

# CEREBRUM

**CCP-1601B**

**CCP-3201B**

**CCP-4801B**

Cerebrum 16, 32 or 48 LCD button control panels  
with 1 rotary button

**Operation manual**



# CEREBRUM

## OPERATION MANUAL

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CCP-4801B



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**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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Date created: 03-11-2010

Date last revised: 15-12-2015

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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

Axon Digital Design  
CCP-1601-3201-4801



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.

# Table of Contents

<b>Table of Contents</b>	<b>4</b>
<b>1. Introduction</b>	<b>5</b>
<b>2. Configuration</b>	<b>6</b>
Panel Configuration	6
Adding the panel to Cerebrum	7
Configuring functionality on the panel	8
GPI Contacts	8
<b>3. Reprogramming the panel</b>	<b>10</b>
<b>4. Specifications</b>	<b>12</b>

# 1. Introduction

The Cerebrum CCP control panel range provide a 19" rack mount hardware control panel with 16, 32 or 48 LCD buttons and one rotary encoder for use with the Cerebrum control and monitoring system and can be configured to control or show the status of any device connected to the Cerebrum system.

The controls can be configured into one or more sub-panels, each of which can use an unlimited number of linked 'pages' to form a flexible quick and logical user interface to the system. The panel is configured using the Cerebrum Form Designer application in the same way as the software panels within the system.

Each of the buttons has a 64x32 LCD matrix which can either display up to three rows of multi-lingual text in a chosen font and/or a graphical icon. One of up to sixty four different background colors can be selected to allow for easy differentiation of functionality, selection or state.

The rotary encoder can be used for different context based functionality, for example it can scroll through pages of router sources or destinations or can change the value of one or more objects on a color corrector. In addition the control can be pressed to allow a home page, or default value to be easily selected.

Eight GPI inputs are available and can be used for any function within Cerebrum but most commonly are used for selection of router sources when driven from Camera Operator Control Panel touchdowns.

The panel communicates with Cerebrum using a TCP/IP protocol over a local or wide area Ethernet network and can be configured to use either DHCP or a 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.

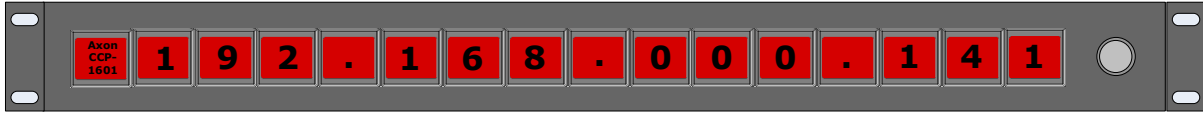
The flush mounted LCD buttons and compact depth allows the panel to be horizontally mounted in a desk or console.

The panel is powered with an external AC-DC brick PSU unit, which can be attached using the raised metalwork bridges on the rear of the panel. The panel has two lockable DC power inlets allowing for an optional redundant PSU in critical applications.

## 2. Configuration

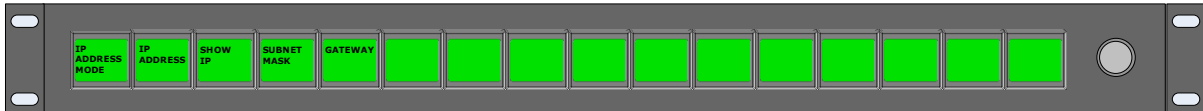
### Panel Configuration

When powering on the CCP panel and connecting it to a network, all the LCD buttons will display with a red backlight and show the IP address that the panel is currently configured to. As shown in the CCP-1601 example below:

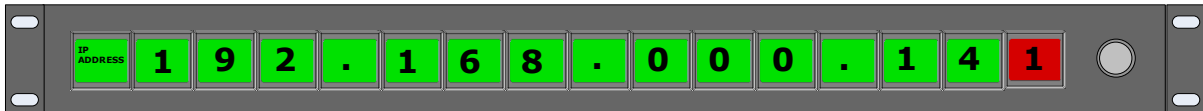


To configure the Cerebrum control panel you need to enter the configuration mode. This is done by pressing and holding the first (1) and last (16) LCD buttons down for 10 seconds.

When it enters this configuration mode the display of the panel will change as follows (CCP-1601 example):



To change the required setting such as the IP address, press the button marked 'IP ADDRESS'. The display will then show the current IP address setting.



The address can be changed by pressing the digit required to change which will then be highlighted and then turning the rotary encoder in either direction until the required digit is shown. Each digit can be set until the required IP address is configured, pressing the rotary encoder will save this setting and return you to the configuration mode menu again.

The settings for the Subnet mask and gateway can be configured in the same way. The IP Address mode can either be configured to MANUAL or DHCP, and the Show IP can either be configured to ON or OFF depending if you want the IP address shown on the panel when there is no communication to Cerebrum.

When all configuration items have been set as required pressing the rotary encoder again will leave the configuration mode and reboot the panel. A message will indicate when this is in progress and the panel will come back on with the sign on page as shown at the top of this page. It will stay like this until communication from Cerebrum tells the panel to display something else.



## Adding the panel to Cerebrum

In order to add a B version of the hardware panels on your Cerebrum system you will need to be running Cerebrum V1.12 or later. To add the panel go to the Network menu and choose the 'Add Network Device' item. A dialog will appear as shown below.

Attribute	Value
Router Name	Cerebrum (Router)
Level	1 - Video, 2 - A1, 3 - A2, 4 - A3
Destination	1 - EVS1 IN1

Attribute	Value
Category	SOURCE_VISION
Page Button	Auto
Page Size	Default
Offset	0
Category Target	

The required Panel Type should be chosen from the drop down list and the required IP address should be defined for the device. An optional Device Name can be specified to aid recognition for the panels use or location.

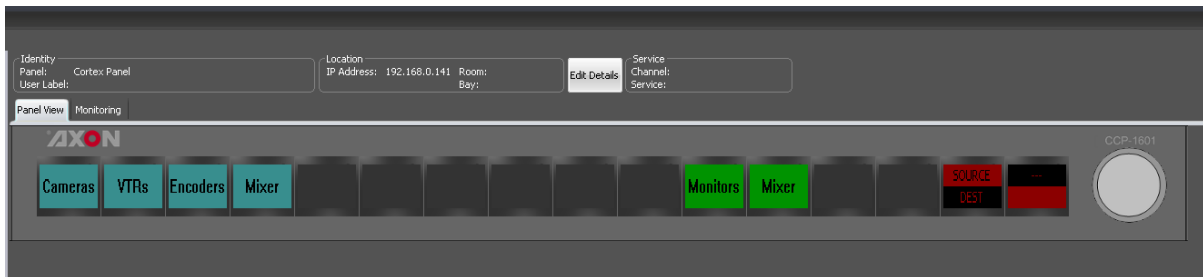
The initial or home page Cerebrum Panel File (.cpf) needs to be specified. This will determine what the panel will show when the system starts or the panel is modified.

The default settings that the panels will use for the router, category and view variables when restarting can be optionally defined for the panel. In this way multiple panels can use the same CPF file but change their behaviour based on this information. Please note these default settings replace the use of the hardware panel variables file (.cvf) previously used. If a previous configuration is loaded into the system any referenced cvf files will be read and stored in the new format.

The check box for redundant PSU will make sure an alarm or warning is generated in the Cerebrum system if one of the PSU's fails.

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.

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. An example showing the CCP-1601B is shown below:



This mimic allows the user interface to be viewed and tested from the active server as if pressing the buttons on the physical hardware panel. Please note this mimic will only be shown on the active Cerebrum server.

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.

### Configuring functionality on the panel

The configuration of what the panel will control or show as status is controlled by the CPF file referenced when adding the panel. As previously stated these files are created using Cerebrum form designer application and is beyond the scope of this document. Please refer to the Cerebrum form designer manual for an explanation of how these files are created and edited.

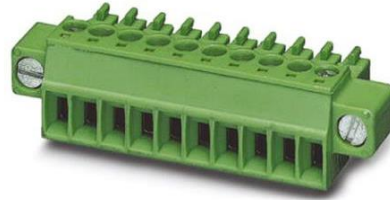
### GPI Contacts

The panel provides eight GPI inputs which can be used for different functionality within Cerebrum. The GPI's will show themselves in the Tally and Joystick dialogs of the Cerebrum configuration provided the panel is given a device name when adding it to the system.

The GPI inputs are internally fed to an optical isolator which provides an electrical isolation between the input signals applied to the unit. The unit supplies +5V to one side of the opto-isolator via two 390R resistors. To trigger the GPI the appropriate input pin will need to be shorted to one of the two 0V contacts available on the same connector.

The connector on the rear of the unit is a 10 way Phoenix Contact connector (Phoenix Contact MINI-COMBICON 1,5/10 PCB mounting vertical socket, 3.81mm pitch – Part No. 1830677). The panel is supplied with a mating screw terminal connector (Phoenix Contact MINI-COMBICON 1,5/10 plug-in connector, 3.81mm pitch – Part No. 1827787), so bare ended cables of between 0.14 and 1.5mm<sup>2</sup> can be connected with just the use of a small flat blade screwdriver.





Pin	Function
10	0V
9	GPI 8
8	GPI 7
7	GPI 6
6	GPI 5
5	GPI 4
4	GPI 3
3	GPI 2
2	GPI 1
1	0V

Where pin 10 is the pin on the furthest left hand side as you view the rear of the unit. The pin-out of the connector is also shown on a label on the rear of the unit.

**Serial Port**

The use of the RS-422 Serial port is not currently supported at the moment. It will be available in future releases.

### 3. Reprogramming the panel

The firmware on the hardware panel can be reprogrammed via an Ethernet connection by using a web page available when the unit is in its bootloader mode.

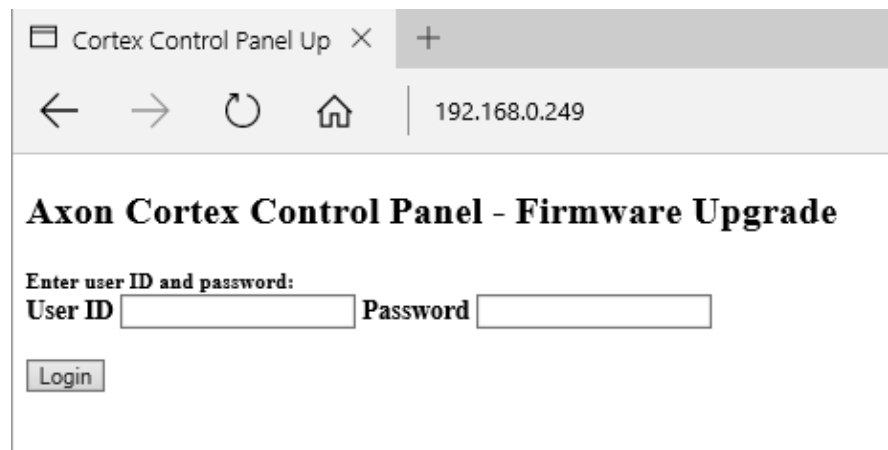
To put the panel into its bootloader mode, first power the unit on and make a note of the current IP address setting making sure this address is available from the PC you will use to reprogram the panel. Then press buttons 1, 3, 14 and 16 at the same for five seconds or more.

The panel will then display a menu with the default and bootloader options.

Press button 10 saying YES to the right of EXIT TO BOOT LOADER.

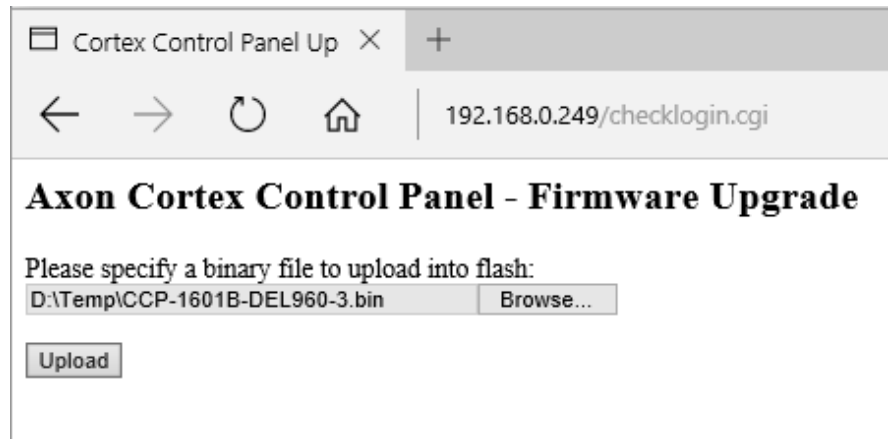
The unit after a short while will then show a single illuminated button saying BOOT LOADER.

When the panel is in this mode, it will host a webserver at its IP address. If you use a web browser and type in the IP address in the address bar it will display the following page:



To upgrade the firmware supply the user name ('axon') and the password ('cortex') and press the Login button.

The browser page will then prompt for a firmware file with the Browse button.



If you locate the required file and then press the Upload button the panel will then reprogram itself.

After successfully programming the unit it will then prompt the user to reset the MCU.



After doing this the browser will complete and the unit will reset itself and show the normal starting UI as described above.



## 4. Specifications

### Dimensions

<b>Height</b>	CCP-1601B: 45mm (1.73") (1RU) CCP-3201B: 90mm (3.46") (2RU) CCP-4801B: 90mm (3.46") (2RU)
<b>Width (including front panel)</b>	484 mm (19")
<b>Depth (including front panel and DC connector)</b>	70mm (2.75")
<b>Width (excluding front panel)</b>	450 mm (17.71")
<b>Depth (excluding front panel, including DC connector)</b>	50mm (1.97")

### Weight

<b>Weight including power adapter</b>	CCP-1601B ~1.2 kg CCP-3201B ~2 kg CCP-4801B ~2.5 kg
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### Power

<b>AC PSU</b>	100-240V AC - 1.2A, Frequency: 50/60 Hz
<b>Panel input</b>	12V DC - 2.0A

### General Purpose Inputs

<b>Typical input current</b>	< 6.4mA
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### Miscellaneous

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