

ELECTROMAGNETIC EMISSIONS
TEST REPORT

LD-00-F002 / FCC ID: ACJ4PKEFA14E28		
EFA14E28:	Warm	14W Globe CFL @ 60 kHz
EFA14E50:	Cool	14W Globe CFL @ 60 kHz
EFD14E28:	Warm	14W 3-Tube CFL @ 60 kHz
EFD14E50:	Cool	14W 3-Tube CFL @ 60 kHz

FCC Part 18 : Consumer ISM equipment
Kind of equipment : Self ballasted fluorescent lamp
Model : EFD14E28
FCC ID : ACJ4PKEFA14E28

Matsushita EMC Center

Matsushita Electric Industrial Co., Ltd.

231-1 Yashiro, Sasayama
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, 571-8501, Japan
2. Factory : Matsushita Electronics Corporation
Address : 1-1 Saiwai-cho, Takatsuki-city
Osaka, 569-1193, Japan
3. Description of Device : Self ballasted fluorescent lamp "Panasonic".
 - a. Application Type : Certification
 - b. Model No. : EFD14E28
 - c. Serial No. : _____
 - d. Date of Manufacture : January, 2000
 - e. Oscillating Frequency : 60 ± 10 kHz
 - f. RF Power Output : 14W
 - 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 : January 21, 25, 2000

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 min. limit margins of 10.6 dB μ V/m(Vertical) at 32.4MHz at the Radiated Emissions and min. limit margins of 12.0 dB μ V(QP) at 0.544MHz at the Conducted Emissions with respect to the limits to whitch 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
Chief Engineer of
Matsusita EMC Center

Description of Measurement Facility

NAME OF TEST SITE : Matsushita EMC Center
ADDRESS : 231-1 Yashiro, Sasayama
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 Accrediation Program
NVLAP Lab Cord: 100428-0
(Effective through: December 31, 2000)

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

a. Measurement Methods and Test Procedure

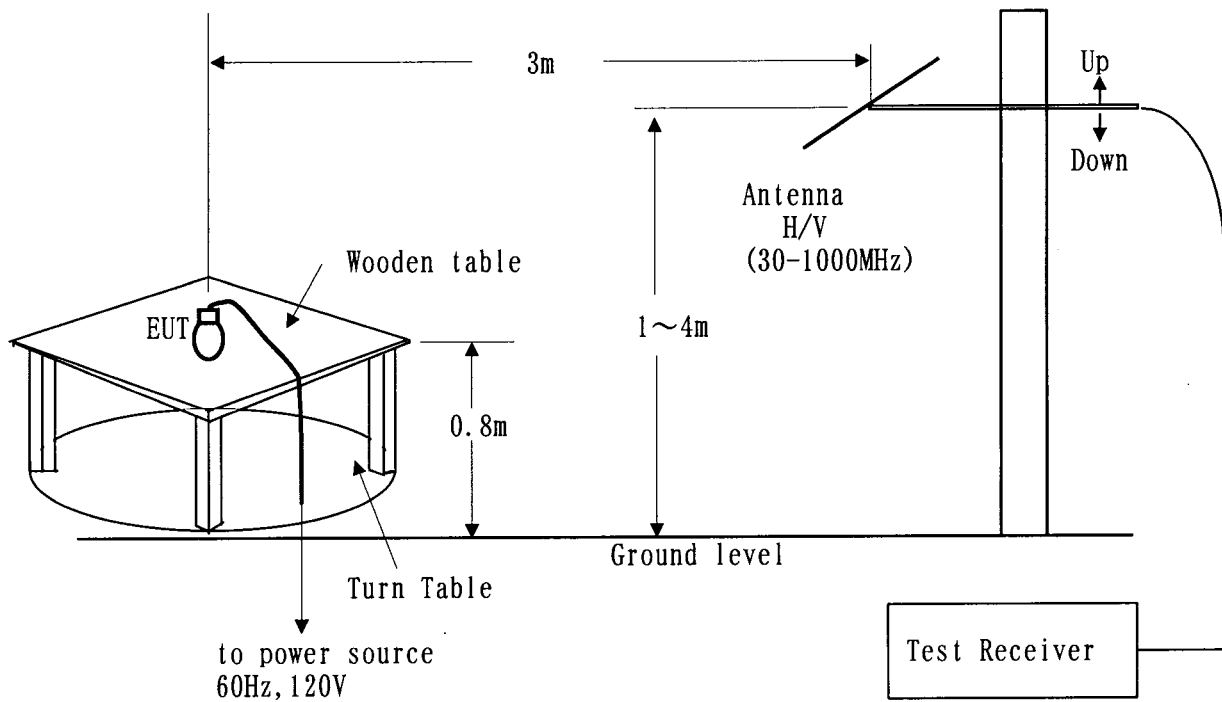
Methods of Measurements of Radio Noise Emissions from ISM

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 : EFD14E28
 FCC ID : ACJ4PKEFA14E28

RADIATED RADIO NOISE MEASUREMENT

TEST CONDITION OF INSTRUMENT

(1) Resolution Bandwidth : 120kHz
 (2) Detector Function : QP

EUT Warm-up Time : 30 minutes

DATE : January 21, 2000
 Temp. : 10°C
 Humi. : 83%

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
30.300	—	-7.0	—	34.2	100	—	22.9
31.752	—	-7.5	—	36.3	100	—	27.5
32.400	—	-7.7	—	37.1	100	—	29.5
33.244	—	-8.0	—	37.3	100	—	29.2
43.172	—	-11.3	—	37.6	100	—	20.7
52.656	—	-14.6	—	41.9	100	—	23.2
43.172	-11.3	—	25.6	—	100	5.2	—
52.656	-14.6	—	29.6	—	100	5.6	—

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

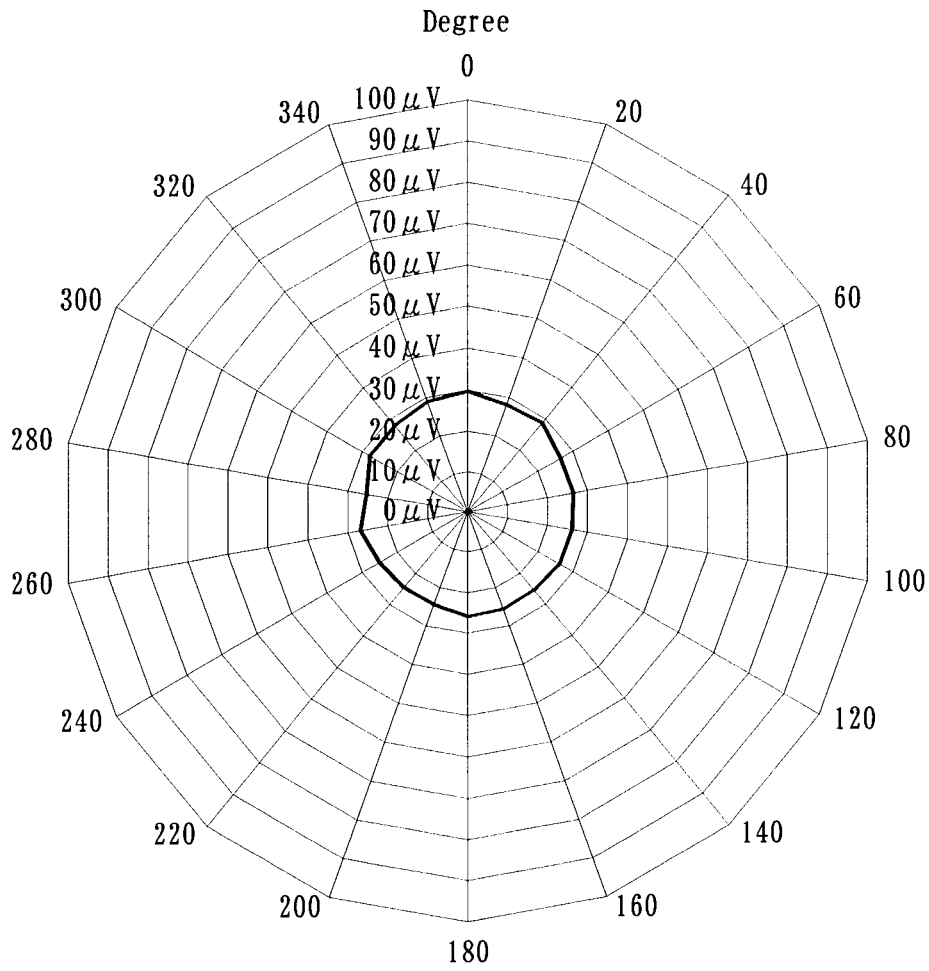
FREQUENCY (MHz)
 30 - 88
 88 - 216
 216 - 1000

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=32.4 MHz , Distance=3m)



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

DESCRIPTION OF DEVICE

Type of EUT : EFA14E28
 FCC ID : ACJ4PKEFA14E28

EUT Warm-up Time : 30 minutes

Test Result (Radiation Pattern)

DATE : January 21, 2000
 Temp. : 10°C
 Humi. : 83%

Measurement Frequency (MHz)	Orientation (Degree)	Meter Reading (dB μ V/m)	Factor (dB)	Field Strength (μ V/m)
32.400	0	37.1	-7.7	29.5
	20	36.6	-7.7	27.9
	40	36.8	-7.7	28.5
	60	36.1	-7.7	26.3
	80	36.1	-7.7	26.3
	100	36.0	-7.7	26.0
	120	36.0	-7.7	26.0
	140	35.8	-7.7	25.4
	160	35.9	-7.7	25.7
	180	36.0	-7.7	26.0
	200	35.5	-7.7	24.5
	220	35.5	-7.7	24.5
	240	35.7	-7.7	25.1
	260	36.3	-7.7	26.9
	280	35.8	-7.7	25.4
	300	36.6	-7.7	27.9
320	36.6	-7.7	27.9	
340	36.9	-7.7	28.8	

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

FREQUENCY (MHz)
 30 - 88
 88 - 216
 216 - 1000

LIMITS (μ V):at 3m
 100
 150
 200

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

1. Conduction Limits. (§ 18.307 (C))

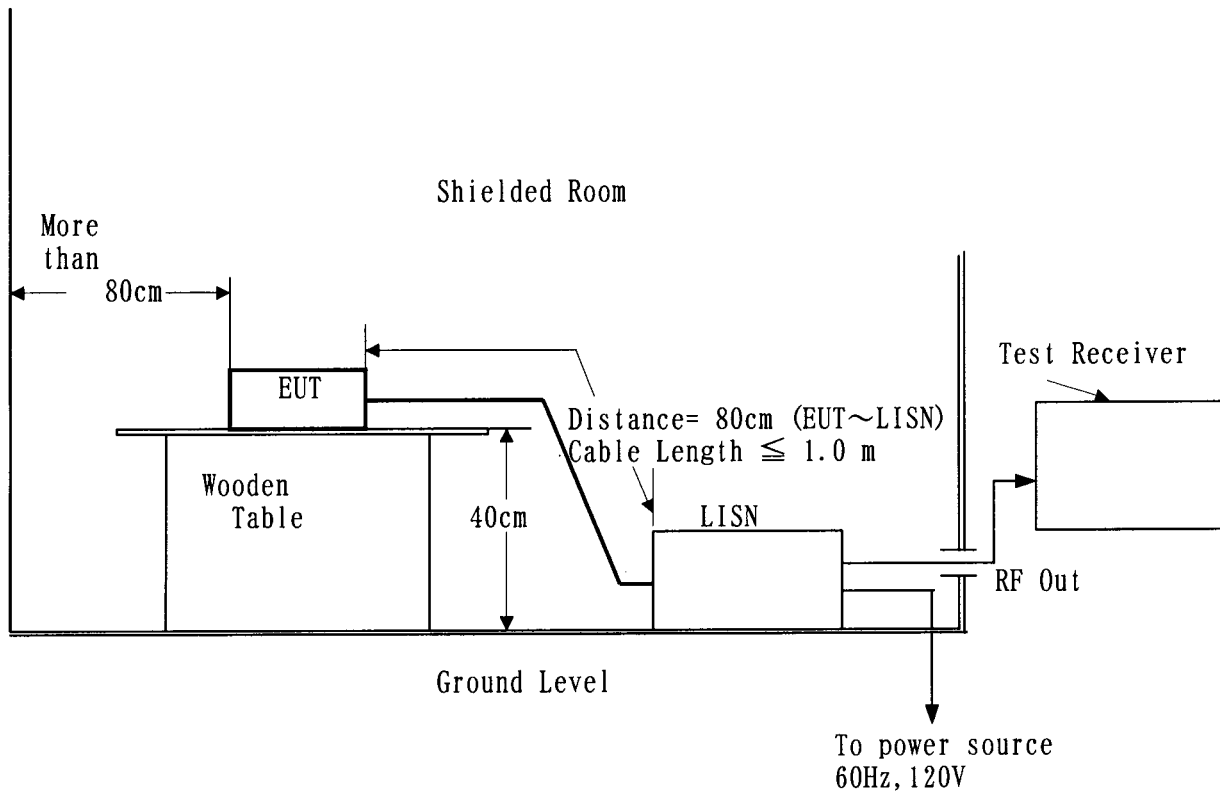
a. Measurement Methods and Test Procedure

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 : EFA14E28
 FCC ID : ACJ4PKEFA14E28

LINE CONDUCTED RF VOLTAGE MEASUREMENT

EUT Warm-up Time : 30 minutes

TEST CONDITION OF INSTRUMENT

(1) Resolution Bandwidth : 9kHz
 (2) Detector Function : QP

DATE : January 25, 2000

Temp.: 21°C

Humi.: 49%

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	Other end- Ground
0.503	0.2	31.3	—————	250	37.6	—————
0.544	0.2	35.8	—————	250	63.1	—————
0.579	0.2	34.0	—————	250	51.3	—————
0.666	0.2	34.5	—————	250	54.3	—————
0.787	0.2	32.8	—————	250	44.7	—————
26.553	1.6	33.5	—————	250	56.9	—————

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.

DESCRIPTION OF DEVICE

Type of EUT : EFA14E28
 FCC ID : ACJ4PKEFA14E28

LINE CONDUCTED RF VOLTAGE MEASUREMENT

EUT Warm-up Time : 30 minutes

TEST CONDITION OF INSTRUMENT

DATE : January 25, 2000

(1) Resolution Bandwidth : 9kHz

Temp. : 21°C

(2) Detector Function : QP

Humi. : 49%

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	Other end- Ground
0.503	0.2	————	32.3	250	————	42.2
0.544	0.2	————	34.8	250	————	56.2
0.579	0.2	————	31.8	250	————	39.8
0.666	0.2	————	33.9	250	————	50.7
0.787	0.2	————	33.2	250	————	46.8
1.266	0.2	————	32.1	250	————	41.2

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.