



Integration Note

Manufacturer:	ELAN
Model Number(s):	M86A
Core Module Version:	g! version 5.1.351 or later required
Comments:	M86A FW version 2.3.2.1
Document Revision Date:	1/14/2013

OVERVIEW AND SUPPORTED FEATURES

THE FOLLOWING FEATURES ARE SUPPORTED:

Traditional Whole-House Audio and Video: The ELAN M86A is a multi-zone – multi-source audio switcher that is controlled over VIANET. The g! Viewer interface can be used to select sources by zone, and control volume in each zone.

Multiple M86A units: Up to 4 ELAN M86A units can be controlled on the VIANET connection of the HC-Series Controllers.

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

Whole House Music: The Whole House Music (WHM) feature is supported.

Do Not Disturb: The Do Not Disturb (DND) feature is supported.

Sense Inputs: The sense inputs are supported and can be used to trigger system events.

Audio Sense: Audio Input sensing (independent of audio source selection) is supported and can be used to trigger system events.

IR Routing: All eight Sources can be configured to route IR from Zone RJ45 inputs and IR Link ports to any combination of Source IR ports. Note that IR must still be generated outside the M86 (from HC, for example) as the M86 cannot generate IR.

ELAN M86A Chassis Programming: The g! software supports programming ELAN M86A features from Configurator, including WHM modes, volume levels, IR Routing and more.

THE FOLLOWING FEATURES ARE NOT SUPPORTED:

Control from HomeBrick/MultiBrick: Control of an M86A is only available from the HC Series controllers VIANET jack. The M86a can not be controlled from legacy HomeBrick/MultiBrick controllers.

Any feature not specifically noted as supported should be assumed to be unsupported.

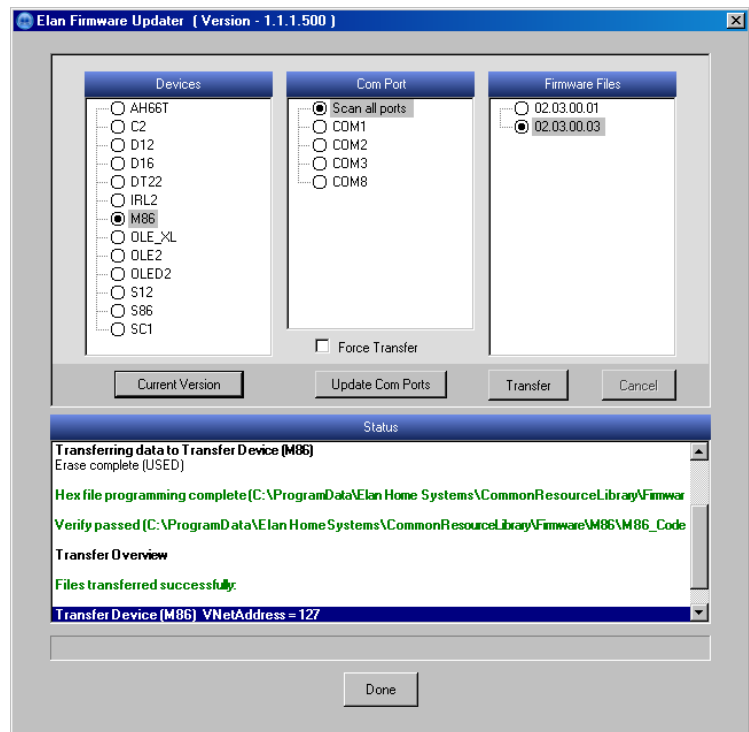
INSTALLATION OVERVIEW

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 zone controllers back to the system controller of the **g!** system for VIANET communications. These will be terminated with an ELAN standard connection.
3. Mount the speakers and keypads in each zone, and install the ELAN and the sources.
4. Connect the **HC Controller** to the ELAN system electrically. See the wiring diagrams for more information.
5. Configure the **g!** system for the ELAN M86A and confirm communication between the ELAN and the **HC Controller**.
6. 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.

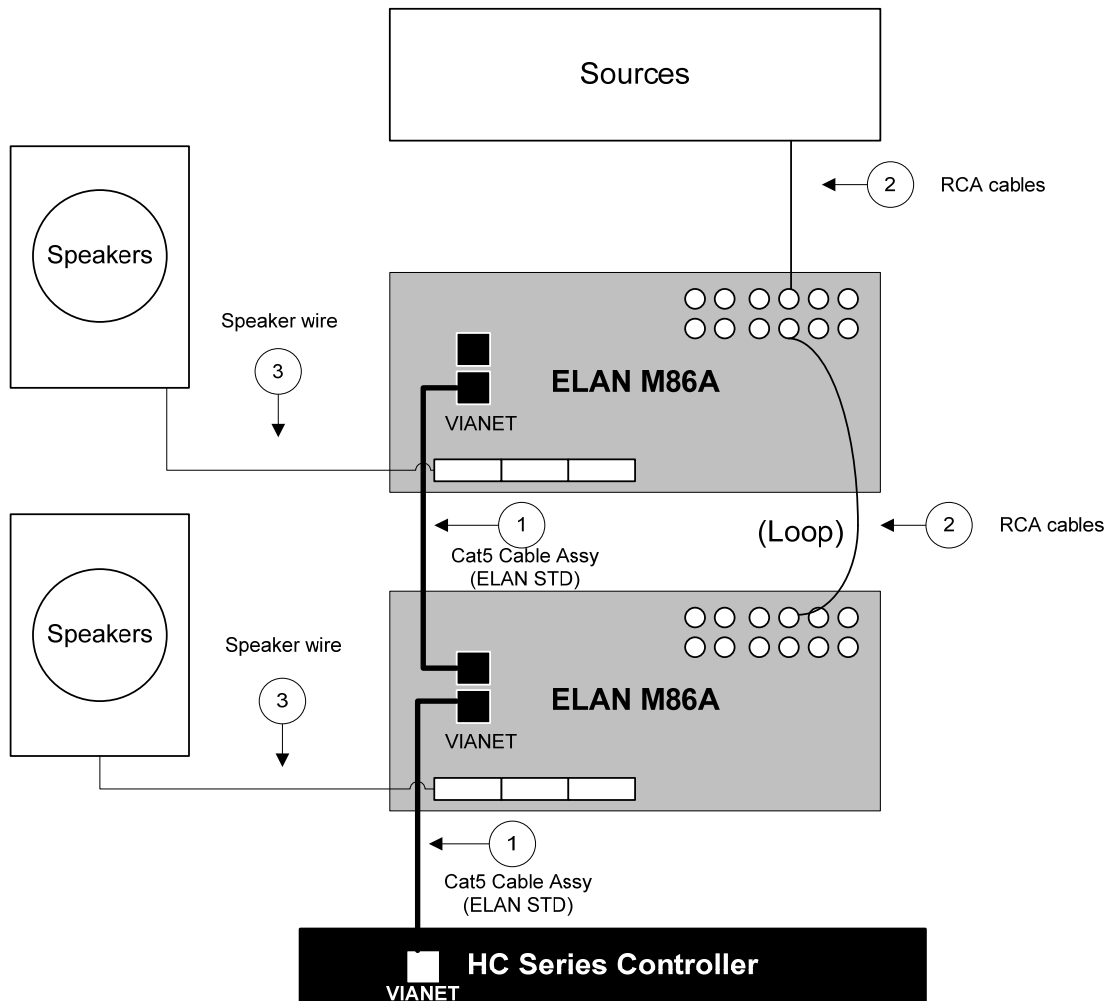
CHECK/UPDATE THE M86A FIRMWARE

Verify the **M86A** firmware on all chassis is one of the supported versions listed in the document header above.

1. Connect a USB cable from your PC to the front USB mini port on the M86. The USB port is behind the door on the right side of the chassis.
2. Disconnect all Vianet cables from the back of the chassis.
3. Start the ELAN Firmware Updater by selecting it from your start button menu and navigating to it via the All Programs browser.
4. To check the firmware: select the device as an M86A and click the **Current Version** button. The application will search the com ports for the M86A then report the current version of that chassis. If the firmware is supported then remove the USB cable, reboot the chassis, and reconnect the Vianet cables.
5. If the firmware needs to be updated: select the device as an M86, select the COM Port, and the proper firmware version then click the **Transfer** button. Wait for the transfer to complete and state that it was successful as shown in the screen on the right.
6. Remove the USB cable, reconnect the Vianet cables, and reboot the chassis.



CONNECTION DIAGRAMS



Note: Connect one chassis VIANET In/Out on the M86 to VIANET In/Out on the HC Controller (it is not important which port is used). Loop VIANET from the 1st chassis to the next (and so on) for control of all chassis.

BILL OF MATERIALS

#	Device	Manufacturer	Part Number	Protocol	Connector Type	Notes
1	Cat5 Cable Assy.	Installer	N/A	VIANET	RJ-45 Male X RJ-45 Male	ELAN Standard
2	RCA Cable	N/A	N/A	Analog	RCA X RCA	
3	Speaker Wire	N/A	N/A	Analog	Bare leads	
4	ELAN M86A	ELAN	M86A	VIANET	RJ-45 Female	
5	HC Controller	ELAN	Various (Ex. HC-12)	VIANET	RJ-45 Female	

g! CONFIGURATION DETAILS

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

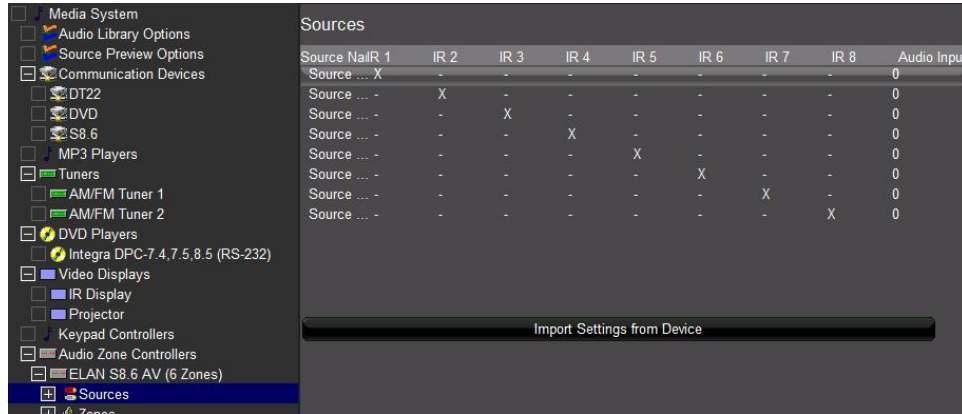
In the table below:

- “<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			PRECONFIGURED VIANET
<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 M86a (X Zones))	
	Device Type	ELAN M86a(X Zones)	See note 1
	Location	<User Defined> (Not Required)	
	Comm Device	<Auto-Select> (Default: VIANET)	
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>	
	Display	<N/A>	
	Universal Receiver	<Select>	
	Configuration Interface	<Select>	
	<Sources List>	<N/A>	
Settings Interface	Settings	Right click zones to add a settings interface to provide independent control of Bass, Treble, Loudness, Whole House Music and Do Not Disturb	
Tab Layout	Interface Tabs	<Select>	Move any unused zones to the right into Available Zones to remove from the viewer
Notes:			
1. Select 6 Zones for control of one Elan M86, 12 Zones for two Elan M86, and so on.			
2. For systems with devices that have controllable volume (such as a Squeezebox), select the desired volume (normally 100%).			

M86A PROGRAMMING

In Version 5.1 (or later) of the **g!** software, it is possible to program basic M86A features from the Configurator.



M86A Source Settings: To access these settings. Click on the ELAN M86A 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 M86A.

Source Name	The names of the sources. See the source exercise below for more details.
IR 1-8	<p>IR routing matrix. This matrix allows configuration of IR routing through the M86A chassis.</p> <p>Note: These setting have no effect on IR outputs from Global Cache or the HC series controllers.</p> <p>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, AM/FM, the IR will be routed to IR output 2.</p>
Audio Input	The source volume level. 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.

Zone Name	Max Volume	Min Vol Turn On	Max Vol Turn On	Page Volume	WHM	Balance	DB	DB Volume
Living Room	100	0	100	75	X	0	X	75
Bedroom	100	0	100	75	X	0	X	75
Zone 3	100	0	100	75	X	0	X	75
Zone 4	100	0	100	75	X	0	X	75
Zone 5	100	0	100	75	X	0	X	75
Zone 6	100	0	100	75	X	0	X	75

	Default Paging	Group Paging
WH Page Type:	X	-

Zone Name	WH Page
Living Room	-
Bedroom	-
Zone 3	-
Zone 4	-
Zone 5	-
Zone 6	-

Import Settings from Device

Quick Reference: M86A Zone Volume Settings	
Volume Control	
Max Volume	The Maximum volume allowed for a zone. Use this setting to prevent unpleasant volume levels or speaker damage in a zone.
On Min	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.
On Max	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 zone controller.
Balance	Adjust the default Left channel/Right channel balance for the zone output.
DB	An "X" in this column designates that the zone participates in the Doorbell functionality of the zone controller.
DB Volume	If DB is enabled in the previous column, set the default volume for doorbell. Can be set from 0% (Off) to 100%. Default is 75%.
Paging Preferences	
WH Page Type	Default Paging. When Default Paging is selected, all zones on the M86A will switch to paging mode when a page is received. Default is On (X). Group Paging. If Group Paging is selected, zones can be grouped to respond to pages differently. Default is Off (-).
WH Page	Select zones to participate in paging functionality. By default, all zones are selected for paging.
Pg Group 1 – Pg Group 8	These columns display when Group Paging is selected as the WH Page Type. Eight paging groups are provided for paging customization. Each zone can be set to be a member of a group. By default, zones are only members of the WH (whole house) group.

Note: Clicking the "Import Settings from Device" button will read in the current settings stored in the zone controller.

COMMON MISTAKES

1. **Multiple Chassis configuration:** When using multiple M86A 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 the unit after changing the ID settings.
2. **Incompatible Firmware:** Confirm the firmware running on the M86A is the same on all chassis in the system and is the compatible version. See the header of this document for compatible versions. Note you must power cycle the M86A chassis after querying firmware or changing firmware from the Firmware Updater tool.

Important Note: If an update to the firmware is required be sure to disconnect the VIANET jack from the M86A chassis prior to updating.

3. **Adding a communication device:** The M86a will use the pre-configured VIANET communication device included with the HC Controller.
4. **Incorrect Cat5 terminations:** The Cat5 terminations use the ELAN standard. They are NOT the T568A/B terminations.
5. **Incompatible devices on the VIANET:** The only devices allowed on the HC Controller VIANET are TS2s, M86, and C2.