

# FCC CLASS II PERMISSION CHANGE TEST REPORT

On Model Name: Microwave Oven

Model Number: ZE(A)G028EYY-X, E(A)G031EYY-X, E(A)G031EYY-X1,XG028PYY

Brand Name: Midea

Prepared for Guangdong Midea Microwave and Electrical Appliances Manufacturing Co., Ltd

FCC ID Number: RSFEG031EMN

According to FCC Part 18(2012) Industrial, Scientific and Medical Equipment FCC/OST MP-5(1986)

FCC methods of measurements of radio noise emission from industrial, scientific and medical equipment

Test Report #: GUA-1207-10858-FCC

Tested by:	Sevencius	ECMG	
	Engineer	Company Name	
Reviewed by	Senior Engineer	ECMG Company Name	
QC Manager	QC Manager	ECMG Company Name	
Test Report I	Released by: Swell		August 22 <sup>nd</sup> ,2012 Date

#### **Test Location**

*Tests performed in a Certified ANSI Semi-Anechoic Chamber and Shielded Room.* 

Test Site Location	: GD WITOL VACUUM ELECTRONIC EMC TEST LABORATORY
	BeiJiao,ShunDe,FoShan,GuangDong, 528311, China
Tel	: (86)-757-26326917
Fax	: (86)-757- 22607341

#### **Test Facility**

The test facility was recognized, certified, or accredited by the following organizations:

FCC – Registration No.: 910385

GD WITOL VACUUM ELECTRONIC EMC TEST LABORATORY has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC was maintained in our files.

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Exhibit Type	File Description	File Name
Test Report	Test Report	RSFEG031EMN _Test Report.pdf
Operation Description	Technical Description	RSFEG031EMN _Operation Description.pdf
External Photos	External Photos	RSFEG031EMN _External Photos
Internal Photos	Internal Photos	RSFEG031EMN _Internal Photos
Block Diagram	Block Diagram	RSFEG031EMN _Block Diagram.pdf
Schematics	Circuit Diagram	RSFEG031EMN _Schematics.pdf
ID Label/Location	Label and Location	RSFEG031EMN _Label & Location.pdf
User Manual	User Manual	RSFEG031EMN _User's Manual.pdf
Test set-up photos	Test set-up photos	RSFEG031EMN _Test Set-up Photos

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#### **Opinions and Interpretations**

This test report relates to the abovementioned equipment under test (EUT).Without the permission of ECMG Electronic Technical Testing Corp (Shenzhen) Test Lab this test 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	: ZE(A)G028EYY-X, E(A)G031EYY-X, E(A)G031EYY- X1, XG028PYY
Model Tested	: AG028PYY
Brand Name	
Receipt Date	: August 1 <sup>st</sup> ,2012
Date Tested	: August 2 <sup>nd</sup> ,2012 to August 5 <sup>th</sup> ,2012
Applicant	: Guangdong Midea Microwave and Electrical Appliances Manufacturing Co.,Ltd
Address	No.6, Yong An Road, Beijiao, Shunde, Foshan.
Telephone	: 86-757-23606480
Fax	: 86-757-22607341
Manufacturer	: Guangdong Midea Microwave and Electrical Appliances Manufacturing Co.,Ltd
Address	No.6, Yong An Road, Beijiao, Shunde, Foshan.
Telephone	: 86-757-23606480
Fax	: 86-757-22607341
Factory	: Guangdong Midea Microwave and Electrical Appliances Manufacturing Co.,Ltd
Address	No.6, Yong An Road, Beijiao, Shunde, Foshan.
Telephone	: 86-757-23606480
Fax	: 86-757-22607341

# **EUT Description**

Guangdong Midea Microwave and Electrical Appliances Manufacturing Co.,Ltd. model tested AG028PYY (referred to as the EUT in this report) is a Microwave Oven.

Power Supply	120V AC/60Hz
Rated Input Power (Microwave)	1500W
Rated Output Power (Microwave)	1000W
Rated Input Power (Grill)	1150W
Rated Output Power (Pizza)	1400W
Frequency	2450 MHz(Class B/Group 2)
Magnetron Model	2М219Ј
Magnetron Manufacturer	WITOL

The technical specifications of EUT are as below:

NOTE: For more detailed information or features please refer to user's manual of EUT.

#### EUT Model Derived

XG028PYY model designations as follow:

*X=E or A ;* 

*G*: *indicate microwave function and grill function* 

028: "0" indicate the microwave output power is 1000W, "28" indicate cavity capacity is 28 liters;

*P: indicate with pizza function* 

*YY= 0-9 or A-Z, indicate different appearance;* 

X1: indicate with magnetron thermostat.

*XG028PYY is identical to ZXG028EYY-X except adding pizza function;* 

Model XG031EYY-X is identical to XG028EYY-X except model name.

There are two motherboards for motherboard #1 and motherboard #2 were included in this report, Model of AG028PYY with motherboard #2 was selected for the final testing.

#### **Test Summary**

The electromagnetic compatibility requirements on model XG028PYY for this test are 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 subsystem used in the test set-up.

Emission Tests					
Specifications	Description	Test Results	Test Point	Remark	
FCC Part 18:2012 FCC/OST MP-5:1986 ANSI C63.4-2009	Radiation Hazard Measurement	Passed	Enclosure	Attachment 1	
FCC Part 18:2012 FCC/OST MP-5:1986 ANSI C63.4-2009	Input Power Measurement	Passed	AC Input Port	Attachment 2	
FCC Part 18:2012 FCC/OST MP-5:1986 ANSI C63.4-2009	RF Output power Measurement	Passed	EUT	Attachment 3	
FCC Part 18:2012 FCC/OST MP-5:1986 ANSI C63.4-2009	Operating Frequency Measurement	Passed	EUT	Attachment 4	
FCC Part 18:2012 FCC/OST MP-5:1986 ANSI C63.4-2009	Conducted Emission	Passed	AC Input Port	Attachment 5	
FCC Part 18:2012 FCC/OST MP-5:1986 ANSI C63.4-2009	Radiated Emission	Passed	Enclosure	Attachment 6	

#### Load for Microwave Oven

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 1000watts or less power output, the beaker contained quantities of water as listed in the following subparagraphs. For ovens rated at more than 1000watts output, each quantity was increased by 50% for each 500watts 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 oven

#### EUT Exercise Software

No test sofware support this test.

#### **Equipment Modification**

Any modifications installed previous to testing by Guangdong Midea Microwave and Electrical Appliances Manufacturing Co.,Ltd., will be incorporated in each production model sold or leased in United States.

There were no modifications installed by ECMG Electronic Technical Testing Corp (Shenzhen) test personnel.



EUT Front View



EUT Back View



Door Opend View #1



Door Opend View #2



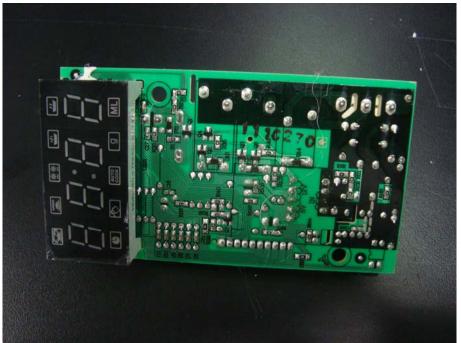
EUT Uncovered View



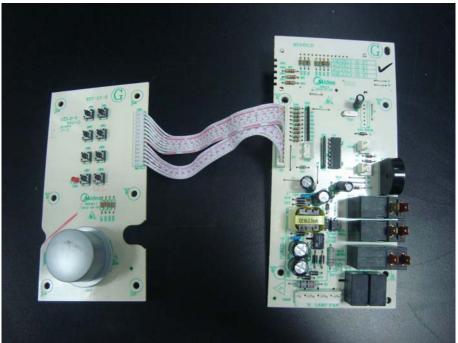
Magnetron Front View



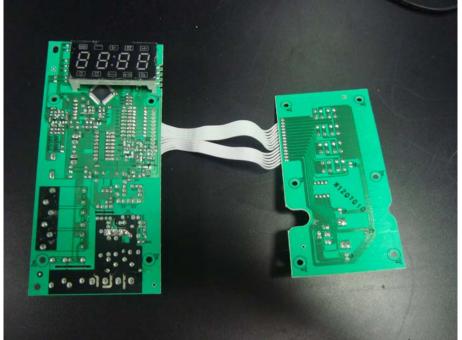
Motherboard Top View #1



Motherboard Bottom View #2



Motherboard Top View #2



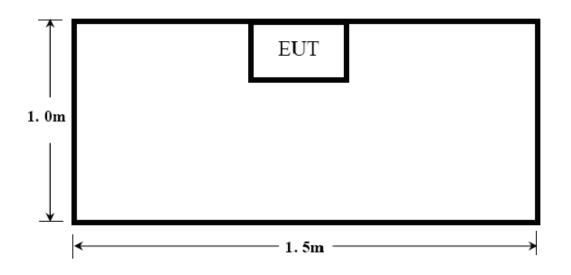
Motherboard Bottom View #2

#### **Test System Details**

EUT							
Model Number	: Z	ZE(A)G02	28EYY-X, E(	(A)G031EYY-X, E	(A)G031	EYY-X1,	XG028PYY
Model Tested:	A	AG028P1	ſΥ				
Description:	/	Aicrowa	ve Oven				
Input:	A	AC 120V	'/60Hz				
Manufacturer:			ong Midea I turing Co.,	Microwave and , Ltd	Electrica	ıl Applia	nces
Support Equipment							
Description	n	Model	Number	Serial Num	ber	Ма	nufacturer
				N/A			
			Cable	Description			
Description From To Length Shielded Ferrite (Meters) (Y/N)							
Power Cable	EUT Plug 1.2 N N					Ν	
Note:The "EUT" means "Microwave Oven".							

#### Note:

The EUT has been tested as an independent unit together with other necessary accessories or support units. The above support units or accessories were used to form a representative test configuration during the test tests.



# ATTACHMENT 1 -RADIATION HAZARD TEST

CLIENT:	Guangdong Midea Microwave and Electrical Appliances Manufacturing Co., Ltd	TEST STANDERD:	FCC Part 18		
MODEL NUMBERS:	ZE(A)G028EYY-X, E(A)G031EYY-X, E(A)G031EYY-X1, XG028PYY	PRODUCT:	Microwave Oven		
MODEL TESTED:	AXG028PYY	EUT DESIGNATION:	Home or Office		
TEMPERATURE:	22°C	HUMIDITY:	53%		
ATM PRESSURE:	103kPa	GROUNDING:	Through AC Power Cord		
TESTED BY:	Sewen Guo	DATE OF TEST:	August 2 <sup>nd</sup> ,2012		
TEST REFERENCE:	ANSI C63.4-2009, 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 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 microwavemeter will check the leakage and then record the maximum leakage.				
TESTED RANGE:	N/A				
TEST VOLTAGE:	AC 120V/60Hz				
RESULTS:	There was no microwave leakage exceeding a power level of 0.15mW/cm <sup>2</sup> observed at any point 5cm or more from the external surface of the oven. A maximum of 1.0 mW/cm2 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 ECMG Electronic Technical Testing Corp (Shenzhen) test personnel.				
M. UNCERTAINTY:	0.0001 mW/cm <sup>2</sup>				

# Test Equipment List:

Test Equipment	Model No.	Manufacturer	Serial No.	Last Cal.	Cal. Interval	
Microwave Measurement	HOLADAY	HI-1710A	00122261	2011.08.20	2012.08.21	
Note: All testing were performed using internationally recognized standards. All test instruments were calibrated and traceable to the National Institute of Standards and Technology (NIST).						

TESTED BY:

Sevencon ENGINEER

ECMG COMPANY NAME

**COMPANY NAME** 

**ECMG** 

menym REVIEWED BY: SENIOR ENGINEER



**Radiation Hazard Test Set-up** 

# ATTACHMENT 2 - INPUT POWER MEASUREMENT

CLIENT:	Guangdong Midea Microwave and Electrical Appliances Manufacturing Co., Ltd.	TEST STANDERD:	FCC Part 18		
MODEL NUMBERS:	ZE(A)G028EYY-X, E(A)G031EYY-X, E(A)G031EYY-X1, XG028PYY	PRODUCT:	Microwave Oven		
MODEL TESTED:	AG028PYY	EUT DESIGNATION:	Home or Office		
TEMPERATURE:	21°C	HUMIDITY:	59%		
ATM PRESSURE:	103.1kPa	GROUNDING:	Through AC Power Cord		
TESTED BY:	Sewen Guo	DATE OF TEST:	August 2 <sup>nd</sup> ,2012		
TEST REFERENCE:	ANSI C63.4-2009, FCC/OST MP-5:1986				
TEST PROCEDURE:	The EUT was set up according to the FCC MP-5 and FCC Part 18 for input power measurement. The input power and current was measured using a power analyzer. 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 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 ECMG Electronic Technical Testing Corp (Shenzhen) test personnel.				
M. UNCERTAINTY :	± 5W				

#### Test Data:

Input Voltage	Input Current	Measured Input	Rated Input
(Vac/Hz)	(amps)	Power(watts)	Power(watts)
120.7	12.40	1463	1500

# Test Equipments List:

Test Equipment	Manufacturer	Model	Serial No.	Last Cal.	Cal. Due
Power Meter	Ainuo	AN8726C	058704195	10/10/2011	10/11/2012
Note: All testing were performed using internationally recognized standards. All test instruments were					

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

TESTED BY:

Seventrus ENGINEER

ECMG

COMPANY NAME

venym **REVIEWED BY:** 

SENIOR ENGINEER

ECMG COMPANY NAME



Input Power Test Set-Up

# ATTACHMENT 3 - RF OUTPUT POWER MEASUREMENT

CLIENT:	Guangdong Midea Microwave and Electrical Appliances Manufacturing Co Ltd.	TEST STANDERD:	FCC Part 18		
MODEL NUMBERS:	ZE(A)G028EYY-X, E(A)G031EYY-X, E(A)G031EYY-X1, XG028PYY	PRODUCT:	Microwave Oven		
MODEL TESTED:	AG028PYY	EUT DESIGNATION:	Home or Office		
TEMPERATURE:	22℃	HUMIDITY:	60%RH		
ATM PRESSURE:	103kPa	GROUNDING:	Through AC Power Cord		
TESTED BY:	Sewen Guo	DATE OF TEST:	August 2 <sup>nd</sup> ,2012		
TEST REFERENCE:	ANSI C63.4-2009, FCC/OST MP-5:1986				
TEST PROCEDURE:	The EUT was set up according to the FCC MP-5 and FCC Part 18 for RF output power Measurement. The Caloric Method was used to determine maximum RF output power. The initial temperature of the water load was measured. A 1000ml water load in a beaker was located in the center of the oven. The oven was operated at maximum output power for 120 seconds, the temperature of the water was re-measured. RF Output Power				
	= (4.2joules/calorie)(volume in n = 4.2 joules/calorie × 1000 × (Fi				
TESTED RANGE:	N/A				
TEST VOLTAGE:	120VAC / 60Hz				
RESULTS:	RF Output Power =850.5 watts. The test results relate only to the equipment under test provided by client.				
CHANGES OR MODIFICATIONS:	There were no modifications installed by ECMG Electronic Technical Testing Corp (Shenzhen) test personnel.				
M. UNCERTAINTY:	±0.3℃				

#### Test Result:

Quality of	Starting	Final	Elapsed Time	RF Output
Water(ml)	Temperature (で)	Temperature (°C)	(Seconds)	Power(watts)
1000	20.0	44.3	1205	850.5

# Test Equipments list:

Test Equipment	Manufacturer	Model	Serial No.	Last Cal.	Cal. Due	
Digit Thermometer	Fluke Corporation	Fluke 51 II	87500204	5/14/2012	5/15/2013	
Stopwatch	JUNSD	JS-306	080303	8/06/2011	8/06/2012	

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

TESTED BY: \_\_\_\_\_ Severan ENGINEER

**ECMG COMPANY NAME** 

**COMPANY NAME** 

**ECMG** 

REVIEWED BY:

**SENIOR ENGINEER** 



**RF Output Power Test Set-Up** 

#### ATTACHMENT 4 - OPERATING FREQUENCY MEASUREMENT

			1		
CLIENT:	Guangdong Midea Microwave and Electrical Appliances Manufacturing Co Ltd.		FCC Part 18		
MODEL NUMBERS:	ZE(A)G028EYY-X, E(A)G031EYY-X,E(A)G031EYY- X1,XG028PYY	PRODUCT:	Microwave Oven		
MODEL TESTED:	AG028PYY	EUT DESIGNATION:	Home or Office		
TEMPERATURE:	<b>21</b> ℃	HUMIDITY:	61%RH		
ATM PRESSURE:	101.1kPa	GROUNDING:	Through AC Power Cord		
TESTED BY:	Sewen Guo	DATE OF TEST:	August 3 <sup>rd</sup> ,2012		
TEST REFERENCE:	ANSI C63.4-2009, FCC/OST MP-	5:1986			
TEST PROCEDURE:	<ul> <li>The EUT was set up according to the FCC MP-5 and FCC Part 18 for Operating Frequency Measurement.</li> <li>1) The variation of frequency with time. The operating frequency was measured using a spectrum analyzer. Starting with the EUT at room temperature, a 1000ml water load in a beaker was located in the center of the oven. Set a spectrum analyzer with antenna at 3 meters distance form the oven and the 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>2) The variation of frequency with Line Voltage. 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.</li> </ul>				
TESTED RANGE:	2450 ± 50MHz				
TEST VOLTAGE:	120VAC / 60Hz				
RESULTS:	Please refer to following pages for details of the variation in operating frequency with time & line voltage measurement. The test results relate only to the equipment under test provided by client.				
CHANGES OR MODIFICATIONS:	There were no modifications installed by ECMG Electronic Technical Testing Corp (Shenzhen) test personnel.				
M. UNCERTAINTY:	Freq. ±10kHz				

#### Variation in Operating Frequency with Time:

Minimum Frequency (MHz)	Maximum Frequency (MHz)
2448.9	2455.8

# Variation in Operating Frequency with Line Voltage:

Minimum Frequency (MHz)	Maximum Frequency (MHz)
2449.8	2452.2
Note: Line voltage varied from 96Vac to 150Vac.	

# Test Equipments List:

Test Equipment	Manufacturer	Model	Serial No.	Last Cal.	Cal. Due
EMI test receiver	R&S	ESIB-26	100174	11/18/2011	11/17/2012
Horn Antenna	R&S	HF906	100311	11/20/2011	11/21/2012

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

TESTED BY:

Jer ENGINEER

ECMG COMPANY NAME

**REVIEWED BY:** 

SENIOR ENGINEER

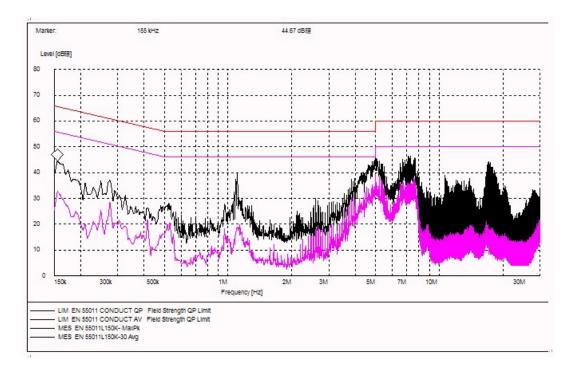
ECMG COMPANY NAME



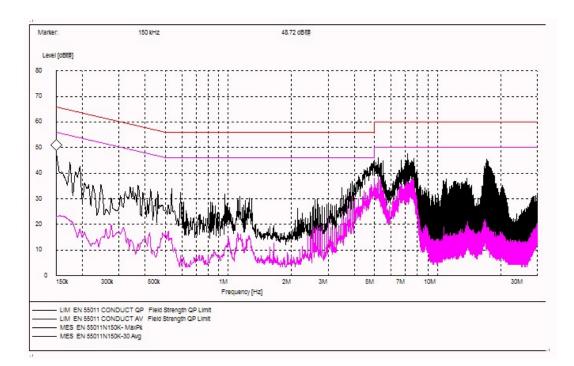
**Operating Frequency Test Set-up** 

# ATTACHMENT 5 - CONDUCTED EMISSION TEST RESULTS

CLIENT:	Guangdong Midea Microwave and Electrical Appliances Manufacturing Co Ltd.	TEST STANDERD:	FCC Part 18		
MODEL NUMBERS:	ZE(A)G028EYY-X, E(A)G031EYY-X,E(A)G031EYY- X1,XG028PYY	PRODUCT:	Microwave Oven		
MODEL TESTED:	AG028PYY	EUT DESIGNATION:	Home or Office		
TEMPERATURE:	<b>22</b> °C	HUMIDITY:	59%RH		
ATM PRESSURE:	101.1kPa	GROUNDING:	Through AC Power Cord		
TESTED BY:	Sewen Guo DATE OF TEST:		August 5 <sup>th</sup> ,2012		
TEST REFERENCE:	ANSI C63.4-2009, FCC/OST MP-	5:1986			
TEST PROCEDURE:	The EUT was set up according to for conducted emissions. The me EMI receiver peak scan was mad highest significant peaks were the peaked and averaged. The free 30MHz.	asurement was using a de at the frequency me nen marked, and these	a AMN on each line and an asurement range. The six e signals were then quasi-		
TESTED RANGE:	150kHz to 30MHz				
TEST VOLTAGE:	120VAC / 60Hz				
RESULTS:	The EUT meets the requirements of test reference for Conducted Emissions. The test results relate only to the equipment under test provided by client.				
CHANGES OR MODIFICATIONS:	There were no modifications installed by ECMG Electronic Technical Testing Corp (Shenzhen) test personnel.				
M. UNCERTAINTY:	±2.5 dB				



Line L Conducted Emission Graph



Line N Conducted Emission Graph

#### Test Data:

Lines (L/N)	Frequency (MHz)	Corrected QP Level (dBuV)	Limits QP (dBuV)	Margin QP (dB)	Frequency (MHz)	Corrected AV Level (dBuV)	Limits AV (dBuV)	Margin QP (dB)
L	0.155	34.7	65.7	-31.0	0.155	24.3	55.7	-31.4
L	0.175	31.5	64.7	-33.2	0.175	22.3	54.7	-32.4
L	1.105	26.3	56.0	-29.7	1.105	16.8	46.0	-29.2
N	0.150	33.5	66.0	-32.5	0.150	21.7	56.0	-34.3
N	0.175	30.1	64.7	-34.6	0.175	19.3	54.7	-35.4
N	0.195	27.2	63.8	-36.8	0.195	13.4	53.8	-40.4

Note :

All readings are using a bandwidth of 9 kHz, with a 500 ms sweep time. A video filter was not use.
 "QP" means "Quasi-Peak" values, "AV" means "Average" values.

The other reading are too low against official limits that are not be recorded. 3)

#### Test Equipments List:

Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due
EMI test receiver	R&S	ESIB-26	100174	11/19/2011	11/18/2012
LISN	R&S	ESH2-Z5	100091	11/19/2011	11/18/2012
Transient Limiter	Agilent	11947A	3107A03648	11/19/2011	11/18/2012
Shielding Room	TDK	8m×4m×3m	N/A	04/17/2012	04/16/2013

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

TESTED BY:

Sevencius ENGINEER

**ECMG COMPANY NAME** 

REVIEWED BY:

SENIOR ENGINEER

**ECMG COMPANY NAME** 

# Conducted Emission Test Set-up:



# ATTACHMENT 6 - RADIATED EMISSION TEST RESULTS

CLIENT:	Guangdong Midea Microwave and Electrical Appliances Manufacturing	TEST STANDERD:	FCC Part 18	
	Co.,Ltd.			
MODEL NUMBERS:	ZE(A)G028EYY-X, E(A)G031EYY-X, E(A)G031EYY- X1,XG028PYY	PRODUCT:	Microwave Oven	
MODEL TESTED:	AG028PYY	EUT DESIGNATION:	Home or Office	
TEMPERATURE:	<b>22</b> °C	HUMIDITY:	62%RH	
ATM PRESSURE:	103.0kPa	GROUNDING:	Through AC Power Cord	
TESTED BY:	Sewen Guo	DATE OF TEST:	August 5 <sup>th</sup> ,2012	
TEST REFERENCE:	ANSI C63.4-2009, FCC/OST	MP-5:1986		
TEST PROCEDURE:	The EUT was set up according to the guidelines of ANSI C63.4-2009& 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 AG = Amplifier Gain			
TESTED RANGE:	30MHz to 24.5GHz			
TEST VOLTAGE:	120VAC / 60Hz			
RESULTS:	The EUT meet the requirements of test reference for radiated emissions. The test results relate only to the equipment under test provided by client.			
CHANGES OR MODIFICATIONS:	There were no modifications (Shenzhen) test personnel.	s installed by ECMG Ele	ectronic Technical Testing Corp	
M. UNCERTAINTY:	± 3.2 dB			

# Field strength limits for out-of-band emissions :

For RF output power <500W, Limit at 300m = 27.96dBuV/m For RF output power>500W, Limit at 300m=20log [25\*SQRT(Power/500)]dBuV/m

#### Test Data :

30MHz – 1GHz							
Frequency [MHz]	Antenna Polarization [V/H]	Corrected Reading [dBµV/m]	Factor (dB)	Field Strength [dBµV/m]	Delta, QP [dB]	3 Meters Limits [dBµV/m]	
94.148	V	8.8	9.0	17.8	-52.5	70.3	
317.695	V	9.2	13.3	22.5	-47.8	70.3	
735.631	V	9.2	23.6	32.8	-37.5	70.3	
272.986	Н	11.3	13.0	24.3	-46.0	70.3	
185.511	Н	8.7	12.5	21.2	-49.1	70.3	
547.074	Н	6.5	19.2	25.7	-44.6	70.3	

Note: 1) All readings are quasi-peak unless stated otherwise, using a bandwidth of 120kHz, with a 60s sweep time. A video filter was not used. 2) Field Strength = Read Level + Factor, Factor = Antenna Factor + Cable Loss - Preamp Factor.

# 1GHz - 25GHz

Frequency [GHz]	Antenna Polarization [V/H]	Corrected Reading [dBµV/m]	Factor (dB)	Field Strength [dBµV/m]	Delta, AV [dB]	3 Meters Limits [dBµV/m]	
8.381	V	22.7	22.3	45.0	-25.3	70.3	
9.042	V	20.6	24.6	45.2	-25.1	70.3	
17.188	V	15.4	40.5	55.9	-14.4	70.3	
7.353	Н	19.4	21.5	40.9	-29.4	70.3	
5.351	н	26.6	18.8	45.4	-24.9	70.3	
17.188	н	15.7	40.5	56.2	-14.1	70.3	

Note: 1) All readings are average unless stated otherwise, using a bandwidth of 1MHz, with a 60s sweep time. A video filter was not used. 2) Field Strength = Read Level + Factor, Factor = Antenna Factor + Cable Loss - Preamp Factor.

# Test Equipments List:

Test Equipment	Manufacturer	Model	Serial No.	Last Cal.	Cal. Due
EMI test receiver	R&S	ESIB-26	100174	11/19/2011	11/18/2012
Horn Antenna	R&S	HF906	100311	11/21/2011	11/20/2012
Hybrid Log Periodic Antenna	ТДК	HLP-3003C	130144	11/21/2011	11/20/2012
Loop Antenna	ETS	ETS-6152	24934	11/21/2011	11/20/2012
Anechoic Chamber	TDK	9m×6 m×5.7m	N/A	04/17/2012	04/16/2013

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

TESTED BY:

Jener Grue ENGINEER

ECMG COMPANY NAME

REVIEWED BY:

SENIOR ENGINEER

ECMG COMPANY NAME

Radiated Emission Test Set-up (30 -1,000MHz):

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

