

TECHNICAL REPORT

1. DESCRIPTION OF MEASUREMENT FACILITY:

The description of the measurement facility is already on file with the FCC laboratory. Please refer to the commission's reference 31010/EQU 4-3-0A.

2. INSTALLATION INSTRUCTIONS:

See EXHIBIT 7.

3. OPERATING INSTRUCTIONS:

See EXHIBIT 8.

4. APPLICANT:

MATSUSHITA MICROWAVE OVEN COMPANY
9333 W. Grand Avenue
Franklin Park, Illinois 60131

5. MANUFACTURER:

MATSUSHITA HOME APPLIANCE CORPORATION OF AMERICA
1355 Lebanon Road
Danville, Kentucky 40423

6. MEASUREMENT SITE:

PANASONIC MAGNETRON LAB.
PANASONIC INDUSTRIAL COMPANY
1707 N. Randle Road
Elgin, Il 60123-7847

7. EQUIPMENT IDENTIFICATION:

Model No.: NN-S789BA, NN-S789WA, NN-S769BA, NN-S769LA,
NN-S769WA, NN-N759BA, NN-N759WA, NN-S759BA, NN-S759WA,
NN-S749BA, NN-S749WA.

Brand Name : Panasonic

FCC ID : ACLAP4P01

7. EQUIPMENT SPECIFICATIONS:

Electrical Power Requirement: 120V, 60Hz, 13.0A

Nominal Operating Frequency: 2450 MHz

Maximum RF Energy Generated: 1100 W (IEC 705)

Magnetron Type: 2M236-M32

Feed Type and Location: Through the wave guide on the top right side of the oven.

Stirrer: Turntable Type

Cabinet Dimensions: (W) 555 x (H) 280 x (D) 428 (mm)

Oven Cavity Dimensions: (W) 417 x (H) 241 x (D) 451 (mm)

Door Viewing Area Dimensions: (W) 320 x (H) 138 (mm)

Door Seal Type: Slit Choke seal and capacitive seal method

8. DESCRIPTION OF DIFFERENCES

Model No.	Premium Sensor Models NN-S789BA, NN-S789WA	Upgraded Sensor Models NN-S769BA, NN-S769WA NN-S769WA	Mid Range Models NN-N759BA, NN-N759WA NN-S759BA, NN-S759WA	Mid Range Models NN-S749BA, NN-S749WA
Input Power	120Vac, 13.0A	120 Vac, 13.0A	120 Vac, 13.0A	120 Vac, 13.0A
Output Power	1100W (IEC705)	1100W (IEC705)	1100W (IEC705)	1100W (IEC705)
Magnetron	2M236-M32	2M236-M32	2M236-M32	2M236-M32
Brand	Panasonic	Panasonic	Panasonic	Panasonic

PHOTOGRAPHS OF EQUIPMENT

EXHIBIT 2-A: FRONT VIEW OF MODEL NN-S789BA

EXHIBIT 2-B: REAR VIEW OF MODEL NN-S789BA

EXHIBIT 2-C: FRONT VIEW OF MODEL NN-S789BA WITH THE DOOR
OPENED

EXHIBIT 2-D: TOP VIEW OF MODEL NN-S789BA WITH ENCLOSURE
REMOVED

EXHIBIT 2-E: RIGHT SIDE VIEW OF MODEL NN-S789BA WITH ENCLOSURE
REMOVED

EXHIBIT 2-F: BOTTOM VIEW OF MODEL NN-S789BA

EXHIBIT 2-G: LEFT SIDE VIEW OF MODEL NN-S789BA WITH ENCLOSURE
REMOVED

EXHIBIT 2-H: VIEW OF DOOR CHOKE CONSTRUCTION ILLUSTRATING
INTEGRAL CHOKE TYPE.

EXHIBIT 2-I: VIEW OF MAGNETRON TYPE 2M236-M32

EXHIBIT 2-J: VIEW OF INVERTER CIRCUITRY

REPORT OF MEASUREMENTS

1. MODEL NO.: NN-S789BA
SERIAL NO. PP-00016
MAGNETRON TYPE NO.: 2M236-M32
2. MEASUREMENT DATE: 10/15/98
3. LIST OF MEASURING EQUIPMENT AND CALIBRATION DATA:
REFER TO ATTACHED EXHIBIT 6
4. INVESTIGATED FREQUENCY RANGE: 100Mhz to 4th Harmonic

5. DATA SUMMARY:

Safety Check :	<u><0.5 MW/cm2</u>	
Radiated Field Strength:	(uV/m @ 300m)	Limit
Fundamental:	<u>2452 MHz</u>	<u>247uv/m</u> N/A
2nd. Harmonic:	<u>4923 MHz</u>	<u>6.53uv/m</u> 32.4
3rd. Harmonic:	<u>7377 MHz</u>	<u>1.74uv/m</u> "
4th. Harmonic:	<u>9827 MHz</u>	<u>1.91uv/m</u> "
Spurious:	<u>2364 MHz</u>	<u>0.53uv/m</u> "
Emmission Sideband:	<u>2400 MHz</u>	<u>0.30uv/m</u> "
Emmission Sideband:	<u>2500 MHz</u>	<u>0.81uv/m</u> "
Greater than 4th. Harmonic	not measurable	

Maximum Frequency Variation: 2448 to 2449 MHz
(96v - 150v/ 1500ml water load)
Maximum Frequency Variation: 2445 to 2459 MHz
(1500 ml - 300ml water load)
Total Power Input to Oven: 1770 watts
Power Developed in Dummy Load: 838 watts
Supply Voltage: 120 Volts, 60Hz, 15.2A

ENGINEERING TEST REPORT

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OCT 15, 1998

Report No . CALR-FCC-O92

This is to certify that the MICROWAVE OVEN from which the following data has been derived properly complies with the requirements of " FCC Rules and Regulations Part 18 Subpart C " as of the date the measurements were made.

1. Manufacturer of Device : Matsushita Home Appliance
Corporation of America

1355 Lebanon Road.
Danville, Kentucky 40423

2. Description of Device

a. FCC ID.	:	ACLAP4P01
b. Model No.	:	NN-S789BA
c. Serial No.	:	PP00016
d. Operating Frequency	:	2450 MHz
e. Output RF Power	:	1100 W (BY IEC 705)
f. Power Consumption	:	120 V. 60 Hz
g. Magnetron Type	:	Matsushita 2M236
h. Employed Mode	:	Turn Table
i. Door Seal Type	:	Choke

3. Measurement Procedure Used : FCC/OST MP-5

4. Measurement Site

Name : Panasonic Magnetron Lab.
Panasonic Industrial Company

Address : 1707 N. Randall Road
Elgin, Illinois 60123-7847

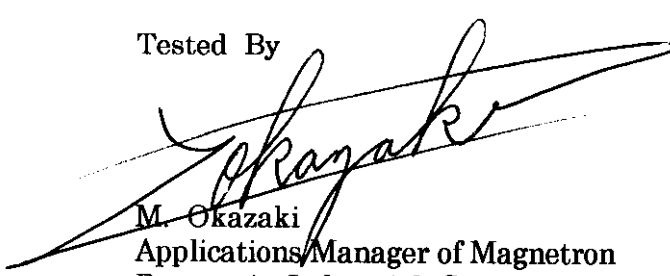
Description of this test facility has been filed with the FCC. (Feb. 26, 1987,
File # 31010/EQU 4-3-0A)

5. Date of Measurement : OCT 15, 1998

6. Measurement Data : See Attached " Data Summary "

7. Test Equipment Used : See Exhibit 1

Tested By



M. Okazaki

Applications Manager of Magnetron
Panasonic Industrial Company

 DATA SUMMARY

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1. Safety Check : < 0.5 mW/cm2 @ 5cm

2. Radiated Field Strength uV/m @ 300m

	Frequency (MHz)	Field Strength (uV/m)	Permissible (uV/m)
Fundamental	2452	247	-----
2nd Harmonic	4923	6.53	32.40
3rd Harmonic	7377	1.74	32.40
4th Harmonic	9827	1.91	32.40
Spurious	2364	0.53	32.40
Emission Side Band	2400	0.30	32.40
Emission Side Band	2500	0.81	32.40

3. Maximum frequency variation : 2448 MHz - 2449 MHz
(96V ~ 150V / 1500cc Load)

2445 MHz - 2459 MHz
(1500cc ~ 300cc / Load)

4. Total power input to oven : 1770 W

5. Power developed in dummy load : 838 W

6. Supply voltage : 120V , 15.2 A

Description of Instrumentation and calculation**(1) Measurement equipment**

a. Field Strength Meter : Electro-Metrics Model EMC-50

Bandwidth Setting : 1 MHz

Detector Function : Linear Average Detection

b. Receiving Antenna : Electro-Metrics Model RGA-180

Frequency Range : 1 - 18 GHz

c. Microwave Survey Meter : Narda Model 8110B

(2) Test Condition

a. Antenna Height Variation : 1.0 - 1.5 m

b. Distance of Antenna to Test unit : 3.0 m

c. Test Unit Height : 1.0 m

(3) Calculation Formula

Field Strength at 3 m (dBuV/m)

$$= \text{Receiver Reading (dBuV)} + \text{Antenna Factor (dB/m)} + \text{Cable Loss (dB)}$$

Field Strength at 300m (uV/m)

$$= K * 10^{\frac{\text{Field Strength at 3 m (dBuV/m)}}{20}}$$

K : Conversion Factor for 3 m to 300 m

Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Conv. Factor K
2400	29	0.7	0.0061
Fundamental	29.3	0.7	0.0062
2500	29.5	0.7	0.0063
4900	33.4	0.9	0.01
7350	36.5	1.2	0.01
9800	38.2	1.4	0.01

Example : 2nd Harmonics

Receiver Reading = 20 dB @ 3 m

$$\text{FIS} = 0.01 * 10^{\frac{20 + 33.4 + 0.9}{20}} = 5.19 \text{ (uV/m)} \\ \text{@300 m}$$

Exhibit 1 Test Equipment List

Name / Model No.	S / No.	Manufacturer	Last Calibrated
Field Strength Meter Model EMC - 50	175	Electro Metrics	11 / 14 / 97
Microwave Survey Meter 8110B	20915	Narda	03 / 19 / 98
Ridged Guide Antenna RGA - 180	2455	Electro Metrics	08 / 20 / 88
Network Analyzer 8410B	1647A00704	Hewlett Packard	06 / 17 / 88
Reflection Unit 8743A	1330A01358	Hewlett Packard	06 / 17 / 88
Sweep Oscillator 8620C	1645A00827	Hewlett Packard	06 / 17 / 88
Frequency Meter 536A	1441A00695	Hewlett Packard	09 / 17 / 88
Power Meter 436A	1629A1172	Hewlett Packard	08 / 05 / 89
Spectrum Analyzer 8555A	1642A06830	Hewlett Packard	08 / 21 / 88

Fig. 1 Physical Description of Test Site

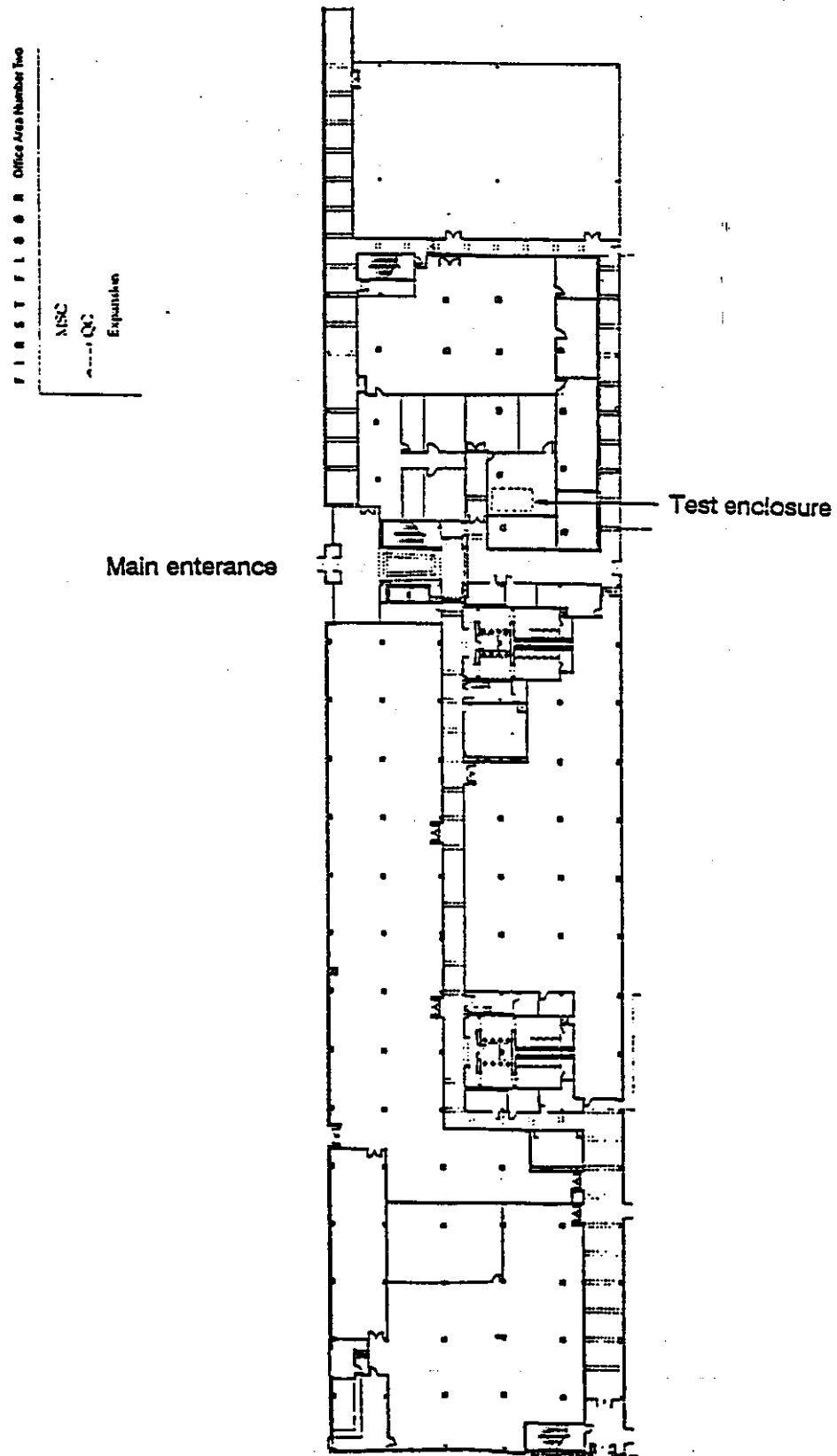


Exhibit 6D
 Fig. 2 Physical Dimensions of Test Site (Unit mm)

ACLAP4P01

