

# Daktronics IPTV Monitoring Software

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Operation Manual

*DD1880991*

*Rev 4 - 18 August 2011*

# DAKTRONICS

## **DAKTRONICS, INC.**

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# Section 1: Introduction

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The purpose of this manual is to assist users with connecting and controlling multiple Enseos® IPTV boxes via Daktronics Data Server and IPTV Monitoring applications.

This manual includes the following main sections:

- **Introduction** covers basic information about the program and this manual.
- **Installation, Initial Setup, and Operation** explain how to install and run the application.
- **Contact Information** offers details about who to contact for help.

Daktronics identifies manuals by an ED or DD number located on the cover page. Any other documents referenced in this manual will be identified by the ED/DD number. For example, this manual would be referred to as *DD1880991*.

## 1.1 Software Conventions

This manual contains the following software conventions and terminology:

<b>Bold</b>	Indicates an item that requires direct action, such as clicking, pressing, selecting or formatting.
<i>Italics</i>	Indicates onscreen text or labels that are not clickable.
<b><i>Bold Italics</i></b>	Used to reference items within the manual, such as figures or sections, as well as other documents and important notes.
[X]	Represents a keyboard key that needs to be pressed.
“Quotes”	Text or commands that may be typed. Quotes also indicate folder names.
Click	Press and release the left mouse button.
Double-click	Press and release the left mouse button twice.
Right-click	Press and release the right mouse button.
Select	Highlight or mark, such as by placing a check mark ✓ in a nearby box; clicking will not necessarily perform an action.
>	Followed by (ex. <b>File &gt; Open</b> ).



## Section 2: Initial Setup

### 2.1 Enseo Box Setup

1. Plug an Enseo box into the TV and connect a network cable into the Enseo box. Plug in the Enseo box.
2. Ensure Data Server is running.
3. Open the IPTV Monitoring application on any computer on the same network as Data Server and the Enseo box. The application will search for Data Server on the network (*Figure 1*) and connect when it is located (*Figure 2*).



*Figure 1: Searching For Data Server*



*Figure 2: Found Data Server*

4. Click the **Discover Players** button in the top-right corner of the IPTV Monitoring application screen, and wait 15-20 seconds for Data Server to update the application.
5. Confirm the new Enseo box appears in the list.
6. Right-click on a box that just appeared, and then click **Register Player** (*Figure 3*). This will mark this box as recognized inside of Data Server.

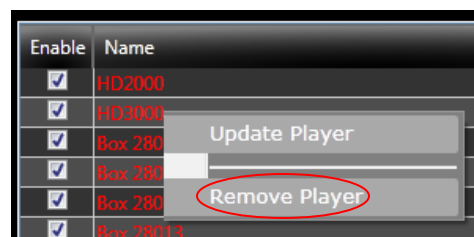


*Figure 3: Register Player*

7. Test the box by sending it commands such as changing the channel up or down or turning the power from On to Standby and vice versa.

*Note:* Refer to Enseo documentation for producing and outputting display content.

8. To remove an unwanted player from the list, right-click it and select **Remove Player** (*Figure 4*).



*Figure 4: Remove Player*

## 2.2 Connection Troubleshooting

- If the IPTV Monitoring application fails to find Data Server (*Figure 5*), ensure Data Server is running:
  - a. Go to **Start > Control Panel > Administrative Tools > Services**.
  - b. Right-click on **Daktronics Data Server** and then click **Start**.



*Figure 5: Could Not Find Data Server*

- If a new Enseo box does not appear in the IPTV Monitoring application:
  - a. Check the IP address of the Enseo box and then try to ping the box from this computer and/or the Data Server computer. Refer to the Enseo documentation on how to locate the IP address.
  - b. Go to **Start > Run**. Type "cmd" and click **OK**.
  - c. Type "ping [IP Address]" and press **[Enter]**. Example - "ping 10.1.50.133"
  - d. If there is no response, check the computer's firewall settings to see if it is blocking any communication from the Enseo box to Data Server.

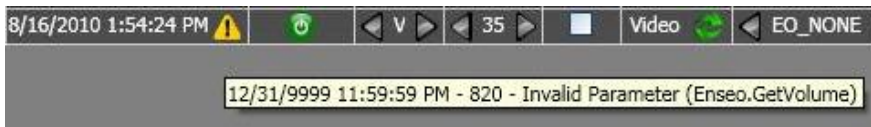
### Color Codes

The name of each Enseo box in the list will have a color that corresponds to its status:

Color	Description	Example
Yellow	The box is discovered but unregistered on the server. Right-click and select <b>Register Player</b> .	Unregistered
Green	The box is responsive and operating correctly.	Responsive
Red	The box is unresponsive. Check to see if the box has power, the network cable is plugged into the box, and also if the cable is still connected to the network.	Unresponsive
White	Data Server is currently discovering all the boxes. Wait 15-20 seconds.	Retrieving

### Errors

If any Enseo box sends an error message, a yellow exclamation point (!) will appear next to the *Last Response*. Hold the cursor over the exclamation point to view the details of the error message (*Figure 6*).



*Figure 6: Error Messages*




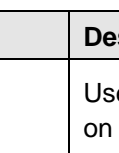
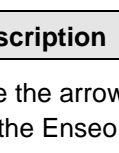
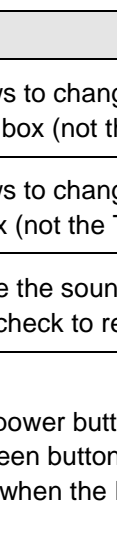
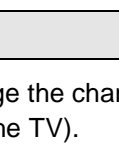
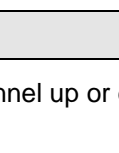
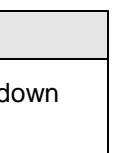

## Section 3: Operation

When the IPTV Monitoring application first starts, it will search for Data Server on the network and then connect to it. Once connected, Data Server will push updates to the monitoring application about all discovered Enseo boxes every 30 seconds.

*Note:* The monitoring application should primarily be used for checking the feedback of each Enseo box on the network and troubleshooting display problems. For normal display operation, it is recommended to set up commands through Display Studio (refer to *Section 3.3*).

### 3.1 Commands

Once an Enseo box has been discovered on the network, the user can control it by sending out various commands. The table below shows every command that the monitoring application allows the user to control on an Enseo box:

Action	Control	Description
Channel Up/Down		Use the arrows to change the channel up or down on the Enseo box (not the TV).
Volume Up/Down		Use the arrows to change the volume up or down on the Enseo box (not the TV).
Mute/Unmute		Check to mute the sound output from the Enseo box to the TV. Uncheck to restore sound output.
Power On/Standby		Click the red power button to turn on the Enseo box, or click the green button put it into standby. The TV will power off when the Enseo box is in standby.
Reload Current Theme		Click the green refresh button to reload the currently playing theme.
Sub-Theme Up/Down		Use the arrows to select a different look and feel for the currently playing theme (sub-themes must be set up for the theme).
Enabled/Disabled		Check to allow Data Server to send commands to this box. Unchecking will not blank the display as with the Power On/Standby command.
Set Box Name		Type in a specific name for the box. This helps the user identify an Enseo box easier than to use the IP Address or MAC Address.

*Note:* These are the properties that the user can set on an individual Enseo box. Groups of boxes can only be powered on or off (put to standby).

## 3.2 Groups

To be able to control multiple boxes, the user will have to set up groups. A group contains a collection of Enseo boxes that enable the user to send one command to many Enseo boxes. By default there is a group named "All" that contains every discovered Enseo box; this group cannot be removed or edited.

### Creating Groups

To create a group:

1. Click the **Groups** tab at the bottom of the application.
2. Right-click inside the group list in the middle of the screen to bring up a menu to create a new group (Figure 7).
3. In the *EditGroupWindow* (Figure 8), type in a name for the new group. Each group name must be unique.
4. Click **Ok** when finished.

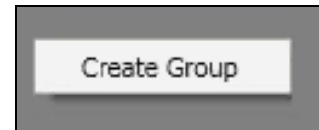


Figure 7: Create New Group



Figure 8: Edit Group Name

After a group is created, any number of Enseo boxes may be added to it. It is possible for a particular Enseo box to be in more than one group.

To add a box to a group:

1. Click on the **Players** tab at the bottom of the application.
2. Right-click on the Enseo box that is to be added in a group.
3. Once right-clicked, a menu will appear with a list of all the available groups (Figure 9). Click the group's checkbox to add the Enseo box to that group.
4. To finalize the group settings for the box, click outside of the menu.



Figure 9: Assigning Groups to Boxes

*Note:* The *Groups* column shows how many groups a box belongs to. Click the down arrow to see an expanded list of groups for the box.



### Editing Groups

- To change a group name, click on the **Groups** tab, right-click an existing group, and then select **Edit Group** (Figure 10).
- To change the Enseo boxes that are included in a group, click on the **Players** tab, right-click an Enseo box, and uncheck the group(s) it should no longer belong to.



Figure 10: Editing/Removing Groups

### Deleting Groups

- To delete a group, click on the **Groups** tab, right-click an existing group, and then select **Remove Group** (Figure 10).

## Unit Filter Colors

On the **Groups** tab, each group assigned to a player will have its own box with a specific color. Ideally the color should be gray to indicate everything is communicating correctly. Otherwise, due to network connection issues, it may be one of the colors described below:

- Red: The player is only set up with a unit filter (an Enseo property)
- Yellow: The player is only set up with a group (a Data Server property)

To synchronize a group to a player's unit filter, right-click the player, and then click **Update Player**.

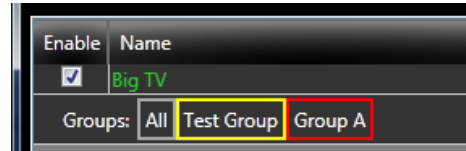


Figure 11: Unit Filter Colors



Figure 12: Update Player

## 3.3 Display Studio Control

Users will typically want to control one or more Enseo boxes from within Display Studio. This is done by sending an Advanced ERTD Play Sequence command via scripting buttons. For more information on setting up an Advanced ERTD Play Sequence command and scripting buttons, refer to the *Show Control System User Handbook (DD2003532)*.

The play sequence command must be set up in a scripting button with the following pieces of information (Figure 13):

- The *Port* number will be specific by site. This is the port that Data Server is listening on for the command. To get the port number, contact the Daktronics employee on site.
- The *Drive* letter tells Data Server what box(es) this command it will go to:
  - "B" - Data Server will try to match the *Library* value to a box's name and send it to that box.
  - "I" - Data Server will try to match the *Library* value to a box's IP address and send it to that box.
  - "G" or empty - Data Server will try to match the *Library* value to a group name and send the command to each box in that group.
- The *Library* will be either the name or IP address of an individual box or a group name, as set up in the IPTV Monitoring application. This will tell Data Server which box(es) to send the command to.
- The *Sequence* will be the command string to send. The commands are outlined below.

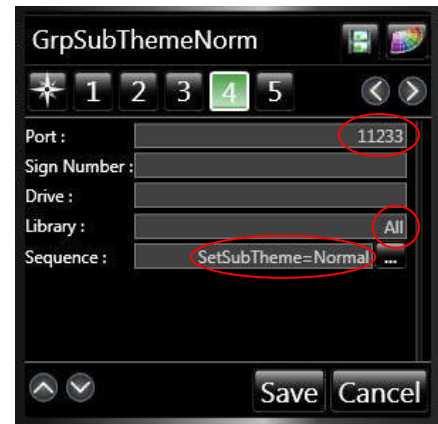


Figure 13: Display Studio Play Sequence Scripting Button

The structure of the *Sequence* is typically <Command>=<Parameter>. For example, to change the channel up by one, set the *Sequence* to "Channel=Up". Note that a parameter is not always necessary. For example, to reboot a group or an individual Enseo box, simply set the *Sequence* to "Reboot".

**Note:** Do not include any quotes (") in the actual *Sequence/Filename*.

Refer to the table on the following pages for a complete list of supported commands that Display Studio can send to Data Server:

Command	Description	Structure
Channel Up*	Tells a player to change the channel up one more than it currently is	Channel=Up
Channel Down*	Tells a player to change the channel down one more than it currently is	Channel=Down
Channel Previous	Tells a player to change the current channel back to the previous channel	Channel=Prev
Set Channel*	Tells a player to change to a specific channel	Channel=## (Where ## is the channel number to set)
Set Volume*	Tells a player to change to a specific volume level	Volume=## (Where ## is the volume to set)
Mute On*	Tells a player to be muted	Mute=On
Mute Off*	Tells a player to no longer be muted.	Mute=Off
Power On*	Tells a player to go from 'Standby' to 'On'	Power=On
Power Off*	Tells a player to go from 'On' to 'Standby'	Power=Off
Reboot	Tells a player to restart	Reboot
Reload Theme	Tells a player to reload the theme that is currently playing	Reload
Set Name	Gives a name to a player so that it can be easily identified	SetUserData=[InsertNameHere]
Set Sub-Theme Up*	Sets the sub-theme on the player up one	SetSubTheme=Up
Set Sub-Theme Down*	Sets the sub-theme on the player down one	SetSubTheme=Down
Set Sub-Theme By Id*	Tells a player to change to a specific sub-theme	SetSubTheme=## (Where ## is the sub-theme id value)
Set Enseio Box Defaults	Tells a player to use the settings in the "C:\Documents and Settings\All Users\Application Data\Daktronics\Common\DataServerPlayers\defaults.xml" file.	SetEnseioBoxDefaults
Get Settings Xml	Used to diagnose any setting on the player that cannot be seen through the TV screen user interface.	GetSettingsXml

Set IR Off	Sets the IR off so the user cannot use the remote to control the player.	SetIR=0
Set IR On	Sets the IR on so the user can use the remote to control the player.	SetIR=1
Net Event*	Sends a net event command to a player so that it can be used to trigger the theme to do something.	NetEvent=## (Where ## is the net event number to send; valid numbers are from 0-99)
Set Theme*	Sets an Author theme on the player based on the path given.	SetTheme=[Path] (Where [Path] is the extra folder path to the Author theme package)  Example: SetTheme=MyTheme/  *The path must end with a forward slash (/). **Refer to the following page for more details on how to set up Data Server for the location of the Author themes.

\* Command is sent as Multicast for group commands only.

## Set Theme Command

To configure Data Server for properly setting themes, Data Server needs to be set up correctly and working. Once that is established, make sure Data Server is off. This is because the configuration file for the Enseio inside of Data Server will be modified. Once it is off, go to "C:\Documents and Settings\All Users\Application Data\Daktronics\Common\DataServerPlayers\" (for Windows XP) or "C:\ProgramData\Daktronics\Common\DataServerPlayers\" (Windows Vista/Windows 7). Open the "grouping.xml" file in a text-editing program, such as Notepad.

Modify the following attributes on the "Module" node:

- themeIP - This is the IP address of the machine that is storing the Author themes.
- themeProc - This sets how the data will be pulled off the machine that is storing the Author themes, either via "http" or "ftp".
- themePort - This is the port number that the Enseio boxes will use to pull the information from. Use "80" for http or "21" for ftp.
- themeUser - This is the username for the Enseio boxes to use if the machine storing the Author themes requires authentication. If this is not needed, use a single space.
- themePass - This is the password for the Enseio boxes to use if the machine storing the Author themes requires authentication. If this is not needed, use a single space.
- themePath - This is the folder path to where all the Author themes are located.

Example - If the fully qualified path to an Author theme is “http://10.1.50.45:80/**MyFolder/Themes/MyTheme**/update.xml”, then the value for the themePath attribute is the bolded text (“**MyFolder/Themes/**”). The SetTheme command will append the final path (in this case “MyTheme/”) to tell the Enseio boxes exactly where the theme to set is located. Similar to the SetTheme command syntax, the forward slash (/) needs to be included at the end.

- themeFile - The filename that contains the Author theme package. The value for this will almost always be “update.xml”.

Save the file, and start Data Server again to test the new settings.

## Command Protocols

The table on the following pages shows which protocol is sent for the various commands.

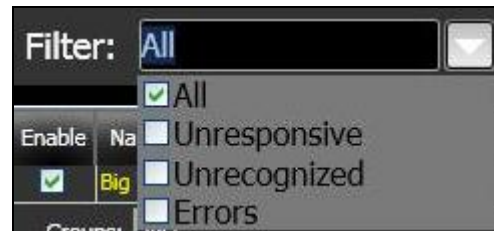
Command	Protocol Sent		
	<i>HTTP</i>	<i>TCP</i>	<i>Multicast</i>
Channel Up	X		X
Channel Down	X		X
Channel Previous	X		
Set Channel	X		X
Set Volume	X		X
Mute On	X		X
Mute Off	X		X
Power On	X		X
Power Off	X		X
Reboot	X		
Reload Theme	X		
Set Name	X		
Set Sub Theme Up		X	X
Set Sub Theme Down		X	X
Set Sub Theme by Id		X	X
Set Enseio Box Defaults	X		
Get Settings Xml	X		
Set IR On	X		
Set IR Off	X		
Net Event	X		X
Set Theme		X	X
Update Unit Filters		X	
Get Unit Filters		X	
Get User Data (Box name)	X		
Get Network Devices	X		
Get Network Settings	X		
Get Network MAC	X		
Get Firmware Version	X		
Get Hardware Model	X		
Get Channel	X		

Get Power State	X		
Get Theme		X	
Get Volume	X		
Get Mute	X		
Get Sub Theme		X	

### 3.4 Other Features

#### Filter

Click the arrow next to the *Filter* box and select the type of boxes to view in the list from **All** (default), **Unresponsive**, **Unrecognized**, or **Errors** (*Figure 14*).



**Figure 14:** Display Filter





## Section 4: Contact Information

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If there are any questions about Data Server or the IPTV Monitoring application, please contact Daktronics Customer Service:

**Mail:** Daktronics, Inc., Customer Service  
201 Daktronics Drive  
P.O. Box 5128  
Brookings, SD 57006

**Phone:** Daktronics Help Desk: 1-800-843-9879 or 1-605-697-4400

**Customer Service Fax:** 1-605-697-4444

**Email:** [sportsoftware@daktronics.com](mailto:sportsoftware@daktronics.com)