



ELECTROMAGNETIC EMISSION COMPLIANCE REPORT FOR FCC CERTIFICATION

Test report file number : E02OR-008

Applicant : TAEAN CO., LTD.
Address : 1011, Saksun-Ri, Taean-Eup, Taean-Gun, Chungchungnam-Do, 357-900, Korea

Manufacturer : TAEAN CO., LTD.
Address : 1011, Saksun-Ri, Taean-Eup, Taean-Gun, Chungchungnam-Do, 357-900, Korea

Type of Equipment : Fluorescent Self-Ballast Lamp (RF Lighting Device)

FCC ID : QOUTA1215GG

Model / Type No. : TA-1215GG

Serial number : N/A

Total page of Report : 11 pages (including this page)

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SUMMARY

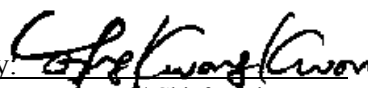
The equipment complies with the requirements of **FCC CFR 47 PART 18 CONSUMER DEVICES**.

This test report contains only the results of a single test of the sample supplied for the examination. It is not a general valid assessment of the features of the respective products of the mass-production.

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CONTENTS

	Page
1. VERIFICATION OF COMPLIANCE.....	3
2. GENERAL INFORMATION	4
2.1 PRODUCT DESCRIPTION	4
2.2 RELATED SUBMITTAL(S) / GRANT(S).....	4
2.3 TEST SYSTEM DETAILS	4
2.4 TEST METHODOLOGY	4
2.5 TEST FACILITY	4
3. SYSTEM TEST CONFIGURATION.....	5
3.1 JUSTIFICATION	5
3.2 CABLE DESCRIPTION.....	5
3.3 EQUIPMENT MODIFICATIONS.....	5
3.4 CONFIGURATION OF TEST SYSTEM.....	5
4. EQUIPMENT LIMITATIONS.....	6
4.1 CONDUCTED EMISSION LIMITS.....	6
4.2 RADIATED EMISSION LIMITS.....	6
5. FINAL RESULT OF MEASUREMENT	7
5.1 CONDUCTED EMISSION TEST	7
5.2 RADIATED EMISSION TEST	9
6. FIELD STRENGTH CALCULATION	10
7. LIST OF TEST EQUIPMENT.....	11



1. VERIFICATION OF COMPLIANCE

- APPLICANT : TAEAN CO., LTD.
- ADDRESS : 1011, Saksun-Ri, Taean-Eup, Taean-Gun, Chungchungnam-Do, 357-900, Korea
- CONTACT PERSON : Mr. Jong-Kon, Lee / Team Manager
- TELEPHONE NO : +82-41-672-0264
- FCC ID : QOUTA1215GG
- MODEL NO/NAME : TA-1215GG
- SERIAL NUMBER : N/A
- DATE : October 11, 2002

DEVICE TYPE	RF Lighting Device- CONSUMER DEVICE
E.U.T. DESCRIPTION	Fluorescent Self-Ballast Lamp
THIS REPORT CONCERNS	ORIGINAL GRANT
MEASUREMENT PROCEDURES	MP-5: 1986, ANSI C63.4
TYPE OF EQUIPMENT TESTED	PRE-PRODUCTION
KIND OF EQUIPMENT AUTHORIZATION REQUESTED	CERTIFICATION
EQUIPMENT WILL BE OPERATED UNDER FCC RULES PART(S)	FCC PART 18
MODIFICATIONS ON THE EQUIPMENT TO ACHIEVE COMPLIANCE	No
FINAL TEST WAS CONDUCTED ON	3 METER OPEN AREA TEST SITE

The above equipment was tested by ONETECH Corp. for compliance with the requirement set forth in the FCC Rules and Regulations. This said equipment in the configuration described in this report, shows the maximum emission levels emanating from equipment are within the compliance requirements.



2. GENERAL INFORMATION

2.1 Product Description

The TAEAN CO., LTD., Model TA-1215GG (referred to as the EUT in this report) is a Fluorescent Self-Ballast Lamp that uses a radio frequency. Product specification described herein was obtained from product data sheet or user's manual.

CHASSIS TYPE	Glass & Plastic
LIST OF EACH OSC. OR CRY. FREQ.(FREQ. \geq 1MHz)	None
RF FREQUENCY	48 kHz
NUMBER OF LAYERS	1 Layer
POWER REQUIREMENT	AC120V, 60Hz, 15W
EXTERNAL CONNECTOR	None

Model Differences:

-. The difference(s) compared to the EUT is as follows: none

2.2 Related Submittal(s) / Grant(s)

Original submittal only

2.3 Test System Details

The model numbers for all the equipments which were used in the tested system is: none

2.4 Test Methodology

Both conducted and radiated testing was performed according to the procedures in MP-5/1986. Radiated testing was performed at a distance of 3 meters from EUT to the antenna.

2.5 Test Facility

The open area test site and conducted measurement facilities are located on at 426-1 Daessangryung-Ri, Chowol-Myun, Kwangju-Kun, Kyunggi-Do 464-080 Korea. Description details of test facilities were submitted to the Commission on January 18, 2002. (Registration Number: 92819)



3. SYSTEM TEST CONFIGURATION

3.1 Justification

This device was configured for testing in a typical way as a normal customer is supposed to be used. During the test, the following components were installed inside of the EUT.

DEVICE TYPE	MANUFACTURER	MODEL/PART NUMBER	FCC ID
MAIN B'D	N/A	N/A	N/A

3.2 Cable Description

	Power Cord Shielded (Y/N)	I/O cable Shielded (Y/N)	Length (M)
Fluorescent Self-Ballast Lamp (EUT)	N	N/A	1.2(P)

* The marked "(P)" means the Power Cable.

3.3 Equipment Modifications

To achieve compliance to consumer equipment levels, the following change(s) was made by ONETECH Corp. during compliance testing:

"There were no Modified items during EMI test"

3.4 Configuration of Test System

Line Conducted Test:

The EUT was connected to the power mains through a Line Impedance Stabilization Network (LISN). This provided 50-ohm coupling impedance for the measuring equipment. The length of the power cord in excess of 80cm, separating the EUT from the LISN, is folded back and forth forming a bundle, hanging approximately in the middle between ground plane and table. The EUT is placed 80cm from a floor earth-grounded conducting surface and is kept 40cm from vertical conducting plane that is bonded to the floor ground plane.

Both side of AC line were checked for maximum conducted interference. During this test, EUT was operating to simulating actual use. Emission levels are checked to see if equipment/cable placements are maximized according to MP-5/1986.

The bandwidth of test Receiver ESHS10 was set at 9 kHz.

Emissions that have peak value close to the specification limit are also measured in the quasi-peak detection mode to determine compliance.

The frequency range from 0.45 MHz to 30 MHz was checked. The test mode (ON) was done on conducted emission test and the results of the highest emissions are listed in Sec. 5.1.

**Radiated Emission Test:**

The EUT was placed on a wooded turn table which is 0.8 meter above a ground. The turn table is placed three meters away from the receiving antenna.

All equipment/cable are placed in a manner which tend maximize its emission characteristics in a typical application. This is accomplished by watching the analyzer while moving equipment/cables according to MP-5/1986.

The turn table was rotated 360 degrees to determine the position of the maximum emission level.

The receiving antenna was moved up and down between 1 to 4 meters above ground screen to find out the maximum emission level. Both vertical and horizontal polarizations of the antenna were set on measurement.

The bandwidth of test Receiver ESVS10 was set at 120 kHz.

The frequency range from 30 MHz to 1000 MHz was checked. The test mode (ON) was done on radiated emission test and the results of the highest emissions are listed in Sec. 5.2.

4. Equipment Limitations**4.1 Conducted Emission Limits**

RF lighting devices Conduction limits: Maximum RF line voltage measured with a 5uH/50 ohm LISN.

Frequency (MHz)	Emissions (uV)	Emissions (dBuV/m)
Non-consumer equipment		
0.45 - 1.6	1000	60.0
1.6 - 30	3000	69.5
Consumer equipment		
0.45 - 30	250	48

4.2 Radiated Emission Limits

Radiated field strength limits for RF lighting devices.

Frequency (MHz)	Distance (Meters)	Field strength limits (uV/m)	Converted Field Strengths Limits By 3 meter Measuring Distance	
			uV/m	dB (uV/m)
Non-consumer equipment	30			
30-88		30	300	49.5
88-216		50	500	54.0
216-1000		70	700	56.9
Consumer equipment	30			
30-88		10	100	40.0
88-216		15	150	43.5
216-1000		20	200	46.0

NOTE 1 – Emission Level dB(uV/m) = 20log Emission Level (uV/m)

NOTE 2 – The measurements are made at 3 meters distance, then the permissible field strength limits be adjusted using 1/d as an attenuation factor.



5. FINAL RESULT OF MEASUREMENT

Preliminary test was done in normal operation mode. And the final measurement was selected for the maximized emission level.

5.1 Conducted Emission Test

Humidity Level : 54 %

Temperature : 22°C

Limits apply to : FCC CFR 47, PART 18, SUBPART C, SECTION 18.307 (c)

Type of Test : CONSUMER EQUIPMENT

Result : PASSED BY -5.85 dB at 0.47 MHz

EUT : Fluorescent Self-Ballast Lamp

Date: August 07, 2002

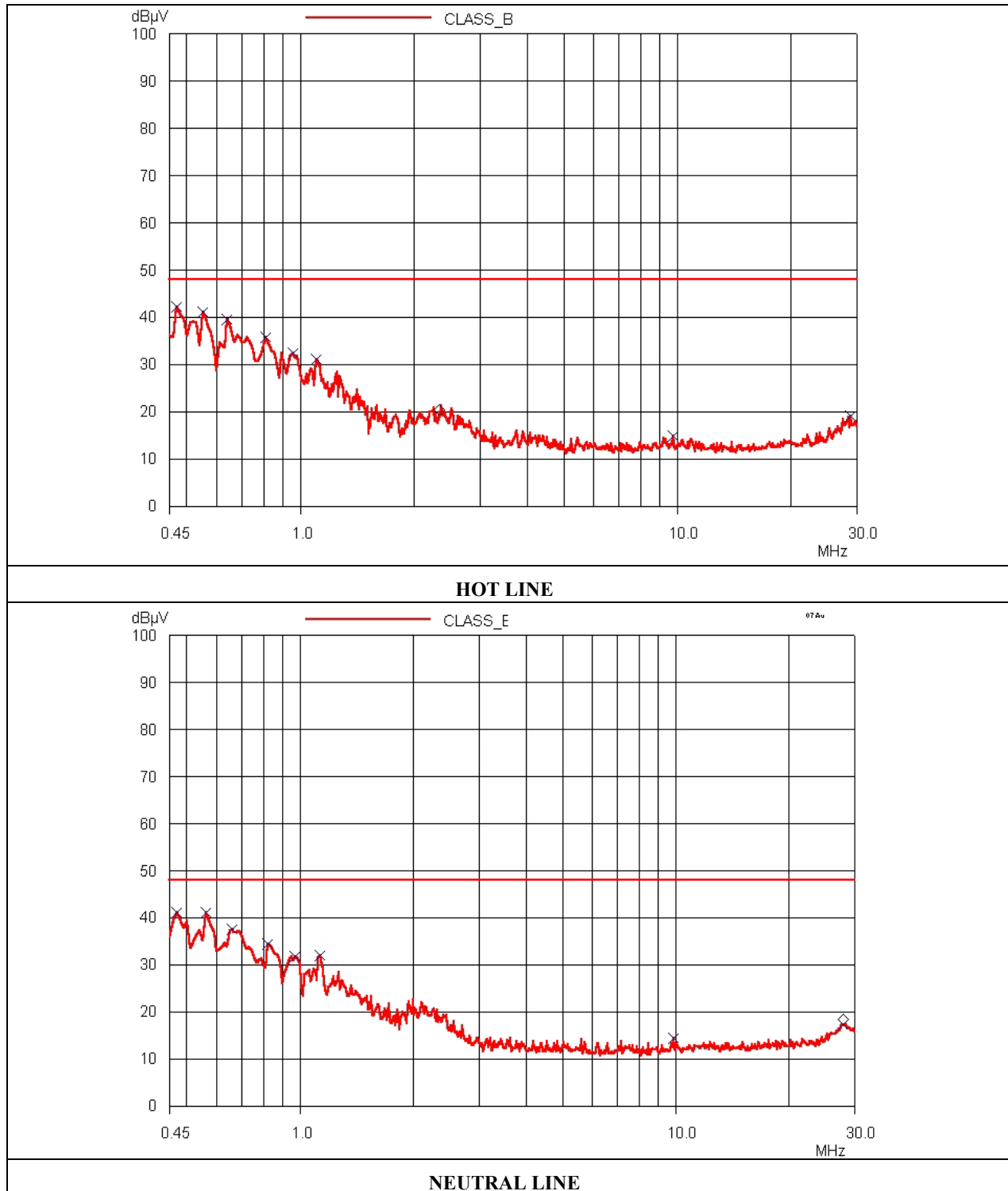
Operating Condition : Power ON (normal mode)

Detector : CISPR Quasi-Peak (6 dB Bandwidth: 9 kHz)

Power Line Conducted Emission			FCC PART 18	
Frequency (MHz)	Amplitude (dBuV)	Conductor	Limit (dBuV)	Margin (dB)
0.47	42.15	HOT	48.00	-5.85
0.55	41.19	HOT	48.00	-6.81
0.64	39.44	HOT	48.00	-8.56
0.81	35.74	HOT	48.00	-12.26
0.96	32.36	HOT	48.00	-15.64
1.13	31.95	NEUTRAL	48.00	-16.05

Line Conducted Emission Tabulated Data


Tested by: Young-Min Choi / Project Engineer



**5.2 Radiated Emission Test**

The following table shows the highest levels of radiated emission on both polarizations of horizontal and vertical.

Humidity Level : 53 % Temperature :
22 °C
 Limits apply to : FCC CFR 47, PART 18, SUBPART C, SECTION 18.305(c)
 Type of Test : CONSUMER EQUIPMENT
 Result : PASSED BY -13.10 dB at 45.80 MHz

EUT : Fluorescent Self-Ballast Lamp Date: August 22, 2002
 Operating Condition : Power ON (normal mode)
 Detector : CISPR Quasi-Peak (6 dB Bandwidth: 120 kHz)
 Distance : 3 Meter

Radiated Emissions		Ant	Correction Factors		Total	FCC PART 18	
Freq. (MHz)	Amp. (dBuV)	Pol.	Ant. (dBuV/m)	Cable (dB)	Amp. (dBuV/m)	Limit (dBuV/m)	Margin (dB)
45.80	15.20	V	10.81	0.89	26.90	40.00	-13.10
54.40	14.90	V	10.18	0.97	26.05	40.00	-13.95
100.20	10.90	V	12.28	1.15	24.33	43.50	-19.17
116.80	13.20	V	13.28	1.22	27.70	43.50	-15.80
121.70	11.20	V	13.37	1.24	25.81	43.50	-17.69
300.20	10.80	H	15.10	2.00	27.90	46.00	-18.10
387.70	11.80	H	14.91	2.41	29.12	46.00	-16.88
452.80	12.10	H	16.37	2.56	31.03	46.00	-14.97
492.70	11.20	H	17.36	2.66	31.22	46.00	-14.78

Radiated Emissions Tabulated Data


 Tested by: Young-Min Choi / Project Engineer



6. FIELD STRENGTH CALCULATION

Meter readings are compared to the specification limit correcting for antenna and cable losses

+ Meter reading (dBuV)

+ Cable Loss (dB)

+ Antenna Factor (Loss) (dB/meter)

= Corrected Reading (dBuV/meter)

- Specification Limit (dBuV/meter)

= dB Relative to Spec (+/- dB)

**7. LIST OF TEST EQUIPMENT**

No.	EQUIPMENTS	MFR.	MODEL	SER. NO.	LAST CAL	DUE CAL	USE
1.	Test receiver	R/S	ESVS 10	827864/005	OCT/01	12MONTH	■
2.	Test receiver	R/S	ESHS 10	834467/007	APR/02	12MONTH	■
3.	Spectrum analyzer	HP	8568B	3109A05456	APR/02	12MONTH	■
4.	RF preselector	HP	85685A	3107A01264	APR/02	12MONTH	■
5.	Quasi-Peak Adapter	HP	85650A	3107A01542	APR/02	12MONTH	■
6.	Biconical antenna	EMCO	3104C	9109-4441 9109-4443 9109-4444	APR/02	12MONTH	■
7.	Log Periodic antenna	EMCO	3146	9109-3213 9109-3214 9109-3217	APR/02	12MONTH	■
8.	LISN	EMCO	3825/2	9109-1867 9109-1869	JUL/02	12MONTH	■
9.	Position Controller	EMCO	1090	9107-1038	N/A	N/A	■
10.	Turn Table	EMCO	1080-1.21	9109-1576	N/A	N/A	■
11.	Antenna Master	EMCO	1070-1	9109-1624	N/A	N/A	■