Integration Note

Manufacturer:	Clipsal
Model Number(s):	**Various**
Minimum Core Module Version:	6.3, Build 49
Document Revision Date:	8/19/2019

OVERVIEW AND SUPPORTED FEATURES

The Clipsal C-Bus lighting system uses either serial or Ethernet to allow a third party system to communicate with and control the lighting.

CLIPSAL LIGHTING SYSTEMS SUPPORT THE FOLLOWING FEATURES:

Any feature not specifically noted as "supported" is not supported.

Lighting Load Control: Control and feedback of lighting load devices in the Clipsal system are supported.

Shade Control: Control and feedback of shades using both standard relays and Clipsal Shutter Relays.

Virtual Keypads: Pre-designed keypad templates emulating real Clipsal keypads are available in Configurator.

Schedule Control: Multiple schedules can be set using the Viewer software allowing timed control of the Clipsal system.

Scene Creation: The ELAN system can be used to create lighting scenes and also offer the ability for the user to create custom scenes within the user interface.

Event Mapping: Event mapping allows events in Clipsal (such as a keypad button press) to initiate a command (or group of commands) in ELAN**.**

Device Discovery: ELAN is able to discover devices configured as part of the Clipsal system by reading the Clipsal backup XML file into the configurator.

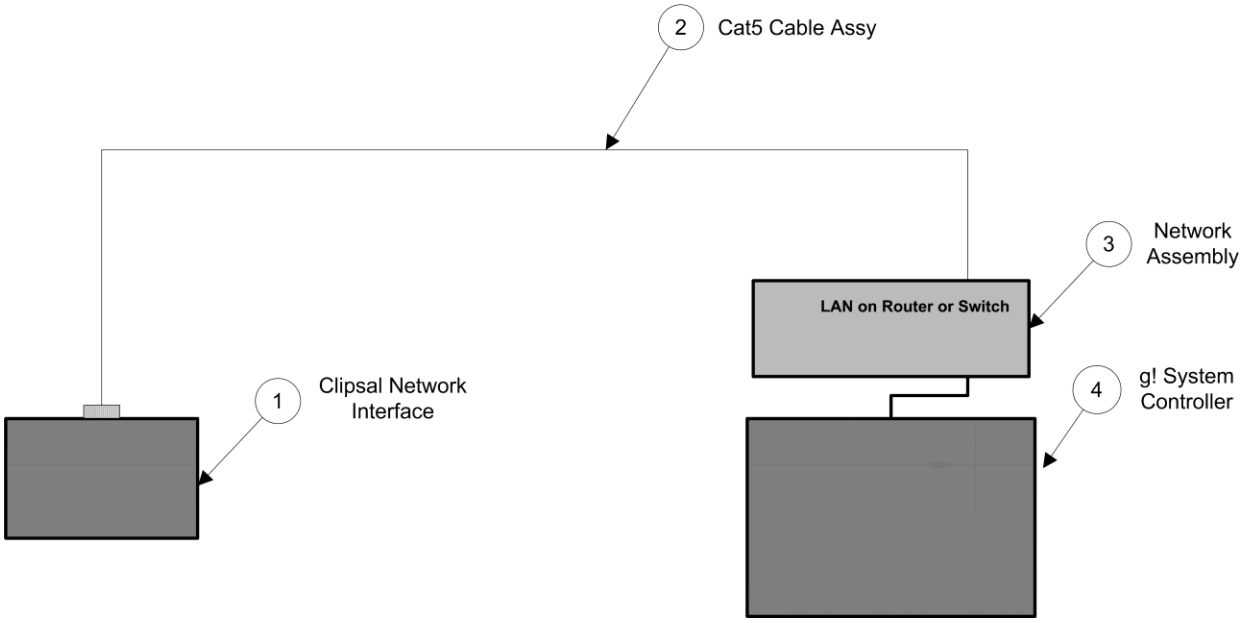
Fade Rate: Dimmer loads can be configured with discrete fade rate levels.

FEATURES NOT SUPPORTED:

Cascaded Bridges: If additional network bridges are used to extend the Clipsal system, they must all be connected directly to the local subnet. Cascaded bridges are not supported.

CONNECTION DIAGRAM: ETHERNET CONTROL

Refer to the **Bill of Materials** and **Wiring Diagram** that follow.

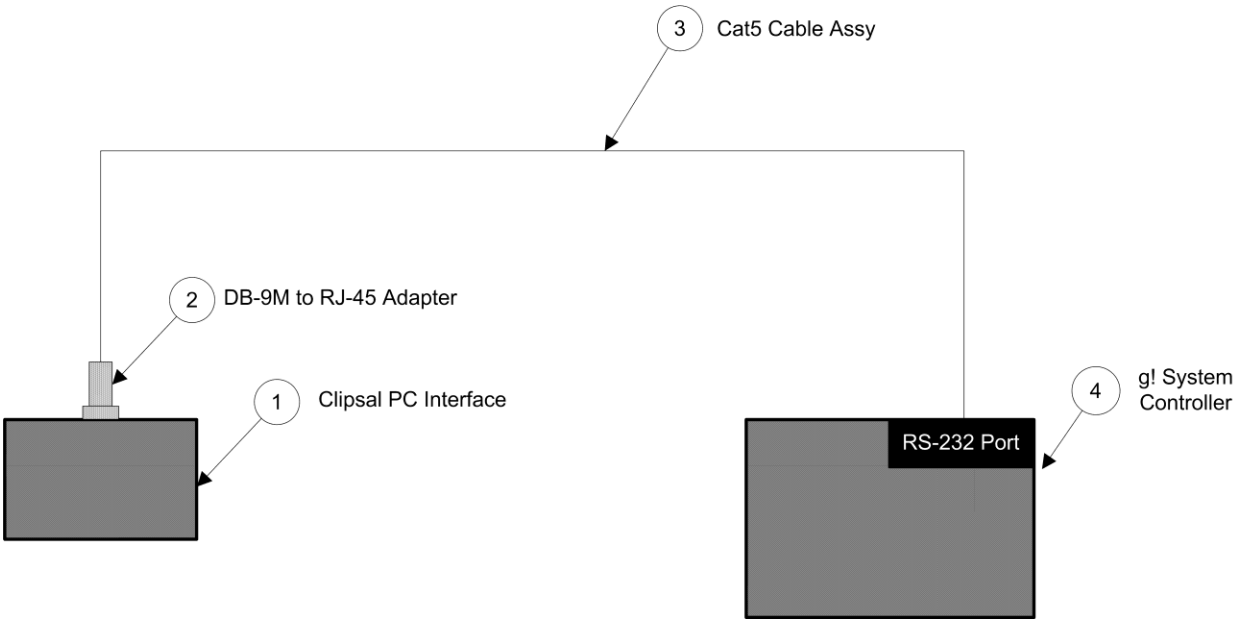


BILL OF MATERIALS

#	Device	Manufacturer	Part Number	Protocol	Connector Type	Notes
1	Network Interface	Clipsal	5500-CN*	Ethernet	RJ-45 Female	*example of Clipsal part number, refer to Clipsal interfaces
2	Cat5 Cable Assy.	Installer	N/A	Ethernet	RJ-45 Male X RJ-45 Male	Must terminate all 8 conductors
3	Network Assembly	ELAN	NWA18	Ethernet	RJ-45 Female	
4	g! Controller	ELAN	Various (e.g. HC12)	Ethernet	RJ-45 Female	

CONNECTION DIAGRAM: RS-232 CONTROL

Refer to the **Bill of Materials** and **Wiring Diagram** that follow



BILL OF MATERIALS

#	Device	Manufacturer	Part Number	Protocol	Connector Type	Notes
1	PC Interface	Clipsal	5500PC*	RS-232	DB-9 Female	*example of Clipsal part number, refer to Clipsal interfaces
2	DB-9M to RJ-45 Adapter	ELAN	HA-CB-307	RS-232	DB-9 Male X RJ-45 Female	
3	Cat5 Cable Assy.	Installer	N/A	RS-232	RJ-45 Male X RJ-45 Male	Must terminate all 8 conductors
4	g! Controller	ELAN	Various (e.g. HC12)	RS-232	RJ-45 Female	

CLIPSAL CONFIGURATION OVERVIEW

For a complete guide to Clipsal lighting system installation and programming, refer to the Clipsal website. The following information provides a brief overview of the central concepts of a Clipsal system, to aid integration with ELAN**.**

Networks

After creating a new project in C-Bus Toolkit, you will be prompted to add a network. Choose the network connection type (**CNI** if you have an Ethernet interface, **Serial** if you're using an RS232 interface). This network is your **Local** subnet as it is connected directly to your interface device. Each network can contain up to 255 Clipsal devices (or "*units*"), each with a unique unit address. To physically extend a system beyond 255 units, a network bridge is required. An additional network with a unique address must be added for each bridge you have installed. Any bridges installed must have their **Transit Network** configured as the local network.

Applications

A number of applications are added by default to a new network. Each application supports a maximum of 256 groups (groups are explained in more detail below). Additional applications (with unique Application IDs) can be added to logically extend (and separate) the C-Bus system. For example, the default Lighting

application has an Application ID of 56 ($38 hex). To extend a system beyond 256 group addresses, a second Lighting application must be added with a different Application ID.

Groups

Within each application, it is possible to add up to 256 groups (numbered 0-255). Groups are typically assigned to individual channels on a C-Bus unit (such as a single dimmer channel operating a dimmable lighting circuit, or a relay operating a non-dimmable lamp). Group dependencies are also likely to include the Keypad keys used to control them within the C-Bus system. So, when a command is sent by ELAN**,** it is routed by network address, application ID and group number, and anything associated with the group will receive & process the command (for example, a light circuit coming on and its associated keypad button(s) becoming illuminated).

ELAN CONFIGURATION

Initial Set Up

Communication Device: In the Lighting tab in Configurator, add a communication device, choosing the appropriate device type for your system (RS232 or Ethernet). If you are using a Serial Interface, choose the COM port you wish to use on the ELAN Home Controller, if you are using a Network Interface, enter the IP address and port number configured in C-Bus Toolkit.

NOTE: If you are using a single Clipsal Network Interface for programming and control of the Clipsal system, note that only one system can connect via the interface at any one time. For the ELAN Home Controller to communicate via the Network Interface it is first necessary to choose **Close All Networks** in C-Bus Toolkit. If the ELAN system is connected and you wish to use C-Bus Toolkit to make some configuration changes, you must first disconnect the ELAN Home Controller and then reboot the Clipsal Ethernet Interface. You will then be able to **Open All Networks** in C-Bus Toolkit.

Lighting Interface: Choose to add a new interface and select **Clipsal Lighting** from the list. Associate it with the Communication Device you created previously. Select the lighting **Application ID**, according to your C-Bus Toolkit configuration. If you have multiple Lighting Application IDs in use in your Clipsal system, you need a separate lighting interface for each. They can share the same Communication Device.

For lighting interfaces managing devices that are local to the g! system (i.e. there are no Clipsal network bridges between the g! system and the devices), leave **Bridge Unit** as zero and select **Local Subnet** in the **Settings** field.

If your Clipsal system uses a network bridge configured to allow communication between subnets, it is not necessary to specify any further interfaces (assuming the Application ID used on the remote net is the same); the local subnet interface will communicate with the remote subnet correctly. If your Clipsal system uses a network bridge configured to disallow communication between subnets, a second Clipsal Lighting Interface must be added in Configurator, with the **Bridge Unit** address specified (this is the network address of the bridge in Clipsal) and **Remote Subnet** selected in the **Settings** field.

Adding Lighting Devices

ELAN is able to discover devices configured as part of the Clipsal system by reading the Clipsal backup XML file into the configurator. The XML file can be found by changing the ".cbz" backup file to ".zip" and extracting it. Most loads whose type can be determined will be imported properly (e.g dimmer load as dimmer device). All other loads whose type cannot be determined (or not available in the Clipsal Lighting Interface) will be added to the Clipsal lighting interface as a switched load.

NOTE: Bridge Unit/Application ID must be set prior to reading the config file. Bridge Unit should be set to the desired Network's address for discovery (and set to the proper value after discovery per instructions above, if needed).

The driver supports 4 different types of lighting device:

Clipsal Dimmer Load: choose this device type if you are adding a group containing a dimmer channel (or group of dimmer channels should you want them to work simultaneously).
If the fade rate value entered into the configurator is not included in the list of values below, it will be rounded (down) to the closest value in the list.

Fade rate values for dimmers	
Time in seconds (min to max)	Fade Rate
1	**1**
4	**4**
8	**8**
12	**12**
20	**20**
24	**24**
40	**40**
60	**60**
90	**90**
120 (2 mins)	**120**
180 (3 mins)	**180**

Clipsal On/Off Load: choose **On/Off Load** if you are adding a group controlling a relay channel (or group of channels).

Clipsal Relay Shade: use this option if your shade requires two relays to operate. Note that you will need to specify group addresses for power and direction, as well as specifying a timeout length.

Clipsal Shade: this option should be used if you have a dedicated Clipsal Shutter Relay.

Scene Programming

Scenes provide a convenient method for setting a number of devices to a desired level with a single button press. It may be that your Clipsal devices store scenes, which can be easily recalled by group address. Alternatively, there are three main ways basic lighting scenes can be created in ELAN**:**

Scene Button: In the **Lighting** tab, create a keypad and add a new button (type "*Scene*"). You can then add as many lighting commands as you want to the button. Pressing the button will activate the commands in Clipsal, simulating a scene. Note that the scene you have created will be available in **g!** only, and not via Clipsal keypads.

Customizable Scenes: Customized scenes can be created by the user via the ELAN user interface. Add a custom scene in Configurator and an appropriate button in the user interface, via the normal method.

Event Mapping: Event mapping can be used to allow Clipsal keypad buttons to initiate commands in ELAN**.** These could be any commands, such as switching a TV on, controlling audio volume or setting a lighting scene.

In C-Bus Toolkit, create a group specifically for the new scene and add any keypad buttons you want to use to activate the scene. In Configurator, add the newly created group as a **Clipsal On/Off Load** (even though it really represents a scene button). Next, in the **Event Mapper** tab, create a new event map for your scene and add the new scene button (Clipsal On/Off Load) to the **Events** section and then all lighting commands you want to be included in the scene to the **Commands** section. The scene button can now be activated via Clipsal keypad buttons, or via buttons in ELAN**.**

G! CONFIGURATION DETAILS

The following table provides settings used in the ELAN Configurator. Please refer to the Configurator Reference Guide for more details.

- "<Select from list>" Select the appropriate item from the list (or drop-down) in the Configurator.
- "<User Defined>", etc. Type in the desired name for the item.
- "<Auto Detect>", etc. The system will auto detect this variable.

Refer to the ELAN **System Programming Details** below for additional information.

Devices	Variable Name	Settings (Ethernet)	Settings (Serial)
Communication Devices	**Name**	<User Defined> (Default: **New Device**)	<User Defined> (Default: **New Device**)
	System #	<Auto Detect>	<Auto Detect>
	Device Type	**Ethernet / Clipsal Lighting (Ethernet)**	**Serial Port / Clipsal Lighting (RS-232)**
	Enable Sharing	<Select from list>	<Select from list>
	Sharing Port	<Auto Detect>	<Auto Detect>
	IP Address	<User Defined> (Enter address of Clipsal Network Interface)	*Not Applicable*
	Port	<User Defined> (Enter port number defined in Clipsal)	*Not Applicable*
	COM Port	*Not Applicable*	<Select from list>
	Protocol	*Not Applicable*	<Auto Detect>
	Baud Rate	*Not Applicable*	<Auto Detect>
	Flow Control	*Not Applicable*	<Auto Detect>
	Parity	*Not Applicable*	<Auto Detect>
	Data Bits	*Not Applicable*	<Auto Detect>
	Stop Bits	*Not Applicable*	<Auto Detect>
Lighting Interface	**Name**	<User Defined> (Default: **Clipsal Lighting**)	<User Defined> (Default: **Clipsal Lighting**)
	System #	<Auto Detect>	<Auto Detect>
	Device Type	**Clipsal Lighting**	**Clipsal Lighting**
	Communication Device	<Select from list> (Choose Ethernet Communcation Device)	<Select from list> (Choose Serial Communcation Device)
	Bridge Unit/Application ID	<Select from list>	<Select from list>
	Settings	<Select from list>	<Select from list>
Lighting Devices	**Name**	<Auto Detect>	<Auto Detect>
	System #	<Auto Detect>	<Auto Detect>
	Device Type	<Auto Detect>	<Auto Detect>
	Hide Device From Scheduler	<Select from list>	<Select from list>
	Group	<Select from list>	<Select from list>
	Power/Direction/Timeout	<Select from list>	<Select from list>
Keypads	**Name**	<User Defined>	<User Defined>
	System #	<Auto Detect>	<Auto Detect>
	Model	<Auto Detect>	<Auto Detect>
And / Or:			
Custom Tab			

COMMON MISTAKES

ELAN Cannot Control the Clipsal System

- Ensure you have selected "*Close All Networks*" in C-Bus Toolkit.
- Check the settings of the Communication Device are correct.