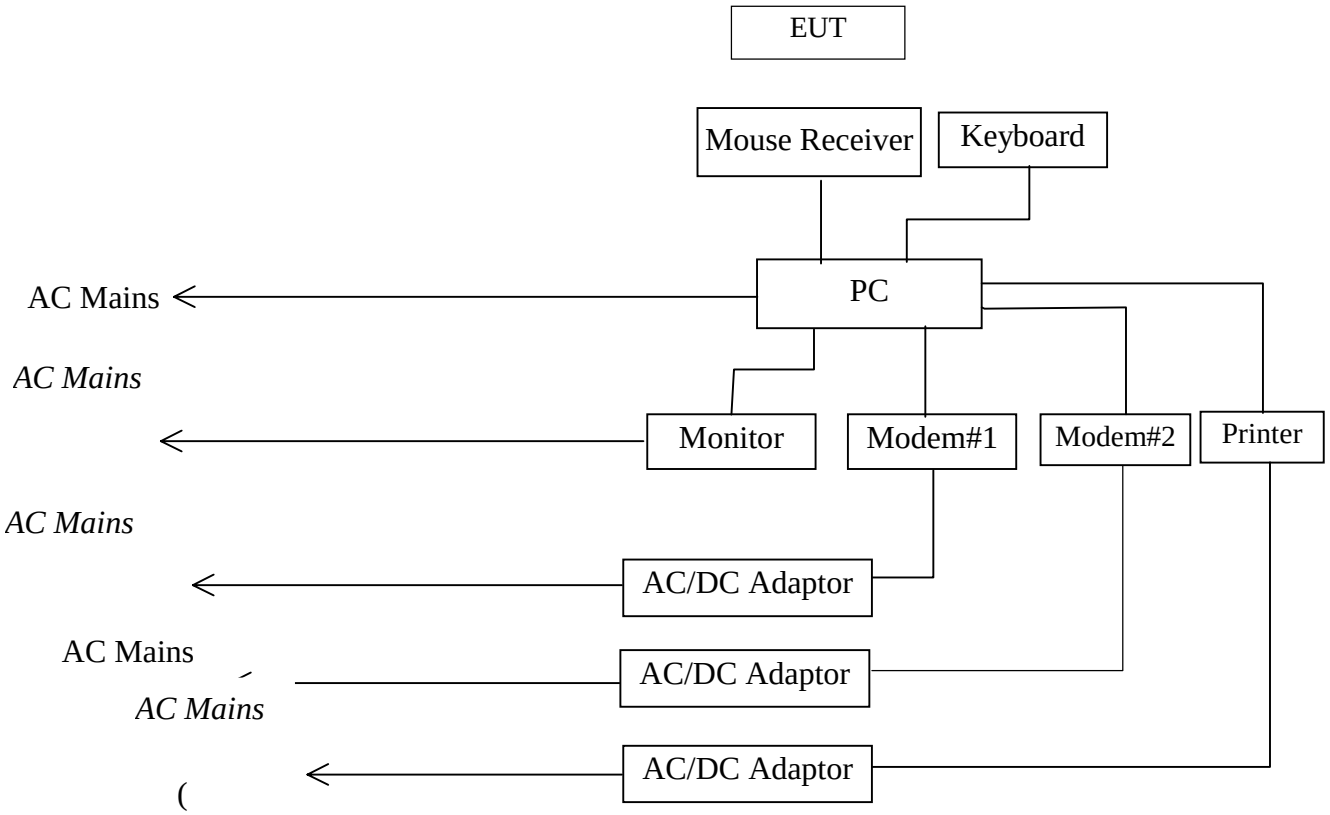
The following test equipments are used during the radiated emission measurement:

3.1.1. For Chamber #3

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analyzer	HP	85422E	3625A00181	Jun. 06, 99	1 Year
2.	Test Receiver	Rohde & Schwarz	ESVS20	830350/005	Jun. 06, 99	1 Year
3.	Amplifier	HP	8447D	2944A07794	Jun. 06, 99	1/2 Year
4.	Bilog Antenna	Chase	CBL6112A	2176	Sep. 26, 98	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. 06, 99	1 Year
8.	FR Cable	MIYAZAKI	5D-2W	3# Chamber No.1	Aug. 11, 99	1/2 Year
9.	FR Cable	MIYAZAKI	5D-2W	3# Chamber No.2	Aug. 11, 99	1/2 Year
10.	FR Cable	FUJIKURA	RG-55/U	3# Chamber No.3	Aug. 11, 99	1/2 Year
11.	FR Cable	FUJIKURA	RG-55/U	3# Chamber No.4	Aug. 11, 99	1/2 Year

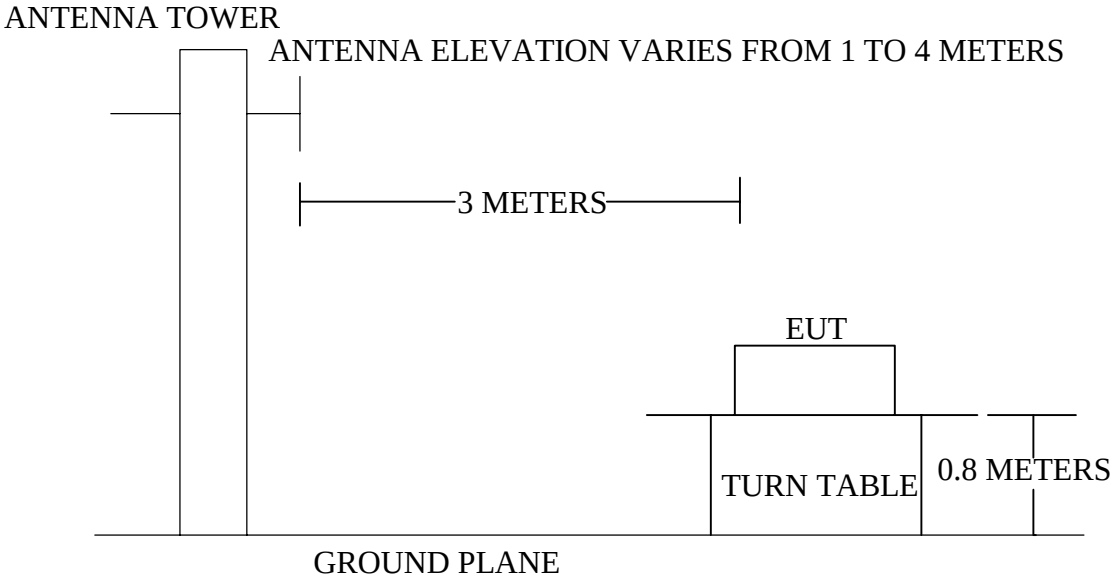
3.2. Block Diagram of Test Setup

3.2.1. diagram of connection between the EUT and simulators



(EUT: RF Cordless Mouse)

3.2.2. Chamber # 3 Test Setup Diagram



3.3. Radiated Emission Limit (Class B)

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		μV/m	dB(μV)/m
Fundamental Frequency	3	50×10^3	94.0
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 (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 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. RF Cordless Mouse (EUT)

Model Number : GT908
Serial Number : N/A
Manufacturer : G.Tech Technology. Ltd.

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 (Running) 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. Peak measurements were too low against limits so higher harmonic measurements on average measurements were judged not necessary. Refer to submitted waveform.

The test mode (Running) is tested in Anechoic Chamber and all the scanning waveforms are attached in Appendix II.

3.7. Radiated Emission Noise Measurement Result

PASS.

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

Date of Test :	Nov 11, 1999	Temperature :	26
EUT :	RF Cordless Mouse	Humidity :	60
Model No. :	GT908	Test Mode :	Running
Test Engineer:	Rees Zeng		

Frequency	Antenna Factor	Cable Loss	Meter Reading Horizontal	Emission Level Horizontal	Over Limits	Limits
MHz	dB/m	dB	dBμV	dBμV/m	dB	dBμV/m
36.190	16.97	1.23	15.90	34.10	-5.90	40.00
133.790	16.80	3.16	19.03	39.00	-4.50	43.50
630.430	24.79	5.45	11.55	41.80	-4.20	46.00
705.120	25.27	5.62	9.21	40.10	-5.90	46.00
917.739	26.69	6.01	38.40	71.10	-22.90	94.00

Remark: 1. All readings are Quasi-Peak values.
2. Emission Level = Antenna Factor + Cable Loss + Meter Reading

Date of Test :	Nov 11, 1999	Temperature :	26
EUT :	RF Cordless Mouse	Humidity :	60
Model No. :	GT908	Test Mode :	Running
Test Engineer:	Rees Zeng		

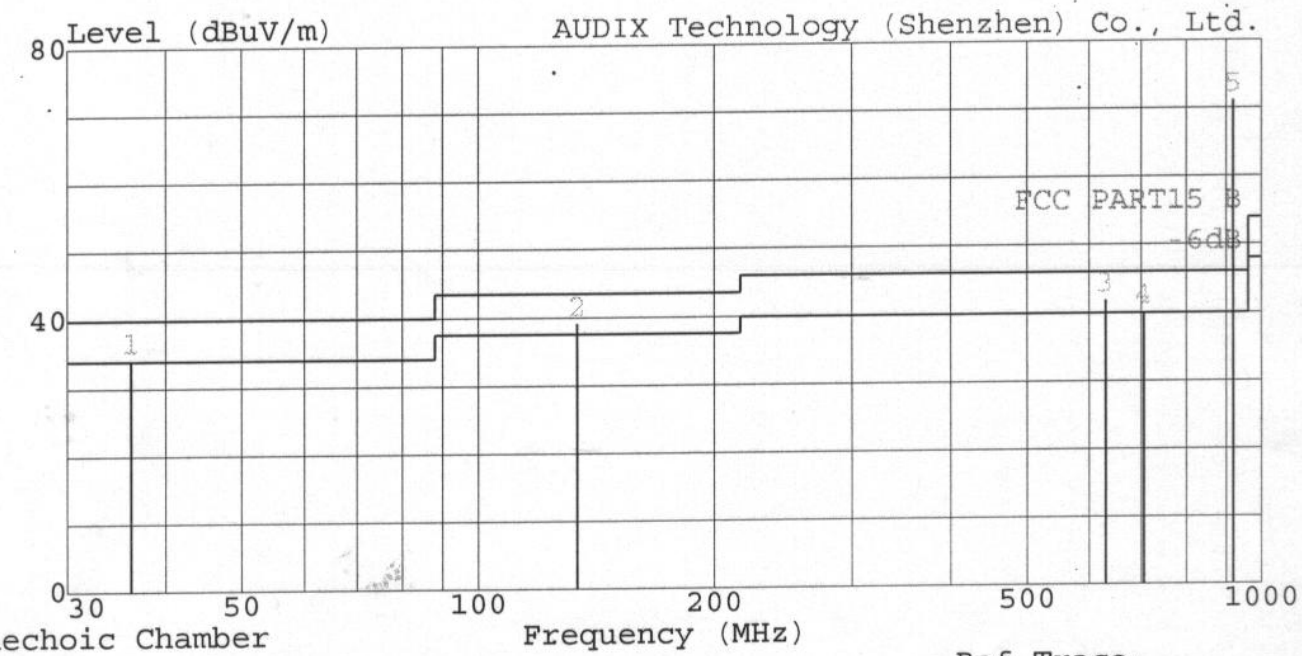
Frequency	Antenna Factor	Cable Loss	Meter Reading Vertical	Emission Level Vertical	Over Limits	Limits
MHz	dB/m	dB	dBμV	dBμV/m	DB	dBμV/m
630.430	24.79	5.45	10.95	41.20	-4.80	46.00
706.090	25.27	5.62	11.11	42.00	-4.00	46.00
817.640	25.93	5.84	8.73	40.50	-5.50	46.00
917.743	26.73	6.01	32.66	65.40	-28.60	94.00

Remark: 1. All readings are Quasi-Peak values.
2. Emission Level = Antenna Factor + Cable Loss + Meter Reading

Reviewer **:** Martin Lu 18/11

AUDIX
52 Block
Shenzhen Science & Industry Park
Nantou, Shenzhen, Guangdong, China
AUDIX Technology (Shenzhen) Co., Ltd. Tel:0755-6639495..7 Fax:0755-6632877

Data#: 33 File#: G-TECH.EMI Date: 11-11,1999 Time: 00:51:31



Anechoic Chamber
Trace :
Limit : FCC PART15 B 3m
Probe : 2176FACTOR HORIZONTAL
Margin: -6.0dB
EUT : RF Cordless Mouse M/N:GT908
Power : DC 3V
Memo : Running
:
:

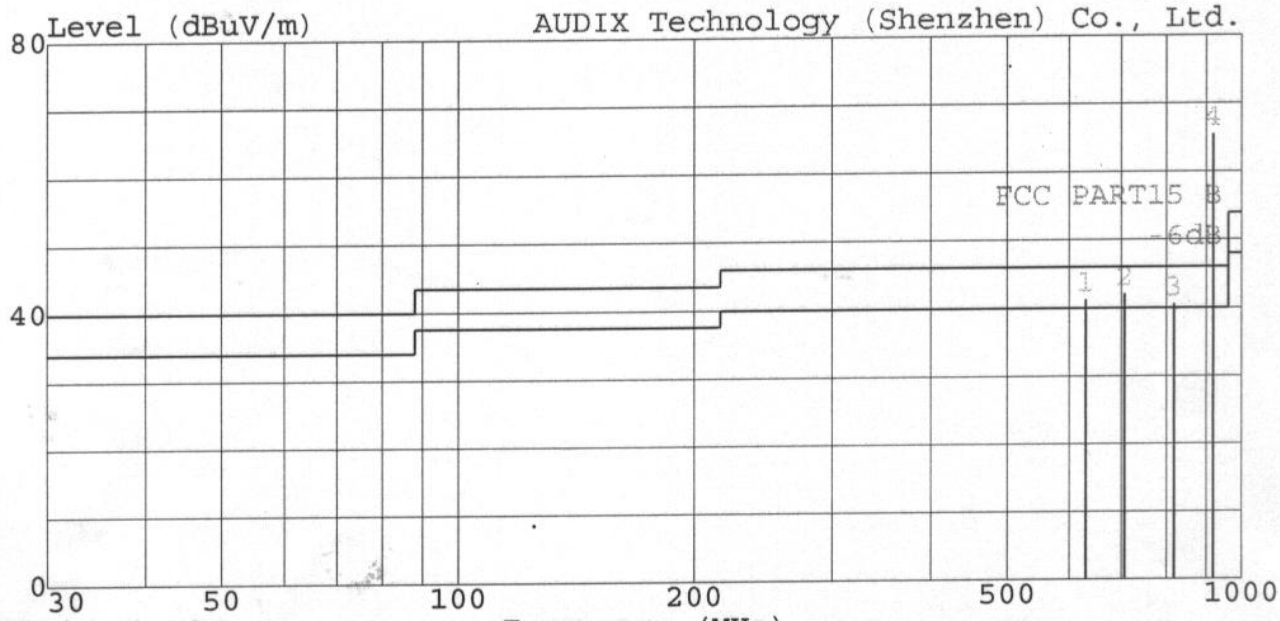
Ref Trace:

Page: 1

		Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark
		MHz	dB	dB	dB	dB	dB	dB	dB	
1	!	36.190	34.10	-5.90	40.00	15.90	16.97	1.23	0.00	
2	!	133.790	39.00	-4.50	43.50	19.03	16.80	3.16	0.00	
3	!	630.430	41.80	-4.20	46.00	11.55	24.79	5.45	0.00	
4	!	705.120	40.10	-5.90	46.00	9.21	25.27	5.62	0.00	
5	*	917.739	71.10	25.10	46.00	38.40	26.69	6.01	0.00	

AUDIX
52 Block
Shenzhen Science & Industry Park
Nantou, Shenzhen, Guangdong, China
AUDIX Technology (Shenzhen) Co., Ltd. Tel:0755-6639495..7 Fax:0755-6632877

Data#: 32 File#: G-TECH.EMI Date: 11-11,1999 Time: 00:49:51



Anechoic Chamber
Trace :
Limit : FCC PART15 B 3m
Probe : 2176FACTOR VERTICAL
Margin: -6.0dB
EUT : RF Cordless Mouse M/N:GT908
Power : DC 3V
Memo : Running
:
:

Ref Trace:

Page: 1

		Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark
		MHz	dB	dB	dB	dB	dB	dB	dB	
1	!	630.430	41.20	-4.80	46.00	10.95	24.79	5.45	0.00	
2	!	706.090	42.00	-4.00	46.00	11.11	25.27	5.62	0.00	
3	!	817.640	40.50	-5.50	46.00	8.73	25.93	5.84	0.00	
4	*	917.743	65.40	19.40	46.00	32.66	26.73	6.01	0.00	

4. FUNDENNENT FREQUENCY BANDWIDTH MEASUREMENT

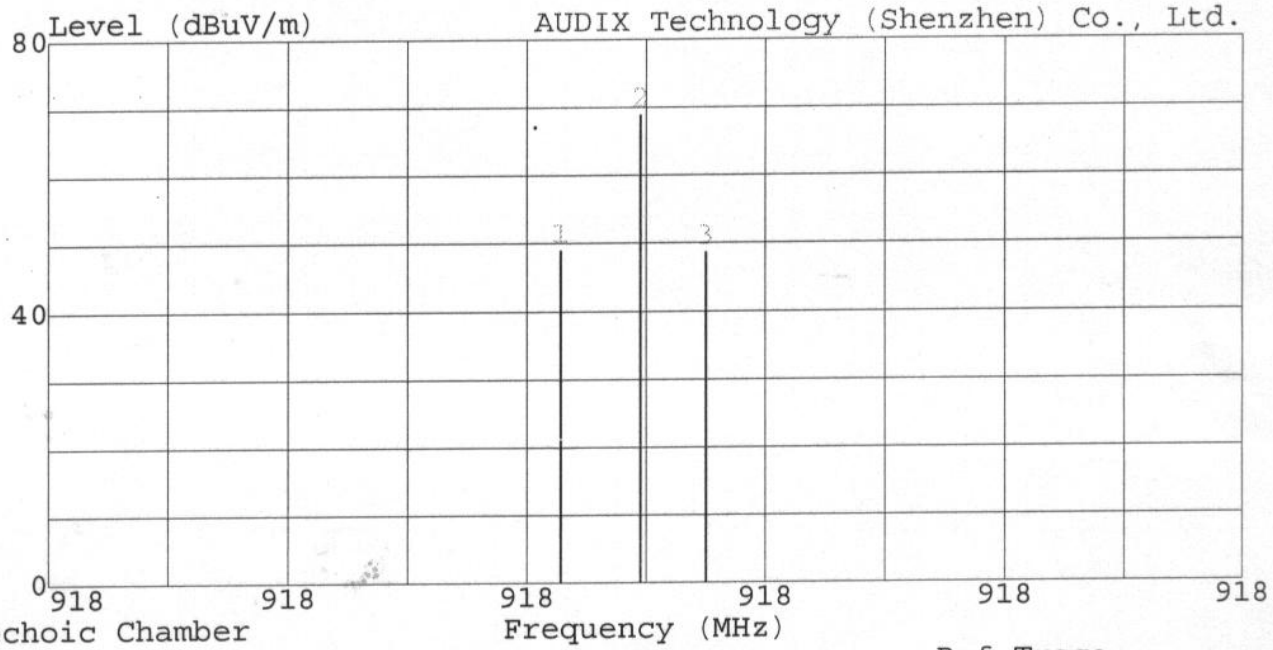
4.1. Test results

PASS.

According to the standard FCC Part 15 subpart C §15.231 (C):
Bandwidth Limit = 0.5%×917.747MHz = 4.589MHz
Bandwidth Measurement Result:
f=917.775MHz - 917.714 MHz = 0.061MHz <4.589 MHz

AUDIX
52 Block
Shenzhen Science & Industry Park
Nantou, Shenzhen, Guangdong, China
AUDIX Technology (Shenzhen) Co., Ltd. Tel:0755-6639495..7 Fax:0755-6632877

Data#: 27 File#: G-TECH.EMI Date: 11-9,1999 Time: 09:00:54



Anechoic Chamber
Trace :
Limit : 3m
Probe : 2176FACTOR VERTICAL
Margin: -6.0dB
EUT : RF Cordless Mouse M/N:GT908
Power : DC 3V
Memo : Running
:
:

Ref Trace:

Page: 1

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark
	MHz	dB	dB	dB	dB	dB	dB	dB	
1	917.714	48.88	------	------	41.67	26.81	6.02	25.61	
2	917.747	68.88	------	------	61.66	26.81	6.02	25.61	
3	917.775	48.65	------	------	41.43	26.81	6.02	25.61	

5. PHOTOGRAPH

5.1. Photos of Power Line Conducted Measurement

FRONT VIEW OF CONDUCTED MEASUREMENT

SIDE VIEW OF CONDUCTED MEASUREMENT

1.2. Photos of Radiated Measurement

FRONT VIEW OF RADIATED MEASUREMENT

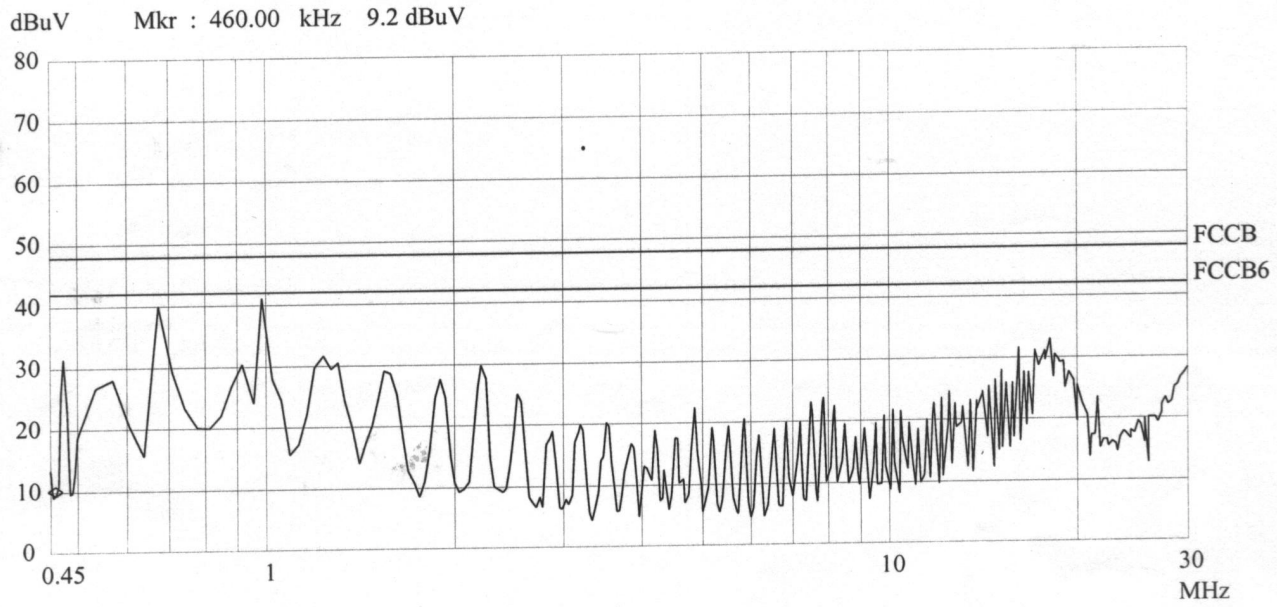
BACK VIEW OF RADIATED MEASUREMENT

APPENDIX I

Conduction Test
FCC Part15 B

02. Nov 99 21:39

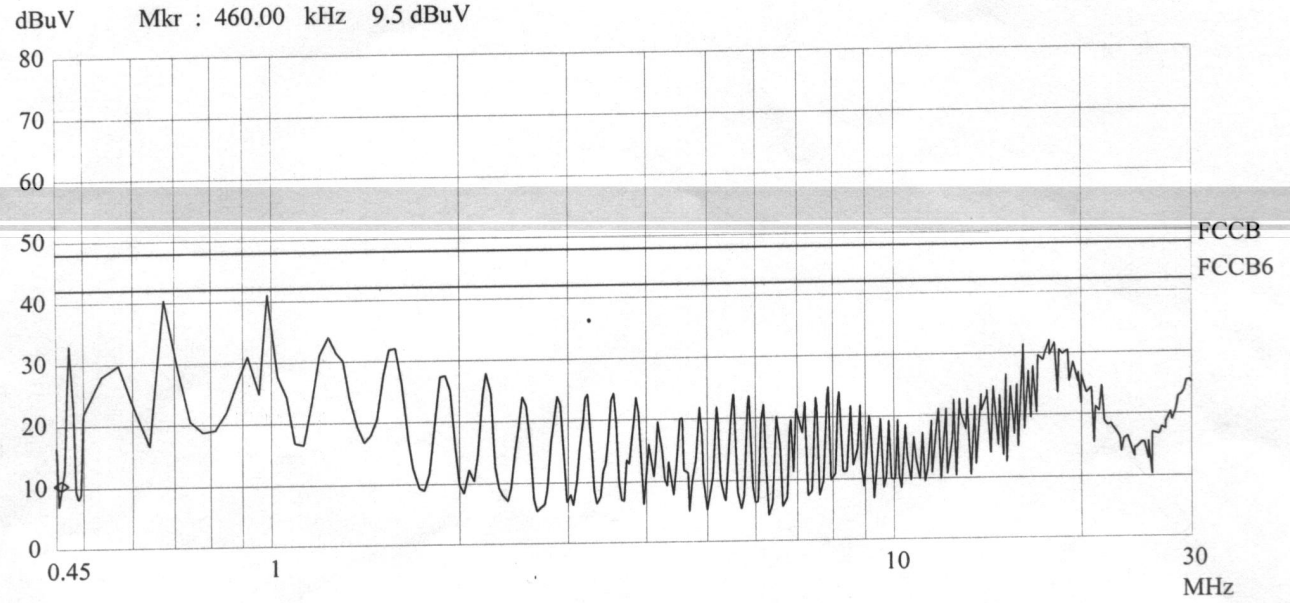
EUT: RF Cordless Mouse M/N:GT908
Manuf: G.TECH
Op Cond: Running
Operator: Rees
Test Spec: Va 120V/60Hz
Comment: Tep:26'C
Tumi:60%



Conduction Test
FCC Part15 B

02. Nov 99 21:36

EUT: RF Cordless Mouse M/N:GT908
Manuf: G.TECH
Op Cond: Running
Operator: Rees
Test Spec: Vb 120V/60Hz
Comment: Tep:26'C
Tumi:60%



APPENDIX II