ADDER®

CCS-PRO

User Guide



Experts in Connectivity Solutions

ADDER®

KVM Switch Solutions

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Introduction

INTRODUCTION

The CCS-PRO* series of switches are focussed upon allowing you to seamlessly access multiple computers and their display screens, using common peripherals.

CCS-PRO switches allow you to use a single USB keyboard and USB mouse to fulfil functions that previously required four or eight separate sets. This provides immediate savings in both desk space and also the time required to access and control systems and screens. The CCS-PRO4 supports up to four connected systems while the larger CCS-PRO8 allows up to eight systems to be accessed.

CCS-PRO switches feature our True Emulation technology, which ensures that the full characteristics of the connected USB keyboard and mouse are passed to every system.

In addition to switching the keyboard and mouse, the CCS-PRO switches can also share a set of speakers and two separate USB peripherals between the various systems. This can be done either in concert with the keyboard and mouse (and each other) or totally independently.

CCS-PRO switches can be used in combination with various Adder extender products (such as AdderLink Infinity, X50 and X-DVIPRO) to extend the distance between the user and the computers under control.

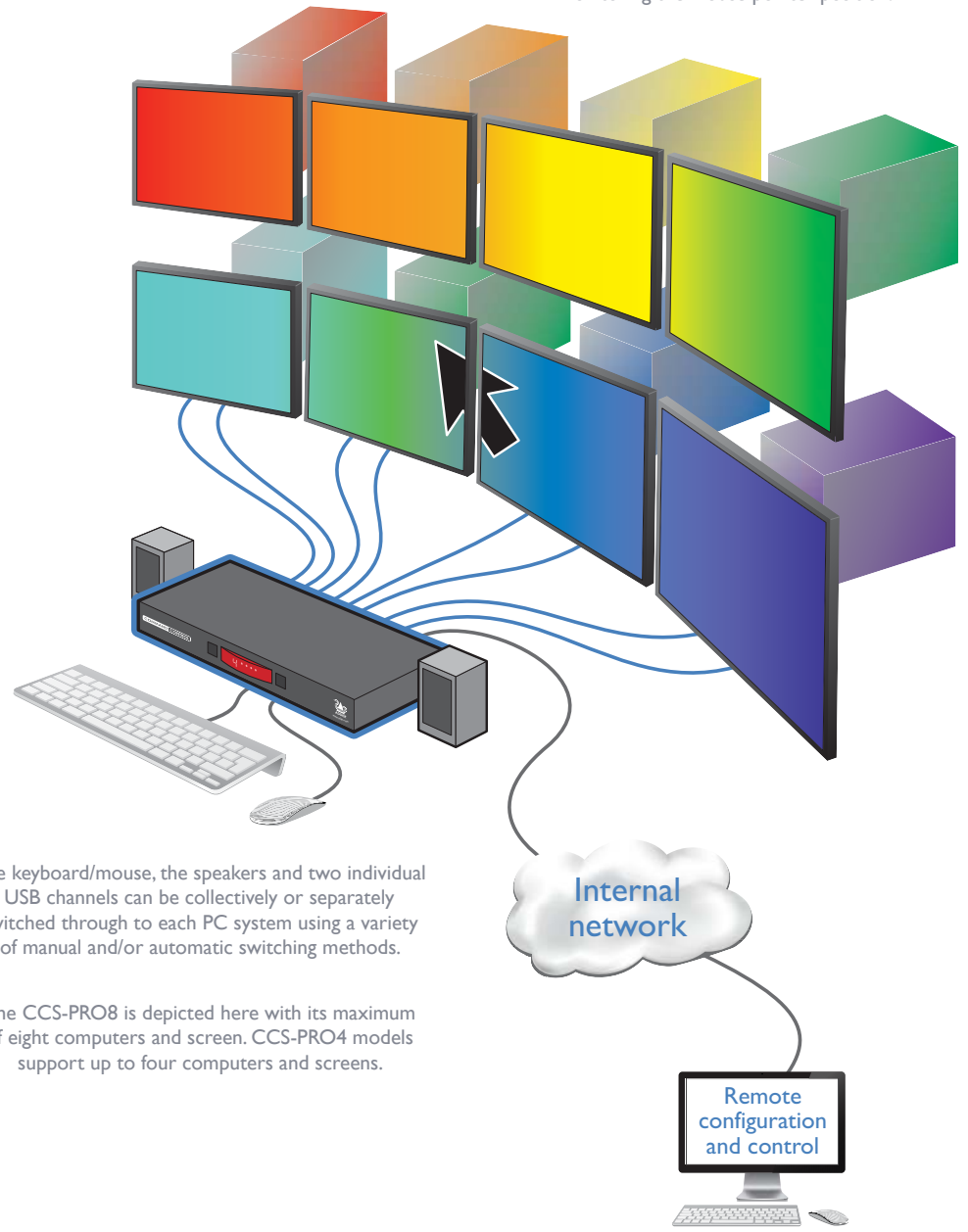
Switching between the systems connected to the CCS-PRO switches can be achieved in six different ways:

- The innovative Free-Flow automatic switching utility,
- The COMPUTER button on the front panel,
- Keyboard hotkey combinations,
- Mouse button combinations,
- Remote control via an external system,
- The optional remote control selector.

Where additional feedback is required as to which systems and screens are selected at any time, the optional CCS-XB kit provides discreet stick-on LED monitor indicators. When a system/screen is selected, a corresponding LED monitor indicator illuminates (in a choice of colours) to confirm the action.

** References to CCS-PRO apply equally to both the CCS-PRO4 and CCS-PRO8 products.*

Free-Flow
An innovative in-built utility that allows the unit to automatically switch between channels by monitoring the mouse pointer position.



The keyboard/mouse, the speakers and two individual USB channels can be collectively or separately switched through to each PC system using a variety of manual and/or automatic switching methods.

The CCS-PRO8 is depicted here with its maximum of eight computers and screen. CCS-PRO4 models support up to four computers and screens.

WHAT IS FREE-FLOW?

Adder Free-Flow delivers an innovation in K/M switching. Using Free-Flow you can automatically switch between target computers simply by moving the mouse pointer from screen to screen.

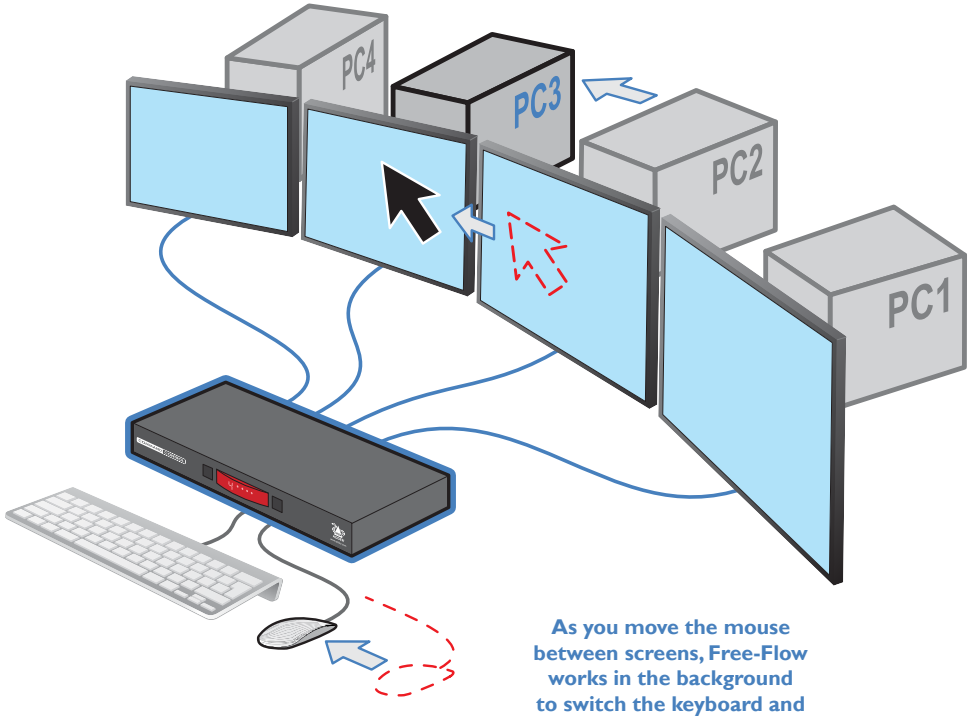
Adder Free-Flow resides on the CCS-PRO switch itself, sensing screen boundaries and instantaneously switching keyboard and mouse (and related peripherals) to the defined target computer. Free-Flow can be configured for almost any combination of screens, which allows you to declare the individual screen sizes and visually position each one relative to the others.

Free-Flow consists of special code within the CCS-PRO switch plus an intuitive graphical configuration application. First you inform the Free-Flow configuration application how many screens you have, their pixel resolutions and how they are physically arranged (e.g side-by-side, vertical stack, square formation, etc.). You then download this information to the CCS-PRO switch and this is used during operation to determine the precise moment to switch from one screen/system to the next.

The beauty of Free-Flow is its simplicity of configuration and operation. Once the initial configuration has taken place, all monitoring and switching is handled within the CCS-PRO without need for extra connections or software utilities.

Issues when using Free-Flow

- When computers and their displays are not currently selected, the CCS-PRO 'parks' their mouse pointers in the bottom right corner of the screen. In most cases this will cause no issues, however, it may be noticeable in circumstances such as the following:
  - If the task bar is set to auto hide and it is positioned either along the bottom of the screen (as default) or along the right hand side, then the task bar will automatically reappear when the mouse pointer is parked.
  - When playing full screen video, the on-screen controls (play, pause, seek etc.) will very likely be revealed when the mouse pointer is parked.
  - To cure the either of the above issues, it is possible to alter the mouse parking position.
- The mouse will not flow across the screens while any mouse buttons are pressed down - this prevents undesired behaviour when dragging windows around or group-selecting items.
- Free-Flow is not supported on Linux operating system.
- Multi-Monitor Free-Flow is for use with the Windows operating system only and requires specialist driver to be installed on each PC. See Multi-Monitor Free-Flow configuration for details.



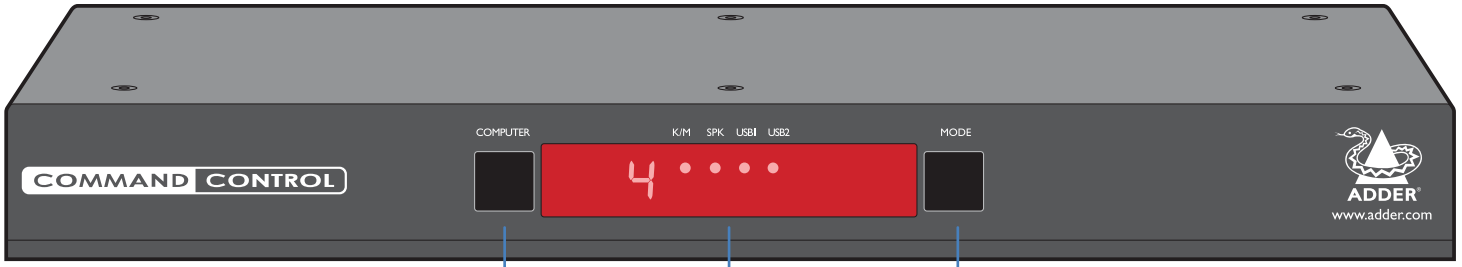
As you move the mouse between screens, Free-Flow works in the background to switch the keyboard and mouse to the corresponding computer.

More information

- Free-Flow configuration
- Multi-Monitor Free-Flow configuration
- Operation: Selecting a computer

CCS-PRO4 FEATURES

The unit is contained within a slimline metal casing that measures just 290 x 128 x 31mm.



COMPUTER button
Press to change to the next computer channel.

Indicators
The upper four indicators (**K/M**, **SPK**, **USB1**, **USB2**) show which peripherals are switched to the current computer channel OR (as you begin pressing the MODE button) the peripherals that will be switched during the next press(es) of the COMPUTER button.

The lower four indicators scroll across in sequence when the Free-Flow utility is engaged.

The seven segment numeric display indicates the computer channel that is currently active.

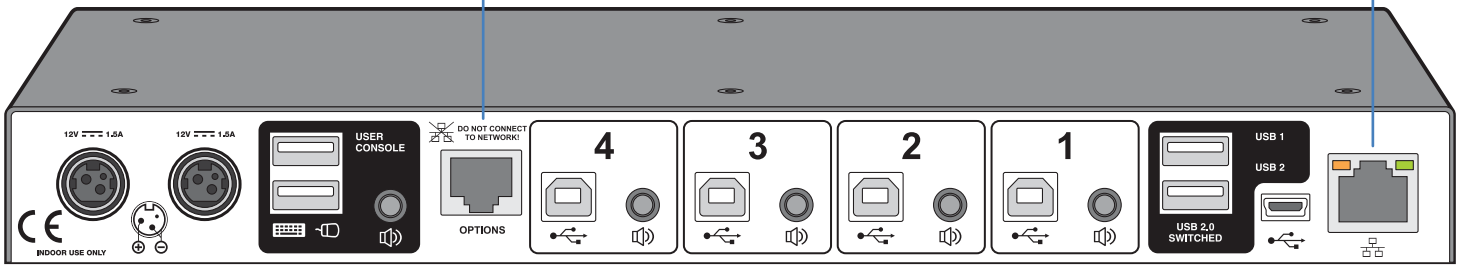
MODE button
Press to determine which peripherals should be switched to another computer channel (will occur when the COMPUTER button is pressed.

Options port
IMPORTANT: Do not connect the OPTIONS port to any network.

This 10p10c port can separately support the following functions:

- Remote control - allows channel switching either using an optional Adder RC4 four button remote control unit (see Optional RC4 remote control) or a computer with serial port.
- LED monitor indicators - the optional CCS-XB module links to here and provides multiple light up monitor indicators.

Network port
Can be used to remotely configure the CCS-PRO4 and/or control switching from an external source, such as a Crestron™, AMX™ or similar controller (see Switching control via the network port for details).



Dual power inputs
In order to provide redundancy

User console
Connect a USB keyboard and mouse plus optional speakers to these connectors. (see What is True Emulation?).

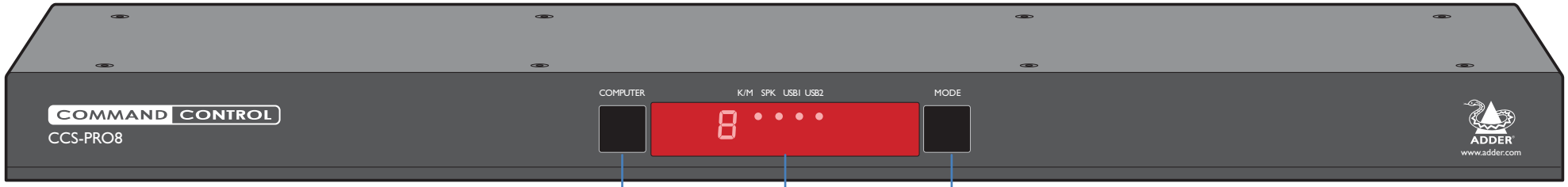
Computer channels
Connect a USB port (v1.1 or 2.0) and (optionally) an audio output from each computer to each of these four channels.

Switched USB ports
Optionally connect up to two USB devices to these connectors. These ports are switched in an enumerated manner.

Micro USB port
Reserved for future use.

CCS-PRO8 FEATURES

The unit is contained within a slimline metal casing that measures just 433 x 158 x 31mm.



COMPUTER button
Press to change to the next computer channel.

Indicators
The upper four indicators (**K/M**, **SPK**, **USB1**, **USB2**) show which peripherals are switched to the current computer channel OR (as you begin pressing the MODE button) the peripherals that will be switched during the next press(es) of the COMPUTER button.

The lower four indicators scroll across in sequence when the Free-Flow utility is engaged.

The seven segment numeric display indicates the computer channel that is currently active.

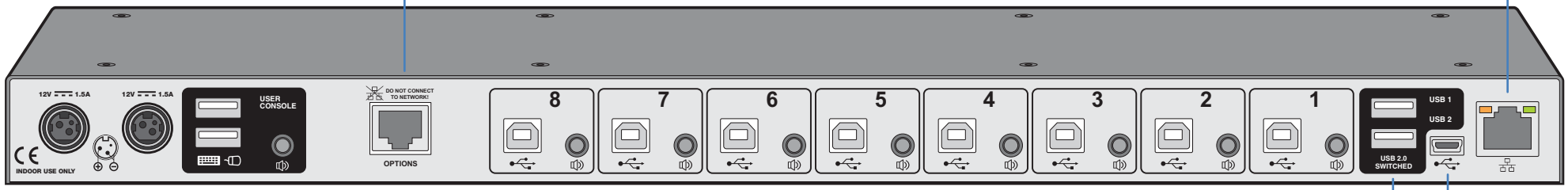
MODE button
Press to determine which peripherals should be switched to another computer channel (will occur when the COMPUTER button is pressed.

Options port
IMPORTANT: Do not connect the OPTIONS port to any network.

This 10p10c port can separately support the following functions:

- Remote control - allows channel switching either using an optional Adder RC8 eight button remote control unit (see Optional RC4 remote control) or a computer with serial port.
- LED monitor indicators - the optional CCS-XB module links to here and provides multiple light up monitor indicators.

Network port
Can be used to remotely configure the CCS-PRO8 and/or control switching from an external source, such as a Crestron™, AMX™ or similar controller (see Switching control via the network port for details).



Dual power inputs
In order to provide redundancy

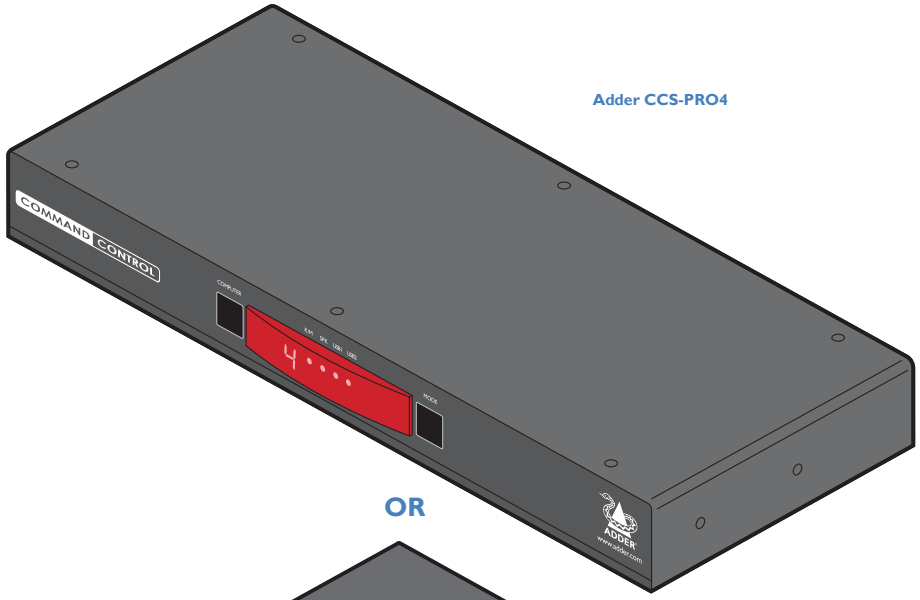
User console
Connect a USB keyboard and mouse plus optional speakers to these connectors. (see What is True Emulation?).

Computer channels
Connect a USB port (v1.1 or 2.0) and (optionally) an audio output from each computer to each of these eight channels.

Switched USB ports
Optionally connect up to two USB devices to these connectors. These ports are switched in an enumerated manner.

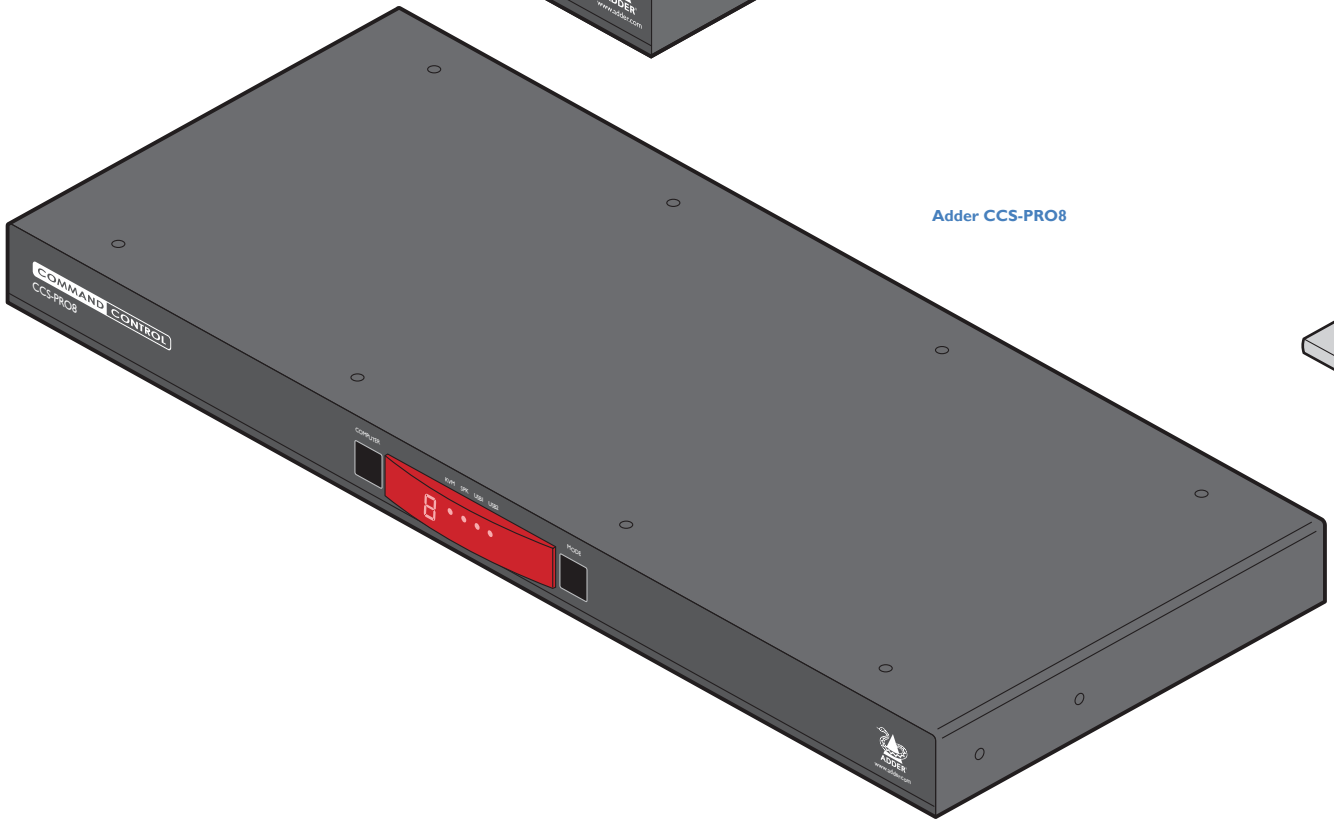
Micro USB port
Reserved for future use.

SUPPLIED ITEMS

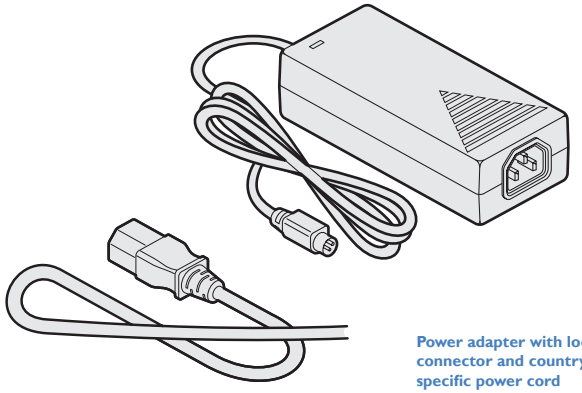


Adder CCS-PRO4

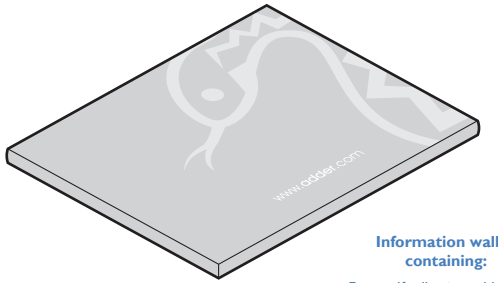
OR



Adder CCS-PRO8



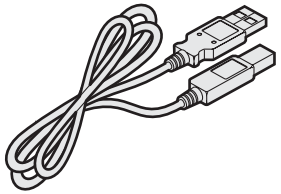
Power adapter with locking connector and country-specific power cord



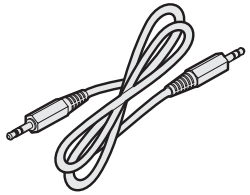
Information wallet containing:

Four self-adhesive rubber feet
Safety document

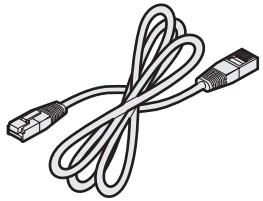
OPTIONAL EXTRAS



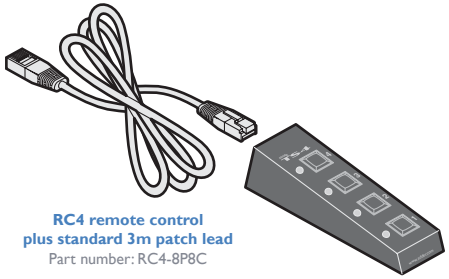
USB cable 2m (type A to B)
Part number:VSC24



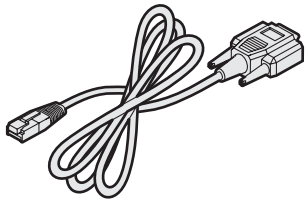
Audio cable 2m (3.5mm stereo jacks)
Part number:VSC22



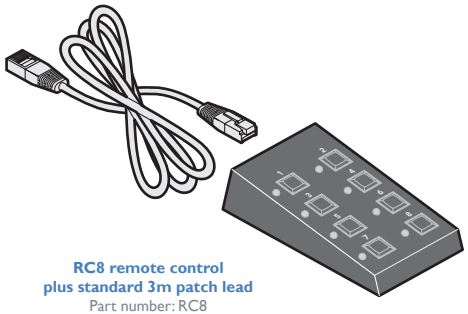
Standard 3m CAT5 patch lead
Part number:VSC23



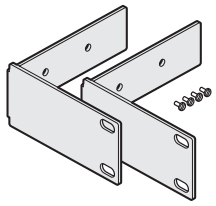
RC4 remote control plus standard 3m patch lead
Part number: RC4-8P8C



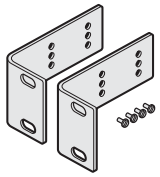
Serial cable
Part number:VSC40



RC8 remote control plus standard 3m patch lead
Part number: RC8



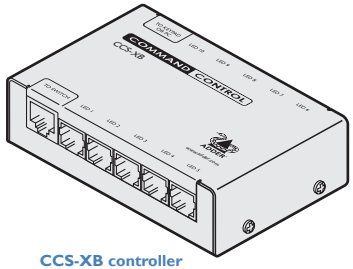
CCS-PRO4 rack mount brackets plus four screws
Part number: RMK9



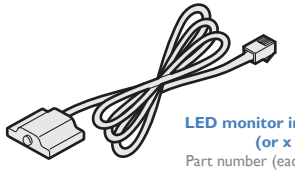
CCS-PRO8 rack mount brackets plus four screws
Part number: RMK11

CCS-XB and CCS-XB8 LED monitor indicator kits

Kits are available for both switch models - the only difference between the two kits are the numbers of LED indicators supplied within the kit: 4 or 8.



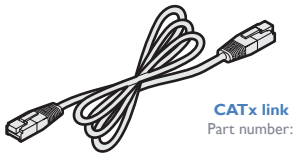
CCS-XB controller



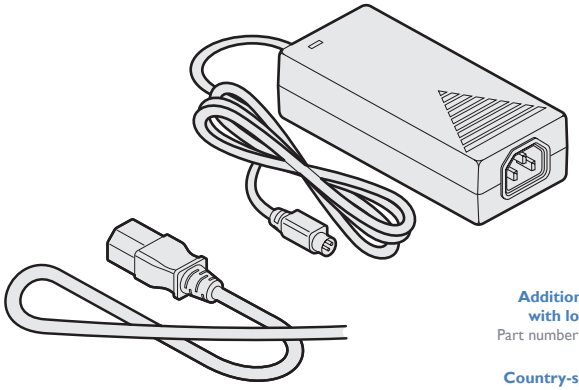
LED monitor indicator x 4 (or x 8)
Part number (each): CCS-LED



Four self-adhesive rubber feet



CATx link cable
Part number:VSC46



Additional power adapter with locking connector
Part number: PSU-IEC-12VDC-1.5A

Country-specific power cords

CAB-IEC-AUS	*(Austrailia)*
CAB-IEC-EURO	*(Central Europe)*
CAB-IEC-UK	*(United Kingdom)*
CAB-IEC-USA	*(United States)*

Installation

LOCATIONS

Please consider the following important points when planning the position of the CCS-PRO switch:

- Situate the CCS-PRO switch close to the systems to which it will be connected and near to a source of mains power.
- Thanks to Free-Flow, (and/or the optional remote control) the CCS-PRO switch can be situated out of sight within the cabling cradle of a desk, standard rack mount or placed adjacent to the connected systems.
- Consult the precautions listed within the Safety information section.

MOUNTING

Before you begin connecting to the keyboard, mouse and source systems, it is advisable to mount the CCS-PRO switch in place, either:

- On a horizontal surface using the supplied self adhesive feet,
- In a standard 19" rack mount (using optional brackets), or
- Amongst the cabling at the rear of the desk.

CONNECTIONS

Connections do not need to be carried out in the order given within this guide, however, where possible connect the *power in* as a final step

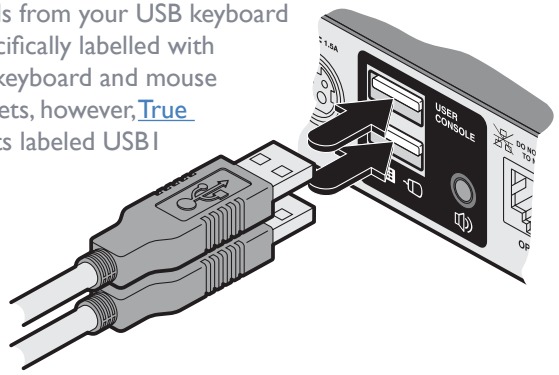
User console

The ports that make up the user console are where you attach the peripherals which will be shared between the computer systems. Ensure that power is disconnected from the switch.

To connect peripherals to the user console

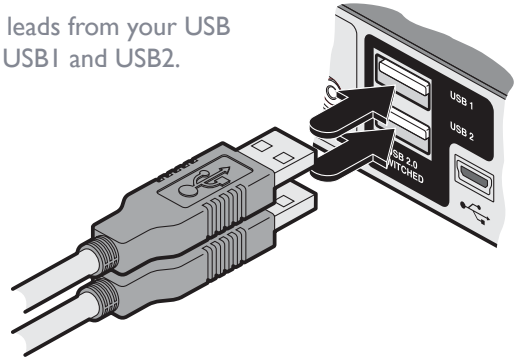
1 Position your peripheral devices in the vicinity of the switch such that their cables will easily reach.

2 *Keyboard and mouse*: Attach the leads from your USB keyboard and mouse to the USB sockets specifically labelled with keyboard and mouse symbols. The keyboard and mouse will operate in any of the USB sockets, however, True Emulation is not available on sockets labeled USB1 or USB2.



From USB keyboard and mouse

3 *USB devices*: Where required, attach the leads from your USB peripherals to the USB sockets labeled USB1 and USB2.

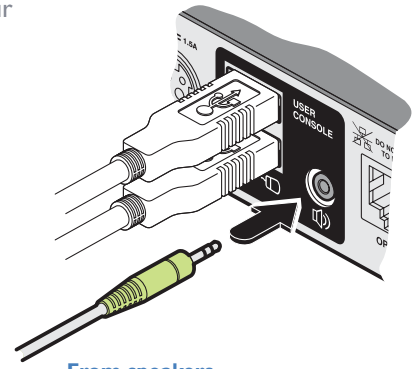


From USB peripherals

4 *Audio*: Where required, connect the lead from your speakers to the audio socket.

Support for optical S/PDIF audio

The Line In sockets on the computer ports and the Line Out socket on the user console are dual purpose. They can accept either 3.5mm analog jacks or mini- TOSLINK optical fiber connectors. The latter provide access to the optical S/PDIF (Sony/Philips Digital InterFace) capabilities supported by the AdderView CCS-PRO system, which switches PCM (Pulse Code Modulation) audio at 96KHz.



From speakers

Computer systems

Each computer system is connected to the CCS-PRO switch using (up to) two cables.

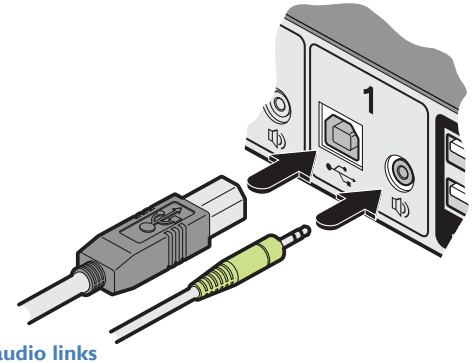
- CCS-PRO switches support USB 2.0 (incl. USB 1.1) connections.

To connect a computer system

1 Ensure that power is disconnected from the CCS-PRO4 switch and the system to be connected.

2 Use a USB cable (type-A to type-B) to link a USB port on the computer system to the USB port of the required channel on the rear of the switch.

3 If required, use a stereo audio link cable (3.5mm jacks at either end) to link the speaker port on the computer system to the audio port of the required channel on the rear of the switch.



USB and audio links from a system

Power connections

The CCS-PRO switch is supplied with a single power adapter but offers the facility to use a second input in order to provide operational redundancy. The CCS-PRO unit can operate perfectly well from a single power adapter operating alone. When two adapters are connected, the unit will spread its load between them; should one power input fail, 100% of the load will be transferred to the other power adapter without a break in operation. Remote checking of the power inputs is possible at any time via the browser interface - see Status page for details.

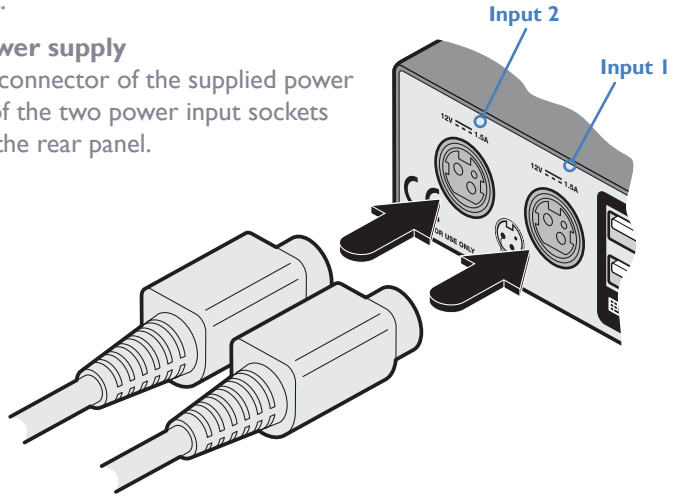
There is no on/off switch on the CCS-PRO unit, so operation begins as soon as power is applied at either port.

IMPORTANT: Please read and adhere to the electrical safety information given within the Safety information section of this guide. In particular, do not use an unearthed power socket or extension cable.

Note: Both the switch and its power supplies generate heat when in operation and will become warm to the touch. Do not enclose them or place them in locations where air cannot circulate to cool the equipment. Do not operate the equipment in ambient temperatures exceeding 40 degrees Centigrade. Do not place the products in contact with equipment whose surface temperature exceeds 40 degrees Centigrade.

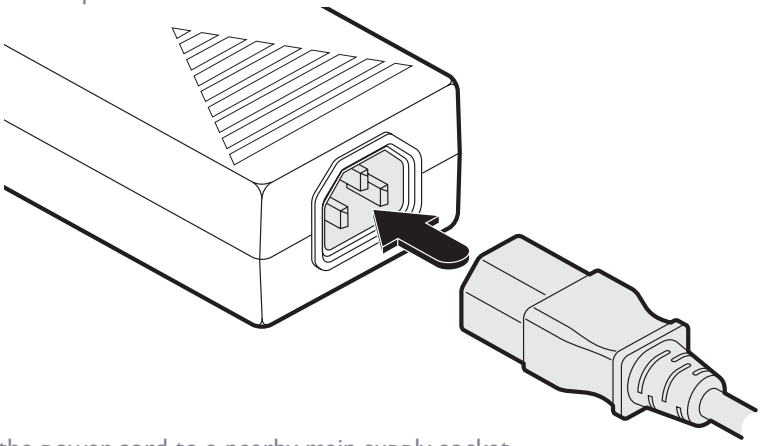
To connect the power supply

1 Attach the output connector of the supplied power adapter to either of the two power input sockets on the left side of the rear panel.



Note: The outer sleeve of each power connector will retract slightly as it locks into place.

2 Connect the IEC connector of the supplied country-specific power cord to the socket of the power adapter.



3 Connect the power cord to a nearby main supply socket.

4 Where power redundancy is required, repeat steps 1 to 3 for a second power adapter.

To disconnect a power adapter

1 Isolate the power adapter from the mains supply.

Note: If you are replacing one of dual power adapters during operation, it is not necessary to also remove power from the other adapter.

2 Grasp the outer body of the power adapter plug where it connects with the CCS-PRO unit.

3 Gently pull the body of the outer plug away from the switch. As the body of the plug slides back, it will release from the socket and you can fully withdraw the whole plug.

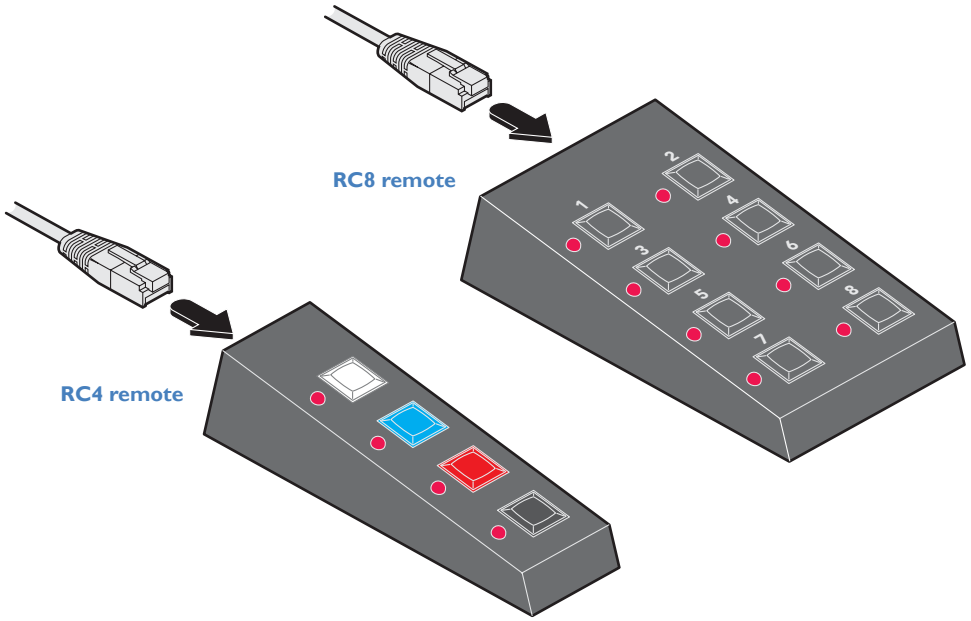
Optional remote control

The optional RC4 and RC8 remote control units (part numbers: RC4-8P8C and RC8, respectively) can be used to provide direct push button access to any channel from your desktop. Both remote controls are supplied with 3 meter cables that are used to link with the **OPTIONS** port on the rear panel of the switches.

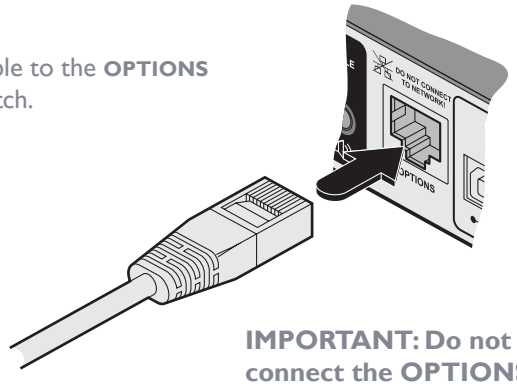
IMPORTANT: Do not connect the OPTIONS port to any network.

To connect the remote control

1 Connect either end of the supplied cable to the socket at the rear of the RC4/RC8 remote control.



2 Connect the other end of the cable to the **OPTIONS** port on the rear panel of the switch.



IMPORTANT: Do not connect the OPTIONS port to any network.

Using a remote control with the optional CCS-XB module

When the optional CCS-XB LED monitor indicator module is used with the CCS-PRO switch, it requires permanent use of the latter's **OPTIONS** port which would otherwise be used to attach the RC4 remote.

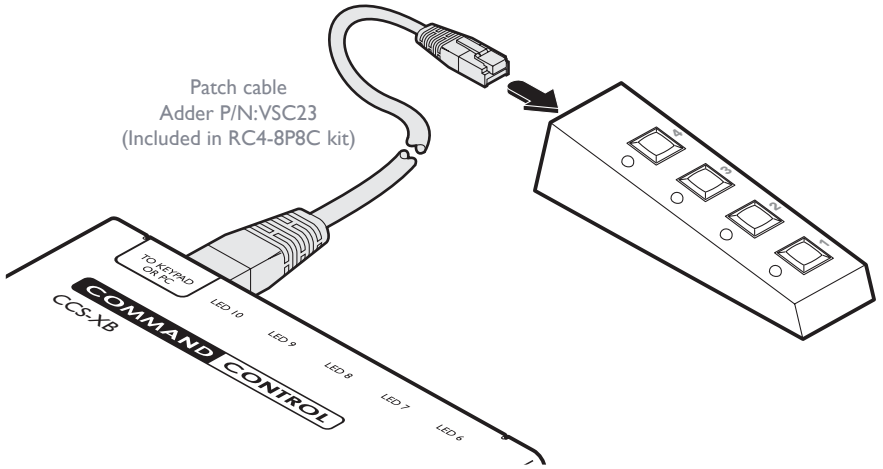
However, the CCS-XB module has an output port that provides a link through to the **OPTIONS** port (to which it is connected) that can be used to attach the RC4 remote.

To connect the remote control to the CCS-XB module

1 Use the Adder Free-Flow utility to program the CCS-PRO switch (see the section Configuring LED monitor indicators).

2 Use the patch cable supplied with the RC4/8 kit to link the remote control to the **TO KEYPAD OR PC** port of the CCS-XB module.

The remote control can now be used in the usual manner to select the required channels.



Optional LED monitor indicator connections

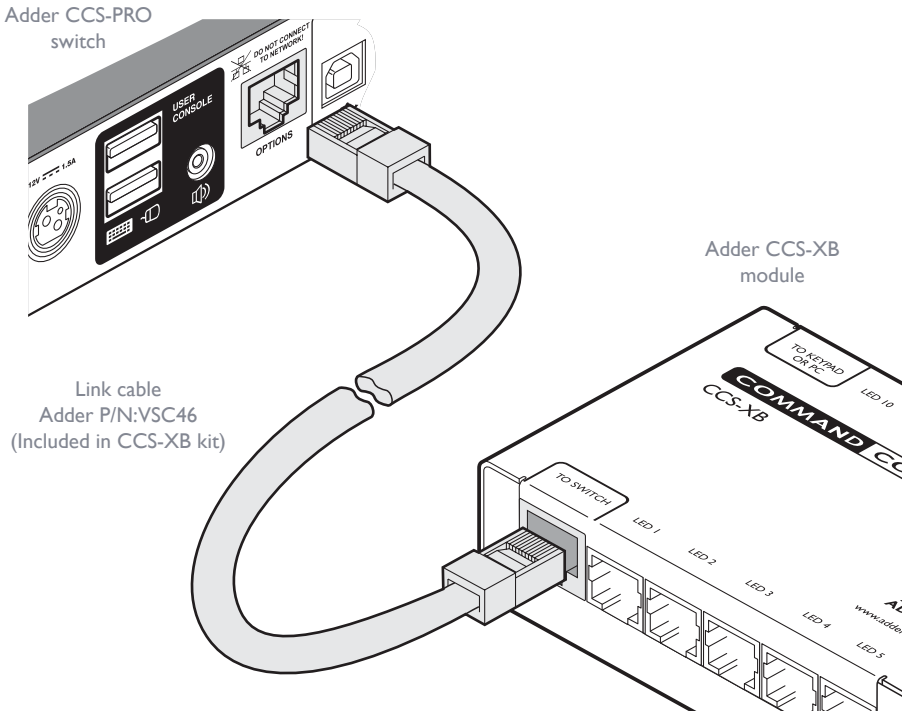
The optional CCS-XB module enables you to add LED (Light Emitting Diode) monitor indicators to each of your video display screens to show which are active.

The CCS-XB module connects to the **OPTIONS** port of the main CCS-PRO switch. Each individual LED monitor indicator then connects to one of the ten ports on the CCS-XB module.

To connect the CCS-XB module and monitor indicators

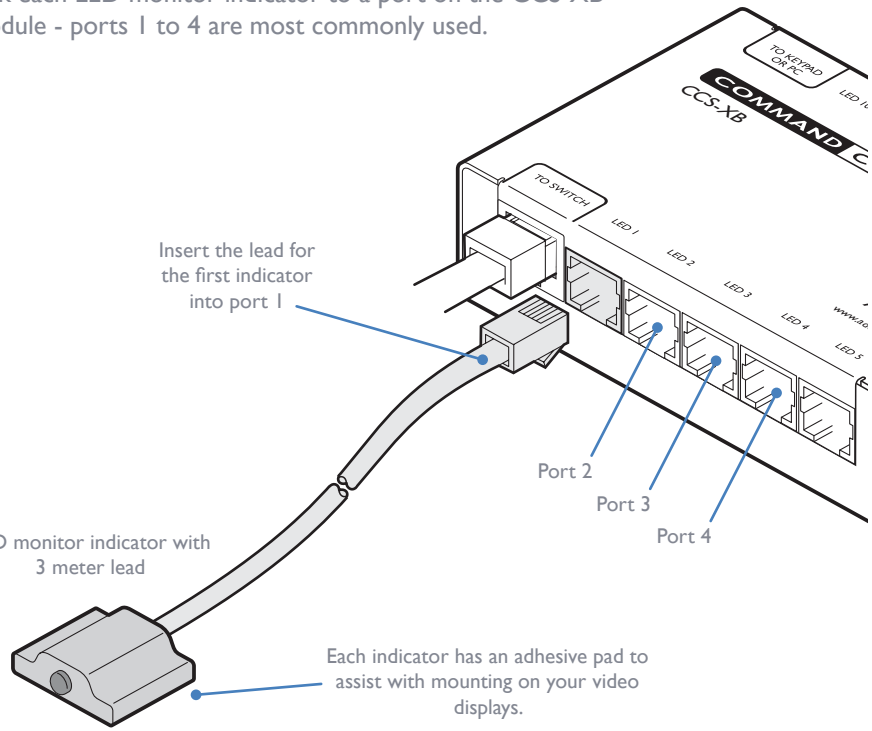
1 Remove power from the switch. Use the flat cable supplied with the CCS-XB kit to link the module to the **OPTIONS** port of the CCS-PRO switch.

Note: If an optional RC4 or RC8 remote control is connected to the Options port, remove this first. It can be attached to the CCS-XB module later (see here).



IMPORTANT: Do not connect the OPTIONS port to any network.

2 Link each LED monitor indicator to a port on the CCS-XB module - ports 1 to 4 are most commonly used.



3 You need to tell the CCS-PRO which LED monitor indicator to illuminate (and in which colour) for each channel. To do this connect your computer to the CCS-PRO switch via a network connection and use the Free-Flow application. Please see the section Configuring LED monitor indicators.

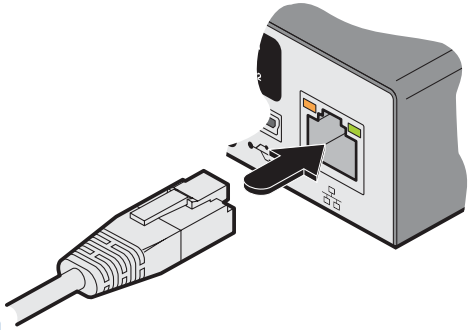
4 Apply power to the switch.

Switching control via the network port

The network port allows switching to be controlled by commands issued from an external system such as a Crestron™ or AMX™ controller.

Connecting to a network for remote control

1 Use a standard patch cable to link the network port () of the CCS-PRO unit to a network switch.



Link from network switch

2 Ensure that the CCS-PRO network port is correctly configured to a subnet that is accessible from the sending device. See Network settings for details.

Issuing remote switching commands via the network port

The Application Programming Interface (API) for the CCS-PRO requires the controlling system to send an HTTP Get request to the following location:

- **<ipaddress>/cgi-bin/channel**

The following parameters are available:

- **km=<channel>** Switches the keyboard and mouse to the defined channel.
- **spk=<channel>** Switches the speakers to the defined channel.
- **usb1=<channel>** Switches USB port 1 to the defined channel.
- **usb2=<channel>** Switches USB port 2 to the defined channel.

An example string is: *192.168.1.22/cgi-bin/channel?km=3&spk=4&usb1=2&usb2=1*

The above example would switch the keyboard and mouse to channel 3, the speakers to channel 4, USB port 1 to channel 2 and USB port 2 to channel 1.

Note: If security is enabled then the client must be authenticated before you are able to access the CCS-PRO.

Switching control via the Options port

The **OPTIONS** port allows an external serial input, typically from a computer, to control the selection of the various channels. You can use either an optional serial cable (part number VSC40) or alternatively construct a custom cable to link the CCS-PRO switch and the computer. For pin-out details of the custom cable, see Appendix 1.

Upon receipt of the correct code, the CCS-PRO will switch immediately to the appropriate channel.

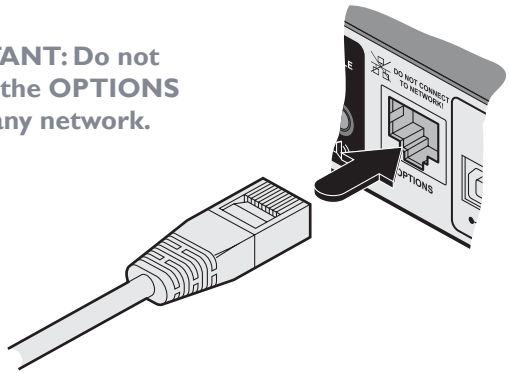
Connecting a computer for remote control

The cable link from the computer needs to connect the transmit (TXD) line of the computer to the receive (RXD) input of the CCS-PRO and also link the ground terminals (GND) of the two devices. See Appendix 1 for details.

To connect a computer remote control

1 Use an optional serial cable to link the **OPTIONS** port on the rear panel of the CCS-PRO switch and a vacant serial port on the computer.

IMPORTANT: Do not connect the OPTIONS port to any network.



Note: If the optional CCS-XB module is used with the CCS-PRO, connect the computer instead to the **TO KEYPAD OR PC** *port on the CCS-XB module.*

Serial port parameter settings

Ensure that the chosen serial port is configured to the following:

- Baud rate: 1200
- Data bits: 8
- Stop bit: 1
- Parity: None

Channel selection codes

	ASCII Character	*Hex*	*Decimal*	
• Channel 1:	'1'	0x31	49	
• Channel 2:	'2'	0x32	50	
• Channel 3:	'3'	0x33	51	
• Channel 4:	'4'	0x34	52	
• Channel 5:	'5'	0x35	53	*CCS-PRO8 models only*
• Channel 6:	'6'	0x36	54	
• Channel 7:	'7'	0x37	55	
• Channel 8:	'8'	0x38	56	

Configuration

INITIAL CONFIGURATION

The configuration, monitoring and management of the CCS-PRO unit is performed using the in-built Adder CCS Manager utility which is accessible via the network connection using a standard web browser.

Accessing the CCS Manager

To access the CCS Manager

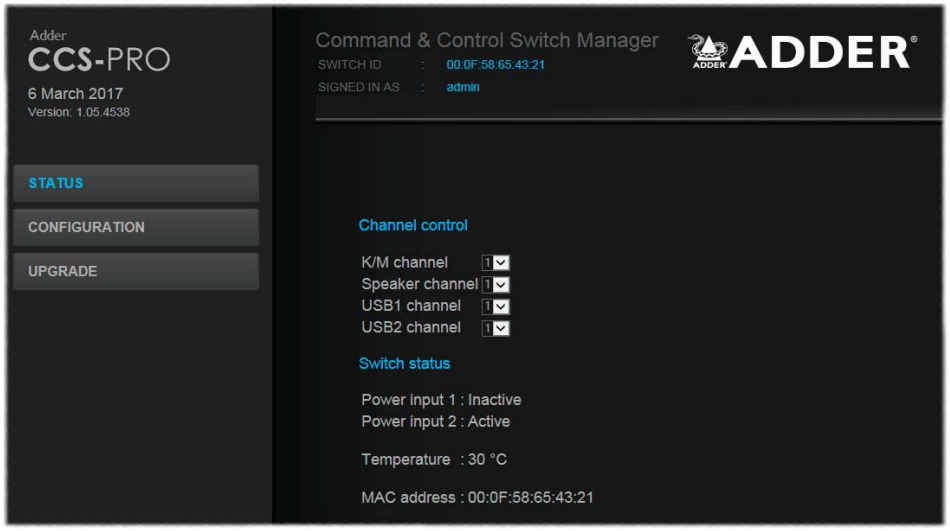
1 Use a computer that is directly or indirectly (i.e. via a network switch) connected to the CCS-PRO unit. If you need to make a temporary connection, see right ➲

2 Run a web browser on your computer and enter the IP address of the CCS-PRO. The default setting is: **192.168.1.22**

3 If requested, enter your username and password to log on.

Note: The default username and password are 'admin' and 'password' respectively.

The opening page of the CCS Manager should be displayed:



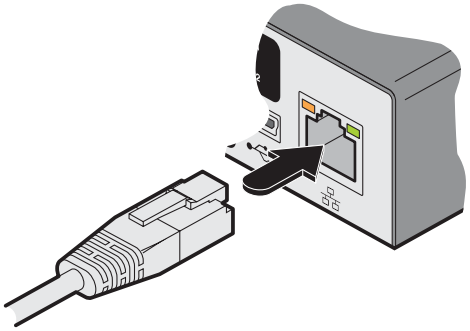
Note: If the CCS-PRO has been previously configured and those settings are unknown, see the Troubleshooting section for details about reverting to the default settings.

Logging out

There is no log out option. You merely need to close the browser that you are using to access the CCS Manager.

To temporarily connect a computer to the network port

1 If you need to make a temporary connection for configuration purposes, use a standard patch cable (cross-over or straight connections are both supported) to link the Ethernet 10/100 network port (🖧) of the CCS-PRO unit to your computer's network port.



Temporary link from your computer

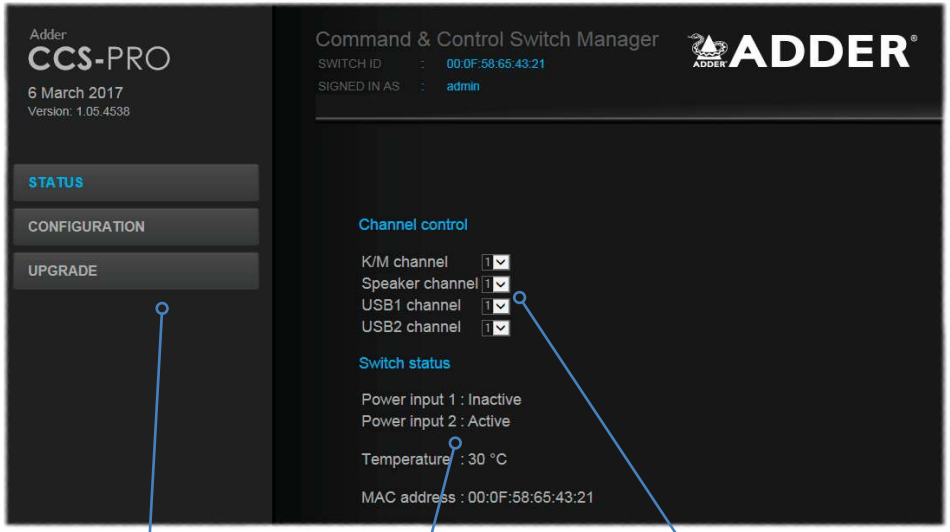
Status page

The Status page provides details about the dual power inputs, the internal operating temperature and also allows you to switch peripheral channels.

To display the Status page

1 Access the CCS Manager.

2 The Status page is the first to be displayed, however, if necessary, click the **Status** button shown on the left side: The page will be displayed:



Click here to choose the required page.

Provides power input and internal temperature details as well as the unit's fixed MAC address.

Indicates to which computer channels the various user console peripherals are currently connected. You can click these to switch any peripheral to another channel.

Channel control

The Channel control section shows the computers to which each of the user console peripheral channels are switched. You can use these entries to individually switch each peripheral to any of the computers.

To switch peripherals between channels

1 Access the CCS Manager.

2 If necessary, on the left side, click the **Status** button.

3 In the **Channel control** section, click the numeric field to the right of the required peripheral channel, (e.g. KM channel, speaker channel, etc.) to reveal a drop down list.



4 Click the number of the computer to which the peripheral should be switched. The CCS-PRO front panel display will respond when peripheral channels are switched:

- The main seven digit number shows the computer to which the KM (Keyboard and Mouse) channel is connected.
- If any of the other channels are switched to a different channel than the KM, their respective indicators will flash.

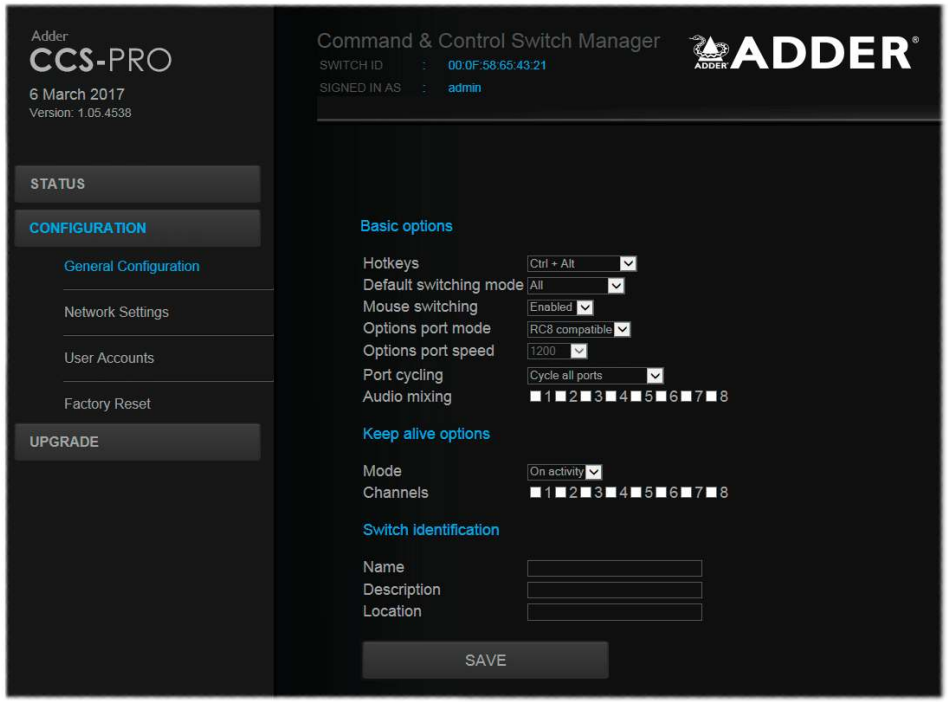
General configuration

The General configuration page contains various switching and identification options.

To display the General configuration page

1 Access the CCS Manager.

2 On the left side, click the **Configuration** button.



Basic options

Within the General configuration page you can adjust various Basic options:

- **Hotkeys** - CCS-PRO switches use Ctrl and Alt as their standard hotkeys. These can be changed if they clash with other software or hardware within the installation (*Ctrl + Shift, Alt + Shift, .Right Alt*, etc.).
- **Default switching mode** - Determines the standard switching mode to be used at power on (*All, KM + speaker, KM only*, etc.).
- **Mouse switching** - You can enable or disable mouse switching to suit your installation requirements.
- **Options port mode** - Determines how the serial Options port should function. Choices are *Serial control* to received switching commands from a computer or *RC4 (or RC8) compatible* for use with optional Adder remote controls.
- **Options port speed** - When the setting above is set to *Serial control*, this setting allows you to choose the communication speed (*110* to *230400* baud).
- **Port cycling** - Determines which computer ports should be visited when the user issues an instruction (either by mouse buttons or keyboard hotkeys + tab) to cycle to the next port. Options are *Cycle all ports* (even those that are not active) or *Cycle only active ports*.
- **Audio mixing** - Allows you to route the audio channels from any (or all) computers to the user's speakers, regardless of which computer is currently switched through to the user console. This is useful for hearing alerts that may be sounded by computers. Place a tick next to each computer whose audio you wish to route through to the user console at all times.

Keep alive options

This feature is used to prevent selected computers from going into sleep mode by emulating activity on the mouse/keyboard. Two modes are possible:

- **On activity** - When chosen, keep alive activities are sent every 15 seconds as long as the local console is in use. When the local console is not in use then no keep alives are sent.
- **Always** - When chosen, keep alive activities are sent continuously every 15 seconds.

Channels: Place a tick next to each computer that needs to be kept awake.

Switch identification

This section allows you to optionally apply *Name*, *Description* and *Location* details to the CCS-PRO. For larger installations where multiple units exist, this information can be very useful for identification purposes. Additionally, the *Name* entry is also used when performing a DHCP search.

If the *Name* and *Location* entries are set, they will be displayed at the top of each CCS Manager page as the *Switch ID* (replacing the MAC address).

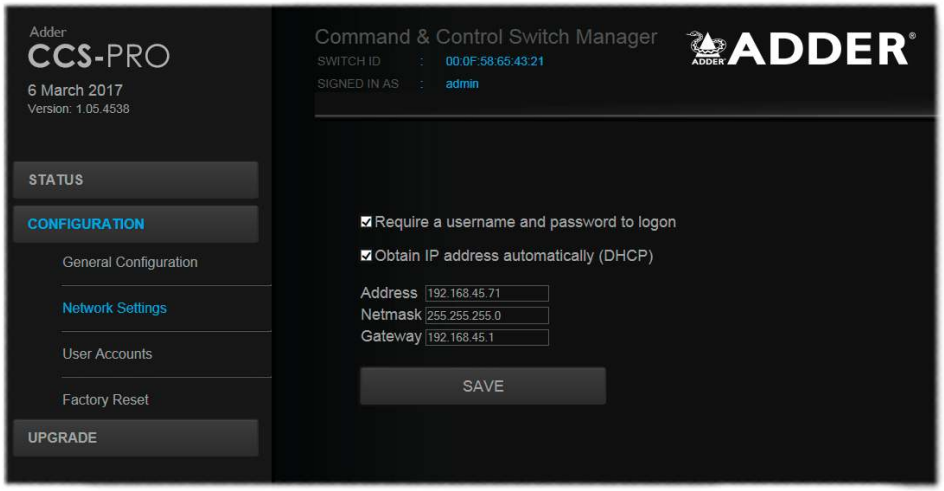
Network settings

To display the Network settings page

1 Access the CCS Manager.

2 On the left side, click the **Configuration** button.

3 On the left side, click the **Network settings** option.



The various network settings are as follows:

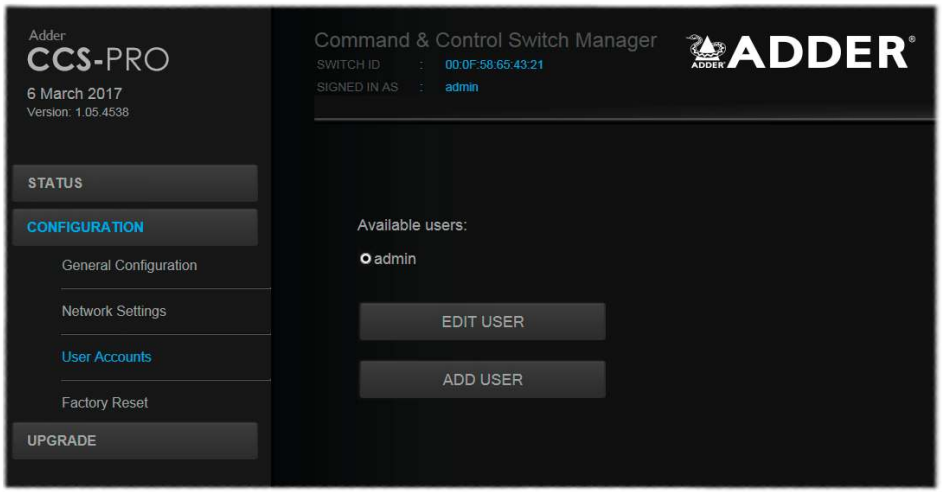
- **Require a username and password to logon** - When ticked, the unit will request a valid username and password before allowing access to the CCS Manager.
- **Obtain IP address automatically (DHCP)** - When ticked, the unit will derive its IP address, netmask and gateway settings from the DHCP (Dynamic Host Configuration Protocol) server on the local network. Additionally, the optional *Name* entry entered within the General Configuration section can also be used when performing a DHCP search.
- **Address**, **Netmask** and **Gateway** - When the setting above is unticked, these three fields are used to define the fundamental network settings of the CCS-PRO unit. The default settings are as follows:
  - *Address: 192.168.1.22*
  - *Netmask: 255.255.255.0*
  - *Gateway: 192.168.1.1*

  When the **Obtain IP address...** option is ticked, these three fields will display the settings that were defined by the DHCP server.

User accounts

To display the User accounts page

1 Access the CCS Manager.
2 On the left side, click the **Configuration** button.
3 On the left side, click the **User accounts** option.

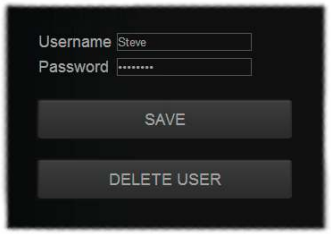


Managing users

The maximum number of declared users is limited to an administrator and up to four other users. A list of current users will be shown and you can alter the list as follows:

To edit a user

1 Click on the user name.
2 Click the **Edit user** button.
3 Adjust the *Username* and/or *Password* as required.
Note: The admin username cannot be changed.
4 Click the **Save** button.



To add a user

1 Click the **Add user** button.
2 Enter the required *Username* and/or *Password*.
3 Click the **Save** button.

To delete a user

1 Click on the user name.
2 Click the **Edit user** button.
3 Click the **Delete user** button.
Note: The admin user cannot be deleted.
4 Click the **Save** button.

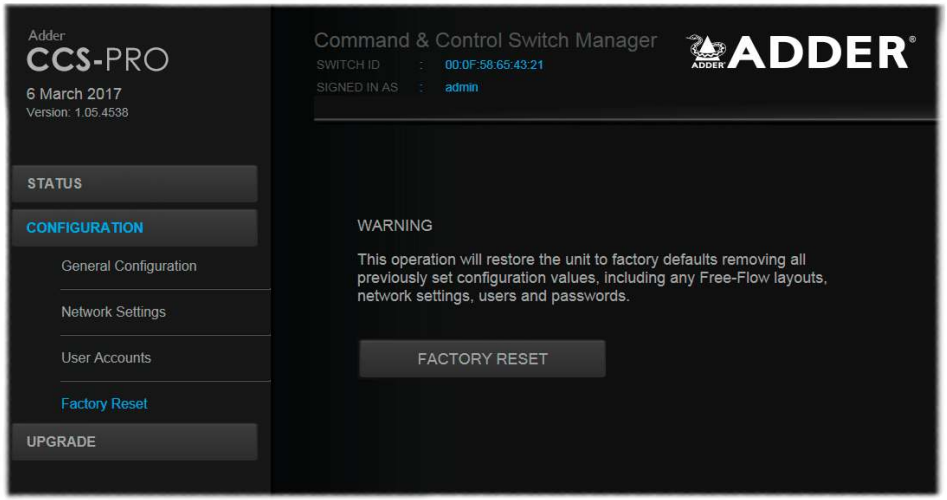
Factory reset

To display the Factory reset page

1 Access the CCS Manager.

2 On the left side, click the **Configuration** button.

3 On the left side, click the **Factory reset** option.



Performing a factory reset

A factory reset will return the CCS-PRO to its original configuration. All network settings will be reset (the default IP address of 192.168.1.22 will be restored) and all users, except for the admin user will be removed. Additionally, if any Free-Flow layouts are stored, they will also be removed from memory.

There are two ways to perform a factory reset:

- Within the Factory Reset page of the CCS Manager, or
- Using the front panel MODE button.

Both methods are discussed below.

To perform a factory reset within CCS Manager

1 Within the *Factory Reset* page, click the **Factory reset** button.

The CCS-PRO unit will be returned to its standard state.

To perform a factory reset using the front panel MODE button

1 Remove power from the CCS-PRO unit.

2 Press and hold the front panel MODE button and restore power.

The CCS-PRO unit will be returned to its standard state.

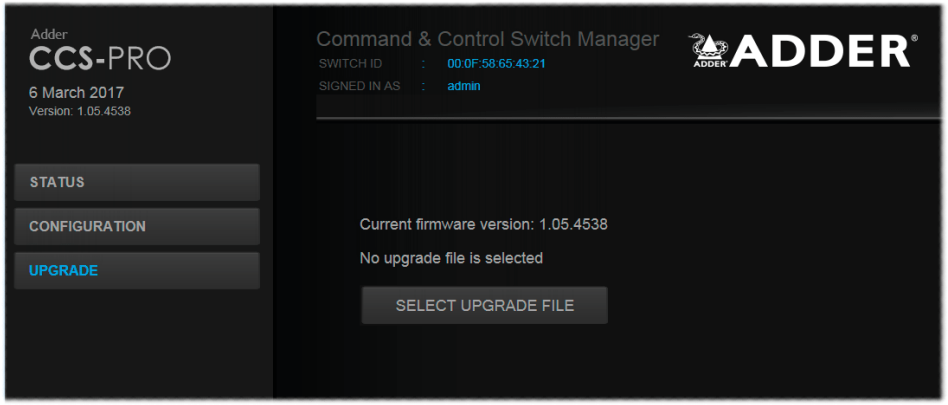
Upgrade

To display the Upgrade page

Note: Firmware upgrades are not possible using the Safari browser, please use a different browser when performing upgrades.

1 Access the CCS Manager.

2 On the left side, click the **Upgrade** button.



Performing a firmware upgrade

The CCS-PRO switch is fully upgradeable via a firmware upgrade.

Note; Once the CCS-PRO has entered upgrade mode the USB ports are disabled. It is not recommended to apply the upgrade from a computer connected to the CCS-PRO. If the upgrade file is on a memory stick connected to the CCS-PRO, The CCS-PRO will remain in this locked state, in order to recover you can connect to the webpage and perform the upgrade again.

To perform a firmware upgrade

1 Download the latest CCS-PRO firmware upgrade file from the Adder Technology website (www.adder.com) and install it on a computer that is attached via a network connection to the CCS-PRO switch.

The file is supplied as a compressed ZIP file. Decompress the ZIP file with an appropriate tool such as WinZip (www.winzip.com) and extract the contained **.bin* file.

2 Access the Upgrade page (as detailed left).

3 Click the **Select upgrade file** button and use the subsequent file dialog to locate the downloaded **.bin* upgrade file. Once selected, the name of the upgrade file will be displayed within the Upgrade window.

4 Click the **Start upgrade** button. As the process begins, the Upgrade page will show 'Upgrade in progress' and the CCS-PRO front panel will show '*U*'.

The upgrade process may take several minutes to complete, after which time the CCS-PRO front panel will return to showing the current channel number.

FREE-FLOW CONFIGURATION (Windows PC required)

Note: Whenever a factory reset is performed on a CCS-PRO unit, the Free Flow Configuration will be deleted and need to be repeated.

Installing the standard configuration application

The Free-Flow configuration application is available for download from the Adder website (www.adder.com).

1 Install the application onto any computer (not necessarily one of the four computers linked to the CCS-PRO switch).

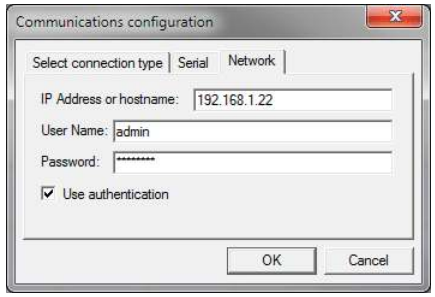
2 Connect the computer to the CCS-PRO via the network port. See To temporarily connect a computer to the network port for details.

3 Run the installation application and follow the on-screen instructions. Once installed, start the Free-Flow application. It may report that it is 'Unable to communicate with the device'. If so:

   a Click the **OK** button, whereupon the Free-Flow window will open.

   b Select **Configure** > **Connection...** to display the Communications configuration dialog.

   c In the first tab, select the **Network** connection. The *Serial* option is used only for the standard CCS4-USB switch:



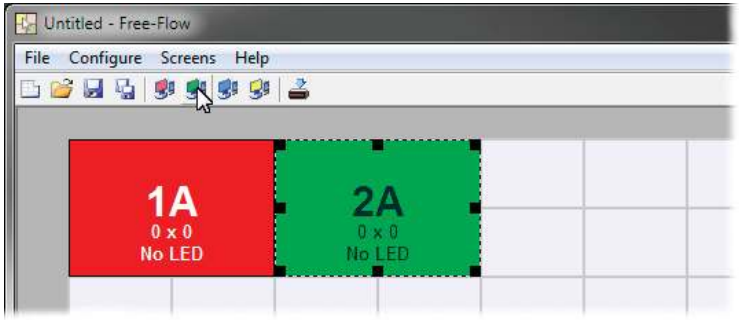
   d Enter the IP address of the CCS-PRO unit (it is set to 192.168.1.22 as standard) as well as the username and password, if used.

   e If required, test the connection. Select **Configure** > **Send Layout to Switch**. If no error message is returned then you can assume the connection is working.

Configuring a standard Free-Flow system

Use the Free-Flow application to declare the display screens and their positions relative to each other. Then download the configuration to the CCS-PRO switch.

1 On the icon bar, click the red, green, blue and yellow screen icons (or use the *Screens* menu) to add the required number of display screens to the map area:



Note: By default, the Free-Flow screen will automatically add four screens in a straight row (1A 2A 3A 4A), each at a resolution of 1920 x 1080. You can edit or delete these screens as required.

2 Arrange the coloured rectangular screen representations to mimic the physical layout of the actual displays, for example:



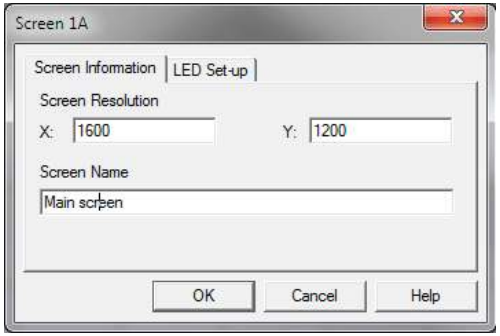
The important thing is to define where each screen edge abuts to the next so that the CCS-PRO switch can determine the correct moments to switch channels.

Use the small black squares around the perimeter of each highlighted screen representation to change their size or stretch them.

Note: The numbering of the screen images relate directly to the four channels on the switch.

continued

3 Double-click on each screen representation to set the screen resolution and, optionally, add a screen name and/or configure an LED monitor indicator:



See also Additional Free-Flow operations and settings

The screen resolutions are not critical but they enable the CCS-PRO switch to accurately map the movement of the mouse onto corresponding movements of the pointer across the screens. The screen names, if used, are not downloaded to the CCS-PRO switch.

If you need to configure an LED monitor indicator, click the LED Setup tab. Please see Configuring LED monitor indicators for details.

4 When the screen map is complete and accurately matches the true layout of the display screens, choose **File** > **Save** to store a copy of the layout. The layout will be stored as a 'Free-Flow Config file' with the extension: .ffc

5 To send the configuration, select **Configure** > **Send Layout to Switch**.

- If the download is successful, the screen representations will briefly turn grey and the upper four indicators on the CCS-PRO switch will begin to scroll across (they will continue to do this while Free-Flow mode is enabled).
- If the download is unsuccessful, a message dialog will explain that it is 'Unable to communicate with the device'. Check the connection and the settings mentioned in the section Installing the standard configuration application.

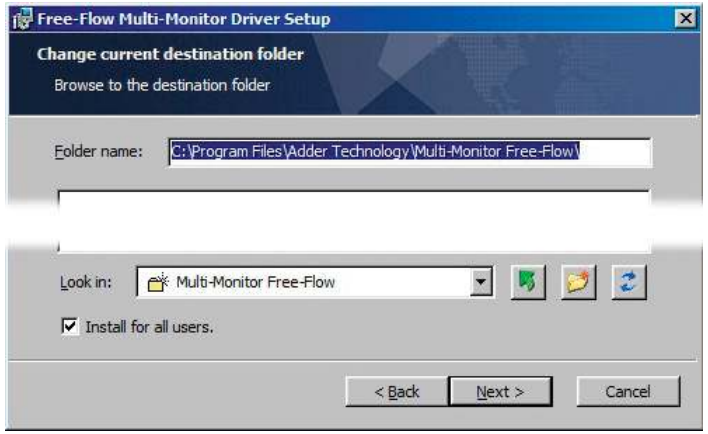
Multi-Monitor Free-Flow configuration (Windows only)

Installing drivers and multi-monitor config app

In order to use Multi-Monitor mode you will need to install a Multi-Monitor Free-Flow driver (available for download from the Adder website www.adder.com) onto each PC that has multiple monitors attached.

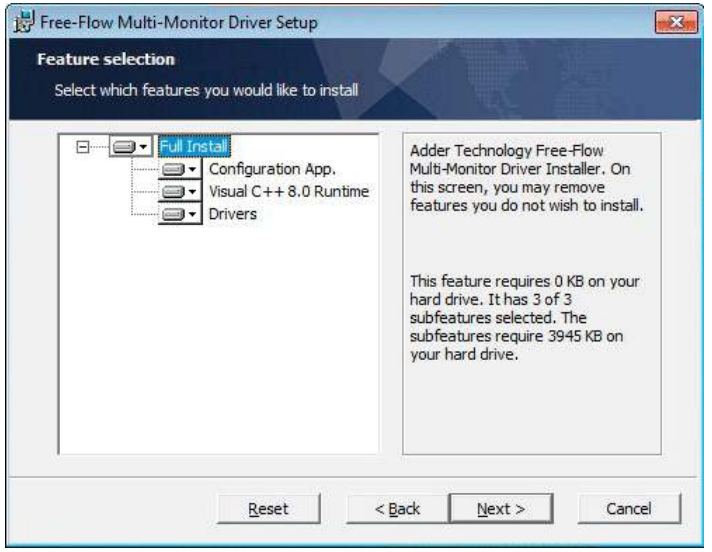
1 On each multiple monitor PC, run the downloaded file. After accepting the licence agreement you will be prompted to choose a destination folder. Either accept the suggested location or change it, as necessary.

Note: The Install for all users option should be ticked if there are more than one user account on the PC and all need to use Free-Flow.



2 The options available during installation are as follows:

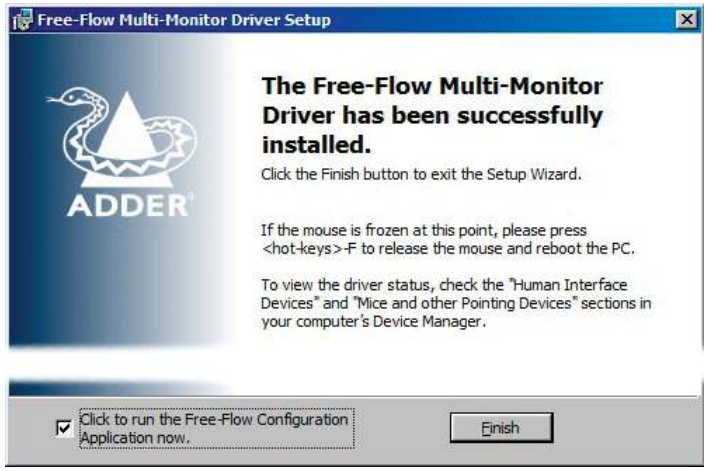
- **Full Install**, (this is recommended), or
- Options to install individually:
  - **Configuration App**
    This is the Free-Flow application and needs to be installed only on the PC that will be used to set up the CCS-PRO switch via the network port.
  - **Visual C++ Runtime**
    The C++ runtime library is a windows component that is required by the multi-monitor driver in order to run its helper applications. It is pre-installed with Windows but is offered here as an option as you may want to keep an older version already installed on your system, or you may already have a newer version in your copy of Windows.
  - **Drivers**
    Multi-Monitor Free-Flow drivers that are required on each PC that will be using Multi-Monitor.



Choose the required components and click the **Next >** button.

3 Once the chosen components have been installed, click the **Finish** button.

Note: On the PC that will be used to set up the CCS-PRO switch, you can optionally tick 'Click to run the Free-Flow Configuration Application' in the lower left corner to immediately begin using Free-Flow - see Configuring multiple monitors on the next page for details.



Note: On each PC that you installed the driver, a process called mumoapp.exe will remain running.

Configuring multiple monitors

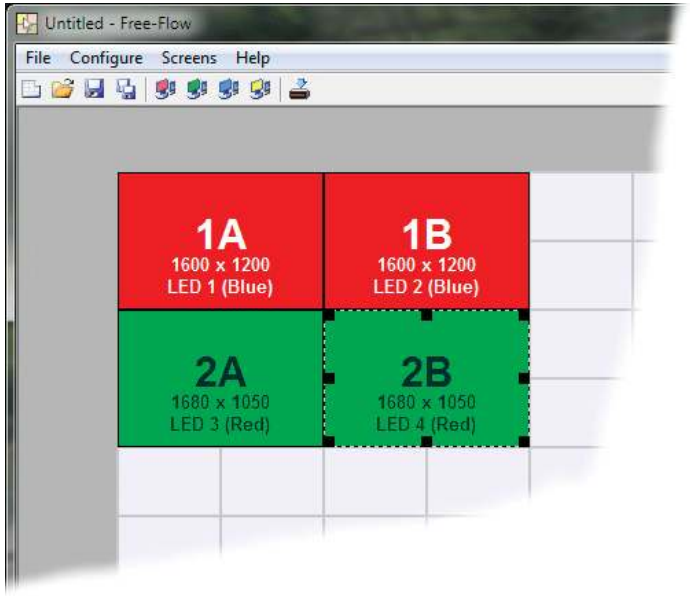
Multi-Monitor configuration is similar to normal Free-Flow setup except that you can add more than one display per PC, up to a total of eight per machine.

Note: It is necessary to install a driver on each PC that has multiple displays - see Installing drivers and multi-monitor config app *on the previous page.*

1 If it is not already running, start the Free-Flow configuration application on the computer that is connected to the network port of the CCS-PRO switch. See Installing the standard configuration application for details.

2 On the icon bar, click the red, green, blue and yellow screen icons (or use the *Screens* menu) to add the required number of display screens per computer to the map area.

For example, to add two monitors for PC 1, click the red computer icon twice. The two red monitor representations will be placed side by side within the Free-Flow map area.



3 Arrange the coloured rectangular screen representations to mimic the physical layout of the actual displays. For example, you may wish to have the two screens of PC1 side by side, with the two screen screens of PC2 below them (as shown left), or some other arrangement to reflect the actual positions of the physical monitor screens.

The important thing is to define where each screen edge abuts to the next so that the CCS-PRO switch can determine the correct moments to switch channels.

Use the small black squares around the perimeter of each highlighted screen representation to change their size or stretch them.

Note: The numbers of the screen representations relate directly to the four channels on the CCS-PRO switch, while the letters relate to the screen hierarchy attached to any single computer (i.e. A is primary, B is secondary, etc.).

4 [Optional step] If you need more squares on the grid in order to arrange many displays in a row, right click on an empty square (or on the darker gray edging) to enlarge the grid. Further right clicks will add even more empty squares.

5 Continue from step 3 of the standard Free-Flow configuration instructions.

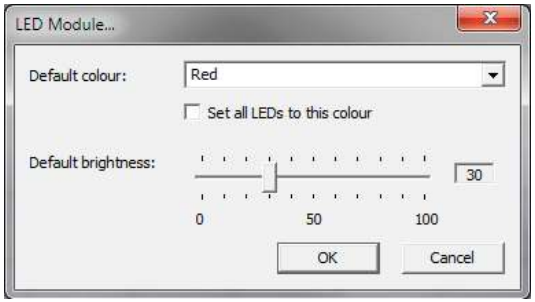
Configuring LED monitor indicators

When the optional CCS-XB LED monitor indicator kit is used, there are several configuration options available that allow you to customise behaviour and these are set using the Free-Flow configuration application.

Note that the LED monitor indicators may be used without Free-Flow.

Adjusting colour and brightness for all indicators

If necessary, you can impose default colour and brightness settings upon all connected LED monitor indicators. Choose **Configure** > **LEDs...** to display the following popup:



To impose a default colour on all connected indicators, choose the required **Default colour** and then tick the option **Set all LEDs to this colour**.

Use the **Default brightness** option to determine the intensity of all indicators.

Click **OK** to exit and apply the required settings.

Note: Once default settings have been made you can optionally change any or all indicators individually as required using the steps outlined below.

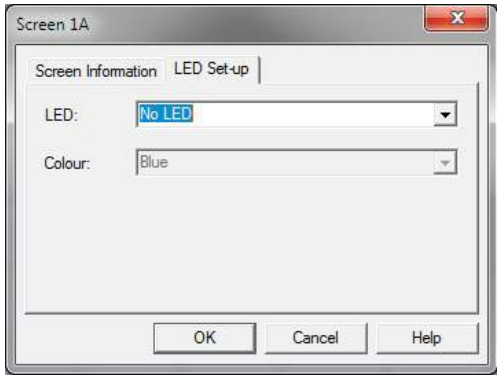
Adjusting individual indicators

For each installed video display screen, you have the opportunity to add and configure an LED monitor indicator.

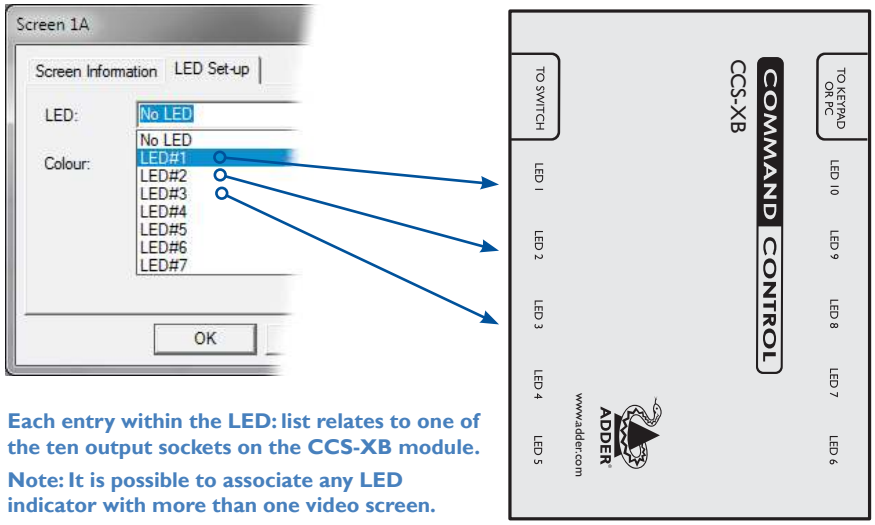
To adjust details for an individual indicator

1 Double-click on a screen representation (or right click on a screen representation and then choose **Properties**) to display the screen popup.

2 Click the **LED Set-up** tab to display the indicator details:



3 For a newly added screen the **LED:** entry will show **No LED**. Click on the drop down handle and choose the LED indicator that you wish to associate with the currently selected video display screen:

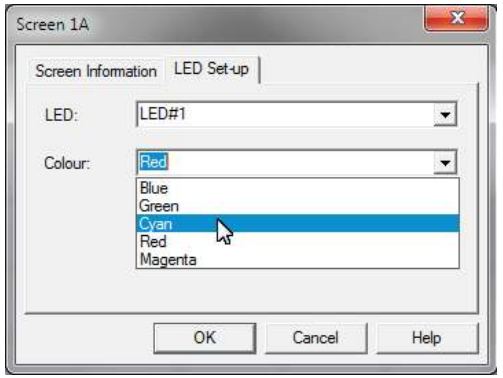


Each entry within the LED: list relates to one of the ten output sockets on the CCS-XB module.

Note: It is possible to associate any LED indicator with more than one video screen.

4 Choose the CCS-XB LED output port that you wish to associate with the currently selected video screen.

5 Optionally alter the colour, from the **Colour:** list, that you wish the LED indicator to display when the associated video screen is selected:



Note: Each LED indicator can only have one colour, so if you associate an indicator with more than one screen and then change the colour on a later screen assignment, it will be changed for all the screens in the list for that LED indicator.

6 Click **OK** to save and exit.

7 Repeat steps 1 to 6 for each screen that requires an LED monitor indicator.

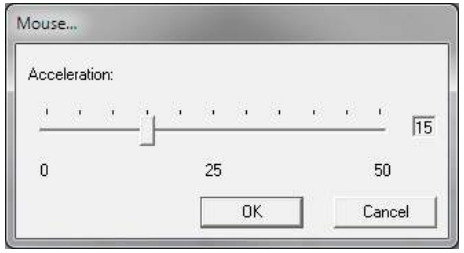
8 Choose **Configure** > **Send Layout to Switch** to update the CCS-PRO switch.

9 The LED monitor indicators may be used without Free-Flow. To disable Free-Flow, simultaneously press and hold Ctrl and Alt, then press F. This acts as a toggle, so repeat to re-enable Free-Flow.

Additional Free-Flow operations and settings

In addition to the core configuration functions, Free-Flow has a number of additional settings that you can make.

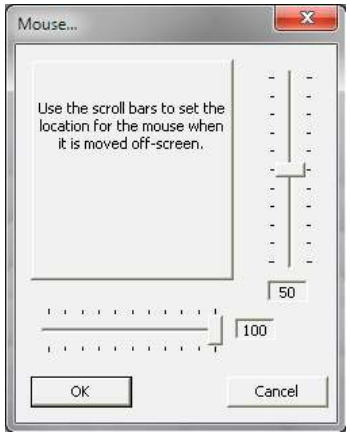
Mouse... (acceleration) setting



Acceleration

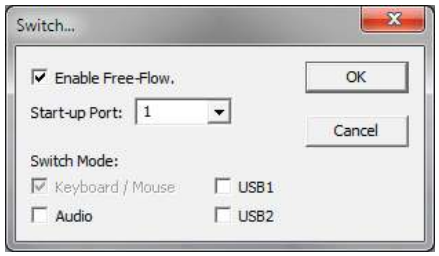
Mouse acceleration allows you to move the mouse pointer quickly across the large areas of the screen in response to small but sharp shifts in the mouse position. The **Configure** > **Mouse...** option provides settings between 0 and 50, however, a value of 12 to 15 will give a typical Windows-like default operation.

Mouse parking... setting



Mouse parking allows you to optionally determine where the mouse pointer for each system should be placed when the focus moves to a different system/video screen. The **Configure** > **Mouse parking...** option displays vertical and horizontal scroll bars. Use the scroll bars to pinpoint the position that should be used to park the dormant mouse on each screen.

Switch... settings



Enable (Disable) Free-Flow

This option allows you to switch off the Free-Flow feature within the CCS-PRO switch. Located within **Configure** > **Switch...** menu item, untick the **Enable Free-Flow** checkbox and download the configuration the CCS-PRO switch to disable.

Start-up Port

Located within **Configure** > **Switch...** menu item (see above image), this option allows you to determine which port should be enabled whenever the CCS-PRO switch is first powered on.

Switch Mode

Located within **Configure** > **Switch...** menu item (see above image), these check boxes allow you to determine which peripherals should be switched whenever the channel is changed by the Free-Flow method. The switching of peripherals via the other methods of channels selection (e.g. the front panel, hotkeys, mouse buttons, etc.) remain unaffected by these settings. By default, the Keyboard/Mouse and Audio are selected.

Operation

SELECTING A COMPUTER

There are six ways to switch the common peripherals to specific computer channels:

- Using the innovative Free-Flow automatic switching utility
- Using the control panel
- Using hotkeys
- Using mouse button presses
- Remote control via an external system
- Using the optional RC4 remote control

Selecting a computer using the Free-Flow utility

Once configured, Free-Flow allows you to change channels merely by moving the mouse to edge of one screen towards the next screen. As the mouse pointer reaches the edge it will cause the channel to automatically change and will jump to the next screen.

Notes:

- *Free-Flow cannot be enabled until a layout has been configured and downloaded to the CCS-PRO switch - see Free-Flow configuration.*
- *The mouse will not flow across the screens while any mouse buttons are pressed down - this prevents undesired behaviour when dragging windows around or group-selecting items.*
- *You can determine which peripherals will be switched by Free-Flow independently of those that would be switched with any other method. See Switch Mode within the Switch... settings section.*
- *You can continue to use any of the other channel switching methods while Free-Flow is enabled.*

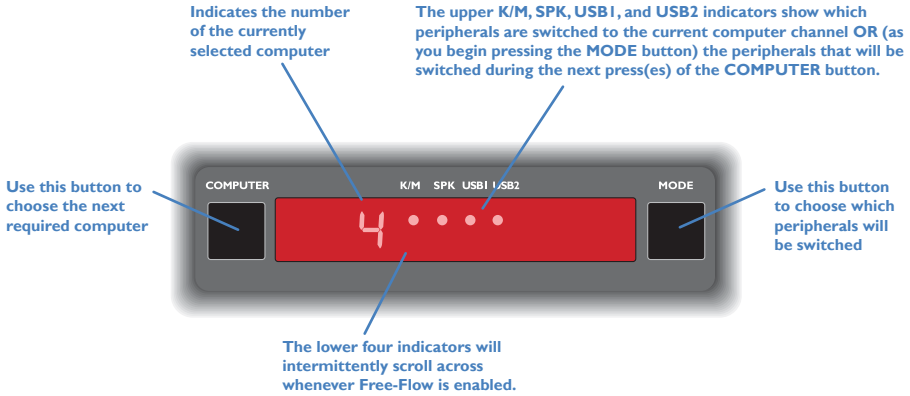
The four upper indicators on the CCS-PRO display panel will scroll across every few seconds to show that Free-Flow is enabled. See What is Free-Flow? for an introduction to the utility or Free-Flow configuration for more details about how to prepare it for operation.

You can temporarily disable (and re-enable) Free-Flow using hotkey presses:

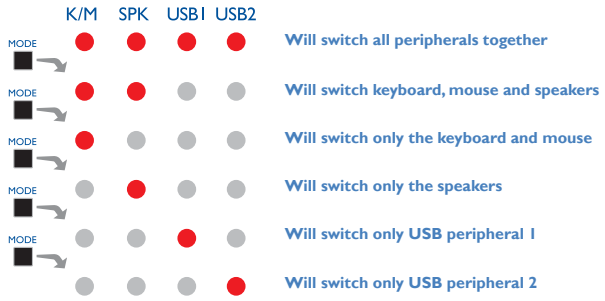
- Simultaneously press and hold Ctrl and Alt, then press F

Selecting a computer using the control panel

The control panel allows you to determine how the various peripherals are switched to one or more computer channels.



1 Optional: If you need to selectively switch some of your peripherals, press the MODE button repeatedly to change the switching mode:



Notes:

- *If an indicator flashes, it signifies that the respective peripheral is currently switched to another computer channel.*
- *The peripherals to be switched using the Free-Flow method are set independently.*

2 Press the COMPUTER button repeatedly to select the required computer channel.

Selecting a computer using hotkeys

Using hotkey combinations, you can quickly switch the keyboard and mouse, speakers and USB peripherals to any computer channel.

To select a computer using hotkeys

The standard hotkey press combinations allow you to change channels with the minimum of keypresses:

1 Simultaneously press and hold Ctrl and Alt (or other hotkeys, if altered).

2 While still holding Ctrl and Alt, press the number key of the required channel address (or the TAB key), then release all of the keys.

Note: The numbers on your keyboard's numeric keypad are not valid, use only the numeral keys above the QWERTY section.

The ports (K/M, audio and/or USB) that are switched using this method depend upon the switching mode that is currently set using the control panel buttons.

The range of standard hotkey combinations are as follows:

Note: If your hotkeys have been changed, substitute them for Ctrl and Alt in the examples given here.

Ctrl Alt 1	Selects channel 1	
Ctrl Alt 2	Selects channel 2	
Ctrl Alt 3	Selects channel 3	
Ctrl Alt 4	Selects channel 4	
Ctrl Alt 5	Selects channel 5	*CCS-PRO8 models only*
Ctrl Alt 6	Selects channel 6	
Ctrl Alt 7	Selects channel 7	
Ctrl Alt 8	Selects channel 8	
Ctrl Alt 0	Isolates the user console from all channels	
Ctrl Alt Tab	Selects the next channel (see note ⇨)	

What are hotkeys?

The Ctrl and Alt keys when pressed in combination are called 'hotkeys' and they signal to the CCS-PRO switch that you wish to control it, rather than the computer. However, if these particular hotkeys clash with another device or program, you can change them to a different combination within the General configuration page of the CCS Manager.

To disable/enable Free-Flow

Once Free-Flow is in operation, you can temporarily disable (and re-enable) it. You can tell when Free-Flow is in operation when the four lower indicators on the CCS-PRO front panel scroll across every few seconds.

- Simultaneously press and hold Ctrl and Alt, then press F

Choosing which computers are accessed when using hot keys + tab

The computer channels that are visited when you use the hot keys + tab (or mouse buttons) are determined by a setting within the Configuration menu:

1 Enter the General configuration page of the CCS Manager.

2 Choose the required Port cycling option, either:

- **Cycle all ports** (visits even inactive ports), or
- **Cycle only active ports**.

3 Click the **Save** button.

Selecting a computer using the mouse buttons

Using the mouse buttons, you can quickly switch the keyboard and mouse, speakers and/or USB peripherals to any computer channel.

Note: These procedures work only with three-button or IntelliMouse devices and only if the 'Mouse switching' option has been enabled (within the General configuration page of the CCS Manager).

To select a computer using the mouse buttons

1 Hold down the middle button (or scroll wheel) of the mouse.

2 Click the left mouse button to increment the channel number or click the right mouse button to decrement the channel. When the correct channel is reached, release the middle button.

When using this method of switching:

- The computer channels that are visited depend upon the configuration menu setting (see note ⇨).
- The ports (K/M, audio and/or USB) that are switched using this method depend upon the switching mode that is currently set using the control panel buttons.

Choosing which computers are accessed when using mouse buttons

The computer channels that are visited when you use the hot keys + tab (or mouse buttons) are determined by a setting within the Configuration menu:

1 Enter the General configuration page of the CCS Manager.

2 Choose the required Port cycling option, either:

- **Cycle all ports** (visits even inactive ports), or
- **Cycle only active ports**.

3 Click the **Save** button.

Further information

This chapter contains a variety of information, including the following:

- Getting assistance - see right
- Troubleshooting
- Appendix 1 - Cable pin-outs
- Appendix 2 - What is True Emulation?

GETTING ASSISTANCE

If you are still experiencing problems after checking the information contained within this guide, then please refer to the Support section of our website:

www.adder.com

LITHIUM BATTERY

CAUTION: This product contains a lithium battery which must be disposed of in the correct manner.

CAUTION: RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE.

- If the lithium battery needs to be changed, you must return the product to your nearest Adder dealer. The battery must be replaced by an authorized Adder dealer.
- Once the product has come to the end of its useful life, the lithium battery must be removed as part of the decommissioning process and recycled in strict accordance with the regulations stipulated by your local authority. Advice on battery removal can be provided on request by Adder.

TROUBLESHOOTING

Problem: My computer and the CCS-PRO switch are connected to the same network but I can't make contact using a web browser.

There may be another device using the same address as the CCS-PRO default (192.168.1.22) or your computer may be on a different subnet.

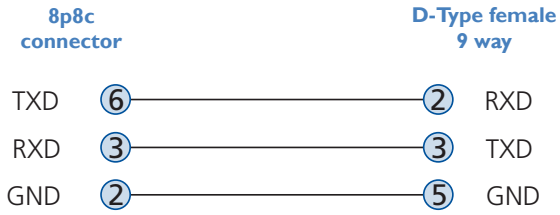
Remedies:

- Check whether any other device on your immediate network is using the same address and temporarily disconnect it, if possible.
- Make a temporary direct connection between your computer and the switch in order to change the IP address used by the switch.
- Check that your computer and the switch are on the same subnet. If necessary, change your computer's subnet mask setting to encompass that of the switch, e.g. instead of 255.255.255.0, try 255.255.0.0.

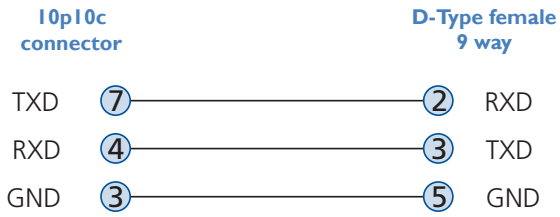
APPENDIX 1 - CABLE PIN-OUTS

The **OPTIONS** port uses a 10p10c socket which can accommodate both 10p10c connectors as well as the much more common 8p8c connectors, which are used on Ethernet leads and patch cables. The pin-outs are listed in this section for both types of connector.

Serial remote control cable (8p8c)



Serial remote control cable (10p10c)



Note: You can also use the optional serial cable (part number VSC40).

APPENDIX 2 - WHAT IS TRUE EMULATION?

True Emulation represents a significant breakthrough in sharing USB devices between two or more computer systems. Until this point, the problem has been how to create a USB switch that provides all of the following:

- Quick, transparent and reliable switching,
- Accurate representation of the connected USB keyboard and mouse,
- Switching control via the connected USB keyboard and/or mouse.

The difficulty in achieving all of the above requirements has been due to the complexity of the USB standard. This has led to various problems that have spawned a number of possible solutions.

Enumerated USB switching

The earliest attempts to switch USB devices applied a relatively 'hands off' approach. Enumerated USB switches are the electronic equivalent of those old mechanical KVM switches with a large knob on the front.

Enumerated switches are so called because a connected USB device will be required to perform a full initiation (a process called *Enumeration*) every time it is switched; just as if you had pulled out the plug and then reconnected it.

Enumerated switches simply pass all signals straight through between the USB device and the computer, they do not attempt to interpret any data. For most devices, this offers an advantage because the switch just leaves them to get on with their jobs without any interference or any hit on performance. However, it means that a USB keyboard or mouse cannot be used to control the switching process - a quick and simple control method expected by most users. Reliability of switching is also an issue that has plagued enumerated switches, especially when used with certain USB devices and particular operating systems.

Emulated USB switching

The issues with interpreting the complex USB data streams and recreating (or *Emulating*) the identity of attached USB devices were eventually solved, leading to the creation of the Emulated USB switch.

A neat side effect of the technique used is that each computer can be fooled into thinking that the USB device is permanently connected to it, even when the device is switched to another computer. This means that the enumeration process for the USB device takes place only once, during the first power on. After that, a computer merely sees a dormant version of the USB device whenever the device is actually connected to a different computer.

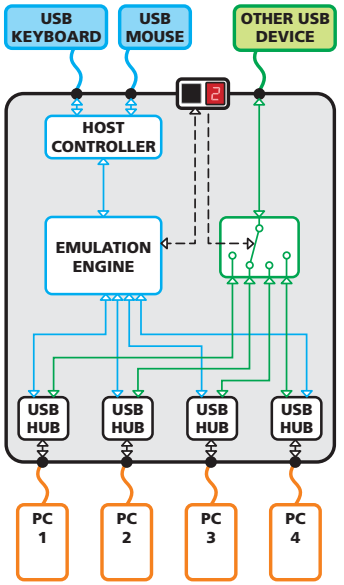
However, it remains a complex task to dynamically assume the identity of a USB device, distribute it among the connected computers and maintain all of the necessary signals, states and processes. Therefore, manufacturers have previously relied upon a fixed keyboard and mouse profile that is declared to each computer, regardless of the actual connected devices. This precluded the use of any special keyboard or mouse features over and above the standard layouts.

True Emulation

Mindful of the limitations associated with the previous USB switching techniques, we set about creating a more effective and elegant solution. After a great deal of research and development, *True Emulation* is the result.

True Emulation allows the complete identity of the keyboard and mouse to be copied and then presented to all of the connected computers. This means that any keyboard offering specialist function keys or any mouse with extra features will be fully supported at each computer. As with the previous emulation method, the unselected computers will continue to see the identities of the keyboard and mouse, which means that no enumeration is necessary when their link becomes active once again. This not only helps to speed up the rate of re-connection, but also raises the reliability of switching because USB links are at their most vulnerable during the enumeration process.

True Emulation relies upon a high speed circuit, called an Emulation Engine, to fully emulate the USB device identities and also interpret keyboard and mouse data streams. The result is full support for K/M switching control via hotkey presses or the third button/scroll wheel of a mouse.



The emulated section of the switch is shown in blue and handles only the keyboard and mouse. The green enumerated section of the switch handles other USB devices and also uses the USB hubs to link with the computers.

True Emulation is not necessarily required by other USB devices, which is why you will also find two enumerated circuits included (shown in green within the block diagram) alongside the True Emulation feature (shown in blue). This allows those other USB devices to operate at their highest speeds, without any intervention. The enumerated circuits benefit greatly from the USB Hubs that are jointly used with the True Emulation system. Because they interface directly and permanently with each computer, they help to stabilise the dormant links, making errors during enumeration much less likely.

The dual switching arrangement provides further flexibility because the True Emulation and enumerated sections can be switched in unison or independently of each other, as required. Thus, your various peripherals can operate with different computers at the same time. Please see software release notes for a list of supported products.

APPENDIX 3 - OPEN SOURCE LICENCES

This product includes binaries that are derived from the open source community.

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