KRAMER

USER MANUAL

MODEL:

K-CONFIG

Room Controller

P/N: 2900-300572 Rev 4

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1 Introduction

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Port Manager	Assign the controlled devices to the Master and Auxiliary device ports	7
Triggers	Activate the Triggers	8
Adding Actions	Describes how to add the various actions to a trigger	9
Connecting to a Device	Describes how to connect to a device, upgrade the firmware, read/write to the device and so on	10
Using the Web pages	Describes how to control the device via the Ethernet and perform minor configuration operations	11
Creating a Virtual Master	Describes how to create a Virtual Master to control a room via KRAMER NETWORK	12

Welcome to Kramer Electronics! Since 1981, Kramer Electronics has been providing a world of unique, creative, and affordable solutions to the vast range of problems that confront video, audio, presentation, and broadcasting professionals on a daily basis. In recent years, we have redesigned and upgraded most of our line, making the best even better!

Our 1,000-plus different models now appear in 14 groups that are clearly defined by function: GROUP 1: Distribution Amplifiers; GROUP 2: Switchers and Routers; GROUP 3: Control Systems; GROUP 4: Format/Standards Converters; GROUP 5: Range Extenders and Repeaters; GROUP 6: Specialty AV Products; GROUP 7: Scan Converters and Scalers; GROUP 8: Cables and Connectors; GROUP 9: Room Connectivity; GROUP 10: Accessories and Rack Adapters; GROUP 11: Sierra Video Products; GROUP 12: Digital Signage; GROUP 13: Audio; and GROUP 14: Collaboration.

Congratulations on purchasing your Kramer Room Controller device, which is ideal for controlling A/V equipment and media room items. The configuration software is part of the package and includes the Kramer **K-CONFIG** Guide.
The Kramer **K-CONFIG** software lets you set a sequence of actions in a trigger (a macro) and assign them to any of the configurable buttons on any of the relevant RC devices, a schedule or an event.

Note that the RC buttons can be configured prior to installation.

This online guide accompanies the **K-CONFIG** application software for Kramer room controllers and is compatible with previous versions. Download up-to-date Kramer user manuals and guides from the Internet at this URL: http://www.kramerav.com/manual/K-Config 3.

1.1 Overview

K-CONFIG is an intuitive configuration application that easily maintains control driver libraries, creates room control macros and protocols, and automatically generates HTML files where applicable. **K-CONFIG** supports a revised GUI, adds a host of advanced and easy to use features and uses a revamped driver database. The easy workflow shared between all Kramer control products enables a “Learn once – use forever” approach.

The **K-CONFIG**:

- Is a simple to use Graphical User Interface design, and no programming knowledge is required.
- Is powerful and updateable by the user driver database.
- Features a flexible querying system for projectors lamp hours, fans status and similar information.
- Includes an easy-to-use messaging system all the way to the Site-CTRL AV site monitoring application.
- Is compatible with current Windows versions: Windows 7 and Windows 8.

1.2 System requirements:

This section defines the minimum requirements for the Kramer **K-CONFIG** and describes how to install your system.

1.2.1 System Requirements for the Kramer K-CONFIG

The system minimum requirements include:

- 1GHz or faster processor
- 1GB or more RAM
- At least 1GB free hard disk space
- Network connection for configuring devices or USB.
- Microsoft.NET® Framework 3.5, automatically installed (see Section 2.1).

1.2.2 Operating Systems

Microsoft Windows 7 (32 or 64 bit) or Microsoft Windows 8 (32 or 64 bit) are the recommended operating systems (Windows NT does not support .NET 2.0 and cannot be used). Other Windows versions are not supported.

2 Planning the Controlled Room

You are here:

Configuration Steps	Description	Section
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Port Manager	Assign the controlled devices to the Master and Auxiliary device ports	7
Triggers	Activate the Triggers	8
Adding Actions	Describes how to add the various actions to a trigger	9
Connecting to a Device	Describes how to connect to a device, upgrade the firmware, read/write to the device and so on	10
Using the Web pages	Describes how to control the device via the Ethernet and perform minor configuration operations	11
Creating a Virtual Master	Describes how to create a Virtual Master to control a room via KRAMER NETWORK	12

Carefully plan your room controller system layout to ensure smooth configuration and installation of the system. The following table summarizes the basic configuration and installation steps:

Stage	K-Config Tool	Description
Plan		List room devices, location, connectivity and main commands
Install HW system		Connect room AV, Lighting, Automation and Control system
Set SW drivers	Driver Manager	Get device drivers and set proper device commands and responses
Set control SW system	Project Navigator and Port Manager	Set controllers, keypads and gateways Assign control ports connectivity to controlled devices
Configure control SW program	Triggers and Action Editor	Assign commands & actions to UI and triggering events
Activate control system	Connect	Sync control SW program to HW system Validate proper control system operation

The following are the steps that will get you going:

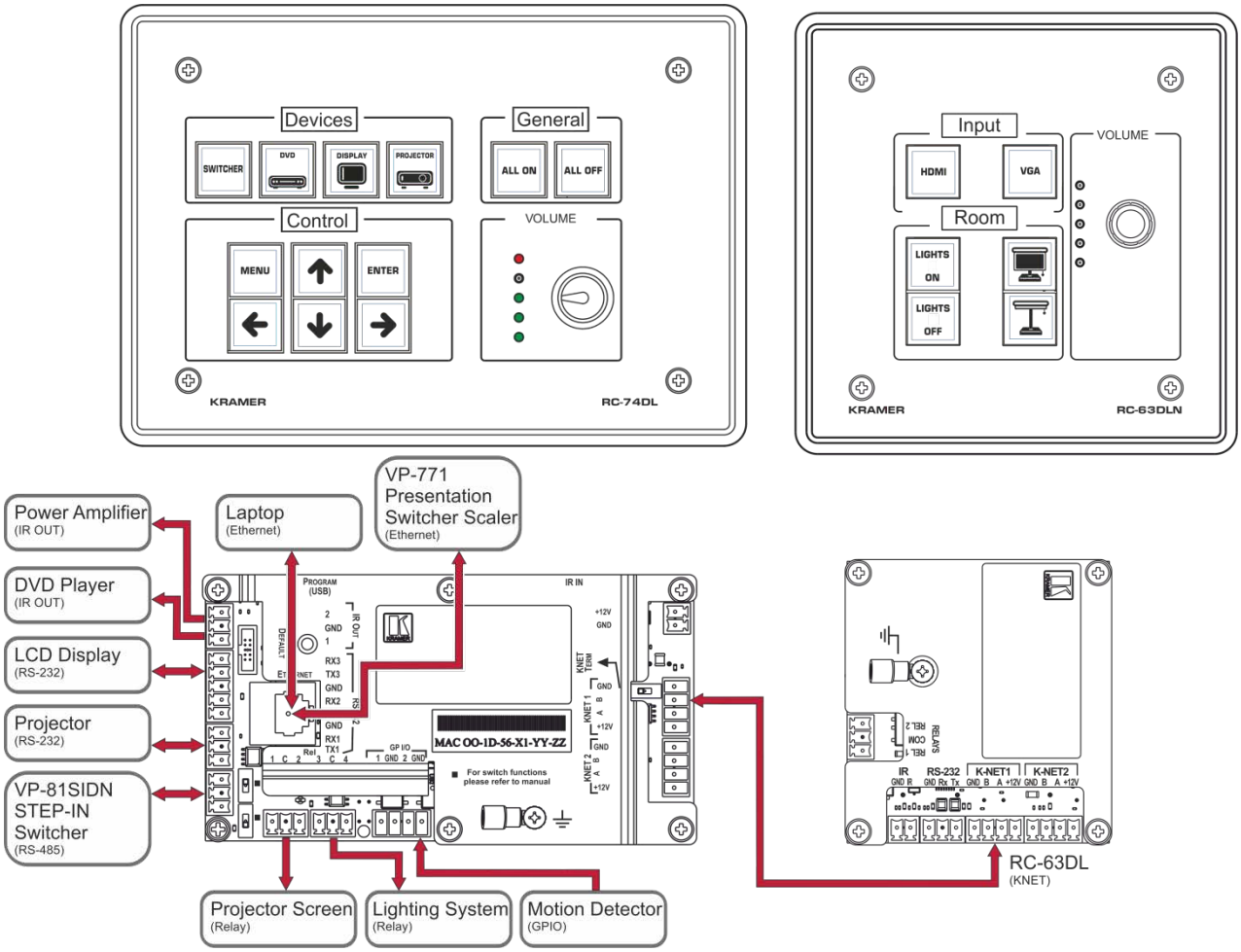
A: Define the room requirements; list the items required, plan the location and function of the devices; prepare a detailed list of the functions and commands required of the system devices:

Device	Function	Connected to	Sample Commands
Projector	Main room display	RS-232	On/off, input selecting, blank, freeze, menu, and so on
LCD Display	Local Monitor	RS-232	On/off, input selecting, volume, aspect ratio, Freeze, Menu, and so on
Laptop	Input the lecturer's laptop	Ethernet	Use the RC's Web page, perform "Test command" when installing the RCs in the room.
VP-81SIDN	Inputs of different user	RS-485	Select input, mute, volume, and so on
VP-771	Select a source	Ethernet	Input selecting, PIP, Blank, mute and so on
DVD Player	Input the DVD Player	IR	On/off, play/stop and so on
Power Amplifier	Amplify the volume	IR	On/Off, volume, select input, mute on/off, and so on
Projector Screen	Roll down and roll up	Relay	Up, down
Lighting System	Set the lights	Relay	On, off, dim
Motion detector	Burglar detection	GPI/O	

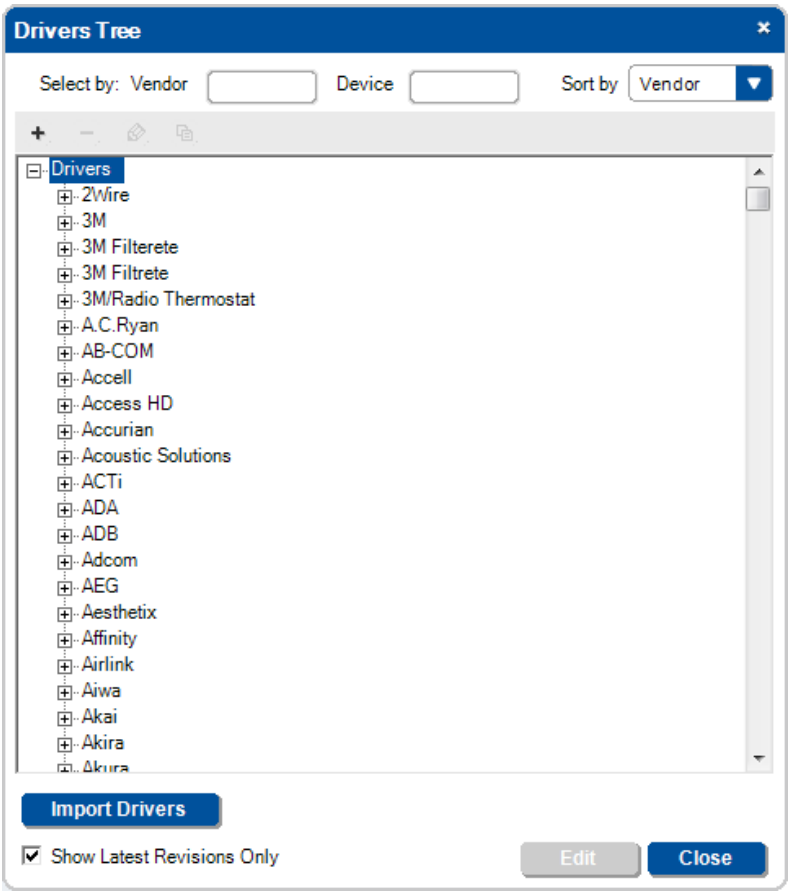
Other functions you would like to have in the room include general command sequences such as weekend shutdown, room startup and so on.

B: Set up the system in the room.

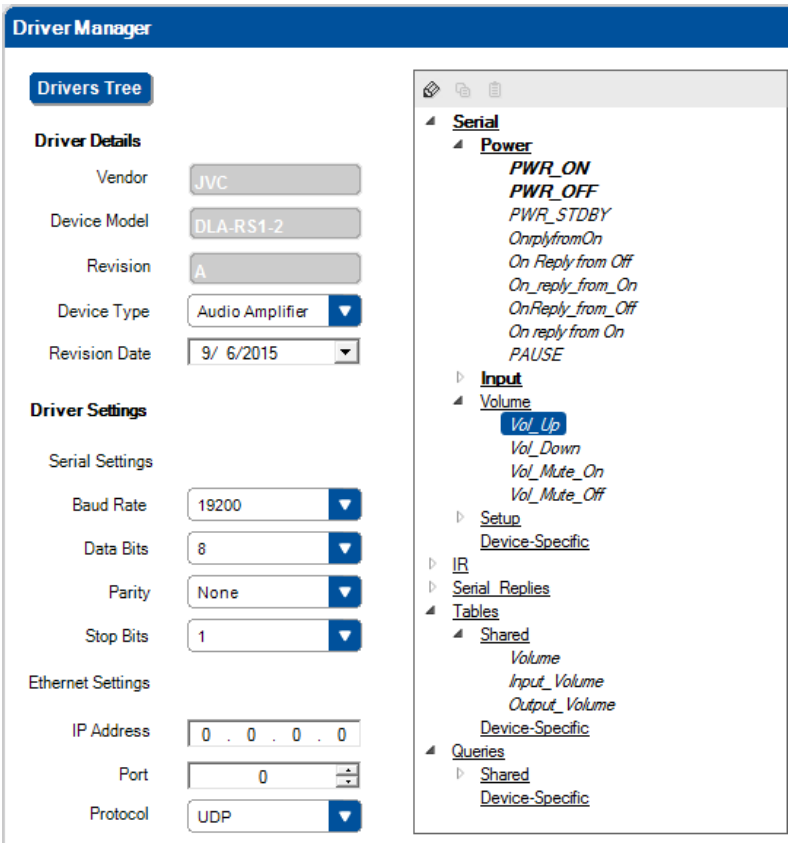
Note that you can also connect the system at a later stage, when testing the commands.



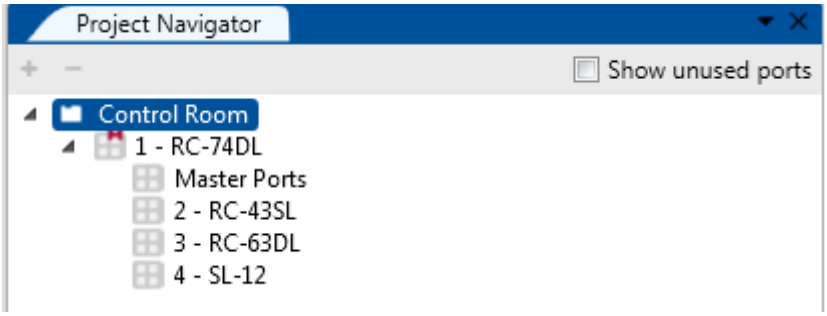
C: Check, according to the list, that all the device drivers appear in the **K-CONFIG** Driver Tree (see Section 5). For example, if you are using a Hitachi Projector, check that its driver is part of the drivers list. If it is not, and you do not have the driver to a device (for example, a projector), you can either request it from Kramer's tech support or download the manufacturer's protocol from the Web, and create it yourself via **K-CONFIG.**



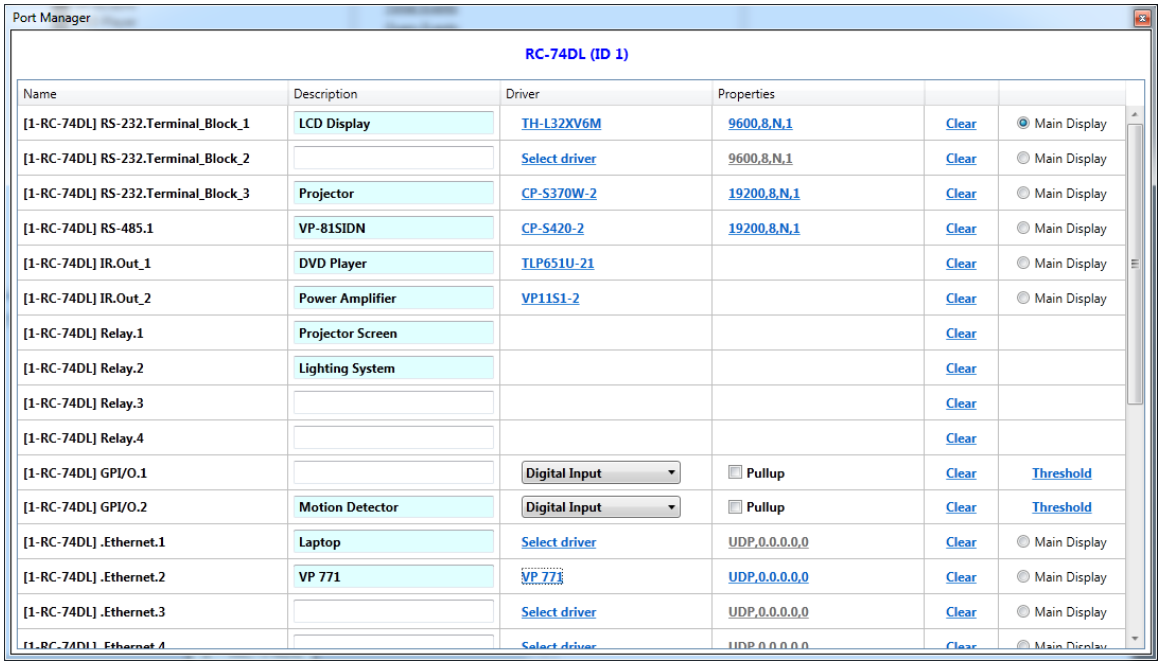
D: Set the serial replies, the queries and the tables via the Driver Manager:



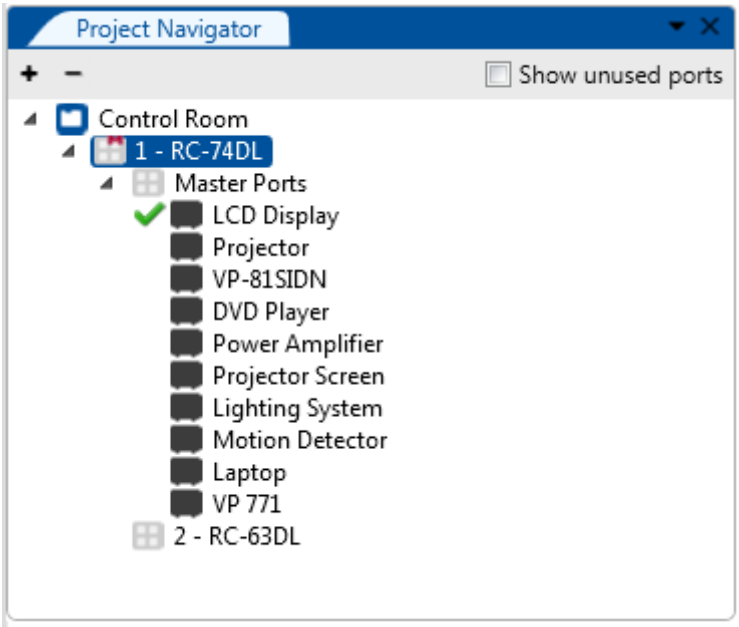
E: Add the Master and auxiliary devices to the Project Navigator:



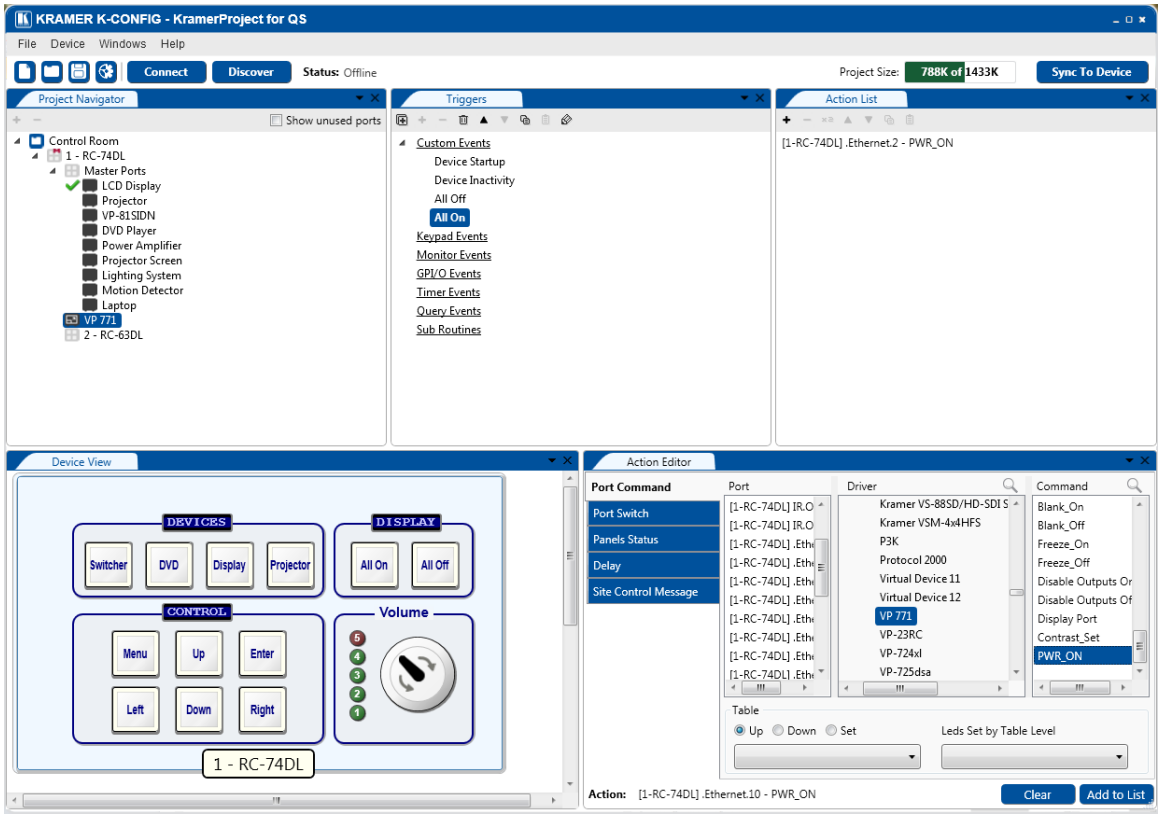
F: Set the ports via the port manager (assign the controlled items and devices to the Master and auxiliary devices):



The port description now appears in the control room:



G: Configure the commands:



H: Connect, write the configuration to the device ("Sync to device") and test the system.

Note that at any time you can add commands or devices in the same way.

2.1 Glossary

The glossary in the table below defines common terms used throughout this manual:

Glossary	
Action	A command that performs an action (for example, Mute the sound on the power amplifier). Actions are grouped into Action Types based on their function (for example, Button Light)
Action List	A list of actions which are performed one after another in the order they were added to the action list. An action list is performed as a result of a Trigger.
Auxiliary Device	A secondary room control device (K-NET ID number=2 and on) such as a room controller, control keypad, keypad or virtual keypad device.
Control Gateway (aka I/O proxy device	Control gateway devices (such as the Kramer FC-28 gateway) which are connected to a master room controller via an Ethernet port. Used to expand the number of I/O ports available for connecting controlled devices.
Control Keypad Device	Integrated room controller and keypad device (such as the Kramer RC-74DL), typically having direct I/O ports, serving as either master or auxiliary room controller.
Controlled Device (aka Peripheral device)	Peripheral devices (such as TV displays, projectors, DVD players, switchers, scalers, sensors, door locks, light switches and dimmers, shades, blinds, drapes and so on) that are controlled by a room controller device via I/O interface connections.
Driver	A communication protocol used for controlling a controlled device by a Kramer controller, as specified by the controlled device vendor.
GPI/O	General Purpose Input / Output port, with multiple operation modes as configured by K-CONFIG. It is typically used to interact with common room sensors (such as an occupancy sensor, temperature sensor and so on).
I/O interface (aka I/O port)	Any Ethernet, Serial, IR, GPI/O, or Relay control interface, connecting between the room controller and the controlled devices, either directly or via a control gateway.
Keypad Device	Keypad-only UI device (such as the Kramer RC-54DL keypad) without an integrated room controller, with hard buttons, knobs, LCD displays and similar UI control keys.
Master Room Controller	The main controller device (by default, K-NET ID number=1) in a room control system to which auxiliary controller devices, controlled devices, UI devices and control gateways are connected.
Room Controller Device	A room controller device running a control program, as configured via K-CONFIG, that controls room controlled devices (connected via I/O interfaces) according to UI-generated user commands. It serves as either master or auxiliary room controller. A room controller can be a HW-based controller unit (such as the Kramer SL-1N controller or the RC-74DL control keypad) or a Server SW-based virtual controller device (such as the KRAMER NETWORK controller).

Glossary	
Touch Panel Device	Touch UI panel (such as the Kramer KT-10 touch panel) with SW-based buttons, knobs, LCD displays and similar UI control keys.
Trigger	An event that starts the execution of an Action List, such as a button press, knob rotation, scheduled event, monitored event and so on
UI Device	User-interface device, with physical (such as a keypad) or SW-based (such as touch panel) buttons and knobs, configured for user room control operation.
Virtual Keypad Device (aka Virtual Device)	A SW-based keypad UI virtual device accessed via Web-browser for user room control operation through its multiple GUI panels, as configured in K-CONFIG. When connected to a Master room controller via Ethernet port, it can serve as an auxiliary UI device.
Virtual Panel	A GUI panel with multiple SW-based GUI elements, configured in a virtual keypad device for user room control operation.
Virtual Room Controller Device (aka Virtual Master)	A SW-based master room controller in KRAMER NETWORK control systems, as created in K-CONFIG and managed in KRAMER NETWORK server.

3 Kramer K-CONFIG Software Installation

You are here:

Configuration Steps	Description	Section
Introduction	General information and system requirements	1
Planning	Carefully plan your controlled room	2
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Driver Manager	Define the Controlled Device Drivers	5
Project Navigator	Define the Controlled Room	6
Port Manager	Assign the controlled devices to the Master and Auxiliary device ports	7
Triggers	Activate the Triggers	8
Adding Actions	Describes how to add the various actions to a trigger	9
Connecting to a Device	Describes how to connect to a device, upgrade the firmware, read/write to the device and so on	10
Using the Web pages	Describes how to control the device via the Ethernet and perform minor configuration operations	11
Creating a Virtual Master	Describes how to create a Virtual Master to control a room via KRAMER NETWORK	12

To install the K-CONFIG software:

- Check that ".NET Framework" Revision 4.0 software is installed or install it if it is missing (see Section 3.1).
- Install the USB driver (see Section 3.2).
- Install the Kramer **K-CONFIG** software (see Section 3.3).

3.1 Installing the ".NET Framework" Revision 4.0 (or higher) Software

Prior to using the Kramer **K-CONFIG** software, make sure that the ".NET Framework" Revision 4.0 (or higher) software is installed on your PC. If it is not, you need to install it:

- If you have a fast Internet connection, this software is automatically installed during the installation of the Kramer **K-CONFIG** software.

3.2 Installing the USB Driver

If you wish to configure the RC device by connecting it via a USB cable, you need to download and install the USB driver. Download the Kramer USB driver from the installation disc or from our Web site at http://www.kramerav.com/manual/K-Config 3, save it on your PC and extract the zip file to a directory where you can find it later.

Connect the mini USB cable from your PC to the device and wait until Windows 7 completes the connection and will report in a bubble that "Device driver software was not successfully installed" (If the device driver is installed successfully, skip the rest of section).

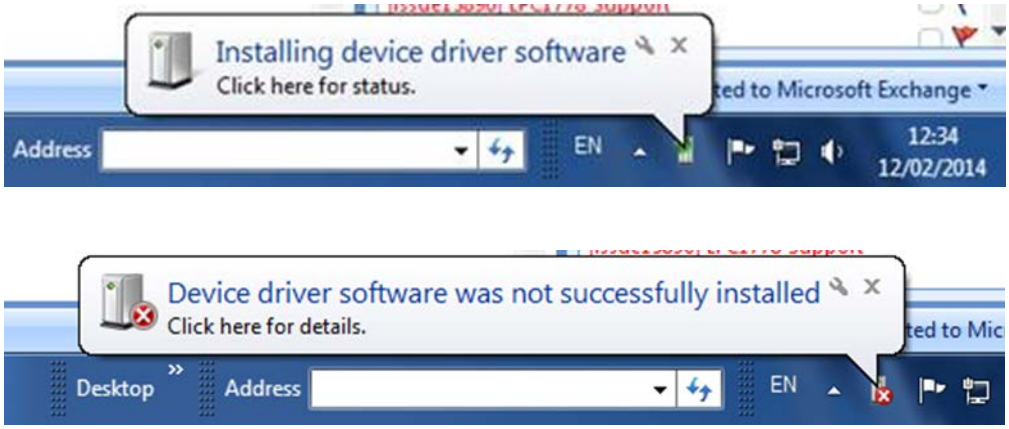

Figure 1: USB Driver Installation –USB Installation Attempt

To install the USB driver:

1. Open Control Panel -> Device Manager …

2. Right click the **Kramer USB –COM DEVICE** driver:

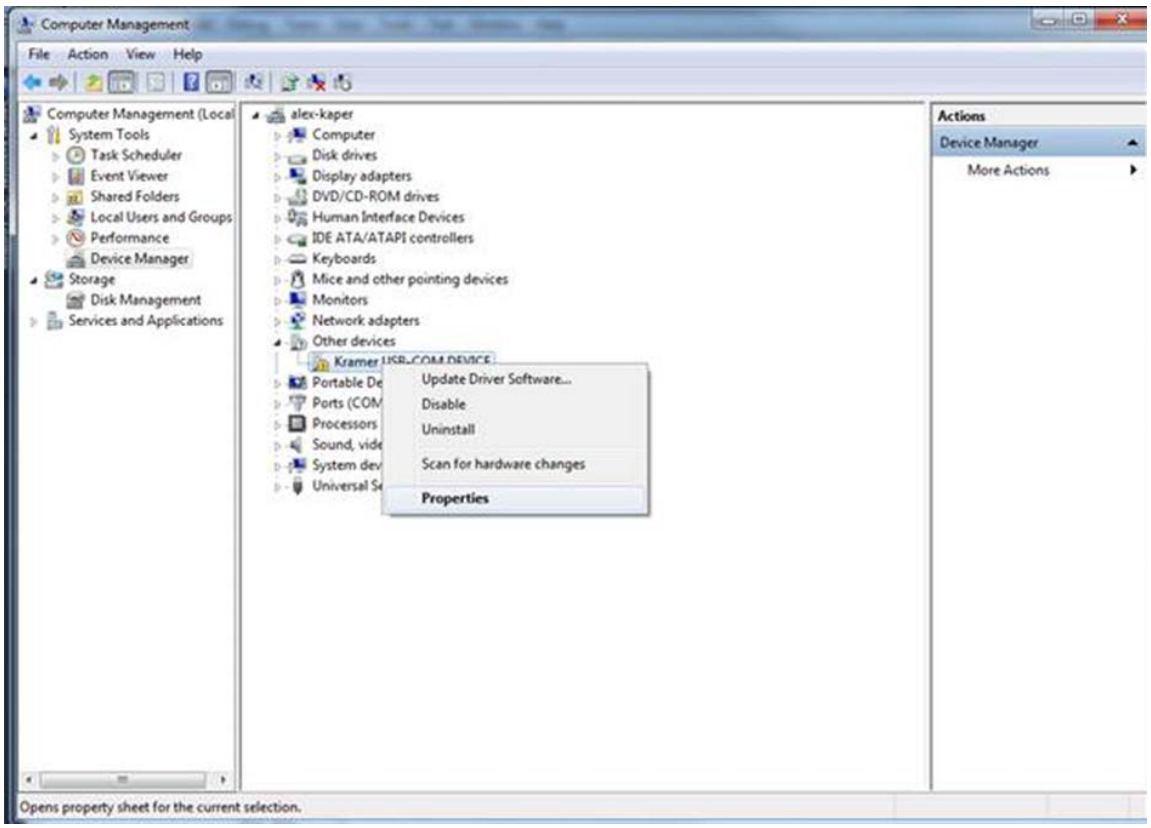

Figure 2: USB Driver Installation – Select USB Driver Properties

3. Select **Properties**.
   The **Properties** window appears:

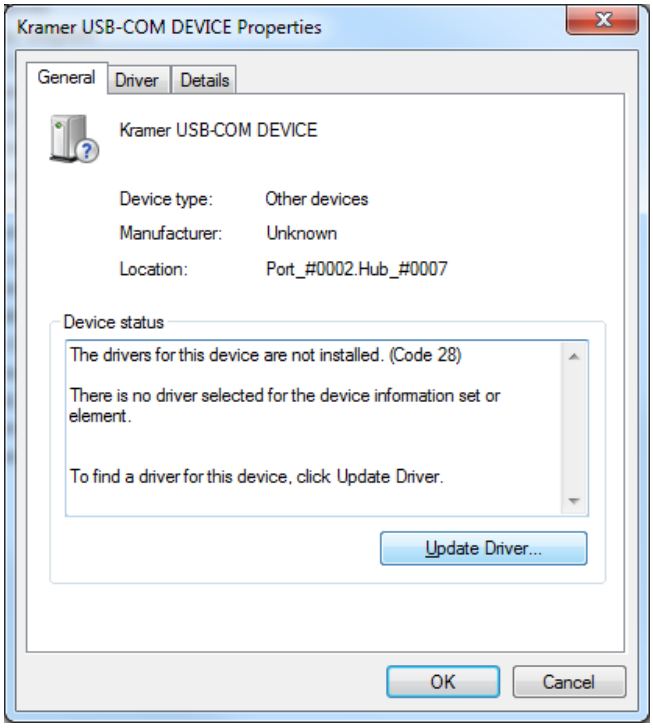

Figure 3: USB Driver Installation –USB Driver Properties Window

4. Click the **Update Driver…** window.
   The following window appears:

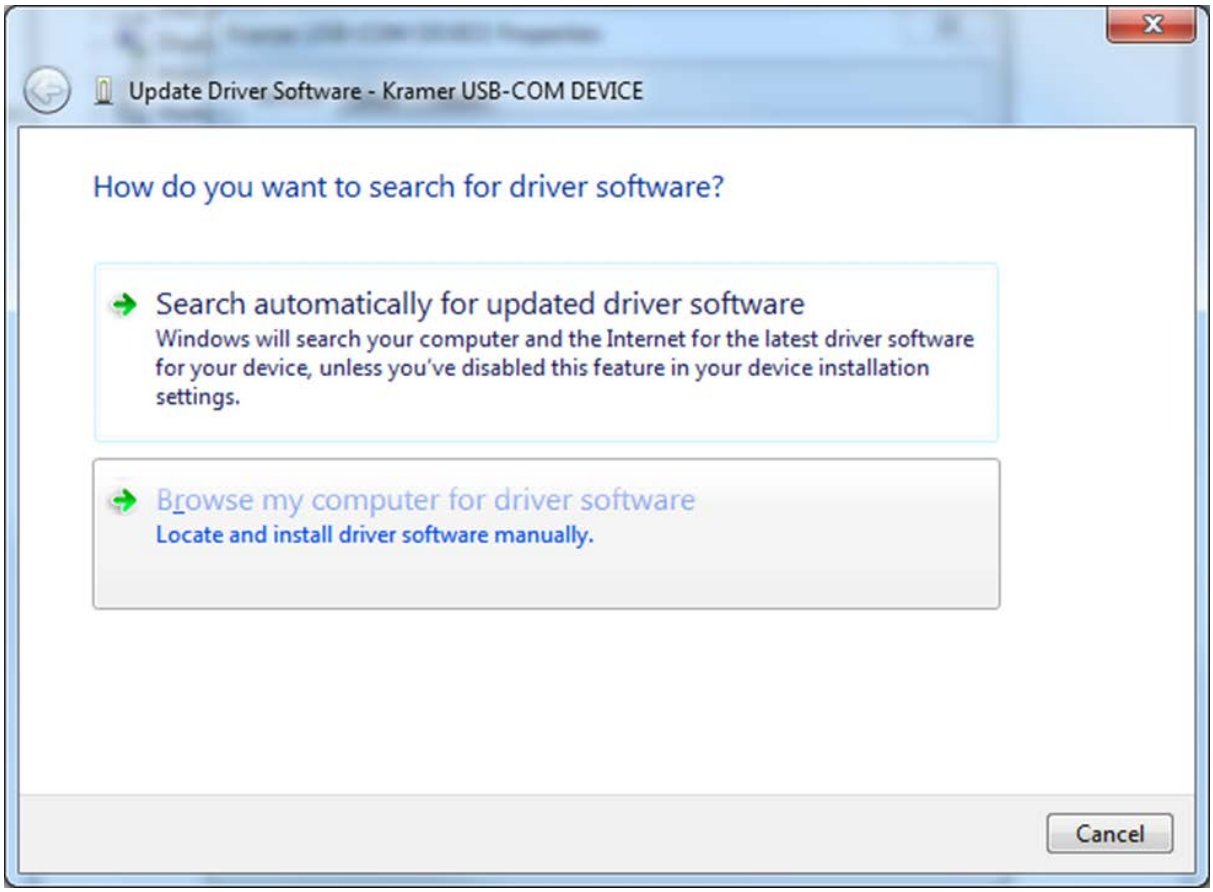

Figure 4: USB Driver Installation – USB Driver Update

5. Select **Browse my computer for driver software** and then set the location of the driver on your PC:

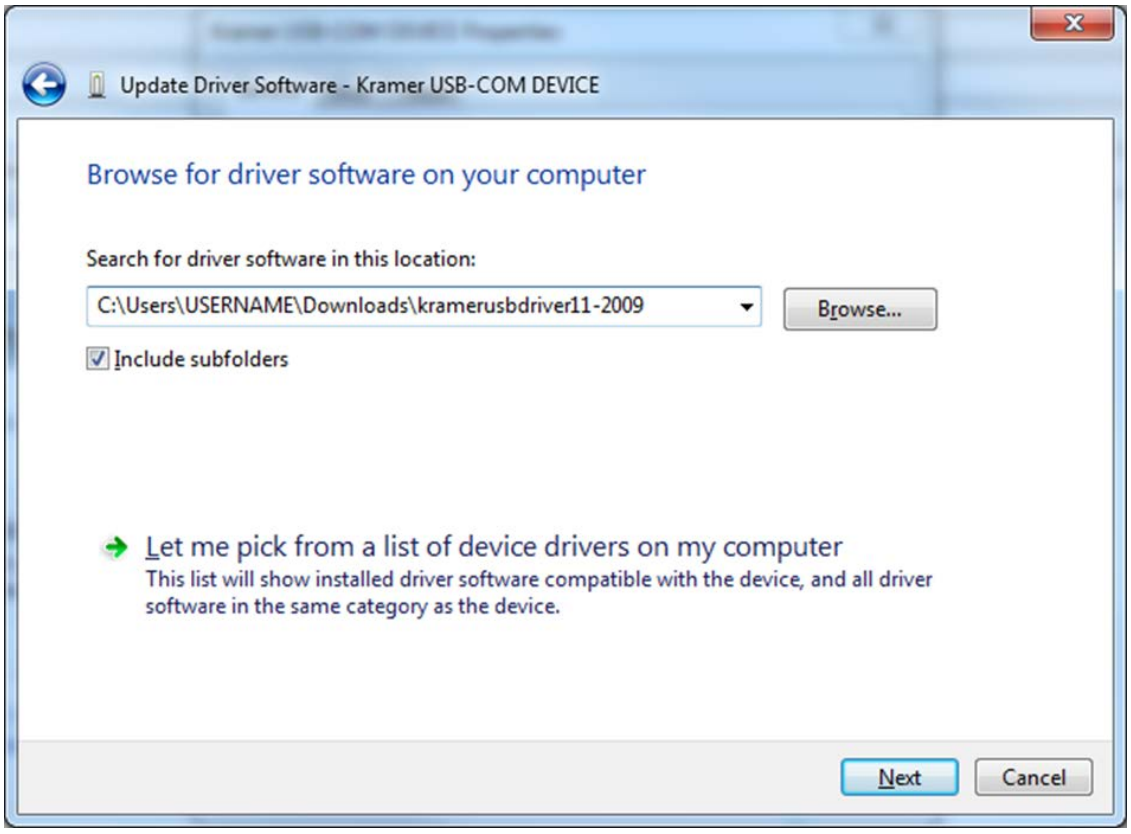

Figure 5: USB Driver Installation – USB Driver Location

6. Click the **Next** button. The **Windows Security** window appears:

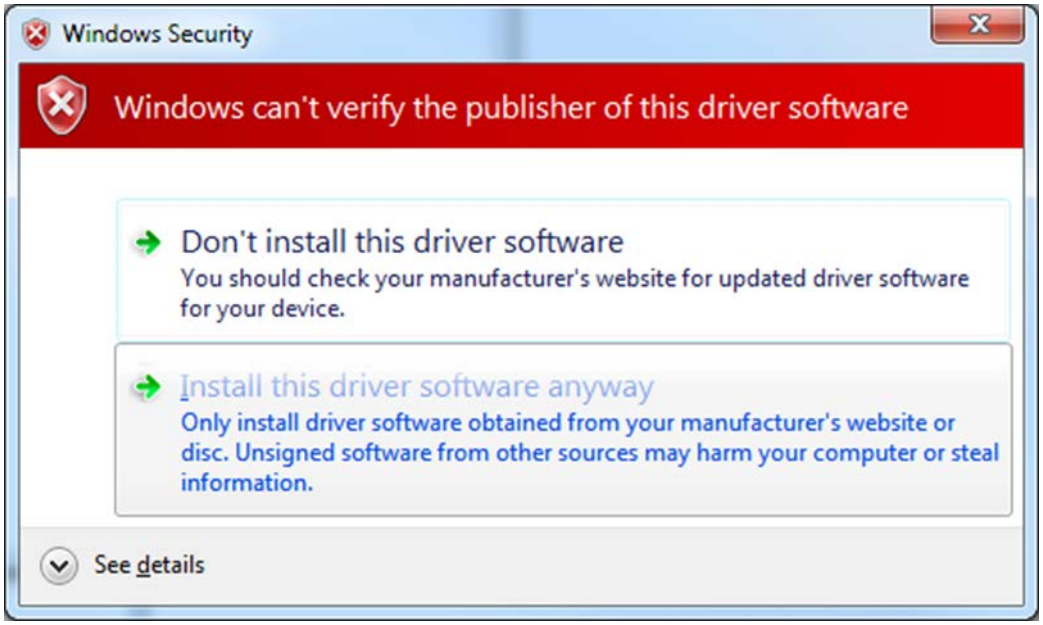

Figure 6: USB Driver Installation – Windows Security

7. Select **Install this driver software anyway**.

8. When the installation is completed, the following window appears:

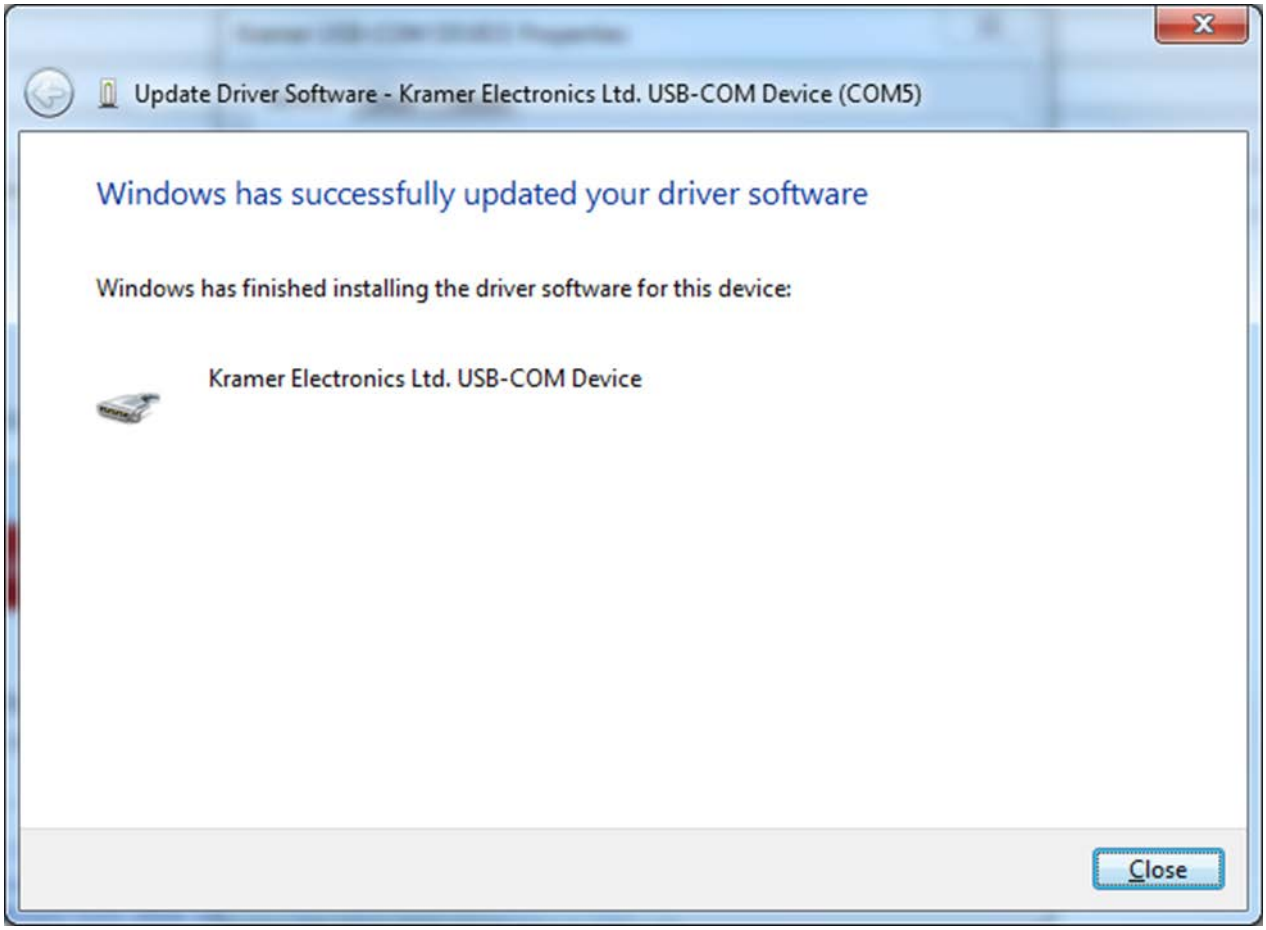

Figure 7: USB Driver Installation – USB Driver Updated

The PC recognizes the USB port to which the device is connected.

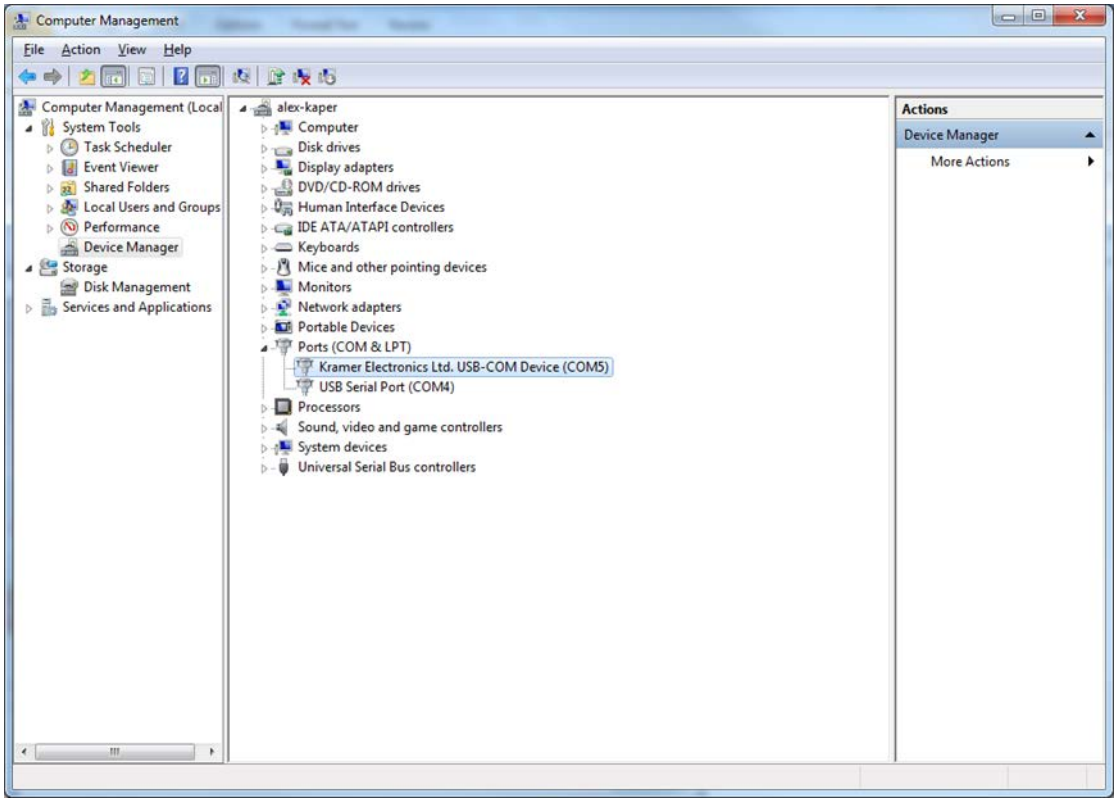

Figure 8: USB Driver Installation – USB Recognized on PC

3.3 Installing Kramer K-CONFIG Software

To download Kramer K-CONFIG from the Internet (note that file names are liable to change from time to time):

1. Go to the Kramer **K-CONFIG** Web page and download the file: "*Kramer K-Config.zip*" from the DOWNLOADS section.

2. Extract the file "*Kramer K-Config.zip*" package, which includes the Kramer **K-CONFIG** application setup and the Kramer device drivers, to a folder (for example, C:\Program Files\Kramer K-Config).

3. Install the Kramer **K-CONFIG** application (follow the instructions on screen).

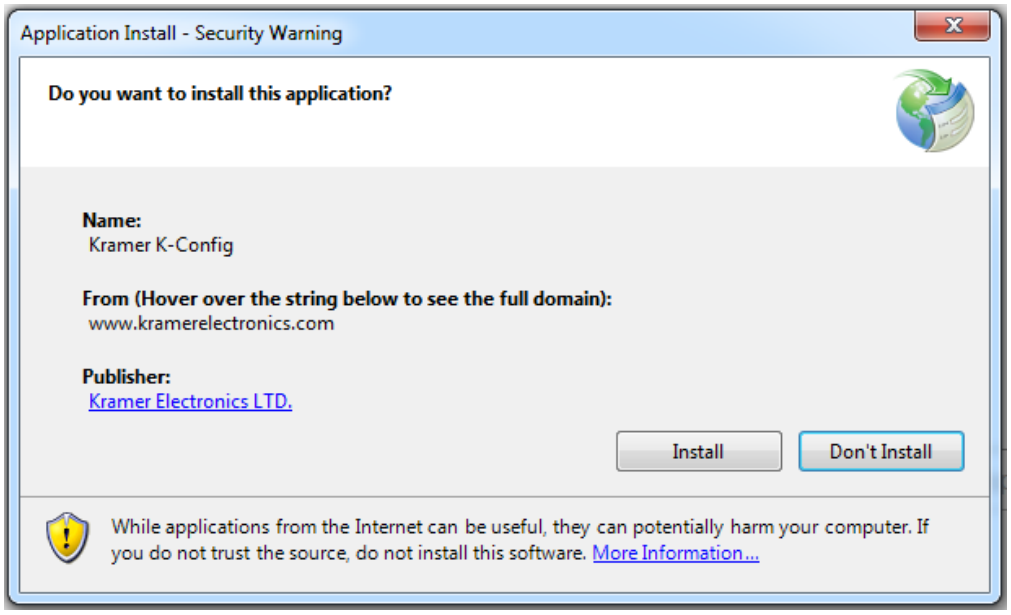

Figure 9: Application Installation

4. Click Install.
   The following window appears.

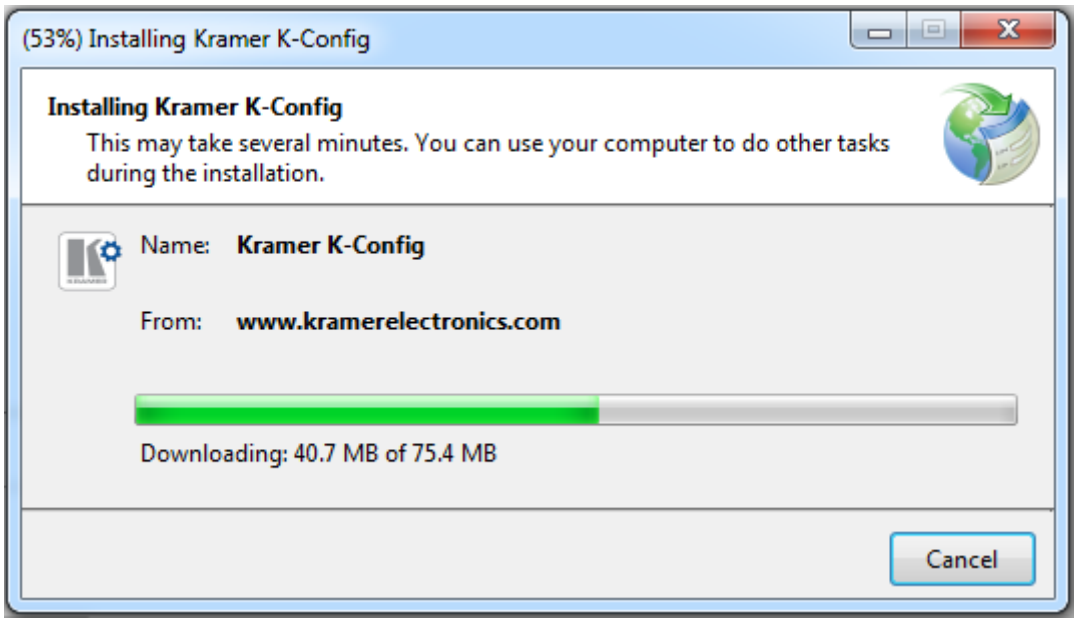

Figure 10: Installing Kramer K-CONFIG

5. Wait for completion of the installation

6. The following window appears (see Figure 11):

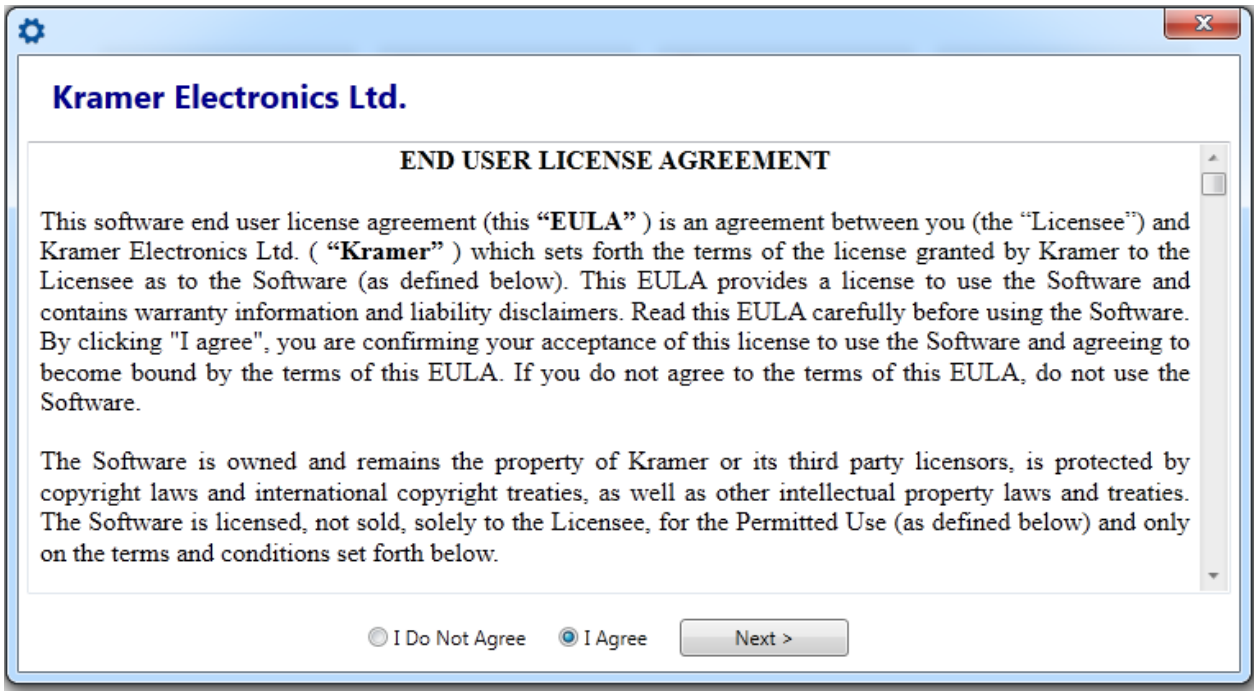

Figure 11: End User License Agreement

7. Check I Agree and click the Next button.
   The Registration window appears:

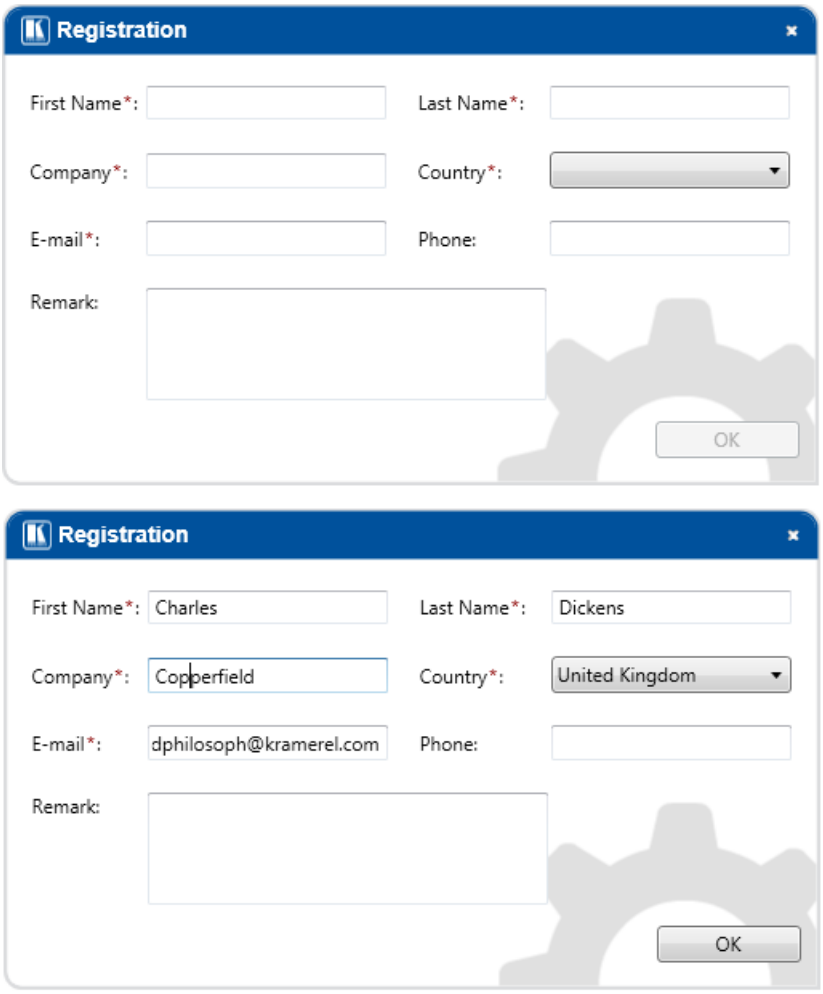

Figure 12: Registration Window

8. Fill in the details (note that this information is for internal use only) and click OK.

9. Upon completion, the **K-CONFIG** opens and then the **K-CONFIG** message appears:

Figure 13: KRAMER K-CONFIG Software

10. When installing for the first time, the following message appears:

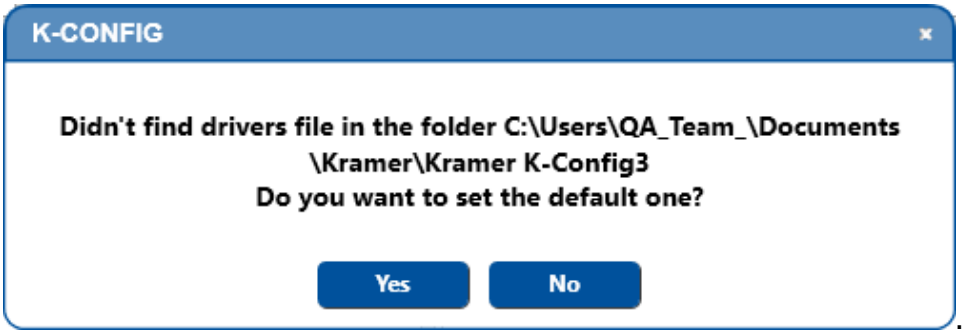

Figure 9: Default Driver Message

11. If you want to set the default click Yes (and continue to step 4) and if not, click No.
    The following window appears:

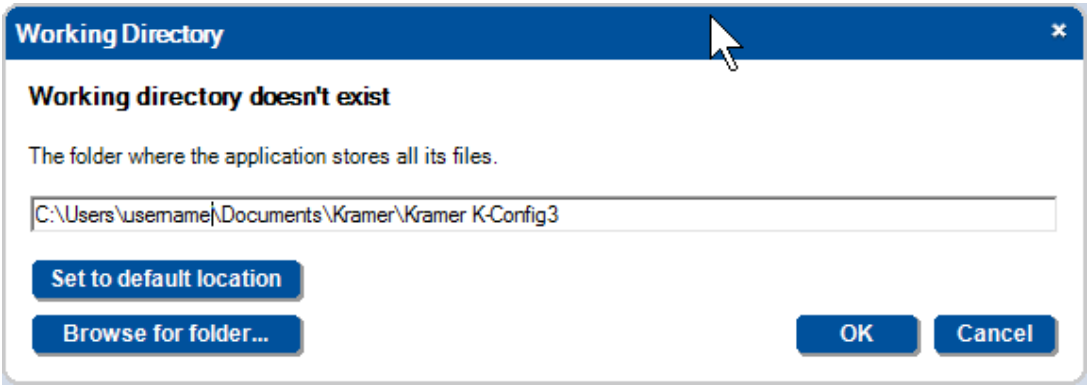

Figure 14: Setting a Working Directory

12. Select or create a new working directory (see Figure 15).
    The working directory will keep the information that is essential for operating the software. This information will remain unchanged while upgrading the software

13. If you need to change the working directory, click the **Browse for folder** button, select the working directory and click OK.
    If you do not need to change the working directory, go to the next step.

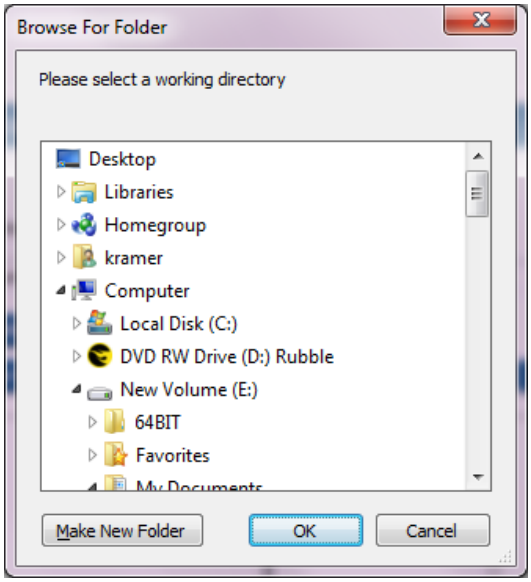

Figure 15: Change the Working Directory Window

14. Once the working directory is selected, click the **Set to Default Location** button.

Figure 16: Drive Database Loaded

15. Click OK.

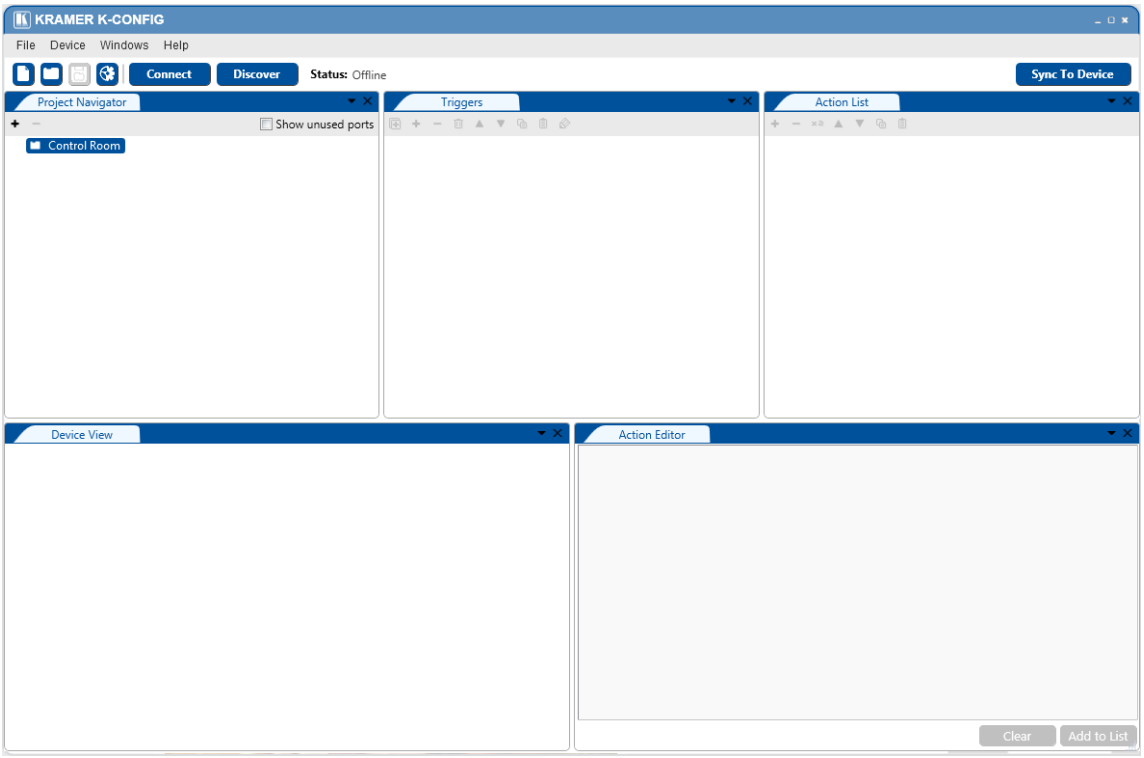

Figure 17: Installation Complete. The main window opens

4 Getting to Know K-CONFIG

You are here:

Configuration Steps	Description	Section
Introduction	General information and system requirements	1
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Following the installation, you can click the **K-CONFIG** icon to open the software:

Figure 18: Opening K-CONFIG

If the selected folder does not contain any drivers, the following message appears.

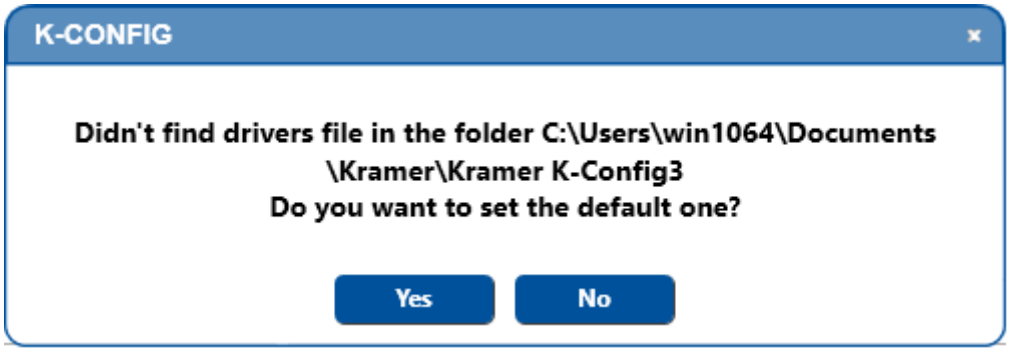


Figure 19: Opening K-CONFIG

The Kramer list of Master/auxiliary devices is automatically installed.

If you need to install drivers to an existing data base:

1. Click the **Import Drivers** button to import drivers.
   The following window appears:

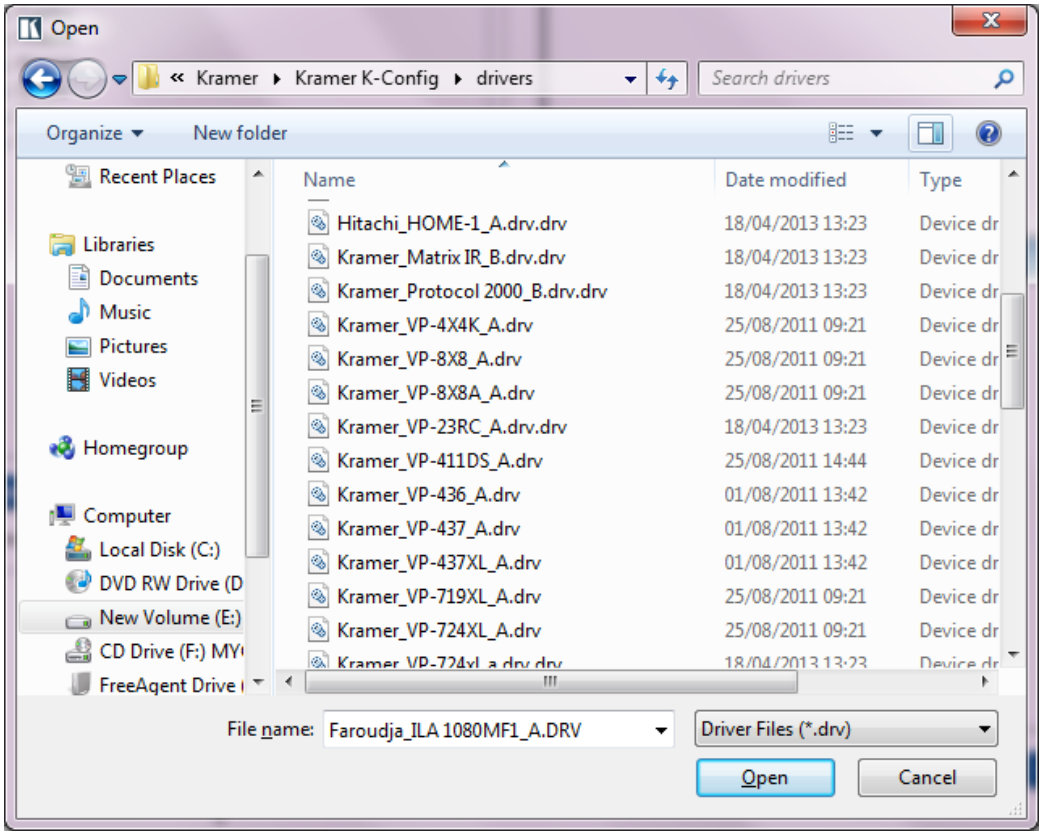
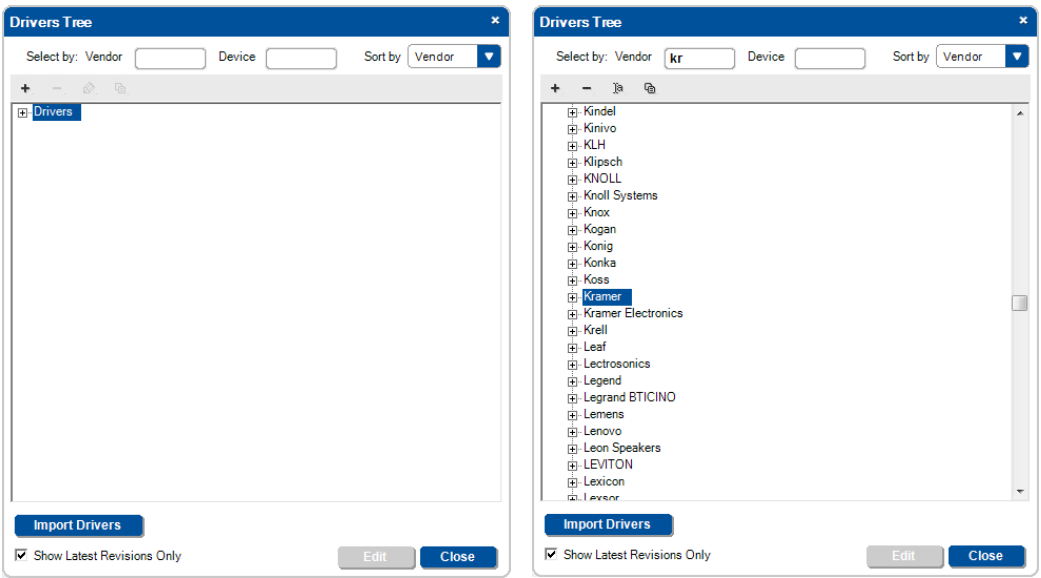


Figure 20: Import Drivers Window

2. Select the files to import and click **OK**.
   The imported drivers are arranged in the expanded **Drivers Tree** as follows (note that you can sort the drivers according to the vendor, the device type or by typing a keyword):



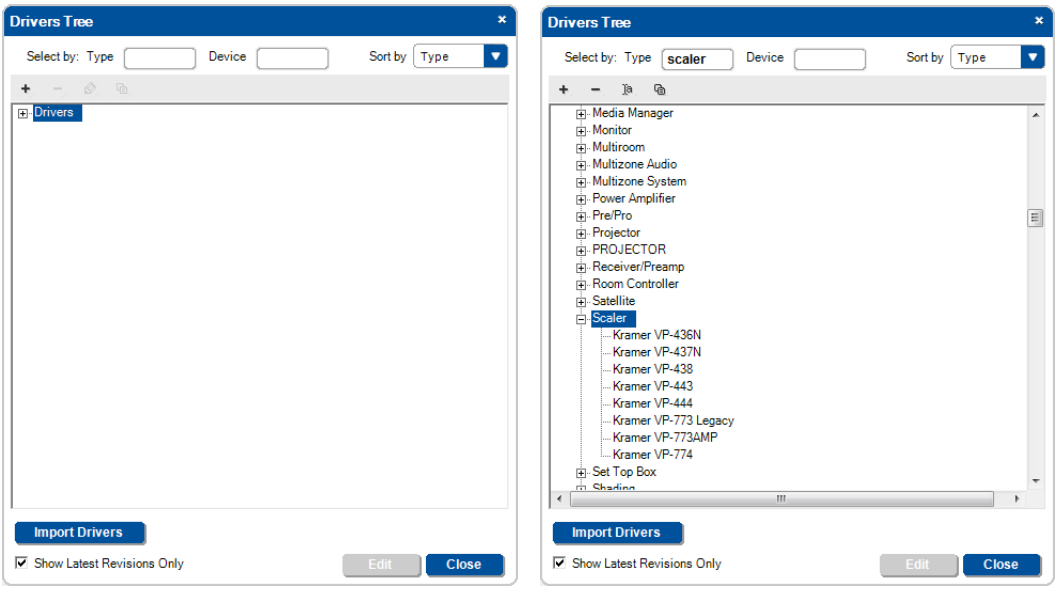


Figure 21: Drivers Tree – with Imported Drivers, Sorted by Vendor, Device Type or by keyword

4.1 The Main Window

The **K-CONFIG** main window is modular and can be altered according to your needs. You can change the size and location of each window in the layout separately, replace it, delete it or add other windows. The **K-CONFIG** main window default layout includes the five most frequently used windows:

- Project Navigator – shows the room controllers and the controlled devices.
- Triggers – shows the list of available triggers, arranged in Event categories.
- Action list – shows the list of actions in a selected trigger.
- Device View – the front panel view of the selected device.
- Action Editor – lets you create an action to add to the action list.

The remaining optional windows which are not accessed as often appear in the Windows menu and include the:

- Port Manager – lets you assign drivers and other characteristics to the ports.
- Device Settings – general, security, Ethernet and date and time settings.
- Web Settings – logo and Web page settings.

Figure 22 shows the main screen default layout appears:

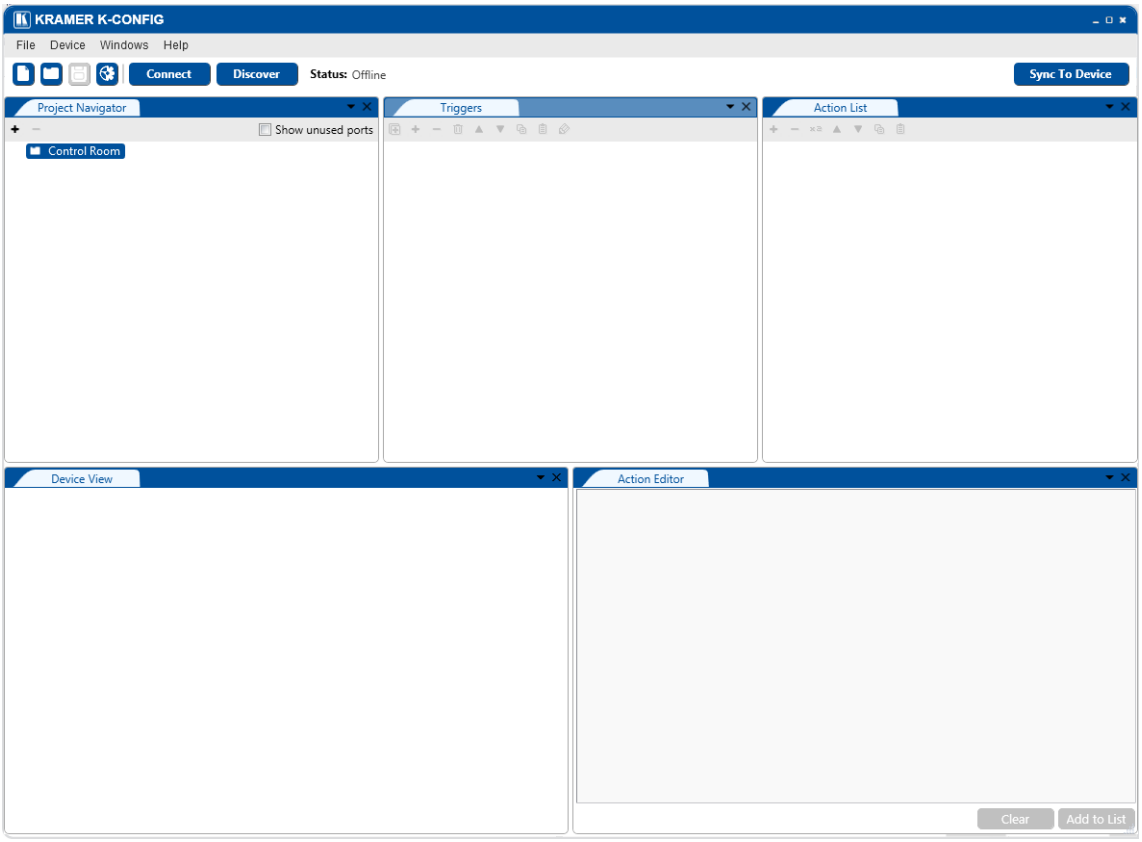


Figure 22: Opening K-CONFIG Default Layout for the First Time

Each user can tailor the main screen appearance according to his/her work flow and needs. To facilitate this, the windows in the main screen can be dragged and positioned to a different location via the drag and drop tool (illustrated Figure 23). For example, to move the Triggers window in the main screen, drag the Triggers window away from its current location (see Figure 24).

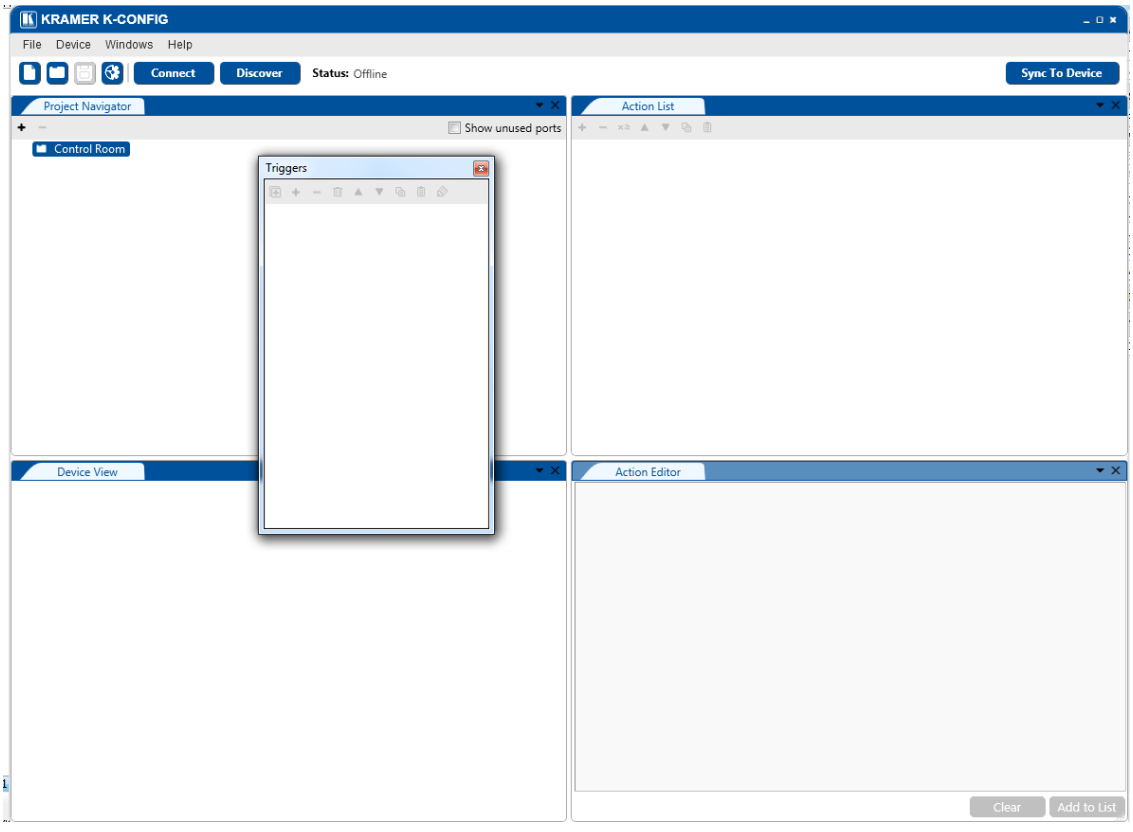


Figure 23: Dragging the Triggers Window

Select the new location by moving the **Triggers** window towards one of the drag and drop tools circled in Figure 24:

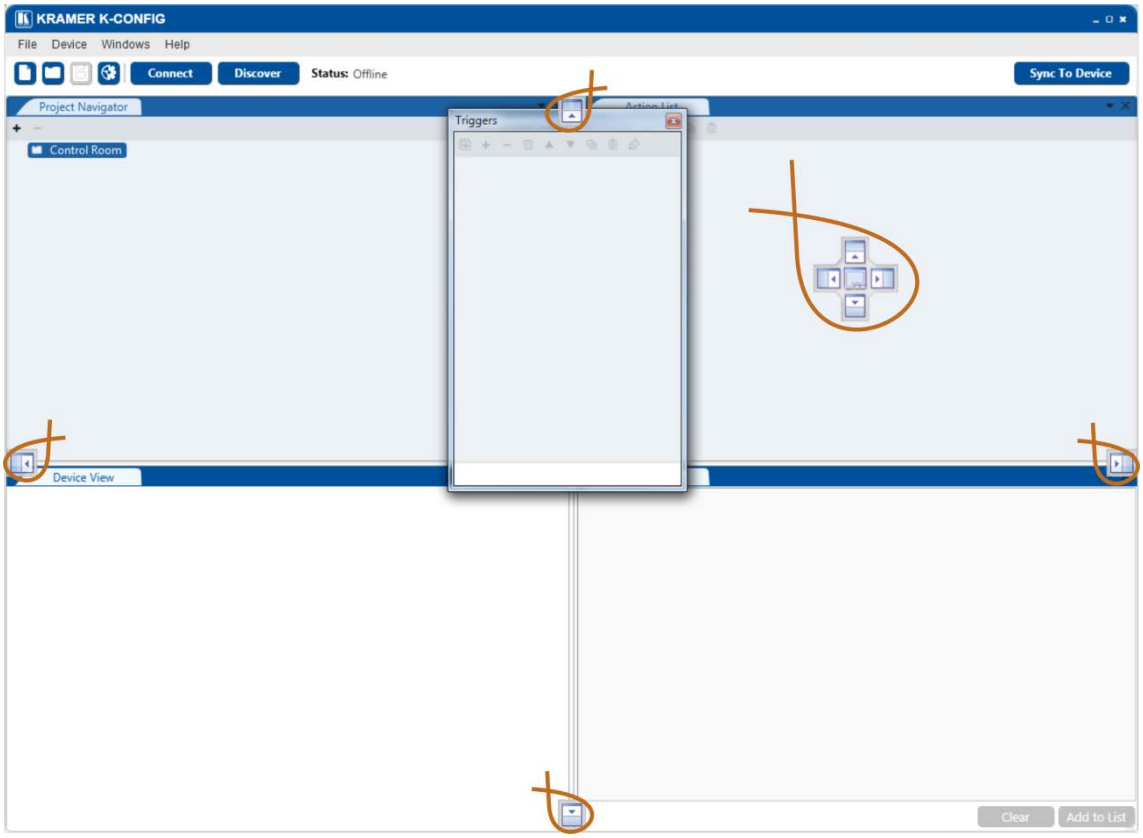


Figure 24: Drag and Drop Tool

For example, to place the **Triggers** window at the left, drag the **Triggers** window to the left drag and drop tool. The **Triggers** window appears at the left:

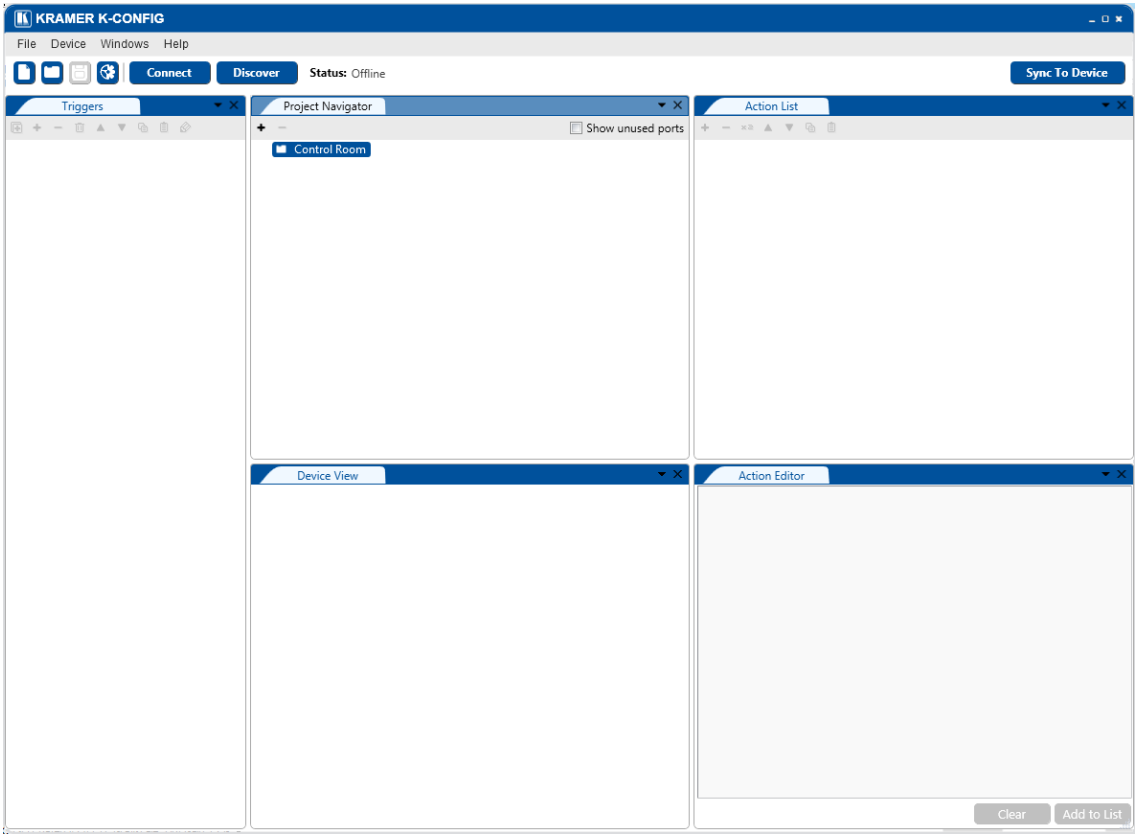


Figure 25: Triggers Window Repositioned

In the same way you can move the selected window to be in a separate first/last row, between other windows in the row or the first/last column. The main screen can have an appearance that is different than the default layout and is suited for your use, as shown in the example in Figure 26:

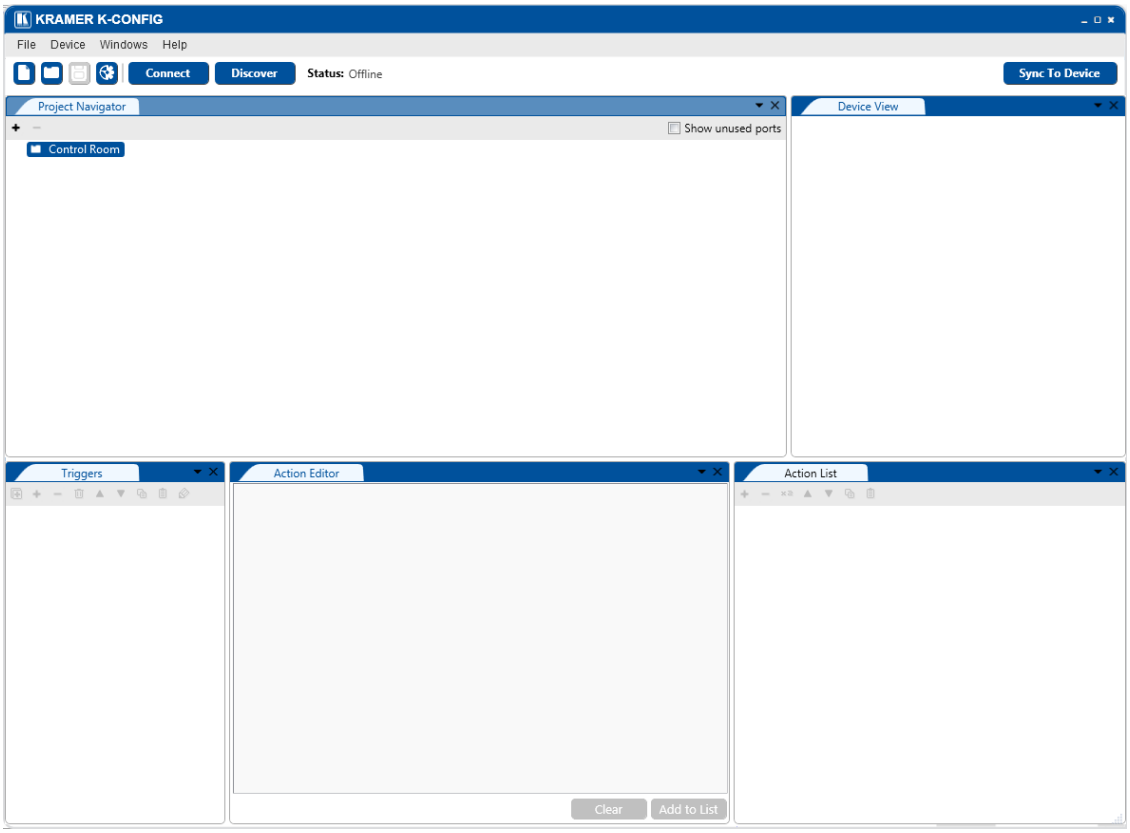


Figure 26: Customized window setup

In the same way you can also add additional windows, for example, the **Port Manager** window, as illustrated in the example in Figure 27. Select **Port Manager** from the **Windows** menu and click the drag and drop tool:

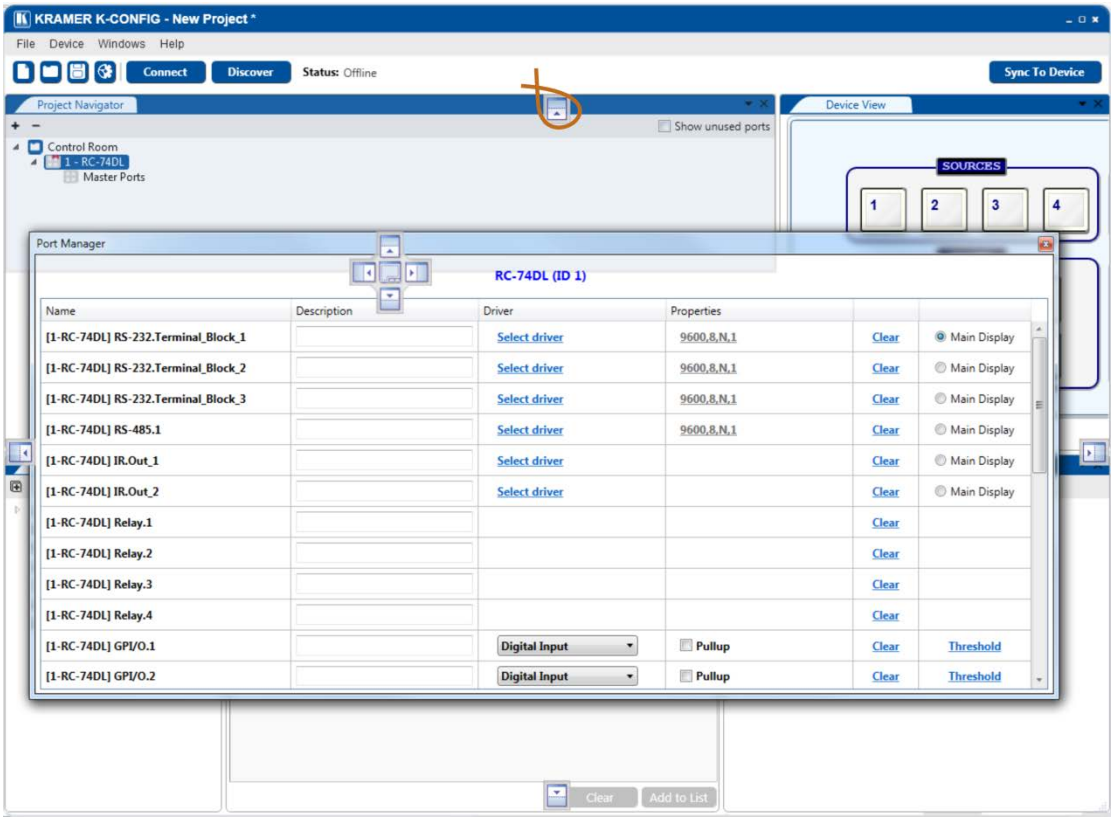


Figure 27: Adding the Port Manager Window to the K-CONFIG Layout

The **Port Manager** window is added to the main window:

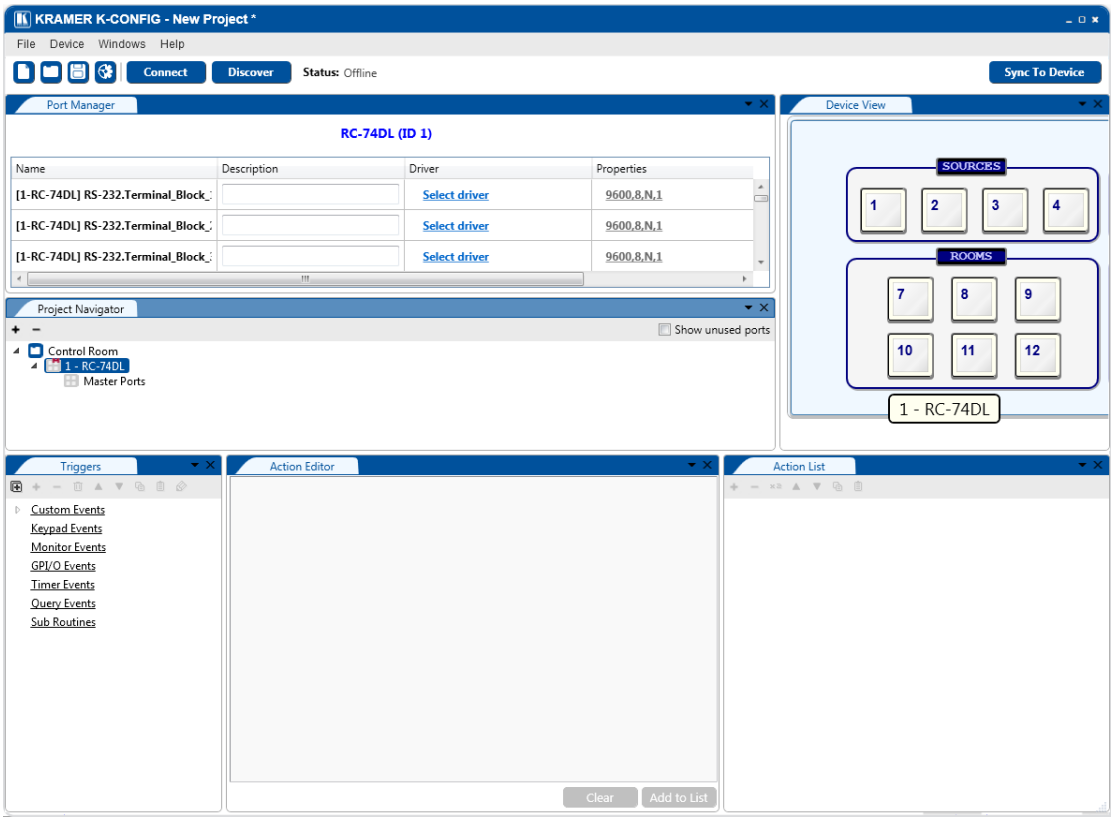


Figure 28: The Port Manager Window Added to the K-CONFIG Layout

The same setup will reappear the next time you launch **K-CONFIG**. At any time you can reset to the factory default view by clicking **Default Layout** in the **Windows** menu.

4.2 The K-CONFIG Menus

This section describes the **K-CONFIG** menus.

4.2.1 The File Menu

This section defines the File Menu for creating and updating project files which are downloaded to the room controllers for controlling the room controlled devices. Note that the same project file can be reused in multiple controllers for controlling multiple rooms.

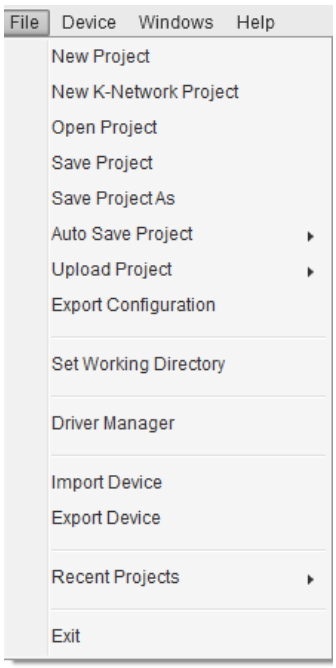
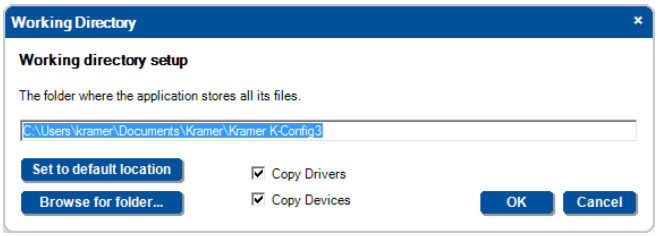


Figure 29: The File Menu

Menu Command	Function
New Project	Select to create a new project, see Section 4.2.1.1 A project includes the control program configuration as well as the drivers for the controlled devices.
New K-Network Project	Select to create a new Kramer Network Project
Open Project	Open an existing project, see Section 4.2.1.1
Save Project	Select to save the current project, see Section 4.2.1.2
Save Project As	Save the project under a different name, see Section 4.2.1.2
Auto Save Project	You can choose to save the project automatically (yes) or not (no). When selecting yes, the configuration is saved periodically, every 30 seconds, if the project was changed/edited
Upload Project	You can choose to upload the project file (kpr) to the device or not, see Section 10.7.1
Export Configuration	For using the batch configuration upload feature with Site-CTRL When exporting a configuration, the file name automatically includes the master room controller name and the date it was saved. For example, SL-10-Configuration-Sep10.kpt
Set Working Directory	Click to set the working directory. You can change the working directory any time 
Driver Manager	Click to open the Driver Manager window
Import Device	Click to import a new or existing Kramer controller devices` XML, see Section 4.2.1.3 You can import one or several new and/or revised device layouts to **K-CONFIG** and virtual device layouts created in other **K-CONFIG** installations
Export Device	Click to export a device, Section 4.2.1.3 You can export virtual device layouts to other **K-CONFIG** installations
Recent Projects	Lists the recent projects worked on
Exit	Click to exit the program

4.2.1.1 Starting a New Project

To start a new project, select New Project in the file menu (or click the New Project icon ( )). To start a new project for Kramer Network, select New K-Network Project (see Section 1212.1)

If you have an open project in **K-CONFIG** and had made changes to it (this is indicated by the Asterisk next to the project name KRAMER K-CONFIG - KramerProject1-RC-74DL *), the following window appears:

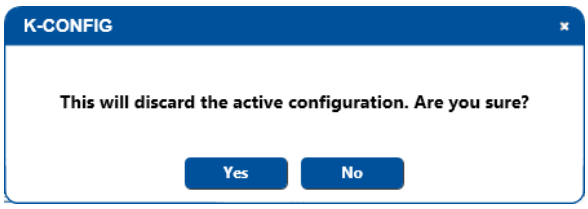


Figure 30: New Project Warning

If you want to save the changes click No and save the project before opening a new one. If you do not need to save the changes, click Yes and a new project will open.

To open an existing project, select the project via “Open Project” ( ) or “Recent Project” and select the project.

4.2.1.2 Saving a Project

To save the project, click **Save** or **Save Project As** in the **File** menu. The following window appears:

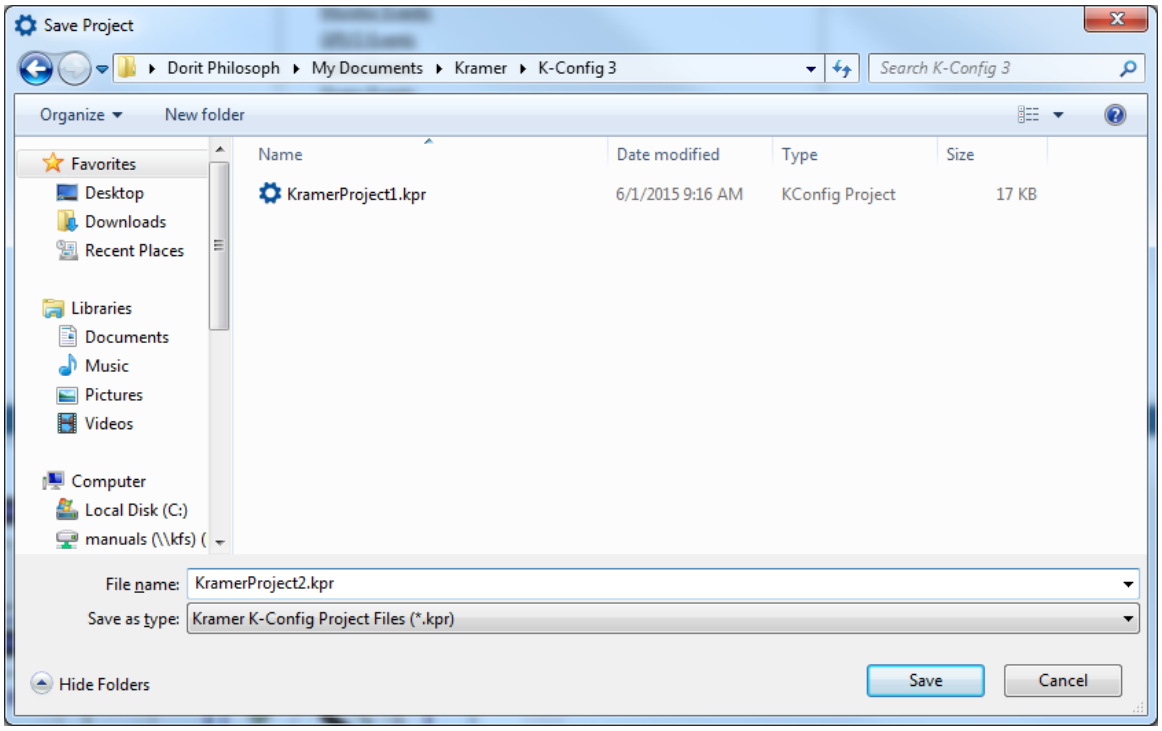


Figure 31: Saving a Project

When saving, writing or opening a new project, follow these important rules:

- In the File menu, you can set Auto Save Project to yes so that the project is automatically saved. If it is not automatically saved you will see an Asterisk next to the project’s name and you will be asked if you want to discard the latest changes.
- If you want to keep previous project configurations, be sure to rename the project before writing it to the controller.
- Always change a project name via **Save Project As** in the **K-CONFIG** software. If the project name is changed outside the
  K-CONFIG software (for example, via the Rename function in a Windows folder view), it will not open correctly in **K-CONFIG**.

4.2.1.3 Import/Export Controller Devices

K-CONFIG lets you import or export device XML templates via the **Import/Export Device** feature in the **File** menu.

This feature lets you import a newly released control device to the Control Room list (Master/Auxiliary) without having to upgrade the **K-CONFIG**. You can also share virtual device layouts that were created in **K-CONFIG** by exporting and importing them to other project files to be used in different room installations.

To Import a device:

1. Select **Import Devices** in the **File** menu, and select the device (or devices) you want to import (only Kramer xml files will appear on the list).
   The following window appears:

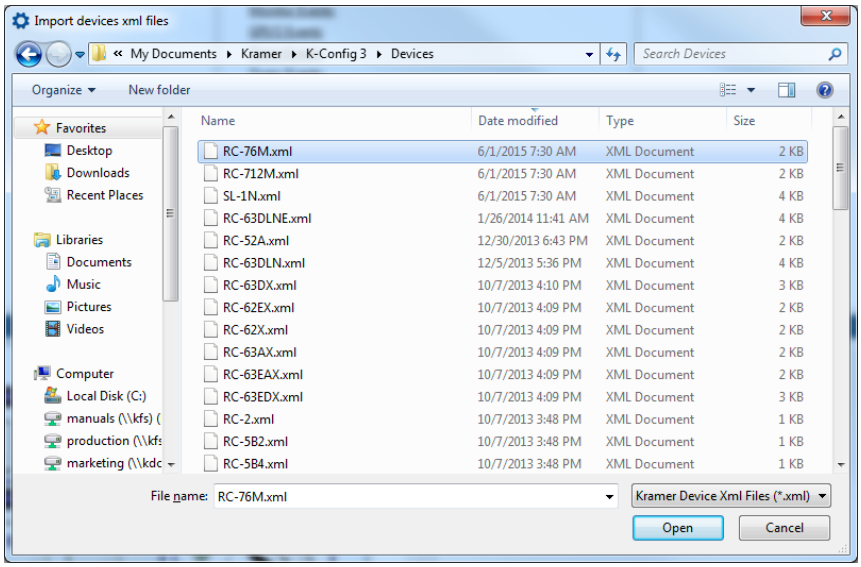


Figure 32: Import Devices

2. Click **Open**.
   If the device already exists on your list, you will get the following message:

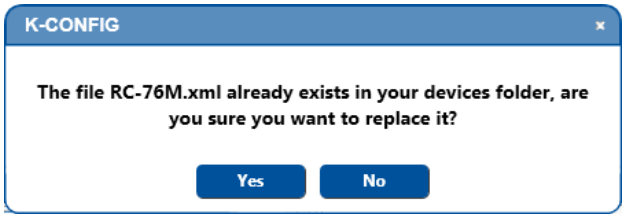


Figure 33: Import Devices – Message

Otherwise, the device will be added to the list.

To export a device (virtual device only):

1. Select **Export Device** in the **File** menu, and select the device you want to export.
   The following window appears:

Figure 34: Select Virtual Device to Save

2. Click **OK**.
   The following window appears:

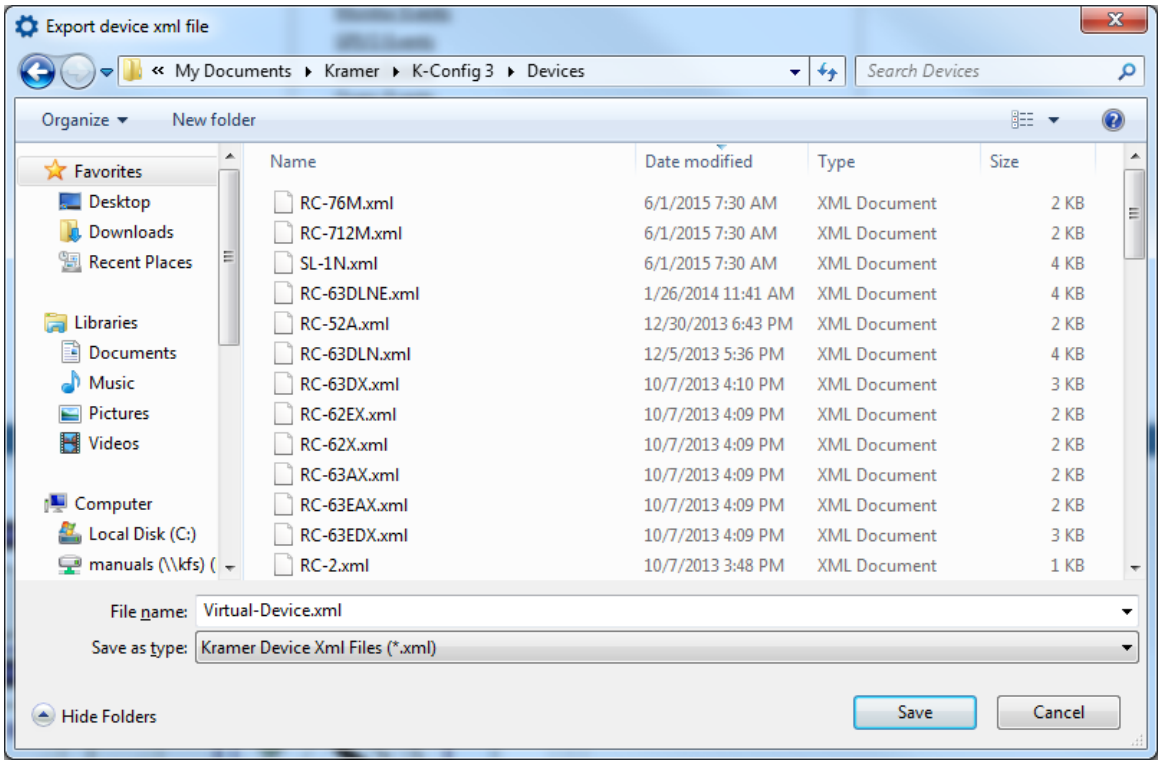


Figure 35: Export Device xml File

You can also export a virtual device by right clicking it and selecting Export Device XML:

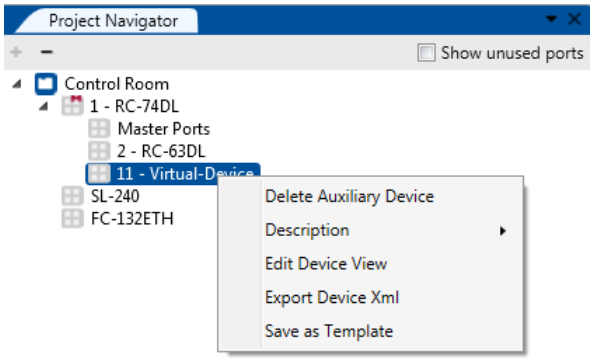


Figure 36: Export Device xml

4.2.2 The Device Menu

This section defines the **Device** menu.

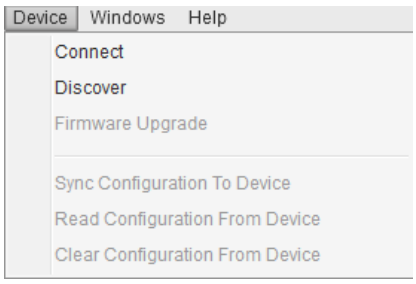


Figure 37: The Device Menu

Menu Command	Function
Connect/ Disconnect	Click to connect to a device via an IP address, a USB connector or a serial port (see Figure 38) or disconnect a connected device
Discover	Discover devices in the local IP network
Firmware Upgrade	Load the firmware upgrade file to the device for upgrading the device (see Section 10.3).
Sync Configuration to Device	Writes the project configuration file to the device (active only when the device is connected), see Section 10.7
Read Configuration from Device	Reads the project configuration file (*.kpr) from the device (active only when the device is connected via Ethernet), see Section 10.7.1
Clear Configuration from Device	Removes the project configuration file from the device, see Section 10.9

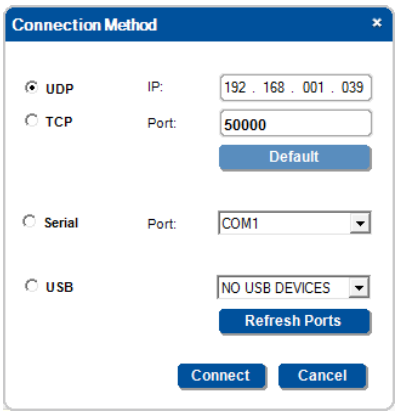


Figure 38: The Connection Method Window

Feature	Function	
Connection Method	Check to select connection to the device via the Ethernet, USB or Serial port	
Ethernet Area	TCP/UDP:	Check either the TCP or the UDP protocol
	IP:	Type the IP address of the device to which you want to connect
	Port:	Type the port number
	Default:	Click to reset the IP address to its default value
Serial	Port:	Select the laptop serial communication port
USB Area	USB Device Drop box:	Select the laptop USB communication USB port
	Refresh Ports:	Click to view the ports that are currently ready to connect on the Kramer device

To connect to a Master device, select the master device (Figure 39), click the Connect button, select the connection method and fill in the relevant details (Figure 40):

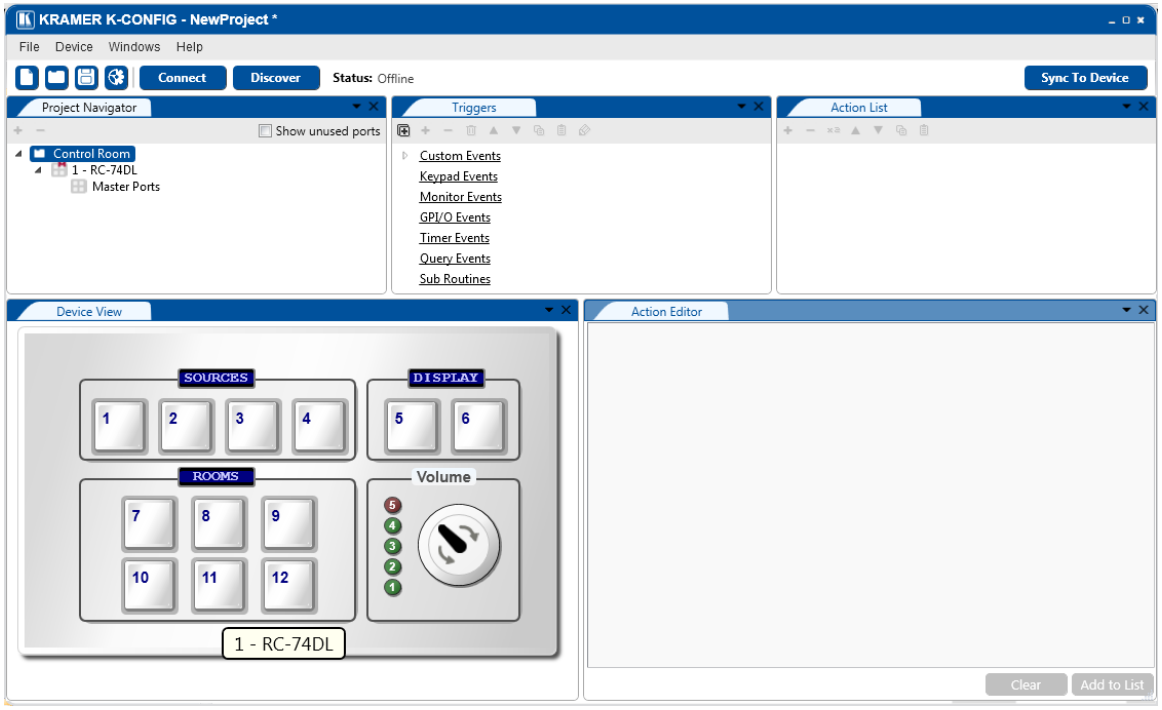


Figure 39: Connecting to a Master Device – Selecting the Device

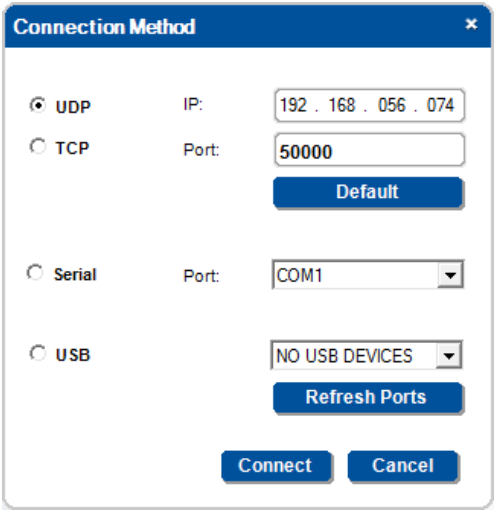


Figure 40: Connecting to a Master Device – Selecting the Connection Method

When connected, the Status displays the connection details:

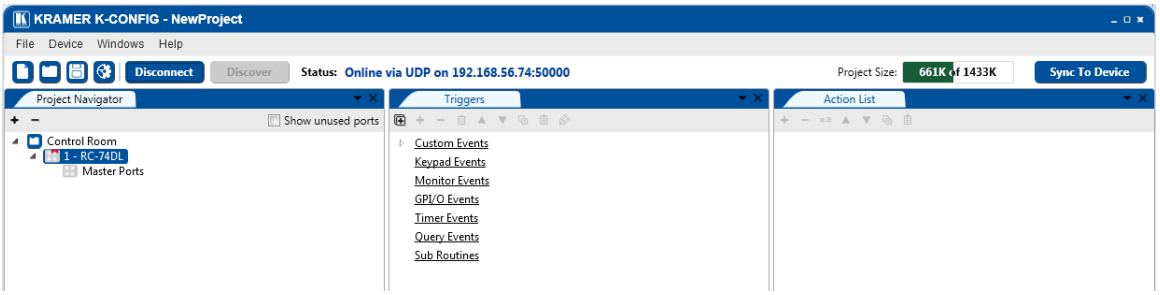


Figure 41: Connecting to a Master Device – the Connection Details

Once connected, you can read the configuration from the device:

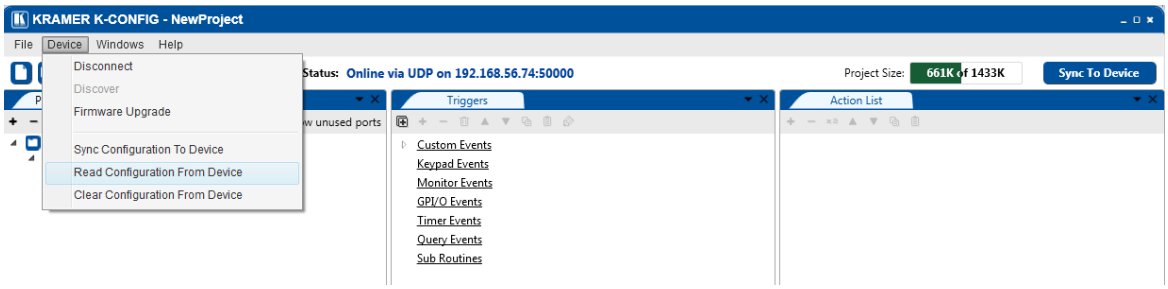
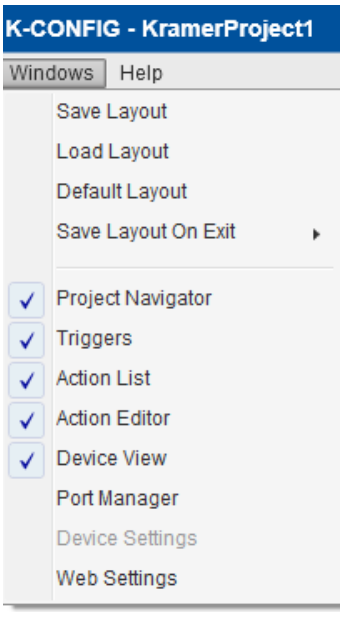


Figure 42: Connecting to a Master Device – reading the Configuration

4.2.3 The Windows Menu

The **Windows** menu lists layout operations and all the available windows. Some of the windows (checked in the Windows menu) appear in the default layout. At any time you can add or delete a window from the main window layout and by clicking Default Layout you can return to the default layout.



Menu Command		Function
Save Layout		Saves the current windows layout
Load Layout		Load a saved layout
Default Layout		Set to the default layout
Save Layout on Exit		Set to On to save
Default layout windows	Project Navigator	Set the controlled room devices
	Triggers	Arrange the triggers
	Action List	Lists the actions added to the trigger
	Action Editor	Select the actions to add to the trigger
	Device View	Displays the selected device front panel
Port Manager		Click to open the Port Manager window
Device Settings		Click to open the Device Settings window see Section 10.4)
Web Settings		Click to open the Web Settings window (see Section 4.2.3.1)

Figure 43: The Window Menu

4.2.3.1 Web Settings

Web settings are used to set the Web page logo, room name and other details for Master room controllers that have an ETH port for remote access from a browser (and by that are also **Site-CTRL** compatible). Figure 44 shows the **Web Settings** window:

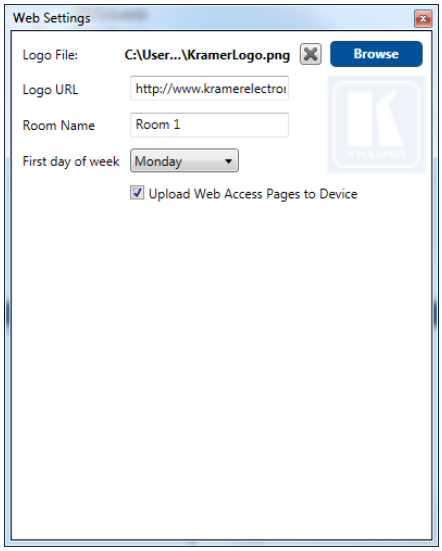


Figure 44: Window Menu – Web Settings Window

The logo file type can be either jpg, jpeg or png, up to 500 Kbytes in size.

For best image quality, when viewed on the device's Web pages, we recommend that you use images of H 200px and W 790px pixels.

Kramer **Site-CTRL** is a powerful A/V assets management tool. It offers real-time monitoring and control of Kramer Master controllers installed in an A/V site and the A/V equipment connected to them. The Kramer **Site-CTRL** downloadable version can monitor and control up to 100 Kramer Master controllers.

Kramer **Site-CTRL**:

- Generates a single page summary of the entire installed A/V site.
- Reports the communication status for each room.
- Reports the status of the local controlled display devices.
- Reports the remaining lamp life for the controlled projectors.
- Supports easy access to the built-in Web pages of Master controllers via **Web Access**.
- Raises alerts and sends e-mails when prompted by a user-defined special triggering event.

4.2.4 The Help Menu

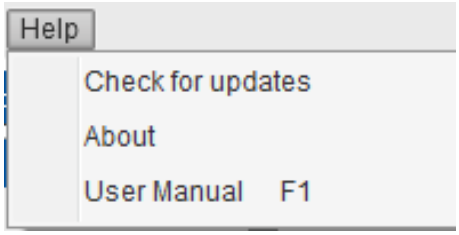


Figure 45: Help Menu

Select Check for updates to check for new updates. If a new update is found, the following message appears:

Figure 46: Help Menu – Check for Updates

Select About to display the basic software and company details:

Figure 47: The Help Menu – About K-CONFIG

Click the Analytics icon to enable/disable the collection of data:

Figure 48: The Help Menu – Enable Analytics

Select User Manual or press the F1 button on your keyboard to open the latest version of the user guide.

4.3 Quick Access Icons

The **K-CONFIG** main window includes a quick access and status toolbar, located just below the menus:

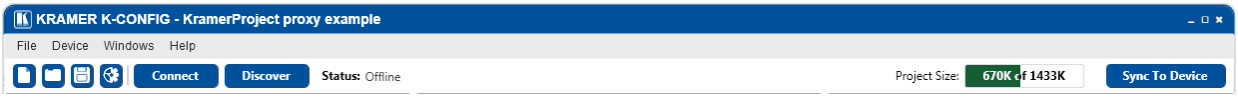


Figure 49: The Quick Access Toolbar

Quick Access Items	Function
	Click to open a new project
	Click to open an existing project
	Click to save the current project
	Click to open the Driver Manager
Connect	Click the button to connect to a selected room controller device
Discover	Click to discover room controller devices on the network
Status: Offline	Shows the room controller device connection status
Project Size: 670K of 1433K	Shows the size of the project. If the project exceeds the permissible size, a message will appear stating how to reduce its size (by not uploading the KPR file). In any case you will still be able to save the project (see Section 10.7.1)
Sync To Device	Click the button to sync the current configuration to the room controller device (after connecting it to the PC)

5 The Driver Manager – Getting Started

You are here:

Configuration Steps	Description	Section
Introduction	General information and system requirements	1
Planning	Carefully plan your controlled room	2
Installation	Install the Software	3
Introduction to K-Config	Get to know the K-Config main window, menus and quick access icons	4
Driver Manager	Define the Controlled Device Drivers	5
Project Navigator	Define the Controlled Room	6
Port Manager	Assign the controlled devices to the Master and Auxiliary device ports	7
Triggers	Activate the Triggers	8
Adding Actions	Describes how to add the various actions to a trigger	9
Connecting to a Device	Describes how to connect to a device, upgrade the firmware, read/write to the device and so on	10
Using the Web pages	Describes how to control the device via the Ethernet and perform minor configuration operations	11
Creating a Virtual Master	Describes how to create a Virtual Master to control a room via KRAMER NETWORK	12

5.1 Getting to Know the Driver Manager

Controlled AV devices (such as projectors, DVD players, switchers, scalers and so on) are controlled by sending out an appropriate command from the room controller to the controlled device, over serial, ETH or IR interfaces. A Driver is a collection of these commands which includes all the relevant commands for the specific device.

When selecting “Driver Manager” from the file menu or the icon, the Drivers Tree window appears and you need to select a specific controlled device driver or to import a new driver. Once selected, the Driver Manager window appears.

The Driver Manager has standard command names for different controlled devices by means of a shared-command-name structure which can be used to build a standard command list. Each command type has a shared name that is common to controlled devices in the controlled room.

A shared command can be either empty (only the name is on the list but it has no device command content), or full (the command has content); when the command is full, the command name on the list appears bold.

The driver manager presents a list of standard shared command names. You can add a command name to the shared list. When adding a new command name to the shared sections of a driver – this command name will appear in every driver you will open in the future as an empty command name. This makes it easy to use the same command names in all your drivers.

For example, if you have two types of projectors (made by different manufacturers) in the controlled room and each of them has its own specific communication protocol, they will most likely have different command names specified in their user manual for the same exact functional action. For example, the command name for powering up the projector can be named “PWR: ON” for the first projector and “Power: on” for the other one. The driver manager defines a common (or shared) name for both, “PWR_ON”, for the same type of command, while the content of the command (syntax) remains specific for each projector.

Note that a command name cannot include spaces. Some command names, in former versions had spaces. For your convenience these command names will still appear with spaces. If you want to change these names via the Common Commands Tree Editor, you will not be able to rewrite them back to their original names (with spaces).

The Driver Manager window is actually a generic framework for managing the controlled room; it includes sets of standard command names (Shared) within the following categories:

- Serial commands
- IR Commands
- Serial replies
- Tables (Serial range commands)
- Queries

Each of the above categories contains sub-groups (depending on the device type) with command names that are “empty” for a new driver (a command name without any content):

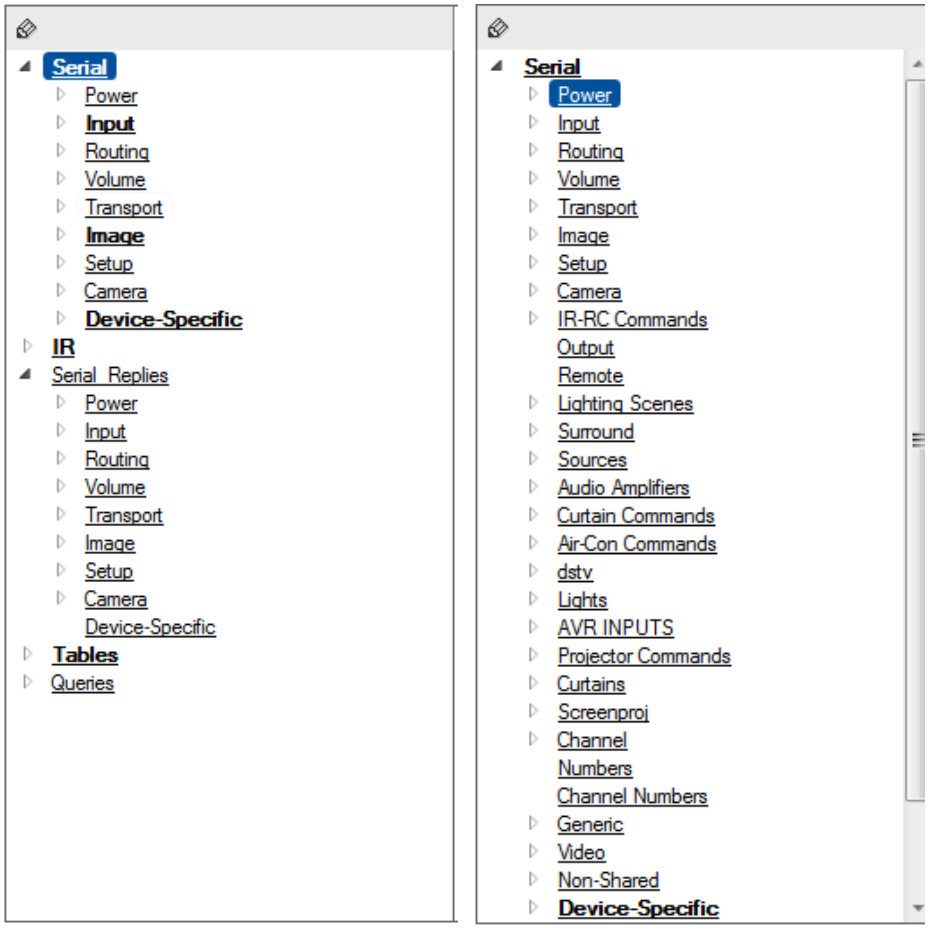


Figure 50: The Commands List in the Driver Manager

A “Full” command name which includes syntax will appear **Bold**. An empty command name will appear as normal font. When selecting any of these “empty” command names you can see that the Command Syntax line is empty.

For example, when selecting PWR_ON:

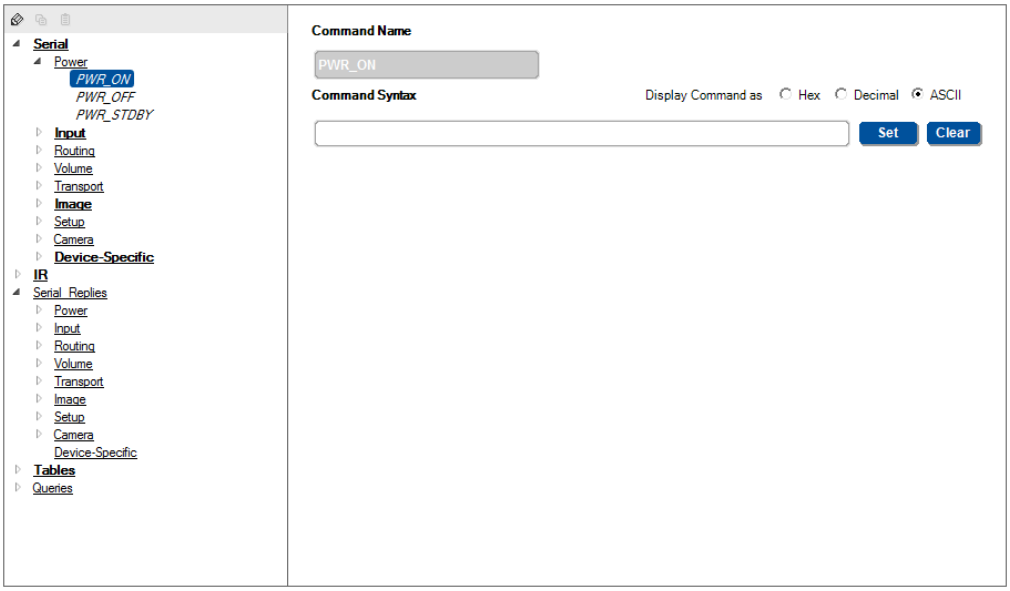


Figure 51: An Empty Command Line

Note that when adding a command name to one of the shared sub categories (via the Common Commands Tree Editor, Section 5.3), this command name will be added to the Serial, IR and Serial Replies list and will appear as empty in all the drivers you will open for editing or as new from now on (you can delete this command also via the Common Commands Tree Editor).

Each of the above categories also includes a Device-Specific sub-group. The Device-Specific sub-group is used for device specific command actions which are not used for other devices. Command names added to this section will not appear as empty command names in other drivers you will later open, since they are specific for this driver.

When importing or opening an existing driver, the command names included in this driver are compared to the shared command names. Whenever a match between command names is found, the syntax associated with this command name will appear under the relevant shared command name. If a command name is not found in the Shared sections, it will appear in the Device-Specific section of this driver.

For your convenience you can move the standard device specific commands (on, off, and so on) to the shared section of the driver.

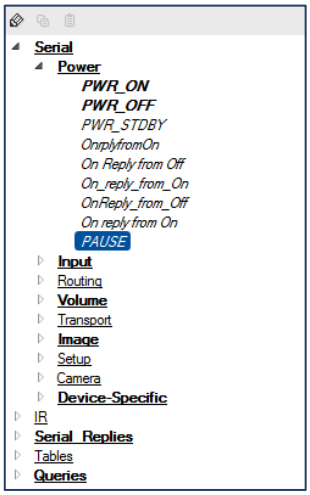
For example, in a certain driver the Power On function was previously tagged with the command name "POWER_ON". In the Driver Manager this command will be listed in the Device-Specific category as a non-shared command. Select this command for editing, and change the command name to “PWR_ON”. The command name changes and will move to the Shared section of this driver.

This framework was structured to let you standardize the command names so that all the same command types will share the same command name although the specific command content is unique for each specific device.

5.1.1 Updating Command Names to the current version of K-CONFIG

It is important that you carefully change the command names in this manner. If these commands are already used in an existing project that you may want to upload in the future to room control devices, you will need to update the command names in the project itself where they are used.

If you want to add or delete command groups for the different controlled device types you can click the **Edit Common Command Group** icon ( ) and use the **Common Commands Tree Editor** to add or delete command groups for each controlled device type or create a custom made controlled device type (see Section 5.3).



Furthermore, the Driver Manager lets you select the controlled device type (for example, a projector, DVD Player, audio amplifier and so on) so that the shared commands list displayed best fits the type of controlled device you are using. For example, it makes little sense to display Transport related commands for a Projector. It's important to understand that the controlled device type selected only affects the displayed command sub groups, it has no "real" influence on the command tree – all shared commands still exist even if they are not displayed. You can also select a generic type so that all the possible commands are available (see item 2 in Figure 55).

5.2 Selecting the Driver Manager

To open the Driver Manager:

1. In the **File** menu select **Driver Manager**.

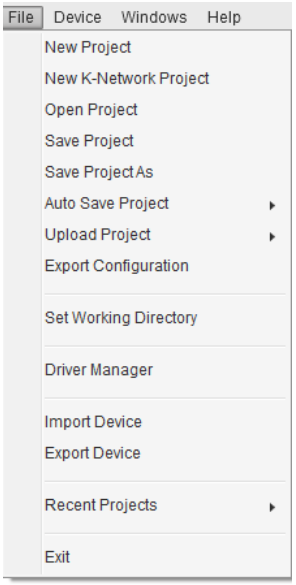


Figure 52: Selecting the Driver Manager in the File Menu

The **Drivers Tree** window appears:

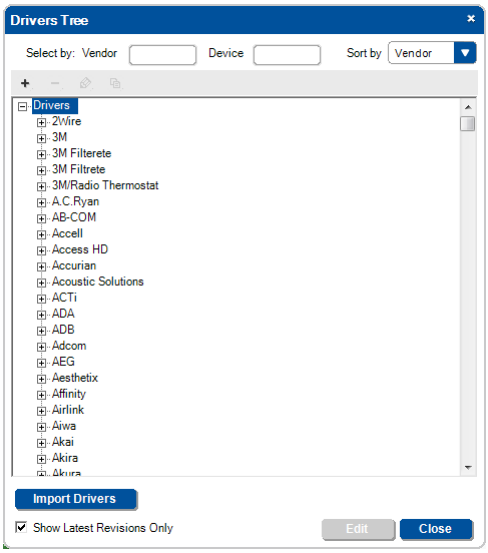


Figure 53: The Drivers Tree

2. Select the driver you want to edit (a Sony Driver in this example):

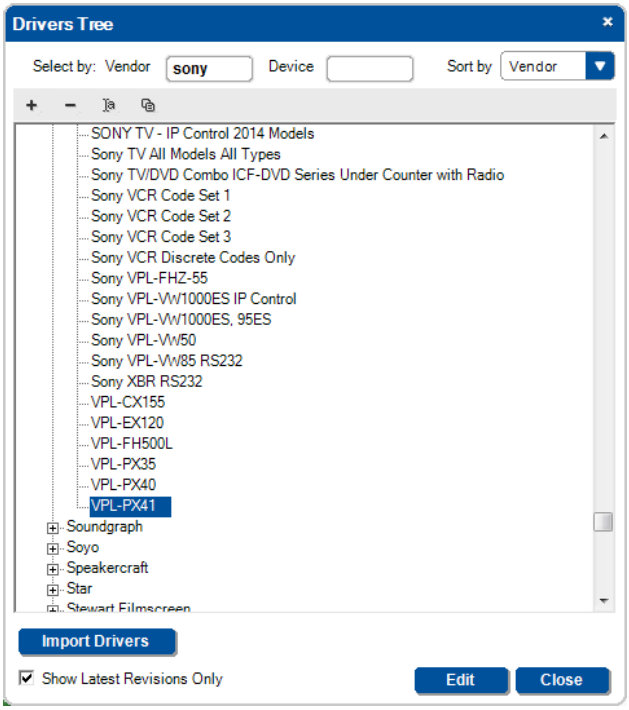


Figure 54: Selecting a Sony Driver

3. Click Edit.
   The **Driver Manager** window appears.

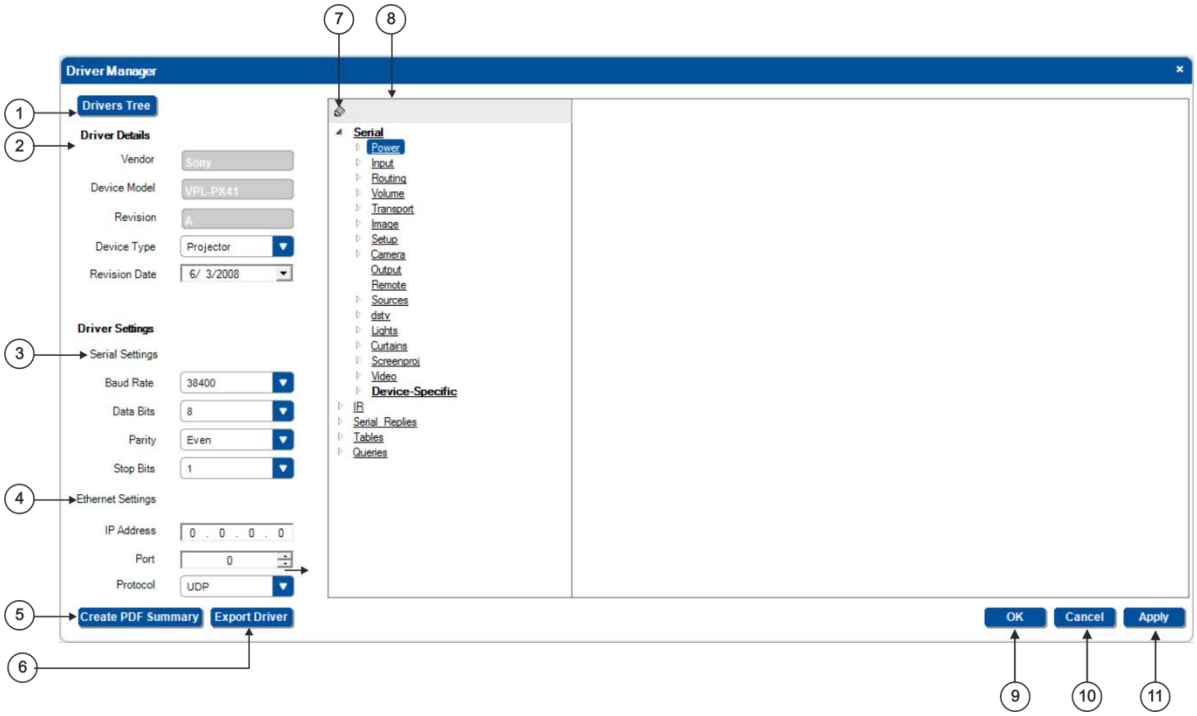
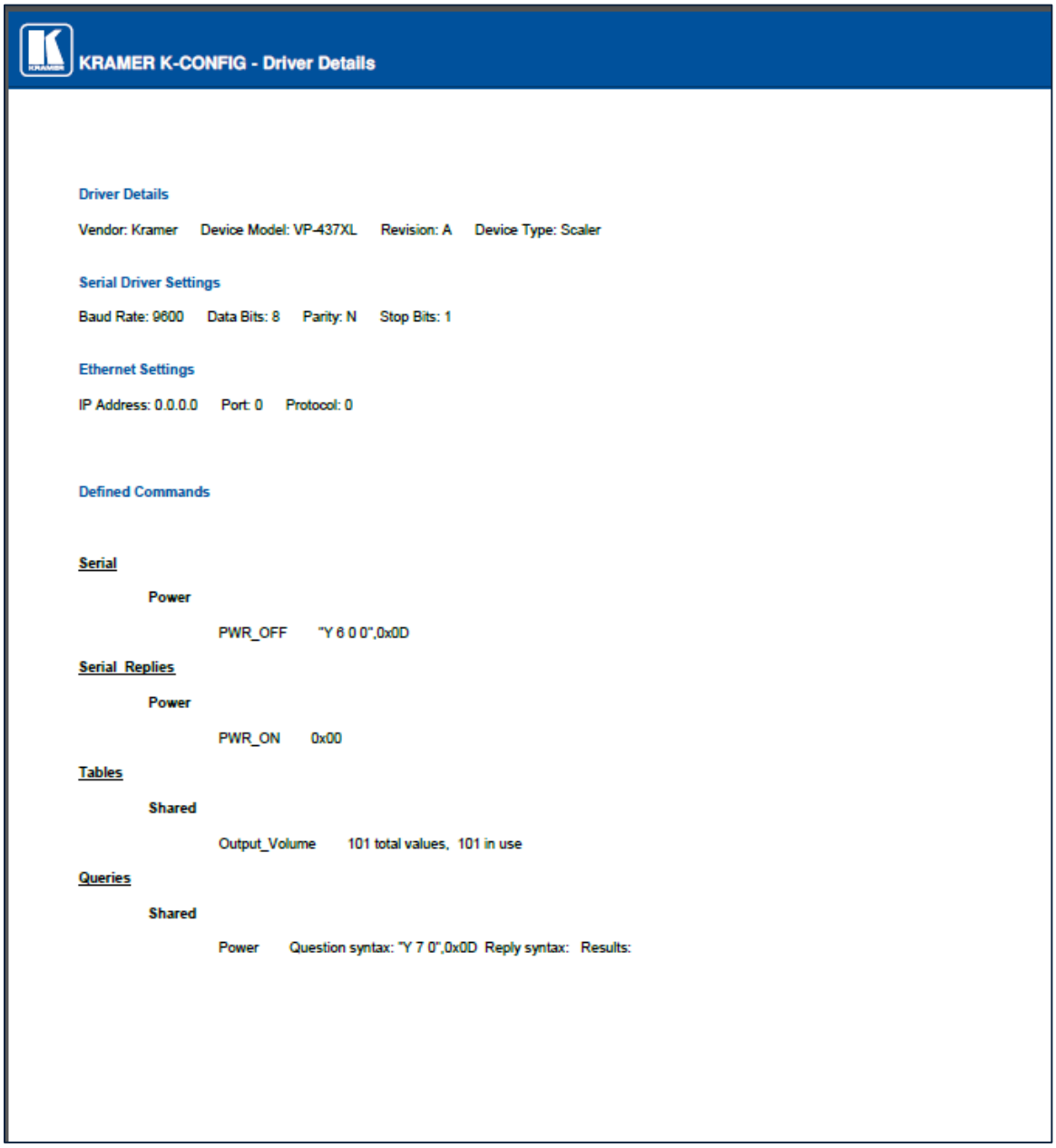


Figure 55: The Driver Manager Window

#	Feature	Function
1	Drivers Tree Button	Click to access the Drivers Tree window and select a different driver
2	Driver Details	The Driver Details area displays the vendor, controlled device model and driver revision and date. Device Type – lets you select the typical controlled device type from a drop down list. Each device type relates to a set of command groups that are typical for that device type. For example, Selecting DVD Player as the controlled device type will include the Power, Transport, Image and Setup group commands
3	Driver Settings: Serial Settings	For serial connections, set the baud rate, data bits, parity and stop bits
4	Driver Settings: Ethernet Settings	For Ethernet connections, set the IP address, port and protocol
5	Create PDF Summary Button	Click to create the driver summary see Figure 56
6	Export Driver Button	Export the driver setup
7	Common Commands Tree Editor Button	Set the common commands layout (see Section 5.3)
8	Command Names List	Includes all the command types (Default / Non Default Shared and Device-Specific)
9	OK button	Click to approve changes
10	Cancel Button	Click to cancel changes
11	Apply Button	Click to apply changes

Figure 56 shows an example of a PDF driver details summary document (for the Kramer **VP-437xl**):



KRAMER K-CONFIG - Driver Details

Driver Details

Vendor: Kramer Device Model: VP-437XL Revision: A Device Type: Scaler

Serial Driver Settings

Baud Rate: 9600 Data Bits: 8 Parity: N Stop Bits: 1

Ethernet Settings

IP Address: 0.0.0.0 Port: 0 Protocol: 0

Defined Commands

Serial

Power

PWR_OFF "Y 6 0 0",0x0D

Serial_Replies

Power

PWR_ON 0x00

Tables

Shared

Output_Volume 101 total values, 101 in use

Queries

Shared

Power Question syntax: "Y 7 0",0x0D Reply syntax: Results:

Figure 56: Driver Details Summary PDF File

5.3 The Common Commands Tree Editor

Click the edit icon in the Command Names list to open the **Common Commands Tree Editor**. The **Common Commands Tree Editor** gives an overall view of the **Device Types**, **Command Groups** and **Commands** with regard to default/non-default shared driver commands, Tables and Queries and lets you make specific adjustments.

Figure 57: Open the Common Commands Tree Editor

5.3.1 IR, Serial and Replies

Select **IR, Serial and Replies** to display the **Device Types** list, the **Command Groups** list and the **Commands** in each group. Figure 58 shows the IR, Serial and Replies Commands Editor.

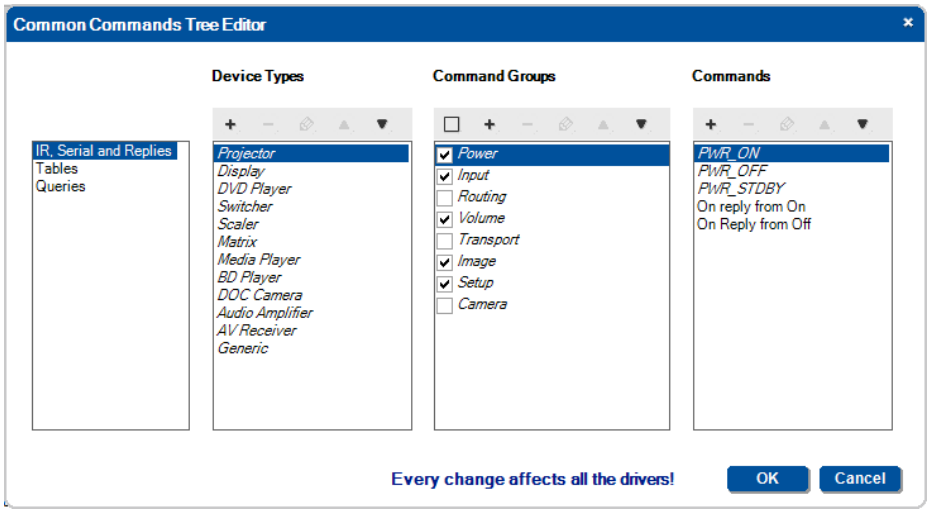


Figure 58: The Common Commands Tree Editor Window – IR, Serial and Replies

# Feature	Function
Device Types	The list includes commonly used controlled devices to choose from. Each controlled device type determines command groups that are available for the selected controlled device type (for example, Projector includes Power, Input, Volume, Image and Setup command groups while Audio Amplifier includes Power, Input, Volume and Setup command groups. You can rearrange the order of the controlled device type list using the up/down arrows, add a new Device Type, rename it or delete it.
Command Groups	Once you select the controlled device type, the relevant Command Groups are automatically checked. You can check a command group to add it to the controlled device type or uncheck it. You can add a new Command Group, delete it or rename it. You can also check or uncheck the entire command groups list.
Commands	Lists the standard commands included in command group. You can add a new Command Group (non-default shared), delete it or rename it.

Note that **K-CONFIG** is supplied with a number of popular command groups and command names. These cannot be changed or deleted by the user.

5.3.2 Tables

Tables shows the list of default shared tables (see Section 5.5.4 for a more detailed explanation). You can add a new non-default shared table name, delete it or rename it:

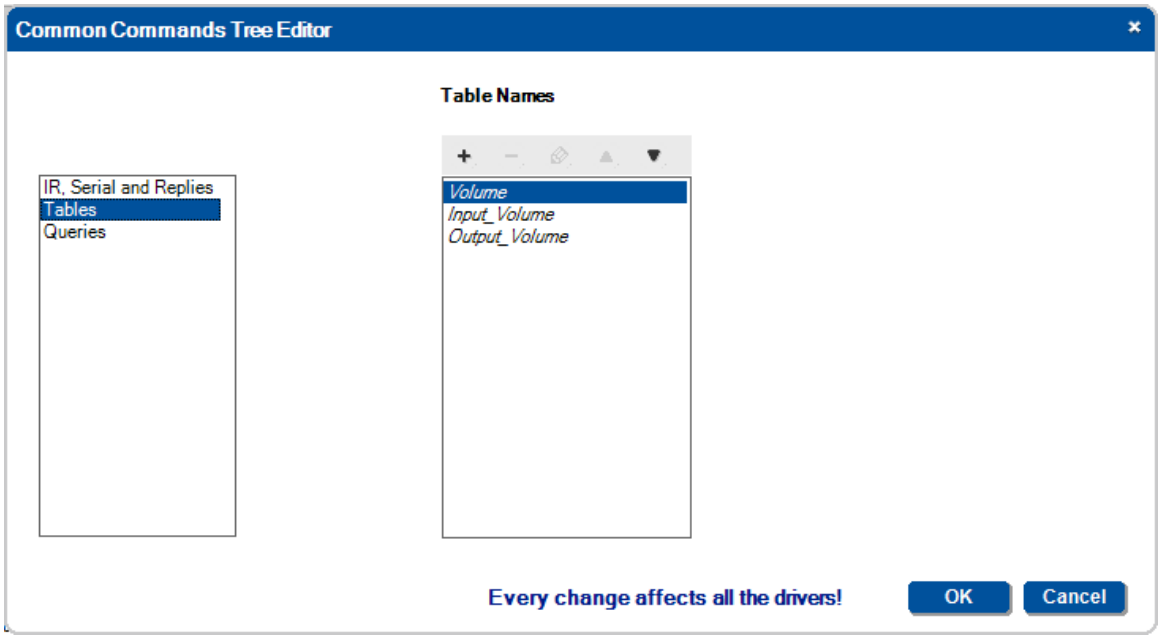


Figure 59: The Common Commands Tree Editor Window – Tables

5.3.3 Queries

Queries shows the list of queries (see Section 5.5.5 for a more detailed explanation). You can add a new Query Name (non-default shared, for example, test1 on the list), delete it or rename it:

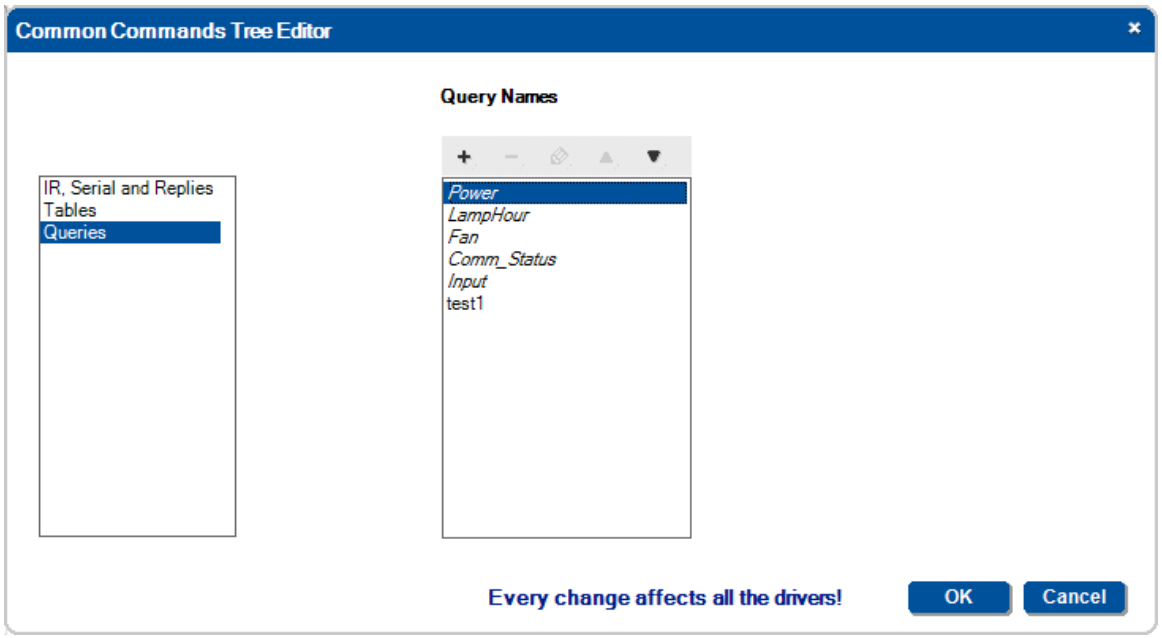


Figure 60: The Common Commands Tree Editor Window – Queries

5.3.4 Adding Non-default Shared Commands

Non-default shared commands can only be added via the Common Commands Tree Editor window. In the following example, a DVI command needs to be added to the Projector Input command group.

To add this non-default shared command:

1. Click the edit icon and select the **Input** command group:

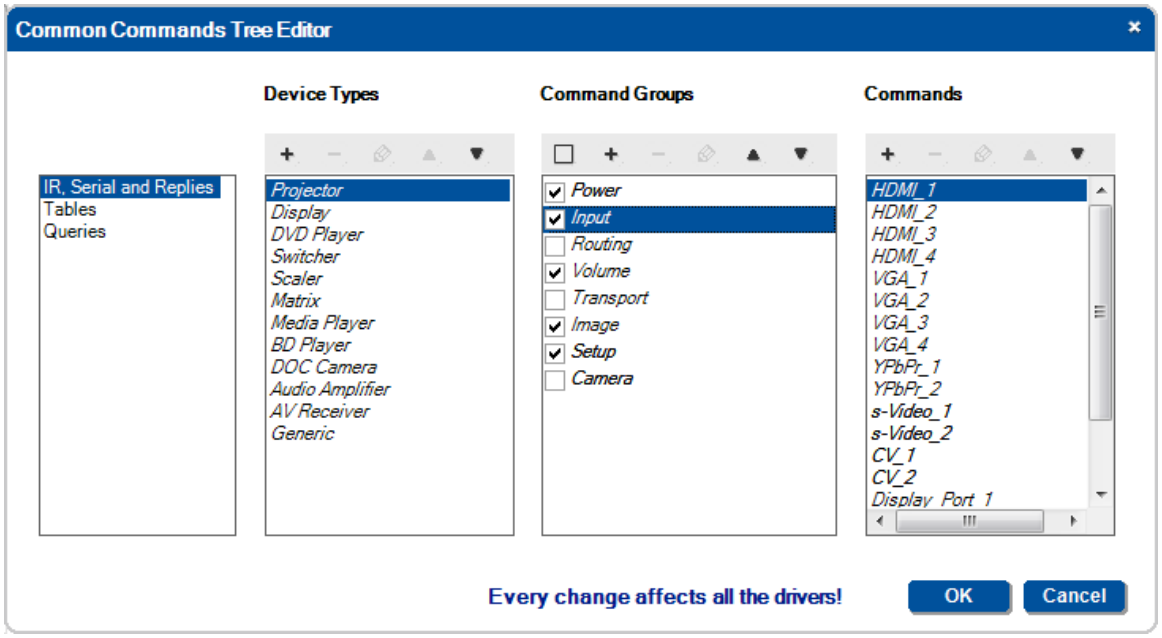


Figure 61: The Commands Tree Editor Window – Adding a Non-default Shared Command

2. In the **Commands** list click the **+** icon. The following window appears:

Figure 62: The Commands Tree Editor Window – Add Command Window

3. Type the new command name and click **OK**:

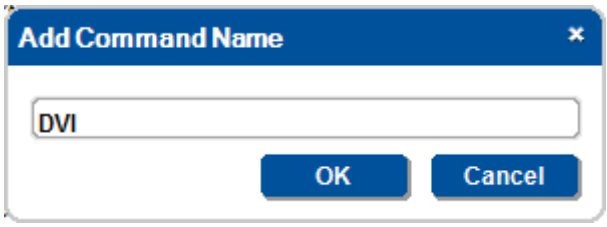


Figure 63: The Commands Tree Editor Window – Adding the Command Name

The new command was added to the Input Commands group and the DVI input device-specific command can be moved to the Input Commands list:

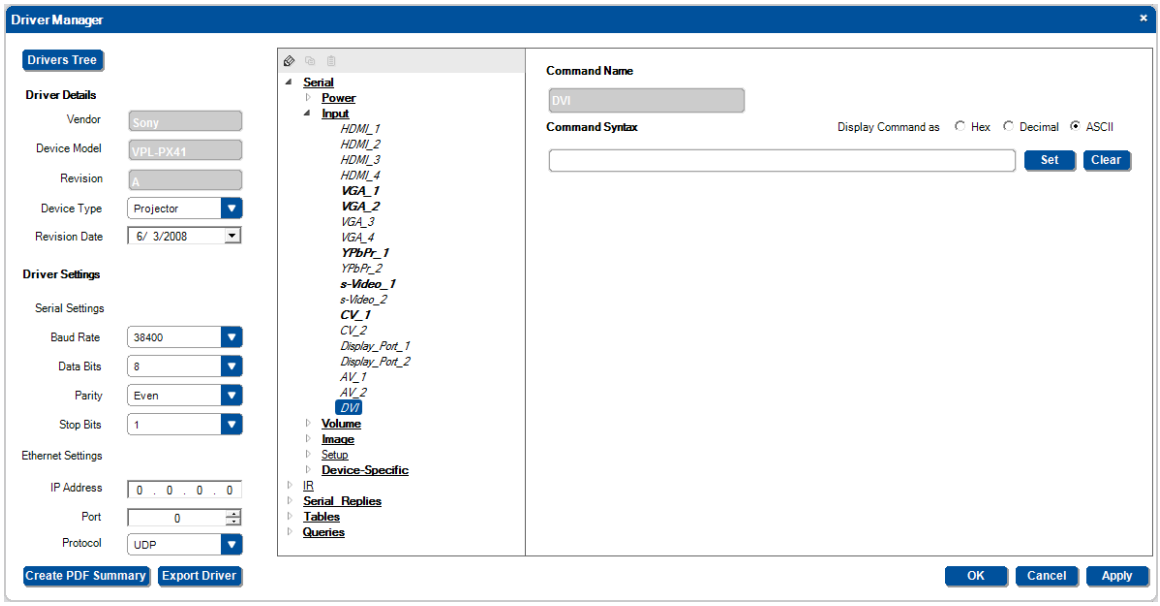


Figure 64: The Driver Manager Window – Non-Default Shared Command Added to the Input List

Note that the non-default shared commands that were added will be part of the shared list for all the drivers.

Repeat this procedure for **Tables** and **Queries** in the same way. Once you have completed this, you can configure the controlled room.

5.4 Setting the Shared Commands

The following section applies to Serial, IR, serial replies, tables and queries in the driver Manager window and describes how to move the content of a Device-Specific command to the shared commands list.

To move the content of a Device-Specific command to the shared commands list:

1. Select the **Device Type** (see Section 5.3.1).
   In this example a projector device type was detected

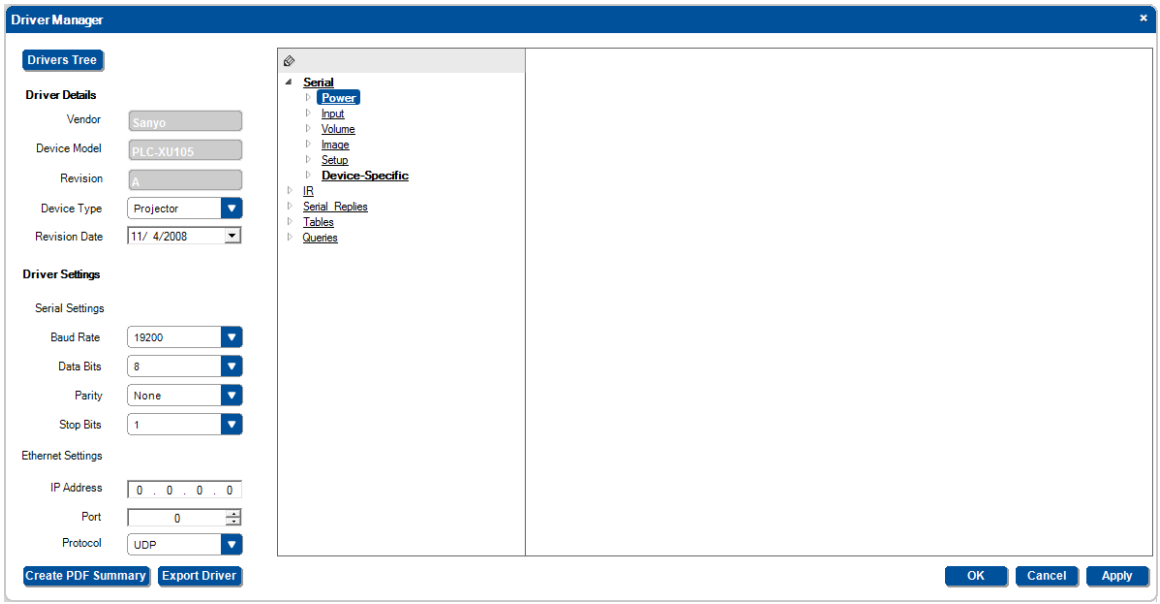


Figure 65: The Driver Manager – Selecting the Device Type

The Device Type narrows down the displayed list of serial command groups and includes only the ones that are relevant to a projector.

The shared commands list default/non-default command names that are currently "empty" (see Section 5.3.1).

2. Select the Device-Specific command in the **Power** Command Group.

3. Click and drag the "Power: Off" command to the shared PWR_OFF command.

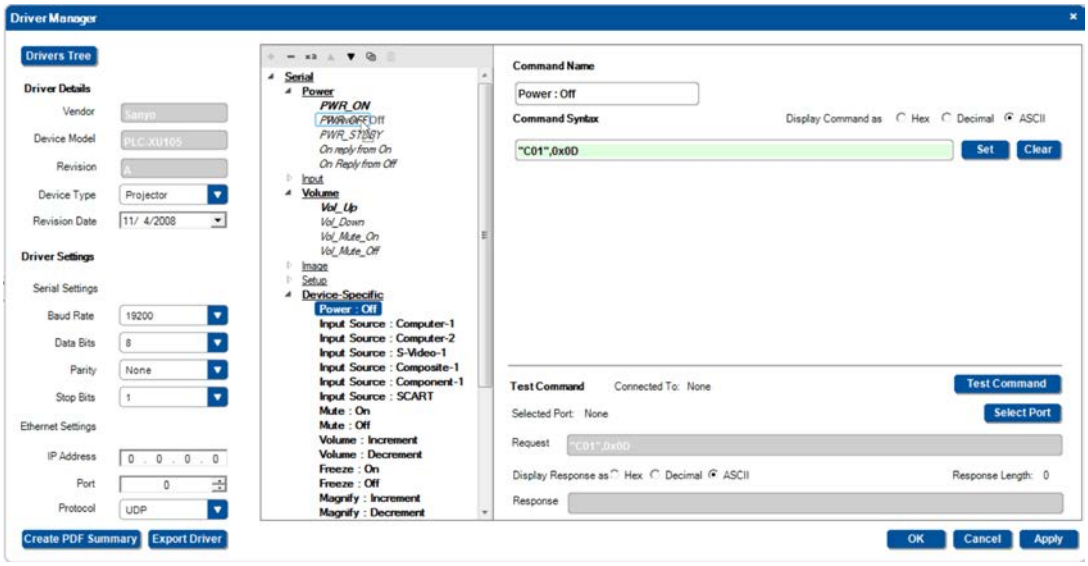


Figure 66: The Driver Manager – Dragging the PWR_OFF to the Power Command Group

The following message appears:

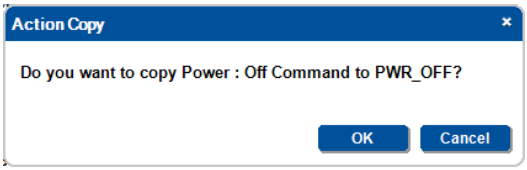


Figure 67: The Driver Manager – Action Copy Message

4. Click OK.
   In the **Power** commands group, PWR_OFF appears **bold** (it's not "empty").

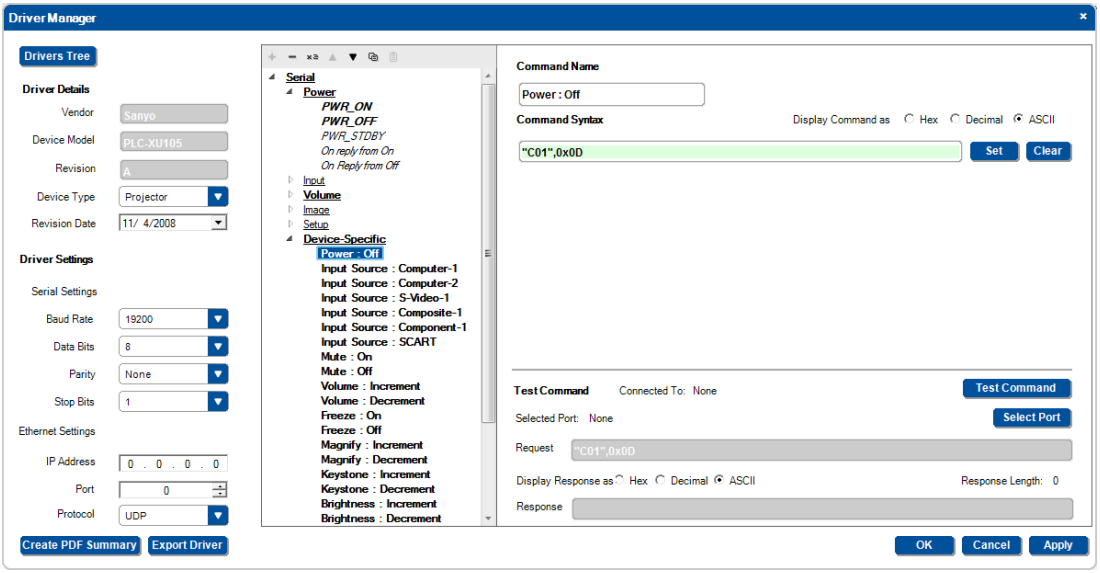


Figure 68: The Driver Manager –PWR_OFF added to the Power Command Group

5. In the same way you can move the content of other Device-Specific commands and fit them into the relevant command groups:
   - Select the Device-Specific command name.
   - Click and hold that command.
   - Drag the command to the desired command in the shared list.
   - Click the Action Copy message OK.

Upon completion of this procedure, the "live (with command content)" command groups and commands appear **bold** in the list. Commands that are unique to the controlled device remain in the Device-Specific command list, see Figure 69.

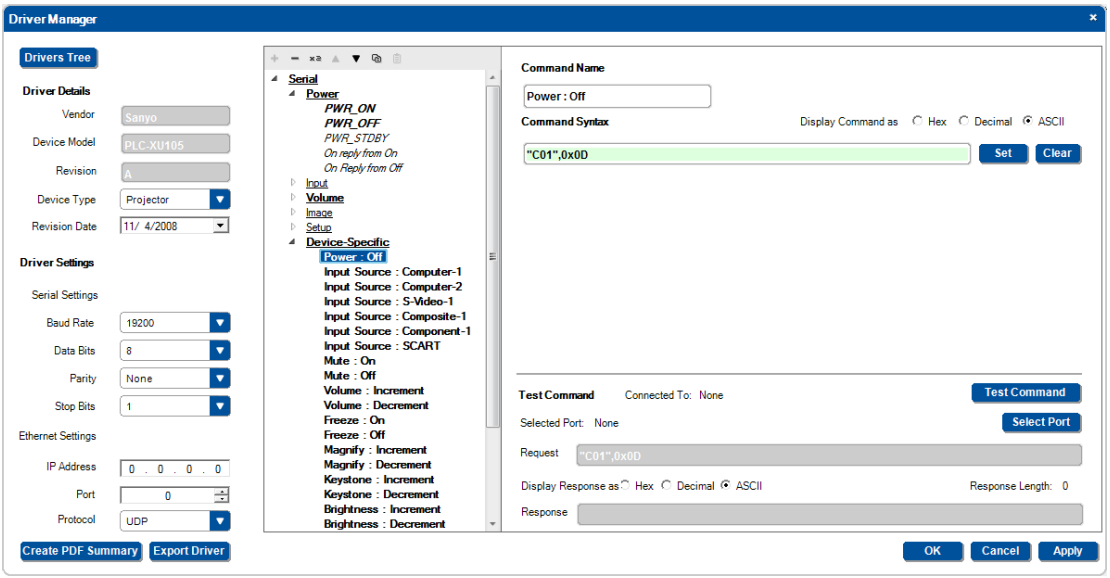


Figure 69: The Driver Manager – Standard Commands Added

5.5 Serial Commands

Select a serial command (Shared or Device-Specific). The following window appears:

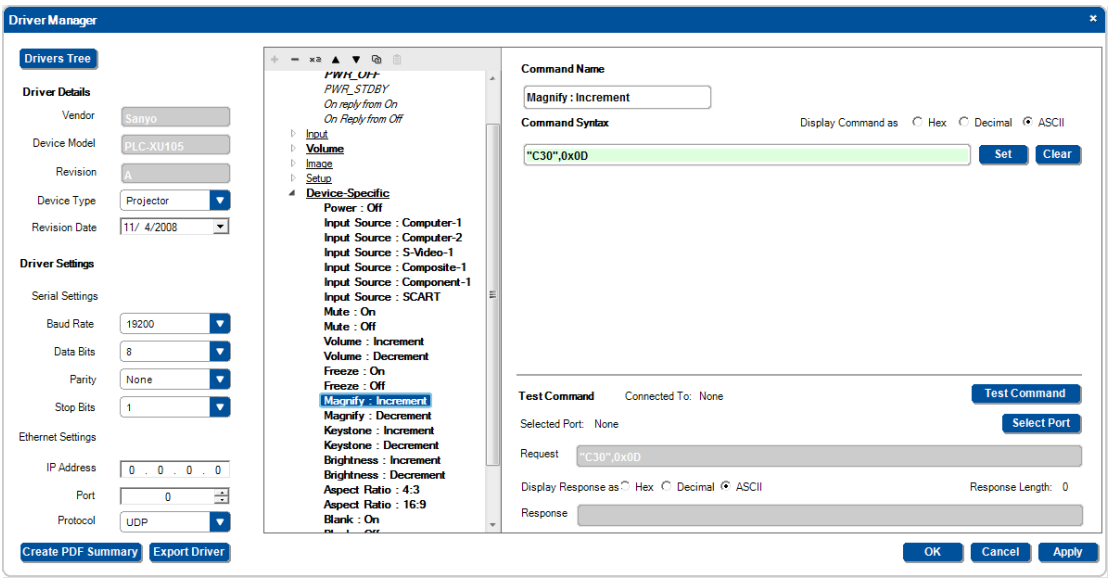


Figure 70: Serial Commands

The area on the right shows the command name and command syntax. You can display the syntax as Hex, Decimal or ASCII. To move a Device-Specific command to the Shared list, see Section 5.4.

Once the controlled device is connected you can test the command, as described in Section 5.5.1.

5.5.1 Creating a Serial Device-Specific Command

To add a serial device-specific command:

1. In the **Serial** list, select **Device-Specific** and click the **+** icon

   The following window appears:

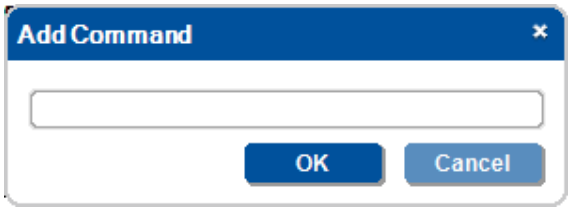


Figure 71: Serial Commands –Add New Command Name

2. Type the new command name (for example, DVI_IN) and click OK:

Figure 72: Serial Commands – the New Command Name

3. In the **Driver Manager** window select the new command (DVI_IN):

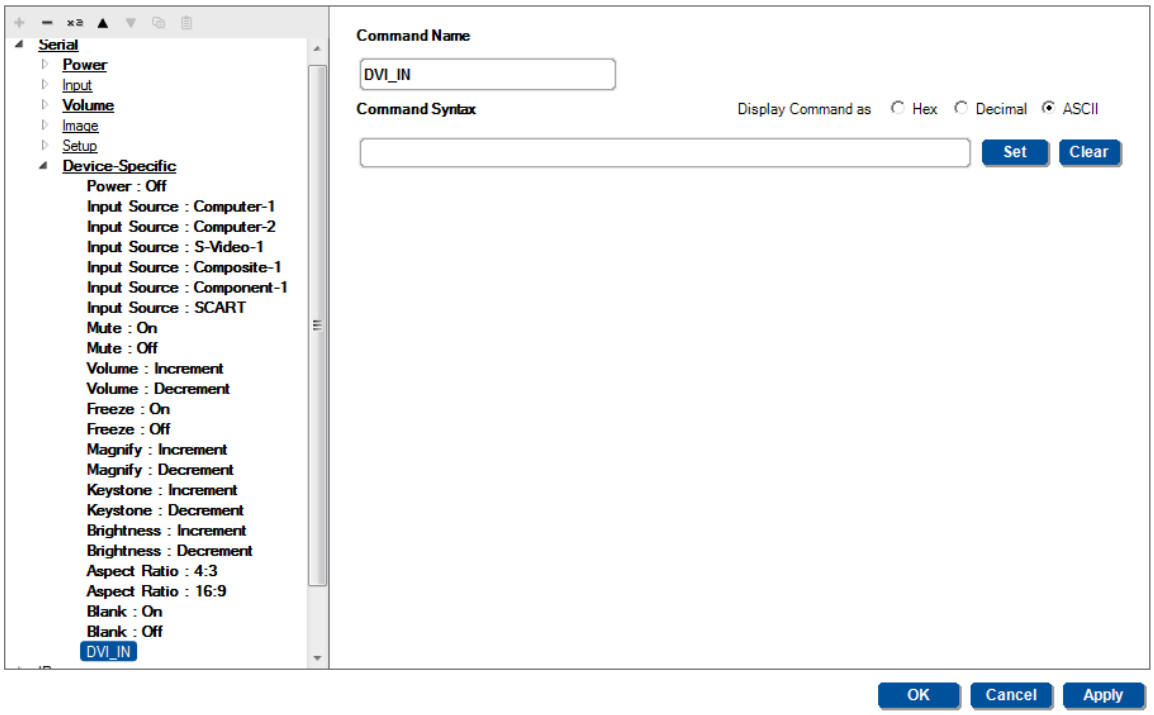


Figure 73: Serial Commands –Selecting the New Command Name

4. Type the command and click the **Set** button:

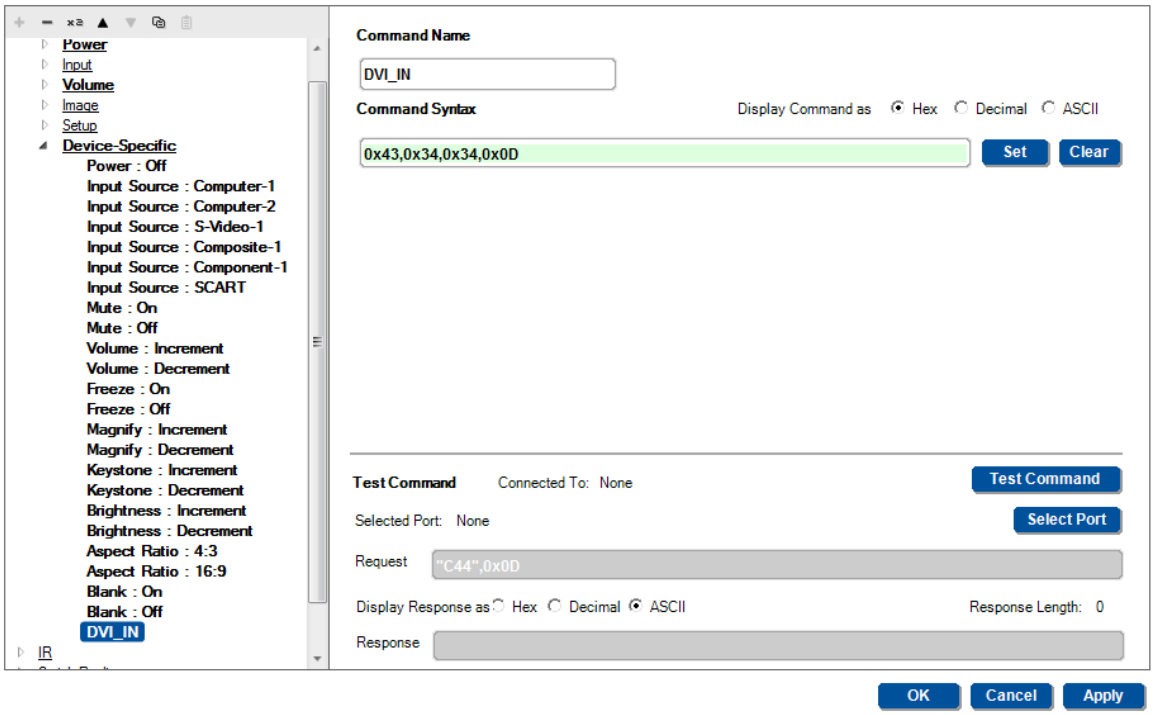


Figure 74: Serial Commands – New Command Added

The DVI_IN command was added to the commands device-specific list and appears **bold**.

Note that when writing a serial command:

- if you enter ASCII commands, enclose the strings in quotation marks (for example, "MUTE OFF").
- Prefix the hex characters with 0x or "$" (for example, 0x0D), non-prefixed values are in decimal (for example, 13).
- String and byte values should be separated by commas or spaces (for example, "BRIGHT DEC",0x0D).
- If a protocol command states Carriage Return (<CR>) and/or Line Feed (<LF>) following the command line, add 0x0D or 0x0A, respectively, outside the command quotation marks, separated by a comma.
  For example, “PWR” <CR> <LF> should appear as “PWR”,0x0D,0x0A.

If required, you can test the command

1. If the room control device is not physically connected, connect it now and connect the controlled device (for example, a DVD or projector).

2. In the **Driver Manager** window select the command to be tested.
   The command syntax appears in the text box on the top right area (under Command Name).

3. Click the **Test Command** button:

   - If the connection type between the room controller device and the PC was not yet established, the connection window will appear and you should select the connection method (in this specific example, the **RC-74DL** is connected to the PC via the Ethernet) and click Connect (see Figure 75) after that the Device Ports window appears (see Figure 76).

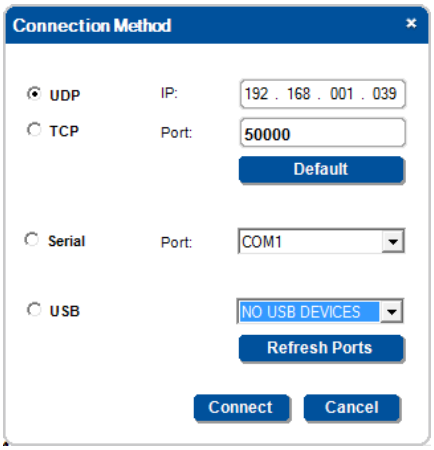


Figure 75: Testing Serial Commands –Connecting the PC to the Room Controller

   - If the room controller device is connected, the Device Ports window appears and you will need to select the port to which the controlled device is connected (see Figure 76).

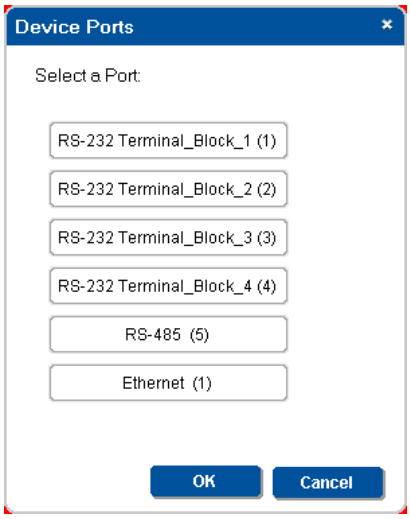


Figure 76: Testing Serial Commands –Selecting a Device Port

4. Select the port to which the controlled device is connected to the room controller (for example, the projector is connected via RS-232 Terminal Block 1 to the **RC-74DL** room controller) and click OK.

   Note that if the controlled device is connected to the Ethernet, the following window appears. Verify the details and then click OK.

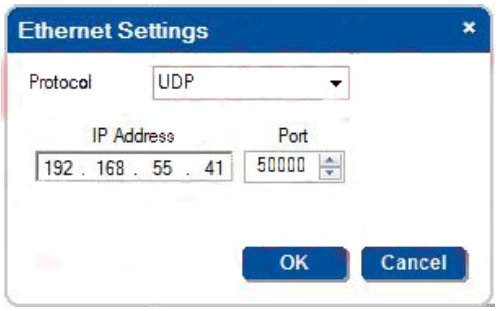


Figure 77: Testing Serial Commands –Ethernet Settings for Controlled Device

The command tested is sent to the controlled device. The **Request** text box shows the sent command and the **Response** text box shows the response:

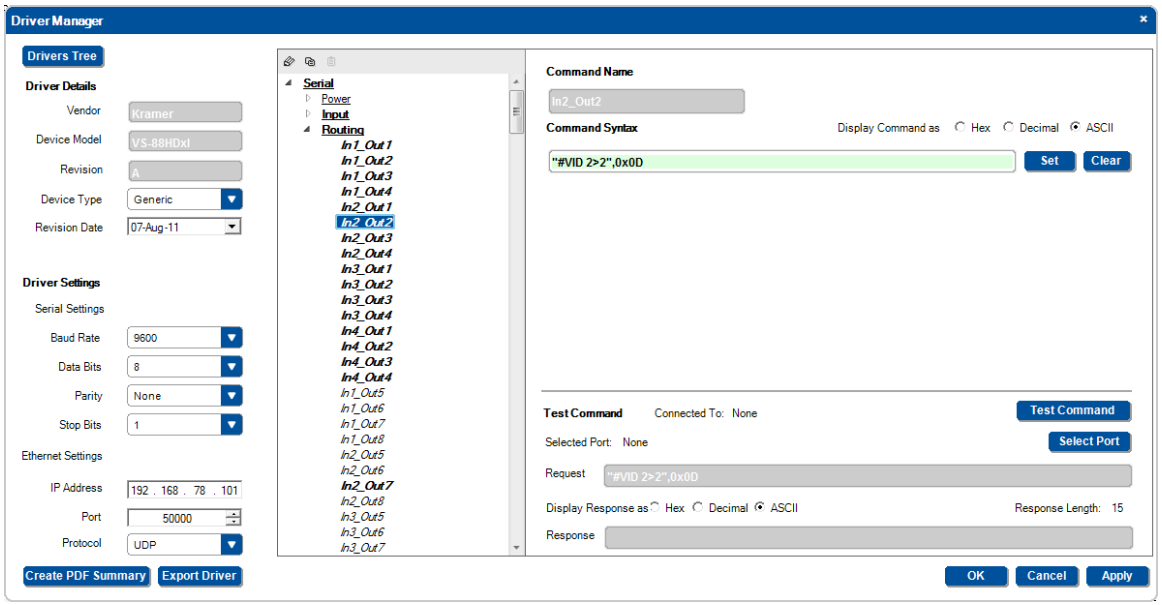


Figure 78: Testing Serial Commands – Setting the Command

Click the Test Command and wait for the response.

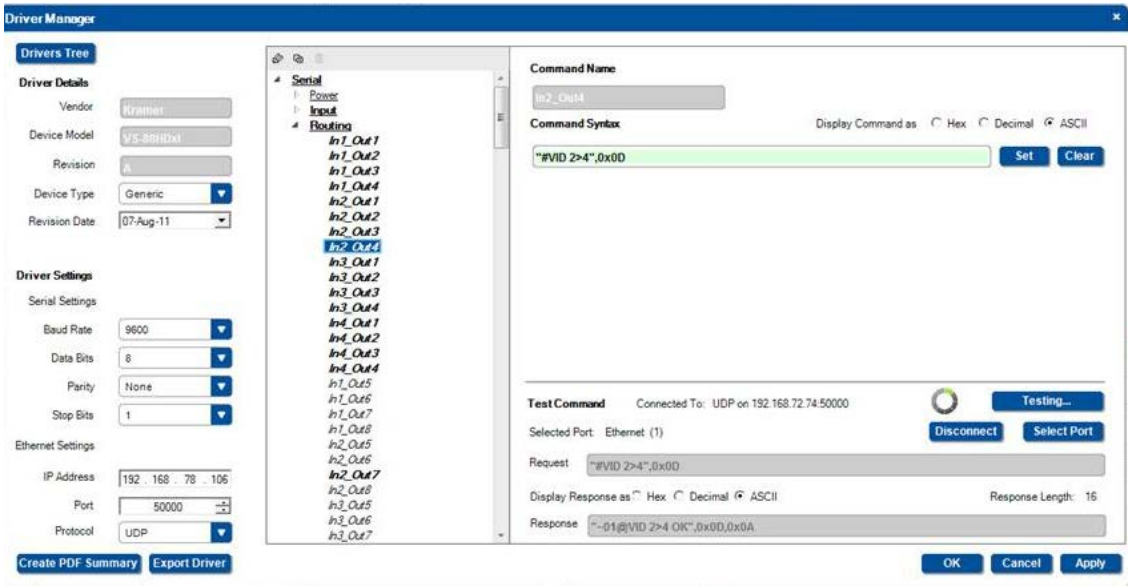


Figure 79: Testing Serial Commands – Request and Response

If the controlled device fails to respond, an ERROR or TIMEOUT message appears.

If the reply has not yet been written to Serial Replies syntax (see Figure 81) or if it does not match the current reply defined in Serial Reply, the following message appears:

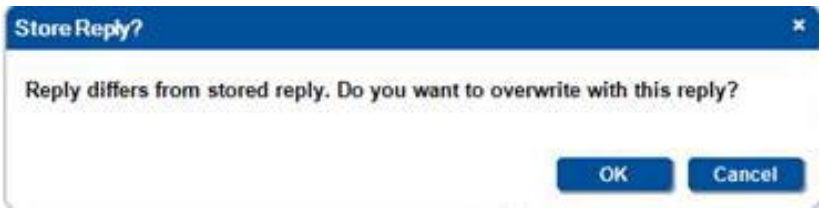


Figure 80: Testing Serial Commands – Storing the Reply

Click OK to store the reply.

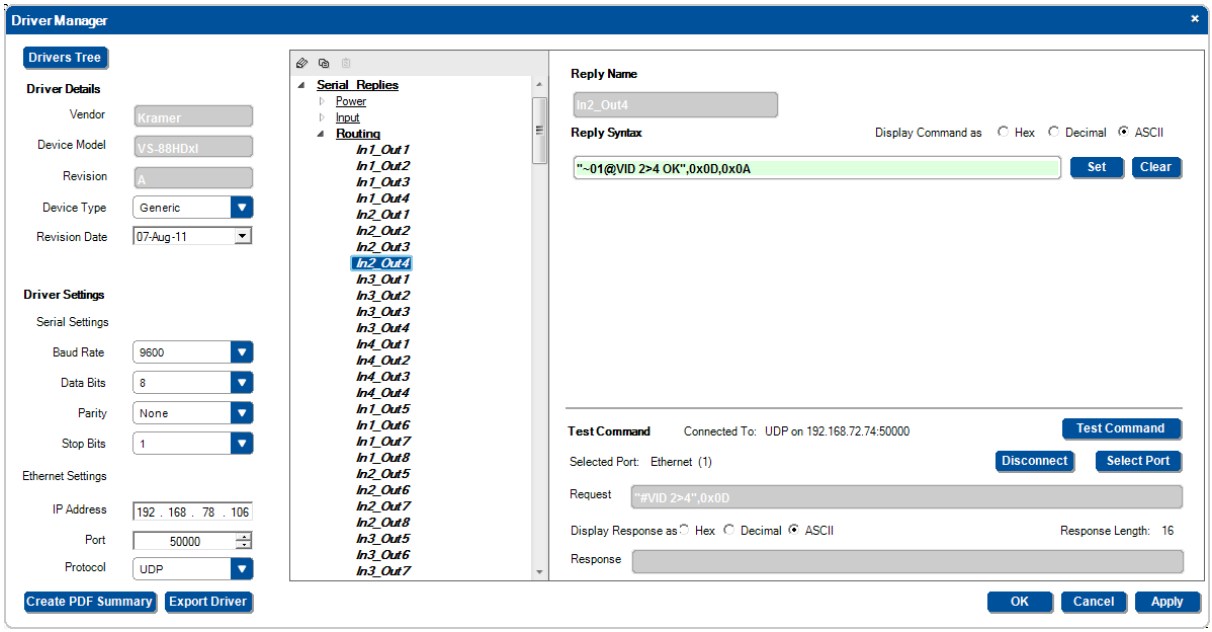


Figure 81: Testing Serial Commands – Serial Reply Stored

If the response matches the current Serial Reply, you will get the Reply Stored Message. Click OK.

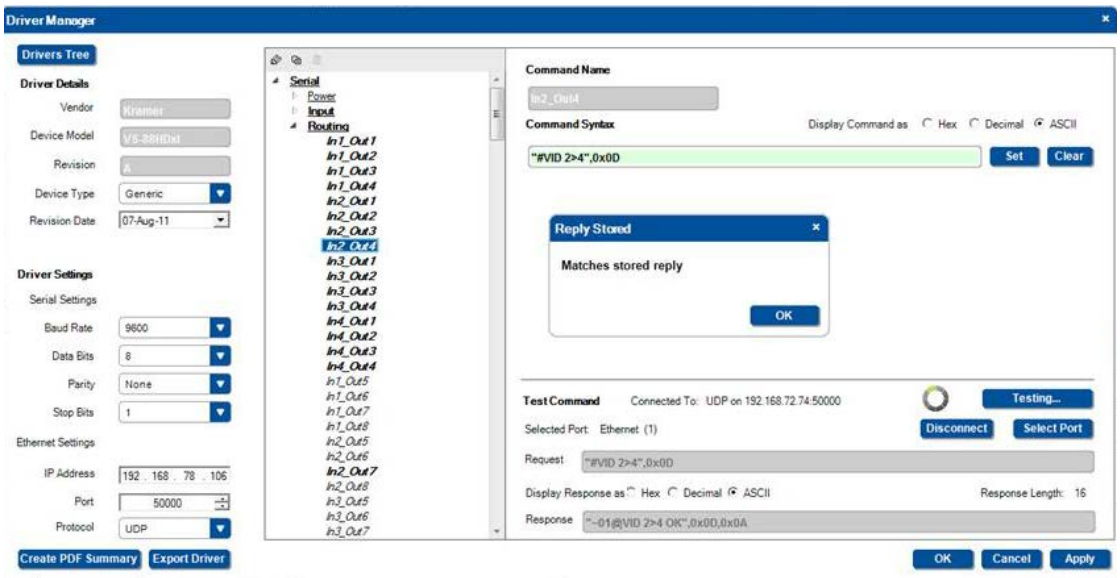


Figure 82: Testing Serial Commands – Serial Reply Matches Stored Reply

5.5.2 Creating an IR Command

Open the IR command list and select a command. You can add an IR command by:

- Typing in the command syntax (see Section 5.5.1).
- Adding a controlled device's pronto IR code and converting it to the regular syntax.
- Reading the IR command via IR Learning as described in this section.

Converting the Pronto IR Codes

Controlled devices which do not have Pronto IR codes require that you convert them before they can be used in **K-CONFIG**.

In the following example, to convert the PWR_ON IR code of a Sony Projector:

1. Select the required command (PWR_ON), click the **Convert from Pronto** button.
   The CONVERT PRONTO COMMAND window appears.

2. Copy the IR Pronto code for the specific machine command (without the quotation marks) and paste it into the CONVERT PRONTO COMMAND window:

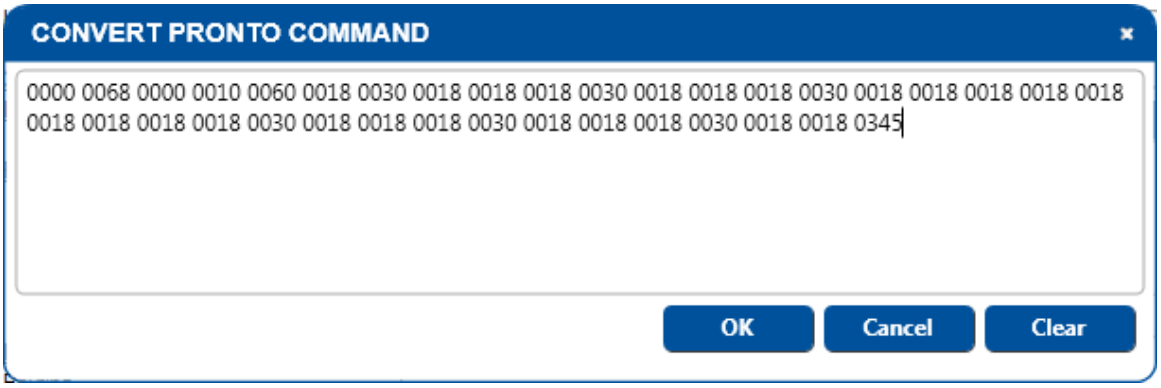


Figure 83: IR Commands – Convert Pronto Command Window

3. Click OK.
   The command has been converted:

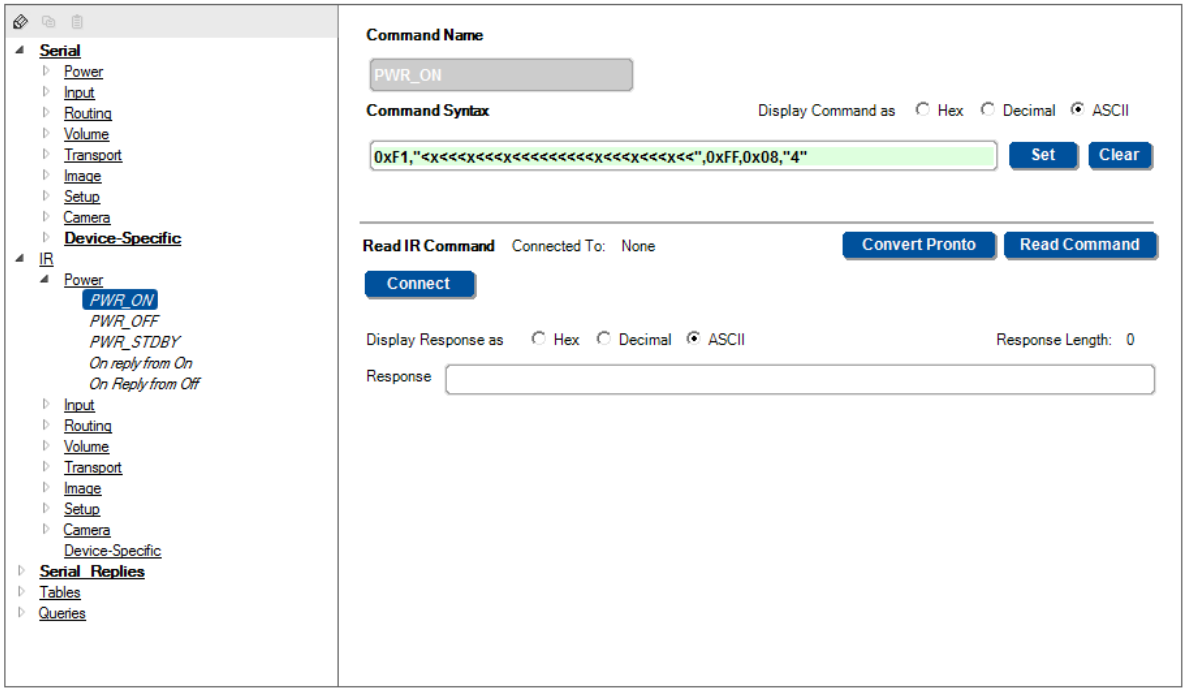


Figure 84: IR Commands – Pronto Command Converted

Reading the IR Command via IR Learning

To create IR commands for a selected device, connect the room controller device (with IR learning capability) directly, whether it is defined as an auxiliary device or a Master device, to your PC and use the remote control transmitter to learn its IR commands.

Use the remote control transmitter of the machine from which you want to learn the IR commands. For example, use the DVD remote control transmitter to write the DVD commands to the driver manager.

To create an IR command:

1. Connect the room controller device directly to your PC.

2. Select an IR command (HDMI_1 in this example)

If you are creating a controlled device specific command, select **IR**>**Device-Specific** and click **+** to add a command. The following window appears:

Type the new command's name and click **OK**.
The new command is added to the Device-Specific list.

3. Click the **Read Command** or the **Connect** button.
   The **Connection Method** window appears.
   If you choose to click the connect button, once connected you will have to click the Read Command button.

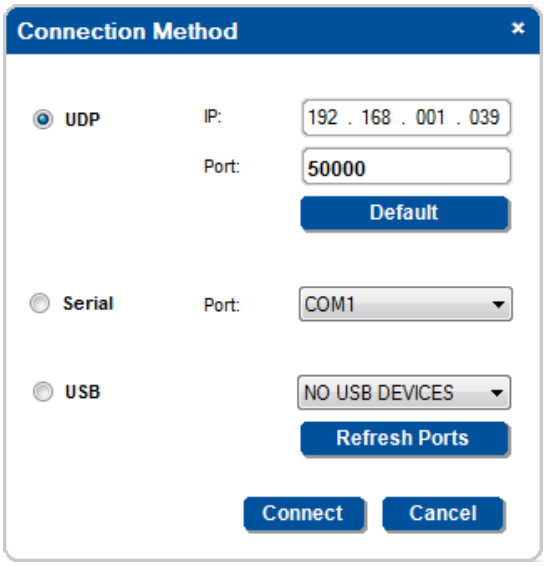


Figure 85: IR Commands - Connect to the Room Controller Device

4. Click Connect.

5. Click the Read Command button.
   The following window appears.

6. Click OK.
   After clicking this button, you have a 1 minute period to point the remote control to the IR learner sensor to let it capture the command.

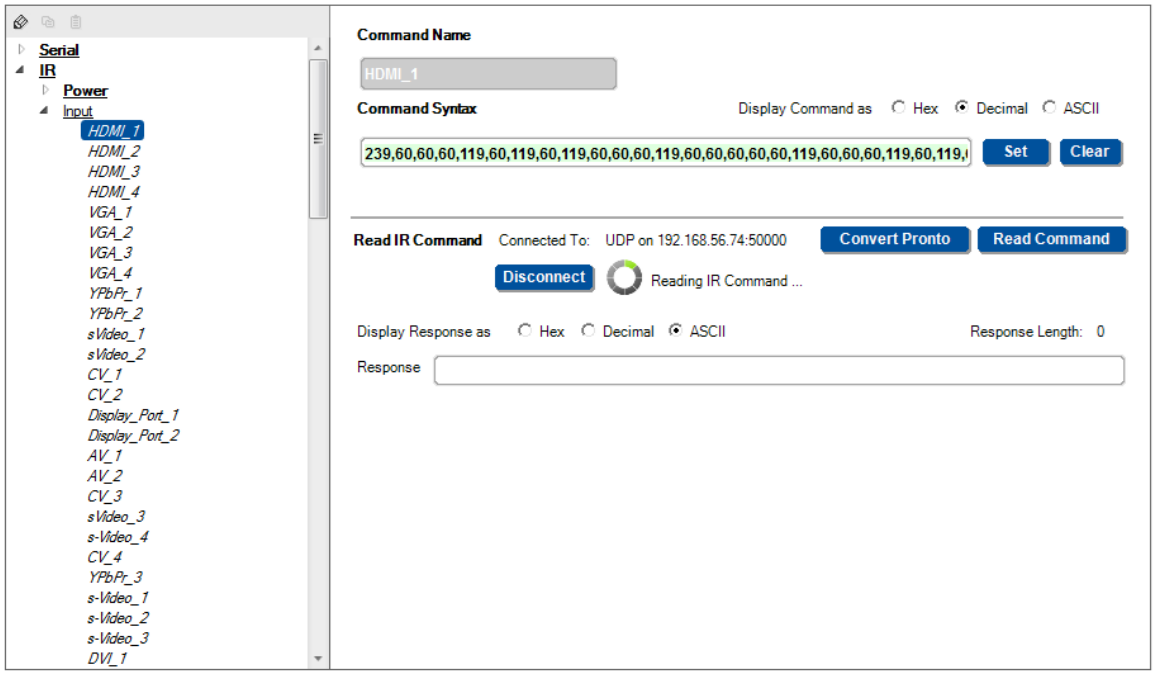


Figure 86: IR Commands – The device is Connected

We recommend that you perform IR learning with minimum lights on and within proximity of 3 to 5cm from the sensor. Any other light source may distort the IR command obtained (as in the example in Figure 87).

7. Click the IR remote towards the IR sensor until the command string is obtained:

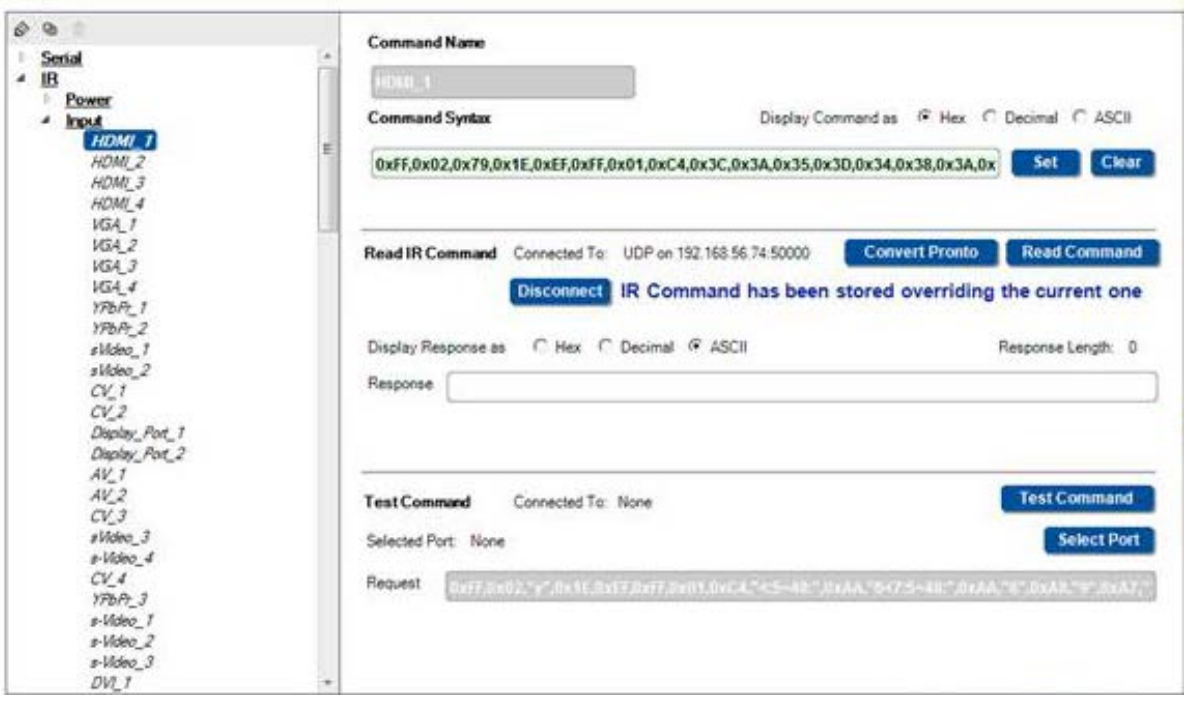


Figure 87: IR Commands – The IR command String Obtained

8. Click Set to save the command.

9. Select the IR port to which the command will be assigned:

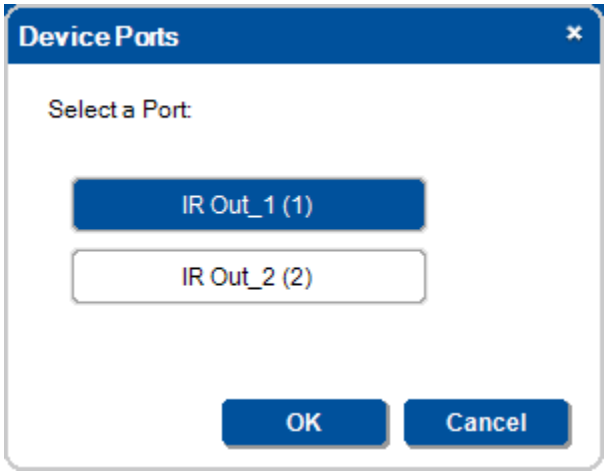


Figure 88: IR Commands – Selecting a Room Controller Device IR Port

You can test the IR command by connecting the room controller device IR terminal block connectors to the controlled device via the IR emitter port, and then clicking the **Test Command** button.

Note that if the room controller device is connected via USB or a serial port and the length of the command is longer than 47 bytes, you will not be able to test it (this does not mean that the command itself will not function directly from the room controller device).

Figure 89 shows how to connect the IR emitter port cable (using the Kramer 3.5mm to IR Emitter Control Cable (C-A35/IRE-10)). The white striped side connects to IR OUT, the black side connects to the Ground, and the LED Emitter Shell is affixed to the IR sensor window with the adhesive layer.

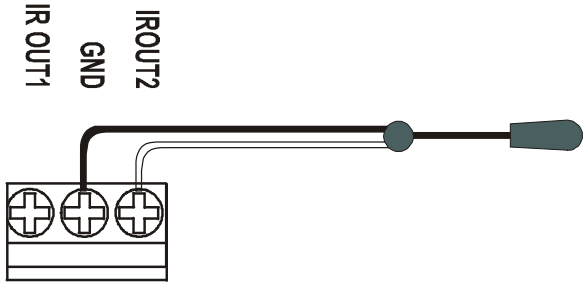


Figure 89: IR Emitter Wiring

We recommend that you do not use the dual IR emitter since it emits a weaker IR signal that may not be detected by some controlled devices.

5.5.3 Creating a Serial Reply

When sending a serial command to a device, that device will usually send a reply. This reply can be used to create monitor events. Serial replies can be typed manually or by sending a serial command to the device and obtaining its reply.

To add a serial reply:

1. Select a command for which there is a command string in the serial command, for example PWR_OFF.
2. In **Serial Reply**, select PWR_OFF from the shared list:

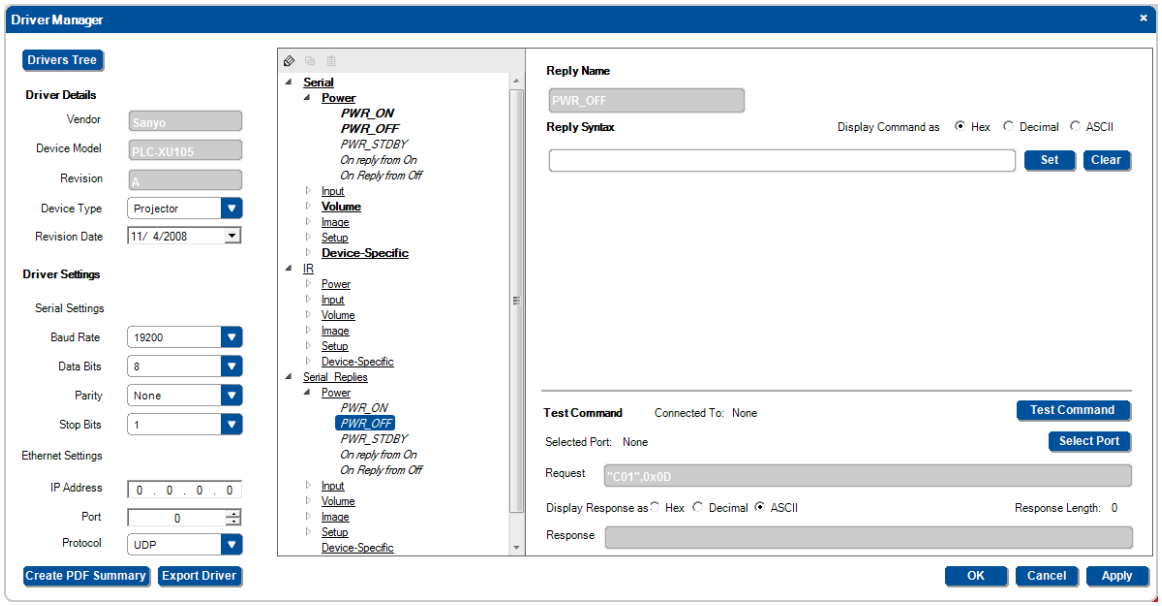


Figure 90: Serial Reply Commands – Selecting a Serial Reply Command

3. Connect the room controller device to your PC.

4. Click the test command button.
   The **Connection Method** window opens.

5. Click **Connect**.

6. Click the **Select Port** button, select the relevant serial port and click the **Select Port** button.

7. Click **Test Command**
   The reply appears in the command syntax area:

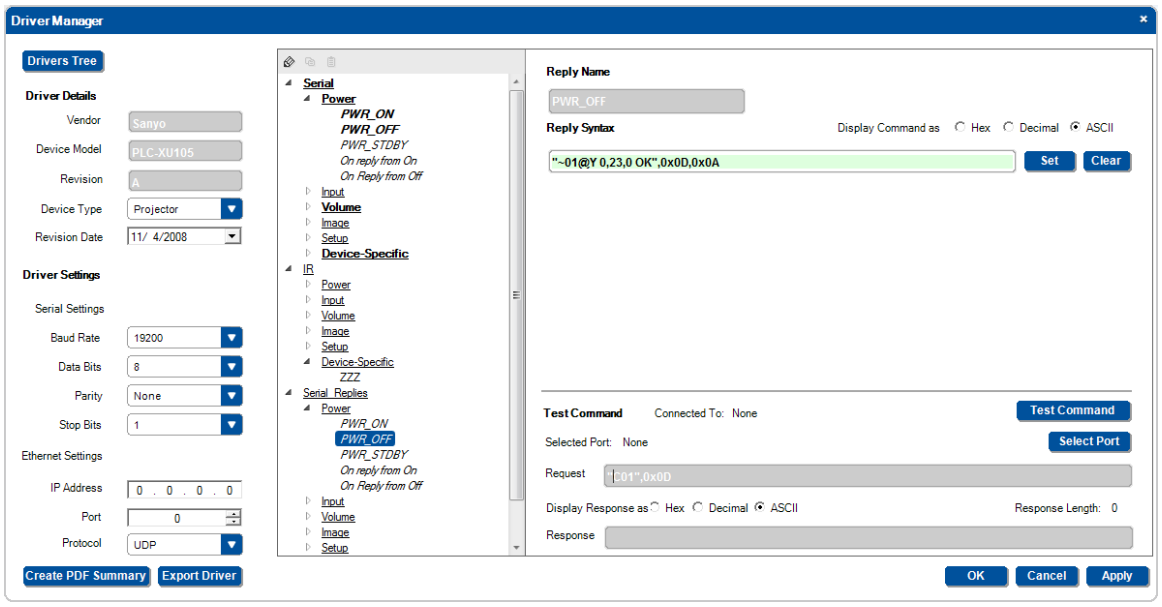


Figure 91: Serial Reply Commands – Reading the Serial Reply Command

8. Click **Set**.
   The Serial Reply was added to the shared Serial Reply>Power list.

Note that a serial reply can be created by testing a serial command and storing the response (see Section 5.5.1).

5.5.4 Creating a Table List

It is useful to write multiple serial commands to a table if they include an adjustment range (for example, the volume level data ranges from 0 to 64). The Table Commands table includes a list of indexed serial commands in sequence (the line number) that the controller should send out once reaching this line.

In the action lists, the program configurator will be able to jump to a certain line (useful on device startup to specify the line to use as the startup state), move up one line and move down on line. These options make it very easy to control range based AV settings (volume, brightness and so on).

The three actions associated with the Table structure can be part of any action list - turn of a volume knob on a room controller device or any button on a room controller device or even a timer trigger. The Table also lets you link the volume LEDs to the range level.

For example, driver commands that define the volume level (from 0 to 64) can be inserted in the Table area in the Driver Manager window. The table is then included in a trigger that lets you change the volume level to a set value with each press of a button or turn of the knob (for digital audio).

Tables can be default/non-default shared or device-specific. Non-default shared tables are added via the Commands Hierarchy table. Device-specific commands are added via the Driver Manager window.

To setup a Table:

1. In the **Driver Manager** window, select a Tables command (for example, Volume):

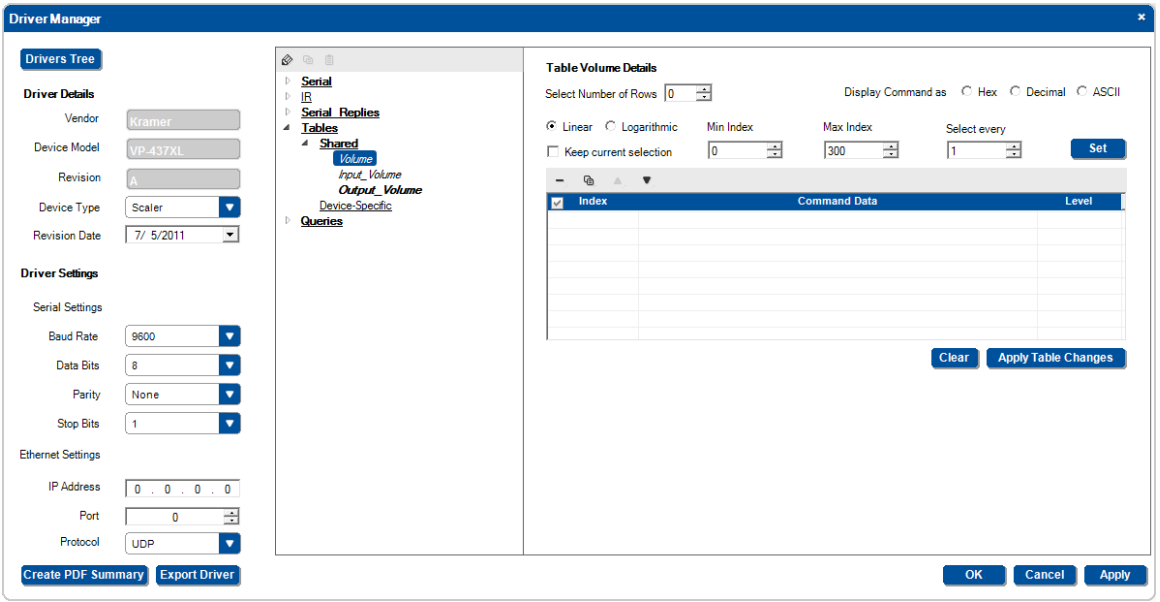


Figure 92: The Driver Manager Window – New Table

The Driver Table window lets you:

- Select the number of commands (rows) in the table (up to 300)
- Write and display the command string in Hex, Decimal or ASCII formats
- Auto Select the relevant rows
- Set the LED Level

2. Select the number of rows you need (for the volume adjustment example, 14 rows are recommended):

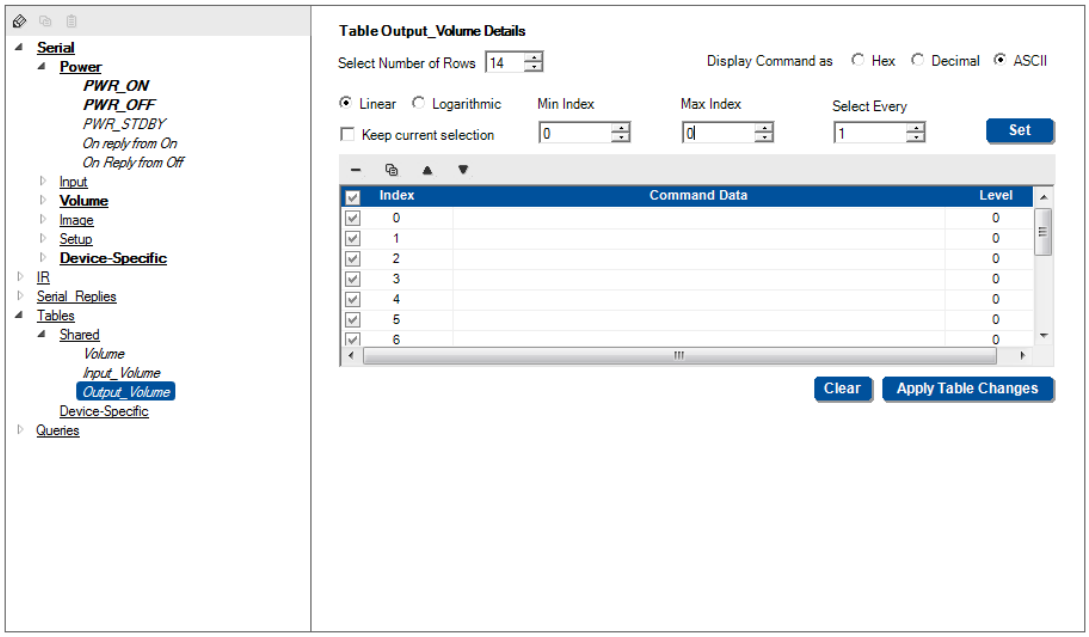


Figure 93: The Driver Manager Window – Select Number of Rows

You can set the Min and Max Index (up to 13 in this example) which will slice out a section of the commands that will be used.

Note that if you find that you have not selected the exact number of rows, you can add or delete a row at any time.

3. Enter the command data according to the protocol:

For example, a certain LCD Display command format is:
[Command1][Command2][ ][Set ID][ ][Data][CR]
Data ranges from 0 to 64.
The specific command for the Volume Control (for a Data value of 35) is:
[k][f][ ][Set ID][ ][Data][Cr]: “kf 1 ”,0x35,0x0D.

4. Click the **Command Data** area and type the command into the driver table:

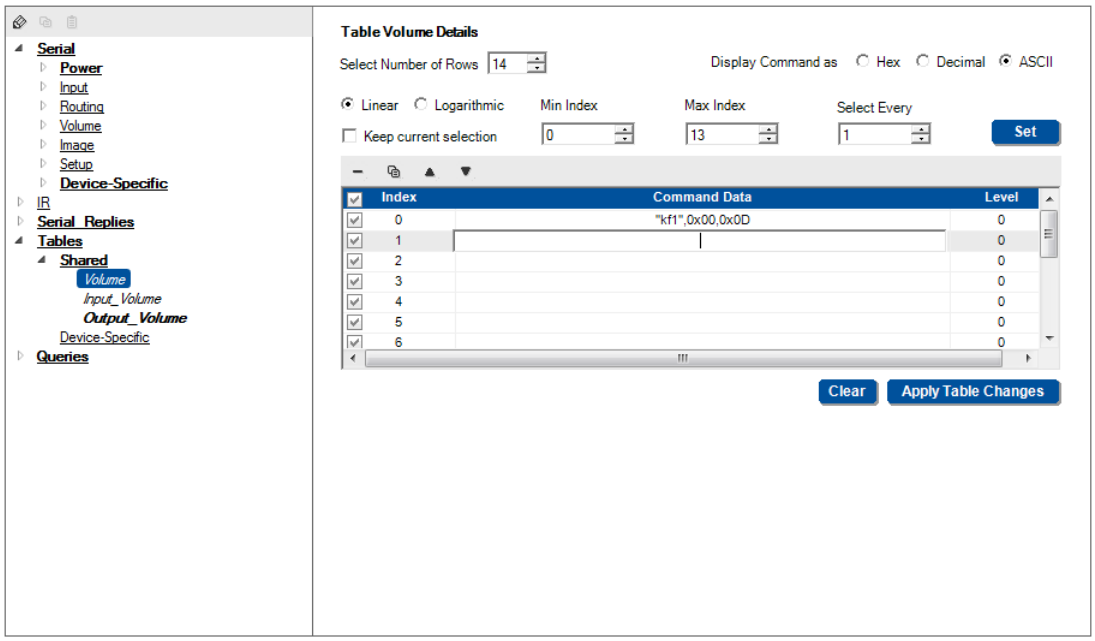


Figure 94: The Driver Manager Window – Typing Commands

5. Add the following commands (you can use the copy and paste function between the rows and just change the specific, relevant byte):

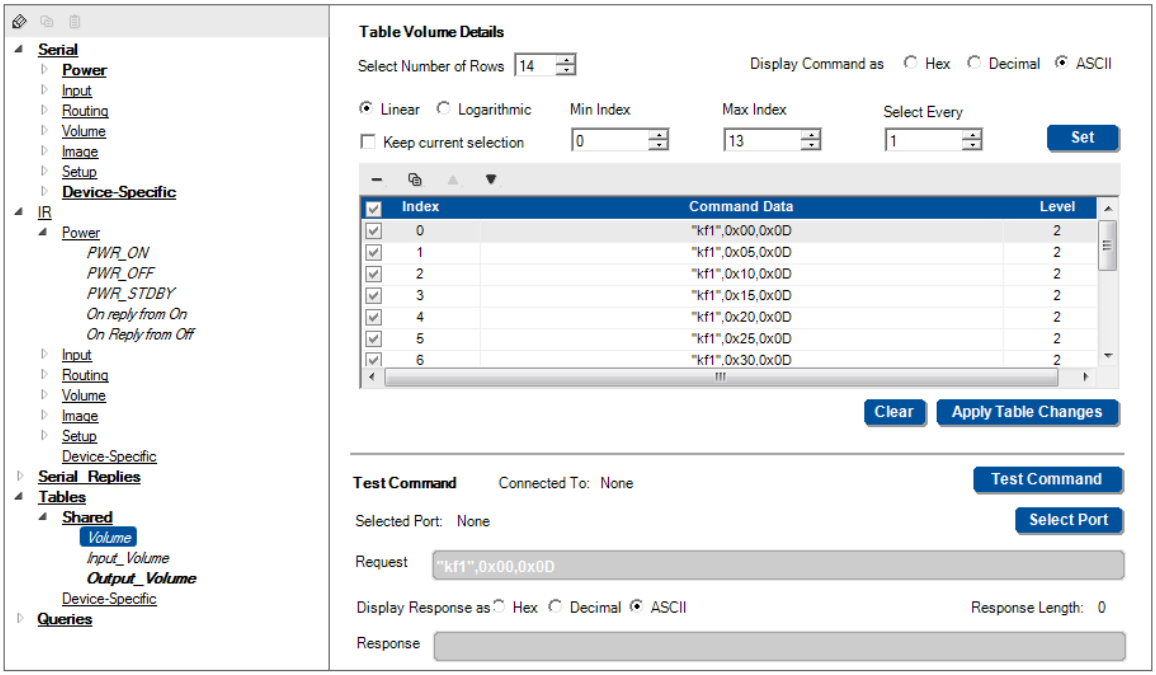


Figure 95: The Driver Manager Window – Writing the Commands

Upon creation, by default, all the rows are checked – meaning that when you move UP/DOWN the list, all the rows will be used. If you prefer to use less rows in your configuration (for example, you may not need to use all the volume levels to create a clean volume UP/DN effect) you can now enable or disable specific row commands manually or through the “Select Every” box, as needed (for example, to set the rate of increase or decrease of the volume) by selecting which commands should be used when traveling UP/DN in the table with the relevant **K-CONFIG** Action commands:

6. For example, select every 3 rows and click Set:

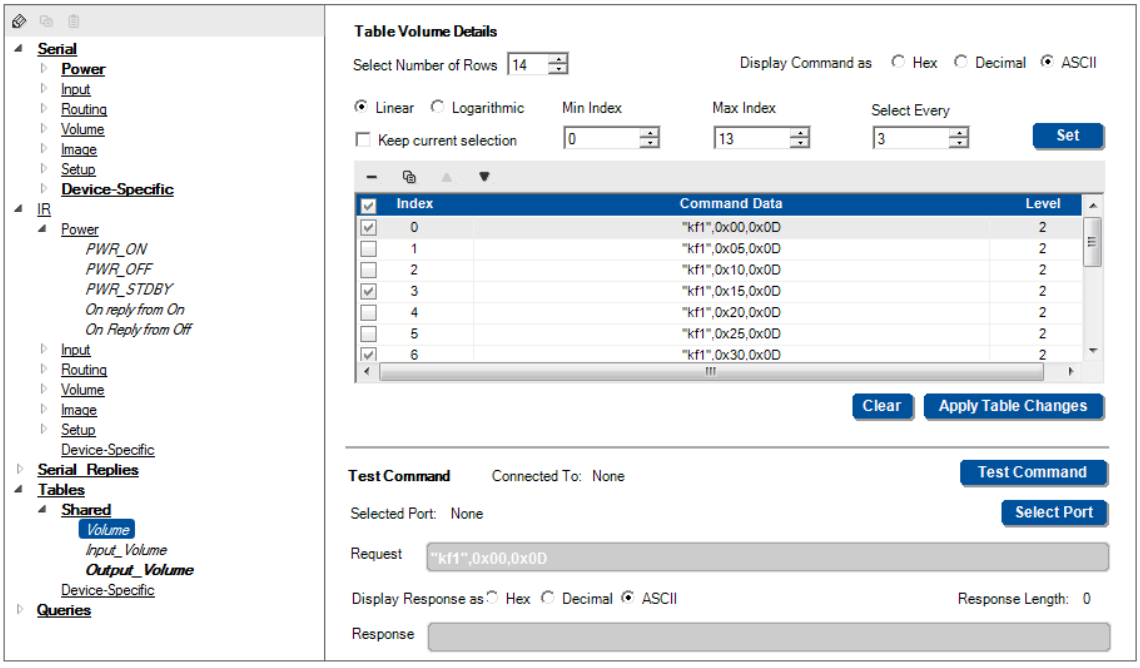


Figure 96: The Driver Manager Window – Selecting every 3 Rows

7. Check the **Keep current selection** box if required.

You can also do this logarithmically, for example, to increase the volume at a fast rate in the lower range and slower in the higher range:

- Check Logarithmic.
- Select the approximate number of steps you need (the table calculates the optimal number).
- Click the Set button.

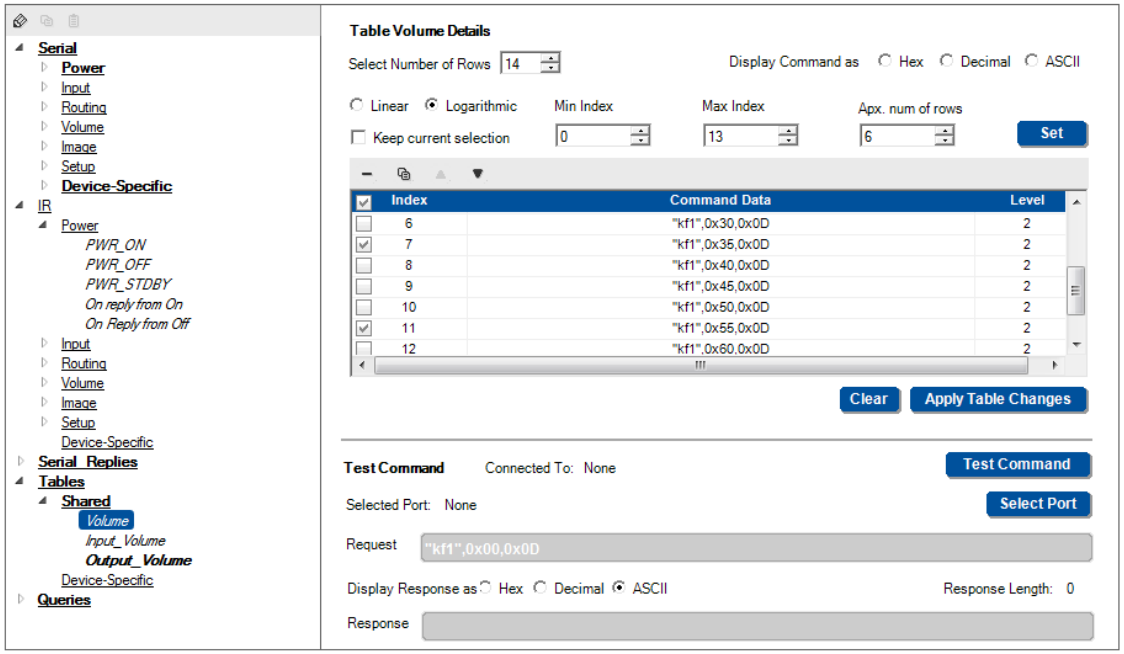


Figure 97: The Driver Manager Window – Logarithmic Row Selection

8. Set the LED Level:

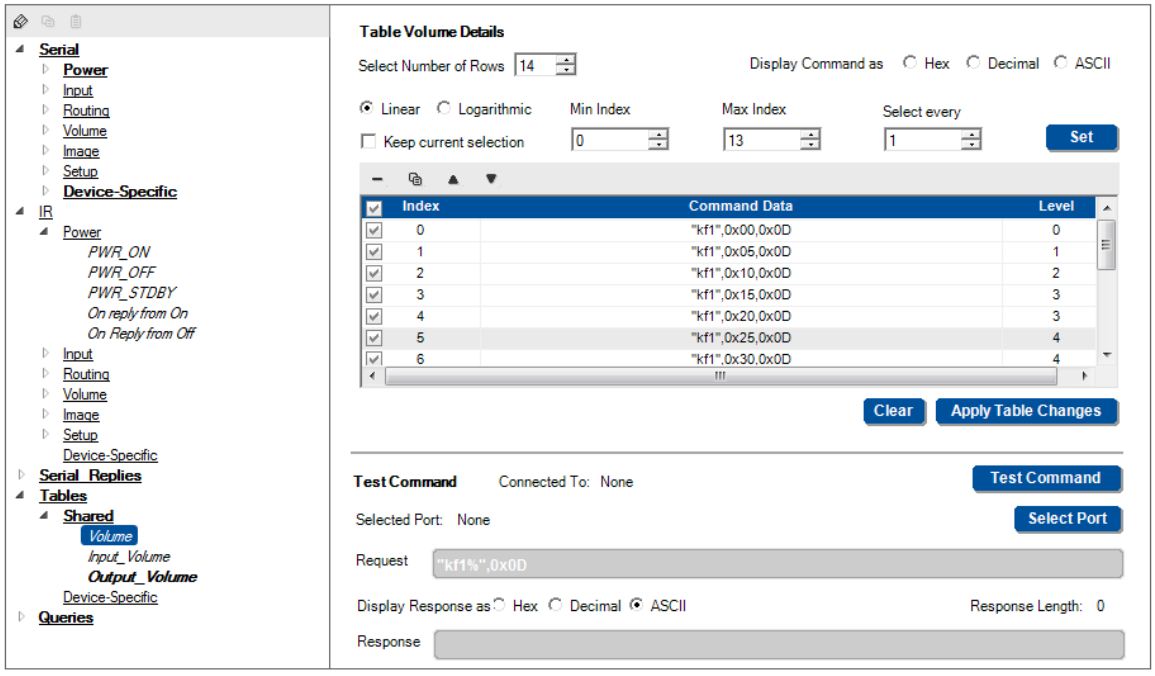


Figure 98: The Driver Manager Window – Setting the LED Levels

The Levels indicate the number of digital knob LEDs that light for each data command on relevant room controller devices (for example, the **RC-63DL** or **RC-54DL**). You can set the LEDs to light only in sequence. For example, one LED will light for data commands up to 30. Two LEDs will light up to data command 50, and so on.

Note that when selecting a command, the test command area appears, letting you test each command in the table.

9. When the table is complete, click **the Apply Table Changes** button and then click **OK**.
   The Volume Table name appears **bold** now.

You can create several sets of tables for different commands.

Once the table is ready, you can use the commands table to set the volume to an exact value in a trigger (see Section 9.2.1).

5.5.5 Creating a Query

A query is a question sent from **K-CONFIG** configured program to a controlled device followed by an expected reply from that device. The reply is analyzed by the controller program according to a set of definitions that was configured by the user or by receiving the first reply within a predefined time period. The reply can then be used to trigger a list of actions.

You can build the query into a shared Query name (Power, LampHour, Fan, Comm_Status and Input), or create Device-Specific queries.

Queries are sent to the Kramer Site-CTL software which can monitor and control multiple room controllers via the **Site Control Message** command (see Section 9.11).

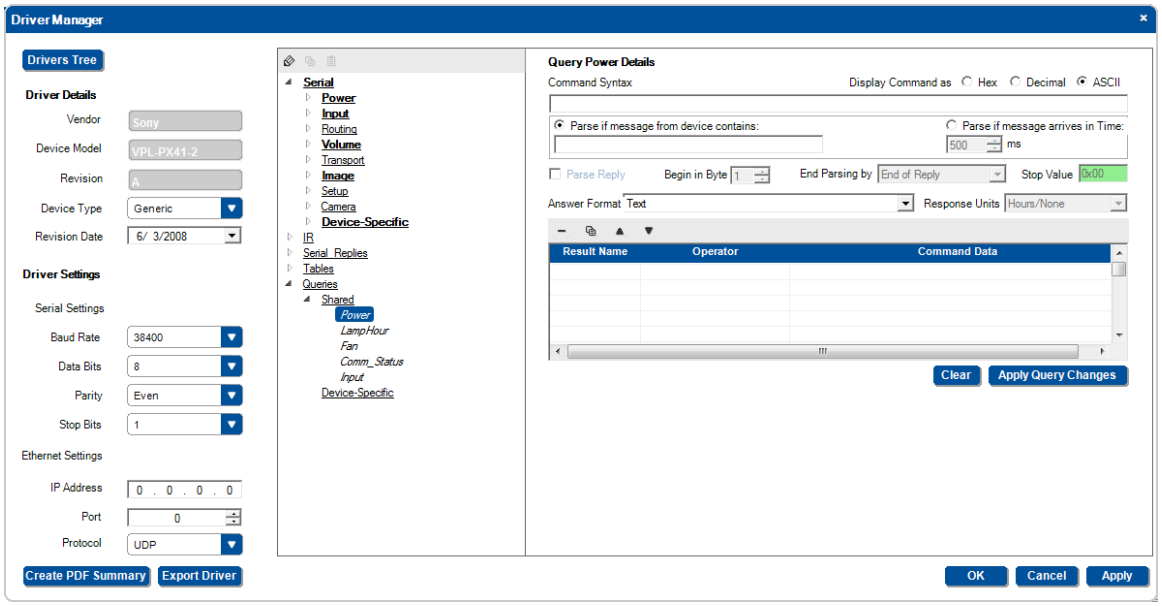


Figure 99: The Driver Manager Window – The Query

To define a shared query, for example, a projector's lamp hours:

1. Under **Queries**, select **Shared** and then **LampHour**.
   The Query area appears:

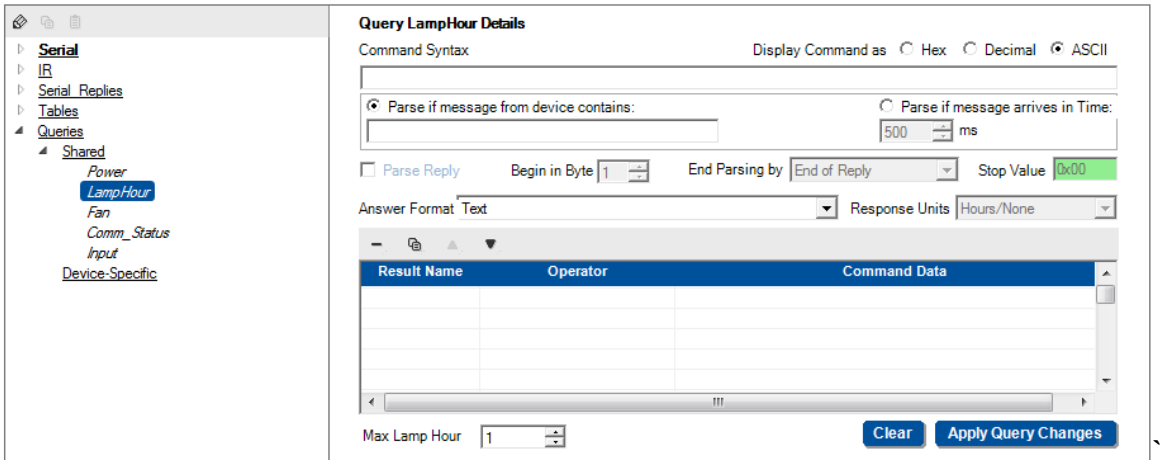


Figure 100: The Driver Manager Window – The Shared Query

Fill in the Query LampHour Details:

Feature	Function	
Command Syntax	Type in the query in HEX/Decimal/ASCII format according to the protocol of the specific projector	
Select response	Parse if message from device contains a certain syntax or Parse if the message arrives within a certain time period	
	Parse if message from device contains: to ensure that the system will parse only the relevant serial replies from the controlled device, type in the syntax that will always be included in the reply. For example, the lamp hour response should always include: #LMP_HR" **Parse if message arrives in time**: the system will accept the first message received within the predefined time period. This can be used when the response cannot be defined by content	
Parse Reply	Check Parse Reply if you want the system extract relevant information (text, number and so on) from the complete serial reply	
	Begin in Byte:	Set the byte from which the relevant information starts: to start with the first byte, select, to start from the second byte, select 2, and so on. The number selected can be considered as the number (characters that should be ignored: 1) from the beginning of the response.
	End Parsing by:	**End of Reply**: the information ends with the final character in the packet. **Specific Char**: a certain character will define the end of the information bits (for example, "A"). **Counting Bytes**: the response will always have a set number of characters.
	Stop Value:	Type in the characters that define the end of the response.
Answer Format	Select the answer format according to the device protocol format: Text (the answer appears as text) Number as Text ["4567"] Hex number as Text ["11D7"] Number – Bytes value (Highest value in first byte – 0x11,0xD7) Number – Bytes value (Highest value in last byte – 0xD7,0x11)	
Response Units	The response units for all answer formats except Text: Hours/None Minutes [will be divided by 60 to get Hours] Seconds [will be divided by 36000 to get Hours]	
Response definition table	This table defines the response ranges and their names.	
	Result Name	The result name will appear when the command data in the query reply complies to the condition stated.
	Operator	The operator is the condition and is set according to the answer format. For example, if the answer format is text, the Operator will be "= Equal To". Other answer formats have the following operators: </> Not Equal To, > greater than, < Less Than, >= Greater Than or Equal To, <= Less Than or Equal To, >< Between.
	Command Data	The Command Data is the part of the data that represents the condition.
Max Lamp Hour	Set the maximum lamp hours (according to the projector manufacturer's data sheet.	
Clear	Clear the table.	
Apply Query Changes	Save the table data (see Figure 101). Once the table is saved, the text command area appears:	

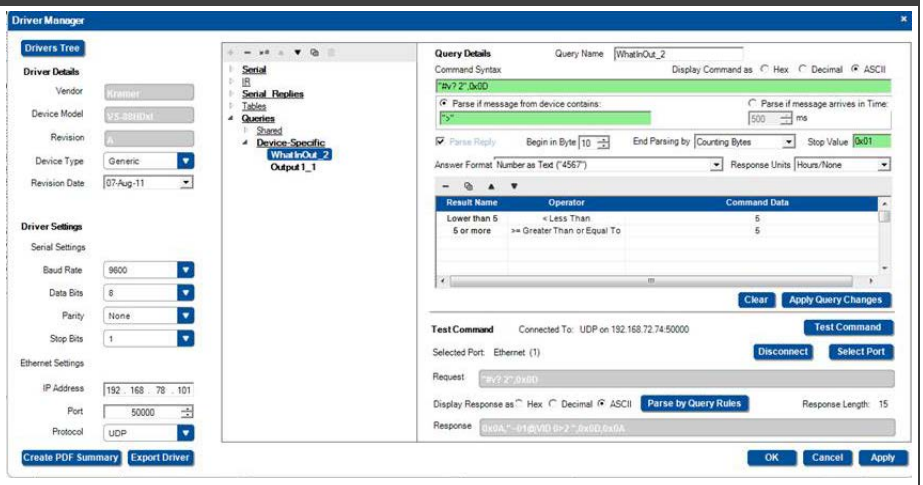
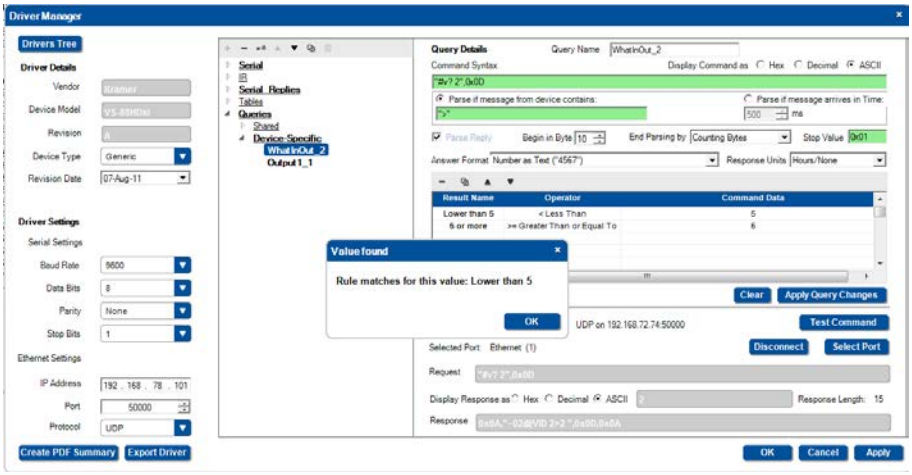
Feature	Function
Testing the command	 To test the command, connect to the machine and select the port. The command syntax appears automatically in the Request line. Click the Test Command button and check that the response complies with the answer format.
Parse by Query Rules	After receiving the device's response, the "Parse by Query Rules" button appears:  You can click the button to test the parsing rule against the reply and see if it gives the expected result and select the correct result from the table.

Figure 101 shows the **Query LampHour Details**:

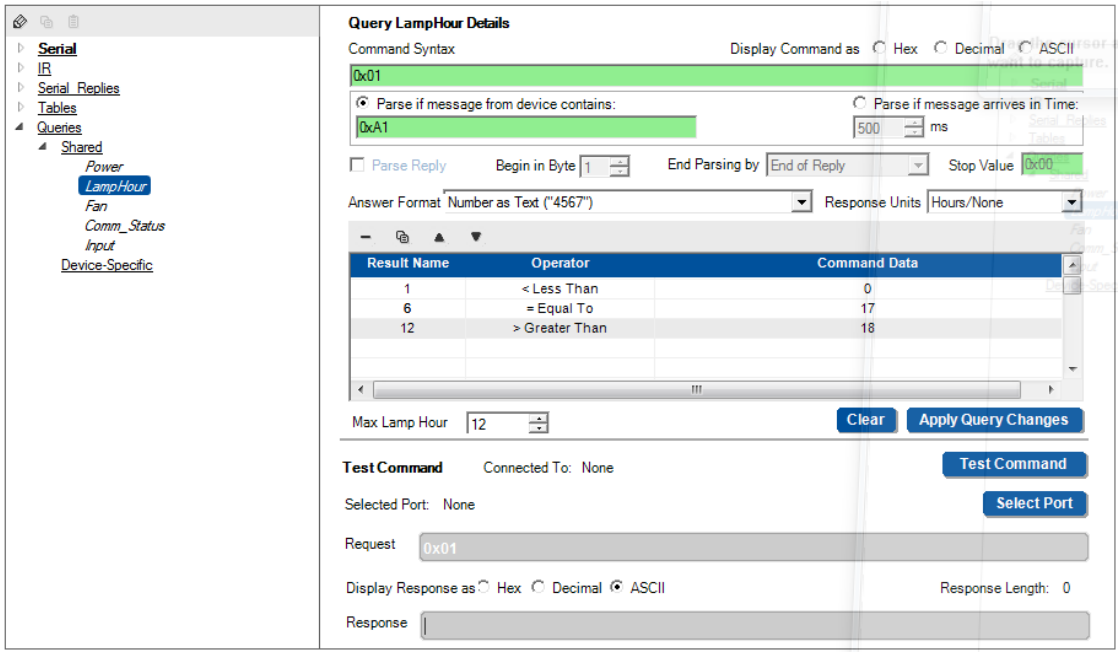


Figure 101: The LampHour Query Details

The query can then be used to create query events (see Section 8.6).

6 Defining the Control Room via the Project Navigator

You are here:

Configuration Steps	Description	Section
Introduction	General information and system requirements	1
Planning	Carefully plan your controlled room	2
Installation	Install the Software	3
Introduction to K-Config	Get to know the K-Config main window, menus and quick access icons	4
Driver Manager	Define the Controlled Device Drivers	5
Project Navigator	Define the Controlled Room	6
Port Manager	Assign the controlled devices to the Master and Auxiliary device ports	7
Triggers	Activate the Triggers	8
Adding Actions	Describes how to add the various actions to a trigger	9
Connecting to a Device	Describes how to connect to a device, upgrade the firmware, read/write to the device and so on	10
Using the Web pages	Describes how to control the device via the Ethernet and perform minor configuration operations	11
Creating a Virtual Master	Describes how to create a Virtual Master to control a room via KRAMER NETWORK	12

Once you have arranged and defined the driver commands of the controlled devices, you can set the control room via the project navigator.

The project navigator lets you set the controlled room.

Depending on the Master room controller, up to four Aux K-NET devices and two Virtual Devices as well as up to 15 control gateways can be used in the same control system setup. At any point you can-right click a room controller device to perform further functions.

You can check the Show unused ports box to show the ports that are unused for each device.

We recommend that you open a new project before defining the control room. At any point, you can save (or save as) the project, see Section 4.2.1.

When opening a new project, you can either add a Master Room Controller or a Virtual Master. The Virtual Master is used for controlling rooms via KRAMER NETWORK (see our Web site at http://www.kramerav.com/NETWORK). KRAMER NETWORK Virtual Master is described in detail in Section 12

6.1 Adding a Master Room Controller

In the following example the **RC-74DL** is selected as the Master room controller and the **RC-63DL** is the connected auxiliary device (some of the devices in the Add Device list (for example, the **WP-500**) do not accept auxiliary devices). Figure 102 shows the **Project Navigator** window. You can right-click the **Control Room label** to rename it or add a Master Device.

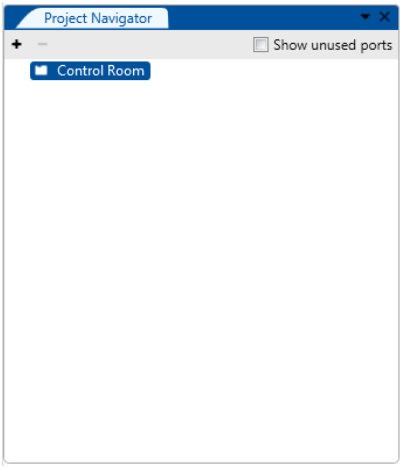


Figure 102: The Project Navigator Window

To define the devices via the Project Navigator:

1. In the **Project Navigator** window area, click **+** to add a device to the tree.
   The **Add Master Device** window appears. Scroll down and select **RC-74DL**:

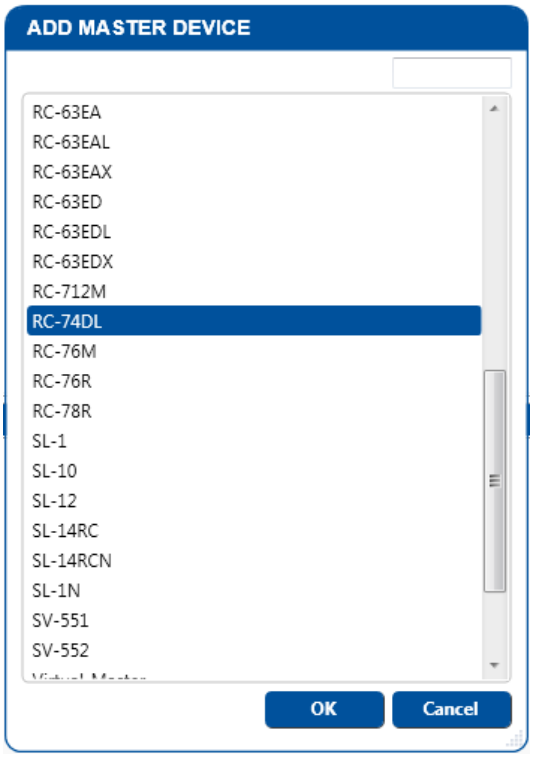


Figure 103: Adding a Master Device to the Project Navigator Window

2. Click **OK**.
   The main window appears and reflects the selection of **RC-74DL**:

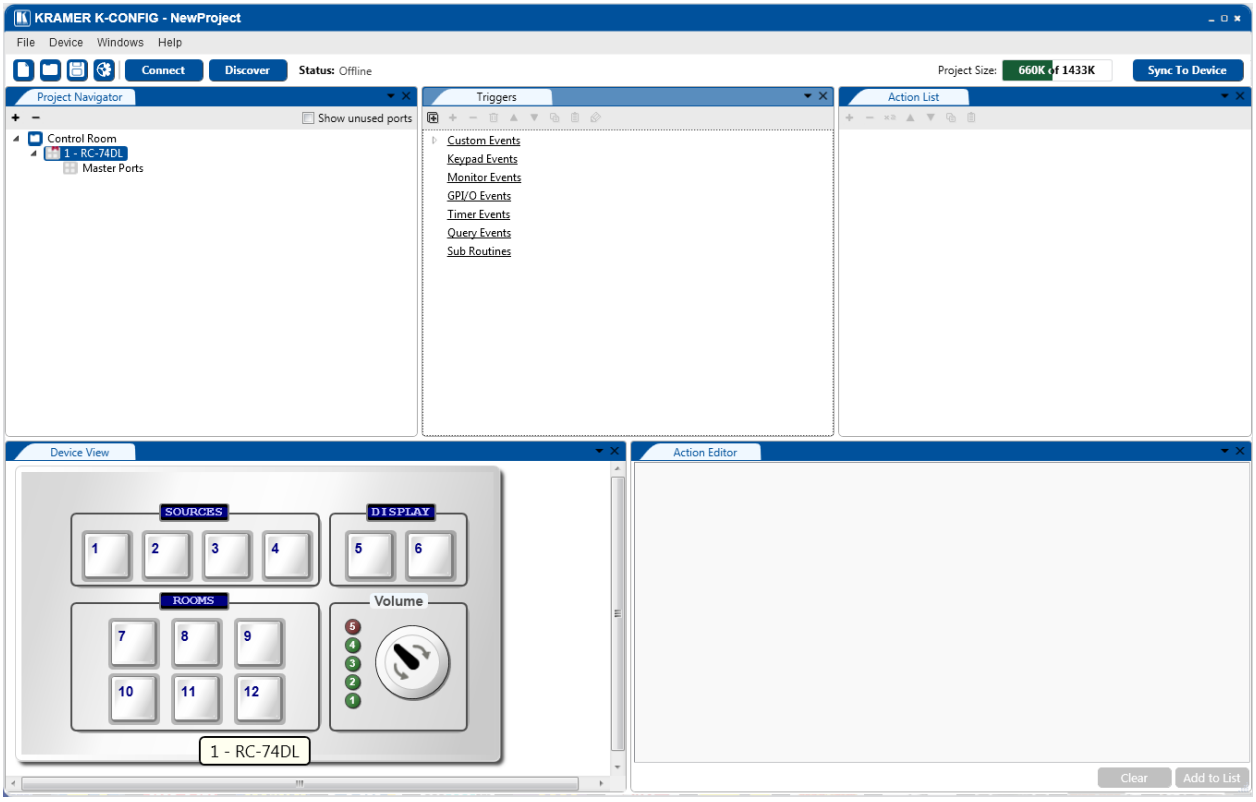


Figure 104: Main Window – Master Device Selected

In the main window you can check the **Show unused ports** box to show the list of the unused ports of the Master controller:

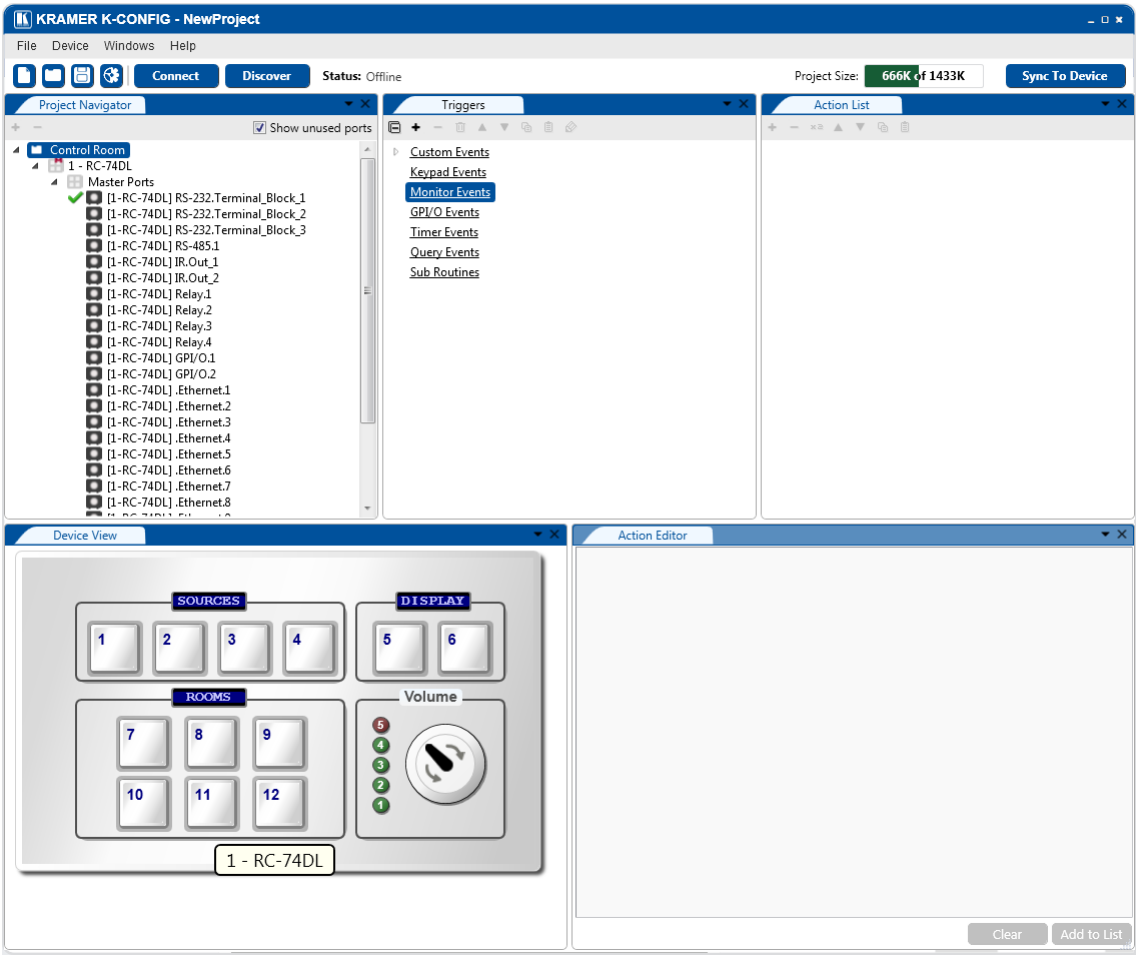


Figure 105: Main Window – Show Unused Ports

Once ports are assigned to controlled devices the used ports will appear on the list (see Section 7).

The **Port Manager** window (which does not appear in the default layout) lists the **RC-74DL** relevant ports (see Figure 106):

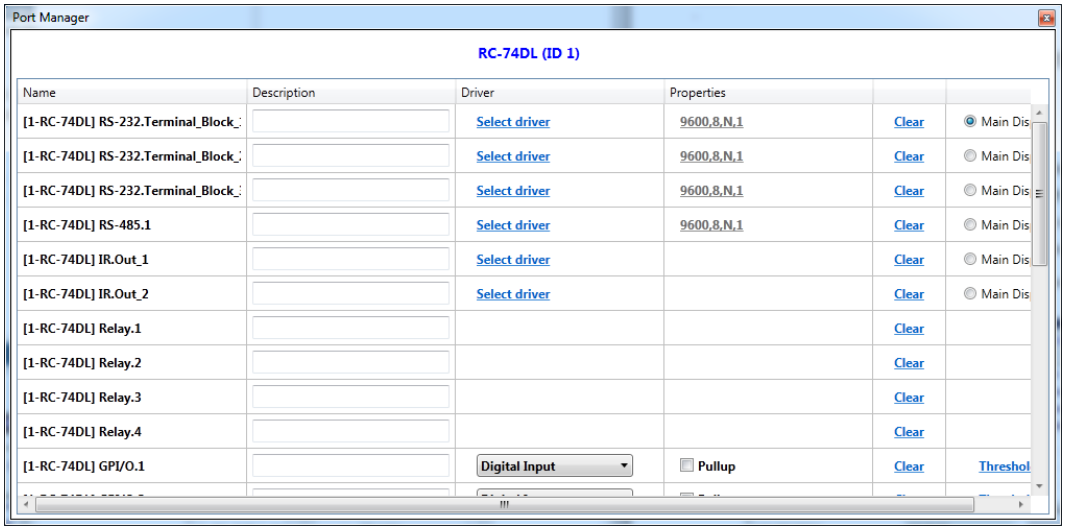


Figure 106: The Port Manager Window for RC-74DL

3. Select the Master device (1 – RC-74DL) and Click + again.

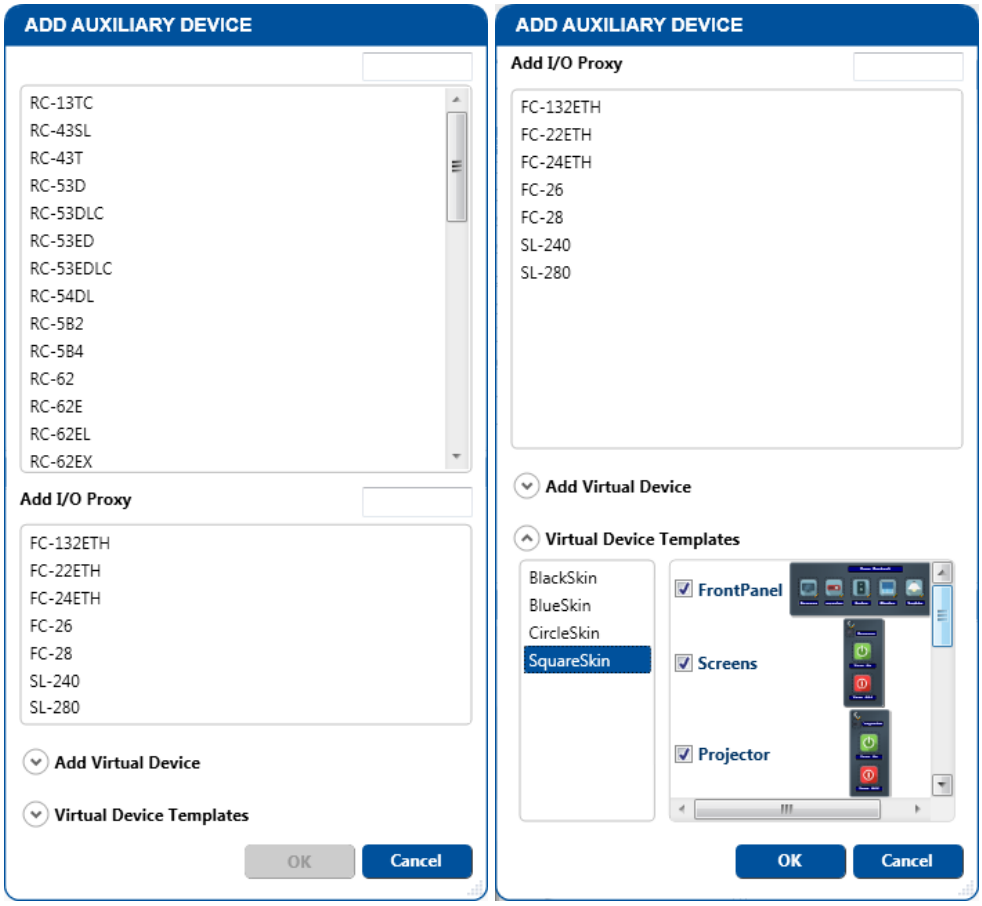


Figure 107: The Auxiliary Device Window

You can filter the controller device names by typing any part of the name in the text box on the right (same for virtual devices). For example, typing 53 will filter all the devices with 53 in their name:

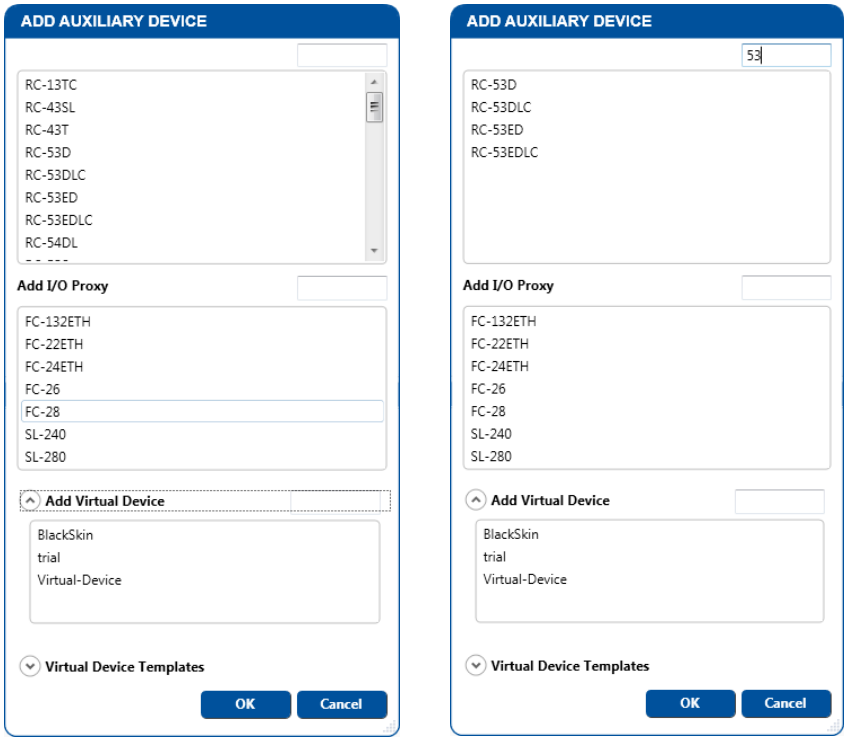


Figure 108: Filtering the Controller Device Name

You can add:

- Room controllers and control panels (see Section 6.2)
- A control gateway device (see Section 6.3)
- A virtual device (see Section 6.4)
- Virtual device templates (see Section 6.4.5)

6.1.1 Master Device Shortcuts

You can right-click the Master Room Controller line in the Project Navigator area to perform various operations for different master controller devices. This section shows different examples of operations that are available for various master controllers.

6.1.1.1 RC-74DL Example

Right click an **RC-74DL** Master Device to:

- Add an auxiliary device (opens the ADD AUXILIARY DEVICE window)
- Delete the master controller device together with auxiliary devices
- Add a description of the master controller device, which will appear as the title of the Port Manager window
- Set a K-NET ID to the device (see Section 10.2)

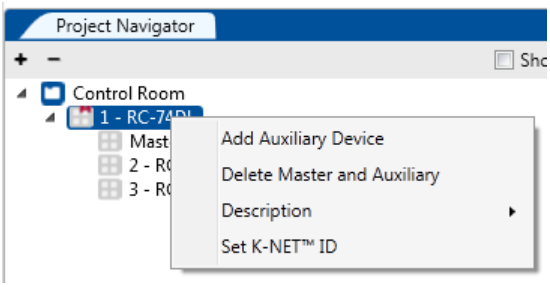


Figure 109: Master Controller Device Shortcuts – Example 1

6.1.1.2 SL-14RN Example

Right click an **SL-14RN** Master Device to:

- Add an auxiliary device (opens the ADD AUXILIARY DEVICE window)
- Delete the master controller device together with auxiliary devices
- Add a description of the master controller device

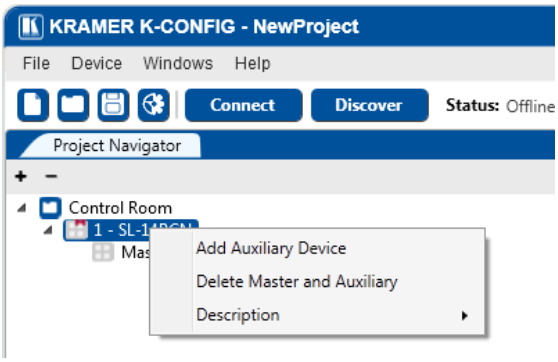


Figure 110: Master Controller Device Shortcuts – Example 2

6.1.1.3 RC-13TC Master Room Controller Example

Right click an **RC-13TC** Master Device to:

- Add an auxiliary device (opens the ADD AUXILIARY DEVICE window)
- Delete the master controller device together with auxiliary devices
- Add a description of the master room controller device
- Set a K-NET ID to the master room controller device (see Section 10.2)
- Set Automatic behavior (see Set Automatic Behavior below)

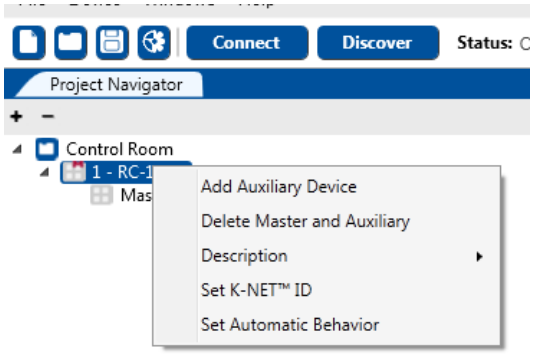


Figure 111: Master Room Controller Device Shortcuts – Example 3

Set Automatic Behavior

The **RC-13TC** Video Transport controller panel buttons receive actions automatically, according to their button names.

Before setting the **RC-13TC** to automatic behavior we recommend that you prepare the drivers via the driver manager (see Section 5).

To set to automatic behavior:

1. Right-click Set Automatic Behavior.
   The following message appears:

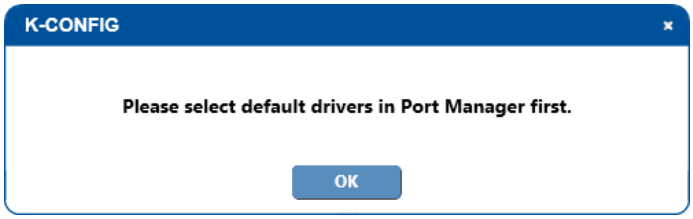


Figure 112: Set Automatic Behavior – Message

Note that if you have already assigned the drivers, the wizard will open immediately (see Figure 115).

2. Click OK.
3. In the Port Manager window, assign the drivers to the port (see Section 7) as shown in the example in Figure 113. Each time you add a driver you will get a message referring to the automatic behavior setup.

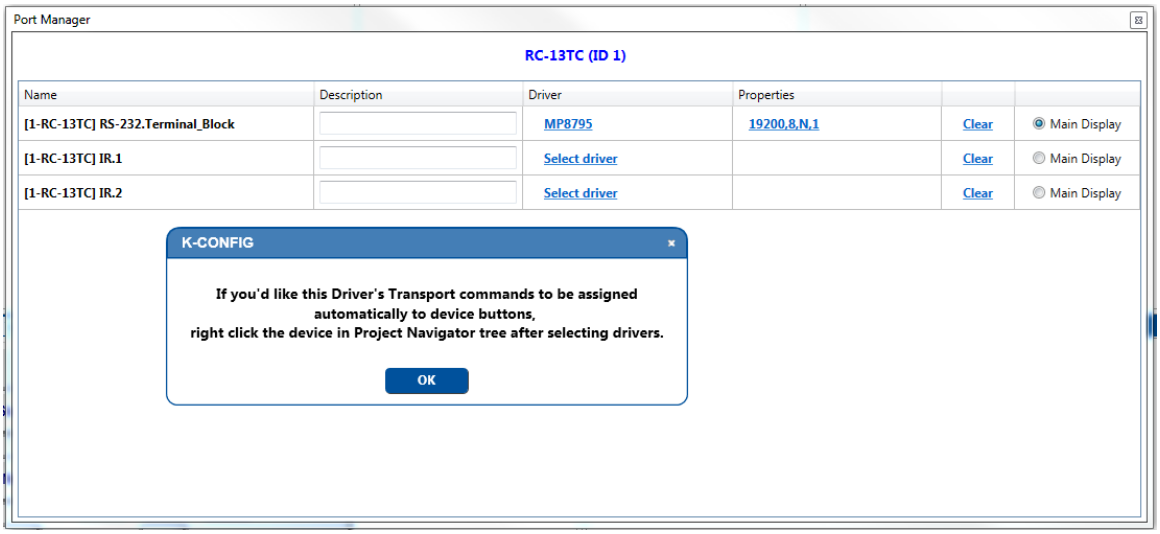


Figure 113: Set Automatic Behavior – Port Manager Example

4. Once the drivers are assigned you can close the Port Manager window.
   The Project Navigator now lists the assigned ports.

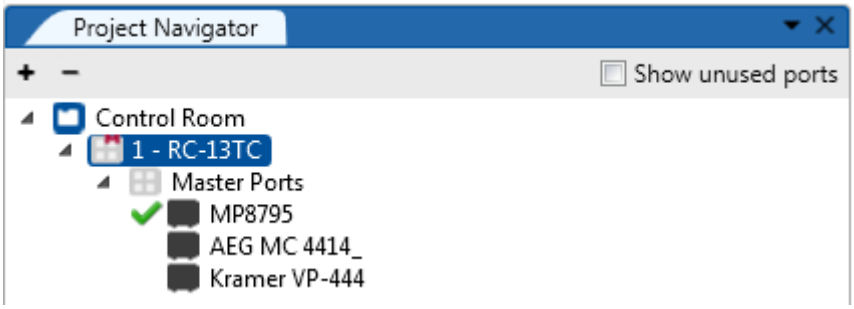


Figure 114: Set Automatic Behavior – RC-13TC with Assigned Ports

5. Right-click the RC-13TC line in the Project Navigator and select Set Automatic Behavior.
   The following window appears:

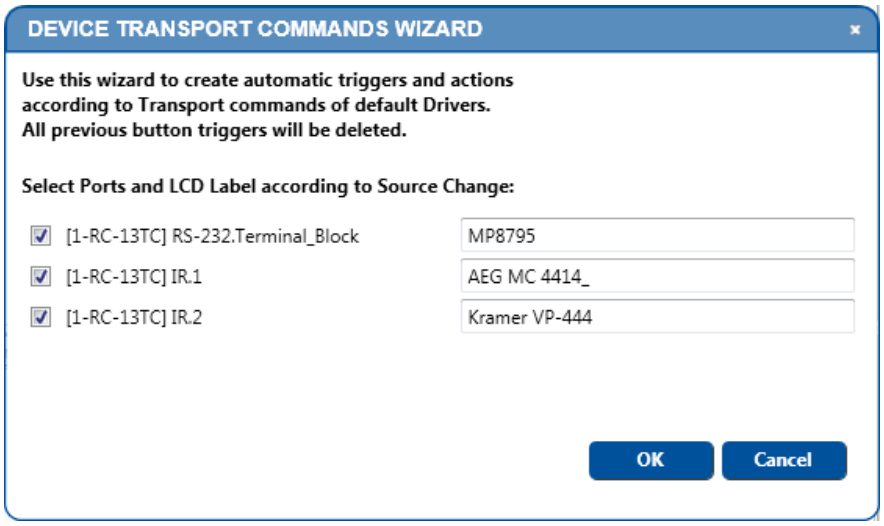


Figure 115: Set Automatic Behavior – Device Transport Commands Wizard Window

6. Click OK.

When setting the Keypad Events Trigger (see Section 8.2) the triggers and actions related to the assigned drivers appear automatically with regard to the buttons on the **RC-13TC**.

6.2 Adding Room Controllers

Auxiliary devices or keypad devices are added from the top list of the ADD AUXILIARY DEVICE window.

To add a room controller:

1. Select the auxiliary device (for example, **RC-63DLN**) and click OK.
   You can also add the auxiliary device by right-clicking the Master Room Controller label, **RC-74DL** in this example.
   The **RC-63DLN** front panel appears in the **Device View** area:

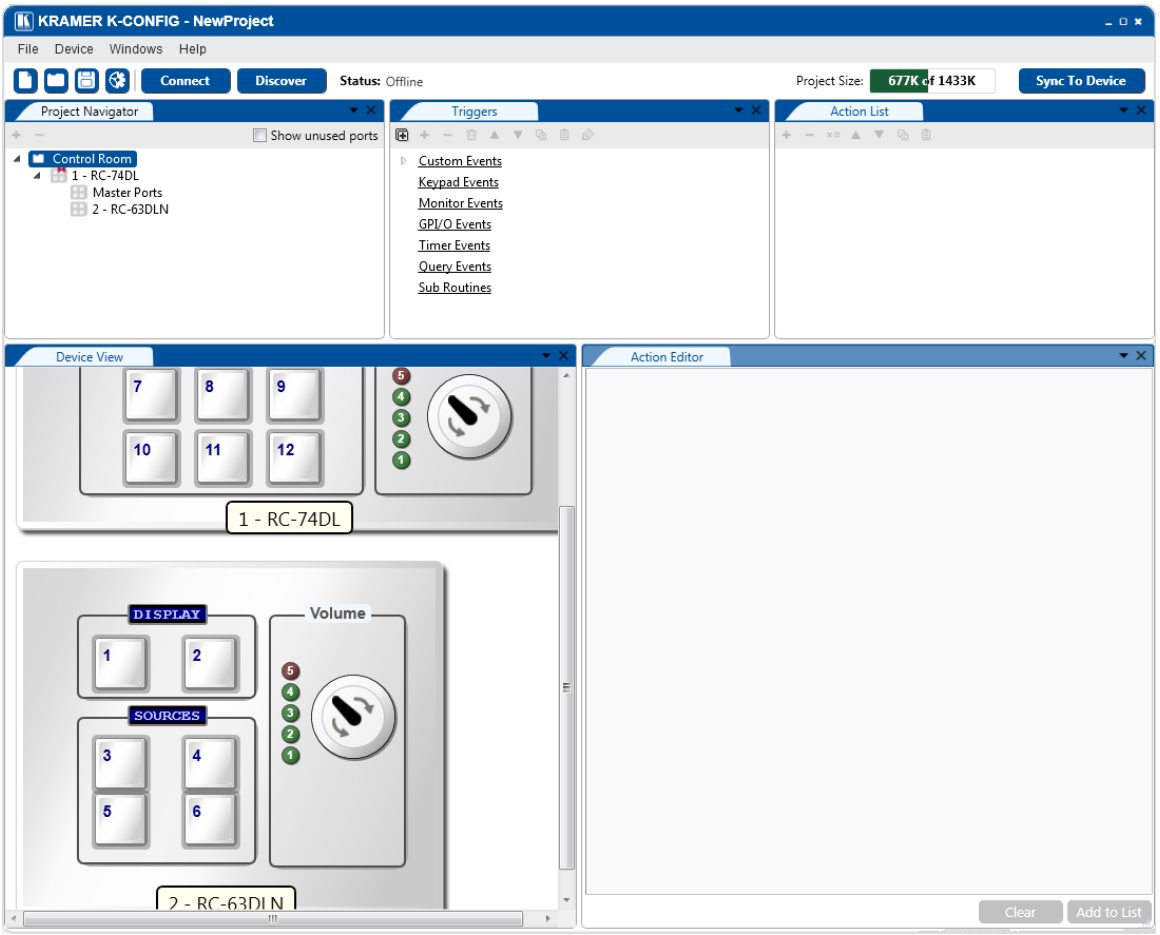


Figure 116: The Device View Area for RC-74DL and RC-63DLN

2. In the **Project Navigator** area, select 1 - RC-74DL.
   It is necessary to select the Master room controller to add an additional device

3. Click **+**.

4. Select another device from the list (for example, the **SL-12**).

To add additional auxiliary devices to the list (depending on the Master room controller selected, up to four Aux K-NET control devices), repeat the above steps.

All four keypad devices that were added in this example appear in the in the Device view:

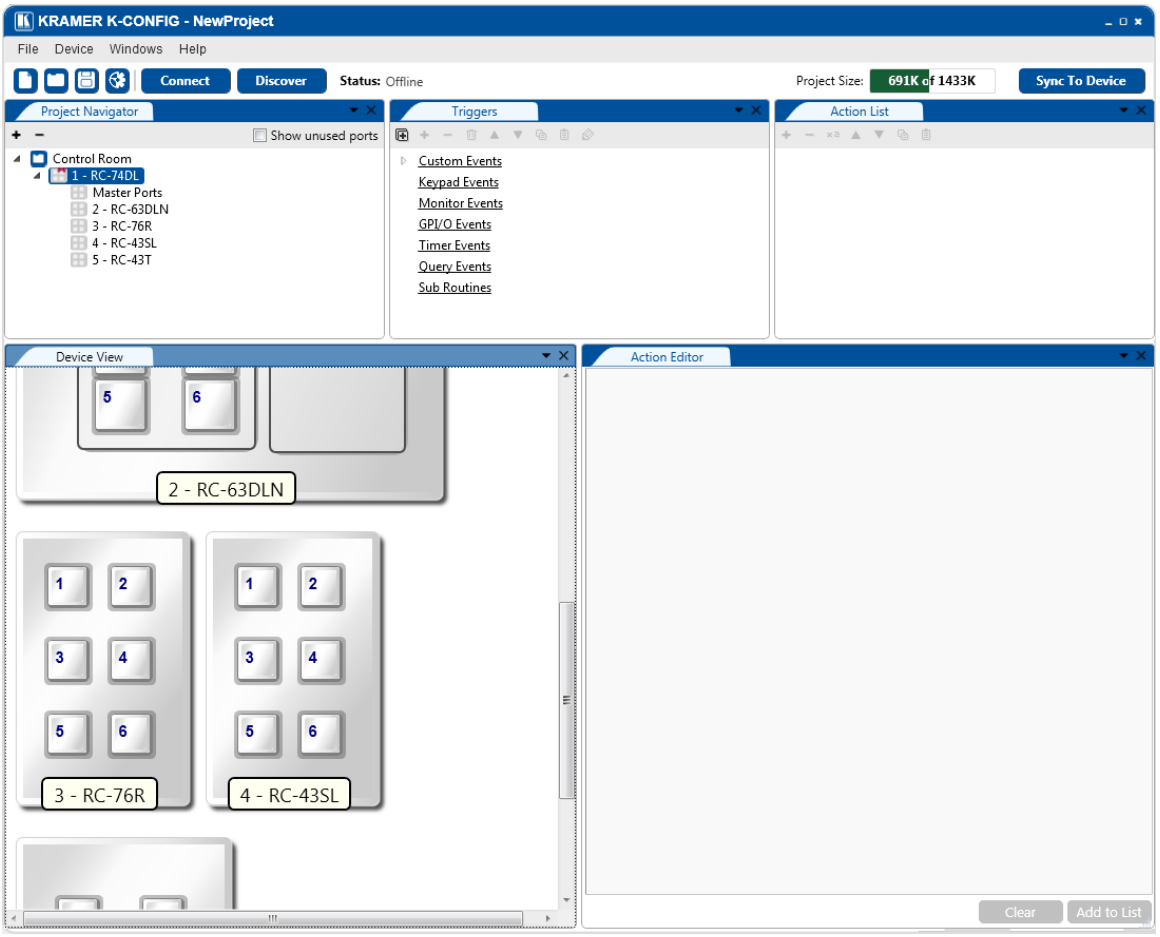


Figure 117: The Device View Area for RC-74DL and Four Auxiliary Devices

Be sure that your control room setup tree is correct before continuing with the configuration. If, at a later stage, an auxiliary K-NET device or a Master RC will be deleted from the tree, all the port assignments, triggers and action lists written for all the devices in the tree will also be deleted.

6.2.1 Auxiliary Device Shortcuts

You can right-click the auxiliary device line in the Project Navigator area to carry out several operations which can vary for different devices. This section shows different examples of operations that are available for auxiliary devices.

Generally the shortcuts let you:

- Delete the auxiliary device
- Add a description of the auxiliary device
- Set a K-NET ID to the auxiliary device (see Section 10.2)
- Upgrade the firmware (see Section 10.3)

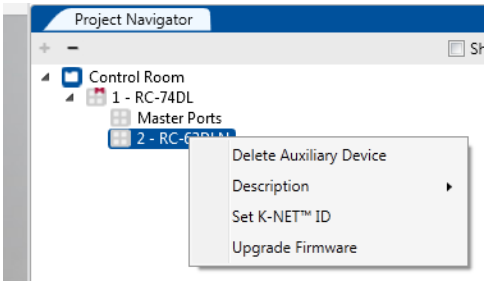


Figure 118: Auxiliary Master Device Shortcuts

The following sections describe additional shortcuts for specific auxiliary devices.

6.2.1.1 Several Identical Devices Installed

When several identical auxiliary devices are installed in a controlled room, you can set one or more of them to be the exact same as the other auxiliary device.

For example, three **RC-63DLN** units are installed in the controlled room. One can be set to act in the same manner as the other:

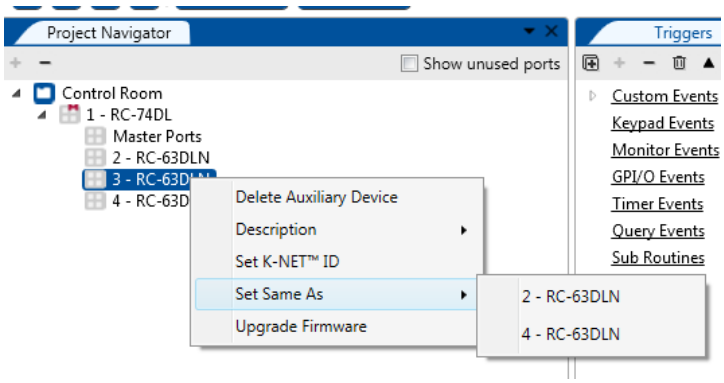


Figure 119: Auxiliary Device Shortcuts – Set the Same As

6.2.1.2 RC-3TBU Example

The Kramer **RC-3TBU** remote control panel replicates any 3 buttons of the Kramer **SL-14RC/SL-14RCN**.
The **RC-3TBU** can be connected only to the **SL-14RC/N**, and you can set the 3 **RC-3TBU** buttons to copy any 3 buttons of the **SL-14RC/N** via the auxiliary device shortcut.

To do so, click Configure Switch Buttons:

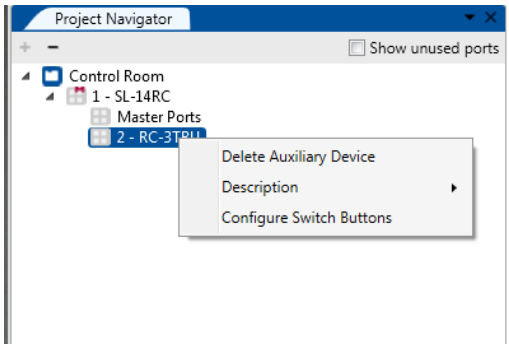


Figure 120: Auxiliary Device Shortcuts – Configure Switch Buttons for RC-3TBU

The following window appears:

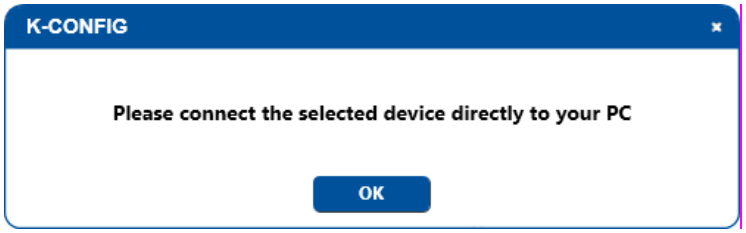


Figure 121: Auxiliary Device Shortcuts – Connect the Device to your PC

Set the connection type:

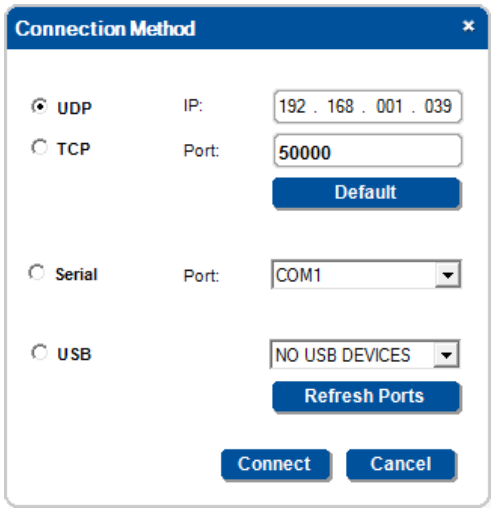


Figure 122: Auxiliary Device Shortcuts – Set the Connection Method

Click **Connect**.

If you did not select the default drivers, the following message appears:

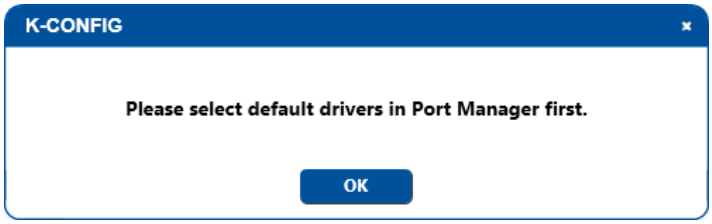


Figure 123: Auxiliary Device Shortcuts – Selecting Default Drivers

Connect the **RC-3TBU** to the PC via USB, select the connection port and click the Connect button. The following window appears:

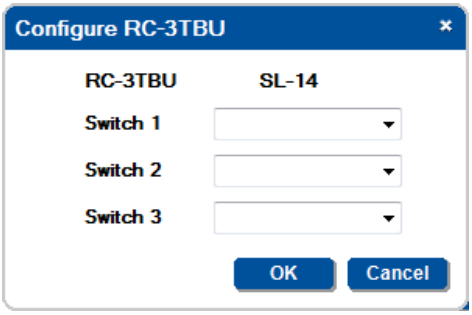


Figure 124: Auxiliary Device Shortcuts – Configuring RC-3TBU Buttons

Select the SL-14RC buttons you want to copy and click OK.

6.2.1.3 RC-13TC Auxiliary Device Automatic Behavior Setup

Right-click an **RC-13TC** Auxiliary device to set the automatic behavior of the device (see Section 6.2.1.3 for further details):

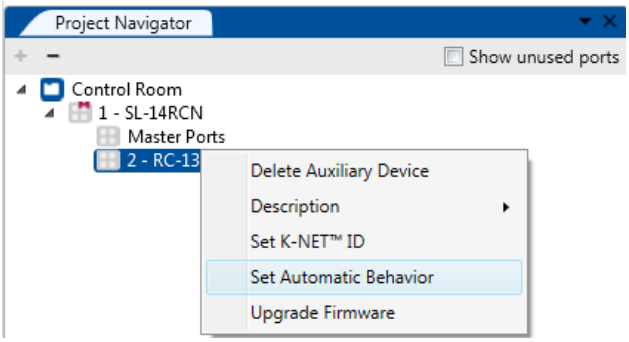


Figure 125: Auxiliary Device Shortcuts – Setting Automatic Behavior

6.3 Adding a Control Gateway Device

The Kramer control gateway devices let you expand the number of ports used to connect to the controlled devices (for example, the **FC-132ETH** with 32 serial ports, the **FC-22ETH** with two RS-232 ports, the **FC-28** with two RS-232 ports, four IR ports, two relay ports and two GPI/O ports, and so on).

Note that only master controllers that have an Ethernet port can accept I/O proxy devices.

To add a control gateway device (for example, the FC-26):

1. Click Add Auxiliary Device. The following window appears:

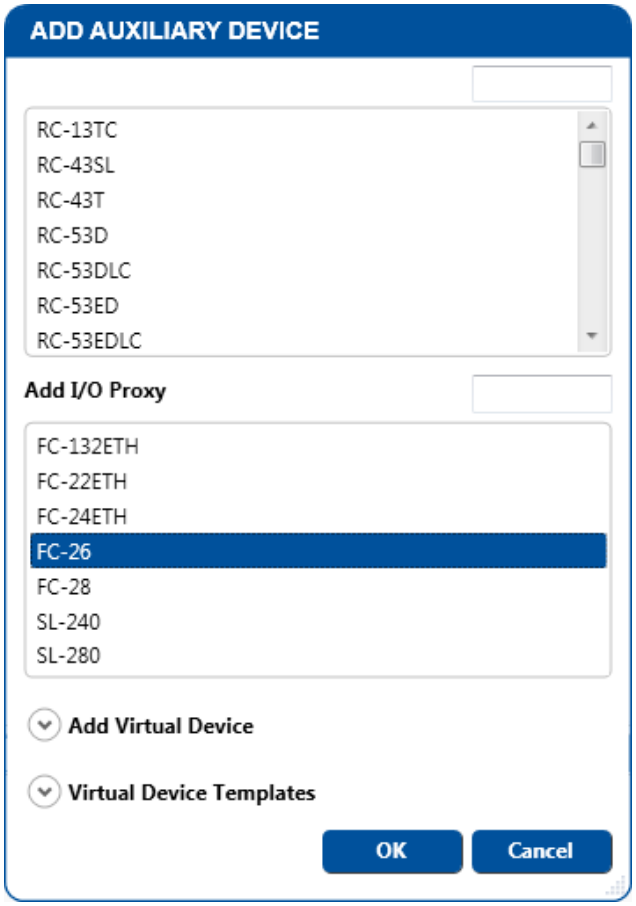


Figure 126: Adding a Control Gateway Device

2. Click OK. **FC-26** appears in the Project Navigator window as follows:

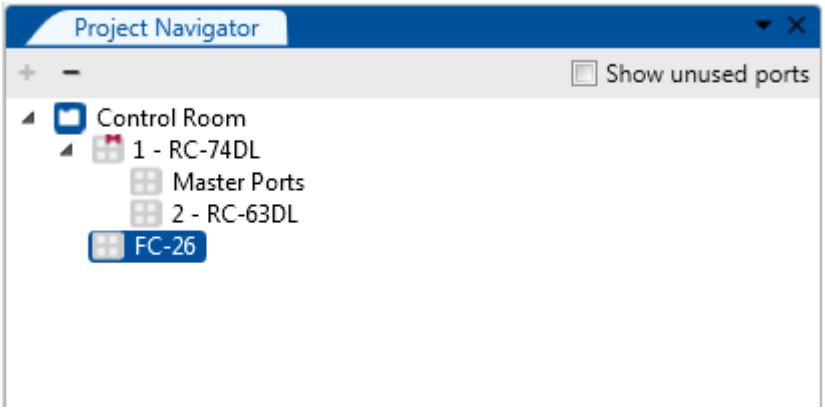


Figure 127: Control Gateway device – FC-26 Listed in the Project Navigator

Adding the control gateway adds additional ports through which you can send commands to devices. For example, the **FC-26** when connected to the **RC-74DL** via the Ethernet port, adds four more IR OUT ports and two more RS-232 ports to the system. So the **RC-74DL** can actually control two RS−232 and four IR controllable devices via the Ethernet connection.

These ports are defined in the Port Manager of the Master controller (**RC-74DL** in this example).

Once a control gateway device is added to the system, you can open the Port Manager Window to assign each of the **FC-26** ports to an Ethernet port in the **RC-74DL**.

Figure 128 shows the **RC-74DL** Port Manager after adding the **FC-26** Device:

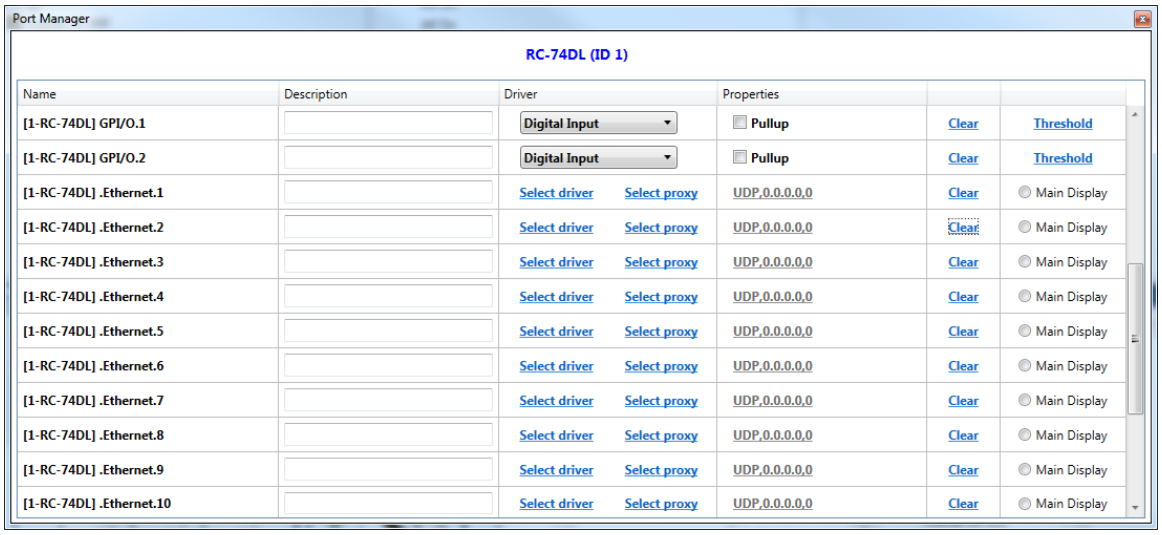


Figure 128: Control Gateway Device – Port Manager Window

Note that 15 Ethernet ports are added when the master device is a physical master room controller device and 50 Ethernet ports are added for a Virtual room controller device (see Section 12).

To set the ports:

1. Select an Ethernet port (Ethernet 11, for example) and click Select proxy (gateway) in the Driver column of the port manager window.
   You can also select an Ethernet port by checking the **Show unused buttons** box and then right-clicking that port in the Project Navigator window:

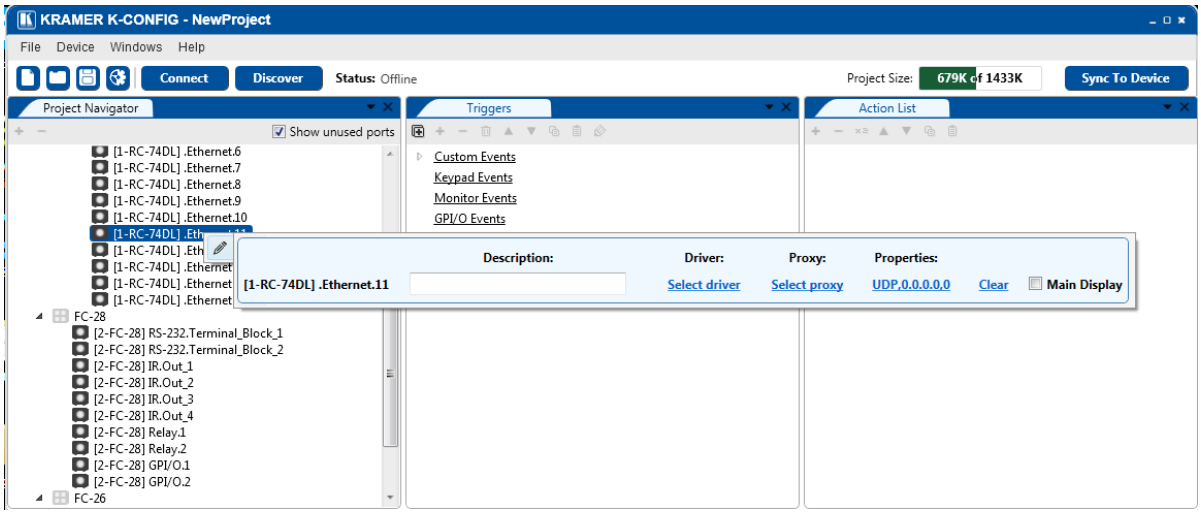


Figure 129: Control Gateway Device – Proxy (Gateway) Port

The following window appears:

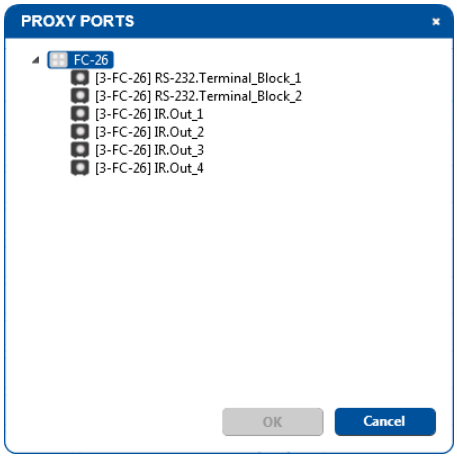


Figure 130: Control Gateway Device – Proxy (Gateway) Ports List

2. Select a port (you can select one or more ports, see Section 6.3.1), for example IR.Out_2:

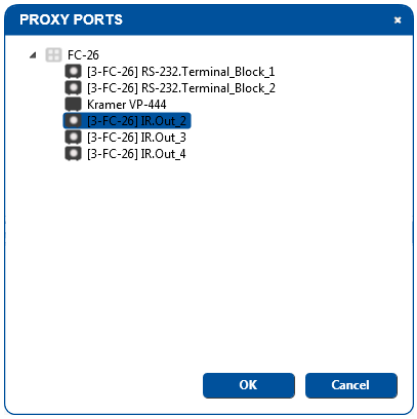


Figure 131: Control Gateway Device – Select a Port

Note that if a port has already been assigned with a driver (**VP-444** is assigned to IR OUT 1 in the example above), that port will display the driver name and you can also choose it as a gateway port).

3. Click OK. Ethernet.11 port is assigned:

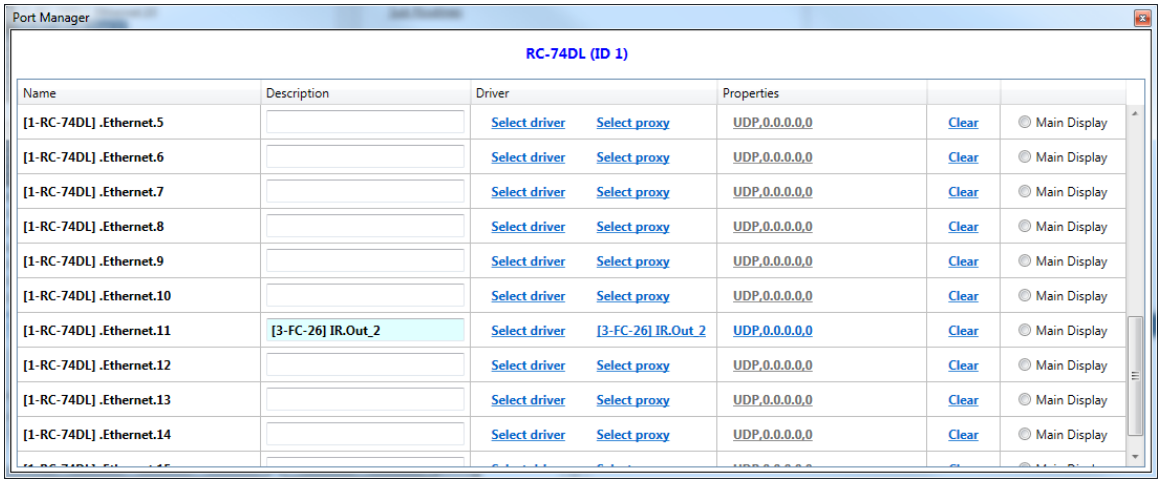


Figure 132: Control Gateway Device – Select a Port

Note that you can either assign a Control Gateway port or a regular driver to the Ethernet port on the master controller. If at this stage you decide to select a driver it will run over the gateway port.

4. Click the UDP, 0.0.0.0 in the Properties column. The following window appears:

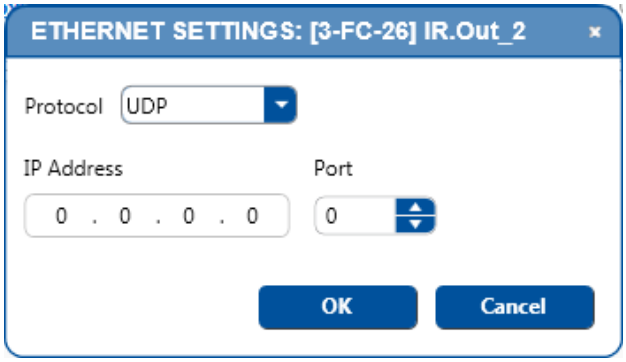


Figure 133: Control Gateway Device – Ethernet Settings for IR Port

5. Select the Protocol type set the IP number, and the port number as defined in the **FC-26** Web pages (see Figure 134, for example):

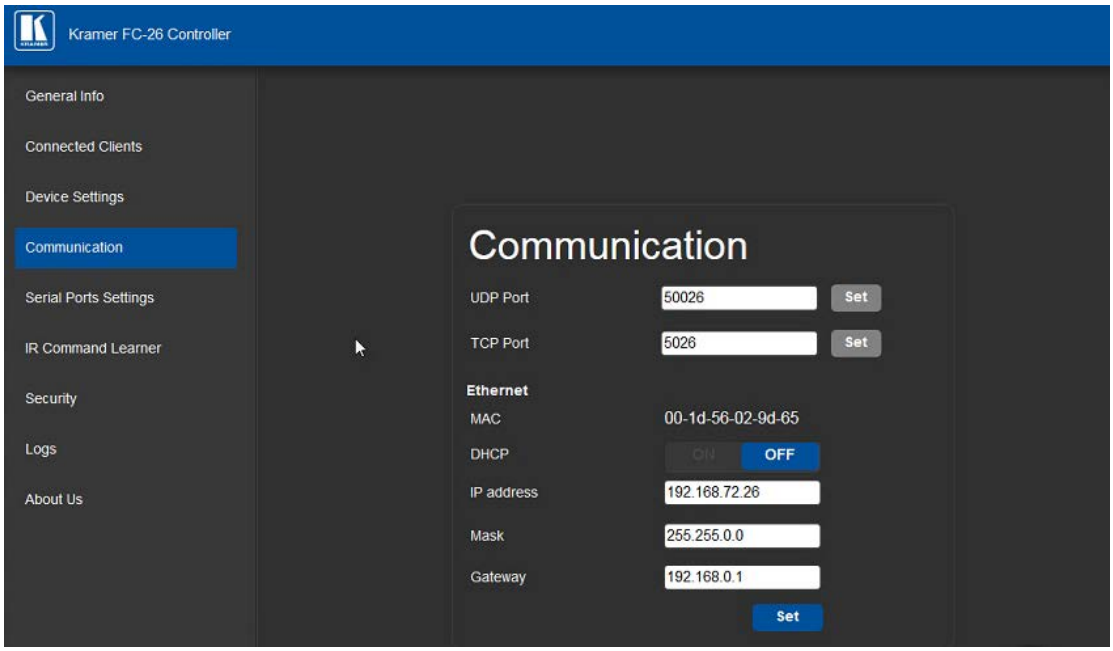


Figure 134: Control Gateway Device – FC-26 Communication Web Page

6. Copy the Ethernet settings:

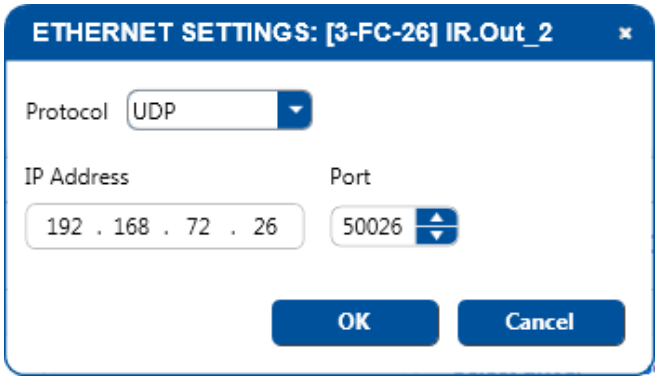


Figure 135: Control Gateway Device – IR Port Ethernet Settings

7. Click OK.
   The IR.Out_1 port is now assigned to Ethernet.11:

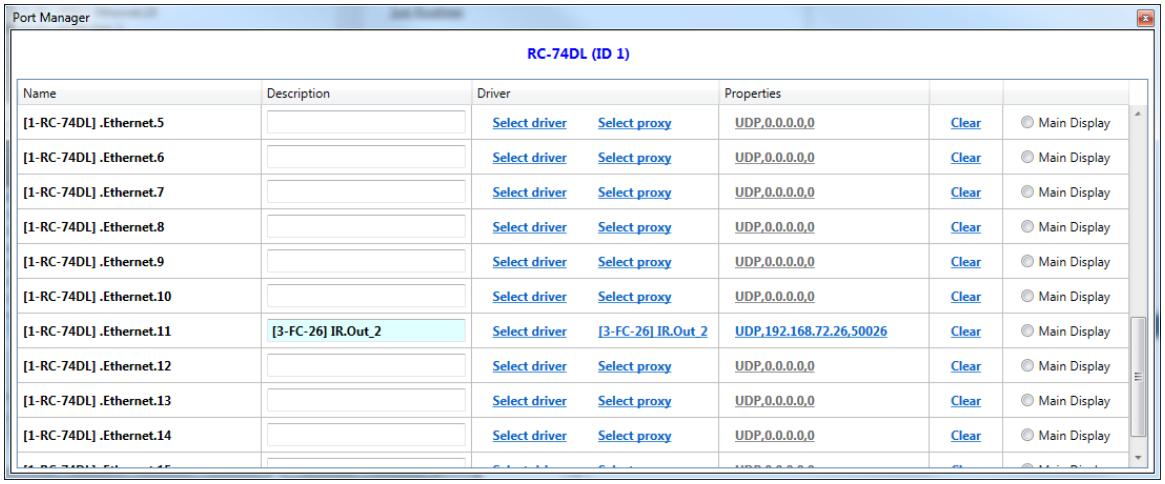


Figure 136: Control Gateway Device – Port Manager, assigning an Ethernet Port

In the same way you can assign all the IR Out ports each to an Ethernet port:

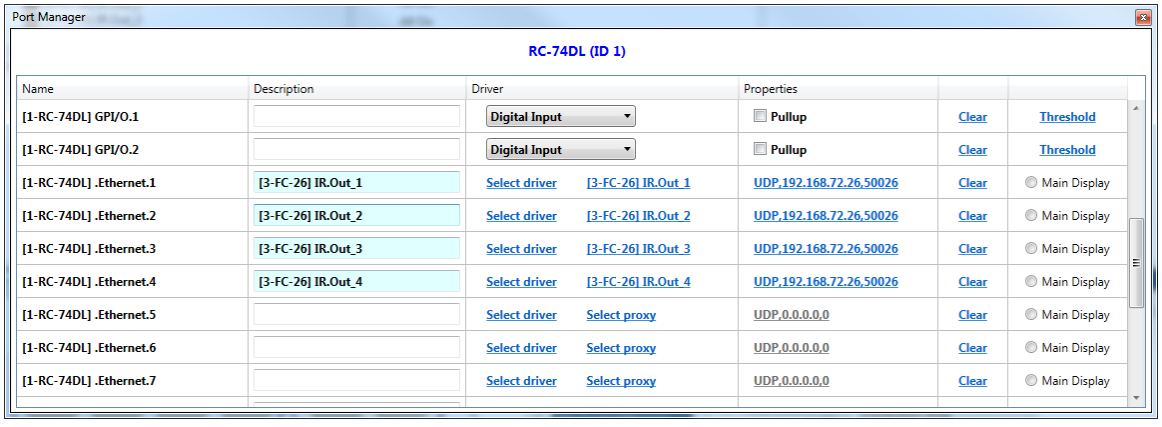


Figure 137: Control Gateway Device – Assigning all the IR ports

To assign the RS-232 port to an RC-74DL port:

1. Click Select Proxy (Gateway), and fill in the details from the **FC-26** Web page (see Figure 139).

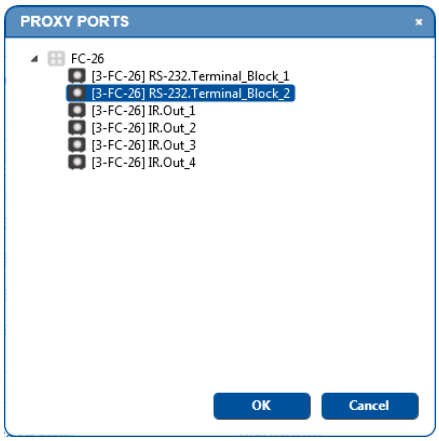


Figure 138: Control Gateway Device – Select Proxy (Gateway) Port

2. In the **FC-26** Web page select the correct IP port and fill in the details.

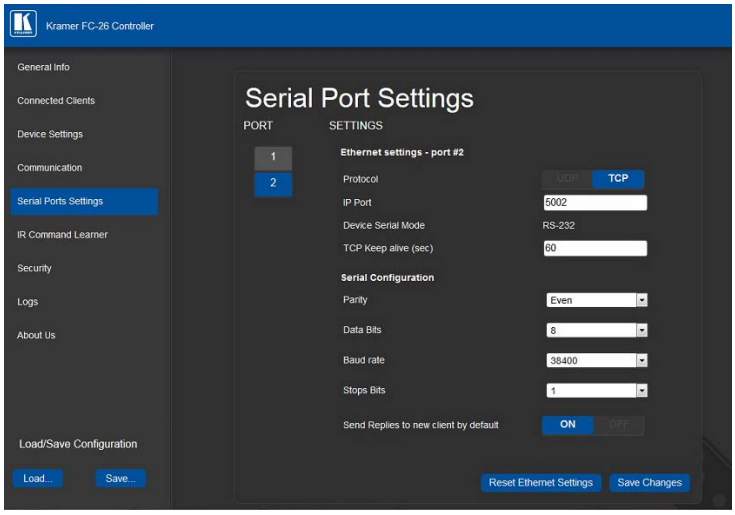


Figure 139: Control Gateway Device – FC-26 Serial Port Settings Web page

3. Fill in the details:

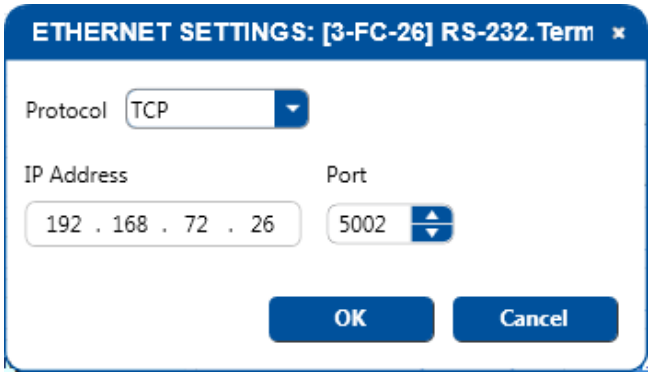
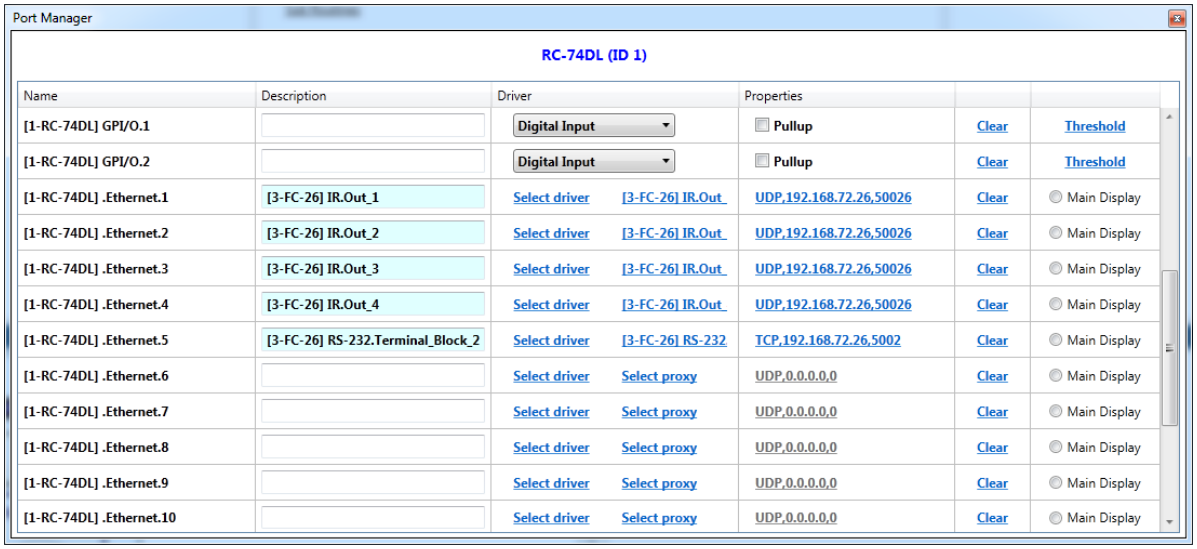


Figure 140: Control Gateway Device – RS-232 Port Ethernet Settings

The Port Manager shows the RS-232 port assigned to Ethernet.5:



In the FC-26 Port manager you can assign the controlled device drivers to which the ports will be connected (for example, **VSM-4x4HFS** is connected to **FC-26** via the RS-232_2 port):

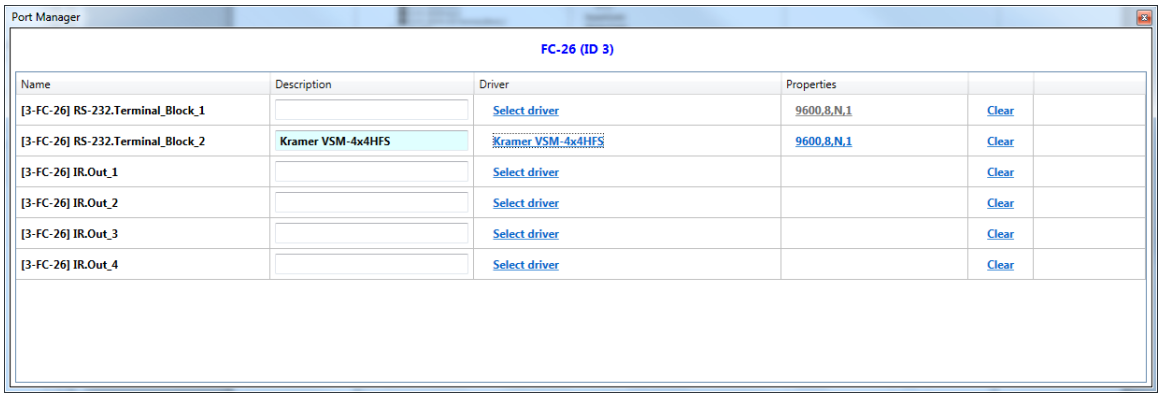


Figure 141: Control Gateway Device – FC-26 Port Manager

The difference between a control gateway device and a regular auxiliary device is that the control gateway is connected via an Ethernet port, which lets you control controlled devices from a distance (the **FC-26** does not have to be located close to the master room controller device) and you can use one of the virtual Ethernet ports so as not to "waste" a physical port on the Master room controller device.

6.3.1 Selecting Multiple Control Gateway Ports

When selecting a control gateway port you can select one RS-232 port per Ethernet virtual port or more than one IR port, relay port and GPI/O port.

In the following example, two control gateways are connected to the **RC-74DL**: **FC-28** and **FC-26**. To assign control gateways to a virtual Ethernet port, check the Show unused ports box in the Project Navigator window and then right-click that port (for example, RC-74L Ethernet Port 6):

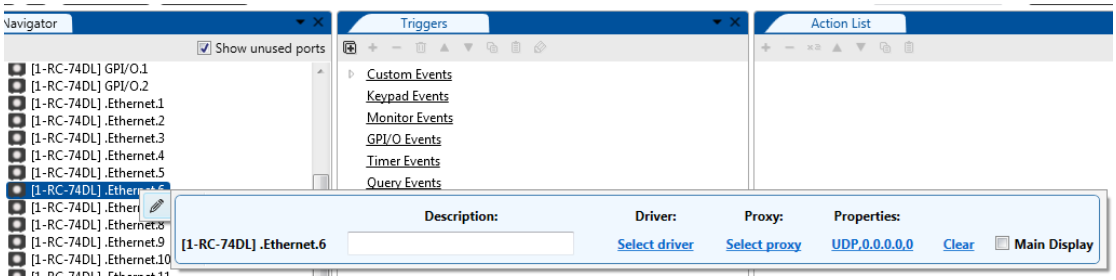


Figure 142: Multiple Control Gateways – Selecting the Virtual Ethernet Port

Click Select Proxy. The Proxy Ports window appears:

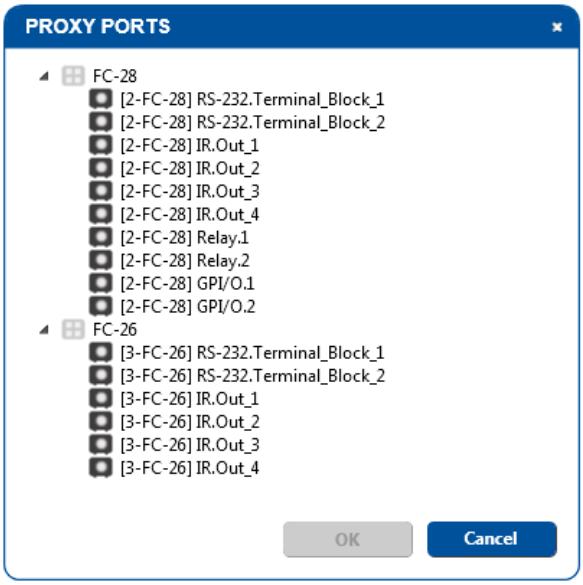


Figure 143: Multiple Control Gateway Ports – The Proxy (Gateway) Ports Window

Click a port to select it and click again to deselect it.

Note that:

You can select either one RS-232 port or any number of other port types. If an RS-232 port is selected, selecting any other port will deselect that RS-232 port.

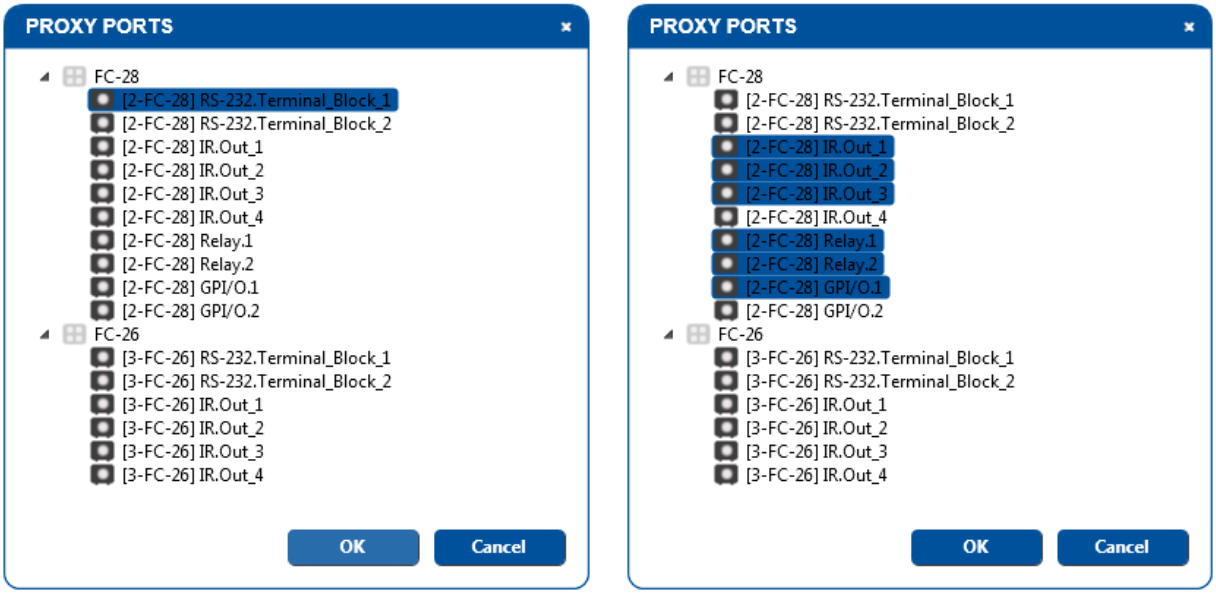


Figure 144: Multiple Control Gateway Ports – Selecting Different Proxy (Gateway) Port Types

You can select the ports of only one control gateway per Virtual Ethernet port: When ports are selected from one control gateway, selecting a port from another control gateway will deselect them:

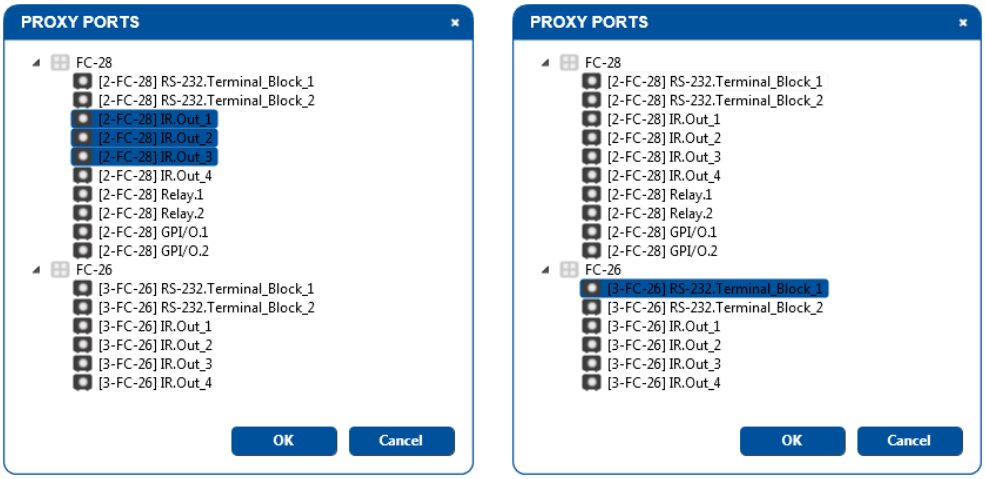


Figure 145: Multiple Control Gateway Ports – Proxy Ports Selected per Control Gateway

After selecting multiple ports click OK. The list of control gateway ports appears next to Virtual Ethernet port 6 in the Project Navigator window (to edit the list, right-click that line):

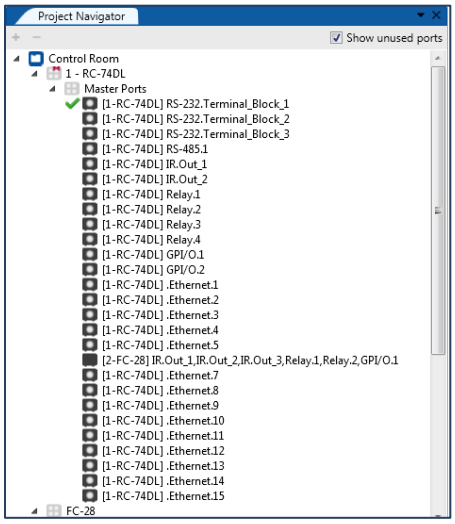


Figure 146: Multiple Control Gateway Ports – Selected Proxy (Gateway) Ports in Project Navigator Window

The Port Manager window shows the proxy ports list as follows:

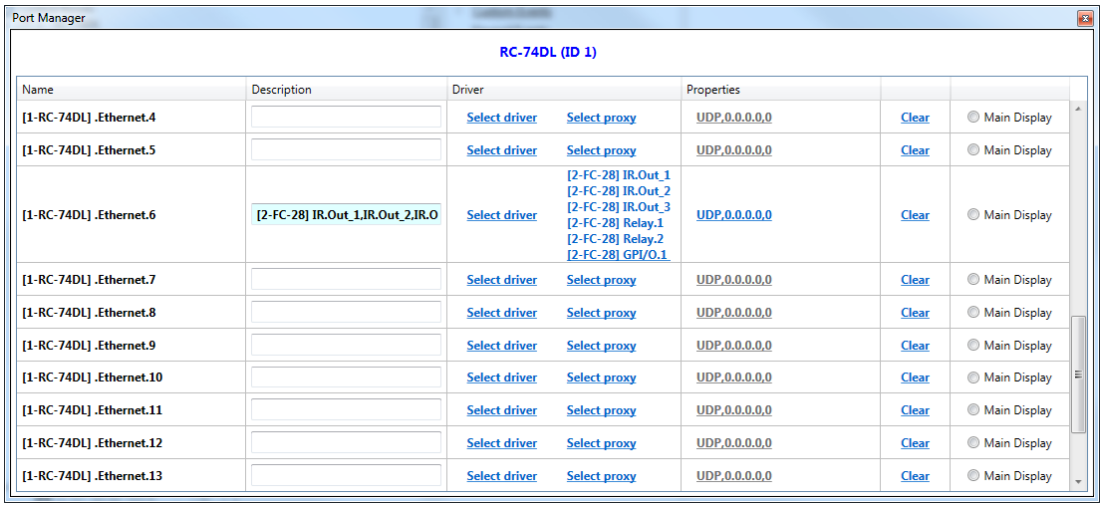


Figure 147: Multiple Control Gateway Ports – Selected Proxy (Gateway) Ports in the Port Manager Window

Click the proxy (gateway) list to edit it.

6.3.2 Control Gateway Device Shortcuts

You can right-click the control gateway device line in the Project Navigator area to perform various operations for different control gateway devices. This section shows different examples of operations that are available for auxiliary devices.

Generally the shortcuts let you:

- Delete the device
- Add a description of the device
- Upgrade the firmware (see Section 10.3)

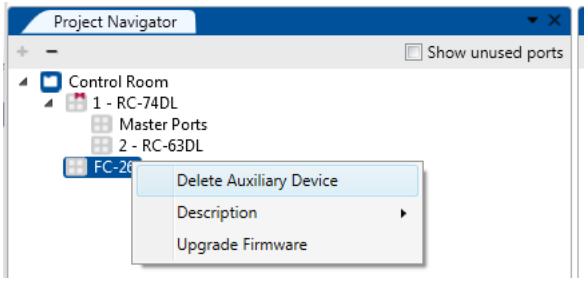


Figure 148: Control Gateway Device Shortcuts

- Right-clicking also lets you delete the master room controller device and auxiliary devices, add a description and set the K-NET™ ID.

6.4 The Virtual Device

The virtual keypad device is compatible with master room controllers with ETH port and which can accept auxiliary devices.

To support the virtual keypad device application, a Virtual Device triggers program layer must be defined by **K-CONFIG** (see Figure 149).

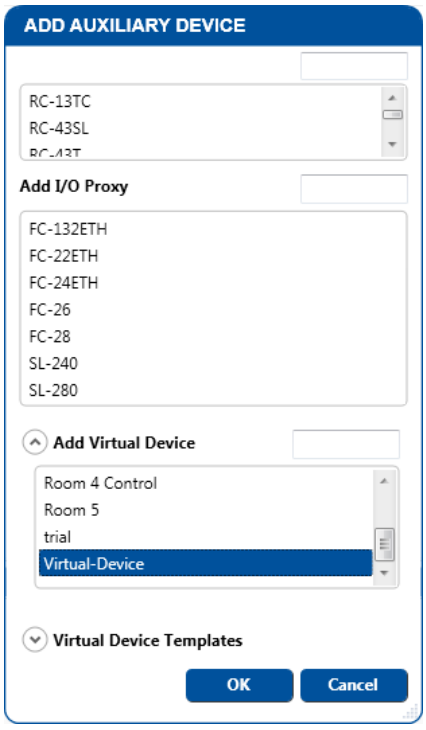


Figure 149: Adding a Virtual Device

This program layer will associate triggers sent from the virtual keypad UI application to the Master room controller for triggering the program-configured series of control actions. Once you have created a virtual keypad device layout, it can be shared using the Import/Export XML function under the File menu.

After adding a Virtual Device to the room control tree (you can add up to two virtual devices, as determined by the Master room controller), the keypad area shows the basic Virtual Device panel, that includes 12 buttons and three configurable text labels:

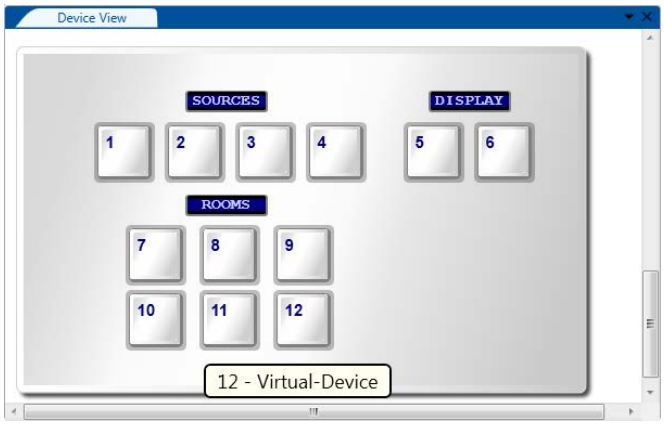


Figure 150: The Basic Virtual Device Front Panel

6.4.1 Edit the Device View

Right-click the virtual device icon in the **Project Navigator** area and select Edit Device View to open the **VIRTUAL DEVICE PROPERTIES** window (see Figure 151).

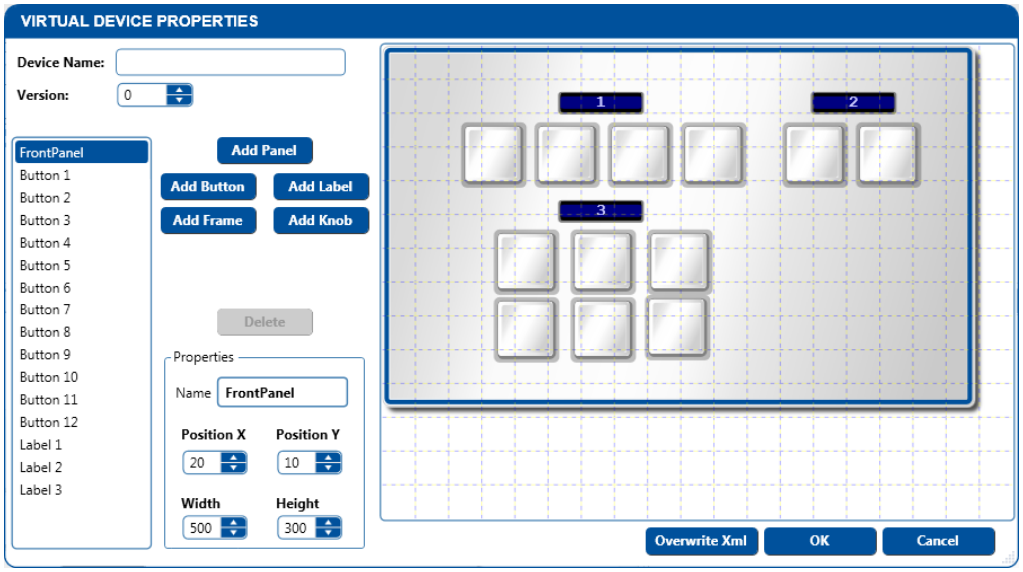


Figure 151: The Virtual Device Properties Window

The **VIRTUAL DEVICE PROPERTIES** window lets you:

- Add up to 128 buttons.
- Add knobs
- Add frames
- Add up to 32 active configurable text labels.
- Create up to six virtual panels (recommended).
- Set the position and size of buttons and labels.
- Keep track of the virtual keypad device versions by setting the version number. This helps keep track of the version, especially when exporting a virtual device.

- Save the virtual device as an XML file so that the labels on the buttons and text labels are saved even if their view is edited.

You can, at any time, delete buttons, text labels and panels.

For example, you can define the virtual keypad device layout as illustrated in Figure 152:

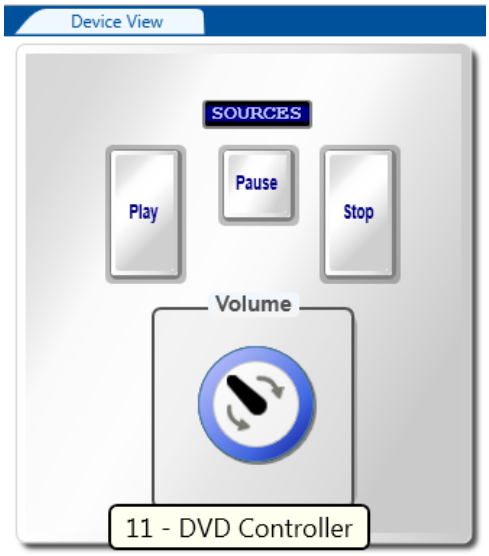


Figure 152: Custom Virtual Device Appearance in K-CONFIG

To define the virtual device front panel, as illustrated in Figure 152 (you do not have to follow the subsequent steps in the same order):

1. In the **VIRTUAL DEVICE PROPERTIES** window, delete buttons 4 to 12, labels 2 and 3, as illustrated in Figure 153:

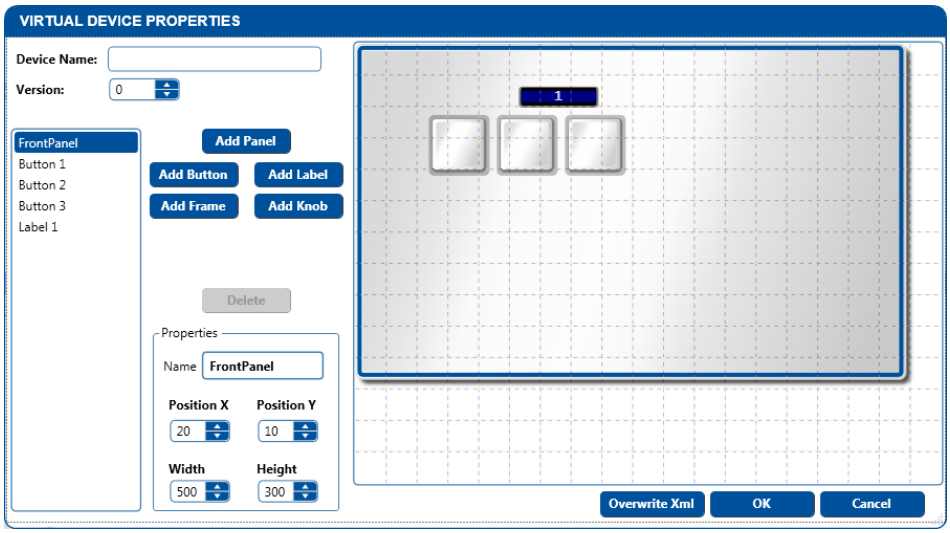


Figure 153: Editing the Virtual Device (Step 1)

2. Add a knob and frame and then set the size of the panel, the size of the buttons, the text label size and their position (set the position by selecting and dragging the item), as well as the virtual keypad device Name (see Figure 154):

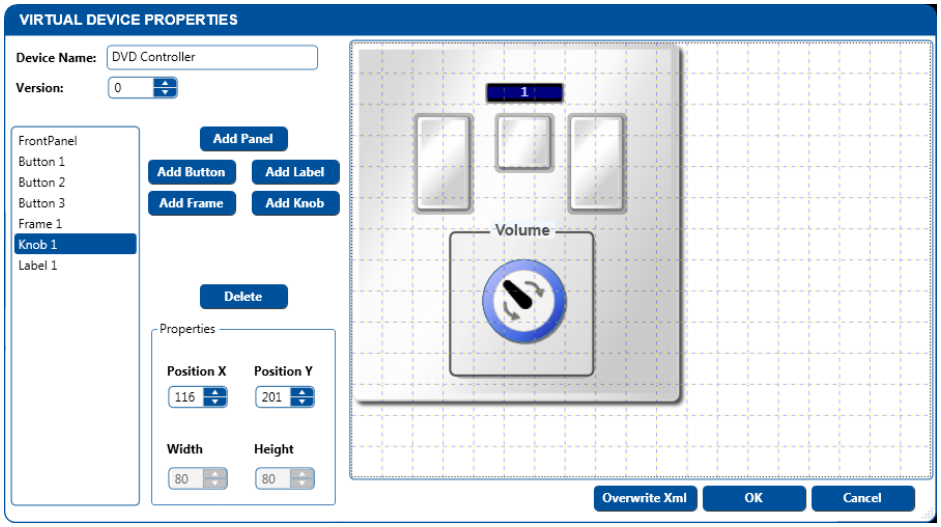


Figure 154: Editing the Virtual Keypad Device (Step 2)

3. Type the virtual keypad device name and click the:
   - OK button, if you want to save the device XML in this project only.
   - Overwrite Xml button, if you want to save the device XML in the Virtual Devices directory.

The Virtual Device appears in the **Device View** window (see Figure 155):

Figure 155: The “DVD Controller” Virtual Device Front Panel

4. Right-click a text label or button to set its name (see Figure 159):

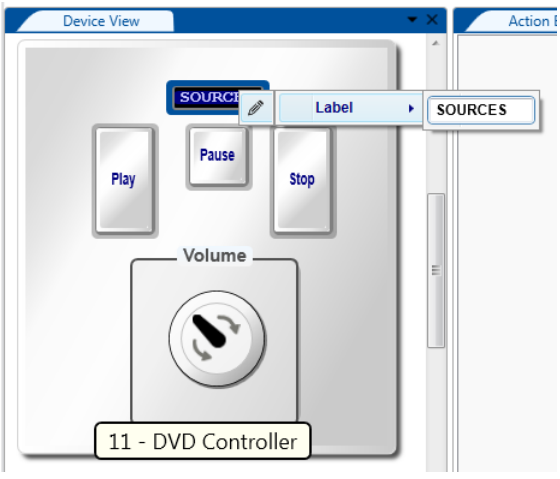


Figure 156: Setting the LCD and Button Label Names

5. Right-click a button to set its behavior (see Figure 159):

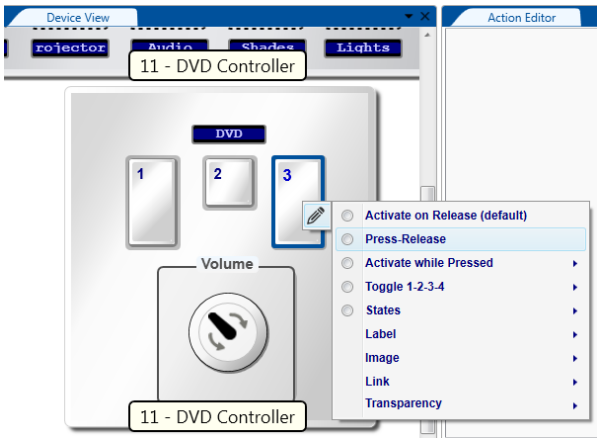


Figure 157: Setting the Button Behavior

Set the Volume knob Function:

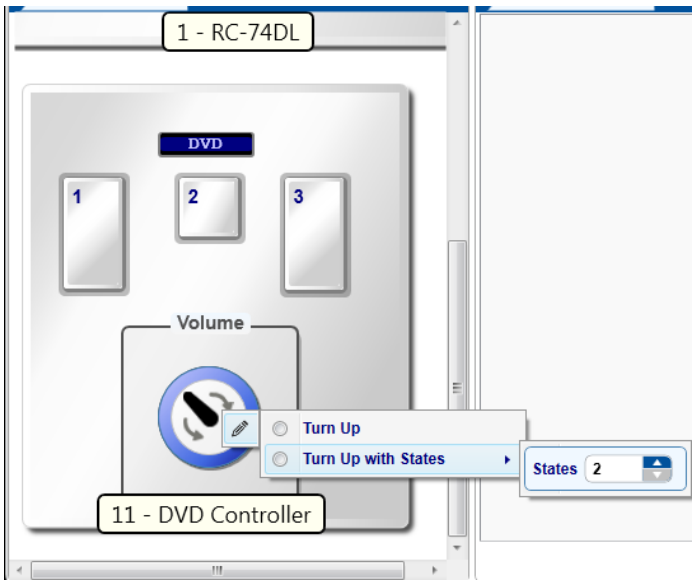


Figure 158: Setting the Knob Function

Figure 159 illustrates the final appearance of the virtual device:

Figure 159: Final Appearance of the “Room 1” Virtual Device Front Panel in K-CONFIG

6.4.2 Creating and Inserting Virtual Panel Templates

To create a virtual panel template:

1. Right click a virtual panel in the Device View area and select Create Panel Template (see Figure 160):

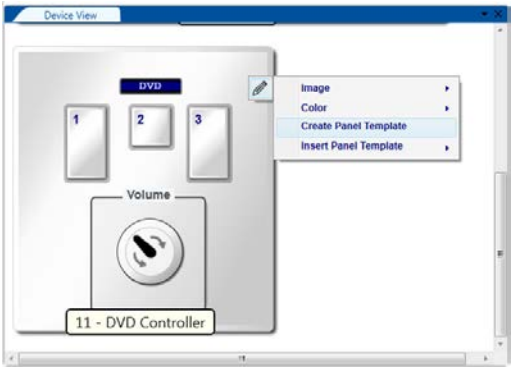


Figure 160: Creating a Virtual Panel Template

The virtual panel is saved to the Panel Templates directory on your PC for future use.

To insert a panel template (into a different project in this example):

1. Right-click the virtual panel.
2. Select a virtual panel from the Insert Panel Template List.
   DVD Controller in this example.

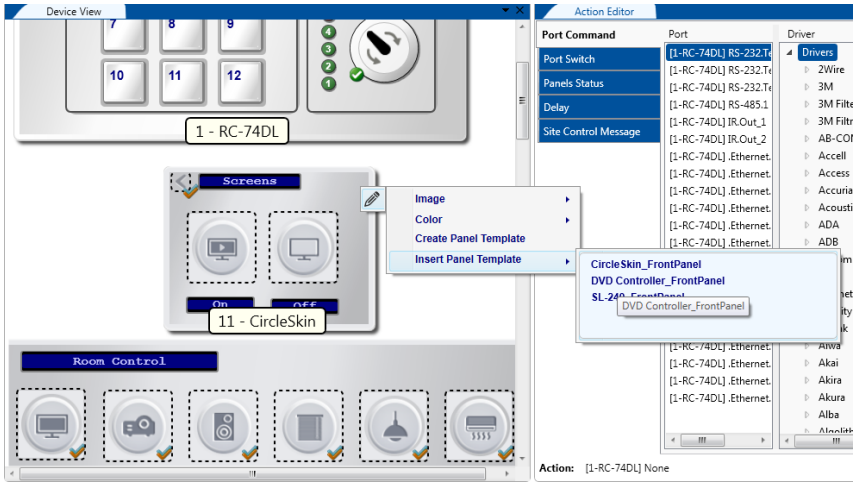


Figure 161: Selecting a Virtual Panel Template

The virtual panel is added beneath:

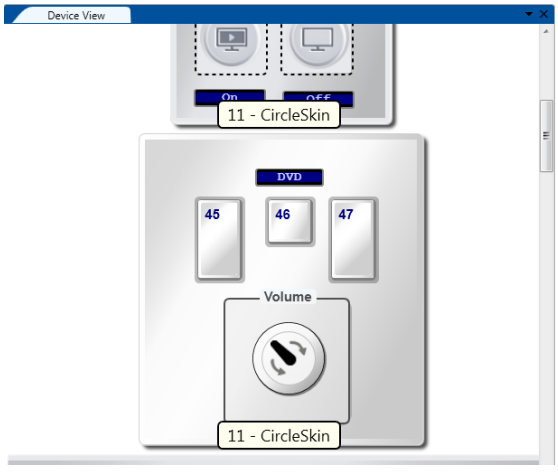


Figure 162: Virtual Panel Template in the Device View

Note that you cannot delete a virtual panel that has been added. You can only do this by deleting the virtual keypad device via the Project Navigator.

6.4.3 Selecting the Main Panel

When the Virtual Keypad device includes several virtual panels, by default, the first panel is set as the main panel which is initially presented upon program start. You can set a different panel to be the main (first) panel.

To select a new main panel:

1. Right-click a virtual panel that is not first in the device view.
   In the following example, there are two virtual panels included in the DVD Controller Virtual Keypad device.

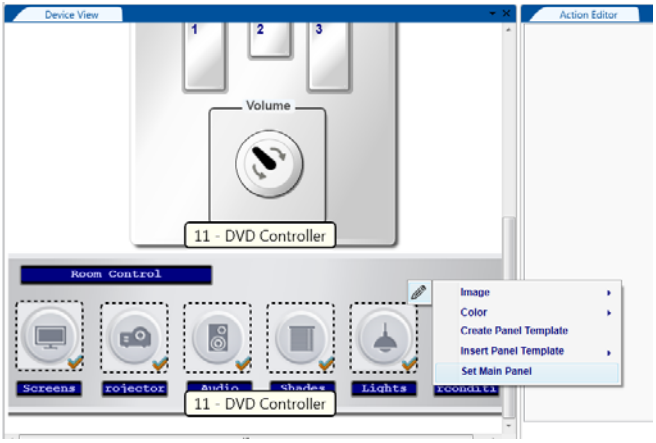


Figure 163: Setting a Virtual Panel to be the Main Panel

The Main Panel will move to be the first panel in the sequence of panels:

Figure 164: New Main Virtual Panel

6.4.4 Creating links

When creating a virtual device with multiple panels you can add a link from one panel to another via the Link feature when editing the button. In the following example the Virtual Device (Room 5) has three panels; you can set a link from one panel to the other by editing a button and creating a link to one of the other panels. This feature is very useful when using touch panels such as tablets or smartphones, and will let you switch from one control UI page to the other with a press of a button.

For example, you can set a button on the main panel to turn on the power on the projector and also link that button to a new panel which incorporates all the project features. One of the buttons in this new panel could be set for turning off the projector power and also link to the main panel.

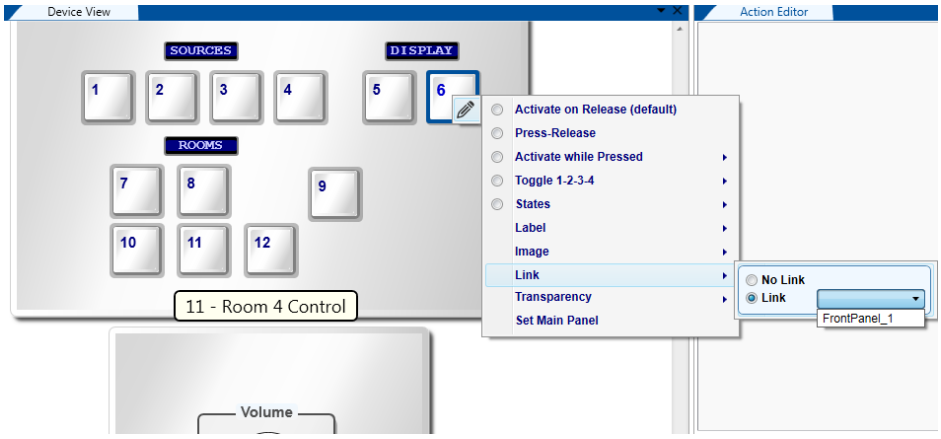


Figure 165: Virtual Device – Link to another Panel

A button with a link will appear as follows:

Figure 166: Virtual Device – a Button with a Link

The Virtual Device View button sizes, as well as their name and location in **K-CONFIG** have no functional meaning in the Virtual Device application.

Only the number of defined buttons, the knob and the text label (interactive field text) have functional meaning and are correlated to the Virtual Keypad device application.

6.4.5 Virtual Device Shortcuts

You can right-click the virtual device line in the Project Navigator area to perform various operations for different virtual keypad devices. This section shows different examples of operations that are available for auxiliary devices.

Generally the shortcuts let you:

- Delete the virtual keypad device.
- Add a description of the virtual keypad device.
- Edit the virtual keypad device view (see Section 6.4.1).
- Export the device xml, letting you export a virtual keypad device for sharing its design with another project configured program (see Section 4.2.1.3).

The following sections describe additional shortcuts.

6.4.5.1 Save a Virtual Keypad Device Template

To add a virtual keypad device as a template, right-click the virtual device and click Save as Template:

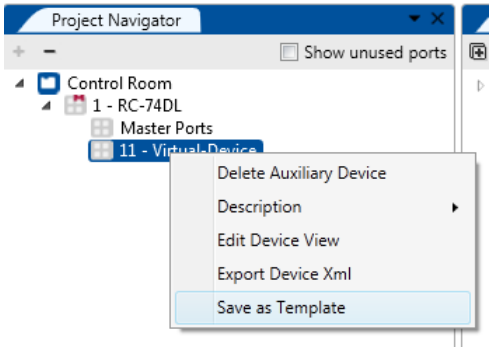


Figure 167: Virtual Keypad Device Shortcuts – Saving as a Template

The following message appears:

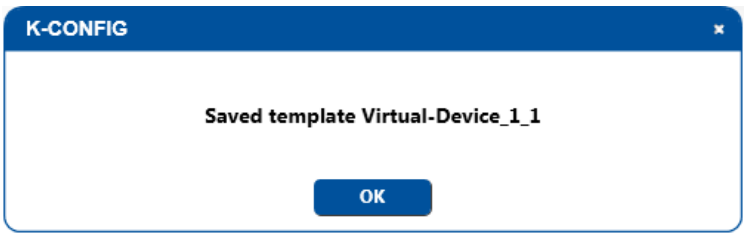


Figure 168: Virtual Device Shortcuts – Saved as a Template

The template is added to the virtual devices templates list (for use when adding a virtual device template).

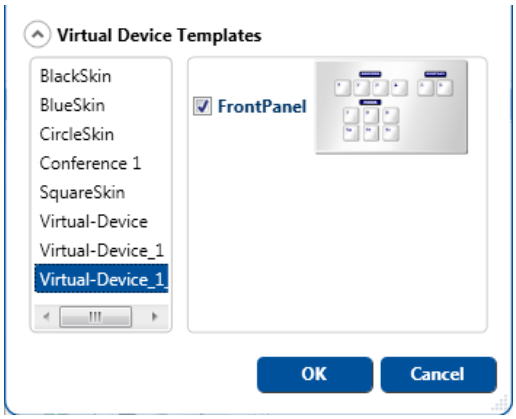


Figure 169: Virtual Device Shortcuts – New Template Added

6.4.5.2 Setting a Virtual Device to be the Same As Another Virtual Device

When more than one virtual device is defined in a controlled room, you can set one or more of them to be the exact same as one of the other virtual keypad devices:

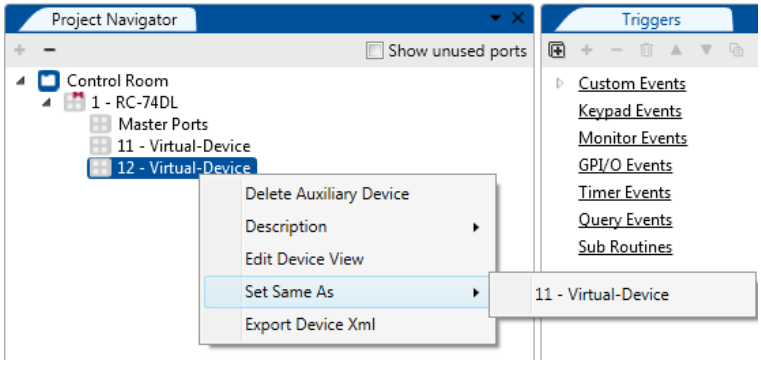


Figure 170: Virtua Device Shortcuts – Setting the Same As

6.5 Adding the Virtual Device Templates

The virtual device templates include a pre-designed virtual device with selectable pre-designed virtual panels, to help you quickly design virtual panels. Each template includes several selectable panels. You can choose a design and then choose the type of panels you need. You can set the Virtual device templates in the same way as a virtual device (see Section 6.4).

The virtual device templates are compatible with Master room controllers with ETH port and which can accept auxiliary devices.

To add the virtual device templates:

1. In the project Navigator area, select the Master Controller and click the + icon.
   The ADD AUXILIARY DEVICE window appears.

2. Open the Virtual Device Templates category and select a template from the list.

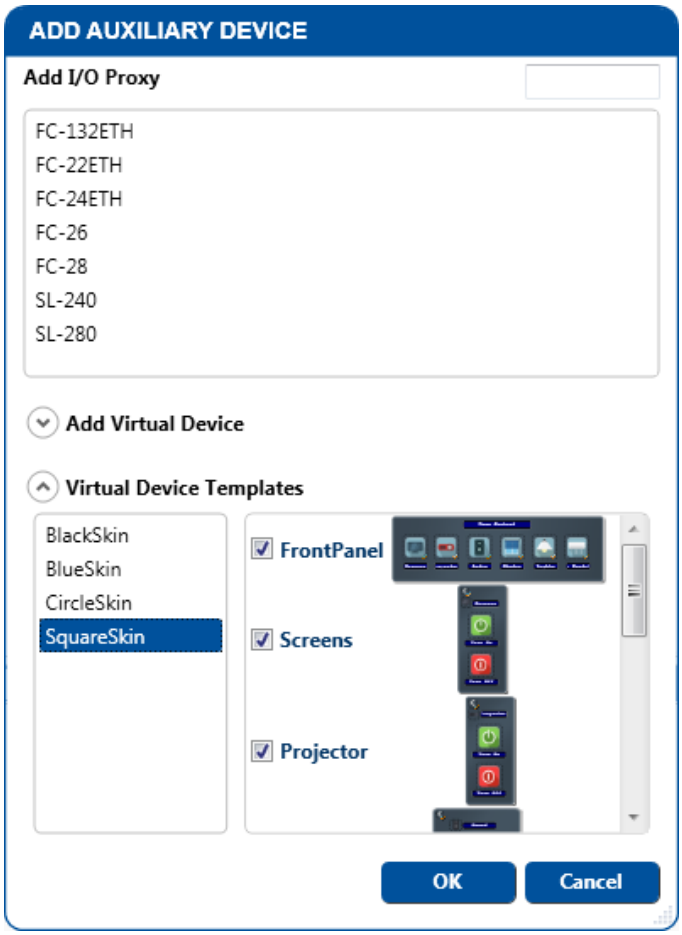


Figure 171: Virtual Device Templates – Selecting the Template

Each template includes a group of eight selectable panels in the following categories (set for your convenience): Front Panel, Screens, Projector, Sound, Shades, Lights, Air conditioning and Front Panel 1.

All of the eight panels are selected by default. You can deselect the panels you don't need and leave the ones you want to use. In the following example Projector, Shades, Air Conditioning and Front Panel 1 were deselected:

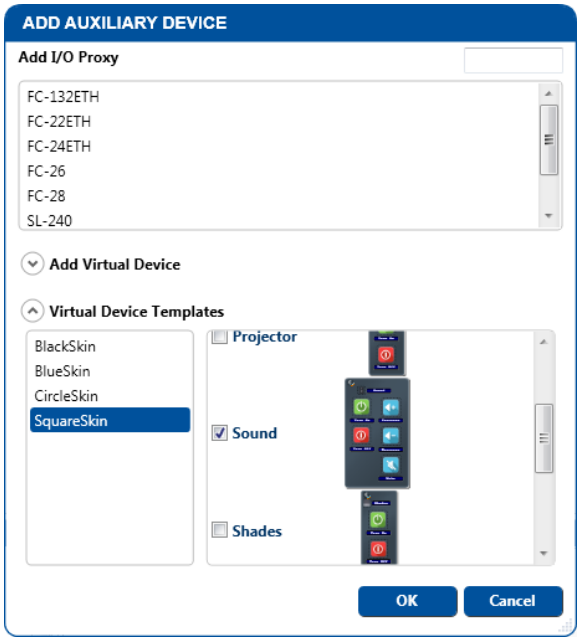


Figure 172: Virtual Device Templates – deselecting Panels

6.5.1 Virtual Device Template Shortcuts

You can right-click the virtual device Template line in the Project Navigator area to perform various operations for different devices. This section shows different examples of operations that are available for auxiliary devices.

Generally the shortcuts let you:

- Delete the virtual device.
- Add a description of the virtual device.
- Edit the virtual device view (see Section 6.4.1).
- Export the device xml, letting you export a virtual device for sharing its design with another project configured program (see Section 4.2.1.3).
- Save the device as a template, by adding it to the virtual device list for adding as an auxiliary virtual device.

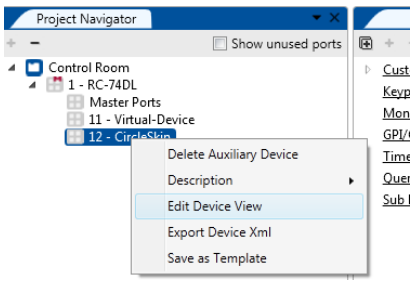


Figure 173: Virtual Template Device Shortcuts – Saving as a Template

6.6 The Room Controller Device View

You can determine the appearance of the various room control device panels and determine their appearance as well as save templates for future use. The room control device can have multiple panels with graphic backgrounds, graphic buttons and icons, all fully customized according to user design demands, and can be saved as templates for future use.

6.6.1 Setting the Appearance of the Panel

You can set the way the background panel and buttons appear on the Web page. You can also set the function of the buttons and knobs on the panel.

To change the panel background (color or image) right-click the panel background and select a color or image (see Figure 174):

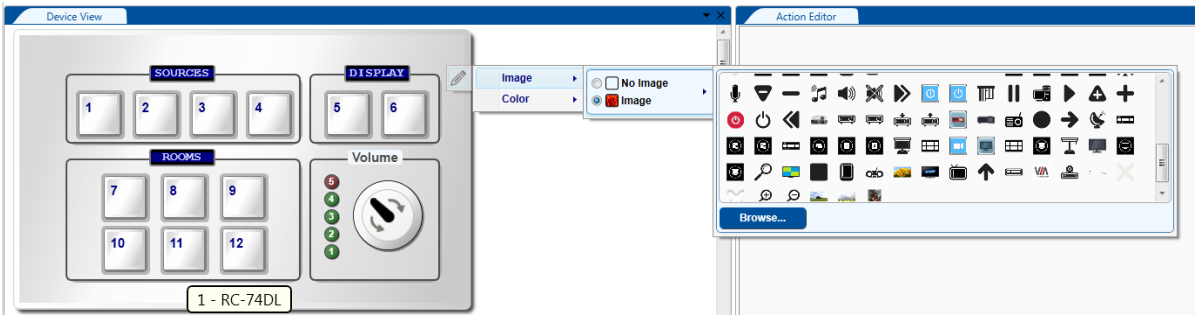


Figure 174: Device View – Editing the Panel Background

The panel background changes as selected:

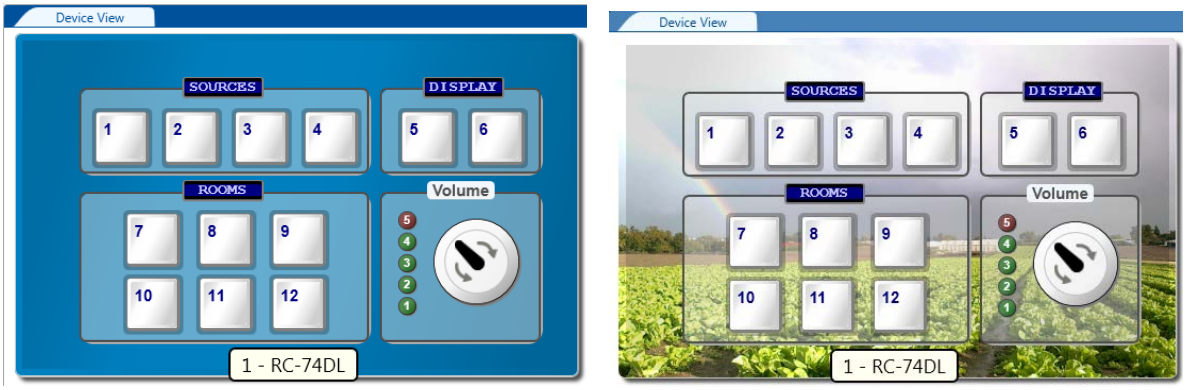


Figure 175: Device View – Panel Background Examples

To add an image to a button, right-click that button and select the desired image/icon (see Figure 176)

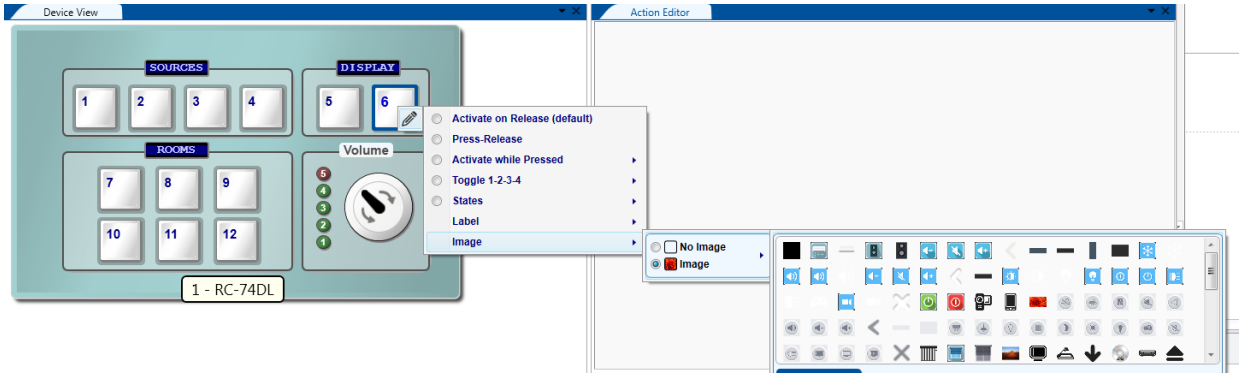


Figure 176: The Device Front Panel – Adding an Image to a Button

Note that buttons and knob functionalities are described in Section 8.2 and Section 8.2.1, respectively).

6.6.2 Setting the Button Label

To set the button label right-click the button select Label and type the label name (DVD in this example).

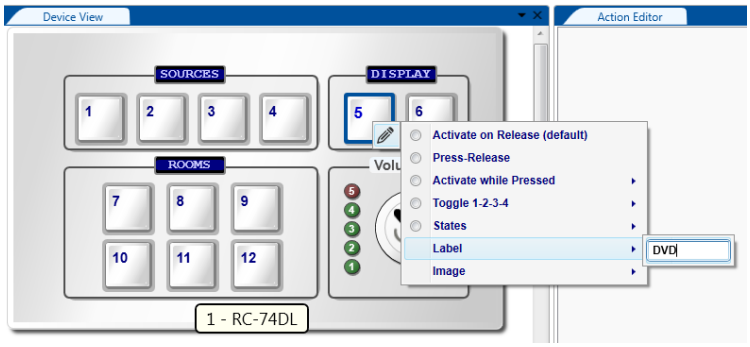


Figure 177: The Device Front Panel – Adding a Label to a Button

Setting the Button Transparency on Virtual Panels

The buttons on Virtual panels and virtual template panels can appear as buttons or set to be transparent for use as hidden buttons.

To set the transparency:

1. Right-click a button on the virtual panel.
2. Set the transparency On.
   The Button is transparent and appears in dotted lines only (invisible on the Web page).

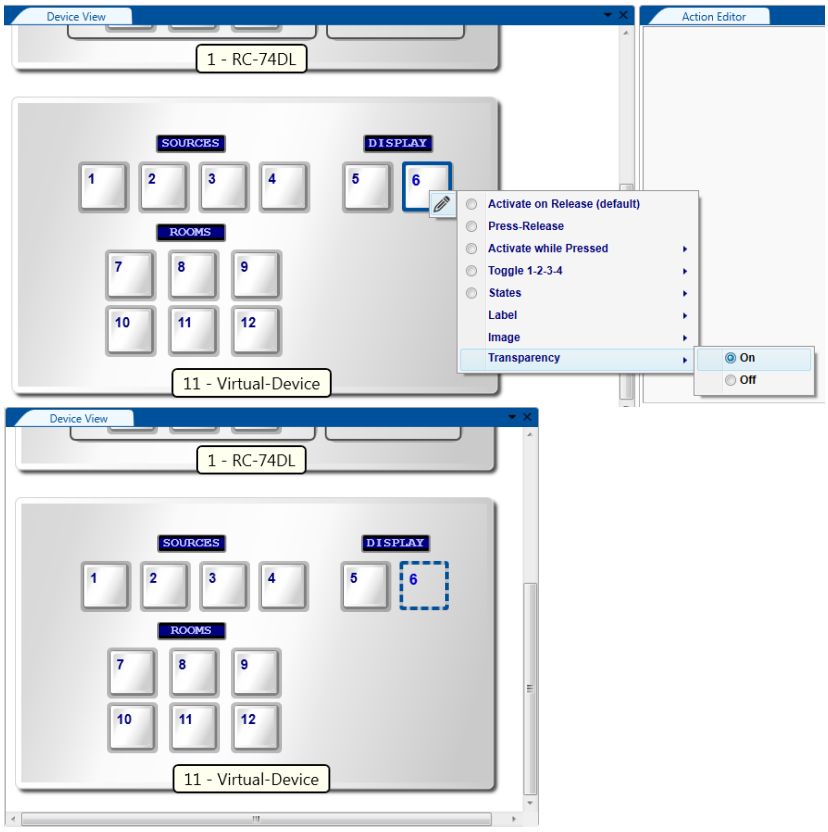


Figure 178: Setting the Button Transparency on a Virtual Panel

7 Assigning the Controlled Devices to Master and Auxiliary Device Ports

You are here:

Configuration Steps	Description	Section
Introduction	General information and system requirements	1
Planning	Carefully plan your controlled room	2
Installation	Install the Software	3
Introduction to K-Config	Get to know the K-Config main window, menus and quick access icons	4
Driver Manager	Define the Controlled Device Drivers	5
Project Navigator	Define the Controlled Room	6
Port Manager	Assign the controlled devices to the Master and Auxiliary device ports	7
Triggers	Activate the Triggers	8
Adding Actions	Describes how to add the various actions to a trigger	9
Connecting to a Device	Describes how to connect to a device, upgrade the firmware, read/write to the device and so on	10
Using the Web pages	Describes how to control the device via the Ethernet and perform minor configuration operations	11
Creating a Virtual Master	Describes how to create a Virtual Master to control a room via KRAMER NETWORK	12

The Port Manager window lists the ports on the selected room controller device (Master room controller or Auxiliary device) or standalone room controller for assigning controlled devices to its ports. It enables writing a description for the assigned device and assigning a default driver to each port.

Note that ports on auxiliary devices can be used only for sending outgoing commands from the auxiliary device to an AV controlled device. If you need device responses to use Monitor Event triggers or Queries functions, which rely on bidirectional communication, connect the AV controlled device to the K-NET master room controller device. For similar reasons, GPI/O ports on the auxiliary devices will be disabled.

In the following example, the project navigator includes the **RC-74DL**, the **RC-63DL**, the **RC-53DLC** and the **SL-10**, see Figure 179.

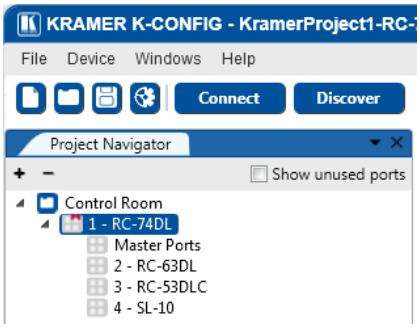


Figure 179: The Control Room Example

To set the ports of the Master device (for example, RC-74DL):

1. Select 1-RC-74DL in the **Project Navigator** area.

2. In the **Windows** menu, select **Port Manager**.

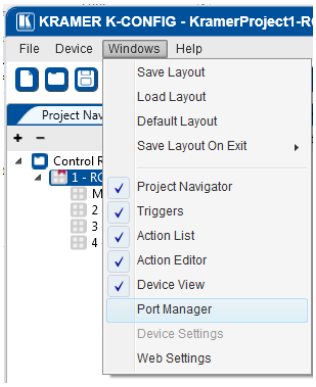


Figure 180: Select the Port Manager

The following window appears:

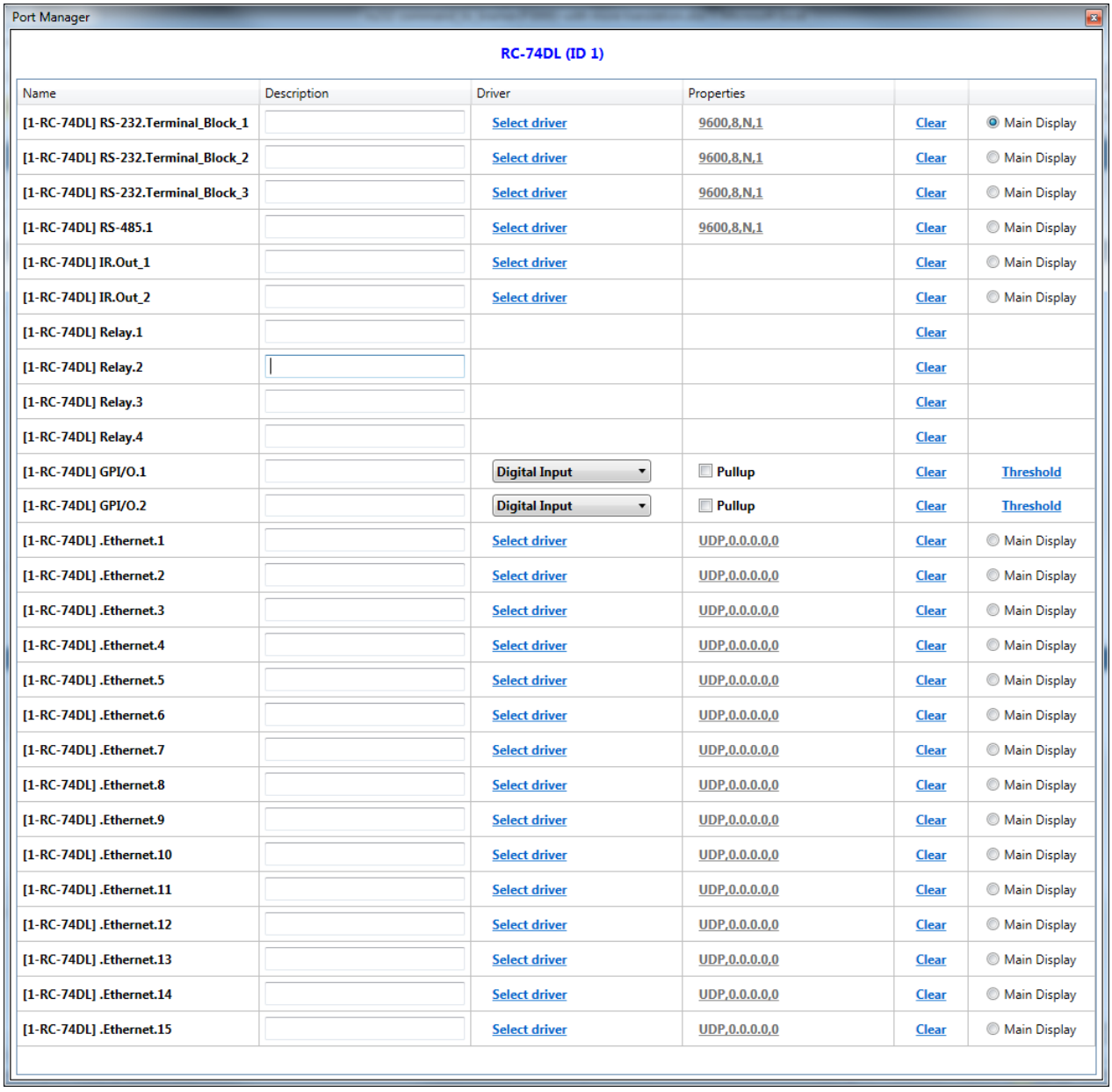


Figure 181: The RC-74DL Port Manager

The list on the left shows the various **RC-74DL** ports:

- RS-232 and RS-485
- IR out
- Relays
- GPI/O
- Ethernet ports

7.1 Assigning a Controlled Device Driver to an RS-232 / RS-485 / IR Port

To assign a controlled device to an RS-232 / RS-485 / IR Port:

1. Click the **Select driver** field next to [1-RC-74DL] RS-232.Terminal_Block_1.
   The following window opens.
   If the list does not include the drivers you need, you can import it by clicking the Import Drivers button.

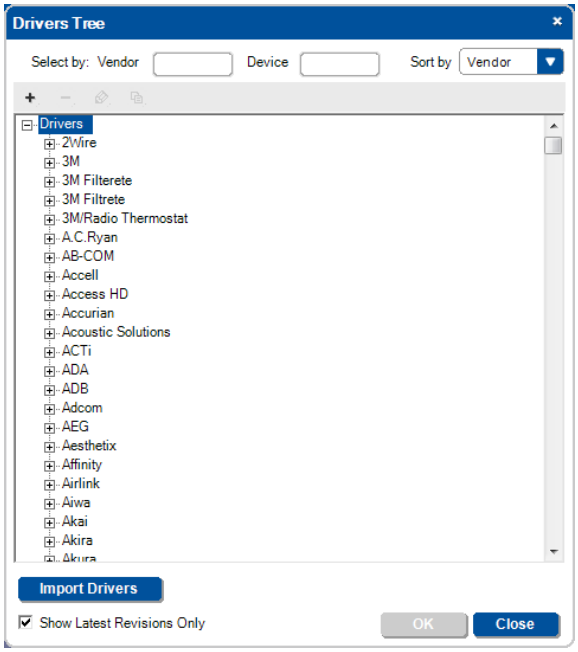


Figure 182: The Drivers Tree Window

2. Select and double-click the vendor and then select the driver.

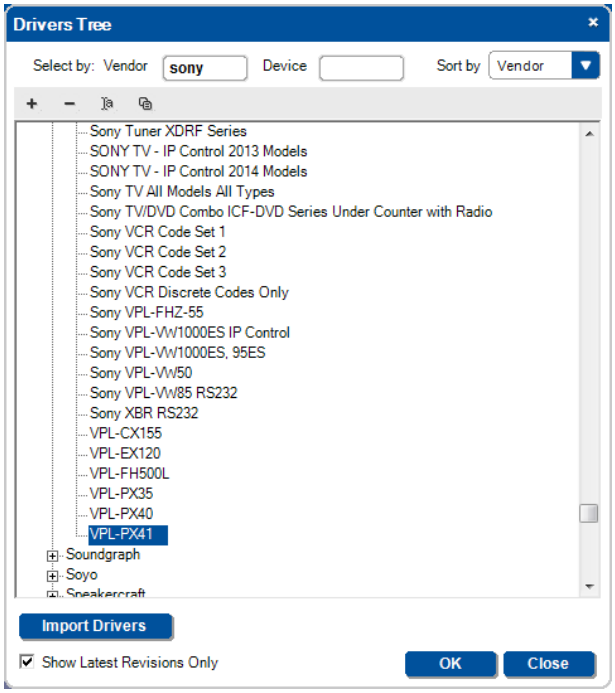


Figure 183: Select the Driver

3. Click **OK**.
   The projector driver is assigned to the RS-232 port.

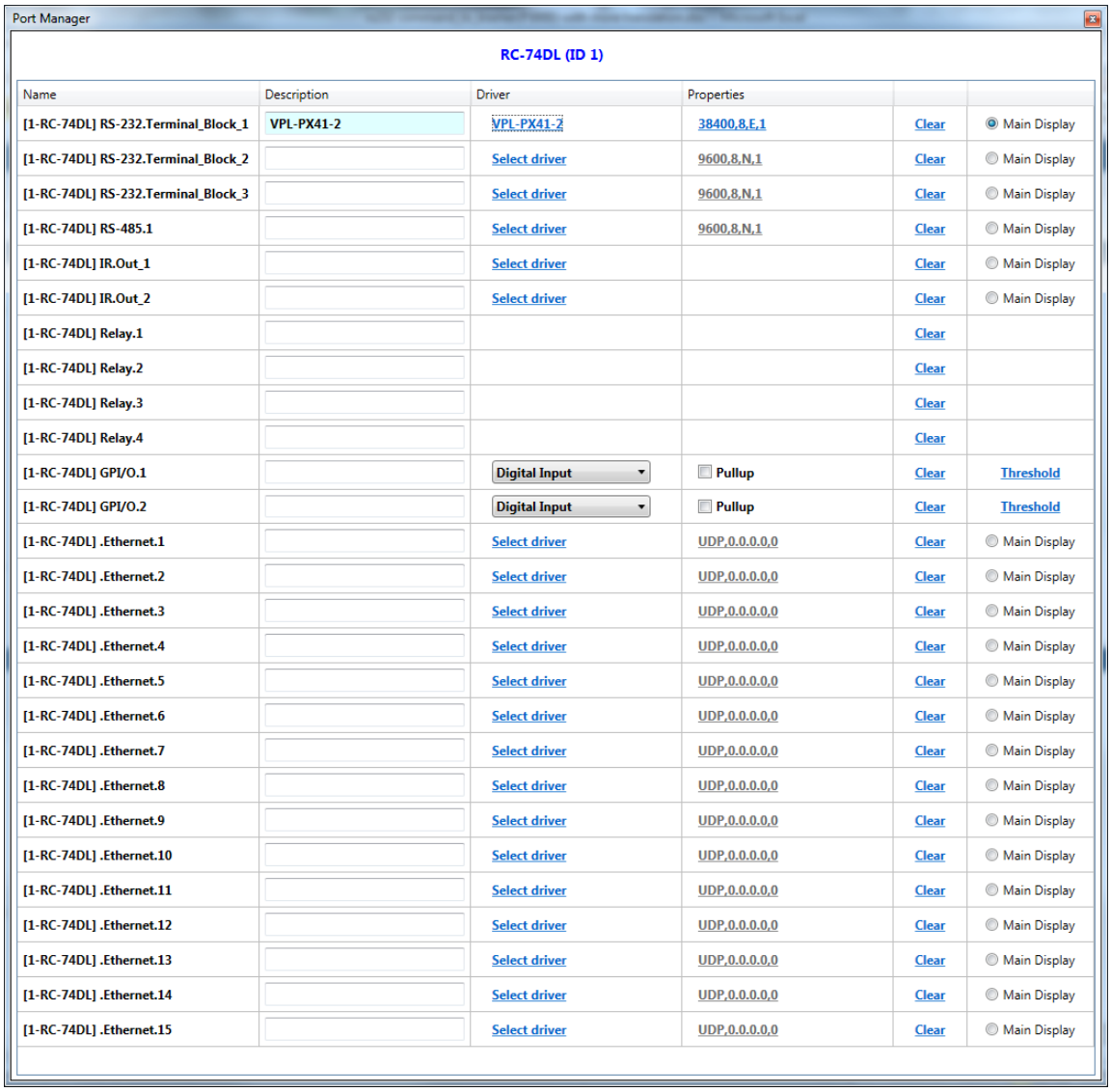


Figure 184: Assigning a Driver to a Port

4. If required, click the **Description** field to change the port description:

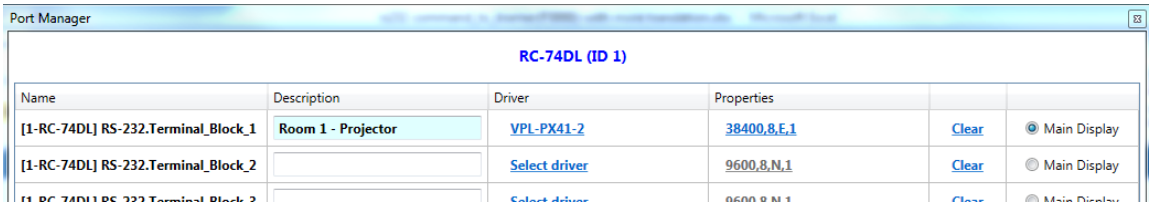


Figure 185: Writing the Port Description

5. In the same way add a driver to each of the other ports.

6. Click the **Properties** field to define the **Serial Settings** for the serial ports:

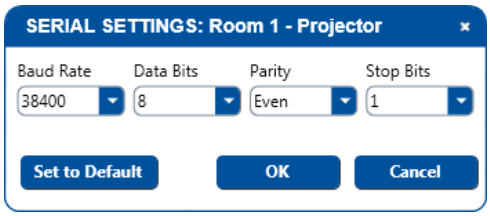


Figure 186: Serial Settings Window

When defining the ports of a master room controller which is Site-CTRL compatible, check the radio button “Main” to select the port which will appear in the main display of the Master room controller Web pages. The same display device will be monitored in the Site-CTRL overview page.

You can click the clear button to reset the port to its default state (no driver attached).

The driver that was assigned to the RS-232 port in the port manager will now appear automatically in the **Action Editor** area when that port is selected:

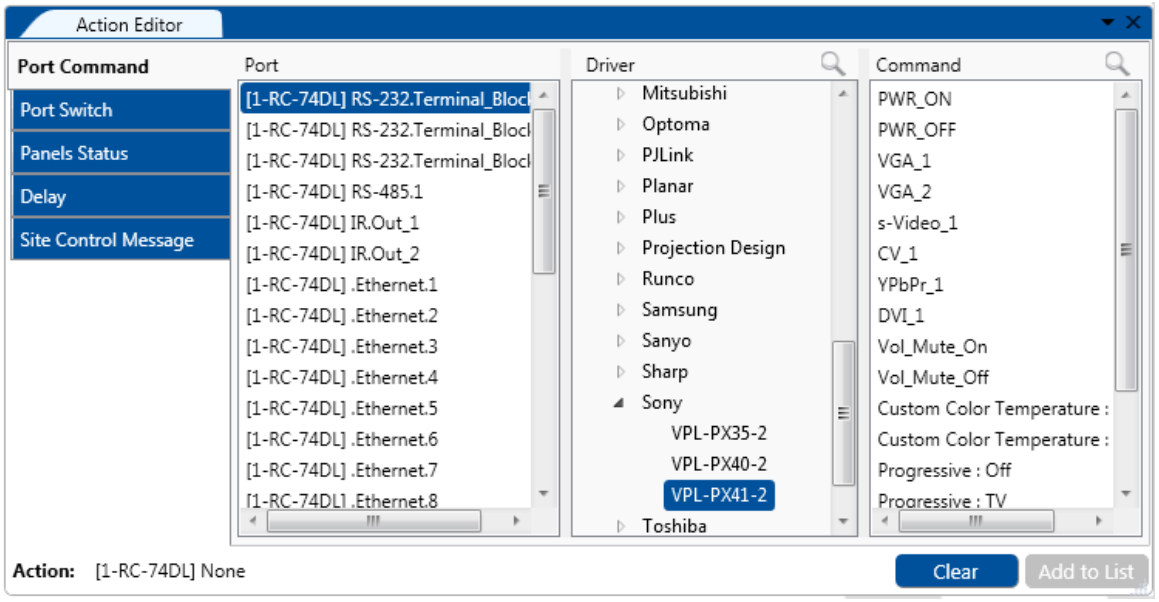


Figure 187: Action Editor – Automatic Driver Selection

Note that the driver should always be set via the Port Manager. Driver settings that are made via the Action Editor are not saved, and need to be set again every time an action is defined.

The Project Navigator shows the assigned controlled devices in their appropriate place. For example, the VPL-PX41 projector (described as Room 1 - Projector), appears under the Master room controller **RC-74DL** and the Kramer **VP-771** scaler which was assigned to the RS-232 port of the **RC-63DL** auxiliary device (procedure not shown here) appears under **RC-63DL**:

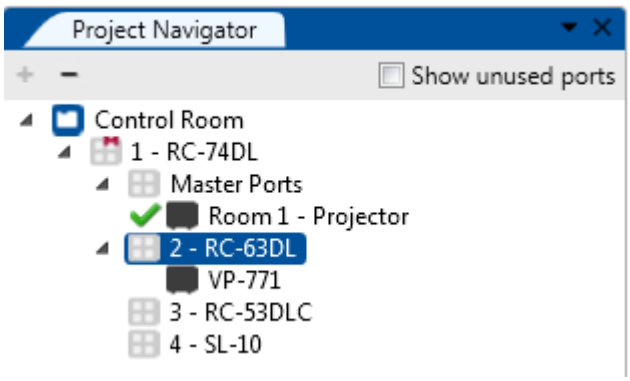


Figure 188: Project Navigator – Display of the Assigned Drivers

In the same way any assigned device, will show in the Project navigator (for example, controlled devices connected via the
RS-232 port, RS-485 port, IR OUT port, relays, and so on).

You can also choose to show the unused ports by checking the Show unused ports box:

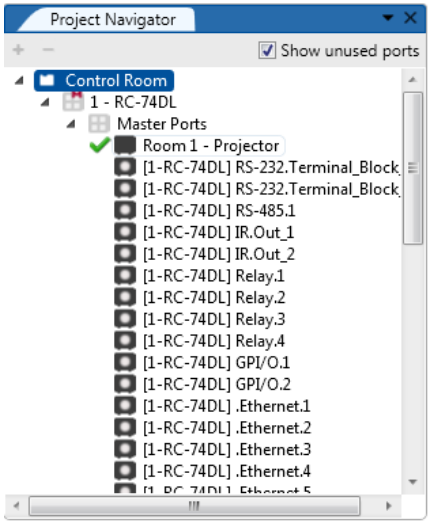


Figure 189: Project Navigator – Display of the Assigned and Unassigned (unused) Drivers

7.2 Setting the Functionality of the GPI/O Port

The GPI/O (General Purpose Input/Output) port functionality can be defined in the Port Manager as follows:

- Analog Input, Digital Input and Digital Output modes
- With or without the internal pull-up resistor
  In the K-CONFIG software this term is referred to as Pullup (as opposed to “pull-up”)
- Threshold setup

Note that only the GPI/O ports on the Master room controller can be activated. The GPI/O Ports on the auxiliary device do not appear in the port manager.

Figure 190 shows the **RC-74DL** GPI/O ports in the Port Manager:

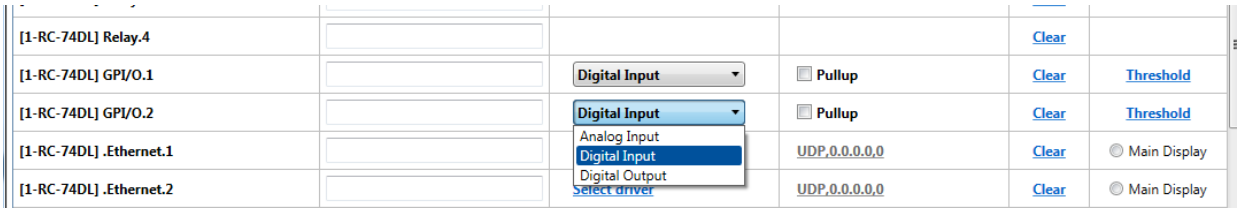


Figure 190: Port Manager – Master RC GPI/O ports

To set GPI/O, do the following:

1. Select the Master RC that includes the GPI/O feature (for example, **RC-74DL** which has two GPI/O ports).
2. Select the **Port Manager** window.
3. In the GPI/O.1 port, set the functionality of the port and name the port in the description box (for example, Temperature High for Digital Input, see Figure 191).
   You have to set the port functionality before you add commands to action lists.

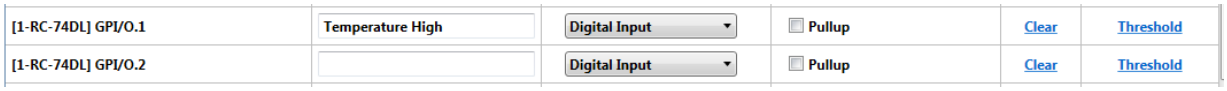


Figure 191: Port Manager – Selecting Digital Input for a Temperature Sensor

4. Select one of the options described in the following sections.

7.2.1 Digital Input

Digital Input mode reads the digital input of an external sensor device that is connected to the GPI/O port, and can be defined:

Pullup — With Pullup: by configuring in this way, the room controller can be used to detect an open circuit (which is detected as Hi); or a short to ground (which is detected as Lo). This is suitable for example, for a pushbutton switch (connecting one terminal of the switch to ground, and the other to the input) or for an alarm closing a circuit that activates a series of actions.

Pullup — Without Pullup: the room controller detects the voltage levels and translates them to High or Low according to the user defined threshold levels.
For example, a high temperature alarm that exceeds the maximum voltage threshold.

Setting the Digital Input

In this example, an alarm causes a short circuit, thus activating a trigger.

To set the trigger:

1. Define the GPI/O in the Port Manager.
   Check **Pullup** for short circuit detection; the threshold is set automatically (**skip step 2**):

   Do not check **Pullup** for voltage level detection; the threshold to be set by the user (**proceed to step 2**):

2. Click the **Threshold** button to define the **GPI/O Threshold** (minimum from 0 and maximum up to 30V) according to the indication set by the controlled device (other voltages will not activate the trigger).

Figure 192: GPI/O Threshold Window

To learn more about GPI/O Events, go to Section 8.4.

7.2.2 Digital Output

The digital output mode function is defined by the pull-up resistor setup:

- Without Pullup: The port is used for controlling external devices such as room or light switches. The external source device determines the voltage output; the maximum voltage is 30V DC and the maximum current is 50mA.
  Note: take care that the current in this configuration does not exceed 50mA!
- With Pullup: the port can be used for controlling devices that accept a TTL signal such as for powering LEDs. The voltage output is TTL positive logic: open: ~2.4V; closed: ~0.2V.

Setting the Digital Output

Define the GPI/O in the **Port Manager**:

Once defined as Digital Output, the GPI/O port will appear in the Action Editor > Port Switch:

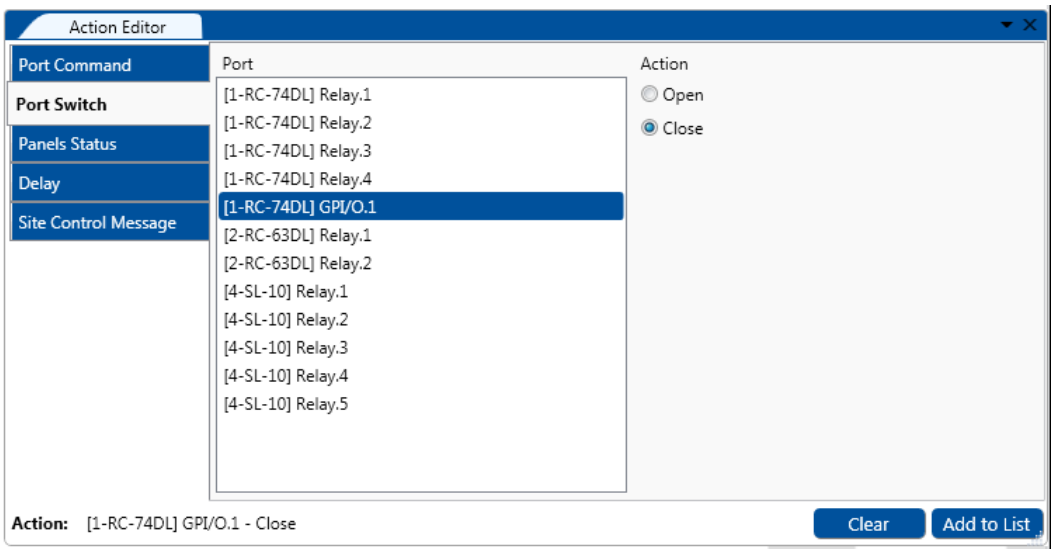
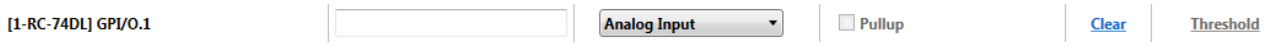


Figure 193: The GPI/O Defined as Digital Output Mode

7.2.3 Analog Input

The analog input mode accepts an analog external device, such as, a volume control device:



The Pullup and Threshold features are disabled.

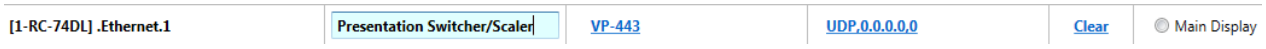
The trigger is activated once when the voltage is within the specified voltage range.

7.3 Assigning a Controlled Device Driver to an Ethernet Port

The Ethernet ports let you send control commands via the Ethernet port to up to 15 IP addresses located on the same subnet and associated with IP controlled devices.

To define an Ethernet port, do the following:

1. Set the **Ethernet** port **Driver** and **Description**.



2. Click the **Properties** field to define the **Ethernet Settings**:

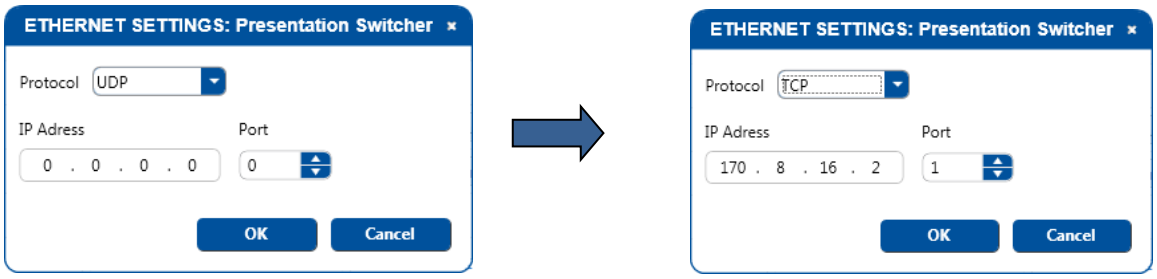


Figure 194: Ethernet Settings Example

The Ethernet port settings are complete:

Note that clicking the Clear button will not reset the Ethernet properties.

7.3.1 Setting the Volume Properties

For Master controllers with an integrated power amplifier (for example, the **SV-551** and **SV-552**) you can set the volume properties via the **Port Manager** (analog or digital), as illustrated in Figure 195.

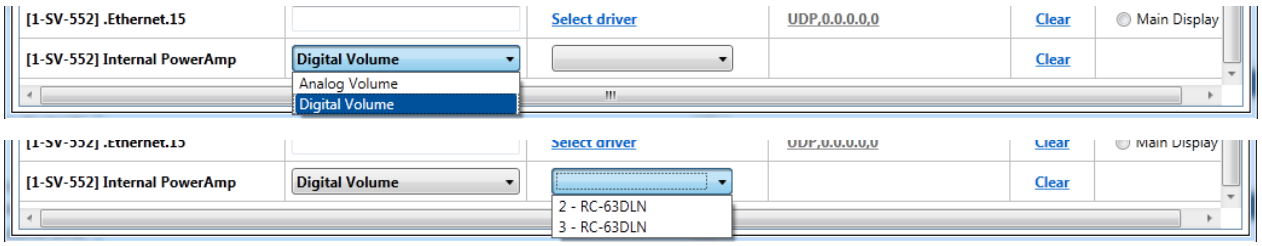


Figure 195: Set Volume Properties

Set the volume control to:

- Analog, if the volume of the integrated amplifier is controlled by an external analog audio knob (via the **SV-551**/**SV-552** 10k volume level input port, connected either to an analog audio knob of a K-NET auxiliary device such as the **RC-63AL**, or any other compatible volume level knob)
- Digital, if the volume of the integrated audio power amplifier is controlled by an auxiliary device with a digital knob (for example, **RC-63DL**). In this example, the amplifier port should be “assigned” via the Port Manager to the relevant **RC-63DL** to achieve volume control.
  For digital audio level control, select the auxiliary device that will control the audio

8 Using the Triggers

You are here:

Configuration Steps	Description	Section
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Driver Manager	Define the Controlled Device Drivers	5
Project Navigator	Define the Controlled Room	6
Port Manager	Assign the controlled devices to the Master and Auxiliary device ports	7
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Adding Actions	Describes how to add the various actions to a trigger	9
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Using the Web pages	Describes how to control the device via the Ethernet and perform minor configuration operations	11
Creating a Virtual Master	Describes how to create a Virtual Master to control a room via KRAMER NETWORK	12

A trigger initiates a series of actions that can be activated by an event, a press of a button or a preset schedule. The triggers are listed as events that trigger a series of user-configured actions:

- Custom Events – include four built-in triggers. Other custom events can be added via **K-CONFIG** (see Section 8.1).
- Keypad Events – add triggers to Keypad events by clicking a keypad panel button or knob on the master room controller and auxiliary devices (see Section 8.2).
- Monitor Events – add triggers to the monitor event by setting an incoming command that will onset a series of user-configured actions (see Section 8.3).
- GPI/O Events – add a GPI/O trigger to activate a series of user-configured actions following a controlled sensor indication such as an alarm set, for example (see Section 8.4).
- Timer Events – add timer triggers that will start a timer following timer stop/start states (see Section 8.5).
- Query Events – query a controlled device to start a series of user-configured actions according to monitored operation parameters such as projector lamp hours and the power status of the main display (for example, a projector), see Section 8.6.
  Note that query Events will not appear on the Triggers list for devices that do not have Ethernet.
- Sub Routines – when the same series of user-configured actions repeats itself in several action lists, you can define a Sub Routine once and use it in all these action lists to save configuration time (see Section 8.7).

Figure 196 shows the trigger list and its available operations:

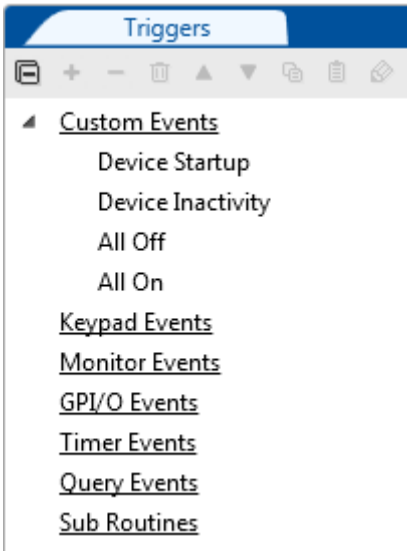
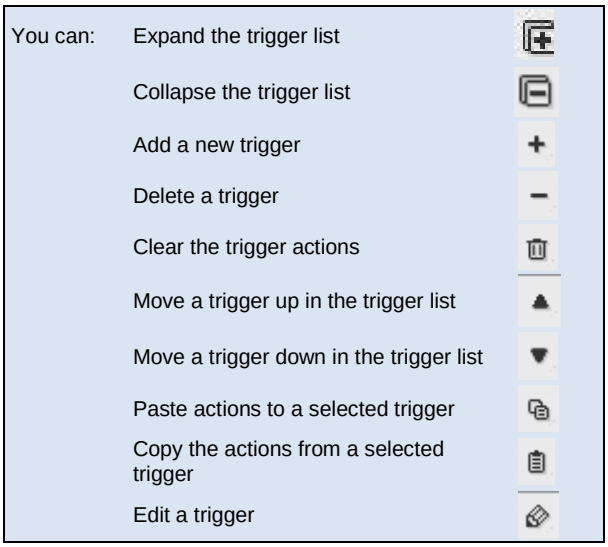


Figure 196: The Standard Built-in Triggers List



Note that not all the actions are available for all types of triggers.

8.1 The Custom Events Trigger

The built-in triggers within the Custom Events are important for proper operation of the system and cannot be deleted:

- The **Device Startup** trigger – is executed on configured device power up and lets you assign a series of actions that will define the status of the room controlled system following power-up, and will constitute the basic system state.
  For example, define the light status of the OFF button of the keypad device upon power up; set the main display status to OFF and so on.
  We recommend that you use this trigger to wake up the room to a known and pre-configured state.
  For VP-81KSI only, startup is defined as detection of a PC-Graphics input signal.
- The Device **Inactivity** trigger – lets you define the room status in case of monitored device inactivity for a preconfigured period (from 0 to 180 minutes) and is set by right-clicking the trigger and editing the inactivity time interval. For example, power down the main display and then roll up the projector screen after the inactivity preset time.
  Device inactivity means that no button was pressed on a room controller device. Note that, for VP-81KSI only, inactivity relates to the incoming syncs on the PC Graphics input channels.
- The **All Off** and **All On** triggers – the actions assigned to the All Off and All On triggers apply to the On and Off actions in the Site-CTRL Management Tool software, as well as in the built-in Web pages Macro tab.
- Custom – you can add new scheduling triggers to the custom events list. A button that is used to trigger the defined custom triggers will be available on the Web page of the main room controller.

To add actions to a custom trigger, for example, the Device Startup trigger:

1. Select the **Device Startup** trigger:

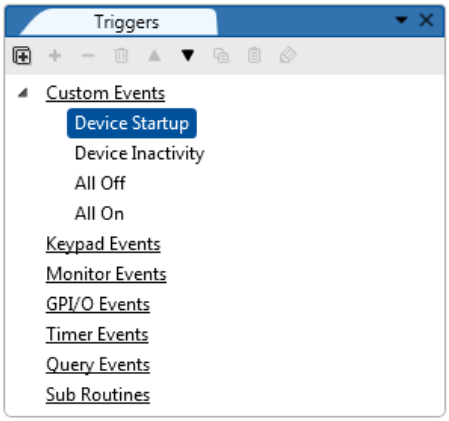


Figure 197: Custom Events – Selecting the Device Startup Trigger

2. In the **Action Editor**, select a **Port Command**:

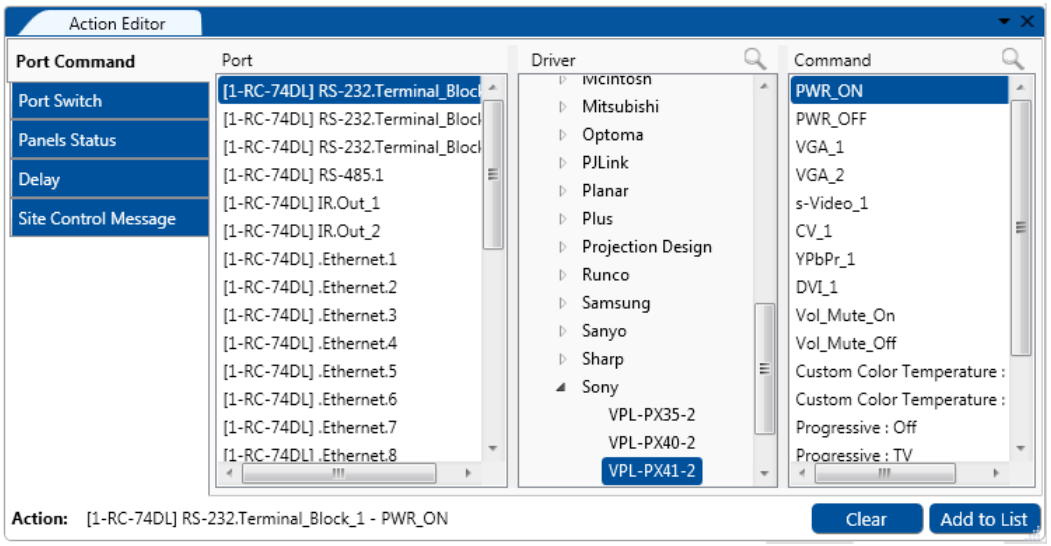


Figure 198: Custom Events – Selecting the Power On Command

The **Action Editor** shows the ports and commands relevant to both the **RC-74DL** and the **RC-63DL** (see Figure 199).

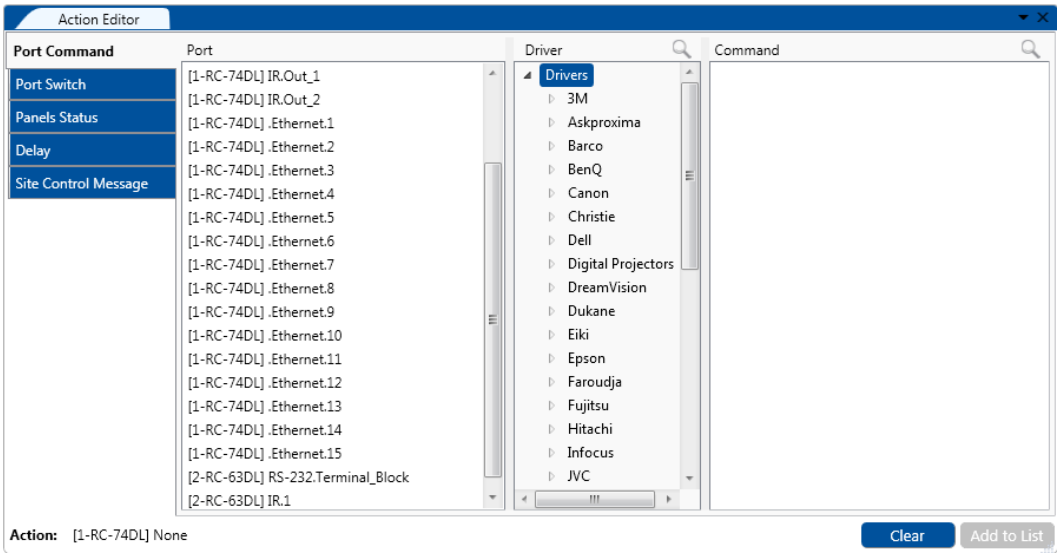


Figure 199: The Action Editor for RC-74DL and RC-63DL

3. Click **the Add to List** button.
   The command is added to the **Device Startup** trigger

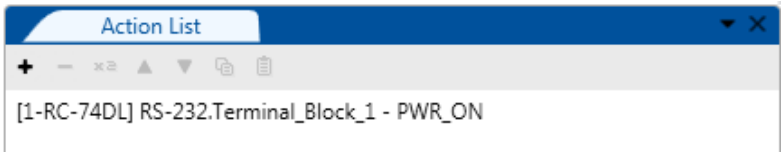


Figure 200: Custom Events – Command added to the Action List

4. In the same way, add all the relevant commands to the **Device Startup** trigger.
   The trigger appears bold in the list.

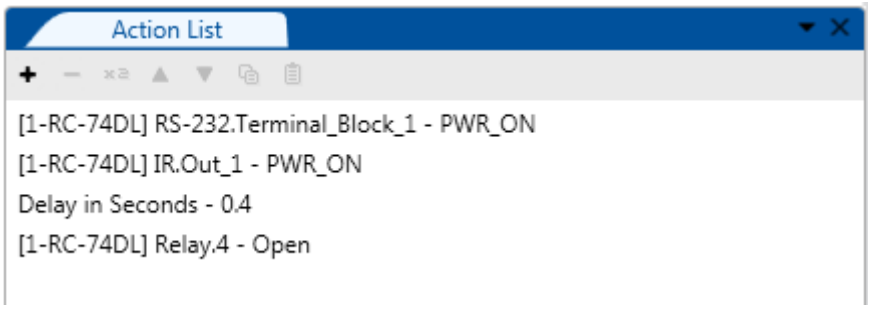


Figure 201: Custom Events – Commands added to the Action List

To add a new custom event:

1. Select **Custom Events**.

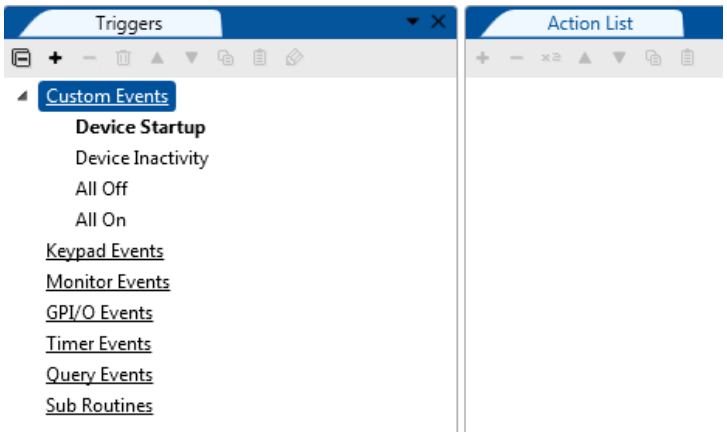


Figure 202: Custom Events – Add a New Trigger

2. Click the **+** icon and type the new name.

Figure 203: Custom Events – Add a New Trigger Name

3. Click **OK**.
   If the configuration is not finalized, finalize it now.
   The new trigger is added to the **Custom Events** trigger list and the **Scheduling** window automatically opens, see Figure 204 (you can open it always by clicking the icon, or right-clicking the trigger).

For room controller devices with internal clocks, the scheduling process lets you activate All Off, All On and Custom trigger actions according to a preset schedule. The room controller device's internal clock will synchronize with the host

PC clock when uploading the configuration file to the device, so if scheduling is used, you have to verify that the PC clock is set appropriately.

Before setting the schedule, you need to set the room controller device's date and time (see Section 10.6.1).

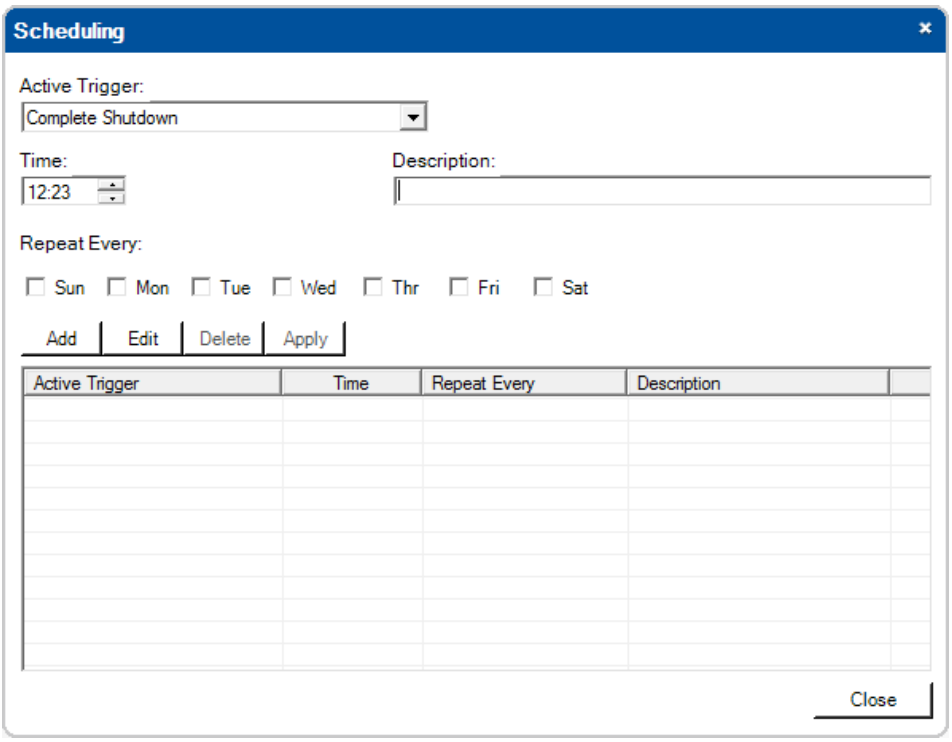


Figure 204: Custom Events – The Scheduling Window

The following examples show different schedules setup for deactivating a room controlled system. In each example, the **Time**, the **Active Trigger**, the **Description** of the selected schedule and the required days (**Repeat Every**) are set, and custom triggers are added as needed:

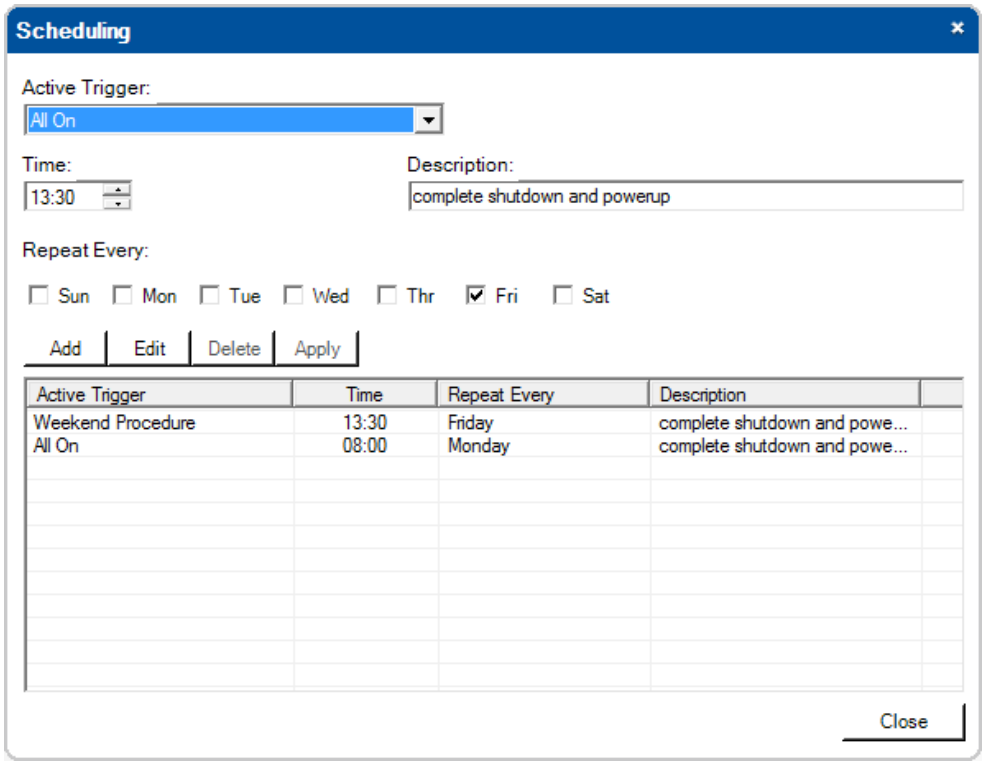


Figure 205: Custom Events – The Scheduling Example 1

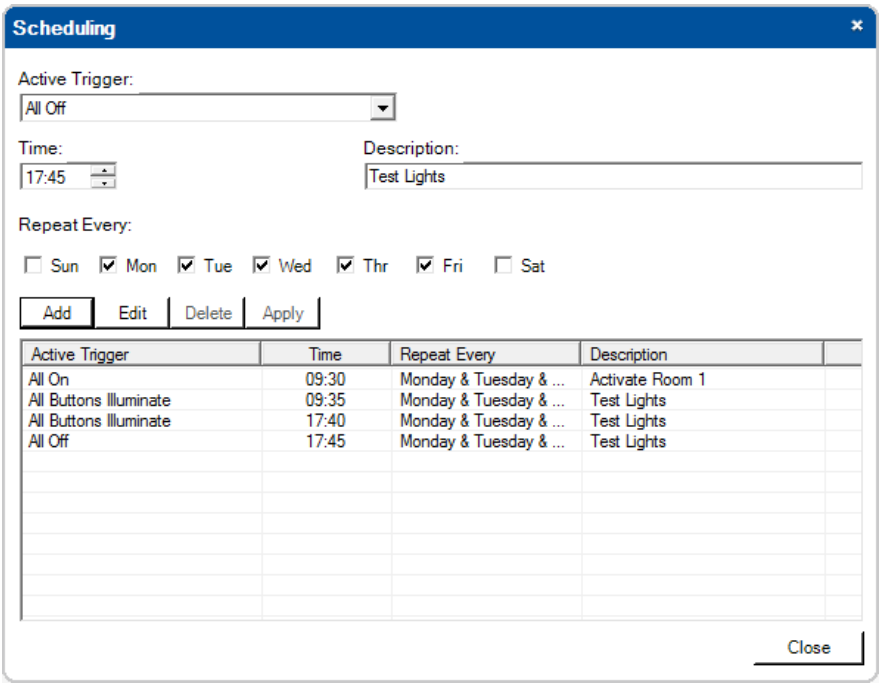


Figure 206: Custom Events – The Scheduling Example 2

8.2 Keypad Events Trigger

Trigger Event triggers include user-configured actions that are triggered by pressing a certain button on a room controller device in the controlled room.

To set a Keypad trigger, for example, pressing the SOURCES button (3) on the RC-63DL auxiliary device:

1. Click the **SOURCES** button.
   The selected button frame turns blue and the edit icon appears:

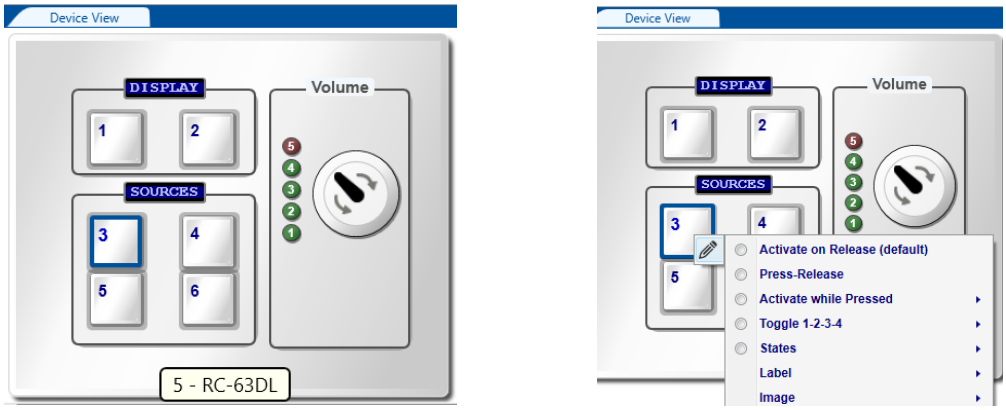
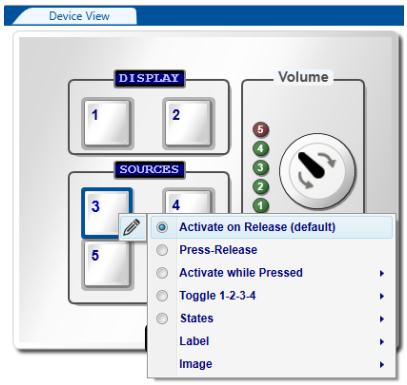


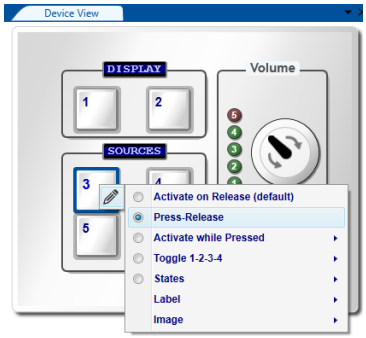
Figure 207: Keypad Events – Selecting a Button

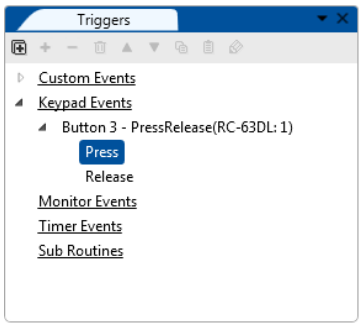
2. Check and set the appropriate button behavior:

- **Activate on Release**: activates the trigger upon button release.

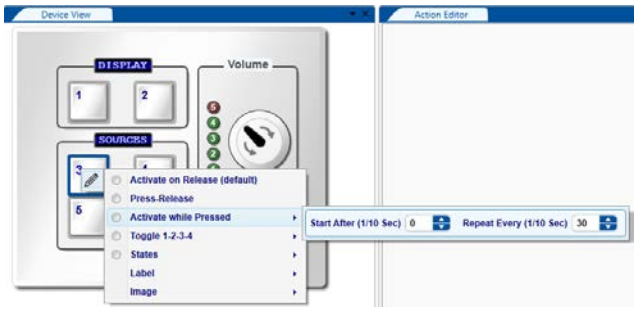


- **Press-Release**: activates a trigger (Press) all the while the button is pressed and another trigger (Release) when the button is released.

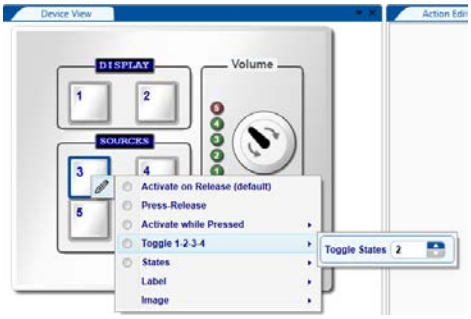




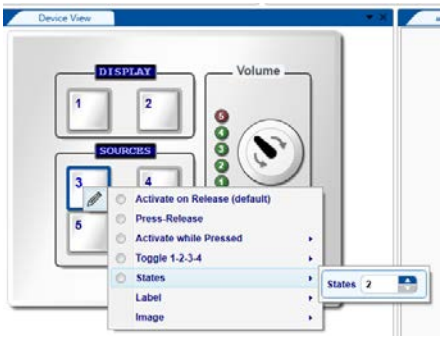
- **Activate while Pressed**: the trigger is activated again and again as long as the button is pressed. You can set the trigger delay time (**Start After**…), as well as the repetition delay time (**Repeat Every**…).
  Note that time is set in 1/10th of a second intervals.



- **Toggle 1-2-3-4**: select the number of toggle states (from 2 to 10). With each press of the button, the next toggle state is activated (upon completion of that toggle). When in the last toggle state, the next press of the button will activate the first toggle state once again.
  We recommend that you assign a different button color command to each trigger state so that you can identify each toggle state by the associated color of the button. For example, the toggle button could be set to have two states and used as an on/off switch. The first press of the button will trigger an “On” action list. The next press on the same button will trigger the “Off” action list.
  Note that not all room controllers can have up to 10 toggle states, some have less.



- **States**: select the number of states from 2 to 4. The state of the button can be changed through Panels Status in the Action Editor.
  Each button state is independent of the other. The state behavior lets you determine which sequence of actions (as defined for each state) will be carried out the next time this button is pressed.
  For example, if you need to control two projectors, you can use one (selector) button to select between the two and a set of three other (control) buttons to control the selected projector. Each of the three control buttons is set to two states: state 1 relates to projector 1 actions and state 2 relates to projector 2 actions. The selection button is set to two toggle states: toggle 1 sets the state of the control buttons to 1 and the next toggle sets it to projector 2.
  Pressing the selector button will change the state of the other three buttons to control the selected projector. See Section 9.4.1 for details on how to use Panels Status.



In addition, you can set the button label and background image (see Section 6.6)

When selecting the button behavior, the Keypad Events list shows the behavior of the buttons. In the example in Figure 208 Button 3 is set to States, Button 4 is set to Toggle, Button 1 is set to Activate while Pressed (Click) and button 2 is set to Activate on release (Hold).

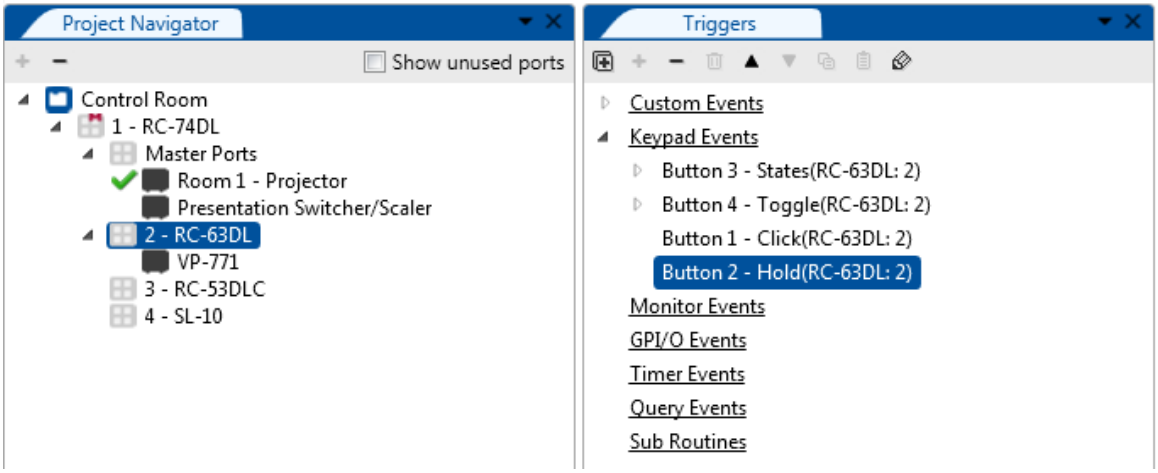


Figure 208: Button Behavior in the Triggers List

3. Add actions to the trigger list (see Section 9).

8.2.1 Knob Keypad Events

The knob Keypad Event is especially useful when trying to control audio amplifiers or similar devices using serial command tables (see Section 9.2.1). Simply add the command table to the action list that is assigned to the knob.

When controlling the built-in amplifier of the **SV-551/SV-552** via the digital knob of the **RC-63D** series or **RC-53D** series units, you do not need to configure the digital knob behavior via the knob turning trigger. All you have to do is to associate the digital audio knob of the user interface unit with the **SV-551/SV-552** audio amplifier on their port manager tab.

The knob triggers are activated by clicking the knob on the keypad device panel. The knob frame turns blue:

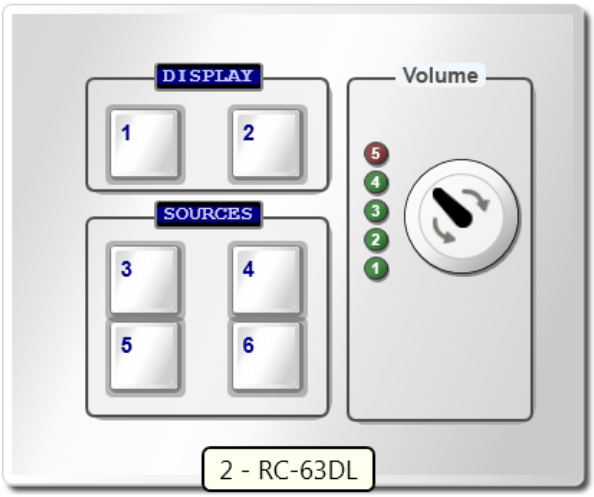


Figure 209: The Knob Triggers

Two general types of triggers are available, depending on the area in which you click on the knob. The upper area will add the **Knob turn up** trigger to the Keypad Events list and the lower part will add the **Knob turn down** trigger to the Keypad Events list:

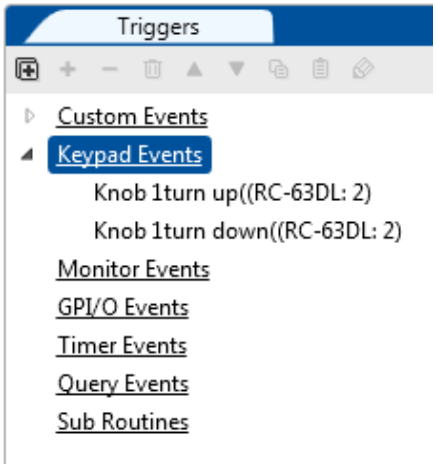


Figure 210: Keypad Events List

You can also set the Knob turn up or turn down with states:

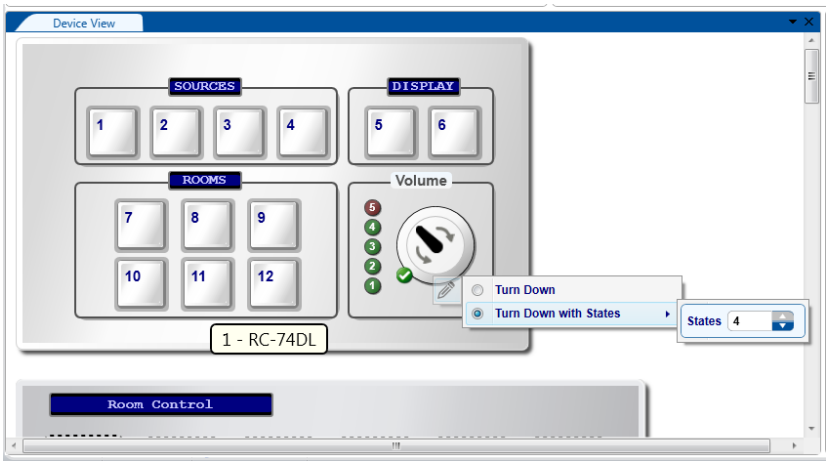


Figure 211: The Knob Triggers with States

Up to 4 states can be defined, as appears in the Triggers list (showing 2 states):

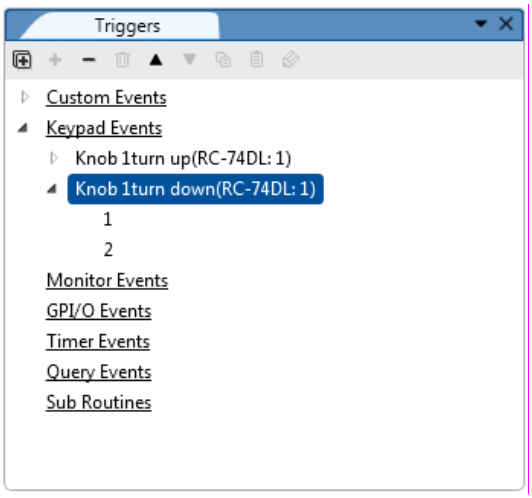


Figure 212: The Keypads Event List with States

Add actions to the list (see Section 9.1).

8.3 Monitor Events Triggers

The monitor event is a trigger that activates a sequence of actions when a certain selected driver message, usually a reply of some sort, is detected coming from the connected controlled device on the relevant serial or Ethernet port (for example, the projector Power: Off command).

Note that you need to set the serial reply commands on serial ports before creating a monitor event, otherwise the command drop down box in the Monitor Events Trigger window will be empty. Serial reply commands are set via the Driver Manager, see Section 5.3).

Note that serial ports on auxiliary K-NET devices can be used only for outgoing serial commands, in contrast to the master room controller which supports bidirectional serial communication. Therefore, monitor event triggers can only be defined for the serial ports of the master room controller in a certain Room Control setup and not for the serial ports of the auxiliary K-NET devices.

To add a monitor event trigger:

1. Click the **Add Monitor Event** button. The **Monitor Events Trigger** window appears. Select the **Port**, **Driver** and **Command** that will trigger the monitor event actions:

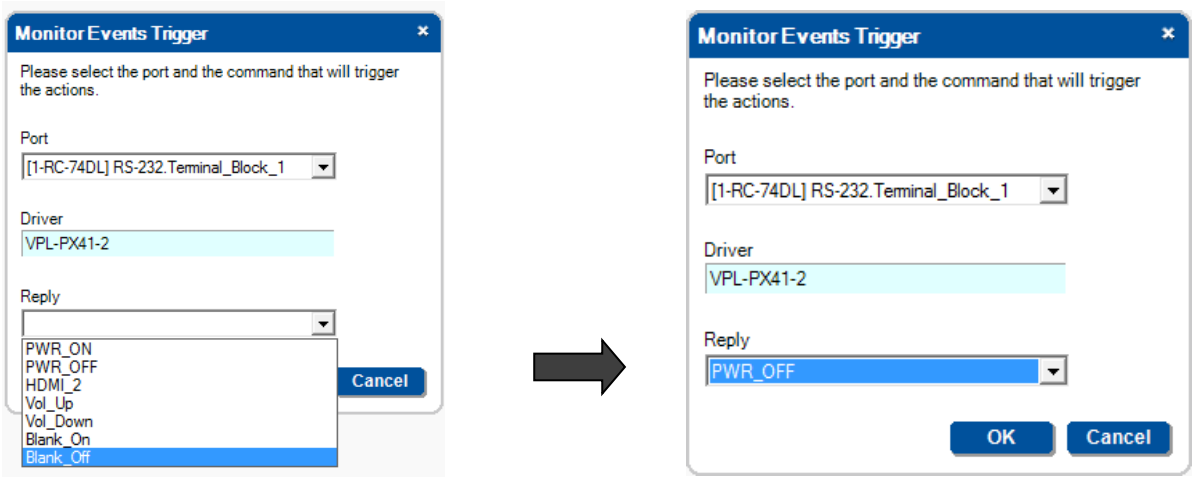


Figure 213: The Monitor Events Trigger Window

2. Click OK.
   The **Monitor Event** is added to the available **Triggers** list:

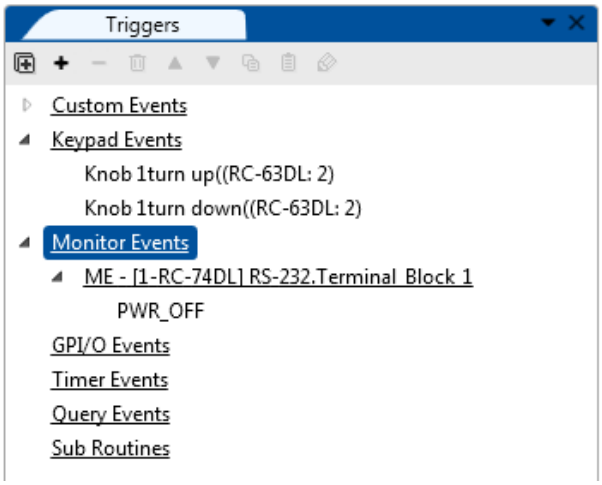


Figure 214: Adding a Monitor Event to the Available Triggers List

You can edit the trigger to respond to a different command by selecting that command and then clicking the button.

3. Add actions to the trigger (see Section 9).

8.4 GPI/O Events Triggers

The GPI/O (General Purpose Input/Output) port can be configured via the **K-CONFIG** software. Using GPI/O, you can select a wide range of events that can trigger a series of actions, for example, when an alarm is set or if the room temperature exceeds a certain value.

Only GPI/O ports on the master room controller can be used in the Room Control setup (**SL-12** is the master room controller in this example). The GPI/O ports are set in the port manager as follows:

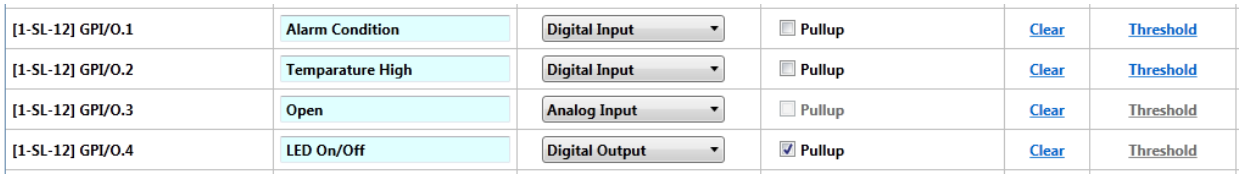


Figure 215: GPI/O Events – Port Manager Setup

Digital output acts in the same way as do relays so it cannot be used as a trigger (see Section 9.3).

Once the master room controller is set, the GPI/O Events appears in the **Project Navigator**:

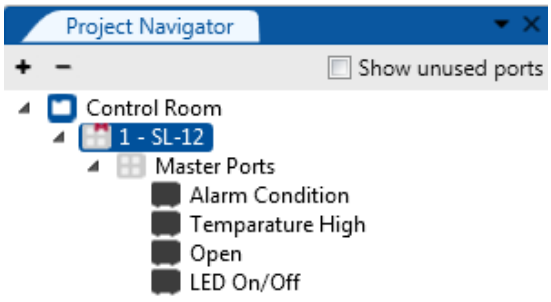


Figure 216: GPI/O Events – GPI/O in Project Navigator

To create a GPI/O event:

1. Select **GPI/O Events** and click **+** to create a new GPI/O trigger. The following window appears:

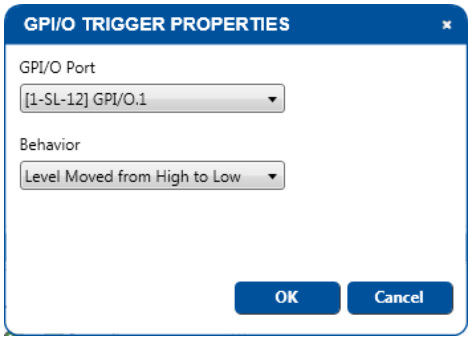


Figure 217: GPI/O Events – GPI/O Trigger Properties

2. Select the GPI/O port from the list and its function behavior:

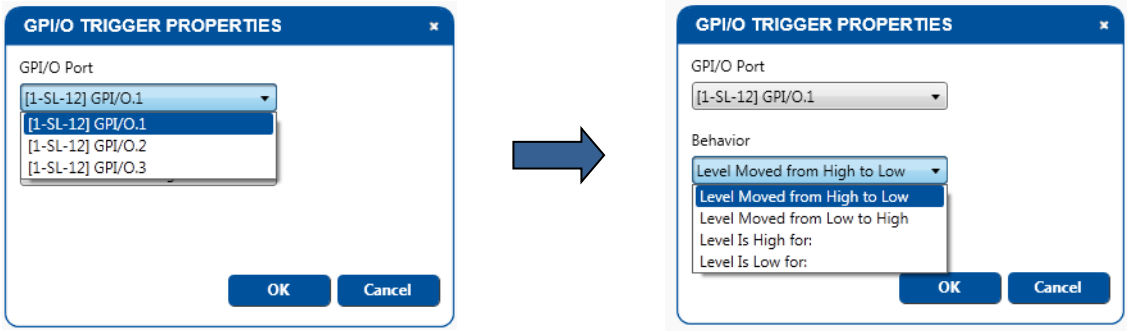


Figure 218: GPI/O Events – Digital Input: Selecting the GPI/O Port and Behavior

3. Select the condition for activating the trigger.

For Digital Input mode:			
Behavior	**Action**	**Pullup**	**Trigger Condition Description**
Level moved from High to Low	Activates the trigger immediately	checked	Closing the circuit
		not checked	voltage exceeding its maximum defined value
Level Moved from Low to High	Activates the trigger immediately	checked	Opening the circuit
		not checked	voltage decreasing below its minimum defined value
Level is High for:	The trigger is activated on the first occurrence	checked	Circuit remains open
		not checked	The voltage exceeding its maximum defined value and staying there for a set period of time (see Figure 219)
Level is Low for:	The trigger is activated after the defined timeout expires	checked	Circuit remains closed
		not checked	The voltage decreasing below its minimum defined value and staying there for a set period of time (see Figure 219)

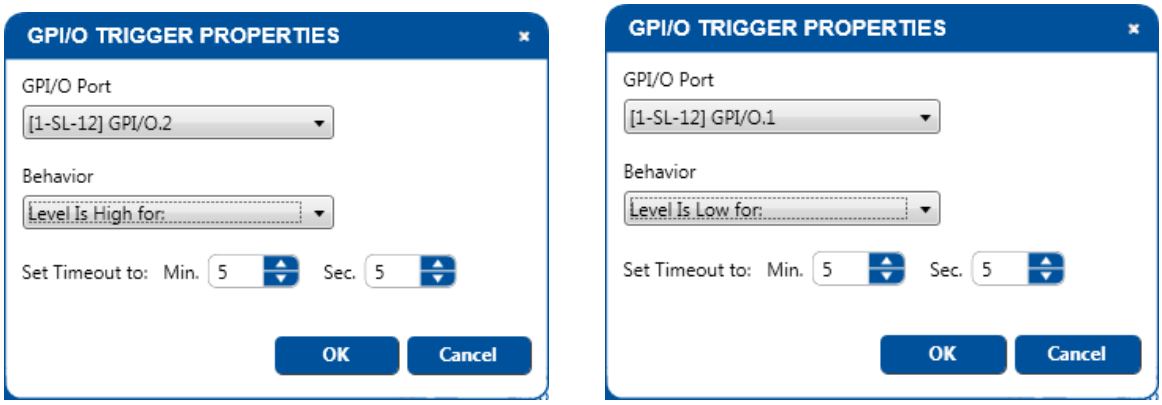


Figure 219: GPI/O Events – Setting the Digital Input Condition Timeout

For Analog Inputs	
Behavior	**Action**
Value is lower than	Activates the trigger once the voltage is below the set voltage
Value is Higher	Activates the trigger once the voltage is above the set voltage

Value is between	Activates the trigger once the voltage is within the set range of voltages

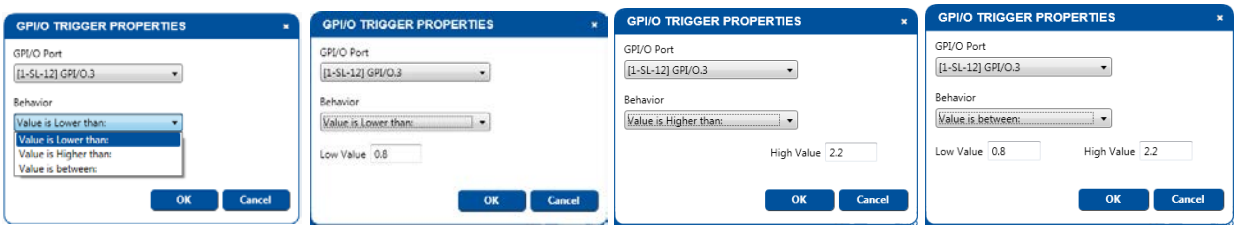


Figure 220: GPI/O Events – Analog Input: Selecting the GPI/O Port and Behavior

You can now add commands to the event (see Section 9.1).

8.5 Timer Events Triggers

Timer Events include Timer triggers that let the control system wait for a configured timeout or event to occur and then act accordingly. To add a new trigger, select Timer Events and right click it or click the **+** icon.

8.5.1 Power ON Example

In the following example, button 3 on the **RC-63DL** is used to turn the projector ON. If, after sending the power ON command, no suitable reply is received from the projector during the selected 5-second time period, the Timer trigger is executed (displaying some type of visible alert to the user or resending the ON commands, as defined by the user).

If a suitable reply is received within the 5-second time period, it will trigger a predefined Monitor Event action list which stops the Timer trigger (see Figure 221) and prevents the alert or error from being sent.

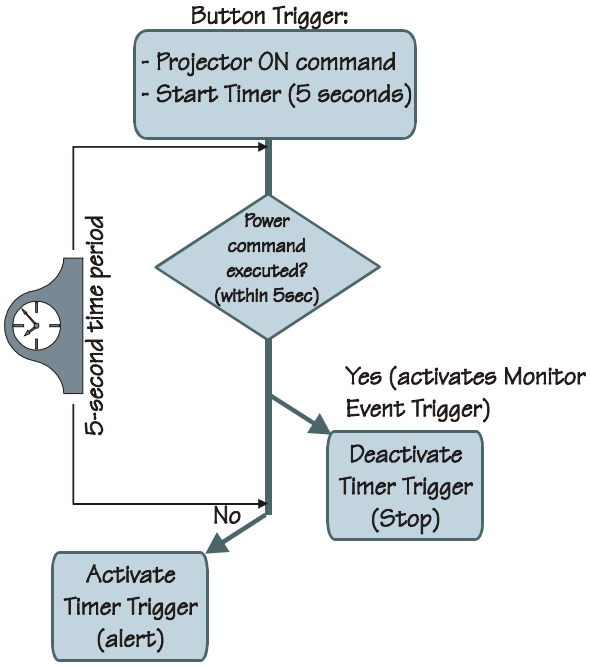


Figure 221: Timer Events – Timer Trigger Flowchart: Power ON Example

This setup includes three simple steps:

Step I: Define the Timer Trigger.

Step II: Define the Button trigger (which includes the Timer Trigger Start state).

Step III: Define the Monitor Event Trigger (which includes the Timer Trigger Stop state).

Step I: Define the Timer Trigger

1. Select **Timer Events** and click the **+** icon to add a new timer trigger.
   The **Timer Trigger** name window appears. Type the **Trigger Name** (for example, PRJON) and set the timeout:

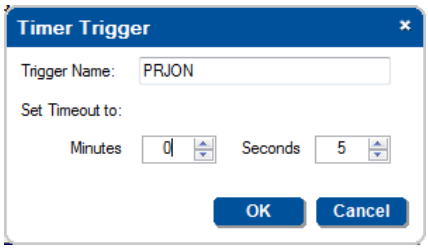


Figure 222: Timer Events – Adding the Trigger Name and Timeout

2. Click **OK**.
   The Timer trigger appears in the available **Timer Events** list:

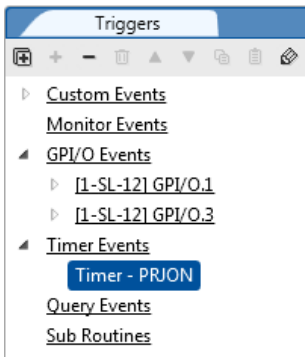


Figure 223: Timer Events – the Timer Trigger in the Triggers List

3. Add the following actions (Button 3 blinks in red for 5 seconds (to indicate a problem) and then illuminates in green:

4. Click **OK**.

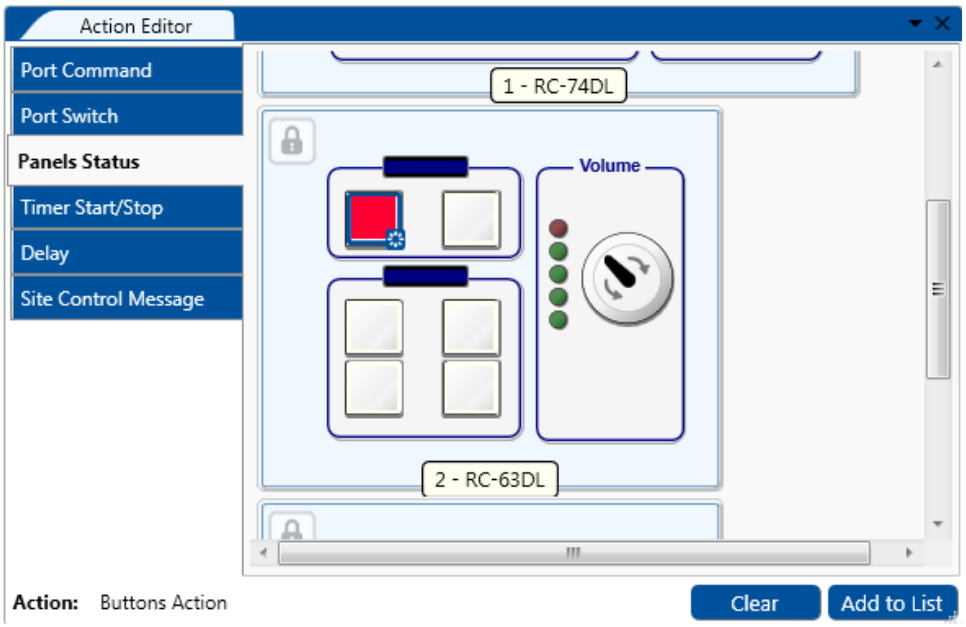


Figure 224: Timer Events – adding Button Status

5. Click the **Add to List** button.
   The command is added to the Action List.

6. Add a 5-second delay and then button illuminates green.
   The PRJON Timer trigger action list appears as follows:

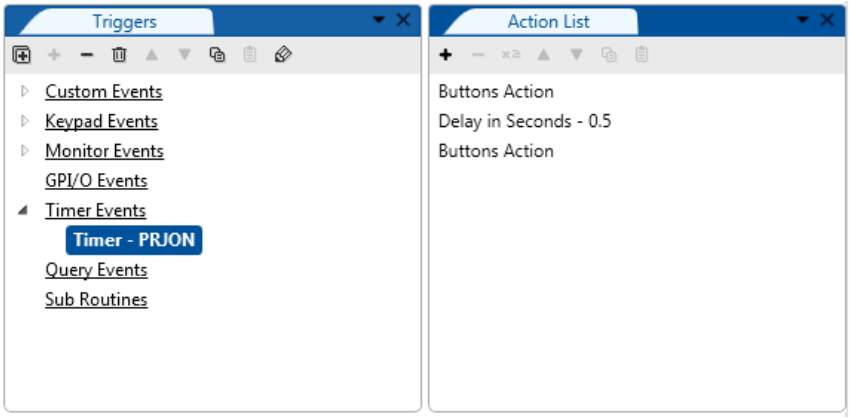


Figure 225: Timer Events – the Timer Trigger Action List

Step II: Define the Button Trigger

7. Define a button trigger: Button 3 - Click (see Section 8.2).

8. From the **Action Type** list select **Port Command** and add the projector power on (PWR_ON) command:

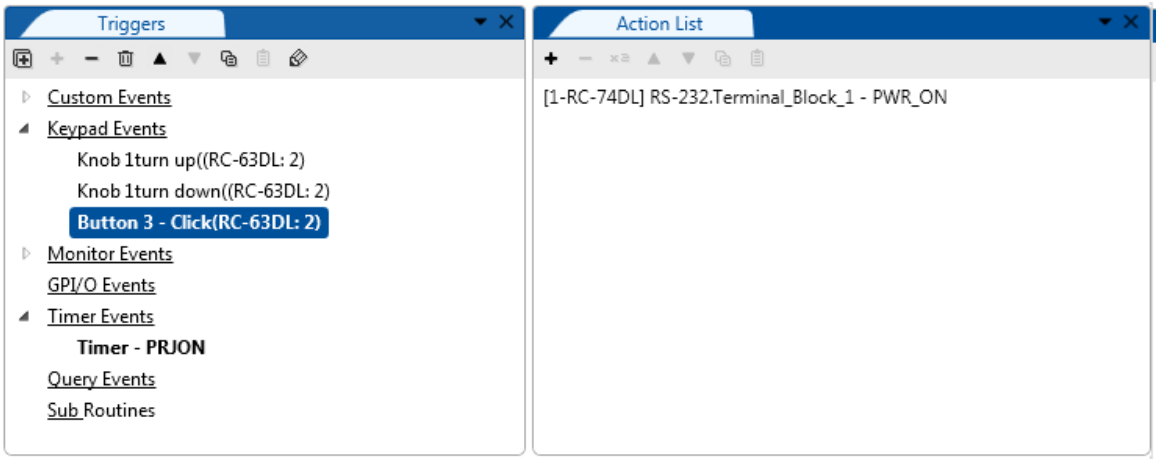


Figure 226: Timer Events – Projector Power On Command in the Button Trigger Action List

9. From the **Action Editor** list select **Timer Start/Stop** and select the relevant **Timer Trigger** (in this example, Timer – PRJON):

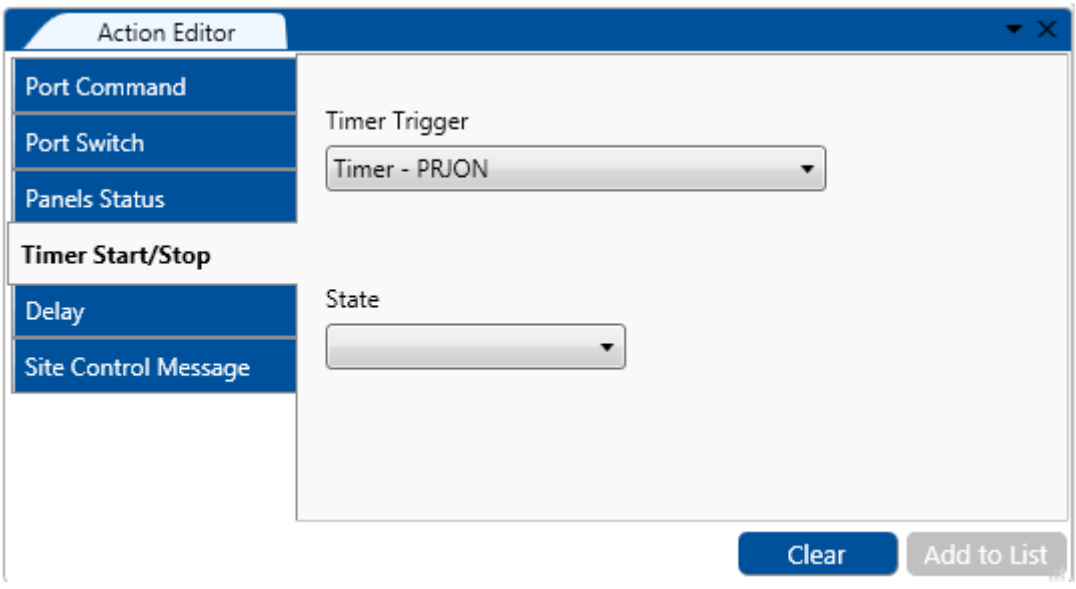


Figure 227: Timer Events – Selecting the Timer Start/Stop Action

10. Select Timer Trigger **State Start** and click **Add to List**:

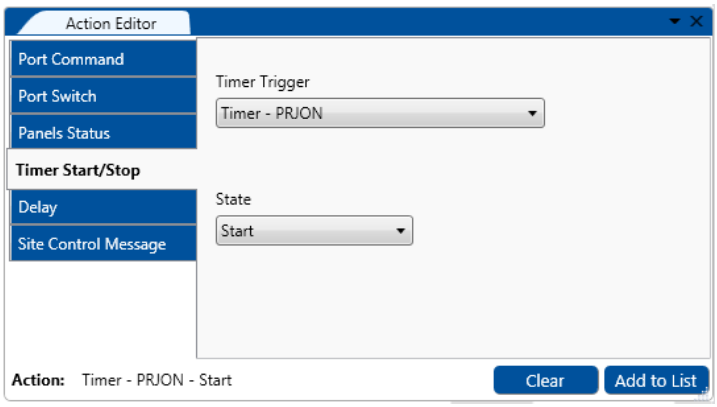


Figure 228: Timer Events – Selecting the Timer Start/Stop Action (Start State Selected)

The button trigger includes powering on the projector and starting the **Timer Trigger**. The Timer trigger actions will be executed within 5 seconds unless they are interrupted by the monitor event.

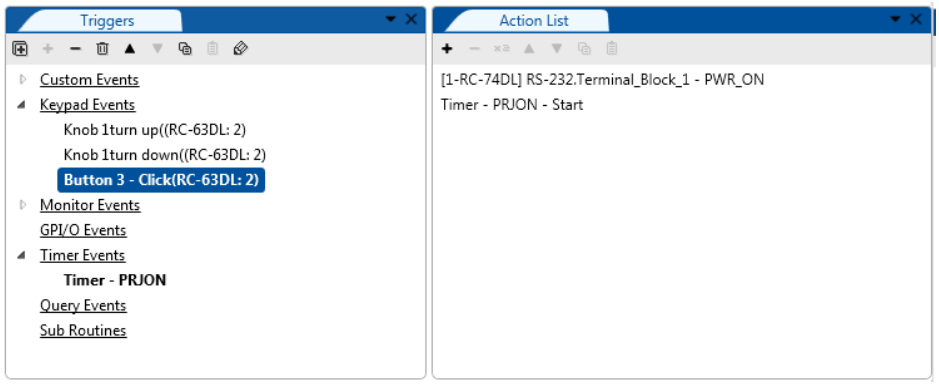


Figure 229: Timer Events – Active Button Trigger Action List

Step III: Define the Monitor Event

11. Add a monitor event trigger and select the **On reply from On** command:

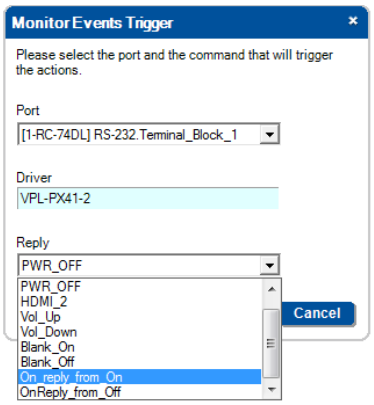


Figure 230: Timer Trigger – Add the Monitor Event

Once the projector power is ON, the **On reply from On** activates the monitor event action(s).

12. Add the required action to the trigger (Stop):

Figure 231: Timer Trigger – Monitor Event Action List

Once the projector replies, the monitor event command is executed, the timer trigger is stopped and normal operation is carried on.

The command list, shown in Figure 230, includes "ON reply from OFF". In some cases, the AV device will reply differently to the same command, depending on its state. When building timers combined with monitor event structures, be certain to take into account the various replies that may return from the AV controlled device and handle each one of them with an appropriate Monitor Event trigger.

Note that a command name cannot include spaces. Some command names, in former versions had spaces. For your convenience these command names will still appear with spaces. If you want to change these names via the Common Commands Tree Editor, you will not be able to rewrite them back to their original names (with spaces).

8.5.2 System Inactivity Example

In this example, the Timer trigger is used to perform a sequence of actions if no signals are fed into the controlled AV room system for a predefined time period (for example, 20 minutes, see Figure 232). A switcher (for example – the Kramer **VP-411DS**) will send out a dedicated serial command once all PC sources are disconnected. We will use this command to trigger a 20 minute timer. Each action list executed during timer activity interval will start with a command to stop this timer. Upon System Inactivity timer timeout, we will shut down the display device and perform other shut off tasks.

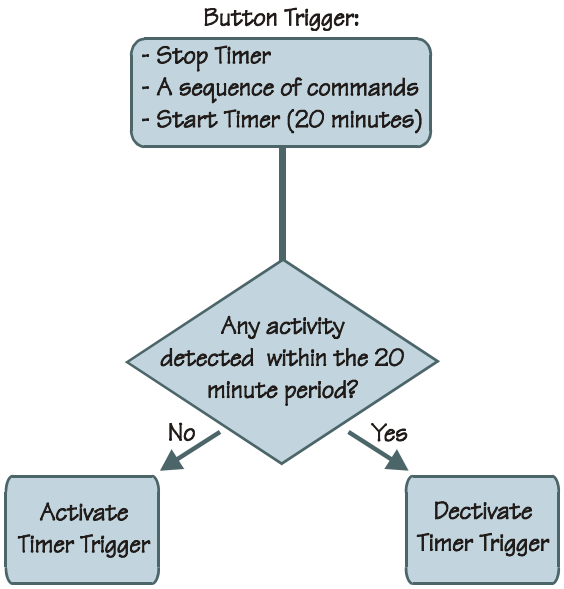


Figure 232: Timer Events – Timer Trigger Flowchart: Inactivity Example

To indicate inactivity, you have to add a “Stop” trigger prior to the sequence of actions and a “Start” trigger upon completion of the actions sequence.

This setup includes two steps:

Step I: Define the Timer Trigger (which will be used for all the triggers)

Step II: Define the Button (and other) triggers

Step I: Define the Timer Trigger

1. Select **Timer Events** and click the **+** icon to open the **Timer Trigger** window.
   The **Timer Trigger** window appears. Type the **Trigger Name** and set the timeout to 20 minutes (for example, System Inactivity):

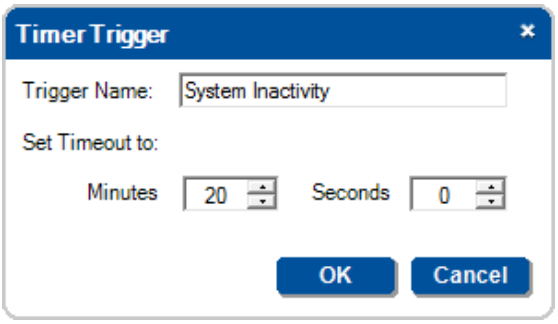


Figure 233: Timer Events – the Timer Trigger Name Window (Inactivity)

2. Click **OK**.
   The Timer trigger appears in the available triggers list:

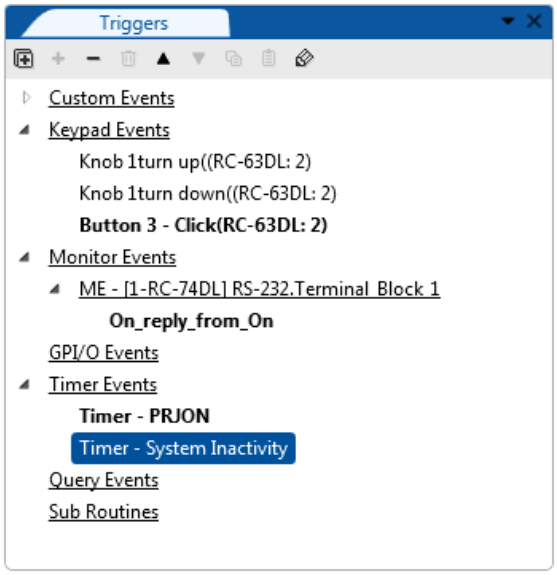


Figure 234: Timer Events – the Timer Trigger in the Triggers List (System Inactivity)

3. Add the following actions (having each button on the **RC-63DL** blink and then remain on, or any other commands added):

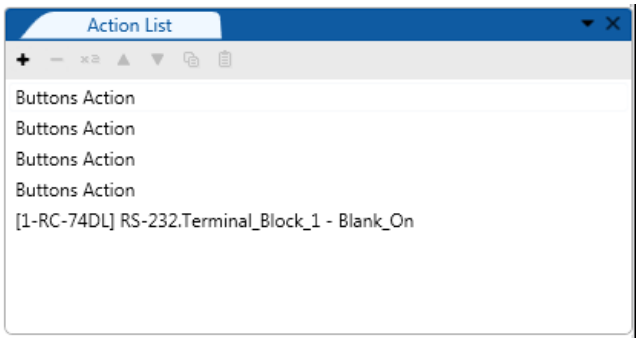


Figure 235: Timer Events – Timer Trigger Action List

Step II: Define the button (or other) Trigger

4. Select a trigger from the Triggers list (for example, Button 1):

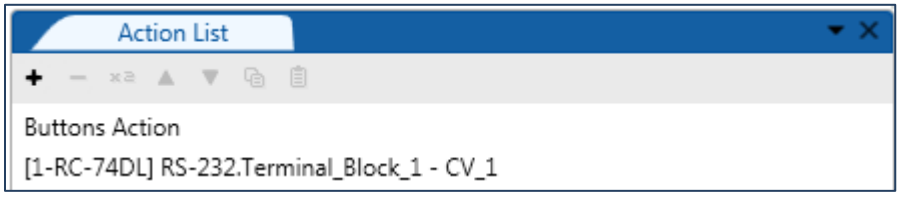


Figure 236: Timer Events – Button 1 Action List

5. Add the **Timer Stop** trigger:

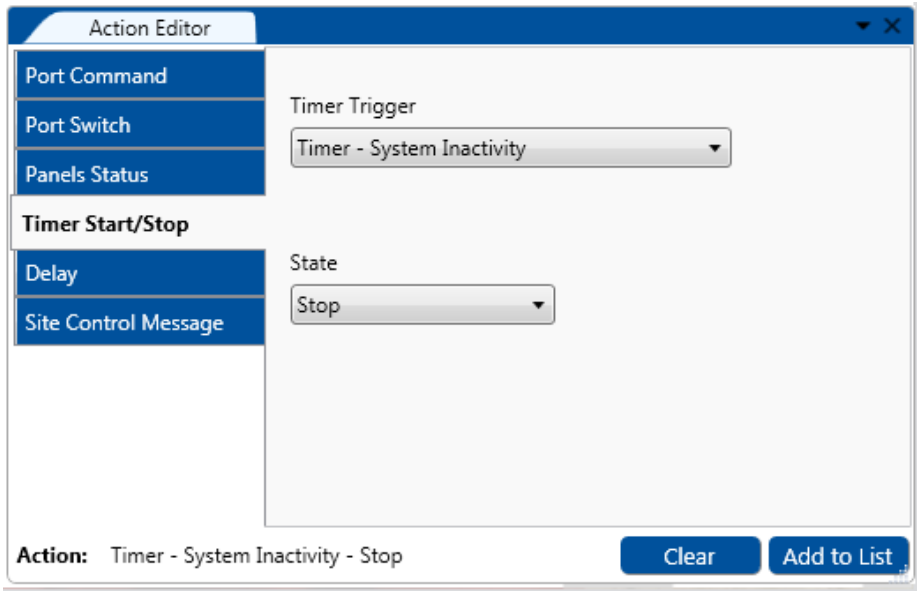


Figure 237: Timer Events – Add the Stop Timer Action

6. Move the added **Stop Timer** trigger to the top of the list using the arrow icons:

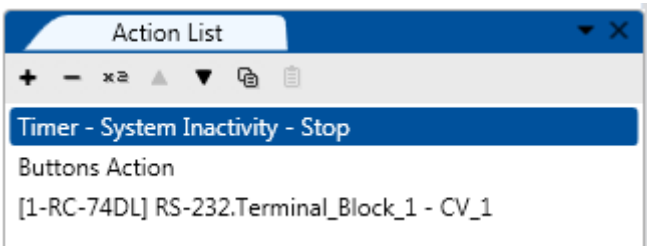


Figure 238: Timer Events – Move the Stop Timer Action

7. Add the Start Timer trigger:

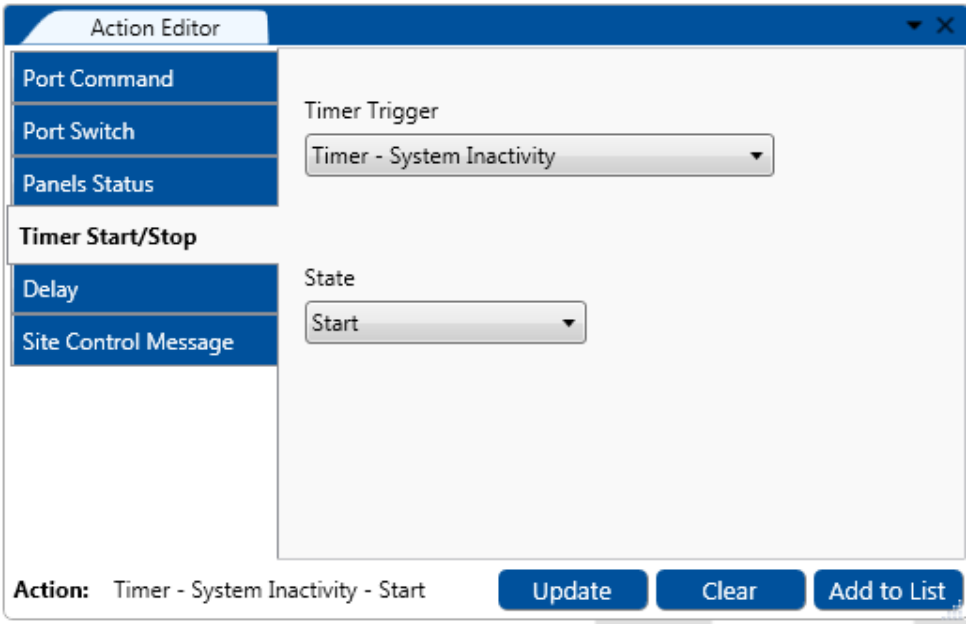


Figure 239: Timer Events – Add the Start Timer Action

8. Figure 240 shows the Button 1 trigger action list:

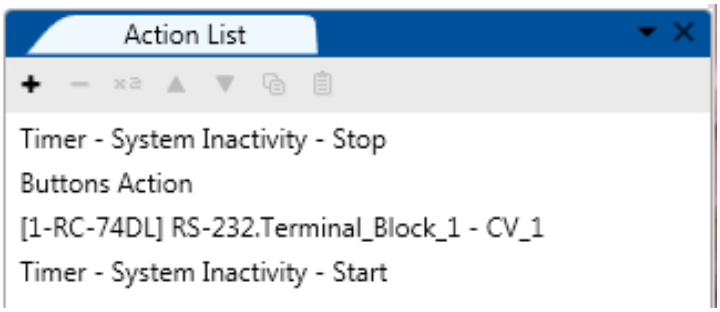


Figure 240: Timer Events – Button 1 Action List with Timer Triggers

9. In the same way, you can add the Stop and Start actions to each trigger.

Adding the Stop action prior to the actual executed action list, stops the System Inactivity trigger.
The Start action that follows the action sequence starts the 20 minute timer and will be active until a button will be pressed or a trigger activated within the 20 minute period.

8.6 Query Events

Before creating a Query Event you need to define a Query via the Driver Manager (see Section 5.3.3), as follows: Driver Manager > Define Query Table> accept table and exit Driver Manager> Create a query event.

To create a query event:

1. Select **Query Events** and click the **+** icon.
   The following window appears:

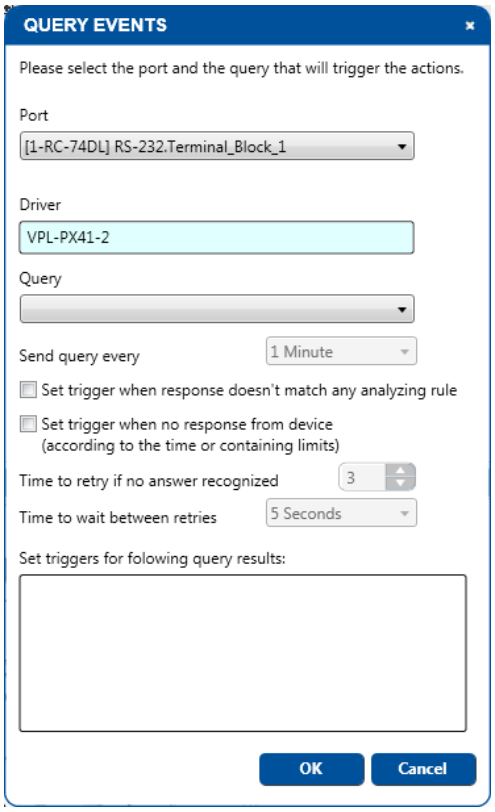


Figure 241: Query Events – The Query Events Window

2. Select the **Port** and **Driver** (the driver appears automatically if defined in the port manager).

3. Select the **Query**.
   In this example, Power.

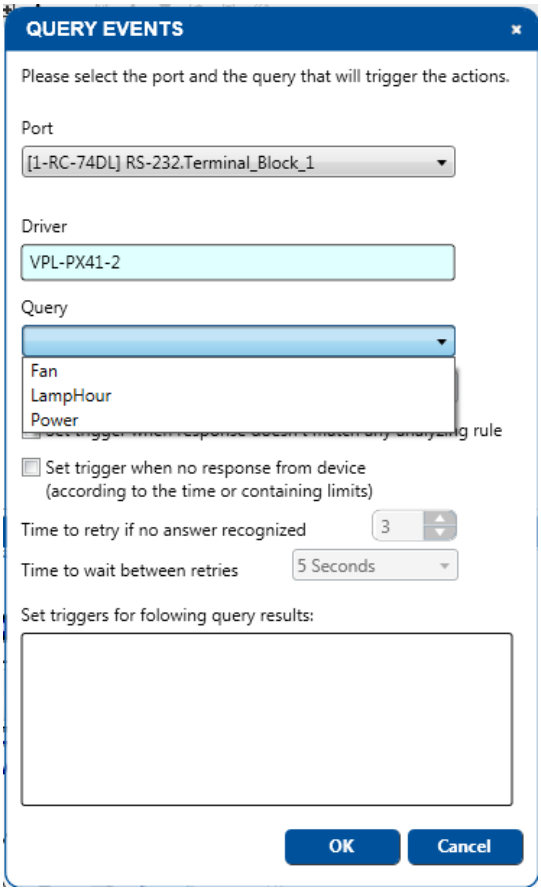


Figure 242: Query Events – Select the Query

Query results shows the query table as defined in the **Driver Manager**. In this example Off, On and Standby were defined.

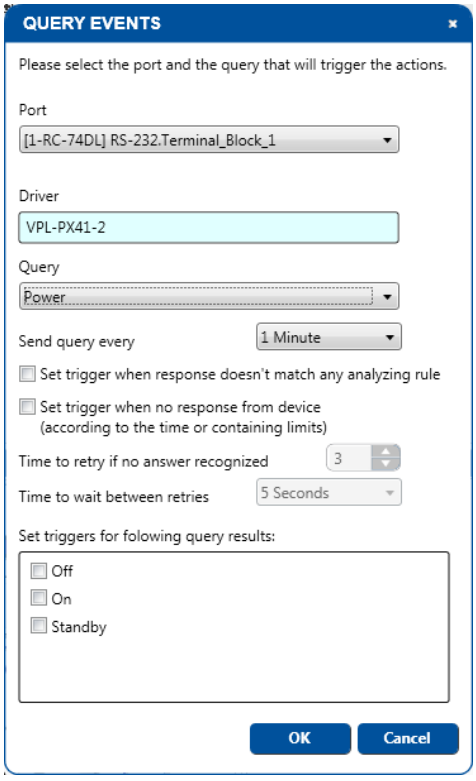


Figure 243: Query Events – The Query Results

4. Select the query results which will trigger an action list:

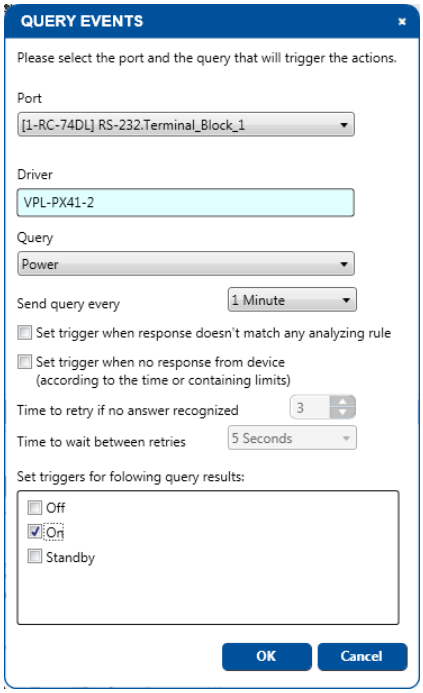


Figure 244: Query Events – Select the Query Results

5. Click **OK** to create the Query trigger.

   Selecting On means that after the power is on the query event will be triggered.

   By default queries are disabled (upon device startup). A query will be triggered only if the matching "Query start" action was executed from the Query Start/Stop action (see Section 9.9) or another trigger. (For example, a "Device startup" trigger or a button trigger). You can also stop a query from triggering by executing the "Query stop" action.

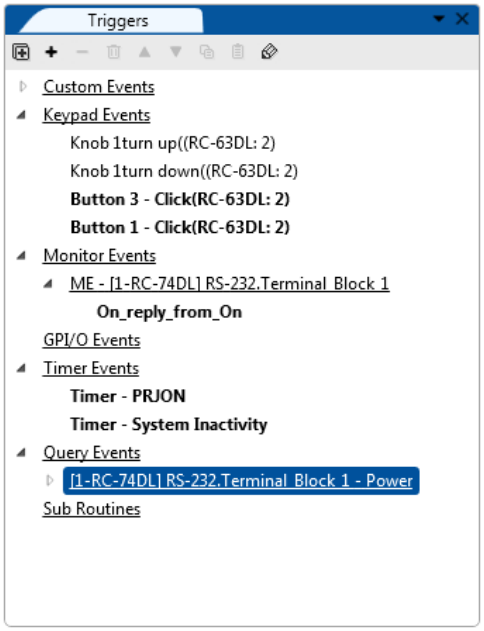


Figure 245: Query Events – The Power-On Trigger

6. Create the action list for this trigger.

   After adding commands to the list, the query trigger appears **bold**.

You can add more Power query events in accordance with the Query table defined in the Driver Manager. If checked, the Off and Standby Query results will also appear as separate Query Events:

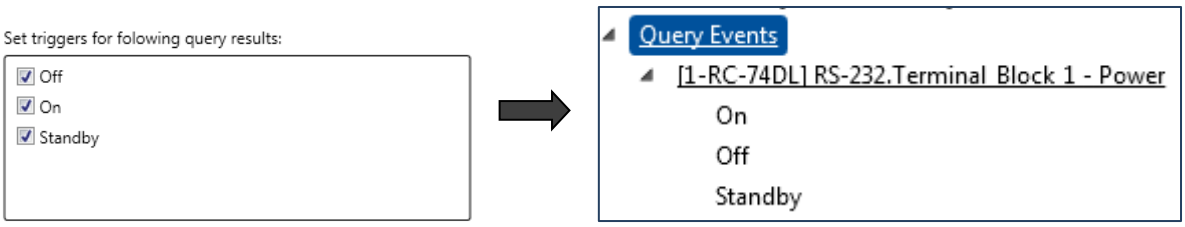


Figure 246: Query Events – Creating Several Query Triggers

Open the drop down box list to select the rate at which the query is sent (30 seconds, 1 minute, and so on).

You can also add the following related triggers (which are relevant only for parsed replies, when the Parse Reply option in the Driver Manager is checked):

- **Set trigger when response doesn't match any analyzing rule** – If the controller recognizes in an incoming command the structure defined as "reply must contain the following syntax" but the parsed relevant information does not match any of the used results for this query, a no match event will be triggered (NoMatch).
- **Set trigger when no response from device (according to the time or containing limits)** – If the controlled device reply to the query command cannot be parsed, a communication Error query event is triggered (CommErr). Define the number of retries in case of a communication error (from 1 to 3), as well as the waiting time between each try (1 second, 3 seconds, and so on).

Use queries to define the Site-CTRL monitored operation parameters (such as the projector lamp hours and the power status of the main display device). The list of available queries appears in the Queries area in the Driver Manager (see Section 5.3.3).

8.7 Sub Routines

Sub routines include triggers that have action lists of common procedures. These common procedures can be incorporated into other event triggers as many times as required.

To use a sub routine:

1. Select **Action Groups** from the **Triggers** list and click the **+** icon. The following window appears:

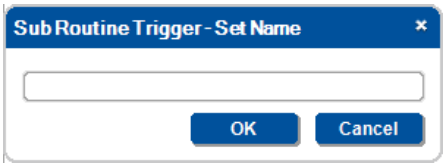


Figure 247: Sub Routines – Create a new Action Group Trigger

2. Type the name:

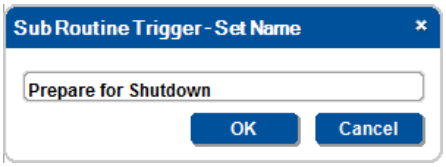


Figure 248: Sub Routines – Set the Sub Routine Trigger Name

3. Click OK and add actions to the trigger (see Section 9):

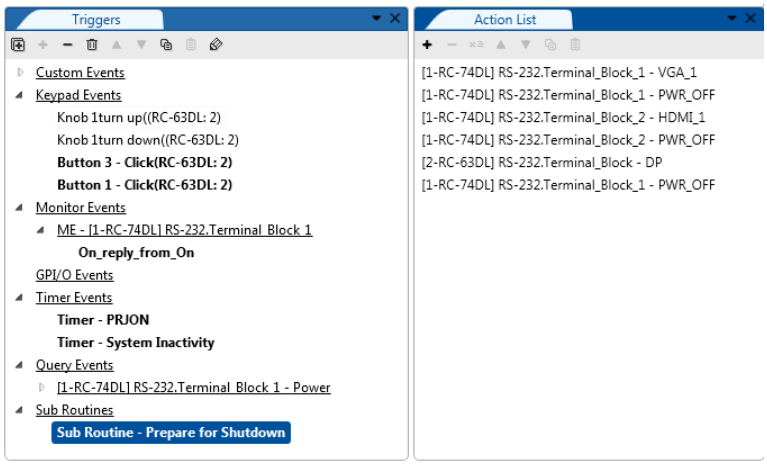


Figure 249: Sub Routines – Set the Action Group Trigger Name

In this example, the subroutine includes power down of the input sources and it can be incorporated into daily and/or weekly shutdown triggers, GPI/O events (temperature alarm, for example), and so on. This sequence of commands will not have to be written again and again for specific triggers and can be used as a sub routine within a trigger as required.

4. Open or create an Event Trigger (for example, one of the built-in Custom Events, All Off).

5. In the Action Editor select Sub Routines and add the Sub Routine see Figure 250.

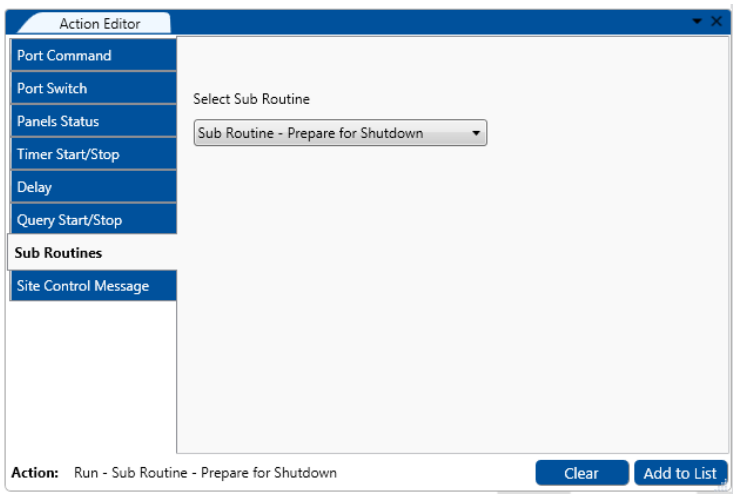


Figure 250: Sub Routines – Selecting the Sub Routine Action Group Trigger in the Action Editor

6. Click the Add to List button.
   The sub routine was added to the All Off Custom Event:

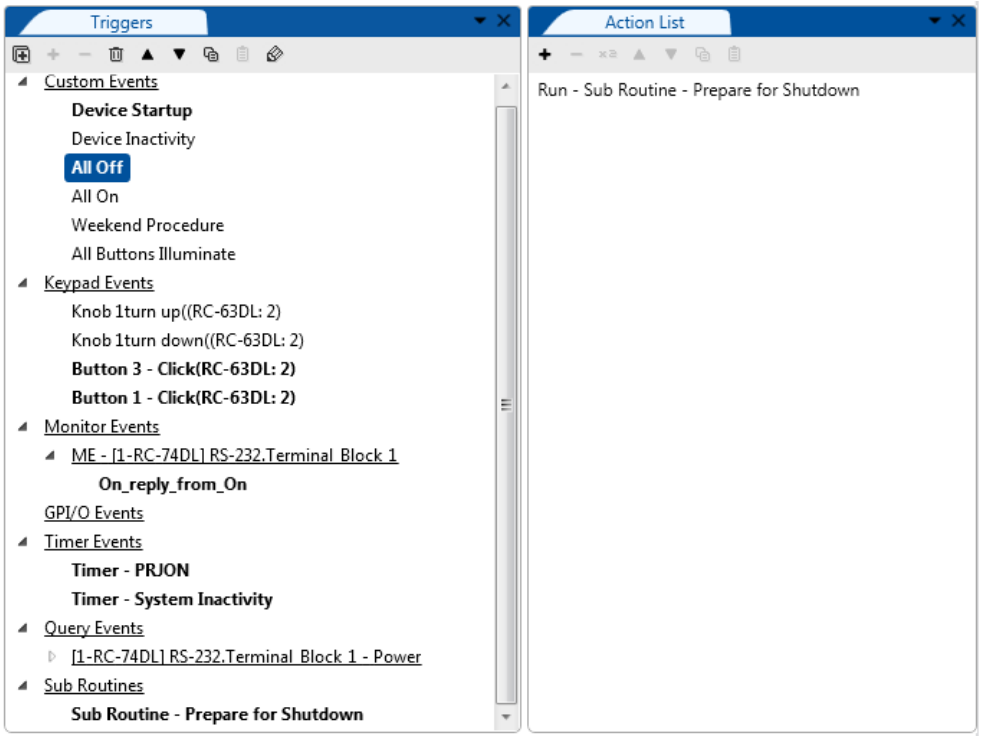


Figure 251: Sub Routines – Sub Routine Trigger is added to an Event Trigger

In the same way you can add Sub Routines to other events as well as to other sub routines.

9 Adding Actions to a Trigger

You are here:

Configuration Steps	Description	Section
Introduction	General information and system requirements	1
Planning	Carefully plan your controlled room	2
Installation	Install the Software	3
Introduction to K-Config	Get to know the K-Config main window, menus and quick access icons	4
Driver Manager	Define the Controlled Device Drivers	5
Project Navigator	Define the Controlled Room	6
Port Manager	Assign the controlled devices to the Master and Auxiliary device ports	7
Triggers	Activate the Triggers	8
Adding Actions	Describes how to add the various actions to a trigger	9
Connecting to a Device	Describes how to connect to a device, upgrade the firmware, read/write to the device and so on	10
Using the Web pages	Describes how to control the device via the Ethernet and perform minor configuration operations	11
Creating a Virtual Master	Describes how to create a Virtual Master to control a room via KRAMER NETWORK	12

K-CONFIG lets you add actions to the different types of triggers that are built-in or created via the Triggers list. This section describes the different types of actions within the following categories that can be added to the action list:

- Port Command (Section 9.2)
- Port Switch (Section 9.3)
- Panels Status (Section 9.4)
- Switcher Command (Section 9.5)
- Power Amplifier (Section 9.6)
- Timer Start/Stop (Section 9.7)
- Delay (Section 9.8)
- Query Start/Stop (Section 9.9)
- Sub Routines (Section 9.10)
- Site Control Message (Section 9.11)

Note that only the relevant action types appear for each room configuration, therefore this section's examples will show different types of room configurations.

The Action Editor will show a list of the maximum available command categories. For example, if **RC-13TC** is the only controller controlled via **K-CONFIG**, the Action Editor will include Port Command, Panels Status, Delay and Site Control Messages. If **RC-63DL** is added as an auxiliary device, the Port Switch category is added to the Action Editor (for controlling the **RC-63DL** relays). This lets you control, for example, the relays on the **RC-63DL** via the **RC-13TC**.

9.1 General Instructions

The **Action Editor** area is divided in two. The list of available action types is listed on the left and once an action type is selected, the available actions appear on the right.

For example, the Switcher Command Action Editor displays the following available action types:

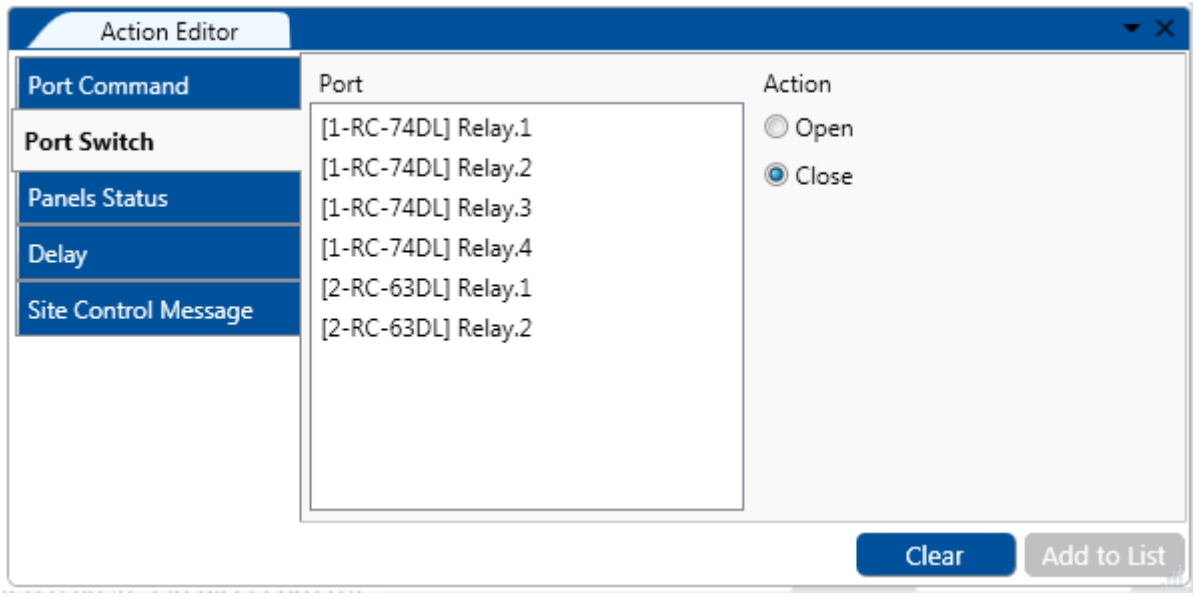


Figure 252: The Action Editor – Available Action Types

Generally, actions are added to triggers via the Action Editor in a similar way:

1. Select the Trigger.
2. Select an action type and relevant action.
3. Click the Add to List button.
   The action is added to the trigger.

At any time you can move the action up or down the list, delete it or duplicate it using the icons above the action list.

At any time you can add delete or change a trigger. Note that in some cases it will affect other triggers.

9.2 Adding a Port Command

To add actions to a trigger (for example, to the built-in All On trigger):

1. In the **Triggers** area, select the **All On trigger**.

2. In the Action Editor, select the Port Command and select the desired port.
   A specific driver was assigned to the selected port, therefore it is selected automatically

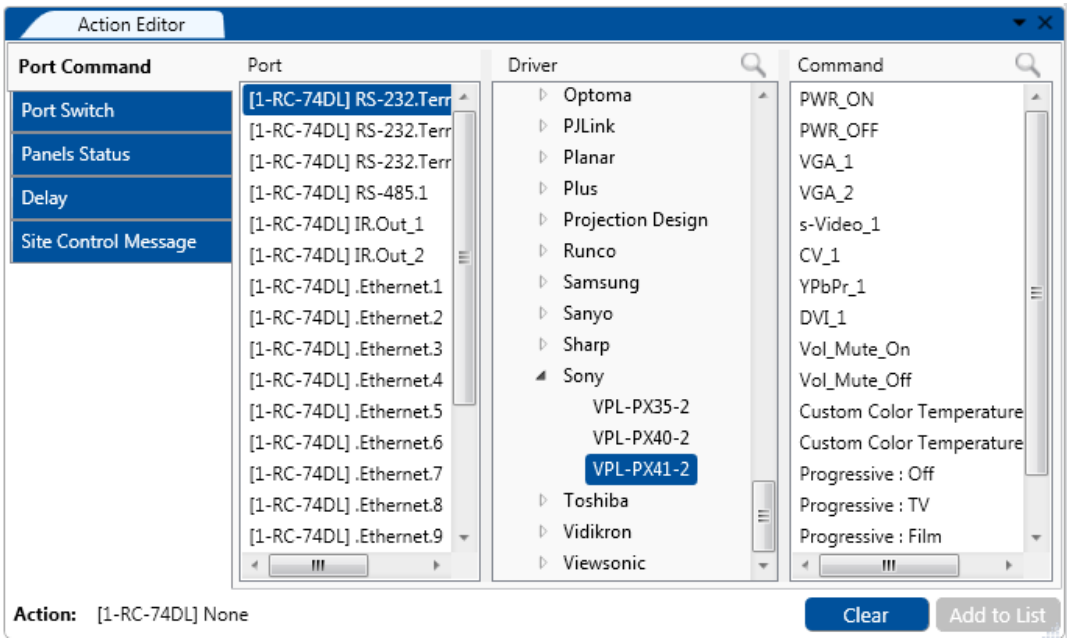


Figure 253: Selecting the Port Command Action Type

3. Select the Command (for example, PWR_ON):
   Note that PWR_ON is a shared command, previously defined in the Driver Manager (see Section 5).

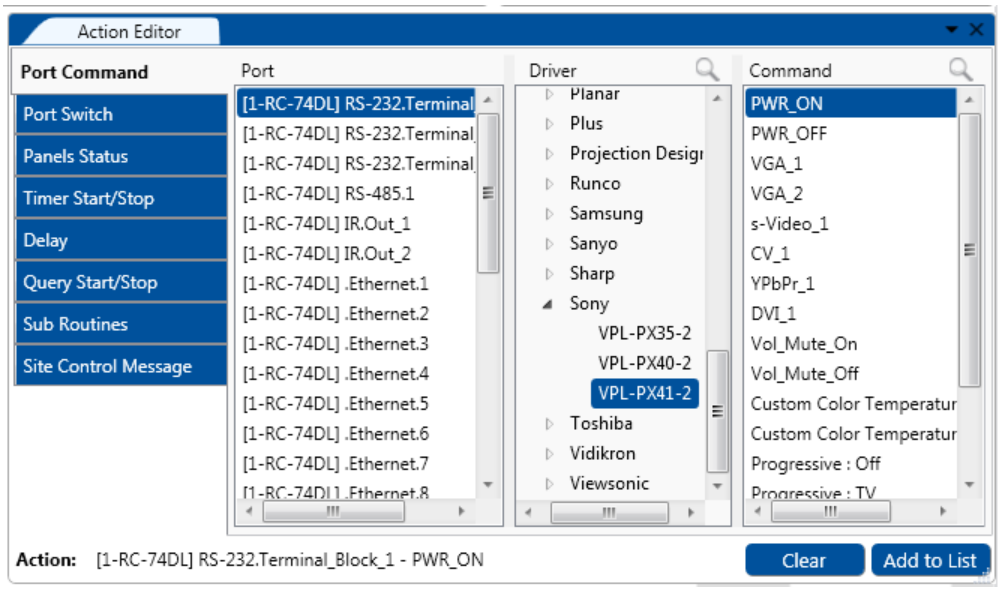


Figure 254: Selecting the Command

4. Click the **Add to List** button.
   The command is added to the **Action List** area (the trigger name appears at the top of the list):

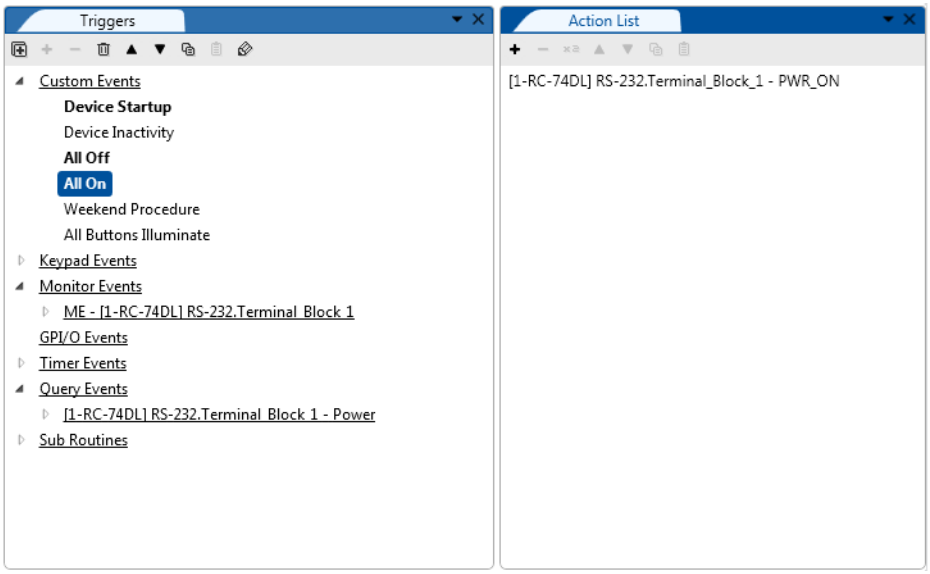


Figure 255: The New Command in the Action List

5. In the same way you can use the Action Editor to add further commands to the action list:

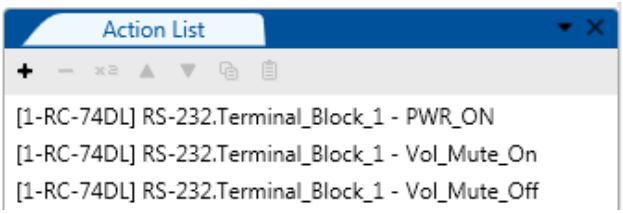
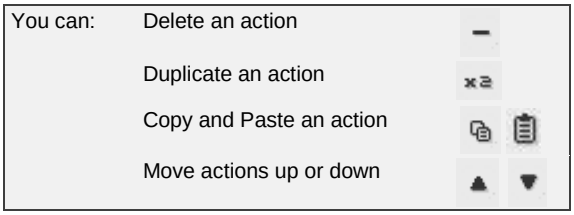


Figure 256: The Action List for the All On Trigger



Once a Trigger's action list is assigned with commands, it turns **bold**:

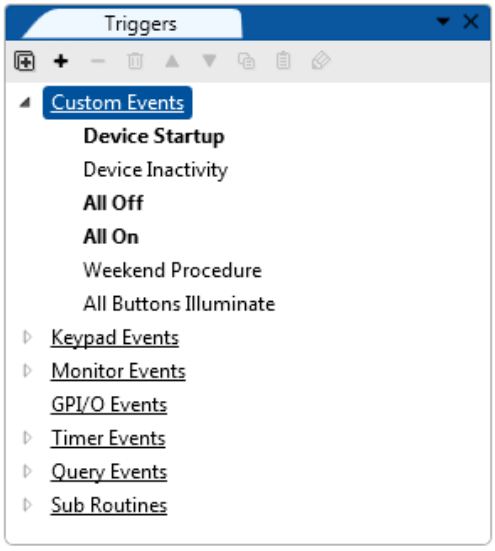


Figure 257: The All On Trigger (after adding commands to the action list)

9.2.1 Adding a Table Action

After creating tables via the Driver Manager (see Section 5.5.4) you can use it in the action editor Port Command list:

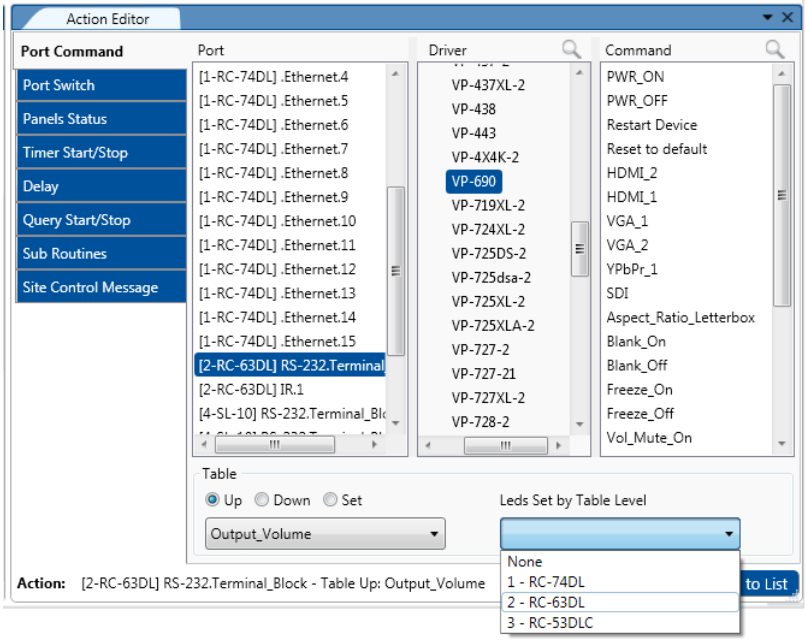


Figure 258: The Table Port Command

Select the:

- Table (Output_Volume).
- Select the room controller device whose LEDs should behave as defined in the table (**RC-63DL**). Select **None** if you do not want the LEDs to behave as defined in the commands table.
- Set the behavior of the table commands to go gradually up, down, or set to a specific value. If you click Set, you can choose a specific volume level (see Figure 259):

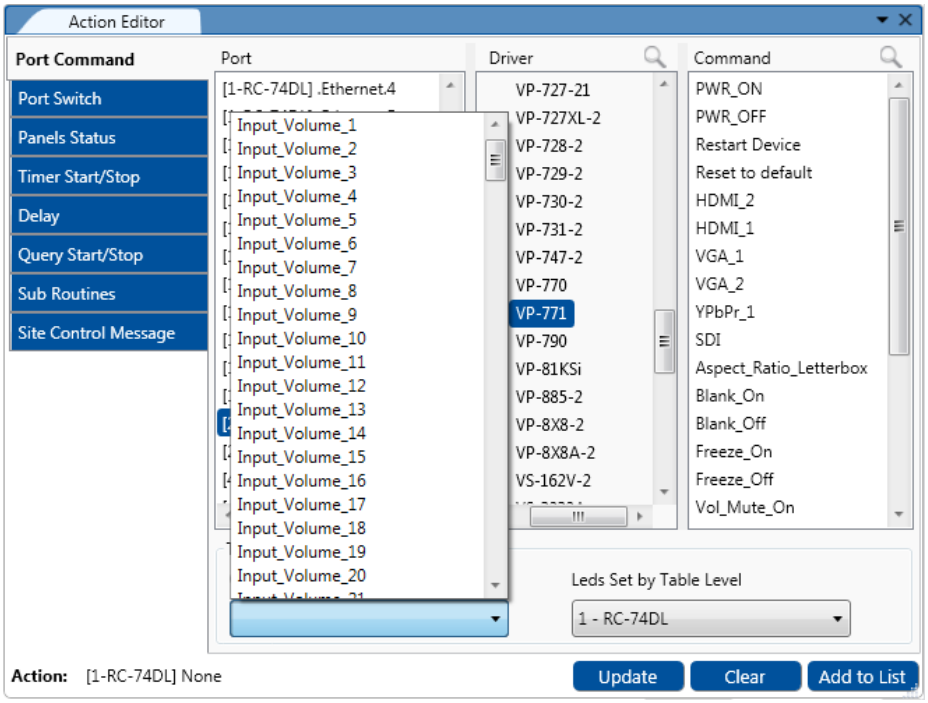


Figure 259: The Table Port Command – Setting a specific Volume Level

Add the command to the Action list:

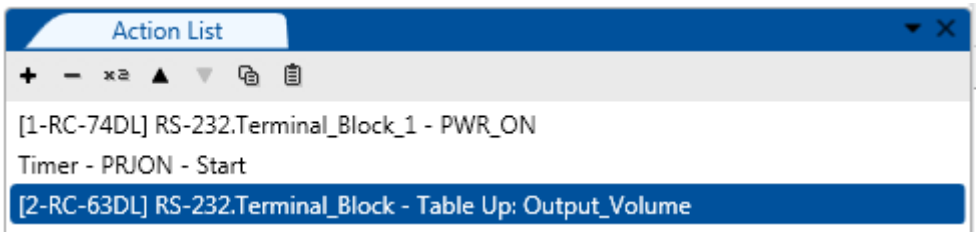


Figure 260: The Table Port Command – Added to the Action List

You can create several other tables for different commands, or combine different command levels in the same table.

9.3 Adding a Port Switch Action

The port switch action lets you open/close relay ports or GPI/O configured as digital outputs on the master room controller and auxiliary devices or control gateways.

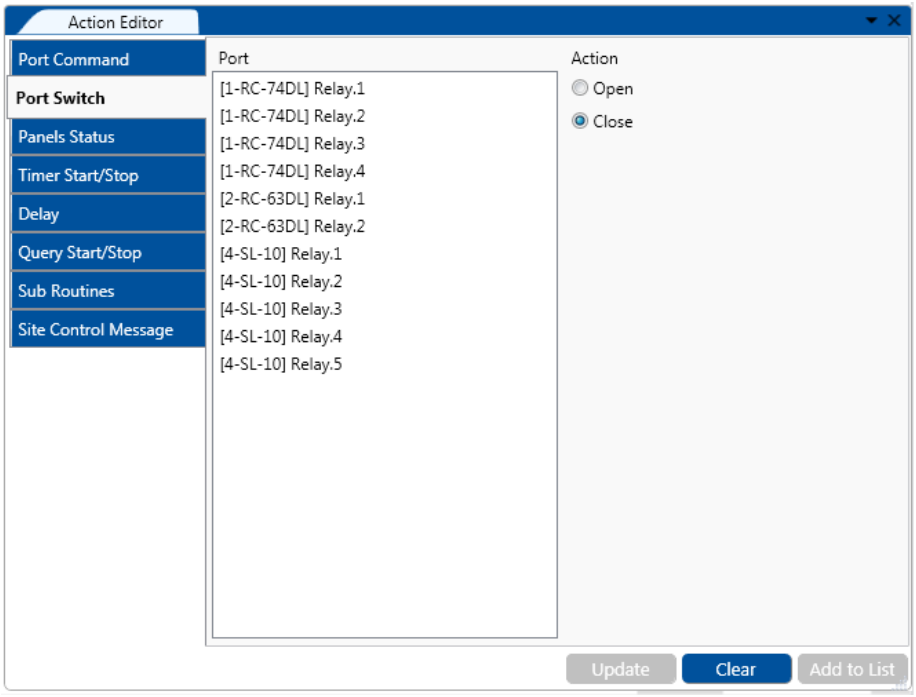


Figure 261: Selecting the Port Switch Action Type

Select the port and check the desired action (Open or Close) and add to the action list:

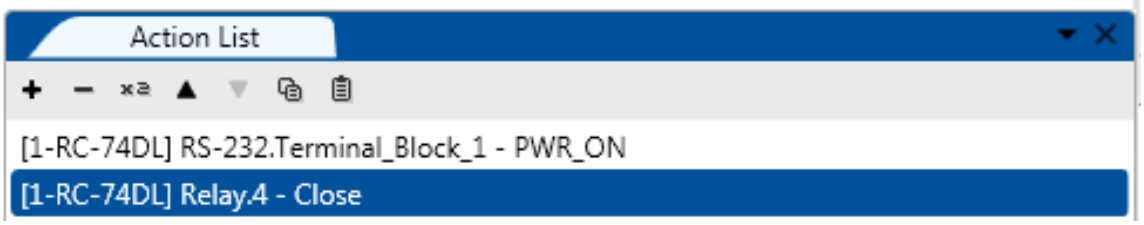


Figure 262: Port Switch Action Type added to the Action List

9.4 Adding a Panels Status Action

The Panels Status Action type lets you set various parameters on each of the master and auxiliary device buttons. Note that you can define only one panel status per command.

Figure 263 shows the **Panel Status Action Editor**. The control keypad device (**RC-74DL**) and the auxiliary keypad devices panels appear on the right side. The left side shows the various actions:

- Button Status, see Section 9.4.1
- LCD Label, see Section 9.4.2
- LEDs Light, see Section 9.4.3
- Panel Lock, see Section 9.4.4

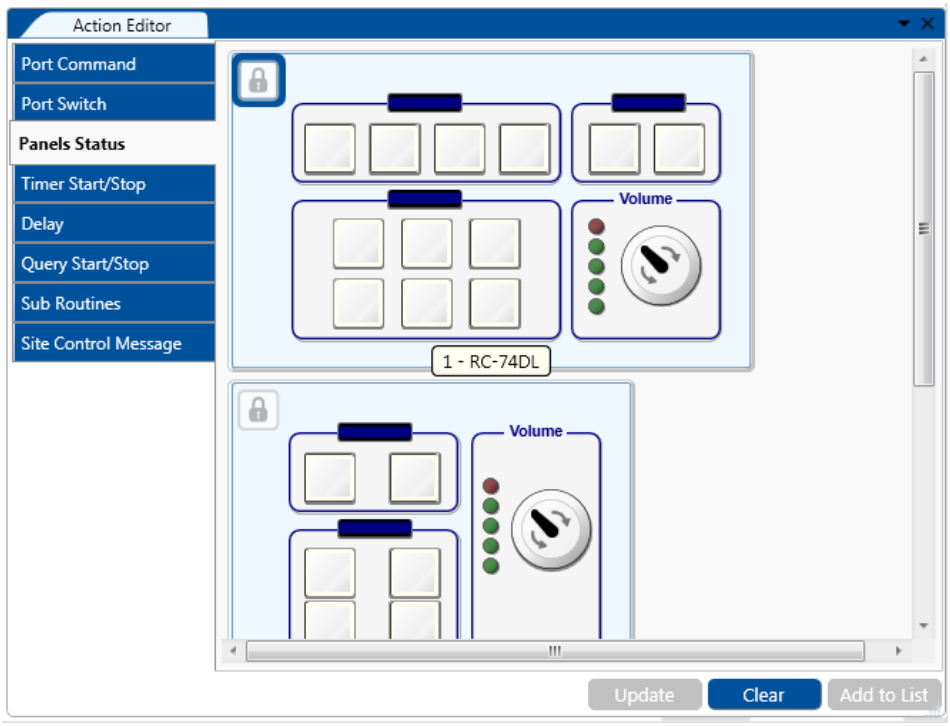


Figure 263: Panels Status Action Editor

Note that the availability of the Panels Status actions changes in accordance with the room controller device specifications. For example, the **SV-552** does not have multicolored illuminated buttons, therefore the button status action is disabled for this device.

Figure 264 shows Panels Status commands that were added to the action list. The list shows a general name for each action. For example, even though “Buttons Action” appears twice, it includes different actions related to the panel buttons.

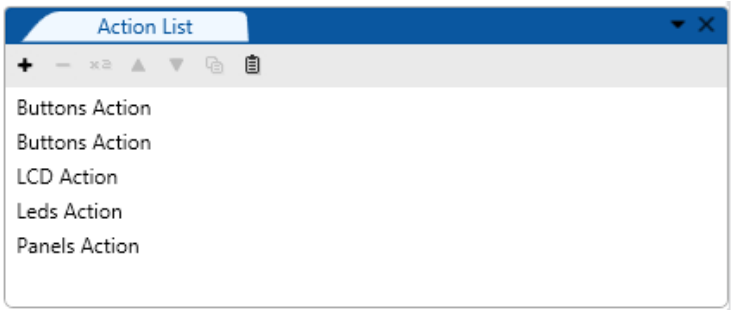


Figure 264: Panels Status Action List

When an action is selected, the details of that action will appear in the Action Editor. For example, selecting the Panels Action shows that **RC-74DL** is locked and the LCD Action shows the **RC-74DL** LCD displaying the date:

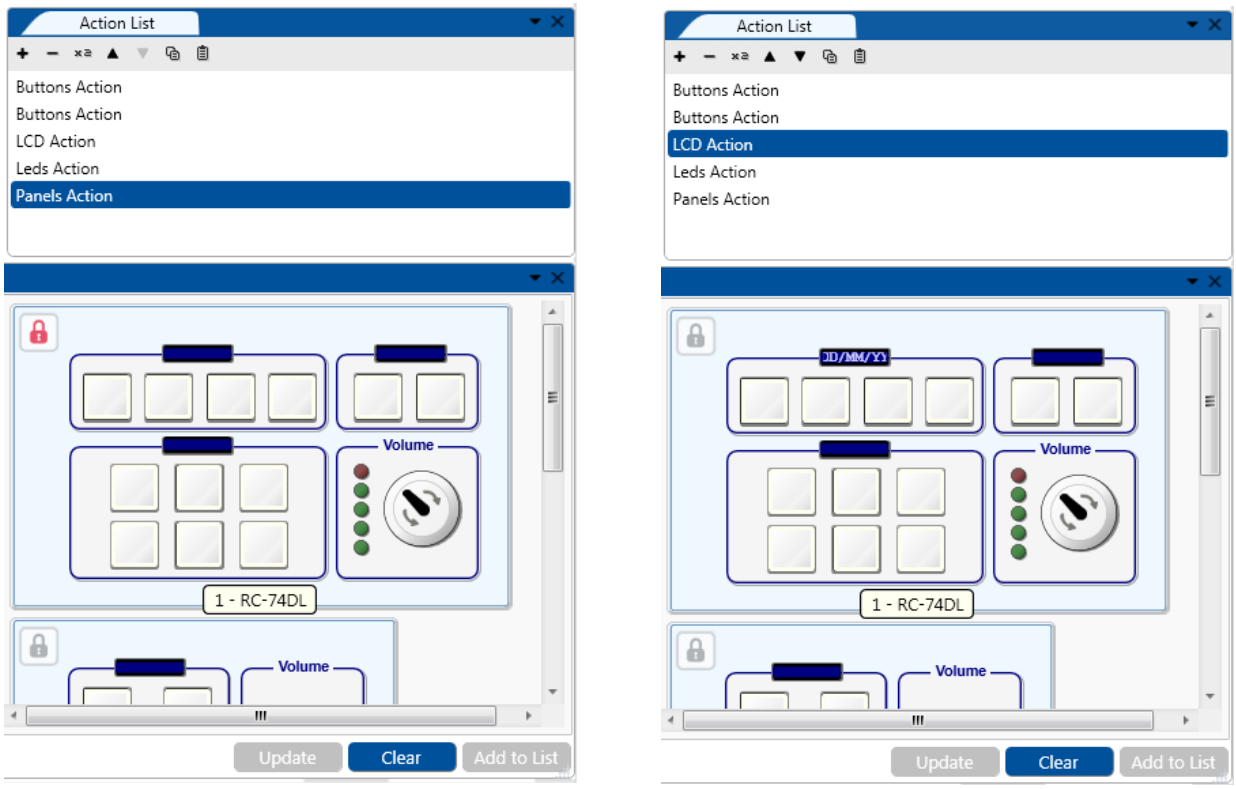


Figure 265: Panels Status Action – as Appears in the Action Editor

9.4.1 The Button Status

The **Button Status** lets you define a button's behavior and set its light color, as well as enable/disable it or set its state.

To define the button status:

1. Choose the Panels Status tab.
2. Click a front panel button in the **Action Editor** (for example button 1 on the **RC-74DL**).
   The button frame turns blue:

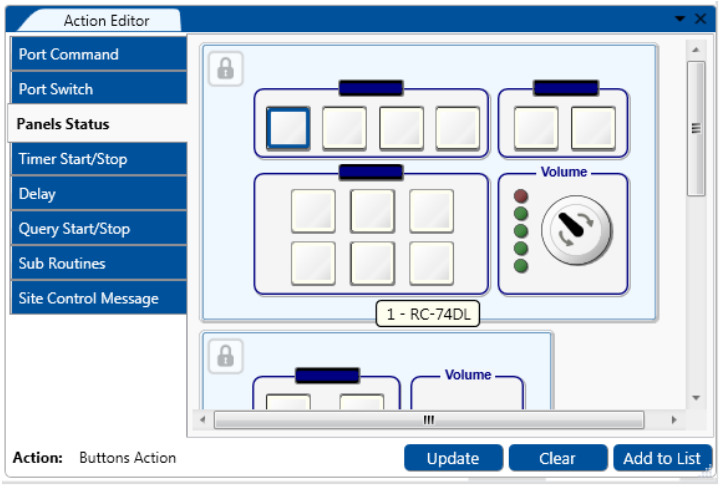
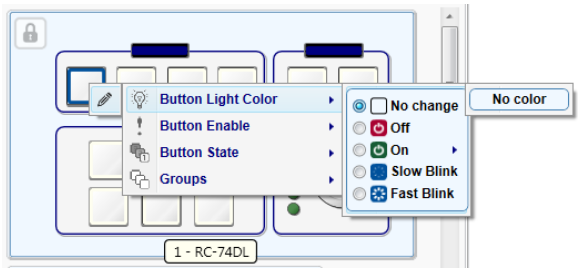


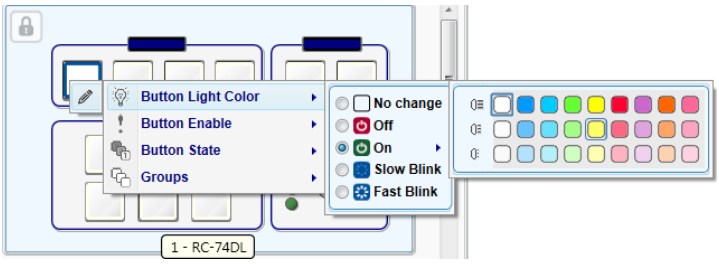
Figure 266: Panels Status – Selecting a Button

Note that only the relevant actions are available for each button type.

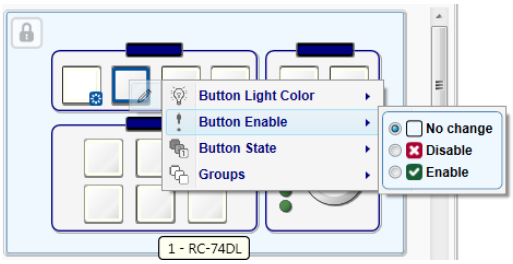
Select **Button Light Color** and choose the button behavior to **No Change** (there is no other change in the current button behavior except for the color change), **Off**, **On**, **Slow Blink** or **Fast Blink.**



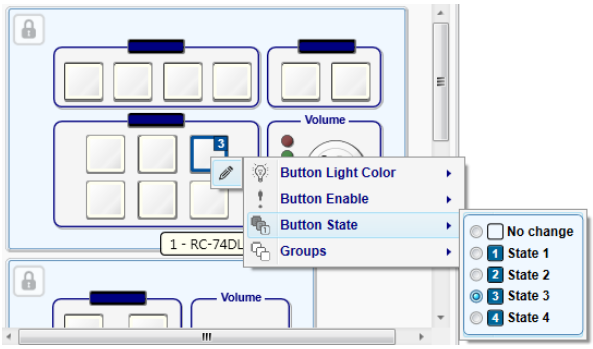
For **No change** and **Off** there is no color to select; for **On**, **Slow Blink** and **Fast Blink** select a color + intensity (one of three levels).



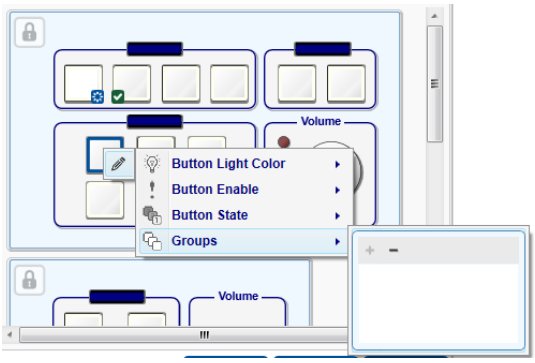
Select **Button Enable** to **disable** or **enable** the button.



Select **Button State** to define the state of the button (first you need to set the button behavior, see Section 8.2. In this example the button behavior was set to four states). For each state you can set the button appearance.



Select **Groups** to group several buttons and give them a name so that you can set the behavior of a group of buttons instead of changing each button separately (see Section 8.2).

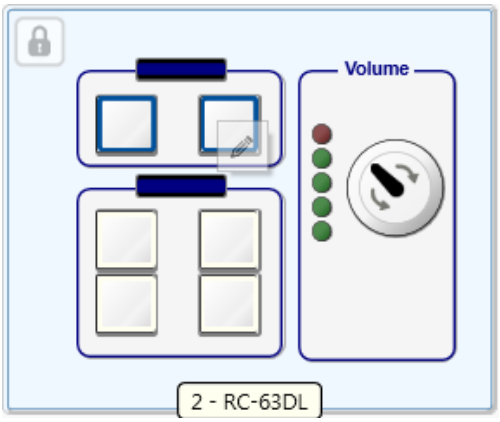


9.4.1.1 Using the Groups Feature

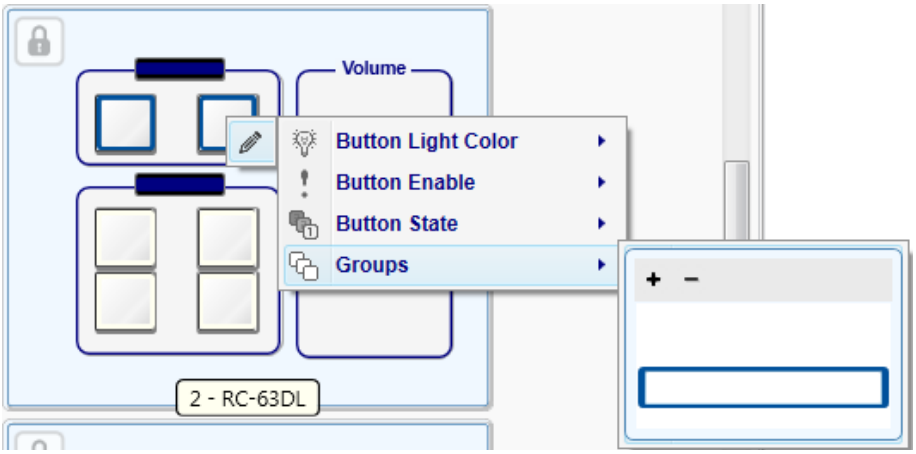
In this example Button 1 on the **RC-63DL** is set to 10 toggles. In each toggle buttons 1 and 2 need to change colors.

To use the Group feature in this case, select the Panels Status Action Editor and do the following:

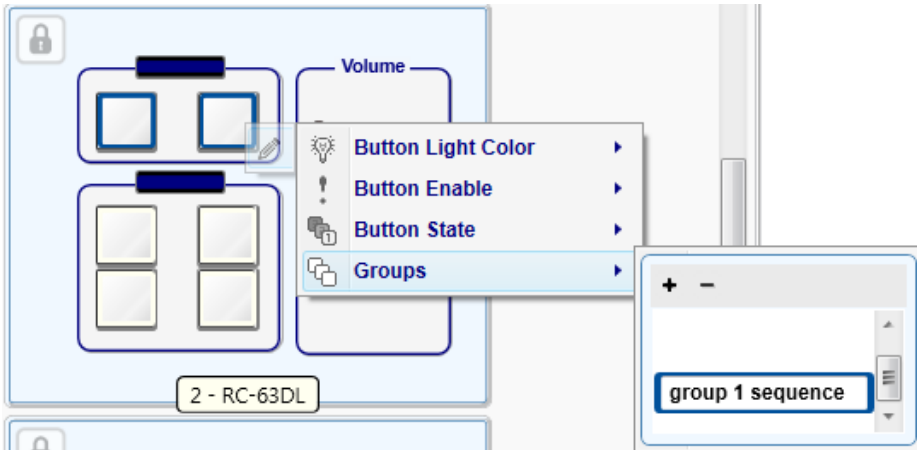
Hold the CTRL button on your keyboard and select buttons 1 and 2.



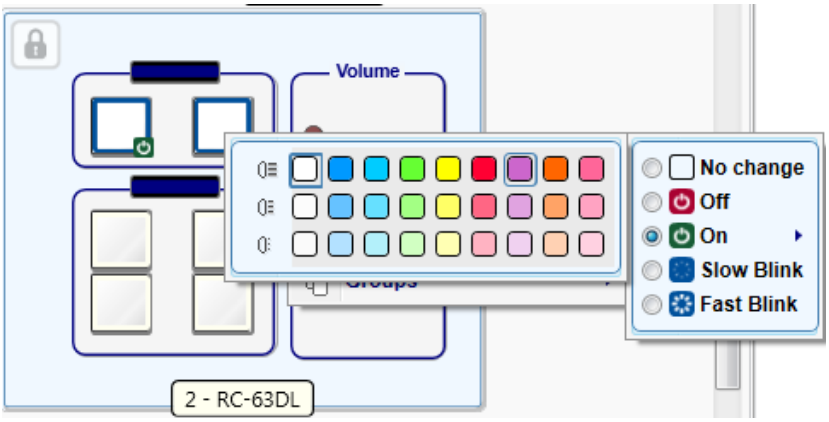
Select **Groups** and click + to open a name text box.



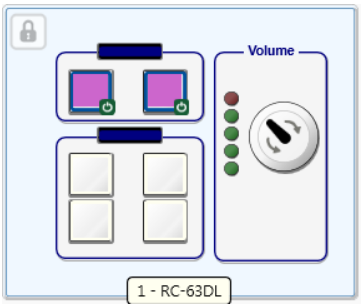
Type the name of the group.



Select **Groups** to group several buttons and give them a name so that you can set the behavior of a group of buttons instead of changing each button separately (see Section 8.2).



The selected button color is applied to the buttons in the defined group selecting.



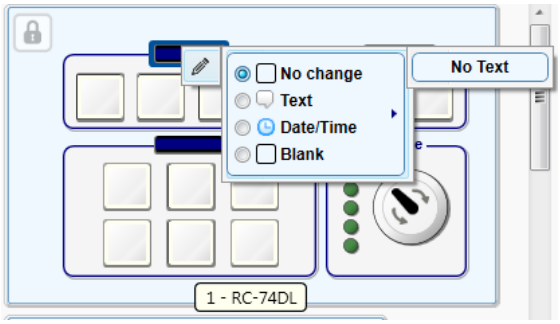
9.4.2 The LCD Label

LCD Label lets you alter an LCD label on the front panel of the device.

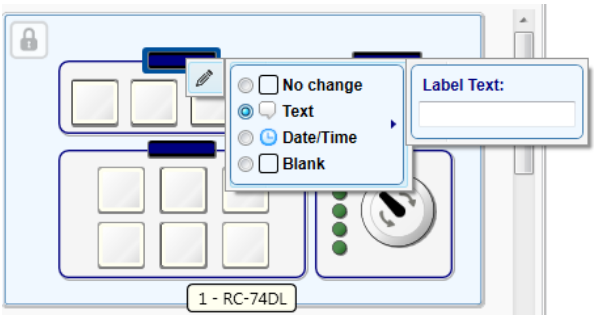
To alter an LCD label on the room controller keypad of the device:

1. Choose the Panels Status tab.
2. Select the LCD Label (its frame turns blue).

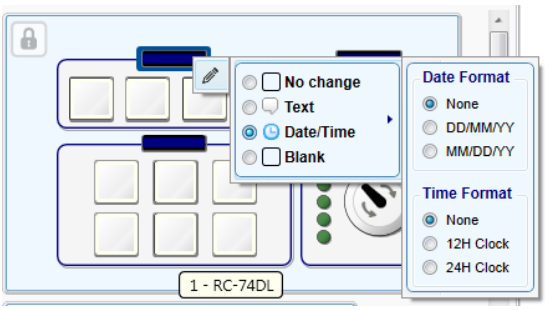
Check **No Change** and the current status will not change.



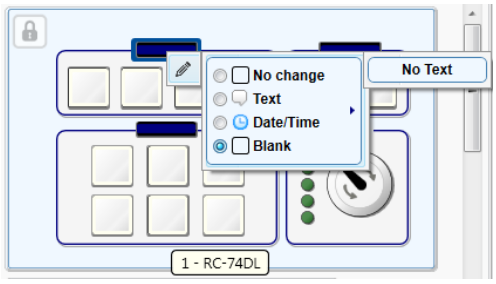
Check **Text** and type a label text.



Check **Date/Time** and select the date format, **None**, **DD/MM/YY** or **MM/DD/YY** and the time format, **None**, **12H** or **24H.**



Check **Blank** to turn the label blank.



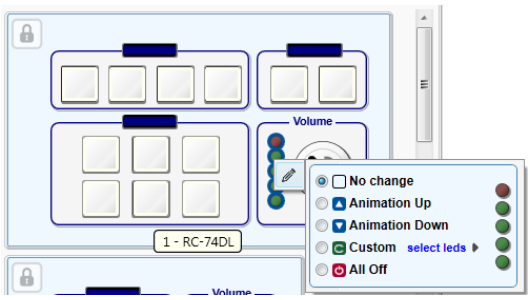
Note that the front panel shows the button status previously set.

9.4.3 The Knob LEDs Light

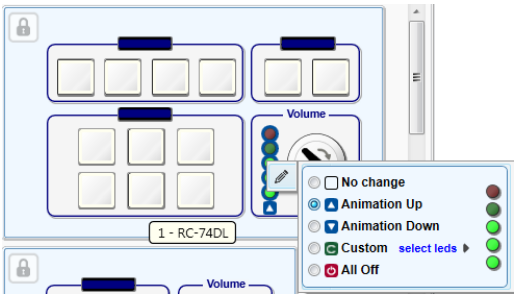
The knob LEDs light (located next to a digital audio knob) lets you select a room controller device and set the behavior of its LEDs.

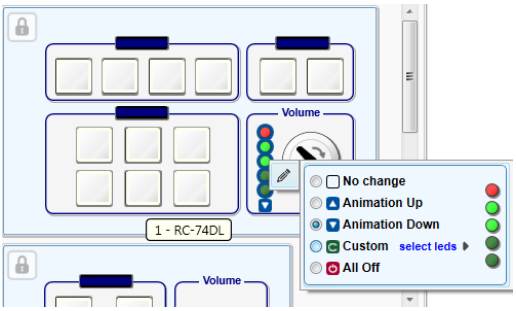
To define the knob LED lights behavior, click the “LEDs” on the left side of the knob:

Check **No Change** and the current status will not change.

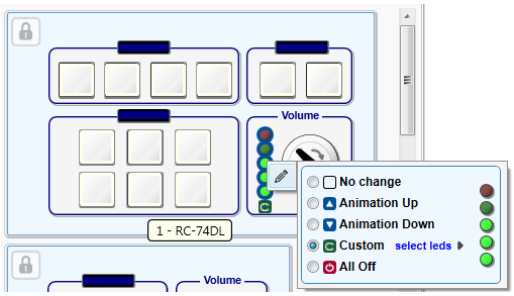


Check **Animation Up** or **Animation Down** to set the turning-on direction of the knob LEDs.

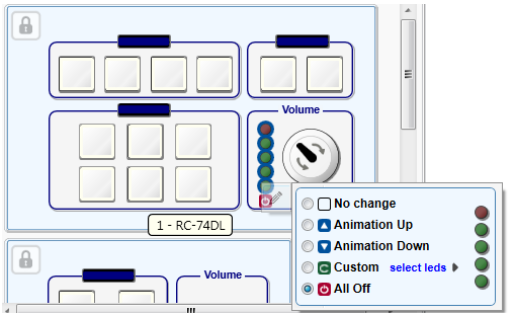




Check **Custom** and select the knob LEDs that should be turned on.



Check **All Off** to turn off the knob LEDs.



9.4.4 The Panel Lock

The Panel Lock lets you select a room controller device and lock its front panel buttons. To lock the front panel, click the room controller device panel area. The button frame turns blue, see Figure 267.

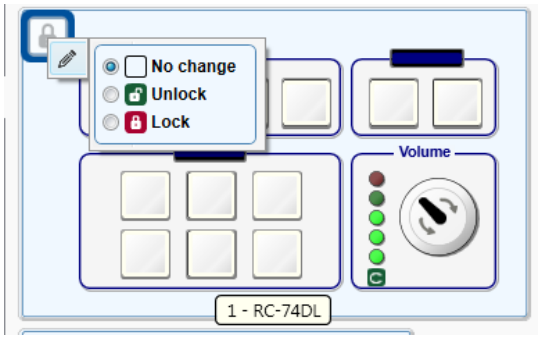


Figure 267: Panel Status – Panel Lock

Note that an unlock/lock icon appears on the top left side of the panel.

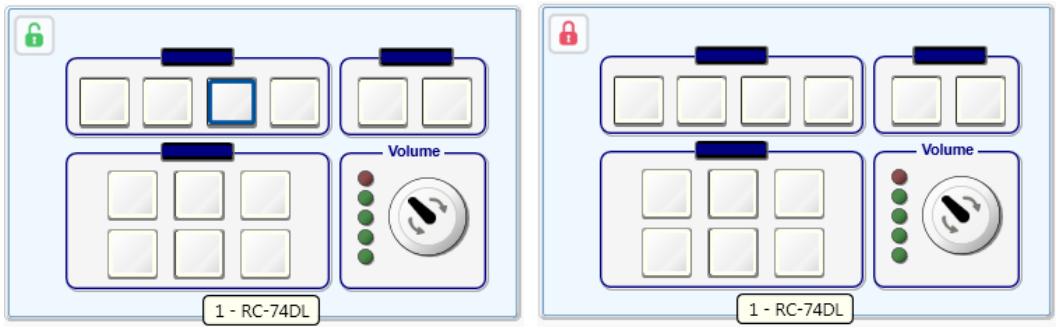


Figure 268: Panel Status – Panel Lock or Unlock State

9.5 Adding a Switcher Command

The **Switcher Command** lets you select an input to switch to the outputs

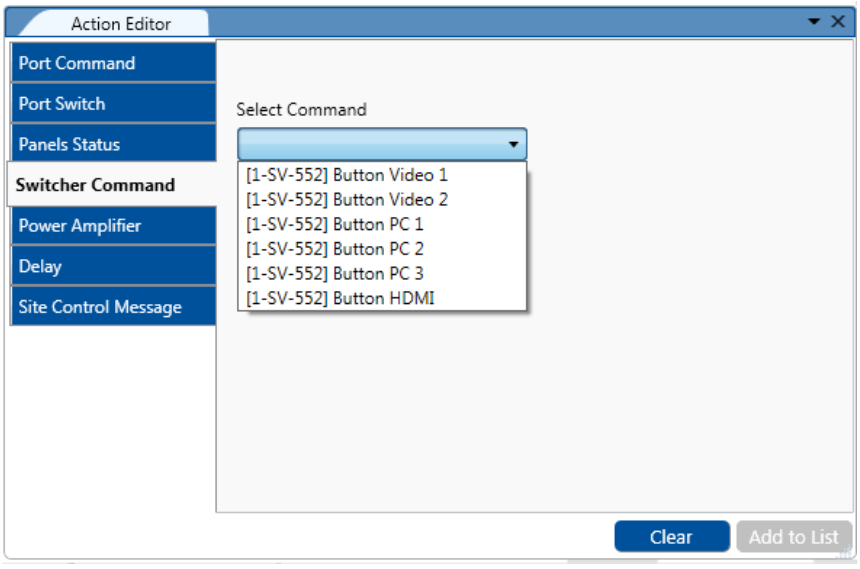


Figure 269: Switcher Command – Select an Input

After selecting the input click the **Add to List** button. The new command is added to the selected trigger action list.

9.6 Adding an Audio Power Amplifier

The **Power Amplifier** action lets you set the output volume for devices with built-in power amplifiers (**SV-552** in this example).

You can set the volume to a certain level, increase or decrease it or mute the volume (On or Off).

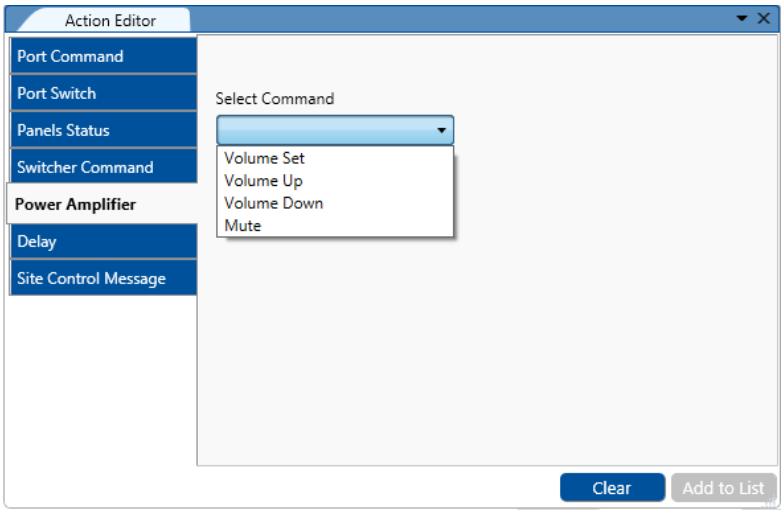


Figure 270: Power Amplifier – Select an input

After setting the desired volume behavior, click the **Add to List** button.

9.7 Timer Start/Stop

The **Timer Start/Stop** action lets you select a trigger and set its state to Start or Stop. Once the Timer triggers are defined, the **Timer Start/Stop** states will appear and will let you start the timer that activates/deactivates the Timer trigger action and stop it (see examples, in Section 8.5).

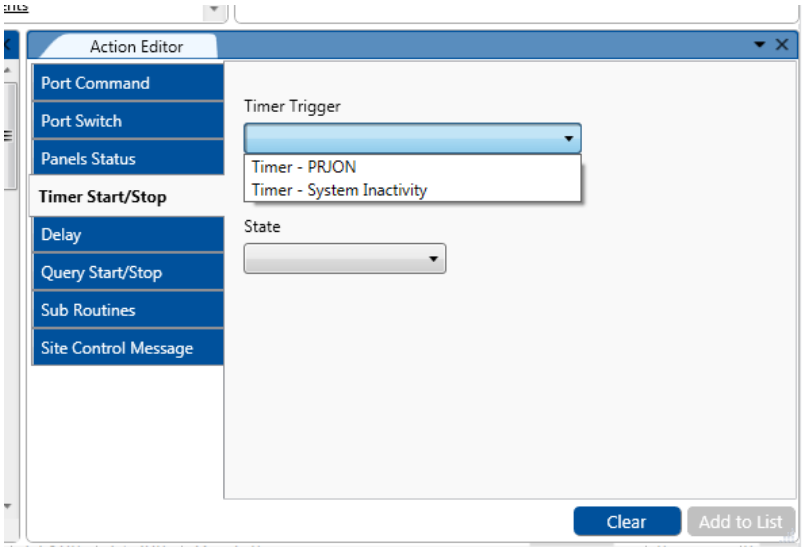


Figure 271: Timer Start/Stop – Select a Timer Trigger

9.8 Delay

The **Delay** action lets you set a delay time of up to 60 seconds between actions. Set the delay time and click the **Add to List** button.

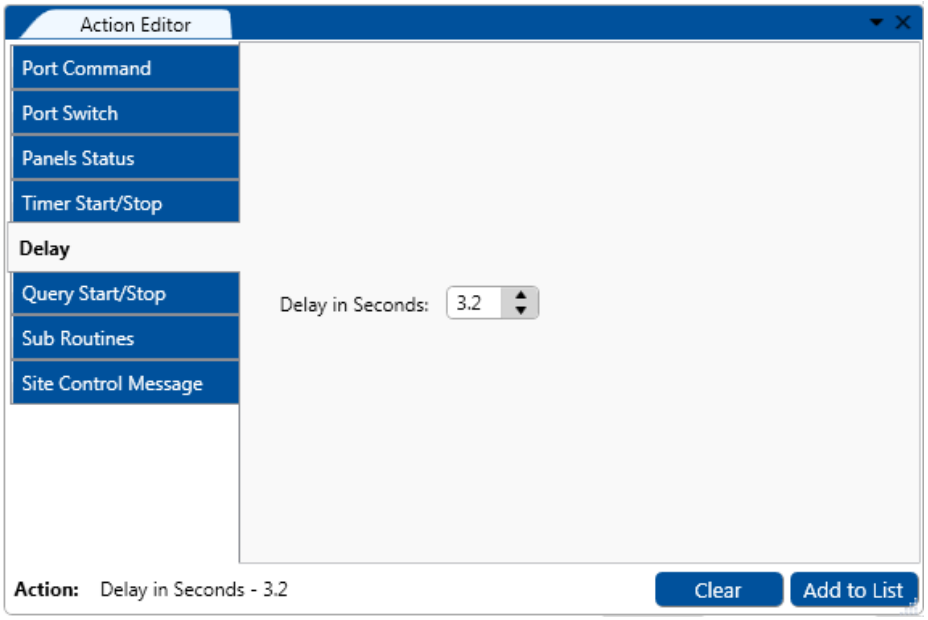


Figure 272: Delay – Set the Delay Time

9.9 Query Start/Stop

Query Start/Stop is used to trigger a query within the action list. To do so select the query and then select start or stop.

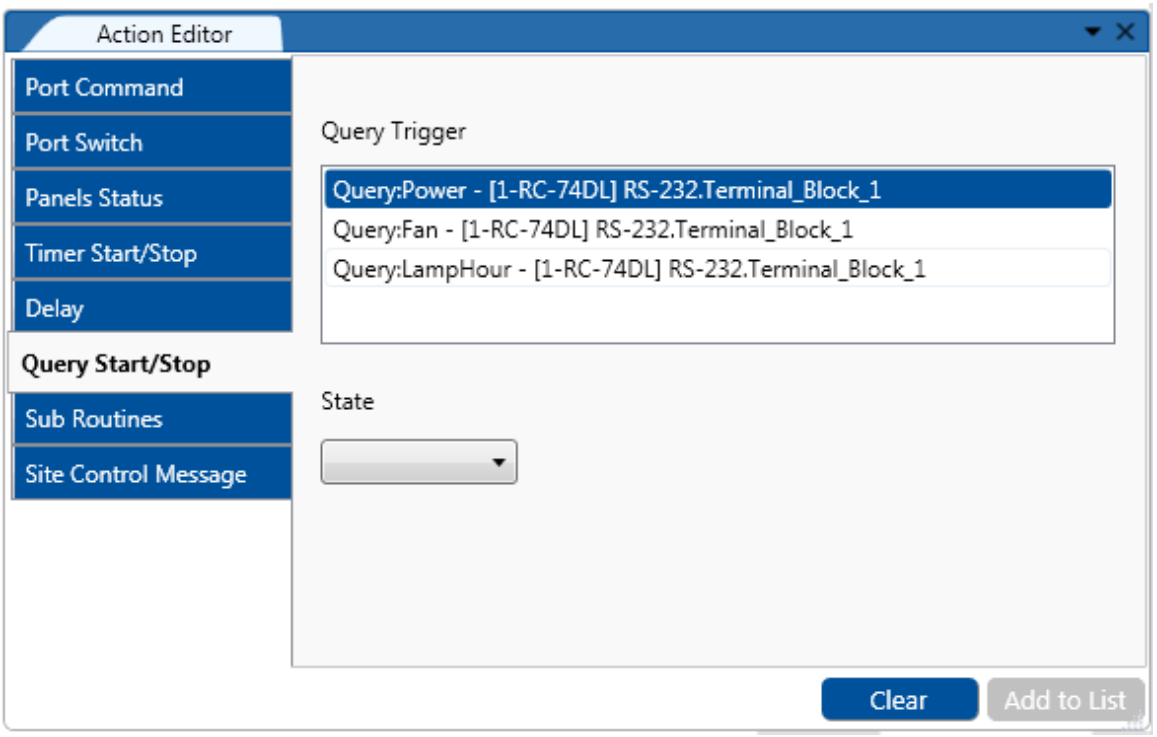


Figure 273: Query Start/Stop – Selecting the Query Trigger

9.10 Adding Sub Routines

Sub routines are enabled once a sub routine trigger is defined (see Section 8.7). After setting the sub routine trigger, you can add the sub routine trigger to any other trigger. This is helpful for using if you need to repeat a sequence of actions several times within a trigger or repeat the same sequence of action in several triggers.

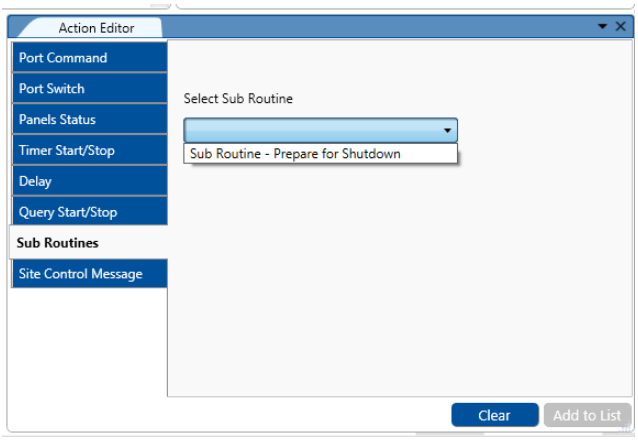


Figure 274: Sub Routines – Select a Sub Routine

9.11 Site Control Message

The **Site Control Message** action is used to send messages to **Site-CTRL** SW application and display them.

Select the **Port**, the **Query** and the **Status**. If relevant, the status is set so that it fits the Site Control filtering categories. The message is typed as required.

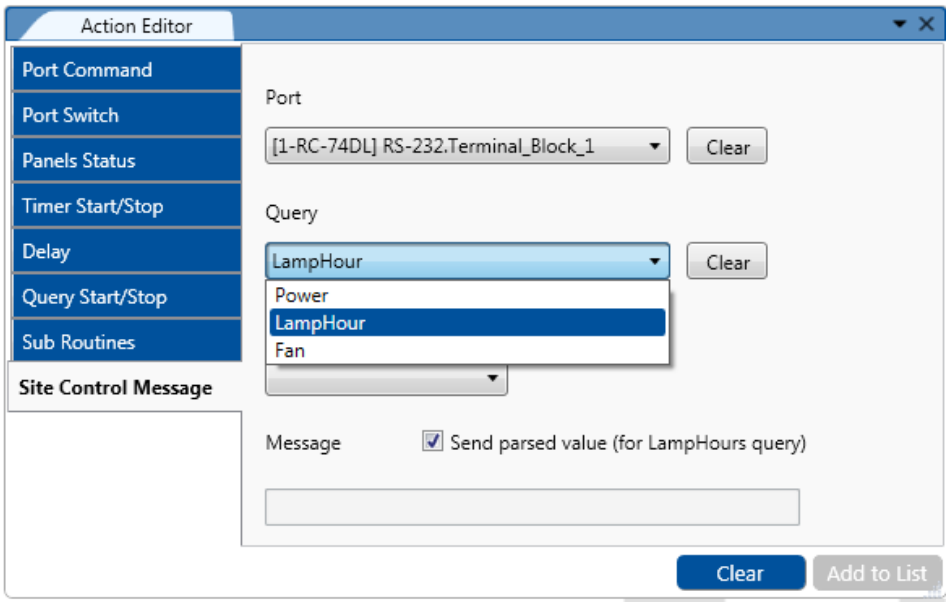


Figure 275: Site Control Message – Select the Query Event

Note that the **Status** sets the level of the displayed message so that when in **Site-CTRL** messages can be filtered according to their levels of risk or importance this message will also be filtered in accordance with the **Site-CTRL** filtering levels.

Note that if you select the LampHour query you need be sure that "Send parsed value" is checked, to allow the SiteCTRL main screen to show the Lamp Hour life in percentage.

10 Connecting to the Device

You are here:

Configuration Steps	Description	Section
Introduction	General information and system requirements	1
Planning	Carefully plan your controlled room	2
Installation	Install the Software	3
Introduction to K-Config	Get to know the K-Config main window, menus and quick access icons	4
Driver Manager	Define the Controlled Device Drivers	5
Project Navigator	Define the Controlled Room	6
Port Manager	Assign the controlled devices to the Master and Auxiliary device ports	7
Triggers	Activate the Triggers	8
Adding Actions	Describes how to add the various actions to a trigger	9
Connecting to a Device	Describes how to connect to a device, upgrade the firmware, read/write to the device and so on	10
Using the Web pages	Describes how to control the device via the Ethernet and perform minor configuration operations	11
Creating a Virtual Master	Describes how to create a Virtual Master to control a room via KRAMER NETWORK	12

While many actions are available to **K-CONFIG** users without needing to connect to the device itself, the following actions require that the device is connected to your PC. These actions include:

- Set the K-NET IDs, see Section 10.2
- Firmware upgrade, see Section 10.3
- General settings, see Section 10.4
- Ethernet settings, see Section 10.5
- Security settings, see Section 10.6
- Date and time settings, see Section 10.6.1
- Syncing the configuration to the device, see Section 10.7
- Reading the configuration from the device, see Section 10.7.1
- Clearing the configuration from the device, see Section 10.9

You can connect your PC to:

- A Master room controller device
- An auxiliary device that is connected with a K-NET cable to its Master room controller.
- An auxiliary device that is connected directly to the PC.

10.1 Connecting Methods

Before you perform any of the actions described above, you need to physically connect to the room controller device.

This can be done in any of the following ways:

- Connecting via the Ethernet
- Connecting to the device via the RS-232 port (no null-modem is required).
- Connecting the room controller device directly to your PC via the USB connector whether it is defined as an auxiliary device or a standalone Master room controller.

You can connect only via the available ports on the room controller device.

Note that you can read from a room controller device only via the Ethernet.

To connect a room controller device:

1. Click the **Connect** button in the quick access toolbar.
   You can also select Connect from the Device menu.

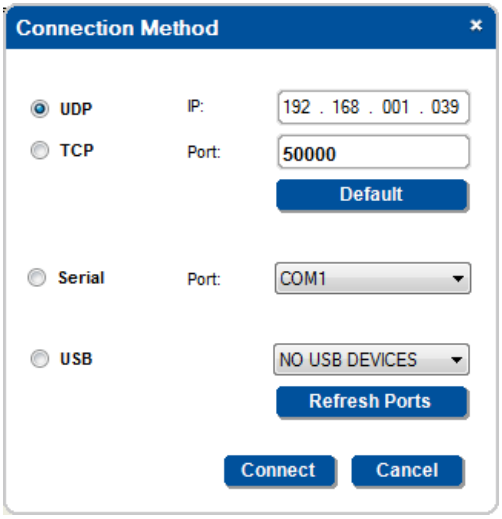


Figure 276: Connection Method Window

Alternatively you can click the DISCOVER button to get a list of discovered room controller devices and then choose the desired room controller device from that list and click Connect.

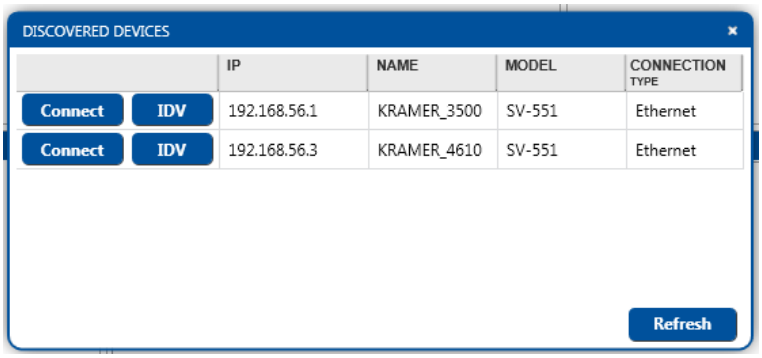


Figure 277: Discover Devices

2. Select the **Connection Method** (Ethernet, Serial or USB).

3. Enter the data that is relevant to the selected connection method:

   - **UDP** – the room controller device IP address and the port number.
     Click Default to return to the default IP address (Section 10.1.1).
   - **TCP** – the room controller device IP address and the port number (note that you have to set the port number to 50000).
     Click Default to return to the default IP address (Section 10.1.1).
   - **Serial** – select the port number to which the room controller device is connected and set the baud rate (Section 10.1.2).
   - **USB** – select the USB port to which the room controller device is connected.
     Click Refresh if a new port was added (Section 10.1.3).

If the project navigator room configuration does not reflect the actual controlled room, the following warning appears:

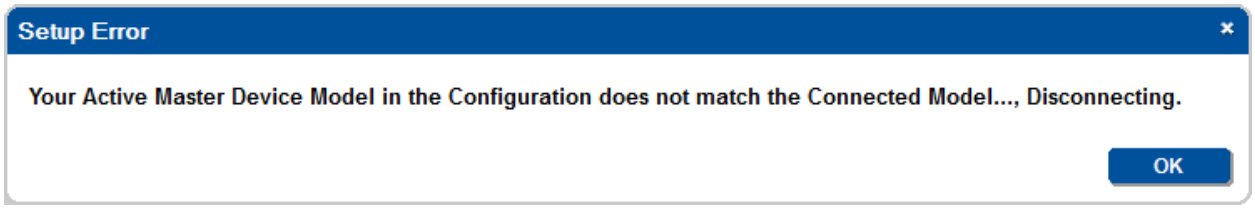


Figure 278: Configuration Mismatch Warning

10.1.1 Connecting via the Ethernet

To connect via the Ethernet (UDP + TCP):

1. Set your PC to enable Ethernet connection (see Section 10.1.1.1).
2. Type the room controller device IP address.
3. For TCP only, set the port number to 50000.
4. Click **Connect**.

10.1.1.1 Setting the ETHERNET Connection

You can connect the room controller device (for example, the **SV-551)** via Ethernet using either of the following methods:

- Directly to the PC using a crossover cable.
- Via a network hub, switch, or router, using a straight-through cable.

Connecting the ETHERNET Port directly to a PC (Crossover Cable)

You can connect the Ethernet port of the room controller device to the Ethernet port on your PC, via a crossover cable with RJ-45 connectors.

This type of connection is recommended for identification of the factory default IP Address of the room controller device (192.168.1.39) during the initial configuration.

After connecting the Ethernet port, configure your PC as follows:

1. Click **Start** > **Control Panel** > **Network and Sharing Center**.
2. Click **Change Adapter Settings**.
3. Highlight the network adapter you want to use to connect to the device and click **Change settings of this connection**.
   The Local Area Connection Properties window for the selected network adapter appears as shown in Figure 279.

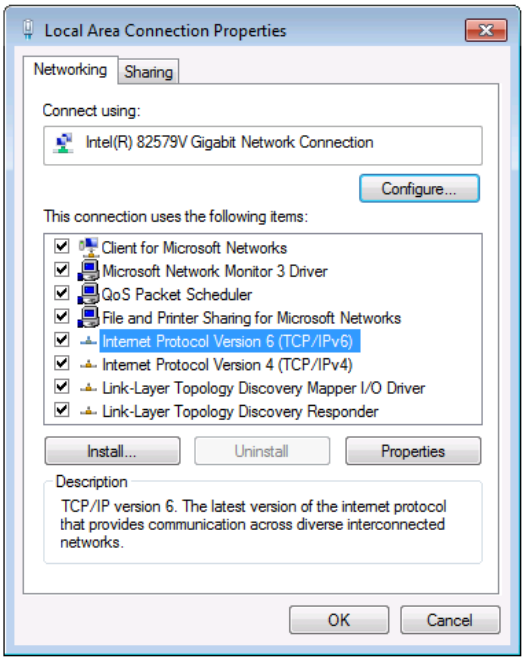


Figure 279: Local Area Connection Properties Window

4. Highlight either **Internet Protocol Version 6 (TCP/IPv6)** or **Internet Protocol Version 4 (TCP/IPv4)** depending on the requirements of your IT system.

5. Click **Properties**.
   The Internet Protocol Properties window relevant to your IT system appears as shown in Figure 280 or Figure 281.

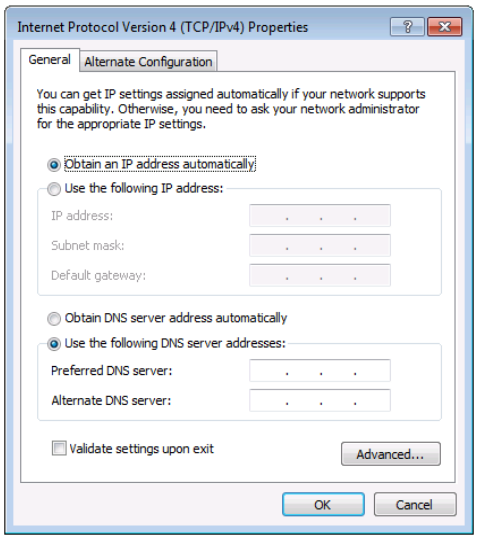


Figure 280: Internet Protocol Version 4 Properties Window

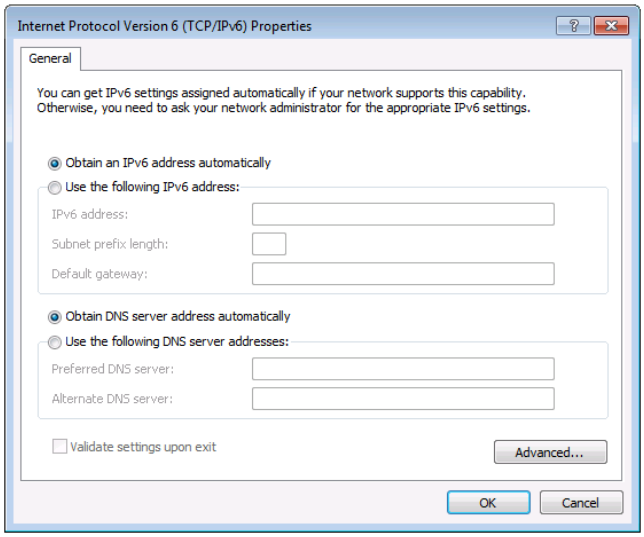


Figure 281: Internet Protocol Version 6 Properties Window

6. Select **Use the following IP Address** for static IP addressing and fill in the details as shown in Figure 282. For TCP/IPv4 you can use any IP address in the range 192.168.1.1 to 192.168.1.255 (excluding 192.168.1.39) that is provided by your IT department.

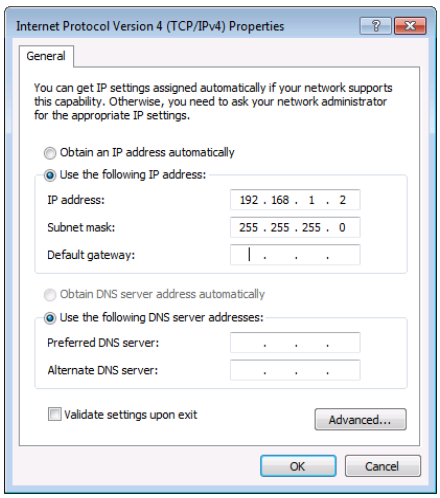


Figure 282: Internet Protocol Properties Window

7. Click **OK**.

8. Click **Close**.

Connecting the ETHERNET Port via a Network Hub (Straight-Through Cable)

You can connect the Ethernet port of the room controller device to the Ethernet port on a network hub or network router, via a straight-through cable with RJ-45 connectors.

10.1.2 Connecting via the RS-232 Port

To connect via an RS-232 port:

1. Select the PC COM number port to which the room controller device is connected.

2. Select the baud rate.

3. Click **Connect**.

10.1.3 Connecting via a USB Port

To connect via a USB port:

1. Select the PC COM port to which the room controller device is connected.
2. Click **Connect**.

10.2 Set the K-NET IDs

Once the controlled room is ready, that is, the items are all actually installed you need to assign the KNET ID for the Master and auxiliary devices. The ID number of the master room controller is always 1, auxiliary devices will have a KNET ID from 2 and on, and the ID numbers allocated to the Virtual devices are 11 and 12. For example, in a controlled room, the Master controller is **RC-74DL**. One of the auxiliary devices connected is the **SL-10**. In order to communicate with the **SL-10**, you need to set the K-Net ID on the **SL-10**.

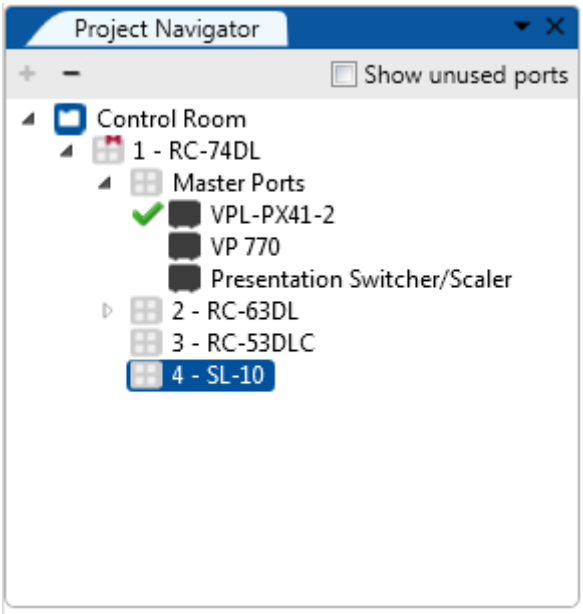


Figure 283: KNET ID – A Controlled Room Setting Example

By default, the following devices' K-NET ID is set to 2 (auxiliary device) resulting in a communication error with **K-CONFIG** when trying to identify them as master room controllers (K-NET ID 1):

- RC-62
- RC-62X
- RC-63A
- RC-63D
- RC-63DL
- RC-63DLN

In such cases, the devices' K-NET ID must be set to 1 manually. For more information, see Section 10.2.1.

To set the K-NET ID to an auxiliary device:

1. Right click the required auxiliary device in the **Project Navigator** area and select **Set K-NET ID**.
   The following window appears:

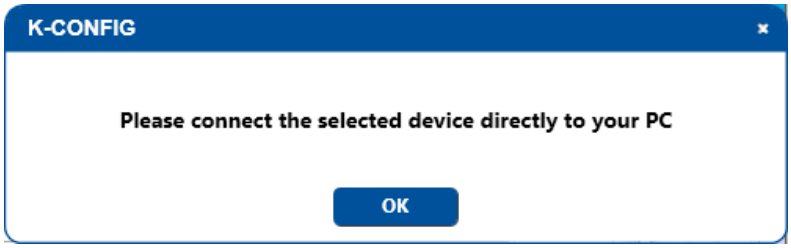


Figure 284: KNET ID – Connect the Device Directly to PC

2. Connect the auxiliary device (**SL-10**) directly to the PC (via USB) and then click **OK**.

If you are connecting the device via USB for the first time, you might need to define the USB port. To do this, follow the instructions in Section 3.2.

The **Connection Method** window appears:

You might need to click **Refresh Ports** to have the USB port appear.

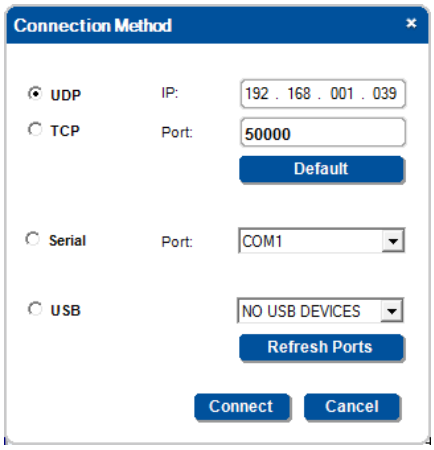


Figure 285: KNET ID – The K-NET ID Connect Window

3. Click **Connect**.
   The **Setting K-NET™ ID** window appears.

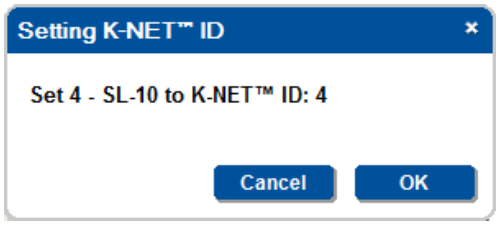


Figure 286: KNET ID – Setting K-NET ID

4. Click **OK** to set the ID number.

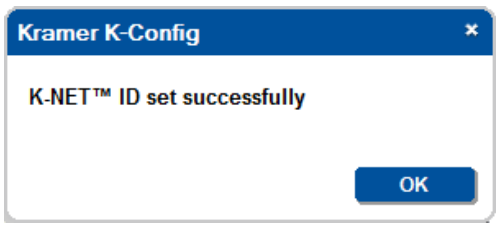


Figure 287: KNET ID –K-NET ID assigned

10.2.1 Setting K-NET IDs Manually

By default, the K-NET ID of the following devices is set to 2:

- RC-62
- RC-62X
- RC-63A
- RC-63D
- RC-63DL
- RC-63DLN

In order for **K-CONFIG** to recognize the following devices as master room controllers, their K-NET ID must be set to 1 using the `MACH-NUM` Protocol 3000 command. For more information about using Protocol 3000 commands, refer to the Protocol 3000 User Manual available at: www.kramerav.com.

To manually set the K-NET ID to 1:

1. Connect the device to your PC via Ethernet, USB or RS-232.
2. Using standard telnet communication software, such as Hercules, send the following Protocol 3000 command:

   `##MACH-NUM 01<CR>`

   The K-NET ID is set to 1. Some devices may require a restart to complete this operation.

10.3 Firmware Upgrade

Before uploading a new firmware to a room controller device, make certain that the firmware you have selected matches the connected room controller device. In some cases, it will be possible to upload firmware that does not match a room controller device, resulting in inoperability of the room controller device.

Before uploading a new firmware to a room controller device, disconnect it from Site-CTRL and Web Access.

To load new firmware:

1. Check for the latest firmware at: www.kramerav.com/manual/K-Config 3.
2. Connect the room controller device.
3. Select **Firmware Update** from the **Device** menu.
   The **Firmware Update** window appears:

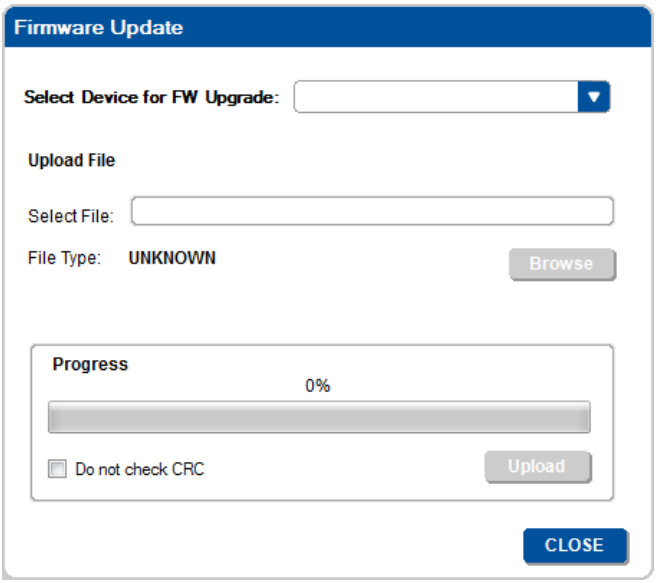


Figure 288: Firmware Update Window

4. Select the room controller device to upgrade from the **Select Device for FW Upgrade** list box (**SL-10** in this example).
   You can select the master room controller or any of the connected auxiliary devices.

5. Click the **Browse** button to find the firmware file.

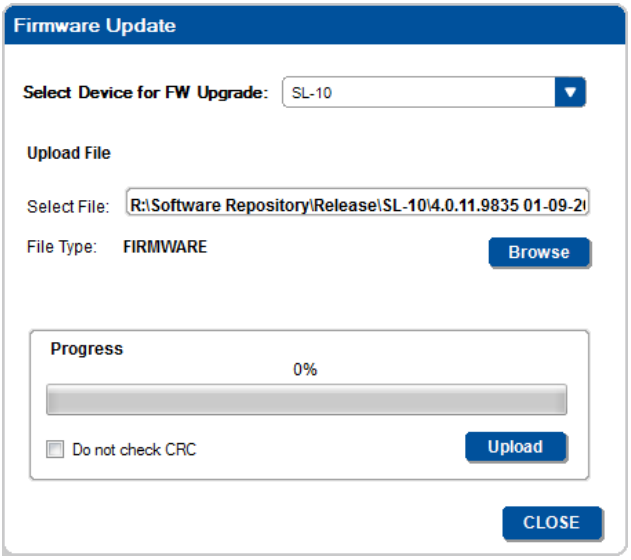


Figure 289: Load Firmware Upgrade Window

6. Click **Upload**. The following warning appears:

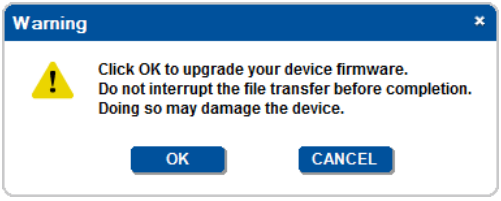


Figure 290: Firmware Upgrade Warning

7. Click **OK**.

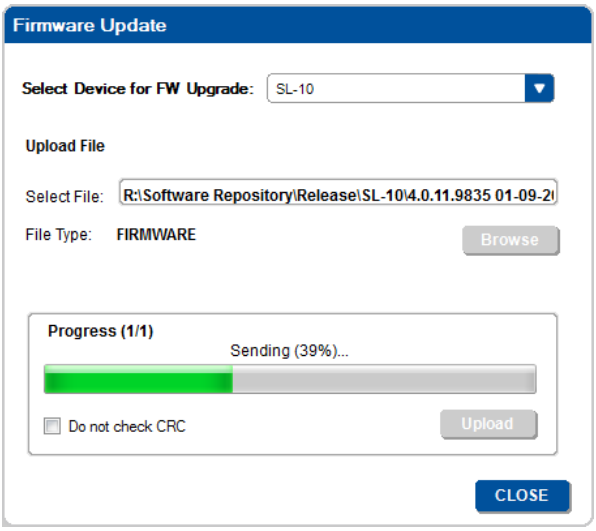


Figure 291: Firmware Upgrade Process

8. Upon Completion the following window appears:

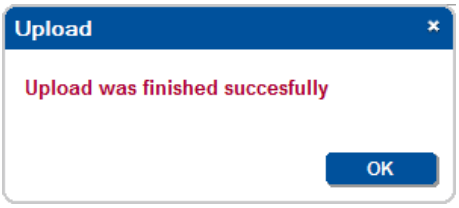


Figure 292: Firmware Upgrade Successful

9. Click **OK**.
   Note that you might be asked to restart the unit.

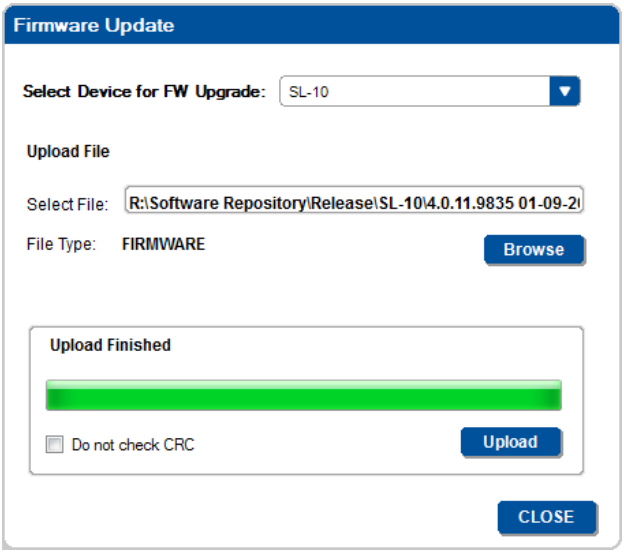


Figure 293: Firmware Upgrade Process Complete

10. Upon completion, open the **Device Settings** window to make sure the firmware was correctly upgraded.

If the firmware version number remains the same, close the **Device Properties** windows, disconnect and then reconnect the device, and open the **Device Properties** window again to check the Firmware version number.

Device setting readout is possible with standalone room controllers and K-NET master room controller or Aux K-NET devices connected with a K-NET cable to their master room controller, as defined in the Room Control tree.

10.4 Device Settings Window

The Device Settings window reads the data from the connected room controller device.

To connect the room controller device:

1. Click the Connect button on the main window or select Connect from the Device menu.
   The Connect window appears (see Figure 38).

2. Select the connection method to the standalone controller or master room controller and click the Connect button (in the Connection Method Window).

Device setting readout is possible with standalone room controllers and K-NET master room controller or Aux K-NET devices connected with a K-NET cable to their master room controller, as defined in the Room Control tree.

Figure 294 shows the general device settings tab, which includes the (master and auxiliary) room controller device information: Name, Model, Description, S.N (Serial Number), Firmware, K-Net-ID and the Unlock keypad PIN code text box where you can set the key pressing sequence to press to unlock the keypad in case it is locked by a trigger (activated by pressing a button, a schedule or via Web Access).

Since the button key number does not appear on the actual keypad, the system integrator should inform the user regarding the key sequence.

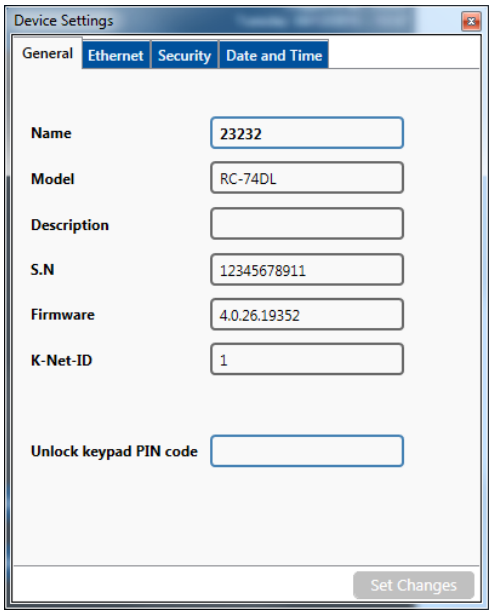


Figure 294: General Device Settings

If you want to view the auxiliary device settings select that device in the **Project Navigation** area:

The **Device Settings** appears empty:

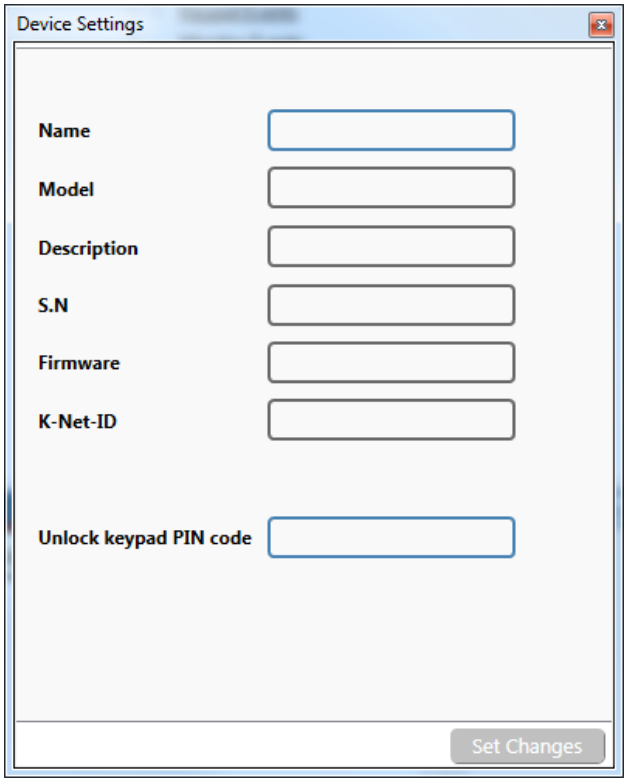
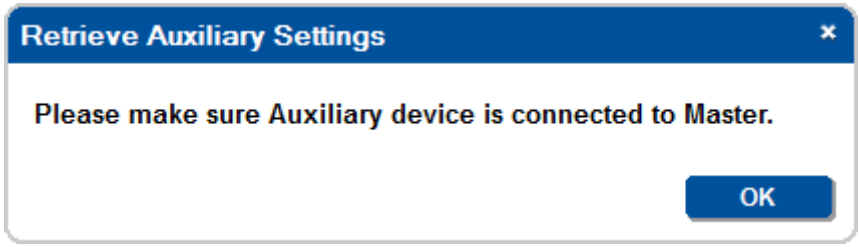


Figure 295: Selecting an auxiliary device

Click **the Retrieve Device Details** button. The following window appears:



Click **OK**. The system retrieves the room controller device settings and the following window appears:

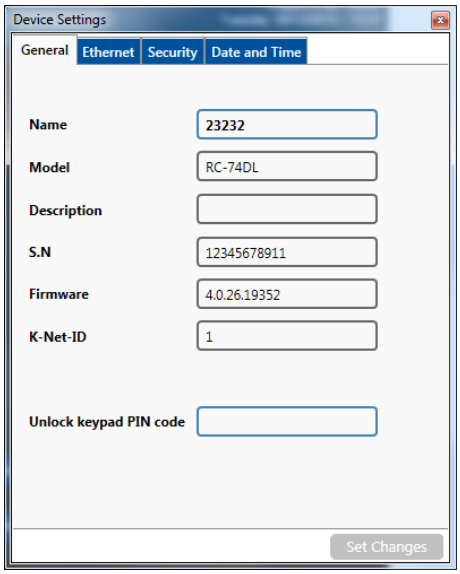


Figure 296: Auxiliary Device Settings

Note that for some room controller devices (for example, the **RC-52N**) you can set the light intensity of the buttons (from 1 to 3); and for some room controller devices the light intensity is set to 3 and cannot be changed (for example. the **RC-2**):

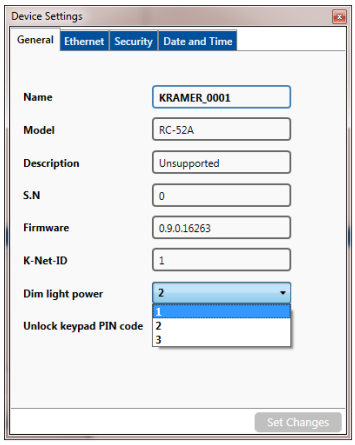


Figure 297: The Dim Light Power Feature

Note that most room controller devices don't have the Dim light power feature.

10.5 The Ethernet Settings Tab

Figure 298 shows the **Ethernet** information, which can be changed, if required:

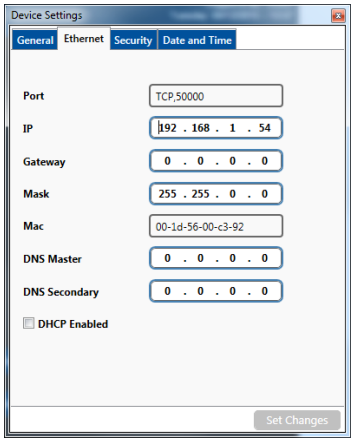


Figure 298: Ethernet Settings

10.6 The Security Tab

Figure 299 shows the **Security Settings**:

Figure 299: Security Settings

Function	
Secure Mode:	OFF – the product definitions and configuration can be changed without requiring a password ON – a password is required to change the configuration and view or change the room controller device definitions
User pass:	This password lets you view the room controller device definitions in Web Access and Site-CTRL without changing the definitions
Admin Pass	Lets you change the room controller device definitions and configuration via Web Access and K-Config

Figure 300 shows the **Date and Time** settings (see Section 10.6.1):

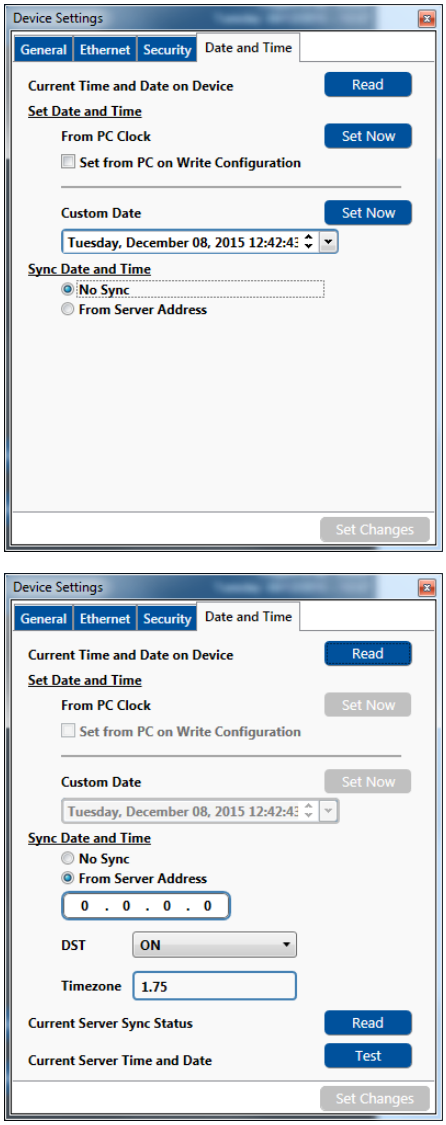
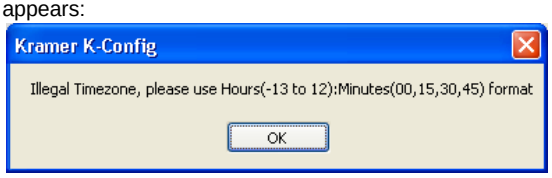


Figure 300: Date and Time Settings

Function	
This area applies to room controller devices with an Ethernet connection and time server settings options and lets you set the room controller device's internal clock to use with the scheduler (see Section 8.1). The date and time can be set either manually, via a local server or via the Ethernet	
Current Room Controller Device Time and Date	Click the Read button to read the device's current date and time
Set Date and Time	Click the Set Now button to set the date and time via one of the following options:
	From PC Clock (if No Sync is checked)
	You can check the box next to Set from PC on Write Configuration to have the date and time updated whenever writing a configuration
	Custom Date (if No Sync is checked)
	Select a date and time from the drop down calendar
Sync Date and Time	Check radio button: No Sync – to read the date and time from the PC clock or by setting a custom date (see above) From Server Address – type an IP address to read from a server address
DST	Daylight Saving Time or Summer Time correction. Set to ON if necessary
Timezone	Set the time zone relevant to UTC (Coordinated Universal Time). The time zone can be set from -13 to +12 hours relative to UTC in 15 minute intervals (00, 15, 30 or 45 minute intervals). For example, the time zone in Adelaide, Australia is UTC +9:30, therefore 9:30 needs to be entered in Timezone for that particular location. If the value entered is out of range, the following message appears: 
Current server Sync Status	Click the Read button to read the date and time on the server Note that the time displayed includes the DST and timezone modifications
Current Server Time and Date	Click the test button to check the status on the server

Note that the **Date and Time** area appears only for room controller devices that include an Ethernet connector and support this function.

10.6.1 Setting the Date and Time

You can set the date and time on machines that have an Ethernet connector to use with the scheduler. You can set the time from several sources such as from a PC connected to the room controller device, an NTP (local) server, or the Ethernet. You can also set the time and date manually.

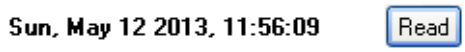
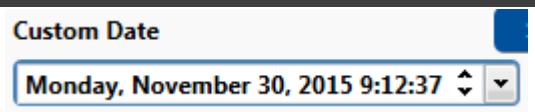
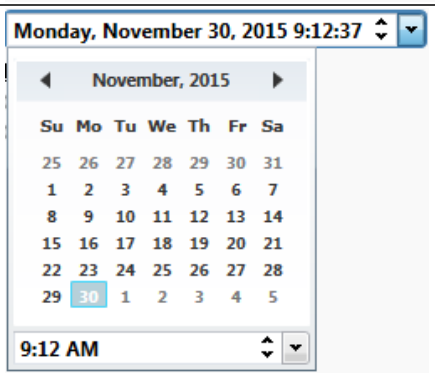
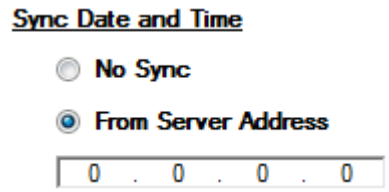
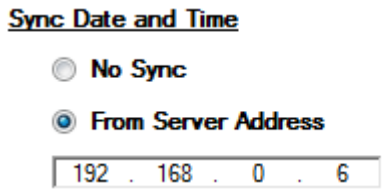
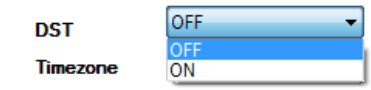
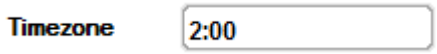
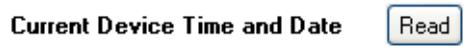
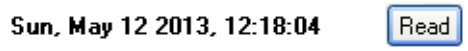
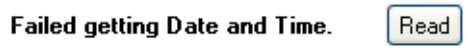
To read the current date and time on the device, click the Read button:

Current Device Time and Date Read

The device time and date appears:

Wed, Oct 02 2013, 11:32:04 Read

The following table summarizes the date and time setting options:

Set Date and Time	Procedure	
From a connected PC Clock	1. Click the “Set Now” button.	
	2. Click Read (from device) to check the updated values.	
	If you want the time and date to be set whenever writing a configuration, check “Set from PC on Write Configuration”.	
Manually	1. Click the dropdown box.	
	2. Select the desired date and time from the dropdown box.	
	3. Click the Set Now button.	
	4. Click Read (**from room controller device**) to check the updated values.	
From a server address	1. In the Sync Date and Time area, check “From Server Address”.	
	2. Type the IP address. For example, 192.168.0.6	
	3. Set the DST to ON (for adjusting the time to the “summer” clock) if required	
	4. Set the time zone according to UTC. For example, the time in Jerusalem is UTC +2:00.	
	5. Click the Read (**from server**) button (below the IP number).	
	6. Click Read (**from device**) to check the updated values.	
	The room controller device updated date and time appear	
	In case there was a problem reading the date and time, the following message appears:	

10.7 Syncing the Configuration to the Room Controller Device

Once the configuration is ready, you can sync (write) the configuration to the room controller device, by selecting Sync Configuration to Device from the Device menu list.

Note that:

- In Master-Auxiliaries configurations, the configuration file is always written to the master room controller.
- When using a standalone room controller, the configuration file is written to the room controller.

In case you have written a configuration file to a room controller device and it is now connected as an auxiliary device to another master room controller, you have to define the device as an auxiliary device and upload an updated configuration file to the master room controller.

Before writing the configuration to the device you have to save it as a project.

To write a configuration to the room controller device, do the following:

1. Connect the PC to the Master or the standalone room controller via the Ethernet/RS-232/USB.
2. Click the **Connect** button (or select Connect from the Device menu list) or click Discover to discover the room controller device.

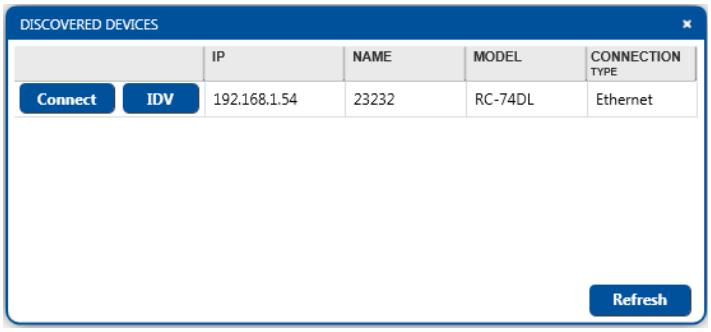
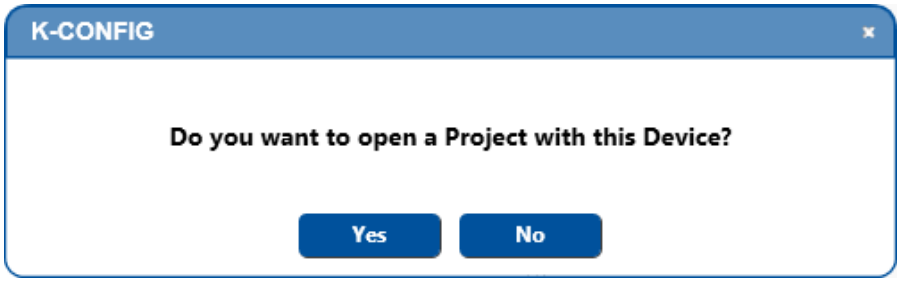


Figure 301: Discovering a Room Controller Device

The following message appears:



3. In the **Device** menu, select **Sync Configuration to Device** (or click the Sync to Device button on the top right).
   You will be prompted to save the configuration as a project:

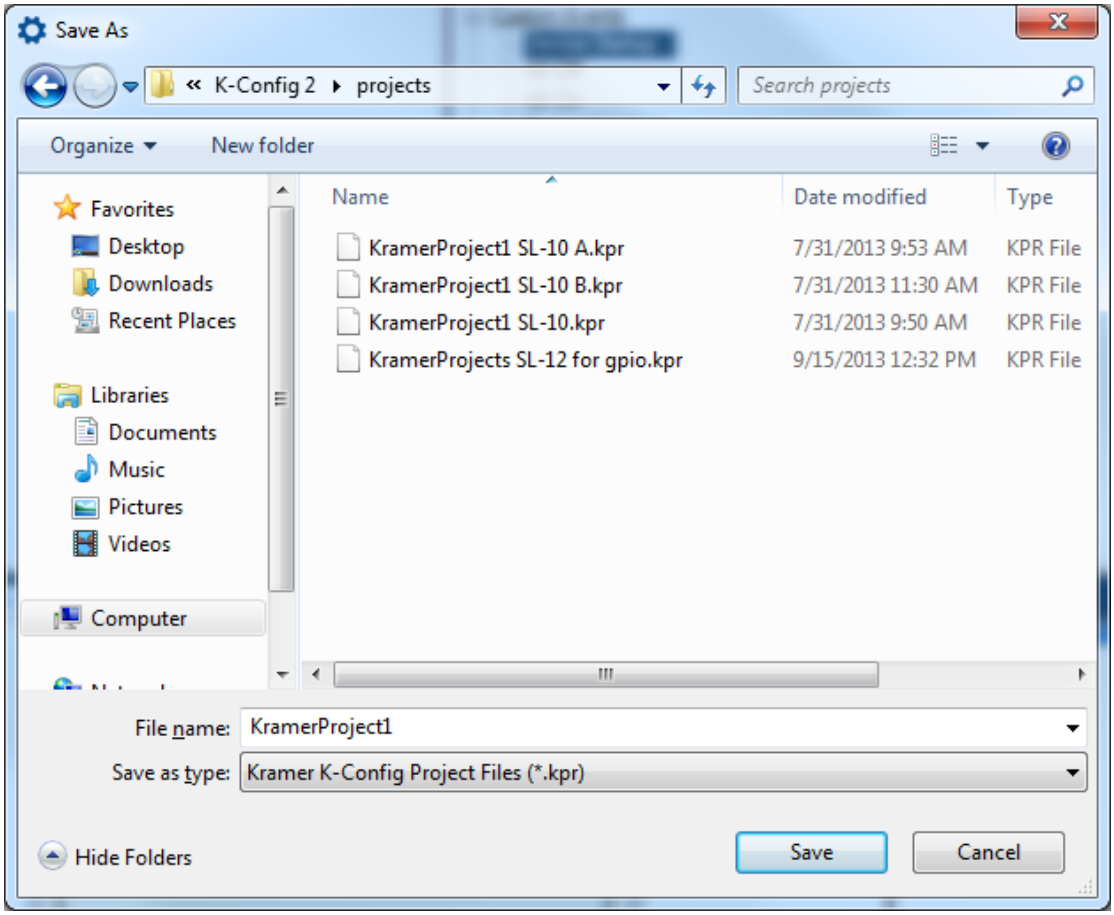


Figure 302: Loading a Configuration

4. If required, change the file name and then click **Save**.
   The **Write Configuration** warning appears:

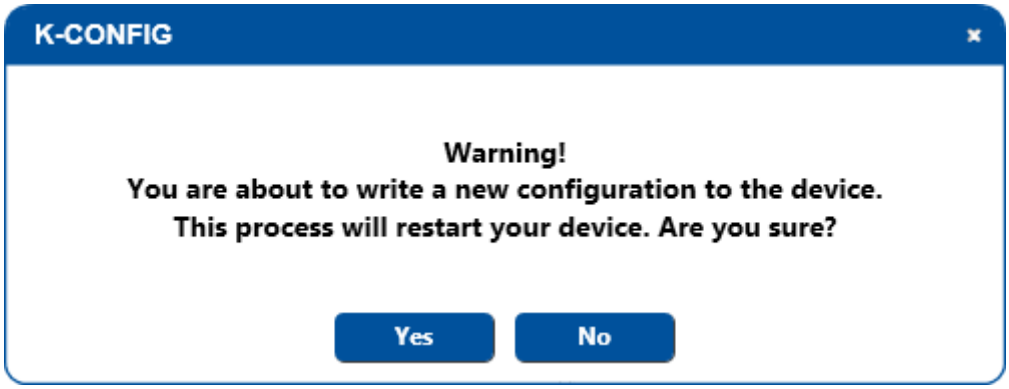


Figure 303: Write Configuration warning

If the KPR project file size exceeds its limit (see Section 10.7.1), the following warning appears:

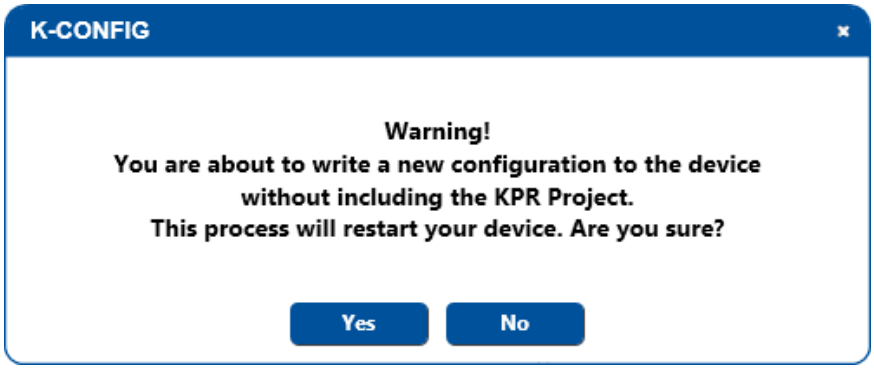


Figure 304: Write Configuration warning (without the KPR Project)

Note that during the Sync process, **K-CONFIG** writes the current configuration and saves (to its current project name) it as well.

5. Click **Yes**.
   The Writing process appears on the top right part of the main window. After uploading the room controller device resets

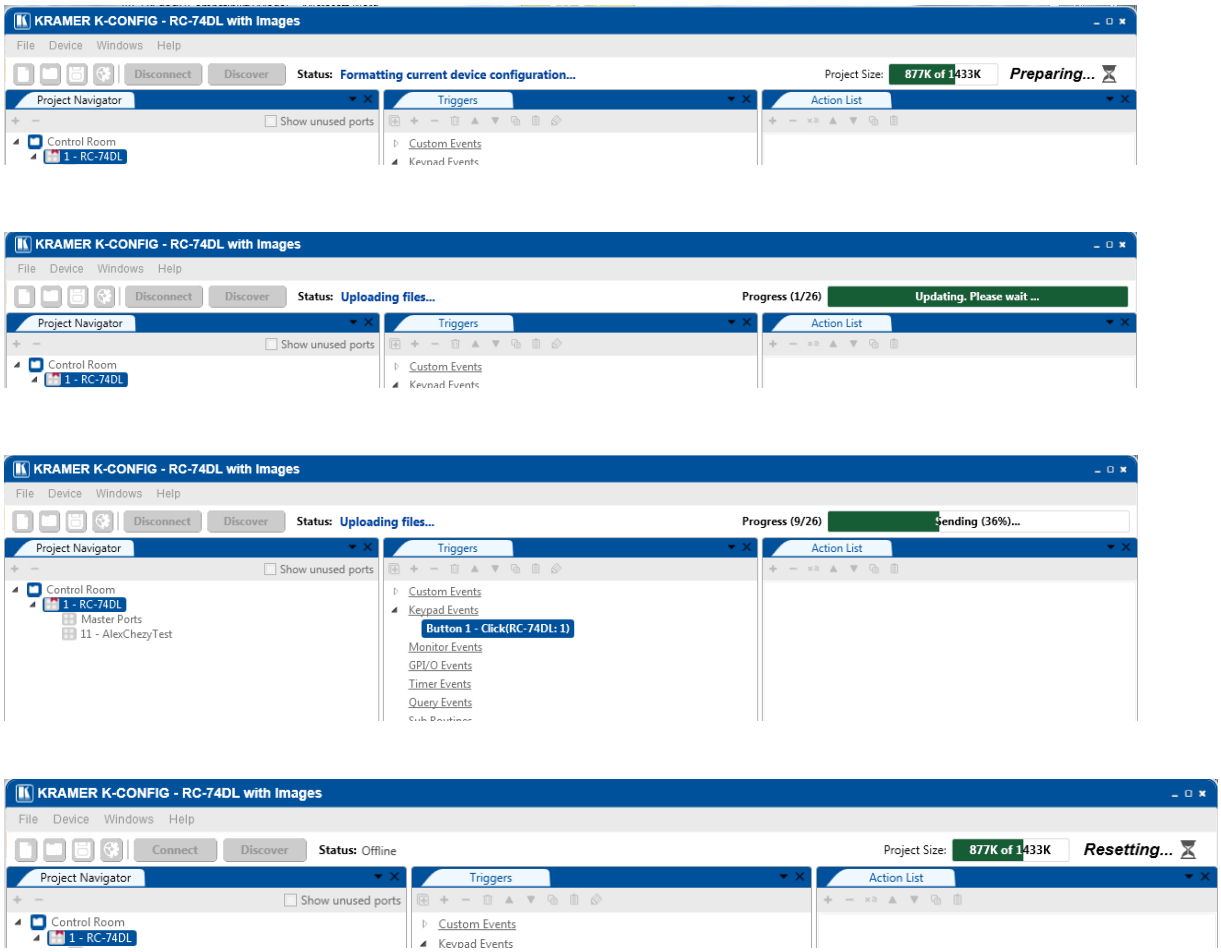


Figure 305: Writing Configuration and Device Resetting Process

6. Upon completion, the following window appears:

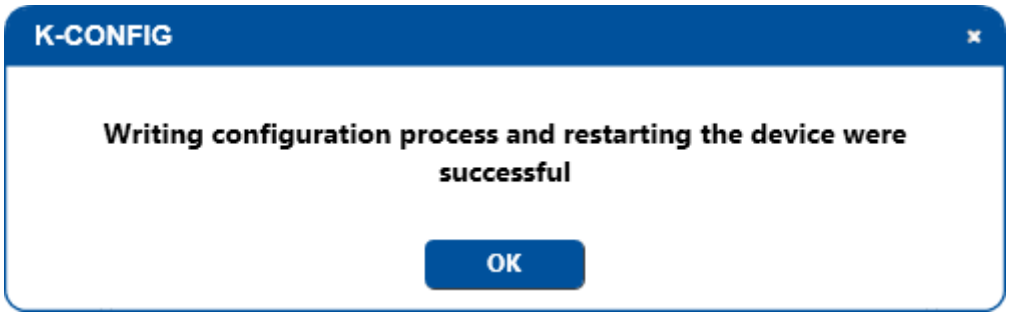


Figure 306: Writing Configuration Complete

7. Click **OK**.

10.7.1 Uploading the Project (*.kpr) File

When syncing the configuration to the room controller device, you can define whether to upload or not upload the project file. This option is relevant only if the project file exceeds the size limit.

Even if you set **File** > **Upload Project** > **No**, and the project file did not yet reach its size limit, it will still save the project file to the room controller device.

When almost reaching the limit, the project size box turns orange and once it exceeds the size limit it turns red.

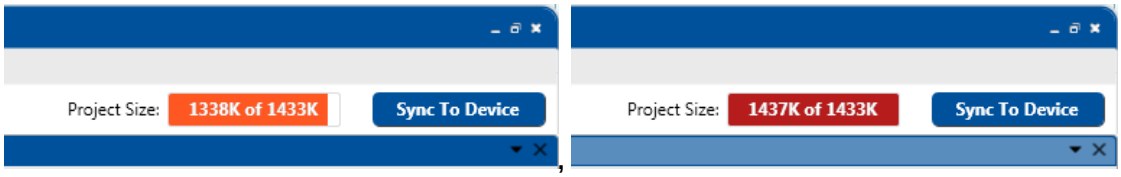


Figure 307: Writing Project Complete

Once exceeding the limit, and attempting to sync the configuration to the room controller device, the following message appears:

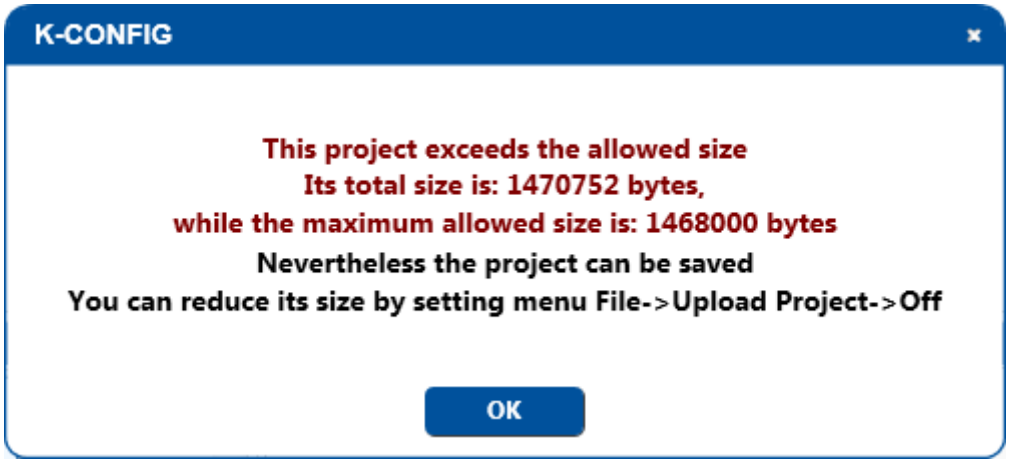


Figure 308: Writing Complete

10.8 Reading the Configuration from the Room Controller Device

In order to read the Device configuration you have to add the system setup in the Project Navigator window. Note that you cannot read the room controller device configuration via the USB port.

1. Connect the PC to the Master or the standalone room controller.
2. Click the **Connect** button (or select Connect from the Device menu list).
3. In the **Device** menu, select **Read Configuration from Device**.
   The following message appears:

Figure 309: Read Configuration from Device – New Project Message

4. Click **OK**.
   Read is in Process:

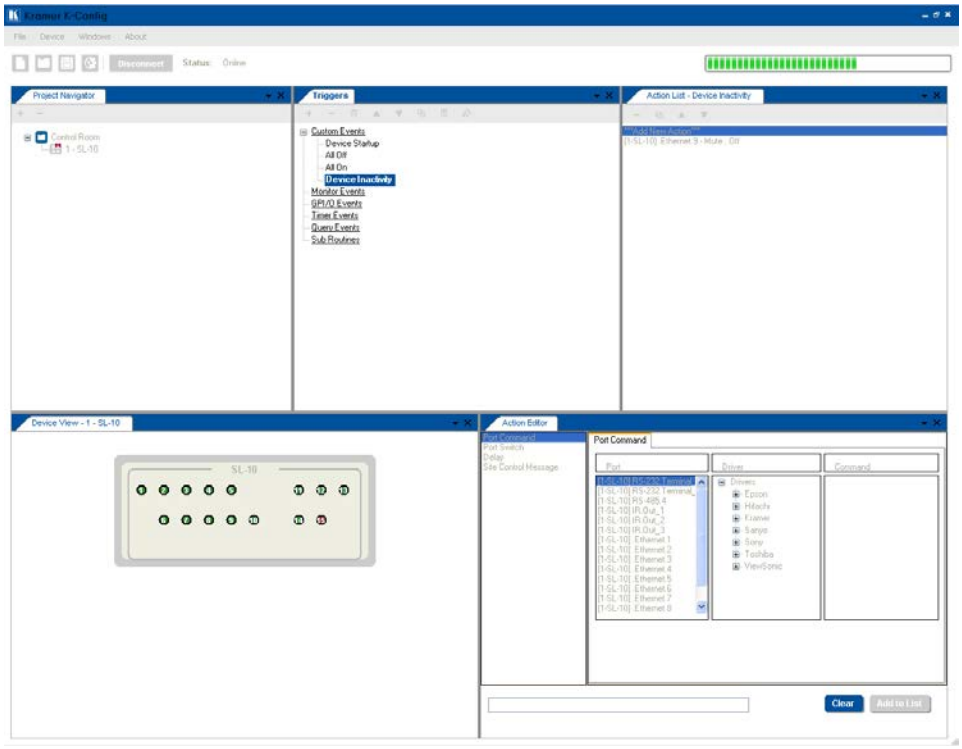


Figure 310: Read Configuration from Device – Reading Process

Upon completion, the following message appears:

Figure 311: Read Configuration from Device – Reading Complete

The Device configuration is now uploaded to the PC.

10.9 Clear Configuration from Room Controller Device

To clear the room controller device configuration:

1. Connect the PC to the Master or the standalone room controller.
2. Click the **Connect** button (or select Connect from the Device menu list).
3. In the **Device** menu, select **Clear Configuration from Device**.
   The following message appears:

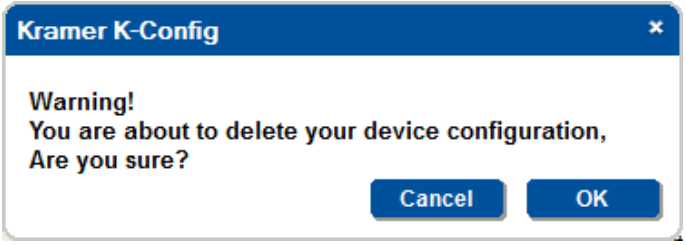


Figure 312: Clearing Configuration from Device – Warning Message

4. Click **OK**.
   The device is being formatted and upon completion, the following message appears:

Figure 313: Clearing Configuration from Device – Warning Message

Any attempt to read the formatted room controller device now, results in the following message:

Figure 314: Clearing Configuration from Room Controller Device – No File Loaded

11 Using the Embedded Web Pages

You are here:

Configuration Steps	Description	Section
Introduction	General information and system requirements	1
Planning	Carefully plan your controlled room	2
Installation	Install the Software	3
Introduction to K-Config	Get to know the K-Config main window, menus and quick access icons	4
Driver Manager	Define the Controlled Device Drivers	5
Project Navigator	Define the Controlled Room	6
Port Manager	Assign the controlled devices to the Master and Auxiliary device ports	7
Triggers	Activate the Triggers	8
Adding Actions	Describes how to add the various actions to a trigger	9
Connecting to a Device	Describes how to connect to a device, upgrade the firmware, read/write to the device and so on	10
Using the Web pages	Describes how to control the device via the Ethernet and perform minor configuration operations	11
Creating a Virtual Master	Describes how to create a Virtual Master to control a room via KRAMER NETWORK	12

The Web pages let you control the controller and gateway device via the Ethernet and perform minor configuration operations. The Web pages include all the configured items and more, and are accessed using a Web browser and an Ethernet connection.

Note that the Web page features are described in more detail throughout the guide.

To do so:

- Connect the room controller device to the PC via the Ethernet (see instructions in the device's user manual).
- Make sure that your browser is supported

The following operating systems and Web browsers are supported:

Operating Systems	Applicable Browser Versions and Higher
Windows 7 and higher	Chrome: 35 Internet Explorer (32/64 bit) version 10 Firefox 30
Mac (PC)	Chrome: 35 Firefox: 30 Safari: 7
iOS	Chrome: 35 Safari (depends on the IOS version)
Android OS	Chrome: 25

11.1 Browsing the K-CONFIG Web Pages

Note that the Web pages reflect the configuration that was synced from **K-CONFIG** to the room controller device. Any change that is done in the Web pages (for example, scheduling) will remain only until the room controller device is once again synced (with same or new configuration).

If the Ethernet/power cable was disconnected, the following message appears:

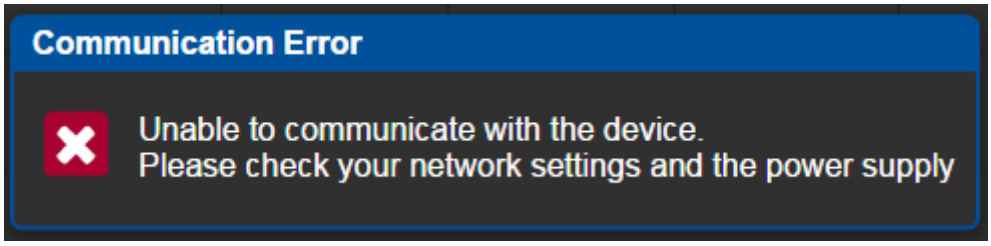


Figure 315: The Embedded Web Pages – Communication Error Message

Reconnect cables to restore Web page.

To browse the **K-CONFIG** Web pages, make sure that the device is powered and connected to your PC via the Ethernet.

Discover the room controller device:

1. Open your Internet browser.
2. Type the IP address of the room controller device in the Address bar of your browser.
   The Web page loads.

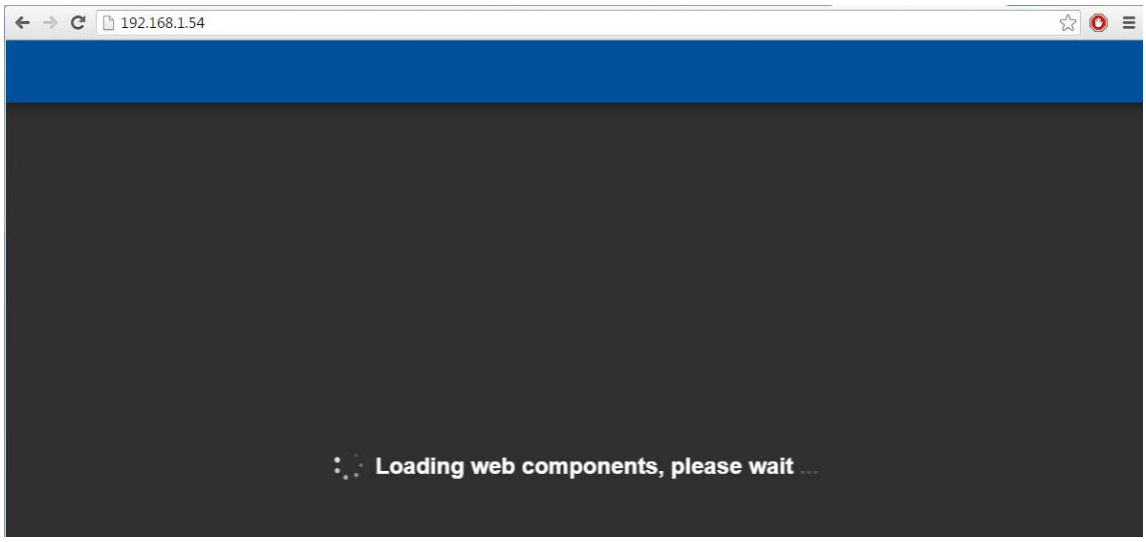


Figure 316: The Embedded Web Pages – Loading the Web Pages

11.2 The Room Controller Devices Web Page

The room controller Devices Web page lists the master room controller device panel, slave keypad panel, and the Virtual device panels (with their K-Net IDs) as configured by **K-CONFIG**:

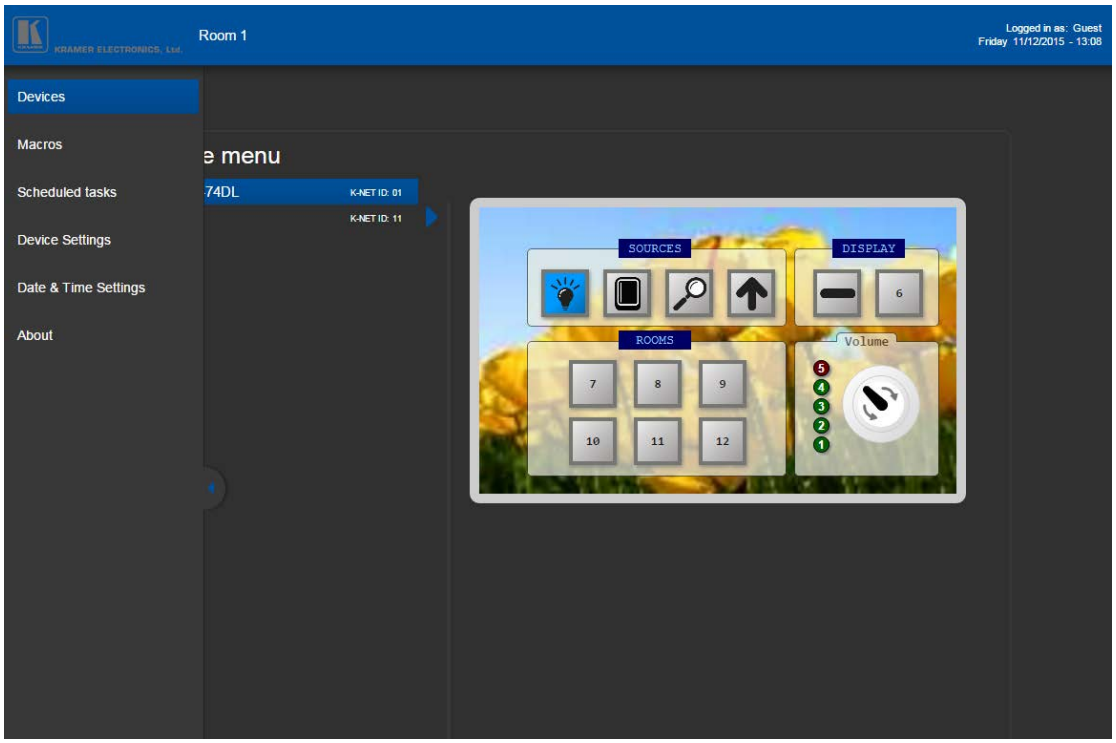


Figure 317: The Embedded Web Pages – the Devices Web Page (and Pages List)

The Room Controller panel appears on the Web page exactly as it was configured in **K-CONFIG:**

Figure 318: The Embedded Web Pages – Master Controller Panel

Click the menu arrow to hide the Web page list:

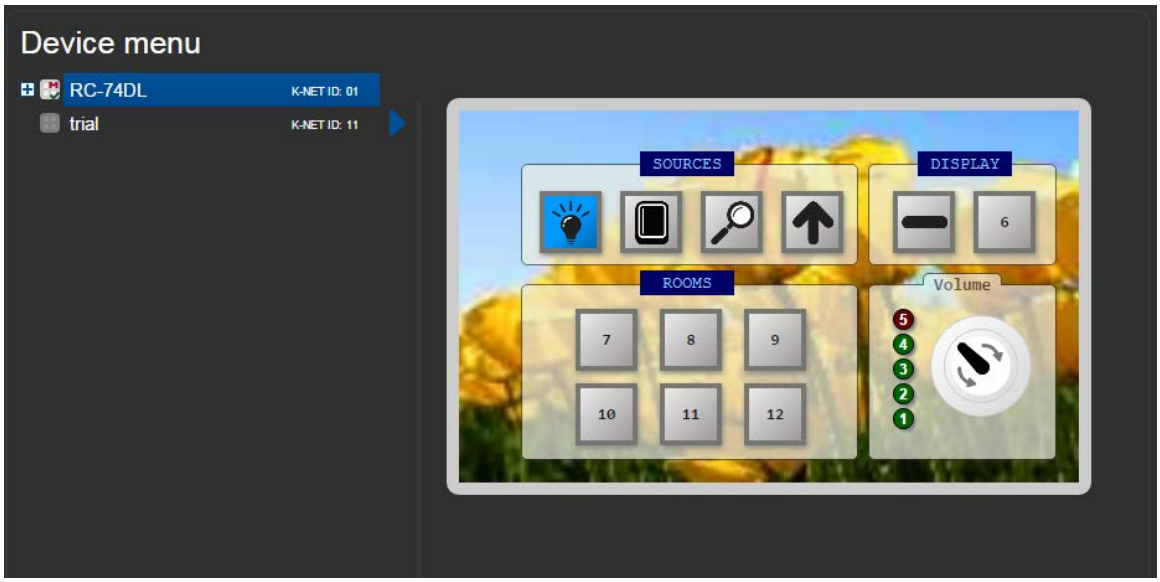
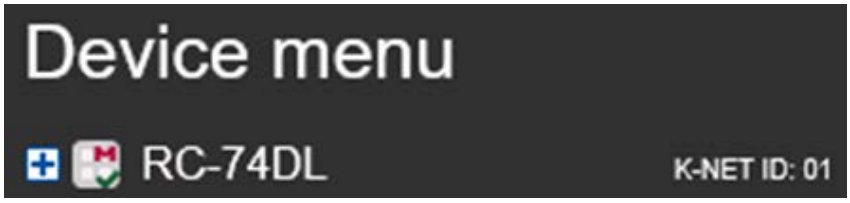


Figure 319: The Embedded Web Pages – The Devices Web Page

The **M** icon next to RC-74DL designates a Master Device and the green ✓mark indicates that the device is connected to the PC:



Click the + icon to see the controlled device drivers that were defined for the master room controller:

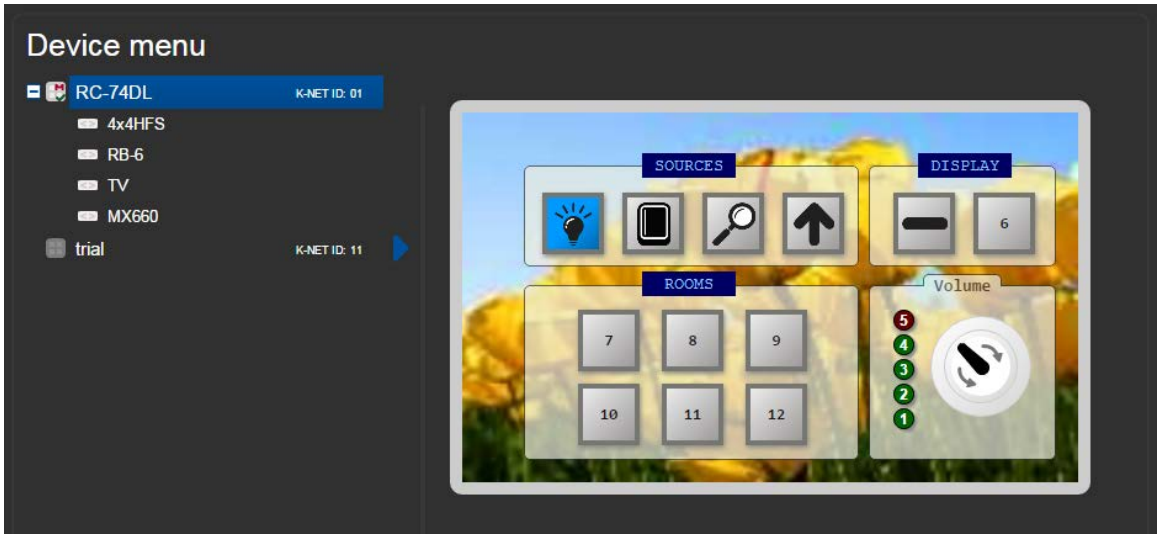


Figure 320: The Embedded Web Pages – The Devices Web Page

Click the **blue** arrow next to switch to single-panel mode in which each panel is displayed in a separate page:

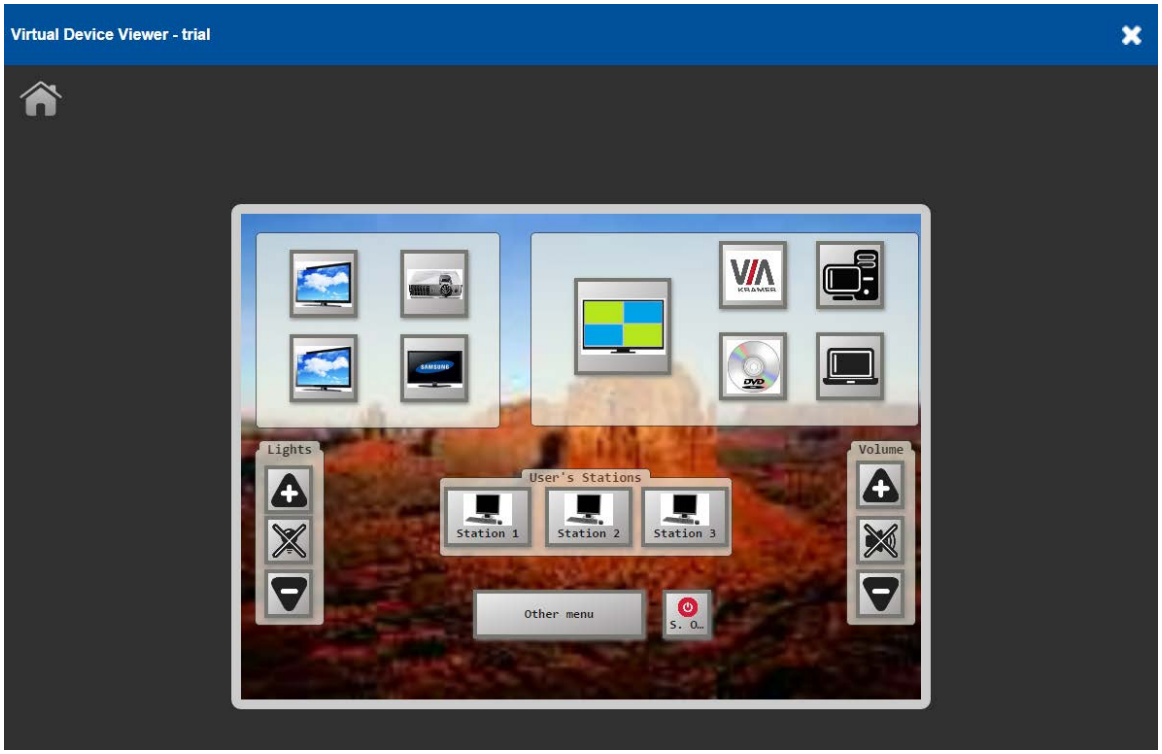


Figure 321: The Embedded Web Pages – The Virtual Device Panel

The virtual device configured in **K-CONFIG** appears in a new window and can be used to control the various devices. Click the home icon to return to the main page. The **Other menu** button was set up to link to yet another virtual panel. Click it to open the next virtual panel:

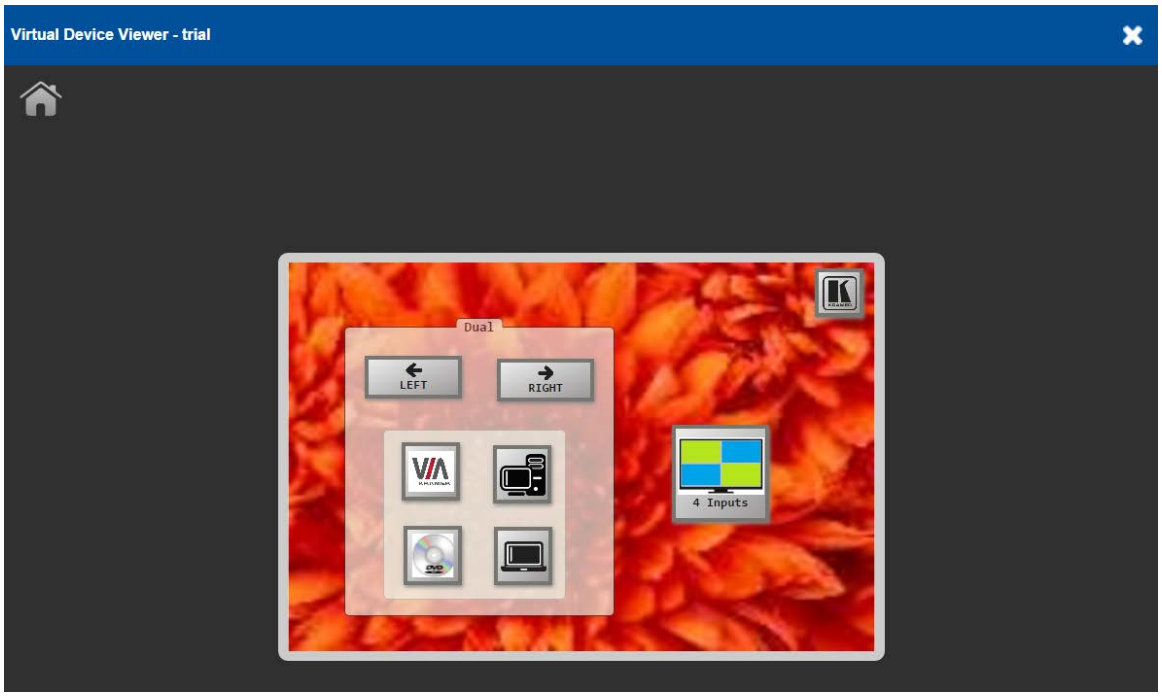


Figure 322: The Embedded Web Pages – The Virtual Device Panel

Click the **X** icon to display all the panels on one screen and scroll the page to view them.

In **K-CONFIG** the **Other menu** button is configured to link to the next configured virtual panel:

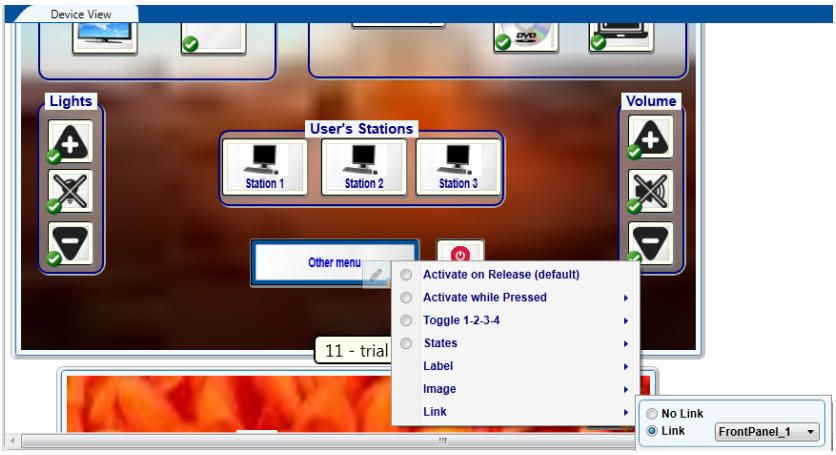


Figure 323: The Embedded Web Pages – Link to Front Panel 1 (in K-CONFIG)

The master controller lists the drivers. Click a driver on the list (for example VSM-4x4HFS) to view the groups of commands that have been defined in the **K-CONFIG** Driver Manager:

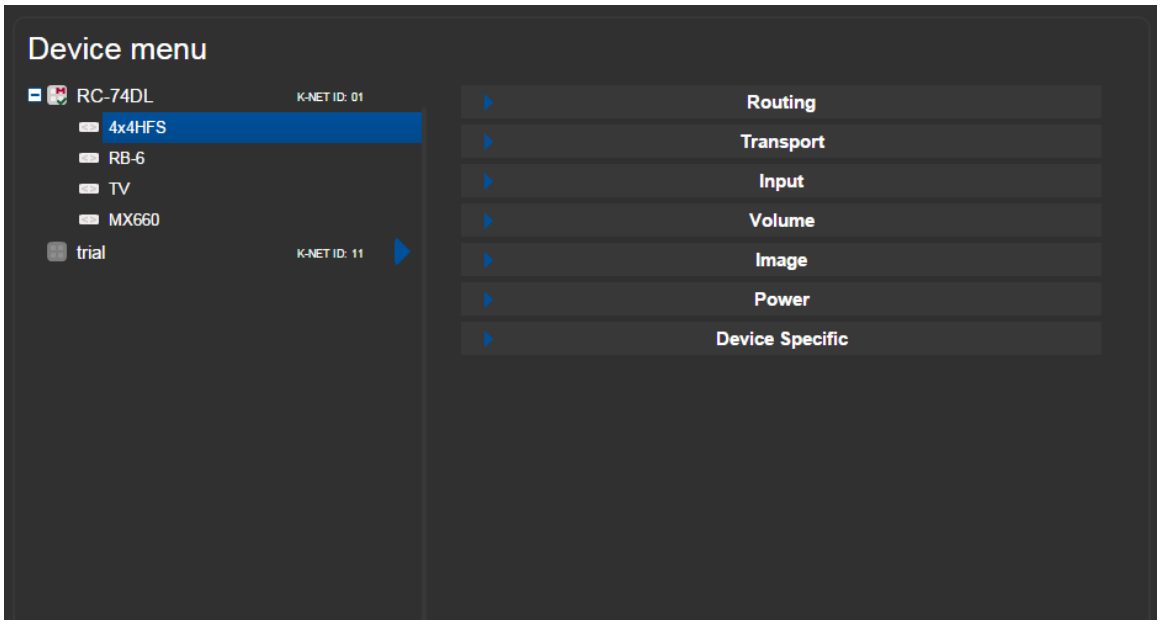


Figure 324: The Embedded Web Pages – The Driver Command Groups

Each category shows the active commands that are defined on the **K-CONFIG** Driver Manager. Click a group button to open and run any of the commands on the list:

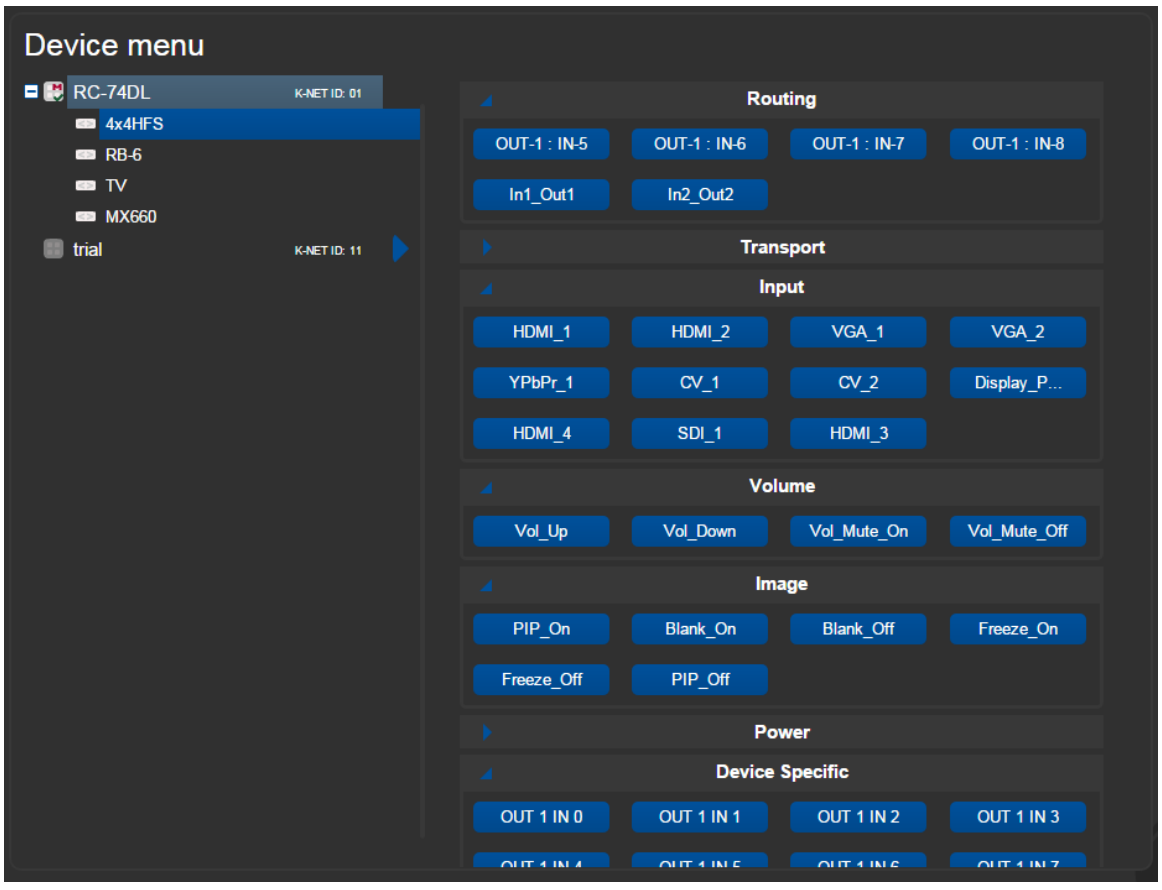


Figure 325: The Embedded Web Pages – VSM-4x4HFS Driver Command Buttons

For the TV, in this example, there will be a different set of commands configured (see Figure 327) that are related to the TV:

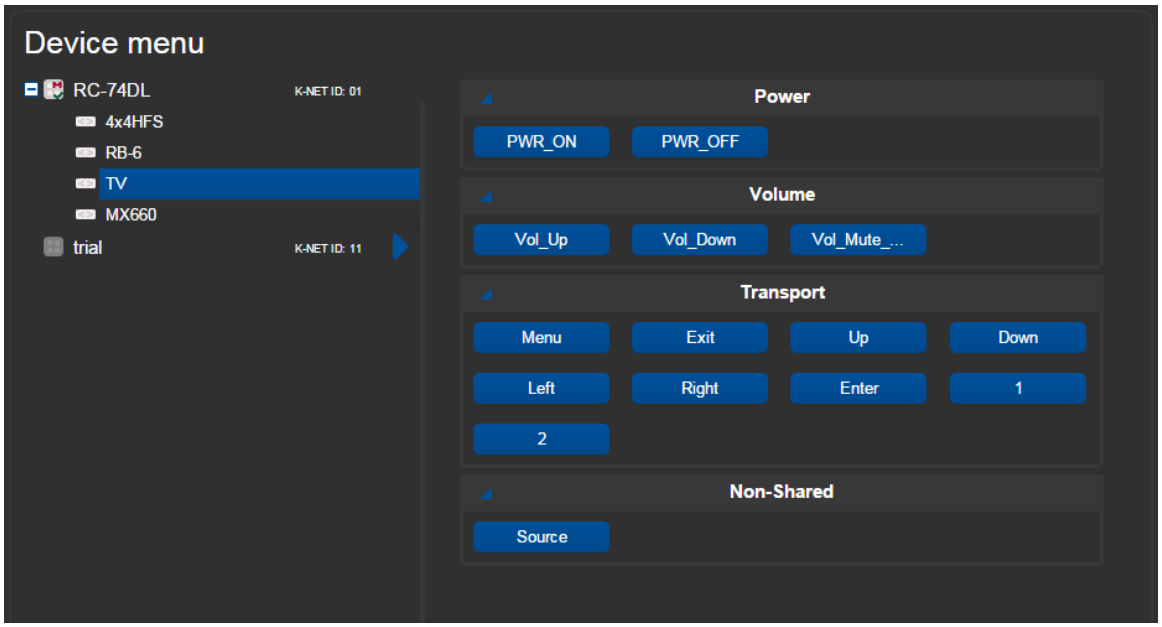


Figure 326: The Embedded Web Pages – TV Driver Command Buttons

In the **K-CONFIG** Action Editor you can find the commands defined in the configuration.

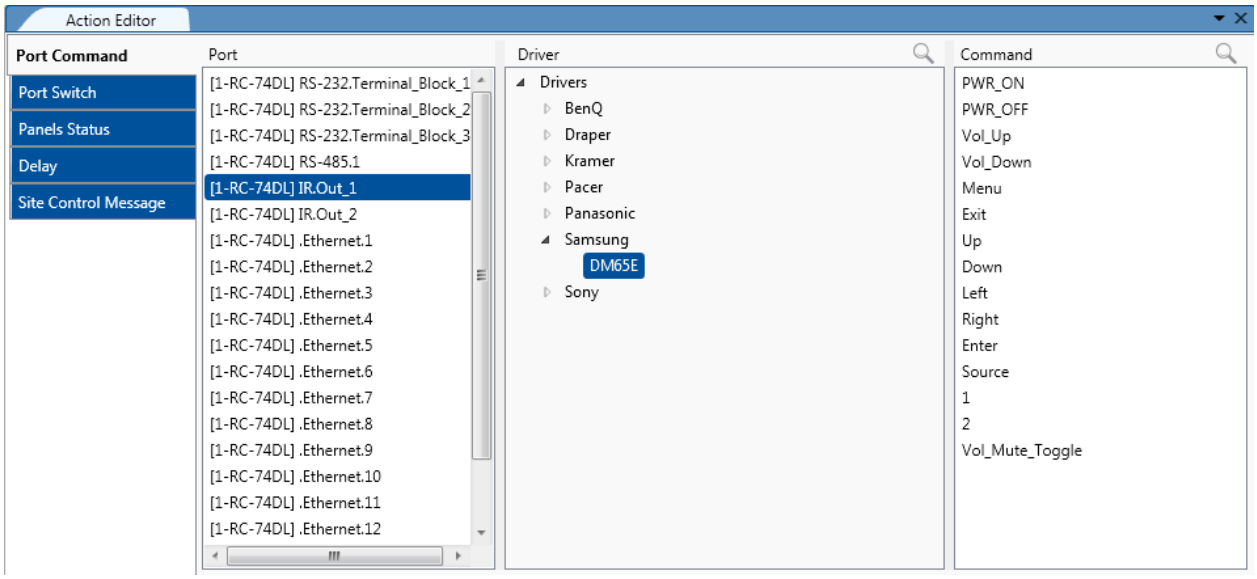


Figure 327: The Embedded Web Pages – Action Editor

11.3 The Macros Web Page

The Macros Web page lists all the macros that were configured in **K-CONFIG** and lets you run them by clicking the appropriate button:

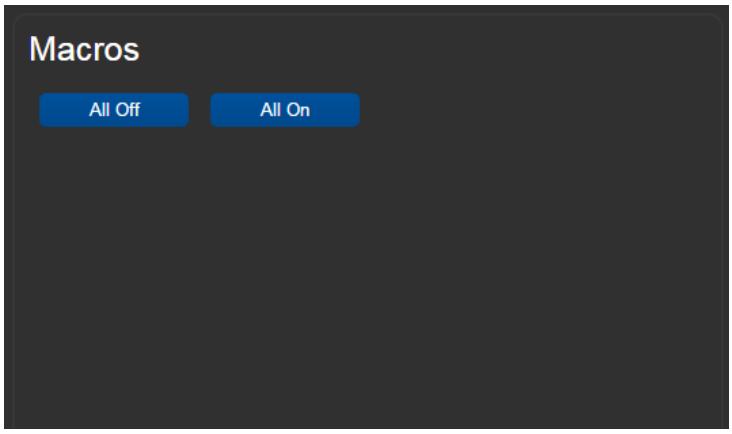


Figure 328: The Embedded Web Pages – The Macros Web Page

11.4 The Scheduled Tasks Web Page

The Scheduled tasks page displays the schedule setup that was configured in **K-CONFIG** together with the tasks that were added via the Web page (this example included no schedules in the configuration, therefore the Schedules tasks tables appears empty):

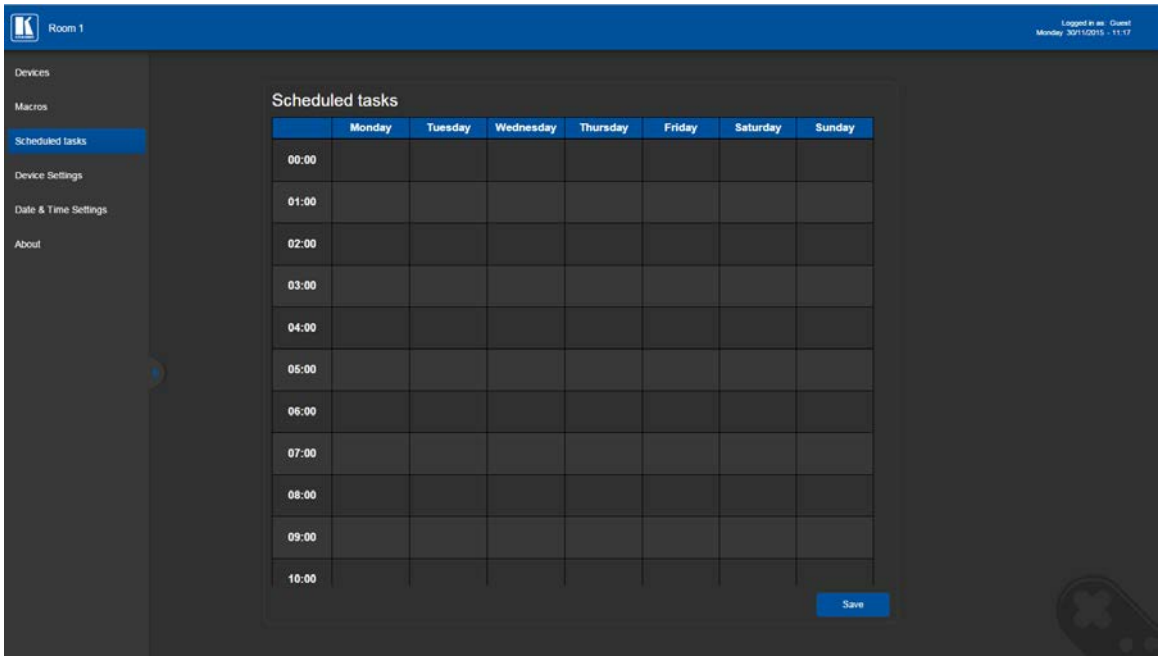


Figure 329: The Embedded Web Pages – The Scheduled Tasks Web Page

Hover over the table and click + to insert a macro:

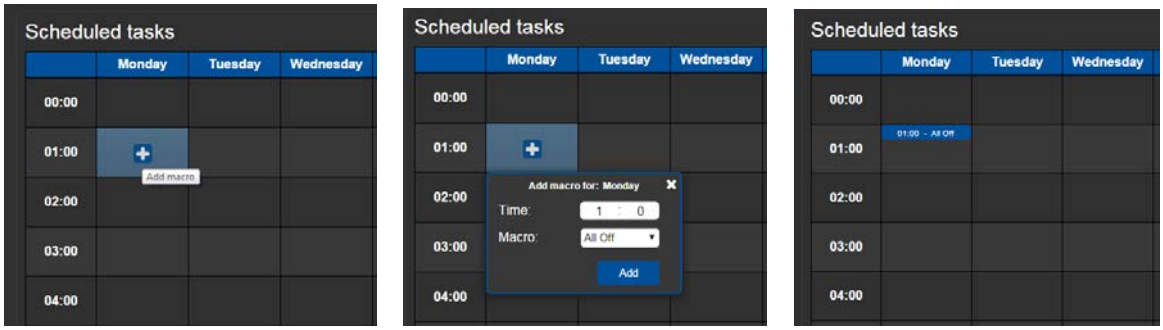


Figure 330: The Embedded Web Pages – Adding a Macro to the Schedule

After setting the schedule, click the Save button to save the setup:

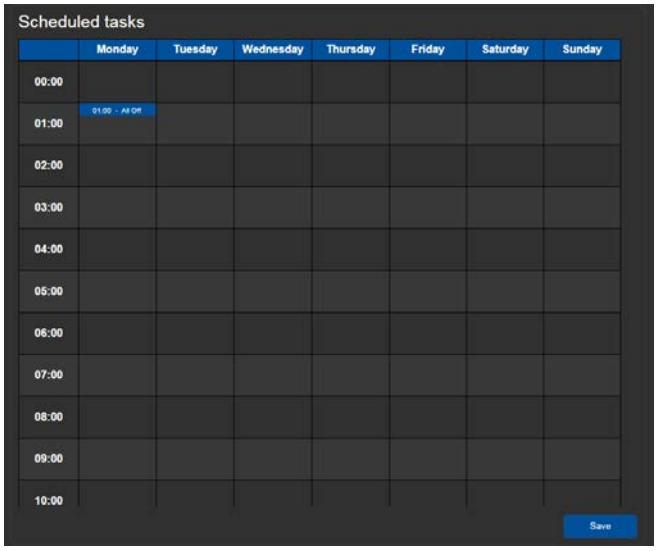


Figure 331: The Embedded Web Pages – Saving the Schedule

The following warning appears:

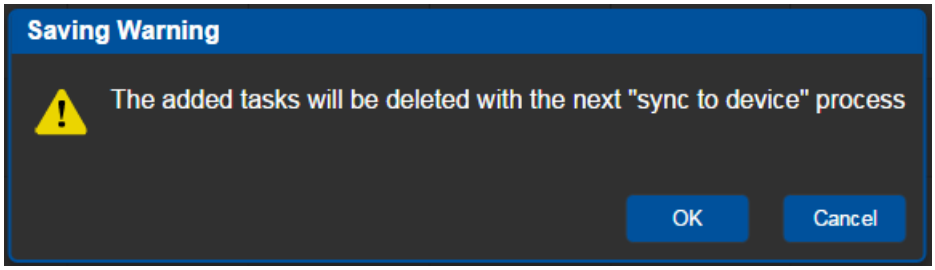


Figure 332: The Embedded Web Pages – Saving Warning

Note that once a configuration is synced to the room controller device, this schedule will be deleted.

You can also edit a schedule and then save it:

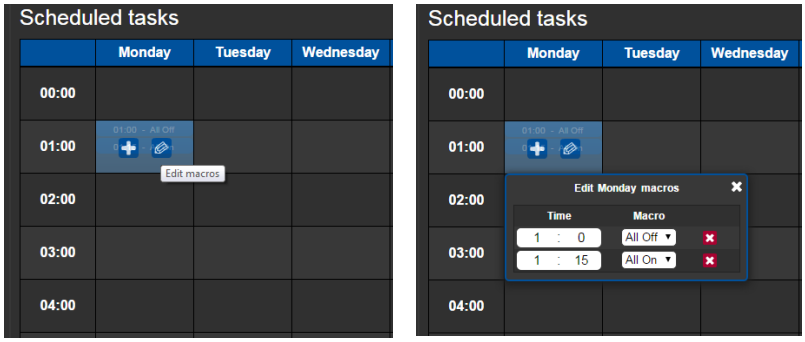


Figure 333: The Embedded Web Pages – Editing a Macro

11.5 The Device Settings Web Page

The Device settings Web page displays the device and security settings and lets you change some of the parameters:

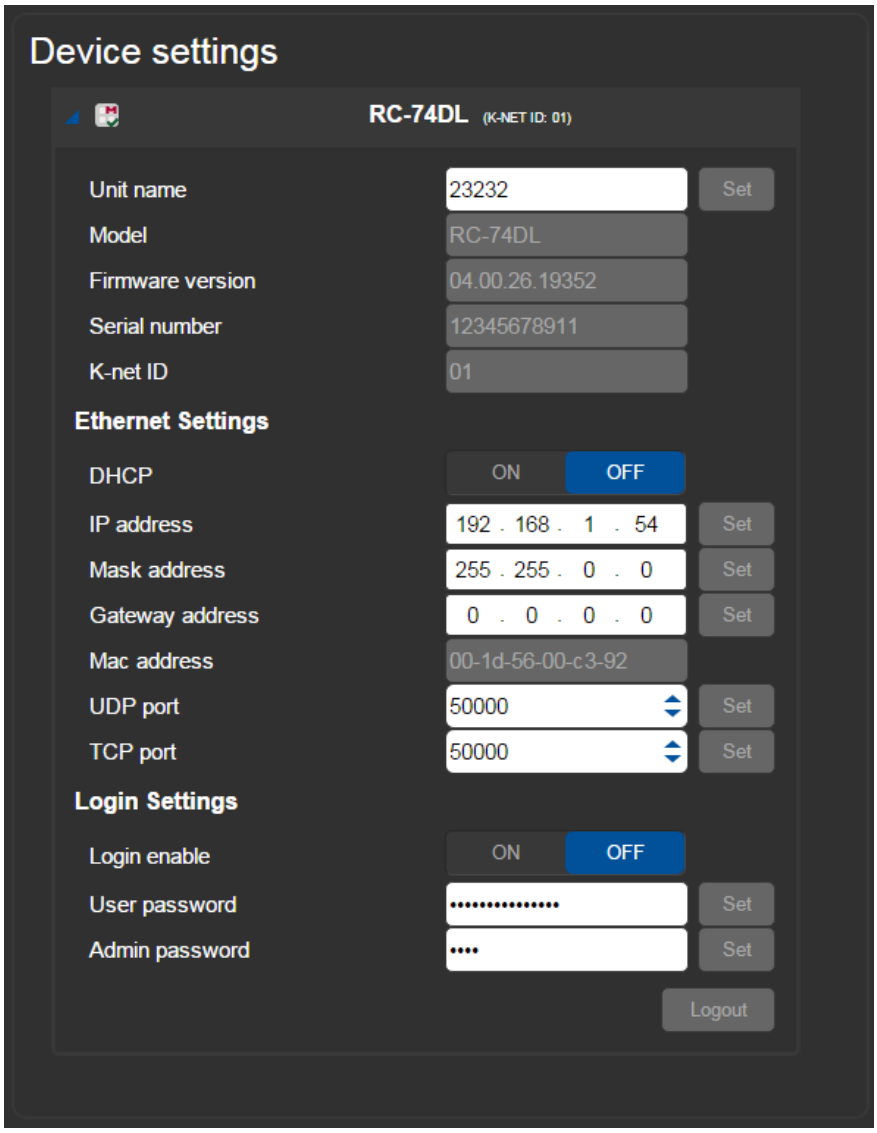


Figure 334: The Embedded Web Pages – The Device Settings Web Page

11.6 The Date and Time Settings Web pages

This page lets you set the time and date and is similar to the Date and Time tab in the **K-CONFIG** Device Settings:

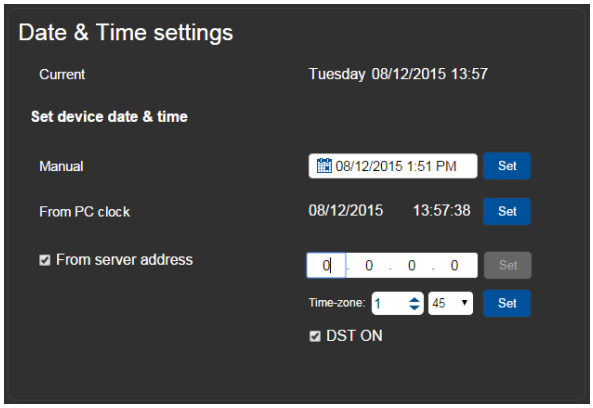


Figure 335: The Embedded Web Pages – Date and Time Settings

11.7 The About Web Page

This page shows the Web page version and Kramer details:

Figure 336: The Embedded Web Pages – The About Web Page

12 Creating a KRAMER NETWORK Virtual Master

You are here:

Configuration Steps	Description	Section
Introduction	General information and system requirements	1
Planning	Carefully plan your controlled room	2
Installation	Install the Software	3
Introduction to K-Config	Get to know the K-Config main window, menus and quick access icons	4
Driver Manager	Define the Controlled Device Drivers	5
Project Navigator	Define the Controlled Room	6
Port Manager	Assign the controlled devices to the Master and Auxiliary device ports	7
Triggers	Activate the Triggers	8
Adding Actions	Describes how to add the various actions to a trigger	9
Connecting to a Device	Describes how to connect to a device, upgrade the firmware, read/write to the device and so on	10
Using the Web pages	Describes how to control the device via the Ethernet and perform minor configuration operations	11
Creating a Virtual Master	Describes how to create a Virtual Master to control a room via KRAMER NETWORK	12

KRAMER NETWORK 1.0 is an IP-based enterprise management software platform for AV networks. Using any laptop, PC or tablet, **KRAMER NETWORK** lets IT managers to easily and remotely configure, route, control, and manage Kramer Pro-AV devices, room environments, and IP streaming devices from a single point in the network via a user-friendly Web-based interface.

Using **KRAMER NETWORK** you can easily manage a room in a floor of a building which is part of a network site. One way of doing this is by using a **KRAMER NETWORK** Virtual Master room controller that is created in **K-CONFIG**. The **KRAMER NETWORK** Virtual Master control configuration is saved in **K-CONFIG** and is then uploaded to a room defined in **KRAMER NETWORK**.

12.1 Opening a New Project

The Virtual Master room controller device is designed to be displayed in the **K-CONFIG** Web pages and it includes 50 Virtual Ethernet ports. You can connect the ports to various controlled devices via the Port Manager window and also add auxiliary devices. You can create the Virtual Master room controller by selecting either New Project or New K-Network Project (a shortcut) from the File menu.

To open a Kramer Network Virtual Master room controller:

1. Select the Virtual-Master room controller from the ADD MASTER DEVICE window:

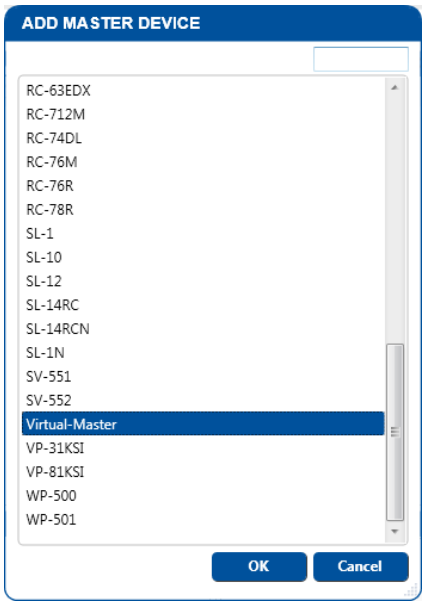


Figure 337: Virtual Master Device – Selecting the Virtual-Master

2. Click OK.
   The virtual-master appears in the Project Navigator area:

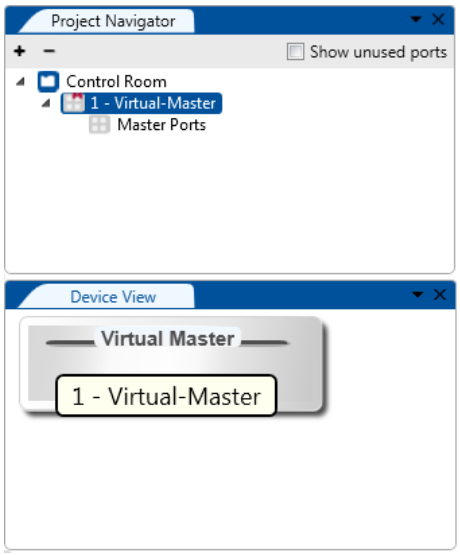


Figure 338: Virtual Master Device –the Virtual-Master in the Project navigator

Click the + sign to add an auxiliary device to the Virtual-Master room controller:

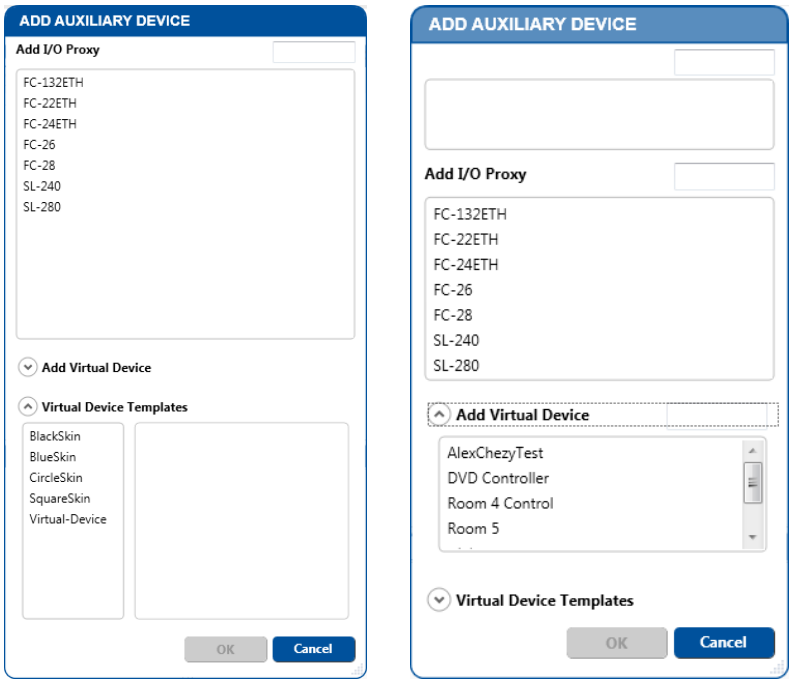


Figure 339: Virtual Master Device – Selecting an Auxiliary Device

You can add three types of devices:

- Control gateway devices (see Section 6.3)
- Virtual keypad devices (see Section 6.4)
- Virtual keypad device templates (see Section 6.5)

Set the master ports (via the Port Manager) and select the auxiliary devices (physical or virtual devices):

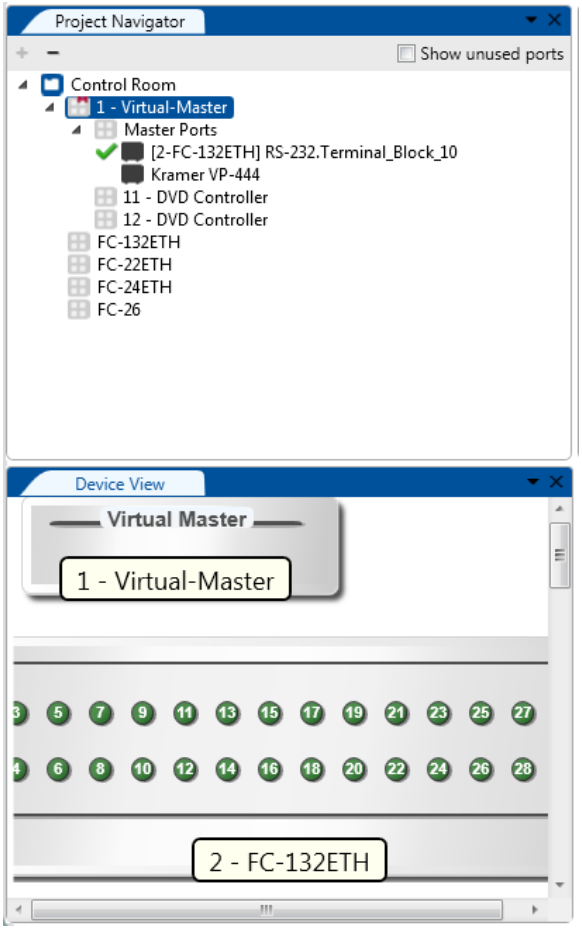


Figure 340: Virtual Master Device – Room Configuration

12.2 Syncing the Virtual Device Configuration to the Virtual Master Device

To sync a configuration for use with KRAMER NETWORK:

1. In the file menu, select Save Project As to save the Virtual Master configuration as a project.

2. Click the Sync to Device button on the top right.
   The Export Configuration Krnt File window appears:

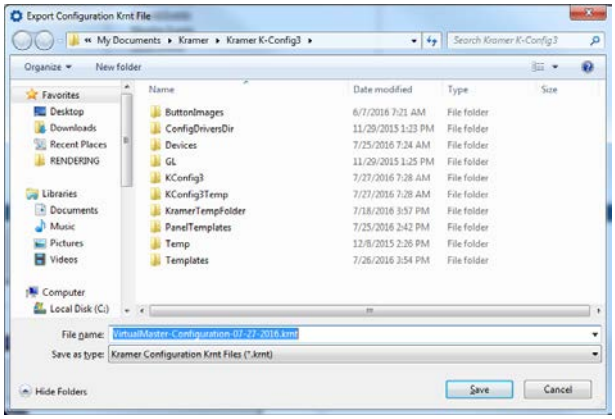


Figure 341: Virtual Master Device – Syncing to Device

3. Click the Save button.

The Krnt file can be used for KRAMER NETWORK.