Date: 1998-11-30 **Page 1 of 9**

No.: HM1500B/504

TEST REPORT

APPLICANT: (Code: 019506)

Whirlpool SMC Microwave Product Development Limited.
2/F., Shell Industrial Building, 12 Lee Chung St.,
Chai Wan, Hong Kong.

DATE SAMPLE(S) RECEIVED:

1998-11-18

TEST DURATION:

1998-11-19 to 1998-11-30

DESCRIPTION OF SAMPLE(S):

A sample of product said to be

Product:	Microwave Hood Combination
Manufacturer:	Shunde Whirlpool SMC Microwave Products Co., Ltd.
Brand Name:	Kenmore
Magnetrons:	Panasonic type 2M167B-M14
Model Number:	68640-1
Rating:	120Va.c. 60Hz 1800W 15A
Origin:	China

INVESTIGATIONS REQUESTED:

Perform relevant tests for F.C.C. part 18 certification.

RESULT/REMARK:

Please see attached sheet(s).

Please see report no.: HM1500/504 for measurement of performed in accordance with F.C.C. part 15.

Testing Engineer	Verify by	Patrick Wong for Managing Director

APPENDICES:

Appendix A - Test Facility
Appendix B - Test Equipment
Appendix C - Photos
Appendix D - Additional Models
Appendix E - Graphical Data

CONCLUSION:

From the measurement data obtained, the tested sample was considered to have COMPLIED with the requirements for the relevant clauses of Part 18 of the Federal Communication Commission Rules for Microwave Oven.

SUMMARY:

TEST CONDITION	TEST REQUIREMENT	TEST METHOD	STATUS
Radiated Emission, 100MHz to 18GHz	FCC Part 18 Subpart C	FCC / OST MP-5	Pass
Input Power Measurement	FCC Part 18 Subpart C	FCC / OST MP-5	Pass
Output Power Measurement	FCC Part 18 Subpart C	FCC / OST MP-5	Pass
Measurement of Output Frequency	FCC Part 18 Subpart C	FCC / OST MP-5	Pass
Output Frequency Stability	FCC Part 18 Subpart C	FCC / OST MP-5	Pass

TEST RESULTS:

1. Test: **Radiated Emissions (100MHz to 18GHz)**

Test Requirement: FCC Part 18 Subpart C
Test Method: FCC / OST MP-5
Test Date(s): 1998-11-29

Test Method:

Measurements were in accordance with F.C.C. Part 18 requirement and F.C.C. / OST MP-5. Please see Appendix A for details of measuring procedure.

The following measurement bandwidths were used:-

Frequency Range (GHz)	Resolution Bandwidth (MHz)	Video Bandwidth (Hz)
0.1 to 1	0.12	1200
1 to 18	1.0	1

Result:

In the frequency range 100MHz to 18GHz, no emissions were detected above the noise floor of the test instrumentation. The noise floor of the test instrumentation are less than 20dBμV/m in the frequency range 100MHz to 18GHz.

2. Test: Input Power Measurement

Test Requirement: FCC Part 18 Subpart C
Test Method: FCC / OST MP-5
Test Date(s): 1998-11-19

Test Method:

Input power was measured using a Wattmeter. A 1000ml water load was located at the center of the oven. The oven was operated at full output power.

Result:

Input Measurement			Manufacturer's Rating	
Voltage (Vac)	Current (A)	Input Power (W)	Current (A)	Input Power (W)
120	15.9	1810.0	15.0	1800.0

3. Test: **Output Power Measurement**

Test Requirement: FCC Part 18 Subpart C
Test Method: FCC / OST MP-5
Test Date(s): 1998-11-19

Test Method:

The output power was measured by the calorimetric method, using 1000ml load and evaluate the power output from the observed temperature rise of the load over a period of time.

The test method was based on clause 8 of IEC 705, Edition 3, 1996, Household Microwave Ovens - Methods for Measuring Performance.

Result:

Initial Temp (^{o}C)	Final Temp. (^{o}C)	Observed Period (s)	Output Power (W)
10.0	21.2	51.0	919.5

Remark:

$$\textbf{Power (W)} = \frac{4.187(\,joules/cal)\,x\,Volume(ml)\,x\Delta T}{51}$$

$$\textbf{Power (W)} = \frac{4.187\,x\,1000\,x\,11.2}{51} = 919.5(W)$$

4. Test: **Measurement of Output Frequency**

Test Requirement: FCC Part 18 Subpart C
Test Method: FCC / OST MP-5
Test Date(s): 1998-11-26

Test Method:

The fundamental frequency was measured using a spectrum analyser with precision frequency reference, with 1000ml load at the center of the oven.

Results:

Measured Frequency (MHz)	Manufacturer's Rated Frequency (MHz)
2471	2450

5. Test: **Output Frequency Stability**

Test Requirement: FCC Part 18 Subpart C
Test Method: Based on FCC / OST MP-5
Test Date(s): 1998-11-27

Frequency variation with time:

Test Method:
A spectrum analyser was used to measure the frequency variation with time, with a 1000ml load located at the center of the oven with maximum power. The test was performed until the volume was reduced by evaporation to approximately 20% of the original quantity.
During the test, the spectrum analyser trace was put on maximum hold in order to obtain a bandwidth plot showing the sideband edges.
Measurements were performed with the antenna in both horizontal and vertical polarities.

Results:

Load		Maximum sideband edge		Minimum sideband edge (GHz)	
Initial Volume (ml)	Final Volume (ml)	Measured	Limit	Measured	Limit
1000	200	2.482	2.500	2.410	2.400

Spectrum analyser Settings

Resolution bandwidth:	1MH	Frequency span:	12MHz/div
Video bandwidth:	1MHz	Sweep Time:	200msec

Remark:
Please see appendix E for graphical data.

Frequency variation with line voltage:

Test Method:

A spectrum analyser was used to measure the frequency variation for line voltage variation from 80% to 125% of normal voltage, with a 1000ml load located at the center of the oven with maximum power.

During the test, the spectrum analyser trace was put on maximum hold in order to obtain a bandwidth plot showing the sideband edges.

Measurements were performed with the antenna in both horizontal and vertical polarities.

Results:

Voltage	Maximum sideband edge		Voltage	Minimum sideband edge	
(Vac)	Measured (GHz)	Limit (GHz)	(Vac)	Measured (GHz)	Limit (GHz)
96	2.485	2.500	96	2.407	2.500

Spectrum analyser settings

Resolution bandwidth:	1MHz	Frequency span:	12MHz/div
Video bandwidth:	1MHz	Sweep Time:	200msec

Remark:

Please see appendix E for graphical data.

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