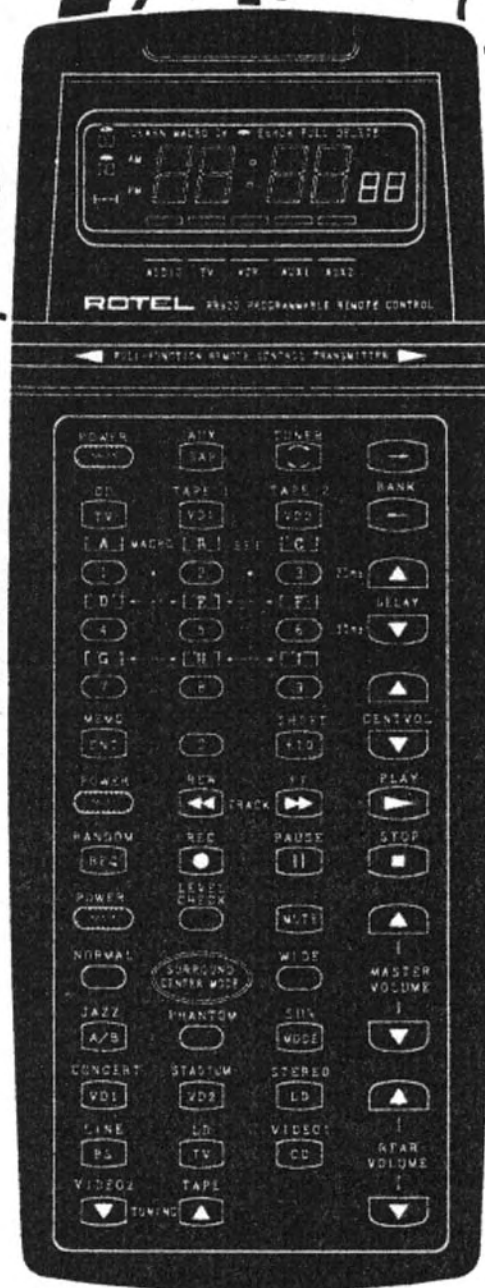


# Programmable Remote Control



**ROTEL**

**RR-920**  
Programmable Remote Control

1-36-8, Ohokayama, Meguro-ku, Tokyo 152, Japan

Owner's Manual

**ROTEL** *hi-fi*

## **Introduction**

Congratulations on purchasing a ROTEL RR920 Programmable Remote Control. It has been designed to give you the flexibility of having 50 buttons and 5 banks available with which to store remote commands.

The RR920 "learns" the commands of other infrared remote controls such as those that come with TV's, VCR's, cable boxes, audio components — even most remote activated ceiling fans, light dimmers and video screens! After you "teach" your ROTEL Programmable Remote the functions of other remotes, the RR920 will be able to duplicate their operation exactly.

Our Programmable Remote has some unique and useful features not found in other remotes which help to simplify its operation. The LCD display shows the current time and is easy to read. The Macro Function allows you to "chain" together a sequence of commands that can be transmitted with the push of a single button. It has two Timer Functions for operating your system when you are not at home, and the Sleep Function lets you turn your system off up to two hours after setting it.

## **Unpacking and Paperwork**

Carefully unpack your RR920 and keep the original box for future moving, shipment or long-term storage.

After opening the box, please check for any visible signs of damage that were not apparent from the outside of the box. If you do encounter what appears to be concealed damage, please consult your ROTEL Dealer before proceeding to further unpack or operate the unit.

## **Important Paperwork**

Make sure to save your sales receipt. Your receipt is extremely important to establish the duration of your Limited Warranty, and for insurance purposes. Next make a note of the serial number which is located on the back of the RR920. Record it in the space provided below for convenient reference.

Serial Number: \_\_\_\_\_

Purchased at: \_\_\_\_\_

Date: \_\_\_\_\_

## **Powering Up The RR920**

The ROTEL RR920 Programmable Remote Control requires four AA-size batteries. We recommend using alkaline cells, especially if you're going to use your remote often.

1. Remove the battery cover on the back of the RR920.
2. Insert four AA cells, making sure that the polarity of each battery (+ and - ends) corresponds with the embossed diagram on the inside bottom of the battery compartment.
3. Replace the battery cover.

When the batteries begin to run low, the LCD display will begin to dim. Whenever changing batteries, change all four at the same time. Don't leave the batteries out of the RR920 for more than 10 minutes or it will "lose" its memory, and all the commands will have to be reprogrammed back into the RR920.

We recommend that you change the batteries at least once a year to ensure that the RR920 will retain all of its programmed commands in memory.

## Functions and Controls

At this point, the RR920 is "empty". In other words, it has not been "taught" the functions of any of your existing remotes. So you won't get any effect if you try to use it. Before you begin programming the ROTEL RR920, it is important to understand its controls and how they can take the place of the remotes you already have.

**50 controls...250 functions.** Each button on the RR920 represents 5 possible memory locations. Memory locations for each button are selected using the BANK buttons. The five memory categories are labeled just underneath the LCD display: AUDIO, TV, VCR, AUX 1 and AUX 2. This way you can use the AUDIO bank to program all functions relating to your audio system, such as VOLUME, CD, TUNER, etc. The TV bank can store all the remote commands from your TV remote control while the VCR bank can learn the remote control commands from your VCR's remote. You might use AUX 1 and AUX 2 for special remote commands for items like remote controlled fans, lighting or screens, or for storing MACROS, which will be discussed further on.

## Functions

The RR920 comes pre-printed with many of the most common audio and video remote functions. But often, some of your existing remotes' function titles won't exactly correspond to any of the titles on the RR920. Remember that any RR920 button can be assigned to ANY function of any remote. So you're not limited by the titles printed on the RR920. They're just there to make identifying functions convenient.

## Programming the RR920

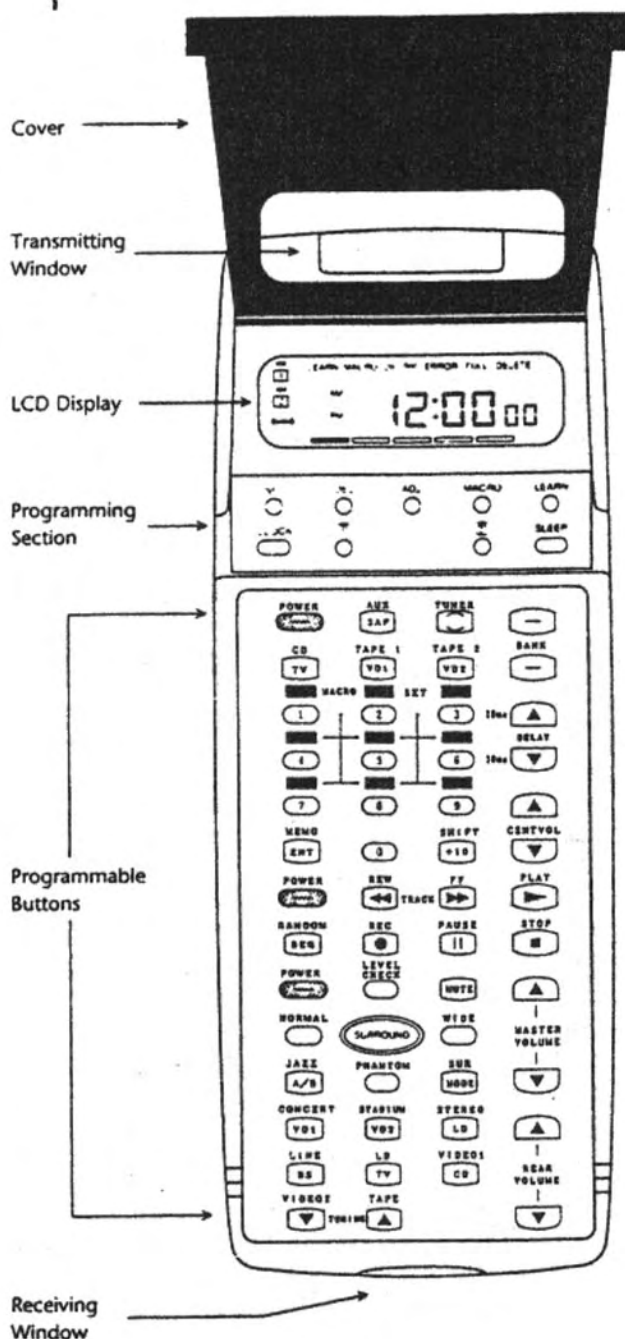


Figure 1

## Setting the Clock

After you install the batteries, the clock will appear in the display beginning at "AM 12:00 00". To set the clock, lift up on the cover that conceals the Programming Buttons located just below the LCD display (grasp the sides of the cover near the arrows ◀ ▶ and lift up).


1. Press the SET button. The "hour" position will begin blinking.
2. Press the ADJ button to select the correct hour.
3. Press the SET button again and the "minutes" position will begin blinking.
4. Press the ADJ button to select the correct minute.
5. Press the CLOCK button to return to the Transmit mode of operation.

## Planning Your Programming Strategy

Before you actually program the RR920, it is helpful to plan out in advance which existing remote functions you're going to assign to which RR920 buttons. We've included a work sheet at the back of these instructions (beginning on page 22) to make things easier.

## Programming Procedure

After you have planned exactly which existing remote functions will go on which ROTEL Programmable Remote buttons, it's time to "teach" the RR920 the commands from your various remote controls.

1. Lift up the flap concealing the programming buttons located just below the LCD display.
2. Use the BANK buttons to select the Bank you want to program first. 
3. Press the LEARN button in the programming section to enter the "learn" mode. LEARN will appear in the display and the clock will go blank (Fig. 2).

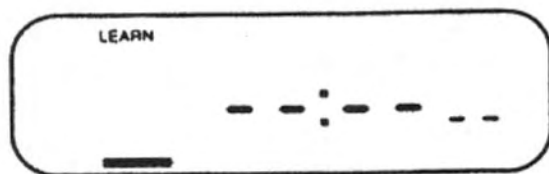


Figure 2

4. Press and release the button where you want the command to be stored in the RR920. The display will change to that shown in Figure 3 to acknowledge your selection.

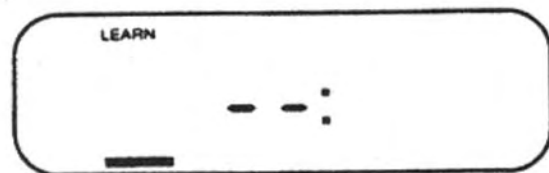


Figure 3

- Position the originating remote control unit within about two inches of the RR920, as shown in Figure 4. The transmit window of the original remote must be aligned with the receiving window of the RR920.

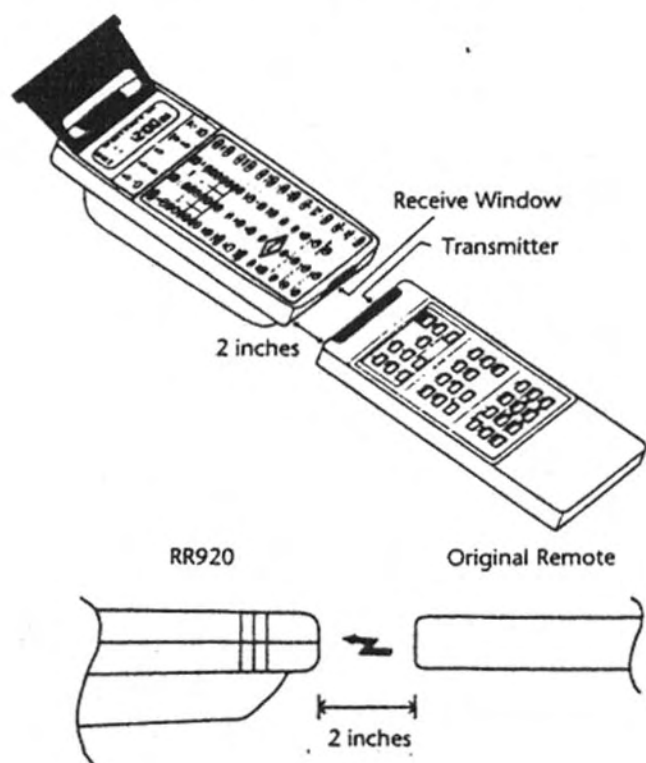


Figure 4

- For functions such as channel change, mute, etc. press and release the button on the original remote control that you want the RR920 to memorize. For continuous commands such as volume up/down, press and hold the button on the original remote. The display will change to that shown in Figure 5.

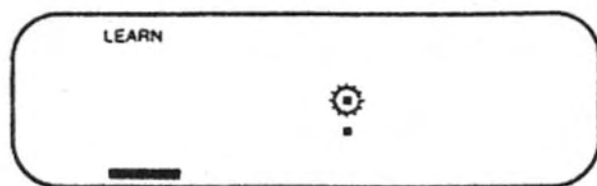


Figure 5

- When the transfer is complete, OK will be displayed to indicate that the RR920 has successfully learned the command. The display will return to the state shown in Figure 2 and the RR920 is now ready to proceed learning more commands. Repeat steps 4 through 7 to continue programming the RR920.
- Press the LEARN button or the CLOCK button in the programming section of the RR920 to return to the normal Transmitting mode of operation.

If ERROR appears in the display (Fig. 6), it means that the learning procedure failed. Repeat the procedure and the RR920 will allocate more memory capacity to that location. If after 3 or 4 attempts the ERROR message still appears, see *In Case Of Difficulty* on Page 17.

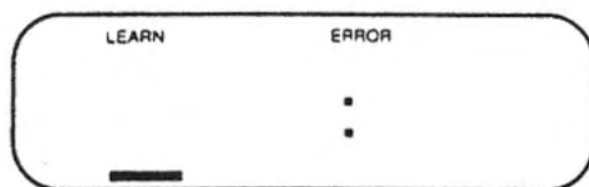


Figure 6

If the RR920 is left in LEARN mode with no activity, it will revert back to the normal Transmitting mode after 1 minute.

**NOTE:** When the memory in the RR920 is filled up, FULL will appear in the display indicating that there is no more room to store remote control commands. Use the DEL. button to free up more memory space (see next section).

## ***Deleting Stored Functions From Memory***

If you have already programmed a remote control command into a button's memory and wish to change it, you must first clear that memory location of the old command before re-learning the new command.

1. To enter the Delete Mode, push the DEL. button located in the Programming Section just below the LCD display.
2. Select the BANK where you want to make the change.
3. Push the button you wish to clear. OK will appear in the display to indicate that the old command has been deleted from that memory location. At this point you may press additional buttons that you wish to clear.
4. Push the CLOCK button or the DEL button again to return to the normal Transmitting mode.
5. Push the LEARN button and follow steps 3 through 8 in the *Programming Procedure* to enter the new remote control command into the RR920 memory.

**NOTE:** You cannot simply "learn" new commands over old commands without using the DELETE function first, or it may result in an invalid code being stored in the memory.

## ***The Macro Function***

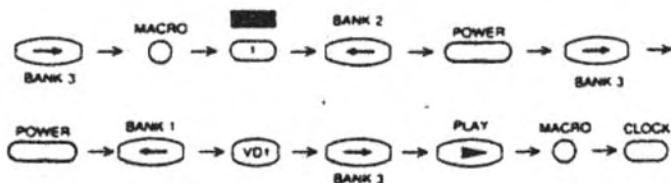
As you will see, the Macro Function of the RR920 can be very useful. Any button can be used as a Macro button. A Macro button can store up to ten previously programmed functions located in any of the five Banks, and transmit them sequentially with the push of a single button.

1. Select the BANK in which you want to enter the Macro Function.
2. Press the MACRO button located in the Programming Section of the RR920. MACRO will appear in the display.
3. Press the RR920 button you want to use to store the Macro Function.
4. Press the RR920 buttons you want to store in the MACRO in the correct sequence. MACRO will blink in the display each time a button is pushed to acknowledge its entry into the Macro. Buttons can be selected from any of the five Banks; the RR920 Macro memorizes the location of the button and the Bank in which the command is stored.
5. Press the MACRO button again to conclude the Macro programming. MACRO OK will appear in the display to confirm that the Macro was programmed successfully.
6. Press the CLOCK button to return to normal Transmitting mode of operation.

As an example, suppose you want to turn on the TV, turn on the VCR, switch your preamplifier (or receiver) to VCR 1 (audio playback) and begin playing a videotape, all with the push of a single button. Let's program a Macro into button "A" in Bank 3. Assume that the following functions have already been programmed into the RR920:

Function	Button and Bank
TV power ON:	TV POWER (Bank 2)
VCR Power ON:	VCR POWER (Bank 3)
VCR 1 (on Preamp or Receiver):	VD1 (Bank 1)
VCR Play:	PLAY (Bank 3)

Press the following buttons in sequence:



From now on, just press button "A" in Bank 3 to turn on the TV, turn on the VCR, switch your preamplifier to VCR 1 and start playing a videotape.

## Setting the Timer

The RR920 has two timers that can be used to program a command or sequence of commands to be transmitted at a predetermined time.


**NOTE:** These are "Daily" timers, and will activate every day at the programmed time. The RR920 timers cannot be programmed, for example, to activate only once a week.

First, program the time of the operation:

1. Press the TIMER 1 button located in the Programming Section just below the LCD display. The symbol will appear in the display.
2. Press the SET button. The "hour" position will begin blinking.
3. Press the ADJ button to select the hour.
4. Press the SET button again and the "minutes" position will begin blinking.
5. Press the ADJ button to select the minute.
6. Press the CLOCK button to return to Transmit mode of operation. will remain in the display.

Now program the commands for TIMER 1 to transmit.

7. Press the MACRO button. MACRO will appear in the display and the symbol will disappear temporarily.
8. Press TIMER 1 (or TIMER 2). MACRO will blink once in the display.
9. Press the buttons you want to store in the Timer 1 Macro in the correct sequence (up to ten buttons). MACRO will blink in the display each time a button is pushed to acknowledge its entry into the Timer 1 Macro. They can be selected from any of the five Banks; the RR920 Macro memorizes the location of the button and the Bank in which the command is stored.
10. Press MACRO again to conclude the Timer 1 Macro programming. MACRO OK will appear in the display to confirm that the Timer 1 Macro was programmed successfully.

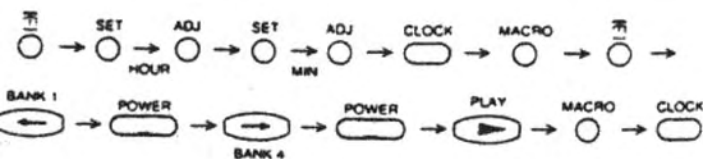
- Press the CLOCK button to return to normal Transmitting mode of operation.  will reappear in the display.


Timer 1 is now set to activate at the time that you have programmed it. Place the RR920 in front of your equipment so that its transmitter is in line-of-sight with the equipment to be operated.

As an example, suppose you want to program the RR920 to turn on your pre-amplifier (or receiver), turn on your CD player and begin playing a CD at 7:00 A.M. to wake you up. Assume that the following functions have already been programmed into the RR920:

Function	Button and Bank
Preamp (or Receiver)	
Power ON:	Preamp POWER (Bank 1)
CD Power ON:	CD POWER (Bank 4)
CD Play:	CD PLAY (Bank 4)

Press the following buttons in sequence:




**NOTE:** To check the time that the Timer 1 is set at, simply push the TIMER 1 button once and the Timer 1 set time will appear in the display. Push the CLOCK button to return to the real-time clock display. To cancel or clear the Timer function, push the TIMER 1 button twice, then push the CLOCK button. The Timer 1 symbol  will disappear from the display. Follow the same procedure for the Timer 2 function.


## Setting the Sleep Function

The Sleep Function allows you to turn off your equipment up to 2 hours after you set the Sleep Timer.


First program the Sleep Timer.

- Press the SLEEP button located in the Programming Section, just under the LCD display. The  symbol appears in the display and the timer display is 0:00 00.
- Press the SLEEP button again and the hour and minute will start blinking.
- Press the SLEEP button again and 2:00 00 will appear in the display. Each press of the SLEEP button will reduce the time by 10 minutes. Stop at the amount of time you want to have elapsed before the Sleep Timer is activated.
- Press the CLOCK button to return to Transmit mode.



Now program the commands for the Sleep Function to transmit:


- Press the MACRO button. MACRO will appear in the display and the  symbol will disappear temporarily.
- Press the SLEEP button. MACRO will blink once in the display.
- Press the buttons you want to store in the Sleep Macro in the correct sequence (up to ten buttons). MACRO will blink in the display each time a button is pushed to acknowledge its entry into the Sleep Macro. They can be selected from any of the five Banks; the RR920 Macro memorizes the location of the button and the Bank in which the command is stored.



8. Press MACRO again to conclude the Sleep Macro programming. MACRO OK will appear in the display to confirm that the Sleep Macro was programmed successfully.
9. Press the CLOCK button to return to normal Transmitting mode of Operation.  will reappear in the display.

The Sleep Function is now set to activate at the time that you have programmed it. Place the RR920 in front of your equipment so that its transmitter is in line-of-sight with the equipment to be operated.


 **NOTE:** To check the time remaining before the Sleep Function is activated, simply push the SLEEP button once and the remaining time will appear in the display. Push the CLOCK button to return to the real-time clock display. To cancel or clear the Sleep function, push the SLEEP button twice, then push the CLOCK button. The Sleep symbol  will disappear from the display.

 **NOTE:** When programming the Macros for the TIMER 1, TIMER 2 and SLEEP functions, you cannot use a button that has already been programmed with a Macro Function. In other words, you can't use a Macro within a Macro. All Macros must be created using single function buttons.

## ***Taking care of the RR920***

As with any remote control, the ROTEL RR920 should not be exposed to intense direct sunlight, liquids or extreme shocks (such as impact on a tile or wood floor).

If the unit becomes "sluggish", forcing you to repeat a command or aim the unit directly at your remote components, make sure that the infrared transmitting window on the front of the RR920 is clean by wiping it with a soft cloth. Another possibility is that the batteries are getting weak and should be changed. How long a set of four AA cells will last depends on the quality of the batteries you bought and how often you use the RR920. We recommend that you replace the batteries at least once a year to ensure that the RR920 will retain all of its programmed commands in memory.

 **NOTE:** If you aren't going to use your original remotes once the RR920 is programmed, make sure to remove their batteries to prevent corrosion damage.

## ***In Case of Difficulty***

Most problems have a quick and simple solution. Before you return your RR920 for service, check out the following:

### **No function buttons work.**

1. Batteries are inserted with incorrect polarities (+ and - ends). Check against the diagram on the inside of the battery compartment.
2. The RR920 needs new batteries.

3. The original remote needs new batteries.
4. The RR920 has not yet learned the specific key you are trying to operate.
5. The RR920 is set to the wrong Bank.

#### **Hard to program; won't say "OK".**

1. Make sure the original remote transmitting window is correctly aligned with the RR920 receiving window.
2. Move the original remote closer to the RR920 receiving window.
3. Check the batteries in the original remote. Even though the original remote may still operate the equipment, the RR920 requires a very strong signal at its receiving window to learn a command.
4. If you've tried steps 1 through 3 and the RR920 still won't "learn" a particular command, then that command may use a special kind of code that is incompatible with the RR920.

#### **Some function buttons work, others don't.**

1. The batteries in the original remote were low when programming the RR920.
2. The RR920 has not yet learned the key you are trying to operate.
3. The RR920 is set to the wrong Bank.

Most often this problem can be eliminated by repeating the programming operation of the button that doesn't work. Be sure to "Delete" the memory location to clear it before reprogramming (See Deleting Stored Functions From Memory on page 10).

#### **The RR920 has "forgotten" its commands.**

1. Check for weak batteries.
2. Make sure that batteries are never removed from the RR920 for more than ten minutes, otherwise the internal memory in the remote will be erased.

#### **Channels change more slowly when using the RR920 than with an original remote.**

1. This is normal with some remote controls.

#### **The RR920 only works at a short distance or becomes "sluggish", requiring you to push a button more than once.**

1. The batteries are getting low in the RR920.
2. The front of the infrared projector on the RR920 is dirty.
3. The infrared receiver "eye" on the component is dirty or obstructed.
4. If 1 through 3 are okay, try deleting and reprogramming buttons that exhibit this problem.

## **Service Assistance**

We suggest that you read the LIMITED WARRANTY completely to fully understand your warranty/service coverage. Be sure to save the sales receipt in a safe place. It will be necessary for warranty service.

If your ROTEL product should require service, we suggest you contact the Dealer from whom you purchased your unit. Should the Dealer be unable to take care of your needs, you may contact the ROTEL Technical Service Department by writing to us at the address shown at the right. We will then give you detailed instructions on how to return the product to us for prompt action.

If you should have questions or comments, please write to the address given on your warranty card. Please include the model and serial number of your ROTEL product, your complete address and a daytime phone number.

## **ROTEL** *hi-fi*

1-36-8 Ohokayama, Meguro-ku, Tokyo  
152, Japan  
TEL 03-3717-0161 FAX 03-3724-7649

### **ROTEL ELECTRONICS CO., LTD.**

ROTEL Bldg. 3F, NO35. Fushing N. Road,  
Taipei, Taiwan  
TEL 02-771-7643 FAX 02-711-6207

### **ROTEL U.K.**

25 Heathfield, Stacey Bushes, Milton  
Keynes, Buckinghamshire, England  
TEL 0908-317707 FAX 0908-322704

### **ROTEL OF AMERICA**

P.O. BOX 8, North Reading, MA 01864-  
0008, U.S.A.  
TEL 508-664-3820 FAX 508-664-4109

### **ROTEL OF CANADA**

902 Mckay Road, Pickering, Ontario,  
L1W3X8, Canada  
TEL 416-428-2800 FAX 416-428-0004