

TABLE OF CONTENTS

PAGE

1. VERIFICATION OF COMPLIANCE	1
2. PRODUCT DESCRIPTION	2
3. TEST FACILITY	2
4. ACCREDITATION AND LISTING	2
5. RADIO NOISE EMISSION MEASUREMENTS PROCEDURES/RESULTS	2
5.1 RADIATION HAZARD MEASUREMENT	2
5.2 INPUT POWER	3
5.3 RF OUTPUT POWER MEASUREMENT	3
5.4 OPERATING FREQUENCY MEASUREMENTS	4
5.5 VARIATION IN OPERATING FREQUENCY WITH TIME	4
5.6 VARIATION IN OPERATING FREQUENCY WITH VOLTAGE	5
5.7 RADIATED EMISSIONS	5
6. EUT SETUP PHOTOS	8
7. MEASUREMENT EQUIPMENT LIST	10

ATTACHMENTS:

- .RADIATED EMISSION DATA
- .VARIATION IN OPERATING FREQUENCY WITH TIME PLOTS
- .VARIATION IN OPERATING FREQUENCY WITH VOLTAGE PLOTS
- .USER MANUAL AND SCHEMATICS
- .PROPOSED FCC ID LABEL
- .EUT PHOTOGRAPHS

1. VERIFICATION OF COMPLIANCE

COMPANY NAME: GUANGDONG GALANZ ENTERPRISE(GROUP) CO., LTD.
328 GUIZHONG ROAD
SHUNDE, GUANGDONG P.R.C. 528305

CONTACT PERSON: HU YANG / MANAGER

TELEPHONE NO: 765-888-6389

EUT DESCRIPTION: MICROWAVE OVEN

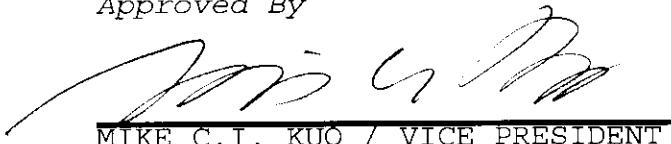
MODEL NO/NAME : WP1100A, WP1100, AG-7W

DATE TESTED : JUNE 17, 1998

TYPE OF EQUIPMENT:	CONSUMER ISM EQUIPMENT
TECHNICAL LIMIT:	SUBPART C
FCC RULES:	PART 18
MEASUREMENT PROCEDURE	FCC/MP-5/1986
EQUIPMENT AUTHORIZATION PROCEDURE	SUBMISSION
MODIFICATIONS MADE ON EUT	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO

The above equipment was tested by Compliance Consulting Services for compliance with the requirements set forth in the FCC CFR 47, PART 18. This said equipment in this configuration described in this report shows that maximum emission levels emanating from equipment are within the compliance requirements.

Approved By



MIKE C.I. KUO / VICE PRESIDENT
COMPLIANCE CONSULTING SERVICES

2. PRODUCT DESCRIPTION

The equipment under test is a microwave oven sold for consumer use. Models: WP1100A, AG-7W is a 1100W microwave oven with digital controls and WP1100 is a 1100W microwave oven with mechanical controls.

Magnetron: Toshiba, Model: 2M248K.

3. TEST FACILITY

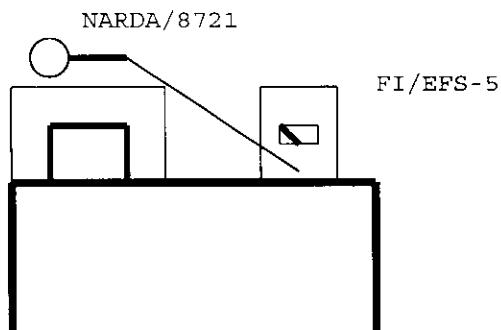
The open area test sites and conducted measurement facilities used to collect the radiated data are located at 561F Monterey Road, Morgan Hill, California, USA. The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22.

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 PROCEDURES/RESULTS

5.1 RADIATION HAZARD MEASUREMENT



Radiation Hazard Measurements

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.

Compliance Certification Services RADITATION TEST DATA SHEET							10/21/1998	Juan Martinez (1 Meter)	
GUANGDONG GALANZ ENTERPRISE CO. 1100W OUTPUT MICROWAVE(WP1100A, WP1100, AG-7W)							SPECTRUM ANALYZER SETTINGS		
F(MHz)	READING	AF	CL	AMP	DIST	OTHER	TOTAL	LIMIT	MARGIN
	dBuV	(dB)	(dB)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)
1189	69.8	24.6	2.1	-34	-49.5	0	13	28.6	-16
1645	58.7	25.2	2.1	-34	-49.5	0	2.5	28.6	-26
2378*	62.1	28	3.1	-34	-49.5	1	10.7	28.6	-18
2452*	62.5	29	3.3	-34	-49.5	1	12.3	28.6	-16
2485*	58.7	29.2	3.4	-34	-49.5	1	8.8	28.6	-20
2514*	65.8	29.2	3.4	-34	-49.5	1	15.9	28.6	-13
2587*	58.7	29.2	3.6	-34	-49.5	1	9	28.6	-20
4432#	56.8	32.3	5.7	-34	-49.5	1	12.3	28.6	-16
4878#	45.8	33	5.7	-34	-49.5	1	2	28.6	-27
4978#	52.8	34.3	5.7	-34	-49.5	1	10.3	28.6	-18
7528#	50.8	36.5	6.8	-34	-49.5	1	11.6	28.6	-17
9800#	53.7	38.2	8.2	-34	-49.5	1	17.6	28.6	-11
12250#	40.5	39.3	8.8	-34	-49.5	1	6.1	28.6	-23
14700#	49.8	40	9.2	-34	-49.5	1	16.5	28.6	-12

NOTE: ALL MEASUREMENTS ARE VERTICAL.

AF: Antenna Factor	DIST: Distance Correction(-49.5dB, 1M)	SPECTRUM ANALYZER SETTINGS	
AMP: Pre-amp gain	20*LOG(d/300M)	RES	VBW
CL: Cable loss	OTHER: High pass filter insertion loss	PEAK: 1MHz 1MHz	Avg: 1MHz 10Hz
	*FSY Microwave high pass filter ($f_0=1.082\text{GHz}$)		
	#FSY Microwave high pass filter ($f_0=4\text{GHz}$)		

Compliance Certification Services										8/27/1998											
RADITATION TEST DATA SHEET										Juan Martinez (1 Meter)											
GUANGDONG GALANZ ENTERPRIZE CO.																					
1100W OUTPUT MICROWAVE(WP1100A, WP1100, AG-7W)																					
F(MHz)	READING	AF	CL	AMP	DIST	OTHER	TOTAL	LIMIT		MARGIN											
	dBuV	(dB)	(dB)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)											
1178	65.2	24.6	2.1	-34	-49.5	0	8.4	28.6	28.6	-20											
1578	42.4	25.2	2.1	-34	-49.5	0	-13.8	28.6	28.6	-42											
2587*	58.7	29.2	3.6	-34	-49.5	1	9	28.6	28.6	-20											
4485#	50.1	32.3	5.7	-34	-49.5	1	5.6	28.6	28.6	-23											
4785#	42.7	33	5.7	-34	-49.5	1	-1.1	28.6	28.6	-30											
4900#	43.7	34.3	5.7	-34	-49.5	1	1.2	28.6	28.6	-27											
7350#	45.2	36.5	6.8	-34	-49.5	1	6	28.6	28.6	-23											
9800#	51	38.2	8.2	-34	-49.5	1	14.9	28.6	28.6	-14											
12250#	39.8	39.3	8.8	-34	-49.5	1	5.4	28.6	28.6	-23											
14700#	48.7	40	9.2	-34	-49.5	1	15.4	28.6	28.6	-13											

NOTE: ALL MEASUREMENTS ARE VERTICAL.

AF: Antenna Factor	DIST: Distance Correction(-49.5dB, 1M)	SPECTRUM ANALYZER SETTINGS	
AMP: Pre-amp gain	20*LOG(d/300M)	RES	VBW
CL: Cable loss	OTHER: High pass filter insertion loss	PEAK:	1MHz 1MHz
	*FSY Microwave high pass filter ($f_0=1.082\text{GHz}$)	Avg:	1MHz 10Hz
	#FSY Microwave high pass filter ($f_0=4\text{GHz}$)		

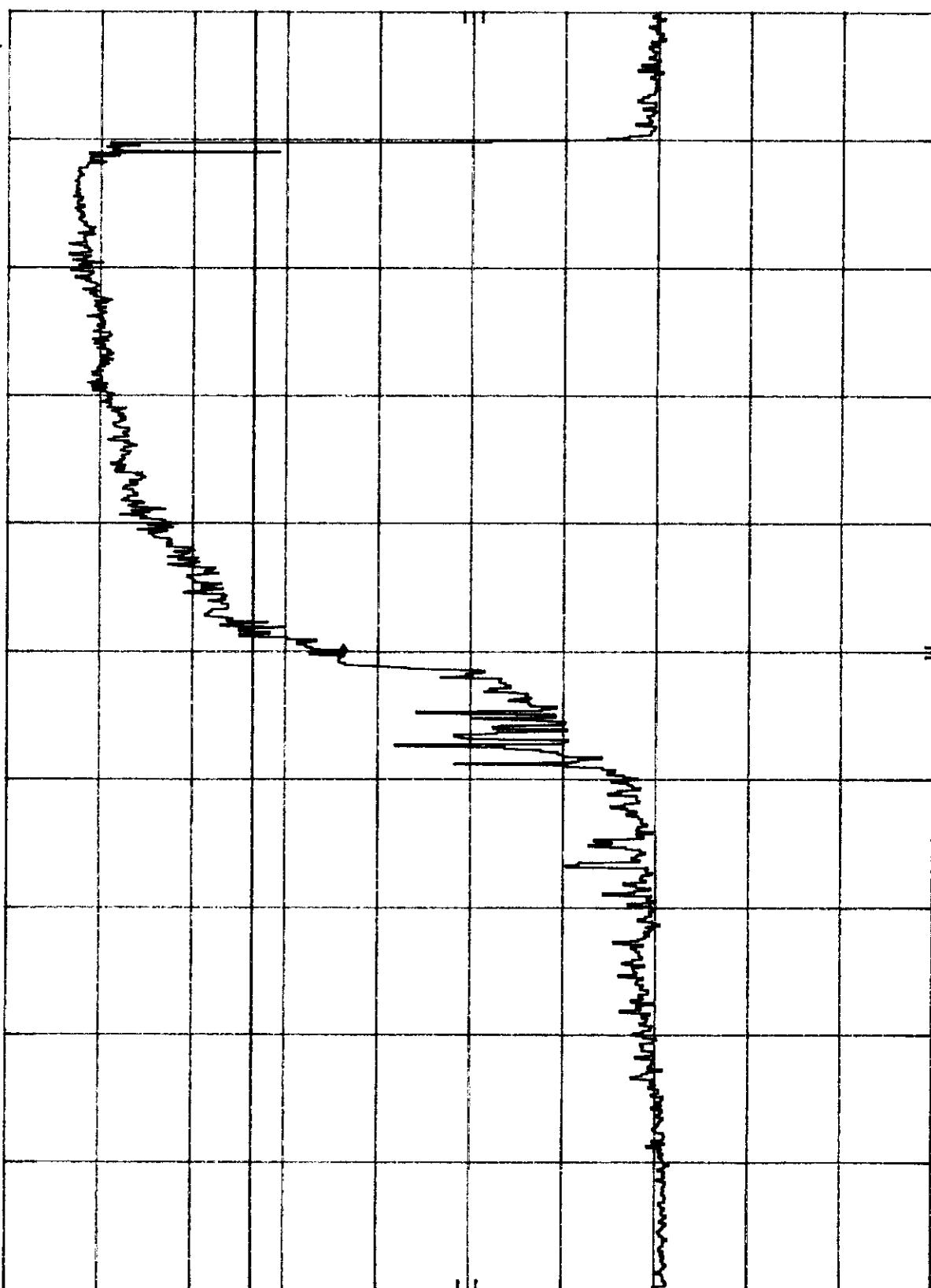
GALANZ 1100WA FREQ OVER TIME

MKR 2.400 0 GHz
REF 107.0 dB μ V ATTEN 10 dB

μ V

10 dB /

DL
80.5
dB μ V



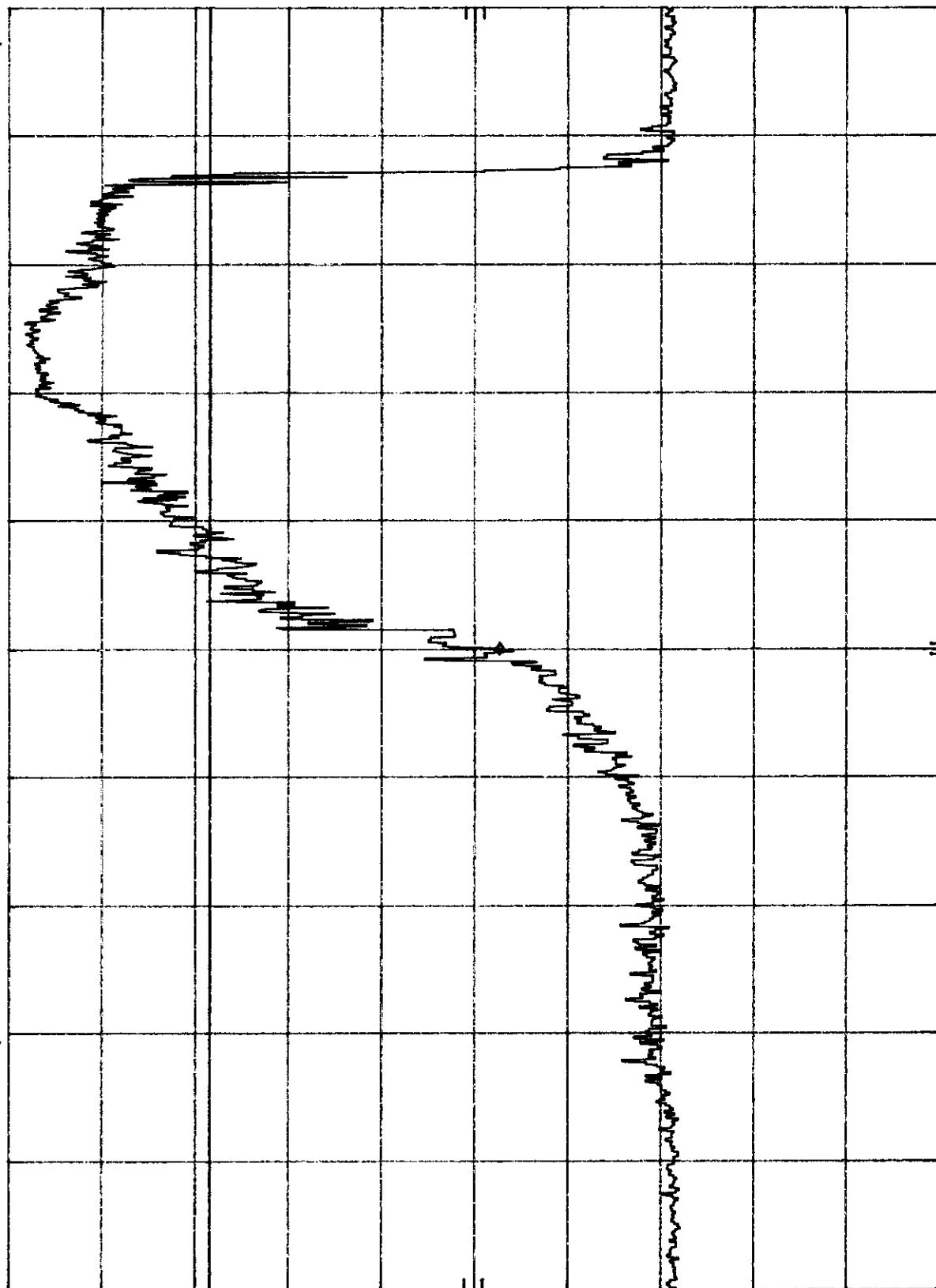
START 2.300 GHz
RES BW 1 MHz
VBW 1 MHz
SWP 20.0 msec

STOP 2.500 GHz
SWP 20.0 msec

GALANZ 1100WA FREQ OVER VOLTAGE (120V)

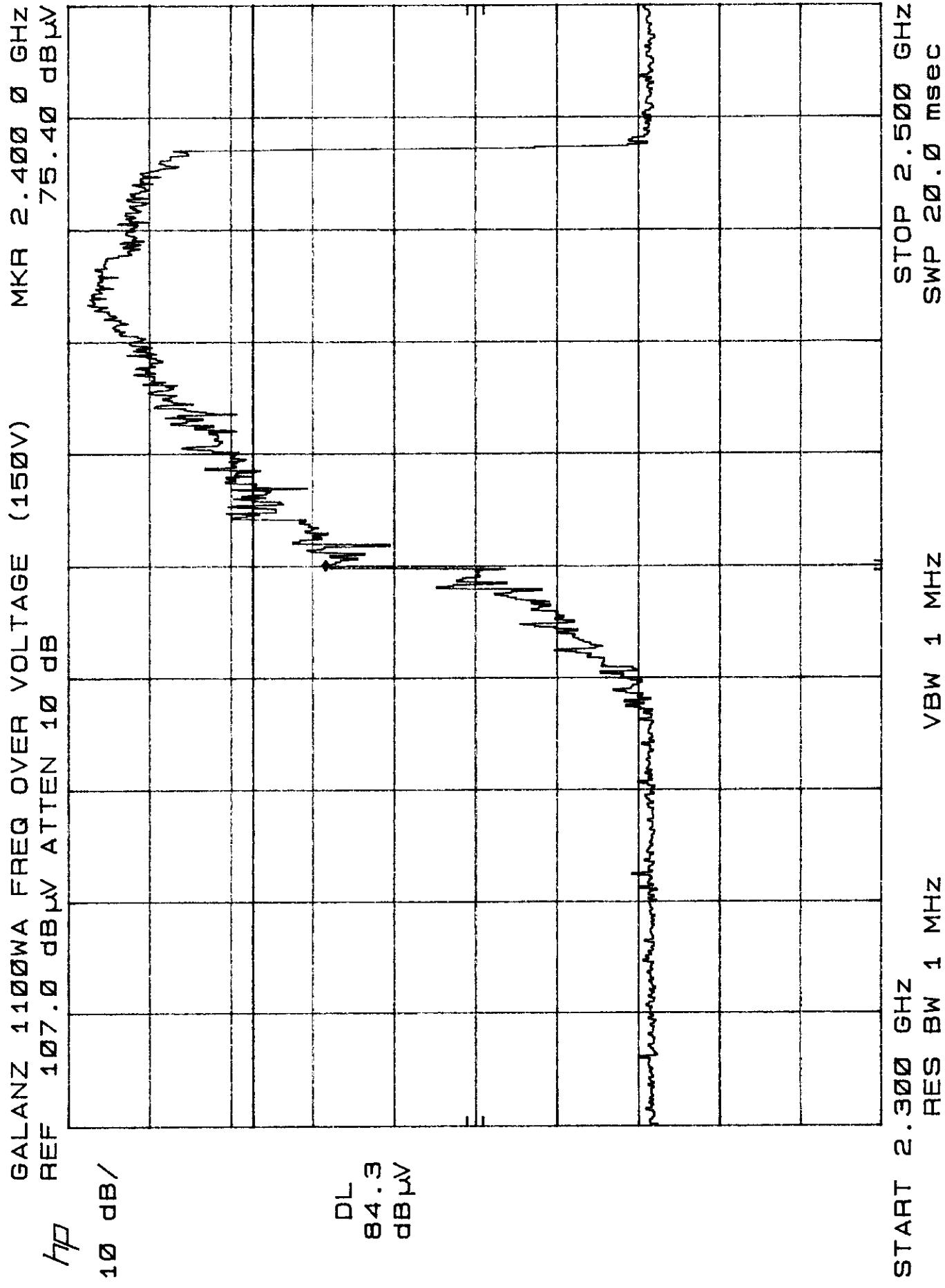
MKR 2.4000 0 GHz
REF 107.0 dB μ V ATTN 10 dB

10 dB/



START 2.3000 GHz
RES BW 1 MHz
VBW 1 MHz

STOP 2.5000 GHz
SWP 20.0 msec



GALANZ 1100WA FREQ OVER VOLTAGE (96V)

MKR 2.400 0 GHz

55.40 dB μ V

REF 107.0 dB μ V ATTN 10 dB

f_f

10 dB/

DL
81.3
dB μ V

START 2.300 GHz
RES BW 1 MHz

VBW 1 MHz

STOP 2.500 GHz
SWP 20.0 msec



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

TEST REPORT

FOR

MICROWAVE OVEN

MODEL: WP1100A, WP1100, AG-7W

FCC ID: NVZ98031100N

REPORT NUMBER: 98E7487

ISSUE DATE: JUNE 17, 1998

Prepared for
GUANGDONG GALANZ ENTERPRISE (GROUP) CO., LTD.
328 GUIZHONG ROAD
SHUNDE, GUANGDONG P.R.C. 528305

Prepared by
COMPLIANCE ENGINEERING SERVICES, INC.
1366 BORDEAUX DRIVE
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LAB CODE:200065-0

COMPLIANCE
Consulting Services

FCC, VCCI, CISPR, CE, AUSTEL, NZ
UL, CSA, TÜV, BCIQ, DHHS, NVLAP

1366 BORDEAUX DRIVE, SUNNYVALE, CA 94089-1005

LOCATION	MAXIMUM LEAKAGE (mw/cm ²)	LIMIT (mw/cm ²)
LOOKING AT FRONT OF MICROWAVED LEFT HAND SIDE AT AIR VENTS	.061	1.0
All others	.0026	1.0

5.2 INPUT POWER

Input power and current were measured using a wattmeter and an ammeter. A 275 ml water load was placed in the center of the oven and the oven was set to 10(100%) maximum power. A 275-ml water load was chosen for its compatibility. Manufacturers to determine their input ratings commonly use this procedure.

<u>Input Voltage (Vac)</u>	<u>Input Current (amps)</u>	<u>Measured Input power (watts)</u>
1100W: 120	15	1400

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 1000-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.

<u>Quantity of water (ml)</u>	<u>Starting Temperature (C°)</u>	<u>Final Temperature (C°)</u>	<u>Elapsed Time (seconds)</u>	<u>RF Power (watts)</u>
1000	10.5	31.66	120	738.5
1000	14.4	31.66	120	602.0
1000	16.1	33.8	120	619.5

Average of 3 Trials: 653.3 W

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 $25 \sqrt{\text{Power}}/500 @ 300\text{M}$ limit.

5.4 OPERATING FREQUENCY MEASUREMENTS

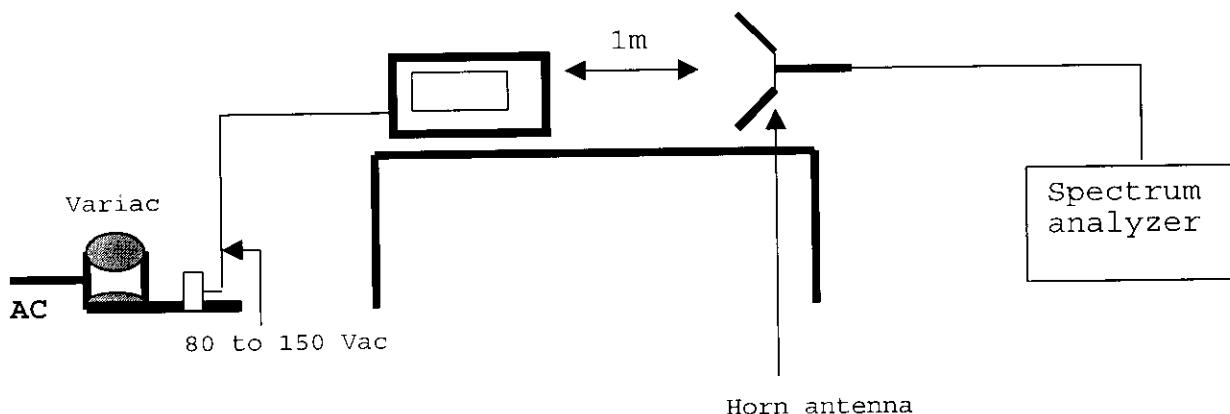


Figure 1. Operating Frequency Measurement Set-up

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 1000-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 monitor until the water load was reduced to 20% of the original load.

The results of this test are as follows.

Initial load: 1000 ml
Load at completion of test: 200 ml

Maximum frequency observed: 2475 MHz
Maximum frequency allowed: 2500 MHz

Minimum frequency observed: 2439 MHz
Minimum frequency allowed: 2400 MHz

Refer to spectrum analyzer plot under ATTACHMENTS: **VARIATION IN OPERATING FREQUENCY WITH TIME PLOTS** for details of Frequency variation with operating time.

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:

Line voltage varied from 96Vac to 150Vac.

150Vac Maximum frequency observed: 2450 MHz
 Maximum frequency allowed: 2500 MHz

 Minimum frequency observed: 2419 MHz
 Minimum frequency allowed: 2400 MHz

96Vac Maximum frequency observed: 2466 MHz
 Maximum frequency allowed: 2500 MHz

 Minimum frequency observed: 2438 MHz
 Minimum frequency allowed: 2400 MHz

Refer to spectrum analyzer plots under ATTACHMENTS: **VARIATION IN OPERATING FREQUENCY WITH VOLTAGE PLOTS** for details of Frequency variation with operating voltage.

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 1-meter 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 10 meters for measurements from 100 - 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.

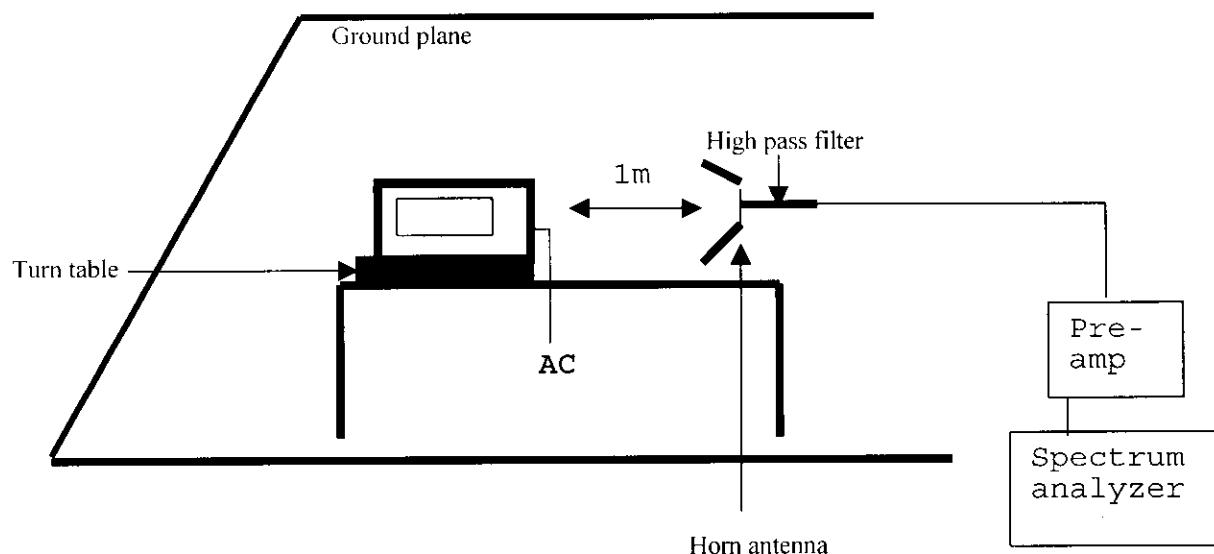


Figure 2. Radiated Emissions Configuration

There were no emissions detected from the EUT in the 100 - 1000MHz region. Emissions detected in the 1000- 14,000 MHz region are reported in a spreadsheet under ATTACHMENTS: **RADIATION EMISSION DATA**.

REPORT NO: 98E7487
FCC ID: NVZ98031100N

DATE: JUNE 17, 1998
EUT: MICROWAVE OVEN

7. MEASUREMENT EQUIPMENT LIST

Equipment	Manufacturer	Model No.	Serial No.	Site	Cal Date	Due Date
Receiver	H.P.	8546A	3520A00259	A	03/98	03/99
RF Filter Section	H.P.	85460A	3448A00232	A	03/98	03/99
Antenna	Chase	CBL6112	2049	A/F	05/98	05/99
Spectrum Analyzer	H.P.	8566B	3014A06685	F	08/98	08/99
Spectrum Display	H.P.	85662A	3026A19146	F	08/98	08/99
Quasi-peak Detector	H.P.	85650A	3145A01654	F	07/98	07/99
Pre-Amp	H.P. (1-26.5GHz)	8449B	3008A00369	A	04/98	04/99
Horn Antenna	EMCO	3115	9001-3245	A	12/97	12/00
Digital Multimeter	Fluke	87	4035173	A	11/98	11/99
Wattmeter	Valhalla	2111A	33-386	A	10/98	10/99
Variac(0 - 280Vac)	Powerstat	N/A	N/A	A	N/A	N/A

Compliance Certification Services
RADIATION TEST DATA SHEET

6/19/1998

Juan Martinez
 Site A(1Meter)

GUANGDONG GALANZ ENTERPRISE CO.
 1100W OUTPUT MICROWAVE(WP1100A, WP1100, AG-7W)

F(MHz)	READING	AF	CL	AMP	DIST	OTHER	TOTAL	LIMIT	MARGIN
	dBuV	(dB)	(dB)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)
1178	48.7	24.6	2.1	-34	-49.5	0	-8.1	28.6	-37
1578	38.4	25.2	2.1	-34	-49.5	0	-17.8	28.6	-46
2587*	37.9	29.2	3.6	-34	-49.5	1	-11.8	28.6	-40
4485#	41.9	32.3	5.7	-34	-49.5	1	-2.6	28.6	-31
4785#	38.9	33	5.7	-34	-49.5	1	-4.9	28.6	-34
4900#	43.7	34.3	5.7	-34	-49.5	1	1.2	28.6	-27
7350#	36	36.5	6.8	-34	-49.5	1	-3.2	28.6	-32
9800#	40.3	38.2	8.2	-34	-49.5	1	4.2	28.6	-24
12250#	38.38	39.3	8.8	-34	-49.5	1	3.98	28.6	-25
14700#	40.9	40	9.2	-34	-49.5	1	7.6	28.6	-21

NOTE: ALL MEASUREMENTS ARE VERTICAL.

AF: Antenna Factor

AMP: Pre-amp gain

DIST: Distance Correction(-49.5dB, 1cm)

OTHER: High pass filter insertion loss

SPECTRUM ANALYZER SETTINGS

PEAK: **RES YBW**

Avg: **1MHz 1MHz**

*FSY Microwave high pass filter ($f_o=1.082\text{GHz}$)

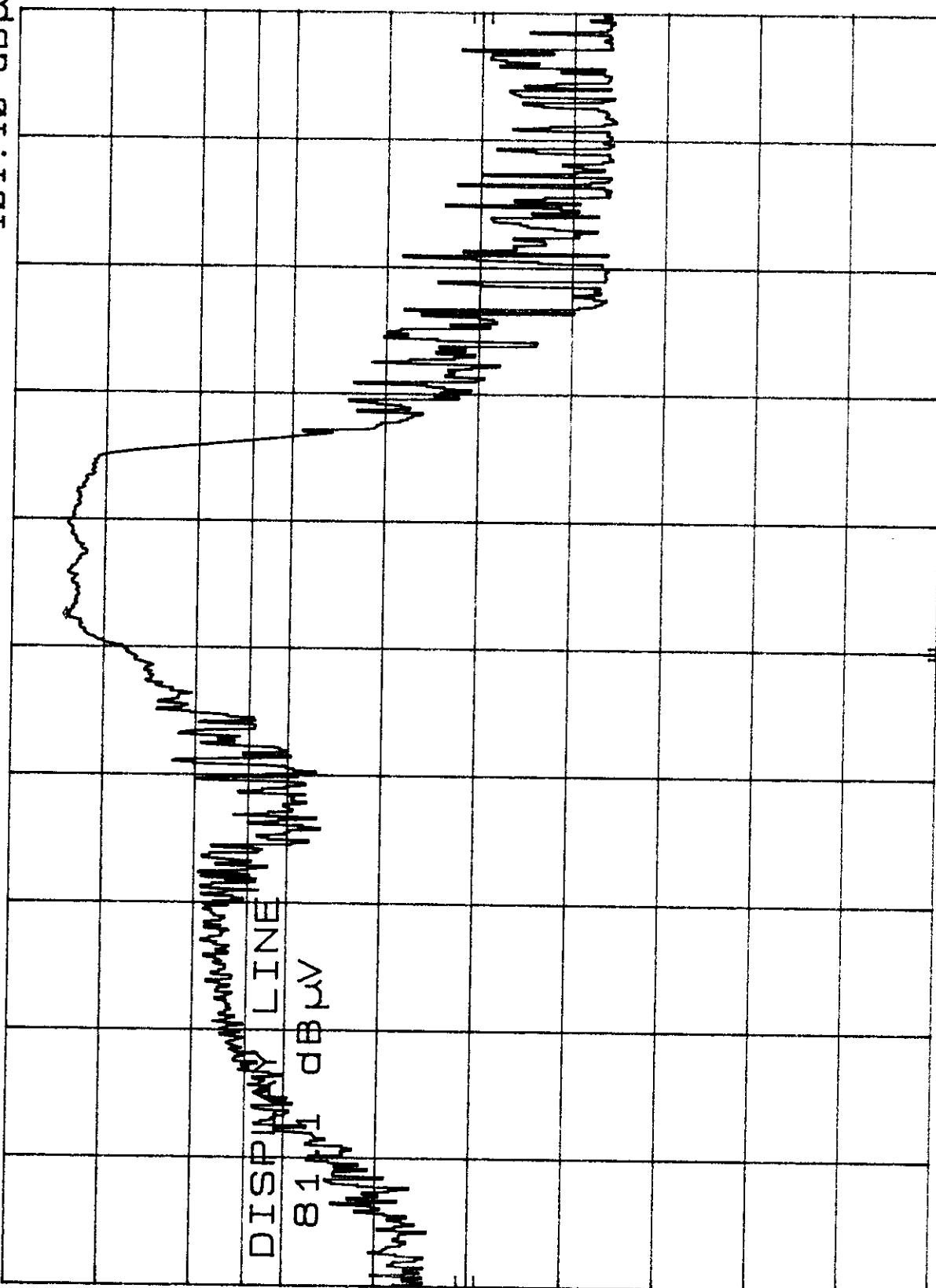
#FSY Microwave high pass filter ($f_o=4\text{GHz}$)

GALANZ WP100A FREQ OVER TIME

REF 107.0 dB μ V ATTEM 10 dB

MKR 2.452 5 GHz
101.10 dB μ V

10 dB/



START 2.400 GHz
RES BW 1 MHz

VBW 1 MHz

STOP 2.500 GHz
SWP 20.0 msec

GALANZ WP1100F FREQ OVER VOLTS 96V

MKRF 2.459 8 GHZ
96.80 dB μ V

REF 107.0 dB μ V ATTN 10 dB

μ V
10 dB/

DL
78.8
dB μ V

V IF BW

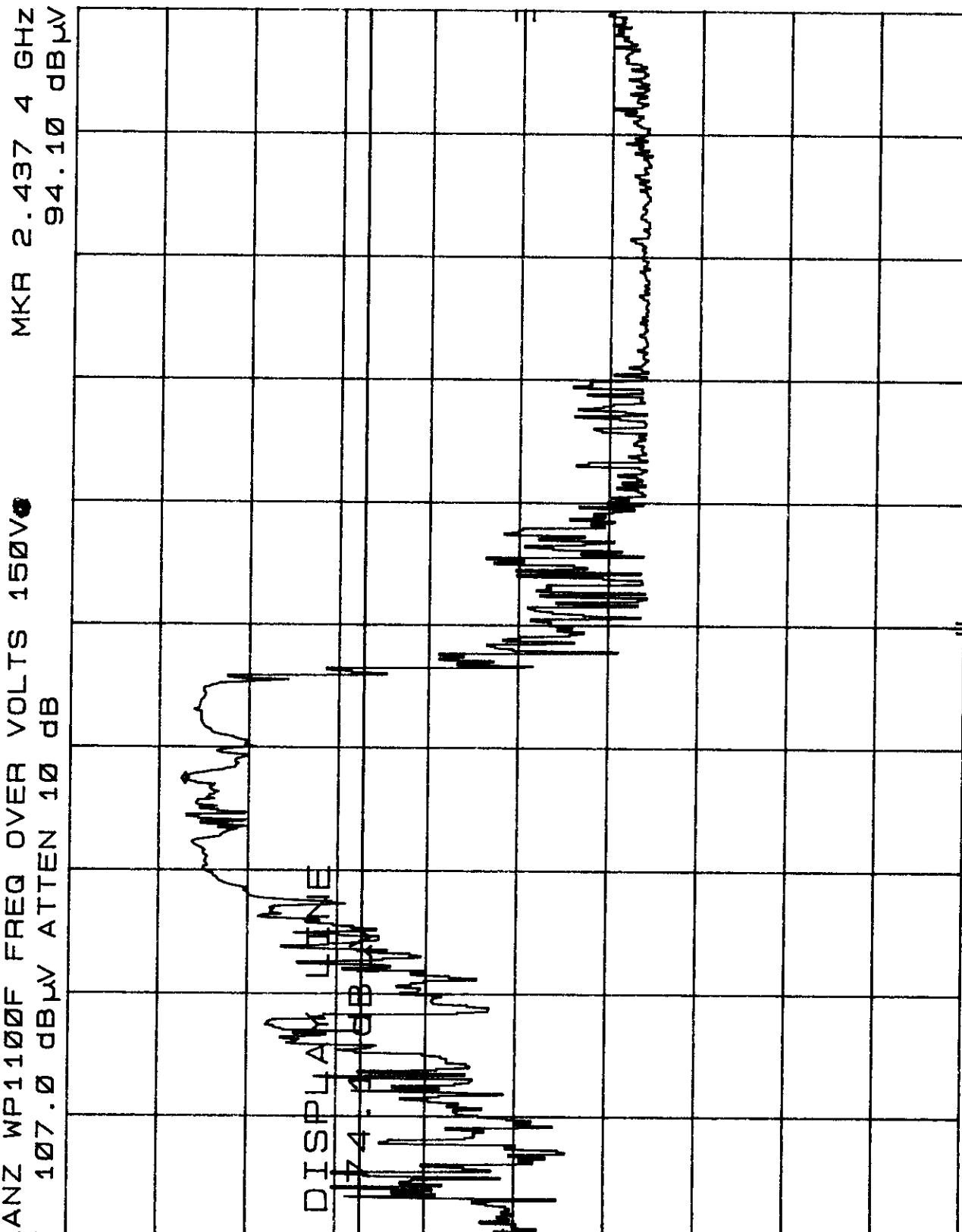
1 MHz

START 2.400 GHz
RES BW 1 MHz

VBW 1 MHz

STOP 2.500 GHz
SWP 20.0 msec

GALANZ WP1100F FREQ OVER VOLTS 150V
REF 107.0 dB μ V ATTN 10 dB
10 dB/



DL
74.1
dB μ V

START 2.400 GHz
RES BW 1 MHz
VBW 1 MHz
STOP 2.500 GHz
SWP 20.0 msec

MKR 2.437 4 GHz
94.10 dB μ V