LG Electronics Inc.

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CLASS II PERMISSIVE CHANGE CERTIFICATION OF COMPLIANCE

Date of Issue: January 25, 2015 **Test Report No: 15-EMUS-0024**

Test Site: LG Electronics Changwon EMC Center

This class II permissive change is to change the controller on the model MC-156SH, FCC ID: BEJC156XFA (Test Report No.: 05-LAE-M043) dated on 04/07/2005.

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)
Brand Name(s):	LG or GE
Model No.:	MC1587GS (Buyer model No.: PEB1590DM#WW, PEB1590DM#BB, CEB1590SS#SS, PEB9159F#SS) #: From 1 to 9
FCC ID:	BEJC156XFA

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.

Kim Dae Woong / Chief Research Engineer
Changwon EMC Center
LG Electronics Inc.

CLASS II PERMISSIVE CHANGE 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.:	MC1587GS (Buyer model No.: PEB1590DM#WW, PEB1590DM#BB, CEB1590SS#SS, PEB9159F#SS) #: From 1 to 9
FCC ID:	BEJC156XFA
Rule Part:	FCC Part 18
Test Procedure:	MP-5: 1985
Date of Test:	December 23, 2014 – December 30, 2014
Date of Issue:	January 25, 2015
Test Result:	Pass

Tested by:

Shin Seung Ho / Research Engineer
Changwon EMC Center
LG Electronics Inc.

Reviewed by:

Son Kwang Mu / Chief Research Engineer
Changwon EMC Center
LG Electronics Inc.

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1. CLIENT INFORMATION

The EUT has been tested by request of:

Company:	1. LG Electronics Inc. Kitchen Package Division
(Manufacturer)	170, Sungsanpaechongro, Seongsan-gu, Changwon-si, Gyeongsangnam-do, 642-711, Korea
Name of contact:	Mi Ran Park
Telephone:	+82-55-260-3463
Fax:	+82-55-268-4783

2. EQUIPMENT UNDER TEST (EUT)

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

Equipment:	Microwave oven MC1587GS
Model:	(Buyer model No.: PEB1590DM#WW, PEB1590DM#BB, CEB1590SS#SS, PEB9159F#SS) #: From 1 to 9
Brand name:	LG or GE
Serial number:	N/A
Magnetron:	2M246 by LG
RF Frequency:	2,450 ± 50 MHz
RF Power Output:	1000 W
Power Consumption	
Microwave Mode:	1500 W
Rated Input Voltage:	120 V~, 60 Hz
Rated Input Current	
Microwave Mode:	13.0 A
Cavity Volume:	1.5 Cu.ft
Oven Type:	Over the range / Household
Mode Stirrer:	Turntable and Stirrer
Power Cord:	Shielded
Outer Dimensions (inch)	22-5/8 X 14-7/8 X 19-7/8 (W x H x D)

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

This class II permissive change certification of compliance is to change the controller on the model MC-156SH, FCC ID: BEJC156XFA

(Test Report No.: 05-LAE-M043) dated on 04/07/2005.

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 C63.4-2001 on April 20, 2012.

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 C63.4-2001. 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 Power line conducted emission measurements

Power line conducted emission measurements were based on the std. MP-5:1985.

5.1.1 Shielded enclosure

The measurement for power-line emissions from EUT was made in shielded enclosure that provides sufficient shielding effectiveness enough not to affect test results.

5.1.2 Detector function selection and bandwidth

During conducted emission measurement, a radio noise meter that has a quasi-peak detector with 10 kHz IF bandwidth of 6 dB was utilized.

5.1.3 Frequency range to be scanned

For conducted emissions measurement, frequency range of 150 kHz to 30 MHz included was investigated.

5.1.4 Unit of measurement

Test results for conducted emissions are reported in micro-volt.

5.1.5 Line impedance stabilization network (LISN)

A LISN with characteristics that conform to the requirements of MP-5:1985 was used for the measurement of conducted power-line radio noise; (50 micro-henries / 50 ohms). Chassis and earth-points for grounding of the LISN were earth-grounded.

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 enumeration of emissions from EUT.

The EUT has designed to use the public AC lines with rated AC voltage as specified in owner's manual and Installation's manual of EUT and filtered to meet the requirement.

AC power was supplied to the EUT through LISN with characteristics described in 5.1.5 of part I of this report.
The EUT was placed on a 1 m×1.5 m×40 cm high wooden table which is placed on the earth-grounded conducting surface larger than 2 square meter. The vertical conducting surface was replaced with horizontal ground plane. Length of the power lead in excess of 80 cm horizontally separating the EUT from LISN was folded back-and-forth form at the center of the power cord not exceeding 40 cm in length.
The EUT was operated with a load of 1000 ml water initially at 20 ± 5 °C placed at the center of the load-carrying surface.
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 the above-mentioned 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%.

5.2 Radiated emissions measurement

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

5.2.2 Detector function selection and bandwidth
In radiated emissions measurement, field strength meter that has quasi-peak and average detector was used. The bandwidth of the detector of instrument is 120 kHz for frequency range of 30 MHz – 1,000 MHz, and 1 MHz for frequency range of 1 GHz to 26 GHz. Emissions be measured are detected in average mode.

5.2.3 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)

5.2.4 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 1,000 MHz and horn antenna in range of 1 to 26 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.

5.2.5 Frequency range to be scanned

For radiated emissions measurements, the spectrum in the range of 30 to 1,000 MHz and above, if found, was investigated.

5.2.6 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.

5.2.7 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) >

Fundamental Frequency (2.45 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	Resolution Bandwidth error of Receiver	Tolerance	0.1	rectangular	1.732	0.06	0.0
V_2	Video Bandwidth error of Receiver	Tolerance	0.1	rectangular	1.732	0.06	0.0
V_3	Frequency shift owing to the mismatch, cable	Tolerance	1.0	rectangular	1.732	0.58	0.3
V_4	Load variation in the EUT	Tolerance	3.0	rectangular	1.732	1.73	3.0
V_5	Measurement Distance Variation	Tolerance	0.5	rectangular	1.732	0.29	0.1
V_6	Site imperfections	Tolerance	1.0	rectangular	1.732	0.58	0.3
V_7	Rotation of EUT	Tolerance	0.5	rectangular	1.732	0.29	0.1
V_8	Measurement System Repeatability	Tolerance	0.5	normal	1	0.50	0.3
	Combined standard uncertainty $u_c(y)$		2.0	normal			
	Expanded uncertainty U		4.00	normal (k = 2)			

$$u_c(y) = \sqrt{\frac{0.1^2 + 0.1^2 - 1.0^2 + 3.0^2 + 0.5^2 + 1.0^2 + 0.5^2}{3} + \frac{0.5^2}{1}}$$

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

$U = 2\,u_c(y) = 2 \times 2.00 = \pm 4.0$ dB

< Radiated Emission Uncertainty (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	0.69	normal (k = 2)	2	0.35	0.1
V_3	Antenna factor calibration #2	Expanded Uncertainty	0.69	normal (k = 2)	2	0.35	0.1
V_4	Cable loss calibration	Expanded Uncertainty	0.0	normal (k = 2)	1	0.01	0.0
V_5	Receiver specification	Tolerance	1.0	rectangular	1.732	0.58	0.3
V_6	Highpass filter	Tolerance	0.55	rectangular	2	0.28	0.1
V_7	Measurement distance variation	Tolerance	0.1	rectangular	1.732	0.06	0.0
V_8	Site imperfections	Tolerance	3.8	rectangular	2.449	1.56	2.4
V_9	Mismatch Receiver VRC: $\Gamma_1 = 0.09$ Antenna VRC: $\Gamma_g = 0.2$ Uncertainty limits $20\text{Log}(1 \pm \Gamma_1 \Gamma_g)$	Tolerance	0.81	U-shaped	1.414	0.57	0.3
V_{10}	System repeatability (previous assessment of $s(q_k)$ from 5 repeats, 1 reading on EUT Repeatability of EUT*		0.0	Std Deviation	1	0.03	0.0
	Combined standard uncertainty $u_c(y)$		1.85	normal			
	Expanded uncertainty U		3.70	normal (k = 2)			

$$u_c(y) = \sqrt{\left(\frac{0.0}{1}\right)^2 + \left(\frac{0.7}{2}\right)^2 + \left(\frac{0.7}{2}\right)^2 + \left(\frac{0.0}{1}\right)^2 + \frac{1.0^2}{3} + \left(\frac{0.55}{2}\right)^2 + \frac{0.1^2}{3} + \left(\frac{0.6}{2}\right)^2 + \frac{0.10^2}{3} + \frac{3.83^2}{6} + \frac{0.81^2}{2} + \frac{0.03^2}{1}}$$

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

$U = 2\,u_c(y) = 2 \times 1.85 = \pm 3.7$ dB

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

Electric Field Strength

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	0.7	rectangular	2	0.35	0.1
V_3	Cable loss calibration	Expanded Uncertainty	0.0	normal (k = 2)	1	0.01	0.0
V_4	Receiver specification	Tolerance	1.0	rectangular	1.732	0.58	0.3
V_5	Antenna directivity	Tolerance	0.0	rectangular	1.732	0.00	0.0
V_6	Antenna factor variation with height	Tolerance	0.5	rectangular	1.732	0.29	0.1
V_7	Antenna phase center variation	Tolerance	0.0	rectangular	1.732	0.0	0.0
V_8	Antenna factor frequency interpolation	Tolerance	0.30	rectangular	1.732	0.17	0.0
V_9	Measurement distance variation	Tolerance	0.1	rectangular	1.732	0.06	0.0
V_{10}	Site imperfections	Tolerance	3.4	normal	2.449	1.39	1.9
V_{11}	Mismatch Receiver VRC: Γ_l = 0.09 Antenna VRC: Γ_g = 0.33 Uncertainty limits 20Log(1± Γ_l Γ_g)	Tolerance	0.59	U-shaped	1.414	0.42	0.2
V_{12}	System repeatability (previous assessment of $s(q_k)$ from 5 repeats, 1 reading on EUT Repeatability of EUT*		0.0	Std Deviation	1	0.02	0.0
	Combined standard uncertainty $u_c(y)$		1.63	normal	2		
	Expanded uncertainty U		3.27	normal (k = 2)	2		

$$u_c(y) = \sqrt{\left(\frac{0.0}{1}\right)^2 + \left(\frac{0.7}{2}\right)^2 + \left(\frac{0.0}{2}\right)^2 + \frac{1.0^2 + 0.0^2 + 0.5^2 + 0.0^2 + 0.30^2 + 0.1^2}{3} + \frac{3.4^2}{6} + \frac{0.59^2}{2} + 0.0^2}$$

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

$U = 2\,u_c(y) = 2 \times 1.63 = \pm 3.3$ *d*B

< Line Conducted Uncertainty >

Conducted Emmision

Symbol	Contribution	Value (dB)		Probability Distribution	Divisor	Standard Uncertainty (dB) 150 kHz - 30 MHz (Value / Divisor)	Standard U Squa
V_1	Receiver specification	Tolerance	1.1	rectangular	1.732	0.65	0.
V_2	LISN coupling specification	Tolerance	3.6	rectangular	2.449	1.47	2.
V_3	Cable and input attenuator calibration	Expanded Uncertainty	1	normal (k = 2)	2	0.50	0.
V_4	Mismatch Receiver VRC: Γ_l = 0.09 LISN VRC: Γ_g = 1.0 Uncertainty limits 20Log (1± Γ_l Γ_g)	Tolerance	0.03	U-shaped	1.414	0.02	0.0
V_5	System repeatability (previous assessment of $s(q_k)$ from 10 repeats, 1 reading on EUT)		0.02	standard deviation	1	0.02	0.0
	Combined standard uncertainty $u_c(y)$		1.68	normal			
	Expanded uncertainty U		3.36	normal (k = 2)			

$$u_c(y) = \sqrt{\frac{1.1^2}{3} + \frac{3.6^2}{6} + \left(\frac{1.0}{2}\right)^2 + \frac{0.03^2}{2} + 0.02^2} = 1.7$$

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

$U = 2\,u_c(y) = 2 \times 1.68 = \pm 3.36$ *d*B

6. MEASURING INSTRUMENT

Instrument	Model	Cal. Due date	Serial No.	Control No.
Accessory Kit	-	-	7044/45-002	99-IRE-16
Microwave Amp	8449B	10/13/2015	3008A01821	02-IRE-33
Horn Antenna	RGA-180 (Electro Metrics) RGA-60 (Electro Metrics)	08/01/2015 07/10/2016	2517 6104	99-IRE-22 99-IRE-21
Antenna Master	2070-2 (EMKO)	-	9903-2231	99-IRE-23
Ultra Log Antenna	HL562 (Chase)	08/07/2015	830547/007	99-IRE-26
High Pass Filter	11SH10-4500/ X1800-010	04/23/2015	3	99-IRE-07
EMI Receiver	ESI26 (R&S) ESU26 (R&S)	10/14/2015 10/13/2015	835336/008 100164	00-IRE-30 08-IRE-36
LISN	ESH2-Z5 (R&S)	05/27/2015	100452	14-ICE-18
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	-
Microwave Cable	Sucoflex 104PE	-	46894/4PE	-
Microwave Cable	Sucoflex 104PE	-	46895/PE	-
Semi Anechoic Chamber	YES INC.	-	-	99-CFA-01
Shield Screen Room	YES INC.	-	-	99-CFA-02
Digital Power Meter	WT110 (Yokogawa)	03/11/2015	12VB14689L	99-IAC-03
Microwave Survey Meter	Holaday	01/05/2016	-	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: 2M246 by LG

Mode	Input Voltage	Current [A]	Power Consumption [W]	Manufacturer Rating [A]
Microwave	120 Vac, 60 Hz	14.3	1530	13.0

7.2 RF Power Output Measurement according to MP-5.

The Calorimetric Method was used to determine maximum output power. A 1,000 ml water load was placed in the center of the oven. A mercury thermometer was used to measure temperature rise. The test method was described in MP-5.

1) Magnetron type: 2M246 by LG

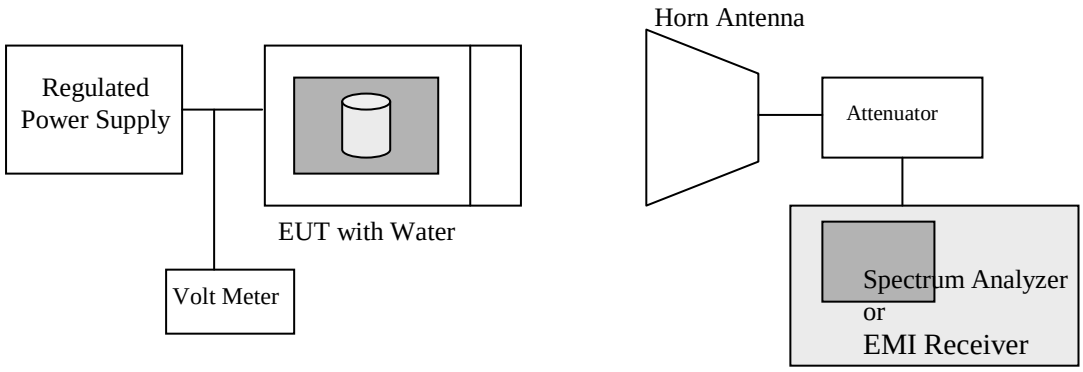
$$\text{Power [W]} = \frac{(4.187 \text{ Joules/Cal}) * (\text{Volume in ml}) * (\text{Temperature Rise})}{\text{Time in Seconds}}$$

Quantity of Water	Starting Temperature	Final Temperature	Elapsed Time
1,000 ml	21.1 °C	42.6 °C	120 Sec

$$\text{Power [W]} = \frac{4.187 * 1{,}000 * 21.5}{120}$$

Power [W] = 750.2 Watts

7.3 Frequency measurements



1) Magnetron type: 2M246 by LG

(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:	2,455 MHz
Minimum Frequency Observed:	2,453 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:	2,460 MHz
Minimum Frequency Observed:	2,438 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/㎠ at any location of the oven. The 1.0 mW/㎠ is in accordance with CDRH and UL923 standard.

A microwave survey meter was placed on all sides, door and viewing, bottom, top and rear. The leakage microwave and did not exceed the specified limits.

1) Magnetron type: 2M246 by LG

Maximum Leakage Microwave Observed: 0.15 ***mW/㎠***

Result: **Pass**

7.5 Conducted emissions (Section 18.307)

Conducted emission was measured at a frequency range 150 kHz to 30 MHz. The Power Line disturbance voltage was measured with the equipment under test (EUT) in a shielded room. The EUT was connected to a line impedance stabilization network (LISN) placed on the floor. The EUT was placed on a non-metallic table 0.4 m above the metallic, grounded floor. The distance to other metallic surfaces was at least 0.4 m.
The line conducted emission measurement procedure and test configuration is based on MP-5:1985.
Amplitude measurements were performed with a quasi-peak detector and, if required, with an average detector.

Below data are the highest levels in Microwave mode.
An overview sweep performed with peak detector is included in the APPENDIX A (Test Plot).

1) Magnetron type: 2M246 by LG

	Quasi-Peak			Average			Result	Phase
Frequency [MHz]	Disturbance Level [dBuV]	Permitted Limit [dBuV]	Margin [dB]	Disturbance Level [dBuV]	Permitted Limit [dBuV]	Margin [dB]		
0.158	36.9	65.6	-28.7	14.7	55.6	-40.9	PASS	N
0.202	40.4	63.5	-23.1	27.1	53.5	-26.4	PASS	L1
0.302	42.4	60.2	-17.8	17.7	50.2	-32.5	PASS	N
0.514	50.7	56.0	-5.3	20.9	46.0	-25.1	PASS	L1
0.522	39.4	56.0	-16.6	11.6	46.0	-34.4	PASS	N
0.582	49.3	56.0	-6.7	20.1	46.0	-25.9	PASS	L1
23.230	31.3	60.0	-28.7	10.4	50.0	-39.6	PASS	N
23.990	35.8	60.0	-24.2	11.3	50.0	-38.7	PASS	L1

Remark: 1. "<<" means that disturbance level is lower than 20 dB below the limit.
2. The measured disturbance level includes all related factor. (LISN Insertion loss and Cable loss).

7.6 Radiated emissions (Section 18.305)

Radiated emission was measured at a frequency range 30 MHz to 26 GHz. The EUT was supported by a 1 m high wood table, measurement above 1 GHz and below 1 GHz.
Radiated emission measurement in frequency range 1 GHz to 26 GHz was 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: 2M246 by LG

Test distance: 3 m

Freq. [GHz]	Ant. Factor [dB]	Amp. [dB]	Cable Loss [dB]	Load [ml]	Load Location	Meter Reading [dBuV]	Field Strength @ 3 m [dBuV/m]	Field Strength @ 3 [uV/m]	Field Strength @ 300 m [uV/m]	FCC Limit @ 300 m [uV/m]	Result
2.113	27.6	N/A	0.67	700	Center	9.3	37.6	75.9	0.8	30.6	PASS
2.390	28.5	N/A	0.75	700	Center	14.6	43.8	154.9	1.5	30.6	PASS
2.508	28.8	N/A	0.79	700	Center	8.4	38.0	79.4	0.8	30.6	PASS
2.817	29.7	N/A	0.66	700	Center	18.3	48.7	272.3	2.7	30.6	PASS
4.901	32.9	33.5	0.95	300	Rt. Front	52.3	52.6	426.6	4.3	30.6	PASS
4.923	33.0	33.5	0.94	700	Rt. Front	52.9	53.3	462.4	4.6	30.6	PASS
4.933	33.0	33.5	0.94	300	Center	59.0	59.4	933.3	9.3	30.6	PASS
7.326	35.9	35.0	0.97	700	Rt. Front	38.0	39.8	97.7	1.0	30.6	PASS
7.380	36.0	35.0	0.97	300	Rt. Front	34.4	36.4	66.1	0.7	30.6	PASS
7.402	36.0	34.9	0.97	700	Center	37.3	39.4	93.3	0.9	30.6	PASS
7.405	36.0	34.9	0.97	300	Center	36.7	38.8	87.1	0.9	30.6	PASS
7.752	36.2	35.1	1.07	300	Center	32.8	35.0	56.2	0.6	30.6	PASS
7.961	36.3	35.4	1.14	300	Rt. Front	32.1	34.1	50.7	0.5	30.6	PASS
8.215	36.6	32.2	1.16	700	Center	30.8	36.3	65.3	0.7	30.6	PASS
9.870	37.3	35.6	1.29	700	Center	43.6	46.5	211.3	2.1	30.6	PASS
12.342	38.6	36.5	1.14	700	Center	33.6	36.8	69.2	0.7	30.6	PASS
14.799	40.5	35.5	1.22	700	Center	37.7	43.8	154.9	1.5	30.6	PASS
17.271	43.7	35.3	1.32	700	Center	34.5	44.3	164.1	1.6	30.6	PASS

Other frequencies: No detected.
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:

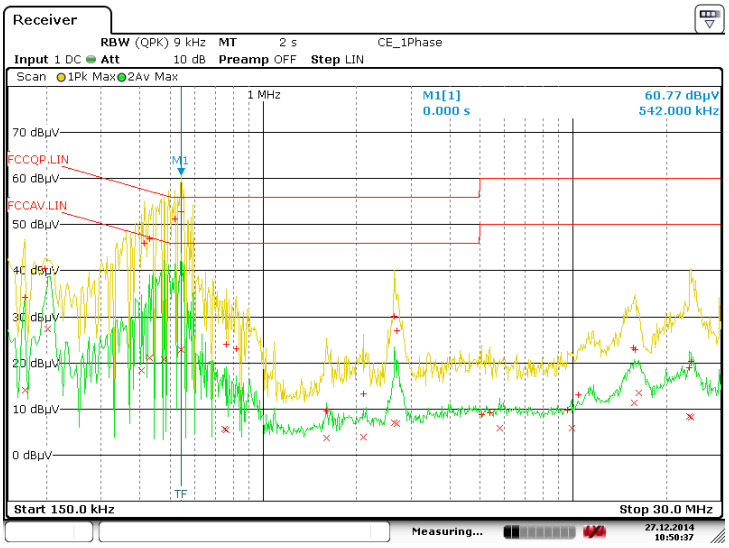
1. Two representative modes (full power and defrost) of operation were investigated.
2. A glass beaker was used as the container and the test was made with a shelf in its initial normal position.
3. Load for measurement of radiation on second and third harmonic: Two loads, one of 700 and the other of 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 26 GHz.

APPENDIX A. Test Plot

♦ **150 kHz ~ 30 MHz (Magnetron type: 2M246 by LG)**

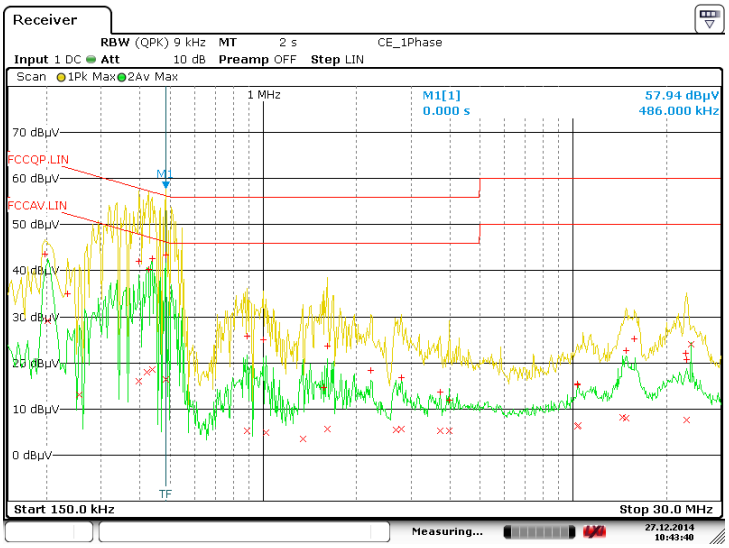
- Operating Mode: Maximum RF Power Output
- Detect Mode: Quasi-Peak(x)/Average(+), Scan Mode: Peak

<Phase: L1>



CEB1590SSSS #1_CE_PHASE L1
Date: 27.DEC.2014 10:50:37

<Phase: N>

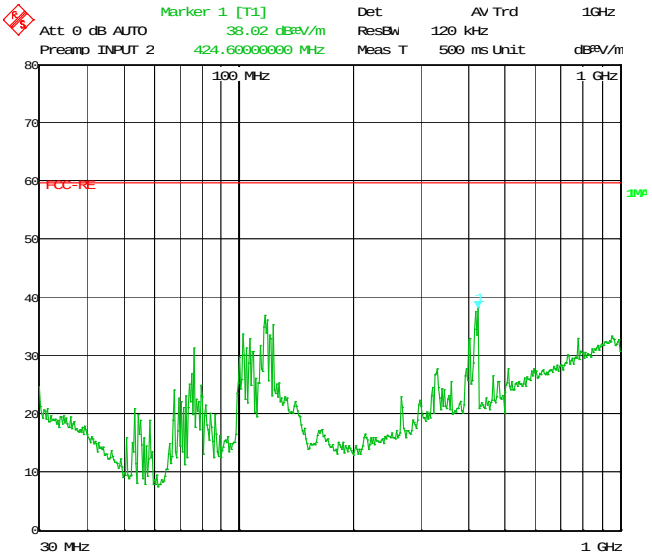


CEB1590SSSS #1_CE_PHASE N
Date: 27.DEC.2014 10:43:40

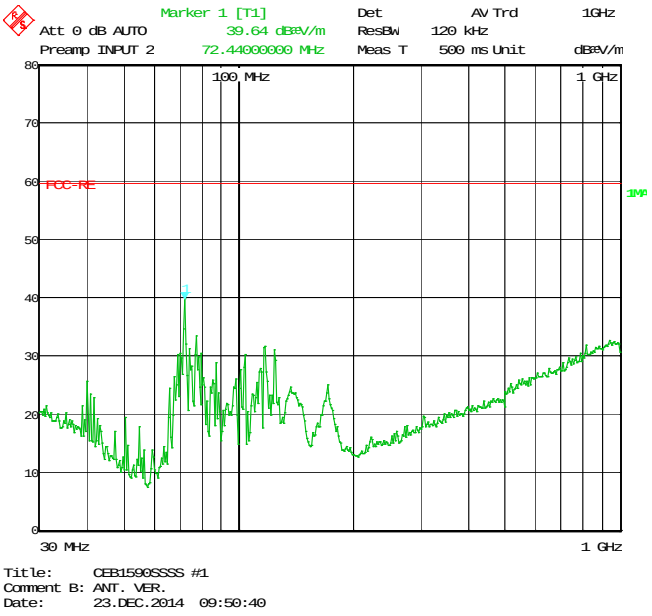
♦ **30 MHz ~ 1000 MHz (Magnetron type: 2M246 by LG)**

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

<Antenna Polarization: Horizontal>



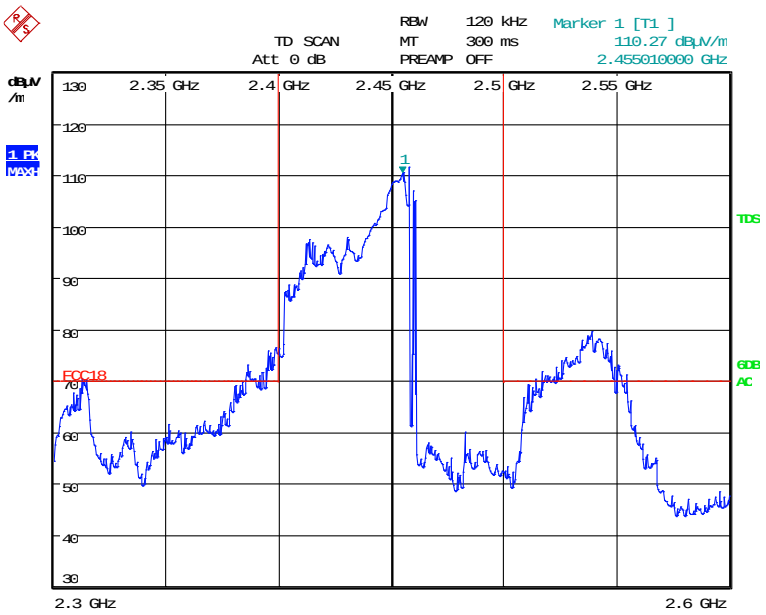
<Antenna Polarization: Vertical>



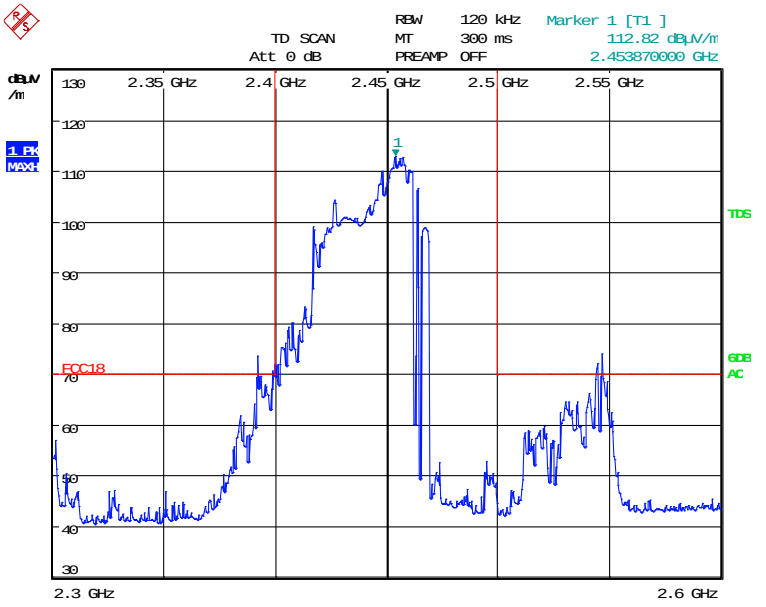
♦Voltage Variation (Magnetron type: 2M246 by LG)

- Detect Mode: Average, Scan Mode: Peak

<Maximum Frequency Observed: 2,455 MHz>



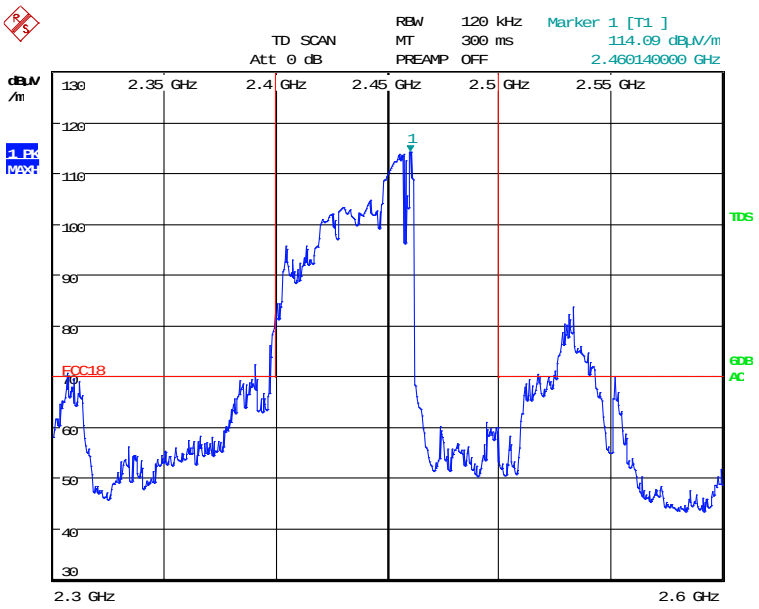
<Minimum Frequency Observed: 2,453 MHz>



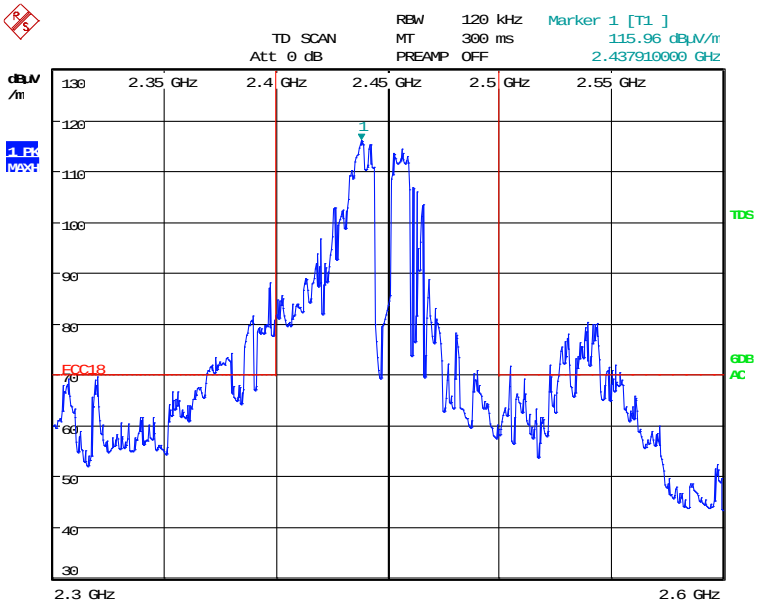
♦Load Variation (Magnetron type: 2M246 by LG)

- Detect Mode: Average, Scan Mode: Peak

<Maximum Frequency Observed: 2,460 MHz >



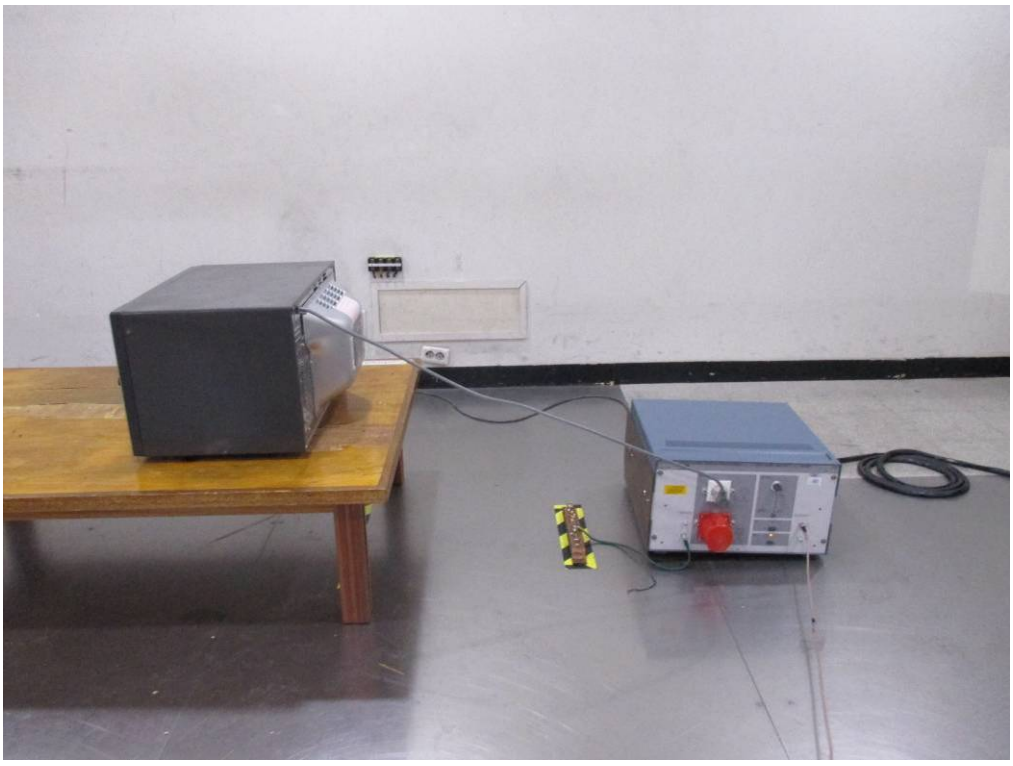
< Minimum Frequency Observed: 2,438 MHz >



APPENDIX B. Test Photos

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

- Conducted Emission



- Radiated Emission