## FCC CFR47 PART 18 SUBPART C

## **ISM EQUIPMENT**

## **TEST REPORT**

## FOR

## **MICROWAVE OVEN**

Model: SED450XH-XXX Series (Testing case: SED450E3H-PA0C)

Magnetron Model: TOSHIBA, 2M248J(JT)

**Brand Name: Galanz** 

Test Report No.: 08CA1053-01

FCC ID: UHW10045001

**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: Vegia Huang

**Reviewed By: Yanhan Lu** 

QC Manager: Valley.Wang

TO A

Name

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

07/25/2008 Date

# List Attached Files

Exhibit Type	File Description	File Name
		UHW10045001
Test report	Test report	-Test report .pdf
		UHW10045001
<b>Operation Description</b>	<b>Operation Description</b>	-operationdescription .pdf
		UHW10045001
<b>External Photos</b>	<b>External Photos</b>	-external photos
		UHW10045001
<b>Internal Photos</b>	<b>Internal Photos</b>	-Internal photos
		UHW10045001
Block Diagram	<b>Block Diagram</b>	-block diagram.pdf
		UHW10045001
Schematics	Schematics	-schematics.pdf
		UHW10045001
ID Label/ Location	<b>ID Label/ Location</b>	-label & location.pdf
		UHW10045001
User Manual	User Manual	-user manual .pdf
		UHW10045001
Test setup Photos	Test setup Photos	-test setup photos

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## **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 ATC-Lab Guangdong Group, 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	SED450XH-XXX
<b>Model Tested</b>	SED450E3H-PA0C
Brand Name	Galanz
<b>Date Tested</b>	July 18, 2008
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 SED450E3H-PA0C0A (referred to the EUT in this report ) is a Microwave Oven .

Specifications:	
Power consumption	120Vac 60Hz, 1450W
Output	1000W
<b>Operation frequency</b>	2450Hz
Magnetron brand	TOSHIBA
Magnetron number	2M248J(JT)
Outside dimensions(HxWxD)	31.0*15.6*16.8 in.
Cavity dimensions(HxWxD)	20.9*14.0*11.0 in.
Capacity	0.95 cu.ft
Cooking uniformity	Turntable System (Φ12.8")
Net weight	Approx.59.5lb.

## **Type of Deriver**

**SED450XH-PA0C model designations:** 

X may be E3, J6, J7 S: Model only with Microwave functions E: denotes the electrical control model D: denotes the code of capacity 45: denote capacity in 45 liters 0: denotes the output power is different, 1000W H: is handle pull out type door P: denotes the material of oven cavity, paint A: after P is the code of requirement in environment protect 0: before C is no special mode C: denotes install method E3, J6, J7: denote the appearance change.

## **Test Summary**

EMC LABORATORYREPORT NO: 08CA1053-01Page 6GUANGDONG ATC-LAB CO., LTD. 528305205# YINGFENG BUILDING RONGGUI RD RONGGUI SHUNDE FOSHAN GUANGDONG CHINATE: 86-757-28375537, FAX: 86-757-28375535This report shall not be reproduced except in full, without the written approval of ATC-Lab.

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The Electromagnetic Compatibility Requirements tested on model SED450E3H-PA0C0A 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

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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

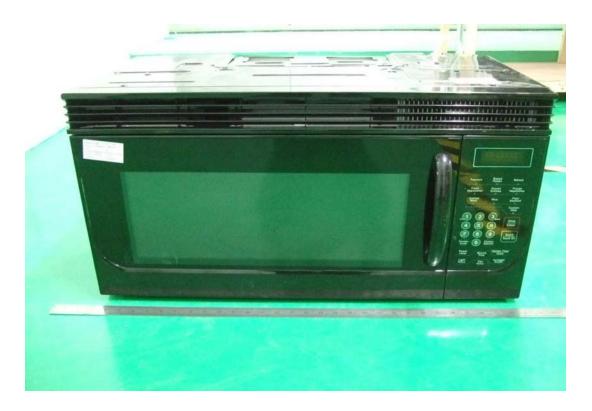
## **Equipment Modification**

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

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## Front and top view



## Door open view

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**Rear View of EUT** 



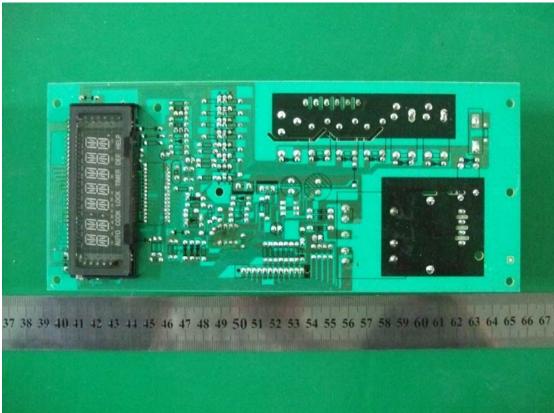
## Uncovered View from right side

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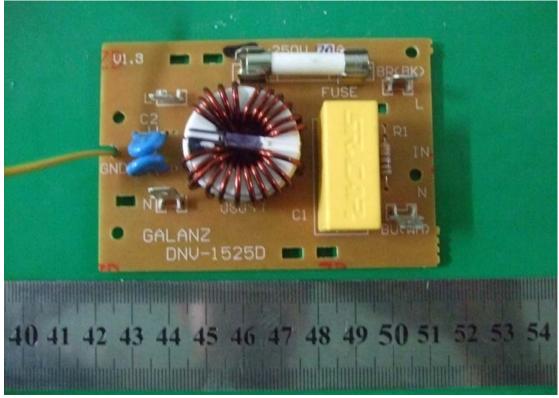
Front view of Main board



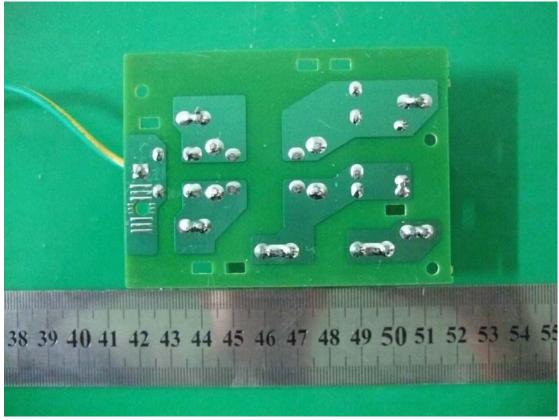
Back view of Main board

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Front View of AC power filter board



## Back of View AC power filter board

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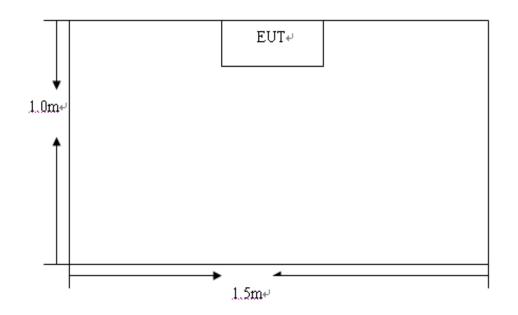
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# Test System Details

EUT					
Model Numbers	SED45	OXH-XXX			
Model tested	SED45	0E3H-PA0	С		
Description	Microw	vave Oven			
Manufacturer	Guange	dong Galai	nz Enterprises (	Co., Ltd	
	Support Equipment				
	N/A				
		Cabl	e Description		
Description	From	From To Length Shielded Ferrite			
	Meters Y/N Y/N				
Power cord	EUT	Plug	1.01	Ν	Ν

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# **Configuration of Tested System**



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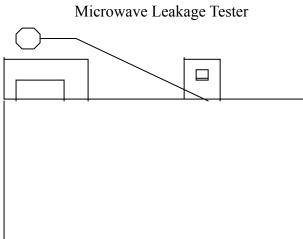
# ATTACHMENT 1-RADIATION HAZARD TEST

Client: Guangdong Galanz Enterprises Co Ltd		-	
Model Numbers: SED450XH-XXX		Product: Microwave Oven	
Model Tested: SED4	50E3H-PA0C	EUT Designation: Home or Office	
Temperature: 23℃		Humidity: 52%RH	
ATM Pressure: 104k	xPa	Grounding: Through AC power cord	
Tested By: Vegia Hu	ang	Date of Test: July 18, 2008	
Test Reference		CC/OST MP-5:1986	
Test Procedure	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		
Tested Range	N/A		
Test Voltage	120VAC/60Hz		
Results	There was no microwave leakage exceeding a power level of $0.72 \text{ mW/cm}^2$ observed at any point 5cm or more from the external surface of the oven.		
	A maximum of $1.0 \text{ mW/cm}^2$ 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.		
	The test results relate only to the equipment under test provided by client.		
Changes or Modifications	There were no modifica	tions installed by Galanz test personnel	
M. Uncertainty	0.0001 mW/cm <sup>2</sup>		

## **Test Equipment List**

Test	Manufacturer	Model	Serial No.	Last Cal.	Cal. Due
Equipment					
Field Monitor	ETS	AR FM5004	A0304252	2008-01-22	2009-01-21
Electric Field	ETS	AR FP6001	A0304302	2008-01-22	2009-01-21
probe					
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**





**Radiation Hazard Test Setup** 

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# ATTACHMENT 2-INPUT POWER MEASUREMENT

Client: Guangdong Galanz Enterprises Co Ltd		Test Standard: FCC Part 18	
Model Numbers: Sl	ED450XH-XXX	Product: Microwave Oven	
Model Tested: SED	450E3H-PA0C	EUT Designation: Home or Office	
Temperature: 23°C		Humidity: 52%RH	
ATM Pressure: 104	kPa	Grounding: Through AC power cord	
Tested By: Vegia H	uang	Date of Test: July 18, 2008	
Test Reference	ANSI C63.4: 2003 , FC	C/OST MP-5:1986	
Test Procedure	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.		
Tested Range	N/A		
Test Voltage	120VAC/60Hz		
Results	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		
Changes or Modifications	There were no modifications installed by Galanz test personnel		
M. Uncertainty	±5W		

## **Test Data**

Input Voltage	Input Current	Measured Input	Rated input
Vac/Hz	amps	power(watt)	power( watt )
120V/60Hz	13.23	1588	1450

## **Test Equipment List**

Test	Manufacturer	Model	Serial No.	Last Cal.	Cal. Due
equipment					
Power frequency test system	Ainuo	AN8716PX	058704273	2008-07-06	2009-07-06
Note: All testing were performed using internationally recognized standard. All test instruments					
were calibrated	were calibrated and traceable to the National Institute of Standards and Technology.				

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**Input Power Test Setup** 

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# ATTACHMENT 3-RF OUTPUT POWER MEASUREMENT

Client: Guangdong Galanz Enterprises Co Ltd		Test Standard: FCC Part 18	
Model Numbers: S	SED450XH-XXX	Product: Microwave Oven	
Model Tested: SEI	D450E3H-PA0C	EUT Designation: Home or Office	
Temperature: 23°C	2	Humidity: 53%RH	
ATM Pressure: 10	4kPa	Grounding: Through AC power cord	
Tested By: Vegia H	luang	Date of Test: July 18, 2008	
Test Reference	ANSI C63.4: 2003 , FC	C/OST MP-5:1986	
Test Procedure	<ul> <li>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.</li> <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> </ul>		
Tested Range	RF Output Power (W) = 4.2 x 1000 x (Final Temp – Initial Temp) / 120         N/A		
Test Voltage	120VAC/60Hz		
Results	RF output power =903.91W The test results relate only to the equipment under test provided by client		
Changes or Modifications	There were no modifications installed by Galanz test personnel.		
M. Uncertainty	±0.3°C		

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## **Test Data**

Quality	of	Starting	Final	Elapsed time	RF output
water(ml)		temperature(℃)	temperature(℃)	(seconds)	power(watt)
1000		18	43.9	120	903.91

## **Test Equipment List**

Test	Manufacturer	Manufacturer Model Serial No. Last Cal. Cal. Due				
equipment						
Data         TES         TES-1310         021108782         2008-04-04         2009-04-04           Acquisition         Image: Compare the second secon						
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** 

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# ATTACHMENT 4-OPERATING FREQUENCY MEASUREMENT

Model Numbers: SED450XH-XXXProduct: Microwave OvenModel Tested: SED450E3H-PA0CEUT Designation: Home or OfficeTemperature: 25°CHumidity: 53%RHATM Pressure: 105kPaGrounding: Through AC power coTested By: Vegia HuangDate of Test: July 18, 2008Test ReferenceANSI C63.4: 2003 , FCC/OST MP-5:1986Test ProcedureThe EUT was set up according to the FCC MP-5 and 18 for Op Frequency measurement1) The Variation of frequency with timeThe operating frequency was measured using a spectrum an starting with EUT at room temperature, a 1000ml water load in a b was located in the center of the oven, set a spectrum analyze antenna at 3 meters distance from the oven and oven was oper maximum output power, The fundamental operating frequency monitored until the water load was reduced to 20 percent of the o load.2) The variation of frequency with Line Voltage. The operating frequency was measured using a spectrum analyze EUT was operated/ warmed by at least 10 minutes of use with a 1 water load at room temperature at the beginning of the test. Th	Client: Guangdong Galanz Enterprises Co Ltd		Test Standard: FCC Part 18	
Temperature: 25°C       Humidity: 53%RH         ATM Pressure: 105kPa       Grounding: Through AC power comparison of the procession of		SED450XH-XXX	Product: Microwave Oven	
ATM Pressure: 105kPa       Grounding: Through AC power comparison of the second s	Model Tested: SEI	D450E3H-PA0C	EUT Designation: Home or Office	
Tested By: Vegia Huang       Date of Test: July 18, 2008         Test Reference       ANSI C63.4: 2003, FCC/OST MP-5:1986         Test Procedure       The EUT was set up according to the FCC MP-5 and 18 for Op Frequency measurement         1)       The Variation of frequency with time         The operating frequency was measured using a spectrum an starting with EUT at room temperature, a 1000ml water load in a b was located in the center of the oven, set a spectrum analyze antenna at 3 meters distance from the oven and oven was oper maximum output power, The fundamental operating frequency monitored until the water load was reduced to 20 percent of the or load.         2)       The variation of frequency was measured using a spectrum analyze EUT was operated/ warmed by at least 10 minutes of use with a 1 water load at room temperature at the beginning of the test. Th operating frequency was monitored as the input voltage varied between 80 and 125 percent of the nominal rating         Test Voltage       120VAC/60Hz         Results       Refer to following pages for details of the variation in op frequency with time & line voltage measurement         Changes or Modifications       There were no modifications installed by Galanz test personnel.	Temperature: 25°C	2	Humidity: 53%RH	
Test Reference       ANSI C63.4: 2003 , FCC/OST MP-5:1986         Test Procedure       The EUT was set up according to the FCC MP-5 and 18 for Op Frequency measurement         1)       The Variation of frequency with time         The operating frequency was measured using a spectrum and starting with EUT at room temperature, a 1000ml water load in a b was located in the center of the oven, set a spectrum analyze antenna at 3 meters distance from the oven and oven was oper maximum output power, The fundamental operating frequence monitored until the water load was reduced to 20 percent of the or load.         2)       The variation of frequency with Line Voltage.         The operating frequency was measured using a spectrum analyze auter load at room temperature at the beginning of the test. The operating frequency was monitored as the input voltage varied between 80 and 125 percent of the nominal rating         Tested Range       120VAC/60Hz         Results       Refer to following pages for details of the variation in op frequency with time & line voltage measurement         There were no modifications installed by Galanz test personnel.	ATM Pressure: 10	5kPa	Grounding: Through AC power cord	
Test ProcedureThe EUT was set up according to the FCC MP-5 and 18 for Op Frequency measurement 1) The Variation of frequency with time The operating frequency was measured using a spectrum an 	Tested By: Vegia H	luang	Date of Test: July 18, 2008	
Frequency measurement1) The Variation of frequency with timeThe operating frequency was measured using a spectrum and starting with EUT at room temperature, a 1000ml water load in a b was located in the center of the oven, set a spectrum analyze antenna at 3 meters distance from the oven and oven was oper maximum output power, The fundamental operating frequency monitored until the water load was reduced to 20 percent of the o load.2) The variation of frequency with Line Voltage. The operating frequency was measured using a spectrum analyze EUT was operated/ warmed by at least 10 minutes of use with a 1 water load at room temperature at the beginning of the test. The operating frequency was monitored as the input voltage varied between 80 and 125 percent of the nominal ratingTested Range2450±50MHzResultsRefer to following pages for details of the variation in op frequency with time & line voltage measurementChanges or ModificationsThere were no modifications installed by Galanz test personnel.	Test Reference	ANSI C63.4: 2003 , FC	C/OST MP-5:1986	
Test Voltage       120VAC/60Hz         Results       Refer to following pages for details of the variation in op frequency with time & line voltage measurement         Changes or Modifications       There were no modifications installed by Galanz test personnel.		<ol> <li>The Variation of frequency with time</li> <li>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.</li> <li>The variation of frequency with Line Voltage.</li> <li>The variation of 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</li> </ol>		
Results       Refer to following pages for details of the variation in op frequency with time & line voltage measurement         Changes or Modifications       There were no modifications installed by Galanz test personnel.	Tested Range	2450±50MHz		
frequency with time & line voltage measurement         Changes or         Modifications	Test Voltage	120VAC/60Hz		
	Changes or	frequency with time &	line voltage measurement	
		Freq.±10kHz		

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## Variation in Operating Frequency with Time

Minimum Frequency(MHz)	Maximum Frequency(MHz)	
2418.6	2477.4	

## Variation in Operating Frequency with Line Voltage

Minimum Frequency(MHz)	Maximum Frequency(MHz)			
2421.6	2474.8			
Note: Line voltage varied from 96Vac to 150Vac				

## **Test Equipment List**

Test	Manufacturer	Model	Serial No.	Last Cal.	Cal. Due		
equipment							
Horn Antenna	ETS	3115	6587	2007-08-03	2008-08-03		
Spectrum         R&S         FSP30         100755         2007-11-30         2008-11-30							
3m Anechoic chamberETSN/AN/A2007-05-232009-05-23							
	ng were performed and traceable to the	e	, e				



**Operating Frequency Test Set-up** 

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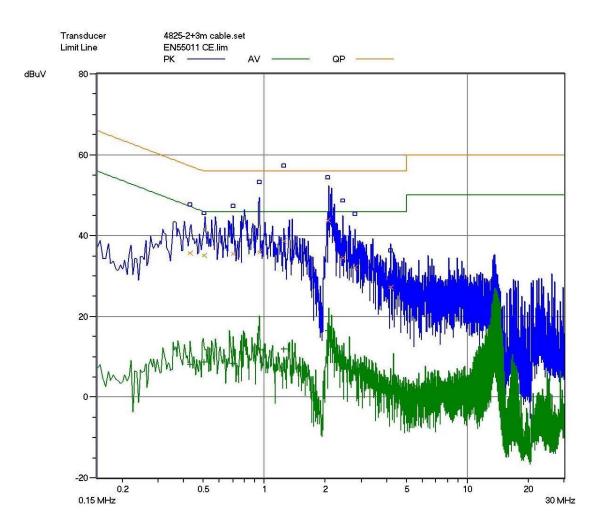
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# ATTACHMENT 5-CONDUCTED EMISSION TEST RESULTS

Client: Guangdong Galanz Enterprises Co Ltd		Test Standard: FCC Part 18	
Model Numbers: S	ED450XH-XXX	Product: Microwave Oven	
Model Tested: SED	0450E3H-PA0C	EUT Designation: Home or Office	
Temperature: 25°C		Humidity: 53%RH	
ATM Pressure: 105	5kPa	Grounding: Through AC power cord	
Tested By: Vegia H	uang	Date of Test: July 18, 2008	
Test Reference	ANSI C63.4: 2003 , FC	C/OST MP-5:1986	
Test Procedure	FCC MP-5 for conduct on each line and an EM measurement range, th and these signals were	ccording to the guideline of ANSI C63.4:2003 & ed emission, The measurement was using a AMN /II receiver peak scan was made at the frequency e six highest significant peak were then marked , then quasi peaked and averaged. The frequency from 150kHz to 30MHz	
Tested Range	150kHz to 30MHz		
Test Voltage	120VAC/60Hz		
Results	The EUT meets the requirements of test reference for conducted Emission on line L by 6.7dB of Quasi-peak detector and by 24.7 dB of Average detector.		
Changes or Modifications	There were no modifications installed by Galanz test personnel.		
M. Uncertainty	±2.5dB		



Туре		Microwave Oven	
EUT / Ser.No.			
Manufacturer		Galanz	
Condition		Full Power (Microwave Mode)	
Operator		Vegia	
Frequency Rang	je(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	

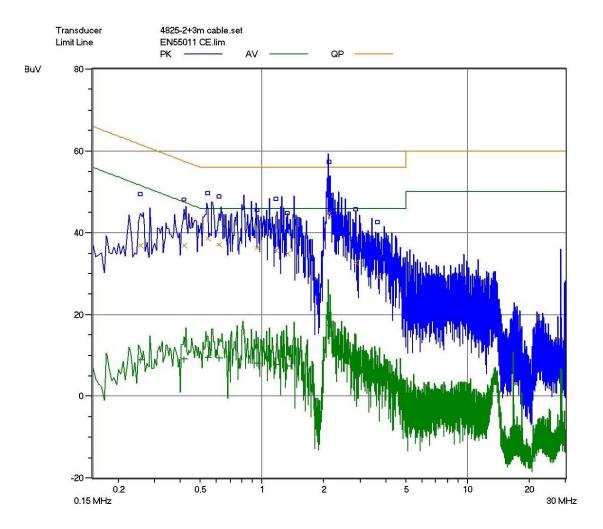


#### Line L Conducted Emission Graph

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#### CE N

Туре		Microwave Oven
EUT / Ser.No.		
Manufacturer		Galanz
Condition		Full Power (Microwave Mode)
Operator		Vegia
Frequency Rang	e(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 N Conducted Emission Graph

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## **Test Data**

Ling	Frequency	Corrected	Corrected	QP limit	AV limit
Line		Reading(QP)	Reading(AV)	dB uV/m	dB uV/m
L	0.4356	39.2	16.5	57.1	47.1
L	0.9476	38.2	9.5	56.0	46.0
L	2.1360	44.2	16.5	56.0	46.0
Ν	0.2550	38.9	10.1	61.6	51.6
Ν	1.1722	38.7	11.1	56.0	46.0
N	2.1138	49.3	21.3	56.0	46.0

# Test Equipment List

Test	Manufacturer	Model	Serial No.	Last Cal.	Cal. Due	
equipment						
EMI Receiver	SCHAFFNER	SMR4503	44	2008-07-08	2009-07-08	
LISN	ETS 4825/2 1161 2008-07-08 2009-07-08					
Shielding RoomETSN/AN/A2008-05-302009-05-30						
Note: All testing were performed using internationally recognized standard. All test instruments						
were calibrated	and traceable to the	National Institu	te of Standards	and Technology.		



**Conducted Emission Test Set-up** 

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# ATTACHMENT 6-RADIATED EMISSION TEST RESULTS

Client: Guangdong Galanz Enterprises		Test Standard: FCC Part 18	
Co Ltd Model Numbers: SED450XH-XXX			
		Product: Microwave Oven	
Model Tested: SED	450E3H-PA0C	EUT Designation: Home or Office	
Temperature: 25℃		Humidity: 54%RH	
ATM Pressure: 105	kPa	Grounding: Through AC power cord	
Tested By: Vegia Hu	uang	Date of Test: July 18, 2008	
Test Reference	ANSI C63.4: 2003 , FC	C/OST MP-5:1986	
Test Procedure	The EUT was set up according to the guidelines of ANSI C63.4: 2003 & 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. An EMI receiver peak scan was made at the frequency measuremen 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. 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 o the Correction Factor are given as follows: FS= RA + AF + CF - AG Where: FS = Field Strength RA = Receiver Amplitude AF = Antenna Factor CF = Cable Attenuation Factor AG = Amplifier Gain		
Tested Range	30MHz to 24.5GHz		
Test Voltage	120VAC/60Hz		
Results	1		
	on Vertical polarization by 21.4dB of Average detector at 4.8926GHz		
Changes or Modifications	There were no modifications installed by Galanz test personnel.		
M. Uncertainty	±3.2dB		

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## **Test Data**

30MHz-1GHz								
Frequency (MHz)	Antenna Polarization (V/H)	Corrected QP reading (dBµV/m)	Delta QP (dB)	3 Meters Limits (dBµV/m)				
53.104	V	22.2	48.3	70.5				
77.404	V	32.0	38.5	70.5				
260.110	V	32.5	38.0	70.5				
68.446	Н	19.5	51.0	70.5				
260.518	Н	32.7	37.8	70.5				
273.118	Н	20.4	50.1	70.5				

Note: All readings are quasi-peak unless stated otherwise, using a bandwidth of 120kHz, with a 30ms sweep time. A video filter was not used.

1GHz-25GHz							
Frequency	Antenna	Corrected AV	Delta AV	3 Meters			
(GHz)	Polarization	reading	(dB) Limits				
	(V/H)	(dBµV/m)		(dBµV/m)			
4.9821	V	47.7	22.8	70.5			
8.5771	V	42.4	28.1	70.5			
9.7111	V	41.7	28.8	70.5			
4.8926	Н	49.1	21.4	70.5			
8.5528	Н	42.3	28.2	70.5			
9.7083	Н	43.2	26.3	70.5			
Comment: None							
Note: All reading are average unless stated otherwise, using a bandwidth of							
1MHz, with a 30 ms sweep time. A video filter was not used.							

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## **Test Equipment List**

Test	Manufacturer	Model	Serial No.	Last Cal.	Cal. Due		
equipment							
Broadband Antenna	ETS	3142C	00042672	2007-09-28	2008-09-28		
Horn Antenna	ETS	3115	6587	2007-08-03	2008-08-03		
Band-pass Filter	Micro-Tronic	BRM50702	S/N-030	2007-11-30	2008-11-30		
EMI Receiver	SCHAFFNER	SMR4503	44	2008-07-08	2009-07-08		
Spectrum Analyzer	R&S	FSP30	100755	2007-11-30	2008-11-30		
3m Anechoic chamber	ETS	N/A	N/A	2007-05-23	2009-05-23		
Note: All testing were performed using internationally recognized standard. All test instruments were calibrated and traceable to the National Institute of Standards and Technology.							

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Radiated Emission Test Setup (30-1000MHz)



Radiated Emission Test Setup (1-25GHz)

## The End

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