

EXHIBIT 4

Test Report

Test Report

ACS-F98014

APPLICATION FOR CERTIFICATION
On Behalf of
Guangzhou Toyo Electric Corporation
Electronic Transformer

Model : ET81-60M

Prepared for : Guangzhou Toyo Electric Corporation
Guangzhou Electric Fan Factory
Cha Tau, Suburb of Guangzhou
Guangzhou, China

Prepared By : Audix Technology (Shenzhen) Co., Ltd.
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Report Number : ACS-F98014
Date of Test : Jul. 18, 1998
Date of Report : Jul. 29, 1998

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TOK98-F052

TEST REPORT VERIFICATION

Applicant : Guangzhou Toyo Electric Corporation
Manufacturer : Guangzhou Toyo Electric Corporation
EUT Description : Electronic Transformer
(A) MODEL NO. : ET81-60M
(B) SERIAL NO. : N/A
(C) POWER SUPPLY : AC 120V / 60Hz. 60W

Measurement Procedure Used:

FCC RULES AND REGULATIONS PART 18 SUBPART C RF LIGHTING DEVICES
CONSUMER (1996) AND MP-5/1986

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 18 Part RF Lighting Device 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 EUT to be technically compliant with the FCC official limits. AUDIX TECHNOLOGY (SHENZHEN) CO., LTD. recommends that this data can be submitted for FCC certification purposes if a 6 dB margin below FCC limits is obtained.

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 : Jul. 18, 1998

Prepared by :

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(KATHERINE GE)

Project Engineer :

Martin Lu 7/30
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Approve & Authorized Signer :

Leon Liu 7/31/98
(LEON LIU)

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

Description	:	Electronic Transformer <i>Electronic Transformer</i>
Model Number	:	ET81-60M
Applicant	:	Guangzhou Toyo Electric Corporation Guangzhou Toyo Electric Corporation Guangzhou Electric Fan Factory Cha Tau, Suburb of Guangzhou Guangzhou, China
Manufacturer	:	Guangzhou Toyo Electric Corporation Guangzhou Toyo Electric Corporation Guangzhou Electric Fan Factory Cha Tau, Suburb of Guangzhou Guangzhou, China
Output Line	:	Unshielded, Nondetachable, 1.5m
Power Cord	:	Unshielded, Nondetachable, 1.8m
Date of Test	:	Jul. 18, 1998

1.2. Description of Test Facility

Site Description	:	
3 meter Anechoic chamber	:	Certificated by FCC, U.S.A Aug. 18, 1997
3 and 10 meter open site	:	Certificated by FCC, U.S.A Feb. 13, 1998
EMC Lab.	:	Certificated by TUV Rheinland Taiwan Dec. 05, 1995
		Certificated by COMMERCE, New Zealand May. 19, 1997
	:	Certificated by NEMKO, Norway Feb. 28, 1998
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

2. POWER LINE CONDUCTED MEASUREMENT

2.1. Test Equipment

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

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde & Schwarz	ESHS20	836600/006	Jun. 07, 98	1 Year
2.	L.I.S.N.	Kyoritsu	KMW-407	8-541-4	Jun. 07, 98	1 Year

2.2. Block Diagram of Test Setup



(EUT: Electronic Transformer)

2.3. Conducted Power Line Emission Limit

Frequency MHz	Limit dB(μV)
0.45 ~ 30	48

2.4. EUT Configuration on Measurement

The following equipments are installed on RF LINE VOLTAGE measurement to meet the FCC 18 requirement and operating in a manner which tends to maximize its emission characteristics in a normal application.

2.4.1. Electronic Transformer (EUT)

Model Number : ET81-60M
 Serial Number : N/A
 Manufacturer : Guangzhou Toyo Electric Corporation

2.5. Operating Condition of EUT

2.5.1. Setup the EUT as shown in Section 2.2.

2.5.2. Turn on the power of all equipments.

2.5.3. Let the EUT works in test mode (Output 60W) and measure it.

2.6. Test Procedure

The EUT is put on table which is 0.8m above the ground and away from other metallic surface at least 0.4m. 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 tested equipments. Both sides of AC line(Line & Neutral) are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipments and all of the interface cables must be changed according to MP-5/1986 on conducted measurement.

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

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

All the test results are listed in Section 2.7. and all the scanning waveforms are attached within Appendix I.

2.7. Line Conducted RF Voltage Measurement Results

PASS.

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

All emissions not reported below are too low against the prescribed limits.

Date of Test : Jul. 18, 1998 Temperature : 26 °C

EUT : Electronic Transformer Humidity : 54 %

Model No. : ET81-60M Working Condition : Output 60W

Frequency MHz	Reading		Limit dB(μV)
	Phase VA dB(μV)	Phase VB dB(μV)	
0.450	37.3	36.4	48.0
0.872	36.3	--	48.0
0.922	--	36.3	48.0
1.830	--	35.7	48.0
2.660	37.6	--	48.0
3.590	--	32.3	48.0
3.770	33.1	--	48.0
27.210	41.0	--	48.0
27.320	--	4.2	48.0

Remark : 1. All readings are Quasi-Peak values.
 2. The worst emission is detected at 27.210 MHz with corrected signal level of 41.0 dB(μV) (limit is 48.0 dB(μV)) when the VA side of the EUT is connected to L.I.S.N.

3. RADIATED EMISSION MEASUREMENT

3.1. Test Equipment

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

3.1.1. In Chamber #3

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	EMI Test Receiver	HP	85422E	3625A00181	Jun. 07, 98	1 Year
2.	Amplifier	HP	8447D	2944A07794	Jun. 07, 98	1/2 Year
3.	Bilog Antenna	Chase	CBL6112A	2176	Sep. 27, 97	1 Year
4.	Computer	N/A	N/A	N/A	N/A	N/A
5.	Printer	NEC	P3800	568101448	N/A	N/A

3.2. Block Diagram of Test Setup

3.2.1. Block Diagram of EUT

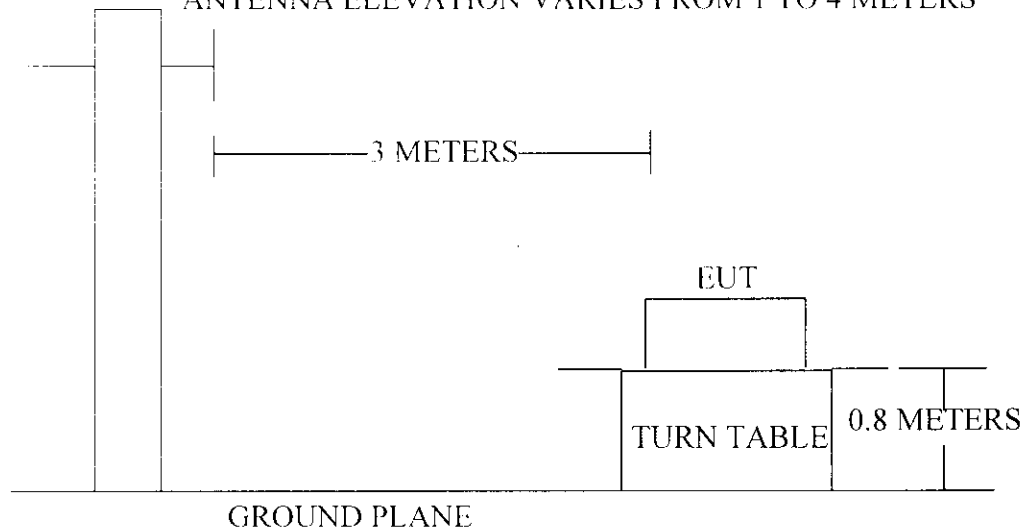


(EUT: Electronic Transformer)

3.2.2. Chamber #3 Test Setup Diagram

ANTENNA TOWER

ANTENNA ELEVATION VARIES FROM 1 TO 4 METERS



3.3. Radiation Limit

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMITS dB(μ V)/m
30 ~ 88	3	40.0
88 ~ 216	3	43.5
216 ~ 1000	3	46.0

Remark : (1) The tighter limit shall apply at the edge between two frequency bands.

(2) Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

3.4. EUT Configuration on Measurement

The configuration of EUT is same as those used in conducted measurement. Please refer to Section 2.4.

3.5. Operating Condition of EUT

Same as conducted measurement which is listed in Section 2.5.

3.6. Test Procedure

The EUT is placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3 meters away from the receiving antenna which is mounted on a antenna tower. The antenna can move 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 measurement.

The Resolution bandwidth setting on the EMI test receiver(HP 85422E) is set at 120KHz.

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

All the test results are listed in Section 3.7. and all the scanning waveforms are attached within Appendix II.

3.7. Radiated Emission Noise Measurement Results.

PASS.

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

Date of Test : Jul. 20, 1998 Temperature : 26 °C
 EUT : Electronic Transformer Humidity : 54%
 Model No. : ET81-60M Operation Mode : Output 60W

Frequency MHz	Antenna Factor dB	Cable Loss dB	Meter Reading Horizontal dB	Emission Level Horizontal dBμV/m	Over Limits dBμV/m	Limits dBμV/m
30.000	19.49	0.90	8.20	28.59	-11.41	40.00
48.013	8.35	1.17	19.30	28.82	-11.18	40.00
60.805	5.31	1.34	26.50	33.15	-6.85	40.00
68.973	5.92	1.46	18.60	25.98	-14.02	40.00
120.015	13.41	1.93	9.60	24.94	-18.56	43.50
160.140	10.90	2.23	7.10	20.23	-23.27	43.50
183.863	9.73	2.45	7.50	19.68	-23.82	43.50

Remark: 1. All readings are Quasi-Peak values.

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

Date of Test : Jul. 20, 1998 Temperature : 26 °C
 EUT : Electronic Transformer Humidity : 54%
 Model No. : ET81-60M Operation Mode : Output 60W

Frequency MHz	Antenna Factor dB	Cable Loss dB	Meter Reading Vertical dB	Emission Level Vertical dBμV/m	Over Limits dBμV/m	Limits dBμV/m
30.000	12.87	0.90	21.00	34.77	-5.23	40.00
48.240	5.31	1.18	24.50	30.99	-9.01	40.00
58.988	5.37	1.33	23.50	30.20	-9.80	40.00
68.738	7.34	1.46	19.10	27.89	-12.11	40.00
98.490	11.97	1.76	9.60	23.32	-20.18	43.50
119.310	12.20	1.93	11.30	25.43	-18.07	43.50
181.730	8.83	2.41	7.30	18.54	-24.96	43.50

Remark: 1. All readings are Quasi-Peak values.

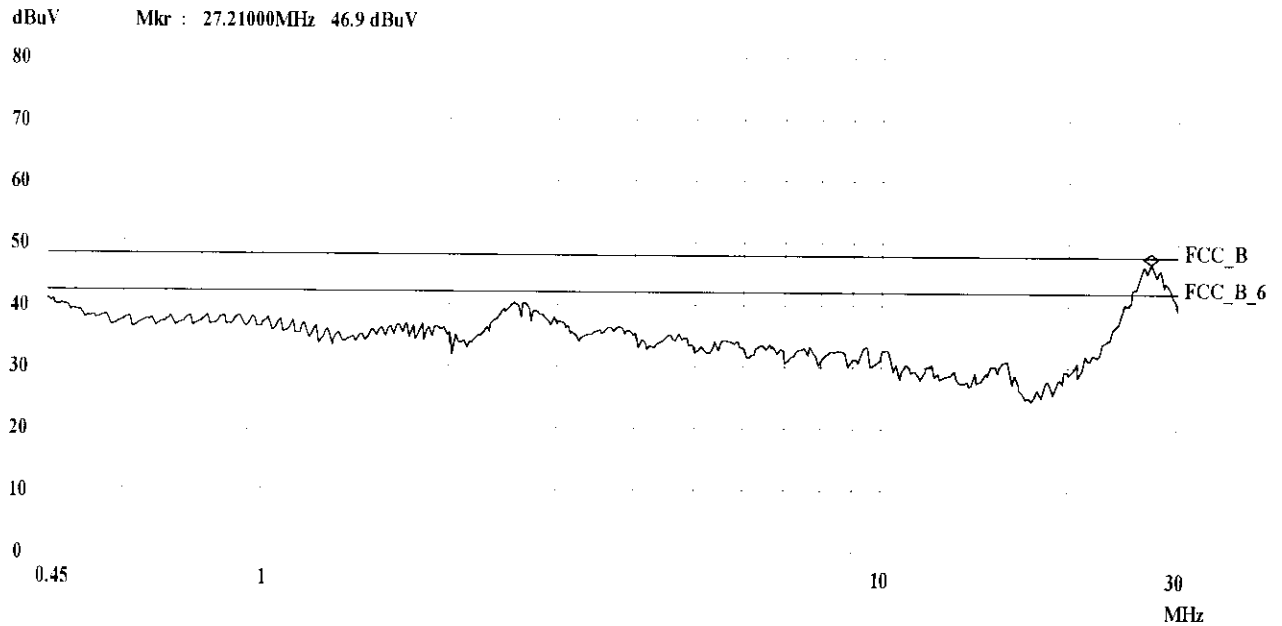
2. Emission Level = Antenna Factor + Cable Loss + Meter Reading

APPENDIX I

Conduction Test FCC Part18

18. Jul 98 09:27

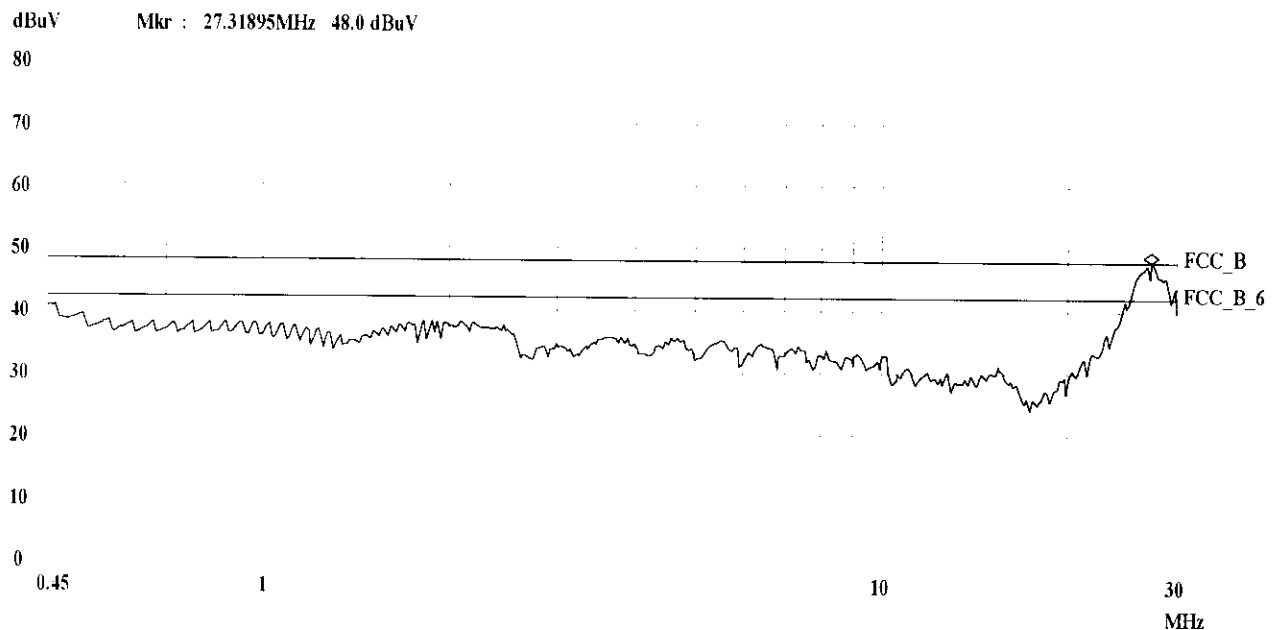
EUT: Electronic Transformer M/N:ET81-60M
Manuf: TOYO
Op Cond: Output 60W
Operator: Houny
Test Spec: Va 120V/60Hz
Comment: Temp:26°C
Humi:54%



Conduction Test FCC Part18

18. Jul 98 09:35

EUT: Electronic Transformer M/N:ET81-60M
Manuf: TOYO
Op Cond: Output 60W
Operator: Houny
Test Spec: Vb 120V/60Hz
Comment: Temp:26°C
Humi:54%



APPENDIX II

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