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 : February 22, 2001 **Test Report No: 01-LAE-M028**

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:	2M246 (LG Electronics Inc.) 2M248J (Toshiba Hokuto Electronics Corp.)
Brand Name(s):	Goldstar or LG
Model No.:	MS-112XE
FCC ID:	BEJS112XH

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-112XE
FCC ID:	BEJS112XH
Rule Part:	FCC Part 18
Test Procedure:	MP-5: 1985
Date of Test:	Feb. 03, - Feb. 12, 2001
Date of Issue :	Feb. 22, 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.

CONTENTS

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:	+82-551-260-3463
Fax:	+82-551-260-3223

2. EQUIPMENT UNDER TEST (EUT)

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

Equipment:	Microwave oven
Model:	MS-112XE
Brand name:	GoldStar or LG
Serial number:	N/A
Magnetron:	2M246 by LG Electronics Inc. 2M248J by Toshiba Hokuto Electronics Corp.
RF Frequency:	2,450 MHz
RF Power Output(IEC 705):	1000 W
Power Consumption	
Microwave Mode:	1,500 W
Rated Input Voltage:	120 V~, 60 Hz
Rated Input Current	
Microwave Mode:	13.0 A
Cavity Volume:	1.0 Cu.ft
Oven Type:	Countertop / Household
Mode Stirrer:	Turntable
Power Cord:	Unshielded
Outer Dimensions(inch)	20.12 (W) * 12.0 (H) * 15.83 (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 Uncertainty (2,450 MHz) >

Symbol	Contribution	Value (dB)	3 m	Probability Distribution	Divisor	Standard Uncertainty Horn Antenna (Value / Divisor) 3 m	Standard Uncertainty Squared 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 Uncertainty (Above 1 GHz) >

Symbol	Contribution	Value (dB)	3 m	Probability Distribution	Divisor	Standard Uncertainty Horn Antenna (Value / Divisor) 3 m	Standard Uncertainty Squared 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 Uncertainty (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 interpolatior	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: $\Gamma_1 = 0.09$ Antenna VRC: $\Gamma_g = 0.33$ Uncertainty limits $20\text{Log}(1 \pm \Gamma_1 \Gamma_g)$	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)

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

< Line Conducted Uncertainty >

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: $\Gamma_1 = 0.09$ LISN VRC: $\Gamma_g = 0.8$ Uncertainty limits $20\text{Log}(1 \pm \Gamma_1 \Gamma_g)$	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)

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

6. MEASURING INSTRUMENT

Instrument	Model	Cal. Due date	Serial No.	Control No.
Microwave Spectrum Analyzer	HP8566B	05/04/2001	3340A08173	99-IRE-05
RF Preselector	HP85685A	05/08/2001	3221A01441	99-IRE-04
Qusi-Peak Adapter	HP85650A	05/08/2001	3303A01732	99-TRE-01
R/B Spectrum Display	HP462	05/08/2001	3340A21397	99-IRE-02
Attenuator Switch Driver	HP11713A	05/08/2001	3334A11152	99-IRE-03
Preamplifier	HP8449B OPT H02	05/08/2001	3008A00525	99-IRE-06
Power Meter	HP436A	04/25/2001	2604A24567	99-IRE-12
Power Sensor	HP8481A	05/12/2001	2552A50829	99-IRE-14
Power Sensor	HP8482A	05/12/2001	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)	10/05/2001	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
EMI Receiver	ESCS30(R&S)	03/31/2001	825788/023	99-ICE-01
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.

1) Magnetron type: LG 2M246

Mode	Input Voltage	Current [A]	Power Consumption [W]	Manufacturer Rating [A]
Microwave	120 Vac, 60 Hz	12.8	1477	13.0

2) Magnetron type: Toshiba 2M248J

Mode	Input Voltage	Current [A]	Power Consumption [W]	Manufacturer Rating [A]
Microwave	120 Vac, 60 Hz	13.1	1502	13.0

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.

1) Magnetron type: LG 2M246

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

Quantity of Water	Starting Temperature	Final Temperature	Elapsed Time
1000 ml	21.0 °C	43.5 °C	120 Sec

$$\text{Power [W]} = \frac{4.187 * 1000 * 22.5}{120}$$

Power [W] = 785.1 Watts

2) Magnetron type: Toshiba 2M248J

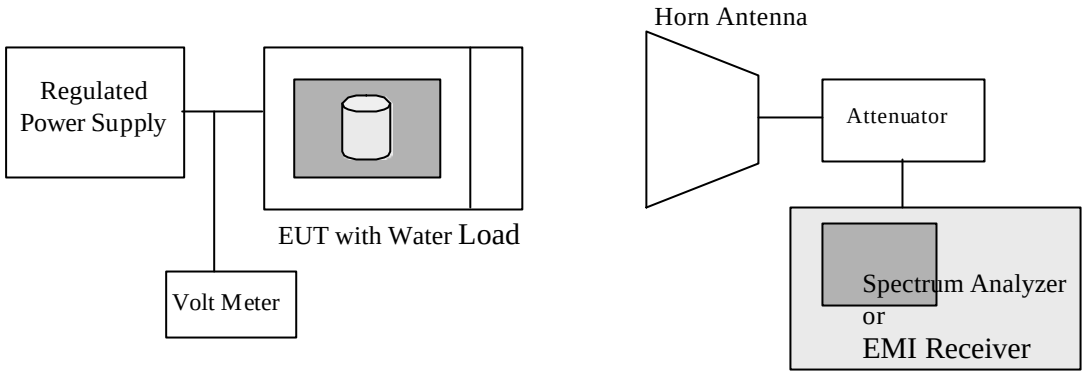
$$\text{Power [W]} = \frac{(4.187 \text{ Joules/Cal}) * (\text{Volume in ml}) * (\text{Temperature Rise})}{\text{Time in Seconds}}$$

Quantity of Water	Starting Temperature	Final Temperature	Elapsed Time
1000 ml	20.8 °C	43.9 °C	120 Sec

$$\text{Power [W]} = \frac{4.187 * 1000 * 23.1}{120}$$

Power [W] = 806.0 Watts

7-3. Frequency measurements



1) Magnetron type: LG 2M246

(1) Frequency vs. Line Voltage Variation Test

Variation of line voltage from 80 % (96 V) to 125 % (150 V)
Load: 1000 ml
Fundamental Frequency: 2,450 MHz
Limit: 2.4 GHz < f < 2.5 GHz

Maximum Frequency Observed:	2,461 MHz
Minimum Frequency Observed:	2,459 MHz
Result:	**Pass**

(2) Frequency vs. Load Variation Test

Frequency was measured at the rated input voltage(AC 120 V).
Initial Load: 1000 ml
Final Load: 200 ml
Fundamental Frequency: 2,450 MHz
Limit: 2.4 GHz < f < 2.5 GHz

Maximum Frequency Observed:	2,460 MHz
Minimum Frequency Observed:	2,457 MHz
Result:	**Pass**

2) Magnetron type: Toshiba 2M248J

(2) Frequency vs. Line Voltage Variation Test

Variation of line voltage from 80 % (96 V) to 125 % (150 V)
Load: 1000 ml
Fundamental Frequency: 2,450 MHz
Limit: 2.4 GHz < f < 2.5 GHz

Maximum Frequency Observed:	2,463 MHz
Minimum Frequency Observed:	2,456 MHz
Result:	**Pass**

(2) Frequency vs. Load Variation Test

Frequency was measured at the rated input voltage(AC 120 V).
Initial Load: 1000 ml
Final Load: 200 ml
Fundamental Frequency: 2,450 MHz
Limit: 2.4 GHz < f < 2.5 GHz

Maximum Frequency Observed:	2,459 MHz
Minimum Frequency Observed:	2,454 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 mW/cm·sq at any location of the oven. The 1.0 mW/cm·sq 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 0.1 mW/cm·sq was observed and did not exceed the specified limits.

1) Magnetron type: LG 2M246

Maximum Leakage Microwave Observed: 0.44 mW/cm·sq

Result: **Pass**

2) Magnetron type: Toshiba 2M248J

Maximum Leakage Microwave Observed: 0.40 mW/cm·sq

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.

1) Magnetron type: LG 2M246

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]
2,399	29.0	4.1	700	Center	22.1	55.2	575.4	5.8	31.3
2,525	29.3	4.1	700	Center	15.6	49.0	281.8	2.8	31.3
4,912	34.0	5.5	700	Center	26.0	66.0	1995.3	20.0	31.3
4,910	34.0	5.5	700	Rt. Front	25.6	65.1	1798.9	18.0	31.3
4,905	34.0	5.5	300	Center	24.5	64.0	1584.9	15.8	31.3
4,910	34.0	5.5	300	Rt. Front	23.5	63.0	1412.5	14.1	31.3
7,355	36.5	10.4	700	Center	13.1	60.0	1000.0	10.0	31.3
7,362	36.5	10.4	700	Rt. Front	13.6	60.5	1059.3	10.6	31.3
7,352	36.5	10.4	300	Center	12.1	59.0	891.3	8.9	31.3
7,367	36.5	10.4	300	Rt. Front	11.1	58.0	794.3	7.9	31.3
9,820	38.4	8.3	700	Center	4.5	51.2	363.1	3.6	31.3

For measurement of 30 MHz – 1000 MHz, refer to APPENDIX A (Test Plot).

2) Magnetron type: Toshiba 2M248J

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]
2,399	29.0	4.1	700	Center	30.9	64.0	1584.9	15.8	31.7
2,525	29.3	4.1	700	Center	16.8	50.2	323.6	3.2	31.7
4,912	34.0	5.5	700	Center	20.4	59.9	988.6	9.9	31.7
4,910	34.0	5.5	700	Rt. Front	17.3	56.8	691.8	6.9	31.7
4,905	34.0	5.5	300	Center	16.3	55.8	616.6	6.2	31.7
4,910	34.0	5.5	300	Rt. Front	15.0	54.5	530.9	5.3	31.7
7,355	36.5	10.4	700	Center	8.7	55.6	602.6	6.0	31.7
7,362	36.5	10.4	700	Rt. Front	9.1	56.0	631.0	6.3	31.7
7,352	36.5	10.4	300	Center	8.1	55.0	562.3	5.6	31.7

7,367	36.5	10.4	300	Rt. Front	12.6	59.5	944.1	9.4	31.7
9,820	38.4	8.3	700	Center	4.3	51.0	354.8	3.5	31.7

For measurement of 30 MHz – 1000 MHz, refer to APPENDIX A (Test Plot).

Result: Pass

* Limit (at 300 m) = 25 * (RF Power/500)$^{1/2}$ (μV/m)
* Field Strength below 1000 MHz (at 300 m) (μV/m) = 10 $^{[(\text{Field strength at 10m(dBuV/m)}-29.5)/20]}$
* Field Strength above 1000 MHz (at 300 m) (μV/m) = K * 10 $^{[\text{Field strength at 3m(dBuV/m)}/20]}$

NOTES:

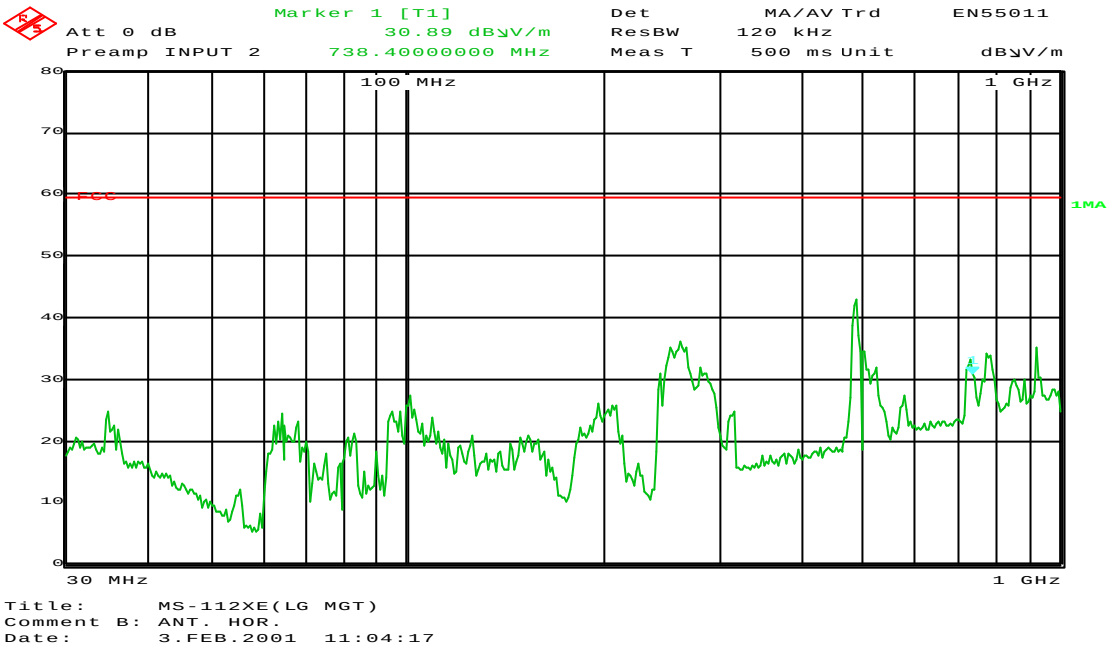
1. Two representative modes (full power and defrost) of operation were investigated.
2. A glass beaker was used as the container and the test was made with a shelf in its initial normal position.
3. Load for measurement of radiation on second and third harmonic: Two loads, one of 700 and the other of 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

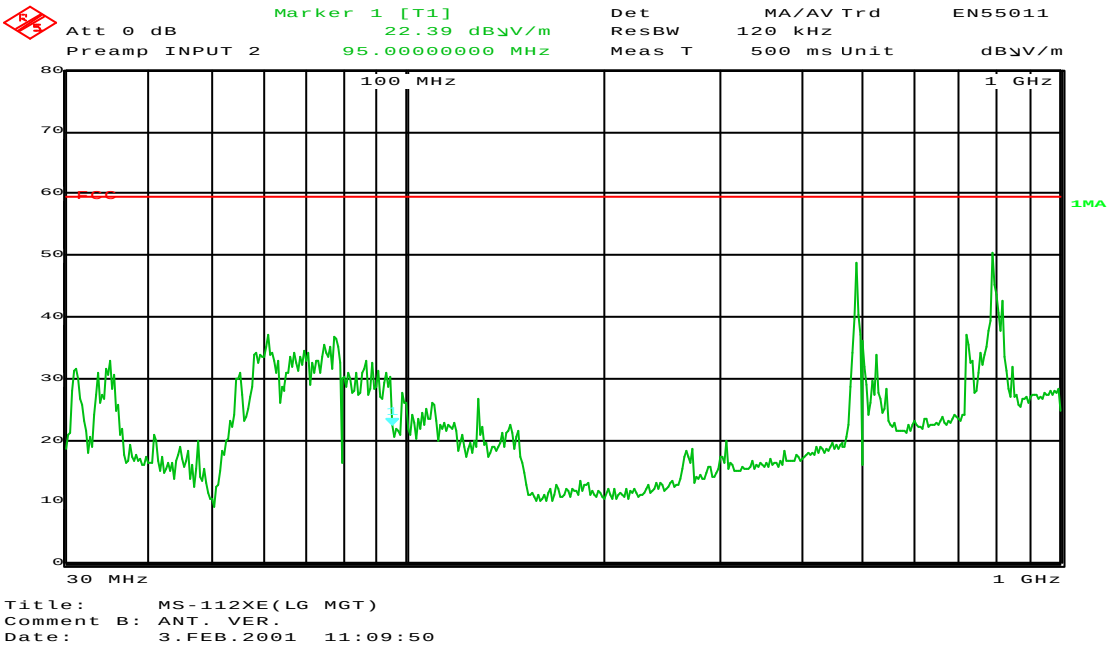
♦ 30 MHz ~ 1000 MHz (Magnetron type: LG 2M246)

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

<Antenna Polarization: Horizontal>



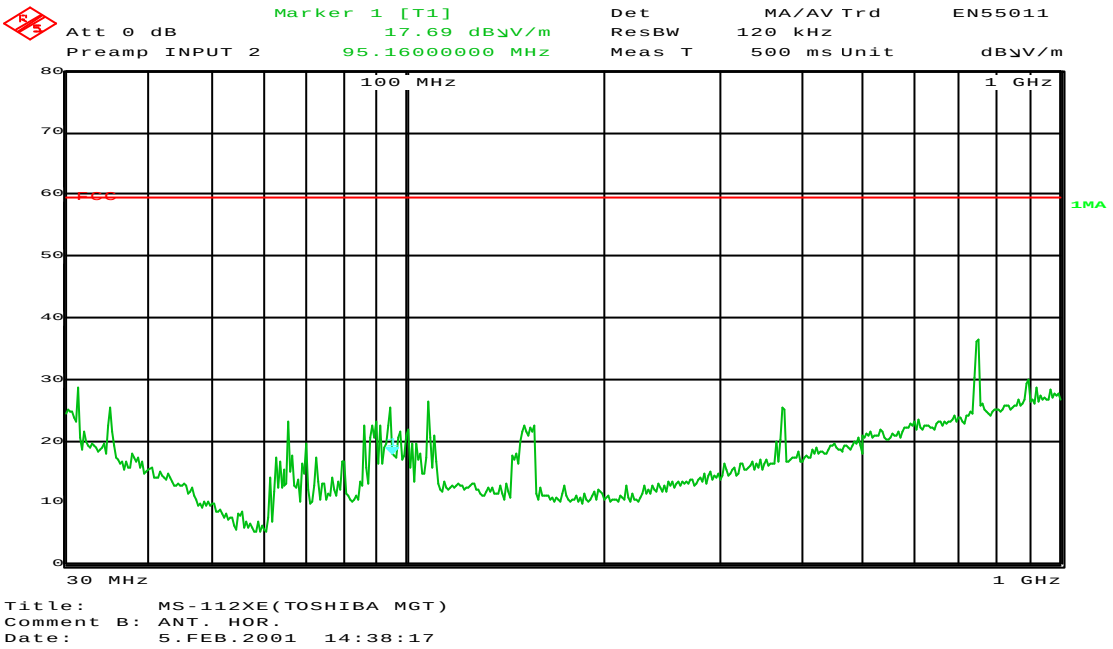
<Antenna Polarization: Vertical>



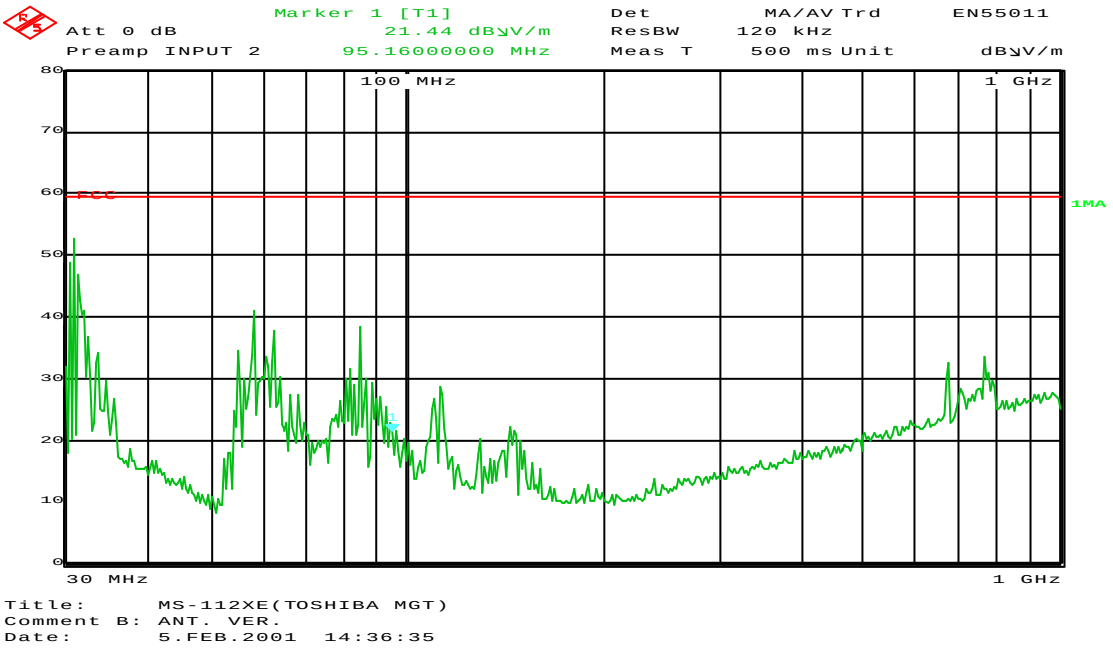
♦ **30 MHz ~ 1000 MHz (Magnetron type: Toshiba 2M248J)**

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

<Antenna Polarization: Horizontal>

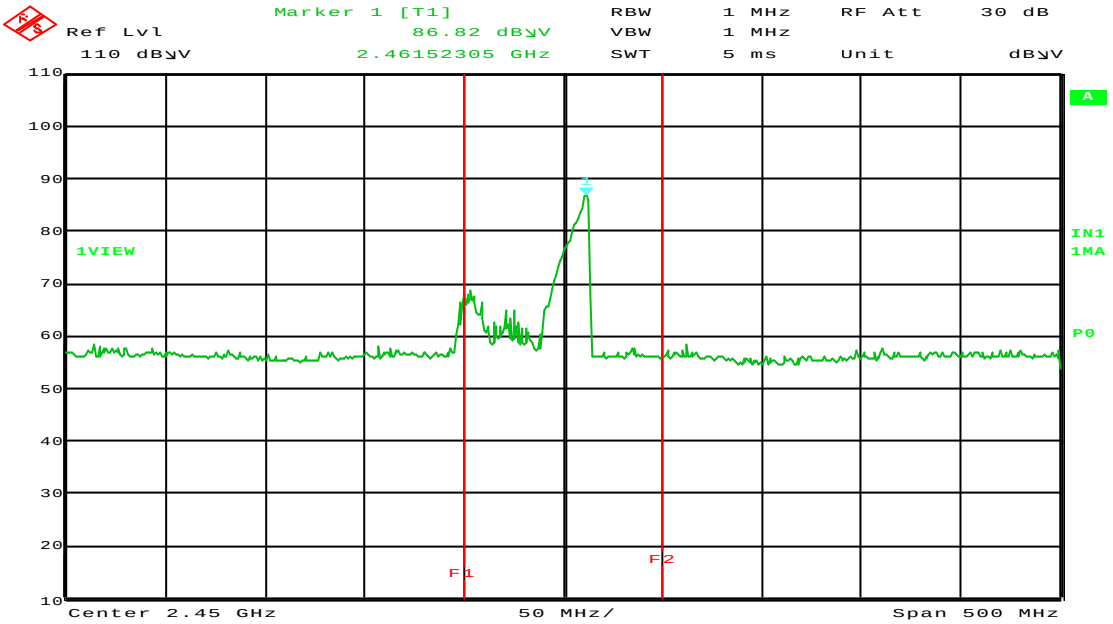


<Antenna Polarization: Vertical>



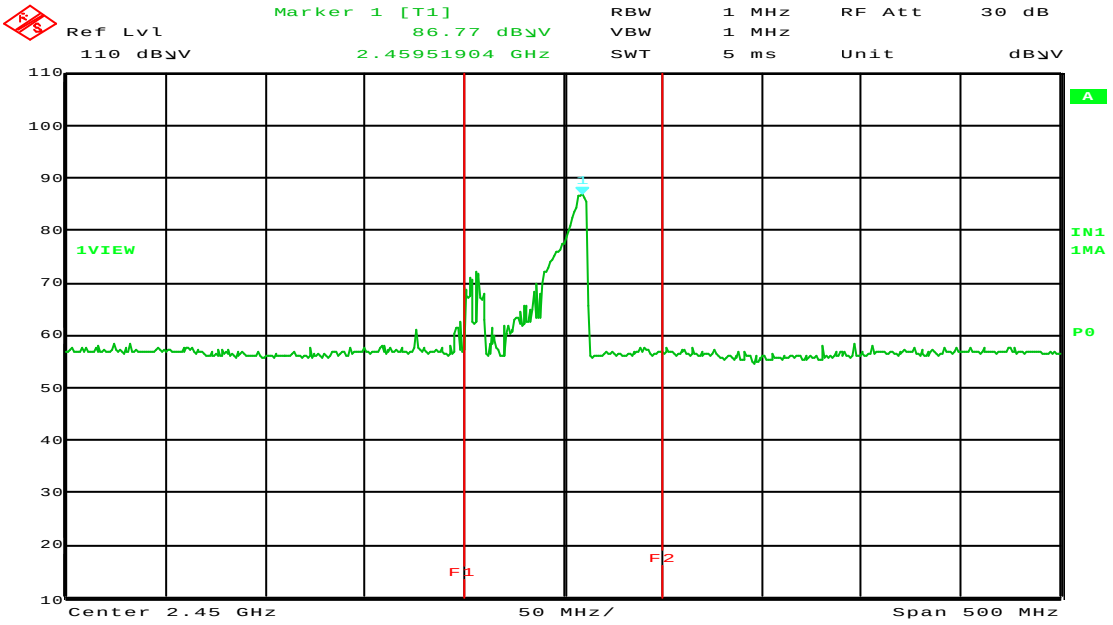
♦Voltage Variation (Magnetron type: LG 2M246)

<Maximum Frequency Observed: 2,461MHz>



Title: MS-112XE(LG MGT)
Comment A: 108 V
Date: 3.FEB.2001 10:09:22

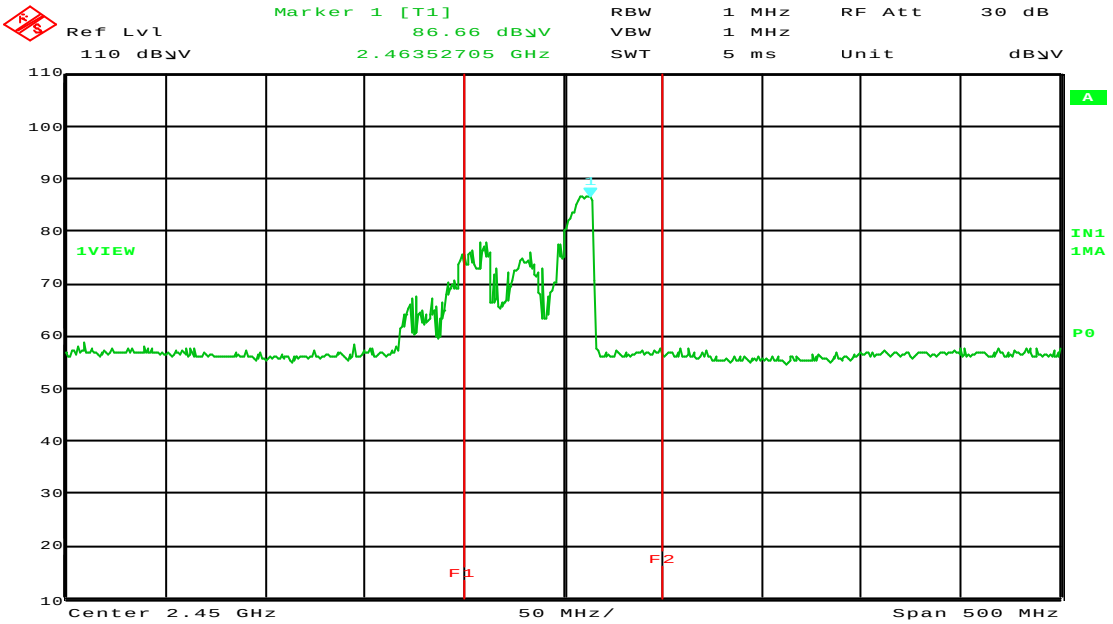
<Minimum Frequency Observed: 2,459 MHz>



Title: MS-112XE(LG MGT)
Comment A: 150 V
Date: 3.FEB.2001 09:51:38

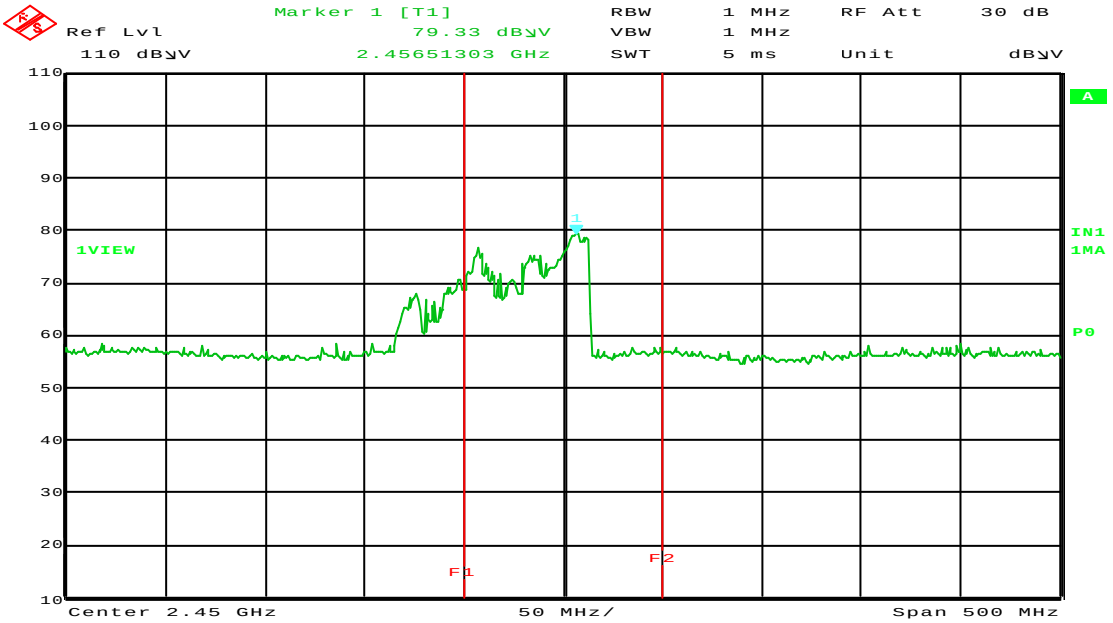
Voltage Variation (Magnetron type: Toshiba 2M248J)

<Maximum Frequency Observed: 2,463MHz>



Title: MS-112XE(TOSHIBA MGT)
Comment A: 108 V
Date: 7.FEB.2001 09:28:42

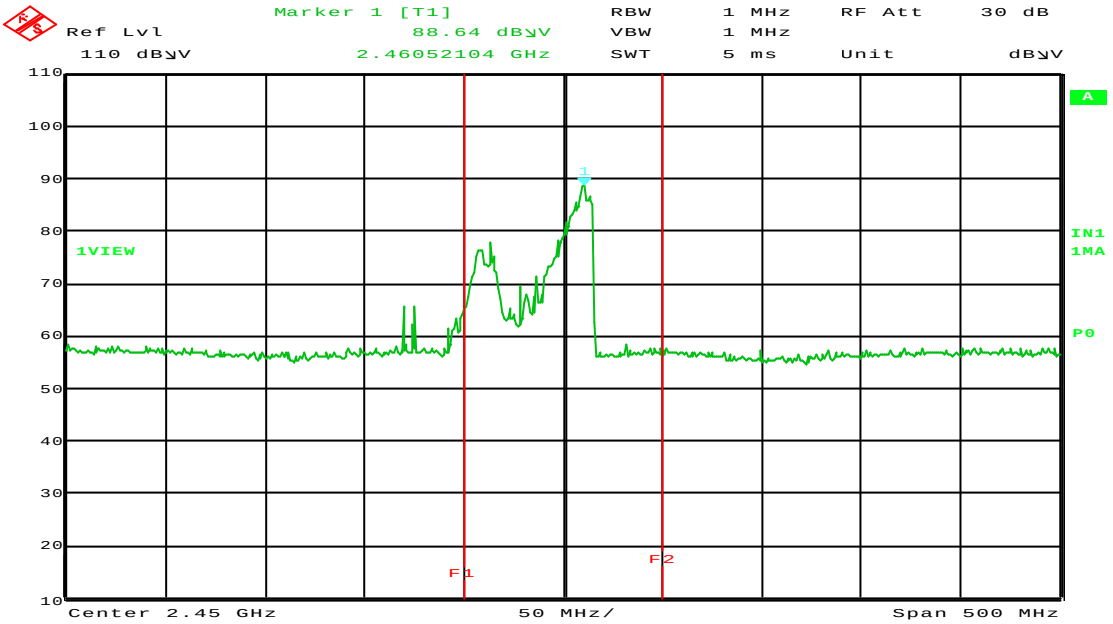
<Minimum Frequency Observed: 2,456 MHz>



Title: MS-112XE(TOSHIBA MGT)
Comment A: 96 V
Date: 7.FEB.2001 09:37:45

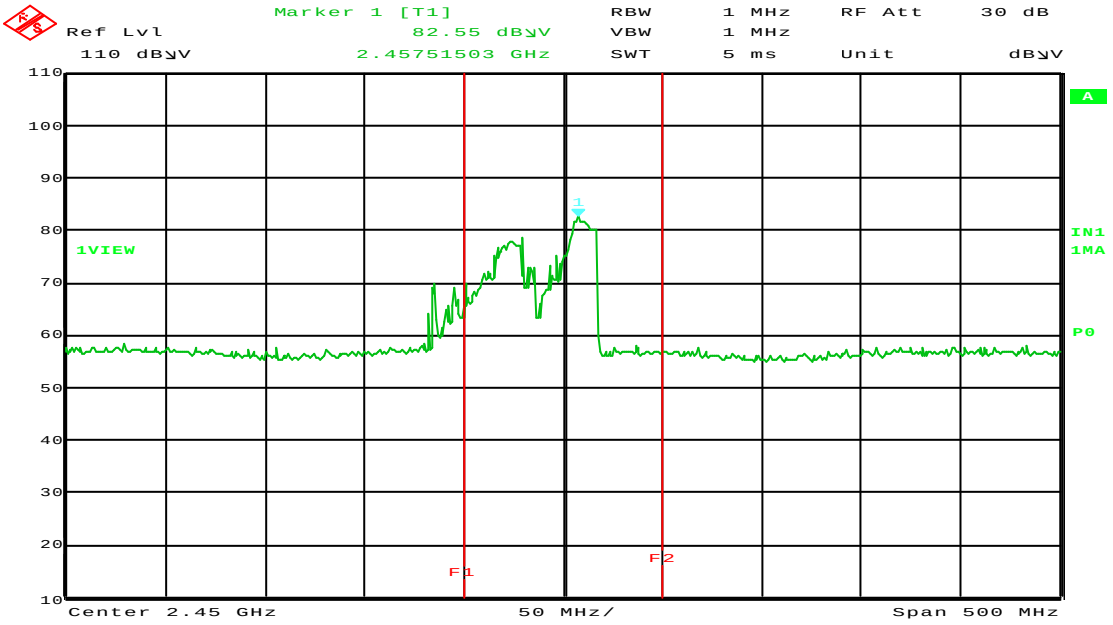
¨ **Load Variation (Magnetron type: LG 2M246)**

<Maximum Frequency Observed: 2,460 MHz >



Title: MS-112XE(LG MGT)
Comment A: 1000 ml
Date: 3.FEB.2001 09:05:10

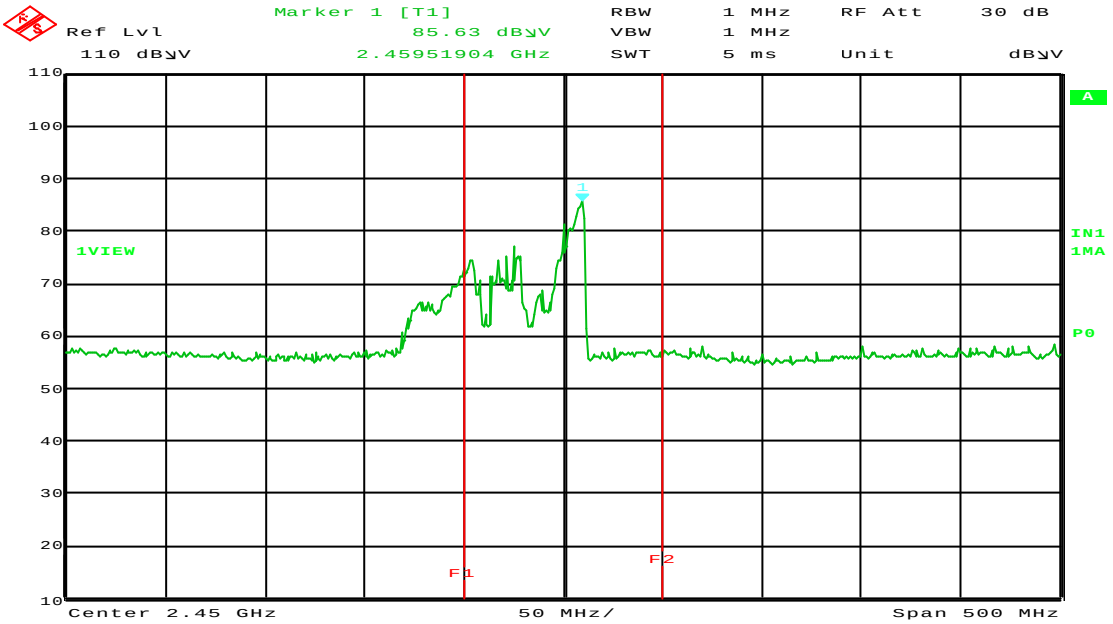
< Minimum Frequency Observed: 2,457 MHz >



Title: MS-112XE(LG MGT)
Comment A: 800 ml
Date: 3.FEB.2001 09:24:01

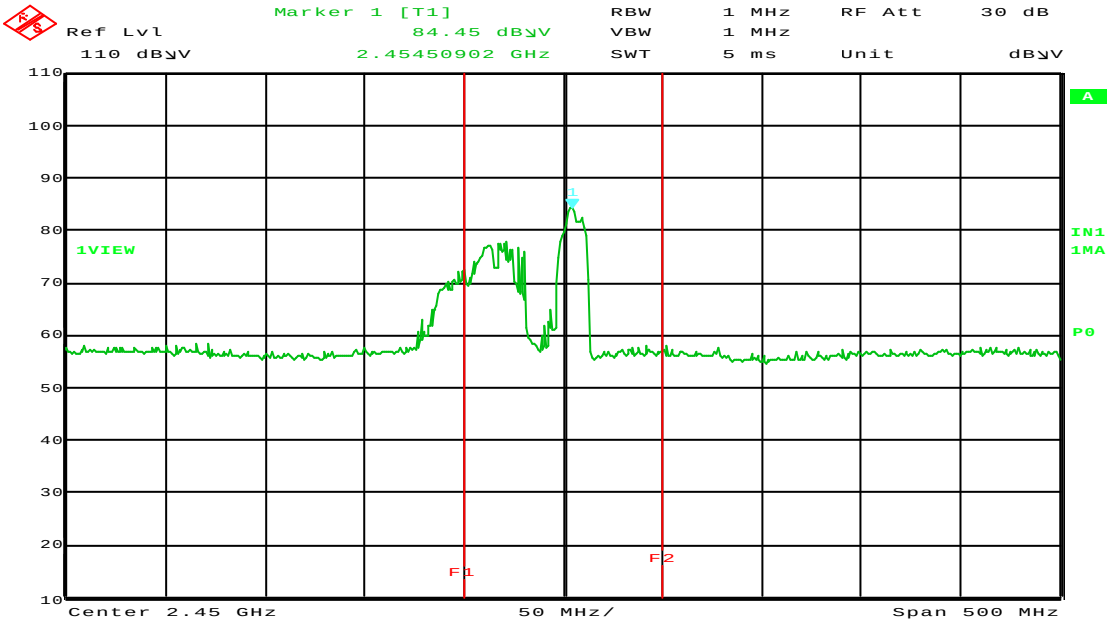
¨ **Load Variation (Magnetron type: Toshiba 2M248J)**

<Maximum Frequency Observed: 2,459 MHz >



Title: MS-112XE(TOSHIBA MGT)
Comment A: 1000 ml
Date: 5.FEB.2001 15:37:34

< Minimum Frequency Observed: 2,454 MHz >



Title: MS-112XE(TOSHIBA MGT)
Comment A: 800 ml
Date: 5.FEB.2001 15:43:20