(d)-(9) Tune-up procedure at specific operating power levels:

(1) Vcc voltage of RF AMP block

DC-DC converter output is +3V constant. It supplies Vcc of the RF AMP block.

(2) Measurement of RF power output.

RF power output is measured at output terminal (CN301).

VCO(CP300) output is applied to RF AMP block and the output is applied to L.P.F.and isolator. So RF power output is decided by VCO and RF AMP block output power, L.P.F. insertion loss and isolator insertion loss.

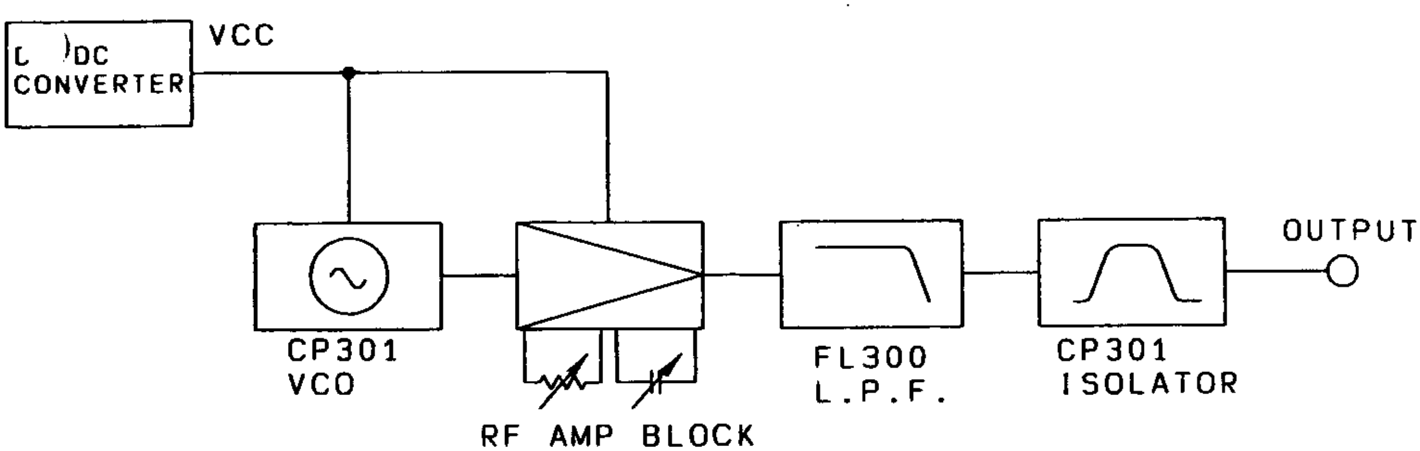
1) VCO RF output power is -1.5 ~ +2.0dBm(at 50 Ω load) at 3V power supply voltage.

2) Adjust RV300, CT300 so that RF AMP block output power is 8 ~ 11.0dBm (at 50 Ω load) when RF AMP block input power is -1.5 ~ +2.0dBm and 3V power supply voltage.

3) L.P.F. insertion loss is less than 0.6dB.

4) Isolator insertion loss is 0.5 ~ 0.9dB.

Therefore RF output power is 10mW(±2mW) by adjusting RV300, CT300.



(d)-(10)A description of circuitry for determining and stabilizing frequency:

Determination and stability of frequency on PLL synthesizer

1. Divide the oscillation frequency[f] from the VCO(CP300) by a prescaler[1/M](IC300). A counter[1/A](IC300) and N counter[1/N](IC300) and apply it [fr'] to a phase detector.

$$fr' = \frac{1}{MN+A} f \quad \text{---- (1)}$$

2. The integrated output signal of the phase detector, which is taken by the phase difference from[fr'] to a reference oscillator[fr], and use the signal as the control voltage for the VCO.

3. With the above 1 and 2(loop 1 through 2), the circuit maintains its balance.

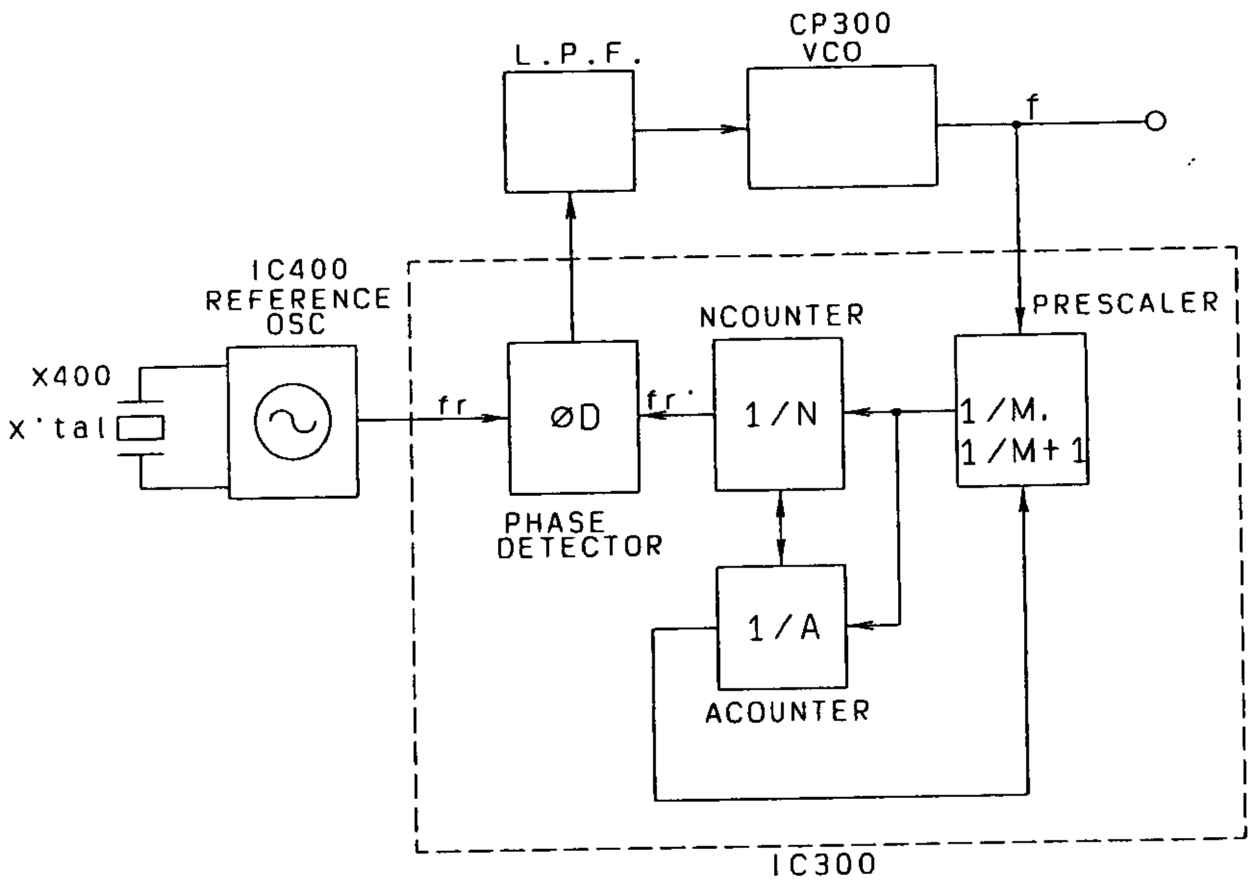
$$fr = fr' \quad \text{---- (2)}$$

   by expression of (1), (2)

$$f = (MN+A)fr \quad \text{---- (3)}$$

4. Therefore transmitting frequency[f] is determined by [M], [N], [A], [fr] and stability is decided by stability of reference frequency[fr].

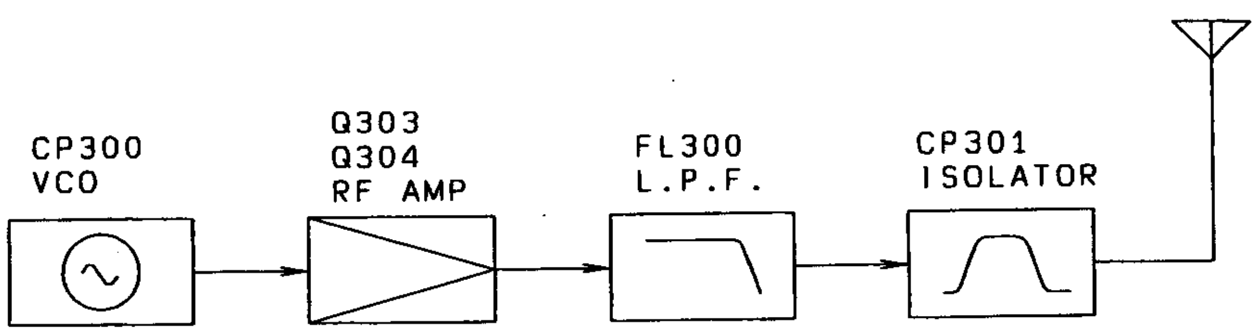
5. Stability of the reference frequency[fr] is ±35ppm(by stability of X'tal(X400) spec). So stability of transmitting frequency[f] is ±50ppm(0.005%).



(d)-(11)A description of circuits for suppression of spurious radiation:

A. Circuits for suppression of spurious radiation.

1. Radiation of higher harmonics are suppressed by installation of low pass filter and isolator in the next to a RF AMP.
2. By introducing direct oscillation system of transmitting frequency by the VCO, RF AMP are straightly amplified. So there is no spurious caused by frequency multiplier.
3. Shield of the VCO and the chassis with conductive paint suppress spurious emission radiated from the transmitter chassis.



(e) Report of Measurement

-- Under FCC Rules and Regulations Parts 2 and 74 --

Report Date : June 23, 1998

Manufacturer: SONY Corporation

Manufacturer's Address: 7-35 Kitashinagawa 6-chome
Shinagawa-ku, Tokyo, 141-0001 JAPAN

Trade Name: SONY

Model Number: WRT-805A(64)
(FCC ID: AK8WRT805A64)

Commodity: UHF SYNTHESIZED TRANSMITTER

Test Method: All Measurements were performed in accordance with the applicable sections in FCC Rules and Regulations Part 2 and 74.

I hereby state that the measurements shown in this report were made in accordance with the procedures indicated. I assume full responsibility for the accuracy of these measurements and vouch for the qualifications of all persons taking them.

Signed by:	Name (Print): K. Nakayama for [signature]	Title: Manager, Product Safety Quality Assurance Department Broadcasting & Professional Systems Company
Company Name: Sony Corporation	Address: 7-35 Kitashinagawa 6-chome Shinagawa-ku, Tokyo, Japan	

2.985 RF power output (The effective radiated power output)

A. Measurement procedure

1. The measurement shall be made on an open field test site which is free from reflecting objects that may affect the measurement results.

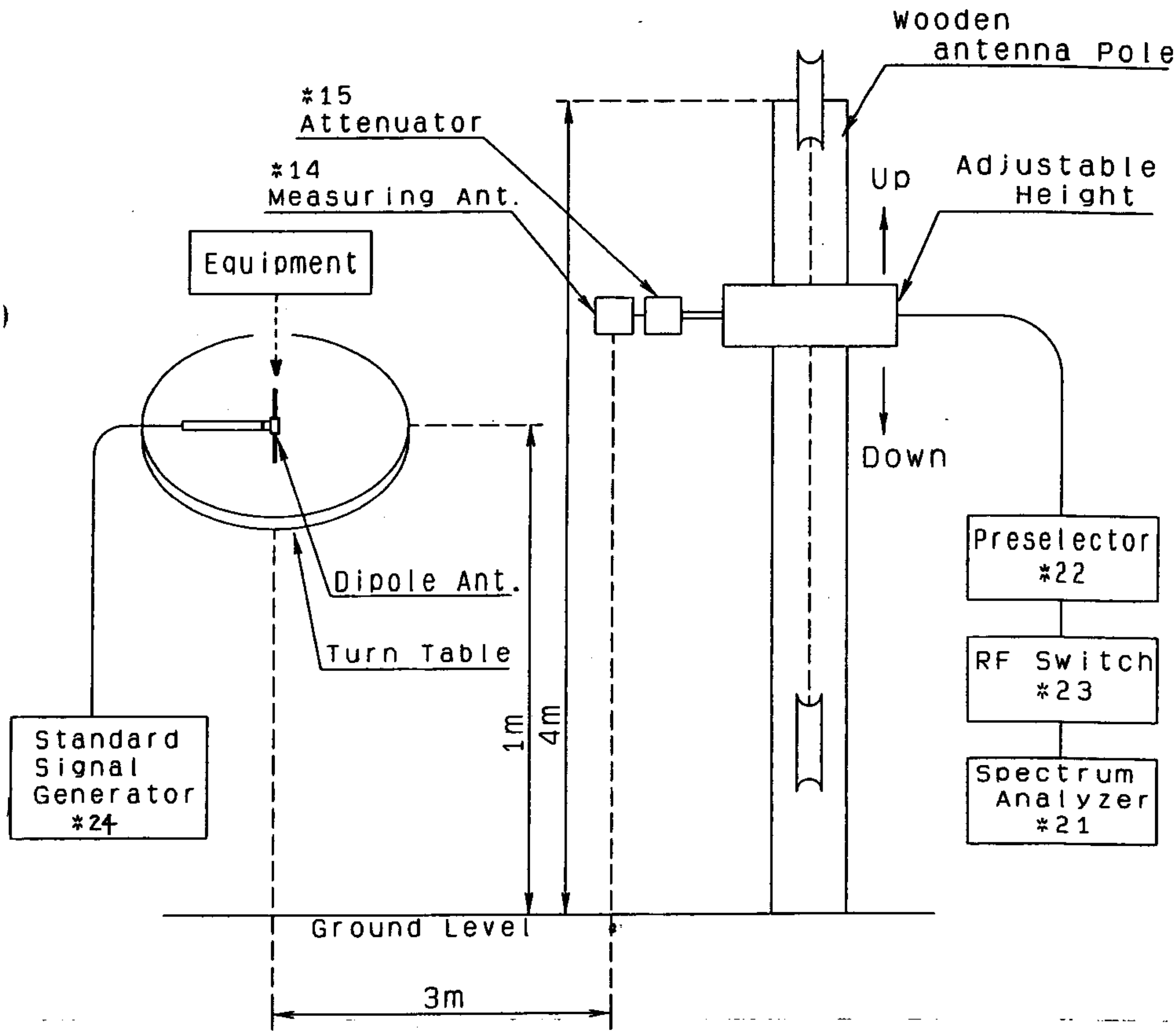
2. For radiated power output of the equipment, the measuring antenna was raised and lowered to obtain a maximum reading on the spectrum analyzer with the antenna vertically and horizontally polarized. The turntable was rotated a minimum of 360° to further increase the reading on the spectrum analyzer. Then field strength was recorded in dBμV/m.

3. The unit was removed and replaced with a dipole antenna. (The antenna was adjusted to a half-wave of transmitting frequency.) The center of the dipole antenna was placed approximately at the same location as the center of the unit.

4. The dipole antenna at the unit end was connected to a signal generator with a coaxial cable. With the antennas at both ends vertically and horizontally polarized and signal generator tuned to the transmitting frequency, the level of the signal generator output was adjusted to the previously recorded maximum reading for this set of conditions was obtained.

5. The input power into the dipole antenna was calculated from the coaxial cable loss and the signal generator output voltage obtained in these readings.

For the setup, refer to the diagram below.



Measuring site

Distance between Antenna ---- 3 meters

Location ---- Atsugi Technology Center, Kanagawa, Japan

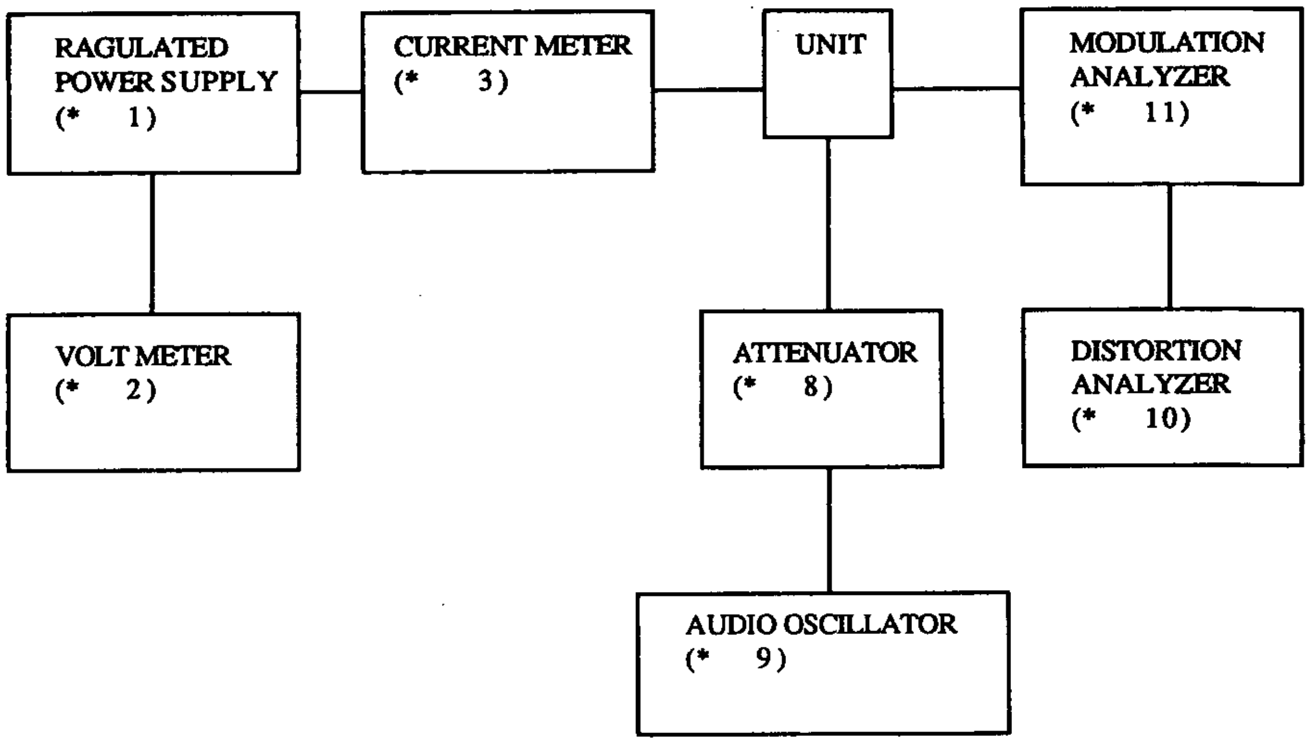
B. For the measured data, refer to Page 31-33.

2.987 Modulation characteristics

A. Measurement procedure

The test signal was applied to the audio input terminal of the transmitter.
A Modulation analyzer was connected to the output terminals of the transmitter.
The test signal frequency was swept from 50 Hz to 15 kHz.

For the test set-up, refer to the diagram below.



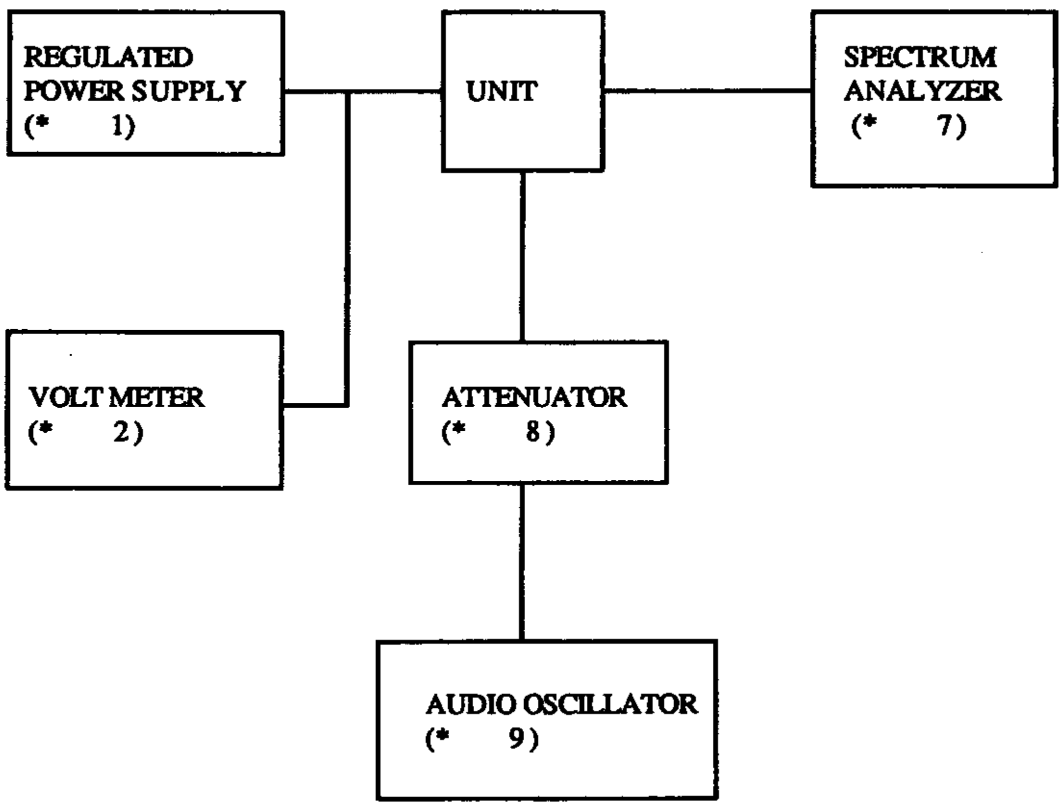
For the measured data, refer to Page 34 - 36.

2.989 Occupied bandwidth

A. Measurement procedure

Manufacturer's necessary bandwidth is 110KHz.
A spectrum analyzer was connected to the output terminals.
The unit was modulated by a 15kHz tone of sufficient level to produce at least 85percent modulation.
The occupied bandwidth was measured with the spectrum analyzer set at 50KHz/div. scan and 10dB/div.

For the test set-up, refer to the diagram below.



For the measured data, refer to Page 37 - 38.

2.991 Spurious emissions at antenna terminals

A. Measurement procedure

The conducted spurious test is not applicable because this device has not output terminals which can connect to the spectrum analyzer.

2.993 Field strength of spurious radiation

A-1. Measurement procedure (from lowest frequency to 1000MHz)

1. The measurement shall be made on an open field which is free from reflecting objects that may affect the measurement results.

2. This procedure was intended to determine the level of spurious emission radiated from the antenna and the unit chassis. The radio frequency spectrum was scanned from lowest frequency generated in the equipment to 1000MHz.

3. For each spurious or harmonic measurement, the measuring antenna was adjusted to the correct length for the frequency involved. This length was made from the lowest requency generated in the equipment to 1000MHz.

4. For each frequency generated in the equipment, the measuring antenna was raised and lowered to obtain a maximum reading on the spectrum analyzer with the antenna vertically polarized. The turntable was rotated a minimum of 360° to further increase the reading on the spectrum analyzer. Then field strength was recorded in dBμV/m.

5. The unit was removed and replaced with a dipole antenna. (The antenna was adjusted to a half-wave of transmitting frequency.) The center of the dipole antenna was placed approximately at the same location as the center of the unit.

6. The dipole antenna at the unit end was fed with a signal generator. With the antennas at both ends vertically polarized and signal generator tuned to the transmitting frequency, the level of the signal generator output was adjusted to the previously recorded maximum reading for this set of conditions was obtained.

7. The entire procedure for each spurious and harmonics frequency with the FSM antenna horizontally polarized was repeated.

8. The input power into the dipole antenna was calculated from the impedance and the signal generator voltage obtained in these readings.

For the measured data, refer to the page 39-1 and 39-2.

2.993 Field strength of spurious radiation

A-2 Measurement procedure (from 1GHz to 10 GHz)

1. The measurement shall be made on an open field which is free from reflecting objects that may affect the measurement results.

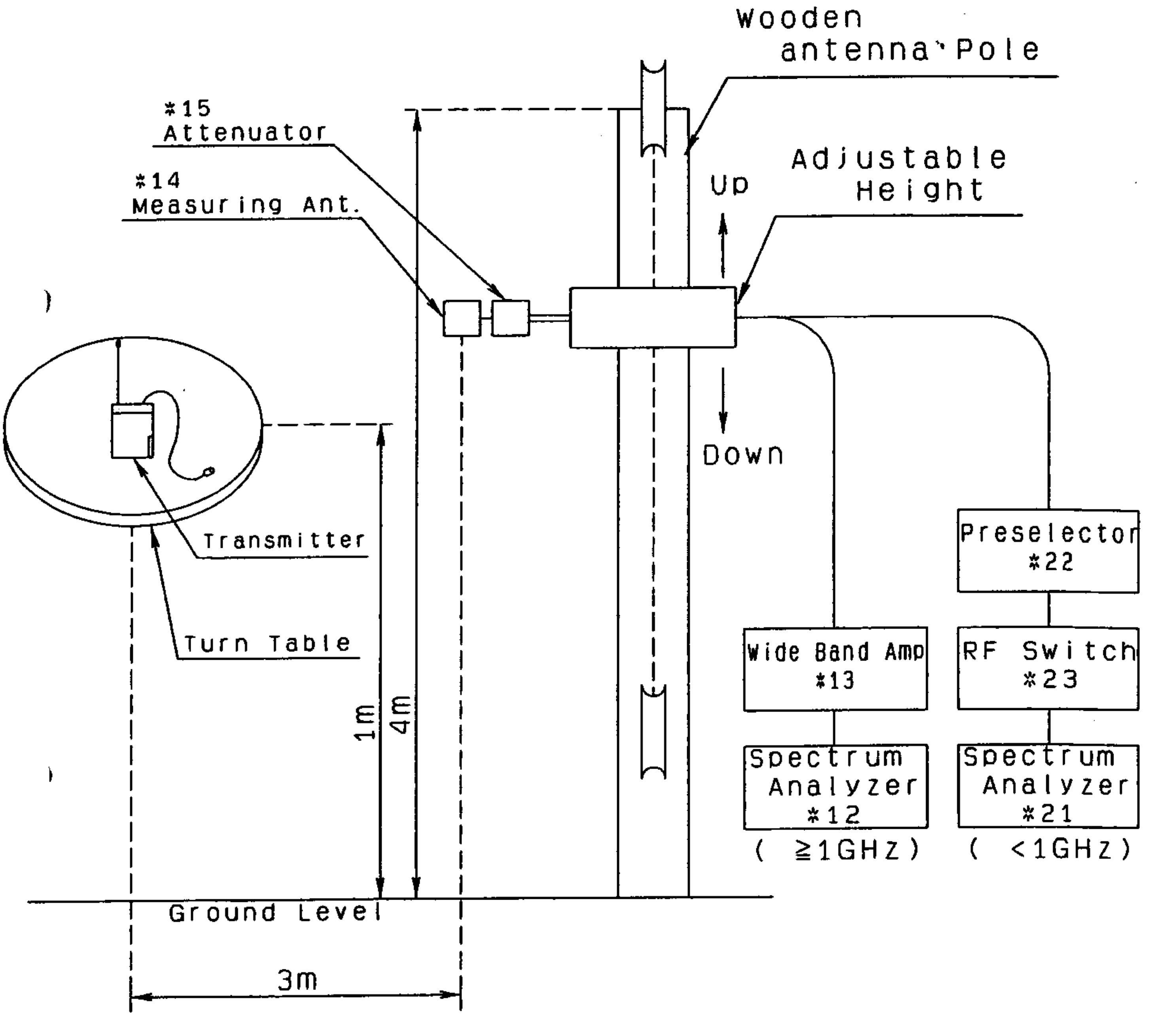
2. This procedure was intended to determine the level of spurious emission radiated from the antenna and the unit chassis. The radio frequency spectrum was scanned from 1GHz frequency generated in the equipment to 10GHz.

3. For each spurious or harmonic measurement, the measuring antenna was changed according to frequency range.

4. For each frequency generated in the equipment, the measuring antenna was raised and lowered to obtain a maximum reading on the spectrum analyzer with the antenna vertically polarized. The turntable was rotated a minimum of 360° to further increase the reading on the spectrum analyzer. Then field strength was recorded in dB μ V/m.

For the measured data, refer to the page 39-1 and 39-2.

For the setup, refer to the diagram below.



Measuring site
Distance between Antenna ---- 3 meters
Location ---- Atsugi Technology Center, Kanagawa, Japan

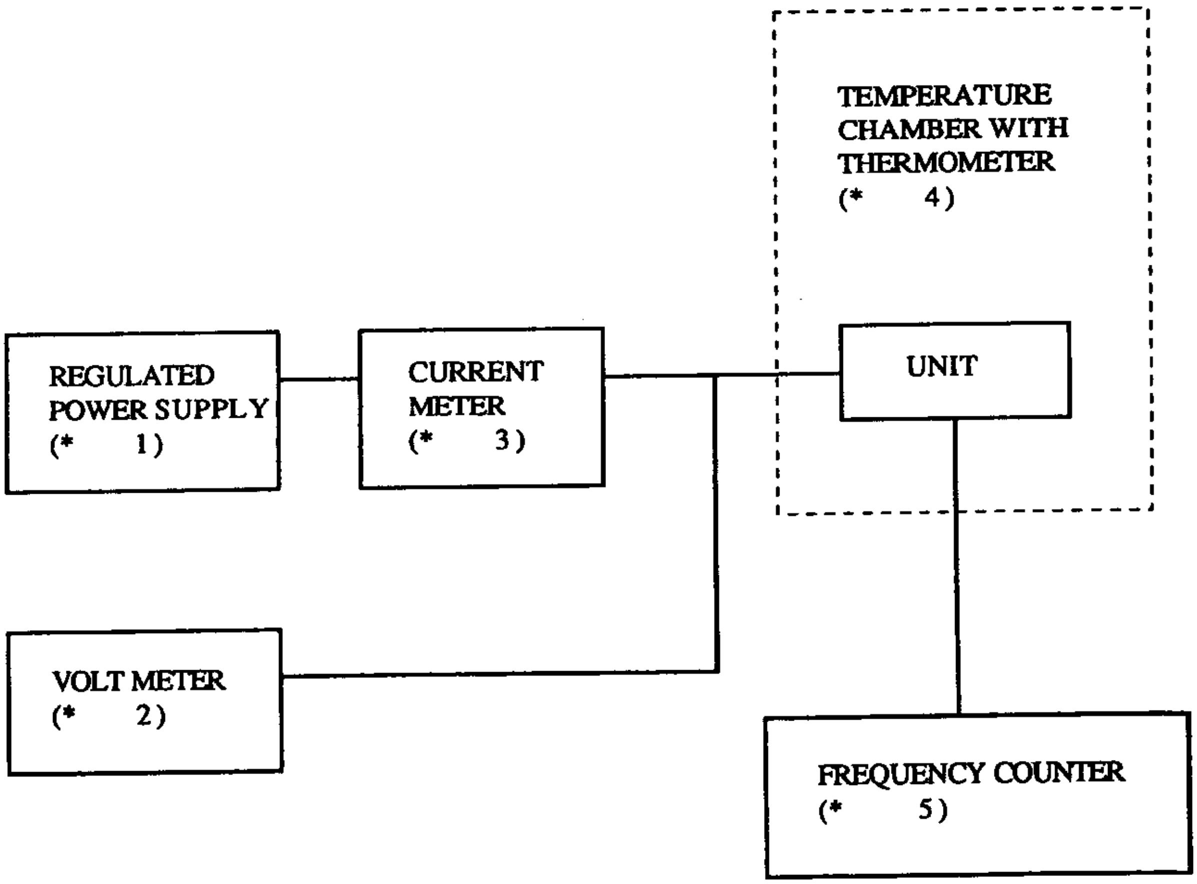
For the measured data, refer to Page 39-1 and 39-2.

2.995 Frequency stability

(1) Frequency vs. Ambient temperature

A. Measurement procedure

The unit was placed in the temperature cycle chamber and was kept at a temperature of -30° ±1° for 1 hour. The rated test voltage was applied for two minutes. The transmitting frequency was measured during this period and recorded. A similar measurement was performed with the temperatures changed 10℃ each time up to maximum of 50℃.
For the test setup, refer to the diagram below.



For the measured data, refer to the Page 40 - 41.

2.995 Frequency stability

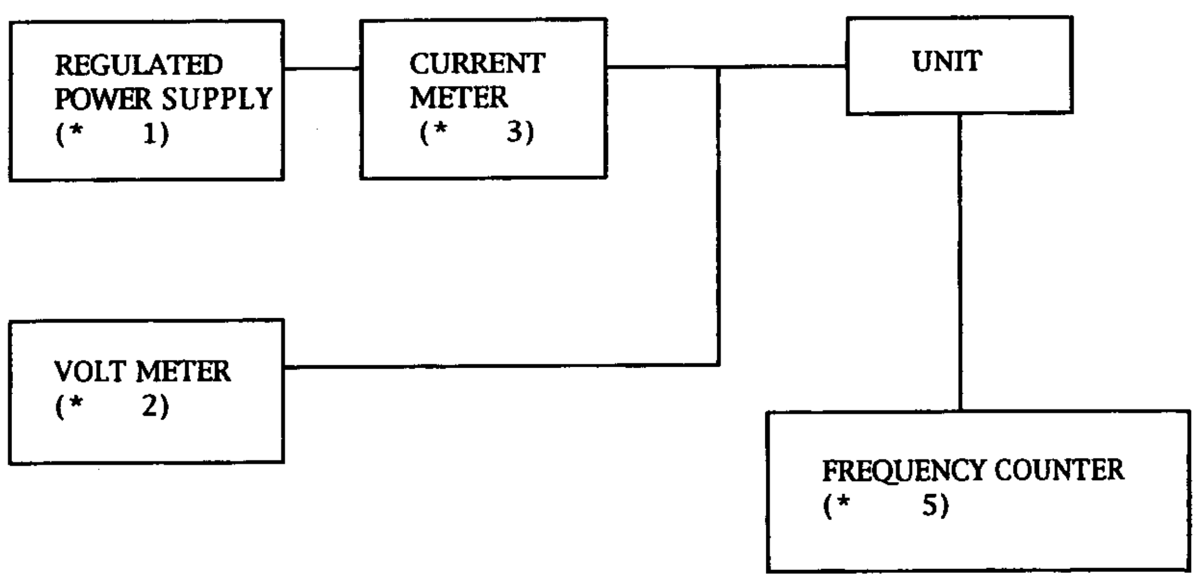
(2) Frequency vs. Supply voltage

A. Measurement procedure

The power supply voltage to the unit under test is varied from 1.0V to 1.725V.

Nominal Value	1.50 V
85% of the nominal value	1.275 V
115% of the nominal value	1.725 V
Battery operating end point which shall be specified by the manufacturer	1.00 V

For the test setup, refer to the diagram below.



For the measured data, refer to the Page 40 - 41.

2.985 RF Power output

Model: WRT-805A(64)
FCC ID: AK8WRT805A64
POWER SUPPLY: 1.50V DC
ANTENNA: 1/4 wavelength helical

Frequency (MHz)	CH No.	ERP (mW)
770.125	64-01	8.9
776.125	65-01	9.3
781.875	65-47	9.1

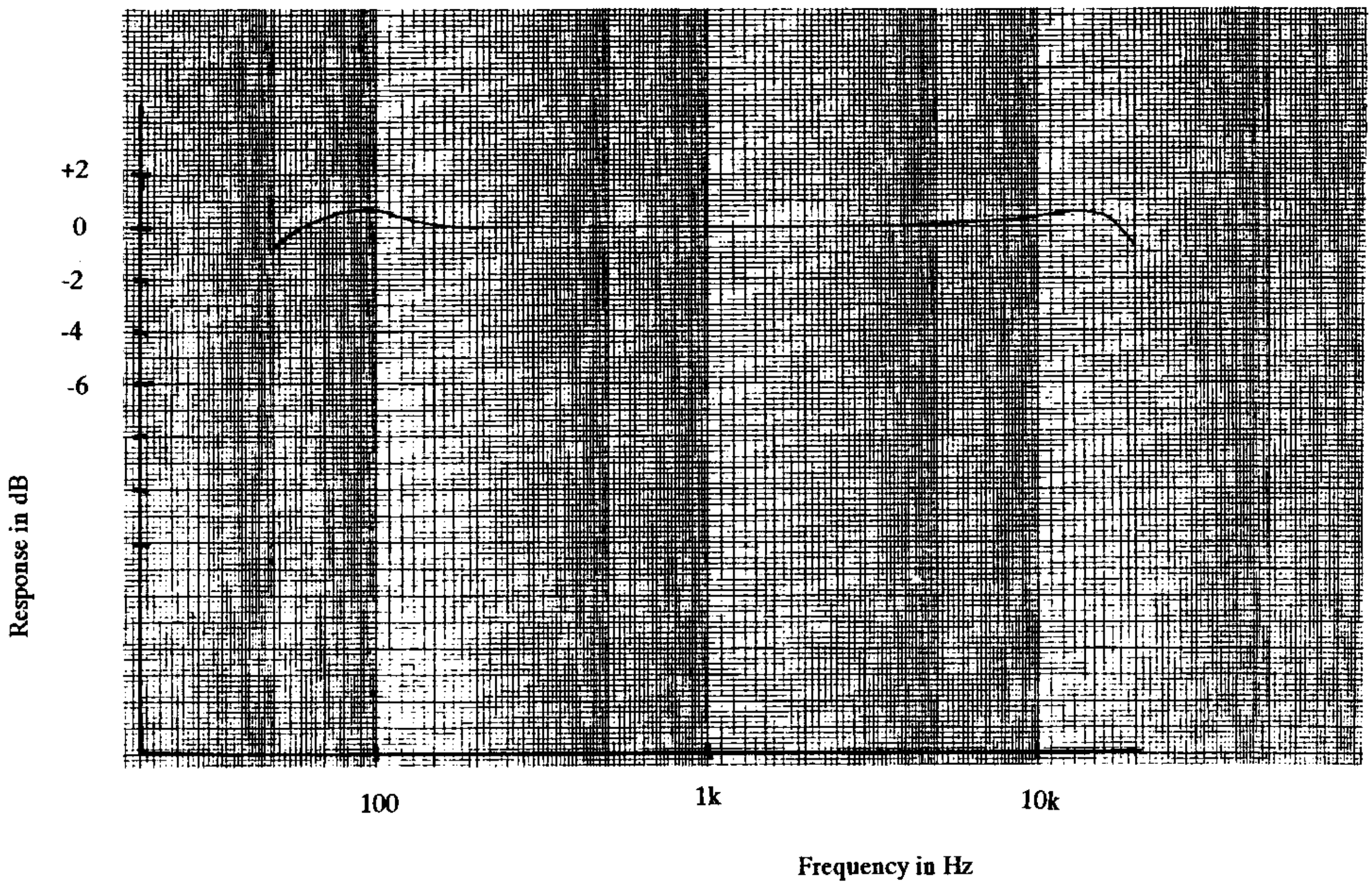
Model: WRT-805A(64)
FCC ID: AK8WRT805A64
POWER SUPPLY: 1.50V DC
ANTENNA: 1/4 wavelength wire

Frequency (MHz)	CH No.	ERP (mW)
770.125	64-01	12.9
776.125	65-01	13.5
781.875	65-47	11.5

2.987 Modulation characteristics

(a) Modulation Frequency Response (Electrical Frequency Response)

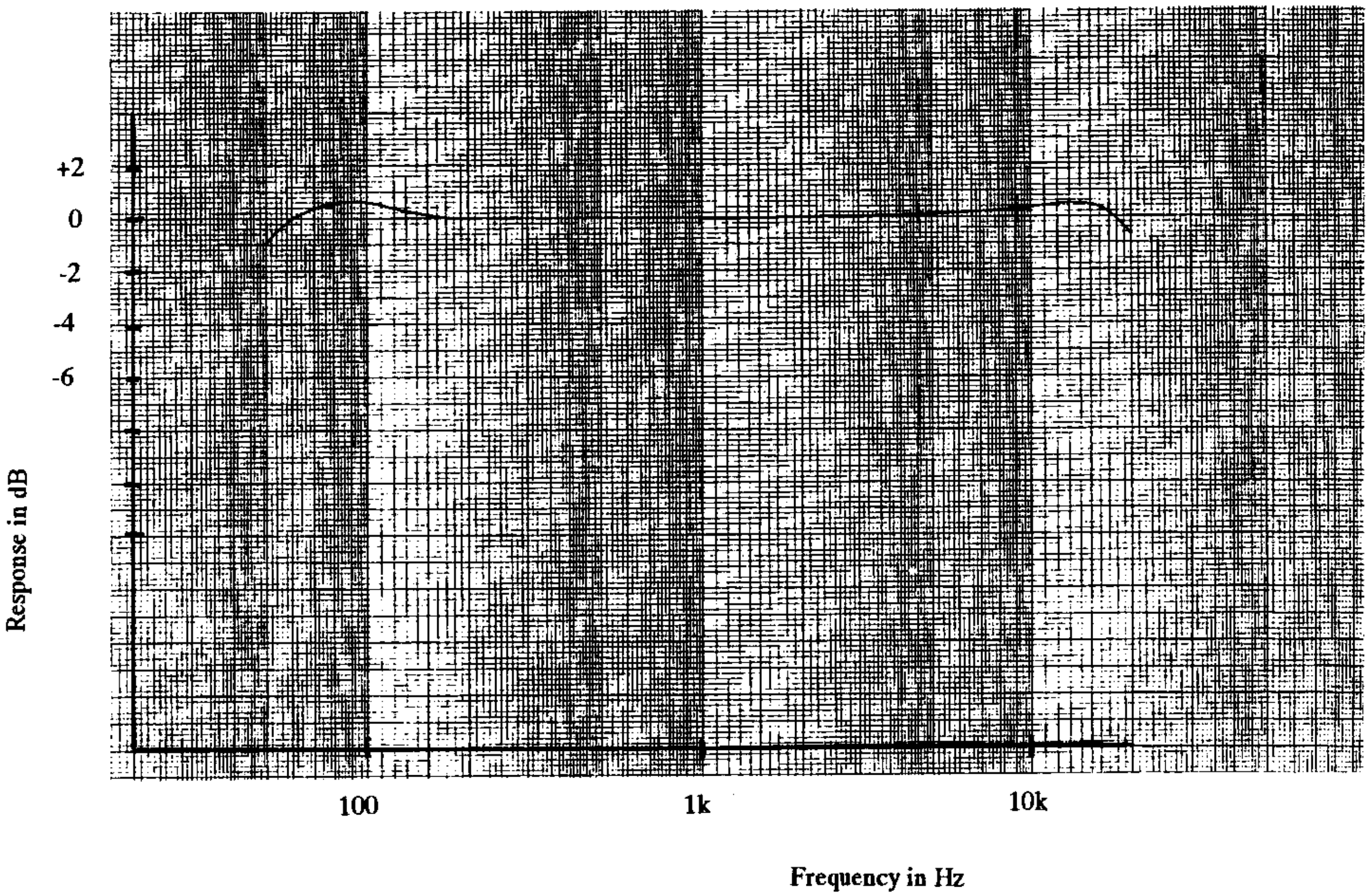
Model:	WRT-805A(64)
FCC ID:	AK8WRT805A64
Transmitting Freq.:	770.125MHz (CH No. 64-01)



2..987 Modulation characteristics

(a) Modulation Frequency Response (Electrical Frequency Response)

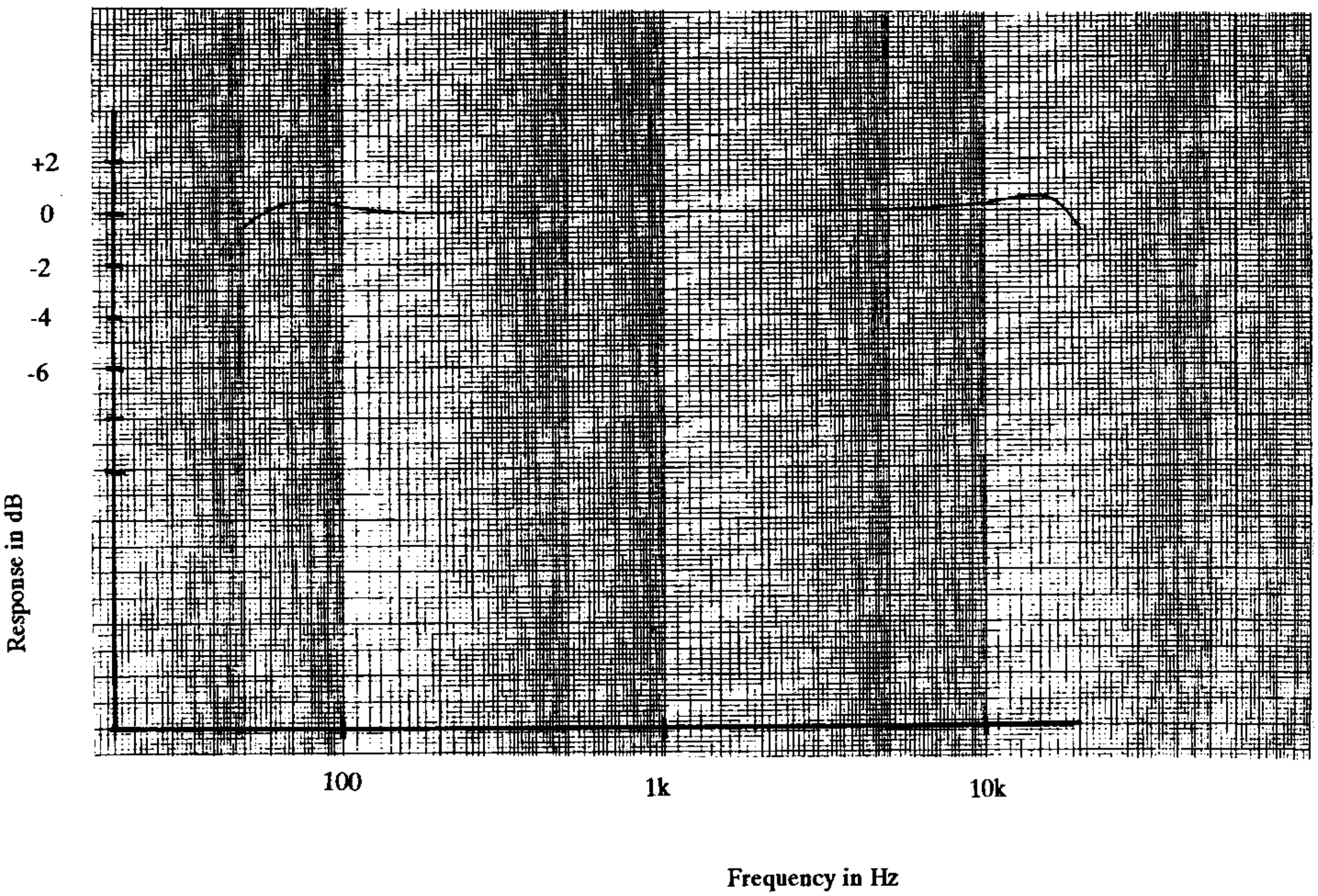
Model:	WRT-805A(64)
FCC ID:	AK8WRT805A64
Transmitting Freq.:	776.125MHz (CH No. 65-01)



2..987 Modulation characteristics

(a) Modulation Frequency Response (Electrical Frequency Response)

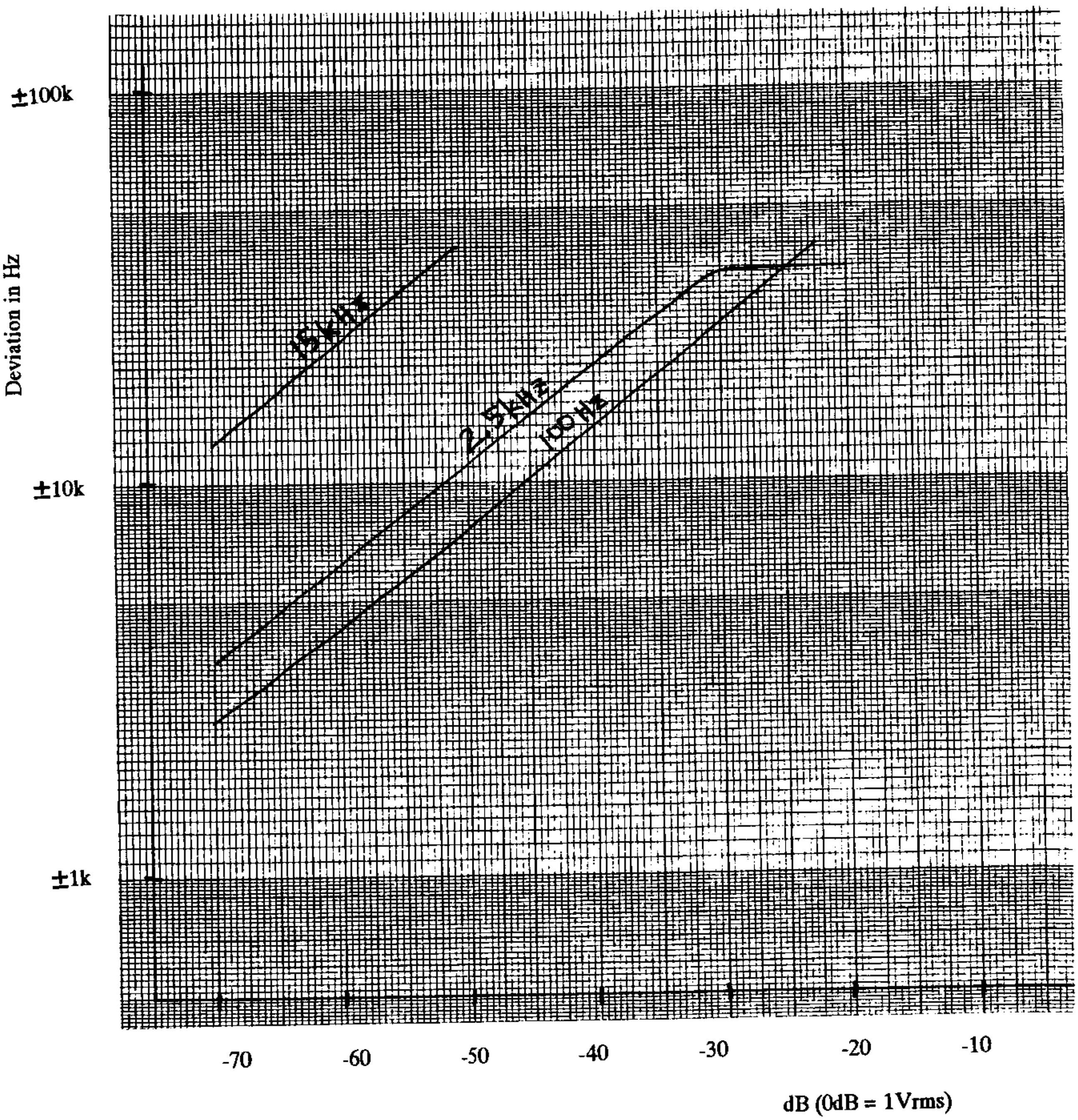
Model:	WRT-805A(64)
FCC ID:	AK8WRT805A64
Transmitting Freq.:	781.875MHz (CH No. 65-47)



2..987 Modulation characteristics

(b) Deviation VS. Input Level

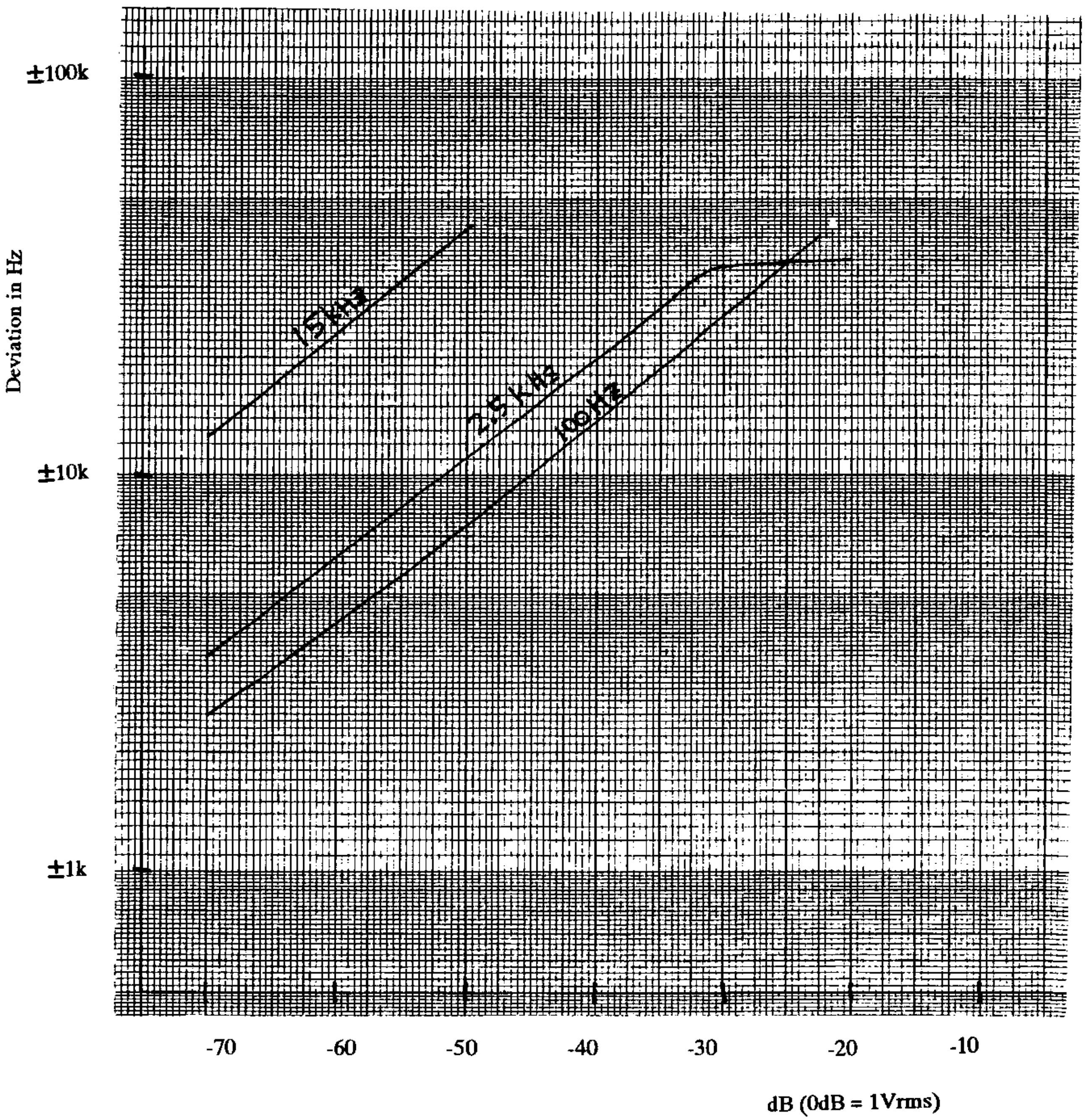
Model:	WRT-805A(64)
FCC ID:	AK8WRT805A64
Transmitting Freq.:	770.125MHz (CH No. 64-01)



2.987 Modulation characteristics

(b) Deviation VS. Input Level

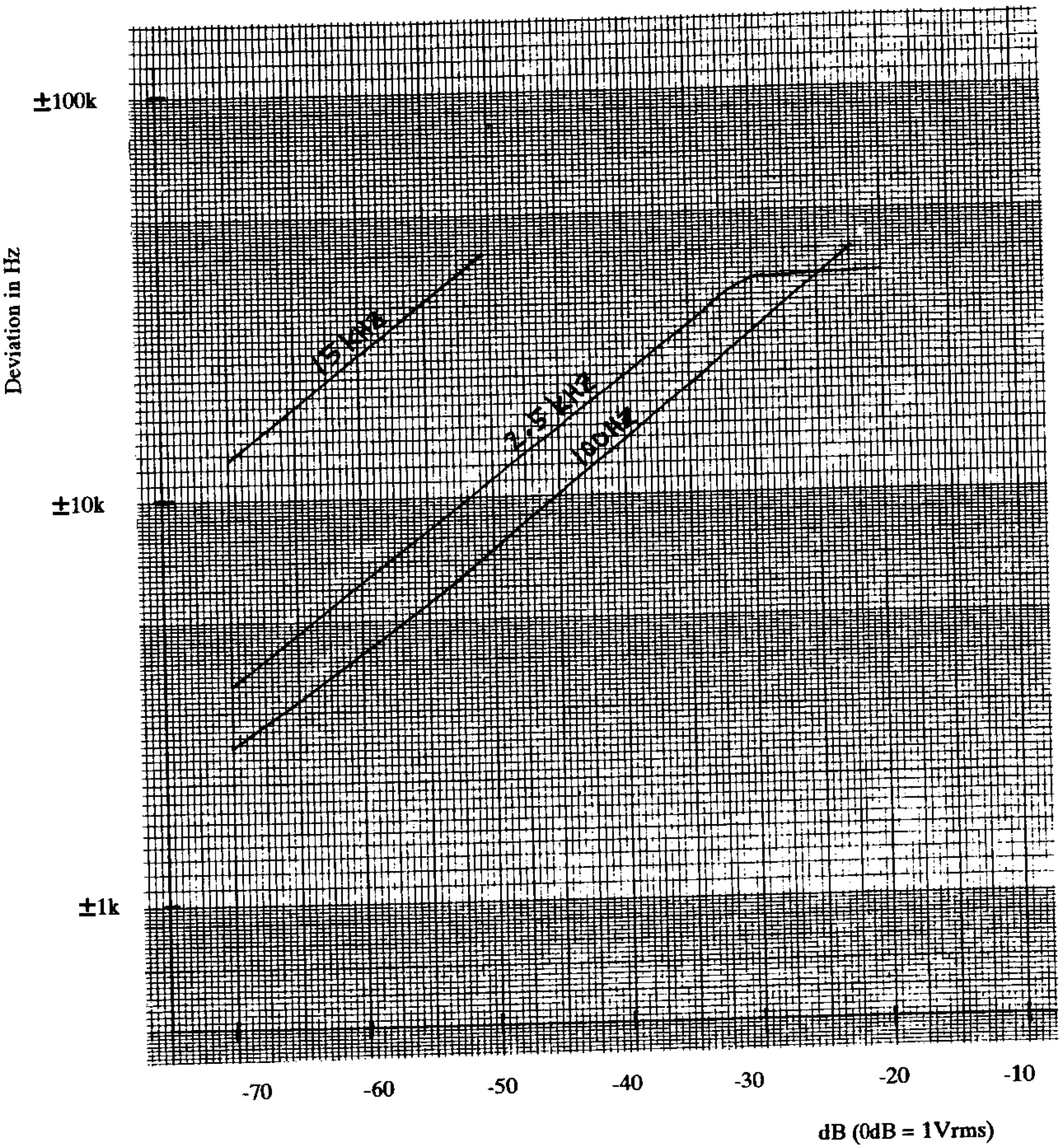
Model:	WRT-805A(64)
FCC ID:	AK8WRT805A64
Transmitting Freq.:	776.125MHz (CH No. 65-01)



2.,987 Modulation characteristics

(b) Deviation VS. Input Level

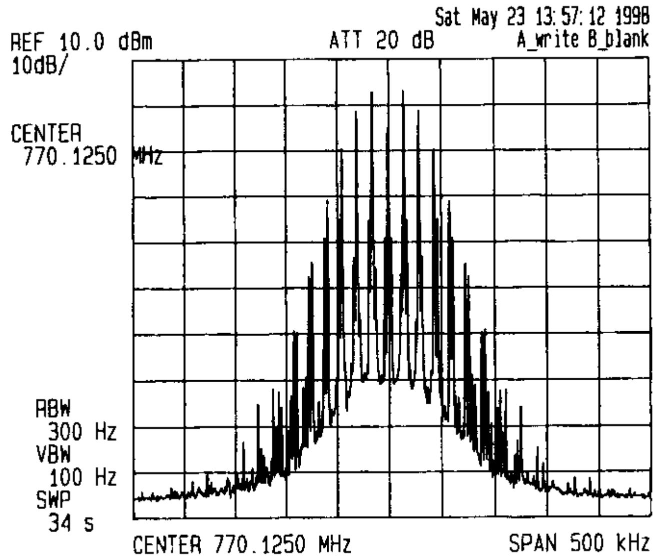
Model:	WRT-805A(64)
FCC ID:	AK8WRT805A64
Transmitting Freq.:	781.875MHz (CH No. 65-47)



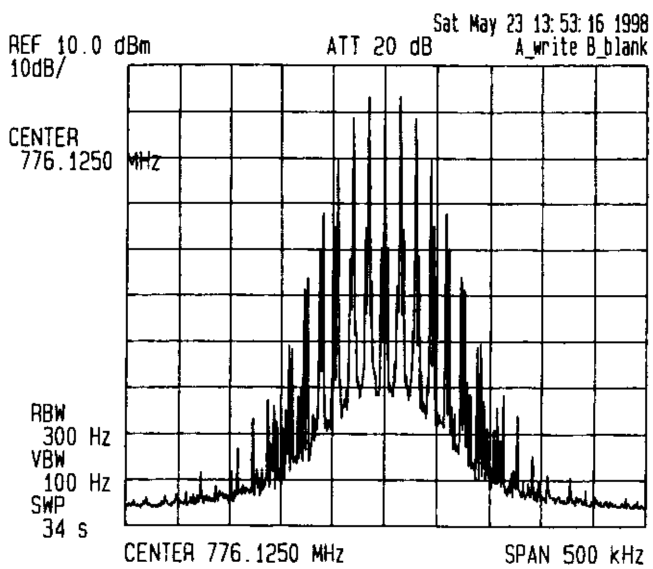
2.,989 Occupied bandwidth

Model: WRT-805A(64)
FCC ID: AK8WRT805A64
Modulating frequency: 15 kHz
Input Level: -53.0 dB(0dB=1Vrms)

Center Frequency
770.125MHz (CH No. 64-01)



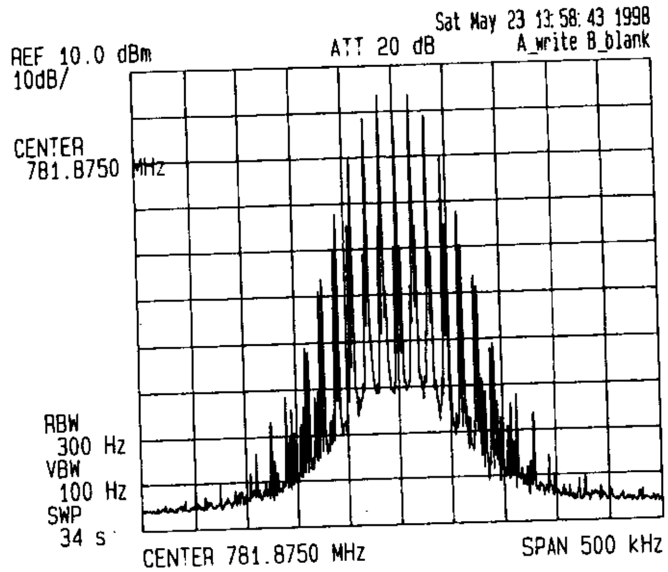
Center Frequency
776.125MHz (CH No. 65-01)



2.,989 Occupied bandwidth

Model: WRT-805A(64)
FCC ID: AK8WRT805A64

Center Frequency
781.875MHz (CH No. 65-47)



2.993 Field strength of spurious radiation

Model:	WRT-805A(64)
FCC ID:	AK8WRT805A64
ANTENNA:	1/4 wavelength helical

Frequency: 770.125MHz (CH No. 64-01)
Power supply: AA size battery x1 1.5V

Frequency (MHz)	Field strength (dBμV/m)
** 770.125	107.7 (* 0.0)
6931.125	55.3 (- 52.4)

Frequency: 776.125MHz (CH No. 65-01)
Power supply: AA size battery x1 1.5V

Frequency (MHz)	Field strength (dBμV/m)
** 776.125	107.9 (* 0.0)
6985.125	55.6 (- 52.3)

Frequency: 781.875MHz (CH No. 65-47)
Power supply: AA size battery x1 1.5V

Frequency (MHz)	Field strength (dBμV/m)
** 781.875	107.8 (* 0.0)
7036.875	54.6 (- 53.2)

Note: * In parenthesis figure shows spurious and harmonic emission level.
Unit: dB (0dB = carrier level)
** Carrier frequency

2.993 Field strength of spurious radiation

Model: WRT-805A(64)
FCC ID: AK8WRT805A64
ANTENNA: 1/4 wavelength wire

Frequency: 770.125MHz (CH No. 64-01)
Power supply: AA size battery x1 1.5V

Frequency (MHz)	Field strength (dBμV/m)
** 770.125	109.3 (*0.0)
6931.125	55.5 (- 53.8)

Frequency: 776.125MHz (CH No. 65-01)
Power supply: AA size battery x1 1.5V

Frequency (MHz)	Field strength (dBμV/m)
** 776.125	109.5 (*0.0)
3880.625	50.8 (- 58.7)

Frequency: 781.875MHz (CH No. 65-47)
Power supply: AA size battery x1 1.5V

Frequency (MHz)	Field strength (dBμV/m)
** 781.875	108.8 (*0.0)
3909.375	48.8 (- 60.0)

Note: * In parenthesis figure shows spurious and harmonic emission level.
Unit: dB (0dB = carrier level)
** Carrier frequency

2.995 Frequency stability

Nominal frequency : 770.125MHz (CH No. 64-01)

Power supply	Frequency stability (%)			
Ambient temperature(℃)	1.000V DC	1.275V DC	1.500V DC	1.725V DC
-30	-0.0041	-0.0041	-0.0041	-0.0041
-20	-0.0028	-0.0028	-0.0028	-0.0028
-10	-0.0019	-0.0019	-0.0019	-0.0019
0	-0.0009	-0.0009	-0.0009	-0.0009
10	-0.0006	-0.0006	-0.0006	-0.0006
20	-0.0002	-0.0002	-0.0002	-0.0002
30	0.0002	0.0002	0.0002	0.0002
40	0.0006	0.0006	0.0006	0.0006
50	0.0004	0.0004	0.0004	0.0004

Nominal frequency : 776.125MHz (CH No. 65-01)

Power supply	Frequency stability (%)			
Ambient temperature(℃)	1.000V DC	1.275V DC	1.500V DC	1.725V DC
-30	-0.0041	-0.0041	-0.0041	-0.0041
-20	-0.0028	-0.0028	-0.0028	-0.0028
-10	-0.0019	-0.0019	-0.0019	-0.0019
0	-0.0009	-0.0009	-0.0009	-0.0009
10	-0.0006	-0.0006	-0.0006	-0.0006
20	-0.0002	-0.0002	-0.0002	-0.0002
30	0.0002	0.0002	0.0002	0.0002
40	0.0006	0.0006	0.0006	0.0006
50	0.0004	0.0004	0.0004	0.0004

2.995 Frequency stability

Nominal frequency : 781.875MHz (CH No. 65-47)

Power supply	Frequency stability (%)			
Ambient temperature(°C)	1.000V DC	1.275V DC	1.500V DC	1.725V DC
-30	-0.0041	-0.0041	-0.0041	-0.0041
-20	-0.0028	-0.0028	-0.0028	-0.0028
-10	-0.0019	-0.0019	-0.0019	-0.0019
0	-0.0009	-0.0009	-0.0009	-0.0009
10	-0.0006	-0.0006	-0.0006	-0.0006
20	-0.0002	-0.0002	-0.0002	-0.0002
30	0.0002	0.0002	0.0002	0.0002
40	0.0006	0.0006	0.0006	0.0006
50	0.0004	0.0004	0.0004	0.0004

2.999 List of Test Equipment

Equipment	Manufacturer	Type	Serial No.
*1 Regulated Power supply	TAKASAGO	NL035-5	9820333
*2 Volt Meter	Yokogawa	2051	10497U
*3 Current Meter	Yokogawa	2051	11384U
*4 Temperature Chamber	Tabai	PL-1	2223871
*5 Frequency Counter	Anritsu	MF76A	MT59216
*6 Power Meter Power Sensor	Hewlett Packard Hewlett Packard	435B 8482A	2445A11826 2349A10440
*7 Spectrum Analyzer	ADVANTEST	R3371A	5863D14
*8 Attenuator	Anritsu	MN-32A	M42522
*9 Audio Oscillator	Matsushita	VP-722A	529059
*10 Distortion Analyzer	Hewlett Packard	334A	1140A09384
*11 Modulation Analyzer	Hewlett Packard	8901A	1922A00235
*12 Spectrum Analyzer	ADVANTEST	R3265	15060251
*13 Wide Band Amplifier	Anritsu	A4H1002S	-
*14 Horn Antenna Log-Periodic Antenna	SCHWARZBECK SCHWARZBECK	BBHA 9120-B UHALP9107	102/93 -
*15 3dB Attenuator	Hewlett Packard	8491B	2708A
*21 Spectrum Analyzer	ADVANTEST	TR4172	60690030
*22 Preselector	ADVANTEST	TR14307	68360004
*23 RF Switch	ADVANTEST	TR14308	8604004
*24 Standard Signal Generator	Anritsu	MG645B1	M54866