



深圳华通威国际检验有限公司
SHENZHEN HUATONGWEI INTERNATIONAL INSPECTION Co., Ltd



TEST REPORT

Report number: TR04080001

Issue date: Nov 5, 2004

The device, as described herewith, was tested pursuant to applicable test procedure and complies with the requirements of:

FCC Rules and Regulations Part 15 Subpart C

Applicant:

TOPWAY ELECTRICAL APPLIANCE COMPANY
XINTANG INDUSTRIAL PARK, BAISHISHA EAST, FUYONG,
BAOAN, SHENZHEN, CHINA

Tel: 86-755-27371967/27392244 Fax: 86-755-27392158/27380379

Manufacturer:

TOPWAY ELECTRICAL APPLIANCE COMPANY
XINTANG INDUSTRIAL PARK, BAISHISHA EAST, FUYONG,
BAOAN, SHENZHEN, CHINA

Tel: 86-755-27371967/27392244 Fax: 86-755-27392158/27380379

Equipment under test:

SUPER ARENA

Model number:

AAR 808

FCC ID No.:

SNWSUPERARENA

Laboratory Name:

Shenzhen Huatongwei International Inspection Co., Ltd
FCC Registration Number: 662850

Laboratory Address:

Keji Nan No.12 Road, Hi-tech Park, Shenzhen, China

Tel: 86-755-26748099 Fax: 86-755-26748089

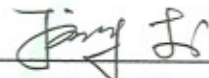
The results in this report are applicable only to the equipment tested.

This report shall not be re-produced except in full without the written approval of Shenzhen Huatongwei International Inspection Co., Ltd.

Compiled by:


Peggy Zuo

Checked by:


Jimmy Li

Authorized by:

For and on behalf of
Shenzhen Huatongwei International Inspection Co., Ltd


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Authorized Signature(s)



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1. General Information

1.1 FCC ID No.: SNWSUPERARENA

1.2 Test Standards

All the test configuration and procedures are strictly according to the requirement of the following standards:

FCC Rules and Regulations Part 15 Subpart C –Intentional Radiators

1.3 EUT(Equipment Under Test) Information

1.3.1 Client Information

Applicant: **TOPWAY ELECTRICAL APPLIANCE COMPANY**
Address of applicant: XINTANG INDUSTRIAL PARK, BAISHISHA EAST,
FUYONG, BAOAN, SHENZHEN, CHINA
Tel: 86-755-27371967/27392244
Fax: 86-755-27392158/27380379

Manufacturer: **TOPWAY ELECTRICAL APPLIANCE COMPANY**
Address of manufacturer: XINTANG INDUSTRIAL PARK, BAISHISHA EAST,
FUYONG, BAOAN, SHENZHEN, CHINA
Tel: 86-755-27371967/27392244
Fax: 86-755-27392158/27380379

1.3.2 General Description of E.U.T.

Name: SUPER ARENA
Model No.: AAR 808
Power Supply: DC 6V
Product Class: Low Power Communication Device Transmitter
Working Frequency: 315MHz
Remark: The working frequency of the EUT accord with the provisions of FCC Rules and Regulations Part 15 Subpart C section 15.231, but it is not used as those products mentioned in this section, so it deemed to measure up with FCC Rules and Regulations Part 15 Subpart C section 15.209.



1.4 Test Uncertainty

Radiated Emission Test: $\pm 4.22\text{dB}$

1.5 Ambient condition for test

Item	Required	Actual
Temperature ()	15~35	22~23
Humidity (%RH)	25~75	50~54
Barometric Pressure (mbar)	860~1060	950~1000

1.6 Principle of Configuration Selection

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the Operating Instructions.

1.7 Test Summary

Test Items	Test Result
Radiated Emission	Pass

1.8 Test Location

The device described above is tested by:

Shenzhen Huatongwei International Inspection Co., Ltd at: Keji Nan No.12 Road, Hi-tech Park, Shenzhen, China

(**FCC Registration Number: 662850**)

The maximum emission levels emanating from the device are compared to the **FCC Rules and Regulations Part 15 Subpart C –Intentional Radiators** limits for radiated emissions and the measurement results contained in this test report show that EUT is to be technically compliant with FCC requirements.

Shenzhen Huatongwei International Inspection Co., Ltd will assume full responsibility for the accuracy and completeness of these measurements.

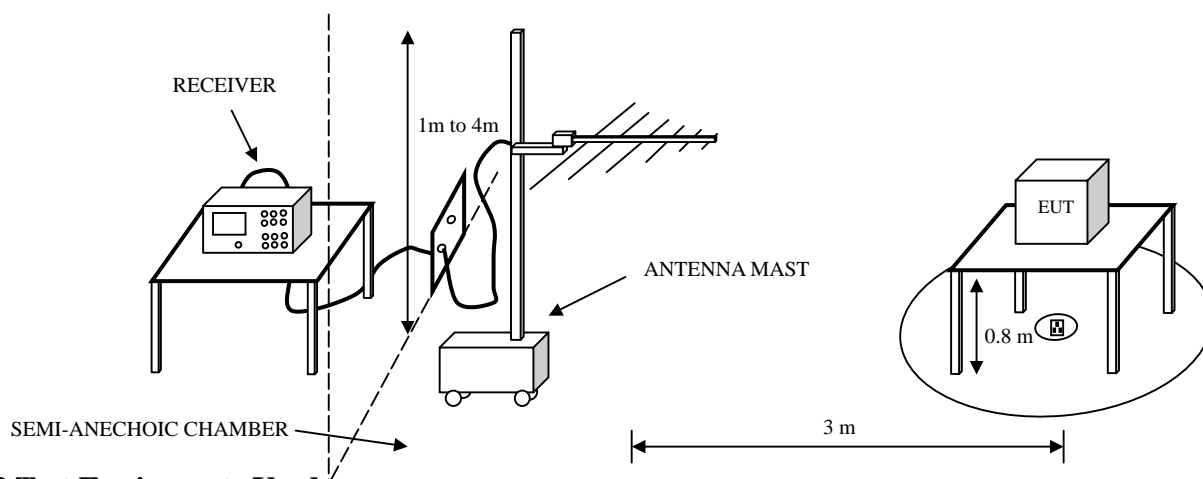


2 Radiated Emission Test

2.1 Test Standards

FCC Rules and Regulations Part 15 Subpart C –Intentional Radiators

2.2 Diagram of Test Setup



2.3 Test Equipments Used

EQP.	Description	Manufacturer	Model No.	Serial No.	Last Cal
	ULTRA-BROADBAND ANTENNA	ROHDE & SCHWARZ	HL562	100015	2003/11
	EMI TEST RECEIVER	ROHDE & SCHWARZ	ESI 26	100009	2003/11
	RF TEST PANEL	ROHDE & SCHWARZ	TS / RSP	335015/ 0017	N/A
	TURNTABLE	ETS	2088	2149	N/A
	ANTENNA MAST	ETS	2075	2346	N/A
	EMI TEST SOFTWARE	ROHDE & SCHWARZ	ESK1	NA	N/A

2.4 Test Description

2.4.1 Configuration of Instruments

Test Receiver Setting:

- Detector: Quasi-Peak
- Band Width: 120KHz
- Frequency Range: 30MHz to 1000MHz

Remark: Because the intentional radiator operates below 10GHz, the scanned frequency range is only set from 30MHz to its tenth harmonic of the fundamental frequency (Refer to FCC Rules and Regulations Part 15 Subpart A section 15.33).

- Turntable Rotated: 0 to 360 degrees

Antenna Position:

- Height: 1m to 4m
- Polarity: Horizontal and Vertical



Arrangement of EUT:

- During the test, EUT was operated at rating power supply voltage. Maximum emission configuration was determined by manipulating the EUT, support equipment, interconnecting cables and varying the mode of operation and the levels in the final result of the test were recorded with the EUT running in the operating mode that maximum emission was emitted.

2.4.2 Radiated Emission Limit (Section 15.209a)

Frequency (MHz)	Distance (Meters)	Field Strengths Limits (dB μ V/m)
30 ~ 88	3	40
88~216	3	43.5
216 ~ 960	3	46
960~1000	3	54

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

(2) Distance refers to the distance in meters between the test instrument antenna and the closest point of any part of the E.U.T.

2.4.3 Test Configuration and Procedures

EUT is tested in Semi-Anechoic Chamber. EUT is placed on a nonmetal table which is 0.8 meter above a grounded turntable. The turntable can rotate 360 degrees to determine the azimuth of the maximum emission level. EUT is set 3 meters away from the center of receiving antenna, and the antenna can move up and down from 1 to 4 meter to find out the maximum emission level. Both horizontal and vertical polarizations of the antenna are set on the test. (All the configuration and procedures are complied with the relevant sections of the standard ANSI C63.4-1992 'Methods of Measurement of Radio Noise Emissions from Low –Voltage Electrical and Electronic Equipment in the Range of 9KHz to 40GHz'.)

2.5 Test Results

Test Results: PASS

Test data see appendix pages (From page 8 to 11).

Remark: When PK reading is less than relevant limit 20dB, the QP reading will not be recorded.

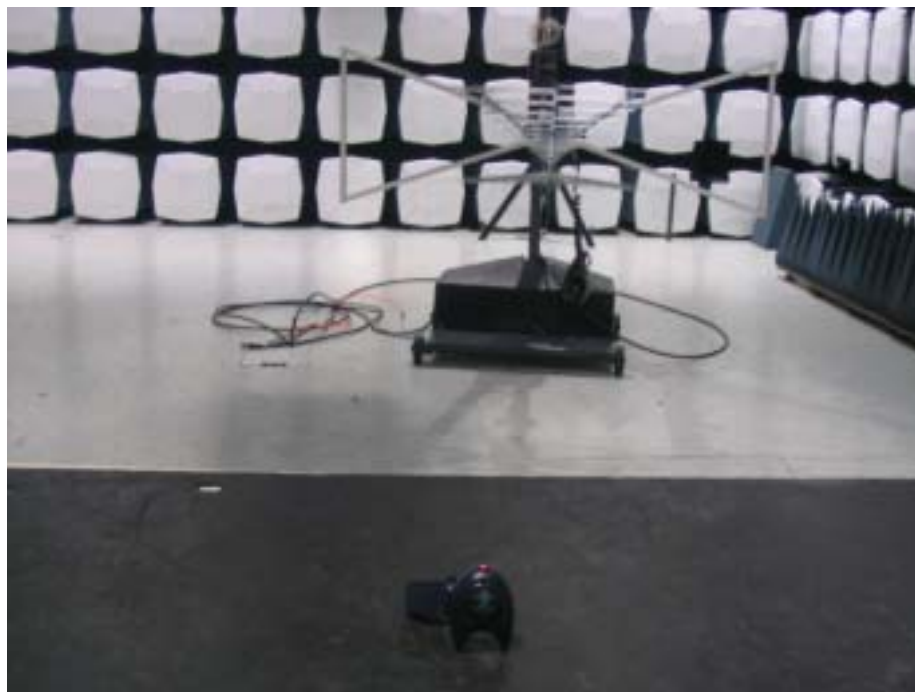
All the frequencies of fundamental emissions and unwanted emissions don't exceed the field strength levels specified in FCC Rules and Regulations Part 15 Subpart C section 15.209. And the level of the fundamental emission is the highest.

According to the test results, the fundamental and unwanted emissions are less lower than that of the limited emissions referred to FCC Rules and Regulations Part 15 Subpart C section 15.209.



3 Configuration Photographs

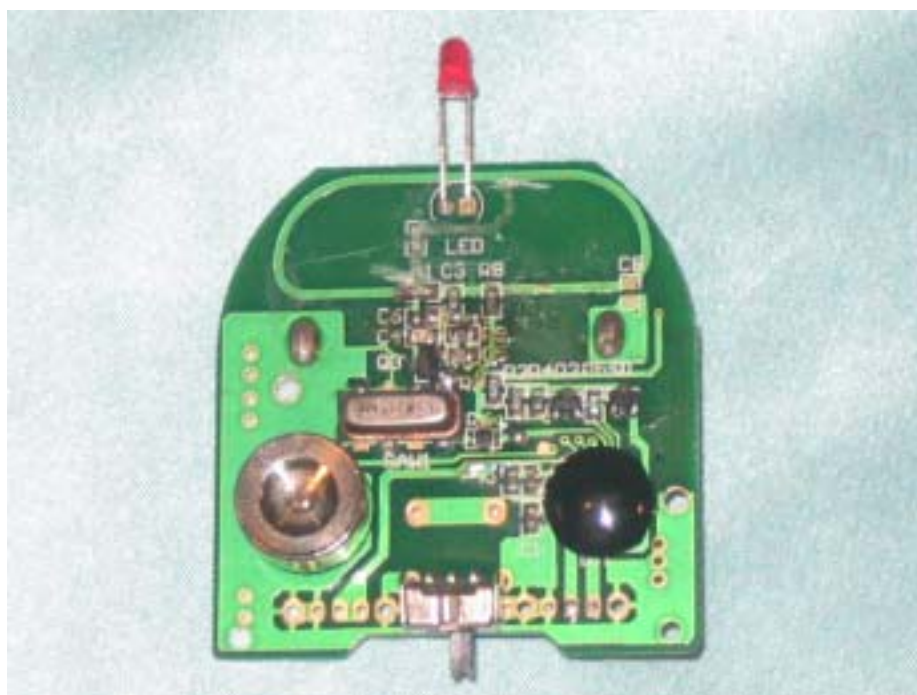
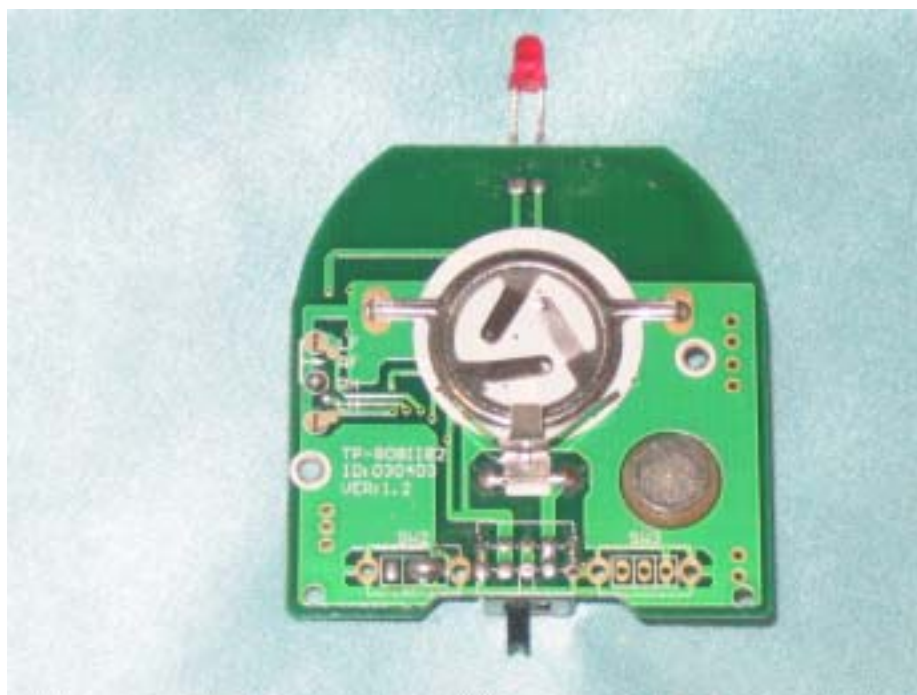
3.1 Photo of Radiated Emission Test



3.2 Outline, framework and Components photos of EUT







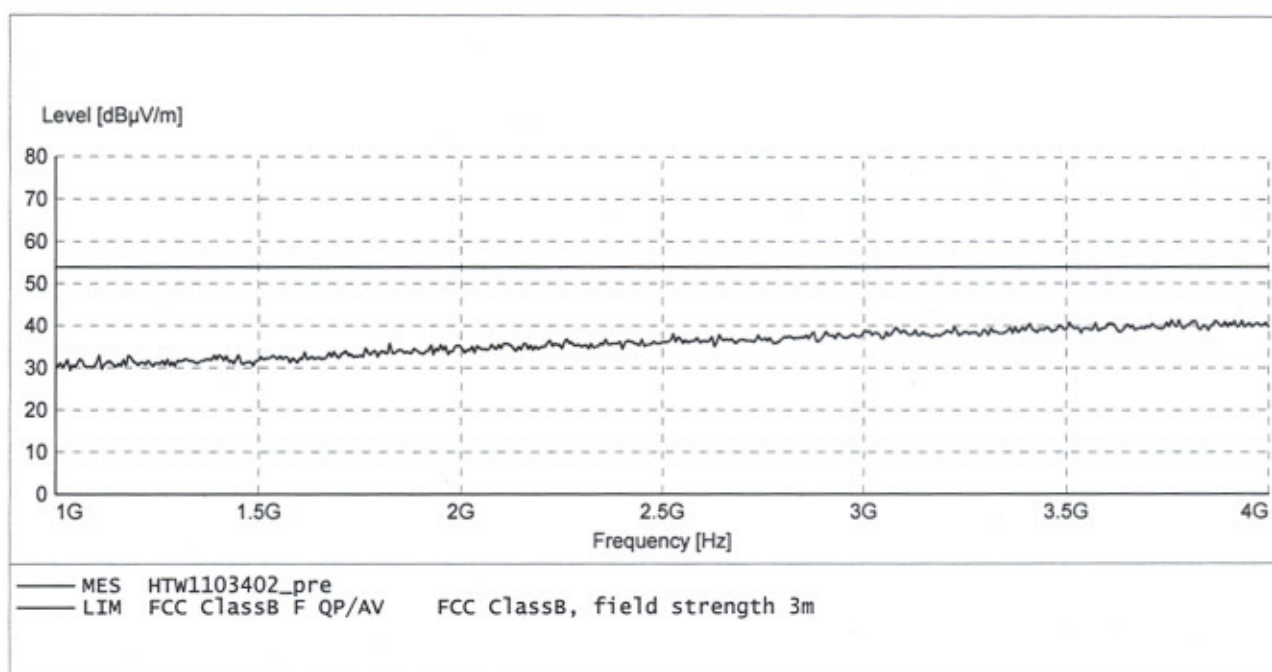
Following pages are the measurement data of the EUT (4 pages from page 8 to 11).



Radiated Emission FCC 15

EUT: SUPER ARENA M/N:AAR808
 Manufacturer: TOPWAY ELECTRICAL APPLIANCE COMPANY
 Operating Condition: ON
 Test Site: 3m CHAMBER
 Operator: JACKY
 Test Specification: DC 3V
 Comment: Polarisation:V
 Temp:22'C Humi:50%

SWEEP TABLE: "test (1G-18G) P"
 Short Description: Field Strength
 Start Stop Detector Meas. IF Transducer
 Frequency Frequency Time Bandw.
 1.0 GHz 18.0 GHz MaxPeak Coupled 1 MHz HF906

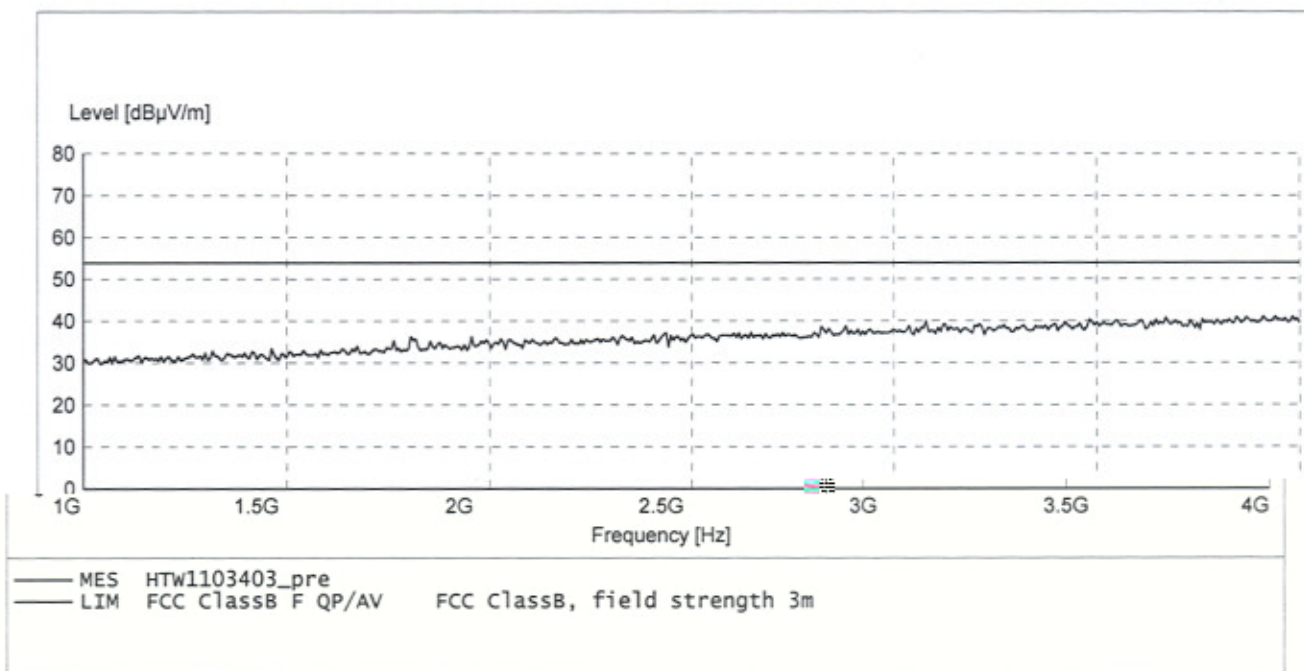




Radiated Emission FCC 15

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 Operating Condition: ON
 Test Site: 3m CHAMBER
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 Comment: Polarisation:H
 Temp:22'C Humi:50%

SWEEP TABLE: "test (1G-18G) P"
 Short Description: Field Strength
 Start Stop Detector Meas. IF Transducer
 Frequency Frequency Time Bandw.
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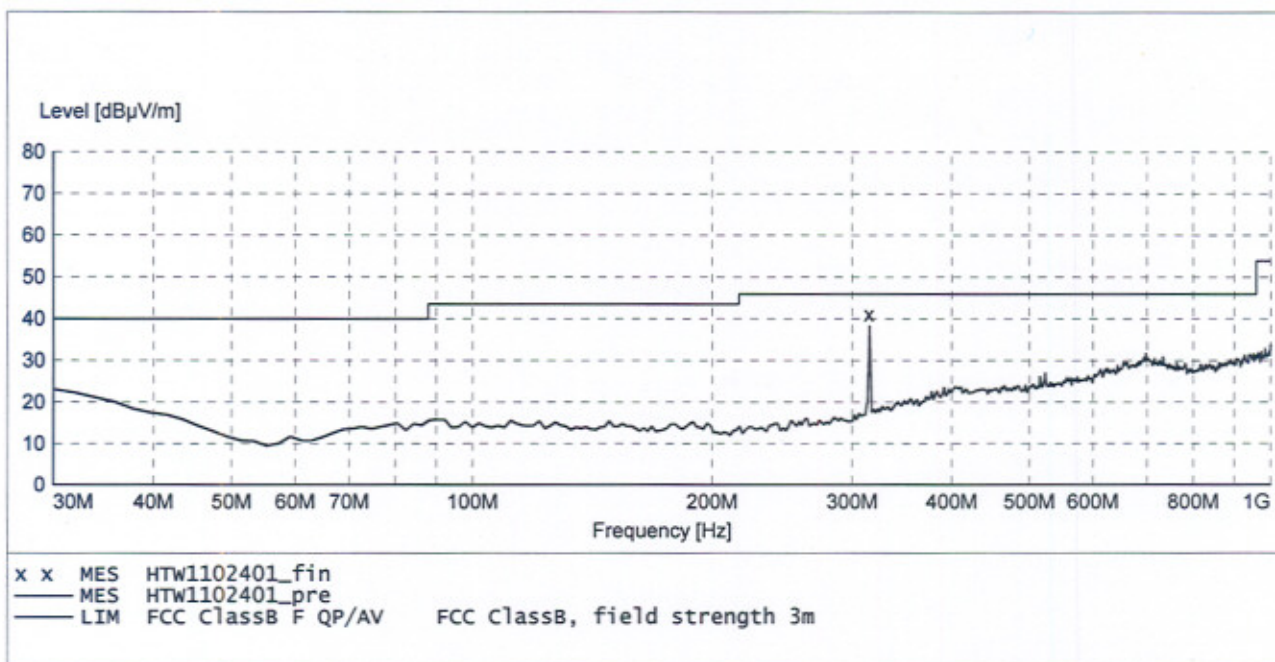


Radiated Emission FCC 15

EUT: SUPER ARENA M/N:AAR808
 Manufacturer: TOPWAY ELECTRICAL APPLIANCE COMPANY
 Operating Condition: ON
 Test Site: 3m CHAMBER
 Operator: JACKY
 Test Specification: DC 3V
 Comment: Polarisation:V
 Temp:22'C Humi:50%

SCAN TABLE: "test Field(30M-1G)"

Start Frequency	Stop Frequency	Step width	Detector	Meas. Time	IF Bandw.	Transducer
30.0 MHz	1.0 GHz	60.0 kHz	QuasiPeak	1.0 s	120 kHz	HL562new



MEASUREMENT RESULT: "HTW1102401_fin"

11/3/04 9:40AM

Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
315.060000	41.20	15.0	46.0	5.1	QP	150.0	65.00	VERTICAL



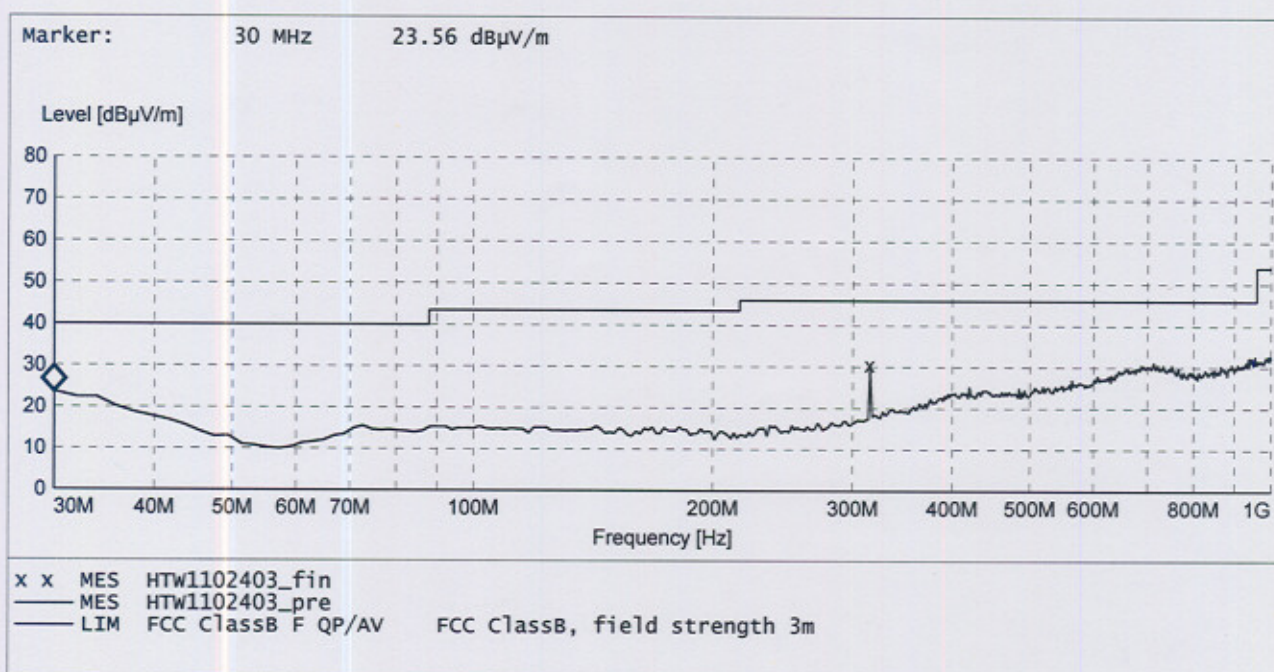


Radiated Emission FCC 15

EUT: SUPER ARENA M/N:AAR808
 Manufacturer: TOPWAY ELECTRICAL APPLIANCE COMPANY
 Operating Condition: ON
 Test Site: 3m CHAMBER
 Operator: JACKY
 Test Specification: DC 3V
 Comment: Polarisation:H
 Temp:22'C Humi:50%

SCAN TABLE: "test Field(30M-1G)"

Short Description:		Field Strength(30M-1G)				
Start Frequency	Stop Frequency	Step width	Detector	Meas. Time	IF Bandw.	Transducer
30.0 MHz	1.0 GHz	60.0 kHz	QuasiPeak	1.0 s	120 kHz	HL562new



MEASUREMENT RESULT: "HTW1102403_fin"

11/3/04 9:33AM

Frequency MHz	Level dB μ V/m	Transd dB	Limit dB μ V/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
315.060000	30.50	15.0	46.0	15.5	QP	285.0	230.00	HORIZONTAL

