



UA



# *T-S500*

---

## *Tuner*

OWNER'S MANUAL  
MODE D'EMPLOI  
MANUAL DE INSTRUCCIONES

# IMPORTANT SAFETY INSTRUCTIONS

	<b>CAUTION</b> <b>RISK OF ELECTRIC SHOCK</b> <b>DO NOT OPEN</b>	
<b>CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.</b>		

## • Explanation of Graphical Symbols



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert you to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert you to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

## Note to CATV system installer:

This reminder is provided to call the CATV system installer’s attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

## IMPORTANT

Please record the serial number of this unit in the space below.

MODEL:

Serial No.:

The serial number is located on the rear of the unit.

Retain this Owner’s Manual in a safe place for future reference.

- 1 Read these instructions.
- 2 Keep these instructions.
- 3 Heed all warnings.
- 4 Follow all instructions.
- 5 Do not use this apparatus near water.
- 6 Clean only with dry cloth.
- 7 Do not block any ventilation openings. Install in accordance with the manufacturer’s instructions.
- 8 Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- 9 Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- 10 Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- 11 Only use attachments/accessories specified by the manufacturer.
- 12 Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
- 13 Unplug this apparatus during lightning storms or when unused for long periods of time.
- 14 Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.



## We Want You Listening For A Lifetime

Yamaha and the Electronic Industries Association’s Consumer Electronics Group want you to get the most out of your equipment by playing it at a safe level. One that lets the sound come through loud and clear without annoying blaring or distortion – and, most importantly, without affecting your sensitive hearing. Since hearing damage from loud sounds is often undetectable until it is too late, Yamaha and the Electronic Industries Association’s Consumer Electronics Group recommend you to avoid prolonged exposure from excessive volume levels.



## FCC INFORMATION (for US customers)

### 1 **IMPORTANT NOTICE: DO NOT MODIFY THIS UNIT!**

This product, when installed as indicated in the instructions contained in this manual, meets FCC requirements. Modifications not expressly approved by Yamaha may void your authority, granted by the FCC, to use the product.

### 2 **IMPORTANT:** When connecting this product to accessories and/or another product use only high quality shielded cables. Cable/s supplied with this product **MUST** be used. Follow all installation instructions. Failure to follow instructions could void your FCC authorization to use this product in the USA.

### 3 **NOTE:** This product has been tested and found to comply with the requirements listed in FCC Regulations, Part 15 for Class "B" digital devices. Compliance with these requirements provides a reasonable level of assurance that your use of this product in a residential environment will not result in harmful interference with other electronic devices.

This equipment generates/uses radio frequencies and, if not installed and used according to the instructions found in the users manual, may cause interference harmful to the operation of other electronic devices.

Compliance with FCC regulations does not guarantee that interference will not occur in all installations. If this product is found to be the source of interference, which can be determined by turning the unit "OFF" and "ON", please try to eliminate the problem by using one of the following measures:

Relocate either this product or the device that is being affected by the interference.

Utilize power outlets that are on different branch (circuit breaker or fuse) circuits or install AC line filter/s.

In the case of radio or TV interference, relocate/reorient the antenna. If the antenna lead-in is 300 ohm ribbon lead, change the lead-in to coaxial type cable.

If these corrective measures do not produce satisfactory results, please contact the local retailer authorized to distribute this type of product. If you can not locate the appropriate retailer, please contact Yamaha Electronics Corp., U.S.A. 6660 Orangethorpe Ave, Buena Park, CA 90620.

The above statements apply **ONLY** to those products distributed by Yamaha Corporation of America or its subsidiaries.

# CAUTION: READ THIS BEFORE OPERATING YOUR UNIT.

- 1 To assure the finest performance, please read this manual carefully. Keep it in a safe place for future reference.
- 2 Install this unit in a well ventilated, cool, dry, clean place – away from direct sunlight, heat sources, vibration, dust, moisture, and/or cold. For proper ventilation, allow the following minimum clearances.  
Top : 10 cm (4 in)  
Rear: 10 cm (4 in)
- 3 Locate this unit away from other electrical appliances, motors, or transformers to avoid humming sounds.
- 4 Do not expose this unit to sudden temperature changes from cold to hot, and do not locate this unit in an environment with high humidity (i.e. a room with a humidifier) to prevent condensation inside this unit, which may cause an electrical shock, fire, damage to this unit, and/or personal injury.
- 5 Avoid installing this unit where foreign objects may fall onto this unit and/or this unit may be exposed to liquid dripping or splashing. On the top of this unit, do not place:
  - Other components, as they may cause damage and/or discoloration on the surface of this unit.
  - Burning objects (i.e. candles), as they may cause fire, damage to this unit, and/or personal injury.
  - Containers with liquid in them, as they may fall and liquid may cause electrical shock to the user and/or damage to this unit.
- 6 Do not cover this unit with a newspaper, tablecloth, curtain, etc. in order not to obstruct heat radiation. If the temperature inside this unit rises, it may cause fire, damage to this unit, and/or personal injury.
- 7 Do not plug in this unit to a wall outlet until all connections are complete.
- 8 Do not operate this unit upside-down. It may overheat, possibly causing damage.
- 9 Do not use force on switches, knobs and/or cords.
- 10 When disconnecting the power cable from the wall outlet, grasp the plug; do not pull the cable.
- 11 Do not clean this unit with chemical solvents; this might damage the finish. Use a clean, dry cloth.
- 12 Only voltage specified on this unit must be used. Using this unit with a higher voltage than specified is dangerous and may cause fire, damage to this unit, and/or personal injury. Yamaha will not be held responsible for any damage resulting from use of this unit with a voltage other than specified.
- 13 To prevent damage by lightning, keep the power cable and outdoor antennas disconnected from a wall outlet or the unit during a lightning storm.
- 14 Do not attempt to modify or fix this unit. Contact qualified Yamaha service personnel when any service is needed. The cabinet should never be opened for any reasons.
- 15 When not planning to use this unit for long periods of time (i.e. vacation), disconnect the AC power plug from the wall outlet.
- 16 Install this unit near the AC outlet and where the AC power plug can be reached easily.
- 17 Be sure to read the “TROUBLESHOOTING” section on common operating errors before concluding that this unit is faulty.
- 18 Before moving this unit, press POWER to turn off this unit and then disconnect the AC power plug from the wall outlet.

## WARNING

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

As long as this unit is connected to the AC wall outlet, it is not disconnected from the AC power source even if you turn off this unit by POWER.

## FOR CANADIAN CUSTOMERS

To prevent electric shock, match wide blade of plug to wide slot and fully insert.  
This Class B digital apparatus complies with Canadian ICES-003.

# CONTENTS

## PREPARATION

<b>CONTROLS AND FUNCTIONS .....</b>	<b>2</b>
Front panel .....	2
Controlling this unit with a remote control.....	2
<b>CONNECTIONS .....</b>	<b>3</b>

## OPERATIONS

<b>TUNING .....</b>	<b>4</b>
Automatic tuning .....	4
Manual tuning .....	4
Selecting preset stations.....	4
<b>PRESETTING STATIONS .....</b>	<b>5</b>
Automatic station preset (FM stations only) .....	5
Manual station preset.....	5
Clearing the preset station .....	5

## ADDITIONAL INFORMATION

<b>TROUBLESHOOTING.....</b>	<b>6</b>
<b>SPECIFICATIONS .....</b>	<b>7</b>

### ■ Features


- 40-station FM/AM preset tuning
- Automatic station preset (FM stations only)
- 2-line information message display

### ■ Supplied accessories

Please check that you have received all of the following parts.

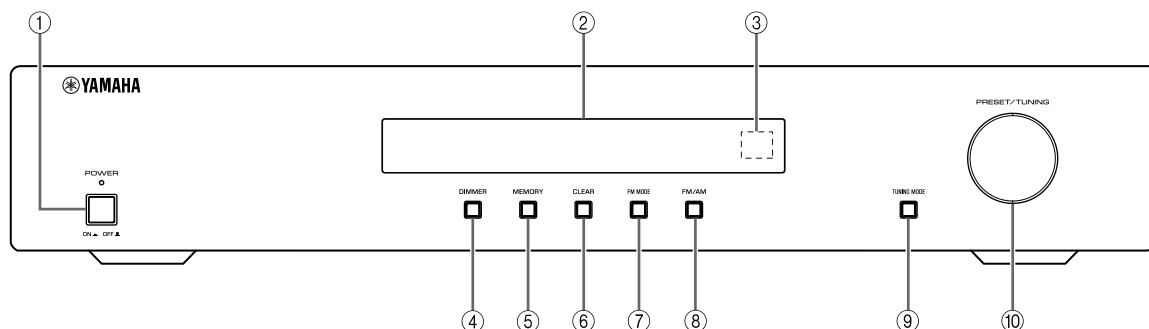
- Indoor FM antenna
- AM loop antenna
- RCA stereo cable

### ■ About this manual

-  indicates a tip for your operation.
- This manual is printed prior to production. Design and specifications are subject to change in part as a result of improvements, etc. In case of differences between the manual and the product, the product has priority.

# CONTROLS AND FUNCTIONS

## Front panel



### ① POWER

Press to turn on/off this unit.



The POWER indicator above lights up when this unit is turned on.

### ② Front panel display

Displays information of the currently tuned FM or AM radio station or the operational status.

### ③ Remote control sensor

Receives signals from a remote control provided with a Yamaha amplifier or receiver.

### ④ DIMMER

Changes brightness level of the front panel display. Choose brightness from 4 levels by pressing this button repeatedly.



This setting is retained even if you turn off this unit.

### ⑤ MEMORY

Sets this unit to the preset station memory mode when this unit is in the FM/AM tuning mode (see page 5).

### ⑥ CLEAR

Clears the preset stations (see page 5).

### ⑦ FM MODE

Switches the FM radio wave reception mode (stereo or monaural) when this unit is in the FM tuning mode (see page 4).

### ⑧ FM/AM

Selects the reception band (FM or AM).

### ⑨ TUNING MODE

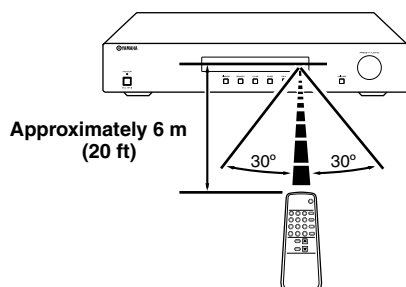
Selects the tuning mode (automatic, manual, or preset tuning) when this unit is in the FM/AM tuning mode (see page 4).

### ⑩ PRESET/TUNING

- Selects the preset FM or AM stations or services when this unit is in the preset tuning mode.
- Selects the FM or AM stations or services when this unit is not in the preset tuning mode.

## Controlling this unit with a remote control

This unit has a remote control sensor. It receives signals from a remote control provided with a Yamaha amplifier or AV receiver.



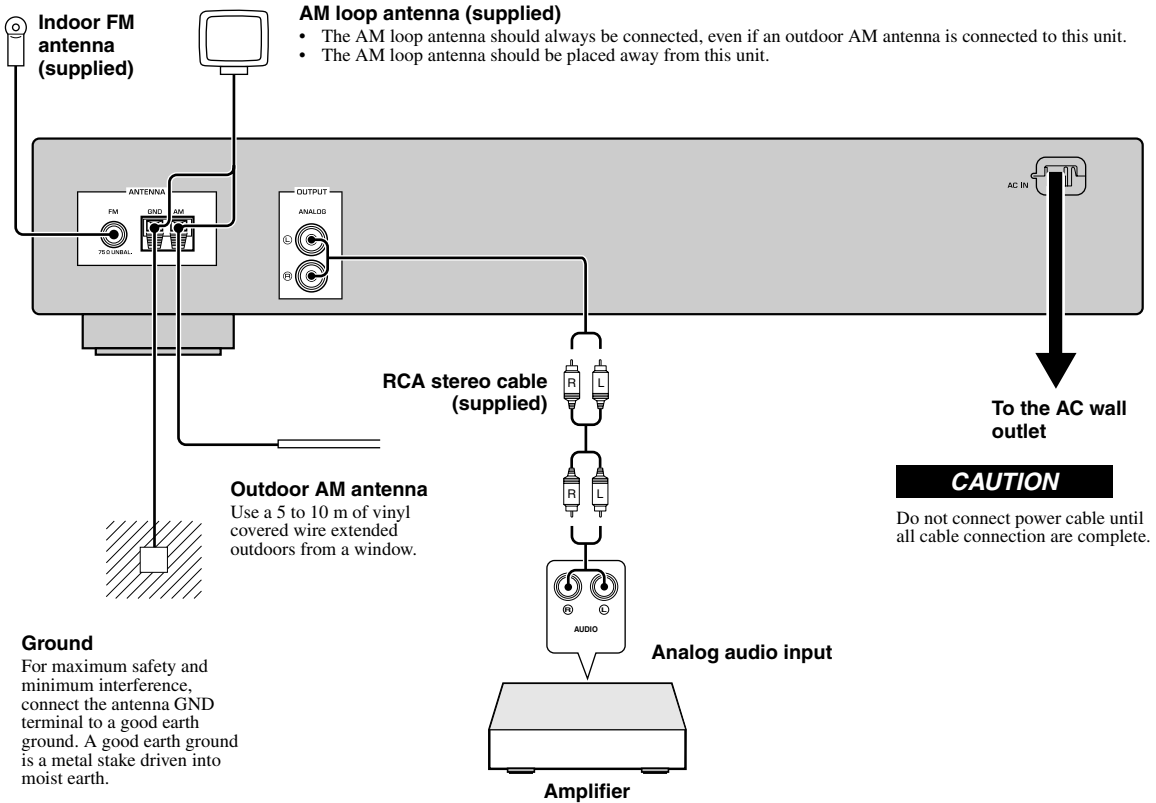
### Notes

- Do not place any large obstacles between the remote control and this unit.
- If the remote control sensor is directly illuminated by strong lighting (especially an inverter type fluorescent lamp), you may not be able to control this unit using the remote control. In this case, reposition this unit to avoid direct lighting.

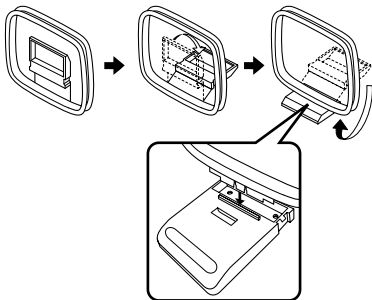
# CONNECTIONS

**Note**

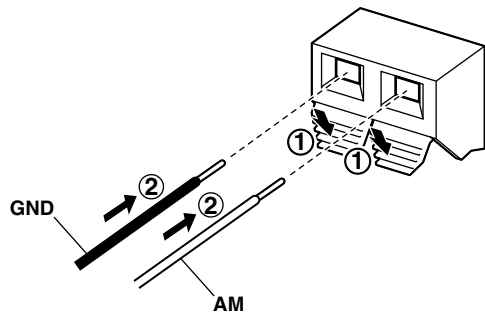
If you experience poor reception quality, install an outdoor antenna. Consult the nearest authorized Yamaha dealer or service center about outdoor antennas.



■ **Assembling the supplied AM loop antenna**



■ **Connecting the wire of the AM loop antenna**



# TUNING

## Automatic tuning

Automatic tuning is effective when station signals are strong and there is no interference.

**1 Press FM/AM repeatedly to select the reception band (FM/AM).**

**2 Press TUNING MODE to select “Auto tune”.**

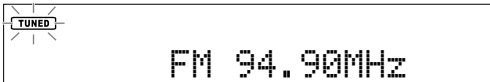


◀ Auto tune ▶  
FM 87.50MHz

Australia model

**3 Turn PRESET/TUNING to begin automatic tuning.**

When this unit is tuned into a station, the TUNED indicator lights up and the frequency of the station is shown on the front panel display.



TUNED  
FM 94.90MHz

Australia model

## Manual tuning

If the signal from the station you want to select is weak, tune into it manually.

**1 Press FM/AM repeatedly to select the reception band (FM/AM).**

**2 Press TUNING MODE repeatedly to select “Manual tune”.**



◀ Manual tune ▶  
FM 87.50MHz

Australia model

**3 Turn PRESET/TUNING to select the desired frequency.**

When this unit is tuned into a station, the TUNED indicator lights up.

## Selecting preset stations

You can tune into any desired station simply by selecting the preset station number.

### Note

See the next page to preset stations.

**1 Press TUNING MODE repeatedly to select “Preset tune”.**

**2 Turn PRESET/TUNING to select the desired preset station number.**

### Improving FM reception

If the signal from the station is weak and the sound quality is not good, set the FM radio wave reception mode to the monaural tuning mode to improve reception.

**Press FM MODE repeatedly to select “AUTO STEREO” (stereo mode) or “MONO” (monaural mode) when this unit is tuned into an FM radio station.**

- When this unit is in the stereo tuning mode, the STEREO indicator lights up on the front panel display.
- When this unit is in the monaural tuning mode, the STEREO indicator goes off.

### Note

Even if this unit is in the stereo tuning mode, the STEREO indicator does not light up when the current program is monaural.

# PRESETTING STATIONS

You can tune into stations easily by storing (presetting) and recalling them. This function enables this unit to preset up to 40 FM and AM stations.

## Automatic station preset (FM stations only)

### Note

To preset AM stations, see “Manual station preset” below.

**1 Press FM/AM repeatedly to select the reception band (FM).**

**2 Press and hold MEMORY for more than 3 seconds.**

“Auto Preset” flashes on the front panel display. This unit starts searching the stations with strong signals and stores them automatically.



Auto Preset  
CH01 FM100.05MHz

Australia model

When automatic station preset is completed, this unit tunes into the station preset to “01”.

### Notes

- Only FM stations with sufficient signal strength are stored automatically. To store a station with weak signal strength, store it manually. See “Manual station preset” below.
- When you rerun “Automatic station preset”, all of the preset data will be deleted and new preset data will be set to each preset number.
- If no station is found, the search ends and this unit returns to the previous station tuned in before the search.

## Manual station preset

**1 Tune into the desired FM/AM station.**

See page 4 for tuning instructions.

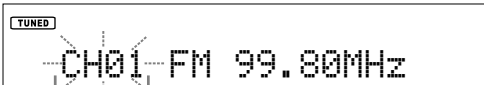
**2 Press MEMORY.**

The preset station number flashes on the front panel display for 5 seconds.

### Note

Perform the next operation within 5 seconds after pressing MEMORY.

**3 Turn PRESET/TUNING to select the desired preset station number while the preset station number flashes.**



TUNED  
CH01 FM 99.80MHz

Preset station number

Australia model

### Note

Perform the next operation within 5 seconds after selecting the preset station number.

**4 Press MEMORY again to confirm the preset.**

### Notes

- When you preset a new station to an existing preset number, new preset data will overwrite the existing preset data.
- The reception mode (stereo or monaural) is stored along with the station frequency.

## Clearing the preset station

Follow the steps below to clear a preset station one at a time.

**1 Select the desired preset station number.**

See “Selecting preset stations” on page 4.

**2 Press CLEAR.**

The selected preset station number flashes on the front panel display.

Flashes



← CLEAR CH01 →  
CH01 FM 99.80MHz

Australia model

If you do not perform the next operation within 5 seconds, the clearing is canceled.

**3 Press CLEAR to confirm.**

“PresetXX Cleared” (XX indicates the preset number) appears on the front panel display.



To clear all preset stations, press and hold CLEAR for 3 seconds. “ALL CLEAR” appears on the front panel display.

# TROUBLESHOOTING

Refer to the table below when this unit does not function properly. If the problem you are experiencing is not listed below or if the instruction below does not help, turn off this unit, disconnect the power cable, and contact the nearest authorized Yamaha dealer or service center.

## ■ Tuner

Problem		Cause	Remedy	See page
FM	<b>FM stereo reception is noisy.</b>	The characteristics of FM stereo broadcasts may cause this problem when the transmitter is too far away or the antenna input is poor.	Check the antenna connections. Try using a high-quality directional FM antenna.	3 —
	<b>There is distortion, and clear reception cannot be obtained even with a good FM antenna.</b>	There is multi-path interference.	Adjust the antenna position to eliminate multi-path interference.	—
	<b>The desired station cannot be tuned into with the automatic tuning method.</b>	The signal is too weak.	Use a high-quality directional FM antenna. Use the manual tuning method.	— 4
AM	<b>The desired station cannot be tuned into with the automatic tuning method.</b>	The signal is weak or the antenna connections are loose.	Tighten the AM loop antenna connections and orient it for the best reception. Use the manual tuning method.	— 4
	<b>There are continuous crackling and hissing noises.</b>	Noise can result from lightning, fluorescent lamps, motors, thermostats and other electrical equipment.	Use an outdoor antenna and a ground wire. This will help somewhat, but it is difficult to eliminate all noise.	—
	<b>There are buzzing and whining noises.</b>	A TV set is being used nearby.	Move this unit away from the TV set.	—

## ■ General

Problem		Cause	Remedy	See page
<b>This unit fails to turn on when POWER is pressed.</b>	The power cord is not connected or the plug is not completely inserted.	Connect the power cord firmly.	3	
	This unit has been exposed to a strong external electric shock (such as lightning or strong static electricity).	Disconnect the power cord, plug it back in after 30 seconds, then use it normally.	—	
<b>A “humming” sound can be heard.</b>	Incorrect cable connections.	Firmly connect the audio connection cord plugs. If the problem persists, the cables may be defective.	—	
<b>This unit does not operate properly.</b>	The internal microcomputer has been frozen by an external electric shock (such as lightning or excessive static electricity) or by a power supply with low voltage.	Disconnect the AC power plug from the outlet and then plug it in again after about 30 seconds.	3	

# SPECIFICATIONS

## AUDIO SECTION

- Output Level/Impedance (fixed)
  - FM (40 kHz Dev., 1kHz) ..... 1.0 V/1.2 k $\Omega$
  - AM (30% mod., 1 kHz) ..... 0.36 V/1.2 k $\Omega$

## FM SECTION

- Tuning Range
  - [U.S.A. and Canada models] ..... 87.5 to 107.9 MHz
  - [Europe and Australia models] ..... 87.50 to 108.00 MHz
- 50 dB Quieting Sensitivity (IHF, 100% mod.)
  - Mono ..... 3  $\mu$ V (20.2 dBf)
- Usable Sensitivity (Signal to Noise 30 dB)
  - Mono ..... 1.0  $\mu$ V
  - Image Rejection Ratio ..... 80 dB
  - IF Rejection Ratio ..... 70 dB
  - Selectivity (400 kHz) ..... 70 dB
- Signal to Noise Ratio (IHF)
  - Mono/Stereo ..... 80 dB/75 dB
- Harmonic Distortion (1 kHz)
  - Mono/Stereo ..... 0.3%/0.5%
- Stereo Separation (40 kHz Dev.)
  - 1 kHz ..... 43 dB
- Frequency response (20 Hz to 15 kHz) ..... -3 dB
- Antenna Input (unbalanced) ..... 75  $\Omega$

## AM SECTION

- Tuning Range
  - [U.S.A. and Canada models] ..... 530 to 1710 kHz
  - [Europe and Australia models] ..... 531 to 1611 kHz
- Usable Sensitivity ..... 300  $\mu$ V/m
- Selectivity ..... 30 dB
- Signal to Noise Ratio ..... 50 dB
- Image Rejection Ratio ..... 35 dB
- Harmonic Distortion ..... 1.0%

## GENERAL

- Power Supply
  - [U.S.A. and Canada models] ..... AC 120 V, 60 Hz
  - [Australia model] ..... AC 240 V, 50 Hz
  - [Europe model] ..... AC 230 V, 50 Hz
- Power Consumption ..... 9 W
- Dimensions (W x H x D) ..... 435 x 87 x 306 mm  
(17 1/8 x 3 3/8 x 12 in)
- Weight ..... 3.2 kg  
(7.1 lbs)

\* Specifications are subject to change without notice.

