

EMI TEST REPORT

On Model Name: Microwave Oven

Model Numbers: XM136AYY

Brand Name: 

FCC ID Number: VG8XM136AXX

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

According to

FCC Part 18(2010)

Industrial, Scientific and Medical Equipment

FCC/OST MP-5(1986)

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

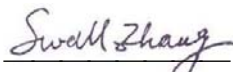
Test Report#: GUA-1112-10754-FCC

Prepared by: Sewen Guo

Reviewed by: Jawen Yin

QC Manager: Swall Zhang

Test Report Released by:


Swall Zhang

December 21, 2011

Date

List Attached Files

<i>Exhibit Type</i>	<i>File Description</i>	<i>File Name</i>
<i>Test Report</i>	<i>Test Report</i>	<i>VG8XM136AXX_Test report.PDF</i>
<i>Operation Description</i>	<i>Technical Description</i>	<i>VG8XM136AXX _operation description. PDF</i>
<i>External Photos</i>	<i>External Photos</i>	<i>VG8XM136AXX_External Photos.PDF</i>
<i>Internal Photos</i>	<i>Internal Photos</i>	<i>VG8XM136AXX_Internal Photos.PDF</i>
<i>Block Diagram</i>	<i>Block Diagram</i>	<i>VG8XM136AXX _Block diagram. PDF</i>
<i>Schematics</i>	<i>Circuit Diagram</i>	<i>VG8XM136AXX _Schematics. PDF</i>
<i>ID Label/Location</i>	<i>Label and Location</i>	<i>VG8XM136AXX _Label & Location. PDF</i>
<i>User Manual</i>	<i>User Manual</i>	<i>VG8XM136AXX _User Manual. PDF</i>
<i>Test setup photos</i>	<i>Test setup photos</i>	<i>VG8XM136AXX_Test Setup.PDF</i>

Test Location

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

Test Site Location:

Shenzhen Academy of Metrology and quality Inspection.

Bldg. of Metrology & Quality Inspection, Longzhu Road, Nanshan District, Shenzhen, Guangdong, China.

Tel:

(86)-755-26941599

Fax:

(86)-755-26941615

Accreditation Bodies

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

- **CNAL - LAB Code: L0579**

SMQ EMC Laboratory has been assessed and in compliance with CNAL/AC01:2002 accreditation criteria for testing laboratories (identical to ISO/IEC 17025:2005 General Requirements)for the Competence of Testing Laboratories.

- **FCC - Registration No.: 97379**

SMQ EMC 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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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 : *XM136AYY*

Model Tested : *EM136AMW*

Brand Name : 

Date of Receipt : *December 12, 2011*

Date Tested : *December 14, 2011 to December 19, 2011*

Applicant : *Guangdong Midea Microwave and Electrical Appliances Manufacturing Co.,Ltd.*

Address : *No.6, Yong An Road, Beijiao, Shunde, Foshan. Guangdong, 528311, China.*

Manufacturer : *Guangdong Midea Microwave and Electrical Appliances Manufacturing Co.,Ltd.*

Address : *No.6, Yong An Road, Beijiao, Shunde, Foshan. Guangdong, 528311, China.*

Factory : *Guangdong Midea Microwave and Electrical Appliances Manufacturing Co.,Ltd.*

Address : *No.6, Yong An Road, Beijiao, Shunde, Foshan. Guangdong, 528311, China.*

EUT Description

Guangdong Midea Microwave and Electrical Appliances Manufacturing Co.,Ltd., model tested EM136AMW (referred to the eut in this report) is a microwave oven. The EUT main features are as follows:

<i>Power Supply</i>	<i>120V~ 60Hz</i>
<i>Rated Input Power (Microwave)</i>	<i>1500W</i>
<i>Rated Output Power (Microwave)</i>	<i>1100 W</i>
<i>Frequency</i>	<i>2450 MHz (Class B/Group 2)</i>
<i>Magnetron Model</i>	<i>2M392J</i>
<i>Magnetron Manufacturer</i>	<i>WITOL</i>

For more informations please refer to user's manual of EUT.

EUT Model Derived

XM136AYY model designations are as follows:

X=E or A ;

M: indicate microwave function;

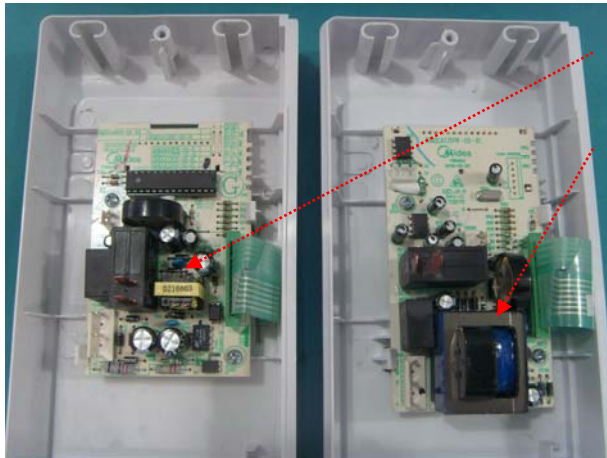
136: "1" indicate the microwave output power is 1100W, "36" indicate cavity capacity is 36 liters;

A: indicate the design No.;

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

Note :

Model of XM136AYY includes two types of motherboard and differences between them are as follows:



Motherboard model MD1001LSB uses a switching power supply.

Motherboard model MD1001LS uses a linear transformer power supply.

We selected motherboard model MD1001LSB and MD1001LS for the all testing.

Test Summary

The electromagnetic compatibility requirements on model EM136AMW 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 subsystem used in the test set-up.

Emission Tests				
Specifications	Description	Test Results	Test Point	Remark
<i>FCC Part 18:2010 FCC/OST MP-5:1986 ANSI C63.4-2009</i>	<i>Radiation Hazard Measurement</i>	<i>Passed</i>	<i>Enclosure</i>	<i>Attachment 1</i>
<i>FCC Part 18:2010 FCC/OST MP-5:1986 ANSI C63.4-2009</i>	<i>Input Power Measurement</i>	<i>Passed</i>	<i>AC Input Port</i>	<i>Attachment 2</i>
<i>FCC Part 18:2010 FCC/OST MP-5:1986 ANSI C63.4-2009</i>	<i>RF Output power Measurement</i>	<i>Passed</i>	<i>EUT</i>	<i>Attachment 3</i>
<i>FCC Part 18:2010 FCC/OST MP-5:1986 ANSI C63.4-2009</i>	<i>Operating Frequency Measurement</i>	<i>Passed</i>	<i>EUT</i>	<i>Attachment 4</i>
<i>FCC Part 18:2010 FCC/OST MP-5:1986 ANSI C63.4-2009</i>	<i>Conducted Emission</i>	<i>Passed</i>	<i>AC Input Port</i>	<i>Attachment 5</i>
<i>FCC Part 18:2010 FCC/OST MP-5:1986 ANSI C63.4-2009</i>	<i>Radiated Emission</i>	<i>Passed</i>	<i>Enclosure</i>	<i>Attachment 6</i>

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.

Note : *Since rated output power of the EUT is 1100 watts, the following load water quantity shall apply:*

-Load for power output measurement: 1100 milliliters of water in the beaker located in the center of the oven.

-Load for frequency measurement: 1100 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 770 and the other of 330 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: 770 milliliters of water, with the beaker located in the center of the oven.

Equipment Modification

Any modification 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 Sample Photos for Model EM136AMW



EUT- Front View with motherboard MD1001LSB



EUT- Front View with motherboard MD1001LS



EUT- Rear View



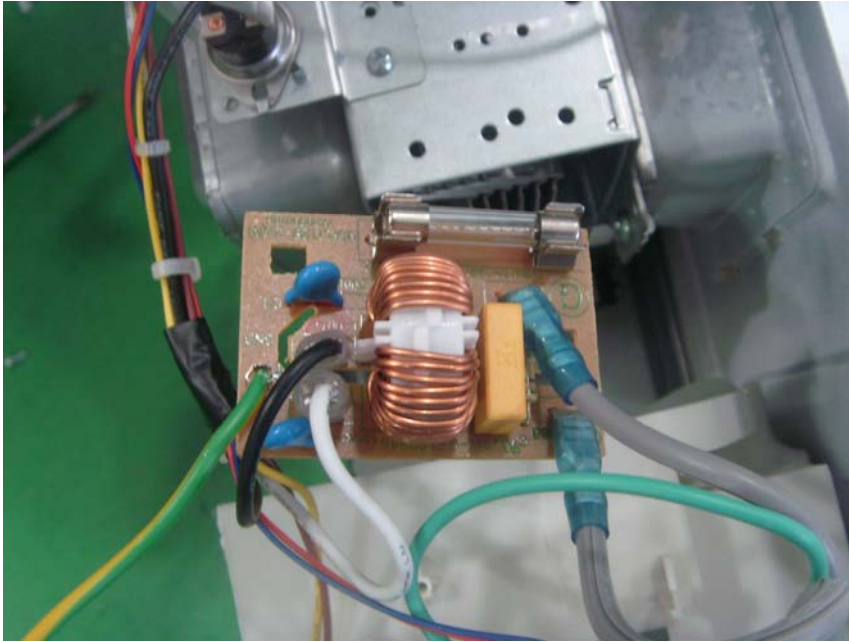
Door Opened View



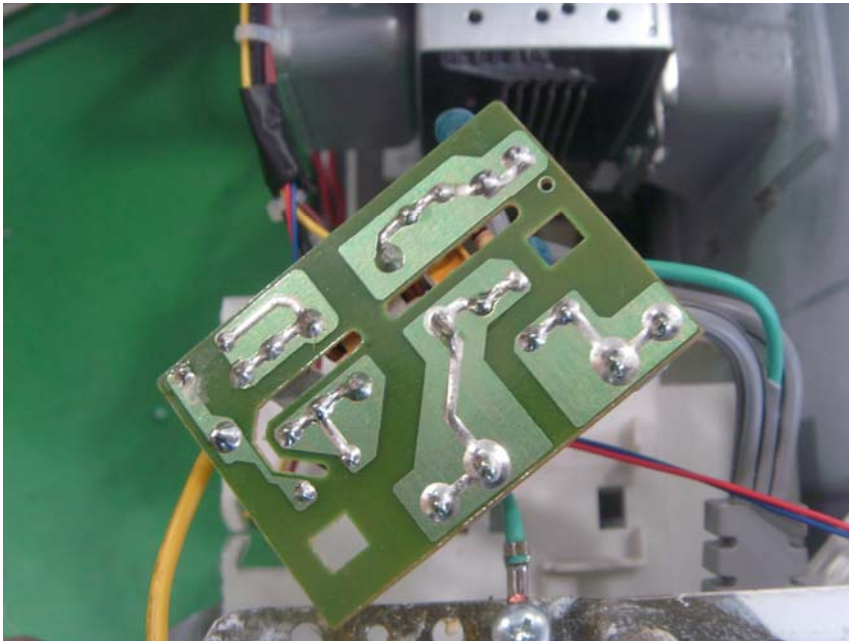
EUT- Inside View



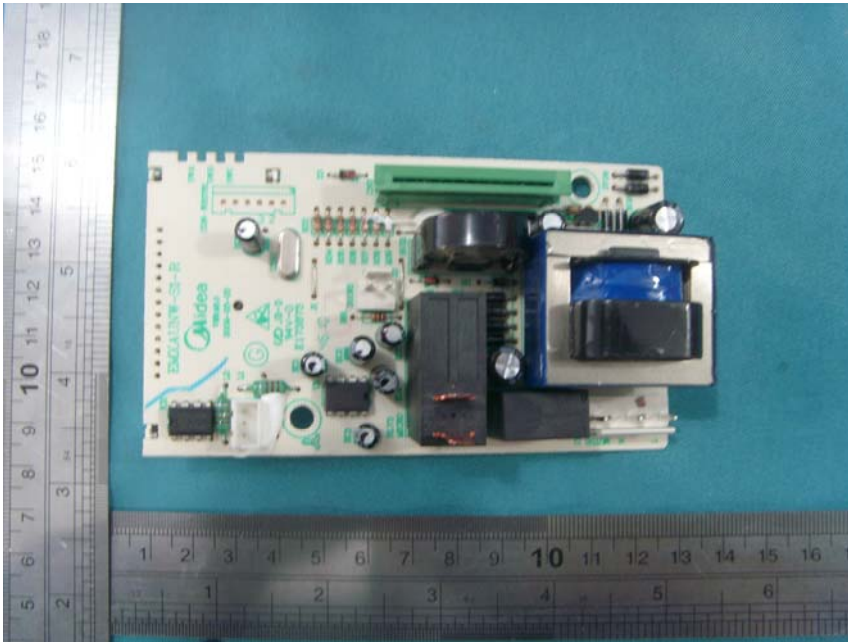
Magnetron View



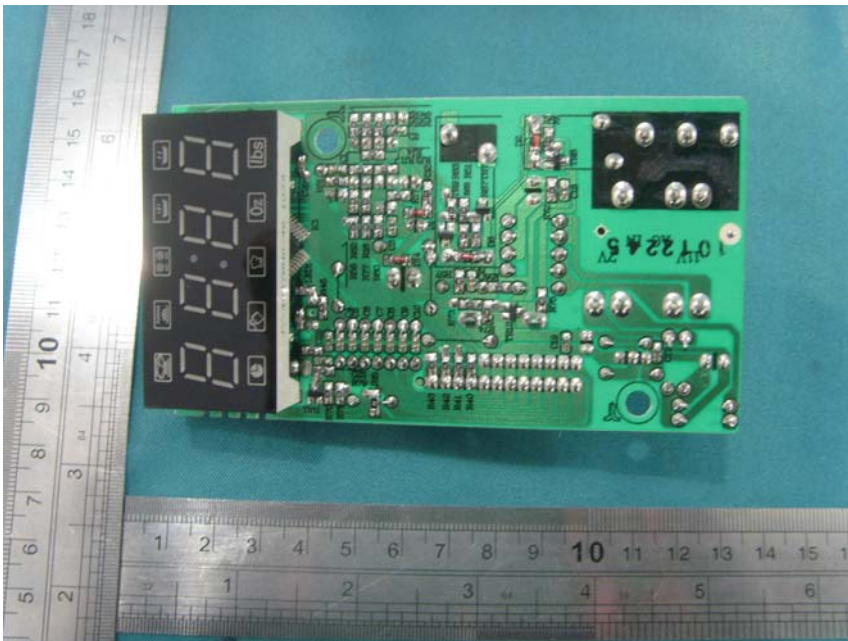
Power Filter Board -Front View



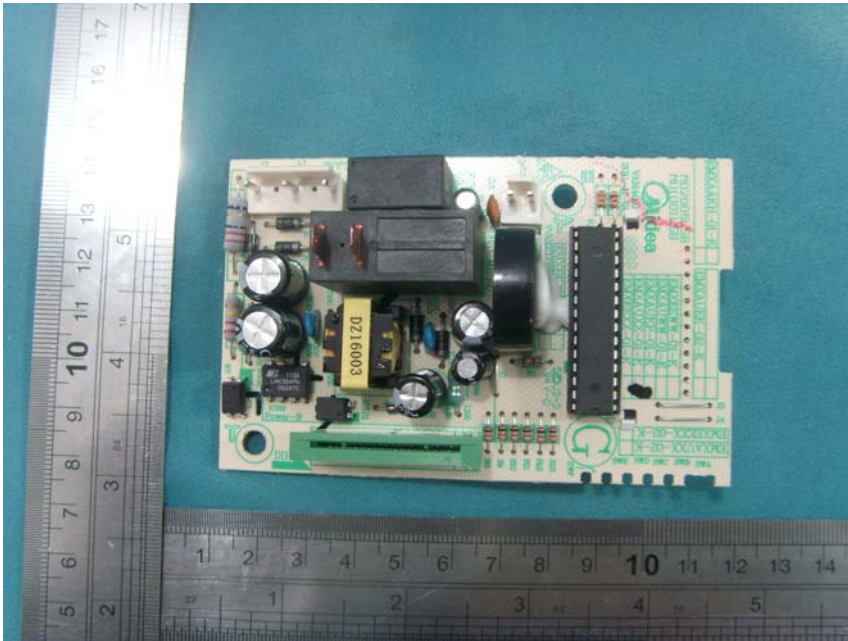
Power Filter Board -Rear View



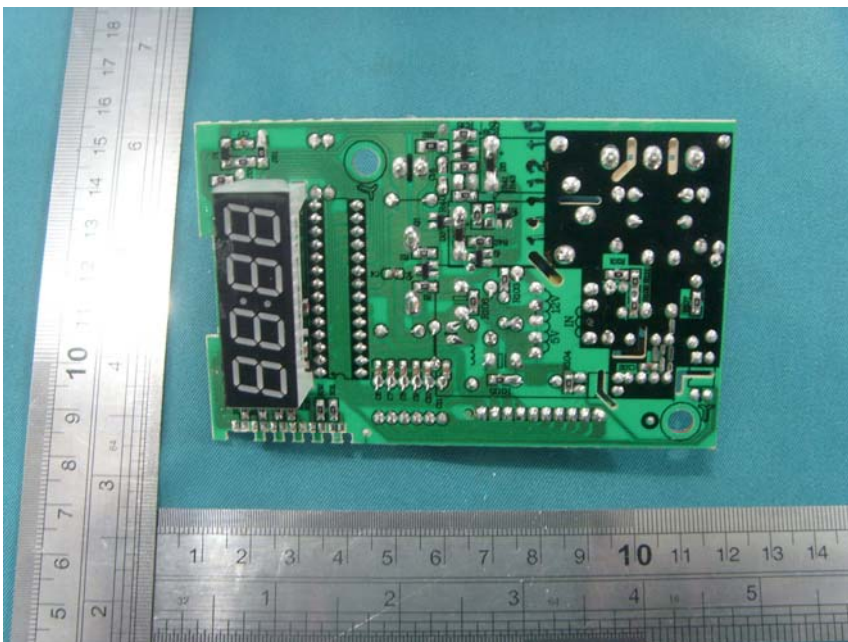
Motherboard top view with model MD1001LS



Motherboard bottom view with model MD1001LS



Motherboard top view with model MD1001LSB

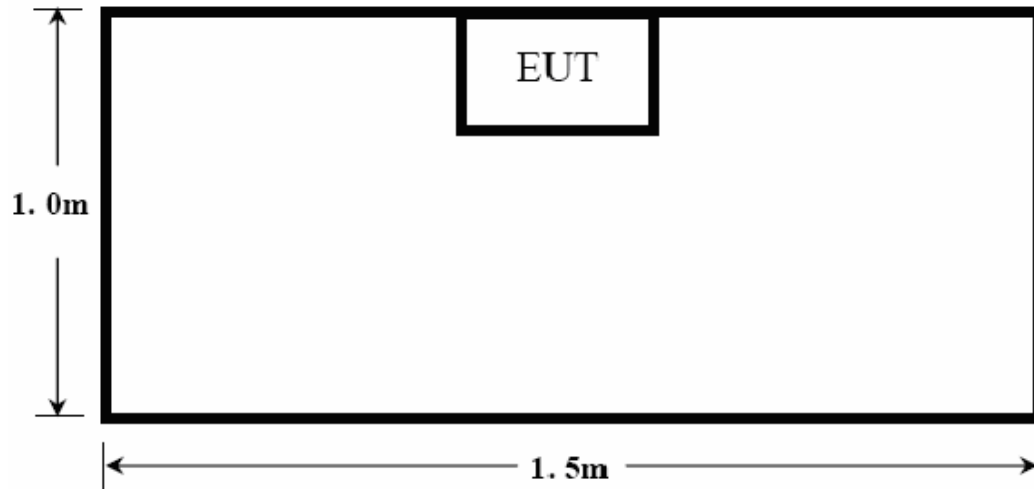


Motherboard bottom view with model MD1001LSB

Test System Details

<i>EUT</i>					
Model Numbers:	<i>XM136AYY</i>				
Model Tested:	<i>EM136AMW</i>				
Description:	<i>Microwave Oven</i>				
Manufacturer:	<i>Guangdong Midea Microwave and Electrical Appliances Manufacturing Co.,Ltd.</i>				
<i>Support Equipment</i>					
<i>N/A</i>					
<i>Cable Description</i>					
<i>Description</i>	<i>From</i>	<i>To</i>	<i>Length (Meters)</i>	<i>Shielded (Y/N)</i>	<i>Ferrite (Y/N)</i>
<i>Power Cable</i>	<i>EUT</i>	<i>Plug</i>	<i>1.20</i>	<i>N</i>	<i>N</i>

Configuration of Tested System



ATTACHMENT 1 – RADIATION HAZARD TEST

CLIENT:	Guangdong Midea Microwave and Electrical Appliances Manufacturing Co.,Ltd.	TEST STANDERD:	FCC Part 18
MODEL NUMBERS:	XM136AYY	PRODUCT:	Microwave Oven
MODEL TESTED:	EM136AMW	EUT DESIGNATION:	Home or Office
TEMPERATURE:	22°C	HUMIDITY:	60%RH
ATM PRESSURE:	101.1kPa	GROUNDING:	Through AC Power Cord
TESTED BY:	Sewen Guo	DATE OF TEST:	December 14, 2011
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 770ml 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:	<p>For EUT model: EM136AMW(With motherboard model MD1001LSB)</p> <p>There was no microwave leakage exceeding a power level of 0.167 mW/cm² observed at any point 5cm or more from the external surface of the oven.</p> <p>For EUT model: EM136AMW(With motherboard model MD1001LS)</p> <p>There was no microwave leakage exceeding a power level of 0.080 mW/cm² observed at any point 5cm or more from the external surface of the oven.</p> <p>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.</p>		
CHANGES OR MODIFICATIONS:	There were no modifications installed by ECMG Electronic Technical Testing Corp (Shenzhen) (China) test personnel.		
M. UNCERTAINTY:	0.0001 mW/cm ²		

Test Equipments List:

Test Equipment	Manufacturer	Model	Serial No.	Last Cal.	Cal. Due
Microwave Measurement	HOLADAY	HI-1710A	00052558	11/10/2011	11/09/2012

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).

SIGNED BY:


ENGINEER

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:	XM136AYY	PRODUCT:	Microwave Oven
MODEL TESTED:	EM136AMW	EUT DESIGNATION:	Home or Office
TEMPERATURE:	22°C	HUMIDITY:	60%RH
ATM PRESSURE:	101.1kPa	GROUNDING:	Through AC Power Cord
TESTED BY:	Sewen Guo	DATE OF TEST:	December 14, 2011
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 770ml 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) (China) test personnel.		
M. UNCERTAINTY :	± 5W		

Test Data:

EUT model: EM136AMW(With motherboard model MD1001LSB)

Input Voltage (Vac/Hz)	Input Current (amps)	Measured Input Power (watts)	Rated Input Power (watts)
120.7	13.30	1525	1500


EUT model: EM136AMW(With motherboard model MD1001LS)

Input Voltage (Vac/Hz)	Input Current (amps)	Measured Input Power (watts)	Rated Input Power (watts)
120.4	12.99	1503	1500

Test Equipments List :

Test Equipment	Manufacturer	Model	Serial No.	Last Cal.	Cal. Due
Power Meter	Ainuo	AN8726C	058704195	08/13/2011	08/12/2012

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).

SIGNED BY: 
ENGINEER

REVIEWED BY: 
SENIOR ENGINEER

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:	XM136AYY	PRODUCT:	Microwave Oven
MODEL TESTED:	EM136AMW	EUT DESIGNATION:	Home or Office
TEMPERATURE:	22°C	HUMIDITY:	60%RH
ATM PRESSURE:	101.1kPa	GROUNDING:	Through AC Power Cord
TESTED BY:	Sewen Guo	DATE OF TEST:	December 14, 2011
TEST REFERENCE:	ANSI C63.4-2009, FCC/OST MP-5:1986		
TEST PROCEDURE:	<p>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 1100ml 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.</p> <p>RF Output Power</p> $= (4.2\text{joules/calorie})(\text{volume in milliliters})(\text{temperature rise}) / (\text{time in seconds})$ $= 4.2 \text{ joules/calorie} \times 1100 \times (\text{Final Temp} - \text{Initial Temp}) / 120$		
TESTED RANGE:	N/A		
TEST VOLTAGE:	120VAC / 60Hz		
RESULTS:	<p>For EUT model: EM136AMW(With motherboard model MD1001LSB)</p> <p>RF Output Power =877.8 watts. The test results relate only to the equipment under test provided by client.</p> <p>For EUT model: EM136AMW(With motherboard model MD1001LS)</p> <p>RF Output Power =889.3 watts. The test results relate only to the equipment under test provided by client.</p>		
CHANGES OR MODIFICATIONS:	There were no modifications installed by ECMG Electronic Technical Testing Corp (Shenzhen).(China) test personnel.		
M. UNCERTAINTY:	± 0.3°C		

Test Data:

EUT model: EM136AMW(With motherboard model MD1001LSB)

Quality of Water (ml)	Starting Temperature (°C)	Final Temperature (°C)	Elapsed Time (Seconds)	RF Output Power (watts)
1100	19.7	42.5	120S	877.8


EUT model: EM136AMW(With motherboard model MD1001LS)

Quality of Water (ml)	Starting Temperature (°C)	Final Temperature (°C)	Elapsed Time (Seconds)	RF Output Power (watts)
1100	19.7	42.8	120S	889.3

Test Equipments List :

Test Equipment	Manufacturer	Model	Serial No.	Last Cal.	Cal. Due
Digit Thermometer	Fluke Corporation	Fluke 51 II	87500204	10/26/2011	10/25/2012
Stopwatch	CASIO	HS-3	005Q08R	10/22/2011	10/21/2012

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).

SIGNED BY: 
ENGINEER

REVIEWED BY: 
SENIOR ENGINEER

RF Output Power Test Set-Up :



ATTACHMENT 4 - OPERATING FREQUENCY MEASUREMENT

CLIENT:	Guangdong Midea Microwave and Electrical Appliances Manufacturing Co.,Ltd.	TEST STANDERD:	FCC Part 18
MODEL NUMBERS:	XM136AYY	PRODUCT:	Microwave Oven
MODEL TESTED:	EM136AMW	EUT DESIGNATION:	Home or Office
TEMPERATURE:	22°C	HUMIDITY:	60%RH
ATM PRESSURE:	101.1kPa	GROUNDING:	Through AC Power Cord
TESTED BY:	Sewen Guo	DATE OF TEST:	December 15, 2011
TEST REFERENCE:	ANSI C63.4-2009, FCC/OST MP-5:1986		
TEST PROCEDURE:	<p>The EUT was set up according to the FCC MP-5 and FCC Part 18 for Operating Frequency Measurement.</p> <ol style="list-style-type: none"> 1) The variation of frequency with time. The operating frequency was measured using a spectrum analyzer. Starting with the EUT at room temperature, a 1100ml 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 1100ml 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) (China) test personnel.		
M. UNCERTAINTY:	Freq. ±10kHz		

Test Data:

EUT model: EM136AMW(With motherboard model MD1001LSB)

Variation in Operating Frequency with Time:

<i>Minimum Frequency (MHz)</i>	<i>Maximum Frequency (MHz)</i>
2436.03	2467.13

Variation in Operating Frequency with Line Voltage:

<i>Minimum Frequency (MHz)</i>	<i>Maximum Frequency (MHz)</i>
2437.30	2460.38
<i>Note: Line voltage varied from 96Vac to 150Vac.</i>	

EUT model: EM136AMW(With motherboard model MD1001LS)

Variation in Operating Frequency with Time:

<i>Minimum Frequency (MHz)</i>	<i>Maximum Frequency (MHz)</i>
2431.12	2448.31

Variation in Operating Frequency with Line Voltage:

<i>Minimum Frequency (MHz)</i>	<i>Maximum Frequency (MHz)</i>
2437.30	2440.20
<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	ESI26	SB3436	01/25/2011	01/24/2012
Horn Antenna	R&S	HF906	SB3435	01/25/2011	01/24/2012
3m Semi-anechoic chamber	Albatross Projects	9x6x6	SB3450/01	03/21/2011	03/20/2012

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).

SIGNED BY:



ENGINEER

REVIEWED BY:



SENIOR ENGINEER

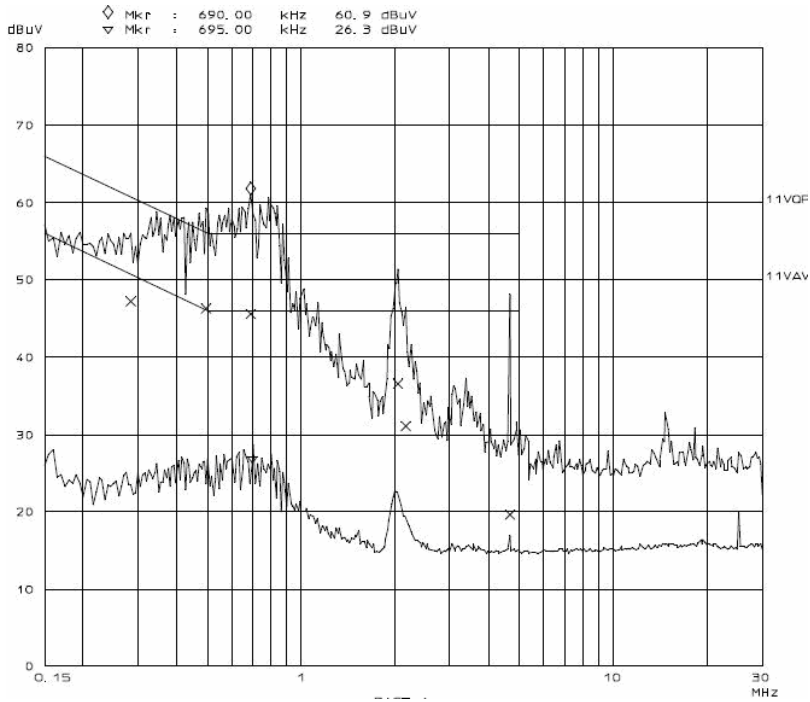
Operating Frequency Test Set-up:



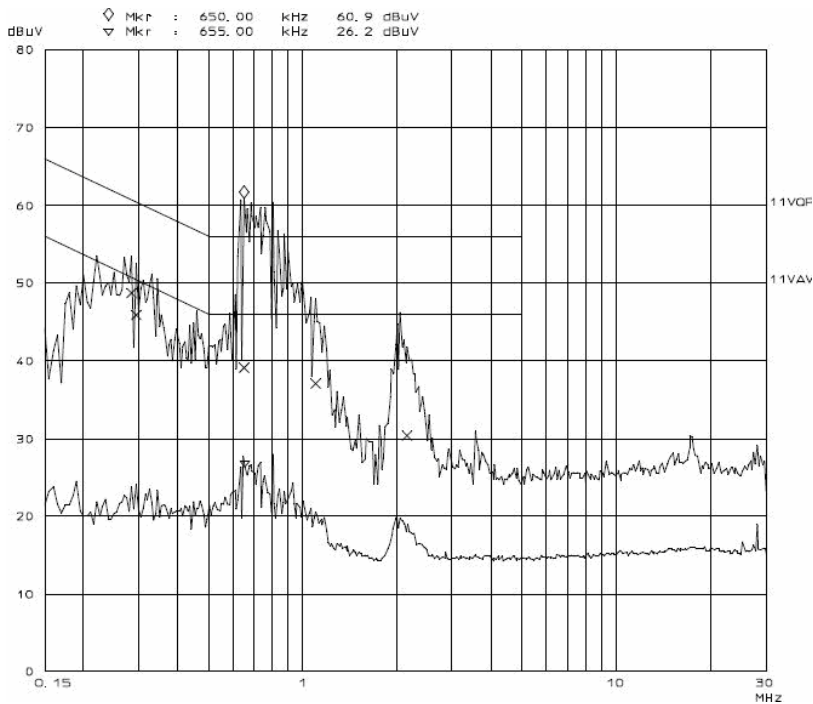
ATTACHMENT 5 - CONDUCTED EMISSION TEST RESULTS

CLIENT:	Guangdong Midea Microwave and Electrical Appliances Manufacturing Co.,Ltd.	TEST STANDERD:	FCC Part 18
MODEL NUMBERS:	XM136AYY	PRODUCT:	Microwave Oven
MODEL TESTED:	EM136AMW	EUT DESIGNATION:	Home or Office
TEMPERATURE:	22°C	HUMIDITY:	60%RH
ATM PRESSURE:	101.1kPa	GROUNDING:	Through AC Power Cord
TESTED BY:	Sewen Guo	DATE OF TEST:	December 14, 2011
TEST REFERENCE:	ANSI C63.4-2009, FCC/OST MP-5:1986		
TEST PROCEDURE:	The EUT was set up according to the guideline of ANSI C63.4-2009 & 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.		
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) (China) test personnel.		
M. UNCERTAINTY:	±2.5 dB		

EUT model: EM136AMW(With motherboard model MD1001LSB)

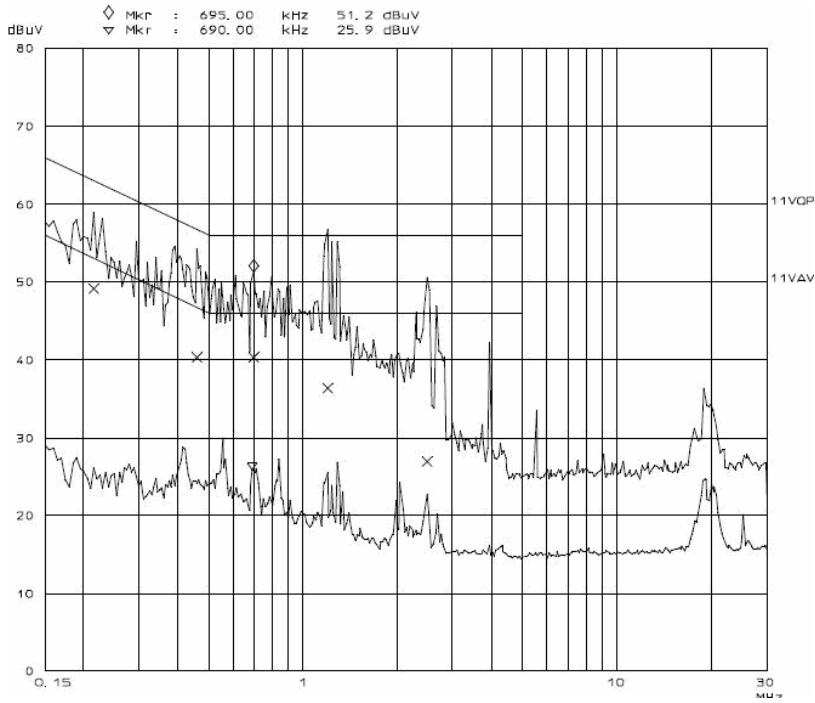


Line L Conducted Emission Graph

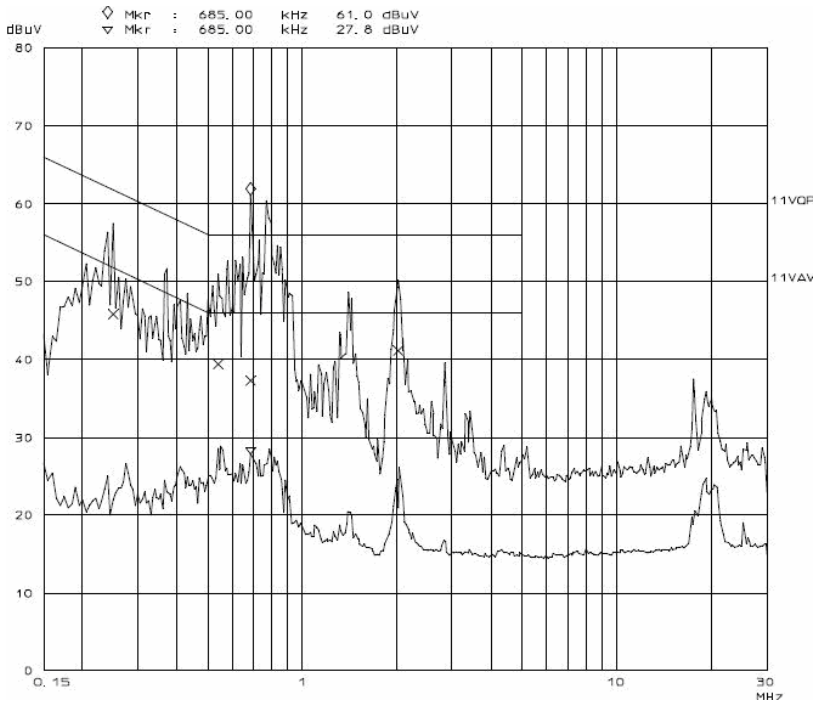


Line N Conducted Emission Graph

EUT model: EM136AMW(With motherboard model MD1001LS)



Line L Conducted Emission Graph



Line N Conducted Emission Graph

Test Data:**EUT model: EM136AMW (With motherboard model MD1001LSB)**

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	0.285	47.1	60.6	-13.5	0.285	27.2	50.6	-23.4
L	0.495	46.3	56	-9.7	0.495	26.4	46	-19.6
L	0.690	45.5	56	-10.5	0.690	26.4	46	-19.6
N	0.295	45.8	60.3	-14.5	0.295	26.1	50.3	-24.2
N	0.650	39.1	56	-16.9	0.650	26.2	46	-19.8
N	2.155	30.3	56	-25.7	2.155	19.2	46	-26.8

Note :

- 1) All readings are using a bandwidth of 9 kHz, with a 500 ms sweep time. A video filter was not use.
- 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.

EUT model: EM136AMW (With motherboard model MD1001LS)

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	0.460	40.3	56.7	-16.4	0.460	24.5	46.7	-22.2
L	0.695	40.3	56	-15.7	0.695	23.2	46	-22.8
L	2.480	26.8	56	-29.2	2.480	20.5	46	-25.5
N	0.540	39.4	56	-16.6	0.540	27.3	46	-18.7
N	0.685	37.3	56	-18.7	0.685	27	46	-19.0
N	2.015	41.1	56	-14.9	2.015	22.3	46	-23.7

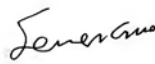
Note :

- 1) All readings are using a bandwidth of 9 kHz, with a 500 ms sweep time. A video filter was not use.
- 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	ESCS30	SB3319	01/25/2011	01/24/2012
LISN	R&S	ESH3-Z5	SB3996	01/25/2011	01/24/2012

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).

SIGNED BY: 
ENGINEER

REVIEWED BY: 
SENIOR ENGINEER

Conducted Emission Test Set-up:



ATTACHMENT 6 - RADIATED EMISSION TEST RESULTS

CLIENT:	Guangdong Midea Microwave and Electrical Appliances Manufacturing Co.,Ltd.	TEST STANDERD:	FCC Part 18
MODEL NUMBERS:	XM136AYY	PRODUCT:	Microwave Oven
MODEL TESTED:	EM136AMW	EUT DESIGNATION:	Home or Office
TEMPERATURE:	22°C	HUMIDITY:	60%RH
ATM PRESSURE:	101.1kPa	GROUNDING:	Through AC Power Cord
TESTED BY:	Sewen Guo	DATE OF TEST:	December 19, 2011
TEST REFERENCE:	ANSI C63.4-2009, FCC/OST MP-5:1986		
TEST PROCEDURE:	<p>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.</p> <p>The following data lists the significant emission frequencies, measured levels, correction factors (including cable and antenna correction factors), and the corrected readings against the limits. Explanation of the Correction Factor are given as follows:</p> <p>FS= RA + AF + CF - AG</p> <p>Where: FS = Field Strength</p> <p>RA = Receiver Amplitude</p> <p>AF = Antenna Factor</p> <p>CF = Cable Attenuation Factor</p> <p>AG = Amplifier Gain</p>		
TESTED RANGE:	30MHz to 24.5GHz		
TEST VOLTAGE:	120VAC / 60Hz		
RESULTS:	The EUT meets 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) (China) test personnel.		
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 :

EUT model: EM136AMW (With motherboard model MD1001LS)


30MHz – 1GHz						
<i>Frequency [MHz]</i>	<i>Antenna Polarization [V/H]</i>	<i>Reading Level [dBμV/m]</i>	<i>Factor (dB)</i>	<i>Field Strength [dBμV/m]</i>	<i>Delta, QP [dB]</i>	<i>3 Meters Limits [dBμV/m]</i>
248.316	H	22.79	12.71	35.5	-35.0	70.5
266.757	H	27.66	13.74	41.4	-29.1	70.5
526.623	H	20.77	17.63	38.4	-32.1	70.5
123.220	V	16.48	12.72	29.2	-41.3	70.5
255.024	V	18.78	13.22	32.0	-38.5	70.5
740.303	V	16.65	20.05	36.7	-33.8	70.5
<p>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 = Reading Level + Factor, Factor = Antenna Factor + Cable Loss</p>						
1GHz – 25GHz						
<i>Frequency [GHz]</i>	<i>Antenna Polarization [V/H]</i>	<i>Reading Level [dBμV/m]</i>	<i>Factor (dB)</i>	<i>Field Strength [dBμV/m]</i>	<i>Delta, AV [dB]</i>	<i>3 Meters Limits [dBμV/m]</i>
9.871	H	11.1	38.2	49.3	-21.2	70.5
14.831	H	1.2	41.3	42.5	-28.0	70.5
4.946	H	4.4	32.9	37.3	-33.2	70.5
4.210	V	10.6	33.1	43.7	-26.8	70.5
9.876	V	18.1	38.2	56.3	-14.2	70.5
14.831	V	13.5	41.3	54.8	-15.7	70.5
<p>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 = Reading Level + Factor, Factor = Antenna Factor + Cable Loss - Preamp Factor.</p>						

EUT model: EM136AMW (With motherboard model MD1001LSB)

30MHz - 1GHz						
Frequency [MHz]	Antenna Polarization [V/H]	Reading Level [dBμV/m]	Factor (dB)	Field Strength [dBμV/m]	Delta, QP [dB]	3 Meters Limits [dBμV/m]
262.126	H	26.13	13.97	40.1	-30.3	70.4
526.623	H	25.87	17.63	43.5	-26.9	70.4
738.549	H	23.09	20.01	43.1	-27.3	70.4
262.126	V	25.33	13.97	39.3	-31.1	70.4
526.623	V	25.07	17.63	42.7	-27.7	70.4
738.549	V	21.59	20.01	41.6	-28.8	70.4
<p>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 = Reading Level + Factor, Factor = Antenna Factor + Cable Loss</p>						
1GHz - 25GHz						
Frequency [GHz]	Antenna Polarization [V/H]	Reading Level [dBμV/m]	Factor (dB)	Field Strength [dBμV/m]	Delta, AV [dB]	3 Meters Limits [dBμV/m]
9.871	H	12	38.2	50.2	-20.2	70.4
14.831	H	4.4	41.3	45.7	-24.7	70.4
4.946	H	7.8	32.9	40.7	-29.7	70.4
4.210	V	12.5	33.1	45.6	-24.8	70.4
9.876	V	17.9	38.2	56.1	-14.3	70.4
14.831	V	14	41.3	55.3	-15.1	70.4
<p>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 = Reading Level + Factor, Factor = Antenna Factor + Cable Loss - Preamp Factor.</p>						

Test Equipments List:

<i>Test Equipment</i>	<i>Manufacturer</i>	<i>Model</i>	<i>Serial No.</i>	<i>Last Cal.</i>	<i>Cal. Due</i>
<i>EMI test receiver</i>	<i>R&S</i>	<i>ESI26</i>	<i>SB3436</i>	<i>01/25/2011</i>	<i>01/24/2012</i>
<i>Bilog antenna</i>	<i>Chase</i>	<i>CBL6112B</i>	<i>SB3440</i>	<i>01/25/2011</i>	<i>01/24/2012</i>
<i>Horn Antenna</i>	<i>R&S</i>	<i>HF906</i>	<i>SB3435</i>	<i>01/25/2011</i>	<i>01/24/2012</i>
<i>3m Semi-anechoic chamber</i>	<i>Albatross Projects</i>	<i>9x6x6</i>	<i>SB3450/01</i>	<i>03/21/2011</i>	<i>03/20/2012</i>
<p><i>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).</i></p>					

SIGNED BY: 

 ENGINEER

REVIEWED BY: 

 SENIOR ENGINEER

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



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

