



# Home Theater Remote

with Z-Wave® Lighting Control

Manage your home entertainment system and lighting with one remote!

Controls

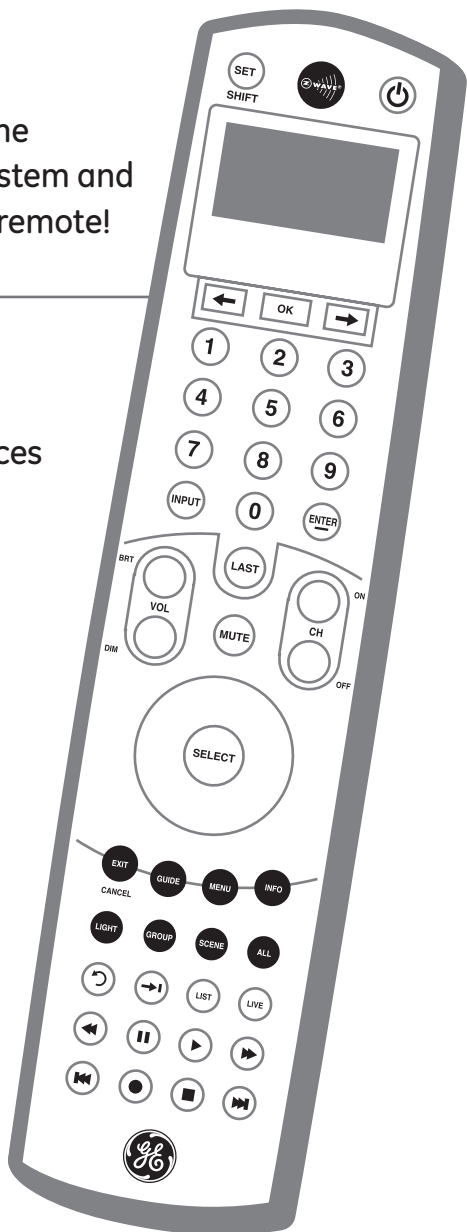
**12**

Audio/Video Devices

and up to

**232**

Z-Wave Devices



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## Introduction

Thank you for purchasing the GE model 45608 Remote Control. This remote allows you to control up to 12 Audio/Video devices as well as your Z-Wave Home Lighting Control network.

A Z-Wave home control network can include up to 232 Z-Wave enabled devices. You can control up to 18 individual Z-Wave lights, 18 groups of lights and 18 scenes for task or mood lighting. Groups can include up to 232 Z-Wave devices and each scene can include up to 32 Z-Wave devices. Lights can be included in multiple groups. Scenes can include lights from different groups.

### Key Features include:

- Easy to use LCD menu system
- Backlit LCD and keys
- Learning function for audio/video devices not in the IR code library
- Programmable Key Macros to perform multiple functions with the press of one button
- Volume Control Lock lets you assign volume & mute functions to a primary device like your stereo receiver
- Key Mover allows you to copy keys around the remote control or between A/V devices
- Timed events allow you to turn On/Off a Z-Wave light, group or scene at a programmed time.
- Control of Z-Wave enabled thermostats for your HVAC system.
- Z-Wave Light, Group & Scene labeling
- Supports Advanced Configuration for Z-Wave devices

For best results, please read all of the instructions before programming and using this remote. Keep this guide for future reference.

## Audio/Video Key Chart

**A. SET** – Press & hold to enter setup mode. When in setup mode, press & release to back up one level in the setup menu or press & hold to cancel setup.

**B. ARROWS** – Scroll left or right to highlight desired menu item. Highlighted menu item in center of display is active.

**C. OK** – Press & release to select highlighted menu item

**D. NUMBER KEYS** – Dependent upon Audio Video device being controlled. Examples: TV - channel selection; Receiver - input selection

**E. LAST** – Selects last channel viewed

**F. VOLUME UP & DOWN** – Press & hold to adjust volume

**G. EXIT / CANCEL** – Closes program guide or device menus

**H. GUIDE** – Activates On-screen program guide for active video

**I. Z-WAVE KEY** – This key cycles the remote between Z-Wave and A/V modes. In A/V mode, the green LED beneath the button flashes to indicate an IR command being transmitted.

**J. POWER** – Turns current device On/Off. This key may be programmed with a macro to turn multiple A/V devices on or off with the touch of one button. A macro overrides individual device control.

**K. DASH** – Used along with the number keys to enter digital TV channels. Example: channel 4-1 or 4-2

**L. MUTE** – Mutes volume on currently selected device or on primary device if Volume Control Lock is programmed

**M. CHANNEL UP & DOWN** – Changes channel on active A/V device

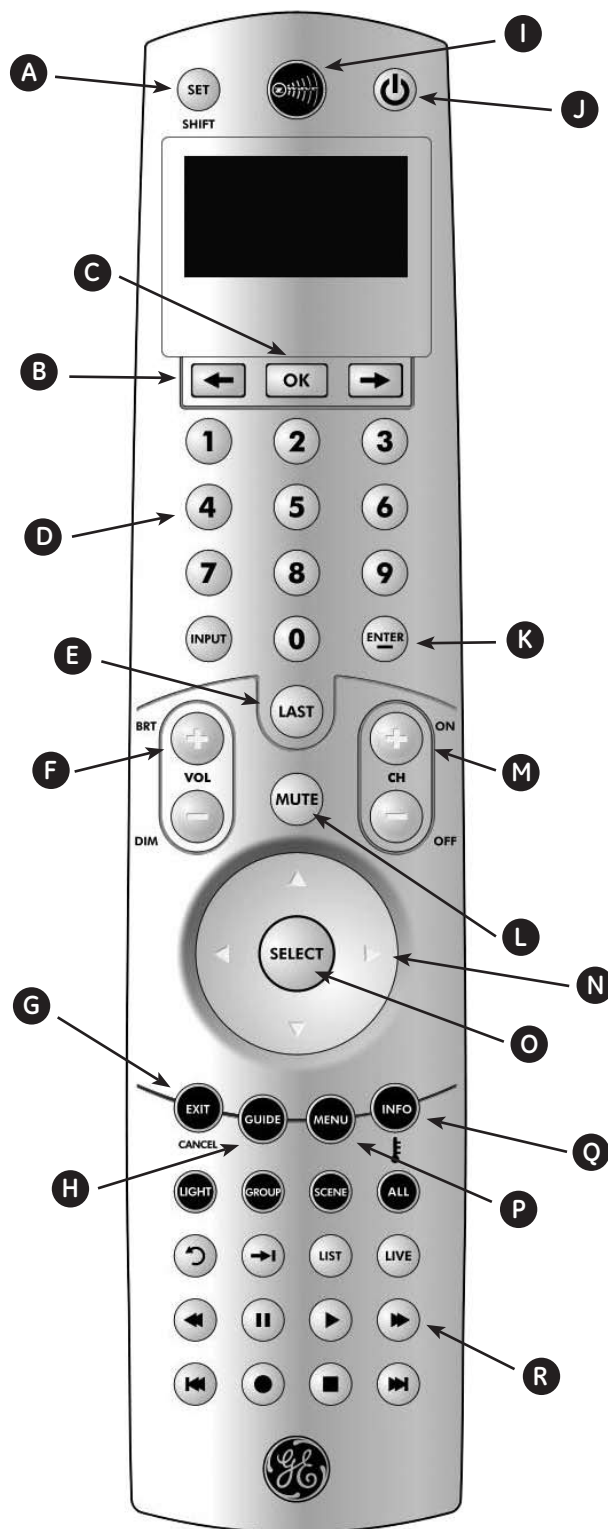
**N. CURSOR (ARROW) KEYS** – Left, Right, Up & Down keys for use in navigating on-screen Guides & Menus

**O. SELECT** – Press & release to select currently highlighted on-screen Guide or Menu item

**P. MENU** – Device specific functions for setup.

**Q. INFO** – Device specific. Displays information on current video source or program on TV screen

**R. CONTROL KEYS** – Device specific controls for the active A/V device



## Batteries

Four “AAA” Alkaline batteries (not included) are required.

### Battery Use and Safety

- Use only fresh batteries of the required size and recommended type.
- Do not mix old and new batteries or different types of batteries.
- If you do not plan to use the remote for an extended period, remove the batteries. They can leak chemicals that can destroy electronic parts.
- Dispose of old batteries promptly and properly. Do not burn or bury them.

### To Install Batteries

1. Open the battery compartment cover (located on the back of the remote).
2. Note the + and - polarity symbols inside the battery compartment.
3. Insert the batteries, making sure their polarity matches the symbols in the compartment.
4. Replace the cover.

*NOTE: The LCD screen will display BATTERY LOW to indicate that the batteries need to be replaced. The remote retains all its user settings except for the day & time while replacing the batteries.*

### Battery Conservation

If any key is pressed continuously for 30 seconds the remote will stop transmission to conserve battery life.

## Automatic Time-Out

During programming, the remote will exit programming mode if 30 seconds elapses after the last key press.

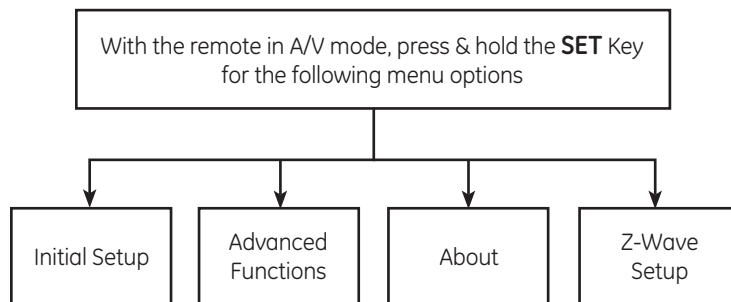
If a key is pressed longer than 60 seconds while scrolling through the menu screen, the remote will time-out.

## Setup

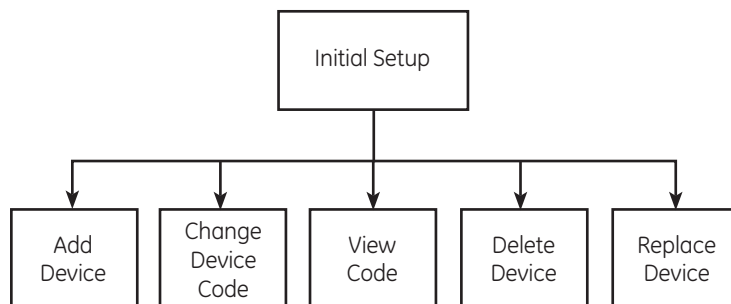
1. Make sure the remote is in A/V mode. (Press & release the large Z-Wave key at the top of the remote to cycle between A/V and Z-Wave modes.)
2. Press and hold the **SET** key to enter setup mode.
3. Use the **ARROW** keys to scroll through the menus and the **OK** key to select devices or actions.

4. When in setup mode:

- Press and release the **SET** key to back up one level in the menu.
- Press and hold the **SET** key to exit setup mode.



### Initial Setup (Audio/Video Devices)



*Note: Most devices can be added by entering its code or searching for its code as described in the following two sections. You also have the option of using your device's original remote to teach commands to this remote. This is covered in the “Advanced Functions” section under the “Learn Function” heading.*

### Adding a Device by Entering Its Code

You can add a device by manually entering its manufacturer's code. See “Manufacturer's Codes” on page 45.

1. Press and hold **SET** until the remote displays **INITIAL SETUP**.
2. Press **OK**. The remote displays **ADD DEVICE**. Press **OK**.
3. The bottom line of the display lists **RECEIVER** as the first device you can add. Press **OK** or use the **ARROW** keys to scroll to a different device to add and then press **OK**.
4. Enter the four-digit code for your device. The LED blinks once for each digit entry. It blinks twice after you have entered the final digit.

*NOTE: If an invalid code is entered, the LED emits one long blink, and the LCD displays INVALID.*

5. The selected device turns off if the code was successful. You can also try pressing additional keys on the remote to test other functions.
6. If the code you entered functions properly for all keys tested, Press OK to save the code.
7. If the code you entered does not function properly, Press **SET** one time and repeat steps 2-6, trying the next available code from the manufacturer's code list.
8. If none of the codes listed for your brand/type of device function properly, you can try searching for its code (next section) or use the "Learn Function" as described on page xx.

### **Adding a Device by Searching for Its Code**

1. Press and hold **SET** until the remote displays **INITIAL SETUP**. Press **OK**.
2. The remote displays **ADD DEVICE**. Press **OK**
3. The bottom line of the display lists **RECEIVER** as the first device you can add. Press **OK** or use the **ARROW** keys to scroll left or right, select a different device to add and then press **OK**.
4. The remote displays the device name on the top line and Code Setup on the next line.
5. Use the **ARROW** keys to scroll through the manufacturer's codes for your device type (i.e., Receiver). When you have selected the correct code, the device will turn off. If you accidentally scroll past the correct code, you can use the other arrow key to go back.
6. Press **OK** to save the code.
7. If none of the codes work for your device, you are offered the option of using the "Learn Function" (see the instructions for learning in the "Advanced Functions" section of this manual). Press **OK** to learn or **SET** to go back one level in the menu.

*NOTE: If you cannot find the working code or brand for your receiver, try the codes for Amplifier, and then Misc. Audio. Scroll left or right to search for the device when the remote displays ADD DEVICE.*

### **Changing a Device Code**

*NOTE: All settings of the current device (Key Mover, Learning, and all other user-programmed features) will be retained.*

1. From **INITIAL SETUP** press **OK**. The remote displays **ADD DEVICE**. Use the **ARROW** keys to scroll to **CHANGE DEVICE CODE**. Press **OK**.
2. The remote displays the device name in the center of the 2nd line. Use the **ARROW** keys to scroll to the desired device and press **OK**.
3. The four digit code can be entered using the number keys or you can use the **ARROW** keys to scroll through the codes for this type of device (see "Adding a Device by Searching for its Code" above)
4. If you manually entered the code with the number keys or found the correct code using the search method, press **OK** to save it.
5. If using the search method and none of the codes work for your device, you are offered the option of using the "Learn Function" (see the instructions for learning in the "Advanced Functions" section of this manual) Press **OK** to learn or **SET** to go back one level in the menu.

### **Deleting a Device**

6. From **INITIAL SETUP** press **OK**. The remote displays **ADD DEVICE**. Use the **ARROW** keys and scroll to **DELETE DEVICE**. Press **OK**.
7. The remote displays the device name and its code (for example, CABLE BOX 1376). Use the **ARROW** keys to scroll to the other devices you have set up.
8. To delete the displayed device, press **OK**. The remote displays **ARE YOU SURE? IF SO PUSH OK**. Press **OK**.
9. The remote displays the name of the deleted device (for example, CABLE BOX 1376 Has Been Deleted).
10. Press **OK** to delete another device or **SET** to exit.

### **Viewing a Programmed Device Code**

1. From **INITIAL SETUP** press **OK**. The remote displays **ADD DEVICE**. Use the **ARROW** keys to scroll to **VIEW CODE** and Press **OK**.
2. The first line of the LCD displays the long device name of the current device. The second line displays the abbreviated name of the current device in the middle.
3. The third line displays the 4-digit code number (for example 0010) programmed for the current device.

- Use the **ARROW** keys to view codes of other devices you have set up.
- After viewing the codes, press **OK** or **SET** to exit.

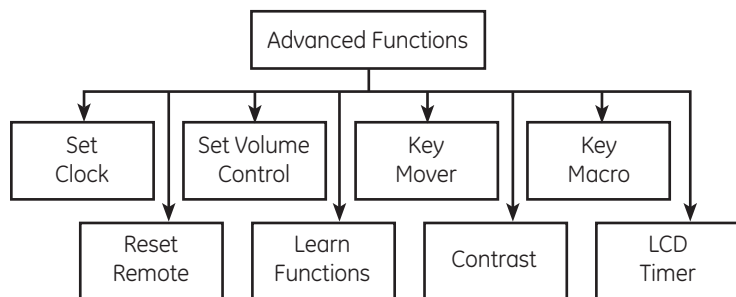
## Replacing a Device

This replaces an existing device with a new device in your remote's programming. One example could be replacing your cable box with a satellite receiver.

***NOTE: The new device replaces and overwrites all settings of the current device (Key Mover, Learning, and all other user-programmed features). The one exception is with macros. The new device code replaces the old device code within the macro.***

- From **INITIAL SETUP** press **OK**. The remote displays **ADD DEVICE**. Use the **ARROW** keys to scroll to **REPLACE DEVICE** and Press **OK**.
- The LCD displays **REPLACE WHAT?** on line 1 and the current device type in the middle of line 2. Use the **ARROW** keys to scroll to the device to replace.
- Press **OK** to select the device type to replace. The LCD displays **WITH WHAT DEVICE?** on line 1 and the current device (for example, RCV) on line 2.
- Use the **ARROW** keys to scroll to the device type you want to replace the current device with.
- When you have selected the replacement device, press **OK**.
- The LCD displays the device code and its default ID. For example, for a cable box the LCD displays **CABLE BOX, CODE SETUP, 1376**. Press **OK** to complete the code setup and store the new device.

## Advanced Functions (Audio/Video Devices)



### To Access the Advanced Functions Menu:

- With the remote in A/V mode, press and hold the **SET** key to enter setup.
- Use the **ARROW** keys to scroll to **"ADVANCED FUNCTIONS"** and press **OK**.

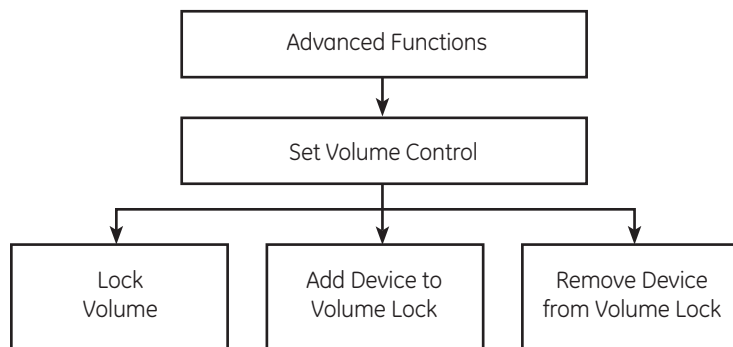
## Set Clock (Day and Time Setup)

- From **ADVANCED FUNCTIONS**, highlight **SET CLOCK** and Press **OK**.
- The screen will display the day, hour, minute and AM/PM with the day highlighted.
  - Press the **CH +** or **CH -** key to change the day.
  - Use the right **ARROW** key to highlight the hour, minute and AM/PM and use the **CH** keys to adjust.
- When you've completed setting the time press **OK**; the screen will display **SET CLOCK**.
- Use the **ARROW** keys to highlight a different menu item or press **SET** to exit setup.

***NOTE: You will need to reprogram the Day & Time when the batteries are replaced.***

## Set Volume Control (Volume Lock)

Volume Lock allows you to control the volume of a primary A/V device when another A/V device is active on the remote. For example, if you use your stereo receiver for the audio while watching TV or DVDs, you can set the remote to control the volume of your stereo regardless of which device (TV or DVD) the remote is set to control. By default, all your devices have independent volume control. You can perform Individual Volume Unlock on a selected device to set its volume control for independent operation.



### Locking Volume Control to Other Devices

- From the **INITIAL SETUP** screen, use the **ARROW** keys to highlight **ADVANCED FUNCTIONS** and Press **OK**.
- The remote displays **SET CLOCK**.
- Use the **ARROW** keys to scroll to **SET VOLUME CONTROL** and Press **OK**.



- The remote displays **LOCK VOLUME**. Press **OK**.
- The remote displays **USE < > TO SELECT VOLUME SOURCE THEN PRESS OK**.
- Use the **ARROW** keys to select the device to be locked. The remote displays the name of the device and its code (for example, **LOCK VOLUME TO RECEIVER 1158**).
- Press **OK**. The display changes to **VOLUME CONTROL IS NOW SET TO RECEIVER**
- The display automatically changes to **LOCK VOLUME** after a few seconds. Press **SET** to exit.

### Adding a Device to Volume Lock

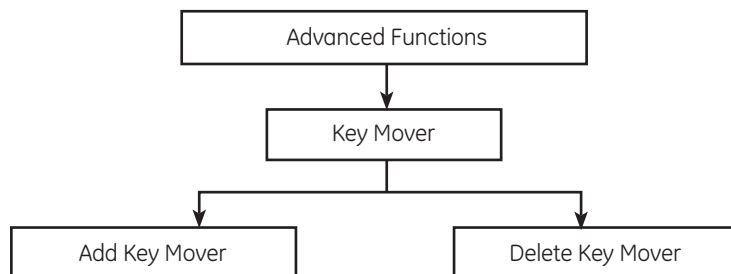
- From **LOCK VOLUME**, use the **ARROW** keys to scroll to **ADD DEVICE TO VOLUME LOCK** and Press **OK**.
- The remote displays **USE < > TO FIND DEVICE TO ADD THEN PUSH OK**. Use the **ARROW** keys to scroll to the device you want to lock. The remote now displays the name of the device being locked and the name of the locking device. For example, **LOCK TV2 TO RECEIVER**.
- Press **OK**. The remote now displays **TV2 HAS BEEN ADDED TO VOLUME LOCK**.
- The display automatically changes to **VOLUME LOCK** after a few seconds. Press **SET** to exit.

### Removing a Device from Volume Lock

- From **LOCK VOLUME**, use the **ARROW** keys to scroll to **REMOVE DEVICE FROM VOLUME LOCK** and Press **OK**.
- The remote displays **USE < > TO SELECT FIND DEVICE TO REMOVE THEN PUSH OK**. Use the **ARROW** keys to select the device to remove. The remote now displays **REMOVE FROM VOLUME LOCK** and the abbreviated device name (TV2 for example).
- Press **OK**. The remote's display changes to **TV2 HAS BEEN REMOVED FROM VOLUME LOCK**.
- The display automatically changes to **REMOVE DEVICE FROM VOLUME LOCK** after a few seconds. Press **OK** to remove another device from Volume Lock, or press **SET** to exit.

## Key Mover

Key Mover allows you to copy keys around the remote control, within a device, or from one device to another.



### Copying a Key

- From **ADVANCED FUNCTIONS**, use the **ARROW** keys to scroll to **KEY MOVER**. Press **OK**.
- The remote displays **ADD KEY MOVER**. Press **OK**.
- The remote displays **FIND SOURCE MODE & PUSH OK**. On the bottom line, the remote displays the source device (for example, **SATELLITE**). Scroll to the source device for the key you intend to move. Press **OK**.
- The remote displays **SELECT SOURCE KEY TO COPY**. All keys except **SET**, **Arrows**, and **Z-Wave** are available for Key Mover.
- Press the key you wish to copy. The remote displays **FIND DESTINATION MODE & PUSH OK**. Scroll to the destination device for the key you wish to copy. Press **OK**.
- The remote displays **SELECT DESTINATION KEY & PUSH OK**. Any key except **SET**, **Z-Wave**, **Arrows** and **OK** is a valid destination key. Press the destination key and then Press **OK**.
- The remote displays **Key Mover Saved**.
- The remote displays **PUSH OK TO ADD ANOTHER PUSH SET TO EXIT**. Press **OK** to return to step 3 above or press **SET** to exit setup.

### Deleting All Copied Keys

This deletes all Key Mover keys for a single mode (device).

- From the **ADD KEY MOVER** screen, scroll to **DELETE KEY MOVER**. Press **OK**.
- The remote displays **FIND MODE PUSH OK**. On the bottom line, the device name is displayed (for example, **TV**).
- Scroll to the device you wish to delete all copied keys from. Press **OK**.
- The remote displays **SELECT KEY TO DELETE OR OK TO DELETE ALL**. Press **OK**.

- The remote displays **DELETING ALL PUSH OK TO CONFIRM**. Press **OK**.
- The remote displays **ALL MOVED KEYS DELETED PUSH OK TO DELETE MORE**. Press **OK** to delete keys for a different device or **SET** to exit.

### Deleting a Single Copied Key

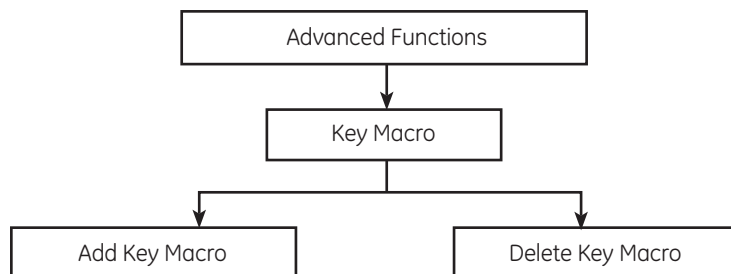
- From the **ADD KEY MOVER** screen, scroll to **DELETE KEY MOVER**. Press **OK**.
- The remote displays **FIND MODE PUSH OK**. On the bottom line, the device name is displayed (for example, **TV**).
- Scroll to the device you wish to delete the copied keys from. Press **OK**.
- The remote displays **SELECT KEY TO DELETE OR OK TO DELETE ALL**. Press the key to delete.
- The remote displays **KEY DELETED PUSH OK TO DELETE ANOTHER**. Press **OK** to delete another copied key, or **SET** to exit.

## Key Macros

Key Macros allow the user to program a series of keystrokes to a single button. For example, you can program a Key Macro on the **POWER** button that turns on and off all of your home entertainment equipment with a single press of the **POWER** button. The Key Macro function is not available in Z-Wave mode however; Z-Wave individual light, group or scene commands can be included in Audio/Video Key Macros. One example of this would be to change the TV's input to DVD, change the stereo receiver's input to DVD, turn on the DVD player and set room lights to low; all with one press of the macro key.

When using a macro, the remote transmits the device commands in sequence. The green LED (beneath the Z-Wave key) blinks once for each transmitted command. The remote must be aimed at the equipment during the entire macro sequence.

**NOTE: Macro programming overrides the key's original function in all modes. However, you can access the key's original function by pressing and releasing SET, then the key where the macro is assigned. The key then sends its original function, not the macro.**



### Adding a Key Macro:

- From **ADVANCED FUNCTIONS**, use the **ARROW** keys to scroll to **KEY MACRO**. Press **OK**.
- The remote displays **ADD KEY MACRO**. Press **OK**.
- The remote displays **SELECT MACRO KEY**. Select any key but Set, Z-Wave, OK or Arrows (scroll left & scroll right) to store your macro.
- The remote displays **ENTER THE MACRO SEQUENCE** with the active device highlighted in the bottom line. Use the **ARROW** keys to highlight the device for each command.
- Press the command key that you want to add to the macro.

**Note: As soon as you press the first command key, the display changes to PUSH OK FOR 3 SECONDS TO SAVE. Do not press OK until you have finished entering all macro commands!**

- To add Z-Wave commands to your macro, press & release the Z-Wave key to change the remote to Z-wave mode. A small "Z" will be shown in the upper left corner of the display. Press the desired light, group or scene mode key, the desired number key and the On or Off (CH+ / CH-) key to add this command to the macro. Note: The display does not change to Z-Wave mode while doing this.
- Press and release the Z-Wave key to return to A/V mode and finish programming your macro.
- When you are finished entering commands for the macro, press and hold the **OK** key for three seconds to save your macro. The remote displays **MACRO SAVED** and returns to the **KEY MACRO** screen.

**NOTE: Macros can include up to 30 commands. If you try to enter more than 30 keys into the macro, the remote displays MEMORY FULL.**

### Deleting a Key Macro

- From **ADVANCED FUNCTIONS** scroll to **KEY MACRO**. Press **OK**.
- The remote displays **ADD KEY MACRO**. Scroll to **DELETE MACRO**. Press **OK**.



- The remote displays **SELECT MACRO KEY TO DELETE AND PUSH OK**.
- Once you have pressed a valid macro key, the remote displays **MACRO DELETED CHOOSE ANOTHER OR OK TO EXIT**.
- Repeat steps 2–4 above until you have finished deleting key macros. Press **SET** when finished to return to normal operation.

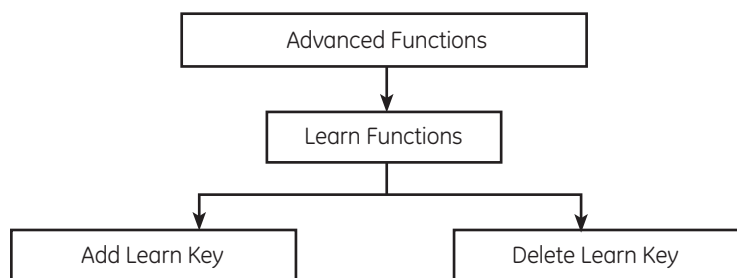
## Learning

Your remote can learn functions from other IR remote controls if you cannot find your device code.

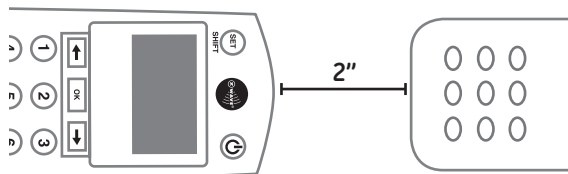
*NOTE: Learning can not be done in Z-Wave mode.*

*NOTE: Make sure your original remote controls have fresh batteries before programming.*

*NOTE: You must add the device you want to learn first. If you cannot find a code that works with your device (for example, RECEIVER), enter a "dummy" code (any four-digit code) so that RCV is an available device.*



- From **ADVANCED FUNCTIONS** use the **ARROW** keys and scroll to **LEARN FUNCTIONS** and press **OK**.
- The remote displays **ADD LEARN KEY**. Press **OK**.
- The remote displays **FIND MODE TO LEARN AND PUSH OK**. The bottom line of the LCD displays the device type (for example, **SATELLITE**). Use the **ARROW** keys to scroll to the device you want the learned key associated with. Press **OK**.
- The remote displays **ALIGN REMOTES PUSH OK**. Place the two remotes as shown in the diagram below and press **OK**.



- The remote displays **SELECT THE KEY TO LEARN TO**. All keys except **SET**, **Z-Wave**, **OK**, or **Arrows** (scroll left & scroll right) are available for learning. Press the key you want to teach the command to.
- The remote displays **WHEN BACKLIGHT TURNS OFF PUSH TEACHING KEY**. The backlight turns off. The display reads **LEARNING NOW! PRESS TEACHING KEY**. Press the teaching key on the original remote control.
- If Learning is successful, then display and backlight turn back on. The remote displays **SUCCESS! PUSH OK TO LEARN PUSH SET TO EXIT**.
- Press **OK** to learn another key or press **SET** to exit Learning mode. If you press **OK**, the remote returns to step 5 above and is ready to learn another key.

*NOTE: If learning fails, the display reads **LEARNING FAILED PUSH OK TO LEARN PUSH SET TO EXIT**.*

*Possible causes for learning failure:*

- Your remotes are too close to a UV source (i.e. in sun light, or close to fluorescent lighting)
- Your remotes are too far apart.
- The teaching remote is an RF (radio frequency) remote. Teaching remotes must be IR (infrared).
- The remotes' IR LEDs are not aligned.
- Batteries in one or both remotes may not have a sufficient charge

## Deleting All Learned Keys

To delete all learned keys for a selected device, perform the steps below:

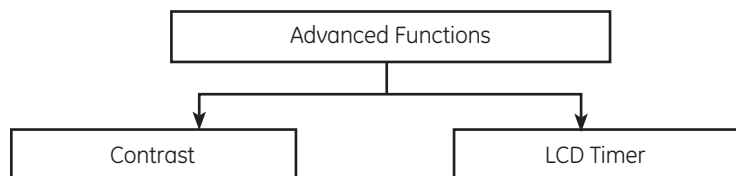
- From **ADD LEARN KEY** use the **ARROW** keys to scroll to **DELETE LEARN KEY**. Press **OK**.
- The remote displays **SELECT MODE THEN PUSH OK**. The device name is displayed on the bottom line of the display (for example, TV). Use the **ARROW** keys to cycle through the available device types. Press **OK**.
- The remote displays **SELECT KEY TO DELETE OR PUSH OK TO DELETE ALL**.
- Press **OK**. The remote displays **DELETING ALL PUSH OK TO CONFIRM**.
- Press **OK**. The remote displays **ALL LEARNED KEYS DELETED. PUSH OK TO DELETE MORE**.
- Press **SET** to exit

## Deleting a Single Learned Key

To delete a single learned key, follow steps 1–3 above.

Then perform the following steps:

1. Press the key containing the learned function to be deleted. The remote displays **KEY DELETED PUSH OK TO DELETE ANOTHER**.
2. Press **SET** to exit or **OK** to delete another learned key



## Setting the LCD Display's Contrast

1. From **ADVANCED FUNCTIONS**, scroll to **CONTRAST**. Press **OK**.
2. The LCD displays **CONTRAST SETUP**, with 10 blocks to show the **CONTRAST** setting. Use the **ARROW** keys to raise or lower the setting.
3. Press **OK** to save.

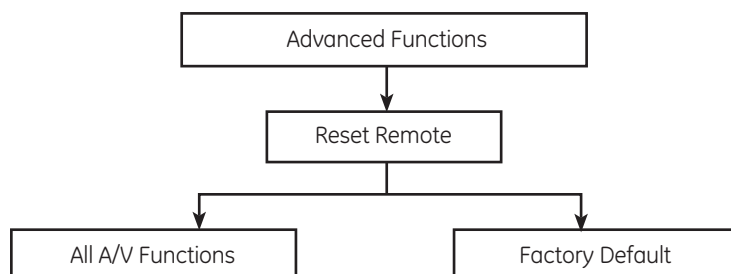
## Adjusting the LCD Timer

You can adjust the LCD timer to control how long your display runs before it times out and goes blank. The timer can be adjusted in increments of 10, 20, or 30 seconds.

*NOTE: This does not affect backlight settings. The backlight runs for 10 seconds on your display, and 5 seconds on your keypad.*

1. From **ADVANCED FUNCTIONS**, scroll to **LCD TIMER**. Press **OK**.
2. The LCD displays **SET TO 20 SECONDS** (or the timer of the last active setting). Use the **ARROW** keys to adjust the LCD Time-out period.
3. Press **OK** to save. The LED blinks twice and the display returns to **LCD TIMER**.

## Resetting the Remote



### Resetting All Audio/Video Features

You can reset all the remote's programming, including Key Mover, Key Macro, Learning, and Volume Lock, except for device codes. To reset all programming, perform the following steps:

1. From **ADVANCED FUNCTIONS**, scroll to **RESET REMOTE**. Press **OK**.
2. The remote displays **TO RESET ALL AV FEATURES PUSH OK**. Press **OK**.
3. The remote displays **PUSH OK TO CONFIRM OR SET TO CANCEL**. Press **OK**.
4. The remote displays **RESET CONFIRMED**.

### Restoring Audio/Video Programming to Factory Settings

*NOTE: This will remove all devices you have programmed, so use caution when restoring factory settings.*

1. From **ADVANCED FUNCTIONS**, scroll to **RESET REMOTE**. Press **OK**.
2. When the remote displays **TO RESET ALL AV FEATURES PUSH OK**, scroll to **RESET TO FACTORY SETTING PUSH OK**. Press **OK**.
3. The remote displays **PUSH OK TO CONFIRM OR SET TO CANCEL**. Press **OK**.
4. The remote displays **THIS CLEARS ALL EVEN CODE SETUP ARE YOU SURE?** Press **OK**.
5. The remote displays **RESET CONFIRMED**. Your remote is now reset to its original factory programming.

## Z-Wave Overview

*Please note: The terms "Device", "Node" and "Light" all refer to an individual Z-Wave enabled device in your home control network and are interchangeable within the context of these instructions.*

If this remote is used as the primary controller, you must use it to create your control network. You can use multiple remote controls with your Z-Wave lighting control network; however, only one remote will act as the primary controller. The primary controller must be used to add or delete devices (lights / nodes) from your network. All other remotes are considered secondary and can be used to create groups and/or scenes and control your lighting however secondary remotes cannot add or delete devices from your control network.

*NOTE: This product can be operated in one Z-Wave network with Z-Wave certified devices from other manufacturers and/or other applications. The different listening nodes within the network can act as repeaters regardless of vendor.*

### ! WARNING

**RISK OF FIRE**

**RISK OF ELECTRICAL SHOCK**

**RISK OF BURNS**

#### **Not for use with Life Support Equipment!**

Z-Wave enabled devices should never be used to supply power to or control the On/Off status of medical and/or life support equipment!

#### **Controlling Appliances:**

Exercise extreme caution when using Z-Wave devices to control appliances. Operation of the Z-Wave device may be in a different room than the controlled appliance, also an unintentional activation may occur if the wrong button on the remote is pressed. Z-Wave devices may automatically be powered on due to timed event programming. Depending upon the appliance, these unattended or unintentional operations could possibly result in a hazardous condition. For these reasons, we recommend the following:

1. Assign Z-Wave controlled appliances to device numbers 10 – 18 on the GE remote. The likelihood of unintentionally turning on the appliance will be reduced significantly because the "Shift" button will need to be pressed before pressing device numbers 10-18.
2. Z-Wave devices controlling appliances should be removed from "All" control setting. Instructions on how to do this are included in the manual for your GE remote.
3. Do Not include Z-Wave devices in Groups or Scenes if they control appliances.
4. Do Not use Z-Wave devices to control electric heaters or any other appliances which may present a hazardous condition due to unattended or unintentional or automatic power on control

## Z-Wave Terminology

**Primary Controller:** This is the main device used to set up and control your Z-Wave network. There can only be one primary controller and it must be used to add or delete devices. A primary controller can be a portable device like a hand-held remote, a static controller (permanently installed & never moved), or a Z-Wave enabled PC.

**Secondary Controller:** The Z-Wave network supports multiple controllers so the consumer can use additional Z-Wave remotes throughout the home. If the secondary controller is the same brand and model as the primary, it will have all of the same capabilities as the primary with one exception; the secondary controller can not be used to add or delete devices.

**Home Control Network:** Your controllers and every Z-Wave device you have added with the primary controller are linked together into a wireless network. Each device in your network has a unique address assigned to it and cannot be activated by your neighbor's Z-Wave controller.

**Light/Node/Device:** Node is the technical term used to describe a Z-Wave device in your home control network. Please note that the terms "Node", "Device" and "Light" all refer to an individual Z-Wave enabled device and are interchangeable.

**Group:** Multiple Z-Wave devices can be turned ON or OFF with a single command when they are placed into a Group. One example would be grouping your porch light, exterior garage lights and patio lights together so that they could all be turned ON if you hear a strange sound in the middle of the night.

**Scene:** A scene lets you establish preset brightness levels for multiple Z-Wave controlled lights and then control them with one command. This is ideal for mood or task lighting. Scene 1 could be the family room lights set to dim for watching TV. Scene 2 could have the same lights set to a different brightness level for other activities like reading or entertaining.

**Event:** An event is something you want to happen at a specific time and day. This could be everyday, a specific day of the week, Monday through Friday, Saturday & Sunday only, or a one time occurrence. Events can be set up to control an individual device, a group or a scene.

## Wireless Range

This device complies with the Z-Wave standard of open-air, line of sight transmission distances of 65 feet. Actual performance in a home depends on the number of walls between the remote controller and the destination device, the type of construction and the number of Z-Wave enabled devices installed in the control network. Every Z-Wave enabled device acts as a signal repeater and multiple devices result in more possible transmission routes which help eliminate "RF dead-spots".

### Things to consider regarding RF range:

- Each wall or obstacle (i.e.: refrigerator, big screen TV, etc.) between the remote and the destination device will reduce the maximum range by approximately 25-30%.
- Brick, tile or concrete walls block more of the RF signal than walls made of wooden studs and plasterboard (drywall).
- Wall mounted Z-Wave devices installed in metal junction boxes will suffer a significant loss of range (approximately 20%) since the metal box blocks a large part of the RF signal.

### Effects of Home Construction on Wireless Range Between Z-Wave Enabled Devices

*Note: The distances shown in the table below are typical examples. Actual performance in your home will vary.*

From the Remote (or repeating Z-Wave module) to destination device:	Type of Construction				
	Wood Frame w/Drywall		Brick, Tile or Concrete		
	Plastic J-Boxes*	Metal J-Boxes	Plastic J-Boxes*	Metal J-Boxes	
Number of Walls or Obstacles	0**	100'	80'	100'	80'
	1	70'	56'	60'	48'
	2	49'	39'	36'	29'
	3	34'	27'	21'	17'

\* For Plug-in Modules or In-Wall Devices Installed in Plastic Junction Boxes

\*\* Line of Sight / no obstructions

*Please Note: Z-Wave home control networks are designed to work properly alongside 802.11 wireless computer networks, Bluetooth and other 2.4GHz or 5.8GHz devices. Some baby cams, wireless video devices and older cordless phones using the 900MHz frequency range may cause interference and limit Z-Wave functionality. Many 900MHz products have a switch to select channel "A" or "B". You may find that one of these channels will cause less interference than the other.*

## Notes on Network Management

1. "Add a node, group or scene" can also be referred to as "include a node, group or scene." "Remove a node, group or scene" can also be referred to as "Exclude a node, group or scene."
2. If the screen displays **FAIL** during the setup or programming process, you have pressed an invalid key or the desired action has not been successfully completed. Please try again.

## Z-Wave Key Chart

**A. SET** – Press & hold to enter setup mode. When in setup mode, press & release to back up one level in the setup menu or press & hold to cancel setup.

**B. SHIFT** – For use in Z-Wave setup & operation modes. Press & release to shift number key from devices 1 – 9 to 10 – 18.

**C. ARROWS** – scroll left or right to highlight desired menu item.

**D. OK** – Press & release to select highlighted menu item

**E. BRT & DIM (Volume Up & Down)** – Light mode only - Use ARROW KEYS or number keys to select desired light (displayed in LCD) and then press & hold to adjust brightness of Z-Wave lights (Must be dimmable)

**F. CANCEL (Exit)** – Press & release to back up one menu level in Z-Wave programming mode

### MODE KEYS:

**G. LIGHT** – Use to program and/or control individual lights

**H. GROUP** – Use to program and/or turn multiple lights On or Off at the same time

**I. SCENE** – Use to program and/or control multiple lights with preset brightness levels.

**J. ALL** – Use to turn On/Off all Z-Wave lighting at the same time. Press & release “All” key, and then the On or Off key (Channel Up or Down)

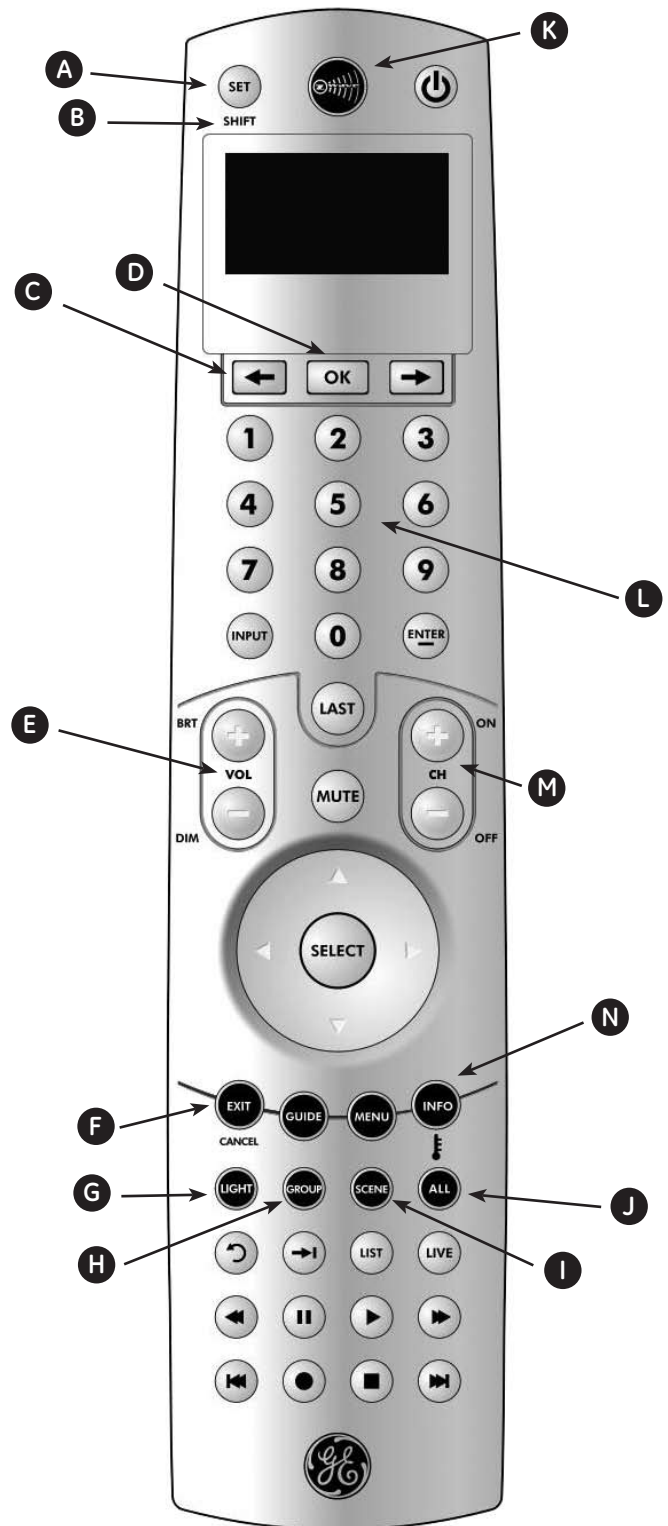
**K. Z-WAVE KEY** – This key cycles the remote between Z-Wave and A/V modes. In Z-Wave mode, the green LED beneath the button blinks to indicate the following:

1. Twice to indicate entering programming mode or a programming success.
2. Once (long blink) to indicate an invalid action during programming or a programming failure.

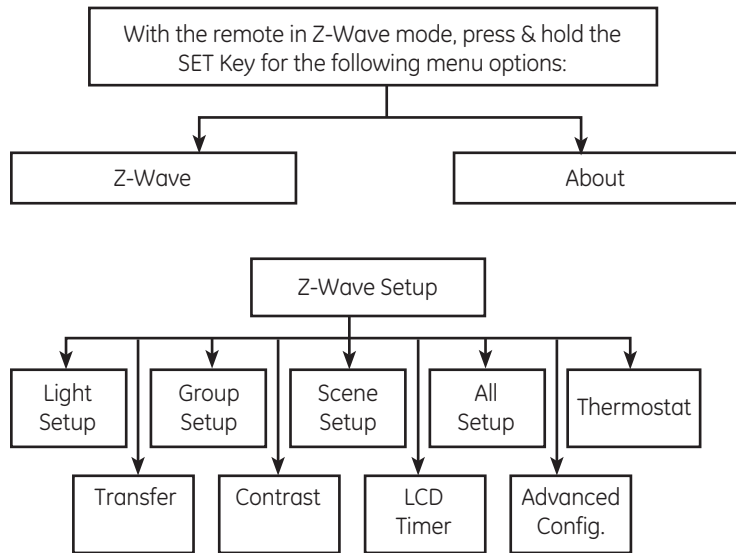
**L. NUMBER KEYS** – Use to select individual lights, groups or scenes. Press & release SHIFT to change number keys from devices 1 – 9 to 10 – 18.

**M. ON & OFF (Channel Up & Down)** – Select the desired mode and use ARROW KEYS or number keys to select desired light, group or scene (displayed in LCD) and then press & release to turn On or Off. Also used for All-On and All-Off functions in All mode

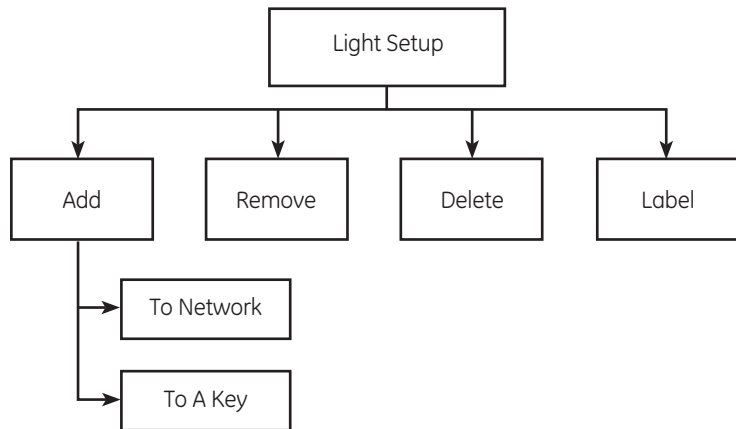
**N. Thermostat symbol (Info Key)** – Press & release to select Z-Wave thermostat



## Z-Wave Setup



## Devices / Lights / Nodes



### Adding a Device (Node / Light) to the Network

In order to control the lights, they must be Z-Wave enabled and you must first add them to your home network. There are two ways to do this.

1. Add lights to your remote so that they can be controlled individually using the number keys (maximum of 18). Adding a device to your remote also adds it to your network. If the device number you are trying to add is already associated with another device, the previous information is lost.

2. Add devices to your home network (maximum of 232) without assigning them to a specific number key. These devices can only be controlled through the **GROUP, SCENE** or **ALL** commands.

### Add a device without assigning it to a specific number key

1. Enter Z-Wave setup mode and highlight **LIGHT SETUP**
2. Press **OK**; the screen will display **ADD**
3. Press **OK**; the screen will display **TO NETWORK**
4. Press **OK**; the letter "W" will be displayed in the upper left hand corner and the green Z-Wave LED will begin blinking indicating the remote is waiting to add your device.
5. Press the button on the device so that it communicates with the remote.
6. When the screen displays **SUCCESSFUL** the device has been added to your network.
7. The device can now be added to Groups and/or Scenes.

### Add a device and assign it to a specific number key

1. Enter Z-Wave setup mode and highlight **LIGHT SETUP**
2. Press **OK**; the screen will display **ADD**
3. Press **OK**; the screen will display **TO NETWORK**
4. Press the left arrow key once; the screen will display **TO A KEY**
5. Press **OK**; the screen will display **SEL DIGIT**
6. Press a digit (1-9) for the device location you wish to add. Press **SET (SHIFT)** and the digit (1-9) if you are adding devices 10 through 18. The screen will display the number you've chosen.
7. Press **OK**; the letter "W" will be displayed in the upper left hand corner and the Z-Wave light will begin blinking indicating the remote is waiting to connect to your device.
8. Press the button on the device so that it communicates with the remote.
9. When the screen displays **SUCCESSFUL** the device has been added to the selected key.
10. The device can now be added to Groups and/or Scenes.

### Controlling an Individual Device (Node / Light)

You can control a light to turn on or off, or change its brightness level. The operation of a specific device varies by product. Refer to the manual for that device to learn its specific operation.

- In the **Z-WAVE** mode press the **LIGHT** key to put the remote into "Individual Light Control" mode. Use the **NUMBER** or **ARROW** keys to select the light you want to control. (Press and release **SHIFT** to control lights 10 through 18.)



## Turning a Light On or Off

- To turn a light on, press and release the **CH +** key for less than one second. The screen will display **ON** above the selected Light/Node.
- To turn a light off, press and release the **CH -** key for less than one second. The screen will display **OFF** above the selected Light/Node.

## Setting a Light's Brightness Level

- To brighten a light, press and hold the **VOL +** key for more than one second. The screen will display **BRIGHT UP** above the selected Light/Node. The light will continue to grow brighter until the key is released.
- To dim a light, press and hold the **VOL -** key for more than one second. The screen will display **BRIGHT DOWN** above the selected Light/Node. The light will continue to grow dimmer until the key is released.

## Removing an Individual Device (Node / Light) From Your Remote

This only removes individual number key control. The device is still part of your home control network and can be controlled through the **GROUP**, **SCENE** and **ALL** commands.

1. Enter Z-Wave setup mode and highlight **LIGHT SETUP**
2. Press **OK**; the screen will display **ADD**
3. Press the right arrow key once; the screen will display **REMOVE**
4. Press **OK**; the screen will display **SEL DIGIT**
5. Press a digit (1-9) for the device location you wish to remove. Press **SHIFT** and the digit (1-9) if you are removing devices 10 through 18. The screen will display the number you've chosen.
6. Press **OK**. When the screen displays **SUCCESSFUL**, the device has been removed from the number key.

## Deleting a Device (Node / Light) From Your Network

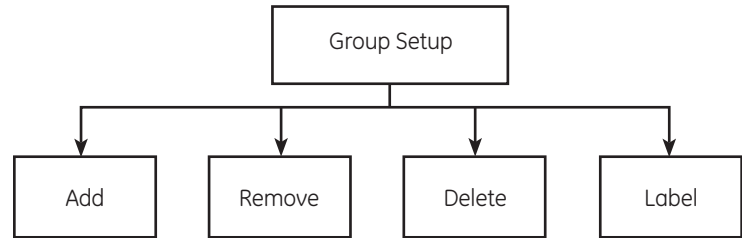
This completely removes the device from your home control network and resets the device to its factory default settings.

1. Enter Z-Wave setup mode and highlight **LIGHT SETUP**
2. Press **OK**; the screen will display **ADD**
3. Press the right arrow key twice; the screen will display **DELETE**
4. Press **OK**; the letter "W" will be displayed in the upper left hand corner and the Z-Wave light will begin blinking indicating the remote is waiting to delete your device.
5. Press the button on the device so that it communicates with the remote.

6. When the screen displays **SUCCESSFUL**, the device has been deleted from your network and reset to its factory defaults.

## Groups

You can create a collection of devices (lights / nodes) that you can turn On or Off as a group. You can create up a maximum of 18 groups. A group can contain up to 232 devices.



## Create a Group or Add a Device to a Group

1. Enter Z-Wave setup mode and highlight **GROUP SETUP**
2. Press **OK**; the screen will display **ADD**
3. Press **OK**; the screen will display **SEL DIGIT**
4. Press a digit (1-9) for the group you wish to add the device to. Press **SHIFT** and the digit (1-9) if you are adding a device to groups 10 through 18. The screen will display the group you've chosen.
5. Press **OK**; the letter "W" will be displayed in the upper left hand corner and the Z-Wave light will begin blinking indicating the remote is waiting to connect to your device.
6. Press the button on the device so that it communicates with the remote.
7. When the screen displays **SUCCESSFUL** you have successfully added the Node/Light to a group.
8. To add additional Node/Lights to your group repeat steps 1 thru 10.

## To control a Group:

1. When in Z-Wave mode press the **GROUP** key once to put the remote into "**GROUP Control**" mode.
2. Press the digit key for the group you wish to control (1-9). Press **SHIFT** and the digit (1-9) if you are controlling groups 10 through 18. The screen will display the selected Group.
  - To turn a **GROUP** on, press and release the **CH +** key for less than one second. The screen will display **ON** above the selected **GROUP**.

- To turn a **GROUP** off, press and release the **CH -** key for less than one second. The screen will display **OFF** above the selected **GROUP**.

### Removing a Device (Node / Light) From a Group:

This only removes the device from a specific group. The device is still part of your home control network and the group still exists (if there were more than one device in it to start).

1. Enter Z-Wave setup mode and highlight **GROUP SETUP**
2. Press **OK**; the screen will display **ADD**
3. Press the right arrow key once; the screen will display **REMOVE**
4. Press **OK**; the screen will display **SEL DIGIT**
5. Press a digit (1-9) for the group you wish to remove the device from. Press **SHIFT** and the digit (1-9) if you are removing a device from groups 10 through 18. The screen will display the group you've chosen.
6. Press **OK**; the letter "W" will be displayed in the upper left hand corner and the Z-Wave light will begin blinking indicating the remote is waiting to remove your device.
7. Press the button on the device so it communicates with the remote.
8. When the screen displays **SUCCESSFUL** you have successfully removed the Node/Light from the group.

### Deleting a Group

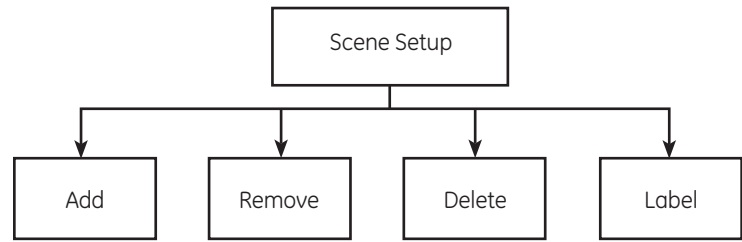
This only deletes the specific group. All of the devices are still part of your home control network.

1. Enter Z-Wave setup mode and highlight **GROUP SETUP**
2. Press **OK**; the screen will display **ADD**
3. Press the right arrow key twice; the screen will display **DELETE**
4. Press **OK**; the screen will display **SEL DIGIT**
5. Press a digit (1-9) for the group you wish to remove the device from. Press **SHIFT** and the digit (1-9) if you are removing a device from groups 10 through 18. The screen will display the group you've chosen.
6. Press **OK**; the screen will display **SUCCESSFUL** to indicate group has been deleted.

## Scenes

A scene is a single device or group of devices that can be preset to turn to a previously specified setting (for example, brightness level). Scenes are ideal for task or mood lighting. You can set up a maximum of 18 scenes, containing up to 32 devices per scene.

Scenes can include lights from different groups.



### Adding a Device (Node / Light) to a Scene

1. Enter Z-Wave setup mode and highlight **SCENE SETUP**
2. Press **OK**; the screen will display **ADD**
3. Press **OK**; the screen will display **SEL DIGIT**
4. Press a digit (1-9) for the scene you wish to add the device to. Press **SHIFT** and the digit (1-9) if you are adding devices to scenes 10 through 18. The screen will display the scene you've chosen.
5. Press **OK**; the letter "W" will be displayed in the upper left hand corner and the Z-Wave light will begin blinking indicating the remote is waiting to connect to your device.
6. Press and release the button on the device so it communicates with the remote.
7. When the screen displays **SUCCESSFUL** you have successfully added the Node/Light to a scene. Immediately following this the screen will display **TO ADJUST LEVEL PUSH OK TO SAVE**.
8. Within 30 seconds press and hold the button on the device to adjust the brightness level. Release the button at your desired setting, then press **OK** on the remote.
9. When the screen displays **SUCCESSFUL** you have successfully added the Node/Light to a scene at your desired setting.
10. To add additional Node/Lights to your scene repeat steps 1 thru 12.

### To control a scene:

1. While in the Z-Wave mode press **SCENE** once to put the remote in **SCENE** mode.
  2. Press the digit key for the scene you wish to control (1-9). Press **SHIFT** and the digit (1-9) if you are controlling scenes 10 through 18. The screen will display scene you've chosen.
- To turn a **SCENE** on, press and release the **CH +** key for less than one second. The screen will display **ON** above the selected **SCENE**.

- To turn a **SCENE** off, press and release the **CH -** key for less than one second. The screen will display **OFF** above the selected **SCENE**.

### Removing a Device (Node / Light) From a Scene

This only removes the device from a specific scene. The device is still part of your home control network and the scene still exists (if there is more than one device in the scene).

- Enter Z-Wave setup mode and highlight **SCENE SETUP**
- Press **OK**; the screen will display **ADD**
- Press the right arrow key once; the screen will display **REMOVE**.
- Press **OK**; the screen will display **SEL DIGIT**
- Press a digit (1-9) for the scene you wish to add the device to. Press **SHIFT** and the digit (1-9) if you are adding devices to scenes 10 through 18. The screen will display the scene you've chosen.
- Press **OK**; the letter "W" will be displayed in the upper left hand corner and the Z-Wave light will begin blinking indicating the remote is waiting to remove your device.
- Press the button on the device so it communicates with the remote.
- When the screen displays **SUCCESSFUL** you have successfully removed the Node/Light from the scene.

### Deleting a Scene

This only deletes the specific scene. All of the devices are still part of your home control network.

- Enter Z-Wave setup mode and highlight **SCENE SETUP**
- Press **OK**; the screen will display **ADD**
- Press the right arrow key twice; the screen will display **DELETE**.
- Press **OK**; the screen will display **SEL DIGIT**
- Press a digit (1-9) for the scene you wish to add the device to. Press **SHIFT** and the digit (1-9) if you are adding devices to scenes 10 through 18. The screen will display the scene you've chosen.
- Press **OK**; the screen will display **SUCCESSFUL** to indicate that the scene has been deleted.

### Labels

Individual **LIGHTS**, **GROUPS** and **SCENES** can all be labeled to help identify their function or location in your home. The process is the same for all three.

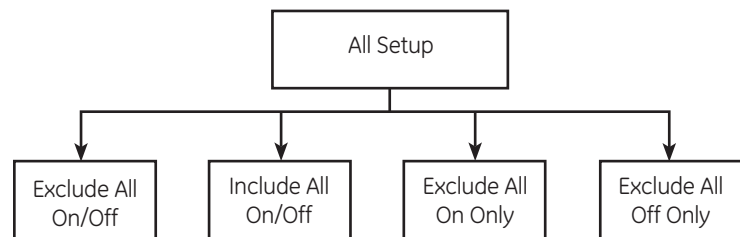
- Enter Z-Wave setup mode and highlight **LIGHT SETUP**, **GROUP SETUP** or **SCENE SETUP**. Press **OK**.
- Use the **ARROW** keys to scroll to **LABEL**.
- Press **OK**; the screen will display **SEL DIGIT**
- Press a digit (1-9) for the **LIGHT**, **GROUP** or **SCENE** you would like to label. Press **SHIFT** and the digit (1-9) if you are labeling for keys 10 through 18. The screen will display the key number in the mode you would like to label.
- Press **OK**; the screen will display the current name of the device in the mode you've selected with the first letter or digit highlighted.
  - Use the right or left **ARROW KEYS** to scroll right or left.
  - Press the **CH +** key to move the letter or number forwards.
  - Press the **CH -** key to move the letter or number backwards.
- When you've completed labeling the device press **OK**; the screen will display **SUCCESSFUL**.

### All-On and All-Off Control

The factory default setting for GE Z-Wave lighting control devices is to be included in All-On and All-Off control. Other brands of Z-Wave enabled lighting control devices may have to be manually added to ALL control. If desired, specific devices can also be setup to ignore the All-On and All-Off commands.

#### Turn all devices on or off

- While in the Z-Wave mode press **ALL** once. The screen will display **ALL**
- Press the **CH +** key to turn all of the lights on. The display will briefly display **ON** below **ALL**.
- Press the **CH -** key to turn all of the lights off. The display will briefly display **OFF** below **ALL**.
- If the screen displays **FAIL** not all of the lights completely received and responded to the remotes command. In this event repeat steps 1 thru 3.



## Adding or Excluding a Device To / From All Control

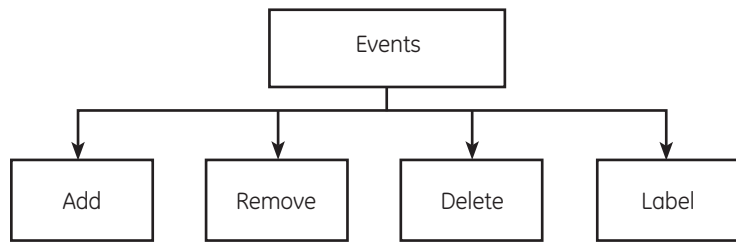
Menu options under **ALL SETUP** include **EXCLUDE ALL ON OFF**, **INCLUDE ALL ON OFF**, **EXCLUDE ALL ON ONLY** and **EXCLUDE ALL OFF ONLY**.

1. Enter Z-Wave setup mode and highlight **ALL SETUP**.
2. Press **OK**; the screen will display **EXCLUDE ALL/ON OFF**
3. Use the **ARROW** keys to scroll to the desired action.
4. Press **OK**; the letter "W" will be displayed in the upper left hand corner and the Z-Wave light will begin blinking indicating the remote is waiting to communicate with your device.
5. Press the button on the device so that it communicates with the remote.
6. When the screen displays **SUCCESSFUL** you have successfully completed the desired action.

## Events

The GE 45608 LCD remote allows you to program automated events such as turning on or off lights at a predetermined time and day. An event can control an individual Light, a Group or a Scene.

*Note: Prior to programming an Event, you must set the day and time.*



### Adding an Event

1. Enter Z-Wave setup mode and highlight **EVENTS**.
2. Press **OK**; the screen will display **ADD**
3. Press **OK**; the screen will display **EVERYDAY**
4. From this screen you can use the right and left arrow keys to select the day or days you would like the event to occur. The selections are;
  - a. **EVERYDAY**(The event will occur everyday)
  - b. **MON – FRI** (The event will occur Monday thru Friday)
  - c. **SAT/SUN** (The event will only occur on Saturday and Sunday)
  - d. **ONETIME** (The event will only occur onetime)

- e. **SUNDAY** (The event will only occur on Sundays)
- f. **MONDAY** (The event will only occur on Mondays)
- g. **TUESDAY** (The event will only occur on Tuesdays)
- h. **WEDNESDAY** (The event will only occur on Wednesdays)
- i. **THURSDAY** (The event will only occur on Thursdays)
- j. **FRIDAY** (The event will only occur on Fridays)
- k. **SATURDAY** (The event will only occur on Saturdays)

*Note: All events with the exception of "ONE TIME" will repeat on a weekly basis until deactivated or deleted.*

5. After selecting the occurrence of the event press **OK**; the screen will display **SEL DIGIT**
6. Press a digit (1-9) for the key you wish to add the event to. Press **SHIFT** and the digit (1-9) if you are adding events to keys 10 through 18. The screen will display the event you've chosen. (Event 1 for example)
7. Press **OK**; the screen shows **NORMAL**. Press **OK** for exact timing or use the **ARROW** keys to change to **RANDOM**. The random option activates the event up to 15 minutes before or after the programmed time. Note: The random option is not available for one time events.
8. Press **OK**; the screen will display **EVENT TYPE - LIGHT 1**
9. Use the **ARROW** keys to scroll between event types. As you scroll the screen will display;
  - a. **LIGHT 1** (Controls the **LIGHT** set to key **#1**)
  - b. **GROUP 1** (Controls the **GROUP** set to key **#1**)
  - c. **SCENE 1** (Controls the **SCENE** set to key **#1**)
10. When you've scrolled to the event type you would like to control, use the **ARROW** keys to select what number **LIGHT**, **GROUP** or **SCENE** you would like to control.
11. After choosing the event type and number press **OK**; the screen will display the hour, minute and AM or PM with the hour highlighted above the words **ON TIME**.
12. To set the **ON TIME** of your event;
  - a. Use the right or left **ARROW** keys to scroll right or left.
  - b. Press the **CH +** key to move hour, minute, AM or PM forwards.
  - c. Press the **CH -** key to move the hour, minute, AM or PM backwards.
13. When you've set the **ON TIME**, press **OK**; the screen will display the hour, minute and AM or PM with the hour highlighted above the words **OFF TIME**.

14. To set the **OFF TIME** of your event:

- d. Use the right or left **ARROW** keys to scroll right or left.
- e. Press the **CH +** key to move hour, minute, AM or PM forwards.
- a. Press the **CH -** key to move the hour, minute, AM or PM backwards.

15. When you've set the **OFF TIME**, press **OK**; the screen will display **SUCCESSFUL** indicating you successfully programmed your event.

### Enabling or Disabling an Individual Event:

1. Enter Z-Wave setup mode and highlight **EVENTS**.
2. Press **OK**; the screen will display **ADD**.
3. Use the **ARROW** keys to scroll to **EVENT VIEW**. Press **OK**.
4. Use the **ARROW** keys to select the desired event. Press **OK**.
5. Use the **ARROW** keys to select **ENABLED** or **DISABLED**. Press **OK**.

### Enabling or Disabling All Events:

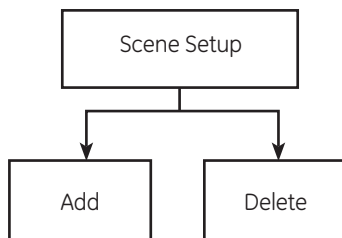
1. Enter Z-Wave setup mode and highlight **EVENTS**.
2. Press **OK**; the screen will display **ADD**.
3. Use the **ARROW** keys to scroll to **ALL**. Press **OK**.
4. Use the **ARROW** keys to select **ENABLED** or **DISABLED**. Press **OK**.

### Deleting an Event

1. Enter Z-Wave setup mode and highlight **EVENTS**.
2. Press **OK**; the screen will display **ADD**.
3. Use the **ARROW** keys to scroll to **DELETE**.
4. Press **OK**; the screen will display **SEL DIGIT**.
5. Use the number keys to select the event to be deleted. Press **OK**.
6. The screen will display **SUCCESSFUL** to indicate that the event has been deleted.

## Thermostats

The GE 45608 LCD remote allows you to program and control multiple Z-Wave enabled Thermostats.



### Adding a Thermostat:

1. Enter Z-Wave setup mode and highlight **THERMOSTAT**
2. Press **OK** and the screen will display **ADD**
3. Press **OK** and the screen will display **SETUP WAITING**
4. Press the button on the thermostat's Z-Wave interface
5. When the screen displays **SUCCESS**, you have successfully added the **THERMOSTAT** to your remote control.

### Controlling a Thermostat:

The features and functions that can be controlled vary by manufacturer and you will need to review the user manual that was provided to determine capabilities of your **THERMOSTAT**. If supported by the thermostat, the 45608 LCD remote allows you to check room temperature, adjust HVAC system modes (Heat, Cool, Auto, Fan, etc.) and adjust temperature settings (**SETPOINT**).

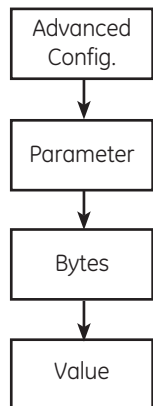
*Note: Your HVAC system may have to be set to "HEAT or "COOL" mode in order to remotely check and/or adjust the room temperature. "AUTO" mode may not provide this function.*

### Deleting a Thermostat:

1. Enter Z-Wave setup mode and highlight **THERMOSTAT**
2. Press **OK** and the screen will display **ADD**
3. Use either **ARROW** keys to scroll until the screen displays **DELETE**
4. Press **OK** and the screen will display **SETUP WAITING**
5. Press the button on the thermostat's Z-Wave interface
6. When the screen displays **SUCCESSFUL**, you have successfully deleted the thermostat.

## Advanced Configuration

Some Z-Wave devices provide advanced capabilities available only through the use of a remote control like the GE 45608. One example is the GE 45606 in-wall dimmer which allows the end user to change whether the LED is illuminated when the light is On or when the light is Off. Please refer to the instructions of your Z-Wave device for available options and specific instructions on changing its advanced configuration.





## To Change Advanced Configuration Settings:

1. Enter Z-Wave setup mode and highlight **THERMOSTAT**
2. Use either **ARROW** key to scroll until the display reads **ADV CONFIG**
3. Press **OK** and screen will display **PARAMETER 0**
4. Use either **ARROW** key to scroll until the display reads the proper parameter number (1 - 255) as indicated in the Z-Wave device's instructions
5. Press **OK** and the screen will read **NUMBER OF BYTES**
6. Use either **ARROW** key to scroll until the display reads the proper number of bytes (1, 2 or 4) as indicated in the Z-Wave device's instructions
7. Press **OK** and the screen will display read **CONFIGURATION VALUE**
8. Use either **ARROW** key to scroll until the display reads the proper value (0 - 255) as indicated in the Z-Wave device's instructions
9. Press **OK**
10. Press the button on the device.
11. The screen will display **SUCCESSFUL**

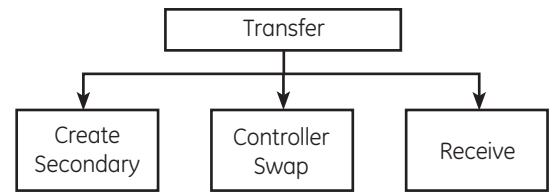
## Copying information to or from the remote control:

Create Secondary, Controller Swap and Receive are all methods used in the process of replication.

## Create Secondary Controller

A Primary controller must be used to add or delete devices from your network; however, secondary controllers can be created to enhance convenience (remotes in multiple locations like the kitchen, master bedroom and family room) and functionality (control of more than 18 individual lights, 18 groups or 18 scenes).

There are two ways to create a secondary controller. The first way is to copy all network and device information while the second is to copy just the network information. If the two remotes are identical (two of the GE 45608s for example), the first method creates an exact duplicate of all Z-Wave information including groups, scenes, labels, etc. The second method copies only the network and does not duplicate the groups, scenes, labels, etc.



## To send device and network information to a secondary remote:

1. Enter Z-Wave setup mode and highlight **TRANSFER**
2. Press **OK**; the screen will display **CREATE SECONDARY**
3. Press **OK**; the screen will display **ALL**
4. Place the Secondary remote in **RECEIVE** mode. See the following section on "Receiving Network and Device Information" if the Secondary remote is a GE 45608 remote. If the Secondary remote is a different GE model or different brand, please refer to its instructions for details.
5. After the Secondary remote is in the **RECEIVE** mode press **OK** on the Primary remote; the screen will display **SENDING**. The Primary remote then transmits the network and device information to the new Secondary remote.
6. Both remotes should indicate a successful completion of the copying process.
  - a. The 45608's screen will display **SUCCESSFUL**.
  - b. Other GE models or other brands will indicate success in various ways, depending on the remote's capabilities. Please refer to its instructions for details.
7. Change individual devices, groups, scenes, etc. on the new secondary remote as needed.

## To send only network information to a secondary remote:

1. Enter Z-Wave setup mode and highlight **TRANSFER**
2. Press **OK**; the screen will display **CREATE SECONDARY**
3. Press **OK**; the screen will display **ALL**
4. Press the right arrow key once; the screen will display **NETWORK ONLY**.
5. Place the Secondary remote in **RECEIVE** mode. See the following section on "Receiving Network and Device Information" if the Secondary remote is a GE 45608 remote. If the Secondary remote is a different GE model or different brand, please refer to its instructions for details.
6. After the Secondary remote is in the **RECEIVE** mode press **OK** on the Primary remote; the screen will display **SENDING**.



The Primary remote then transmits the network and device information to the new Secondary remote.

7. Both remotes should indicate a successful completion of the copying process.
  - a. The 45608's screen will display **SUCCESSFUL**.
  - b. Other GE models or other brands will indicate success in various ways, depending on the remote's capabilities. Please refer to its instructions for details.
8. Change individual devices, groups, scenes, etc. on the new secondary remote as needed.

## Controller Swap (Transfer Primary)

You can transfer all of your remote's information to another remote, so it becomes the new Primary remote and the original remote becomes a secondary controller. You can do this in two ways: either transferring all information, or just transferring network information.

### Transferring all Device, Network and Primary status to a new remote:

1. Enter Z-Wave setup mode and highlight **TRANSFER**
2. Press **OK**; the screen will display **CREATE SECONDARY**
3. Press the right **ARROW** key once; the screen will display **CONTROLLER SWAP**.
4. Press **OK**; the screen will display **ALL**
5. Place the Secondary remote in **RECEIVE** mode. See the following section on "Receiving Network and Device Information" if the Secondary remote is a GE 45608 remote. If the Secondary remote is a different GE model or different brand, please refer to its instructions for details.
6. After the Secondary remote is in the **RECEIVE** mode press **OK** on the Primary remote; the screen will display **SENDING**. The Primary remote then transmits the network and device information to the new Secondary remote.
7. Both remotes should indicate a successful completion of the copying process.
  - a. The 45608's screen will display **SUCCESSFUL**.
  - b. Other GE models or other brands will indicate success in various ways, depending on the remote's capabilities. Please refer to its instructions for details.

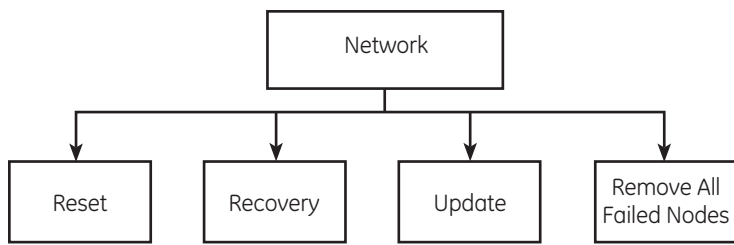
### Transferring only Network and Primary status to a new remote:

1. Enter Z-Wave setup mode and highlight **TRANSFER**

2. Press **OK**; the screen will display **CREATE SECONDARY**
3. Press the right arrow key once; the screen will display **CONTROLLER SWAP**.
4. Press **OK**; the screen will display **ALL**
5. Press the right **ARROW** key once; the screen will display **NETWORK ONLY**.
6. Place the Secondary remote in **RECEIVE** mode. See the following section on "Receiving Network and Device Information" if the Secondary remote is a GE 45608 remote. If the Secondary remote is a different GE model or different brand, please refer to its instructions for details.
7. After the Secondary remote is in the **RECEIVE** mode press **OK** on the Primary remote; the screen will display **SENDING**. The Primary remote then transmits the network and device information to the new Secondary remote.
8. Both remotes should indicate a successful completion of the copying process.
  - c. The 45608's screen will display **SUCCESSFUL**.
  - d. Other GE models or other brands will indicate success in various ways, depending on the remote's capabilities. Please refer to its instructions for details.

## Receiving Network and Device Information

1. Enter Z-Wave setup mode and highlight **TRANSFER**
2. Press **OK**; the screen will display **CREATE SECONDARY**
3. Use the **ARROW** keys to scroll to **RECEIVE**.
4. Press **OK**; the screen will display **RECEIVING**
5. Place the Primary remote in "Transmit" mode. See the previous section on "Creating a Secondary Controller" or "Controller Swap" if the Primary controller is a GE 45608 remote. If the Primary remote is a different GE model or different brand, please refer to its instructions for details.
6. After the Primary remote is in the "Transmit" mode, press **OK** on this remote; the screen will display **RECEIVING**. The Primary remote then transmits the network and device information to the new remote.
7. Both remotes should indicate a successful completion of the copying process.
  - e. The 45608's screen will display **SUCCESSFUL**.
  - f. Other GE models or other brands will indicate success in various ways, depending on the remote's capabilities. Please refer to its instructions for details.



## Resetting Your Network

You can reset your network to clear all device and Z-Wave network information from the remote. This does not reset the Z-Wave devices to their factory default. Each device still needs to be deleted in order to reset them. Please refer to the section on “Deleting a Device (Node/Light) from Your Network” for details.

### To reset your network:

1. Enter Z-Wave setup mode and scroll to **NETWORK**
2. Press **OK**; the screen will display **RESET**
3. Press **OK**; the screen will display **RESETTING**
4. When the screen displays **SUCCESSFUL** your remote has been reset.
5. Delete all individual devices to reset them to their factory defaults. This step must be completed in order to use the devices in a new network.

## Recovering Network Information

This forces a re-discovery of all the devices in your network, verifies communications between devices and rebuilds the routing tables. The remote must be the Primary controller to perform this function. All secondary controllers should be updated using the “create secondary Controller” instructions after a successful network recovery.

### To recover network information:

1. Enter Z-Wave setup mode and highlight **NETWORK**
2. Press **OK**; the screen will display **RESET**
3. Use the **ARROW** keys to scroll to **RECOVER**.
4. Press **OK**; the screen will display **RECOVERING**
5. When the screen displays **SUCCESSFUL** you have successfully recovered network information and rebuilt the routing tables

## Network Update

This function only works if you have a Static Update Controller (SUC) in your network. An SUC is permanently installed in a specific location and helps maintain up-to-date “neighbor lists” and routing tables for your control network. This command sends a request to the SUC for the current network topology and ensures that the hand-held remote includes the latest network information.

## Interoperability with Z-Wave™ Devices

A Z-Wave™ network can integrate devices of various classes, and these devices can be made by different manufacturers. Although every Z-Wave certified product is designed to work with all other Z-Wave certified products, your controller must include the appropriate device classifications in order to control non-lighting Z-wave devices. As an example, the GE 45600 basic remote is designed only for controlling Z-Wave devices using the lighting control classification. The GE 45601 remote with LCD readout can control other Z-Wave certified devices like thermostats as well as lighting.

### FCC NOTICE

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off or on, the user should:

- Relocate or reorient the TV or radio antenna
- Increase the separation between the device and the receiver.

Any changes or modifications to the equipment without JASCO’s express consent will void the user’s right to operate this equipment.

FCC ID: MG345608

Compliance with IC Rules and Regulations

IC: 6924A-45608

Jasco Products Company

Model: 45608

Object is subject to the following two conditions:

1. This device may not cause interference, and
2. This device must accept any interference, including interference that may cause undesired operation of the device.”

## WARRANTY

JASCO Products warrants this product to be free from manufacturing defects for a period of two years from the original date of consumer purchase. This warranty is limited to the repair or replacement of this product only and does not extend to consequential or incidental damage to other products that may be used with this product. This warranty is in lieu of all other warranties, expressed or implied. Some states do not allow limitations on how long an implied warranty lasts or permit the exclusion or limitation of incidental or consequential damage, so the above limitations may not apply to you. This warranty gives you specific rights, and you may also have other rights which vary from state to state. Please contact Customer Service at 800-654-8483 (option 4) between 7:30AM – 5:00PM CST or via our website ([www.jascoproducts.com](http://www.jascoproducts.com)) if the unit should prove defective within the warranty period.

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Oklahoma City, OK 73114

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## Setup Codes for Compatible Brands of Audio/Video Devices

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### For Audio - Amplifier

Adcom .....	1100	Mark Levinson .....	1483
Bel Canto Design .....	1583	McIntosh .....	0251
Bose .....	0674	NEC .....	0264
Carver .....	0892	Parasound .....	1934
Classe .....	1461	Philips .....	0892
Halcro .....	1934	Polk Audio .....	0892
Harman/Kardon .....	0892	Primare .....	1395
JVC .....	0331	Shure .....	0264
Left Coast .....	0892	Sony .....	1126
Lexicon .....	1802	Victor .....	0331
Marantz .....	0892	Yamaha .....	0354, 0133

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### For Cable Set Top Box

A-Mark .....	0008, 0144	Nova Vision .....	0008
ABC .....	0237, 0003, 0008	Novaplex .....	0008
Accuphase .....	0003	Pace .....	1877, 0877, 0237, 0008
Acorn .....	0237	Panasonic .....	0000, 0008, 0144, 0107
Action .....	0237	Paragon .....	0000, 0008, 0525
Active .....	0237	Penney .....	0000
Archer .....	0237	Philips .....	1305, 0317
BCC .....	0276	Pioneer .....	1877, 0877, 0144, 0533
British Telecom .....	0003	Pulsar .....	0000
Century .....	0008	Quasar .....	0000
Digeo .....	1187	Regal .....	0276
Director .....	0476	Runco .....	0000
Fosgate .....	0276	Samsung .....	0003, 0144
GE .....	0144	Scientific Atlanta .....	1877, 0877, 0477, 0237, 0003, 0000, 0008
General Instrument .....	0476, 0810, 0276, 0003	Sony .....	1006
Gibraltar .....	0003	Sprucer .....	0144
GoldStar .....	0144	Starcom .....	0003
Hitachi .....	0003, 0008	Supercable .....	0276
Insight .....	0476, 0810	Torx .....	0003
Jerrold .....	0476, 0810, 0276, 0003	Toshiba .....	0000
Memorex .....	0000	United Cable .....	0276, 0003
Mitsubishi .....	0003	US Electronics .....	0276, 0003, 0008
Motorola .....	1376, 0476, 0810, 0276, 1187	Videoway .....	0000
		Zenith .....	0000, 0525

## For Audio - CD

DKK	0000	RadioShack	0000, 0180
Fisher	0000	RCA	1062
Harman/Kardon	0100	Realistic	0000, 0180
Inkel	0180	Sansui	0000
Integra	0101	Sanyo	0000
JVC	0072	Sharp	0180
Kenwood	0000	Sherwood	0180
Marantz	0180	Sony	0490, 0000, 0100, 1364, 0185
Memorex	0000	Symphonic	0180
Miro	0000	Teac	0490, 0180
Modulaire	0000, 0180	Victor	0072
Onkyo	1327, 0101	Yamaha	0490, 0036, 1292
Optimus	0000	Yorx	0000
Panasonic	0388, 0752		
Pioneer	1062, 1087		

## For Home Automation

Frigidaire	1333	Security System	0167
GE	0240	Universal	0167
Marmitek	0167	Universal X10	0167
One For All	0167	Whirlpool	1332
RadioShack	0240	X10	0167
Russound	1232, 1233		

## For Audio - Cassette Deck

Aiwa	0029	Philips	0029
Carver	0029	Pioneer	0027
Denon	0076	Polk Audio	0029
Grundig	0029	RCA	0027
Harman/Kardon	0182, 0029	Sansui	0029
JVC	0244	Sony	0243, 0170, 0291
Magnavox	0029	Wards	0027
Marantz	0029	Yamaha	0097
Optimus	0027		

## For Video - Laser Disk Player

Carver	0064, 0194	Pioneer	0059
Denon	0059, 0172	Polk Audio	0194
Harman/Kardon	0194	Quasar	0204
Magnavox	0064, 0194, 0217	Sony	0193, 0201
Marantz	0064, 0194	Technics	0204
Mitsubishi	0059	Theta Digital	0194
NAD	0059	Toshiba	0059
Optimus	0059	Wards	0059
Panasonic	0204	Yamaha	0217
Philips	0064, 0194		

## For Audio - Accessory

Aiwa	0159	NaviPod	1644
Altec Lansing	0607, 1056	Netgear	1785
Apple	1115, 1644	Roku	1828
D-Link	1522	Slim Devices	1844
DLO	1155	Sonance	2042
Imerge	1491	Sony	0159
iPort	2042	SSI	1522
Marantz	1491	Yamaha	1809, 1810

## For Video - Accessory

ABS	1272	Mind	1272
Alienware	1272	Niveus Media	1272
CyberPower	1272	Northgate	1272
D-Link	1554	Ricavision	1272
Gateway	1272	Sony	1272, 1324, 1364
Hewlett Packard	1272, 1267	Stack 9	1272
Howard Computers	1272	Systemax	1272
HP	1272, 1267	Tagar Systems	1272
Hush	1272	Toshiba	1272
iBUYPOWER	1272	Touch	1272
Linksys	1272, 1365	Viewsonic	1272
Media Center PC	1272	Voodoo	1272
Microsoft	1272		

## For Audio - Receiver

ADC	0531	JBL	0110, 1306
Aiwa	1405, 0121, 1388, 1641	JVC	1058, 1374, 1495
Alco	1390	Kawasaki	1390
AMC	1077	Kenwood	1313, 1570
Anam	1609, 1074	KLH	1390, 1428
Arcam	1189	Koss	1366
Audiotronic	1189	LG	1293
Audiovox	1390	Magnavox	1189, 1269, 0531, 1266, 1514
B & K	0701, 0840	Marantz	1189, 1269, 0891, 1289
Bose	1229, 1253, 1933	McIntosh	1289
Capetronic	0531	Micromega	1189
Carver	1189, 0121, 1289	Myryad	1189
Curtis Mathes	0014	Nakamichi	1313
Denon	1360, 0121, 1142, 1306	Onkyo	0842, 1298, 1320, 1531
Emerson	0531	Optimus	1023, 0014, 0121, 0531, 0670, 1074
Fisher	1801	Oritron	1366
Harman/Kardon	0110, 0891, 1289, 1304, 1306	Panasonic	1308, 1518, 1288, 1316, 1548, 1633, 1763, 1764
Hitachi	1801	Philips	1189, 1269, 0891, 1266
Insignia	1077		
Integra	0842, 1298, 1320		

**For Audio - Receiver, cont.**

Pioneer	1023, 0014, 0150, 0531, 0630, 1384	Sony	1058, 1441, 1258, 1759, 1622, 1558, 1658, 1758, 1858
Polk Audio	1289	Soundesign	0670
Proscan	1254	Stereophonics	1023
RadioShack	1609	Sunfire	1313
RCA	1023, 1609, 1254, 0531, 1074, 1390, 1511	Teac	1074, 1390, 1528
Realistic	1609, 0121	Technics	1308, 1518, 1633
Rio	1869	Thorens	1189
Samsung	1295, 1304, 1500	Toshiba	0842
Sansui	1189	Venturer	1390
Sanyo	1469, 1801	Wards	0014
Sherwood	1077, 1653	Yamaha	1023, 0176, 1176, 1276, 1331, 1375
Sonic Blue	1869	Zenith	1293

**For Satellite Set Top Box**

Bell ExpressVu	0775	Mitsubishi	0749
Chaparral	0216	Motorola	0856
DirecTV	1377, 0392, 0566, 0639, 1639, 1142, 0247, 0749, 1749, 0724, 0819, 1856, 1076, 1392, 1442, 1609, 1640	Optimus	0724
Dish Network System	1505, 1005, 0775, 1775	Panasonic	0247, 0701
Dishpro	1505, 1005, 0775, 1775	Paysat	0724
Echostar	1505, 1005, 0775, 1775	Philips	1142, 0749, 1749, 0775, 0724, 0819, 1076, 0722, 1442
Expressvu	0775, 1775	Pioneer	1142, 1442
Funai	1377	Proscan	0392, 0566
GE	0392, 0566	RadioShack	0566, 0775
GOI	0775, 1775	RCA	0392, 0566, 1142, 0775, 0855, 0143, 1392, 1442
Hitachi	0749, 0819	Samsung	1377, 1142, 1276, 1442, 1609
Houston	0775	SKY	0856
HTS	0775, 1775	Sony	0639, 1639, 1640
Hughes Network Systems	1142, 0749, 1749, 1442	Thomson	0392, 0566
JVC	0775, 1775	Tivo	1142, 1442
Magnavox	0724, 0722	Toshiba	0749, 1749, 1285
Memorex	0724	UltimateTV	1392, 1640
		Uniden	0724, 0722
		Zenith	0856, 1856

**For Television**

A-Mark	0047, 0054	Agna	0150
Accuscan	0047	Aiko	0092
Action	0030	Akai	0060, 0812, 0702, 0030, 0145
Admiral	0047, 0054, 0017, 0051, 0093, 0463, 0180	Alleron	0030
Advent	0761	Ambassador	0150
Adventuri	0000	America Action	0180
		American High	0000, 0060

**For Television, cont.**

Amstrad	0171	Denon	0145
Amtron	0000, 0180	Dumont	0017, 0180, 0178
Anam	0180	Durabrand	0463, 0180, 0178, 0171
AOC	0180, 0030	Dwin	0093
Apex Digital	0156, 0765	Dynex	1463
Audinac	0180	Eaton	0060
Audiovox	0451, 0180, 0092	Electroband	0000
Aventura	0171	Electrograph	1755
Baysonic	0180	Electrohome	0154, 0000, 0463, 0150, 0178, 0030
Beaumarck	0017, 0178, 0030	Emerald	0178
Belcor	0030	Emerson	0047, 0154, 0451, 0236, 0463, 0180, 0150, 0178, 0171
Bell & Howell	0054, 0154, 0093	Envision	0030
Bradford	0180	ESA	0812, 0171
Brockwood	0178, 0030	Fisher	0054, 0154, 0000
Broksonic	0236, 0463, 0180	Fortress	0093
Candle	0030	Fujitsu	0683, 0809
Capehart	0017, 0178, 0030, 0092	Funai	0000, 0180, 0171
Carnivale	0030	Futuretech	0180
Carver	0054	Gateway	1756, 1755
Celebrity	0000	GE	1447, 0047, 0000, 0051, 0451, 0060, 0178, 0030, 1347
Celera	0765	Gemini	0047
Changhong	0156, 0765	Gibraltar	0017, 0000, 0030
Cineral	0451, 0092	GoldStar	0047, 0054, 0178, 0030
Citek	0047	Gradiente	0053
Citizen	0054, 0000, 0451, 0463, 0180, 0060, 0030, 0171, 0092	Grundig	0683
Clarion	0180	Grundy	0180
Classic	0030, 0092	Grunpy	0180
Colortyme	0047, 0054, 0017, 0060, 0178, 0030	Hallmark	0236, 0180, 0178, 0060, 0178, 0030
Commercial Solutions	1447, 0047	Harley Davidson	0000, 0180, 0060, 0178, 0030
Conic	0178	Harman/Kardon	0054
Contec	0180	Harvard	0180
Craig	0180, 0171	Havermy	0093
Crosley	0054, 0000, 0180, 0030, 0171	Heathkit	0017
Crown	0093, 0180	Hello Kitty	0451
Curtis Mathes	0047, 0054, 0154, 0000, 0051, 0451, 0093, 0180, 0060, 0702, 0178, 0030, 0145, 0166, 1347	Hitachi	0047, 0054, 0017, 0000, 0051, 1145, 0145
CXC	0180	Ima	0236, 0180, 0178
Daewoo	0451, 0178, 0092, 1756, 1755	Infinity	0054
Dayton	0092	Insignia	0171
Daytron	0178, 0030, 0092	Inteq	0017, 0145
Dell	1178	JBL	0054
		JCB	0000

**For Television, cont.**

Jensen ..... 0761 Nishi..... 0030  
 JIL..... 0030 NTC ..... 0092  
 Jutan..... 0030 Nyon ..... 0000  
 JVC..... 0054, 0053, 0030, 0650,  
 ..... 0731, 1253 Onwa..... 0180  
 Kamp..... 0017, 0180 Optimus... 0154, 0250, 0093, 0180,  
 ..... 0150, 0178, 0030, 0166, 0650  
 Kawasho ..... 0030 Optonica ..... 0093  
 KEC..... 0180, 0060 Orion..... 0017, 0236, 0463, 0180,  
 Kenwood ..... 0180, 0030 ..... 0178, 1463  
 KLH ..... 0156, 0180, 0765 Pace..... 0092  
 Kloss ..... 0030 Panasonic ..... 0054, 0000, 0156,  
 Konka ..... 0180 ..... 0250, 0051, 0236, 0030, 0650  
 KTV..... 0463, 0180, 0030 Pasonic..... 0060, 0030  
 Lark ..... 0154 PCE..... 0156, 0060  
 LG ..... 0054, 1265, 0060, 0178,  
 ..... 0030, 0856, 1178 Penney ... 0047, 0000, 0156, 0250,  
 ..... 0051, 0060, 0178, 0030, 1347  
 Lloyd's ..... 0236, 0180, 0030 Philco..... 0054, 0463, 0030, 0145  
 Logik ..... 0236, 0180 Philips .... 1454, 0054, 0030, 0171,  
 ..... 0690, 1254  
 LXI. . 0047, 0054, 0017, 0154, 0000,  
 0156, 0051, 0093, 0060, 0053, 0178,  
 ..... 0030, 0171, 0166 Pilot ..... 0051, 0060, 0178, 0030  
 Magnasonic .... 0054, 0000, 0156,  
 ..... 0093, 0030, 0092 Pioneer ..... 0166, 0679  
 Magnavox ..... 0047, 1454, 0054,  
 0154, 0000, 0250, 0051, 0180, 0060,  
 ..... 0030, 0171, 0092, 1254, 1755 Polaroid ..... 0765  
 Majestic ..... 0017 Portland ..... 0451, 0092  
 Marantz ..... 1454, 0054, 0030 Precision ..... 0236, 0180  
 Matsushita ..... 0250, 0051, 0650 Prima..... 0761  
 Maxent ..... 1756, 1755 Prism..... 0250, 0051  
 Megatron..... 0047, 0178, 0145 Proscan ..... 1447, 0047, 1347  
 Memorex ..... 0154, 0463, 0180,  
 ..... 0150, 0178, 0030 Proton..... 0178  
 MGA..... 0150, 0178, 0030 Pulsar ..... 0017, 0092  
 MGN Technology ..... 0178 Pulser ..... 0178, 0092  
 Micro Genius..... 0150 Quartz..... 0150, 0178  
 Midland ..... 0047, 0017, 0051 Quasar ..... 0250, 0051, 0650  
 Mitsubishi .0154, 0093, 1250, 0150,  
 ..... 0178, 0030, 0836 Rabbit ..... 0047  
 Motorola... 0054, 0051, 0093, 0150 RadioShack..... 0047, 0154, 0180,  
 ..... 0150, 0178, 0030 ..... 0150, 0178, 0030  
 MTC ..... 0180, 0060, 0030, 0092 RCA ..... 1447, 0047, 0054, 0000,  
 ..... 0051, 0093, 0178, 0090, 0679, 1047,  
 ..... 1347, 1547  
 Multitech ..... 0180 Realistic ... 0047, 0154, 0180, 0150,  
 ..... 0178, 0030 Runco ..... 0017, 0060, 0030  
 NAD ..... 0156, 0178, 0166, 1156 Sampo .... 0047, 0030, 1756, 1755  
 NEC ..... 0047, 0178, 0030, 1704 Samsung . 0047, 0054, 0017, 0154,  
 ..... 0060, 0812, 0702, 0178, 0030, 1060  
 NetTV ..... 1755 Sanky ..... 0060, 0030  
 Nikko ..... 0178, 0030, 0092 Sansui..... 0463, 0060, 0030  
 Nikkodo ..... 0178, 0030, 0092 Sanyo .... 0047, 0054, 0154, 0000,

**For Television, cont.**

Sanyo ..... 0463, 0171, 1755 Telefunken..... 0702  
 Saville ..... 0060 Thomas ..... 0047, 0178  
 Scotch..... 0178 Thomson ..... 1447, 0047  
 Scott ..... 0236, 0180, 0178, 0030 TMK ..... 0236, 0180, 0178  
 Sears..... 0047, 0054, 0017, 0154,  
 0000, 0156, 0051, 0093, 0060, 0053,  
 ..... 0178, 0030, 0171, 0166 TNCi..... 0017  
 Sharp..... 0054, 0093, 0180 Tocom..... 0156  
 Sheng Chia ..... 0093 Toshiba... 0154, 1256, 0156, 0150,  
 ..... 0845, 1156, 1656, 1704 1265, 0060, 1145, 0145, 0166, 0650,  
 Totevision ..... 0051  
 Shivaki ..... 0178 Toyomenka ..... 0178  
 Siemens ..... 0145 Truetone..... 0250, 0051  
 Signature..... 0047, 0093, 0030 TVS..... 0463  
 Simpson..... 0178, 0030 Ultra..... 0092  
 Singer ..... 0060, 0092 Universal ..... 0047  
 Solar Drape..... 0000 V ..... 1756, 0885, 1755  
 Sony..... 0017, 0154, 1100, 0000,  
 ..... 0150, 0053 Vector Research ..... 0030  
 Soundesign..... 0180, 0178 Victor..... 0053  
 Spectravision ..... 0156, 0178 Vidikron ..... 0054  
 Squareview..... 0171 Vidtech ..... 0178  
 SR2000 ..... 0154, 0171 Viewsonic ..... 0885, 1755  
 SSS..... 0180 Viking ..... 0060  
 Starlite..... 0236, 0180 Vizio ..... 1756, 0885, 1755  
 Superscan..... 0093 Wards.... 0047, 0054, 0017, 0154,  
 Supreme ..... 0000 0000, 0051, 0093, 0236, 0178, 0030,  
 SV2000 ..... 0054 ..... 0166, 1156  
 Sylvania ... 0047, 0054, 0154, 0000,  
 ..... 0051, 0178, 0030, 0171, 0092 Waycon ..... 0156  
 Symphonic 0000, 0180, 0178, 0171 Welton ..... 0178  
 Tandy ..... 0093 Westinghouse ... 0000, 0451, 0885  
 Tatung ..... 0000, 0051, 1756 White Westinghouse... 0451, 0236,  
 ..... 0463  
 Teac..... 0154 World..... 0451, 0236, 0463, 0180  
 Technics..... 0054, 0250, 0051 XR-1000 ..... 0154, 0180, 0171  
 Technovox..... 0030 Yamaha ..... 0030  
 Techwood ..... 0250, 0051, 0060 Yox ..... 0030  
 Teknika ... 0054, 0463, 0180, 0150,  
 ..... 0060, 0178, 0092 Zenith .... 0047, 0017, 0000, 0093,  
 ..... 0463, 1265, 0812, 0178, 0030, 1145,  
 Telecolor..... 0017 ..... 0145, 0171, 0092

**For Video - VCR**

A-Mark ..... 0000 Amstrad ..... 0000  
 ABS..... 1972 Astra ..... 0035  
 Admiral..... 0060 Avis ..... 0000  
 Adventura ..... 0000 Bell & Howell..... 0035, 0000  
 Aiwa..... 0000 Broksonic..... 1479  
 Alienware..... 1972 Canon..... 0035  
 American High..... 0035, 0081 Carver..... 0035, 0081



**For Video - VCR, cont.**

Citizen	0035, 0000	Kodak	0035
Colortyme	0060, 0035, 0045	KTV	0000
Colt	0000	Linksys	1972
Criterion	0000	Lloyd's	0000
Crosley	0035, 0081, 0000	Loewe	0081
Curtis Mathes	0060, 0035, 0000	Logik	0000
CyberPower	1972	LXI	0000, 0042, 0067
Daewoo	0045	Magnasonic	0000
Dell	1972	Magnavox	0035, 0081, 0000, 0618, 1781
Denon	0081, 0042	Marantz	0035, 0081
DirecTV	0739	Matsushita	0035, 0081
Dual	0000	Media Center PC	1972
Dynatech	0000	MEI	0035
Electrohome	0060, 0000	Memorex	0035, 0000, 1237
Emerex	0032	MGA	0060
Emerson	0000, 1479	Microsoft	1972
Fisher	0000	Mind	1972
Fuji	0035, 0033	Minolta	0042
Fujitsu	0000	Mitsubishi	0060, 0000, 0042, 0067, 0807
Funai	0000	Motorola	0035
Garrard	0000	MTC	0000
Gateway	1972	MTX	0000
GE	0060, 0035, 0000, 0807, 1060	Multitech	0000
Gemini	0060	NEC	0067
Genexxa	0000	Niveus Media	1972
Go Video	0614	Northgate	1972
GoldStar	0035, 0000, 1237	Olympus	0035
Goodmans	0081, 0000	Optimus	1062, 0035, 0000
Gradiente	0000	Orion	0000, 1479
Granada	0081, 0042	Panama	0035
Grundig	0081	Panasonic	1062, 0035, 0000, 0225, 0614, 0616
Harley Davidson	0000	Penney	0035, 0081, 0000, 0042, 0067, 1237
Harman/Kardon	0081	Pentax	0042
Hewlett Packard	1972	Philco	0035, 0081, 0000
HI-Q	0035, 0000	Philips	0035, 0081, 0045, 0000, 0616, 0618, 0739
Hitachi	0035, 0045, 0000, 0042	Pioneer	0081, 0042, 0067
Howard Computers	1972	Polk Audio	0081
HP	1972	Proscan	0060, 1060
Hughes Network Systems	0042, 0739	Protec	0000
Humax	0739	Quartz	0035
Hush	1972	Quasar	0035
Hytek	0000	RadioShack	0035, 0000
iBUYPOWER	1972		
Jensen	0067		
JVC	0067		
Kenwood	0067		

**For Video - VCR, cont.**

RCA	0060, 0035, 0045, 0000, 0042, 0807, 0880, 1060	Tagar Systems	1972
Realistic	0035, 0000	Tandy	0000
ReplayTV	0614, 0616	Tatung	0081, 0000, 0067
Ricavision	1972	Teac	0000, 0067
Samsung	0060, 0045, 0000, 0739, 1014	Technics	0035, 0000
Sansui	0000, 0067, 1479	Teknika	0035, 0000
Sanyo	0000	Thomas	0000
Scott	0045	Thomson	0060
Sears	0060, 0035, 0033, 0045, 0000, 0042, 0067, 1237	Tivo	0618, 0636, 0739, 1996
Sharp	0032, 0000, 0807	TMK	0000
Shintom	0000	Toshiba	0045, 0000, 0845, 1972, 1996
Signature	0060, 0035, 0000	Touch	1972
Sonic Blue	0614, 0616	Ultra	0045
Sony	0035, 0032, 0033, 0000, 0067, 0636, 1232, 1972	Vector	0045
Soundmaster	0000	Victor	0067
Stack 9	1972	Video Concepts	0045
STS	0042	Videosonic	0000
SV2000	0000	Viewsonic	1972
SVA	0000	Villain	0000
Sylvania	0035, 0081, 0000, 1781	Voodoo	1972
Symphonic	0000	Wards	0060, 0035, 0081, 0033, 0045, 0000, 0042
Systemax	1972	White Westinghouse	0000
		XR-1000	0035, 0000
		Zenith	0033, 000

**For Video - DVD**

3D LAB	0503, 0539	Dual	0675
Accurian	0675	DVD2000	0521
Akai	0695, 0899	Emerson	0591, 0675
Alba	0672	Enterprise	0591
Alco	0790	Entivo	0503, 0539
Apex Digital	0533, 0672	Funai	0675
Audiovox	0790	GE	0522
Blue Parade	0571	Go Video	0573, 1075
Blue Sky	0695	Goodmans	0790
Broksonic	0695	Gradiente	0490
California Audio Labs	0490	Grundig	0539
Centrex	0672	Hitachi	0573, 0664
Citizen	0695	Hiteker	0672
Clairtone	0571	Integra	0571, 0627
Creative	0503, 0539	JMB	0695
CyberHome	0816	JVC	0558, 0623, 0867, 1164
Denon	0490, 0634	Kawasaki	0790
Digitrex	0672	Kenwood	0490, 0534
Disney	0675	KLH	0790

## For Video - DVD, cont.

Kloss .....	0533	Realistic .....	0571
Lasonic .....	0627	Reoc.....	0752
Lecson .....	1533	Rotel .....	0623
LG .....	0591	Sampo .....	0752
Magnasonic .....	0675	Samsung .....	.0490, 0573, 0820, ..... 0899, 1075
Magnavox. 0503, 0539, 0646, 0675		Sansui.....	0695
Marantz .....	0503, 0539, 0675	Sanyo .....	0675, 0695
McIntosh .....	1533	Schwaiger.....	0752
Memorex .....	0695	Sharp.....	0630, 0675, 0752
Microsoft .....	0522	Shinsonic.....	0533
Minato.....	0752	Sonic Blue .....	0573
Mitsubishi .....	1521, 0521	Sony. 0533, 1533, 0864, 1033, 1431	
Onkyo .....	0503, 0627	Sylvania .....	0675
Optimus .....	0571	Symphonic .....	0675
Palsonic .....	0672	Teac.....	0571, 0790, 0809
Panasonic .....	.0503, 0490, 0571, ..... 0703, 1362, 1462, 1762	Technics.....	0490, 0703
Philco.....	0675	Theta Digital .....	0571
Philips .....	.0503, 0539, 0646, 0675, ..... 0854, 1260, 1354	Thomson .....	0522
Pioneer .....	0525, 0571, 0631	Toshiba... 0503, 0573, 0539, 0695, ..... 1045, 1154	
Polk Audio .....	0539	Universum.....	0591
Presidian .....	0675	Urban Concepts .....	0503, 0539
Proceed .....	0672	Venturer.....	0790
Proscan .....	0522	Xbox.....	0522
RadioShack.....	0571	Yamaha .....	.0490, 0539, 0545
RCA .0522, 0571, 0790, 0822, 1132		Zenith .....	0503, 0591