

# IRD-8 INFRARED ROUTING SYSTEM HOOKUP & OPERATING INSTRUCTIONS

## INTRODUCTION

The IRD-8 is an infrared repeater system with the ability to receive an IR signal and send it to specific flashers. This feature allows individual remote control operation of a single component within a group of identical components. Example: using a hand-held remote to operate a single TV within a wall of identical TV's would be impossible without the IRD-8.

The IRD-8 is compatible with virtually all brands of infrared-controllable equipment.

An IR sensor on the front of the IRD-8 picks up the remote signals; the commands are re-transmitted to the components via individual Niles IRC-2 Micro-Flashers. Each IRC-2 flasher is installed directly over the IR receiving "eye" of each component using self-adhesive. A special plastic blocker is supplied with each IRC-2. The blockers, installed over each IRC-2, ensure that the components receive IR signals only through the IRD-8.

The flasher "routes" are selected three different ways: by pressing pushbuttons on the front of the IRD-8, by using the Niles HC-1 remote control, or by using a learning remote control that has been taught to work the IRD-8. The Niles HC-1 remote will operate only the IRD-8; using a learning remote eliminates the need for two different remotes (one to operate the equipment and another for the IRD-8). To aid in programming a learning remote, a special "teaching" flasher is located on the front of the IRD-8. The teaching flasher, when activated, sends the learning remote the IR commands needed to work the IRD-8.

Eight LEDs on the front of the IRD-8 indicate which routes are active.

Once the desired routes have been selected, pressing a button on the components' remote control while aiming it at the IRD-8 will cause that IR command to be received by the IRD-8, which then routes the command to the selected components via the flashers. Components not selected will not receive the IR command.

The IRD-8 can handle a maximum of eight components.

# CONNECTIONS

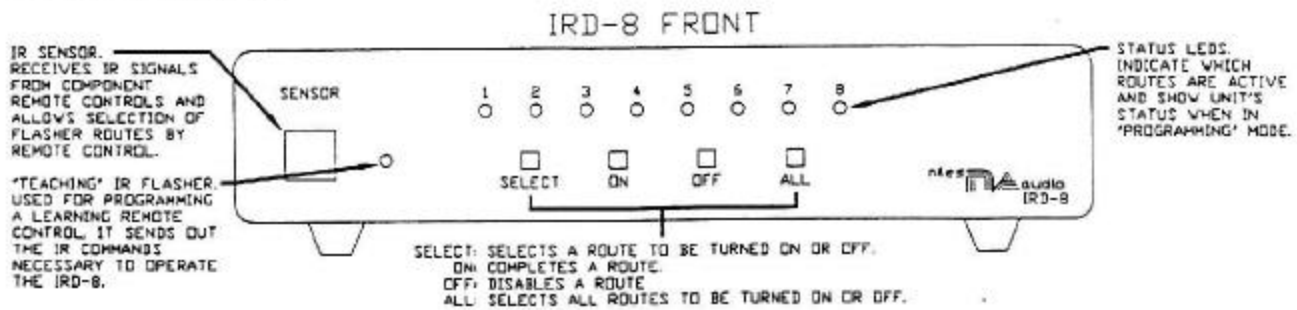


FIGURE 1

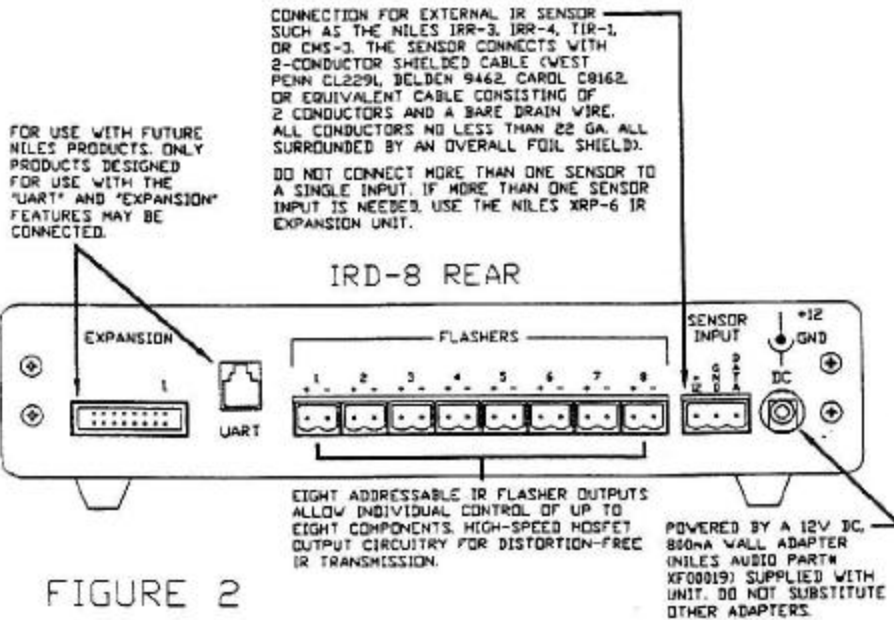


FIGURE 2

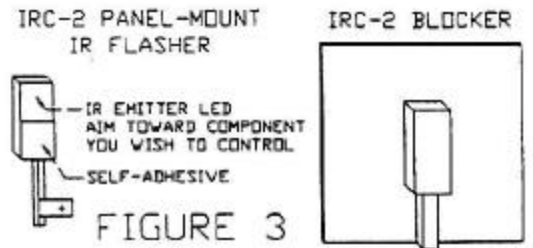


FIGURE 3

- INSTALL EACH IRC-2 DIRECTLY OVER THE IR RECEIVING "EYE" OF EACH COMPONENT. ON SOME EQUIPMENT, THE SENSOR MAY BE HIDDEN BEHIND THE PLASTIC BEZEL COVERING THE UNIT'S DISPLAYS. A BRIGHT FLASHLIGHT IS HELPFUL FOR LOCATING SENSORS ON EQUIPMENT WITH VERY DARK PLASTIC BEZELS. ANOTHER METHOD IS TO COVER DIFFERENT PARTS OF THE COMPONENT WITH YOUR HAND UNTIL THE COMPONENT NO LONGER RESPONDS TO COMMANDS FROM ITS IR REMOTE.
- THE IRC-2 BLOCKERS COVER EACH IRC-2. THIS ENSURES THAT THE COMPONENTS RECEIVE IR SIGNALS ONLY THROUGH THE IRC-2'S.
- FIRST, PLACE THE BLOCKER OVER THE IRC-2 WITHOUT REMOVING THE PAPER BACKING FROM THE ADHESIVE. IF THE BLOCKER OBSTRUCTS ANY OF THE UNIT'S SWITCHES OR CONTROLS, USE A PENCIL TO MARK THE AREA OF THE BLOCKER TO BE REMOVED. CAREFULLY TRIM THE BLOCKER WITH SCISSORS. CAUTION: CUTTING OFF TOO MUCH FROM THE BLOCKER MAY ALLOW UNWANTED IR TO PASS.
- REMOVE THE PAPER BACKING FROM THE ADHESIVE AND PLACE THE BLOCKER OVER THE IRC-2.

## DETAIL OF OPTIONAL HC-1 REMOTE

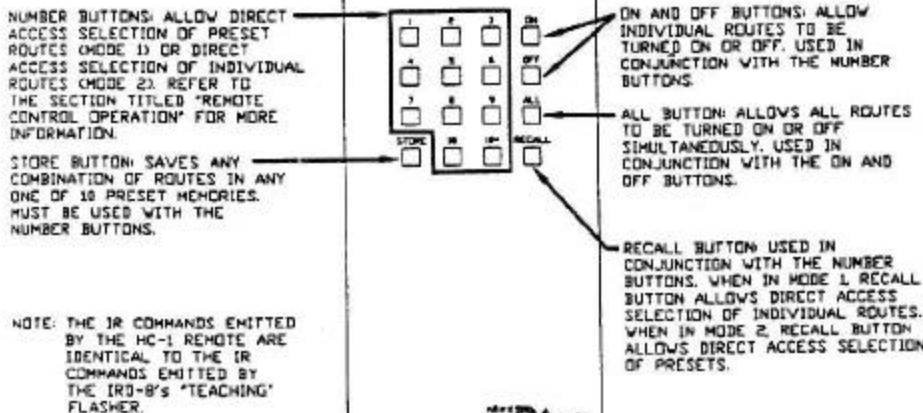


FIGURE 4

## IRD-8 TOP VIEW

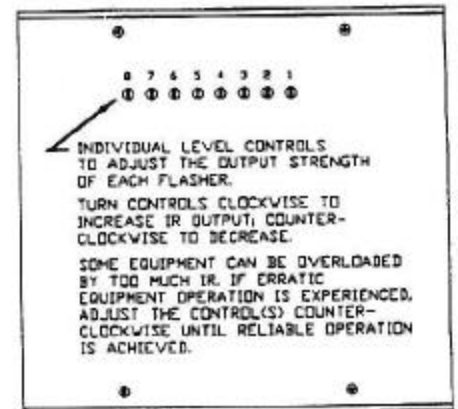


FIGURE 5

EXAMPLE OF USING THE IRD-8 TO OPERATE 2 IDENTICAL VCR'S BY REMOTE CONTROL

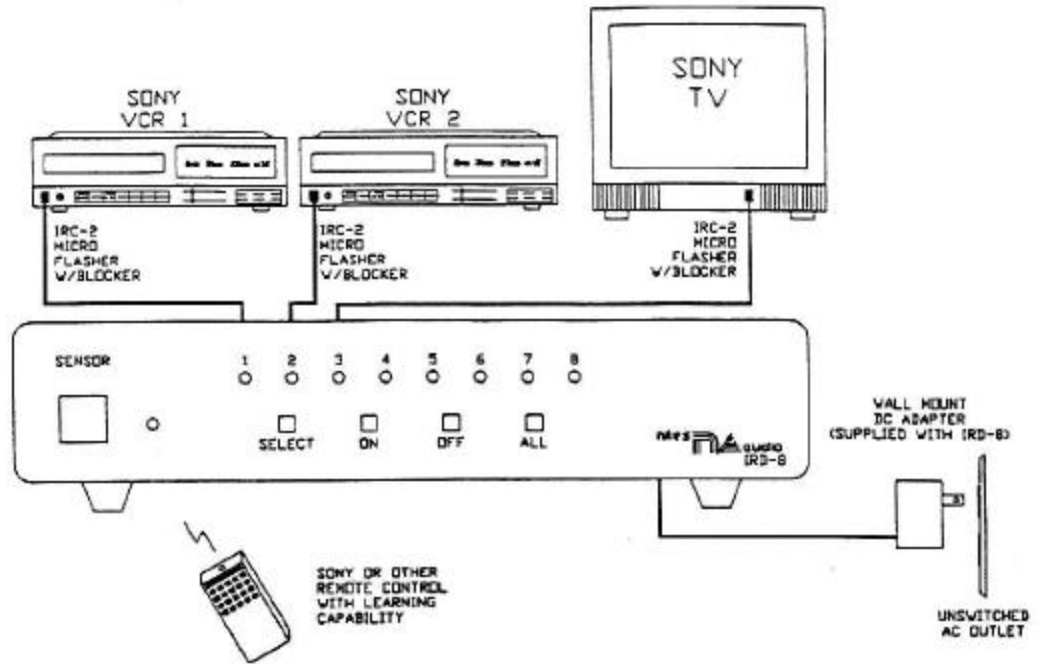


FIGURE 6

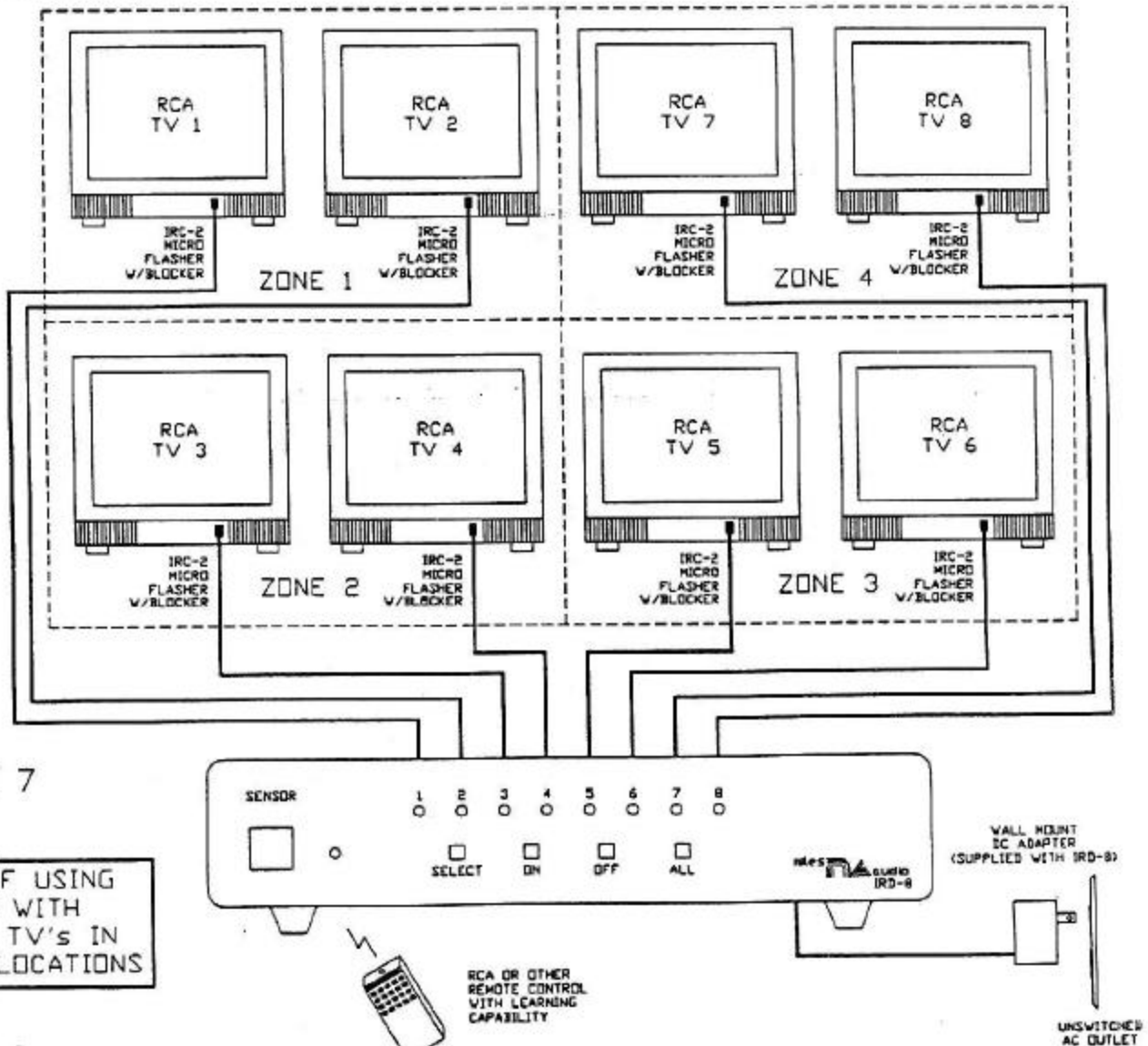


FIGURE 7

EXAMPLE OF USING THE IRD-8 WITH IDENTICAL TV'S IN MULTIPLE LOCATIONS

## OPERATION

Routes are selected on the IRD-8 by using its front panel pushbuttons or by remote control. Using a remote to operate the IRD-8 is preferred since it offers greater flexibility and convenience.

### FRONT PANEL OPERATION

#### To turn routes on:

1. Repeatedly press the SELECT button until the LED representing the desired route blinks. If you want to select all of the routes, press the ALL button. The LED (or LEDs) will blink for four seconds before "timing out".
2. With the LED(s) still blinking, press the ON button. The LED(s) will stay on, indicating that the route (or routes) represented by the LED(s) have been completed.
3. Repeat steps 1 and 2 if any additional routes are needed.

#### To turn routes off:

1. Repeatedly press the SELECT button until the LED representing the desired route blinks. If you want to select all of the routes, press the ALL button. The LED (or LEDs) will blink for four seconds before "timing out".
2. With the LED(s) still blinking, press the OFF button. The LED(s) will go off, indicating that the route (or routes) represented by the LED(s) have been disabled.
3. Repeat steps 1 and 2 if any additional routes need to be disabled.

### REMOTE CONTROL OPERATION

Operating the IRD-8 by remote requires the Niles HC-1 remote control or a learning remote that has been taught to work the IRD-8. Using a learning remote eliminates the need for two different remotes (one to operate the equipment and another for the IRD-8).

The IRD-8 has two different modes of remote operation: Direct Preset Access (Mode 1) and Direct Route Access (Mode 2). Which mode is preferred depends on your system configuration and how you wish the system to operate.

#### Mode 1 - Direct Preset Access

The IRD-8 has 10 preset memories. Each preset can store a different combination of routes. Mode 1 allows each of these preset routes to be recalled instantly by remote control. This mode is useful when there are several different component combinations that will be used again and again.

If you are using the Niles HC-1 remote control, presets are recalled by pressing the NUMBER buttons. If you are using a learning remote, presets are recalled by pressing the buttons that have been taught the infrared NUMBER commands. Refer to the section titled "Teaching A Learning Remote to Operate the IRD-8" for more information.

## REMOTE CONTROL OPERATION (Continued)

### Mode 2 - Direct Route Access

Mode 2 allows direct access selection of routes by remote control. This mode allows individual routes to be turned on or off as needed. Mode 2 is useful when the combination of components to be used will be constantly changing.

If you are using the Niles HC-1 remote control, routes are turned on or off by pressing the NUMBER buttons followed by the ON or OFF buttons. If you are using a learning remote, routes are turned on or off by pressing the buttons that have been taught the infrared NUMBER, ON and OFF commands. Refer to the section titled "Teaching A Learning Remote to Operate the IRD-8" for more information.

### SETTING THE "MODE OF OPERATION"

1. Simultaneously press and continue to hold the SELECT and ON buttons on the front of the IRD-8 for 3 seconds. Once in the "PROGRAMMING" mode, LED number 1 will light. Release the SELECT and ON buttons.
2. Press the OFF button to toggle between DIRECT PRESET ACCESS (MODE 1) and DIRECT ROUTE ACCESS (MODE 2). LEDs number 1 and 2 display the selected mode. DIRECT PRESET ACCESS (MODE 1) is selected when LED #1 is ON and DIRECT ROUTE ACCESS (MODE 2) is selected when LED #2 is ON.
3. Press the ALL button to return to normal operation.

### USING MODE 1 - DIRECT PRESET ACCESS

#### To turn routes on or off:

1. Using either the HC-1 remote or a learning remote, press the RECALL button. All the LEDs will blink once.
2. Press one or more of the NUMBER buttons for each route you want to turn on or off. If you want to turn all the routes on or off, press the ALL button. The LEDs representing the desired routes will blink for four seconds before "timing out".
3. While the LEDs are blinking, press the ON or OFF buttons to complete or disable the route(s).

#### To save routes in preset memory:

1. Using either the HC-1 remote or a learning remote, select the desired routes (see steps 1-3 above).
2. Press the STORE button. The LEDs for the routes currently selected will blink for four seconds before "timing out".
3. While the LEDs are blinking, press a NUMBER key on the remote representing the desired preset storage location. The routes are now stored in that preset number.

#### To recall routes from preset memory:

Using either the HC-1 remote or a learning remote, press a NUMBER button representing the preset to be recalled.

## USING MODE 2 - DIRECT ROUTE ACCESS

### To turn routes on or off:

1. Using either the HC-1 remote or a learning remote, press one or more of the NUMBER buttons for each route you want to turn on or off. If you want to turn all the routes on or off, press the ALL button. The LEDs representing the desired routes will blink for four seconds before "timing out".
2. While the LEDs are blinking, press the ON or OFF buttons to complete or disable the route(s).

### To save routes in preset memory:

1. Using either the HC-1 remote or a learning remote, select the desired routes.
2. Press the STORE button. The LEDs for the routes currently selected will blink for four seconds before "timing out".
3. While the LEDs are blinking, press a NUMBER key on the remote representing the desired preset storage location. The routes are now stored in that preset number.

### To recall routes from preset memory:

1. Using either the HC-1 remote or a learning remote, press the RECALL button. All the LEDs will blink once.
2. Press the NUMBER button representing the preset to be recalled.

## TEACHING A "LEARNING" REMOTE TO OPERATE THE IRD-8

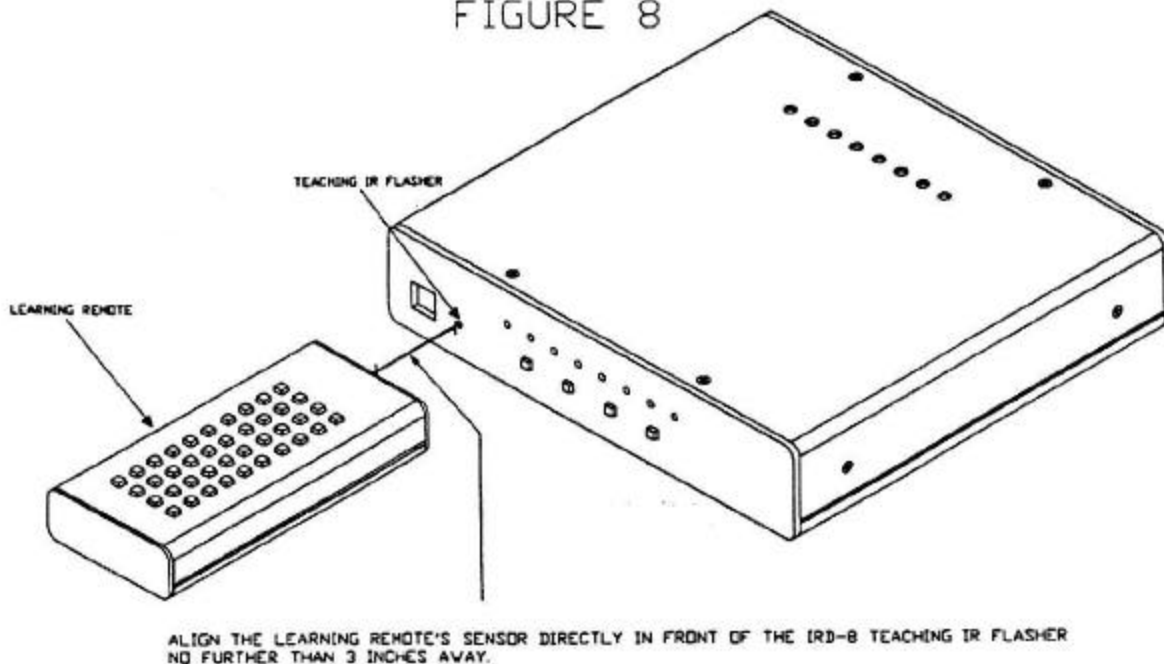
Any learning-type remote control can be programmed to operate the IRD-8. The HC-1 remote is not required for this since the IRD-8 is capable of programming learning remotes directly. A special "teaching" flasher, built-in the front panel of the IRD-8, is used for the programming. This flasher sends out the IR codes needed to operate the IRD-8 by remote control.

Before you can program a learning remote to operate the IRD-8, you must first put the IRD-8 in the "PROGRAMMING" mode.

1. Simultaneously press and continue to hold the ON and OFF buttons on the front of the IRD-8 for 3 seconds. Once in the PROGRAMMING mode, LED number 1 will light, indicating that the first IR command is ready to be sent. Release the ON and OFF buttons.
2. Align the "learning end" (sensor input) of the learning remote directly in front of the IRD-8's teaching IR flasher. Make sure they are no further than three inches away (see Figure 8 on page 7).
3. There are sixteen possible commands which can be taught to the learning remote. How many commands you need depends on your system's configuration and how you wish the system to operate. Table 1 on page 7 shows the IR commands of the IRD-8 and explains their functions.
4. Once you have determined which commands you want to teach your learning remote, put the learning remote into the "learn" mode according to its manufacturers' instructions. Review the instructions for the steps required to program the learning remote. Usually, you press a button on the learning remote first, then you press a matching button on the teaching remote. Most learning remotes will prompt you with an LED labeled "other" or "learn" when they are ready to receive a command from the teaching remote.
5. Press the button on the learning remote chosen to store the desired IRD-8 command.

6. When you see the "other" or "learn" prompt on the learning remote, press the ON button on the IRD-8. This transmits the IR command from the IRD-8 to the learning remote.
7. Press the SELECT button on the IRD-8 to advance to the next IR command to be sent to the learning remote. LEDs 1 through 5 on the IRD-8 display which IR command is ready to be transmitted. You can keep track of which command is ready to be sent by observing the LED's. Table 2 on page 8 lists the IR commands and shows the corresponding LED pattern that represents each command.
8. Repeat steps 5 through 8 until all the desired IR commands have been learned.
9. To exit the PROGRAMMING mode and return to normal operation, press the ALL button on the front panel.

FIGURE 8



IR COMMAND	FUNCTION
KEYS 1 through 10 and 10 +	These are the "NUMBER" buttons. They allow direct access selection of preset routes (Mode 1) or direct access selection of individual routes (mode 2). Refer to the section titled "Remote Control Operation" for more information.
ON and OFF	Allow individual routes to be turned on or off; used in conjunction with the NUMBER buttons. ON and OFF function in Mode 1 or Mode 2.
ALL	Enables all routes to be turned on or off simultaneously; used in conjunction with the ON and OFF buttons. The ALL command works in Mode 1 or Mode 2.
RECALL	Used in conjunction with the NUMBER buttons. When the IRD-8 is in Mode 1, the RECALL button allows direct access selection of individual routes. When in Mode 2, the RECALL button allows direct access selection of preset routes.
STORE	Saves any combination of routes in any one of 10 preset memories. Must be used with the NUMBER buttons.

TABLE 1

IR COMMAND	LED 1	LED 2	LED 3	LED 4	LED 5
KEY #1	ON	OFF	OFF	OFF	OFF
KEY #2	OFF	ON	OFF	OFF	OFF
KEY #3	ON	ON	OFF	OFF	OFF
KEY #4	OFF	OFF	ON	OFF	OFF
KEY #5	ON	OFF	ON	OFF	OFF
KEY #6	OFF	ON	ON	OFF	OFF
KEY #7	ON	ON	ON	OFF	OFF
KEY #8	OFF	OFF	OFF	ON	OFF
KEY #9	ON	OFF	OFF	ON	OFF
KEY #10	OFF	ON	OFF	ON	OFF
ON	ON	ON	OFF	ON	OFF
OFF	OFF	OFF	ON	ON	OFF
ALL	ON	OFF	ON	ON	OFF
RECALL	OFF	ON	ON	ON	OFF
STORE	ON	ON	ON	ON	OFF
10 +	OFF	OFF	OFF	OFF	ON

**TABLE 2**

## **SPECIFICATIONS**

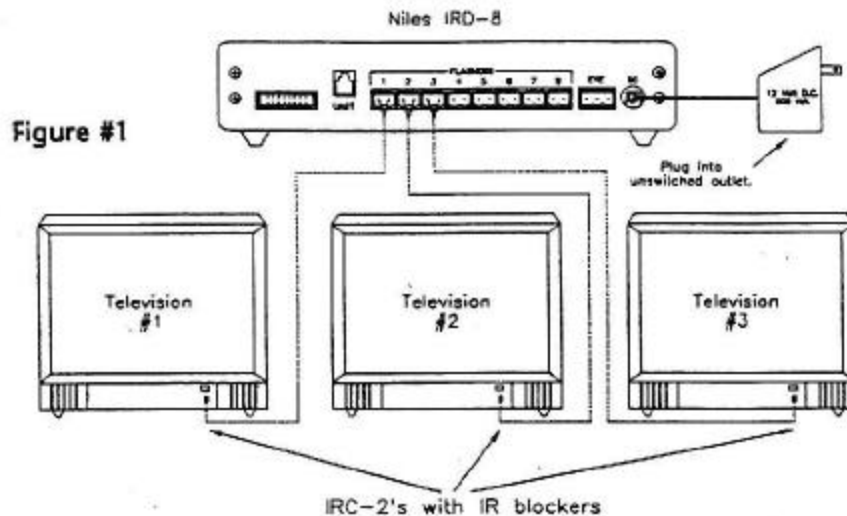
### IRD-8 - IR Router Main System Unit

Power Requirements 12 volts DC, wall-mount 110v AC to 12v DC adapter included  
 Overall Dimensions (including connectors) 8 1/2" Wide x 2 1/8" High x 9 1/8" Deep  
 Weight 5 lbs.

### HC-1 - IR Router Remote Control

Power Requirements 2 "AA" batteries (included)  
 Overall Dimensions 2 1/2" Wide x 1 1/16" High x 5 5/8" Deep

The most common use of the IRD-8 is individually controlling three identical televisions located within the same room. This guide facilitates the setup of the IRD-8 for this application quickly and elegantly. For other installation requirements, refer to the provided hookup & operating guide.



### Connections

1. Connect the stripped wire end of three individual IRC-2 micro-flashers to the #1, #2 and #3 flasher outputs on the back panel of the IRD-8 as shown in figure #1.
2. Adhere an individual IRC-2 over the infrared sensor of each television. Cover each IRC-2 with the infrared blocker provided.

### Teaching a learning remote to operate the IRD-8.

1. Simultaneously press and continue to hold the *ON* and *OFF* buttons on the front panel of the IRD-8. When the #1 LED lights release the buttons.
2. Choose a button on your learning remote that will be taught the #1 command and set the remote to the learning mode.
3. While placing the "learning end" of the remote within three inches of the teaching IR Flasher on the front panel of the IRD-8, press the *ON* button on the IRD-8 until the remote confirms that the command has been taught.
4. Press the *SELECT* button on the IRD-8 once and the #2 LED lights. Choose a button on the learning remote that will be taught the #2 command and set the remote to the learning mode. Repeat step 3 to teach this command.
5. Press the *SELECT* button on the IRD-8 once and the #1 and the #2 LED's light. Choose a button on the learning remote that will be taught the #3 command and set the remote to the learning mode. Repeat step 3 to teach this command.
6. Press the *SELECT* button on the IRD-8 several times until the #1, #2, #3 and #4 LED's are all lit together. Choose a button on the learning remote that will be taught the *Store* command and set the remote to the learning mode. Repeat step 3 to teach this command.
7. Exit the teaching mode by pressing the *All* button on the IRD-8.



### Setting the IRD-8 to the Direct Preset Access Mode (Mode #1)

The IRD-8 has two modes of operation, Direct Preset Access (Mode #1) and Direct Route Access (Mode #2). Direct Preset Access offers the simplest operation for this application.

1. Simultaneously press and continue to hold the *SELECT* and *ON* buttons on the front panel of the IRD-8. When the #1 LED lights release the buttons.
2. With the #1 LED lit, press the *ALL* button. The #1 LED will turn off and the IRD-8 is now in the Direct Preset Access Mode.

### Programming in the Preset Routes

1. Press the *SELECT* button on the IRD-8 until the #1 LED is blinking. While it is blinking press the *ON* button and the #1 LED will light continuously. This indicates that flasher #1 is now active.
2. To store this active flasher as a preset route, aim the learning remote at the IRD-8 and press the button that has been taught the *Store* command. The #1 LED will begin to blink. Before four seconds elapses, press the button on the learning remote that has been taught the #1 command. The #1 LED will light continuously. This has now programmed the IRD-8 to activate flasher #1 when the #1 command is received. *\* If your learning remote does not operate the IRD-8, teach the IR commands again by placing the learning remote either closer or further away from the IRD-8's teaching flasher. This may allow the commands to be taught properly.*
3. Press the *ALL* button on the IRD-8 and all the LED'S will blink. Press The *OFF* button and all the LED's will turn off. Press the *SELECT* button until the #2 LED is blinking. While it is blinking press the *ON* button and the #2 LED will light continuously. This indicates that #2 flasher is now active.
4. To store this active flasher as a preset route, aim the learning remote at the IRD-8 and press the button that has been taught the *Store* command. The #2 LED will begin to blink. Before four seconds elapses, press the button on the learning remote that has been taught the #2 command. The #2 LED will light continuously. This has now programmed the IRD-8 to activate flasher #2 when the #2 command is received.
5. Press the *ALL* button on the IRD-8 and all the LED'S will blink. Press The *OFF* button and all the LED's will turn off. Press the *SELECT* button until the #3 LED is blinking. While it is blinking press the *ON* button and the #3 LED will light continuously. This indicates that #3 flasher is now active.
6. To store this active flasher as a preset route, aim the learning remote at the IRD-8 and press the button that has been taught the *Store* command. The #3 LED will begin to blink. Before four seconds elapses, press the button on the learning remote that has been taught the #3 command. The #3 LED will light continuously. This has now programmed the IRD-8 to activate flasher #3 when the #3 command is received.

### Television Operation

1. To operate a specific television, simply aim the learning remote at the IRD-8 and press either the #1, #2 or the #3 command in order to activate a specific flasher.
2. After a specific flasher has been selected, operation of the television connected to that flasher can be accomplished through the infrared sensor on the front panel of the IRD-8.