

CEREBRUM

CCP-4800

Cerebrum 1U 48 button hardware control panel

Operation manual



CEREBRUM

OPERATION MANUAL

CCP-4800



Hercules 28

NL-5126 RK Gilze

The Netherlands

Phone: +31 161 850 450

Fax: +31 161 850 499

E-mail: Info@axon.tv

Web: www.axon.tv



WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRICAL SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE



- ALWAYS disconnect your entire system from the AC mains before cleaning any component. The product frame (SFR18 or SFR04) must be terminated with three-conductor AC mains power cord that includes an earth ground connection. To prevent shock hazard, all three connections must always be used.
- NEVER use flammable or combustible chemicals for cleaning components.
- NEVER operate this product if any cover is removed.
- NEVER wet the inside of this product with any liquid.
- NEVER pour or spill liquids directly onto this unit.
- NEVER block airflow through ventilation slots.
- NEVER bypass any fuse.
- NEVER replace any fuse with a value or type other than those specified.
- NEVER attempt to repair this product. If a problem occurs, contact your local Axon distributor.
- NEVER expose this product to extremely high or low temperatures.
- NEVER operate this product in an explosive atmosphere.

Warranty: Axon warrants their products according to the warranty policy as described in the general terms. That means that Axon Digital Design BV can only warrant the products as long as the serial numbers are not removed.

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This product complies with the requirements of the product family standards for audio, video, audio-visual entertainment lighting control apparatus for professional use as mentioned below.

	EN60950 Safety EN55103-1: 1996 Emission EN55103-2: 1996 Immunity
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Axon Digital Design CCP-4800  Tested To Comply With FCC Standards FOR HOME OR OFFICE USE	This device complies with part 15 of the FCC Rules Operation is subject to the following two conditions: (1) This device may cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.
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Table of Contents

Introduction to Cerebrum	5
An Introduction to Cerebrum	5
Key Cerebrum features	5
Configuration	6
Monitoring workflow & events	6
The CCP-4800 control panel	7
Introduction	7
Features	7
Configuration	8
Initial configuration	8
Dipswitch settings	8
Configuration Method	8
Cerebrum Controlled	8
Default IP address	9
Adding the panel to Cerebrum	9
Configuring functionality on the panel	11
Creating a CPF file	11
Controlling an Enumerated object of a Synapse card	12
Creating a button that will navigate to a different menu	12
Standalone	13
Default IP address	14
Configuration	15
SynCross Router Settings	16
Button Setting	16
Firmware upgrade	18
Operation	18
Specifications	20

1 Introduction to Cerebrum

An Introduction to Cerebrum

In modern broadcasting, the multi-platform delivery and multi-purpose repackaging of materials demand that you master a diversity of workflows. AXON's Cerebrum software application makes the implementation of multiple video and audio signal paths easier, more efficient and cost-effective than ever. Cerebrum provides comprehensive tools to configure, monitor and maintain not only the complete range of Synapse products, but also a wide variety of other devices.

The result is that you, and limitless numbers of users, can take total control over multiple and complex routines. Ultimately, you can make your work flow how you want it to flow.

Please visit the AXON Digital Design Website at www.axon.tv to obtain the latest information on our new products and updates.

Key Cerebrum features

Cerebrum is a Windows-based application whose advanced functionality and broad range of features make life easier. The brains behind your many and varied workflows, Cerebrum allows users to remotely:

- Configure... a complex workflow in a short space of time.
- Manage & Report... events using hierarchical system status.
- Control... devices via an intuitive, user-friendly graphical interface.
- Maintain... a workflow over its lifetime.

Cerebrum employs Ethernet communication to each device in your chosen workflow, providing the ability to both configure and monitor devices at local and remote sites. It uses an SQL database to record, view and archive historical workflow events as well as stores the user-definable aspects of each device's configuration. This database can also be redeployed for the user's own requirements via ODBC or similar interface.

The application allows up to 64 user-groups to be defined. For each group the level of access can be restricted, not only to program functionality but also to control access of individual settings on specific devices. Limitless users can be added and assigned to one of these groups, each with their own unique password. This ensures that Cerebrum can be used in operations where conditional access is required, and as an administrative tool.

Configuration

Within its clear, intuitive interface Cerebrum provides you with the tools to configure your workflow with speed and ease. Each device is represented by one, or more, graphical dialogue interfaces, which are shown automatically in the Control view when the device is selected. These provide a clear idea of the function and signal flow within the module, and make clear what effect the setting has on the signal path. Visualisations for some devices, such as Synapse Aspect Ratio Converters, are given for the output display. If you need further clarification of function a view to the manual for the selected card is always available.

You can save the configuration of a device as a template file, or to the clipboard, and quickly copy it to other selected devices in the workflow. Using Cerebrum's Compare function, the settings and status of a device of the same type can be compared, with any differences highlighted. To ease some aspects of configuration, and to make monitoring of the system more applicable to each user's particular application, additional data can be added about the location, channel and/or service the device is providing. There is also a free-form notes field for all other critical information.

Monitoring workflow & events

Cerebrum provides a multitude of ways to let you accurately track events within your workflows. Each device in your workflow is shown in the System view, and displays its current and historical status using an icon. Cerebrum actively monitors each device to check for its current status. The status of each device is passed to a parent node within the System view and a hierarchical status of your complete workflow is shown using a single icon. This is also reflected in the application's optional Status Bar, and in the System Icon Tray, when the application is either obscured or minimised. The System view can be alphanumerically sorted by the network address, user name, card type or one of the user defined data items such as Channel, Service, Room or Bay.

Each event occurring for a device being monitored (Synapse, SNMP or Router) is logged to the database and shown in the Event Log. A status priority can be assigned to each event to determine whether an alarm or warning action should be triggered. Each state of a device's status can be configured by the system administrator to reflect the severity of the event, plus the method by which the warning or error should be cleared (either manually or automatically on a good event state) allowing the status to really reflect the condition of a users system.

The Event Log window can be filtered using different criteria. Additional user data can be stored with each event, such as the cause/reason for the related warning or error. Cerebrum allows limits to be set for the size of the Alarm Log table in the SQL database allowing the user to keep historical records for the activity of the system.

4 The CCP-4800 control panel

Introduction

The CCP-4800 Cerebrum control panel is a 1U rack mount panel with 48 tactile buttons.

Features

The CCP4800 can operate in two modes. Default the panel can be used in a Cerebrum controlled system. Secondly the panel can be used as a dedicated router control panel.

When being used in default setup the panel provides a hardware panel control surface for a Cerebrum control system. The panel is configured in the same way as the software panels in the Cerebrum system using the Cerebrum Form Designer application. All devices connected to the Cerebrum server can be controlled or viewed from this physical surface. The panel can be configured to work with a number of 'pages' which can be linked together to form a logical, quick and user friendly interface.

Also the panel can be used as a standalone control panel. In this case the panel will be configured to control the SynCross routers directly by means of the SWP08 protocol. Cerebrum is used to assign functions to each of the buttons.

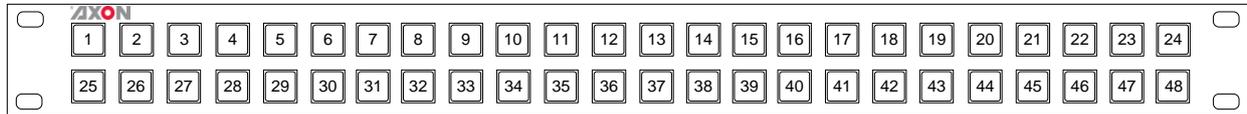
The unit is powered with an internal PSU unit. The rear of the unit has two IEC power inlets allowing for a redundant PSU in critical applications. The unit has an earth or grounding stud by the side of the inlets.

The unit uses its inbuilt 100Base-T Ethernet connector to connect to the Cerebrum server over either a local or wide area network. The unit can be configured to use either DHCP or manually assigned IP addresses. As with other Axon devices when used in manual IP assignment mode the address, sub-net mask and gateway can be assigned using the configuration mode of the panel.

5 Configuration

Initial configuration

When powering on the CCP-4800 panel and connecting it to a network, all the buttons start blinking.



Dipswitch settings

The DIP switches are used to setup the operation mode of the panel. The operation modes are Cerebrum controlled or standalone. Another function of the dipswitches is to select the application firmware upgrade and IP address mode.

Configuration Method

Poles 3, 6, 7 and 8 are being used. The rest of the poles need to be in OFF state.

Pole 3 is used for IP address mode selection:

OFF: User-defined IP address

ON: Default IP address



Pole 6, 7 and 8 are all set to ON for CCP mode

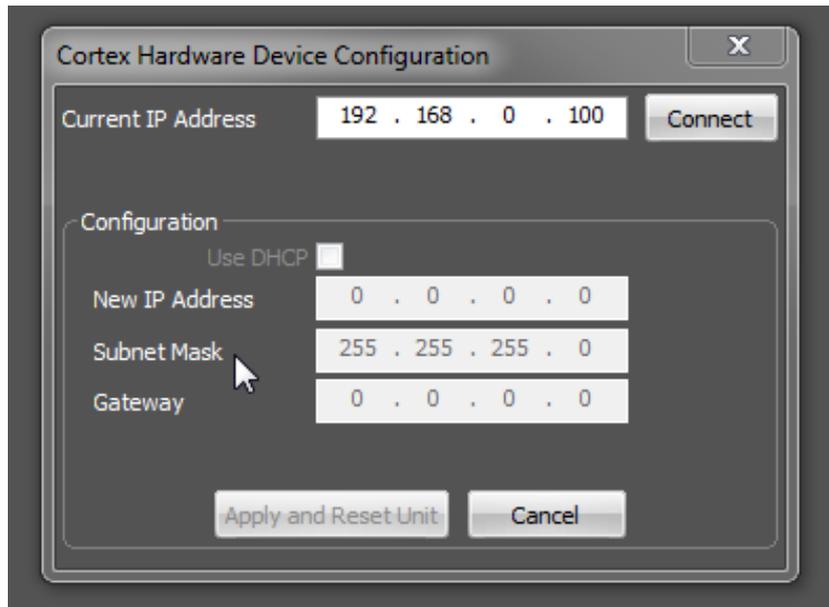
Pole 6, 7 are set to ON and Pole 8 is set to OFF for Probel mode

Cerebrum Controlled

To use the CCP with Cerebrum, please check that the dipswitches 6, 7 and 8 are set to **on**.

The default IP address of the panels is 192.168.0.100. To change the IP address you need to do this follow these actions:

Start-up Cerebrum and go to View → Engineering → Configure Cerebrum Hardware. The following pop-up screen will appear.



To change the IP address into the required IP address follows the setting from top to bottom. First start with filling in the current IP address. After that fill in the new IP settings and press “Apply and Reset Unit”. After reboot the panel will come back with the right IP address.

Default IP address

In some cases the IP address of the panel could be unknown. To default the IP address you need to power down the panel. Put dipswitch 3 in the on position and wait for 30 seconds and power down again. Now the panel has been configured in its default IP address again. This address is 192.168.0.100.

Adding the panel to Cerebrum

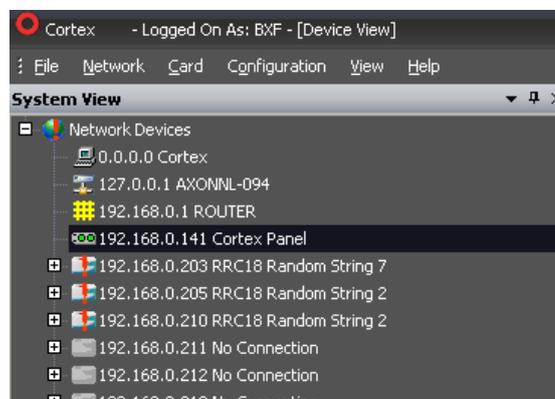
In order to use a hardware panel on your Cerebrum system you will need to be running Cerebrum V1.06.02 or later. To add the panel go to the Network menu and choose the Add Network Device option, from the selection box then choose to add a ‘Cerebrum Panel’.



Define the IP address of the panel that you are adding to the system and also the home page cpf file that you want the panel to display first. You can also specify an initial settings file that can hold variables for this instance of the panel. In this way you can have multiple panels using the same cpf files but perhaps changing different destinations of the router, or different Synapse devices depending on their location.

The check box for redundant PSU is not used in case of the CCP4800.

When you have finished choosing the options press Add to continue. The panel should now appear at the correct IP address in the System View of Cerebrum, as shown in the following screenshot:



When this panel is selected in the System View the control tab of the Device View should show a mimic of what the panel is currently displaying if it is on-line. This is displayed in the

following picture as well:



Configuring functionality on the panel

This mimic will also work, so pressing a button on the mimic is the same as pressing a button on the real panel, so the functionality of the panel can be tested without being near the physical device if required.

The Monitoring tab, in the same way as all other devices within Cerebrum, shows a historical log of the status events for this panel. These include PSU monitoring and communication status events.

The CCP4800 panel works in the same way as the Control view in Cerebrum. The Software panels use CLF's (Cerebrum Layout Files) to define the functionality and the information shown to the user, whereas the Hardware panels use a CPF's (Cerebrum Panel Files) to define the same. These files are created by the Cerebrum Designer in the same way as the CLFs.

Creating a CPF file

To create a CPF for defining functionality to a CCP4800 control panel, first make sure the Cerebrum designer is installed onto your system. If this has not been done, re-run the Cerebrum installation and press the modify button when prompted, then choose the Cerebrum designer option to add this to your system. When the designer is installed then invoke this from the desktop/program files shortcut.

To create a new or blank CPF file then go to the File menu and select New → Hardware Panel. A blank template will appear looking like the CCP4800 panel. This file should be saved in the Cerebrum\Forms\Hardware Panels folder (or sub folder)

There are two ways to design functionality onto the panel, if you are familiar with the Cerebrum system then you can add functionality manually using the Update Editor, or if you are less familiar with the system you can use the System View to 'drag and drop' functionality onto the buttons from the devices in the system.

To work with the System View you have to join the Designer as a client onto your Cerebrum system whilst it is connected to your network. To do this ensure the Cerebrum application is running and has the Client connections enabled (Configuration → Cerebrum Configuration → CorLink → Enable Client connections), you should ideally give the Corlink server a unique name and if you are using more than one Cerebrum system on your network then it should have a unique multicast address.

Controlling an Enumerated object of a Synapse card

When the client connections has been enabled you will be able to join the designer onto the system by choosing the File → Log On To Server option and giving a valid user and password (default User: Admin, Password: Cerebrum), if successfully connected to the system the bottom left of the status bar should show Connected in green text. The System View will also show the network devices in the same way as they are shown in the main Cerebrum application.

If you want to control an enumerated object of a Synapse card from the CCP4800, firstly select the card in the system view you want to control, this will then show a list of objects in the bottom half of the System View, then you can find the Control object required and then you can drag from this half of the view to the button/s required.

For example: if you want to turn the program keyer of a HDK100 on and off with two buttons from the CCP4800, first find the card in the system, then in the Control group of objects locate the object called Prgm-Key, click on the plus symbol to the left hand side of this object to reveal the states this object has, then select the first two states 'Off' and 'On' and then drag them onto the first two buttons of the CPF file opened for editing. This will assign a template that will control this specific instance of the HDK100 and turn the Keyer On and Off with the two buttons.

If you are making a generic CPF file for controlling multiple HDK100 cards then you would use the ACP Cards tab in the System View then find the card type required, then select the software version of the card required. This then shows the objects available again, however when the object states are dragged onto the panel it will expect two Panel Variables to be set to target the card (IP_ADDRESS and SLOT).

Creating a button that will navigate to a different menu

In order to create a panel which gives the user a choice of different functionality from the same panel, you can create separate CPF files to create the functionality required and then link them together by adding functionality to a button to change the panel the CCP4800 is using. An example of this is shown in the Example panel files supplied with the installation, the file Example.cpf has three buttons that link to other CPF files, if you select the first button then you will see in the update editor a GUI event was created and in this event a GUI set action was added that changed the file being used as Example Presets.cpf.

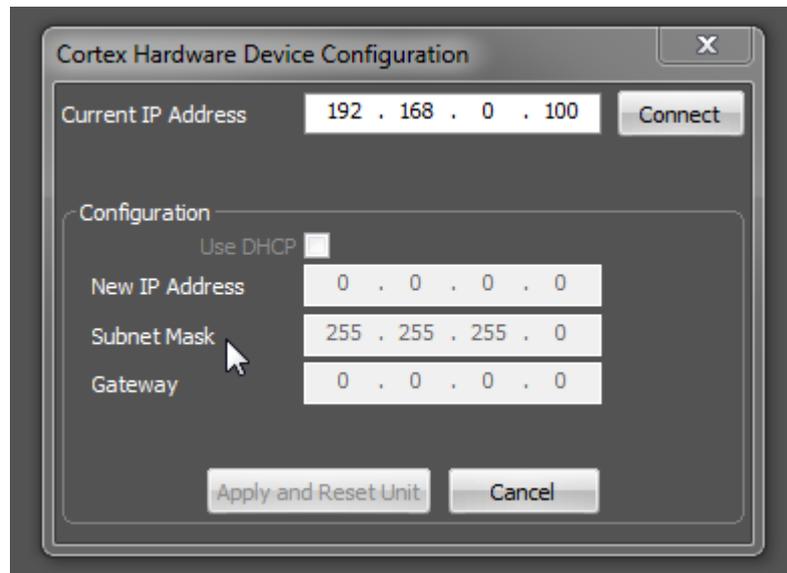
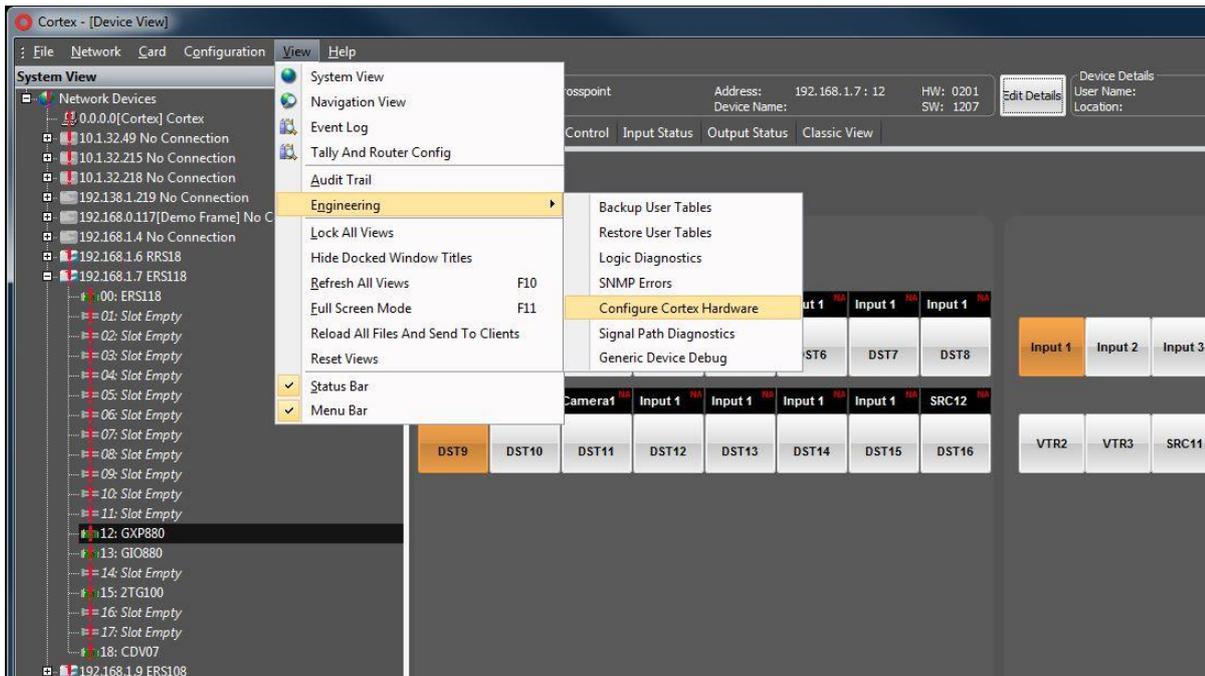
To use this on a CPF of your own, you can either add the event and action manually or copy the button from this example and paste it onto your own CPF file to the button required, changing the file it is calling and the button text from the initial configuration of the button. Don't forget to give the user a way to get back to the main/home menu.

Standalone

When the dipswitches 6 and 7 are set to on and switch 8 to off the panel will act as a standalone router panel. This panel can be used to control all SynCross router variants.

The default IP address of the panels is 192.168.0.100. To change the IP address you need to do this follow these actions:

Start-up Cerebrum and go to View → Engineering → Configure Cerebrum Hardware. The following pop-up screen will appear.



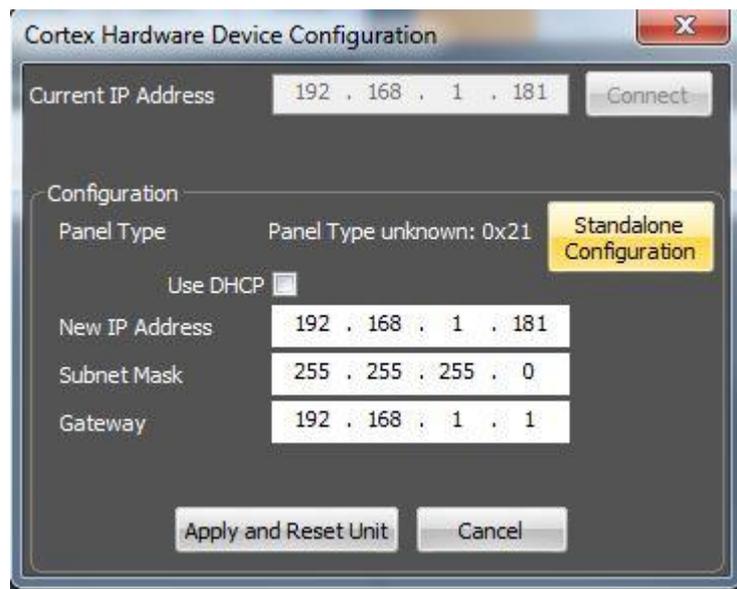
To change the IP address into the required IP address follows the setting from top to bottom. First start with filling in the current IP address. After that fill in the new IP settings and press “Apply and Reset Unit”. After reboot the panel will come back with the right IP address.

When using the standalone more, please make sure the GXP880 (the Syncross crosspoint card) CtrlMode is set to SWP08 over TCP.

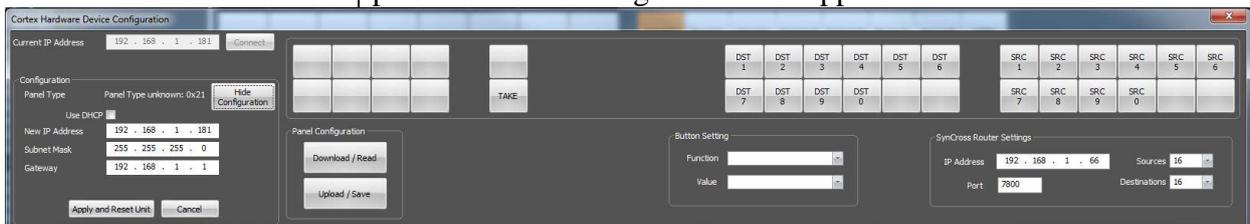
Label-Outp-38	23456576
Label-Outp-39	outeerre
Label-Outp-40	sdbgEHER
Rescan	Off
Take-Control	Direct-Take
Take	Off
CtrlMode	SWP08 over TCP
Reclocker1	On
Reclocker2	On
Reclocker3	On
Reclocker4	On
Reclocker5	On
Reclocker6	On
Reclocker7	On

Default IP address

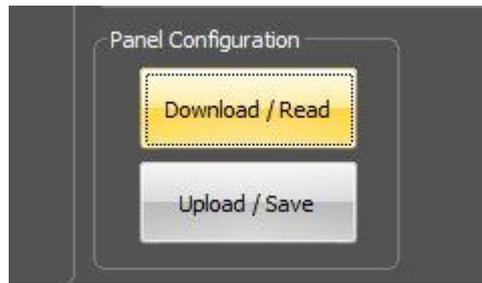
In some cases the IP address of the panel could be unknown. To default the IP address you need to power down the panel. Put dipswitch 3 in the on position and wait for 30 seconds and power down again. Now the panel has been configured in its default IP address again. This address is 192.168.0.100.



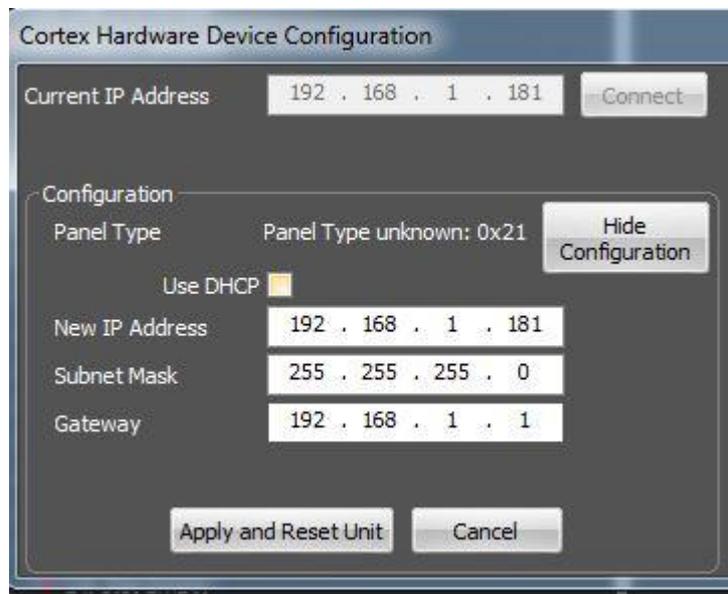
When the connection has been made with the panel an extra button will popup. This button will enable the user to set the functionality of the buttons in standalone mode. When the Standalone button is pressed the following screen will appear.



This popup screen will show the buttons available on the physical panel.



When you start changing the configuration of the panel start with reading the current configuration of the panel. When this is the first setup of the panel this is not needed. Pressing the Download/Read button will read the current settings stored within the panel. These settings will be shown on the panel buttons. When a new setup has been made button Upload/Save needs to be used. Pressing this button will upload the new configuration to the panel.



Configuration

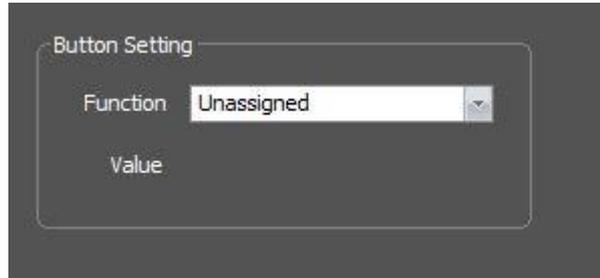
In this group box the IP settings of the panel can be made. The panel can be used in DHCP mode and manual mode. When used in manual mode the IP settings can be setup up below the DHCP check box. When these IP settings need to be applied to the panel, press Apply and reset Unit. When all changes needs to de discarded press cancel and all settings will fall back to the state they originally where.



SynCross Router Settings

To connect the panel to a SynCross router you need to make the panel aware of the existence of the SynCross Router. To do this all details need to be filled in. Because the panel will be in the same network only the IP address, port number, number of sources and number of destinations.

The SynCross routers always will be connected to the port number 7800.



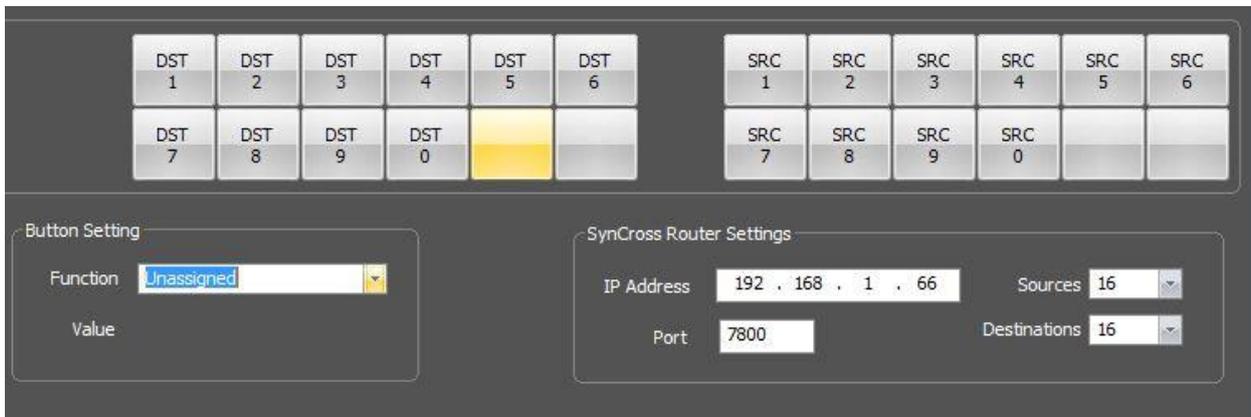
Button Setting

Below the “Physical” buttons on the popup screen you will be able to set the function of the buttons. The choices are Unassigned, sources, destinations and take.

When a button is chosen the function dropdown menu will show what the current function of the button is. Select a button which function needs to be altered. Within the Button Setting groupbox you need to choose a function.

If as function destinations or sources is chosen also the dropdown for the value will appear. With the value dropdown menu you will be able to set a destination or source number.

The Take button will give the button take functionality. This button only can be used once.



DST 1	DST 2	DST 3	DST 4	DST 5	DST 6	SRC 1	SRC 2	SRC 3	SRC 4	SRC 5	SRC 6
DST 7	DST 8	DST 9	DST 0			SRC 7	SRC 8	SRC 9	SRC 0		

Button Setting

Function: Unassigned

Value: Unassigned
Source
Destination
Take

SynCross Router Settings

IP Address: 192 . 168 . 1 . 66 Sources: 16

Port: 7800 Destinations: 16

						TAKE	DST 1	DST 2	DST 3	DST 4	DST 5	DST 6	SRC 1	SRC 2	SRC 3	SRC 4	SRC 5	SRC 6
							DST 7	DST 8	DST 9	DST 0			SRC 7	SRC 8	SRC 9	SRC 0		

Panel Configuration

Download / Read

Upload / Save

Button Setting

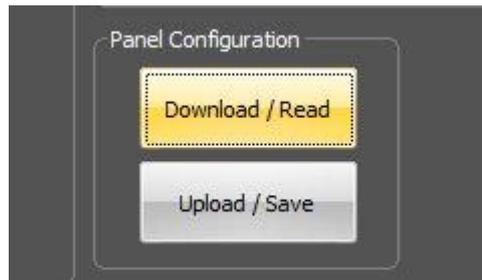
Function: Unassigned

Value:

SynCross Router Settings

IP Address: 192 . 168 . 1 . 66 Sources: 16

Port: 7800 Destinations: 16



If the new setup is ok it can be uploaded to the panel. To make this effective the Upload/Save needs to be used. Pressing this button will upload the new configuration to the panel.

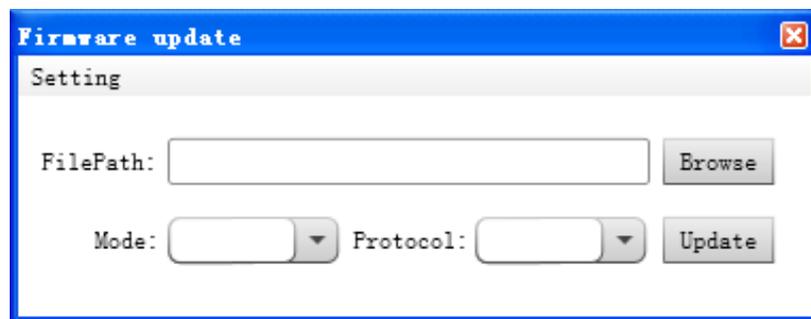
6 Firmware upgrade

Operation

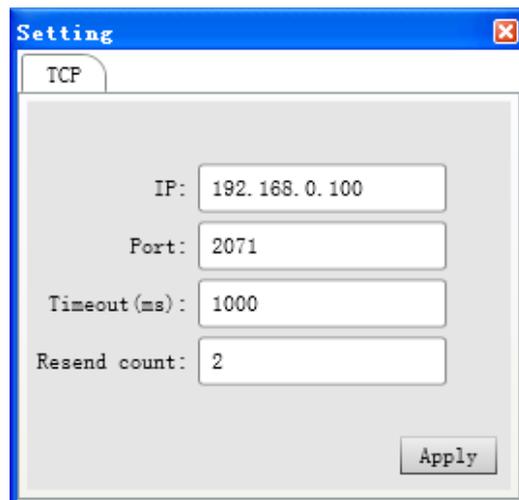
The firmware of the control panel can be upgraded. This upgrade is necessary in case of new releases.

The Update Tool software is used to upgrade the application. The use of TCP/IP allows communication between control panel and UpdateTool software.

Set the panel into CCP mode as mentioned in chapter “configuration Method”, connect LAN interface, power up the panel and run the UpdateTool program. This tool can be found on the www.axon.tv website.



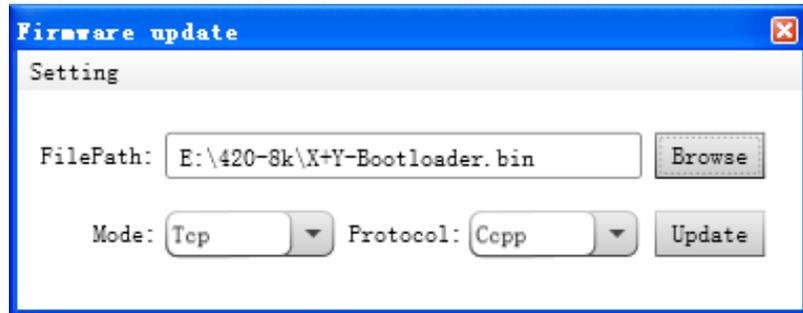
Click Setting menu to launch setting window, set as below:



IP	Panel's IP Address
Port	Panel's communication port, use 2071
Timeout(ms)	Communication timeout
Resend count	Resend times

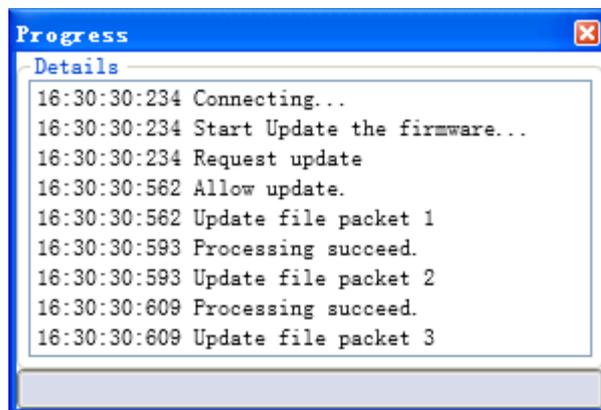
Click the Apply button and then close the setting window.

In main window, set as below:

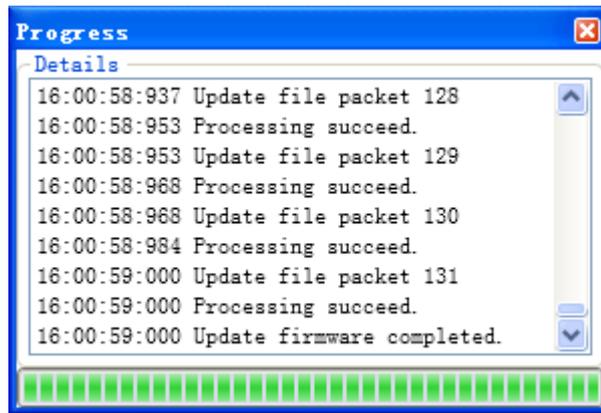


FilePath	Select .bin file of panel application
Mode	Select Tcp
Protocol	Select Ccpp

Click the Update button to start programming. The application will show as below.



Wait until program completes.



After the upload of the new software the panel will automatically restart. Now the new application will be running.

7 Specifications

Dimensions

Height	44mm (1.73") (1RU)
Width (including front panel)	483 mm (19")
Depth (including front panel and DC connector)	171mm (6.73")
Width (excluding front panel)	450 mm (17.71")
Depth (excluding front panel, including DC connector)	121mm (4.67")

Weight

Weight (excluding power adapter)	~2.5 kg
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Power

AC	100–240V AC, Frequency: 50/60 Hz 3W
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Miscellaneous

Operating temperature	0° to 40° C environmental temperature (32° to 104° F)
Storage temperature	-20° to 70 ° environmental temperature (-4° to 158° F)