

PROJECT:



Custom Installation Handbook

- **Extended IR Codes:**
Infrared Codes for
Improved Reliability and
Advanced Control of
Yamaha A/V Components
- **Volume Presets and Memory Presets:**
Preset Memories for
Customized Operation of
Yamaha A/V Components

Table Of Contents

Infrared Code Types and Definitions.....	Page 5
Advantages of Discreet and Extended IR Codes.....	Page 6
Accessing Extended IR Codes.....	Page 7
Extended IR Codes Example.....	Page 8
Using Multiple Remote Controls.....	Page 9, 10
Yamaha Volume Presets: Definitions and Advantages.....	Page 11
Yamaha Volume Presets: How to Set and Recall.....	Page 12
Yamaha Home Presets: Definitions and Advantages.....	Page 13
Yamaha Home Presets: How to Set and Recall.....	Page 14
Troubleshooting Guide for Memory Presets.....	Page 15

“Yamaha has absolutely the most complete set of automation codes of any receiver manufacturer, bar none.”

www.remotecentral.com

In this section you will learn about the different types of infrared codes (IR) used in audio/video remote controls, and their definitions.

Controlling a typical audio/video entertainment system is largely a matter of knowing the current status of the equipment, especially if the equipment is hidden from view such as a system installed in a cabinet or entertainment center. For example, is the equipment turned on, or is the correct input selected? Unless you're standing in front of the components or looking at an on-screen display, this is hard to know. Using the right IR codes solves this problem. The list below identifies the four different types of IR codes used in home entertainment components:

- ***Toggle IR Codes:*** A single IR command that toggles or scrolls through two or more functions in a specific order. Example 1: MUTE-press once and Mute is turned on; press again and Mute is turned off. The same button is used for Mute on and off. Example 2: VIDEO INPUT: press once for Composite Video, twice for S-Video and three times for Component Video input.
- ***Discreet IR Codes:*** A code or button that executes one specific command.
Example 1: POWER-turns power on to the component, STANDBY-turns power off to the component
Example: VIDEO 1-Composite Video, VIDEO 2-S-Video, VIDEO 3-Component Video - Separate IR codes are used for each function.
- ***Standard IR Codes:*** Codes found on a stock remote control that can be toggle or discreet.
- ***Extended IR Codes:*** IR Codes that are either hidden in the sub-menu of stock remote controls or part of a manufacturer's IR code database. They are almost always discreet and are the most effective type of code for a custom installation.

In this section you will learn about the advantages of Discreet and Extended IR Codes and their benefits in custom installation systems.

Discreet IR Codes

Using the correct type of IR codes makes the control of a complex A/V system appear to be seamless. Using Discreet IR Codes ensures easy operation and reliable control of all components in a system. These codes always yield a predictable result when pressing a button on a remote control. A single press of a discreet remote control button performs the same function each time it is pressed. For example, with discreet codes the POWER ON button always turns on the component, and the STANDBY button always turns off the component. With a toggle Power button both POWER ON and STANDBY are controlled by the same button. Unless you know the current status of the components, pressing the toggle Power button could turn-off the components if they are already on, or vice-versa. Or, with a toggle Video Input command, you might have to toggle through several inputs to reach the desired input. With discreet Video Input codes you can select Video 1 Video 2 or Video 3 independently, always producing the same result.

Most manufacturers provide some discreet codes on their remote controls. For example, pressing the DVD input always selects the same input. Or pressing the play button always executes PLAY. Some also offer discreet POWER ON and STANDBY codes, probably the most important.

Extended IR Codes

Extended IR codes offer the greatest advantages in controlling A/V systems because they control virtually every function of a component, thus they are called Extended. Some examples include Power, Mute (mute on, mute off), Speaker A and B on/off, input, input mode (digital or analog), independent power control for multi-zone operation, direct access to DSP modes, tuner controls, and many more. A complete list of Extended IR codes for Yamaha components is available on the Yamaha website at www.yamaha.com/yec/customer/ir_codes.htm. Extended IR codes are usually discreet so they always produce the same result.

In some Yamaha remote controls the Extended IR codes are stored in hidden sub-menus. These codes can be accessed easily according to the instructions on the following page.

In this section you will learn how to access Extended IR Codes from Yamaha remote controls, and how to use multiple remote controls to exchange Extended IR Codes between remotes.

Accessing Extended IR Codes from Yamaha remote controls

Several Yamaha A/V Receiver remote control models contain a library of Extended IR codes that can be used to enhance system operation and improve control reliability. Pictured below is the most common type of Yamaha remote control with Extended IR codes. Accessing the Extended IR codes is simple. Use the instructions below to output specific Extended IR codes to the A/V Receiver or other components. A list of Extended IR codes for each model is available on the Yamaha website. A sample list of Extended IR codes is shown on the next page.

1. Select "OPTN" in LCD window by pressing SELECT down key (v)
2. Press and hold LEARN tab for 3 seconds until first Extended IR code shows in LCD window (Example: 7EAO)
3. Scroll up/down to select desired code;
4. Press ENTER to output code

Example of Extended IR Codes

Function		Extended IR Codes			
		Custom Code		Data Code	
Zone 2 Power	On	7	E	B	A
	Off	7	E	B	B
Main Power	On	7	E	7	E
	Off	7	E	7	F
Zone 2 Mute	On	7	E	A	0
	Off	7	E	A	1
Audio Mute	On	7	E	A	2
	Off	7	E	A	3
Zone 3 Mute	On	7	E	2	6
	Off	7	E	6	6
Ext. Input	On	7	E	A	4
	Off	7	E	A	5
Input Mode	Auto	7	E	A	6
	DD RF	7	E	A	7
	DTS	7	E	A	8
	Digital	7	E	A	9
	Analog	7	E	A	A
SP Relay A	On	7	E	A	B
	Off	7	E	A	C
SP Relay B	On	7	E	A	D
	Off	7	E	A	E
On-Screen	Off	7	E	B	0
	Short	7	E	B	1
	Full	7	E	B	2
Sleep	Off	7	E	B	3
	120	7	E	B	4
	90	7	E	B	5
	60	7	E	B	6
	30	7	E	B	7
EX/ES	Auto	7	E	7	C
	On (Discrete On)	7	E	7	D
	Off	7	E	B	9
DC1 Trigger Control	Zone 1	7	E	3	2
	Zone 2	7	E	3	3
	Zone 3	7	E	3	1
	All On	7	E	3	4
DC2 Trigger Control	Zone 1	7	E	9	6
	Zone 2	7	E	9	7
	Zone 3	7	E	9	F
	All On	7	E	9	8
DC1 Trigger Zone 1	On	7	E	7	3
	Off	7	E	7	4
DC1 Trigger Zone 2	On	7	E	7	1
	Off	7	E	7	2
DC1 Trigger Zone 3	On	7	E	8	3
	Off	7	E	8	4

For a complete list of Extended IR codes for all models, visit the Yamaha website at: www.yamaha.com/yec/customer/ir_codes.htm.

Accessing and outputting Extended IR Codes is easy. Capturing the codes to create a macro command sequence is the next step. The easiest method is with two remote controls, one to output the codes and the second to store them for future use. This section illustrates how to use two remotes to output and store Extended IR Codes.

Using Multiple Remote Controls to Output and Store Extended IR Codes

In this section you will learn how to output the desired Extended IR Codes and capture them in a second remote control.

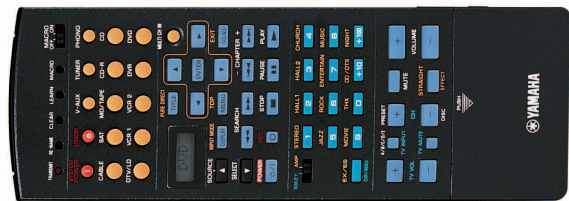
In order to store the Extended IR Codes for future use, they must be output to another remote control with learning capability. The second remote does not need to be the same model, only with learning capability. Use the instructions below and follow the procedures.

Step One

1. Select the desired Extended IR Code(s) from list on opposite page
2. Locate the code on the Source Remote control (see page 7 for instructions)
3. Prepare Learning Remote control by pressing LEARN key once
4. Press target key on Learning Remote (using 10-key pad is easiest)
5. Press ENTER on Source Remote to output Extended IR code
6. Repeat steps 1-5 until all desired Extended IR codes are transferred from Source to Learning Remote. It is helpful to keep track of the target keys used to learn the Extended IR codes
7. Press LEARN key once on Learning Remote to return to regular mode



Source Remote



Learning Remote

Note: Remotes return to Regular mode after 30 seconds of non-use

Have you ever turned on your A/V system only to find that the last person to use the system left the volume at a high level? Of course, most people have done this. Not only is this annoying, it can also damage equipment and loudspeakers. The solution is Yamaha Volume Presets. With Yamaha Volume Presets you can select a predetermined volume level for your system when it's turned on with a Volume Preset command. In fact, depending on the A/V receiver model, you can store from 3 to 6 Volume Presets for your system. Volume Presets can also be included in macro sequences so that each source powers up at a specific volume level. For example, FM radio could be set to power-up at a lower, background level, while CD or DVD might turn on at a higher volume. Your system no longer has to automatically return to the volume level at which it was last used. When you use Volume Presets there are no surprises-you always have a predictable volume level at power up.

Volume presets also provide protection for your system because sudden, loud bursts of sound can damage your ears, your A/V equipment and loudspeakers.

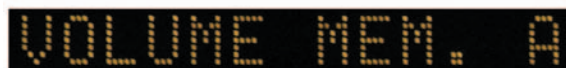
Volume Presets are set and recalled using Extended IR codes. In this section you will learn how to set Volume Presets and recall them for future use.

Yamaha Volume Presets: How to Set and Recall Volume Presets

Yamaha Volume Presets are accessed with Extended IR Codes (these codes are found in certain advanced Yamaha A/V Receiver remote controls). Once set, the Volume Preset can be recalled simply and efficiently. Volume Presets use an easy three-step process.

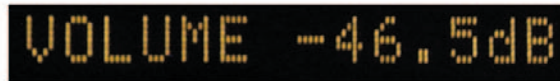
STEP 1: SET VOLUME LEVEL: With the power on, set the volume to a specific level using either the volume control on the front panel or the remote control of the Yamaha A/V receiver.

STEP 2: SET VOLUME PRESET: When the desired volume is set issue an Extended IR Code for Volume Preset Memory A to the receiver. This stores one Volume Preset in the receiver's memory. Yamaha receivers have from 3 to 6 Volume Memories, labeled A-C or A-F, depending on model. (See list of Extended IR Codes for specific receiver models on the Yamaha website). The front panel display will appear as shown below:



VOLUME MEM. A

STEP 3: RECALL VOLUME PRESET: To recall the Volume Preset (A-C or A-F), use the appropriate Extended IR Code for your receiver. When the E-IR code is selected, issue the code to the receiver to recall the pre-determined volume level. The front panel display will show the predetermined volume level.



STEP 4 (Optional): Integrate step 3 into a macro sequence so that individual sources can be selected at a specific volume level. Example: FM is selected at -50dB, or CD is selected at a volume level of -35dB.

How to select and output Volume Preset (Memorize or Recall)

1. Select "OPTN" in LCD window by pressing SELECT down key (v)

2. Press and hold LEARN tab for 3 seconds until first Extended IR code shows in LCD window (Example: 7EAO)

4. Press ENTER key to output code

3. Scroll up/down to select desired Volume Preset code



Home Presets are used to memorize and recall many important system settings. Just like Volume Presets they provide predictability for system operation and can save a lot of time making system adjustments. Home Presets can customize system settings for various types of listening situations such as DVD Movie, FM radio, CD Music, Multi-channel Music and many others. For example, when watching a DVD Movie you may want to select a specific DSP mode, activate Audio Delay, adjust LFE level, dim the front panel display, turn-off Zone 2, reduce dynamic range and use Cinema EQ. Rather than adjusting your system settings each time you watch a movie, simply use one Home Preset Recall command to change the most important system settings. Home Presets provide predictability and ease of operation. Many Yamaha A/V receivers include from 3 to 6 Home Preset Memories, depending on model. They are labeled A-C or A-F. Home Presets are first memorized and then recalled just like Volume Presets.

Following is a list of the most common Home Preset functions. Some advanced A/V receiver models may include more functions. Consult the Yamaha website for your specific model and Home Preset functions.

Speaker Set (Lg/Sm)	Display Set
Headphone Tone Control	Zone 2 Settings
Center Ch EQ	6-Channel Input Settings
Rear Center Ch EQ	DSP Program/Parameters
Cinema EQ	Speaker A/B Settings
Input Rename	A/V Input
I/O Assignment	Zone 2 Input
Input Mode	On-Screen display
LFE Level	Display Dimmer
Dynamic Range	Effects levels-all channels
Speaker Delay	Dolby Digital Matrix 6.1
Audio Delay	

As you can see, Home Presets offer substantial control over system settings providing predictable results for various listening conditions and preferences.

Home Presets can be easily memorized and recalled using Extended I/R commands, just like Volume Presets.

STEP 1: IDENTIFY SETTINGS: First, it is helpful to identify the system settings that you want to adjust for each of the 3 or 6 Home Preset memories. For example, DVD Movie, FM Radio, CD Music, Multi-Channel Music, etc. Using the worksheet below, mark the settings appropriate for each system configuration.

STEP 2: ADJUST SETTINGS: Adjust the system settings for the first configuration (Ex. DVD Movie) using the remote control.

STEP 3: OUTPUT MEMORY CODE: Find the Extended IR code for Home Preset A from the list on the Yamaha website. Select and output the Extended IR code to the receiver. The front panel display should appear as below, indicating that the receiver has memorized the system settings you have selected. Continue setting Home Presets B-C or B-F depending on the number of system configurations desired.



STEP 4: OUTPUT RECALL CODE: To recall a Home Preset memory, select the appropriate Home Recall Extended IR code from the list on the Yamaha website. Output the code to the A/V receiver to recall the system settings you have selected. When recalled, the front panel display should appear as indicated below.



STEP 5: (Optional) BUILD MACRO SEQUENCE: To maximize the use of Home Presets integrate the Home Preset Recall command into a Macro Command sequence. By doing this you are adjusting as many as 23 system settings with one infrared command in the Macro Command sequence. This requires the use of two remote controls as discussed on page 10. Three Macro examples are shown below that include Volume Preset and Home Preset commands.

Macro 1: DVD Movie

- Power ON
- DVD Input
- Volume Recall A (-35dB)
- Home Recall A (DSP Mode, Cinema EQ, LFE Level, Audio Delay, Effects Levels, Dolby Digital Matrix 6.1)

Macro 2: CD Music

- Power ON
- CD Input
- Volume Recall (-55dB)
- Home Recall B (Stereo, Speaker A & B, Dynamic Range, Zone 2 settings)

Macro 3: Multi-Ch Music

- Power ON
- DVD Input
- 6-Ch Input
- Volume Recall C (-45dB)
- Home Recall C (6-channel input settings, Effects Levels, LFE Level)

Problem: When executing a command for Home or Volume Presets the A/V receiver does not respond.

Solution: Make sure the remote control is pointed towards the receiver when issuing the commands.

Problem: The symbol OPTN does not appear in the LCD window.

Solution: Make sure you press the SELECT down key (below the LCD window) before pressing and holding down the LEARN button.

Problem: The symbol SYSTM appears in the LCD window instead of OPTN.

Solution: The remote control may be set-up for Zone 2/3 commands (some models) which prevents the OPTN symbol from appearing. Reset the remote control for standard operation using the following instructions:

STEP 1: Select any source on the remote control.

STEP 2: Press and hold the LEARN button for three seconds until SETUP appears in the LCD window.

STEP 3: Using the right arrow key, scroll until the symbol L:AMP appears in the LCD window. This accesses the LIBRARY of AMP codes for the remote control.

STEP 4: Using the down arrow key, select either YPC (Yamaha preset codes for North America), DSP (DSP codes) or NO (No codes).

STEP 5: Press LEARN again (briefly) to return to standard operation.

When the SOURCE down key is pressed the symbol OPTN should appear in the LCD window, enabling you to access the Extended I/R code library.



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