



HC Extender Controller Integration Note

Manufacturer:	ELAN
Model Number(s):	HC4, HC6, HC8, HC12
Core Module Version:	g! Core Module 6.0.232
Document Revision Date:	3/29/2013

OVERVIEW AND SUPPORTED FEATURES

ELAN HC controllers can be used in a **g!** system as Extenders to provide additional inputs, outputs, IR, COM Ports, or additional On Screen Displays (OSD). In a **g!** system there will always be one Master controller and there may be up to 16 Extender controllers. Any **g!** controller can be used as either a Master controller or an Extender controller. There are no licenses or Apps required to utilize Extender mode in a **g!** system.

HC EXTENDER CONTROLLERS SUPPORT THE FOLLOWING FEATURES:

All HC Controllers may be Extenders or Masters: Any of the HC controllers (HC4, HC6, HC8, HC12) may be used as either a Master controller or a slave controller. Up to 1 Master controller and 16 Extender controllers can be used in a **g!** system.

RS-232 & RS-485 COM Ports: Up to 24 total serial communication ports from the Master and/or Extender controllers can be used in a **g!** system. Refer to the serial port configuration section below for limitations and exceptions.

Relay Outputs: Up to 12 Relay Outputs from the Master and/or Extender controllers can be used in a **g!** system.

Sense Inputs: Up to 12 Sense Inputs from the Master and/or Extender controllers can be used in a **g!** system.

IR Outputs: Up to 48 IR outputs from the Master and/or Extender controllers can be used in a **g!** system.

IR Inputs: Additional IR inputs can be used in addition to the Master controller.

OSD Video Outputs: Up to 17 OSD video outputs from the Master and/or Extender controllers can be used in a **g!** system.

HC EXTENDER CONTROLLERS DO NOT SUPPORT THE FOLLOWING FEATURES:

Audio Output: The audio outputs on Extender controllers have no functionality at this time.

USB: The USB ports on Extender controllers have no functionality at this time.

Vianet: The Vianet connections on Extender controllers have no functionality at this time.

File Sharing: Using the Extender controllers Hard Drive or storage card for file sharing is not supported at this time.

RS-232 ports with Hardware Features: Even parity or flow control is not supported on Extender COM ports.

Remote Extenders: Extender controllers must be on the same LAN as the Master controller.

Multiple Master Controllers: Only one Master controller is allowed in a **g!** system.

ELAN Home Systems • 1690 Corporate Circle • Petaluma, CA 94954 USA

tech support: 800.622.3526 • main: 760.710.0990 • sales: 877.289.3526 • email: elan@elanhomesystems.com

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CONFIGURATION OVERVIEW

The configuration of a **g!** system with Extender controller(s) involves first setting each controller that is to be an Extender into Extender Mode. At this time the Extender will automatically log into the Master controller and make its supported Extender Mode functionality available from within the Master controller configurator. One exception to this is the Extender controller OSD as these are enabled or disabled from the Extender controller's configurator and not from within the Master's configurator. Below are details for setting a controller into Extender Mode and configuration of each item of the Extender controller:

SETTING A CONTROLLER TO EXTENDER MODE:

The following steps will configure a system controller as an Extender:

1. Make sure all controllers are online. First make sure the Master controller and all Extender controllers are networked properly and accessible locally with the **g!**Tools utility. Both the Master controller and all of the Extender controllers must be configured with Static IP addresses. The ELAN recommended Master controller IP is 192.168.0.2 and Extender controllers are recommended to start IPs at 192.168.0.3. Each additional Extender would use the next available IP address, 0.4, 0.5, and so on.

IMPORTANT! The Master controller will recognize and account for each Extender controller by its IP address. Therefore it is critical that the IP addresses are established prior to configuring any Extender controllers.

2. Factory Reset the Extender Controllers. The Extender must not have any existing configuration. If the Extender controller had any configuration at one time you will need to perform a Factory Configuration Reset. To do so access the Extender controller configurator. Navigate to the System tab then right-click the System node at the top of the tree. Select the option for Reset to Factory Configuration. The controller will perform the reset and restart the software. You will need to use the software update utility on the controller to put finish the reset process (see steps below).

IMPORTANT! Factory resetting the controller will remove all existing programming and any Keys or Pro licenses that were installed.

- Keys and Pro licenses are not required on Extender controller but are also not transferrable to other controllers. If keys were installed on the Extender they can be restored when it is returned back to Master mode using the Key Manager utility.
- If you would like to save the controller's configuration prior to the Factory Reset use the standard System Configuration Backup process.

3. Update the Extender controllers. The Extender controller must be running the same version of software as the Master controller. Use the same **g!** software update utility to update the Extender controller to the version of the Master controller prior to setting the Extender into Extender Mode.
4. Add a description to the Master controller. Access the Master controller's configurator and navigate to the System tab then select the System node in the tree. Add a system description that indicates the controller is the Master controller.
5. Add a description to the Extender controller. Access the first Extender controller's configurator and navigate to the System tab then select the System node in the tree. Add a system description that indicates the controller is an Extender controller. If there will be more than one Extender be sure to include some other identifying text in this field.

IMPORTANT! When adding Extender items in the Master controller you will see the Extender's description that you enter in this step within the Master controller's configurator to help identify which Extender you are working with.

6. Set Extender Mode. Access the configurator for the first Extender controller and navigate to the System tab then select the System node in the tree. In the Controller Mode selection box select

Extender. Enter the IP address of the Master controller in the Master Address field then click Apply. At this time the Extender will login to the Master and register itself as an Extender to it and its additional functionality will become accessible thru the Master controller's configurator.

IMPORTANT! Extender controller configurators will have limited view and configuration. Most of the fields within the Extender configurator will not be accessible since they are not functional.

7. Disable OSD if not in use. If the Extender controllers OSD is not going to be used the disable it now. In the Extender configurator select the Interface tab then click on the On Screen Display node. If you will not be using the Extender OSD then set the Enable Local OSD to No.
8. Repeat these steps for each Extender controller.

OSD VIDEO OUTPUT:

The following steps will configure an Extender's OSD video output.

1. Enable the OSD on the Extender. Open a configurator to the Extender controller and navigate to the Interface tab. Select the On Screen Display node in the tree. If the OSD on the Extender is going to be used set the Enable Local OSD to Yes, otherwise set No. Select the desired video output resolution and click apply. Note: if a resolution change is required then the Extender controller must be rebooted for the change to take effect.
2. Configure the view of the OSD. Open a configurator to the Master controller and navigate to the Interface tab. All of the OSD's can be identified in the listing under the heading Interface Devices (OSD). The Extender OSD will be listed by their System Name and description. Locate the Extender OSD to configure and click the + to expand it.
3. Set the Video Display.

Note: Extender OSD's utilize the component video output to provide a high definition remote controllable On Screen Display. The component video can be either connected directly to a video display (such as a projector, television, or monitor) or the video can be connected as a source to a video zone controller (such as a V85 or an AVR). In this step you will configure how this is connected. Once completed the end user will be able to activate the OSD from either the **g!** remote or an HR2 and the system will automatically select the OSD source in that zone while remembering its previous state. When the OSD is disabled the system will automatically return to the previous state of the video displays and/or zone controllers.

Select the Advanced Settings node in the tree. On the right pane select the video display or video zone controller output that the OSD is connected to. Then select the source input on the display or zone controller that the OSD is connected to.

If you are using the video zone controller output method then it is recommended to create an OSD interface from the available OSD interface template. This interface should be assigned to the source on the zone controller that the OSD is connected to. This interface will provide notification on the **g!** user interfaces that the zone is currently in OSD mode. You will also need to configure the video power state and display input selection for the OSD source as you do with all other sources within the zone.

Optionally you can also select a source to switch the display or zone controller to when the OSD is disabled and the zone is Off. This will put the display or zone controller into a common state to minimize delays from HDMI handshaking when the zone is next activated.

4. Configure the OSD interface. In the Tab Config nodes select the pages that you would like to show on the OSD by moving them to the Visible Tabs column. Set the pages that you do not want to show on the OSD to the Available Tabs column, and then click Apply.

COM PORTS:

Extender COM ports are configured one at a time in the same manner as a Master COM port except you will specify that they are on an Extender. All of these steps are done within the Master controller's configurator. Below are sample steps to add an Extender COM device.

1. Open the Master controller configurator and navigate to the subsystem tab to which you want to add a COM device. For example, if you are adding a COM device to connect a Security panel, select the Security tab in Configurator.
2. Right Click on Communication Devices and select Add New Communication Device.
3. In the Device Name enter a descriptive name of the device that you are adding the COM device for. This field is for your reference only but it is recommended to be as descriptive as possible to aid in working with this system.
4. In the Type drop down box select HC Extender COM port.
5. In the Device drop down box select the HC Extender that you want to connect the device to. The drop down should populate with all Extenders currently present on the network and they can be identified in the list by their system name and the description that you entered for each Extender. If the Extender you are looking for is not present then stop and verify it is online before proceeding.
6. In the Communication Type box select the communication type required for the particular subsystem that you are adding. Refer to the specific devices Integration Note for this information.
7. Continue configuring the device as you would when it was directly connected to the Master controller.

SENSE INPUTS:

Extender Sense Inputs can be configured for use in a **g!** system on the Input/Output tab of the configurator as described below. Adding sense inputs for an Extender will add all of the sense inputs available on that Extender.

Note that the quantity limits for Sense Inputs documented above is a limitation of the inputs that can be actively used in a **g!** system and not a limitation of the quantity that can be configured. Only inputs that are actively used in a **g!** system will count towards the documented limit.

1. Open the Master controller configurator and navigate to the Input/Output tab.
2. Right-click the Sense Inputs node and select Add New Input Controller.
3. Select HC Extender Input Controller.
4. The HC Extender drop down list will populate with all the available Extenders online in the network. If the Extender does not show up in this list then stop and make sure the Extender is online and on the same network as the Master controller. In the drop down box select the HC Extender that you want to add the Sense Inputs from. The Extender can be identified in this list by its system name and description.
5. The inputs are now available in the Master configurator for use. Configure the inputs for use as you would with inputs that are on the Master controller.

RELAY OUTPUTS:

Extender Relay Outputs can be configured for use in a **g!** system on the Input/Output tab of the configurator as described below. Adding Relay Outputs for an Extender will add all of the Relay Outputs available on that Extender.

Note that the quantity limits for Relay Outputs documented above is a limitation of the outputs that can be actively used in a **g!** system and not a limitation of the quantity that can be configured. Only outputs that are actively used in a **g!** system will count towards the documented limit.

1. Open the Master controller configurator and navigate to the Input/Output tab.
2. Right-click the Relay Outputs node and select Add New Output Controller.
3. Select HC Extender Output Controller.
4. The HC Extender drop down list will populate with all the available Extenders online in the network. If the Extender does not show up in this list then stop and make sure the Extender is online and on the same network as the Master controller. In the drop down box select the HC Extender that you want to add the Relay Outputs for. The Extender can be identified in this list by its system name and description.
5. The outputs are now available in the Master configurator for use. Configure the outputs for use as you would with outputs that are on the Master controller.

IR INPUTS:

Extender IR Inputs can be configured for use in a **g!** system on the Input/Output tab of the configurator as described below. From Core Module 6.1 forward, more than 1 Extender IR Input may be used. Note that only one IR Input may be active at any one instant in time.

1. Open the Master controller configurator and navigate to the Input/Output tab.
2. Right-click the IR Receivers node and select Add New IR Receiver.
3. Select HC Extender IR Input.
4. The HC Extender drop down list will populate with all the available Extenders online in the network. If the Extender does not show up in this list then stop and make sure the Extender is online and on the same network as the Master controller. In the drop down box select the HC Extender that you want to add the IR Input for. The Extender can be identified in this list by its system name and description.
5. The IR Input is now available in the Master configurator for use. Configure the IR Inputs for use as you would with those that are on the Master controller.

IR OUTPUTS:

Extender IR Outputs can be configured for use in a **g!** system on the Input/Output tab of the configurator as described below. Adding IR Outputs for an Extender will add all of the IR Outputs available on that Extender.

Note that the quantity limits for IR Outputs documented above is a limitation of the IR outputs that can be actively used in a **g!** system and not a limitation of the quantity that can be configured. Only IR outputs that are actively used in a **g!** system will count towards the documented limit.

1. Open the Master controller configurator and navigate to the Input/Output tab.
2. Right-click the IR Outputs node and select Add New IR Sender.
3. Select HC Extender IR Outputs.
4. The HC Extender drop down list will populate with all the available Extenders online in the network. If the Extender does not show up in this list then stop and make sure the Extender is online and on the same network as the Master controller. In the drop down box select the HC Extender that you want to add the IR Outputs for. The Extender can be identified in this list by its system name and description.
5. The outputs are now available in the Master configurator for use. Configure the outputs for use as you would with outputs that are on the Master controller.

ADDITIONAL INFORMATION WHEN USING EXTENDER MODE IN A g! SYSTEM

UPDATING A SYSTEM THAT INCLUDES EXTENDER CONTROLLERS:

Extender controllers configured in a g! system will automatically update after the Master controller has been updated. To update a g! system you will only need to update the Master controller. When the Master controller reboots and comes online the Extender controllers will begin to update themselves from the Master. Note that this process is done one Extender at a time and it may take several minutes per Extender. To check an Extenders version access the Extender configurator and Navigate to the System Tab. Click on System at the top of the tree. The right pane will display the current Extender version under the Version field.

RETURNING A CONTROLLER TO MASTER MODE:

If an Extender controller is no longer need it can be reconfigured as a Master Controller. The following steps will return the Extender to a Master controller.

1. Open the Master controller configurator and delete all of the Extender items for the Extender to be reconfigured as a Master.
2. Open the Extender controller configurator and navigate to the System tab.
3. Select the System node in the tree and set the Controller Mode to Master then click Apply.
4. Use the g! software update utility to update the controller to the desired version of software. Note that the update must be the same version or newer.
5. If there were Key for Pro Apps or viewers they can be reinstalled on the controller using the Key Manager utility.
6. The controller can now be used as a Master controller in another system.

REPLACING AN EXTENDER CONTROLLER:

The following steps will document replacing an Extender controller in a g! system with an Extender of the same model hardware (HC4, HC6, HC8, or HC12).

Note: Replacing an Extender with a different model of hardware is not supported. To do so you will need to access the Master controller and manually delete all references to the original Extender controller then follow the steps above to add the replacement as a new Extender.

1. Make sure the replacement Extender is the same model hardware as the original Extender controller (HC4, HC6, HC8, or HC12).
2. Install the replacement Extender controller in the g! system network and configure it to have the same IP as the original Extender controller. The IP address is how the Master controller identifies each extender.
3. Factory Reset the replacement Extender Controller. The Extender must not have any existing configuration. If the Extender controller had any configuration at one time you will need to perform a Factory Configuration Reset. To do so access the Extender controller configurator. Navigate to the System tab then right-click the System node at the top of the tree. Select the option for Reset to Factory Configuration. The controller will perform the reset and restart the software. You will need to use the software update utility on the controller to put finish the reset process.

IMPORTANT! Factory resetting the controller will remove all existing programming and any Keys or Pro licenses that were installed.

Keys and Pro licenses are not required on Extender controller but are also not transferrable to other controllers. If keys were installed on the Extender they can be restored when it is returned back to Master mode using the Key Manager utility.

If you would like to save the controller's configuration prior to the Factory Reset use the standard System Configuration Backup process.

4. Update the Extender controller. The Extender controller must be running the same version of software as the Master controller. Use the same **g!** software update utility to update the Extender controller to the version of the Master controller prior to setting the Extender into Extender Mode.
5. Add a description to the Extender controller. Access the first Extender controller's configurator and navigate to the System tab then select the System node in the tree. Add a system description that indicates the controller is an Extender controller. If there will be more than one Extender be sure to include some other identifying text in this field.
6. Set Extender Mode. Access the configurator for the first Extender controller and navigate to the System tab then select the System node in the tree. In the Controller Mode selection box select Extender. Enter the IP address of the Master controller in the Master Address field then click Apply. At this time the Extender will login to the Master and automatically reconfigure its Extender functionality.
7. Disable OSD if not in use. If the Extender controllers OSD is not going to be used the disable it now. In the Extender configurator select the Interface tab then click on the On Screen Display node. If you will not be using the Extender OSD then set the Enable Local OSD to No.