

**TOSHIBA**

**TOSHIBA HOKUTO ELECTRONICS CORPORATION**

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March 28, 2000  
(Ref. No. : 00-027)

RE : Electromagnetic radiation from microwave oven KOR-631H9  
with Toshiba magnetron 2M254

Dear Mr. Jun

We are enclosing herewith the above mentioned test results based on FCC measuring method in our measuring facility of FCC file number 430A.

We confirmed test results are satisfied with FCC limit.

Please feel free to contact us, if you have any question or request.

Sincerely yours,



Toshiki Azuma  
Manager  
Magnetron Engineering Group

AZ/IS/sw

cc : Mr. Ogawa TOSHIBA TOKYO  
Mr. Ikegami TOSHIBA HOKUTO TOKYO

ELECTROMAGNETIC RADIATION TEST OF MICROWAVE OVEN

The following measurements were conducted in Toshiba Hokuto Electronics Corporation measurement facility of FCC file number 430A.

Date : 2000-3-27  
Oven : KOR-631H9  
Tube : 2M254  
Line : 120V/60Hz

1. Output power (Load : 1000ml water (center))

Input power : 1000W  
Output power : 700W  
\* Permissible FIS =  $29.6 \mu\text{V/m}$  at 300m  
(FIS : Field Intensity Strength)

2. Power Leak (Load : 275ml water (center))

Po leak :  $0.35 \text{ mW/cm}^2$

3. FIS measurements

Measurement equipment (Refer Page-4)

Interference analyzer : EMC-60 MK-IV (Bandwidth : 5MHz)  
Antenna : CA-S, CA-M and CA-X

3-1 Side band radiation (Load : 700ml water (center))

Frequency (MHz)	FIS ( $\mu\text{V/m}$ ) at 300m
2391	9.3
2538	2.9

3-2 Harmonics radiation

Harmonics	Load	FIS( $\mu\text{V/m}$ ) at 300m	Frequency (MHz)
2nd	700ml side	7.3	4887
3rd	300ml side	16.3	7225
4th	700ml center	Background noise	9800

Note : 2nd and 3rd Harmonics : The maximum value with the load condition such as 300ml or 700ml water in the center or side position

4. Frequency measurements

Measurement equipment (Refer Page-4)

Interference analyzer : EMC-60 MK-IV (Bandwidth : 5MHz)  
Antenna : CA-S, CA-M and CA-X

4-1 The variation of frequency for load variation ( Load : 1000ml water center)

Volume of water (ml)	Frequency (MHz)
1000	2459
800	2459
600	2461
400	2465
200	2467

4-2 The variation of frequency for line voltage variation ( Load : 1000ml water center)

Line voltage (V)	Frequency (MHz)
96	2455
108	2460
120	2459
132	2460
150	2460

5. Frequency sweeping

Measurement equipment (Refer Page-4)

Spectrum analyzer : HP8562A  
Antenna : CA-S, CA-M and CA-X

None of higher FIS value than those shown in the above table existed in the following frequency band.

Frequency (MHz)	Load condition
2000 - 2400	700ml center
2500 - 4000	
4000 - 8000	300ml or 700ml water in the center or side position
8000 - 10000	700ml center

No.	Equipment Name	Model Name & Manufacturer	Specification	Last Calibration Date	Calibration Frequency
1	Interference Analyzer	EMC-60 MK-IV SER : 44116 ELECTRO-METRICS	0.5 to 18 GHz	March 2000	
2	Antenna	(1) CA-S SER : 22-1 POLARAD	2.1 to 4.34 GHz		
		(2) CA-M SER : 20-15 POLARAD	4.19 to 7.74 GHz		
		(3) CA-X SER : 20-10 POLARAD	7.36 to 10 GHz		
3	Signal Generator	8671B SER : 2545A00106 HEWLETT PACKARD	2.0 to 18 GHz	March 2000	
4	Frequency Counter	85340A SER : 134A01280 HEWLETT PACKARD		March 2000	Annually
5	Power Meter	435A SER : 1312J00144 HEWLETT PACKARD	0 to 1 mW	March 2000	Annually
6	Power Sensor	8481A SER : 1234A871 HEWLETT PACKARD		March 2000	
7	Spectrum Analyzer	8562A SER : 2923A03932 HEWLETT PACKARD	1 kHz to 22 GHz	March 2000	