

**FCC CFR47 PART 18 SUBPART C**

**ISM EQUIPMENT**

**TEST REPORT**

**FOR**

**MICROWAVE OVEN**

**Model: RED(X)0(Y)H-(Z) (Testing case: RED450E3H-P)**

**Magnetron Model: Toshiba, 2M248J(JT)**

**Brand Name: Galanz**

**Test Report No.: 10CA8201-01**

**FCC ID: UHW10045002**

**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: Bossco He**

**Reviewed By: Yanhan Lu**

**QC Manager: Valley.Wang**

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

**Name**



**08/20/2010** \_\_\_\_\_

**Date**

## List Attached Files

<b>Exhibit Type</b>	<b>File Description</b>	<b>File Name</b>
<b>Test report</b>	<b>Test report</b>	<b>UHW10045002 -Test report .pdf</b>
<b>Operation Description</b>	<b>Operational Description</b>	<b>UHW10045002 -Operational description .pdf</b>
<b>External Photos</b>	<b>External Photos</b>	<b>UHW10045002 -External photos .pdf</b>
<b>Internal Photos</b>	<b>Internal Photos</b>	<b>UHW10045002 -Internal photos .pdf</b>
<b>Block Diagram</b>	<b>Block Diagram</b>	<b>UHW10045002 -Block diagram .pdf</b>
<b>Schematics Diagram</b>	<b>Schematics Diagram</b>	<b>UHW10045002 -Schematics .pdf</b>
<b>ID Label/ Location</b>	<b>ID Label/ Location</b>	<b>UHW10045002 -label &amp; location .pdf</b>
<b>User Manual</b>	<b>User Manual</b>	<b>UHW10045002 -User manual .pdf</b>
<b>Test setup Photos</b>	<b>Test setup Photos</b>	<b>UHW10045002 -Test setup photos .pdf</b>
<b>Part List</b>	<b>Part List</b>	<b>UHW10045002 - Part list .pdf</b>

## **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** RED(X)0(Y)H-(Z)  
**Model Tested** RED450E3H-P  
**Brand Name** Galanz  
**Date Tested** Aug 10, 2010—Aug 16, 2010  
**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 RED450E3H-P  
(Refer to the EUT in this report) is a Microwave Oven.

### Specifications:

<b>Power consumption</b>	<b>120Vac 60Hz, 1450W(Microwave)</b>
<b>Output</b>	<b>1000W</b>
<b>Operation frequency</b>	<b>2450Hz</b>
<b>Magnetron brand</b>	<b>Toshiba</b>
<b>Magnetron number</b>	<b>2M248J(JT)</b>
<b>Outside dimensions(HxWxD)</b>	<b>16 7/8”(W) × 29 7/8”(H) × 17 5/8”(D)</b>
<b>Cavity dimensions(HxWxD)</b>	<b>10 3/16”(W) × 21 1/2”(H) × 14 13/16”(D)</b>
<b>Capacity</b>	<b>1.6 Cu.Ft.</b>
<b>Cooking uniformity</b>	<b>Turntable /Stirrer Fan System</b>
<b>Net weight</b>	<b>Approx. (net) 60.0lb / (gross) 68.8lb</b>

## **Type of Deriver**

**RED(X)0(Y)H-(Z)model designations:**

**R:** denotes “Over-The-Range” model..

**E:** denotes one of the electric controller.

**D:** denotes the type of the cavity.

**0:** denote the output power is 1000W

**H:** denotes the Pull-out type door

**Variable (X):** for sale area, including a combination of numbers, may be 42, 45, 51 or 56, which don't affect the certification.

**Variable (Y):** denotes one of the cosmetics of the microwave oven, including combination of letters and/or numbers, which don't affect the certification.

**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, which don't affect the certification.

## Test Summary

The Electromagnetic Compatibility Requirements on model tested RED450E3H-P 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 \_\_\_\_\_**



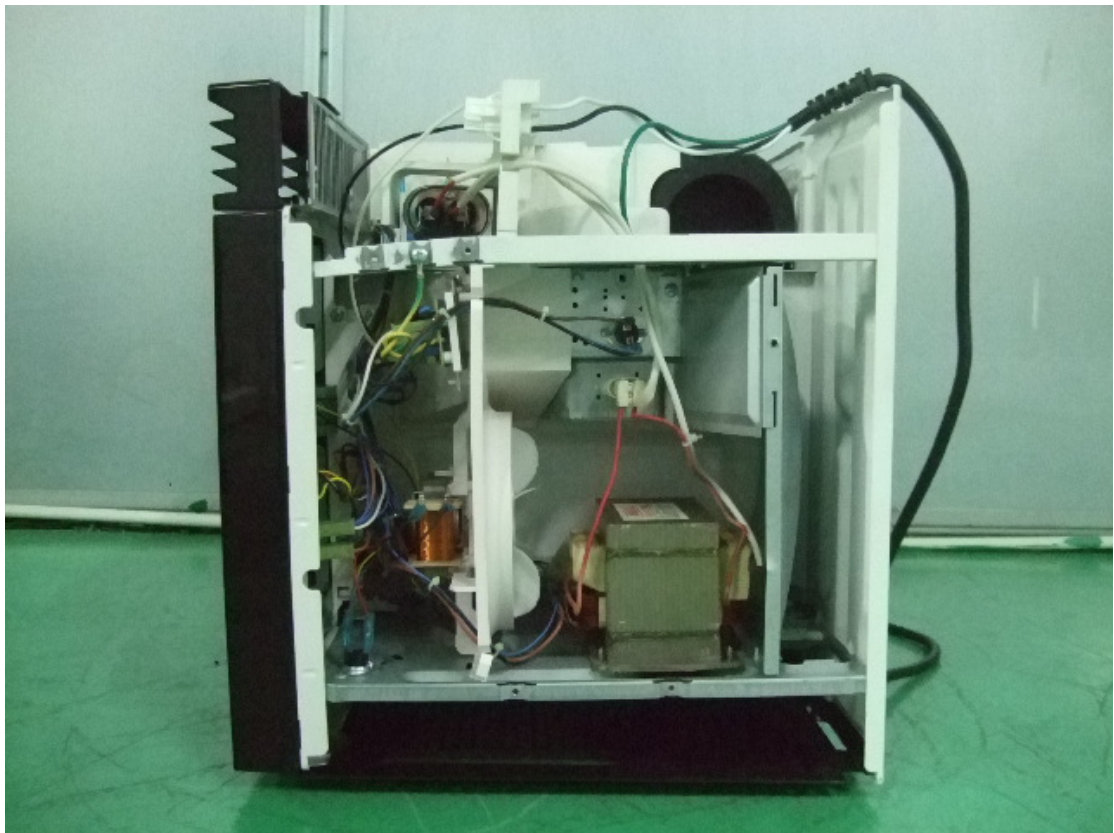
**Front and top view**



**Door open view**

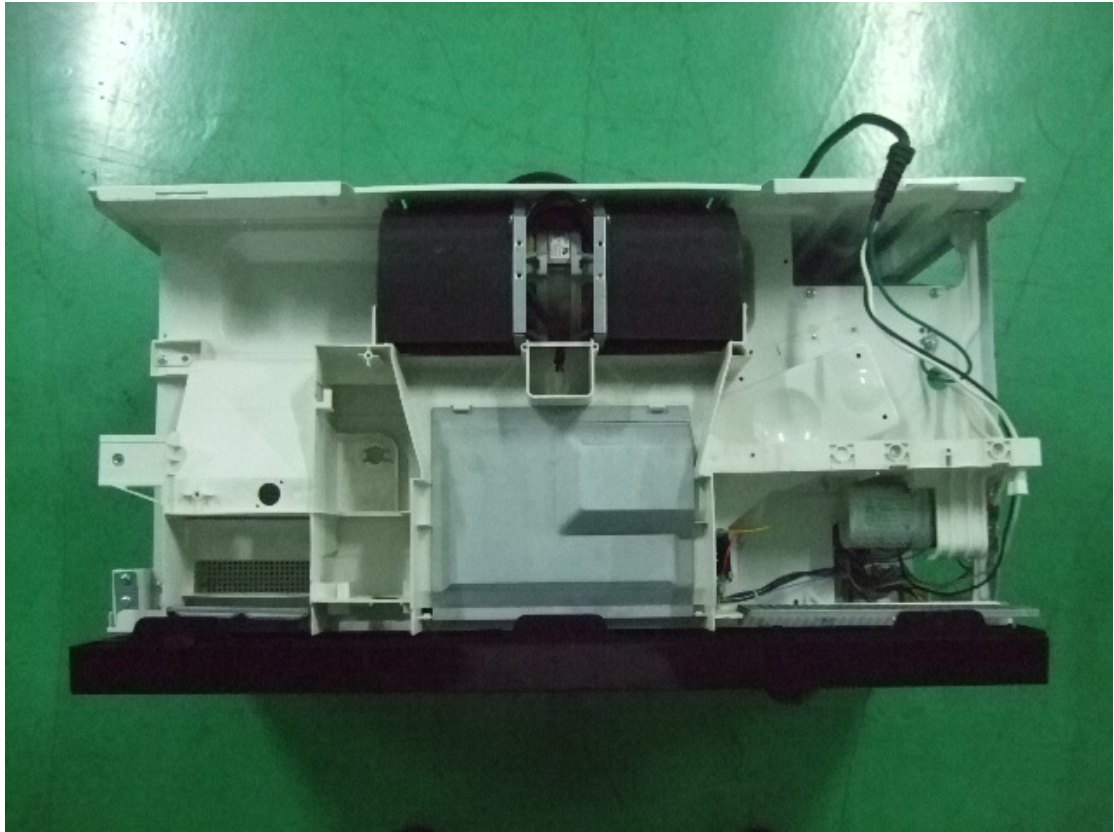


**Rear View of EUT**

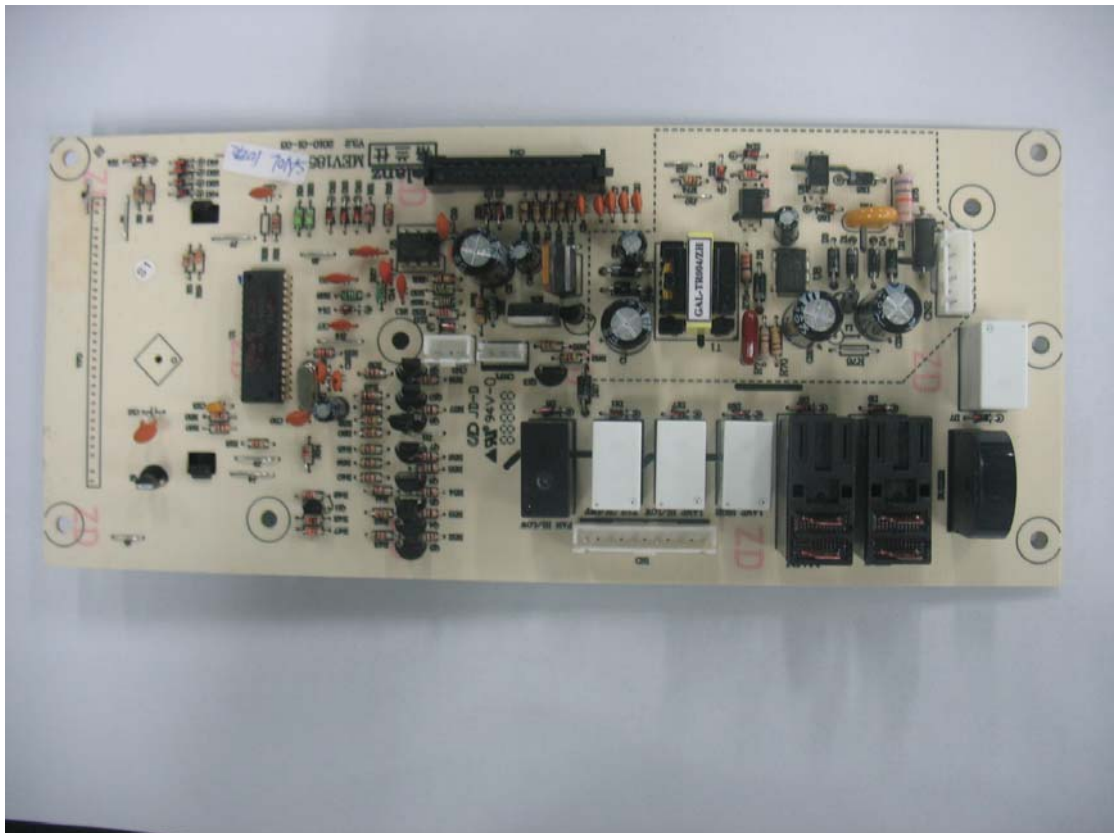


**Uncovered View from right side**

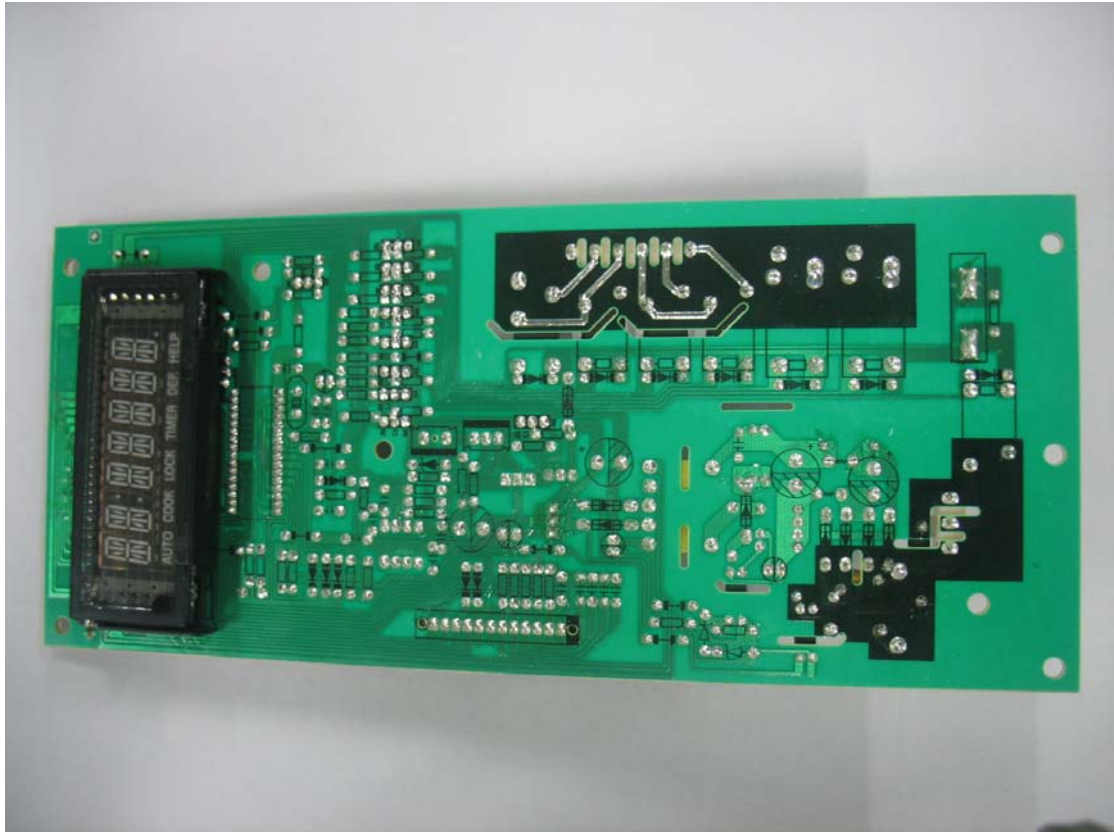




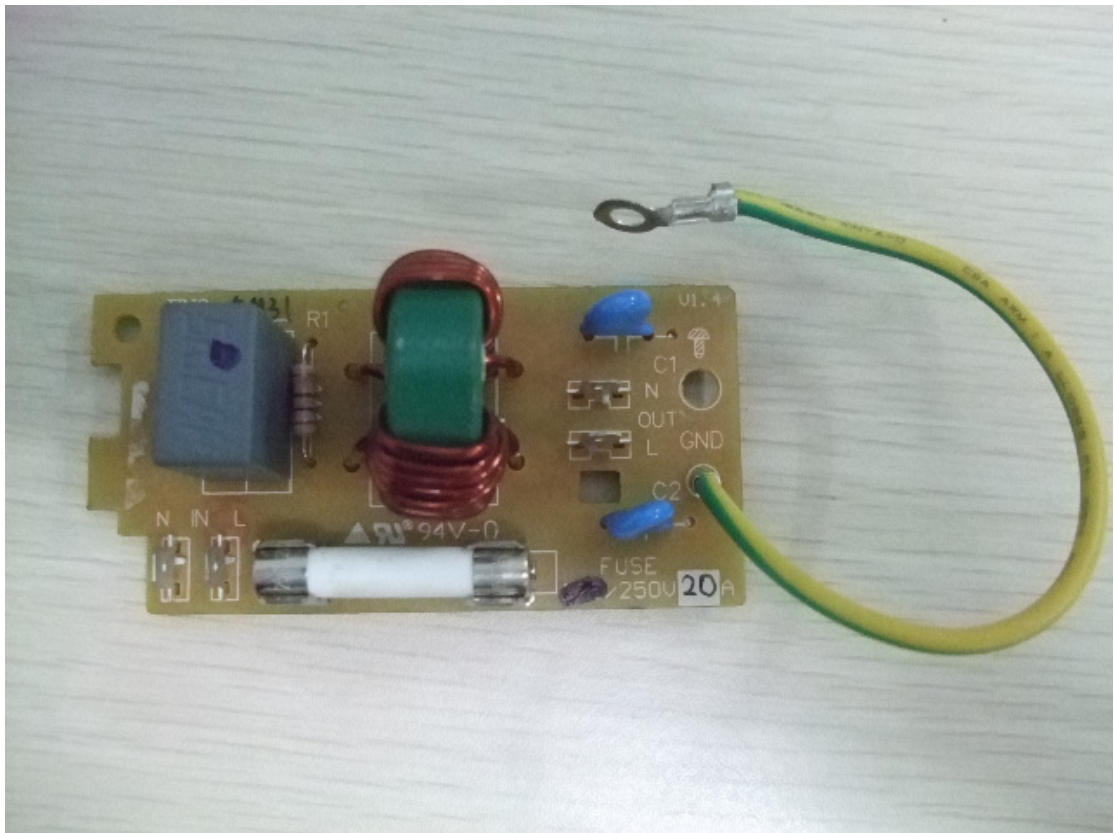
**Uncovered View from top side**



**Front view of Main board**

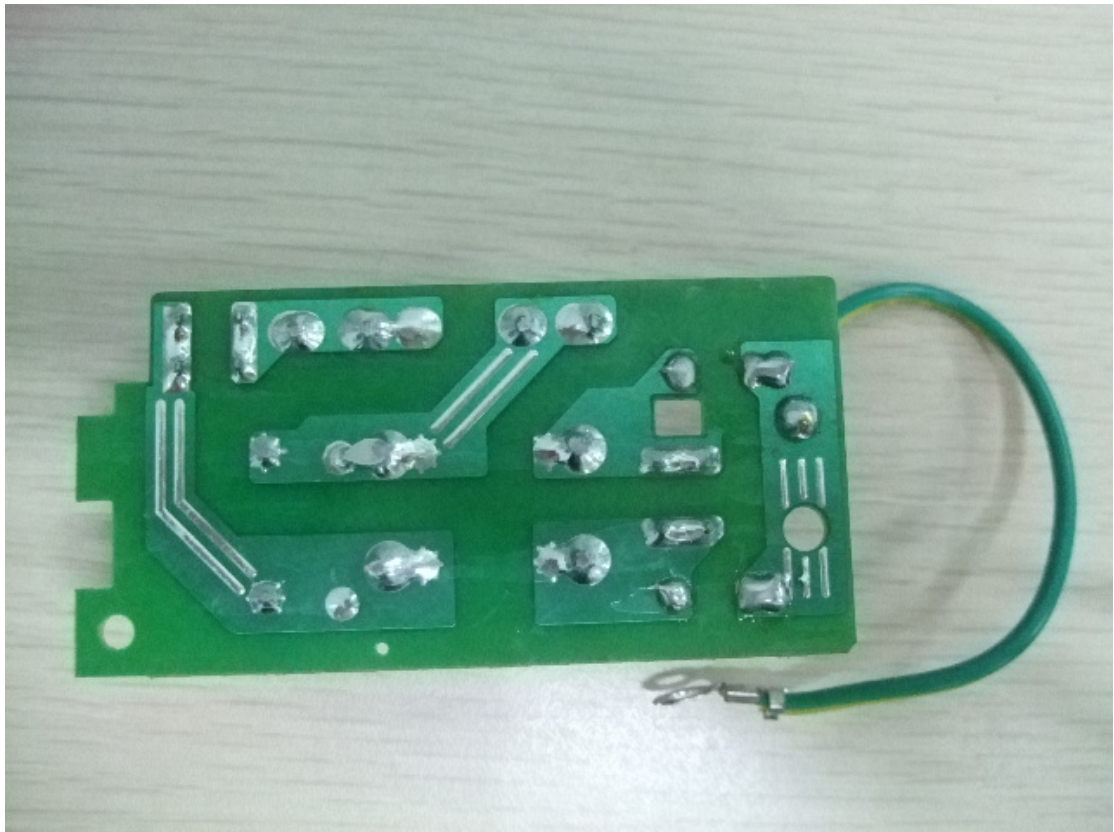


**Back view of Main board**



**Front View of AC power filter board**





**Back of View AC power filter board**

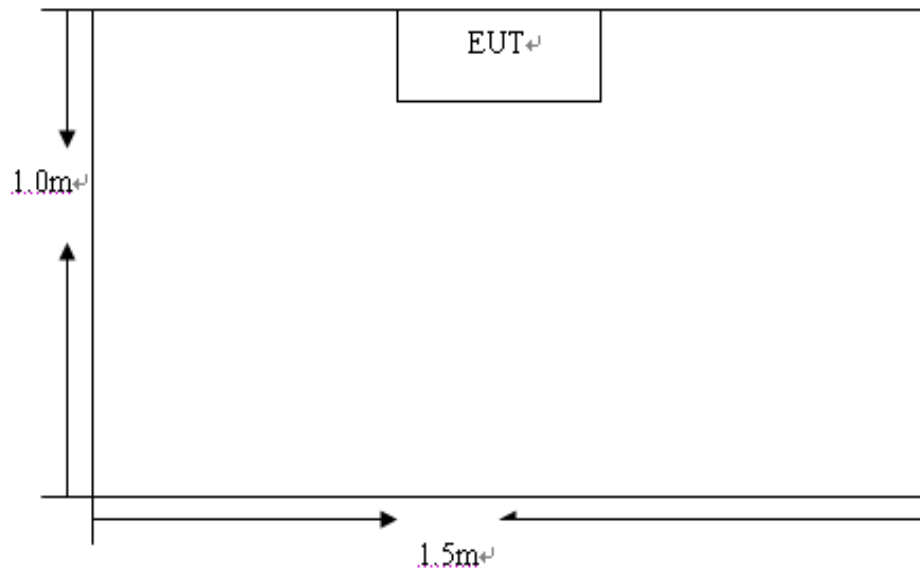


**View of Magnetron**

## Test System Details

EUT					
<b>Model Numbers</b>	<b>RED(X)0(Y)H-(Z)</b>				
<b>Model tested</b>	<b>RED450E3H-P</b>				
<b>Description</b>	<b>Microwave Oven</b>				
<b>Manufacturer</b>	<b>Guangdong Galanz Enterprises Co., Ltd</b>				
Support Equipment					
N/A					
Cable Description					
<b>Description</b>	<b>From</b>	<b>To</b>	<b>Length Meters</b>	<b>Shielded Y/N</b>	<b>Ferrite Y/N</b>
<b>Power cord</b>	<b>EUT</b>	<b>Plug</b>	<b>1.05</b>	<b>N</b>	<b>N</b>

## 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: RED(X)0(Y)H-(Z)</b>		<b>Product: Microwave Oven</b>
<b>Model Tested: RED450E3H-P</b>		<b>EUT Designation: Home or Office</b>
<b>Temperature: 23°C</b>		<b>Humidity: 54%RH</b>
<b>ATM Pressure: 101kPa</b>		<b>Grounding: Through AC power cord</b>
<b>Tested By: Bossco He</b>		<b>Date of Test: Aug 10,2010</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 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 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 0.14mW/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>	0.01 mW/cm <sup>2</sup>	

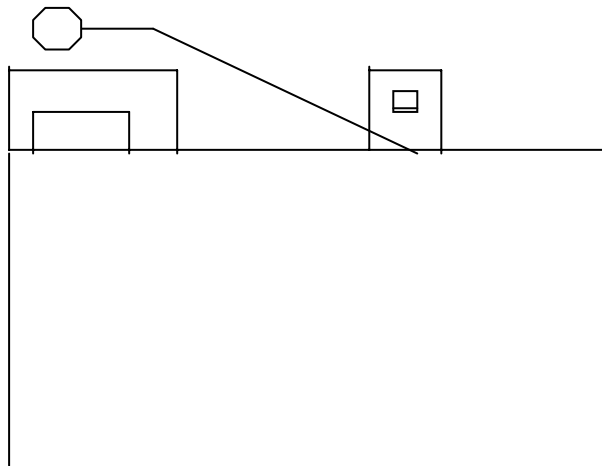
## Test Equipment List

Test Equipment	Manufacturer	Model	Serial No.	Last Cal.	Cal. Due
Field Monitor	ETS	AR FM5004	A0304252	2009-01-21	2011-01-20
Electric Field probe	ETS	AR FP6001	A0304302	2009-01-21	2011-01-20

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: RED(X)0(Y)H-(Z)</b>	<b>Product: Microwave Oven</b>
<b>Model Tested: RED450E3H-P</b>	<b>EUT Designation: Home or Office</b>
<b>Temperature: 23°C</b>	<b>Humidity: 54%RH</b>
<b>ATM Pressure: 101kPa</b>	<b>Grounding: Through AC power cord</b>
<b>Tested By: Bossco He</b>	<b>Date of Test: Aug 10,2010</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>120V/60Hz</b>	<b>12.77</b>	<b>1532</b>	<b>1450</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 frequency test system	Ainuo	AN8716PX	058704273	2010-07-06	2011-07-06

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: RED(X)0(Y)H-(Z)</b>	<b>Product: Microwave Oven</b>
<b>Model Tested: RED450E3H-P</b>	<b>EUT Designation: Home or Office</b>
<b>Temperature: 23°C</b>	<b>Humidity: 52%RH</b>
<b>ATM Pressure: 101kPa</b>	<b>Grounding: Through AC power cord</b>
<b>Tested By: Bossco He</b>	<b>Date of Test: Aug 10,2010</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 120 seconds.</li> <li>4) At the end of the 120 seconds, measure and record the final temperature of the 1000ml water load.</li> <li>5) Calculate the RF output power</li> </ol> <p>RF Output Power (W) = <math>4.2 \times 1000 \times (\text{Final Temp} - \text{Initial Temp}) / 120</math></p>
<b>Tested Range</b>	N/A
<b>Test Voltage</b>	120VAC/60Hz
<b>Results</b>	<p>RF output power =924W</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

<b>Quality of water(ml)</b>	<b>Starting temperature(°C)</b>	<b>Final temperature(°C)</b>	<b>Elapsed time (seconds)</b>	<b>RF output power(watt)</b>
<b>1000</b>	<b>18.0</b>	<b>44.4</b>	<b>120</b>	<b>924</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>
Data Acquisition	TES	TES-1310	021108782	2010-04-04	201104-04

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: RED(X)0(Y)H-(Z)</b>	<b>Product: Microwave Oven</b>
<b>Model Tested: RED450E3H-P</b>	<b>EUT Designation: Home or Office</b>
<b>Temperature: 24°C</b>	<b>Humidity: 56%RH</b>
<b>ATM Pressure: 100.9kPa</b>	<b>Grounding: Through AC power cord</b>
<b>Tested By: Bossco He</b>	<b>Date of Test: Aug 12,2010</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)
2404.6	2486.8

### Variation in Operating Frequency with Line Voltage

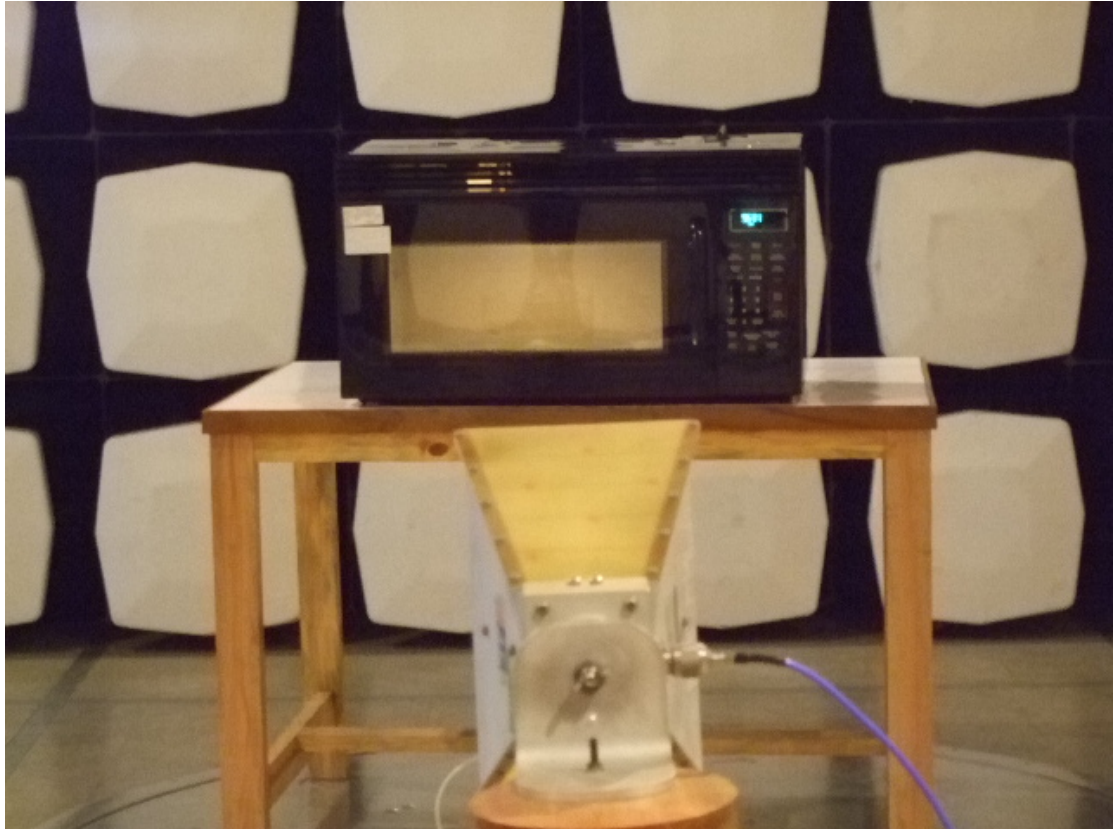
Minimum Frequency(MHz)	Maximum Frequency(MHz)
2403.6	2486.2

**Note: Line voltage varied from 96Vac to 150Vac**

## 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	2009-11-30	2010-11-30
3m Anechoic chamber	ETS	N/A	N/A	2009-05-23	2011-05-23

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



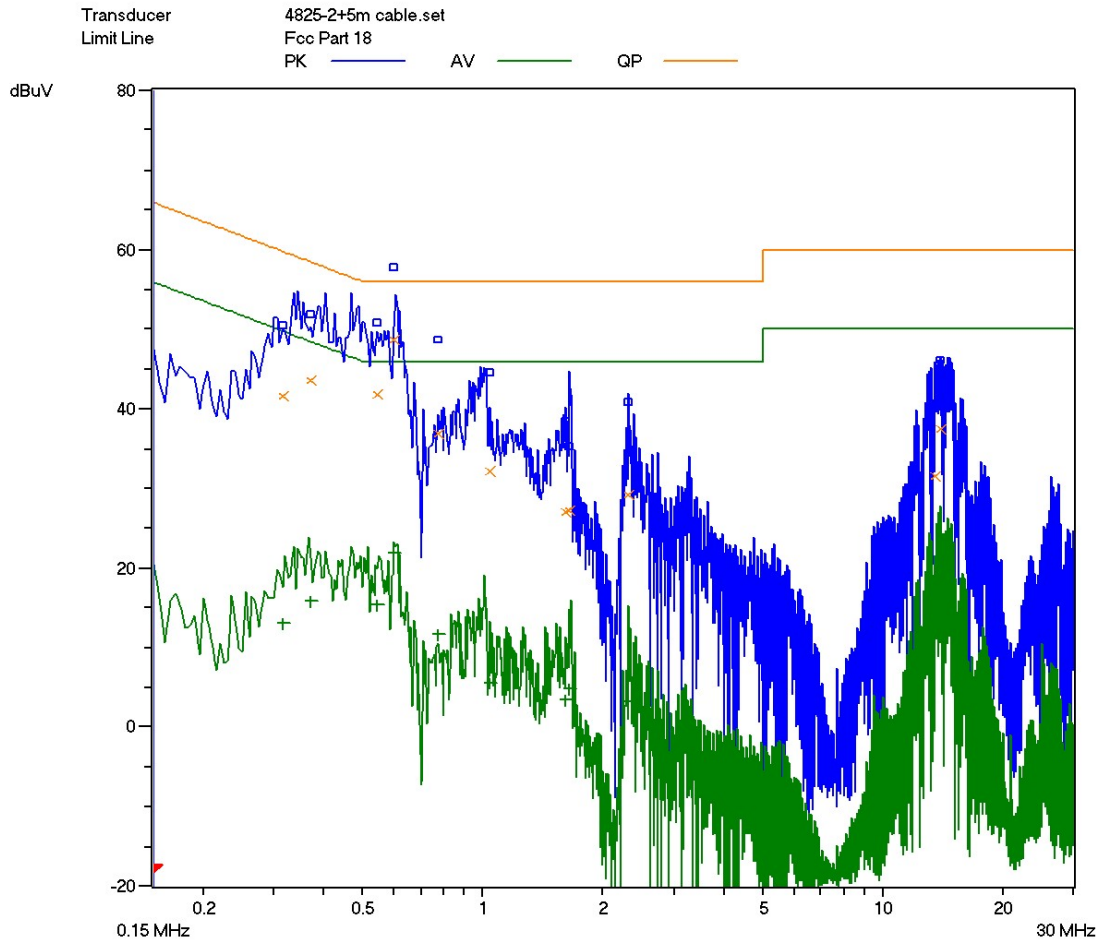
**Operating Frequency Test Set-up**

## ATTACHMENT 5-CONDUCTED EMISSION TEST RESULTS

<b>Client: Guangdong Galanz Enterprises Co Ltd</b>		<b>Test Standard: FCC Part 18</b>
<b>Model Numbers: RED(X)0(Y)H-(Z)</b>		<b>Product: Microwave Oven</b>
<b>Model Tested: RED450E3H-P</b>		<b>EUT Designation: Home or Office</b>
<b>Temperature: 24°C</b>		<b>Humidity: 55%RH</b>
<b>ATM Pressure: 100.9kPa</b>		<b>Grounding: Through AC power cord</b>
<b>Tested By: Bossco He</b>		<b>Date of Test: Aug 16, 2010</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 L by 6.7dBμV of Quasi-peak detector and by 23.9 dBμV of Average detector.	
<b>Changes or Modifications</b>	There were no modifications installed by Galanz test personnel.	
<b>M. Uncertainty</b>	±2.5dB	

Type Microwave Oven  
EUT / Ser.No. RED450E3H-P  
Manufacturer Galanz  
Condition Full Power Of Microwave Mode  
Operator Bossco

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

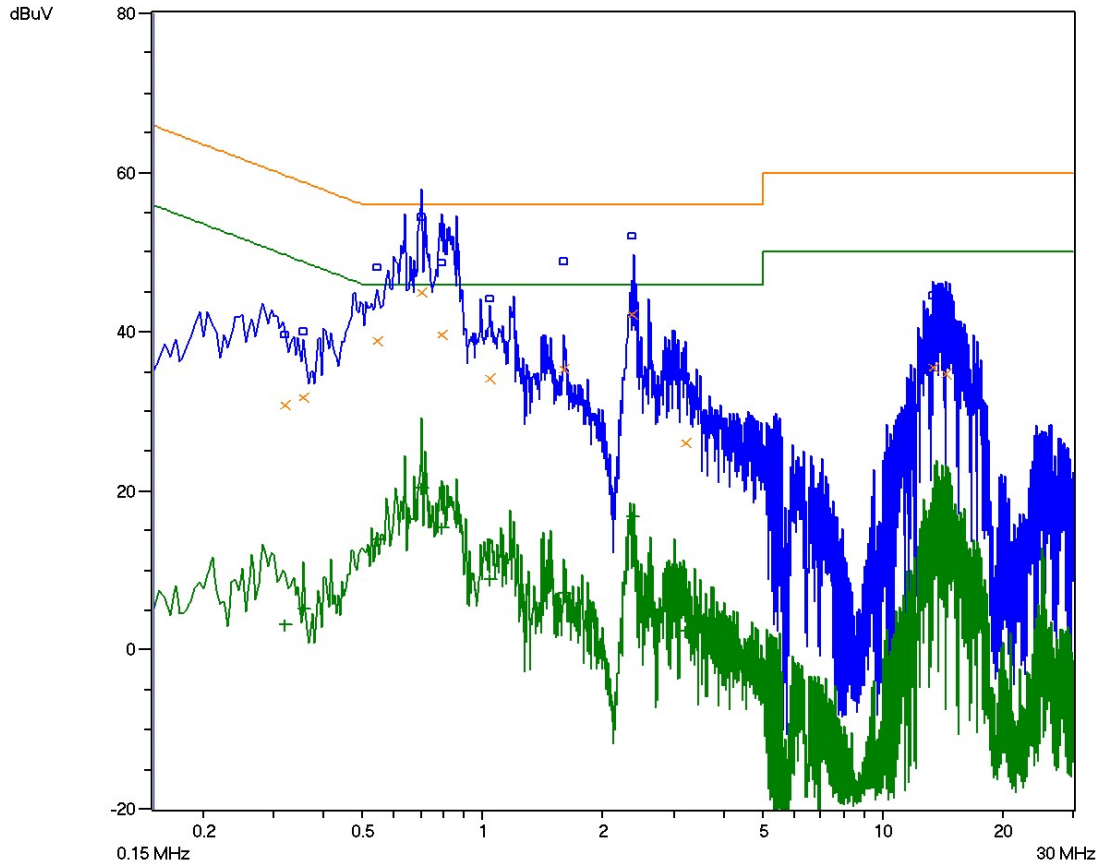


Line L Conducted Emission Graph

Type Microwave Oven  
EUT / Ser.No. RED450E3H-P  
Manufacturer Galanz  
Condition Full Power Of Microwave Mode  
Operator Bossco

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	0.3700	44.6	16.2	58.5	48.5
L	0.5950	49.3	22.1	56.0	46.0
L	13.9850	38.5	16.8	60.0	50.0
N	0.7021	45.8	21.2	56.0	46.0
N	2.3600	43.1	17.4	56.0	46.0
N	13.4210	36.2	11.3	60.0	50.0

## Test Equipment List

Test equipment	Manufacturer	Model	Serial No.	Last Cal.	Cal. Due
EMI Receiver	SCHAFFNER	SMR4503	44	2010-07-08	2011-07-08
LISN	ETS	4825/2	1161	2010-07-08	2011-07-08
Shielding Room	ETS	N/A	N/A	2010-05-18	2011-05-18

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

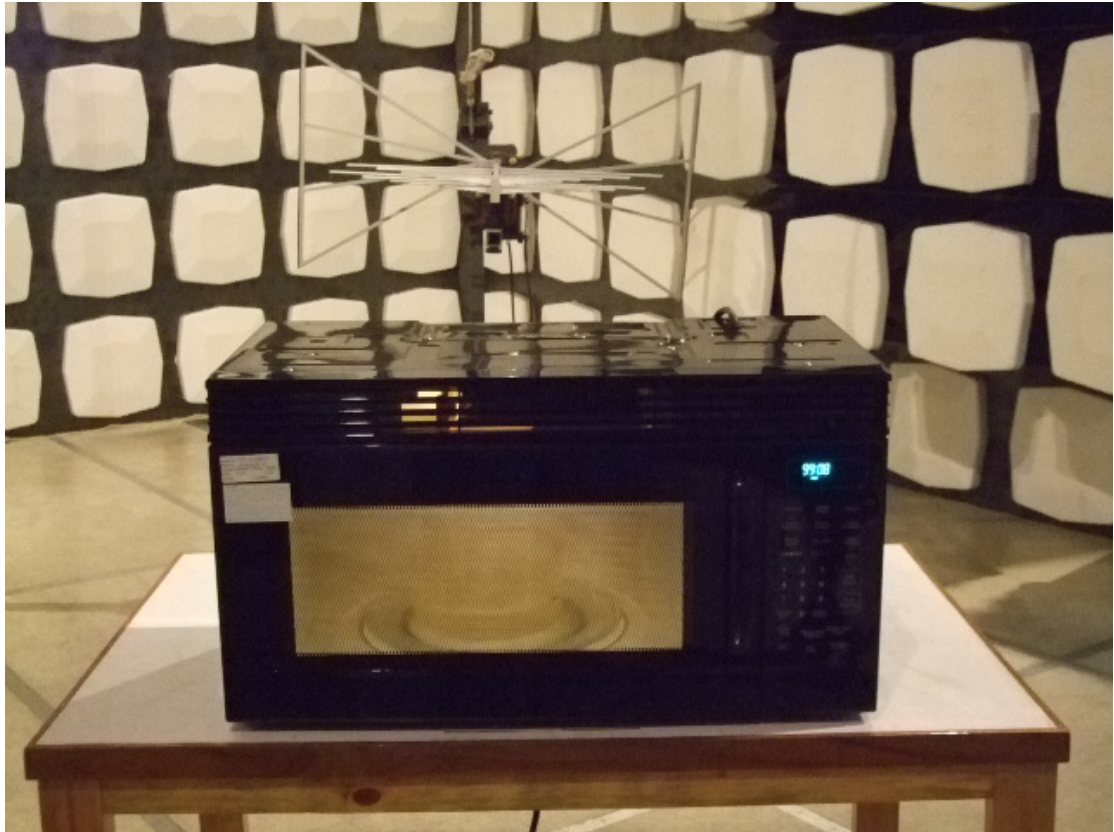
<b>Client: Guangdong Galanz Enterprises Co Ltd</b>	<b>Test Standard: FCC Part 18</b>
<b>Model Numbers: RED(X)0(Y)H-(Z)</b>	<b>Product: Microwave Oven</b>
<b>Model Tested: RED450E3H-P</b>	<b>EUT Designation: Home or Office</b>
<b>Temperature: 24°C</b>	<b>Humidity: 52%RH</b>
<b>ATM Pressure: 100.9kPa</b>	<b>Grounding: Through AC power cord</b>
<b>Tested By: Bossco He</b>	<b>Date of Test: Aug 12,2010</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 1m*1.5m 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          Where: FS = Field Strength          RA = Receiver Amplitude          AF = Antenna Factor          CF = Cable Attenuation Factor          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 Horizontal polarization by 12.20dBuV/m of Average detector at 14.70004GHz
<b>Changes or Modifications</b>	There were no modifications installed by Galanz test personnel.
<b>M. Uncertainty</b>	±3.2dB

## Test Data

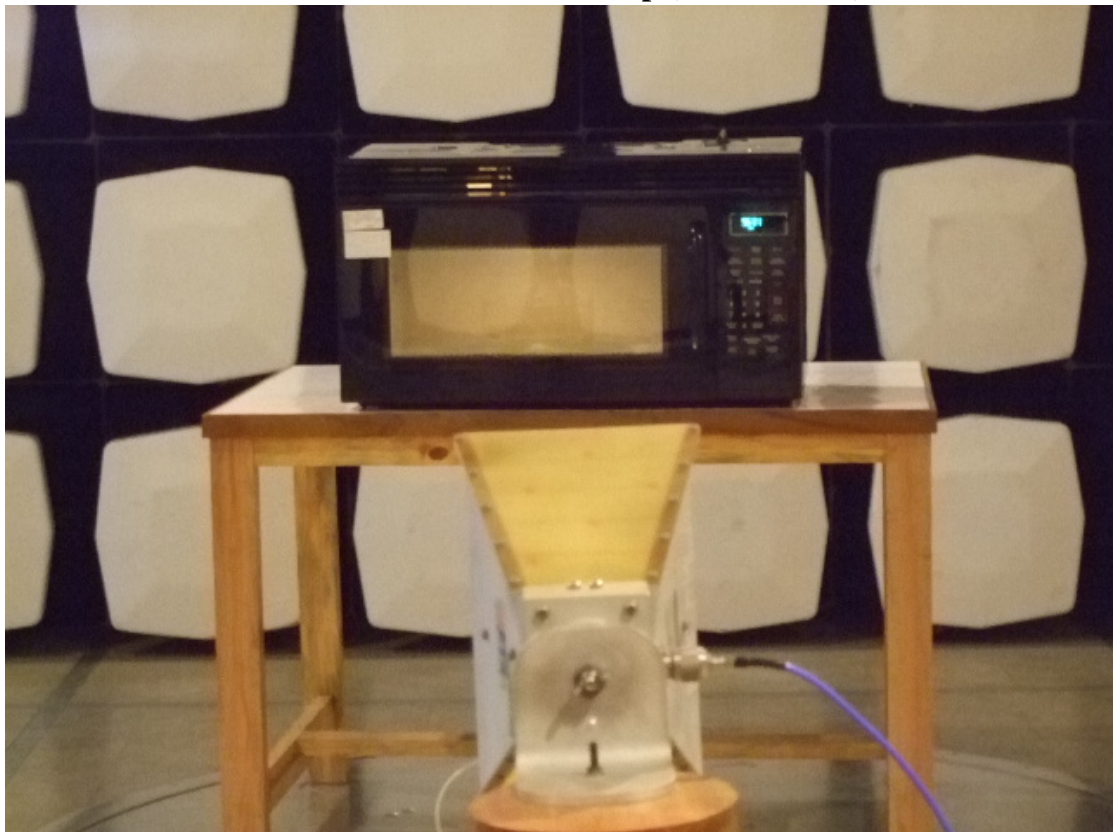
<b>30MHz-1GHz</b>				
<b>Frequency (MHz)</b>	<b>Antenna Polarization (V/H)</b>	<b>Corrected QP reading (dBμV/m)</b>	<b>Delta QP (dB)</b>	<b>3 Meters Limits (dBμV/m)</b>
67.7980	V	38.6	32.0	70.6
250.2220	V	24.7	45.9	70.6
327.0100	V	26.4	44.2	70.6
68.1820	H	31.5	39.1	70.6
246.3820	H	26.3	44.3	70.6
322.3780	H	24.8	45.8	70.6
<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>Corrected AV reading (dBμV/m)</b>	<b>Delta AV (dB)</b>	<b>3 Meters Limits (dBμV/m)</b>
2.19420	V	27.19	43.41	70.6
4.89012	V	45.06	25.54	70.6
7.36056	V	48.58	22.02	70.6
2.19016	H	28.11	42.49	70.6
4.87964	H	42.67	27.93	70.6
14.70004	H	58.40	12.20	70.6
<b>Comment: None</b>				
<b>Note: All reading are average unless stated otherwise, using PK detector RBW=1MHz,VBW=10Hz</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>
Broadband Antenna	ETS	3142C	00042672	2008-09-26	2010-09-26
Horn Antenna	ETS	3115	6587	2010-08-02	2012-08-02
Band-pass Filter	Micro-Tronic	BRM50702	S/N-030	2009-11-30	2010-11-30
EMI Receiver	SCHAFFNER	SMR4503	44	2010-07-08	2011-07-08
Spectrum Analyzer	R&S	FSP30	100755	2009-11-30	2010-11-30
3m Anechoic chamber	ETS	N/A	N/A	2009-05-23	2011-05-23
<p>Note: All testing were performed using internationally recognized standard. All test instruments were calibrated and traceable to the National Institute of Standards and Technology.</p>					



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



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

**The End**