

COMMAND CONTROL

Professional KVM Solutions for Control Rooms



Connectivity Experts

Professional C2 Solutions for Transport, Military, Security, Government, Oil & Gas, Telecommunications, Medical and Broadcast environments



Command and Control

The control room can be a high pressure, fast moving environment, so when choosing equipment, you need to be sure that you choose products you can rely upon. Adders command and control products are designed and manufactured with quality at the forefront of our mind, the reason that our products are used in mission critical installations across the globe. Whether it is a power station, an Air Traffic control tower or a live Broadcast studio, the goals often remain the same - remove the computer hardware from the user area, minimise the number of keyboard/mouse sets at each desk, and provide safe, secure remote access of computers.

Build quality is not our only focus. We understand the importance of delivering information accurately and immediately so we focus on enabling our users to interact with their systems in real-time through high resolution, low latency video extension. When combined with our highly compatible USB platforms and simple, intuitive user interfaces, you can begin to see why Adder products are central to the design of so many control rooms around the world.

Who uses Command and Control?

Command and Control is an essential part of many industries. Adder has specific experience working alongside:

NOC - Network Operation Centres

- Data Centre Control

TOC - Tactical Operation Centres

- Military Operations
- Police and Intelligence

SOC - Information Security Operation Centres

- Security Agencies
- Government Agencies
- Traffic management
- CCTV

EOC - Emergency Operation Centres

- Emergency Services

COS - Combined Operation Centres

- Air Traffic Control
- Oil and Gas

Control Rooms

- Broadcast
- AV (Audio Visual)
- Simulation and Training
- Medical

Designed for the Control Room

Adder have four main categories of product for Command and Control environments:

KVM extension

Locating noisy and hot computers away from operator areas is essential to creating a comfortable working environment for your operators. The psychological pressure of command and control environments is increased significantly by noisy machines and can easily distract the user from their

primary focus. Placing computers in a locked, temperature controlled environment also increases their life-span and performance as well as preventing unauthorised access to the computers and the information they store. Adder products are designed in a way that provides all of these benefits without sacrificing the performance you would expect if the PC were under your desk. In our view, the best KVM extender is the one that the operator does not realise is there. This means providing real-time extension, high resolution graphics and a high level of USB compatibility. In addition, all of our devices run silent with no fans built in. Through intelligent design and layout, they rely upon natural conduction cooling to dissipate heat.

KVM switching

It's highly likely that an operator will need access to more than one computer or video source to carry out their tasks. In many applications, the operator will often require more than one monitor on their desk which typically leads to multiple keyboard/mouse sets. Adder's keyboard and mouse switches allow you to remove the keyboard and mouse clutter from the desk, improving ergonomics and simplifying the usability of complex setups. With Adder's Free-Flow switching technology, it is now possible to move between multiple computers, operating systems and displays using a single mouse.

KVM over IP

For many years, Adder has been providing remote access of computers using a dedicated hardware package and Real VNC protocol. This technology has been widely used to provide remote access for secondary/emergency control rooms but is more commonly used to allow computer images to be presented on to the video wall. Many video wall processor manufacturers accept VNC protocol for video inputs and recommend Adder IP devices because of the superior performance they offer over traditional software versions. The latest models in this category support HD resolutions, dual-screen and audio making them the clear market leaders.

Digital IP Matrix – Combining extensions, switching and IP in a single network.

Migration to digital video and USB technology has introduced a huge amount of complexity when combining extension, switching, sharing products to create flexible user access. Along with complexity comes higher costs and compromised performance so many customers are turning to KVM Matrix products. The matrix concept gives each operator the ability to connect to any source computer via a central matrix switch. Unfortunately, high quality KVM matrix systems carry a large price tag and have limited scalability so are only rarely used in very premium applications. With the development of the AdderLink INFINITY range, Adder has created a flexible, scalable matrix which uses standard network infrastructure to deliver real-time HD video, USB 2.0 hubs and audio over ubiquitous copper cabling. The system allows integrators to simplify system design and bring all elements of the KVM function under a single umbrella and manage devices using the comprehensive AdderLink INFINITY management system (A.I.M.). In short, you can now extend, switch, share and access any computer on your KVM network from the desk, the video wall or in fact, anywhere in the world.



China State Grid: *Keeping energy flowing*

Problem

Modern control rooms need to separate working space from machinery space. This often involves locating computing power into machine rooms or even separate buildings. There are a number of reasons why this is the case:

- Minimise noise and heat generation in working space
- Enable maintenance and pre-emptive repairs to take place while a control room remains operational
- Extend hardware life cycle and reliability by maintaining ideal environmental conditions
- Allow resources to be re-routed for emergency and disaster recovery

While creating a distraction free working environment, the control room must maintain absolute reliability alongside transparent connectivity. The user must always believe they interact directly with the computer systems in use while only being able to access systems they are authorised to.

Solution

China State Grid chose the AdderLink INFINITY as a best of breed command and control solution, delivering lossless real time interaction with the flexibility of an instantly configurable IP matrix. Driving 1920x1200 digital video and audio alongside USB from the machine room through to the control room, the AdderLink INFINITY is both rapid to deploy and solid in performance. Key to the success of this installation was the AdderLink INFINITY management system (A.I.M.).

A.I.M. allows an entire installation to be repurposed at the touch of a button, while users have the freedom to connect disparate systems using an on screen display, as simple in operation as changing channel on a television. This simplicity is key to user adoption and understanding, allowing operators to get on with their real task rather than being distracted by

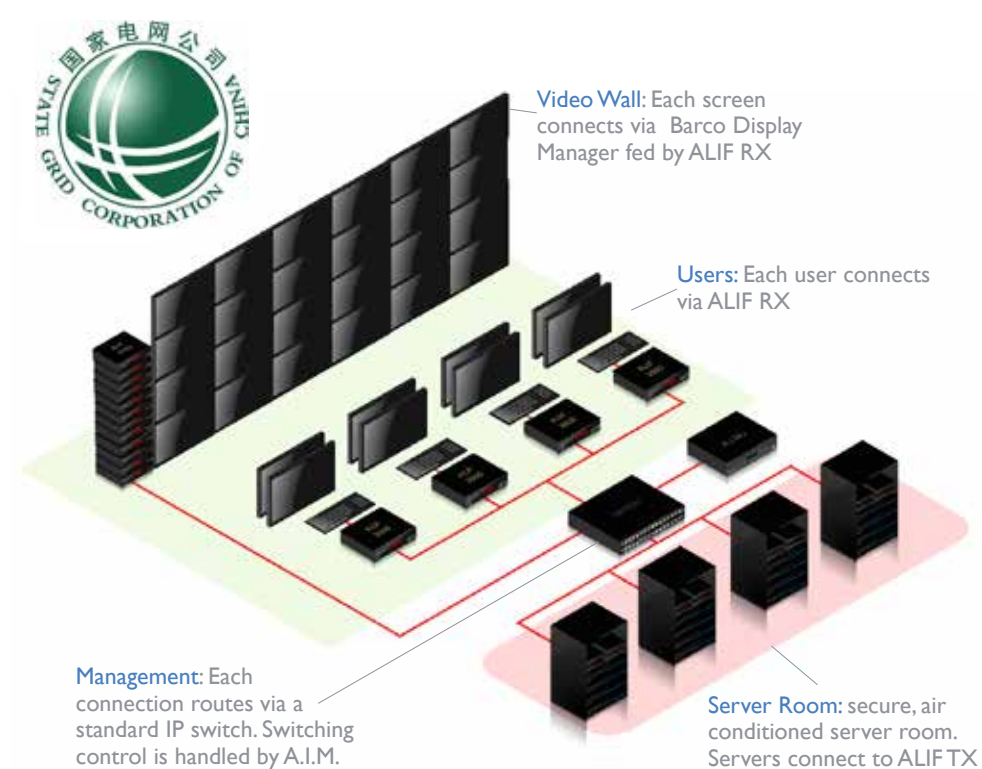
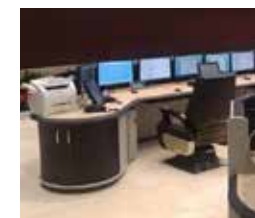


the technology in front of them. This installation used another key feature of the AdderLink INFINITY – Multicast. Multicasting allows the operator to view a system on the screen directly in front of them, while a second receiver unit delivers the same content to the video wall processor. Today, this can even be done using VNC through the ALIF2112T transmitter which not only distributes spatially lossless DVI, but at the same time becomes a VNC server, allowing control room content to be decoded by the video wall itself, or even sent around the world to other control rooms or individual users.

Result

The result of deploying AdderLink INFINITY into China State Grid is a flexible, robust control environment with endless configurability. The installation can be scaled at any time in the future to enable additional operators, or split down to manage new tasks as required.

Key Equipment Used:
AdderLink INFINITY Dual
CCS4USB with Free-Flow
RC4 Desk Controllers
Barco Display Manager



COMMAND & CONTROL TECHNOLOGY

NEW

Now featuring
VNC



High density, small form factor,
secure DVI,USB & Audio over IP

ADDERLink INFINITY

Pure digital media extension over IP Network

PRODUCT IN BRIEF

AdderLink INFINITY allows you to build a flexible infrastructure, the likes of which have not been possible before. Locate computers anywhere you like, share connections to computers, watch the interactions others have with computers, share control, collaborate, switch computers, and so on. The AdderLink INFINITY is also the first device of its kind to allow multicasting across your network.

Adder's expertise in IP-based KVM solutions also means that you get the very best video quality and fluid USB-based interactions with your computer. Optimized for both HID and Mass Storage devices, the AdderLink INFINITY uses USB 2.0 technology to deliver reliable and flexible device support.

FEATURES

Perfect Digital Video

The AdderLink INFINITY makes use of multiple video encoding technologies devised by Adder to deliver the very best picture available. Our encoding systems are spatially lossless, with 1:1 pixel mapping, so the digital video you receive is the same as the digital video leaving the remote computer.

Intelligent Video Encoding

The AdderLink INFINITY uses optimal spatially lossless compression techniques to minimize network bandwidth usage and maximize the user experience. In most usage scenarios, with typical computer desktop applications, the AdderLink INFINITY uses remarkably little bandwidth. When it needs to deliver full screen motion video, it has the capability to process full screen moving video in real time.

Video Colour Accuracy

The received video colour is the same as the sent colour every time. There is never a loss of clarity with the AdderLink INFINITY. Because of this, colour controlled environments such as visual media or scientific imaging can collaborate in real time on projects, handing control across seamlessly to other group members.

USB True Emulation

The AdderLink INFINITY enables you to connect any USB human interface device from mice and keyboards through to graphics tablets, jog shuttles, joysticks and

3D explorers. Furthermore, most other USB devices can also be attached, such as Mass Storage devices.

Network Topology

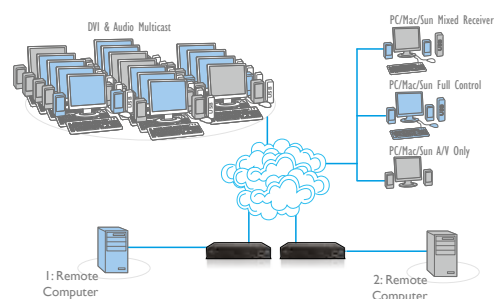
You can configure your network topology to best suit your needs. If you simply want to extend one computer TX to one user RX, you can do so by connecting both TX and RX units via a low cost CATx cable. Distance is not limited - a standard network cable will deliver IP traffic up to 100 metres away. If you want to go further, simply add a network switch to achieve an additional 100 metres. This can be done many times if you wish. The AdderLink INFINITY network is assumed to be a private network which you manage. As such, you can control maximum data rates generated by each TX unit to ensure absolute stability.

Wireless Connectivity

Because of the efficient manner in which AdderLink INFINITY constructs data for IP transmission, it is perfectly reasonable to make use of standard off-the-shelf wireless routing to connect either RX or TX units to your network. Typical desktop applications (word processing, datasheet, etc.) will use very little bandwidth.

Mounting Options

The AdderLink INFINITY units can be rack mounted, desktop mounted, wall mounted or attached to the back of your monitor using an optional VESA mounting carriage.



High density, small form factor,
secure DVI,USB & Audio over
copper or fiber based IP

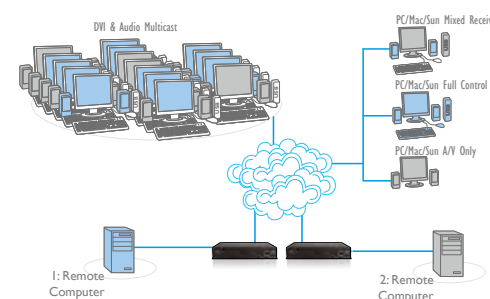
ADDERLink INFINITY dual

Pure digital media extension over IP featuring dual head & dual link video

PRODUCT IN BRIEF

AdderLink INFINITY dual allows you to build a flexible infrastructure, the likes of which have not been possible before. Locate computers anywhere you like, share connections to computers, watch the interactions others have with computers, share control, collaborate, switch computers, and so on. The AdderLink INFINITY range is also the first of its kind to allow multicasting across your network.

The AdderLink INFINITY dual interfaces USB peripherals such as the keyboard, mouse or graphics tablet, together with DVI for the video display, over a layer 3, standard gigabit ethernet network, on copper or fiber.



FEATURES

Dual link or dual head DVI

The AdderLink INFINITY dual features full DVI connectivity for either dual link or dual head applications. DVI delivers native digital video signals from your computer to your digital panel (LCD for example) without the need to convert signal types from the digital domain. By delivering native digital video throughout the AdderLink INFINITY network, you can be assured of accuracy on each and every pixel.

Network Topology - CATx or fiber

You can configure your network topology to best suit your needs. If you simply want to extend one computer TX to one user RX, you can do so by connecting both TX and RX units via a low cost CATx cable or fiber. Distance is not limited - a single copper network cable will deliver IP traffic up to 100 meters away. If you want to go further, simply add a network switch in to achieve an additional 100 meters. This can be done as many times if you wish.

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USB True Emulation

Like the AdderLink INFINITY, the AdderLink INFINITY dual enables you to connect any USB human interface device from mice and keyboards through to graphics tablets, jog shuttles, joysticks and 3D explorers. Furthermore, most other USB devices can also be attached, such as Mass Storage devices.

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USB 2.0

The AdderLink INFINITY dual uses USB 2.0 connectivity to interface with your keyboard and mouse, and any other peripheral you wish to use. USB is the most broadly used computer peripheral interface standard available.

Digital Stereo Audio

AdderLink INFINITY dual delivers crystal clear stereo audio digitally across the network. This ensures continuous fidelity and channel separation between the TX and RX units, or even in Multicast environments.

COMMAND & CONTROL TECHNOLOGY



Digital KVM Matrix
19 inch 1U form factor
Management server

ADDERLink A.I.M.

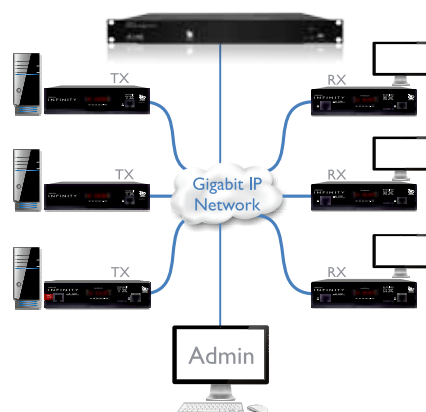
AdderLink INFINITY network management suite



PRODUCT IN BRIEF

The A.I.M. management server is a control suite which transforms AdderLink Infinity extenders into a digital matrix solution. Using standard IP infrastructure it is possible to route any user station to any computer attached to the network without any compromises to video quality or control. It allows co-operative sharing of computers and the multicasting of video to any destination.

- Intuitive, multi-lingual user interface
- Multiple switching methods
- Configurable user access rights
- Full audit trail
- Easy centralized management
- Open API for 3rd party control



FEATURES – System administration

Secure access and communications

Using TLS (transport layer security) and HTTPS, communications between AdderLink units and A.I.M. and between A.I.M. and the outside world are all secure.

Redundant operation

For 24/7 reliability a second hot A.I.M. can be added to ensure constant uptime and with dual NIC interfaces on every AdderLink Infinity unit, systems can be easily designed for maximum resilience.

User access rights management and audit trails

Administrators can manage access rights to each device on a user by user basis either manually through the web browser or automatically using Active Directory. Reports showing the history of devices, user logins and device connections can be viewed and exported to a CSV file or via SYSLOG.

Easy centralized management

Accessed via a web browser, the dashboard gives a real time overview of system connections and users. Tabs enable you to navigate between settings and device or user sub-menus.

Control Channel and Presets connections

A.I.M. can be used to make connections between an individual pair of transmitter and receiver devices centrally from within the management system. Using Presets, a list of pre-defined connections, multi-screen, video wall or signage setups can be forced with a single click.

Internationalization

The user desks can select different keyboard configurations to suite their requirements and as a global setting select the language for the OSD from a choice of over 14 languages.

FEATURES – Intuitive user interface

On screen display at each user station

Users login and choose channel connections from an intuitive OSD similar to that of a Digital TV. Users can also use Presets to change channels for multiple screens across multiple receivers.

Remote OSD

The remote OSD allows the user to “push” video and control to another station or to a video wall or projector.

Favourites and hotkey switching

Each user can select their favourite channels within the OSD and allocate a hotkey for fast switching between channels.

Choice of connection modes

Administrators can choose to give users the ability to connect in three modes: View only, Shared or Exclusive. Each permitted mode is then made available within the OSD.

Fast video and USB switching

The switching time between computers is less than 1 second to provide a quality user experience.

Multicasting

Network multicasting allows the system to share video simultaneously from one transmitter to an unlimited number of receivers. Suitable for signage, monitoring and sharing of desktops.

USB sharing

USB sharing allows multiple users to connect to and control a single computer at the same time. Each transmitter can report 12 unique USB devices (identified by VID/PID codes) but will merge devices with the same ID to allow many more.



Compact four port USB
and audio switch

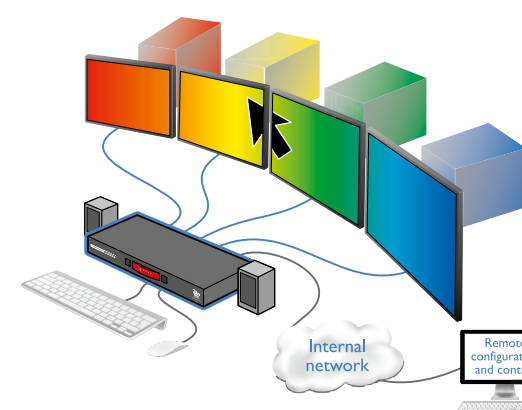
ADDER CCS-PRO4

Create a single workspace from four different computers



The CCS-PRO4 enables users to interact with up to four computers using a single mouse. The operator can simply move the cursor across screen borders to instantly select the computer they need to control providing the experience of a single desktop - a great saving in both time and desk space.

- Seamless switching between computers
- Multiple computers, multiple monitors, single keyboard and mouse
- No software required for single screen computers
- Improved desk ergonomics
- Interactive light modules for screen identification



FEATURES

Seamless switching by mouse control with Free-Flow technology

Free-Flow allows users to automatically switch between target computers simply by moving the mouse pointer from screen to screen. Unlike software-only variants, no software or networking is required on your mission critical computers for Free-Flow to work.

Improved desk ergonomics

With only one keyboard and mouse required to operate four computer systems, the desk space can be made more ergonomically effective and reduces the time taken for operators to multiplex to different systems.

Multi Monitor Free-Flow

The system is able to support four monitors per computer. To enable Free-Flow on multi monitor computers, a driver must be installed on the target computer. This feature is currently available for Windows computers only.

External control options

The unit can be controlled and switched via hotkeys, mouse clicks, Ethernet, RS232 or remote 3 button mouse. With the open API, the unit can be easily set up and integrated into 3rd party systems.

Instant switching with True USB Emulation

Adder's True USB Emulation technology overcomes limitations of other KVM switches by emulating the true character of the connected devices to all the computers simultaneously. This means that you can use the extra function keys, wheels, buttons and controls, without sacrificing switching times.

Independent simultaneous device selection

Switching options enable you to use the keyboard and mouse on one computer whilst your USB peripherals and speakers are independently connected to different computers. You can of course still switch all the connected devices to any one of the connected computers.

Screen illumination module

The CCS-XB expansion module is an optional accessory which connects to the CCS-PRO4. It gives users the option to have a LED indicator positioned on each screen to identify which screen you are currently controlling. The color and intensity can be controlled for each screen. A maximum of ten LED indicators can be supported.

Redundant power

For mission critical applications, dual power inlets are now available.



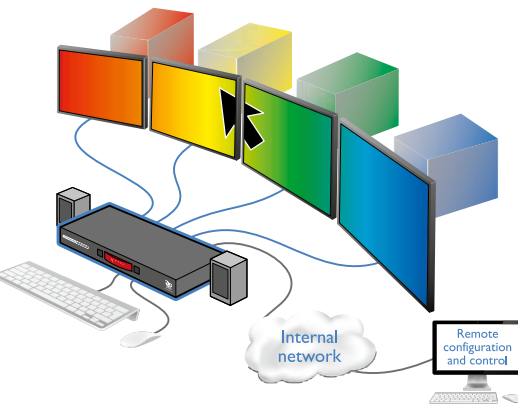
ADDER Free-Flow

Unique technology from the experts in connectivity.
Free-Flow - Automated mouse switching.



PRODUCT IN BRIEF

The Adder Free-Flow represents true innovation in KVM switching. For the first time, Free-Flow allows users to automatically switch between target computers simply by moving the mouse pointer from screen to screen. What makes this such a revolution is that you no longer need software to be installed on your mission critical computers for Free-Flow to function. Adder Free-Flow resides on the switch itself, sensing screen boundaries and instantaneously switching keyboard, mouse and audio to the defined target computer. Free-Flow can be configured for almost any combination of screens using the included configuration application which allows you to declare the individual screen sizes and visually position each one relative to the others.



Intuitive MultiScreen edge detect
KM-A switch with USB True Emulation

1A 1920x1080	2A 800x600
3A 1920x1080	4A 1920x1200

Example 1: 4 CPU system with single head at varying resolutions. Full edge switching.

1A 1920x1080	2A 800x600
3A 1920x1080	4A 1920x1200

Example 2: 4 head system with varying resolutions. Scaled to switch using relative size.

1A 1920x1080
2A 800x600
3A 1920x1080
4A 1920x1200

Example 3: 4 CPU system with single head at varying resolutions. Scaled to switch between primary and secondary screens.

1A 1920x1080	1B 800x600	2A 1920x1080	2B 800x600
3A 1920x1080	3B 800x600	4A 1920x1080	4B 800x600

Example 4: 4 CPU system Dual Head. Horizontally configured in 2 rows.

1A 1920x1080	1B 800x600	1C 1920x1080	1D 800x600
2A 1920x1080	2B 800x600	2C 1920x1080	2D 800x600
3A 1920x1080	3B 800x600	3C 1920x1080	3D 800x600
4A 1920x1080	4B 800x600	4C 1920x1080	4D 800x600

Example 5: 4 CPU system with Quad head at varying resolutions. Scaled to switch as a single bank.

FEATURES

Edge Detect Technology
Adder's Edge Detect Technology allows you to switch between computers simply by moving your mouse cursor across screen boundaries. This detection happens inside the switch itself which means you do not need to install software on your computers. The on board detection uses a configuration file loaded onto the switch to indicate screen position and size relative to each other.

Multihead Capability
Free-Flow includes support for multihead windows systems allowing up to eight heads per computer. This means, using the Free-Flow driver, Free-Flow can be used across as many as 32 screens per switch.

Screen Banking
When used in combination with an additional switch, a user can control multiple banks of screens. For example, using the CATxIP4000 in front of the Free-Flow switches, as many as 24 screen banks can be controlled. That's as many as 768 heads/screens.

Broad USB 2.0 Hi Speed device support
A vast range of USB devices can be connected to the CCS4USB. From non standard human interface devices to printers and scanners. This gives great flexibility. For example, you could be scanning a set of documents onto one computer whilst working on another and printing from yet another, all at the same time. The USB 2.0 switching action has been carefully engineered to ensure maximum computer reliability when connecting and disconnecting USB devices.



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