



**FCC CFR47 PART 18 SUBPART C
ISM EQUIPMENT**

TEST REPORT

FOR

MICROWAVE OVEN

MODEL NUMBER: OTC

MAGNETRON MODEL: 2M253H, 2M167B

FCC ID: APYDMR0159

REPORT NUMBER: 05U3345-1

ISSUE DATE: APRIL 06, 2005

Prepared for
**SHARP CORPORATION
22-22 NAGAIKE-CHO,
ABENO-KU RELIABILITY CONTROL GROUP
OSAKA, JAPAN, 545-8522**

Prepared by
**COMPLIANCE CERTIFICATION SERVICES
561F MONTEREY ROAD,
MORGAN HILL, CA 95037, USA
TEL: (408) 463-0885
FAX: (408) 463-0888**

NVLAP[®]
LAB CODE:200065-0

TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS.....	3
2. PRODUCT DESCRIPTION	4
3. TEST FACILITY	4
4. ACCREDITATION AND LISTING	4
5. RADIO NOISE EMISSION MEASUREMENTS.....	5
5.1. <i>RADIATION HAZARD MEASUREMENT</i>	5
5.1.1. MAGNETRON-2M253H	5
5.1.2. MAGNETRON-2M167B.....	6
5.2. <i>INPUT POWER</i>	7
5.2.1. MAGNETRON-2M253H	7
5.2.2. MAGNETRON-2M167B.....	7
5.3. <i>RF OUTPUT POWER MEASUREMENT</i>	8
5.3.1. MAGNETRON-2M253H	8
5.3.2. MAGNETRON-2M167B.....	8
5.4. <i>OPERATING FREQUENCY MEASUREMENTS</i>	9
5.5. <i>VARIATION IN OPERATING FREQUENCY WITH TIME</i>	9
5.5.1. MAGNETRON-2M253H	9
5.5.2. MAGNETRON-2M167B.....	11
5.6. <i>VARIATION IN OPERATING FREQUENCY WITH VOLTAGE</i>	13
5.6.1. MAGNETRON-2M253H	13
5.6.2. MAGNETRON-2M167B.....	17
5.7. <i>RADIATED EMISSIONS</i>	21
5.7.1. MAGNETRON-2M253H (HORIZONTAL).....	23
5.7.2. MAGNETRON-2M253H (VERTICAL).....	25
5.7.3. MAGNETRON-2M167B (HORIZONTAL)	27
5.7.4. MAGNETRON-2M167B (VERTICAL).....	29
5.8. <i>RADIATED EMISSIONS – ABOVE 1GHz</i>	31
5.8.1. MAGNETRON-2M253H	31
5.8.2. MAGNETRON-2M167B.....	32
5.9. <i>CONDUCTED EMISSIONS</i>	33
5.9.1. MAGNETRON-2M253H	33
5.9.2. MAGNETRON-2M167B.....	33
6. MEASUREMENT EQUIPMENT LIST	39
7. SETUP PHOTO	40

1. ATTESTATION OF TEST RESULTS

COMPANY NAME: SHARP ELECTRONIC CORP
22-22 NAGAIKE-CHO,
ABENO-KU RELIABILITY CONTROL GROUP
OSAKA, JAPAN, 545-8522

EUT DESCRIPTION: MICROWAVE OVEN

MODEL NUMBER: OTC

SERIAL NUMBER: 115358

MAGNETRON MODEL: 2M253H, 2M167B

DATE TESTED: MARCH 31-APRIL 04, 3005

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC PART 18 SUBPART C & FCC METHEROD OF MEASUREMENTS OF RADIO NOISE EMISSION FROM INDUSTRIAL, SCIENTIFIC, AND MEDICAL EQUIPMENT FCC / OST MP-5	NO NON-COMPLIANCE NOTED

Compliance Certification Services, Inc. tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by Compliance Certification Services and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by Compliance Certification Services will constitute fraud and shall nullify the document. No part of this report may be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any government agency.

Approved & Released For CCS By:



THU CHAN
EMC SUPERVISOR
COMPLIANCE CERTIFICATION SERVICES

Tested By:



CHIN PANG
EMC ENGINEER
COMPLIANCE CERTIFICATION SERVICES

2. PRODUCT DESCRIPTION

The equipment under test is a microwave oven sold for consumer use. Model: OTC is an 1100W microwave oven with digital controls panel.

Magnetron Model: 2M253H and 2M167B

3. TEST FACILITY

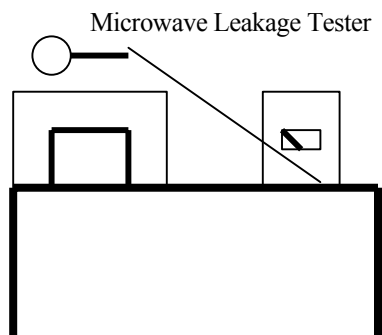
The open area test sites and conducted measurement facilities used to collect the radiated data are located at 561F Monterey Road, Morgan Hill, California, USA. The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22.

4. ACCREDITATION AND LISTING

The test facilities used to perform radiated and conducted emissions tests are accredited by National Voluntary Laboratory Accreditation Program for the specific scope of accreditation under Lab Code: 200065-0 to perform Electromagnetic Interference tests according to FCC PART 15 AND CISPR 22 requirements. No part of this report may be used to claim or imply product endorsement by NVLAP or any agency of the US Government. In addition, the test facilities are listed with Federal Communications Commission (reference no: 31040/SIT (1300B3) and 31040/SIT (1300F2))

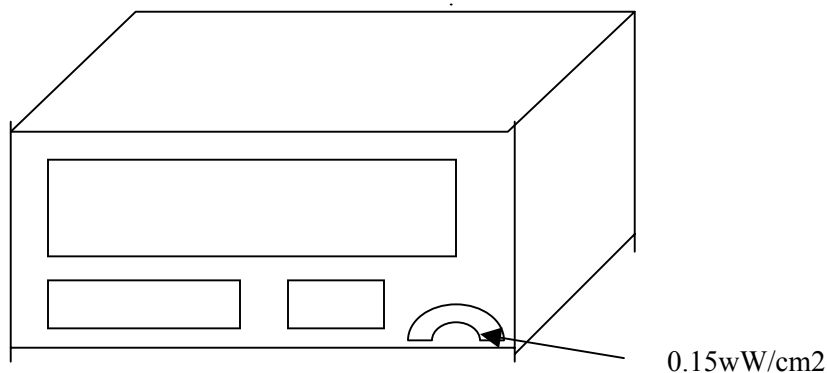
5. RADIO NOISE EMISSION MEASUREMENTS

5.1. RADIATION HAZARD MEASUREMENT



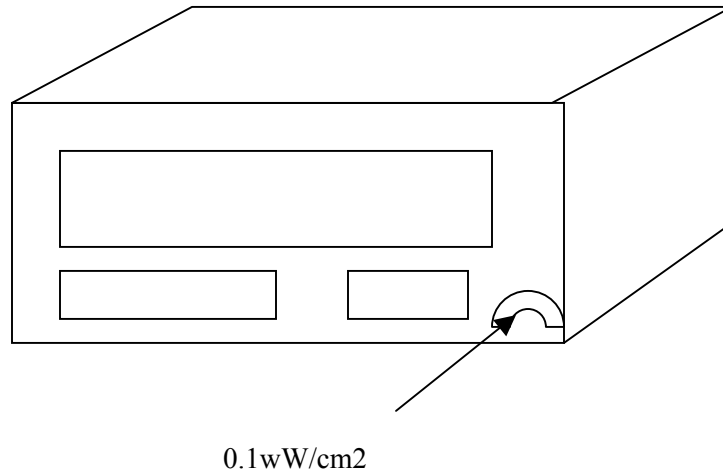
A 700-ml water load was placed in the center of the oven. The power setting was set to 10 (100) maximum power. While the oven was operating, the STE probe was moved slowly around the door seams to check for leakage.

5.1.1. MAGNETRON-2M253H



	Maximum Leakage (mW/cm ²)	Limit (mW/cm ²)
Figure shown above for the location of maximum leakage	0.15	1.00
All Others	0.05	1.00

5.1.2. MAGNETRON-2M167B



	Maximum Leakage (mW/cm ²)	Limit (mW/cm ²)
Figure shown above for the location of maximum leakage	0.1	1.00
All Others	0.05	1.00

5.2. INPUT POWER

Input power and current were measured using a wattmeter and an amp-meter. A 700 ml water load was placed in the center of the oven and the oven was set to 10 (100%) maximum power. A 700-ml water load was chosen for its compatibility. Manufacturers to determine their input ratings commonly use this procedure.

5.2.1. MAGNETRON-2M253H

Input Voltage (Vac)	Input Current (Amps)	Measured Input Power (Watts)
115	14.00	1610

5.2.2. MAGNETRON-2M167B

Input Voltage (Vac)	Input Current (Amps)	Measured Input Power (Watts)
115	13.95	1604.25

Based on the measured input power, the EUT was found to be operating within the intended specifications.

5.3. RF OUTPUT POWER MEASUREMENT

The Caloric Method was used to determine maximum output power. The initial temperature of a 1100-ml water load was measured.

The water load was placed in the center of the oven. The oven was operated at maximum output power for 120 seconds. Then the temperature of the water was re-measured.

5.3.1. MAGNETRON-2M253H

Start Temp (°C)	Final Temp (°C)	Elapaed Time (120 sec)	RF Power (Watts)
20.5	38.4	120	689.15
21.3	39.5	120	700.70
21.5	39.7	120	700.70

Average of 3 Trials: 696.85W

5.3.2. MAGNETRON-2M167B

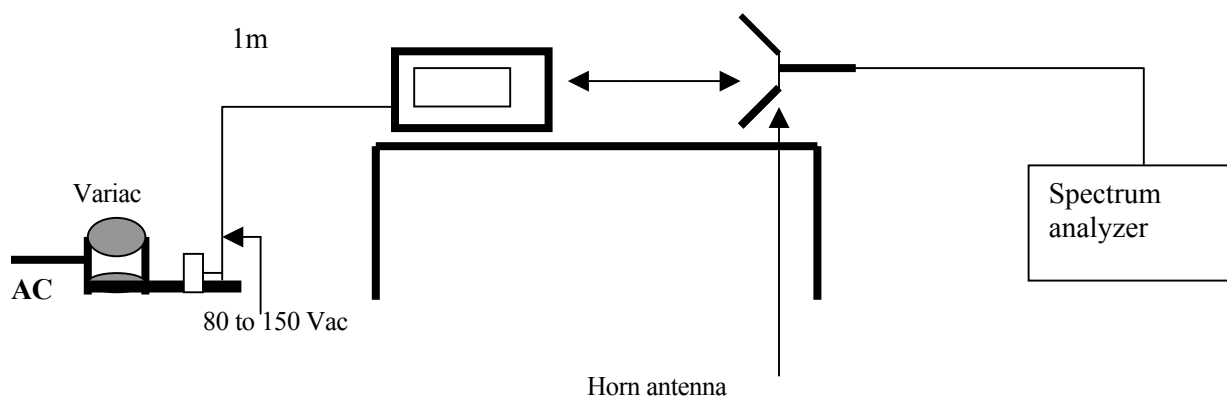
Start Temp (°C)	Final Temp (°C)	Elapaed Time (120 sec)	RF Power (Watts)
20.9	39.5	120	716.1
19.5	38.1	120	716.1
20.5	38.7	120	700.7

Average of 3 Trials : 710.97 W

$$\text{Power} = \frac{(4.2 \text{ Joules/Cal}) \times (\text{Volume in ml}) \times (\text{Temp. Rise})}{\text{Time in seconds}}$$

The measured output was found to be OVER 500Watts. Therefore, in accordance with section 18.305 of Subpart B, the measured out-of-band emissions were compared to the $25 \sqrt{\text{Power}/500}$ @ 300m limit.

5.4. OPERATING FREQUENCY MEASUREMENTS



Operating Frequency Measurement Set-up

5.5. VARIATION IN OPERATING FREQUENCY WITH TIME

The operating frequency was measured using a spectrum analyzer. Starting with the EUT at room temperature, a 1100-ml water load was placed in the center of 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% of the original load.

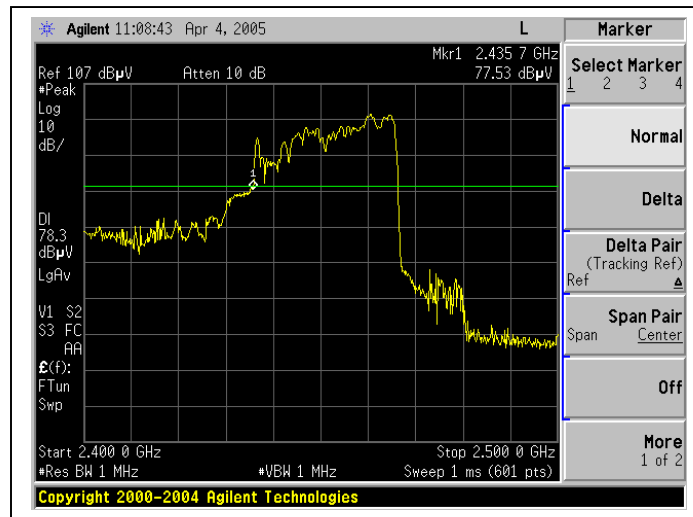
The results of this test are as follows.

Initial load: 1100 ml

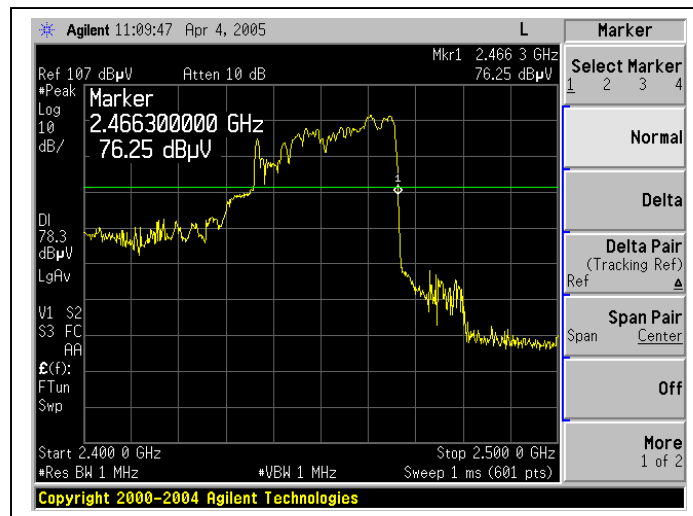
Load at completion of test: 200 ml

5.5.1. MAGNETRON-2M253H

	115Vac(MHz)
Minimum Frequency (2400 MHz)	2435.7
Maximum Frequency (2500 MHz)	2466.3



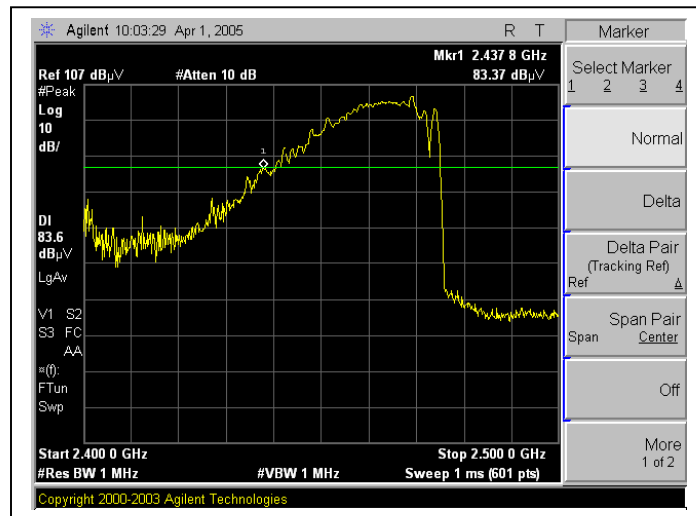
Minimum Frequency @ 115Vac



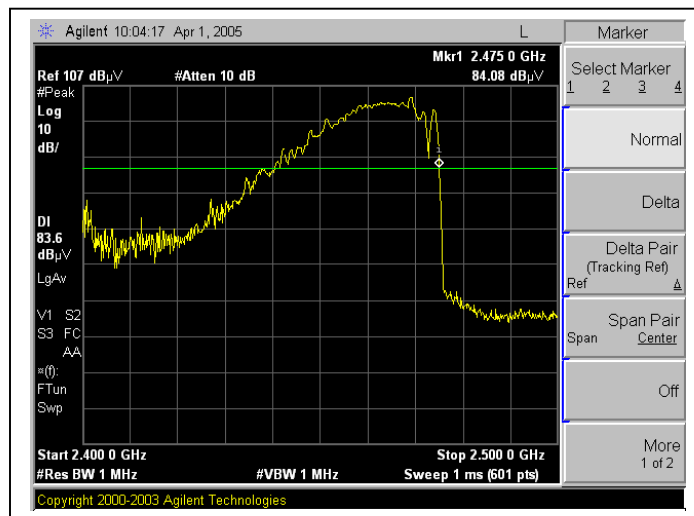
Maximum Frequency @ 115Vac

5.5.2. MAGNETRON-2M167B

	115Vac(MHz)
Minimum Frequency (2400 MHz)	2437.8
Maximum Frequency (2500 MHz)	2475



Minimum Frequency @ 115Vac



Maximum Frequency @ 115Vac

5.6. VARIATION IN OPERATING FREQUENCY WITH VOLTAGE

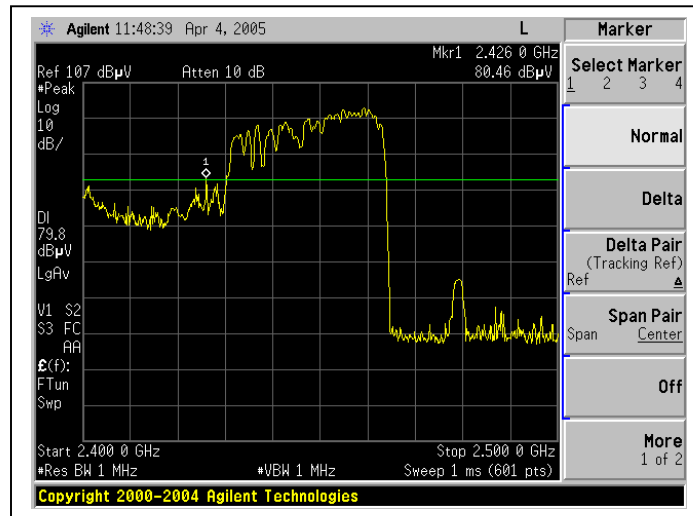
Following the above test, after operating the oven long enough to assure that stable operating temperature were obtained, the operating frequency was monitored as the input voltage was varied between 80 to 125 percent of the nominal rating.

The water load was maintained at 200 ml for the duration of the test.

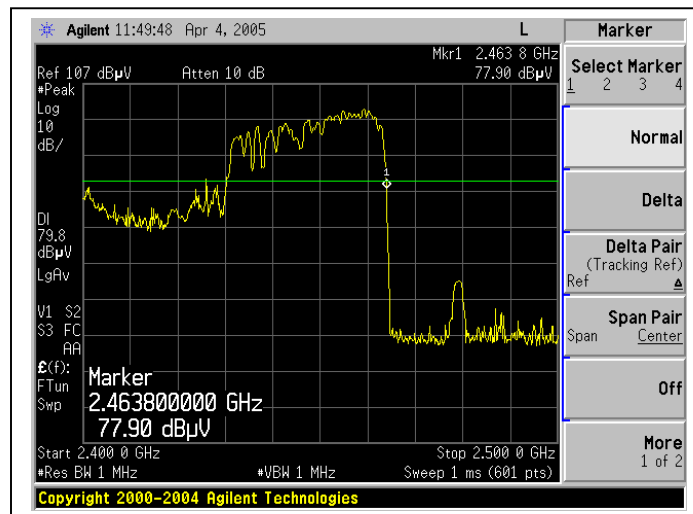
The results of this test are as follows:

5.6.1. MAGNETRON-2M253H

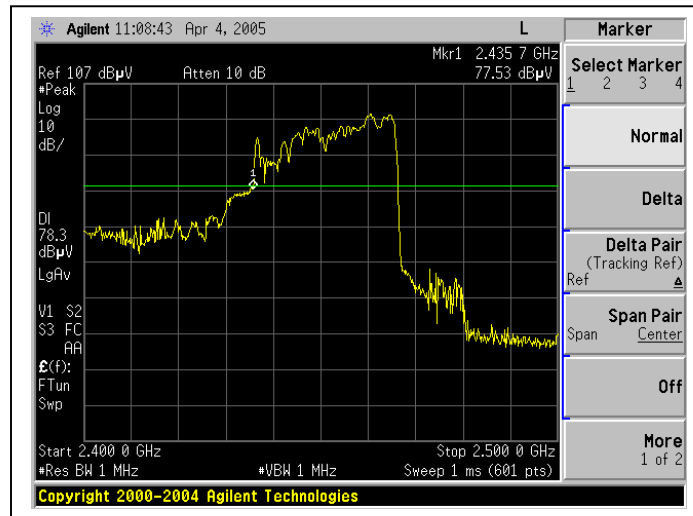
	96Vac (MHz)	115Vac (MHz)	150Vac (MHz)
Minimum Frequency (2400 MHz)	2426	2435.7	2429
Maximum Frequency (2500 MHz)	2463.8	2466.3	2462.2



Minimum Frequency @ 96Vac



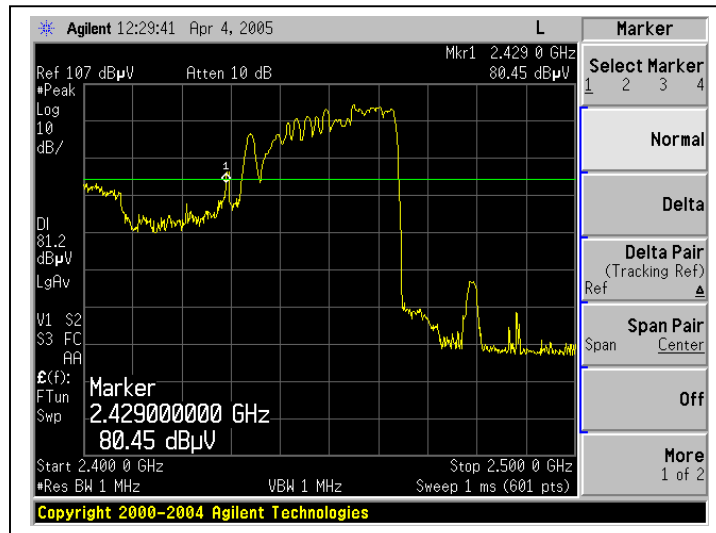
Maximum Frequency @ 96Vac



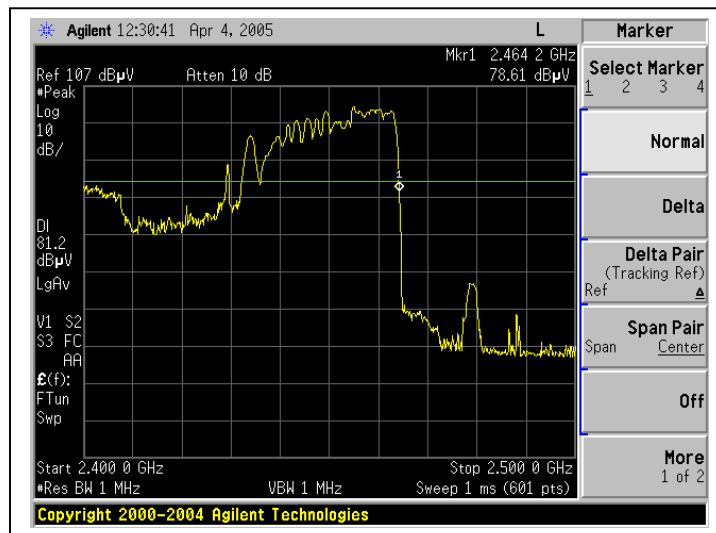
Minimum Frequency @ 115Vac



Maximum Frequency @ 115Vac



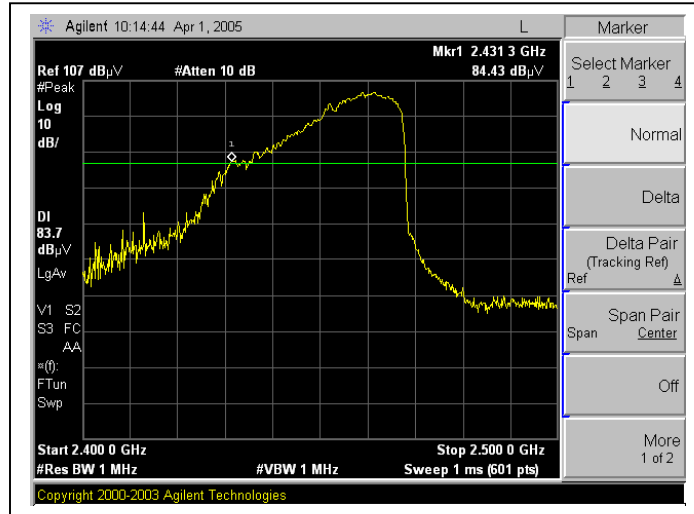
Minimum Frequency @ 150Vac



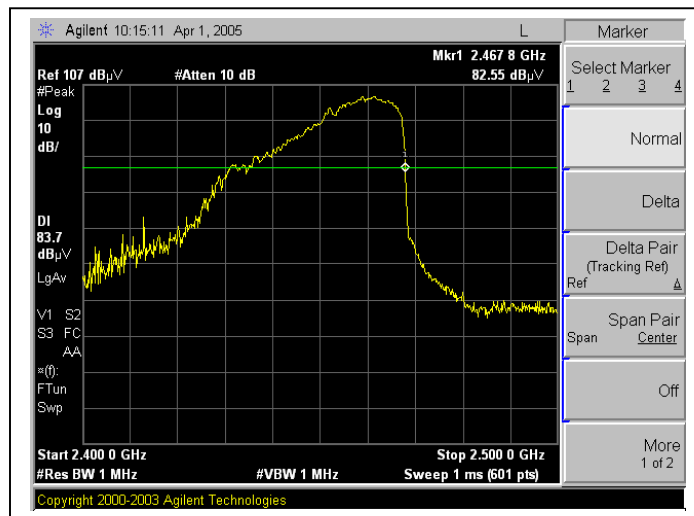
Maximum Frequency @ 150Vac

5.6.2. MAGNETRON-2M167B

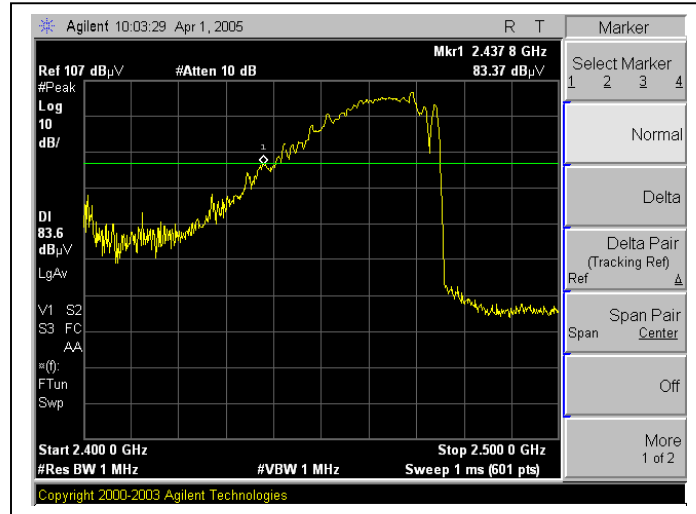
	96Vac (MHz)	115Vac (MHz)	150Vac (MHz)
Minimum Frequency (2400 MHz)	2431.3	2437.8	2433.8
Maximum Frequency (2500 MHz)	2467.8	2475	2472.2



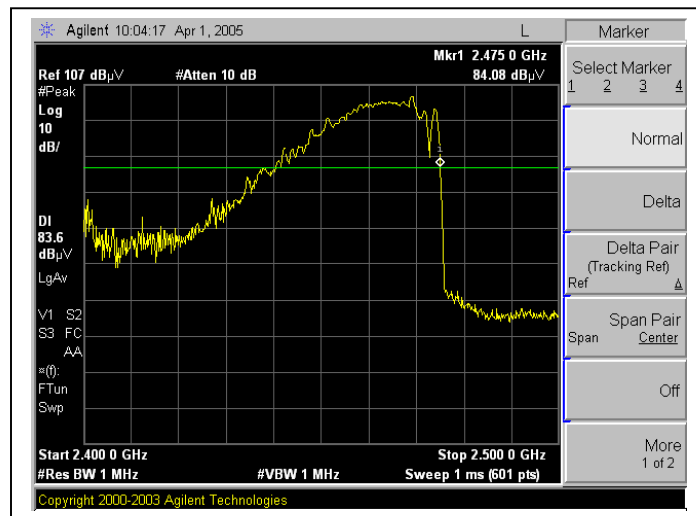
Minimum Frequency @ 96Vac



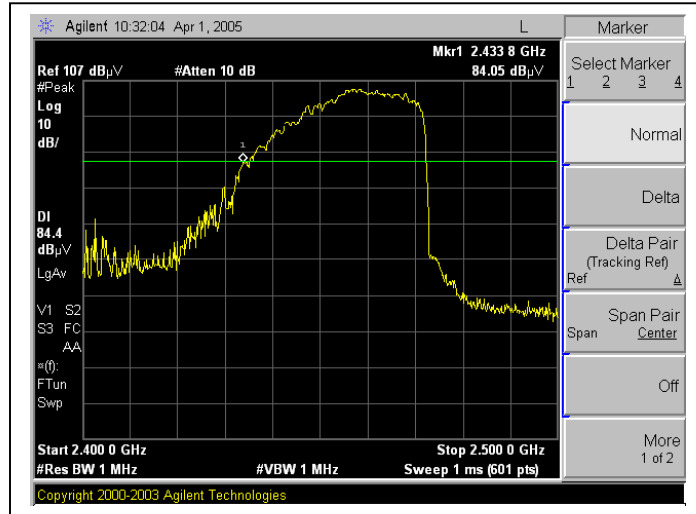
Maximum Frequency @ 96Vac



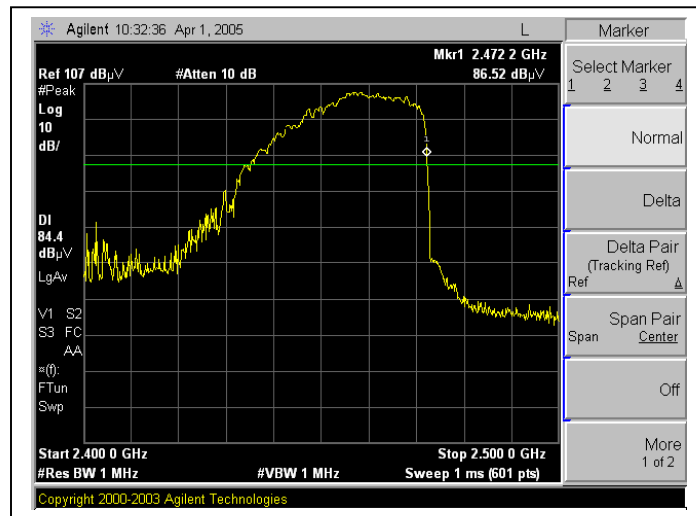
Minimum Frequency @ 115Vac



Maximum Frequency @ 115Vac



Minimum Frequency @ 150Vac



Maximum Frequency @ 150Vac

5.7. RADIATED EMISSIONS

Radiated emissions were measured over an inclusive frequency range to 100MHz through the sixth harmonic of the operating frequency. For this test, a 80cm high wooden table in an open laboratory area supported the device under test. The table was placed on a turntable.

The measurement antenna was placed 3 meters for measurements from 30 - 1000MHz and 1 meter for measurements from 1000 - 14,000MHz, respectively, for the device under test. The indicated frequency range was swept as the device under test was rotated along its vertical axis in 90° increments.

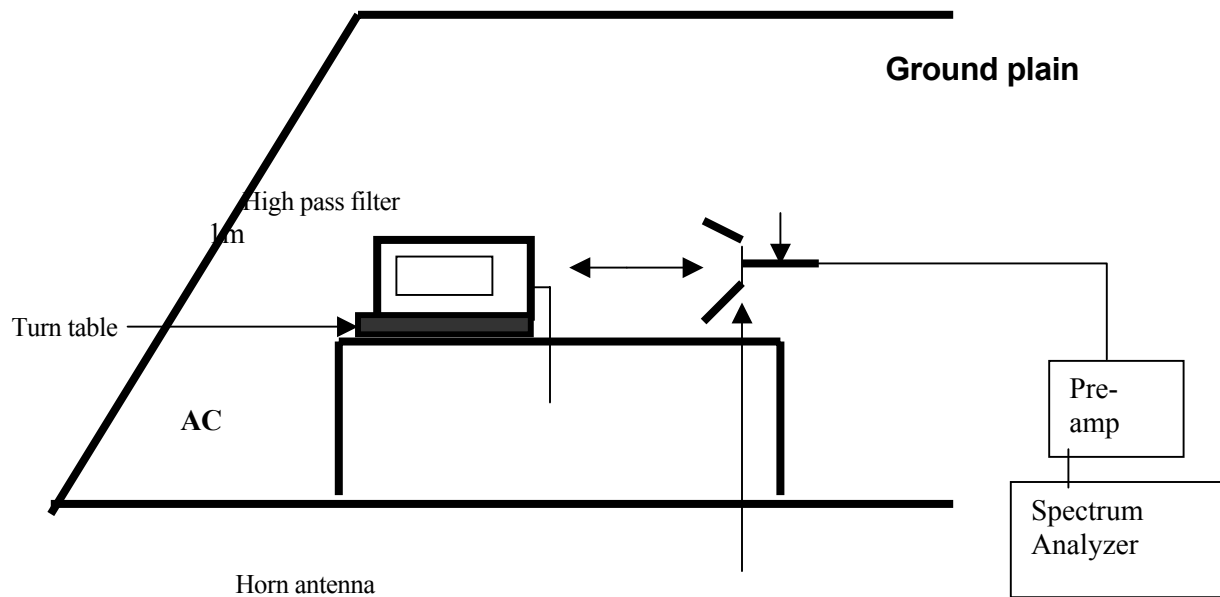
During the preliminary tests, the load consisted of 700-ml tap water placed in the center of the oven. The emissions were observed while the device under test was operated at maximum output power.

The level of the emissions near the edge of the designated ISM frequency band was measured. For this test, the load consisted of 700-ml water load located in the center of the oven.

The levels of the second and third harmonic were measured inclusively with a 300 ml and 700 ml water load alternately placed in the center and right front corner of the oven. Harmonics beyond the third were measured with a 700-ml load placed in the center of the oven. The data obtained during these tests is contained on the attached spreadsheet.

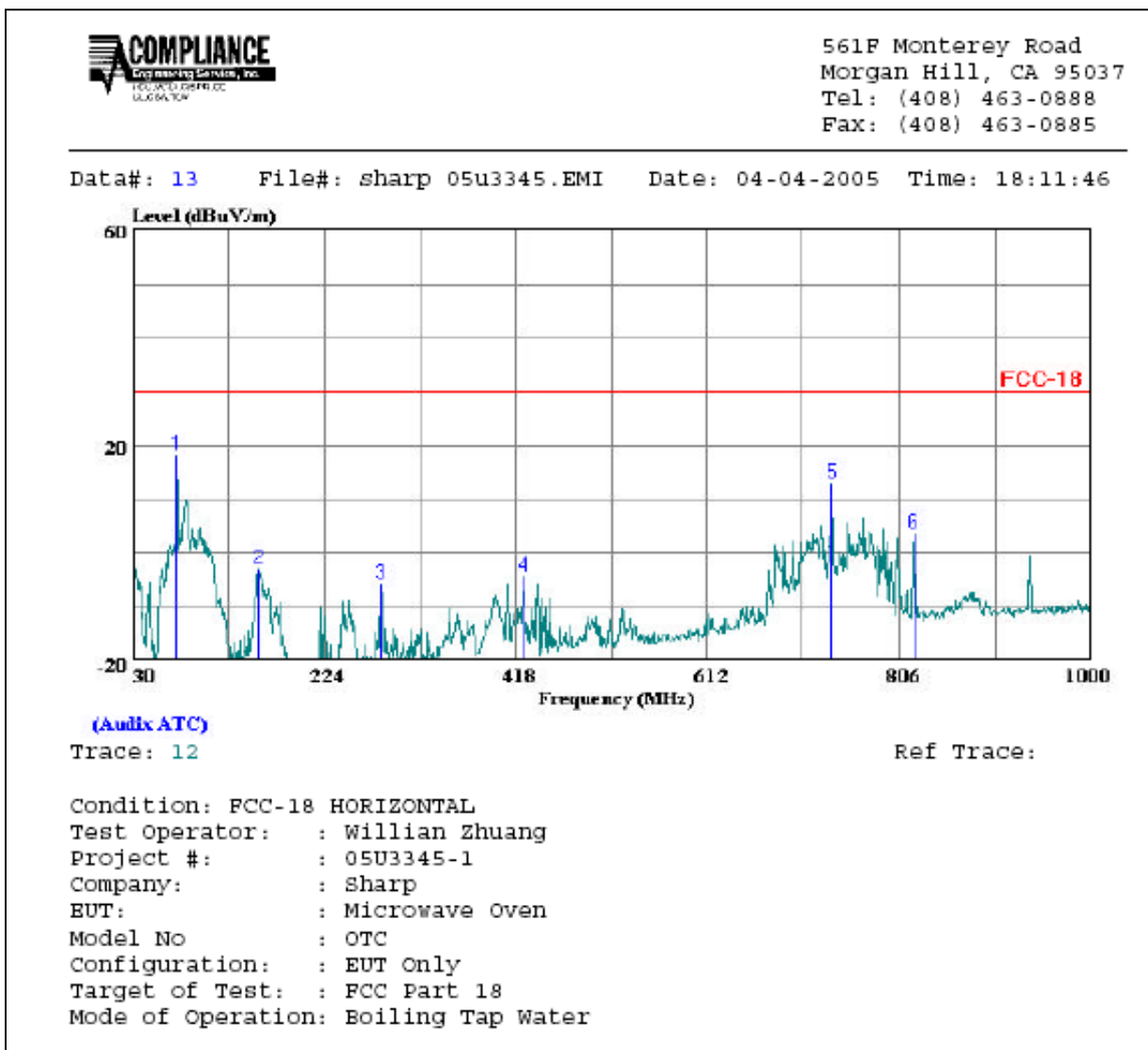
The maximum of all other out-of-band emissions were measured while a 700-ml load was placed in the center of the oven. Maximum readings were recorded after variations in antenna polarizations, height, device orientation, load position, and size. For frequencies above 1 GHz, the video bandwidth of the spectrum analyzer was set to simulate a linear average detection mode (10Hz).

For all emissions the equivalent 300 meters intensity was calculated assuming a linear decrease in the intensity of the RFI field with increased distance. In the operating modes and conditions described, there were no over-limit emissions discovered.



Radiated Emissions Configuration

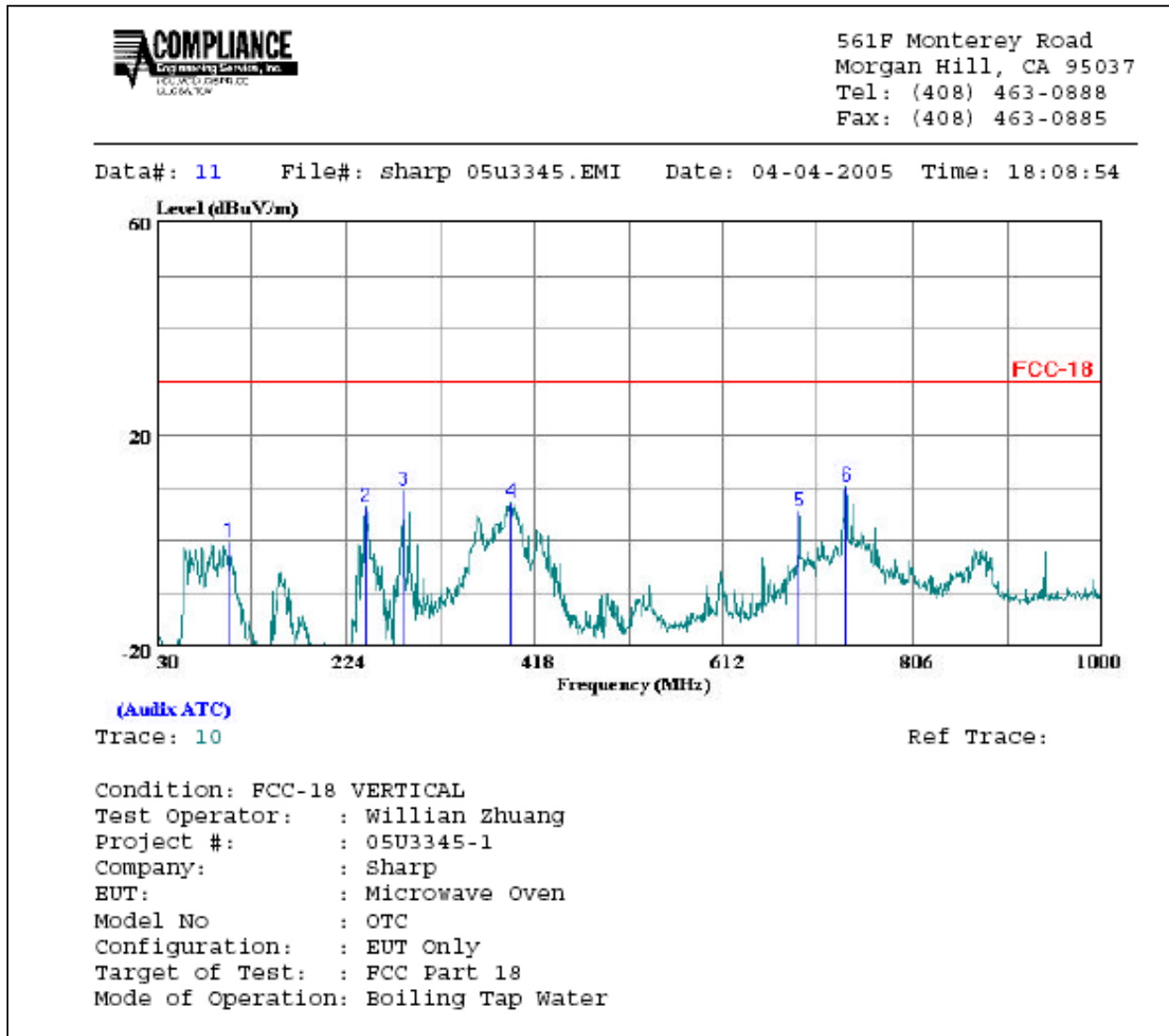
5.7.1. MAGNETRON-2M253H (HORIZONTAL)



HORIZONTAL DATA,

							Page: 1
	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	73.650	36.90	-18.64	18.26	30.00	-11.74	Peak
2	158.040	10.90	-13.87	-2.97	30.00	-32.97	Peak
3	281.230	6.60	-12.59	-5.99	30.00	-35.99	Peak
4	426.730	4.40	-8.88	-4.48	30.00	-34.48	Peak
5	739.070	15.40	-2.57	12.83	30.00	-17.17	Peak
6	820.550	5.20	-1.63	3.57	30.00	-26.43	Peak

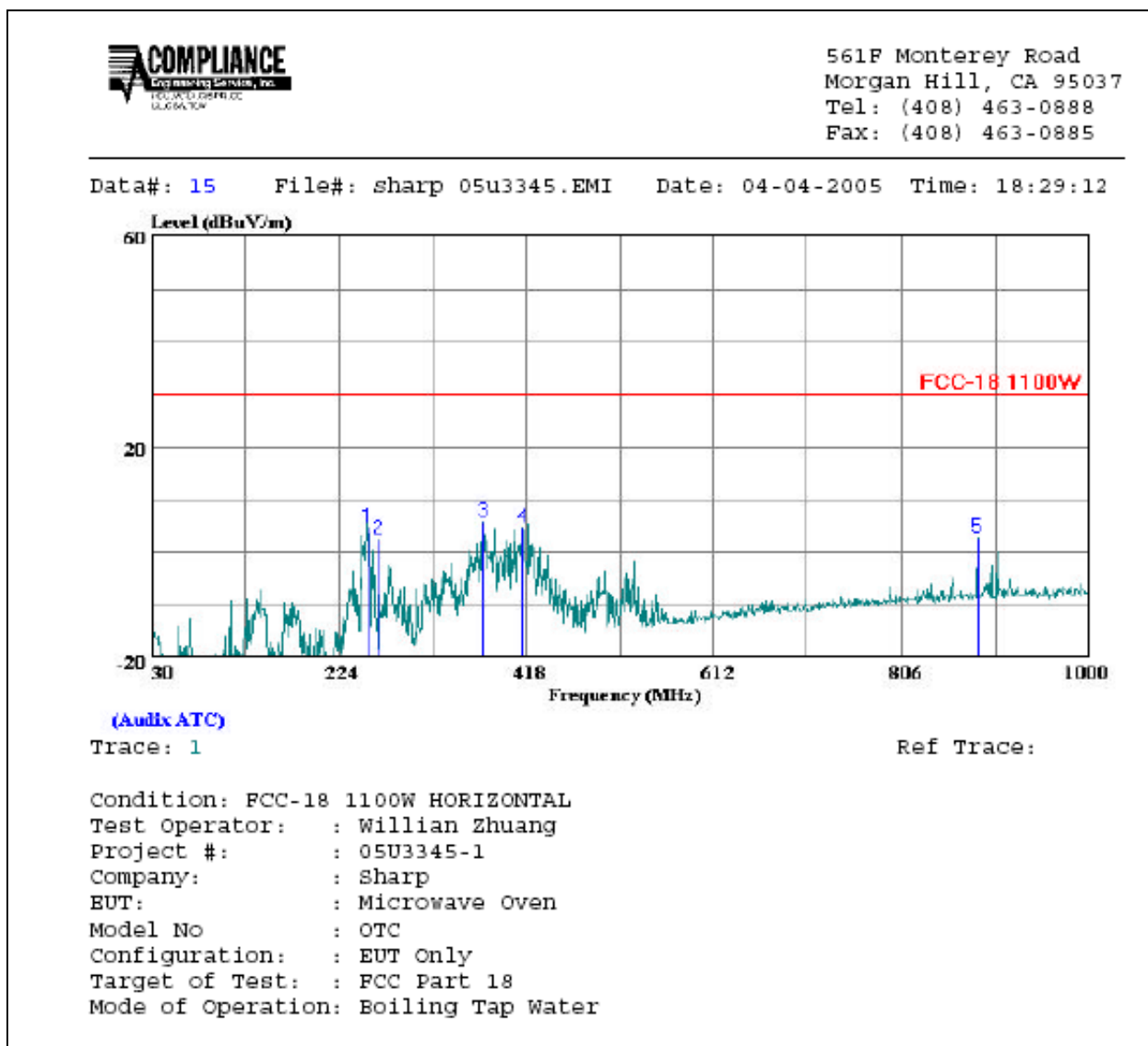
5.7.2. MAGNETRON-2M253H (VERTICAL)



VERTICAL DATA

Page: 1							
	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	104.690	15.00	-15.42	-0.42	30.00	-30.42	Peak
2	244.370	20.20	-13.90	6.30	30.00	-23.70	Peak
3	283.170	21.90	-12.53	9.37	30.00	-20.63	Peak
4	393.750	16.90	-9.67	7.23	30.00	-22.77	Peak
5	690.570	8.90	-3.38	5.52	30.00	-24.48	Peak
6	739.070	12.80	-2.57	10.23	30.00	-19.77	Peak

5.7.3. MAGNETRON-2M167B (HORIZONTAL)

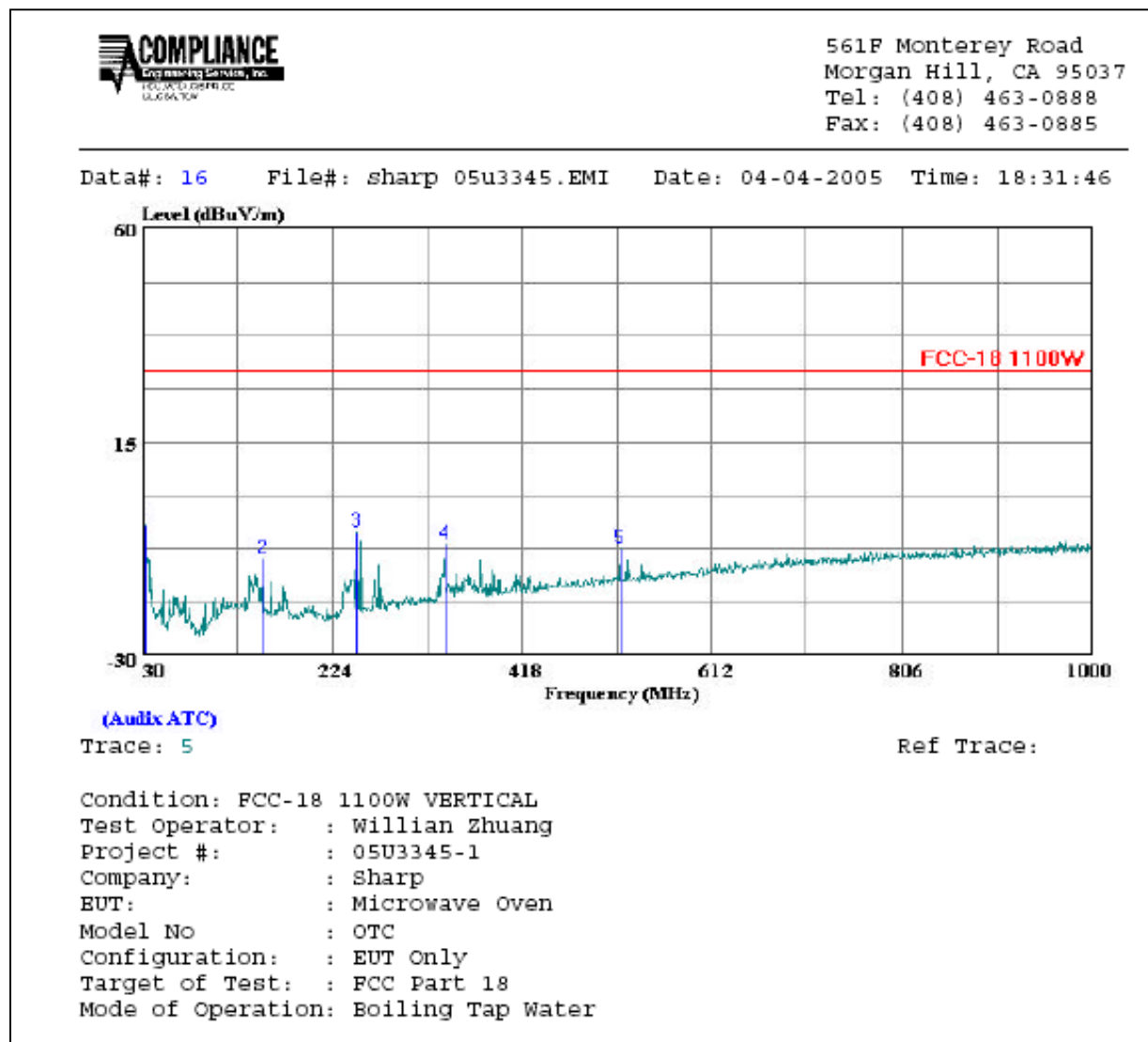


HORIZONTAL DATA,

Page: 1

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	254.070	18.20	-13.55	4.65	30.00	-25.35	Peak
2	265.710	15.50	-13.12	2.38	30.00	-27.62	Peak
3	373.380	15.80	-10.09	5.71	30.00	-24.29	Peak
4	414.120	13.80	-9.15	4.65	30.00	-25.35	Peak
5	883.600	3.80	-1.17	2.63	30.00	-27.37	Peak

5.7.4. MAGNETRON-2M167B (VERTICAL)



VERTICAL DATA

							Page: 1
	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	32.910	5.55	-8.01	-2.47	30.00	-32.47	Peak
2	153.190	3.90	-13.70	-9.80	30.00	-39.80	Peak
3	249.220	9.60	-13.72	-4.12	30.00	-34.12	Peak
4	339.430	4.40	-10.90	-6.50	30.00	-36.50	Peak
5	518.880	-0.80	-6.89	-7.69	30.00	-37.69	Peak

5.8. RADIATED EMISSIONS – ABOVE 1GHz

5.8.1. MAGNETRON-2M253H

4/2/2005 1 High Frequency Measurement
Compliance Certification Services, Morgan Hill Open Field Site

Test Engr: William Zhuang
Project #: 05U3345-1
Company: Sharp Electronics Corp.
EUT Descrip.: Microwave Oven
EUT M/N: OTC, w/ Magnetron 2M253H
Test Target: FCC Part 18
Mode Oper: boiling Tap Water

Test Equipment:

EMCO Horn 1-18GHz T73; S/N: 6717 @3m	Pre-amplifier 1-26GHz T63 Miteq 646456	Pre-amplifier 26-40GHz	Horn > 18GHz	Limit
---	---	------------------------	--------------	-------

Hi Frequency Cables

2 foot cable 2_William	3 foot cable	4 foot cable	12 foot cable 12_William
---------------------------	--------------	--------------	-----------------------------

HPF
HPF_4.0GHz

Reject Filter

Peak Measurements
RBW=VBW=1MHz

Average Measurements
RBW=1MHz ; VBW=10Hz

f GHz	Dist (m)	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Filt dB	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes (V/H)
2.465	3.0	65.7	41.7	28.4	2.2	-39.0	-40.0	0.0	17.4	-6.6	50.0	30.0	-32.6	-36.6	V
4.913	3.0	72.6	41.4	33.0	3.3	-37.9	-40.0	0.6	31.5	0.3	50.0	30.0	-18.5	-29.7	V
7.374	3.0	67.9	39.4	35.9	4.0	-36.9	-40.0	0.6	31.5	3.1	50.0	30.0	-18.5	-26.9	V
8.608	3.0	75.0	39.6	37.2	4.2	-36.3	-40.0	0.8	40.8	5.4	50.0	30.0	-9.2	-24.6	V
9.826	3.0	64.4	36.4	37.6	4.5	-36.1	-40.0	0.8	31.2	3.2	50.0	30.0	-18.8	-26.8	V
12.300	3.0	60.7	34.8	38.8	5.3	-37.8	-40.0	0.9	28.0	2.1	50.0	30.0	-22.0	-27.9	V
14.750	3.0	73.0	39.7	40.2	5.9	-39.6	-40.0	0.9	40.3	7.0	50.0	30.0	-9.7	-23.0	V
17.241	3.0	72.0	35.9	42.8	6.0	-35.9	-40.0	1.5	46.4	10.3	50.0	30.0	-3.6	-19.7	V
2.460	3.0	67.2	40.8	28.4	2.2	-39.0	-40.0	0.0	18.8	-7.5	50.0	30.0	-31.2	-37.5	H
4.919	3.0	72.2	41.5	33.0	3.3	-37.9	-40.0	0.6	31.2	0.5	50.0	30.0	-18.8	-29.5	H
7.391	3.0	58.3	37.0	36.0	4.0	-36.8	-40.0	0.6	22.0	0.8	50.0	30.0	-28.0	-29.2	H
9.825	3.0	66.7	36.5	37.6	4.5	-36.1	-40.0	0.8	33.5	3.4	50.0	30.0	-16.5	-26.6	H
12.292	3.0	60.9	35.8	38.8	5.3	-37.8	-40.0	0.9	28.2	3.1	50.0	30.0	-21.8	-26.9	H
14.738	3.0	74.8	43.2	40.2	5.9	-39.6	-40.0	0.9	42.1	10.5	50.0	30.0	-7.9	-19.5	H
17.222	3.0	72.0	37.0	42.7	6.0	-35.9	-40.0	1.5	46.3	11.3	50.0	30.0	-3.7	-18.7	H

f	Measurement Frequency	Amp	Preamp Gain	Avg Lim	Average Field Strength Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters	Pk Lim	Peak Field Strength Limit
Read	Analyzer Reading	Avg	Average Field Strength @ 3 m	Avg Mar	Margin vs. Average Limit
AF	Antenna Factor	Peak	Calculated Peak Field Strength	Pk Mar	Margin vs. Peak Limit
CL	Cable Loss	HPF	High Pass Filter		

Note: No other emissions were found up to 10th harmonic.

5.8.2. MAGNETRON-2M167B

4/2/2005 1 High Frequency Measurement															
Compliance Certification Services, Morgan Hill Open Field Site															
Test Engr: William Zhuang															
Project #: 05U3345-1															
Company: Sharp Electronics Corp.															
EUT Descrip.: Microwave Oven															
EUT M/N: OTC, w/Magnetron 2M167B															
Test Target: FCC Part 18															
Mode Oper: Boiling Tap Water															
Test Equipment:															
EMCO Horn 1-18GHz		Pre-amplifier 1-26GHz		Pre-amplifier 26-40GHz		Horn > 18GHz		Limit							
T73; S/N: 6717 @3m		T63 Miteq 646456													
Hi Frequency Cables															
2 foot cable		3 foot cable		4 foot cable		12 foot cable		HPF		Reject Filter		Peak Measurements			
2_William						12_William		HPF_4.0GHz				RBW=VBW=1MHz			
Average Measurements															
RBW=1MHz ; VBW=10Hz															
f GHz	Dist (m)	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fldr dB	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes (V/H)
2.463	3.0	60.5	41.5	28.4	2.2	-39.0	-40.0	0.0	12.2	-6.8	50.0	30.0	-37.8	-36.8	V
4.950	3.0	67.9	40.2	33.0	3.3	-37.9	-40.0	0.6	27.0	-0.8	50.0	30.0	-23.0	-30.8	V
7.400	3.0	66.5	37.7	36.0	4.0	-36.8	-40.0	0.6	30.2	1.4	50.0	30.0	-19.8	-28.6	V
8.630	3.0	52.3	32.5	37.2	4.2	-36.3	-40.0	0.8	18.1	-1.7	50.0	30.0	-31.9	-31.7	V
9.860	3.0	65.3	38.0	37.6	4.5	-36.1	-40.0	0.8	32.1	4.9	50.0	30.0	-17.9	-25.1	V
12.310	3.0	51.7	34.6	38.8	5.3	-37.8	-40.0	0.9	18.9	1.8	50.0	30.0	-31.1	-28.2	V
14.800	3.0	53.4	37.1	40.2	5.9	-39.7	-40.0	0.9	20.7	4.4	50.0	30.0	-29.3	-25.6	V
17.250	3.0	55.7	35.0	42.8	6.0	-35.9	-40.0	1.5	30.2	9.5	50.0	30.0	-19.8	-20.5	V
2.468	3.0	64.6	40.7	28.4	2.2	-39.0	-40.0	0.0	16.3	-7.6	50.0	30.0	-33.7	-37.6	H
4.416	3.0	67.8	34.9	32.5	3.1	-38.1	-40.0	0.5	25.8	-7.1	50.0	30.0	-24.2	-37.1	H
4.928	3.0	72.4	40.6	33.0	3.3	-37.9	-40.0	0.6	31.3	-0.5	50.0	30.0	-18.7	-30.5	H
7.094	3.0	56.3	34.5	35.5	3.9	-37.1	-40.0	0.6	19.1	-2.6	50.0	30.0	-30.9	-32.6	H
7.396	3.0	64.2	37.0	36.0	4.0	-36.8	-40.0	0.6	27.9	0.7	50.0	30.0	-22.1	-29.3	H
9.885	3.0	72.3	37.7	37.6	4.5	-36.1	-40.0	0.8	39.2	4.6	50.0	30.0	-10.8	-25.4	H
12.324	3.0	61.0	35.2	38.8	5.3	-37.8	-40.0	0.9	28.2	2.5	50.0	30.0	-21.8	-27.5	H
14.819	3.0	66.5	38.2	40.2	5.9	-39.7	-40.0	0.9	33.8	5.5	50.0	30.0	-16.2	-24.5	H
17.272	3.0	60.7	34.9	42.9	6.0	-35.9	-40.0	1.5	35.3	9.5	50.0	30.0	-14.7	-20.5	H
f	Measurement Frequency					Amp	Preamp Gain					Avg Lim	Average Field Strength Limit		
Dist	Distance to Antenna					D Corr	Distance Correct to 3 meters					Pk Lim	Peak Field Strength Limit		
Read	Analyzer Reading					Avg	Average Field Strength @ 3 m					Avg Mar	Margin vs. Average Limit		
AF	Antenna Factor					Peak	Calculated Peak Field Strength					Pk Mar	Margin vs. Peak Limit		
CL	Cable Loss					HPF	High Pass Filter								

Note: No other emissions were found up to 10th harmonic.

5.9. CONDUCTED EMISSIONS

Preliminary Conducted Emission Tests were performed according to CCS test procedure no: CCSUE2004B and EN55011/CISPR11. The following preliminary tests were conducted to determine the worst mode of operation.

Preliminary Conducted Emission Test			
Frequency Range Investigated		150 kHz TO 30 MHz	
Mode of operation	Date	Data Report/Plot No.	Worst Mode
Boiling tap water	4/2/05	05U3345-1	☒

Final Conducted Emission Test was conducted by operating the worst mode as indicated above.

5.9.1. MAGNETRON-2M253H

CONDUCTED EMISSIONS DATA (115VAC 60Hz)									
Freq.	Reading			Closs	Limit	EN_B	Margin		Remark
(MHz)	PK (dBuV)	QP (dBuV)	AV (dBuV)	(dB)	QP	AV	QP (dB)	AV (dB)	L1 / L2
0.36	41.14	--	-5.70	0.00	58.73	48.73	-17.59	-54.43	L1
12.85	37.94	--	13.90	0.00	60.00	50.00	-22.06	-36.07	L1
17.29	37.04	--	11.47	0.00	60.00	50.00	-22.96	-38.53	L1
0.21	57.92	--	12.11	0.00	63.21	53.21	-5.29	-37.10	L2
0.40	45.40	--	-2.17	0.00	57.85	47.85	-12.45	-50.02	L2
11.68	45.92	--	10.45	0.00	60.00	50.00	-14.08	-39.55	L2
6 Worst Data									

5.9.2. MAGNETRON-2M167B

CONDUCTED EMISSIONS DATA (115VAC 60Hz)									
Freq.	Reading			Closs	Limit	EN_B	Margin		Remark
(MHz)	PK (dBuV)	QP (dBuV)	AV (dBuV)	(dB)	QP	AV	QP (dB)	AV (dB)	L1 / L2
0.41	40.74	--	--	0.00	57.59	47.59	-16.85	-6.85	L1
0.50	41.48	--	--	0.00	56.00	46.00	-14.52	-4.52	L1
11.81	46.94	--	--	0.00	60.00	50.00	-13.06	-3.06	L1
0.46	38.52	--	--	0.00	56.77	46.77	-18.25	-8.25	L2
1.51	32.92	--	--	0.00	56.00	46.00	-23.08	-13.08	L2
11.32	48.38	--	--	0.00	60.00	50.00	-11.62	-1.62	L2
6 Worst Data									

C.F.(Correction Factor)=Insertion Loss + Cable Loss

Corrected Reading = Metering Reading + C.F.

Margin=Corrected Reading - Limits

P=Peak Reading

L1=Hot

Q=Quasi-peak

L2=Neutral

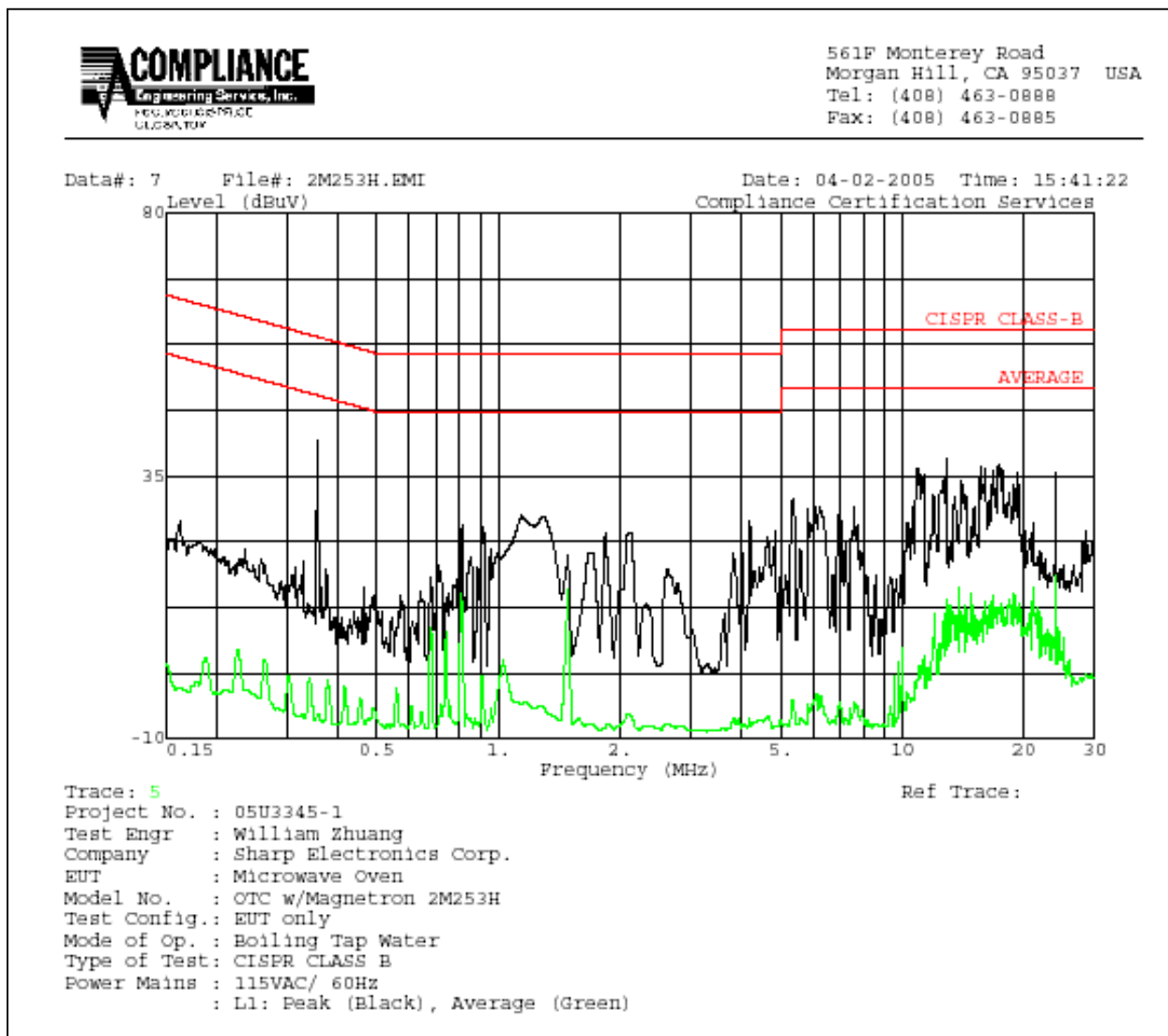
A=Average Reading

Comments: N/A

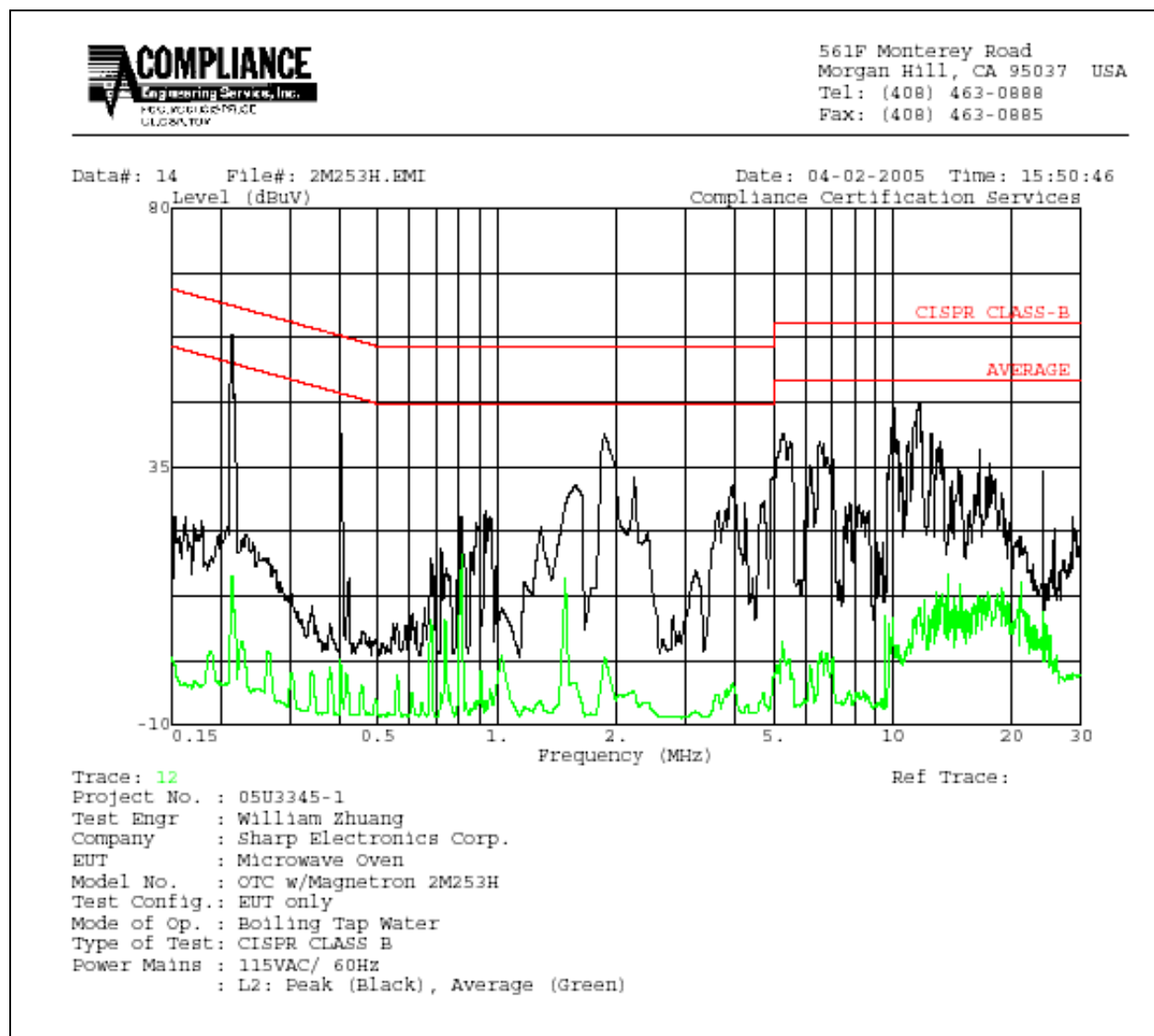
Conducted Emission Plot

MAGNETRON-2M253H

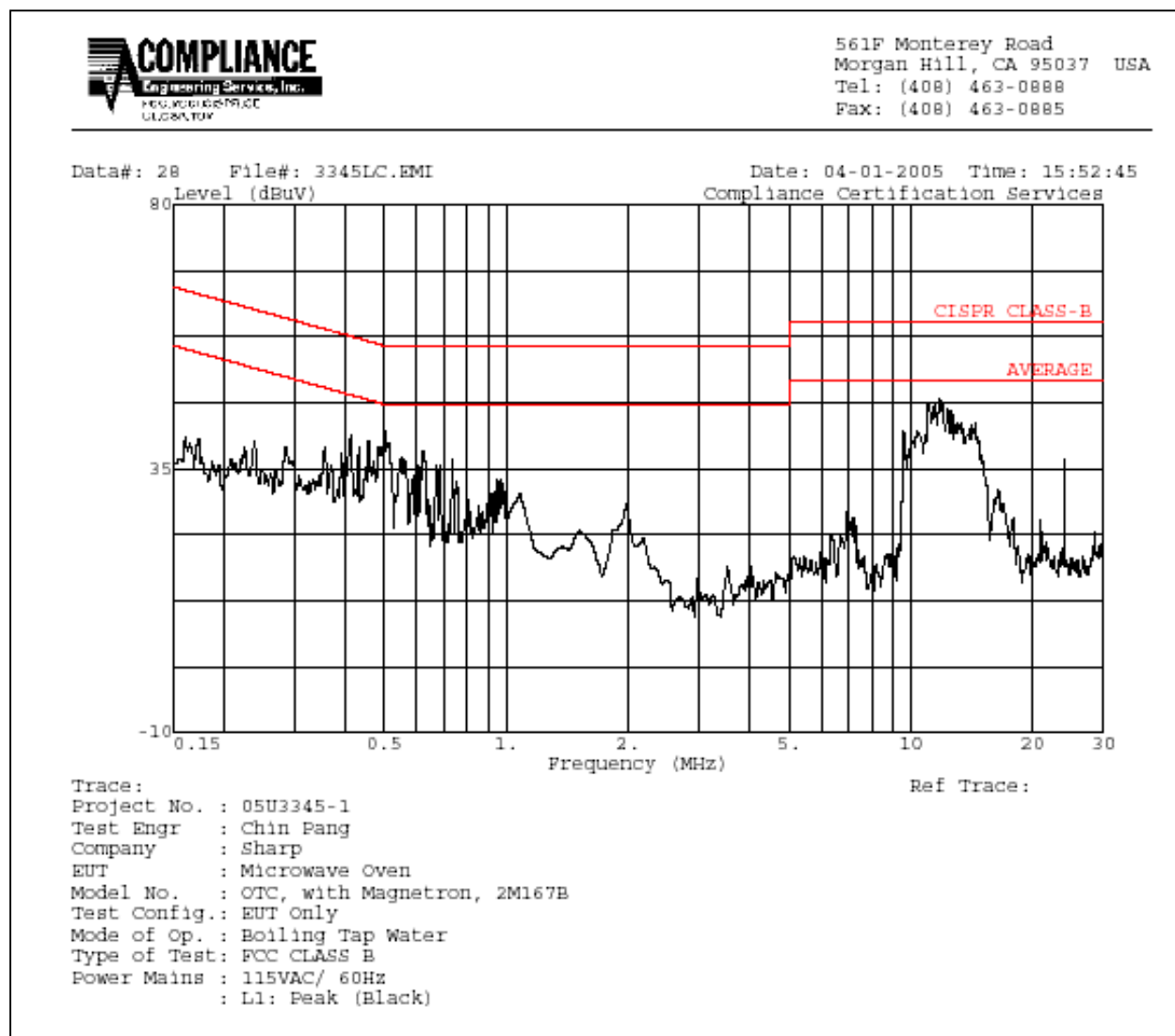
LINE 1



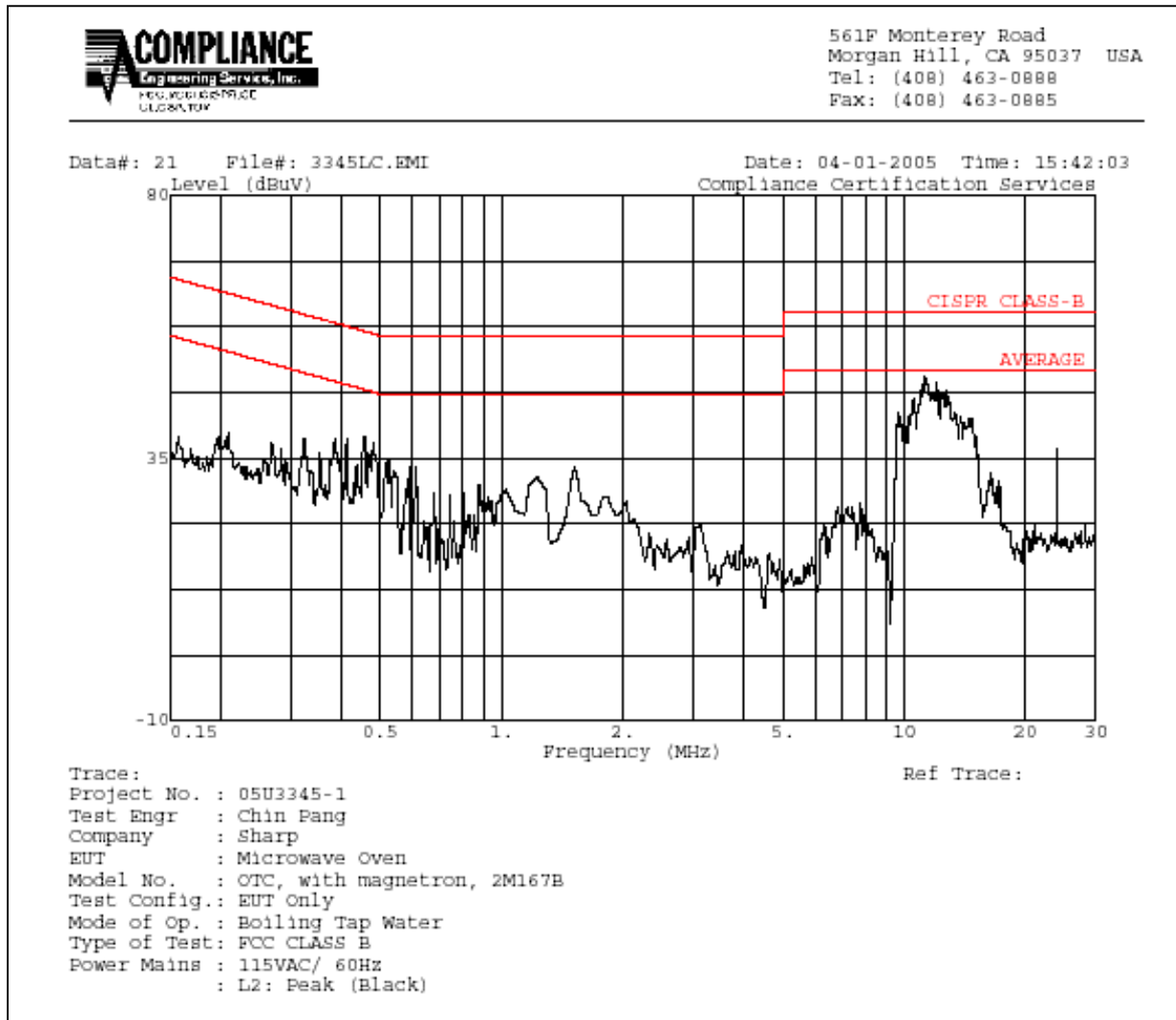
LINE 2



LINE 1



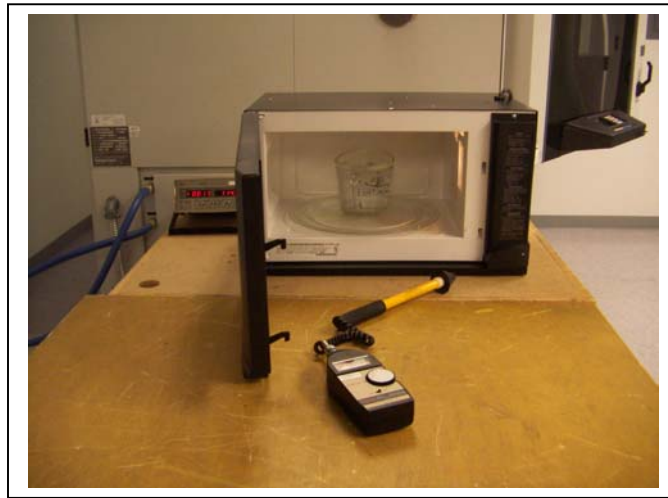
LINE 2



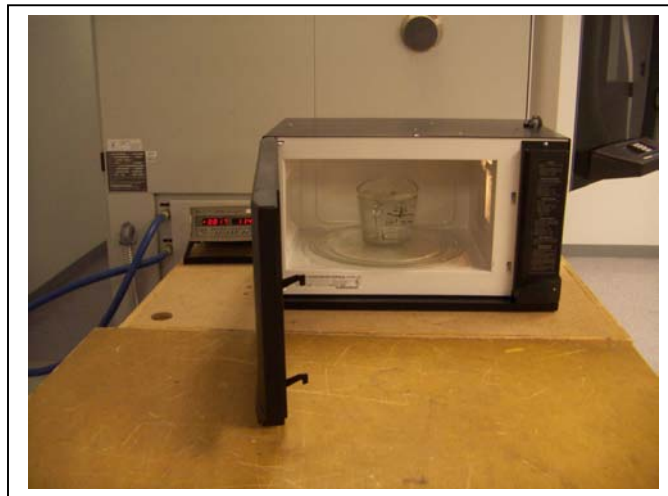
6. MEASUREMENT EQUIPMENT LIST

TEST EQUIPMENT LIST				
Name of Equipment	Manufacturer	Model No.	Serial No.	Due Date
Quasi-Peak Adaptor	HP	85650A	2811A01155	5/24/2005
SA Display Section 2	HP	85662A	2816A16696	5/24/2005
Site A Preamplifier, 1300MHz	HP	8447D	2944A06833	8/17/2005
SA RF Section, 1.5 GHz	HP	85680B	2814A04227	5/24/2005
30MHz---- 2Ghz	Sunol Sciences	JB1 Antenna	A121003	9/12/2005
Spectrum Analyzer	HP	E4446A	US42510266	8/25/2005
EMI Test Receiver	R & S	ESHS 20	827129/006	10/22/2005
Site A Line Stabilizer / Conditioner	Tripplite	LC-1800a	A0051681	CNR
LISN, 10 kHz ~ 30 MHz	FCC	LISN-50/250-25-2	2023	8/30/2005
Digital Power Analyzer	Valhalla	2111A	NA	4/20/2005
Ajustable Power Supply	The Superior Electric Co.	Powerstat	NA	CNR
Microwave Leakage Tester	Simpson	380-2	6-115310	9/28/2005

7. SETUP PHOTO



Radiation Hazard Measurement



Operating Frequency Measurements



Radiation Measurement Below 1GHz



Radiation Measurements Above 1GHz



Line Conduction

END OF REPORT