## FCC CFR47 PART 18 SUBPART C

## **ISM EQUIPMENT**

#### **TEST REPORT**

## FOR

#### **MICROWAVE OVEN**

Model : D90N30(X)RII(Y) Series (Testing case : D90N30ASLRII-T4)

Magnetron Model: Galanz, M24FB-610A

Brand Name: Galanz

Test Report No: 07A1754-1

FCC ID: UHW9130001

**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: Xiaoming Xu** 

**Reviewed By: yanhan Lu** 

QC Manager: Valley.Wang

 $\overline{\mathbf{A}}$ 

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

<u>09/30/2007</u> Date

Name

## List Attached Files

Exhibit Typy	File Description	File Name
		UHW9130001
Test report	Test report	-Test report .pdf
		UHW9130001
<b>Operation Description</b>	<b>Operation Description</b>	-operationdescription .pdf
		UHW9130001
<b>External Photos</b>	<b>External Photos</b>	-external photos
		UHW9130001
<b>Internal Photos</b>	<b>Internal Photos</b>	-Internal photos
		UHW9130001
Block Diagram	<b>Block Diagram</b>	-block diagram.pdf
		UHW9130001
Schematics	Schematics	-schematics.pdf
		UHW9130001
ID Label/ Location	ID Label/ Location	-label & location.pdf
		UHW9130001
User Manual	User Manual	-user manual .pdf
		UHW9130001
Test setup Photos	<b>Test setup Photos</b>	-test setup photos

Page 1 of 34

#### **Test Location**

Tests performed at Galanz in a certified Ansi Semi-Anechoic Chamber and shielded Roon.

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

# **Table of Contents**

GOVERNMENT DISCLAIMER NOTICE	1
REPRODUCTION CAUSE	1
OPINIONS AND INTERPRETATIONS	1
STATEMENT OF MEASUREMENT UNCERTAINTY	1
ADMINISTRATIVE DATA	2
EUT DESCRIPTION	2
TYPE OF DERIVER	3
TEST SUMMARY	4
LORD FOR MWO	5
EQUIPMENT MODIFICATION	5
EUT SAMPLE PHOTOS FOR MODEL	6
TEST SYSTEM DETAILS	10
CONFIGURATION OF TESTED SYSTEM	11
ATTACHMENT 1- RADIATION HAZARD TEST	12
ATTACHMENT 2-INPUT POWER MEASUREMENT	14
ATTACHMENT 3-RF OUTPUT POWER MEASUREMENT	16
ATTACHMENT 4- OPERATING FREQUENCY MEASUREMENT	18
ATTACHMENT 5-CONDUCTED EMISSION TEST RESULTS	21
ATTACHMENT 6-RADIATED EMISSION TEST RESULTS	25

## **GOVERNMENT DISCLAIMER NOTICE**

When government drawing specification or other data are used for any purpose other than in connection with a definitely related government procurement operation, the United States government thereby incurs no responsibility nor any obligation whatsoever, and the fact that the Government might have formulated, furnished or in any way supplied the said drawing, specification or other data, is not to be regarded implication or otherwise in any manner licensing the holder or any other person or corporation, or conveying any rights to permission to manufacture, use or sell patented invention that may in any way be related thereto. This report must not be used to claim product endorsement by NVLAP or any agency of the U.S. Government.

#### **Reproduction Clause**

Any reproduction of the document must be done in full. No single part of the document may be reproduced without permission from ATC-Lab Guangdong Group. 205# Yingfeng Building, Ronggui China.

#### **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	D90N30(X)RII(Y)
Model Tested	D90N30ASLRII-T4
Brand Name	Galanz
Date Tested	September 28 2007
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 D90N30ASLRII-T4 (refered to the EUT in this report ) is a Microwave Oven .

Specifications:	
Power consumption	120Vac 60Hz, 1500W (Microwave )
Output	900W
Operation frequency	2450Hz
Magnetron brand	Galanz
Magnetron number	M24FB-610A
Outside dimensions(HxWxD)	11.9*19.8*12.9 in.
Cavity dimensions(HxWxD)	8.4*13.7*12.9 in.
Capacity	1.1 cu.ft
Cooking uniformity	Turntable System (Ф12")
Net weight	Approx.34.4lb.

## **Type of Deriver**

D90N30(X)RII(Y) model designations:

X may be ASL, ESL
Y may be T4,TL4
D: Model with the grill function
90: denote the output power is different, 900W
30: denote capacity in 30 liters
A or E denote the electrical control model.
T2 denote the appearance change .

## **Test Summary**

The Electromagnet Competibility requirement on Model tested\_D90N30ASLRII-T4 for 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 by 0.0028mW/cm	EUP	Attachment 1
FCC Part 18:2004 FCC/OST MP-5:1986 ANSI C63.4:2003	In put power measurement	Refer to Attachment2	EUT	Attachment 2
FCC Part 18:2004 FCC/OST MP-5:1986 ANSI C63.4:2003	RF output power Measurement	Refer to Attachments	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	Passedby12.5dB of QPPassedby20.7 dB of AVE	AC Input port	Attachment 5
FCC Part 18:2004 FCC/OST MP-5:1986 ANSI C63.4:2003	Radiated Emission	Passed by 22.8db of AVE	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 tag 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 fro 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

Page 8 of 34

# EUT Sample Photos for model



Front and top view



Door open view

EMC LABORATORY REPORT NO: 07A1754-1 GUANGDONG ATC-LAB CO., LTD. 528305 205# YINGFENG BUILDING RONGGUI RD RONGGUI SHUNDE FOSHAN GUANGDONG CHINA TEL:86-757-28375537, FAX: 86-757-28375535 This report shall not be reproduced except in full, without the written approval of ATC-Lab.

Page 9 of 34



**Rear View of EUT** 

**Door Opened View** 



Uncovered View from right side

EMC LABORATORY REPORT NO: 07A1754-1 GUANGDONG ATC-LAB CO., LTD. 528305 205# YINGFENG BUILDING RONGGUI RD RONGGUI SHUNDE FOSHAN GUANGDONG CHINA TEL:86-757-28375537, FAX: 86-757-28375535 This report shall not be reproduced except in full, without the written approval of ATC-Lab.

Page 10 of 34



Front view of Mainboard



**Back view of Mainboard** 

EMC LABORATORY REPORT NO: 07A1754-1 GUANGDONG ATC-LAB CO., LTD. 528305 205# YINGFENG BUILDING RONGGUI RD RONGGUI SHUNDE FOSHAN GUANGDONG CHINA TEL:86-757-28375537, FAX: 86-757-28375535 This report shall not be reproduced except in full, without the written approval of ATC-Lab.

Page 11 of 34



Front View of AC power filter board



EMC LABORATORY REPORT NO: 07A1754-1 GUANGDONG ATC-LAB CO.,LTD. 528305 205# YINGFENG BUILDING RONGGUI RD RONGGUI SHUNDE FOSHAN GUANGDONG CHINA TEL:86-757-28375537, FAX: 86-757-28375535 This report shall not be reproduced except in full, without the written approval of ATC-Lab.

Page 12 of 34

#### Back of View AC power filter board

# **Test System Details**

EUT					
Model Numbers	D90N30	(X)RII(Y)			
Model tested	D90N30	ASLRII-T4			
Description	Microw	ave Oven			
Manufacturer	Guange	long Galanz E	nterprises Co	.,Ltd	
Support Equipment					
N/A					
	Cable Description				
Description	From To Length Shielded Ferrite				Ferrite
	Meters Y/N Y/N				
Power cord	EUT	Plug	1.20	Ν	N

# **Configuration of Tested System**



EMC LABORATORYREPORT NO: 07A1754-1Page 14 of 34GUANGDONG ATC-LAB CO.,LTD. 528305205# YINGFENG BUILDING RONGGUI RD RONGGUI SHUNDE FOSHAN GUANGDONG CHINATEL:86-757-28375537, FAX: 86-757-28375535This report shall not be reproduced except in full , without the written approval of ATC-Lab.

## ATTACHMENT 1-RADIATION HAZARD TEST

Client: Guangdong Galanz Enterprises Co Ltd		Test Standard: FCC Part 18	
Model Numbers: D90N30(X)RII(Y)		Product: Microwave Oven	
Model Tested: D90N	N30ASLRII-T4	EUT Designation: Hone or Office	
Temperature: 22°C		Humidity: 55%RH	
ATM Pressure: 101	kPa	Grounding: Through AC power cord	
<b>Tested By: Xiaomin</b>	g Xu	Date of Test; 2007, September 28th	
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 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 0.0028 mW/cm <sup>2</sup> observed at any point 5cm or more from the external surface of the oven. A maximum of 1.0mW/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. The test results relate only to the equipment under test provided by client.		
Changes or Modifications	There were no modifications installed by EMC Compliance Management Group (China) test personnel.		
M.Uncertainty	0.0001 mW/cm²		

EMC LABORATORYREPORT NO: 07A1754-1Page 15 of 34GUANGDONG ATC-LAB CO.,LTD. 528305205# YINGFENG BUILDING RONGGUI RD RONGGUI SHUNDE FOSHAN GUANGDONG CHINATEL:86-757-28375537, FAX: 86-757-28375535This report shall not be reproduced except in full , without the written approval of ATC-Lab.

## **Test Equipment List**

Test	Manufacturer	Model	Serial No.	Last Cal.	Cal. Due
Equipment					
Field	AR FM5004	A0304252	A0304252	24/06/07	24/06/08
Monitor					
Electric	AR FP6001	A0304302	A0304302	24/06/07	24/06/08
Fieldprober					
Note: All testing were performed using internationally recognized standard. All test instrument					
were calibrated and traceable to the National Institute of Standards and Technology.					

## **Radiation Hazard Test Set-up**



## ATTACHMENT 2-INPUT POWER MEASUREMENT

Client: Guangdong Galanz Enterprises Co Ltd		Test Standard: FCC Part 18	
Model Numbers: D90N30(X)RII(Y)		Product: Microwave Oven	
Model Tested: D90N	N30ASLRII-T4	EUT Designation: Hone or Office	
Temperature: 22°C		Humidity: 55%RH	
ATM Pressure: 101	kPa	Grounding: Through AC power cord	
Tested By: Xiaomin	ıg Xu	Date of Test; 2007, September 28th	
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 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 ampmeter 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	11.83	1428	1450

## **Test Equipment List**

Test	Manufacturer	Model	Serial No.	Last Cal.	Cal. Due
equipment					
Power	Ainuo	AN8716PX	058704273	07/12/07	07/12/08
frequency					
test system					
Note: All testing were performed using internationally recognized standard. All test instrument					
were calibrated and traceable to the National Institute of Standards and Technology.					



**Input Power Test Setup** 

EMC LABORATORY REPORT NO: 07A1754-1 GUANGDONG ATC-LAB CO.,LTD. 528305 205# YINGFENG BUILDING RONGGUI RD RONGGUI SHUNDE FOSHAN GUANGDONG CHINA TEL:86-757-28375537, FAX: 86-757-28375535 This report shall not be reproduced except in full, without the written approval of ATC-Lab.

Page 19 of 34

## ATTACHMENT 3-RF OUTPUT POWER MEASUREMENT

Client: Guangdong Galanz Enterprises Co Ltd		Test Standard: FCC Part 18	
Model Numbers: D90N30(X)RII(Y)		Product: Microwave Oven	
Model Tested: D90N	N30ASLRII-T4	EUT Designation: Hone or Office	
Temperature: 22℃		Humidity: 55%RH	
ATM Pressure: 101	kPa	Grounding: Through AC power cord	
Tested By: Xiaomin	g Xu	Date of Test; 2007, September 28th	
Test Reference	ANSI C63.4: 2003,	FCC/OST MP-5:1986	
	<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> <li>RF Output Power (W) = 4.2 x 1000 x (Final Temp – Initial Temp) / 120</li> </ul>		
Tested Range	N/A		
Test Voltage	120VAC/60Hz		
Results	RF output power =	756W	
	The test results re	elate only to the equipment under test	
	provided by client		
Changes or	There were no n	nodifications installed by Galanz test	
M Uncertainty	personnel.		
	± <b>0.3</b> C		

EMC LABORATORYREPORT NO: 07A1754-1Page 20 of 34GUANGDONG ATC-LAB CO.,LTD. 528305205# YINGFENG BUILDING RONGGUI RD RONGGUI SHUNDE FOSHAN GUANGDONG CHINATEL:86-757-28375537, FAX: 86-757-28375535This report shall not be reproduced except in full , without the written approval of ATC-Lab.

#### **Test Data**

Quality	of	Starting	Final	Elapsed time	RF output
water(ml)		temperature	temperature	(seconds)	power(watt)
1000		18.1	39.7	120	756

## **Test Equipment List**

Test	Manufacturer	Model	Serial No.	Last Cal.	Cal. Due
equipment					
Data	TES	TES-1310	021108782	2007-04-04	2008-04-04
Acquisition					
Note: All testing were performed using internationally recognised standard. All test instrument					
were calibrated	were calibrated and traceable to the National Institute of Standards and Technology.				



**RF Output Power Test Set-up** 

Page 22 of 34

## ATTACHMENT 4-OPERATING FREQUENCY MEASUREMENT

Client: Guangdong Co Ltd	Galanz Enterprises	Test Standard: FCC Part 18			
Model Numbers: D	90N30(X)RII(Y)	Product: Microwave Oven			
Model Tested: D90N	N30ASLRII-T4	EUT Designation: Hone or Office			
Temperature: 22℃		Humidity: 55%RH			
ATM Pressure: 101	kPa	Grounding: Through AC power cord			
Tested By: Xiaomin	g Xu	Date of Test; 2007, September 28th			
Test Reference	ANSI C63.4: 2003,	FCC/OST MP-5:1986			
Test Procedure	<ul> <li>The EUT was set up Operating Frequence</li> <li>1) The Variation of frequency was at room temperature, a 100 the oven ,set a spectrum and and oven was operated at frequency was monitored original load.</li> <li>2) The variation of the The operating frequency was operated/warmed by load at room temperatur operating frequency varied between 80 at</li> </ul>	p according to the FCC MP-5 and 18 for cy measurement ency with time as measured using a spectrum analyzer, starting with EUT Oml water load in a breaker was located in the center of nalyzer with antenna at 3 meters distance from the oven maximum output power, The fundamental operating until the water load was reduced to 20 percent of the <b>Frequency with Line Voltage.</b> Was measured using a spectrum analyzer. The EUT at least 10 minutes of use with a 1000ml water re at the beginning of the test. Then the was monitored as the input voltage was and 125 percent of the norminal rating			
Tested Range	2450 ± 50MHz				
Test Voltage	120VAC/60Hz				
Results	Refer to following pages for details of the variation in				
Changes	operating frequency with time & line voltage measurement				
Modifications	narsonal	ounications instance by Galanz lest			
M.Uncertainty	Freq.±10kHz				

EMC LABORATORY REPORT NO: 07A1754-1 GUANGDONG ATC-LAB CO.,LTD. 528305 205# YINGFENG BUILDING RONGGUI RD RONGGUI SHUNDE FOSHAN GUANGDONG CHINA TEL:86-757-28375537, FAX: 86-757-28375535 This report shall not be reproduced except in full, without the written approval of ATC-Lab.

Page 23 of 34

#### Variation in Operating Frequency with Time

Minimum Frequency(MHz	Maximum Frequency(MHz)
2420.8	2482.2

#### Variation in Operating Frequency with Line Voltage

Minimum Frequency(MHz	Maximum Frequency(MHz)			
2420.8	2485.6			
Note: Line voltage varied from 96Vac to 150Vac				

## **Test Equipment List**

Test	Manufacturer	Model	Serial No.	Last Cal.	Cal. Due
equipment					
Vltra Broadband Antenna	ETS	3142C	00042672	2007-07-31	2008-07-31
Horn Antenna	ETS	3115	6587	2007-08-03	2008-08-03
Spectrum Analyzer	R&S	FSP30	100755	2006-12-03	2007-12-03
3M Anechoic chamber         ETS         N/A         N/A         2007-05-23         2008-05-23					
Note: All testing were performed using internationally recognised standard. All test instrument were calibrated and traceable to the National Institute of Standards and Technology.					



**Operating Frequency Test Set-up** 

EMC LABORATORY REPORT NO: 07A1754-1 GUANGDONG ATC-LAB CO.,LTD. 528305 205# YINGFENG BUILDING RONGGUI RD RONGGUI SHUNDE FOSHAN GUANGDONG CHINA TEL:86-757-28375537, FAX: 86-757-28375535 This report shall not be reproduced except in full, without the written approval of ATC-Lab.

Page 25 of 34

## ATTACHMENT 5-CONDUCTED EMISSION TEST RESULTS

Client: Guangdong Co Ltd	Galanz Enterprises	Test Standard: FCC Part 18	
Model Numbers: D	90N30(X)RII(Y)	Product: Microwave Oven	
Model Tested: D90N	N30ASLRII-T4	EUT Designation: Hone or Office	
Temperature: 22℃		Humidity: 55%RH	
ATM Pressure: 101	kPa	Grounding: Through AC power cord	
Tested By: Xiaomin	g Xu	Date of Test; 2007, August 29th	
Test Reference	ANSI C63.4: 2003 , FCC/OST MP-5:1986		
Test Procedure	The EUT was set C63.4:2003 & FC measurement was receiver peak scan range, the six high and these signal s w frequency range inv	up according to the guideline of ANSI C MP-5 for conducted emission, The using a AMN on each line and an EMI was made at the frequency measurement test significant peak were then marked, were then quasipeaked and averaged. The vestigated was rom 150kHz to 30MHz	
Tested Range	150kHz to 30MHz		
Test Voltage	120VAC/60Hz		
Results	The EUT meets t conducted Emissio detector and by 20.	he requirements of test reference for n on line L by 12.5dB of Quasi-peak 7 dB of Average detector.	
Changes or Modifications	There were no modifications installed by Galanz test personnel.		
M.Uncertainty	±2.5dB		

#### conduction emissionn L

#### 8/29/07 10:56:07 AM

Type EUT / Ser.No. Manufacturer Condition Operator Comment		microwave oven D90N30ASLRII-T4 GALANZ FULL POWER SAM ECMG		
Frequency Bang	e(s)	Bange 1	Bange 2	Bange 3
Start Frequency	- (- )	9 kHz	50 kHz	148.5 kHz
Stop Frequency		50 kHz	148.5 kHz	30 MHz
Step Frequency		100 Hz	100 Hz	5 kHz
Attenuator		Auto	Auto	Auto
Detector	(Pre)	P CISPR	P CISPR	AV CISPR
IF Bandwidth	(Pre)	200 Hz	200 Hz	9 kHz
Measure Time	(Pre)	100 ms	20 ms	10 ms
Detector	(Final)	QP	QP	QP
IF Bandwidth	(Final)	200 Hz	200 Hz	9 kHz
Measure Time	(Final)	2 s	1 s	1 s
Sub Ranges	(Final)	2	3	10



## Line L Conducted Emission Graph

Page 27 of 34

EMC LABORATORY REPORT NO: 07A1754-1 GUANGDONG ATC-LAB CO., LTD. 528305 205# YINGFENG BUILDING RONGGUI RD RONGGUI SHUNDE FOSHAN GUANGDONG CHINA TEL:86-757-28375537, FAX: 86-757-28375535 This report shall not be reproduced except in full, without the written approval of ATC-Lab.

#### conduction emissionn N

Type EUT / Ser.No. Manufacturer Condition		microwave oven D90N30ASLRII-T4 GALANZ FULL POWER		
Operator		SAM		
Comment		ECMG		
Frequency Range	e(s)	Range 1	Range 2	Range 3
Start Frequency	.,	9 kHz	50 kHz	148.5 kHz
Stop Frequency		50 kHz	148.5 kHz	30 MHz
Step Frequency		100 Hz	100 Hz	5 kHz
Attenuator		Auto	Auto	Auto
Detector	(Pre)	P CISPR	P CISPR	AV CISPR
IF Bandwidth	(Pre)	200 Hz	200 Hz	9 kHz
Measure Time	(Pre)	100 ms	20 ms	10 ms
Detector	(Final)	QP	QP	QP
IF Bandwidth	(Final)	200 Hz	200 Hz	9 kHz
Measure Time	(Final)	2 s	1 s	1 s
Sub Ranges	(Final)	2	3	10



Line N Conducted Emission Graph

EMC LABORATORYREPORT NO: 07A1754-1Page 28 of 34GUANGDONG ATC-LAB CO.,LTD. 528305205# YINGFENG BUILDING RONGGUI RD RONGGUI SHUNDE FOSHAN GUANGDONG CHINATEL:86-757-28375537, FAX: 86-757-28375535This report shall not be reproduced except in full , without the written approval of ATC-Lab.

#### **Test Data**

Lino	Fraguerau	Corrected	Corrected	QP limit	AV limit
Line	riequency	Reading(QP)	Reading(AV)	dB uV/m	dB uV/m
L	0.3170	45.0	20.3	60.9	50.9
L	0.6290	31.3	15.6	56.0	46.0
L	2.5922	24.6	10.2	56.0	46.0
N	0.2250	46.8	21.4	61.5	51.5
N	0.5018	49.3	20.1	56.0	46.0
N	2.5078	40.1	20.6	56.0	46.0

#### **Test Equipment List**

Test equipment	Manufacturer	Model	Serial No.	Last Cal.	Cal. Due
EMI Receiver	SCHAFFNER	SMR4503	44	2007-07-09	2008-07-09
LISN	EST	4825/2	1161	2007-07-09	2008-07-09
Note: All testing were performed using internationally recognised standard. All test instrument were calibrated and traceable to the National Institute of Standards and Technology.					



**Conducted Emission Test Set-up** 

EMC LABORATORY REPORT NO: 07A1754-1 GUANGDONG ATC-LAB CO.,LTD. 528305 205# YINGFENG BUILDING RONGGUI RD RONGGUI SHUNDE FOSHAN GUANGDONG CHINA TEL:86-757-28375537, FAX: 86-757-28375535 This report shall not be reproduced except in full, without the written approval of ATC-Lab.

Page 30 of 34

## ATTACHMENT 6-RADIATED EMISSION TEST RESULTS

Client: Guangdong Galanz Enterprises Co Ltd		Test Standard: FCC Part 18	
Model Numbers: D	90N30(X)RII(Y)	Product: Microwave Oven	
Model Tested: D90N	N30ASLRII-T4	EUT Designation: Hone or Office	
Temperature: 22°C		Humidity: 55%RH	
ATM Pressure: 101	kPa	Grounding: Through AC power cord	
Tested By: Xiaomin	g Xu	Date of Test; 2007, August 29th	
Test Reference	ANSI C63.4: 2003,	FCC/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 1.0 m above the ground. The table is placed on a flush mounted metal turntable. 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. 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: FS= RA + AF + CF - AG Where: $FS = Field$ Strength RA = Receiver Amplitude AF = Antenna Factor CF = Cable Attenuation Factor		
Tested Range	30MHz to 24.5GHz		
Test Voltage	120VAC/60Hz	he near instructor of test information for	
RESUILS	Radiated emission	ne requirements of test reference for on Vertical polarization by 22.8 dB of	
	Average detector at	4.9478 GHz	
Changes or	There were no n	nodifications installed by Galanz test	
Modifications	personnel.	······································	
M.Uncertainty	±3.2dB		

EMC LABORATORY REPORT NO: 07A1754-1 Page 31 of 34 GUANGDONG ATC-LAB CO.,LTD. 528305 205# YINGFENG BUILDING RONGGUI RD RONGGUI SHUNDE FOSHAN GUANGDONG CHINA TEL:86-757-28375537, FAX: 86-757-28375535

This report shall not be reproduced except in full, without the written approval of ATC-Lab.

#### **Test Data**

30MHz-1GHz								
Frequency (MHz)	Antenna Polarization (V/H)	Corrected reading (dBuV/m)	Delta,QP (dB)	3 Meters Limits (dBuV/m)				
57.76	V	20.1	68.4	70.5				
137.76	V	11.9	58.6	70.5				
267.96	V	13.3	57.2	70.5				
133.86	Н	16.1	54.4	70.5				
222.06	Н	17.2	53.3	70.5				
704.46	Н	17.5	53	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	Delta,QP	3 Meters				
(GHz)	Polarization	reading	(dB)	Limits				
	(V/H)	(dBuV/m)		(dBuV/m)				
8.1400	V	41.99	33.01	75				
9.8699	V	43.94	31.06	75				
14.8368	V	52.89	22.11	75				
4.9424	Н	46.15	28.85	75				
9.7888	Н	42.04	32.96	75				
14.8384	Н	56.69	18.31	75				
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.								

Page 32 of 34

## **Test Equipment List**

Test	Manufacturer	Model	Serial No.	Last Cal.	Cal. Due		
equipment							
Vltra Broadband Antenna	ETS	3142C	00042672	2007-07-31	2008-07-31		
Horn Antenna	ETS	3115	6587	2007-08-03	2008-08-03		
Band-pass Filter	R&S	FSP30	100755	2006-12-03	2007-12-03		
EMI Receiver	ETS	N/A	N/A	2007-05-23	2008-05-23		
3M Anechoic chamber	ETS	3142C	00042672	2007-07-31	2008-07-31		
Note: All testing were performed using internationally recognised standard. All test instrument were calibrated and traceable to the National Institute of Standards and Technology.							

Page 33 of 34



Radiated Emission Test Set-up(30-1000MHz)



Radiated Emission Test Set-up(1-25GHz)

#### The End

EMC LABORATORY REPORT NO: 07A1754-1 GUANGDONG ATC-LAB CO., LTD. 528305 205# YINGFENG BUILDING RONGGUI RD RONGGUI SHUNDE FOSHAN GUANGDONG CHINA TEL:86-757-28375537, FAX: 86-757-28375535 This report shall not be reproduced except in full, without the written approval of ATC-Lab.

Page 34 of 34