LG Electronics Inc.

Digital Appliance Company, EMC Center

391-2, Ga Eum Jeong – Dong, Changwon City, Gyeong Nam
641-711, KOREA
Tel: + 82 55 260 3966, Fax: +82 55 260 3968

CERTIFICATION OF COMPLIANCE

Date of Issue: June. 05, 2001 **Test Report No: 01-LAE-M114**

Test Site: LG Electronics Changwon EMC Center

Applicant:	LG Electronics Inc.
Regulation:	FCC Part 18 – ISM Consumer Device
Test Procedure:	MP-5: 1985
Equipment Class:	Industrial, Scientific, and Medical equipment
EUT Type:	Microwave oven
Magnetron Type:	2M282J (Toshiba Hokuto Electronics Corp.)
Brand Name(s):	Goldstar or LG
Model No.:	MS-147ZE
FCC ID:	BEJS144ZH

This device has been verified to comply with the applicable requirements in the FCC Part 18 and was tested in accordance with the measurement procedures specified in MP-5: 1985.

I assure full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

Kwan Y. Sung / Senior Research Engineer
Digital Appliance Company, EMC Center
LG Electronics Inc.

REPORT FOR A MICROWAVE OVEN

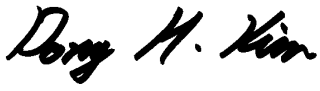
Scope - Measurement and determination of electromagnetic emissions (EME) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission.

EUT Type:	Microwave oven
Model No.:	MS-147ZE
FCC ID:	BEJS144ZH
Rule Part:	FCC Part 18
Test Procedure:	MP-5: 1985
Date of Test:	May. 25, 2001 - May. 31 2001
Date of Issue :	May. 24, 2001
Test Result:	Pass

EMC Center reports apply only to the specific sample(s) tested under stated test conditions. It is the manufacturer's responsibility to assure that additional production unit of this model are manufactured with identical electrical and mechanical components.

The EMC Center facilities has been placed on file and the name of our organization added to the FCC's list for the FCC Part 15 and 18 of the Commission's Rules under Registration Number 93197.

Tested by:



Dong H. Kim / Associate Research Engineer
Digital Appliance Company, EMC Center
LG Electronics Inc.

Reviewed by:

Kwan Y. Sung / Senior Engineer
Digital Appliance Company, EMC Center
LG Electronics Inc.

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1. CLIENT INFORMATION

The EUT has been tested by request of:

Company:	LG Electronics Inc., Cooking Appliances Division 391-2, Ga Eum Jung - Dong, Changwon city, Gyeong Nam, 641-711, Korea
Name of contact:	B. H. Kim
Telephone:	+82-55-260-3463
Fax:	+82-55-260-3223

2. EQUIPMENT UNDER TEST (EUT)

EUT is the LG Electronics Inc. Microwave Oven as followings:

Equipment:	Microwave oven
Model:	MS-147ZE
Brand name:	GoldStar or LG
Serial number:	N/A
Magnetron:	2M282J by Toshiba Hokuto Electronics Corp.
RF Frequency:	2,450 MHz
RF Power Output(IEC 705):	1200 W or 1150 W
Power Consumption Microwave Mode:	 1600 W
Rated Input Voltage:	120 V~, 60 Hz
Rated Input Current Microwave Mode:	 13.5 A
Cavity Volume:	1.4 Cu.ft
Oven Type:	Countertop / Household
Mode Stirrer:	Turntable
Power Cord:	Unshielded
Outer Dimensions(inch)	21.87 (W) * 12.62 (H) * 17.25 (D)

EMI suppression device(s) installed in production: See schematics (Appendix C)
EMI suppression device(s) added and/or modified during test: None

3. TEST SITE

Measurement of radiated emissions from EUT was made at semi-anechoic chamber that has been in compliance with Federal Communications Commissions (FCC) requirements of clause 2.948 according to ANSI C63.4-1992 on April 21, 1998.

4. CALIBRATIONS OF MEASURING INSTRUMENT

All measurement was made with instruments calibrated according to the recommendation by manufacturer. Measurement of radiated emissions and power line conducted emissions were made with instruments conforming to American National Standard Specification, ANSI C63.4-1992. The calibration of measuring instrument, including any accessories that may affect test results, was performed according to the recommendation by manufacturer.

5. DESCRIPTION OF TEST CONDITION

5.1 Radiated emissions measurement

5.1.1 Test site

Measurement was made in semi-anechoic chamber as described at Clause 3 in this report.

5.1.2 Detector function selection and bandwidth

In radiated emissions measurement, field strength meter that has CISPR quasi-peak and average detector was used. The bandwidth of the detector of instrument is 120 kHz for frequency range of 30 MHz - 1000 MHz, and 1 MHz for frequency range of 1 GHz to 10 GHz. Emissions to be measured are detected in average mode.

5.1.3 Unit of measurement

Test results of radiated emissions measurement are reported in microvolts per meter at the specific distance. Using the unit of dBμV on the test instrument, the indication unit was converted to field strength unit of μV/m as following method;

$$F / S = 10^{\{(R+AF+CF)/20\}} \ (\mu V/m)$$

here,

F / S: Field Strength in μV/m, R: Meter Reading Level in dB(μV),
AF: Antenna Factor in dB/m
CF: Conversion Factor
* 30 MHz ~ 1 GHz : CF = CL
* Above 1 GHz :CF = CL – PG + FL + AL
CL: Cable Loss (dB) FL: Filter Loss (dB)
PG: Preamplifier Gain (dB) AL: Attenuator Loss (dB)

5.1.4 Antennas

Measurements were made using calibrated biconical antenna in range of 30 MHz to 300 MHz, log-periodic antenna in range of 300 MHz to 1000 MHz and horn antenna in range of 1 to 10 GHz to determine the emission characteristics of the EUT. Measurements were also made for both horizontal and vertical polarization.

The horizontal distance between the receiving antenna and the closest periphery of the EUT was 3 meters for horn antenna and 10 meters for biconical and log-periodic antenna.

5.1.5 Frequency range to be scanned

For radiated emissions measurements, the spectrum in the range of 30 to 1000 MHz and above, if found, was investigated.

5.1.6 Test conditions and configuration of EUT

The EUT was configured and operated in all modes of operation so as to find the maximum RF energy generated from EUT.

The power was furnished with rated (normal) AC 120 volts, as specified in the Owner's manual of EUT. The EUT was placed on a 1 m high non-metallic table. The turntable containing the system was rotated and the antenna height was varied 4 m to find the maximum RF energy detected from EUT.

Each type of accessory provided by manufacturer or typically used and support equipment were connected to the EUT during measurement to the typical usage and applicable as nearly as practicable.

5.1.7 Measurement uncertainty

The measurement uncertainty describes the overall uncertainty of the given measured value during the operation of the EUT in mentioned above way.

The measurement uncertainty was calculated in accordance with NAMAS NIS 81: "The treatment of uncertainty in EMC measurement."

For calculated uncertainty of each item, refer the next page.

The measurement uncertainty was given with a confidence of 95%.

< Fundamental Frequency Uncerntainty (2,450 MHz) >

Symbol	Contribution	Value (dB)		Probability Distribution	Divisor	Standard Uncertainty Horn Antenna (Value / Divisor)	Standard Uncertainty Squared
			3 m			3 m	3 m
V_1	Ambient signals				1	0.00	0.0
V_2	Antenna factor calibration	Expanded Uncertainty	0.5	normal (k = 2)	2	0.25	0.1
V_3	Cable loss calibration	Expanded Uncertainty	0.5	normal (k = 2)	2	0.25	0.1
V_4	Receiver specification	Tolerance	1.0	rectangular	1.732	0.58	0.3
V_5	Measurement distance variation	Tolerance	0.6	rectangular	1.732	0.35	0.1
V_6	Site imperfections	Tolerance	2.0	rectangular	1.732	1.15	1.3
V_7	Mismatch Receiver VRC: $\Gamma_1 = 0.33$ Antenna VRC: $\Gamma_g = 0.20$ Uncertainty limits $20\text{Log}(1 \pm \Gamma_1 \Gamma_g)$	Tolerance	0.6	U-shaped	1.414	0.42	0.2
V_8	System repeatability (previous assessment of $s(q_k)$ from 5 repeats, 1 reading on EUT Repeatability of EUT*		0.5	Std Deviation	1	0.50	0.3
	Combined standard uncertainty $u_c(y)$		1.53	normal			
	Expanded uncertainty U		3.06	normal (k = 2)			

$$u_c(y) = \sqrt{\left(\frac{0.0}{1}\right)^2 + \left(\frac{0.5}{2}\right)^2 + \left(\frac{0.5}{2}\right)^2 + \frac{1.0^2 + 0.6^2 + 2.0^2}{3} + \left(\frac{0.6}{2}\right)^2 + 0.5^2}$$

The level of confidence will be approximately 95%. (The coverage factor: k=2)

$U = 2\, u_c(y) = 2 \times 1.53 = \pm 3.1$ *d*B

< Radiated Emission Uncerntainty (Above 1 GHz) >

Symbol	Contribution	Value (dB)		Probability Distribution	Divisor	Standard Uncertainty Horn Antenna (Value / Divisor)	Standard Uncertainty Squared
			3 m			3 m	3 m
V_1	Ambient signals			-	1	0.00	0.0
V_2	Antenna factor calibration #1	Expanded Uncertainty	0.5	normal (k = 2)	2	0.25	0.1
V_3	Antenna factor calibration #2	Expanded Uncertainty	0.5	normal (k = 2)	2	0.25	0.1
V_4	Cable loss calibration	Expanded Uncertainty	0.5	normal (k = 2)	2	0.25	0.1
V_5	Receiver specification	Tolerance	1.0	rectangular	1.732	0.58	0.3
V_6	Highpass filter	Tolerance	1.0	rectangular	1.732	0.58	0.3
V_7	Measurement distance variation	Tolerance	0.6	rectangular	1.732	0.35	0.1
V_8	Site imperfections	Tolerance	2.0	rectangular	1.732	1.15	1.3
V_9	Mismatch Receiver VRC: $\Gamma_1 = 0.33$ Antenna VRC: $\Gamma_g = 0.2$ Uncertainty limits $20\text{Log}(1 \pm \Gamma_1 \Gamma_g)$	Tolerance	0.6	U-shaped	1.414	0.42	0.2
V_{10}	System repeatability (previous assessment of $s(q_k)$ from 5 repeats, 1 reading on EUT Repeatability of EUT*		0.5	Std Deviation	1	0.50	0.3
	Combined standard uncertainty $u_c(y)$		1.65	normal			
	Expanded uncertainty U		3.31	normal (k = 2)			

$$u_c(y) = \sqrt{\left(\frac{0.0}{1}\right)^2 + \left(\frac{0.5}{2}\right)^2 + \left(\frac{0.5}{2}\right)^2 + \left(\frac{0.5}{2}\right)^2 + \frac{1.0^2 + 1.0^2 + 0.6^2 + 2.0^2}{3} + \left(\frac{0.6}{2}\right)^2 + 0.5^2}$$

The level of confidence will be approximately 95%. (The coverage factor: k=2)

$U = 2\, u_c(y) = 2 \times 1.65 = \pm 3.4$ *d*B

< Electric Field Strength Uncerntainty (30 MHz – 1 GHz) >

Symbol	Contribution	Value (dB)		Probability Distribution	Divisor	Standard Uncertainty UltraLog Antenna (Value / Divisor)	Standard Uncertainty Squared
			10 m			10 m	10 m
V_1	Ambient signals			Std Deviation	1	0.00	0.0
V_2	Antenna factor calibration	Tolerance	1.0	rectangular	1.732	0.58	0.3
V_3	Cable loss calibration	Expanded Uncertainty	0.5	normal (k = 2)	2	0.25	0.1
V_4	Receiver specification	Tolerance	1.0	rectangular	1.732	0.58	0.3
V_5	Antenna directivity	Tolerance	3.0	rectangular	1.732	1.73	3.0
V_6	Antenna factor variation with height	Tolerance	0.5	rectangular	1.732	0.29	0.1
V_7	Antenna phase center variatior	Tolerance	0.2	rectangular	1.732	0.1	0.0
V_8	Antenna factor frequency interpolation	Tolerance	0.25	rectangular	1.732	0.14	0.0
V_9	Measurement distance variation	Tolerance	0.4	rectangular	1.732	0.23	0.1
V_{10}	Site imperfections	Tolerance	2.0	rectangular	1.732	1.15	1.3
V_{11}	Mismatch Receiver VRC: Γ_1 = 0.09 Antenna VRC: Γ_g = 0.33 Uncertainty limits 20Log(1+ Γ_1 Γ_g)	Tolerance	0.3	U-shaped	1.414	0.21	0.0
V_{12}	System repeatability (previous assessment of s(q_k) from 5 repeats, 1 reading on EUT Repeatability of EUT*		0.5	Std Deviation	1	0.50	0.3
	Combined standard uncertainty $u_c(y)$		2.35	normal	2		
	Expanded uncertainty U		4.70	normal (k = 2)	2		

$$u_c(y) = \sqrt{\left(\frac{0.0}{1}\right)^2 + \left(\frac{0.5}{2}\right)^2 + \frac{1.0^2 + 1.0^2 + 3.0^2 + 0.5^2 + 0.2^2 + 0.25^2 + 0.4^2 + 2.0^2}{3} + \frac{0.30^2}{2} + 0.5^2}$$

The level of confidence will be approximately 95%. (The coverage factor: k=2)

$U = 2\,u_c(y) = 2 \times 2.35 = +4.7$ *d*B

< Line Conducted Uncerntainty >

Symbol	Contribution	Value (dB)		Probability Distribution	Divisor	Standard Uncertainty (dB) 150 kHz - 30 MHz (Value / Divisor)	Standard Uncertainty Squared
V_1	Receiver specification	Tolerance	1.0	rectangular	1.732	0.58	0.3
V_2	LISN coupling specification	Tolerance	1.0	rectangular	1.732	0.58	0.3
V_3	Cable and input attenuator calibration	Expanded Uncertainty	0.5	normal (k = 2)	2	0.25	0.1
V_4	Mismatch Receiver VRC:Γ_1 = 0.0 9 LISN VRC: Γ_g = 0.8 Uncertainty limits 20Log ($1 \pm \Gamma_1$ Γ_g)	Tolerance	0.6	U-shaped	1.414	0.42	0.180
V_5	System repeatability (previous assessment of s(q_k) from 10 repeats, 1 reading on EUT)		0.35	standard deviation	1	0.35	0.12
	Combined standard uncertainty $u_c(y)$		1.02	normal			
	Expanded uncertainty U		2.03	normal (k = 2)			

$$u_c(y) = \sqrt{\frac{1.0^2 + 1.0^2}{3} + \left(\frac{0.5}{2}\right)^2 + \frac{0.6^2}{2} + 0.35^2} = \quad dB$$

The level of confidence will be approximately 95%. (The coverage factor: k=2)

$U = 2\,u_c(y) = 2 \times \quad 1.02 \quad = \pm 2.1$ *d*B

6. MEASURING INSTRUMENT

Instrument	Model	Cal. Due date	Serial No.	Control No.
Microwave Spectrum Analyzer	HP8566B	05/10/2002	3340A08173	99-IRE-05
RF Preselector	HP85685A	05/10/2002	3221A01441	99-IRE-04
Qusi-Peak Adapter	HP85650A	05/10/2002	3303A01732	99-TRE-01
R/B Spectrum Display	HP462	05/10/2002	3340A21397	99-IRE-02
Attenuator Switch Driver	HP11713A	05/10/2002	3334A11152	99-IRE-03
Preamplifier	HP8449B OPT H02	05/10/2002	3008A00525	99-IRE-06
Power Meter	HP436A	05/12/2002	2604A24567	99-IRE-12
Power Sensor	HP8481A	05/12/2002	2552A50829	99-IRE-14
Power Sensor	HP8482A	05/12/2002	2607A11242	99-IRE-15
Accessory Kit	-	-	7044/45-002	99-IRE-16
Horn Antenna	RGA-60 (Electro Metrics)	05/23/2002	6104	99-IRE-21
Antenna Master	2070-2(EMKO)	-	9903-2231	99-IRE-23
Ultra Log Antenna	HL562(Chase)	05/19/2003	830547/007	99-IRE-27
High Pass Filter	11SH10-2500/X1800-010	03/06/2002	2	99-IRE-07
High Pass Filter	11SH10-2500/X1800-010	04/24/2002	3	99-IRE-29
EMI Receiver	ESI26 (R&S)	07/20/2001	835336/008	00-IRE-30
LISN	ESH2-Z5(R&S)	02/06/2002	825640/003	99-ICE-02
Microwave Cable	Sucoflex 104	-	125484/4	-
Microwave Cable	Sucoflex 106	-	13417/6	-
Microwave Cable	Sucoflex 106	-	13419/6	-
Microwave Cable	Sucoflex 106	-	13418/6	-
Microwave Cable	Sucoflex 104	-	125483/4	-
Microwave Cable	Sucoflex 104	-	12548/4	-
Microwave Cable	Sucoflex 106	-	13416/6	-
Microwave Cable	Sucoflex 106	-	13416/6	-
Semi Anechoic Chamber	YES INC.	-	-	99-CFA-01
Shield Screen Room	YES INC.	-	-	99-CFA-02
Microwave Survey Meter	Holaday HI-1710/HI-2623	11/29/2001	102445	FJZ394HA

7. TEST DATA

7.1 Input Power

The input power was measured using Wattmeter. A 275 ml water load in a polypropylene beaker is placed in the center of the oven. The 275 ml water was chosen for its compatibility with UL procedure to determine input ratings. The oven was operated at the rated input and full output power for 6 minutes.

Mode	Input Voltage	Current [A]	Power Consumption [W]	Manufacturer Rating [A]
Microwave	120 Vac, 60 Hz	14.2	1,654	13.5

7.2 RF Power Output Measurement

The Calorimetric Method was used to determine maximum output power. A 1000 ml water load was placed in the center of the oven. A mercury thermometer was used to measure temperature rise. The test method described in MP-5 and IEC Publication 705/1998.

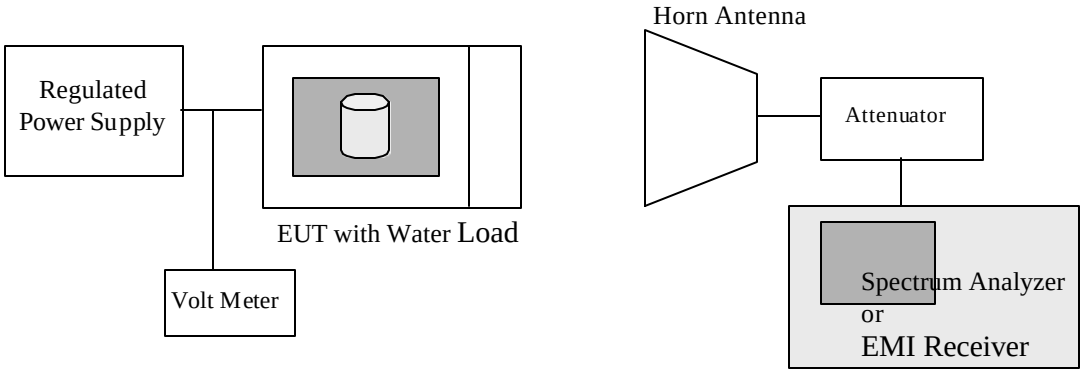
$$\text{Power [W]} = \frac{(4.187 \text{ Joules/Cal}) * (\text{Volume in ml}) * (\text{Temperature Rise})}{\text{Time in Seconds}}$$

Quantity of Water	Starting Temperature	Final Temperature	Elapsed Time
1000 ml	23.6 °C	49.0 °C	120 Sec

$$\text{Power [W]} = \frac{4.187 * 1{,}000 * 25.4}{120}$$

Power [W] = 886.2 Watts

7-3. Frequency measurements



(1) Frequency vs Line Voltage Variation Test

Variation of line voltage from 80 % (96 V) to 125 % (150 V)
Load: 1,000 ml
Fundamental Frequency: 2,450 MHz
Limit: 2.4 GHz < f < 2.5 GHz

Maximum Frequency Observed:	2,468 MHz
Minimum Frequency Observed:	2,464 MHz
Result:	**Pass**

(2) Frequency vs Load Variation Test

Frequency was measured at the rated input voltage (AC 120 V).
Initial Load: 1,000 ml
Final Load: 200 ml
Fundamental Frequency: 2,450 MHz
Limit: 2.4 GHz < f < 2.5 GHz

Maximum Frequency Observed:	2,463 MHz
Minimum Frequency Observed:	2,459 MHz
Result:	**Pass**

7-4. Power Density Safety Check

The power density was check to ensure that the power is not greater than 1.0 ㎽/㎠ at any location of the oven. The 1.0 ㎽/㎠ is in accordance with CDRH and UL923 standard.

A microwave survey meter was placed on all sides, door and viewing, bottom, top and rear. No power greater than 0.21 ㎽/㎠ was observed and did not exceed the specified limits.

Maximum Leakage Microwave Observed:	0.21 ㎽/㎠
Result:	**Pass**

7-5. Radiated emissions (Section 18.305)

Radiated emission was measured at a frequency range 30 MHz to 10 GHz. The EUT was supported by a 1 m high wood table, measurement above 1 GHz and below 1 GHz.
Preliminary measurements were made inside an anechoic chamber at 3 m to determine to emission characteristics of EUT. The EUT is configured and operated in a manner which produces the maximum emission in a typical configuration. Final measurements were made outdoor in control room at 3 meter test method.

Test distance: 3 m

Freq. (MHz)	Ant. Factor [dB]	Cable Loss [dB]	Load [ml]	Load Location	Meter Reading [dBμV]	Field Strength @ 3 m [dBμV/m]	Field Strength @ 3 m [μV/m]	Field Strength @ 300 m [μV/m]	FCC Limit @ 300 m [μV/m]
2,394	29.0	4.1	700	Center	18.9	52.0	398.1	4.0	33.2
2,518	29.3	4.1	700	Center	16.6	50.0	316.2	3.2	33.2
4,920	34.0	5.5	700	Center	14.0	53.5	473.2	4.7	33.2
4,922	34.0	5.5	700	Rt. Front	12.0	51.5	375.8	3.8	33.2
4,922	34.0	5.5	300	Center	12.5	52.0	398.1	4.0	33.2
4,923	34.0	5.5	300	Rt. Front	11.5	51.0	354.8	3.5	33.2
7,383	36.5	10.4	700	Center	5.1	52.0	398.1	4.0	33.2
7,378	36.5	10.4	700	Rt. Front	8.1	55.0	562.3	5.6	33.2
7,398	36.5	10.4	300	Center	15.1	62.0	1258.9	12.6	33.2
7,355	36.5	10.4	300	Rt. Front	14.1	61.0	1122.0	11.2	33.2
9,848	38.4	8.3	700	Center	7.0	53.7	484.2	4.8	33.2

For measurement of 30 MHz – 1,000 MHz, refer to APPENDIX A (Test Plot).

Result: Pass

* Limit (at 300 m) = 25 * (RF Power/500) $^{1/2}$ [μV/m]
* Field Strength below 1,000 MHz (at 300 m) [μV/m] = 10 $^{[(\text{Field strength at 10m(dBuV/m)}-29.5)/20]}$
* Field Strength above 1,000 MHz (at 300 m) [μV/m] = K * 10 $^{[\text{Field strength at 3m(dBuV/m)}/20]}$

NOTES:

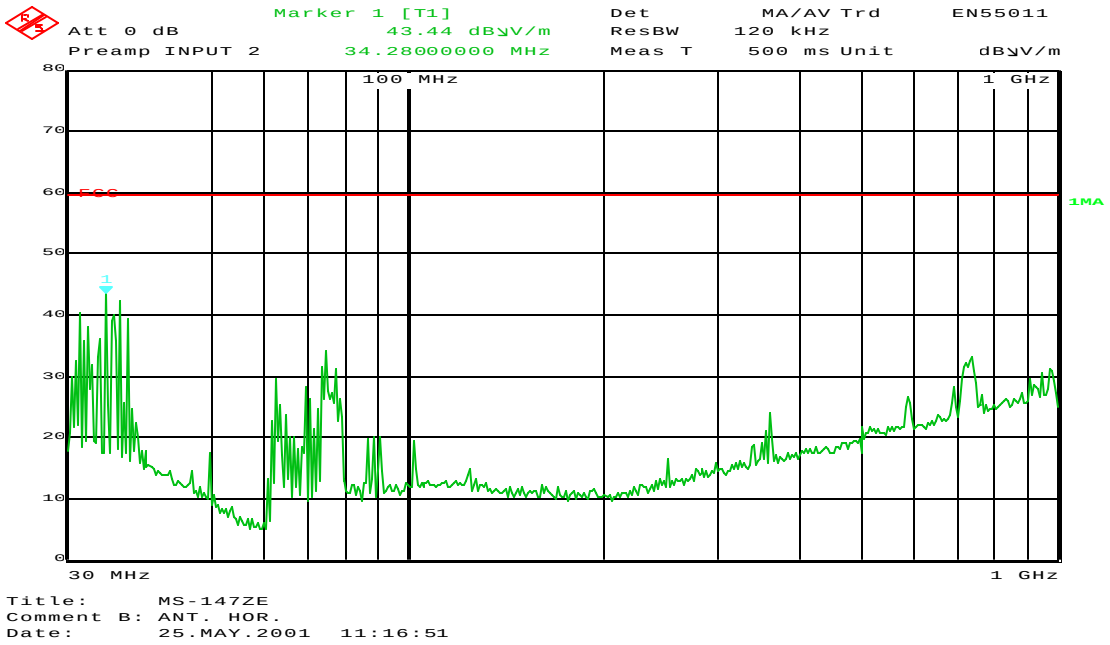
1. Two representative modes (full power and defrost) of operation were investigated.
2. A glass beaker was used as the container and the test was made with a shelf in its initial normal position.
3. Load for measurement of radiation on second and third harmonic: Two loads, one of 700 and the other of 300 ml, of water were used. Each load was tested both with the beaker located in the center of the oven and with it in the corner.
4. Load for all other measurements: 700 ml of water, with the beaker located in the center of the oven
5. All other emissions are non-significant.
6. The tests were made with average detector for frequency range of 30 MHz to 10 GHz.

APPENDIX A. Test Plot

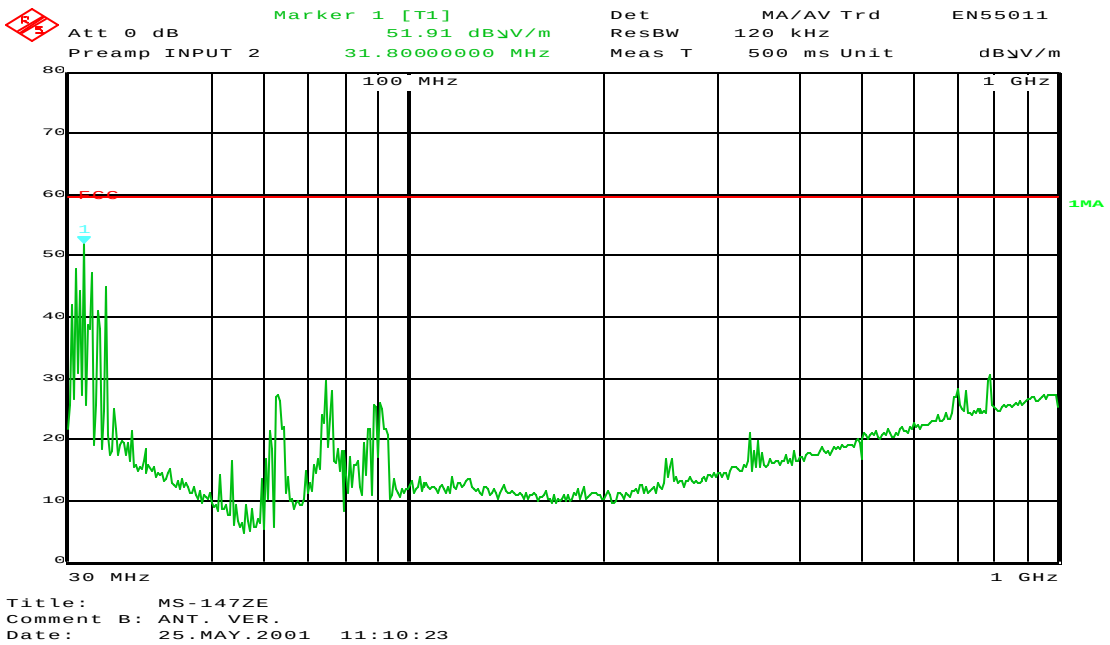
♦ **30 MHz ~ 1000 MHz (Magnetron type: 2M282J by Toshiba)**

- Operating Mode: Maximum RF Power Output
- Detect Mode: Peak
- Measurement Distance: 10 meters

<Antenna Polarization: Horizontal>

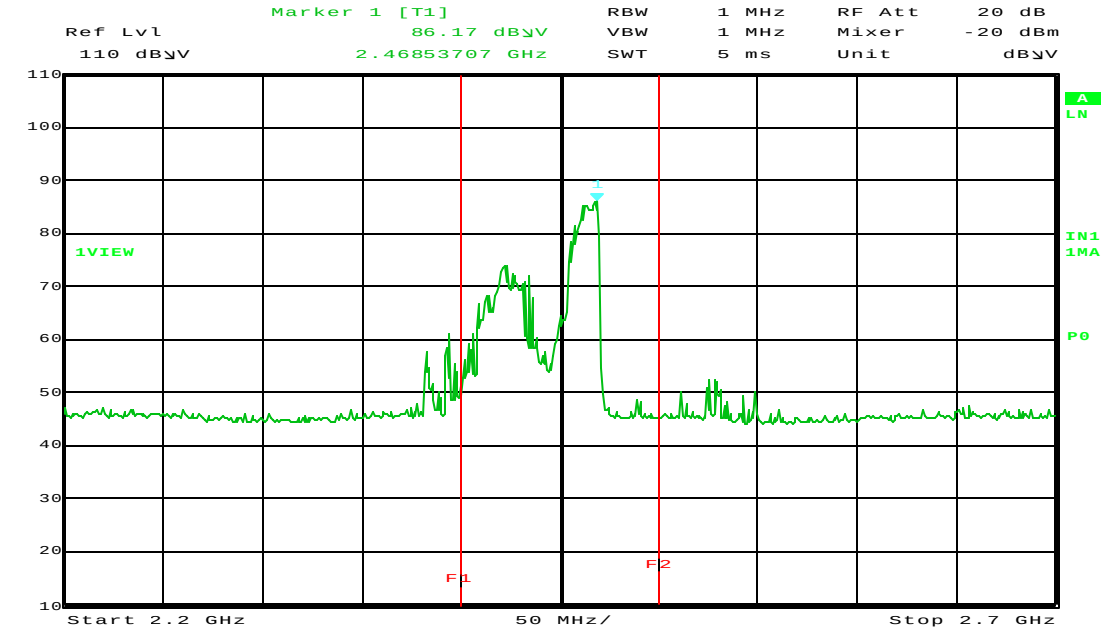


<Antenna Polarization: Vertical>



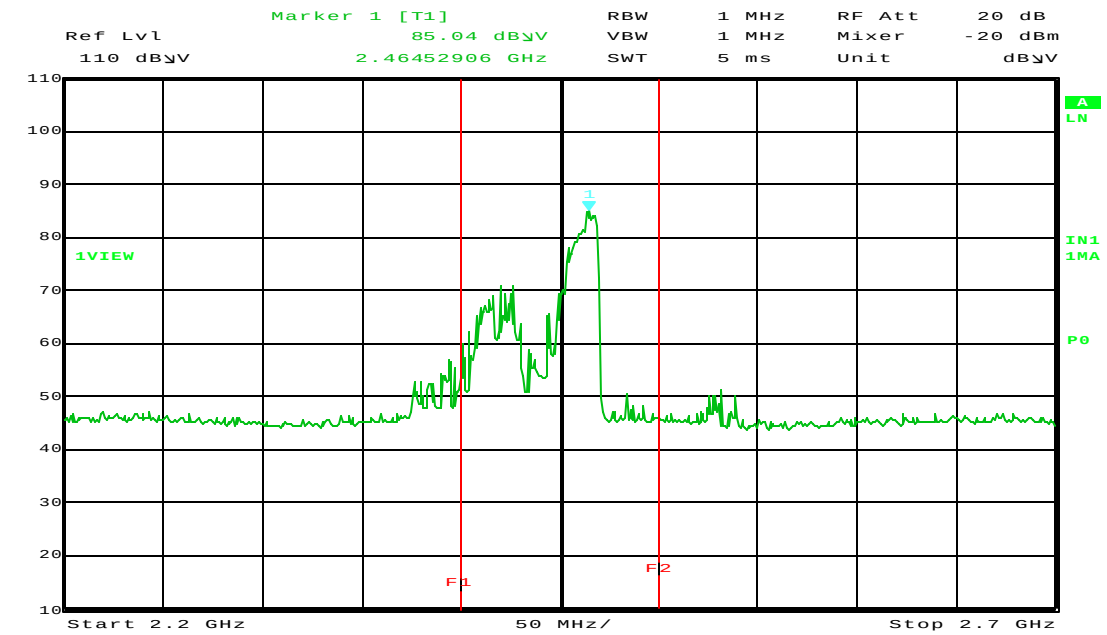
♦Voltage Variation (Magnetron type: 2M282J by Toshiba)

<Maximum Frequency Observed: 2,468 MHz>



Title: MS-147ZE
Comment A: 150V
Date: 25.MAY.2001 17:14:44

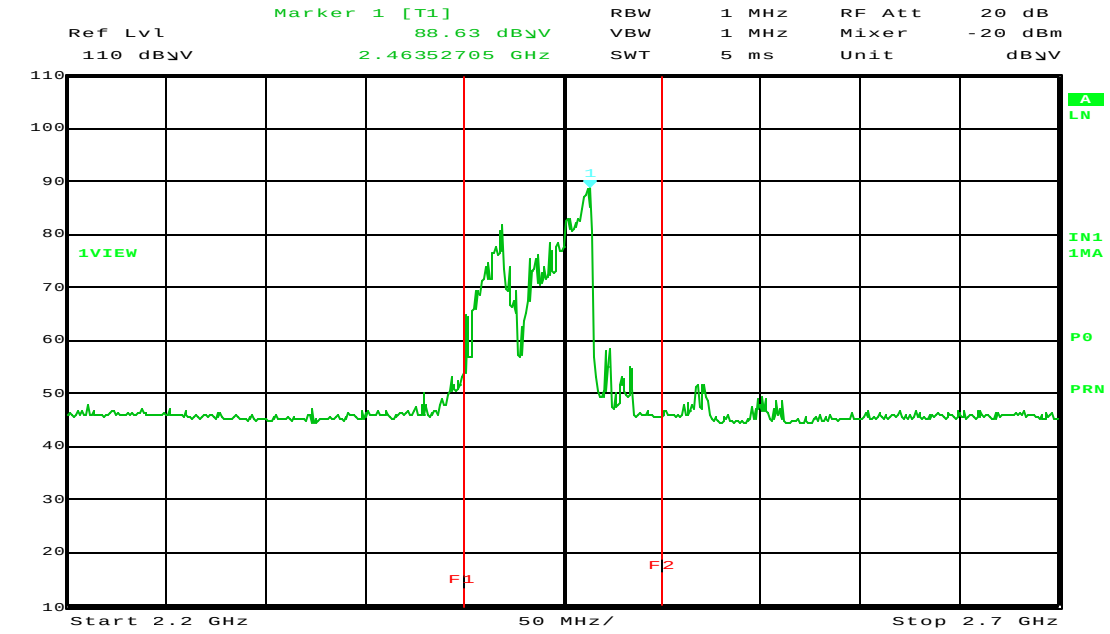
<Minimum Frequency Observed: 2,464 MHz>



Title: MS-147ZE
Comment A: 132V
Date: 25.MAY.2001 17:07:57

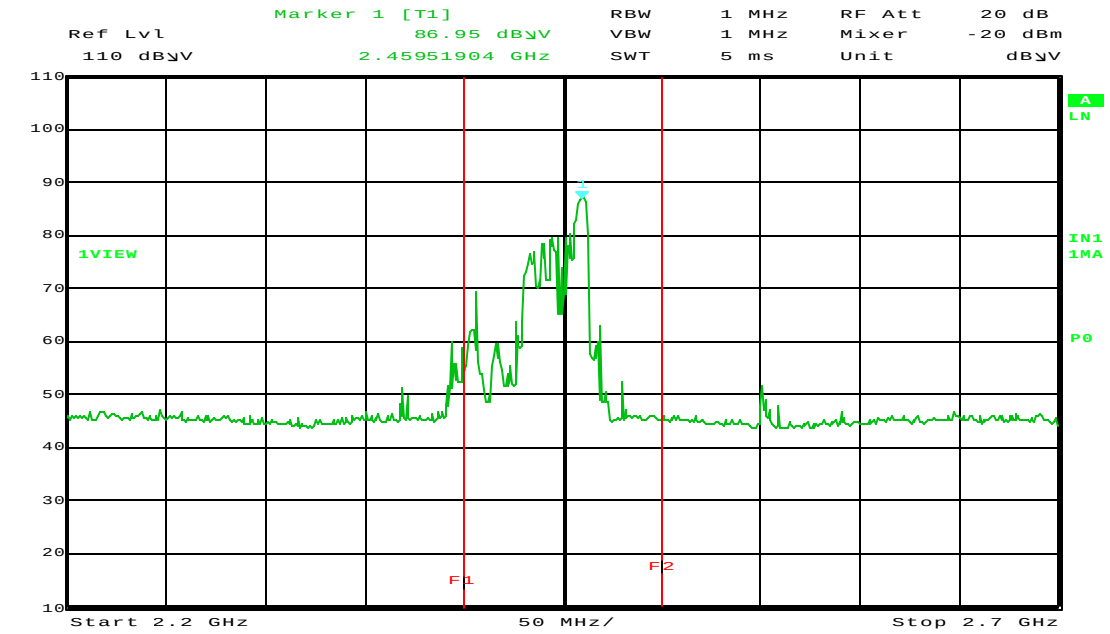
¨ **Load Variation (Magnetron type: 2M282J by Toshiba)**

<Maximum Frequency Observed: 2,463MHz >



Title: MS-147ZE
Comment A: 400ml
Date: 25.MAY.2001 16:23:21

< Minimum Frequency Observed: 2,459 MHz >



Title: MS-147ZE
Comment A: 200ml
Date: 25.MAY.2001 16:32:51

APPENDIX B. Labeling Requirements

Labeling requirements per Section 2.925 and 15.19.

The label shown shall be permanently affixed at a conspicuous location on the device and be readily visible to the user at the time purchase.

GoldStar **MICROWAVE OVEN (HOUSEHOLD)**

LISTED
57B5
UL
E82904

MODEL NO.: MS-147ZE
CATALOG NO.
INPUT 120V 13.5 A SINGLE PHASE
WITH GROUNDING 60Hz AC
OUTPUT FREQUENCY 2450MHz
COMPLIES WITH DHHS RADIATION PERFORMANCE
STANDARDS 21CFR SUBCHAPTER J.
MANUFACTURED:

DHHS CODE NO.: LT
FCC ID: BEJS144ZH
MADE IN KOREA
DISTRIBUTED BY LG ELECTRONICES INC.
20,YOIDO-DONG, YOUNGDUNGPO-GU, SEOUL
SERIAL NO.:

CAUTION
This Device is to be Serviced Only by Properly Qualified Service Personnel.
Consult the Service Manual for Proper Service Procedures to Assure Continued Compliance
with the Federal Performance Standard for Microwave Ovens and for Precautions to be
Taken to Avoid Possible Exposure to Excessive Microwave Energy .

WARNING- TO PROVIDE CONTINUED PROTECTION AGAINST ELECTRIC SHOCK, CONNECT TO PROPERLY GROUNDED OUTLETS ONLY.
- •DISCONNECT APPLIANCE BEFORE SERVICING .
- • REMOVAL OF ENCLOSURE WITH PRODUCT ENERGIZED MAY EXPOSE
- • SERVICEMAN TO HAZARDOUS HIGH VOLTAGE POTENTIALS

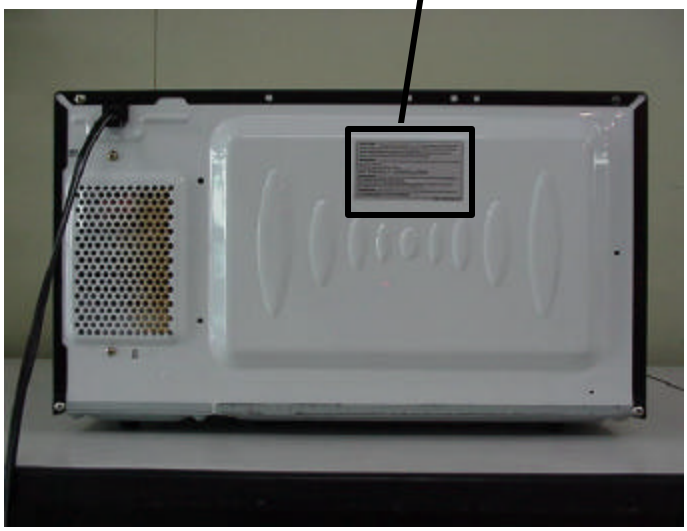
NOT FOR BUILT-IN INSTALLATION

WARNING- Certain internal parts are intentionally not grounded and may present a risk of electric shock only during servicing.
Service personnel - Do not contact the following parts while the appliance is energized(If Provided FAN MOTOR,TURNTABLE MOTOR or LV.TRANSFORMER).

P/NO.:

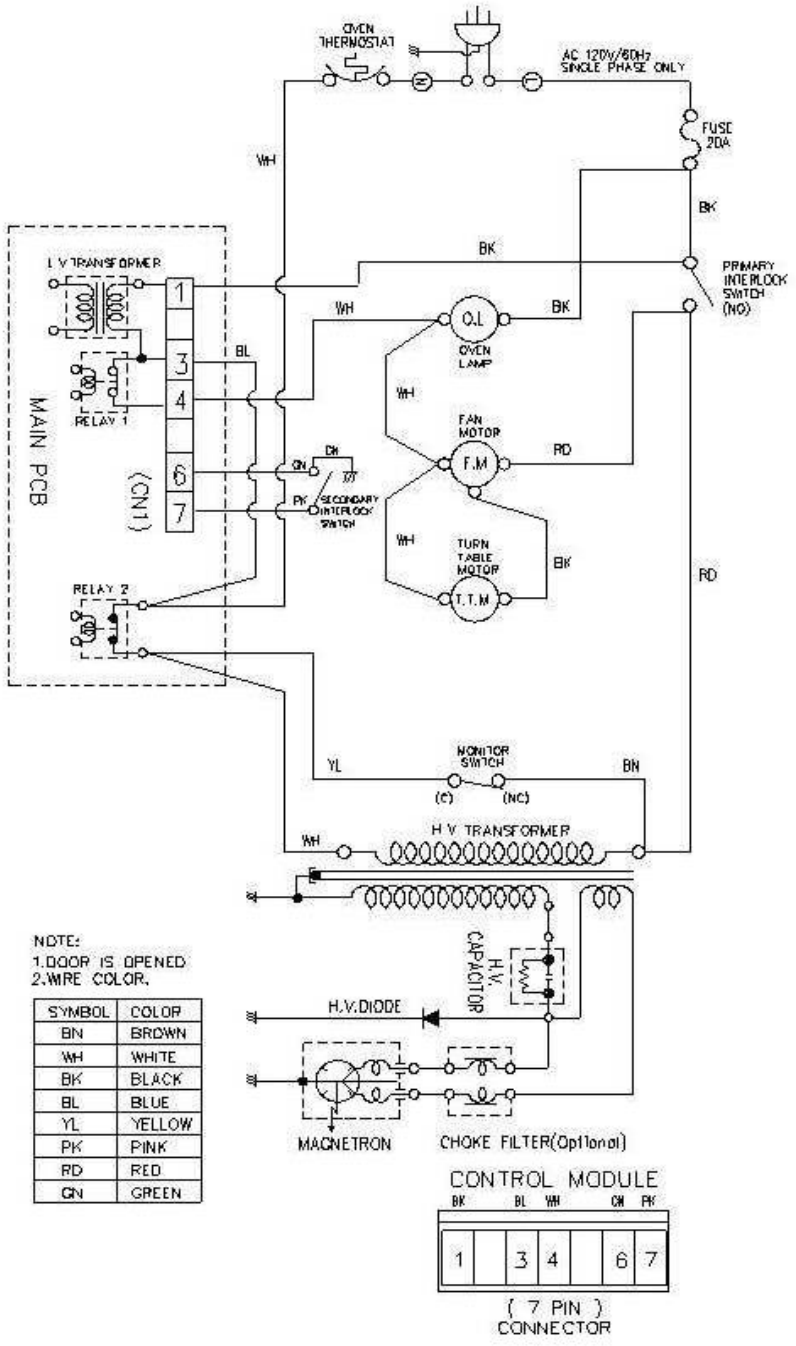
<Fig. 1. Sample Label of Nameplate>

* Alternate location:
The nameplate may be alternatively affixed on the front surface of oven cavity or left side of control panel.



< Fig. 2. Photo of the physical location of the label>

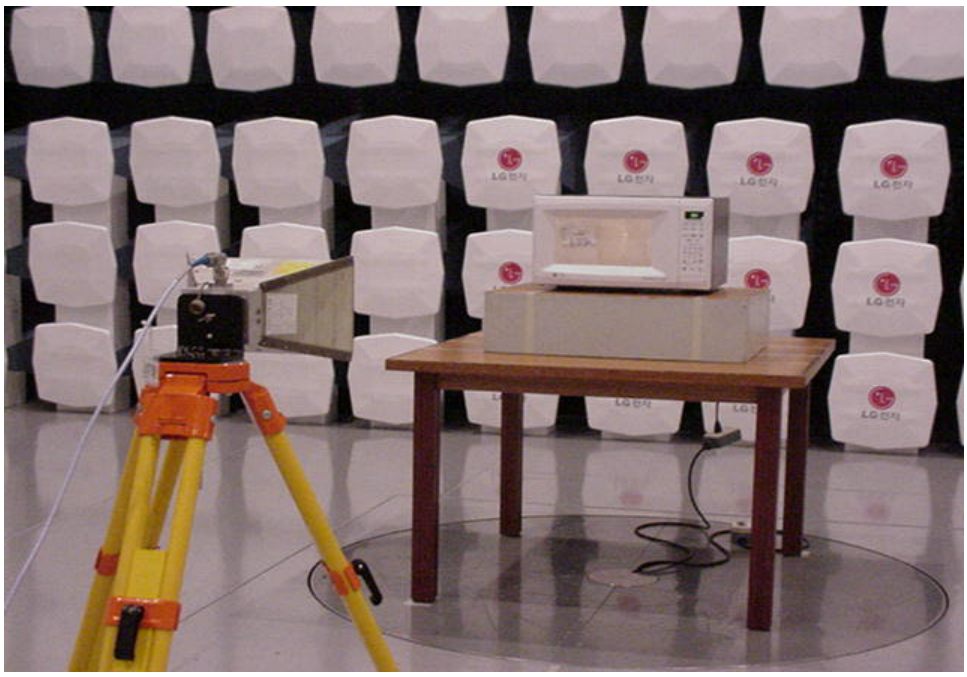
APPENDIX C. Block Diagram / Schematics

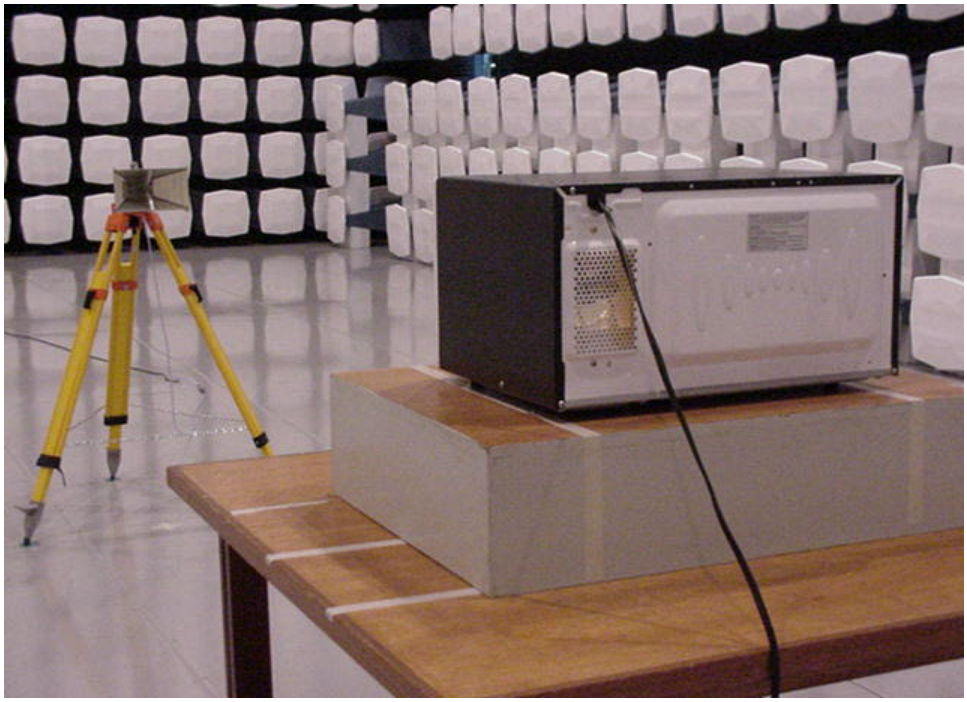


<Fig. 3. Schematic Diagram>

APPENDIX D. Test Photos

Test photos show the worst case configuration and cable placement with a minimum margin to the specifications.



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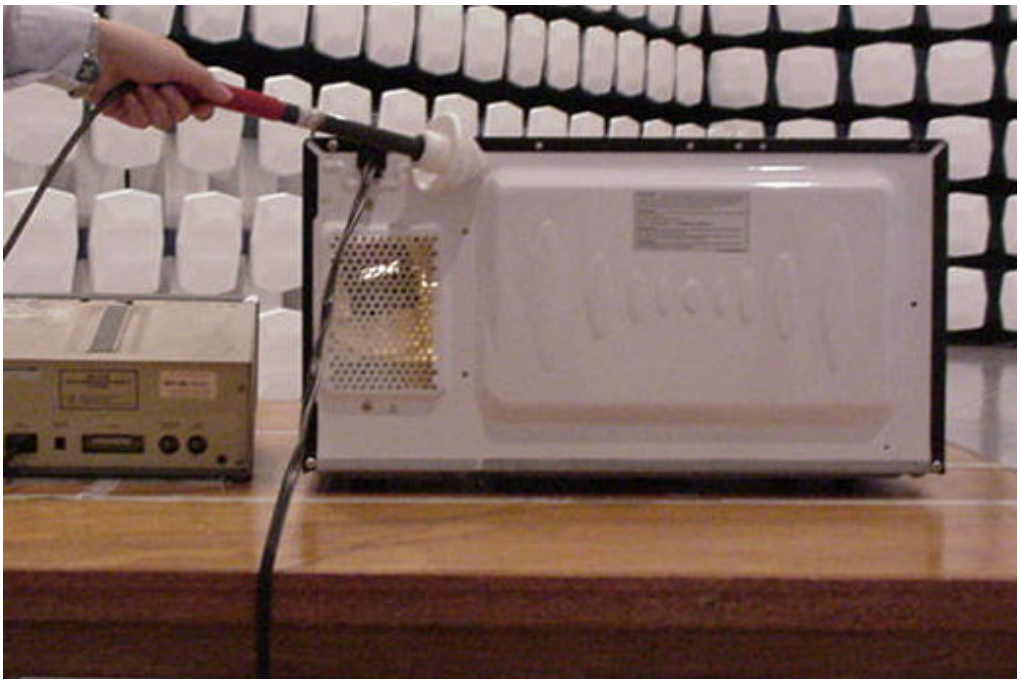
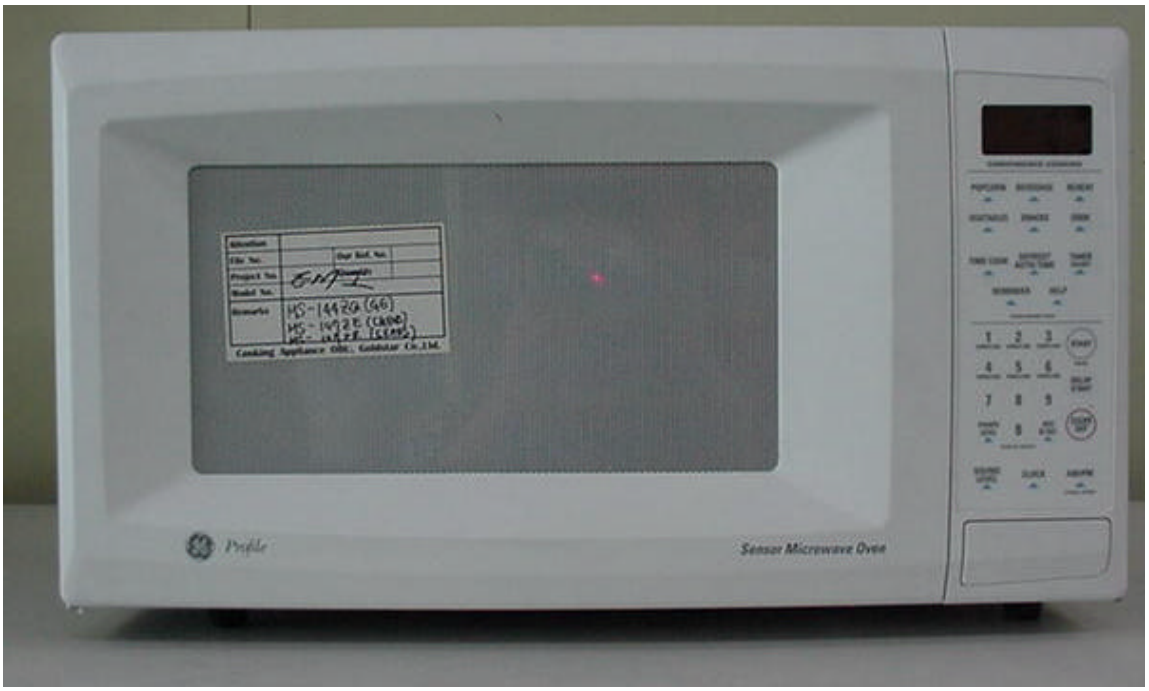
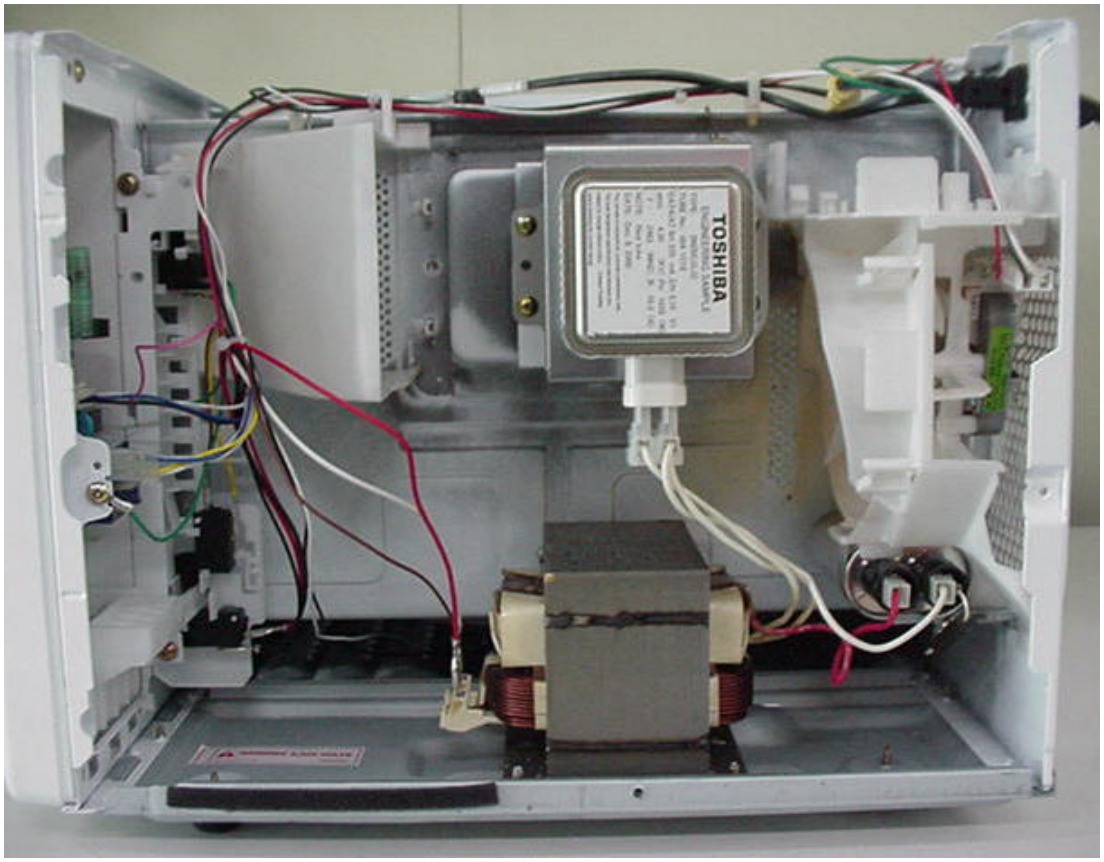
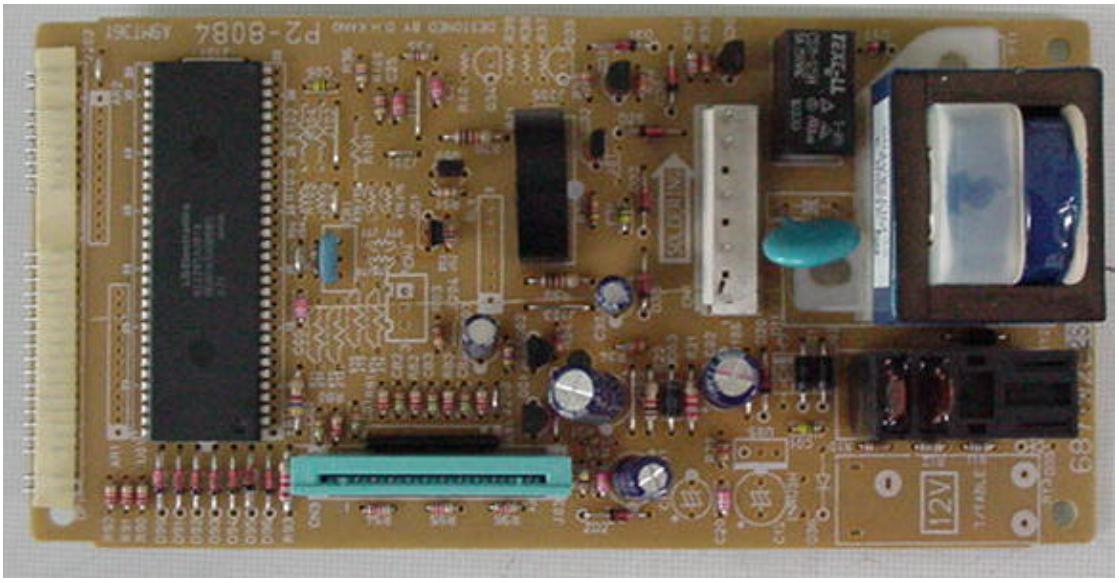
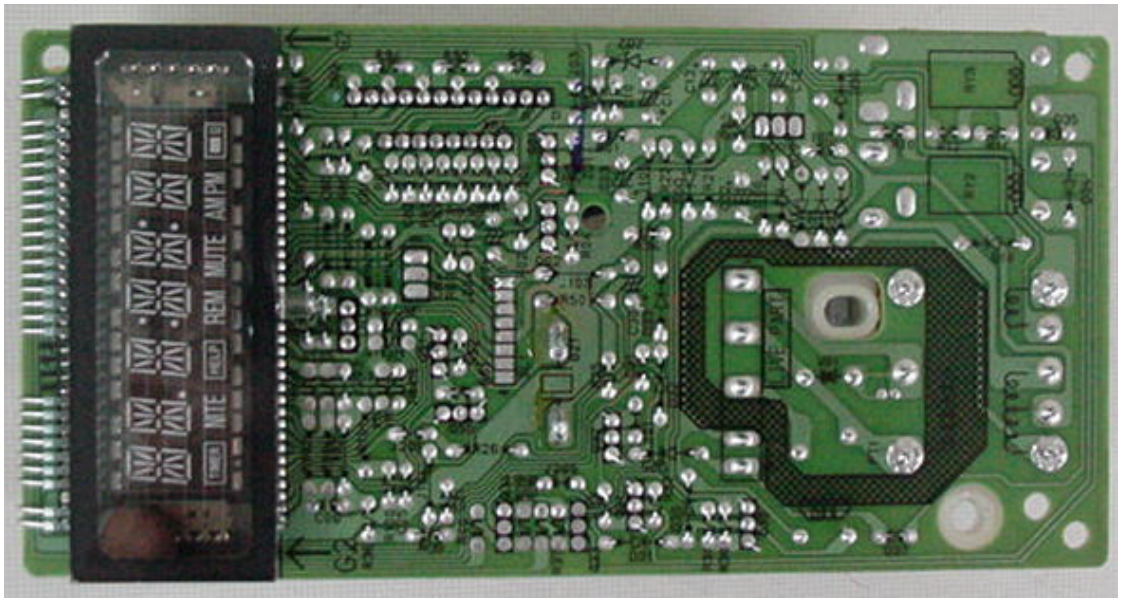


APPENDIX E. EUT Photos




TOSHIBA


12V


MUTE
REM
MTE

APPENDIX F. Owner' s Manual with regard to FCC Instruction

INSTALLATION

A. Circuits

For safety purposes this oven must be plugged into a 20 Amp circuit. No other electrical appliances or lighting circuits should be on this line. If in doubt, consult a licensed electrician.

B. Voltage Warning

The voltage used at the wall receptacle must be the same as specified on the oven name plate located on the front or on the side of the control panel of the oven. Use of a higher voltage is dangerous and may result in a fire or other type of accident causing oven damage. Low voltage will cause slow cooking. In case your microwave oven does not perform normally in spite of proper voltage, remove and reinsert the plug.

C. Placement of the Oven

Your microwave oven can be placed easily in your kitchen, family room, or anywhere else in your home. Place the oven on a flat surface such as a kitchen countertop or a specially designed microwave oven cart at least 100cm (39.4 inches) from floor. Do not place oven above a gas or electric range. Free air flow around the oven is important. Allow at least 2 inches of space at the top, sides, and back of the oven for proper ventilation.

NOTES:

- Never place the turntable in the oven upside down.
- You can build your microwave oven into a wall or cabinet by using one of the trim kits listed in the "Built-In Kits" section.

D. Do not block the air vents

All air vents should be kept clear during cooking. If air vents are covered during oven operation the oven may overheat. In this case, a sensitive thermal safety device automatically turns the oven off. The oven will be inoperable until it has cooled sufficiently.

E. Radio interference

1. Microwave oven operation may interfere with TV or radio reception.
2. When there is interference, it may be reduced or eliminated by taking the following measures:
   a. Clean the door and the sealing surfaces of the oven.
   b. Reorient the receiving antenna of radio or TV.
   c. Relocate the microwave oven in relation to the TV or radio.
   d. Move the microwave oven away from the receiver.
   e. Plug the microwave oven into a different outlet so that microwave oven and receiver are on different branch circuits.

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