

ELECTROMAGNETIC EMISSIONS
TEST REPORT

FCC CLASS B COMPLIANCE
(CONSUMER EQUIPMENT)

KIND OF EQUIPMENT : Self ballasted fluorescent lamp

MODEL : EFT23E28D

FCC ID : ACJ4PKERT23D

Matsushita EMC Center

Matsushita Electric Industrial Co., Ltd.

Yashiro, Sasayama-cho
Taki-gun, Hyogo 669-2356
JAPAN

TEL 0795-52-5681
FAX 0795-52-5682

This test report with appendix consists of 15 pages.

The test results only responds to the tested sample.

It is not allowed to copy this report even partly without the allowance of
the test laboratory.

ENGINEERING TEST REPORT

This is to certify that the Self ballasted fluorescent lamp from which the following data have been derived through the required measurements, properly complies with the requirements of FCC Rules and Regulations Part 18 Subpart C & FCC/SOT MP-5 as of date of measurements were made.

1. Applicant : Matsushita Electric Industrial Co., Ltd
Address : 1006 Oaza Kadoma, Kadoma-city
Osaka-Pref., 571-8501, Japan
2. Factory : Matsushita Electronics Corporation
Address : 1-1 Saiwai-cho, Takatsuki-city
Osaka-Pref., 569-1193, Japan
3. Description of Device : Self ballasted fluorescent lamp "Panasonic".

- a. Application Type : Certification
b. Model No. : EFT23FE28D
c. Serial No. : _____
d. Date of Manufacture : November, 1998
e. Oscillating Frequency : $60 \pm 10\text{kHz}$
f. RF Power Output : 21W
g. Power Supply : AC 120V, 60Hz
h. EUT Conditions : Production (Client samples)

3. Measurement Procedures Used : FCC Method of Measurement of Radio Noise Emissions from ISM Devices, MP-5.

4. Measurement Site : Matsushita EMC Center
Matsushita Electric Industrial Co., Ltd.

5. Date of Measurement : November 28, 1998

CERTIFYING ENGINEER

Katsuo Ishihara

Katsuo Ishihara
Chief Engineer of
Matsushita EMC Center

Certification of Measurement Results

I hereby certify that this Self ballasted fluorescent lamp passed and give margins of more than 9.9 dB μ V/m at the Radiated Emissions and more than 4.7 dB μ V at the Conducted Emissions with respect to the limits to which it was tested.

These test results are traceable to the
National and International Standards.

Measurement Uncertainty, at time of test, and at least
95% confidence, was estimated to be as follows:

Radiated Emission Measurement	: 2.6 dB
Conducted Emission Measurement	: 3.1 dB

Certifying Engineer : Matsushita EMC Center

Katsuo Ishihara
Katsuo Ishihara
Chief Engineer of
Matsushita EMC Center

Date : December 8, 1998

Description of Measurement Facility

NAME OF TEST SITE

: Matsushita EMC Center

ADDRESS

: Yasiro, Sasayama-cho, Taki-gun,
Hyogo 669-2356, JAPAN

APPROVAL

: This site has been filed with FCC
FEDERAL COMMUNICATIONS COMMISSION
FCC File No. 31040/SIT-1300F2

(Refild date: August 28, 1997)

Accredited by NVLAP
National Institute of Standards and Technology
National Voluntary Laboratory Accreditation Program
NVLAP Lab Cord: 100428-0
(Effective through: December 31, 1998)

1. Field strength limits. (§ 18.305(C))

a. Measurement Methods and Test Procedure

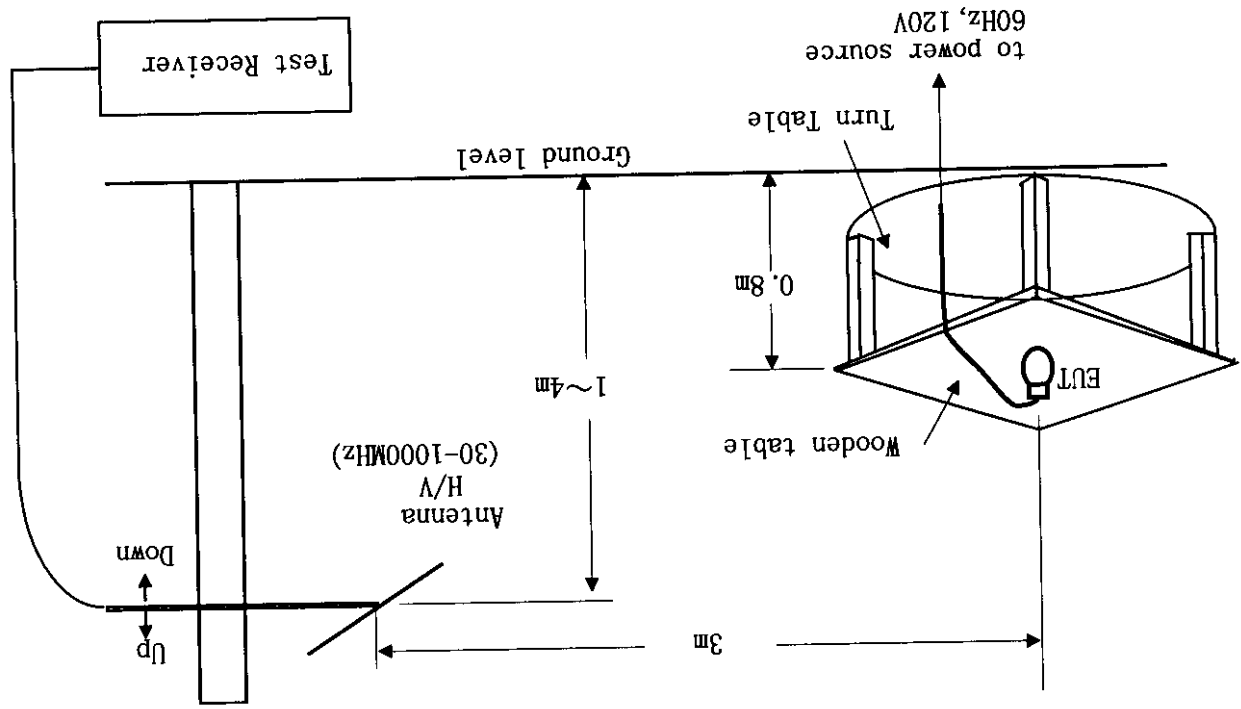
Methods of Measurements of Radio Noise Emissions from ISM

Equipment FCC/OST MP-5 (1985)

b. Test Arrangement

Above 30MHz, I used broad band antenna

Test Equipment Operation Mode: Quasi-Peak



DESCRIPTION OF DEVICE

Type of EUT : EFT23E28D

FCC ID : ACJ4PKFFT23D

Classification of EUT : Class B (Consumer equipment)

RADIATED RADIO NOISE MEASUREMENT

TEST CONDITION OF INSTRUMENT

(1) Resolution Bandwidth : 120K
(2) Detector Function : QPEUT Warm-up Time : 30 minutes
DATE : November 28, 1998
Temp. : 12°C
Humi. : 63%

Frequency (MHz)	Factor (dB)		Meter Reading at 3m (dB μ V/m)		Limits at 3m (μ V/m)		Emission Level at 3m (μ V/m)	
	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Vertical
35.117	_____	_____	_____	_____	100	_____	_____	_____
37.236	_____	_____	_____	_____	100	_____	_____	_____
38.139	_____	_____	_____	_____	100	_____	_____	_____
44.249	_____	_____	_____	_____	100	_____	_____	_____
44.493	_____	_____	_____	_____	100	_____	_____	_____
46.609	_____	_____	_____	_____	100	_____	_____	_____
51.625	_____	_____	_____	_____	100	_____	_____	_____
97.247	_____	_____	_____	_____	100	_____	_____	_____
-8.6	_____	-8.6	_____	_____	35.8	_____	_____	22.9
-9.3	_____	-9.3	_____	_____	29.3	_____	_____	10.0
-9.6	_____	-9.6	_____	_____	30.9	_____	_____	11.6
-11.7	_____	-11.7	_____	_____	41.5	_____	_____	30.9
-11.8	_____	-11.8	_____	_____	41.9	_____	_____	32.0
-12.5	_____	-12.5	_____	_____	36.2	_____	_____	15.3
-14.2	_____	-14.2	_____	_____	37.0	_____	_____	13.8
-15.4	_____	-15.4	_____	_____	42.0	_____	_____	21.4

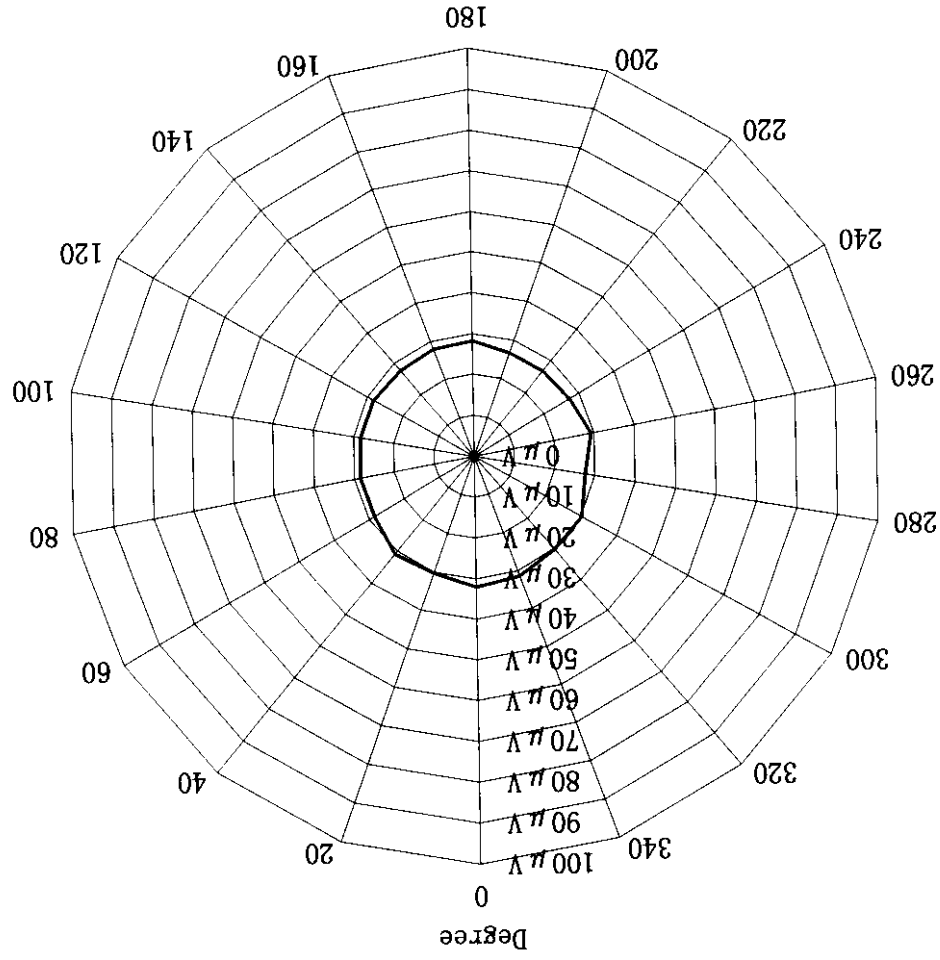
FCC LIMITS Class B (§ 18.305(C))
(Consumer equipment)

FREQUENCY (MHz)	30	88	216
LIMITS (μ V) : at 3m	100	150	200

NOTE : Reporting frequency is the point measured more than 20dB from the limits in the emission level measurement from 30MHz to 1000MHz.

* Factor = Antenna Factor + Cable loss - AMP. Gain

RADIATION PATTERN
(Top View)
(f=44.493 MHz , Distance=3m)



NOTE: "0" Degree is the direction of FCC ID label on the EUT.

* Factor = Antenna Factor + Cable loss - AMP. Gain

FCC LIMITS Class B (§ 18.305(C))
(Consumer equipment)
FREQUENCY (MHz) 30 88 216 216 1000
LIMITS (μV): at 3m 100 150 200

Measurement Frequency (MHz)	Orientation (Degree)	Meter Reading (dB μV/m)	Factor (dB)	Field Strength (μV/m)
44.493	0	41.9	-11.8	32.0
	20	41.4	-11.8	30.2
	40	41.6	-11.8	30.9
	60	40.9	-11.8	28.5
	80	40.9	-11.8	28.5
	100	40.8	-11.8	28.2
	120	40.8	-11.8	28.2
	140	40.6	-11.8	27.5
	160	40.7	-11.8	27.9
	180	40.8	-11.8	28.2
	200	40.3	-11.8	26.6
	220	40.3	-11.8	26.6
	240	40.5	-11.8	27.2
	260	41.1	-11.8	29.2
	280	40.6	-11.8	27.5
	300	41.4	-11.8	30.2
	320	41.4	-11.8	30.2
	340	41.7	-11.8	31.3

Test Result (Radiation Pattern)
EUT Warm-up Time : 30 minutes
DATE : November 28, 1998
Temp. : 12°C
Humid. : 63%

DESCRIPTION OF DEVICE
Type of EUT : EFT23FE28D
FCC ID : ACJ4PKFFT23D
Classification of EUT : Class B (Consumer equipment)

1. Conduction Limits. (§ 18.307 (C))

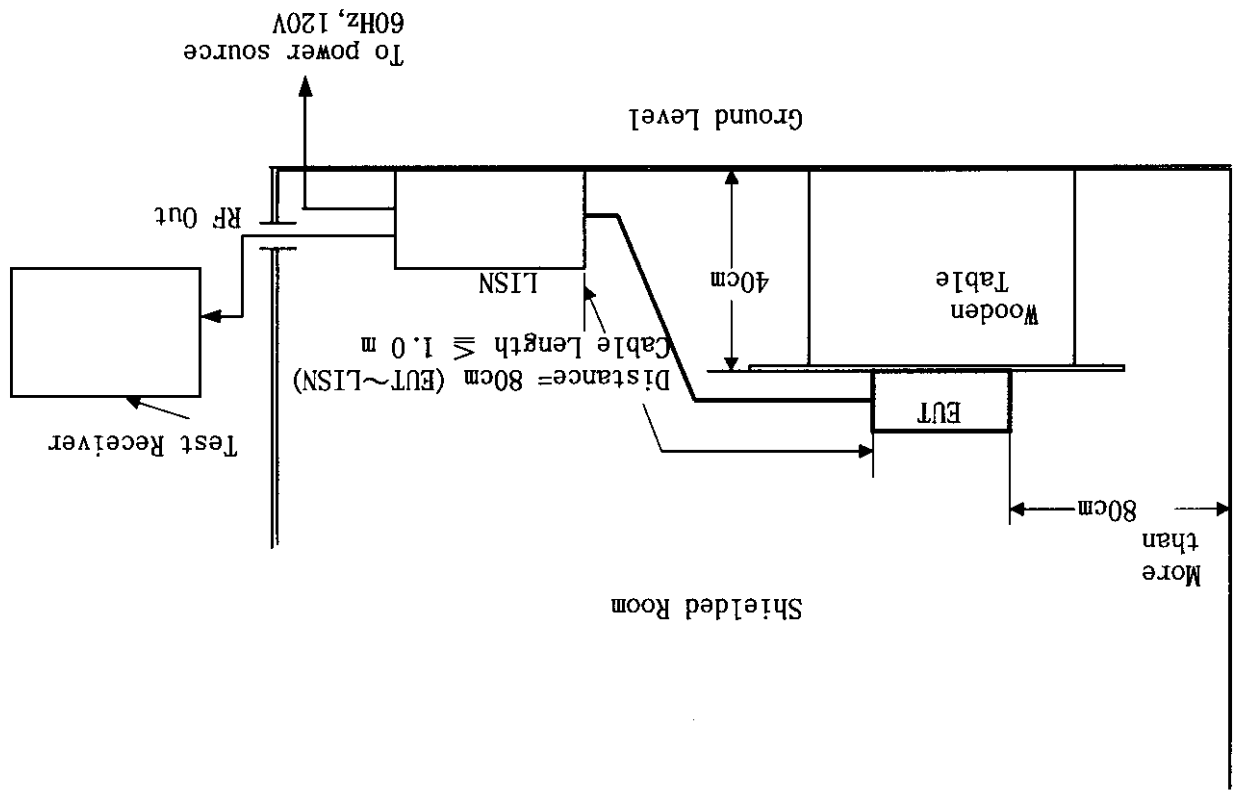
a. Measurement Methods and Test Procedure

Methods of Measurements of Radio Noise Emissions from ISM

Equipment FCC/OST MP-5 (1985)

b. Test Arrangement

Test Equipment Operation Mode: Quasi-Peak



DESCRIPTION OF DEVICE
 Type of EUT : EFT23E28D
 FCC ID : ACJ4PKFT23D
 Classification of EUT : FCC CLASS B
 (Consumer equipment)

LINE CONDUCTED RF VOLTAGE MEASUREMENT
 TEST CONDITION OF INSTRUMENT
 (1) Resolution Bandwidth : 9kHz
 (2) Detector Function : QP
 EUT Warm-up Time : 30 minutes
 DATE : November 28, 1998
 Temp. : 20°C
 Humi. : 64%

Frequency (MHz)	LISN Factor (dB)	Meter Reading (dB μ V)		Limits (μ V)		Emission Level (μ V)	
		Other end-	Ground	Other end-	Ground	Other end-	Ground
0.501	0.2	43.1	_____	250	_____	146.2	_____
0.646	0.2	41.1	_____	250	_____	116.1	_____
0.800	0.2	39.0	_____	250	_____	91.2	_____
0.950	0.3	38.0	_____	250	_____	82.2	_____
1.100	0.3	35.8	_____	250	_____	63.8	_____
1.230	0.3	35.8	_____	250	_____	63.8	_____

FREQUENCY (MHz) 0.45 ~ 30
 LIMITS (μ V) 250

NOTE : Reporting frequency is the point measured more than 20dB from the limits in the emission level measurement from 0.45MHz to 30MHz.

Classification of EUT : FCC CLASS B
(Consumer equipment)

DESCRIPTION OF DEVICE
Type of EUT : EFT23E28D
FCC ID : ACJ4PKFFT23D

LINE CONDUCTED RF VOLTAGE MEASUREMENT
TEST CONDITION OF INSTRUMENT
(1) Resolution Bandwidth : 9kHz
(2) Detector Function : QP
EUT Warm-up Time : 30 minutes
DATE : November 28, 1998
Temp. : 20°C
Humi. : 64%

Frequency (MHz)	LISN Factor (dB)	Meter Reading (dB μ V)		Limits (μ V)	Emission Level (μ V)	
		other end-	Ground		other end-	Ground
0.513	0.2	_____	_____	250	_____	146.2
0.621	0.2	_____	_____	250	_____	97.7
0.779	0.2	_____	_____	250	_____	87.1
0.901	0.3	_____	_____	250	_____	77.6
1.098	0.3	_____	_____	250	_____	61.7
1.230	0.3	_____	_____	250	_____	55.0

FREQUENCY (MHz) 0.45 ~ 30
LIMITS (μ V) 250

NOTE : Reporting frequency is the point measured more than 20dB from the limits
in the emission level measurement from 0.45MHz to 30MHz.