

EMI TEST REPORT

On Model Name: Microwave Oven

Model Numbers: TM944EYY-SHM(N)D, TM944EYY
Y-SHM(N)D

Trade Mark: 

FCC ID Number: VG8TM944EYY-SHMD

Prepared for Guangdong Midea Kitchen Appliances
Manufacturing Co., Ltd.

According to

* FCC Part 18(2016)

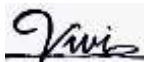
Industrial, Scientific and Medical Equipment

* FCC/OST MP-5(1986)

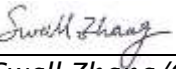
*FCC methods of measurements of radio noise emission from
industrial, scientific and medical equipment*

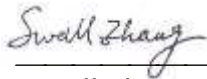


Test Report #: GUA-1705-11700-FCC

Prepared by:  ECMG
ViVi Huang/Assistant Company Name

Reviewed by:  ECMG
Jawen Yin/Senior Engineer Company Name

QC Manager:  ECMG
Swall Zhang/QC Manager Company Name

Test Report Released by:  June 12th, 2017
Swall Zhang Date

Verdict

Test Result :	Pass*
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**: In the configuration, the EUT complied with the standard specified above.*

Revision History

Rev.	Issue date	Revision	Revised by
1.0	12/5/2015	Initial review	Jawen Yin
2.0	6/12/2017	Updated mother board	Jawen Yin

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, Guang
Dong, 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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List Attached Files

Exhibit Type	File Description	File Name
<i>Test Report</i>	<i>Test Report</i>	<i>VG8TM944EYY-SHMD_Test Report.pdf</i>
<i>Operation Description</i>	<i>Technical Description</i>	<i>VG8TM944EYY-SHMD_Operation Description.pdf</i>
<i>External Photos</i>	<i>External Photos</i>	<i>VG8TM944EYY-SHMD _External Photos.pdf</i>
<i>Internal Photos</i>	<i>Internal Photos</i>	<i>VG8TM944EYY-SHMD _Internal Photos.pdf</i>
<i>Block Diagram</i>	<i>Block Diagram</i>	<i>VG8TM944EYY-SHMD _Block Diagram.pdf</i>
<i>Schematics</i>	<i>Circuit Diagram</i>	<i>VG8TM944EYY-SHMD _Schematics.pdf</i>
<i>ID Label/Location</i>	<i>Label and Location</i>	<i>VG8TM944EYY-SHMD_Label & Location.pdf</i>
<i>User Manual</i>	<i>User Manual</i>	<i>VG8TM944EYY-SHMD _User's Manual.pdf</i>
<i>Test set-up photos</i>	<i>Test set-up photos</i>	<i>VG8TM944EYY-SHMD _Test Set-up Photos</i>

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Reproduction Clause

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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 : TM944EYY-SHM(N)D, TM944EYYY-SHM(N)D

Model Tested : TM944E4AA-SHND

Brand Name : 

Receipt Date : May 25th, 2017

Date Tested : May 25th, 2017

Applicant : Guangdong Midea Kitchen Appliances
Manufacturing Co.,Ltd.

Address : No.6, Yong An Road, Beijiao, Shunde, Foshan.

Telephone : (86)-757-26339595

Fax : (86)-757-22607341

Manufacturer : Guangdong Midea Kitchen Appliances
Manufacturing Co.,Ltd.

Address : No.6, Yong An Road, Beijiao, Shunde, Foshan.

Telephone : (86)-757-26339595

Fax : (86)-757-22607341

Factory : Guangdong Midea Kitchen Appliances
Manufacturing Co.,Ltd.

Address : No.6, Yong An Road, Beijiao, Shunde, Foshan.

Telephone : (86)-757-26339595

Fax : (86)-757-22607341

EUT Description

Guangdong Midea Kitchen Appliances Manufacturing Co.,Ltd. model tested TM944E4AA-SHND (referred to as the EUT in this report) is a Microwave Oven.

The technical specifications of EUT are as below:

Power Supply	120V AC/60Hz
Rated Input Power (Microwave)	1650W
Rated Output Power (Microwave)	950W
Frequency	2450 MHz(Class B/Group 2)
Magnetron Model	2M303H
Magnetron Manufacturer	TOSHIBA

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

EUT Model Derived

TM944EYY-SHM(N)D, TM944EYYY-SHM(N)D model designations as follows:

T=Touch type keypad electronic control;

M:Indicate Microwave;

944:"9" indicate the microwave output power is 950W,"44" indicate cavity capacity is 44liters;

E:Indicate the design No.;

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

-S:Stands for stainless cavity;

H:with humidity function;

M:27 inch Microwave oven,N:30 inch Microwave oven;

D:UL&CUL microwave oven.

Model TM944E4AA-SHND is identical to TM944E4AB except for displaying board.Model TM944E4AA-SHND was selected for final testing.

Test Summary

The electromagnetic compatibility requirements on model TM944E4AA-SHND 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 18:2016 FCC/OST MP-5:1986 ANSI C63.4-2014	Radiation Hazard Measurement	Passed	Enclosure	Attachment 1
FCC Part 18:2016 FCC/OST MP-5:1986 ANSI C63.4-2014	Input Power Measurement	Passed	AC Input Port	Attachment 2
FCC Part 18:2016 FCC/OST MP-5:1986 ANSI C63.4-2014	RF Output power Measurement	Passed	EUT	Attachment 3
FCC Part 18:2016 FCC/OST MP-5:1986 ANSI C63.4-2014	Operating Frequency Measurement	Passed	EUT	Attachment 4
FCC Part 18:2016 FCC/OST MP-5:1986 ANSI C63.4-2014	Conducted Emission	Passed	AC Input Port	Attachment 5
FCC Part 18:2016 FCC/OST MP-5:1986 ANSI C63.4-2014	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 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 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 software support this test.

Equipment Modification

Any modifications installed previous to testing by Guangdong Midea Kitchen 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 Sample Photos for Model TM944E4AA-SHND



EUT- Front View



CEUT -Back View



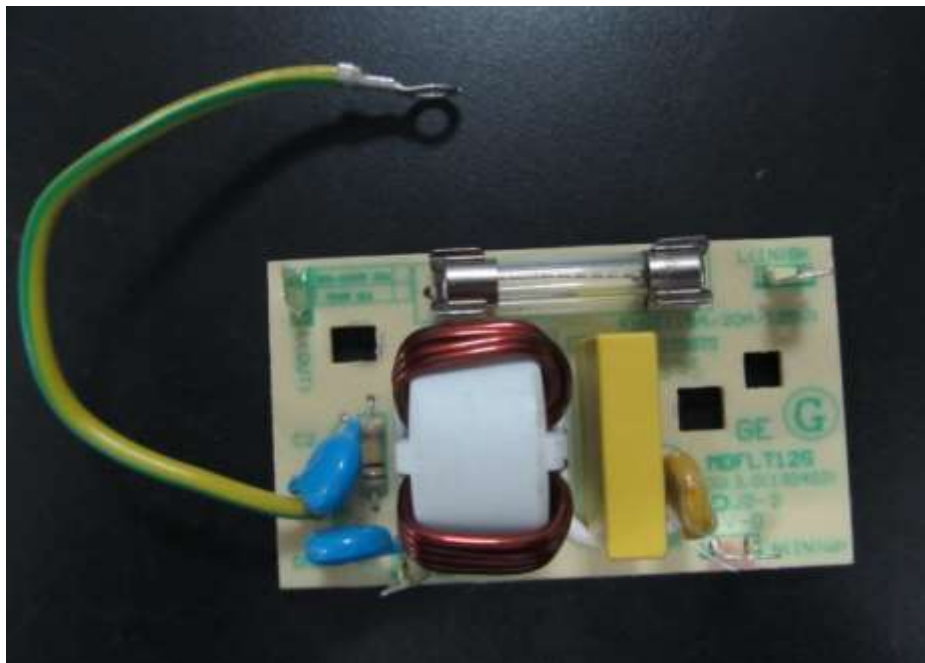
Door Opened View



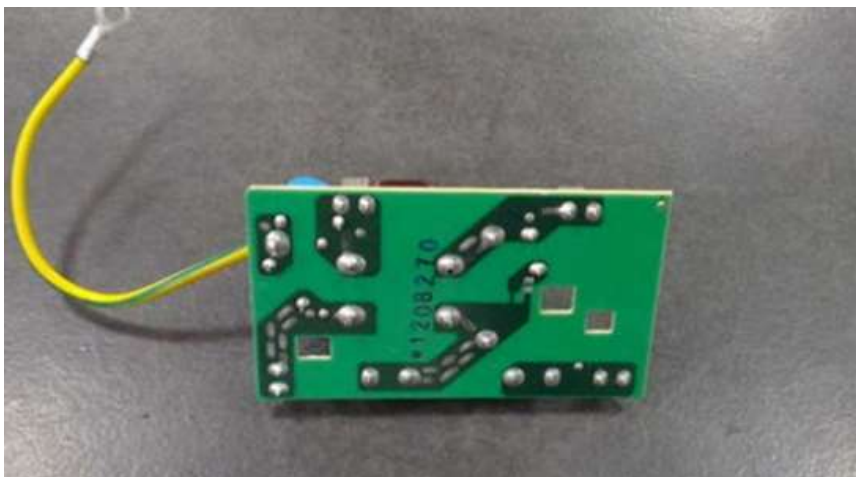
EUT- Uncovered View



Magnetron Front View



Power Filter Board -Top View



Power Filter Board -Bottom View



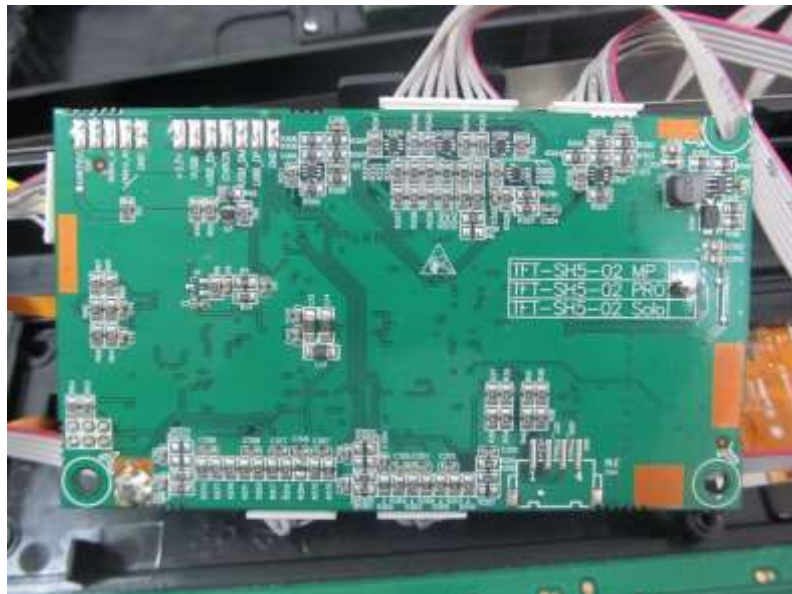
Motherboard- Top View



Motherboard- Bottom View



Displaying Board-Top View



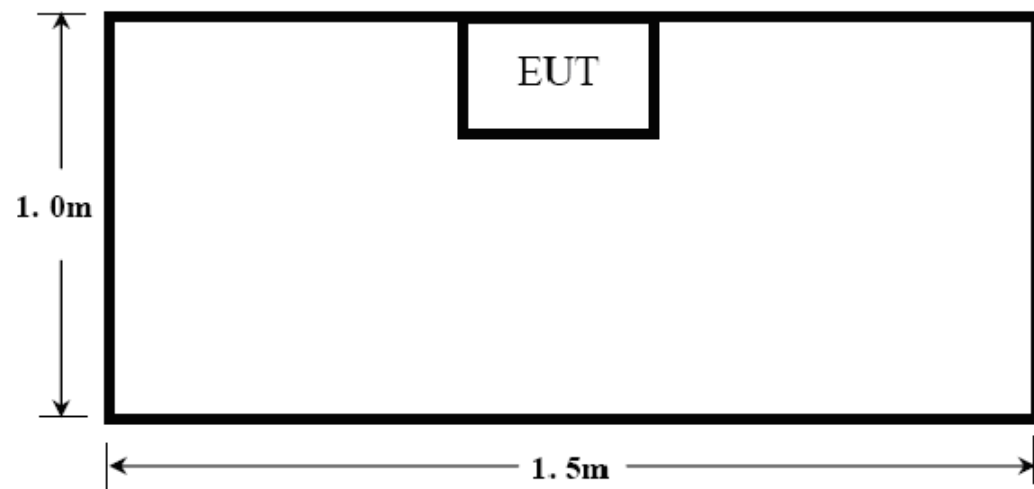
Displaying Board-Bottom View

Test System Details

EUT					
Model Number:	TM944EYY-SHM(N)D, TM944EYYY-SHM(N)D				
Model Tested:	TM944E4AA-SHND				
Description:	Microwave Oven				
Input:	AC 120V/60Hz				
Manufacturer:	Guangdong Midea Kitchen Appliances Manufacturing Co.,Ltd.				
Support Equipment					
Description	Model Number	Serial Number	Manufacturer		
N/A					
Cable Description					
Description	From	To	Length (Meters)	Shielded (Y/N)	Ferrite (Y/N)
Power Cable	EUT	Plug	1.2	N	N
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.

Configuration of Tested System



ATTACHMENT 1 -RADIATION HAZARD TEST

CLIENT:	Guangdong Midea Kitchen Appliances Manufacturing Co.,Ltd.	TEST STANDERD:	FCC Part 18
MODEL NUMBERS:	TM944EYY-SHM(N)D, TM944EYYY-SHM(N)D	PRODUCT:	Microwave Oven
MODEL TESTED:	TM944E4AA-SHND	EUT DESIGNATION:	Home or Office
TEMPERATURE:	23°C	HUMIDITY:	51%
ATM PRESSURE:	103kPa	GROUNDING:	Through AC Power Cord
TESTED BY:	Yang Dongmei	DATE OF TEST:	May 25 th ,2017
TEST REFERENCE:	ANSI C63.4-2014, 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 0.49 mW/cm² 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 ²		

Test Equipment List:

Test Equipment	Manufacturer	Model	Serial No.	Cal. Due Date
Microwave Measurement	HOLADAY	HI-1710A	00022150	2018.01.03

TESTED BY:

杨冬松

ENGINEER

REVIEWED BY:

James

SENIOR ENGINEER

Radiation Hazard Test Set up:



ATTACHMENT 2 – INPUT POWER MEASUREMENT

CLIENT:	Guangdong Midea Kitchen Appliances Manufacturing Co.,Ltd.	TEST STANDERD:	FCC Part 18
MODEL NUMBERS:	TM944EYY-SHM(N)D, TM944EYYY-SHM(N)D	PRODUCT:	Microwave Oven
MODEL TESTED:	TM944E4AA-SHND	EUT DESIGNATION:	Home or Office
TEMPERATURE:	22°C	HUMIDITY:	59%
ATM PRESSURE:	103.1kPa	GROUNDING:	Through AC Power Cord
TESTED BY:	Yang Dongmei	DATE OF TEST:	May 25 th ,2017
TEST REFERENCE:	ANSI C63.4-2014, 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 (V)	Input Current (A)	Measured Input Power (W)	Rated input Power (W)
120.7	14.18	1612	1650

Test Equipments List:

Test Equipment	Manufacturer	Model	Serial No.	Cal. Due Date
Power Meter	Ainuo	AN8726C	058704200	2018.01.12

TESTED BY: 杨冬松
ENGINEER

REVIEWED BY: James
SENIOR ENGINEER

Input power Test Set up:



ATTACHMENT 3 – RF OUTPUT POWER MEASUREMENT

CLIENT:	Guangdong Midea Kitchen Appliances Manufacturing Co.,Ltd.	TEST STANDERD:	FCC Part 18
MODEL NUMBERS:	TM944EYY-SHM(N)D, TM944EYYY-SHM(N)D	PRODUCT:	Microwave Oven
MODEL TESTED:	TM944E4AA-SHND	EUT DESIGNATION:	Home or Office
TEMPERATURE:	22°C	HUMIDITY:	60%RH
ATM PRESSURE:	103kPa	GROUNDING:	Through AC Power Cord
TESTED BY:	Yang Dongmei	DATE OF TEST:	May 25 th ,2017
TEST REFERENCE:	ANSI C63.4-2014, 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 milliliters)(temperature rise) / (time in seconds) = 4.2 joules/calorie × 1000 × (Final Temp - Initial Temp) / 120		
TESTED RANGE:	N/A		
TEST VOLTAGE:	120VAC/60Hz		
RESULTS:	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°C		

Test Result:

Initial Temp (°C)	Final Temp (°C)	Measured Times (s)	Measured out put Power(W)
20.2	43.7	120S	822.5

$$RF \text{ Output Power (W)} = 4.2 \times 1000 \times (\text{Final Temp} - \text{Initial Temp}) / 120$$

Test Equipments list:

Test Equipment	Manufacturer	Model	Serial No.	Cal. Due Date
Digit Thermometer	Fluke Corporation	Fluke 51 II	15940198	2017.08.12
Stopwatch	CASIO	JS-510	CF-003	2017.07.13

TESTED BY:

杨冬松

ENGINEER

REVIEWED BY:

Jianfeng

SENIOR ENGINEER

RF Output power Test Set up:

ATTACHMENT 4 – OPERATING FREQUENCY MEASUREMENT

CLIENT:	Guangdong Midea Kitchen Appliances Manufacturing Co.,Ltd.	TEST STANDERD:	FCC Part 18
MODEL NUMBERS:	TM944EYY-SHM(N)D, TM944EYYY-SHM(N)D	PRODUCT:	Microwave Oven
MODEL TESTED:	TM944E4AA-SHND	EUT DESIGNATION:	Home or Office
TEMPERATURE:	22°C	HUMIDITY:	60%RH
ATM PRESSURE:	101.1kPa	GROUNDING:	Through AC Power Cord
TESTED BY:	Yang Dongmei	DATE OF TEST:	May 25 th ,2017
TEST REFERENCE:	ANSI C63.4-2014, FCC/OST MP-5:1986		
TEST PROCEDURE:	The EUT was set up according to the FCC MP-5 and FCC Part 18 for Operating Frequency Measurement. 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. 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.		
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:

<i>Minimum Frequency (MHz)</i>	<i>Maximum Frequency (MHz)</i>
2451.6	2452.3

Variation in Operating Frequency with Line Voltage:

<i>Minimum Frequency (MHz)</i>	<i>Maximum Frequency (MHz)</i>
2448.9	2450.7
<i>Note: Line voltage varied from 96Vac to 150Vac.</i>	

Test Equipments List:

Test Equipment	Manufacturer	Model	Serial No.	Last Cal.	Cal. Due
EMI test receiver	R&S	ESIB-26	100174	08/1/2016	08/30/2017
Horn Antenna	R&S	HF906	100311	08/1/2016	08/30/2017

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:

杨冬平

ENGINEER

REVIEWED BY:

James

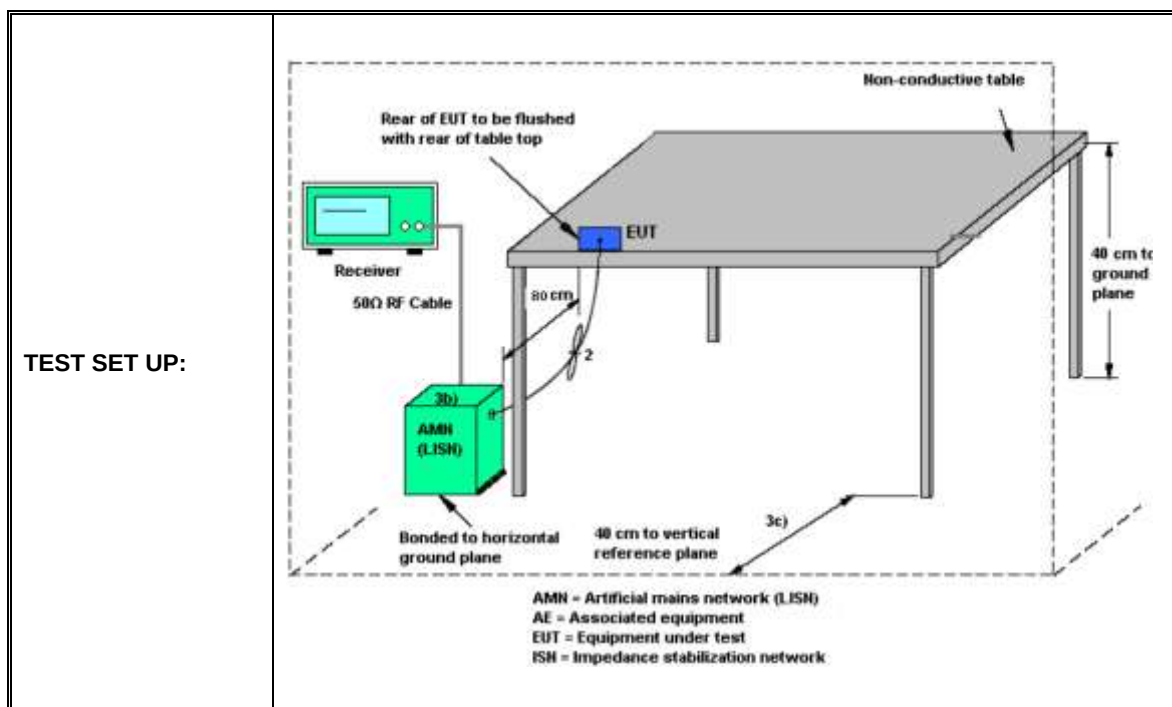
SENIOR ENGINEER

Operating Frequency Test Set-up:



ATTACHMENT 5 – CONDUCTED EMISSION TEST RESULTS

CLIENT:	Guangdong Midea Kitchen Appliances Manufacturing Co.,Ltd.	TEST STANDERD:	FCC Part 18
MODEL NUMBERS:	TM944EYY-SHM(N)D, TM944EYYY-SHM(N)D	PRODUCT:	Microwave Oven
MODEL TESTED:	TM944E4AA-SHND	EUT DESIGNATION:	Home or Office
TEMPERATURE:	22°C	HUMIDITY:	60%RH
ATM PRESSURE:	101.1kPa	GROUNDING:	Through AC Power Cord
TESTED BY:	Yang Dongmei	DATE OF TEST:	May 25 th ,2017
TEST REFERENCE:	ANSI C63.4-2014, FCC/OST MP-5:1986		
TEST PROCEDURE:	The EUT was set up according to the guideline of ANSI C63.4-2014 & FCC MP-5 for conducted emissions. 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 peaks were then marked, and these signals were then quasi-peaked and averaged. The frequency range investigated was from 150kHz to 30MHz. Corrected Amplitude & Over Limit Calculation. The basic equation as follow: $VC = VR + AC + VDF;$ Herein, VC: corrected voltage amplitude VR: reading voltage amplitude AC: attenuation caused by cable loss VDF: voltage division factor of AMN or ISN. he “Over Limit” column of the following data tables indicates the degree of compliance within the applicable limit. For example, a Over Limit of 7dB means the emission is 7dB below the maximum limit. The equation for Over Limit calculation is as follows: $\text{Over Limit} = \text{Limit} - \text{Corrected Amplitude}.$		
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:	The maximum measurement uncertainty is evaluated as : 150KHz~ 30MHz: 3.0dB		



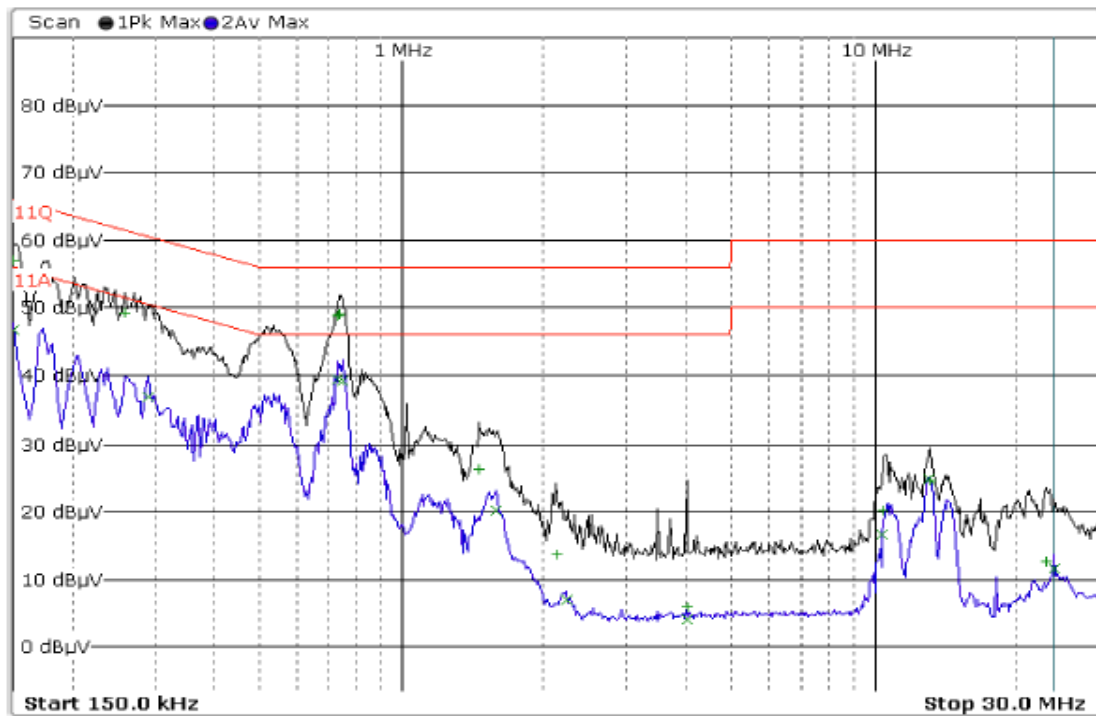
EMI Receiver Set-up:

Frequency [MHz]	IF B/W
0.15 - 30	9KHz

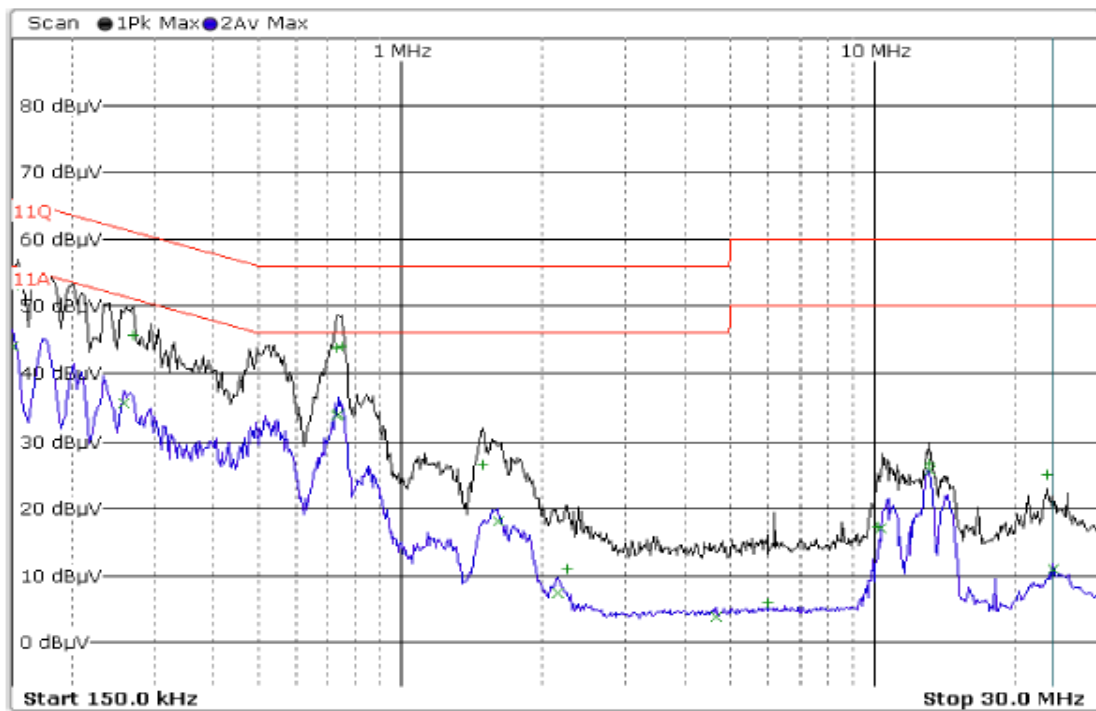
FCC Part 18 Conducted Emission Limit:

Frequency [MHz]	Field strength [dBuV]	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.



Line L Conducted Emission Graph



Line N Conducted Emission Graph

Test Data:

<i>Lines (L/N)</i>	<i>Frequency (MHz)</i>	<i>Corrected QP Level (dBuV)</i>	<i>Limits QP (dBuV)</i>	<i>Over Limit QP (dB)</i>	<i>Frequency (MHz)</i>	<i>Corrected AV Level (dBuV)</i>	<i>Limits AV (dBuV)</i>	<i>Over Limit QP (dB)</i>
L	0.150	56.95	66	-9.05	0.150	46.67	56	-9.33
L	0.258	49.28	61.50	-12.22	0.290	37.04	50.52	-13.48
L	0.734	48.88	56	-7.12	0.734	39.32	46	-6.68
N	0.154	52.99	65.78	-12.79	0.150	43.90	56	-12.10
N	0.270	45.75	61.12	-15.37	0.258	35.75	51.50	-15.75
N	0.730	43.68	56	-12.32	0.734	33.91	46	-12.09

Note :

- 1) All readings are using a bandwidth of 9 kHz, with a 500 ms sweep time. A video filter was not used.
- 2) "QP" means "Quasi-Peak" values, "AV" means "Average" values.
- 3) The other reading are too low against official limits that are not be recorded.

Test Equipments List:

Test Equipment	Manufacturer	Model NO.	Serial No.	Last Cal.	Cal. Due
EMI test receiver	R&S	ESIB-26	100174	11/19/2016	11/18/2017
LISN	R&S	ESH2-Z5	100091	11/19/2016	11/18/2017
Transient Limiter	Agilent	11947A	3107A03 648	11/19/2016	11/18/2017
Shielding Room	TDK	8m×4m×3 m	N/A	04/17/2017	04/16/2018

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: 杨冬平
ENGINEER

REVIEWED BY: James
SENIOR ENGINEER

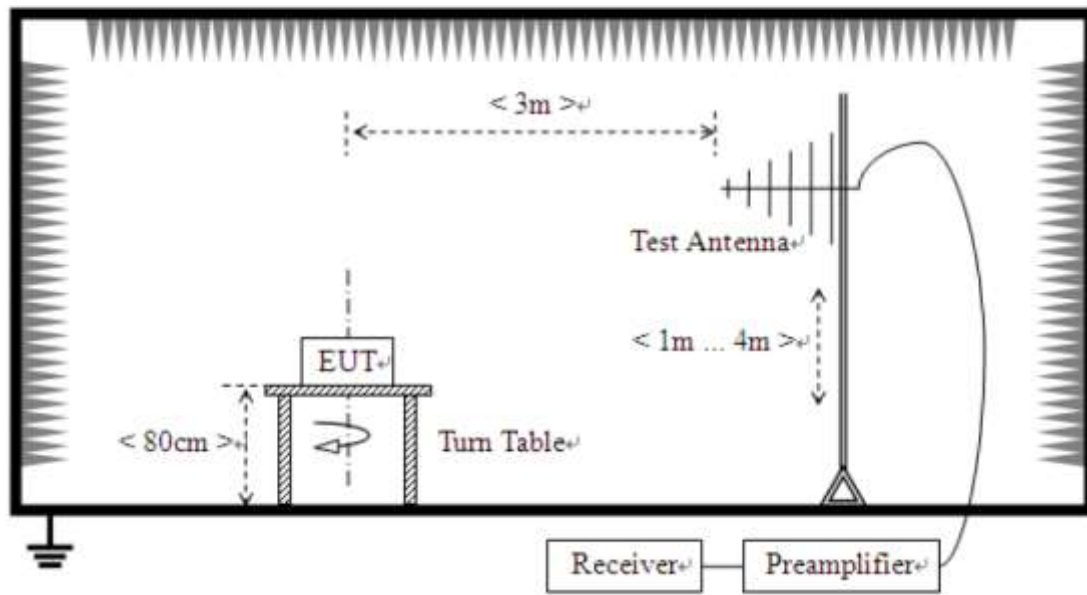
Conducted Emission Test Set-up:



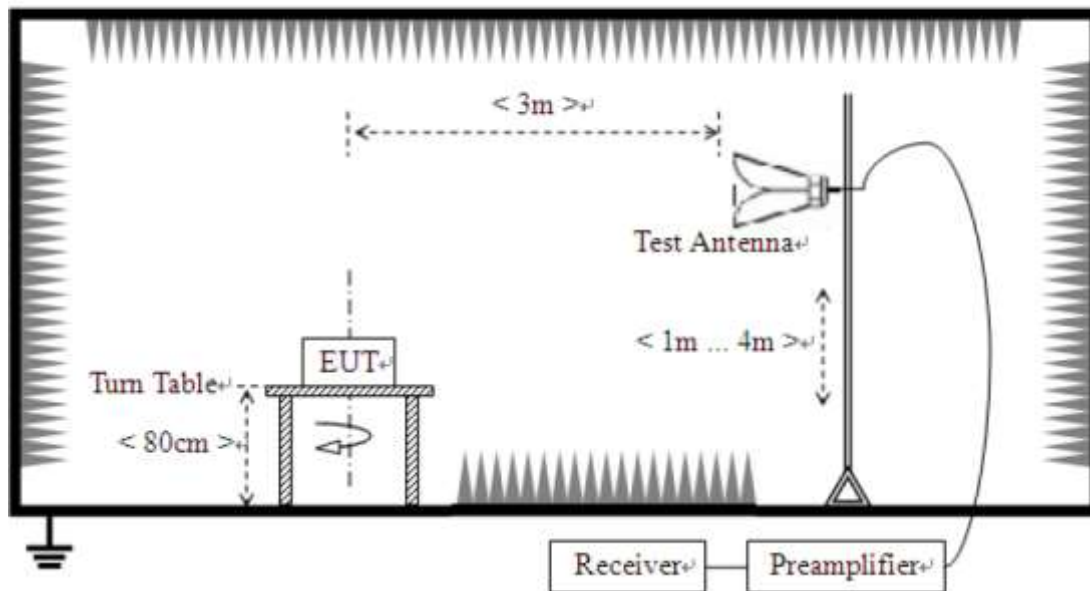
ATTACHMENT 6 - RADIATED EMISSION TEST RESULTS

CLIENT:	Guangdong Midea Kitchen Appliances Manufacturing Co.,Ltd.	TEST STANDERD:	FCC Part 18
MODEL NUMBERS:	TM944EYY-SHM(N)D, TM944EYYY-SHM(N)D	PRODUCT:	Microwave Oven
MODEL TESTED:	TM944E4AA-SHND	EUT DESIGNATION:	Home or Office
TEMPERATURE:	22°C	HUMIDITY:	63%RH
ATM PRESSURE:	103.0kPa	GROUNDING:	Through AC Power Cord
TESTED BY:	Yang Dongmei	DATE OF TEST:	May 25 th ,2017
TEST REFERENCE:	ANSI C63.4-2014, FCC/OST MP-5:1986		
TEST PROCEDURE:	The EUT was set up according to the guidelines of ANSI C63.4-2014& 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 installed by ECMG Electronic Technical Testing Corp (Shenzhen) test personnel.		
M. UNCERTAINTY:	The maximum measurement uncertainty is evaluated as : 30~1000MHz: 4.76dB; 1~25GHz: 4.5dB		

For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



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 = $20\log [25 \cdot \sqrt{\text{Power}/500}] \text{dBuV/m}$

Test Data :

30MHz – 1GHz						
Frequency [MHz]	Antenna Polarization [V/H]	Corrected Reading [dB μ V/m]	Factor (dB)	Field Strength [dB μ V/m]	Over limit, QP [dB]	3 Meters Limits [dB μ V/m]
74.709	H	/	/	25.7	-44.4	70.1
131.082	H	/	/	28.6	-41.5	70.1
263.267	H	/	/	32.4	-37.7	70.1
74.709	V	/	/	28.1	-42.0	70.1
261.267	V	/	/	27.4	-42.7	70.1
323.241	V	/	/	28.1	-42.0	70.1
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 [dB μ V/m]	Factor (dB)	Field Strength [dB μ V/m]	Over limit, AV [dB]	3 Meters Limits [dB μ V/m]
4.954	V	/	/	41.2	-28.9	70.1
7.441	V	/	/	39.3	-30.8	70.1
9.854	V	/	/	38.4	-31.7	70.1
4.383	H	/	/	42.5	-27.6	70.1
10.154	H	/	/	38.6	-31.5	70.1
7.389	H	/	/	39.1	-31.0	70.1
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 No.	Serial No.	Calibrated until
EMI test receiver	R&S	ESIB-26	100174	11/18/2017
Horn Antenna	R&S	HF906	100311	11/20/2017
Hybrid Log Periodic Antenna	TDK	HLP-3003C	130144	11/20/2017
Anechoic Chamber	TDK	9m×6 m×5.7m	N/A	04/16/2018

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: 杨冬松
ENGINEER

REVIEWED BY: James
SENIOR ENGINEER

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



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



****** End Of Report ******