

**FCC CFR47 PART 18 SUBPART C**

**ISM EQUIPMENT**

**TEST REPORT**

**FOR**

**MICROWAVE OVEN**

**Model: P90D23(Y)-(Z) (Testing case: P90D23MXL-A7)**

**Magnetron Model: Galanz, M24FB-610A**

**Brand Name: Galanz**

**Test Report No.: 12CA04263-01**

**FCC ID: UHW90237**

**Prepared for**

**GUANGDONG GALANZ ENTERPRISE (GROUP)CO.,LTD.**

**25 RONGGUI NAN ROAD, RONGGUI SHUNDE, GUANGDONG**

**P.R.C.528305**

**ACCORDING TO**

**FCC PART 18 INDUSTRIAL, SCIENTIFIC AND MEDICAL EQUIPMENT**

**&**

**FCC/0ST MP-5(1986) FCC METHODS OF MEASUREMENTS OF RADIO**

**NOISE EMISSION FROM INDUSTRIAL, SCIENTIFIC AND MEDICAL**

**EQUIPMENT**

**Prepared By: Daomen Guan**

**Reviewed By: Yanhan Lu**

**QC Manager: Valley.Wang**

**Test Report Released By** \_\_\_\_\_

**Name**



**29/04/2012** \_\_\_\_\_

**Date**

## List Attached Files

Exhibit Type	File Description	File Name
Test report	Test report	UHW90237 -Test report .pdf
Operation Description	Operational Description	UHW90237 -Operational description .pdf
External Photos	External Photos	UHW90237 -External photos .pdf
Internal Photos	Internal Photos	UHW90237 -Internal photos .pdf
Block Diagram	Block Diagram	UHW90237 -Block diagram .pdf
Schematics Diagram	Schematics Diagram	UHW90237 -Schematics .pdf
ID Label/ Location	ID Label/ Location	UHW90237 -label & location .pdf
User Manual	User Manual	UHW90237 -User manual .pdf
Test setup Photos	Test setup Photos	UHW90237 -Test setup photos .pdf
Part List	Part List	UHW90237 - Part list .pdf

## **Test Location**

**Tests performed at Galanz in a certified Ansi Semi-Anechoic Chamber and Shielded Room.**

### **Test Site Location**

**EMC Laboratory**

**Guangdong Galanz Enterprises Co., Ltd**

**25 South Ronggui Rd., Shunde, Foshan, Guangdong, China.**

**Tel: 86-757-23612785**

**Fax: 86-757-23612537**

**In compliance with the site registration requirements of section 2.948 of the FCC rules to perform EMI measurements for the general public.**

**FCC Registration Number: 580210**

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## **Opinions and Interpretations**

This test report relates to the above mentioned equipment under test (EUT). Without permission of EMC Laboratory of Guangdong Galanz Enterprises Co., Ltd, this report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark on this or similar products. The manufacturer has sole responsibility of continued compliance of the device.

## **Statement of Measurement Uncertainty**

The data and results referenced in the document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities that can account for a nominal measurement error. Furthermore, component and process variability of devices similar to that tested may result in additional deviation.

## **Administrative Data**

**Test Sample** Microwave oven  
**Model Numbers** P90D23(Y)-(Z)  
**Model Tested** P90D23MXL-A7  
**Brand Name** Galanz  
**Date Tested** April 26, 2012 to April 27, 2012  
**Applicant** Guangdong Galanz Enterprises Co., Ltd.  
25 ronggui nan Rd., Shunde, Foshan, Guangdong , China  
**Telephone** 86-757-23612785  
**Fax** 86-757-23612537  
**Manufacturer** Guangdong Galanz Enterprises Co., Ltd.  
25 ronggui nan Rd., Shunde, Foshan, Guangdong , China

## **EUT DESCRIPTION**

Guangdong Galanz Enterprises Co., Ltd. Model tested P90D23MXL-A7  
(Refer to the EUT in this report) is a Microwave Oven.

### **Specifications:**

<b>Power consumption</b>	<b>120Vac 60Hz, 1350W(Microwave)</b>
<b>Output</b>	<b>900W</b>
<b>Operation frequency</b>	<b>2450Hz</b>
<b>Magnetron brand</b>	<b>Galanz</b>
<b>Magnetron number</b>	<b>M24FB-610A</b>
<b>Outside dimensions(HxWxD)</b>	<b>12 × 19 5/6 × 15 5/9in.</b>
<b>Cavity dimensions(HxWxD)</b>	<b>8 11/16 × 13 3/8 × 12 5/8 in.</b>
<b>Capacity</b>	<b>0.81cu.ft</b>
<b>Cooking uniformity</b>	<b>Turntable System</b>
<b>Net weight</b>	<b>Approx. 32 lb.</b>

## **Type of Deriver**

**P90D23(Y)-(Z)model designations:**

**P:** With Microwave functions only.

**90:** denote the output power is 900W

**D23:** denote different capacity in 23 liters.

Variable (Y) may be L,P,J,SL,SP,SJ,TL,TJ,AL,AP,AJ,ASL,ASP,ATL, AXL ATP,EL,EP,EJ,ESL,ESP,ESJ,ETL,EXL,ETP,ETJ,ML,MP,MJ,MSL,MSP,MSJ,M TL ,MXL,MTP,MTJ.“L” and “J” is pull-out type door, “P” is push-button type door. “X” is pull-down type door, When there is no letter before “L”, “P” and “J”, denotes mechanical control model; When there is “A” , “E” or “M” denote the electrical control model. “S” denotes stainless steel cavity; “T” denotes the gray cavity; When there is neither “S” nor “T” before “L”, “P” or “J”, denotes the epoxy painted cavity.

Variable (Z) may compose by one to six characters from A to Z and/or numbers from 0 to 9. It represents the differences of the appearance.

## Test Summary

The Electromagnetic Compatibility Requirements on model tested P90D23MXL-A7 for this test is stated below. All results listed in this report relate exclusively to this above mentioned model as the Equipment under Test. This report confers no approval or endorsement upon any other component, host or sub-system used in the test set-up

Emission Tests				
Specifications	Description	Test results	Test point	Remark
FCC Part 18:2004 FCC/OST MP-5:1986 ANSI C63.4:2003	Radiation Hazard Measurement	Passed	Enclosure	Attachment 1
FCC Part 18:2004 FCC/OST MP-5:1986 ANSI C63.4:2003	Input Power Measurement	Passed	AC Input Port	Attachment 2
FCC Part 18:2004 FCC/OST MP-5:1986 ANSI C63.4:2003	RF Output Power Measurement	Passed	EUT	Attachment 3
FCC Part 18:2004 FCC/OST MP-5:1986 ANSI C63.4:2003	Operating Frequency Measurement	Passed	EUT	Attachment 4
FCC Part 18:2004 FCC/OST MP-5:1986 ANSI C63.4:2003	Conducted Emission	Passed	AC Input Port	Attachment 5
FCC Part 18:2004 FCC/OST MP-5:1986 ANSI C63.4:2003	Radiated Emission	Passed	Enclosure	Attachment 6

## **Load for Microwave Ovens**

For all measurements the energy developed by the oven was absorbed by a dummy load consisting of a quantity of tap water in a beaker. If the oven was provided with a shelf or other utensil support, this support was in its initial normal position. For ovens rated at 1000 watts or less power output, the beaker contained quantities of water as listed in the following subparagraphs, for ovens rated at more than 1000 watts output, each quantity was increased by 50% for each 500 watts or fraction thereof in excess of 1000 watts, additional beakers were used if necessary

- Load for power output measurement: 1000 milliliters of water in the beaker located in the center of the oven.
- Load for frequency measurement: 1000 milliliters of water in the beaker located in the center of the oven.
- load for measurement of radiation on second and third harmonic : Two loads, one of 700 and the other of 300 milliliters, of water are used , Each load is tested both with the beaker located in the center of the oven and with it in the right front corner.
- Load for all other measurements: 700 milliliters of water, with the beaker located in the center of the ovens

## **Equipment Modification**

Any modifications installed previous to testing by Guangdong Galanz Enterprises Co., Ltd will be incorporated in each production model sold or leased in United States

**EUT Sample Photos for model \_\_\_\_\_**



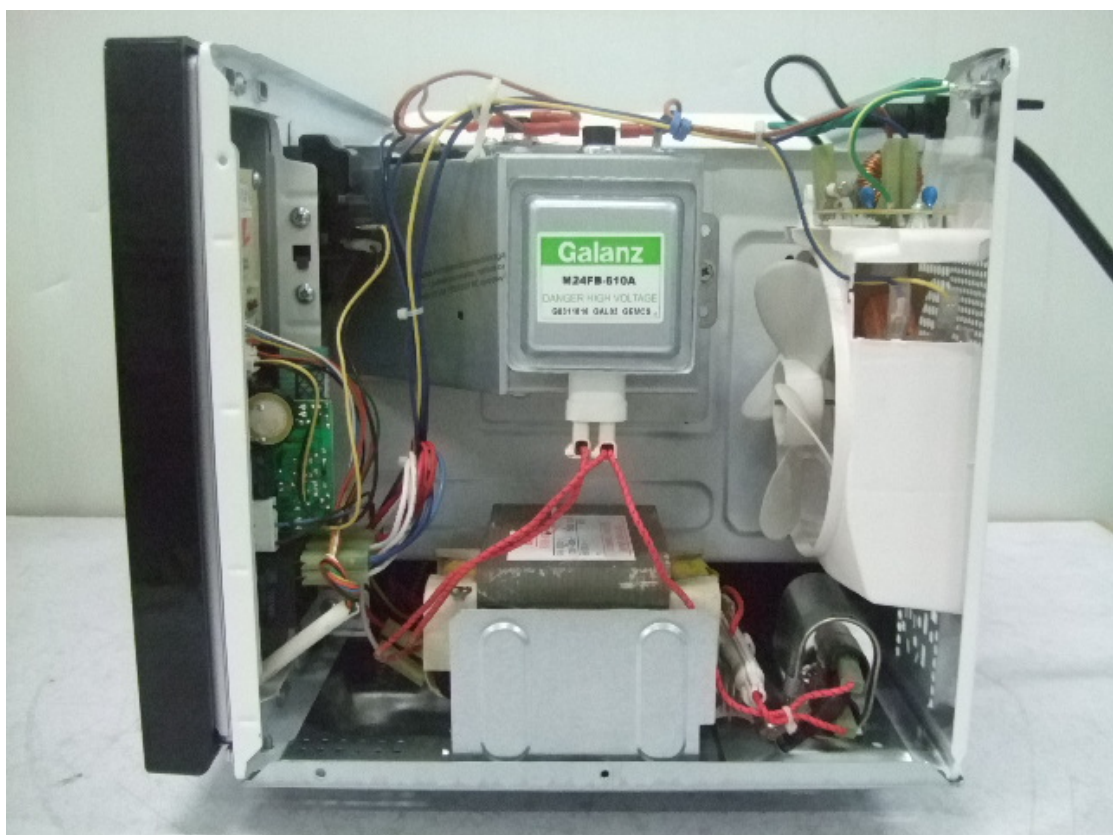
**Front view**



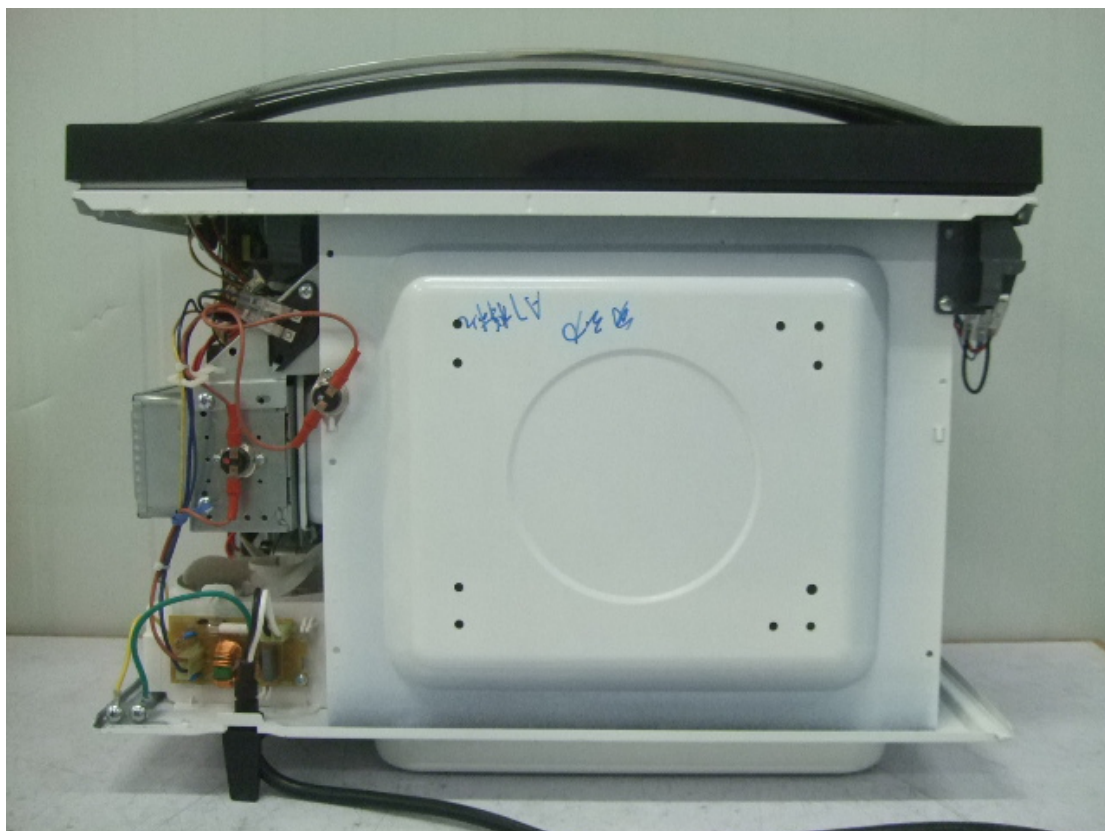
**Door open view**



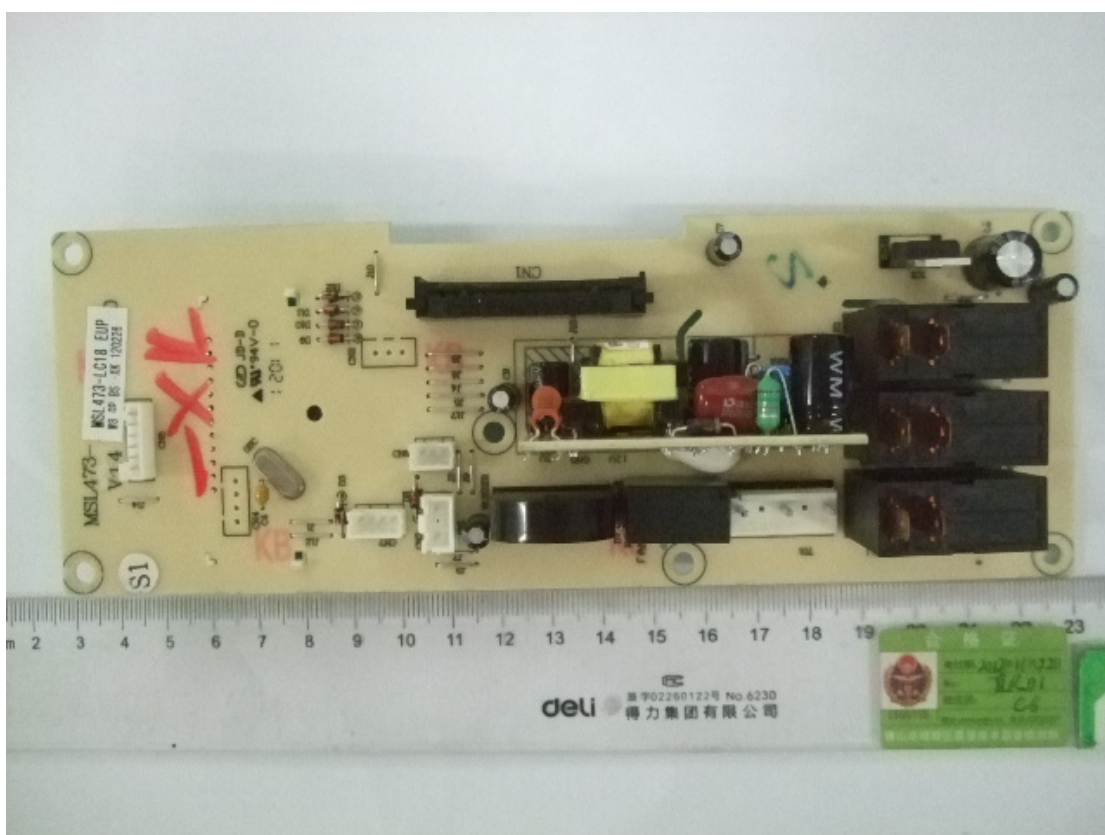
**Rear View of EUT**



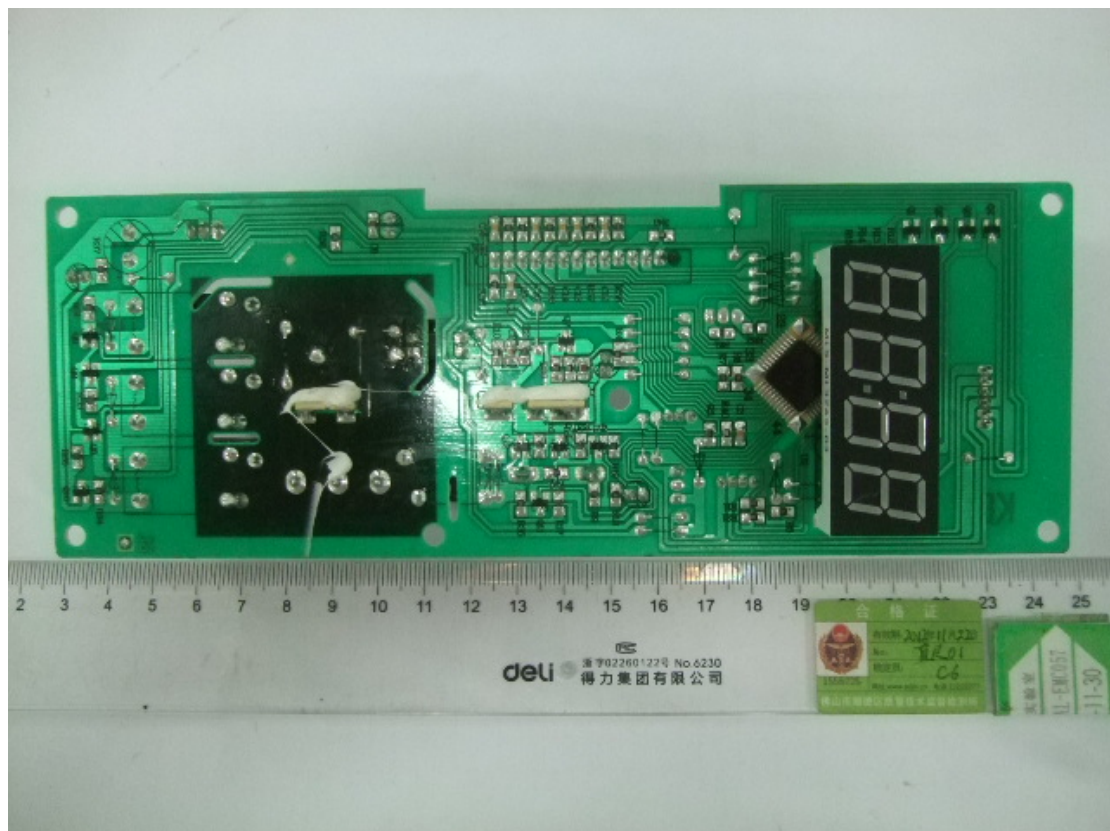
**Uncovered View from right side**



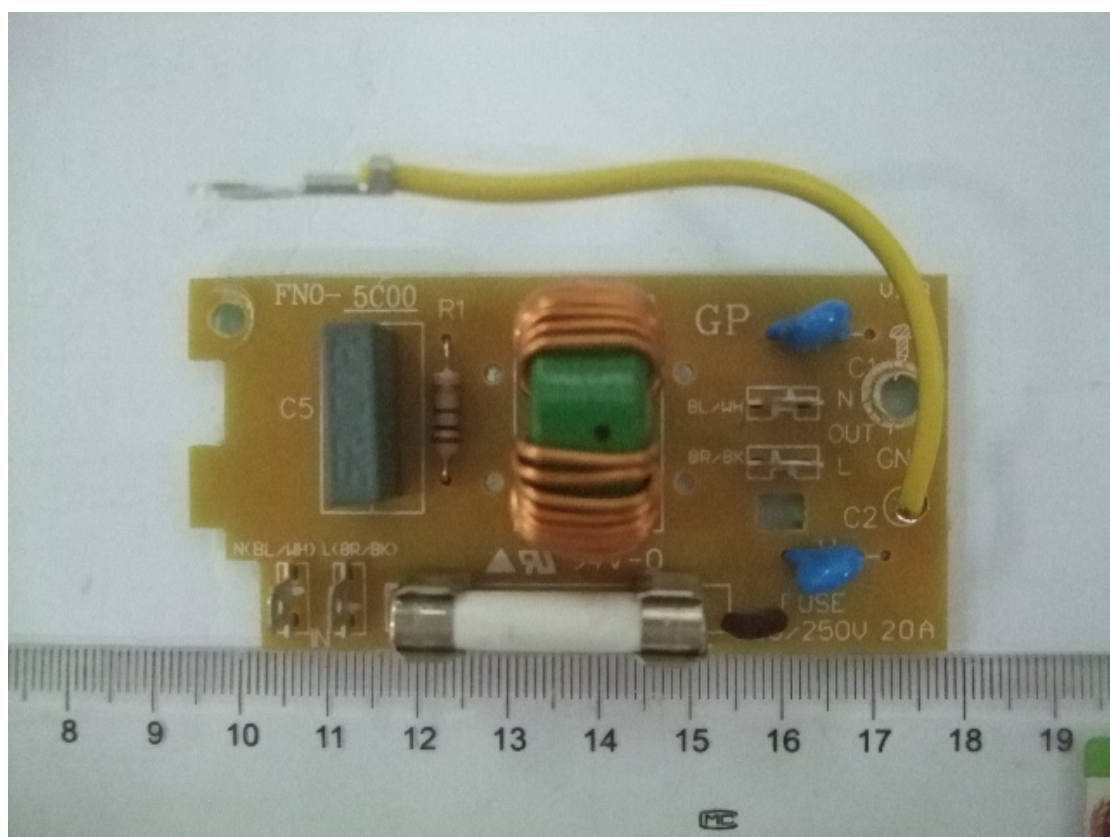
**Uncovered View from top side**



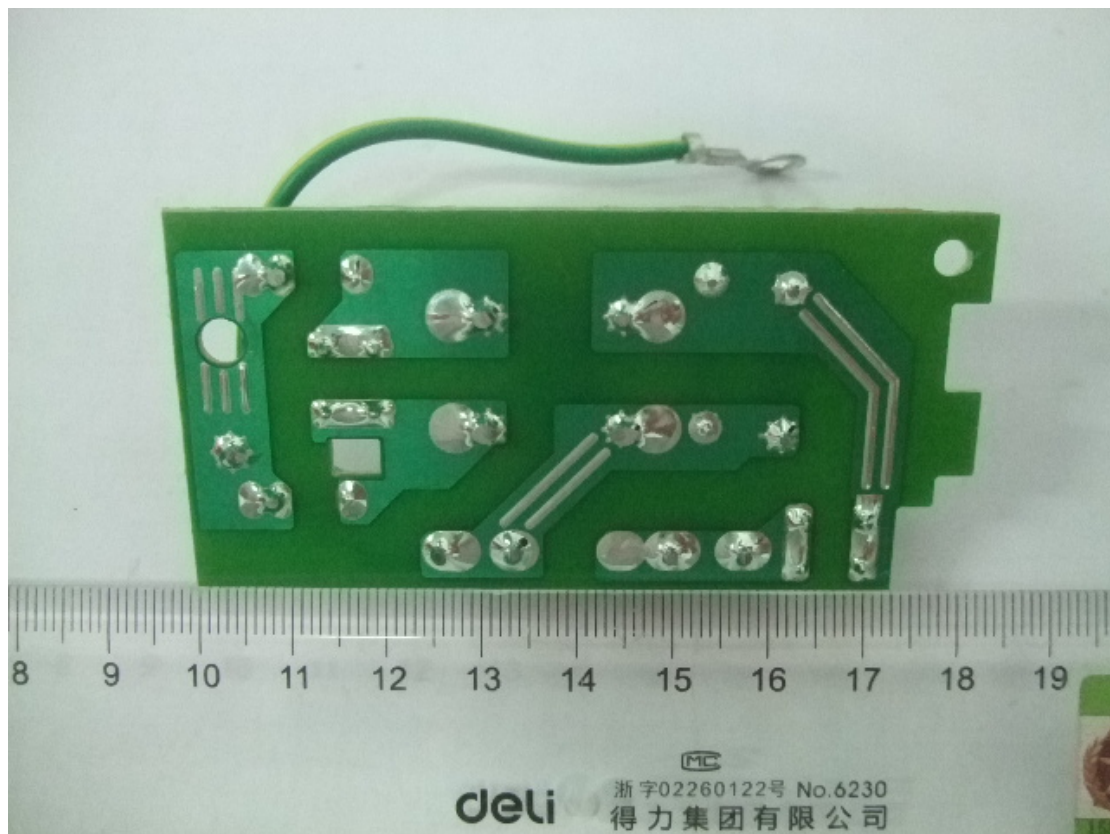
**Front view of Main board**



**Back view of Main board**



**Front View of AC power filter board**



**Back of View AC power filter board**

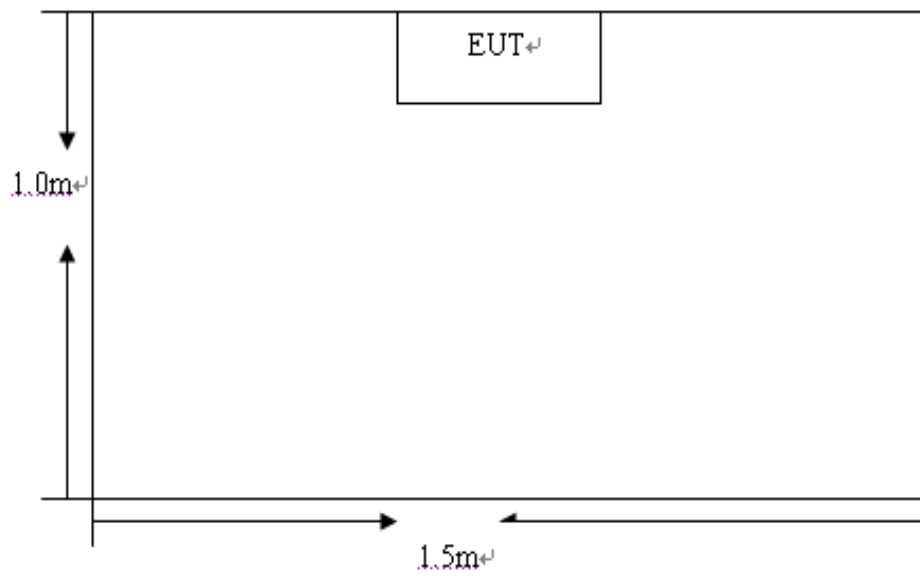


**View of Magnetron**

## Test System Details

EUT					
Model Numbers	P90D23(Y)-(Z)				
Model tested	P90D23MXL-A7				
Description	Microwave Oven				
Manufacturer	Guangdong Galanz Enterprises Co., Ltd				
Support Equipment					
N/A					
Cable Description					
Description	From	To	Length Meters	Shielded Y/N	Ferrite Y/N
Power cord	EUT	Plug	1.10	N	N

## Configuration of Tested System



## ATTACHMENT 1-RADIATION HAZARD TEST

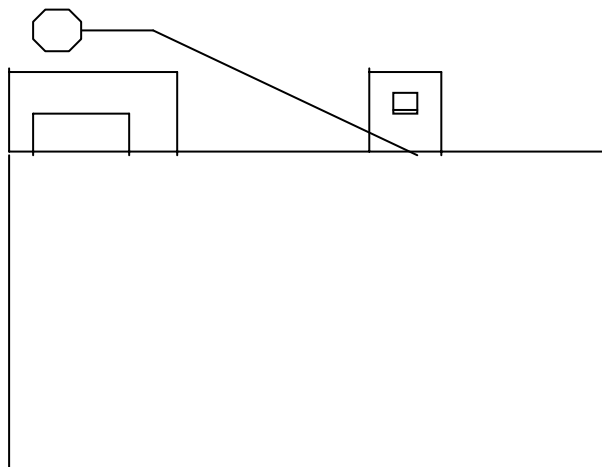
<b>Client: Guangdong Galanz Enterprises Co Ltd</b>		<b>Test Standard: FCC Part 18</b>
<b>Model Numbers: P90D23(Y)-(Z)</b>		<b>Product: Microwave Oven</b>
<b>Model Tested: P90D23MXL-A7</b>		<b>EUT Designation: Home or Office</b>
<b>Temperature: 21°C</b>		<b>Humidity: 54%R.H.</b>
<b>ATM Pressure: 108.5kPa</b>		<b>Grounding: Through AC power cord</b>
<b>Tested By: Daomen Guan</b>		<b>Date of Test: April 26,2012</b>
<b>Test Reference</b>	ANSI C63.4: 2003, FCC/OST MP-5:1986	
<b>Test Procedure</b>	<p>The EUT was set up according to the FCC MP-5 and FCC Part 18 for Radiation Hazard Measurement. The measurement was using a microwave leakage meter to measure the Radiation leakage in the as-received condition with the oven door closed. A 700ml water load in a beaker was located in the center of the oven and the Microwave oven was set to maximum power. While the oven operating, the microwave meter will check the leakage and then record the maximum leakage</p>	
<b>Tested Range</b>	N/A	
<b>Test Voltage</b>	120VAC/60Hz	
<b>Results</b>	<p>There was no microwave leakage exceeding a power level of 0.57mW/cm<sup>2</sup> observed at any point 5cm or more from the external surface of the oven.</p> <p>A maximum of 1.0 mW/cm<sup>2</sup> is allowed in accordance with the applicable FCC standards. Hence, microwave leakage in the as-received condition with the oven door closed was below the maximum allowed.</p> <p>The test results relate only to the equipment under test provided by client.</p>	
<b>Changes or Modifications</b>	There were no modifications installed by Galanz test personnel	
<b>M. Uncertainty</b>	0.01mW/cm <sup>2</sup>	

## Test Equipment List

Test Equipment	Manufacturer	Model	Serial No.	Last Cal.	Cal. Due
Microwave Measurement System	HOLADAY	HI-1710	98370	2012-01-10	2013-01-10
Note: All testing were performed using internationally recognized standard. All test instruments were calibrated and traceable to the National Institute of Standards and Technology.					

## Radiation Hazard Test Set-up

### Microwave Leakage Tester





**Radiation Hazard Test Setup**

**ATTACHMENT 2-INPUT POWER MEASUREMENT**

<b>Client: Guangdong Galanz Enterprises Co Ltd</b>	<b>Test Standard: FCC Part 18</b>
<b>Model Numbers: P90D23(Y)-(Z)</b>	<b>Product: Microwave Oven</b>
<b>Model Tested: P90D23MXL-A7</b>	<b>EUT Designation: Home or Office</b>
<b>Temperature: 21°C</b>	<b>Humidity: 54%R.H.</b>
<b>ATM Pressure: 108.5kPa</b>	<b>Grounding: Through AC power cord</b>
<b>Tested By: Daomen Guan</b>	<b>Date of Test: April 26,2012</b>
<b>Test Reference</b>	ANSI C63.4: 2003 , FCC/OST MP-5:1986
<b>Test Procedure</b>	The EUT was set up according to the FCC MP-5 and 18 for input power measurement, The input power and current was measured using a power analyzer. A 1000ml water load in a beaker was located in the center of the oven and the Microwave oven was set to maximum power, while the oven is operating, use a voltmeter and an ampere-meter to test the AC input voltage and current.
<b>Tested Range</b>	N/A
<b>Test Voltage</b>	120VAC/60Hz
<b>Results</b>	Based on the measured input power , the EUT was found to be operating within the intended specifications The test results relate only to the equipment under test provided by client
<b>Changes or Modifications</b>	There were no modifications installed by Galanz test personnel
<b>M. Uncertainty</b>	±5W

### Test Data

<b>Input Voltage Vac/Hz</b>	<b>Input Current amps</b>	<b>Measured Input power(watt)</b>	<b>Rated input power( watt )</b>
<b>120.1V/60Hz</b>	<b>12.48</b>	<b>1418</b>	<b>1350</b>

### Test Equipment List

<b>Test equipment</b>	<b>Manufacturer</b>	<b>Model</b>	<b>Serial No.</b>	<b>Last Cal.</b>	<b>Cal. Due</b>
Power Meter	Ainuo	AN8720P	058704076	2011-07-20	2012-07-19

Note: All testing were performed using internationally recognized standard. All test instruments were calibrated and traceable to the National Institute of Standards and Technology.



**Input Power Test Setup**

### ATTACHMENT 3-RF OUTPUT POWER MEASUREMENT

<b>Client: Guangdong Galanz Enterprises Co Ltd</b>		<b>Test Standard: FCC Part 18</b>
<b>Model Numbers: P90D23(Y)-(Z)</b>		<b>Product: Microwave Oven</b>
<b>Model Tested: P90D23MXL-A7</b>		<b>EUT Designation: Home or Office</b>
<b>Temperature: 21°C</b>		<b>Humidity: 54%R.H.</b>
<b>ATM Pressure: 108.5kPa</b>		<b>Grounding: Through AC power cord</b>
<b>Tested By: Daomen Guan</b>		<b>Date of Test: April 26,2012</b>
<b>Test Reference</b>	ANSI C63.4: 2003 , FCC/OST MP-5:1986	
<b>Test Procedure</b>	<p>The EUT was set up according to the FCC MP-5 and 18 for RF power measurement, The Caloric method was used to determine maximum RF output power.</p> <ol style="list-style-type: none"> <li>1) A 1000ml water load in a beaker is located in the center of the oven.</li> <li>2) Measure and record the initial temperature of the 1000ml water load.</li> <li>3) Start and keep the oven operating at maximum output power for 123 seconds, the additional 3 seconds is to allow for the magnetron start up delay.</li> <li>4) At the end of the 123 seconds, measure and record the final temperature of the 1000ml water load.</li> <li>5) Calculate the RF output power</li> </ol> $\text{RF Output Power (W)} = 4.2 \times 1000 \times (\text{Final Temp} - \text{Initial Temp}) / 120$	
<b>Tested Range</b>	N/A	
<b>Test Voltage</b>	120VAC/60Hz	
<b>Results</b>	<p>RF output power =819.0W</p> <p>The test results relate only to the equipment under test provided by client</p>	
<b>Changes or Modifications</b>	There were no modifications installed by Galanz test personnel.	
<b>M. Uncertainty</b>	±0.3°C	

### Test Data

Quality of water(ml)	Starting temperature(°C)	Final temperature(°C)	Elapsed time (seconds)	RF output power(watt)
1000	19.2	42.6	123	819.0

### Test Equipment List

Test equipment	Manufacturer	Model	Serial No.	Last Cal.	Cal. Due
Digital thermometer	TES	TES1310	021108782	2011-05-20	2012-05-19
Electronic scale	DING JIAN	30Kg	862399	2012-01-13	2013-01-12
Power Meter	Ainuo	AN8720P	058704076	2011-07-20	2012-07-19

Note: All testing were performed using internationally recognized standard. All test instruments were calibrated and traceable to the National Institute of Standards and Technology.



**RF Output Power Test Set-up**

## ATTACHMENT 4-OPERATING FREQUENCY MEASUREMENT

<b>Client: Guangdong Galanz Enterprises Co Ltd</b>		<b>Test Standard: FCC Part 18</b>
<b>Model Numbers: P90D23(Y)-(Z)</b>		<b>Product: Microwave Oven</b>
<b>Model Tested: P90D23MXL-A7</b>		<b>EUT Designation: Home or Office</b>
<b>Temperature: 22°C</b>		<b>Humidity: 49%R.H.</b>
<b>ATM Pressure: 103.1kPa</b>		<b>Grounding: Through AC power cord</b>
<b>Tested By: Daomen Guan</b>		<b>Date of Test: April 27, 2012</b>
<b>Test Reference</b>	ANSI C63.4: 2003 , FCC/OST MP-5:1986	
<b>Test Procedure</b>	<p>The EUT was set up according to the FCC MP-5 and 18 for Operating Frequency measurement</p> <p>1) The Variation of frequency with time</p> <p>The operating frequency was measured using a spectrum analyzer, starting with EUT at room temperature, a 1000ml water load in a breaker was located in the center of the oven, set a spectrum analyzer with antenna at 3 meters distance from the oven and oven was operated at maximum output power, The fundamental operating frequency was monitored until the water load was reduced to 20 percent of the original load.</p> <p>2) The variation of frequency with Line Voltage.</p> <p>The operating frequency was measured using a spectrum analyzer. The EUT was operated/ warmed by at least 10 minutes of use with a 1000ml water load at room temperature at the beginning of the test. Then the operating frequency was monitored as the input voltage was varied between 80 and 125 percent of the nominal rating</p>	
<b>Tested Range</b>	2450±50MHz	
<b>Test Voltage</b>	120VAC/60Hz	
<b>Results</b>	Refer to following pages for details of the variation in operating frequency with time & line voltage measurement	
<b>Changes or Modifications</b>	There were no modifications installed by Galanz test personnel.	
<b>M. Uncertainty</b>	Freq. ± 10kHz	

## Test data

### Variation in Operating Frequency with Time

Minimum Frequency(MHz)	Maximum Frequency(MHz)
2415.2	2491.4

### Variation in Operating Frequency with Line Voltage

Minimum Frequency(MHz)	Maximum Frequency(MHz)
2415.0	2484.8
<b>Note: Line voltage varied from 96Vac to 150Vac</b>	

## Test Equipment List

Test equipment	Manufacturer	Model	Serial No.	Last Cal.	Cal. Due
Horn Antenna	ETS	3115	6587	2010-08-02	2012-08-02
Spectrum Analyzer	R&S	FSP30	100755	2011-11-21	2012-11-21
3m Anechoic chamber	ETS	RFD-F-100	3187	2011-05-27	2013-05-27
Note: All testing were performed using internationally recognized standard. All test instruments were calibrated and traceable to the National Institute of Standards and Technology.					



**Operating Frequency Test Set-up**

## ATTACHMENT 5-CONDUCTED EMISSION TEST RESULTS

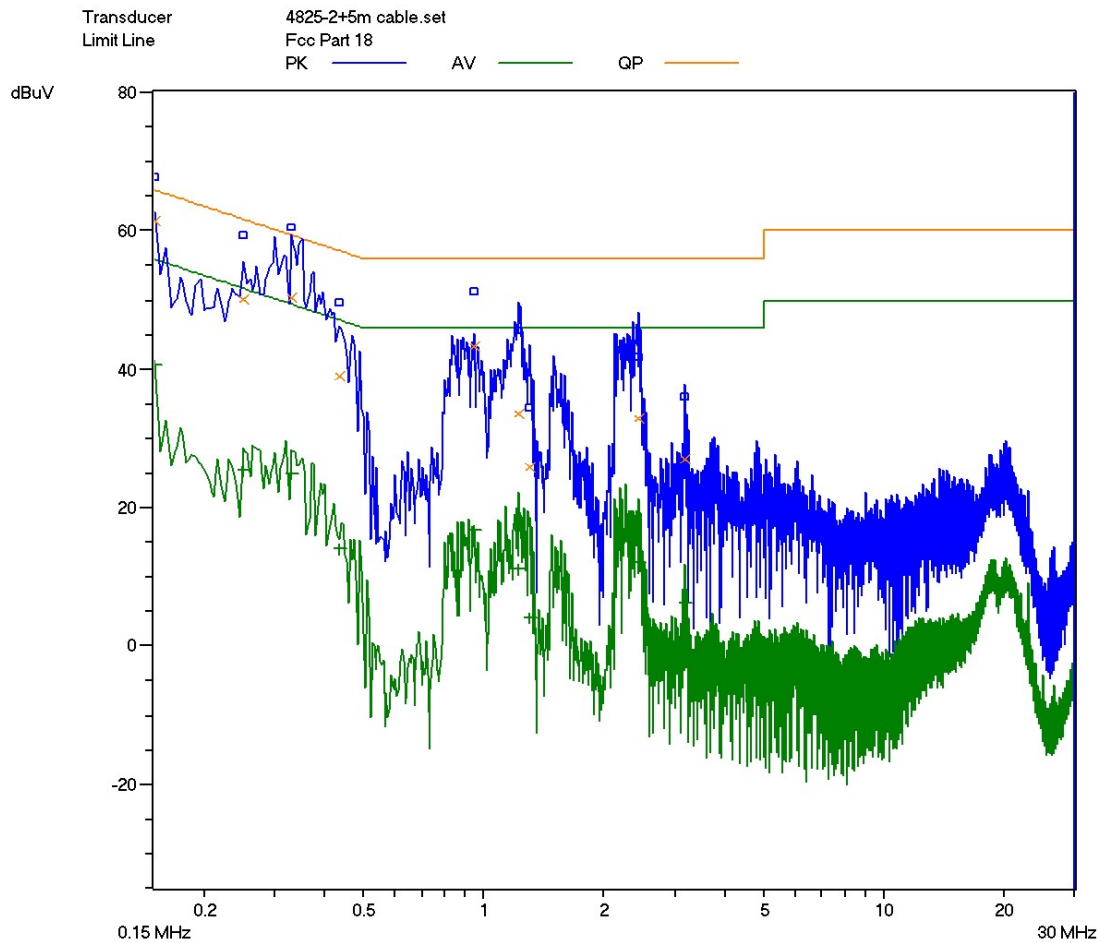
<b>Client: Guangdong Galanz Enterprises Co Ltd</b>		<b>Test Standard: FCC Part 18</b>
<b>Model Numbers: P90D23(Y)-(Z)</b>		<b>Product: Microwave Oven</b>
<b>Model Tested: P90D23MXL-A7</b>		<b>EUT Designation: Home or Office</b>
<b>Temperature: 24°C</b>		<b>Humidity: 52%R.H.</b>
<b>ATM Pressure: 105.6kPa</b>		<b>Grounding: Through AC power cord</b>
<b>Tested By: Daomen Guan</b>		<b>Date of Test: April 27, 2012</b>
<b>Test Reference</b>	ANSI C63.4: 2003 , FCC/OST MP-5:1986	
<b>Test Procedure</b>	The EUT was set up according to the guideline of ANSI C63.4:2003 & FCC MP-5 for conducted emission, The measurement was using a AMN on each line and an EMI receiver peak scan was made at the frequency measurement range , the six highest significant peak were then marked , and these signals were then quasi peaked and averaged. The frequency range investigated was from 150kHz to 30MHz	
<b>Tested Range</b>	150kHz to 30MHz	
<b>Test Voltage</b>	120VAC/60Hz	
<b>Results</b>	The EUT meets the requirements of test reference for conducted Emission on line N by 5.5dBμV of Quasi-peak detector and by 17.2 dBμV of Average detector.	
<b>Changes or Modifications</b>	There were no modifications installed by Galanz test personnel.	
<b>M. Uncertainty</b>	±2.5dB	

CE-L.res  
CE L

4/27/12 11:11:35 AM

Title CE L  
Type Microwave Oven  
EUT / Ser.No. P90D23MXL-A7  
Manufacturer Galanz  
Condition Full Power Of Microwave Mode  
Operator Daomen

Frequency Range(s)	Range 1
Start Frequency	150 kHz
Stop Frequency	30 MHz
Step Frequency	5 kHz
Attenuator	Auto
Detector (Pre)	AV CISPR
IF Bandwidth (Pre)	9 kHz
Measure Time (Pre)	10 ms
Detector (Final)	QP
IF Bandwidth (Final)	9 kHz
Measure Time (Final)	1 s
Sub Ranges (Final)	20



**Line L Conducted Emission Graph**

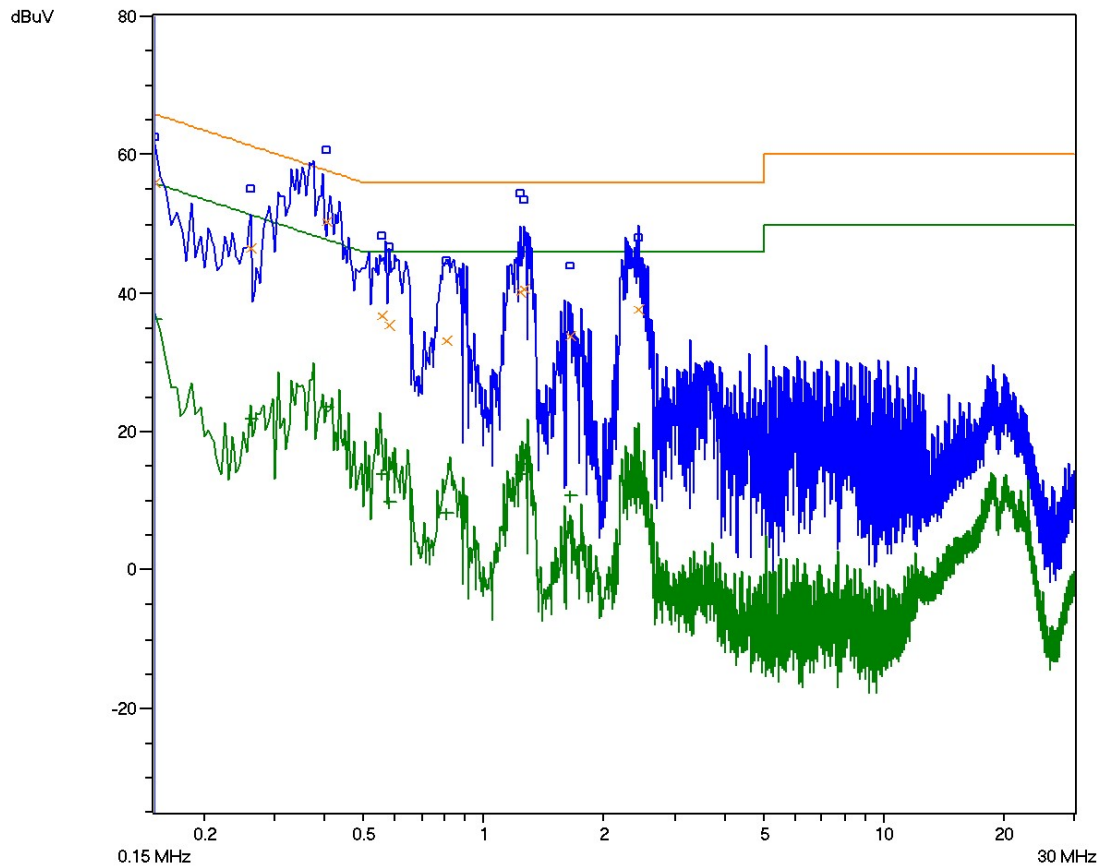
CE-N.res  
CE N

4/27/12 11:30:07 AM

Title CE N  
Type Microwave Oven  
EUT / Ser.No. P90D23MXL-A7  
Manufacturer Galanz  
Condition Full Power Of Microwave Mode  
Operator Daomen

Frequency Range(s)	Range 1
Start Frequency	150 kHz
Stop Frequency	30 MHz
Step Frequency	5 kHz
Attenuator	Auto
Detector (Pre)	AV CISPR
IF Bandwidth (Pre)	9 kHz
Measure Time (Pre)	10 ms
Detector (Final)	QP
IF Bandwidth (Final)	9 kHz
Measure Time (Final)	1 s
Sub Ranges (Final)	20

Transducer 4825-2+5m cable.set  
Limit Line Fcc Part 18  
PK AV QP



**Line N Conducted Emission Graph**

## Test Data

Line	Frequency (MHz)	Corrected Reading(QP)	Corrected Reading(AV)	QP limit dB uV	AV limit dB uV
L	0.1504	57.6	36.3	66.0	56.0
L	0.3160	51.7	30.3	59.8	49.8
L	0.3466	51.8	30.2	59.0	49.0
N	0.1516	58.4	37.2	65.9	55.9
N	0.3764	52.9	31.2	58.4	48.4
N	2.4092	48.8	27.6	56.0	46.0

## Test Equipment List

Test equipment	Manufacturer	Model	Serial No.	Last Cal.	Cal. Due
EMI Receiver	SCHAFFNER	SMR4503	44	2011-07-08	2012-07-08
LISN	ETS	4825/2	1161	2011-07-08	2012-07-08
Shielding Room	ETS	RFD-100	3181	2011-05-18	2012-05-18
Note: All testing were performed using internationally recognized standard. All test instruments were calibrated and traceable to the National Institute of Standards and Technology.					



**Conducted Emission Test Set-up**

**ATTACHMENT 6-RADIATED EMISSION TEST RESULTS**

<b>Client: Guangdong Galanz Enterprises Co Ltd</b>	<b>Test Standard: FCC Part 18</b>
<b>Model Numbers: P90D23(Y)-(Z)</b>	<b>Product: Microwave Oven</b>
<b>Model Tested: P90D23MXL-A7</b>	<b>EUT Designation: Home or Office</b>
<b>Temperature: 22°C</b>	<b>Humidity: 49%R.H.</b>
<b>ATM Pressure: 103.1Pa</b>	<b>Grounding: Through AC power cord</b>
<b>Tested By: Daomen Guan</b>	<b>Date of Test: April 27, 2012</b>
<b>Test Reference</b>	ANSI C63.4: 2003 , FCC/OST MP-5:1986
<b>Test Procedure</b>	<p>The EUT was set up according to the guidelines of ANSI C63.4: 2003 &amp; FCC MP- 5 for radiated emissions. Microwave oven was placed on a 0.8m*1.2m nonconductive table. The top of the table is 0.8 m above the ground. The table is placed on a flush mounted metal turntable.</p> <p>An EMI receiver peak scan was made at the frequency measurement range (pre- scan) in an Anechoic chamber. Signal discrimination was then performed and the significant peaks marked. All data was recorded in Quasi-peak detection mode from 30 MHz to 1GHz and average detector mode above 1GHz.</p> <p>The following data lists the significant emission frequencies, measured levels, correction factors (including cable and antenna correction factors), and the corrected readings against the limits. Explanation of the Correction Factor are given as follows:</p> <p>FS= RA + AF + CF - AG</p> <p>Where: FS = Field Strength</p> <p>RA = Receiver Amplitude</p> <p>AF = Antenna Factor</p> <p>CF = Cable Attenuation Factor</p> <p>AG = Amplifier Gain</p>
<b>Tested Range</b>	30MHz to 24.5GHz
<b>Test Voltage</b>	120VAC/60Hz
<b>Results</b>	The EUT meets the requirements of test reference for Radiated emission on Vertical polarization by 15.37dBuV/m of AV detector at 9.88750 GHz
<b>Changes or Modifications</b>	There were no modifications installed by Galanz test personnel.
<b>M. Uncertainty</b>	±3.2dB

<b>30MHz-1GHz</b>				
<b>Frequency (MHz)</b>	<b>Antenna Polarization (V/H)</b>	<b>3 Meters Corrected QP reading (dBμV/m)</b>	<b>Delta QP (dB)</b>	<b>3 Meters Limits (dBμV/m)</b>
110.2060	V	51.20	18.90	70.10
124.6120	V	53.60	16.50	70.10
125.8040	V	54.10	16.00	70.10
107.8120	H	35.40	34.70	70.10
110.1880	H	34.70	35.40	70.10
265.9960	H	31.40	38.70	70.10
<b>Note: All readings are quasi-peak unless stated otherwise, using a bandwidth of 120kHz.</b>				
<b>1GHz-25GHz</b>				
<b>Frequency (GHz)</b>	<b>Antenna Polarization (V/H)</b>	<b>3 Meters Corrected AV reading (dBμV/m)</b>	<b>Delta AV (dB)</b>	<b>3 Meters Limits (dBμV/m)</b>
2.19416	V	39.85	30.25	70.10
4.93256	V	46.74	23.36	70.10
7.41288	V	51.59	18.51	70.10
9.88750	V	54.73	15.37	70.10
2.20342	H	37.44	32.66	70.10
4.94522	H	49.28	20.82	70.10
7.40408	H	52.00	18.10	70.10
9.87852	H	54.51	15.59	70.10
<b>Comment: None</b>				
<b>Note: All reading are average unless stated otherwise, using PK detector RBW=1MHz,VBW=10Hz</b>				

## Test Equipment List

Test equipment	Manufacturer	Model	Serial No.	Last Cal.	Cal. Due
Broadband Antenna	ETS	3142C	00042672	2010-09-25	2012-09-25
Horn Antenna	ETS	3115	6587	2010-08-02	2012-08-02
Band-pass Filter	Micro-Tronic	BRM50702	030	2011-11-021	2012-11-21
EMI Receiver	SCHAFFNER	SMR4503	44	2011-07-08	2012-07-08
Spectrum Analyzer	R&S	FSP30	100755	2011-11-21	2012-11-21
3m Anechoic chamber	ETS	RFD-F-100	3187	2011-05-27	2013-05-27
Note: All testing were performed using internationally recognized standard. All test instruments were calibrated and traceable to the National Institute of Standards and Technology.					



**Radiated Emission Test Setup (30-1000MHz)**



**Radiated Emission Test Setup (1-25GHz)**

**The End**