

## REPORT OF MEASUREMENTS (MICROWAVE OVEN TEST DATA)

FCC ID : AEZM904 MODEL : EM-Z9011N DATE : February 6, 2002  
 NOMINAL FREQUENCY : 2,450 MHz TESTED BY : M. KANESHIRO

*M. Kaneshiro*

DESCRIPTION : (Unit Dimension : cm)

Cabinet Dimension : 76.0 by 35.7 by 43.2 Door Dimension : 57.7 by 33.3

Oven Cavity Dimension : 48.9 by 34.5 by 25.5 Door Viewing area : 44.0 by 20.8

Feed Type and Location : Waveguide, located top side Stirrer: rotating tray

(incl. Rotating tray)

Door seal Type : Choke Seal Magnetron Type : Toshiba, 2M-253H (M) -N

Others : N/A

## TEST EQUIPMENT USED :

## 1. Antenna (Horn Antenna)

|                 | Frequency Range | Correction Factor |
|-----------------|-----------------|-------------------|
| AILTECH 91888-2 | 1.0 - 2.0 G Hz  | 21.5 - 22 dB      |
| AILTECH 91889-2 | 2.0 - 3.6 G Hz  | 20.5 - 21 dB      |
| AILTECH 94613-1 | 3.6 - 7.6 G Hz  | 37 dB             |
| AILTECH 91891-2 | 7.3 - 10.0 G Hz | 39.8 dB           |

Other Correction Factor

(a) Cable loss

| Frequency (MHz) | Cable loss (dB) |
|-----------------|-----------------|
| 2,400           | 1.1             |
| 2,500           | 1.1             |
| 4,900           | 1.6             |
| 7,350           | 2.2             |
| 9,800           | 2.7             |

(b) Loss of Band Rejection Filter

| Frequency Range (G Hz) | Filter loss (dB) |
|------------------------|------------------|
| 2.0 - 3.6              | 3.0              |

## 2. Field Strength Meter

AILTECH NM-67 (SER 0241-03088)

Last calibrated date : December 14, 2001

Setting : Bandwidth ----- 1 MHz

Function ----- Field Intensity (average value detector)

3. When measuring sidebands close to the fundamental, band reject filter Model 6N45-2450/60 (SER FK837-1) was employed.

## REPORT OF MEASUREMENT (MICROWAVE OVEN TEST DATA SHEET B)

FCC ID : AEZM904 MODEL : EM-Z9011N DATE : February 6, 2002  
 Nominal Frequency : 2,450 MHz TESTED BY : MKANESHIRO

## DATA SUMMERY (FCC MEASUREMENT PROCEDURE MP-5)

CALCULATION :  $E_{300m} = K \cdot 10^{-(A+B+C+D+E)/20}$

SAFETY CHECK (at 5 cm) Load : 275 ml/center  
 FUNDAMENTAL Load : 1,000 ml/center

0.20 mW/sq.cm  
2,450 MHz.

LIMIT =  $25 \cdot \sqrt{\text{power}/500}$  : 34.5  $\mu\text{V}/\text{m}$

\* Note : Location of load for the oven provided with the rotating tray is :  
 Contiguous with the shelf circumference.

RADIATION FIELD STRENGTH ( $\mu\text{V}/\text{m}$  at 300 m)

|                                | Load<br>(ml) | Location of Load     | Emission<br>Frequency<br>(MHz) | Meter<br>Reading<br>(dB $\mu\text{V}$ ) | Antenna<br>Factor<br>(dB) | Cable<br>Loss<br>(dB) | Filter<br>Loss<br>(dB) | Calcu.<br>Factor<br>(dB) | The Value of K<br>( $E_{300m} = K \cdot 10^{-(A+B+C+D+E)/20}$ ) | Max. Field<br>Strength<br>( $\mu\text{V}/\text{m}$ at 300m) | Limit<br>( $\mu\text{V}/\text{m}$ at 300m) |
|--------------------------------|--------------|----------------------|--------------------------------|-----------------------------------------|---------------------------|-----------------------|------------------------|--------------------------|-----------------------------------------------------------------|-------------------------------------------------------------|--------------------------------------------|
| 2nd Harmonic                   | 300          | Center               | 4,916                          | 12.0                                    | 37.0                      | 1.6                   | —                      | 5                        | 0.0100                                                          | 6.0                                                         | 34.5                                       |
| 2nd Harmonic                   | 300          | * Right/Front Corner | 4,900                          | 10.0                                    | 37.0                      | 1.6                   | —                      | 5                        | 0.0100                                                          | 4.8                                                         | 34.5                                       |
| 2nd Harmonic                   | 700          | Center               | 4,920                          | 15.0                                    | 37.0                      | 1.6                   | —                      | 5                        | 0.0100                                                          | 8.5                                                         | 34.5                                       |
| 2nd Harmonic                   | 700          | * Right/Front Corner | 4,918                          | 9.0                                     | 37.0                      | 1.6                   | —                      | 5                        | 0.0100                                                          | 4.3                                                         | 34.5                                       |
| 3rd Harmonic                   | 300          | Center               | 8,295                          | 11.0                                    | 39.8                      | 2.2                   | —                      | 5                        | 0.0100                                                          | 7.9                                                         | 34.5                                       |
| 3rd Harmonic                   | 300          | * Right/Front Corner | 8,220                          | 11.0                                    | 39.8                      | 2.2                   | —                      | 5                        | 0.0100                                                          | 7.9                                                         | 34.5                                       |
| 3rd Harmonic                   | 700          | Center               | 8,288                          | 11.0                                    | 39.8                      | 2.2                   | —                      | 5                        | 0.0100                                                          | 7.9                                                         | 34.5                                       |
| 3rd Harmonic                   | 700          | * Right/Front Corner | 8,288                          | 11.0                                    | 39.8                      | 2.2                   | —                      | 5                        | 0.0100                                                          | 7.9                                                         | 34.5                                       |
| 4th Harmonic                   | 700          | Center               | 9,791                          | 13.0                                    | 39.8                      | 2.7                   | —                      | 5                        | 0.0100                                                          | 10.6                                                        | 34.5                                       |
| Spurious                       | 700          | Center               | 2,386                          | 22.0                                    | 20.8                      | 1.1                   | 3                      | 5                        | 0.0061                                                          | 2.4                                                         | 34.5                                       |
| Emission Sideband<br>2,400 MHz | 700          | Center               | 2,400                          | 17.0                                    | 20.8                      | 1.1                   | 3                      | 5                        | 0.0061                                                          | 1.3                                                         | 34.5                                       |
| Emission Sideband<br>2,500 MHz | 700          | Center               | 2,500                          | 13.0                                    | 20.8                      | 1.1                   | 3                      | 5                        | 0.0064                                                          | 0.9                                                         | 34.5                                       |

Maximum Frequency Variation 1,000 ml load

Total Power Input to Oven

Power Development in dummy load (Thermal Method)

Supply Voltage

2,443 to 2,447 MHz.

1,500 Watts

950 Watts (IEC705 Test Procedure)

AC 120 V 60 Hz

1830 MHz - 2745 MHz

2745 MHz - 3660 MHz

3660 MHz - 4575 MHz

4575 MHz and above

$2.6230 \cdot 10^{(-3)} \cdot \text{frequency : GHz}$  -0.0002

$2.1858 \cdot 10^{(-3)} \cdot \text{frequency : GHz}$  +0.0010

$1.0929 \cdot 10^{(-3)} \cdot \text{frequency : GHz}$  +0.0050

0.0100

FCC ID : AEZM904MODEL : EM-Z9011N

DATE : February 6, 2002

TESTED BY : M. KANESHIRO*M. Kaneshiro*

Note : In order to convert the measured field strength at 3 meters to the field at 300 meters, comply with FCC/OST MP-5 Appendix C "4.6.1 Computations to determine compliance". A calculation factor of 5 dB, this figure is fixed by SANYO, is introduced for adjusting a tolerance in measurement.

A calculation factor of 5 dB should be added to "METER READING" as shown in SAMPLE CALCULATION below.

## SAMPLE CALCULATION

(1) 2<sup>nd</sup> Harmonic with 300 m/Center load

$$\begin{aligned}\text{Field Strength at 300 m} &= 0.0100 \times 10^{(12.0 + 37 + 1.6 + 5) / 20} \\ &= 6.0 \quad \text{uV/m}\end{aligned}$$

## (2) Emission sideband 2,400 M Hz., 700 m/Center load

$$\begin{aligned}\text{Field Strength at 300 m} &= 0.0061 \times 10^{(17.0 + 20.8 + 1.1 + 3 + 5) / 20} \\ &= 1.3 \quad \text{uV/m}\end{aligned}$$

**REPORT OF MEASUREMENT (MICROWAVE OVEN TEST DATA)**

- Measurement of Frequency VS Line Voltage Stability -

FCC ID : AEZM904 Model : EM-Z9011N Date : Feb. 6.2002Nominal Frequency : 2,450 MHzTested by : M.KANESHIRO*M. Kaneshiro*

| Line Voltage Variation [Volt] | Frequency [GHz] | Deviation for ISM Frequency [MHz] | Limit [MHz] |
|-------------------------------|-----------------|-----------------------------------|-------------|
| 96 (- 20%)                    | 2.442           | -8                                | ± 50        |
| 120 (± 0%)                    | 2.443           | -7                                | ± 50        |
| 150 (+ 25%)                   | 2.446           | -4                                | ± 50        |

**[ Environment ]**Temperature : 16.0 °CHumidity : 58.0 %**[ Sample Calculation ]**Frequency : 2.442 GHz

Deviation for ISM Frequencies Calculated as follows,

$$\underline{2.442} - 2.4500 = \underline{-0.008} \text{ [GHz]} = \underline{-8} \text{ [MHz]}$$

**[ Summary of Test Results ]**

Above data shows that the test device do/ do not complies with the requirements.