ELAN Home Systems **Life Just Got Better ®**	Audio Integration Note
Manufacturer:	Elan
Model Number(s):	**System 12**
Comments:	Version 5.0 (g!) requires S12 FW **2.02.00.04**
Document Revision Date:	8/17/2011

OVERVIEW AND SUPPORTED FEATURES

THE FOLLOWING FEATURES ARE SUPPORTED:

Traditional Whole-House Audio and Video: The Elan is a multizone - multisource audio/video switcher that can be controlled by the g! software using its serial (RS-232) port. The g! Viewer interface can be used to select sources by zone, and control volume in each zone.

Multiple S12 units: Up to 4 Elan System 12 units can be controlled using a single serial (RS-232) port in the g! software. In addition, other Elan System products, such as the Elan V883 or V85 Video Switch, can be daisy chained with the S12 on a single com port.

Independent Zone Settings: Volume, Bass and Treble can be adjusted independently for each zone.

Local Sources: Elan S12's support 1 "local source" for each zone. This source may be controlled from g!.

Sense Inputs: g! can receive feedback from the variety of inputs on the rear of the S12 chassis. Note that inputs need to be shorted for a minimum of 5 seconds for reliable detection in g!

Elan S12 Programming (Version 5.0 and above): In Version 5.0 or above, the g! software supports programming Elan S12 features from Configurator, and Elan ViaTools is not required for most features, including WHM modes, volume levels, IR Routing and more. **Note:** If you have already programmed in ViaTools, existing programming should carry over and not be affected.

IR Routing: g! supports configuration of the Elan S12 built in IR Routing abilities. Note that IR must still be generated outside the S12 (from HC or Global Cache etc), as the S12 is not capable of generating IR.

Elan S12 configurations:

1. **Default Tracking:** The g! software supports using the Elan S12 in its default configuration state. This consists of switching the first 12 video inputs (composite) together with the first 12 audio inputs. In this configuration the remaining video inputs that are not tied to an audio source, 13 – 16, must be switched through the Event Mapper.
2. **Source Select Tracking:** The g! software supports using the Elan S12 when its video sources are grouped with an audio source using the Elan Via Tools software. Using the Via Tools software, the S12 video sources can be assigned as composite and/or component for each audio source. The g! software will then switch the grouped audio and video sources together to the appropriate zone. If you are not programming in ViaTools, this can be accomplished in g! with the Event Mapper.
3. **16 x 16:** In this configuration the video sources are not tied to any audio sources, allowing either 16 composite video or 5 component videos sources to be switched independently of the audio. The g! software supports controlling the audio directly through the Audio Zone Controller, while video may be switched with Event Maps using the Route Input to Output command.

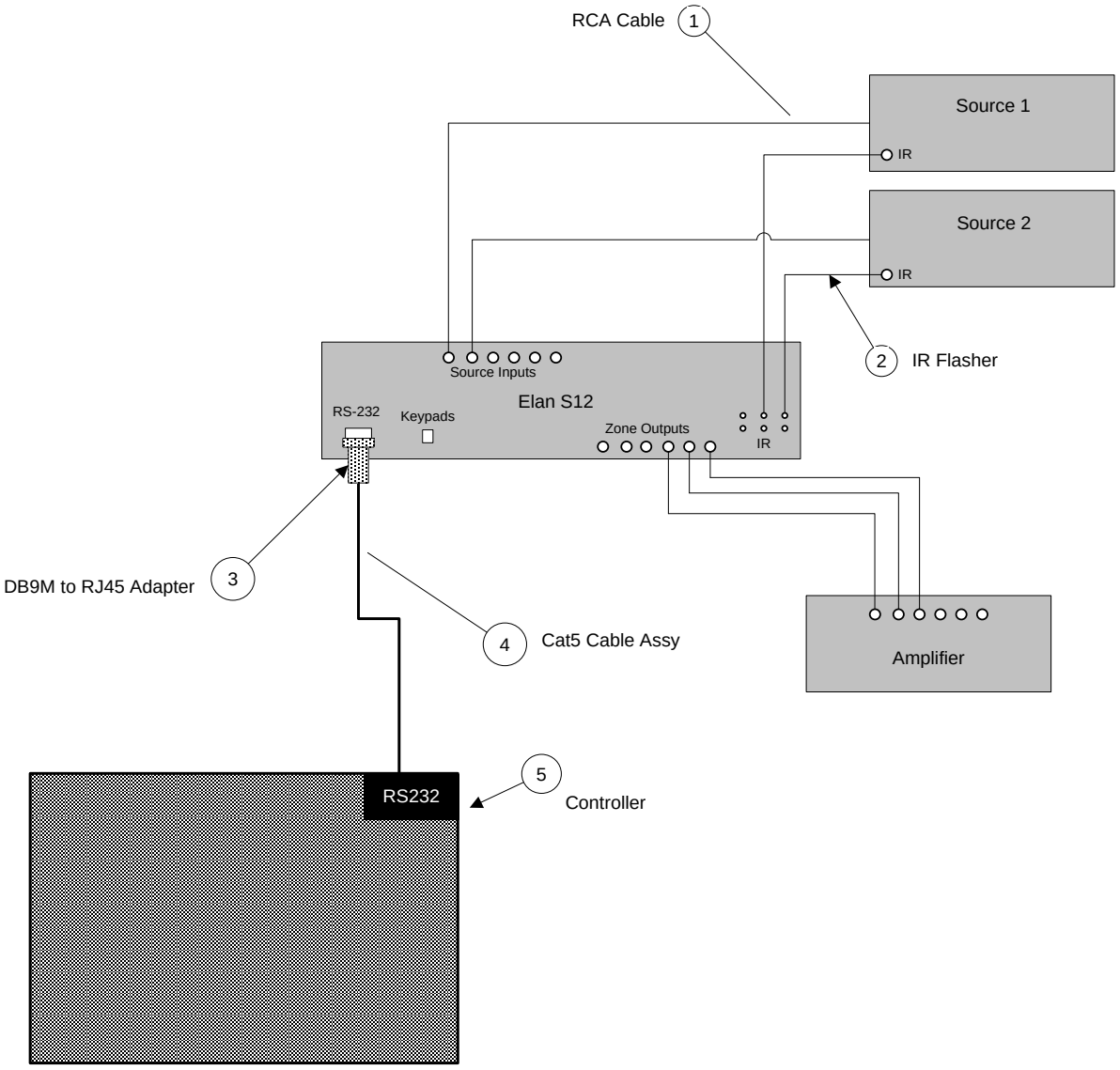
THE FOLLOWING FEATURES ARE NOT SUPPORTED:

Turn-On Settings: g! Configurator doesn't have Turn-On Settings for DRC, DND, Bass or Treble.

INSTALLATION OVERVIEW

1. During the rough-in phase, install speaker wire for the speakers and Cat5 cable for keypads, in each zone.
2. Also during the rough-in phase, run a Cat5 wire from the location of the Elan S12 back to the Network Assembly of the **g!** system for RS-232 communications. Refer to the **RS-232 Connection Options** Integration Note for other options.
3. Mount the speakers and keypads in each zone, and install the Elan and the sources. Ensure to set Unit ID dipswitches and restart the S12's if using multiple chassis.
4. Setup the Elan to operate as desired using the Via Tools software. Refer to Elan documentation for details. **(Not Required in version 5.0 or above)**
5. Confirm proper audio and video switching as configured in step above (standalone operation – not required in version 5.0 or above).
6. Connect the **g!** system to the Elan system electrically. See the wiring diagrams for more information.
7. Configure the **g!** system for the Elan and confirm communication between the Elan and the **Controller**.
8. Test the system by changing sources in a zone to confirm the correct source plays and volume is controlled. Test source control for any sources that are to be controlled from the **g!** interface.

CONNECTION DIAGRAMS



BILL OF MATERIALS

#	Device	Manufacturer	Part Number	Protocol	Connector Type	Notes
1	RCA Cable	N/A	N/A	Analog	RCA X RCA	
2	IR Flasher	Elan	IRE1/IRE2	IR	Mini Jack X IR Flasher	
3	DB9M to RJ45 Adapter	Elan	HA-CB-307	RS-232	DB-9 Male X RJ-45 Female	
4	Cat5 Cable Assy.	Installer	N/A	RS-232	RJ-45 Male X RJ-45 Male	Must connect all 8 wires
5	Controller	Elan	Various (ex. HC-12)	RS-232	RJ-45 Female	

g! Configuration Details

The following table provides settings used in the g! Configurator when connecting to an Elan system. Please refer to the Configurator Reference Guide for more details.

In the table below:

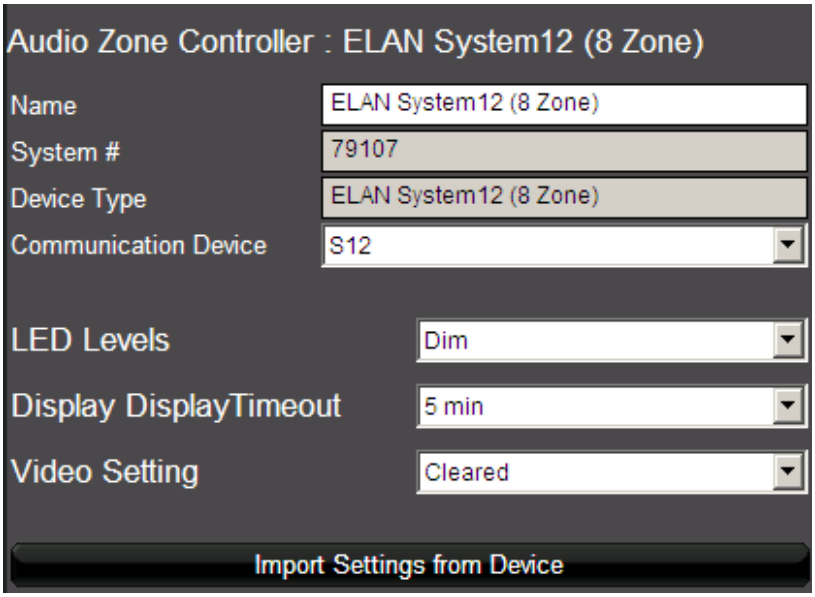
- "<Select>" Select the appropriate item from the list (or drop-down) in the Configurator.
- "<User Defined>", etc. Type in the desired name for the item.

Devices	Variable Name	Setting	Comments
Communication Devices	**Name**	<User Defined> (Default: **Elan System**)	
	Type	**Serial Port**	
	Communication Type	**Elan System**	
	Location	<User Defined> (Not Required)	
	Com Port	<Select>	
<Other RS-232 Sources>	Add any other RS-232 controlled sources. Refer to the Integration Note for each specific source device.		
<Other IR Controlled Sources>	Add IR devices on the Input/Output tab for other IR controlled sources. Refer to the **Configurator Reference Guide** .		
Other Audio Devices / Interfaces	**Name**	<User Defined>	Add Interfaces for any source that does not have a built-in interface
	Template	<Select>	
	Default Device	<Select>	Select the RS-232 or IR controlled source for this interface
Audio Zone Controllers	**Name**	<User Defined> (Default: **Elan System 12 (X Zones)**)	
	Device Type	**ELAN System 12 (X Zones)**	See note 1
	Location	<User Defined> (Not Required)	
	Comm Device	<Select> (Default: **Elan System**)	
Sources	**Name**	<User Defined>	
	Source Device	<Select>	Sources must be previously configured in order to allow selection.
	Source Volume	<Select>	See note 2
	Show Source	<Select>	Set to **No** for any inputs that are not used
	Source Icon	<Select>	This icon appears on the source button in the Viewer Interface
	Display Name	<User Defined>	This text appears on the source button in the Viewer Interface
Zones	**Name**	<User Defined>	
	Universal Receiver	<Select>	Zone IR Receiver assignment.
	Settings Interface	<Select>	Drop-down field used to select the Settings interface for the zone.
	Display	<Select>	Drop-down field used to select which television display is assigned to the zone.
	Slave Zone	<Select>	Drop-down field used to assign a slave zone to this zone.
Tab Layout	**Interface Tabs**	<Select>	Move any unused zones to the left into **Available Zones** to remove from the viewer
Notes:			
1. Select 8 Zones for control of one Elan S12, 16 Zones for two Elan S12s, and so on.			
2. For systems with devices that have controlable volume (such as an AudioTron), select the desired volume (normally 100%).			

S12 PROGRAMMING

In Version 5.0 and above of the g! software, it is possible to program basic S12 features without the use of ViaTools.

If you are using 4.0 of the software, continue to program the S12 in ViaTools according to standard procedures.



S12 Settings: To access these settings. Click on the Elan System 12 under Audio Zone Controllers on the Media Tab of Configurator. Be sure to Apply any changes made on this page to write settings down to the S12.	
LED Levels	On, Off, or Dim. Controls front panel LED brightness on the S12.
Display Timeout	Choose time from 1 sec to 4 hours to affect how long the Display on the front of the S12 will stay active (lit) following a change.
Video Setting	Default, Cleared, or Custom. (**Default Setting: Custom**) Default: Use the default factory settings in the S12. This setting will ignore any programming in g! or ViaTools! and follow factory settings (Default Tracking Mode). Cleared: Clear all Video Settings in the S12. Settings will be programmed in g!. Custom: The Video Settings were programmed already in ViaTools! and will not be re-programmed in g!. Keep current custom settings.
Import Settings from Device	Click this button to import S12 settings from the device. This is typically used if you have programmed the S12 in ViaTools.

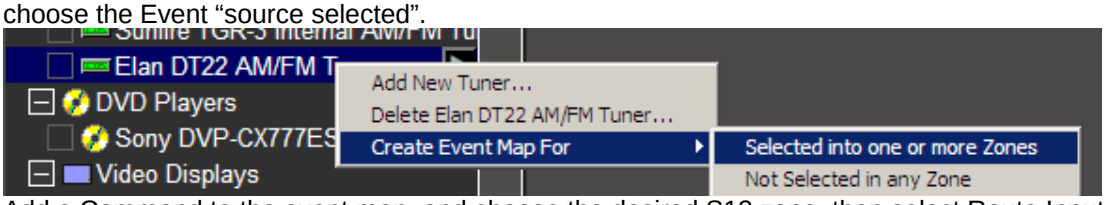
VIDEO SWITCHING WITH AN SYSTEM 12

The Elan System 12 can be programmed into 3 modes for video switching as explained in Supported Features: Default Tracking, Source Tracking, and 16x16. If these functions have been programmed already in ViaTools, the Custom settings should be chosen above and functions will continue to act as they did prior to integration with g!. If they have not been programmed, or you wish to program them in g!, see the considerations below:

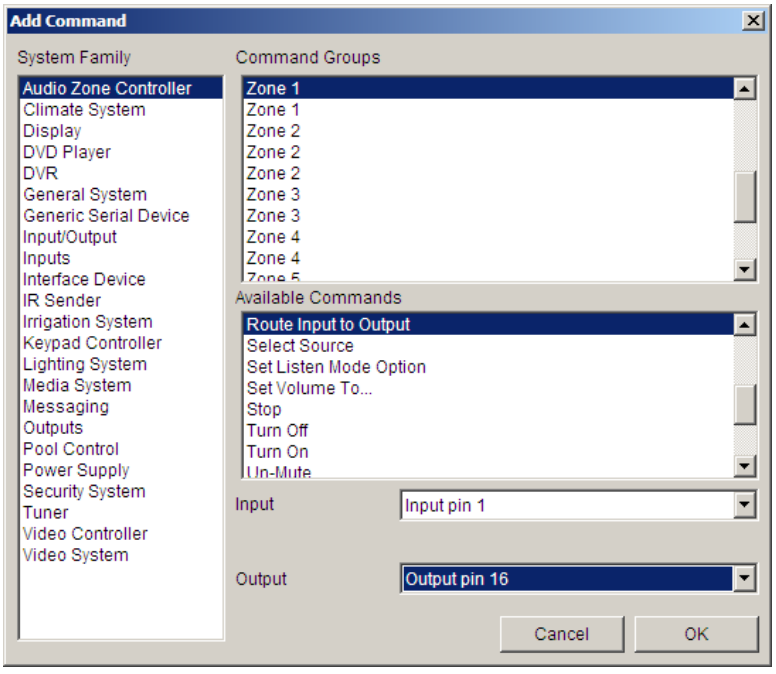
Default Tracking:	Video inputs 1-12 (composite) will switch with audio inputs 1-12. Video Inputs 13-16 may be switched manually using Event Mapper.
Source Select Tracking:	Video Inputs can be switched manually using Event Mapper.
16x16 Mode:	Video Inputs can be switched manually using Event Mapper.

Switching video manually using Event Mapper 4.0/5.0:

Any Event in a g! system may be used as the trigger for the Event Map. For example, use a Source (such as Elan DT22) and create an event map for when the source is selected. You could also select a zone and choose the Event “source selected”.

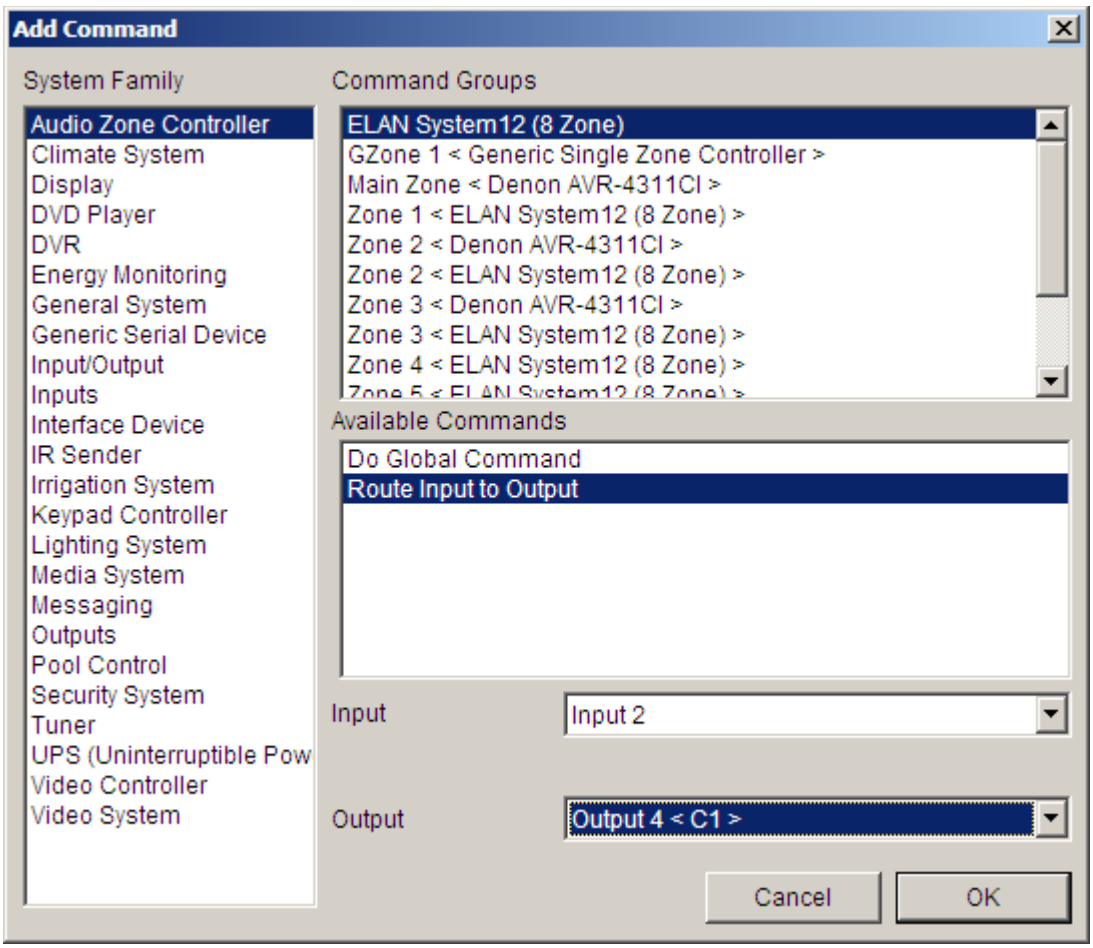


Add a Command to the event map, and choose the desired S12 zone, then select Route Input to Output. This will allow you select what video to switch when the input is selected.



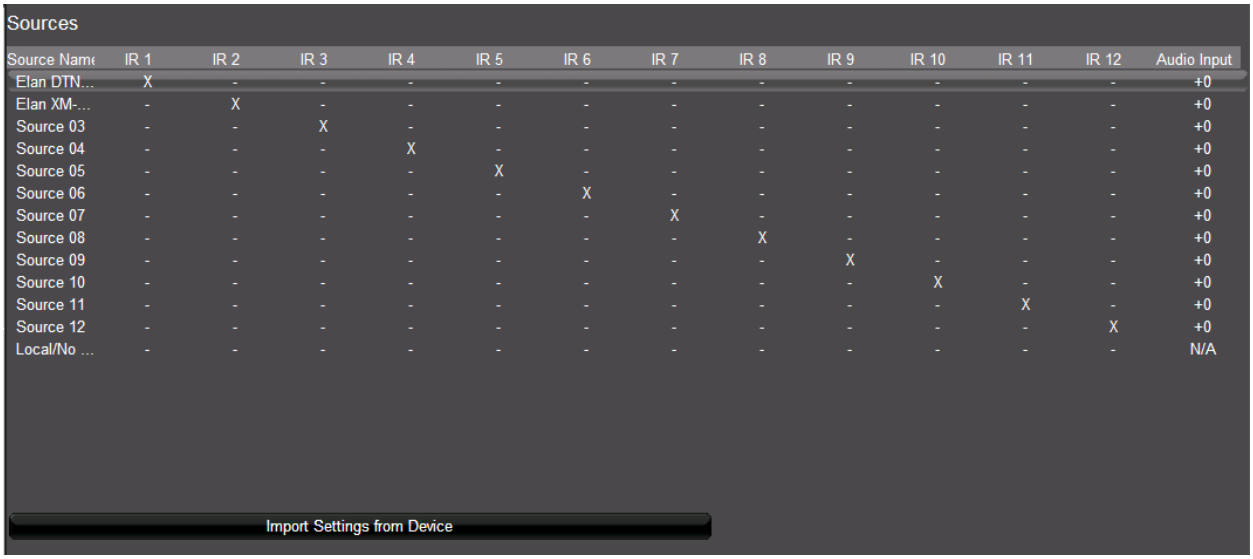
Route Input to Output commands are available in 4.0 or 5.0 software.

5.1 and above (HC’s): Add a Command to the event map, and choose the S12 Chassis, then select Route Input to Output. This will allow you select what video to switch when the input is selected.

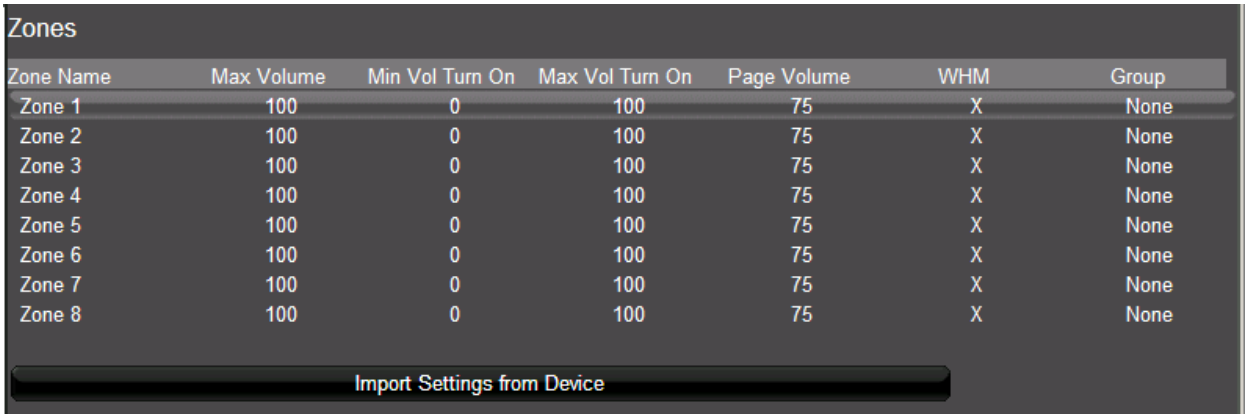


Route Input to Output commands as available in 5.1 software.

S12 SOURCE SETTINGS



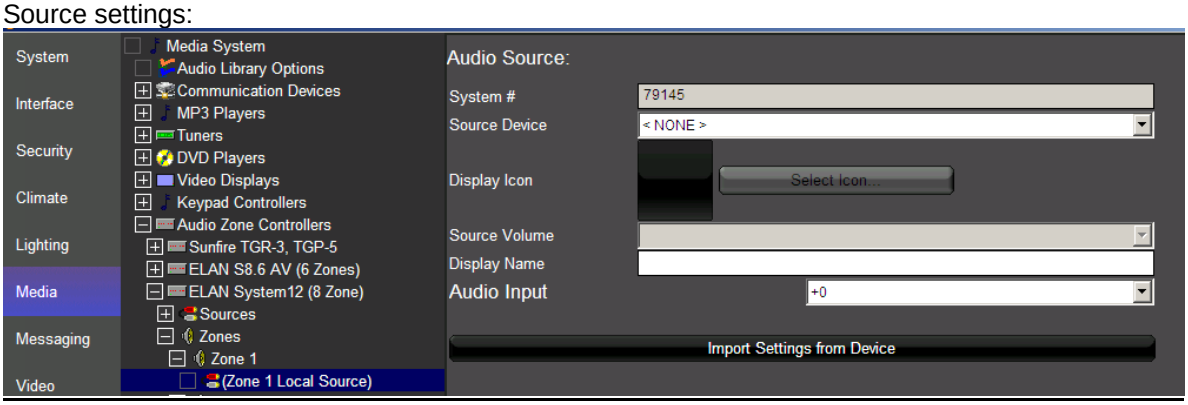
S12 Source Settings: To access these settings. Click on Sources under the Elan System 12 within Audio Zone Controllers on the Media Tab of Configurator. Be sure to Apply any changes made on this page to write settings down to the S12.	
Source Name	The names of the sources.
IR 1-12	IR routing matrix. This matrix allows configuration of IR routing through the S12 chassis. Note: These setting have no effect on IR outputs from Global Cache or the HC series controllers. Select the IR output jack for each source. An "X" indicates that IR received by the chassis zone input will be passed to that port when the selected source is active. In the screen above, for example, if IR is received to control source 2, Elan XMR-3, the IR will be routed to IR output 2.
Audio Input	The source volume level (gain). Use these adjustments (+ / –) on each source to maintain equivalent source volumes throughout the system.
Import Settings from Device	(Optional) If the chassis has already been configured, click this button to read in the existing settings from the device.



S12 Zone Settings: To access these settings. Click on Zones under Elan System 12 within Audio Zone Controllers on the Media Tab of Configurator. Be sure to Apply any changes made on this page to write settings down to the S12.	
Zone Name	Enter Custom Name for Zone. This will be written down to the S12, or can be imported from the S12 if it was already programmed in ViaTools!
Max Volume	The Maximum volume allowed for a zone. Use this setting to prevent unpleasant volume levels or speaker damage in a zone.
Min Vol Turn On	The minimum volume level for a zone when it is turned on. If the zone is turned off with the volume below this point, it will return to this level when reactivated.
Max Vol Turn On	The maximum volume level for a zone when it is turned on. If the zone is turned off with the volume above this point, it will return to this level when reactivated.
Page Volume	The default volume for paging. Can be set from 0% (Off) to 100%. Default is 75%.
WHM	An “X” in this column designates that the zone participates in the Whole House Music functionality of the controller.
Group	Use the drop-downs to select a Group. Up to 4 groups per chassis may be created, and zones that are grouped will link source changes together. Note that Volume Control is always on a zone by zone basis and will not be affected by Grouping.
Import Settings from Device	(Optional) If the chassis has already been configured, click this button to read in the existing settings from the device.

Local Sources

To access Local Sources on the Elan System 12, click the **+** icon on each zone to expose the Local Source settings:



Enter the source information as normal. In addition, you may set the Audio Input level for the Local Source or import these settings from the S12.

COMMON MISTAKES

1. **Multiple Chassis configuration:** When using multiple S12 chassis, it is important to set the DIP switches on each chassis to reflect the correct chassis number. Refer to the Elan documentation to set these switches properly. Note that you must power cycle after changing dip switches for the change to take effect.
2. **Incompatible Firmware:** Confirm the firmware running on the S12 is the same on all chassis in the system and is one of the compatible versions. See the header of this document for compatible versions. Note you must power cycle after updating firmware for the firmware update to take effect.
3. **Multiple Communication Devices for multi-chassis installs:** If you have multiple S12's, or S12's with daisy-chained V883 (etc), only one communication device and one serial connection is required.
4. **Wrong Communication Type:** The Elan S12 must be controlled via RS-232, and requires the communication type ELAN SYSTEM for proper function.
5. **Video switching issues:** The S12 can be programmed for video switching in viatools or in the g! software but this does require that the S12 Video Setting is set properly in the configurator. See the S12 Programming section above for details on the different settings and when to use each.