EXTENSION

Professional KVMA Extension Solutions

CATx Extension Experts

Professional AV Solutions for Integrators, Installers,
Public Exhibitions, Digital Signage, Education, and Media.

What is an Extender?

AdderLink Extenders enable you to increase the distance between your computer (or similar signal source) and the point of use/display.

Extenders come in a variety of formats which include some or all of; Video, Keyboard, Mouse, USB, Audio and RS232 Control. Essentially, extending all devices which sit external to the computer.

Who uses Extenders?

There are a large number of scenarios which call for the benefits of peripheral extension.

In a server room/data centre environment, extenders can be used to create remote consoles quickly and cheaply.

In public installations, an extender allows you to protect the computer system, minimising potential damage (either accidental or vandalised) by locating it in a secure environment. Co-locating such systems also give greater installation flexibility, you no longer need to house a computer, consider heat dissipation, or insulate the effects of fan noise.

Work environments benefit similarly from co-location. For example, sound/signal sensitive environments such as Audio/Video Post Production or controlled areas in scientific laboratories can eliminate noise, and minimise heat impact from computers. Environmentally sensitive areas such as server/machine rooms can be kept undisturbed reducing the need for additional cooling by extending control elsewhere.

Dangerous industrial environments can also be controlled remotely, minimising the risk of damage to the user itself from very loud noise, temperature, moving machinery or dangerous/poisonous atmospheres.

In military/defence, extenders are often used to allow greater protection of computing equipment. In a ship for example, the machine room can be located in a secured and resilient structure deep within the ship's core, and functionality fed out across the ship via extenders.

AV only extension is used throughout the Digital Signage industry as a low cost, highly resilient method of distributing Audio and Video content to large numbers of remote screens. AV extension combined with RS232 also gives system operators the ability to remotely control and interrogate individual screens around the installation, scheduling power and channel automatically using software such as Adder's Display Manager.

How are Extenders Installed?

Extenders are made to be as simple as possible to install. AdderLink Extenders come with a range of connectivity options to perfectly suit your requirements. The first

consideration is 'what connections will be needed?'. The AdderLink range offers analogue VGA and digital DVI video connectivity together with a choice of PS2 or USB for keyboard and mouse. Some extenders also support other USB devices e.g. peripheral devices such as printers, scanners and web cams to name a few. The AdderLink range also provides audio and RS232 connectivity amongst the range.

Once you have considered the connection types required, you then need to consider the extension distance needed. AdderLink Extenders range from 40m to 300m extension distance dependant upon the type of connections used.

Most extender 'pairs' (transmitter and receiver) use low cost CAT5 cable to connect across long distances. The reason we use CAT5 cable as the signal transport medium is that it is low cost, easy to install through cable duct, walls, ceilings, etc. and it is highly reliable. CAT5 cable has been in use across LAN networks for decades and during that time has proven to be an ideal routing cable. Furthermore, many commercial buildings already have CAT5 cable installed for use in local area networks which means many users do not need to install cable at all.

The AdderLink DVI extender (X-DVI PRO) is slightly different in that we recommend the use of shielded CAT6 cable. This is because of the enormous amount of uncompressed data that is carried, and ensures signal isolation from external RF devices which can have a significant impact on digital data streams. CAT6 cable is as easy to install as CAT5, and is commonly used across Gigabit Ethernet networks.

Other Considerations

When an extender is installed across a very long distance, an effect of the cable called 'cable skew' can become apparent. Cable skew is caused by the strands of wire within the CATx cable having slightly different lengths. The amount of skew is entirely dependent upon the cable itself and may differ between manufacturers. In practice, the skew results in some signals experiencing increased delay (because they need to travel through more wire than other signals components). As an example, in an analogue VGA signal, split into RGB components and sent through separate wire pairs, the effect would be a slight shift in colour field at the receiver. To counteract this, AdderLink extenders are available with 'De-Skew' functionality to bring the component signals back into perfect alignment. Once set, this does not need to be changed unless you connect a different CATx cable.

The other option available when installing CATx cable is to use 'skew-less cable' which is carefully manufactured to ensure consistent wire length and twist.

CASE STUDY - SSL
Audio Production

Solid State Logic's (SSL) Product Demonstration Area (PDA) is a suite of 6 fully functioning production studios, used for demonstrations, training, testing and product development. Built over two floors, each of the studios is acoustically designed by some of the world's finest acoustic designers, including Sam Toyashima, WhiteMark, Neil Grant Associates and Munro Acoustics. The studios are all wired for video and 5.1 audio and with the development of HD video and audio, digital workstations and computer based production technology, SSL saw an opportunity to develop even more flexibility and capability for this showcase facility.

Central to the vision for the development was the need to give complete flexibility to all resources in the facility. Customer demands mean that at any time there may be a need to do 5.1 audio demo mix production in one room, at the same time providing a HD, mix-to-picture training session in another. The combination of six multi-channel console rooms having free access to five Mac and PC based workstations and their associated display screens, pointing devices, keyboards and HD video feeds were a complex problem to solve.

Initially, SSL's PDA had three machine rooms to house tape machines, power supplies and all the other paraphernalia that studios need. With SSL's development of more green, energy efficient technology and the use of PC and Mac workstations, it looked feasible that all studios could be fed from one machine area. It also seemed feasible that the majority of the installation could be future proofed by flood wiring with CAT5e and Fiber to carry all audio, video and control signals. These became further design goals for the project, reducing power consumption, machine space and liberating copper stuffed cable ducts to be freely accessible and capable of significant expansion, when necessary.

When the time came to plan the new installation, SSL engineers sat round the table with Adder to work out a flexible, cost efficient solution to the various challenges. A key technical obstacle was how to deal with Mac and PC display, keyboard and controller technology, particularly the need for hi-resolution video and USB 2.0 serial connections. The solution came in the form of Adder's new AdderLink X50 module. This combined the required video resolutions, with USB 2.0 capability and common CAT5e based wiring. At the machine end, each Mac and PC is connected to it's own X50 transmitter. CAT5e is then wired to a manual CAT5e Patch and in each studio, the displays, keyboards, mice and USB ports are taken from the X50 receivers. To provide additional video only feeds to HD projectors and secondary TFT displays, the installation uses parallel AdderLink AV100 units, again via a CAT5e patch.

The central machine area is on the ground floor, meaning that the longest cable runs to first floor studios are approximately 40 metres (130 ft), initial testing proved that the X50 would be capable of all the video resolutions needed, even at the longest distances. Also the USB performance gave snappy pointer and keyboard reactions. Projector video feeds also had great resolution performance, all the video and control problems were solved.

Result
Audio at the Speed of Light:
With a solution to the challenges of workstation control and display, the next hurdle was how to deliver the same flexibility for SSL's audio. Key to solving this challenge were SSL's MORSE fibre MADI router and Alpha-Link Fibre MADI Convertors. Each room was wired for several fibre MADI feeds all connected to the MADI router in the machine area.

All consoles, processors and workstations were also connected to the fibre router, creating the world's largest MORSE routing system and eliminating approximately 10km of multi-core and co-axial wire in the process.

Multiple Synchronization:
As if this project weren't complex enough, another challenge is system synchronization. In most installations, there's a single source of Video sync and Wordclock and that is distributed throughout the whole facility. A complex demand on SSL's resource is the need to work in different studios using different standards, for example, PAL and NTSC, Tri-Level sync for HD and also often at different digital audio sample frequencies. To resolve this challenge the facility has multiple master sync sources that are used to create all the house sync signals. Each studio can then be patch isolated to allow any console and associated workstation to work independently of another. In normal operation, the whole facility is locked to a master clock source to ensure complete synchronicity.

In Summary
From HD video production to film dubbing, from evaluating the latest processing plug-in to training the basics of mixing console operation, SSL's PDA is now equipped for a huge variety of production tasks for today and into the future. Along the way, facility power consumption has reduced enough to eliminate the need for two significant AC systems and more space liberated for future expansion. The combination of CAT5e, Fibre MADI, Adder KVM technology and SSL MORSE routing have brought a new era to the development of SSL's products and services.

High density, small form factor, VGA extension over CATx cable

ADDERLink X50 & MS
Low/full speed USB 2.0, hi-res VGA and audio extender over a single CAT cable up to 50m

PRODUCT IN BRIEF

AdderLink X50s have been designed for use in applications where computers can have their USB peripherals including keyboards and mice, high quality video and audio control extended up to 50m (150 ft.) across CAT5 or higher UTP cable.

The AdderLink X50 provides sharp, bright and ultra high-resolution video over a VGA interface and ensures total USB compatability regardless of the computer being controlled or the peripheral being extended.

FEATURES

Fully transparent low/full speed USB
Utilising a unique method of USB communication, the AdderLink X50 delivers the highest possible levels of USB compatibility. With an integrated 4 port hub the X50 supports all USB 1.1 and 2.0 low/full speed devices

Video performance
Crisp, clear and industry leading video quality at very high resolutions of 1920x1200 to 50m (150 ft.)

Video compensation
The AdderLink X50 allows for a great range of very smooth and fine adjustments enabling the user to adjust the video picture to their exact preference

True DDC Emulation
Unless an extender actively supports DDC some high performance video cards cannot be used at high resolutions. The AdderLink X50 fully supports 2-page DDC ensuring all possible resolutions are supported

Fully platform independent
As the AdderLink X50 supports fully transparent USB connections it is able to support all common hardware platforms including PC, Sun and MAC and their associated peripherals

Digital audio
Adder's unique digital transmission of audio signals means the AdderLink X50 delivers clickless, 44.1kHz CD quality,

stereo audio without the need for an additional CATx cable

Dual Access
For local control of extended computers the AdderLink X50 provides both a local video and audio output at the transmitter unit. (USB devices can be plugged directly into the computer)

Extended common mode input range
To ensure full operation in all environments and avoid problems such as screen blanking in industrial environments caused for example by large electrical equipment switching, the AdderLink X50 implements a special termination system that allows the common mode range to be extended

AdderLink X50-MultiScreen
The AdderLink X50-MultiScreen adds a second video and transparent, high speed RS232 up to baud rates of 19200. This extra functionality adds to the diverse range of solutions for which the AdderLink X50 can be utilised including the extention of computers with dual monitors and allow it to be used in touch screen and interactive kiosk applications

High density rack mount option
Being part of Adder's X series range of KVM extenders, the AdderLink X50 units can be mounted into a chassis that will allow 16 (X50) or 8 (X50-MS) units to be housed in 2U of rack space.

50m (165ft)

USB
AUDIO
VGA
CATx
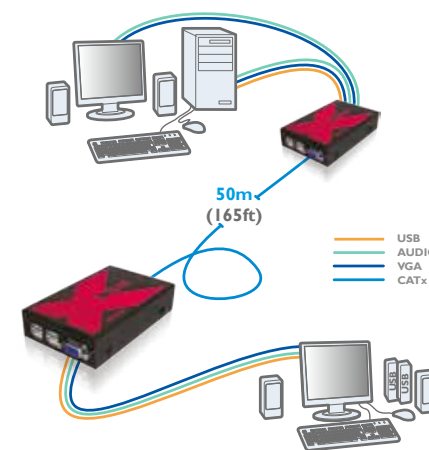
Fanless, small form factor,
DVI-D, USB and audio

Fanless, small form factor,
Dual Link, DVI-D, USB and audio

ADDERLink X-DVI PRO
Digital video extender with USB 2.0 over a single cable

ADDERLink X-DVI PRO DL
Dual Link digital video extender with USB 2.0 over a single cable

PRODUCT IN BRIEF

AdderLink X-DVI PRO is a high performance KVM (Keyboard, Video and Mouse) extender that enables you to locate your critical computing hardware in a secure and temperature controlled environment, away from the user work station environment, whilst maintaining the same user experience. It can transmit a Single Link DVI video stream, USB 2.0 and analog audio over a single CATx cable.

• Plug and play
• 50 meter extension distance
• 1920x1200 @60Hz maximum resolution
• USB 2.0 Low and Full speed
• Keyboard, mouse tablet and touch
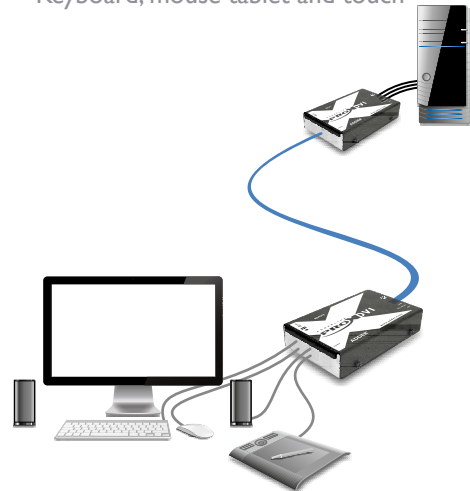
FEATURES

Perfect digital video, real time control
The X-DVI PRO extender uses an uncompressed system whereby every pixel of every frame are sent without loss. HDMI video and audio can be extended with the correct adapter cable, although HDCP and CEC are not supported.

50 meters over a single CATx cable
Video, USB 2.0 (Low and Full speed) and audio all pass along a single cable, providing up to 50 meters of extension. Distance is dependent upon video resolution, the CATx cable type, and the number of connection breaks for patch panels and wall plates. See table on reverse for details.

USB 2.0
Enables connection of any USB human interface device from mice and keyboards through to graphics tablets, jog shuttles, joysticks, 3D explorers and mass storage devices. Full speed (12Mbps) isochronous devices such as headsets are supported.

Power efficiency
The X-DVI PRO extender is designed to be highly power efficient and run with the minimum of input. In fact, the transmitter unit is so energy efficient that it can be powered solely from the host computer's USB connection.

EDID management
The system has intelligent EDID management to allow the true characteristics of the monitor to be passed back to the computer.

Plug and Play
AdderLink X-DVI PRO extenders are delivered in a zero config state so you can plug them in and start working with them straight away. There's no need for drivers or software to be installed.

Analog audio
Stereo CD quality (stereo channel 16 bit sampled at 44.1kHz) is available to transfer audio from local to remote for line out.

Digital audio
Supports 8 channels of HDMI audio simultaneously with analog audio.

Built to last
Adder Technology have a well-earned reputation for creating products that perform well and stay the course. The X-DVI PRO extender units are no exception and feature tough metallic enclosures to ensure they can easily withstand everyday treatment. The internal components and external connectors too are selected for their reliability in addition to their performance characteristics.

PRODUCT IN BRIEF

ADDERLink X-DVI PRO DL is a high performance KVM (Keyboard, Video, Mouse) extender that enables you to locate your critical computing hardware in a secure and temperature controlled environment away from the user work station, whilst maintaining the same user experience. It can transmit a dual link video stream, USB 2.0 and analog audio over a single CATx cable.

• Plug and play
• 50 meter extension distance
• 2560x1600 @60Hz maximum resolution
• USB 2.0 Low and full speed
• Keyboard, mouse, tablet and touch
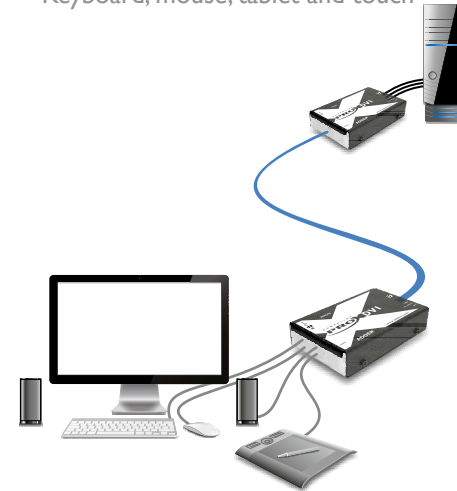
FEATURES

Dual Link resolutions, Real Time Control
The X-DVI PRO DL allows you to remote your monitor with resolutions up to 2560x1600 @60Hz up to 50 meters away from your computer. Using a visually lossless technique, no visible artefacts or latency are introduced allowing you to be certain of quality and control.

50 meters over a single CATx cable
Video, USB 2.0 (low and full speed) and audio pass along a single cable, providing up to 50 meters of extension. Distance is dependent upon video resolution, CATx cable type and the number of connection breaks for patch panels and wall plates. See table on reverse for details.

USB 2.0
Enables connection of any human interface device from mice and keyboards through to graphics tablets, jog shuttles, joysticks, 3D explorers and mass storage devices. Full speed (12 Mbps) isochronous devices are also supported.

Power efficiency
The X-DVI PRO DL extender is designed to be highly power efficient and consumes <6 watts per point.

EDID management
The system has intelligent EDID management to allow the true characteristics of the monitor to be passed back to the computer.

Plug and Play
The AdderLink X-DVI PRO DL extender is delivered in a zero config state so you can plug the units in and start working with them straight away. There is no need for drivers or software to be installed.

Analog Audio
Stereo CD quality (stereo channel 16 bit sampled at 44.1 kHz) is available to transfer audio from local to remote for line out.

Built to last
Adder Technology have a well-earned reputation for creating products that perform well. The AdderLink X-DVI PRO DL is no exception and features tough, yet lightweight metallic enclosures to ensure they can easily withstand everyday treatment. The internal components and external connectors too are selected for their reliability in addition to their high performance characteristics.

Fanless, small form factor,
Dual DisplayPort, USB,
audio and Serial

High density, small form factor,
secure DVI,
USB & audio over Fiber

ADDERLink XD522
High resolution DisplayPort video extender with USB 2.0 over a single cable

ADDERLink INFINITY FX
AdderLink INFINITY FX - Digital media KVM extender over fiber

PRODUCT IN BRIEF

AdderLink XD522 is a high performance KVM (Keyboard, Video, Mouse) extender that enables you to locate your critical computing hardware in a secure and temperature controlled environment away from the user work station whilst maintaining the same user desktop experience.

It can transmit either two 1920x1200 video streams or one higher resolution video stream (2560x1600 WQXGA), digital audio (S/PDIF), analog audio, Hi-Speed USB 2.0 and USB 2.0 (full and low speed) over CATx cables.

FEATURES

- Plug and play
- 150 meter extension distance for a single 1920x1080 screen
- 100 meter extension distance for two 1920x1200 screens or a single high resolution screen to 2560x1600
- Supports Mac Cinema Display (2560x1440)
- USB 2.0 Hi-Speed for mass storage devices plus:
  Keyboard, mouse tablet and touch
- S/PDIF and analog audio

Perfect Digital Video, Real Time Control
The system is uncompressed, where by every pixel of every frame are sent without loss. The receiver supports DisplayPort Dual Mode (DP++) which means that monitors which only support HDMI or DVI can be used (with the correct adapter cable).

Single CATx Cable
Video, USB 2.0 (HID-only) and audio all pass along a single cable. A second CATx cable is required for the Hi-Speed USB 2.0 extension.

Up to 150 Meter Extension Distances
Distance is dependent on the monitor resolution, number of monitors, cable type and the number of connection breaks for patch panels and wall plates. See table on reverse for details.

USB 2.0
Enables connection of any USB human interface device from mice and keyboards through to graphics tablets, jog shuttles, joysticks and 3D explorers. Mass storage devices and isochronous devices such as webcams and headsets can be used through the transparent USB 2.0 Hi-Speed port.

EDID Management
The system has intelligent EDID management to allow the true characteristics of the monitor to be passed back to the computer.

Plug and Play
The AdderLink XD522 extender is delivered in a zero config state so you can plug the units in and start working with them straight away. There is no need for drivers or software to be installed.

Digital Audio
Supports the S/PDIF interface via an optical 3.5mm jack socket (dual use with analog audio via mini Toslink).

HD Quality Analog Audio
HD audio quality (stereo channel 24 bit sampled at 96kHz) is available to transfer audio from local to remote for Line in / Line out. Microphone in and headphone use cases are also supported.
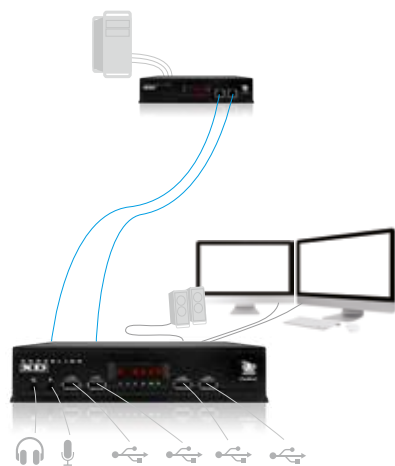
PRODUCT IN BRIEF

AdderLink INFINITY FX is a dual head (2 x 1920x1200), dual link (1 x 2560x1600) DVI KVM extender over fiber. Delivering DVI and bi-directional USB, Audio and RS232 across distances up to 10Km with no lossy compression and minimal lag.

As part of the AdderLink INFINITY range, this KVM extender can easily be integrated into a wider matrix at any point, or kept as a robust point to point extender.

The AdderLink INFINITY FX comes with a choice of Single mode or Multimode fiber modules to suit your specific application.

FEATURES

Fiber optic extension
The AdderLink INFINITY FX comes with integral SFP cages which allows you to simply plug in fiber optic transceivers suitable for your application. There are two choices available, a Multimode or Monomode, both 4.25Gbps rate selectable with LC type connectors suitable for up to 500 Meters (Multimode) or 10Km (Single mode).

DVI - Digital Visual Interface
AdderLink INFINITY FX features two single link or a single Dual link. DVI delivers native digital video signals from your computer to your digital panel without the need to convert signal types from the digital domain. By delivering native digital video you can be assured of accuracy on each and every pixel.

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
AdderLink INFINITY FX uses optimal spatially-lossless compression techniques to minimize network bandwidth usage and maximize the user experience. In typical computer desktop applications, AdderLink INFINITY FX 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 FX.

USB 2.0 True Emulation
AdderLink INFINITY FX enables you to connect most USB devices from mice and keyboards through to graphics tablets, jog shuttles, joysticks, 3D explorers and USB flash drives. However currently Isochronous devices like web cams and USB microphones are not supported.

Digital Stereo Audio
AdderLink INFINITY FX 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.

RS232 channels
The AdderLink INFINITY FX includes a bi-directional RS232 interface which can be used to connect devices like touch screens or industrial control equipment.

Point to Point or via 1GBe Network switch. You can connect directly together or you can route through a network switch. These devices are capable of working as a digital matrix switch with the addition of the AdderLink INFINITY Manager (A.I.M.).

High density, small form factor, USB, VGA & audio extender

Second generation extender to transmit VGA video, audio and transparent USB over CATx cable

ADDERLink X200

USB keyboard, video and mouse extender with 44.1kHz digital stereo audio support and switching for two remote devices

ADDERLink X-USB PRO

VGA, audio and transparent USB 2.0 up to 300m over CATx cable

PRODUCT IN BRIEF

AdderLink X200s have been designed for use in applications where up to two computer systems can have their keyboard, video, audio and mouse control extended up to 300 m (1000 ft.) over CAT5 or higher UTP cable.

The AdderLink X200 provides absolute real time keyboard and mouse performance along with hi-definition, hi-resolution video over a VGA interface. The AdderLink X200 receiver can be connected to the ADDERView CATx range of KVM switches as well as to individual computers using Adder's range of computer access modules.
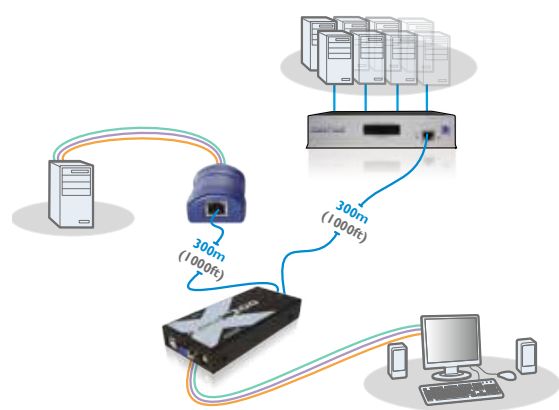
FEATURES

Video performance
Industry leading resolutions of:
1920x1200 to 50 m (165 ft.)
1600x1200 to 200 m (650 ft.)
1280x1024 to 300 m (1000 ft.)

Video compensation
The AdderLink X200 applies 128 steps of signal compensation enabling fine picture adjustments

Brightness control
The AdderLink X200 offers its own brightness correction to ensure images are crisp, clear and bright

Integrated De-Skew
The AdderLink X200 AS/R model has integrated skew correction with a 300MHz bandwidth (1/4 of a pixel movement at 1600 x 1200 resolution). This removes the video skew issues that can be caused by longer CATx cables

Two port integrated KVM switch
Each receiver is fitted with two ports to enable connection to a local and remote computer, or two remote computers. The user can quickly select between these ports using keyboard hotkeys or mouse control. Individual video brightness, compensation and skew settings can be applied to each connection.

Flexible system configuration
Each receiver may be connected to one or two USB, PS/2 or Sun style computer access modules. Furthermore, the X200 receiver unit may be used as the remote user station for any ADDER CATx KVM switch

Emulated DDC
Unless an extender actively supports DDC some well-known high performance video cards cannot be used at high resolutions. The AdderLink X200 fully supports DDC

Digital audio
44.1kHz digital stereo audio delivers high fidelity audio for speakers.

PRODUCT IN BRIEF

Adder's next generation USB, video and audio extender delivers sharp, bright and high resolution video images and high quality audio at distances up to 300m (1000ft) over a single CATx cable.

The AdderLink X-USB PRO has been designed to provide industry-leading video clarity, compatibility and high rack densities.
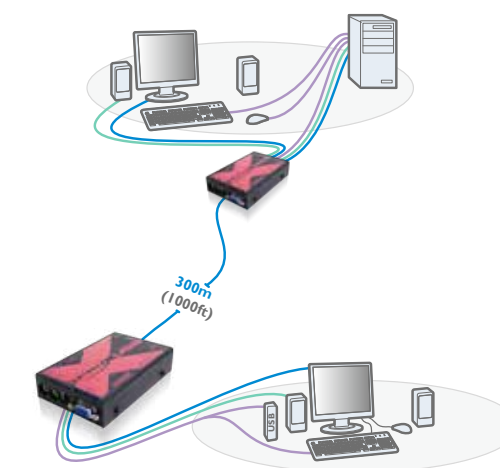
FEATURES

Digital like video
VGA resolutions of 1920x1200 are achievable at 300 meters (1000ft). This is achievable by including a variable noise filter which overcomes issues introduced by increased gain as the length of the cable increases over 200 meters.

Video compensation
A multi-pole compensation technique is used enable superb video quality at maximum distance over a single cable. For the first time, adjustment can be made for cable type and cable length with further color skew compensation and gain adjustment to ensure crystal clear images, all from the receiver's keyboard.

Local feed through port
A local feed through port is provided for audio and video so a local console can be used.

USB powered transmitter
The transmitter is powered via its USB port to reduce the need for external supplies. There is an option for an external power supply if the USB port has insufficient power.

Dual user configuration
Two X-USB PRO units can be linked to a single computer so two users can access the system. When using two sets of X-USB PRO modules to allow two users to access a single computer the arbitration between the users is handled

by the USB sub-system of the computer. This means that both users can control the computer at exactly the same time and the resulting keyboard and mouse influences will be an amalgam of the two inputs.

Emulated two page DDC EDID
This extender supports full two page DDC EDID. Some high performance video cards require the two page data or they will not deliver optimal performance.

USB support
The X-USB extends USB 2.0 (low and full speed) allowing all USB compatible accessories (including isochronous devices) to be extended. The receiver unit has a built in 4 port USB hub to enable a complete desktop to be located remotely, including a keyboard, monitor, mouse, disk drive, flash memory stick, webcam, and any other device that would normally be plugged into your computer's USB port.

Audio
Audio transmission delivers CD quality stereo audio for speakers.

Rack options
Both transmitter and receiver units can be used stand-alone or up to 16 units can be mounted into a 2U chassis.

ADDERLink AV Series

High-resolution video and superb quality audio distribution for Professional Digital Signage and Media Streaming applications.

The AdderLink AV Series is a range of audiovisual extenders delivering high video resolutions and superb quality audio up to 300m using standard CATx cable (x=5,5e,6,7).

The innovative design allows for flexible audiovisual distribution that can be expanded to grow in line with project developments. Consisting of 4 interchangeable units, the AdderLink AV Series makes the design of digital signage and narrow casting applications cost effective, flexible and easy to plan.

AdderLink AV200 Series

Reduce your Digital Signage Installation Costs
The AdderLink AV Series allows you to interrogate and control as many as 64 screens without the need for multiple media players.

One AdderLink receiver can support two displays, back to back, reducing hardware costs and installation time.

Global IP access to your entire digital signage distribution system is also available (using AdderLink IPEPS for example), eliminating the need to be on site for system upgrades, maintenance and content distribution updates.

Fully Bi-Directional RS-232 Communication
The AdderLink AV200 Series allows you to communicate with individual screens, groups of screens or to broadcast commands across the network as a whole. Each receiver unit can control and interrogate two screens at the same time, and each screen is fully addressable.

DDC Cache
The DDC (Display Data Channel) EDID cache carries information about the physical characteristics of the screen, such as resolution or colour depth, back to the display adapter (graphics card) to ensure the resulting picture is correct, every time.

Expansion via Cascade Links
The AdderLink AV series of products have been specifically designed to be flexible in order to support both your immediate and future needs. The ability to create small, medium and large digital signage networks is made possible via cascading transmitters. This is achieved by using the video, audio and serial out ports to provide the inputs to the next transmitter module, and so on, allowing for up to 64 remote displays across 32 separate CATx branches.

Unprecedented Screen Management
Adder's Display Manager software (included) provides a central control point for your AdderLink AV installation, simplifying the control of your entire digital signage system.

The AdderLink AV Series can also be used with any other third party management software supporting RS232.

- Topology map – Allows you to construct a schematic diagram that represents the physical layout of installed Adder AV units and the video displays that are attached to them.
- Ports – Enter a screen name for each display unit, as well as an optional group to which it may belong, e.g. "42" monitors".
- Dates and times – Allows for monitors to be turned off and on at predefined dates and times. Useful for turning in-store displays off while stores are closed, while leaving window displays turned on for window shoppers.
- Talk to port – Sends a preconfigured command to any port, ideal for turning screens on and off, or querying screens.
- Scheduling – Allows you to schedule commands at preconfigured times

and intervals.
- Activity monitor – Allows you to run offline simulations to ensure commands are being sent correctly before making your digital signage network live.

Global IP Access To Your Entire Digital Signage Distribution System
With the addition of an Adder KVM over IP solution to your digital signage network, you can remotely manage your entire digital signage solution. From control and interrogation to transferring the last screen content or turning displays on and off.

Rack-Mountable
Transmitters can be rackmounted in a 3U chassis, saving valuable space. Due to the small size of the receivers they can be mounted directly behind the display out of view, or tucked away in almost any location.

Squid Cable
Cabling is made simpler and less power outlets are needed when using Adder's unique squid cable, which enables four transmitters to be powered from one single power supply.

Y-Cable
When two connected displays both require serial control, a special Y-cable is available. The Y-cable allows a connected receiver to provide a serial link to each display.

Digital Signage and Extension Solutions

Adder's range of audiovisual extenders deliver high-definition video, as well as CD quality stereo audio across installations up to 1000 ft, ideal for professional narrowcast digital signage systems. The design enables flexible audiovisual distribution, management, and interaction with display devices.

Furthermore, the extension system is easily scalable and expandable to cope with future moves and changes to your signage installations.. The AdderLink AV200 Series supports fully bidirectional RS232 to enable remote interrogation and control of video display panels and all AdderLink AV units support high quality video with resolutions up to HD1080p across at least 64 screens.

The Adder Difference
With 25 years of experience, Adder has an impressive track record for bringing innovative and successful products to market and a reputation for engineering excellence. Adder's Digital Signage solutions give you the simplicity you need to get installations done on time and on budget.

Adder's solutions offer a no-nonsense straightforward approach to Digital Signage installation and configuration.
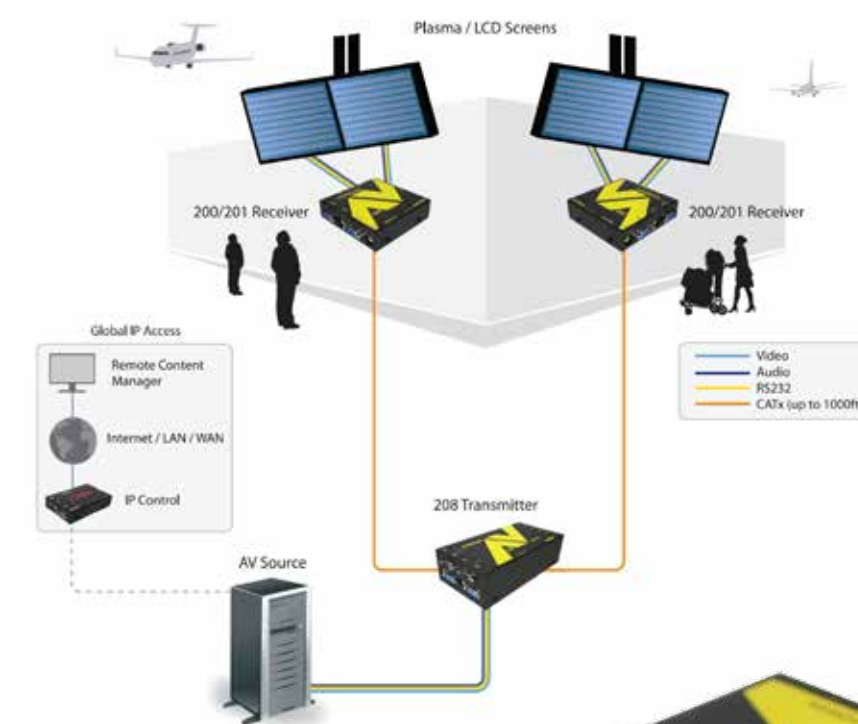
The AV Series is ideal for use in a variety of multimedia venues:

- Retail
- Hospitality
- Medical
- Education
- Transportation

AdderLink AV Series
Adder's AV series is comprised of interchangeable units that can be configured for a point-to-point or point-to-multipoint solutions at distances up to 1000 ft using standard CATx cable.

Part Number	Description	Rack Mountable	Stereo Audio	Cascade Port	RS232	Local Ports	Dual Video Out	Deskew	Transmit to 4 receivers	Transmit to 8 receivers	Display Manager Software
AV100P	Transmitter & Receiver Pair	•	•	•		•					
AV100T	Transmitter	•	•	•		•					
AV100R	Receiver	•	•	•			•				
AV104T	Transmitter	•	•	•		•			•		
AV101R	Receiver	•	•	•				•			
AV200P	Transmitter & Receiver Pair	•	•	•	•	•					•
AV200T	Transmitter	•	•	•	•	•					•
AV200R	Receiver	•	•	•	•		•	•			•
AV201R	Receiver	•	•	•	•		•	•	•		•
AV204T	Transmitter	•	•	•	•	•			•		•
AV208T	Transmitter	•	•	•	•	•				•	•

Digital video extender
low power, small form factor,
HDMI with audio

ADDERLINK DV100
Digital video extender with audio over a single cable

Digital video extender
low power, small form factor,
DVI-D video

ADDERLINK DV120
Digital video extender over a single cable

PRODUCT IN BRIEF

ADDERLink DV100 is an easy to install, highly compact video extender system that can transmit an HD video stream with audio over a single CATx cable. This enables you to locate your media playback hardware in a secure and temperature controlled environment. Thus your valuable systems are kept safely away from the display point environment whilst maintaining precisely the same user experience. ADDERLink DV100 is ideally suited to the Digital Signage (DOOH - Digital Out-Of-Home) and Audio Visual (AV) industries.

FEATURES

Pixel perfect digital video
ALDV100 uses an uncompressed communication system whereby the pixels of every frame are sent without loss. Resolutions up to 1920x1200 @60Hz (WUXGA) are supported. Additionally, the High-bandwidth Digital Content Protection (HDCP) of the HDMI standard is supported.

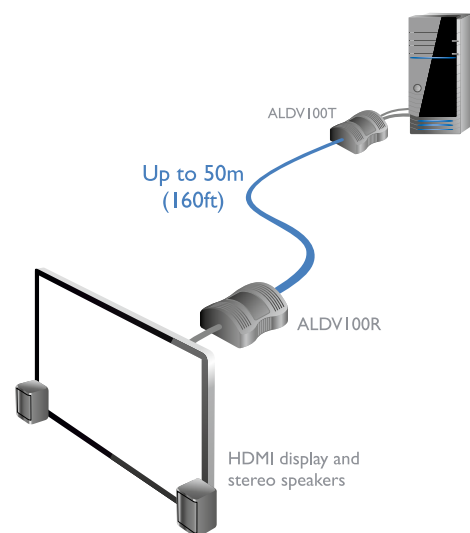**Up to 50 meters over a single CATx cable**
Video, audio and power all pass along a single cable, providing a maximum of 50 meters extension. The actual achievable extension distance is dependent upon the CATx cable type used and the number of connection breaks for patch panels and wall plates. Please see the table on reverse for details.

Highly energy efficient - No external power supplies are required
The AdderLink DV100 is designed to be highly power efficient, using less than an eighth of the power required by some competing systems. By harvesting power from a standard USB socket, no external PSUs are needed and hence the support infrastructure required is kept to an absolute minimum.

Digital audio
Supports eight channels of HDMI audio.

Mix-n-match
The whole AdderLink DV family of extenders share a common advantage of cross connection. The HDMI transmitters (ALDV100T) of the family can seamlessly be connected to the DVI-D receivers (ALDV120R) and vice versa.
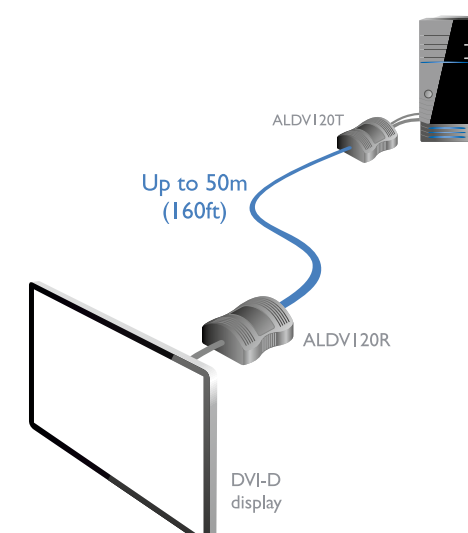
EDID management
The system has intelligent EDID management to allow the true characteristics of the display to be passed back to the computer.

Plug and Play
AdderLink DV100 extenders are delivered in a zero config state so you can connect their two units and start working with them straight away. There's no need for drivers or software to be installed.

Built to last
Adder Technology have a well-earned reputation for creating products that perform well and stay the course. AdderLink DV100 is no exception and features tough, yet lightweight ABS enclosures to ensure they can easily withstand everyday treatment. The internal components and external connectors too are selected for their reliability in addition to their performance characteristics.

PRODUCT IN BRIEF

The ADDERLink DV120 is an easy to install, highly compact video extender system that can transmit an HD video stream over a single CATx cable. This allows you to locate your media playback hardware in a secure and temperature controlled environment. Thus, your valuable systems are kept safely away from the display point environment whilst maintaining precisely the same user experience.

The ADDERLink DV120 is ideally suited to the Digital Signage (DOOH - Digital Out-Of-Home) and Audio Visual (AV) industries.

FEATURES

Pixel perfect digital video
The ALDV120 uses an uncompressed communication system whereby the pixels of every frame are sent without loss. Resolutions up to 1920x1200 @60Hz (WUXGA) are supported.

Up to 50 meters over a single CATx cable
Video and power pass along a single cable, providing a maximum of 50 meters extension. The actual achievable extension distance is dependent upon the CATx cable type used and the number of connection breaks for patch panels and wall plates. Please see the table on reverse for details.

Highly energy efficient - No external power supplies are required
The AdderLink DV120 is designed to be highly power efficient, using less than an eighth of the power required by some competing systems. By harvesting power from a standard USB socket, no external PSUs are needed and hence the support infrastructure required is kept to an absolute minimum.

EDID management
The system has intelligent EDID management to allow the true characteristics of the monitor to be passed back to the computer.

Plug and Play
The AdderLink DV120 extenders are delivered in a zero config state so you can connect the two units and start working with them immediately. There's no need for drivers or software to be installed.

Perfect video wall companion
With locking connectors and no power supplies required at the receiver, the ALDV120 makes a perfect companion for video walls where the controller must be located far from the screens.

Built to last
Adder Technology have a well-earned reputation for creating products that perform well and stay the course. AdderLink DV120 is no exception and features tough, yet lightweight ABS enclosures to ensure they can easily withstand everyday treatment. The internal components and external connectors too are selected for their reliability in addition to their performance characteristics.

ALDV100T

Up to 50m
(160ft)

ALDV100R

HDMI display and
stereo speakers

ALDV120T

Up to 50m
(160ft)

ALDV120R

DVI-D
display

Digital video extender
low power, small form factor,
HDMI with audio

ADDERLink DV104T
Digital video/audio switch and extender to drive up to four remote displays

PRODUCT IN BRIEF

ADDERLink DV104T is a high performance digital video extender and splitter that enables you to locate your critical play out hardware in a secure and temperature controlled environment away from the display point environment whilst maintaining the same user experience.

• Proof of Display (P.O.D.)

• 50 meter extension distance

• Plug and Play

• Two video inputs, four video outputs

• 2x4 HD Digital matrix

• Line powered receivers

One or two
HDMI/DVI feeds   Network   POD
                             Manager

ALDV100R (HDMI) or   Up to 50m
ALDV120R (DVI-D)   (160ft)
receivers

HDMI or DVI-D
displays and speakers
x4
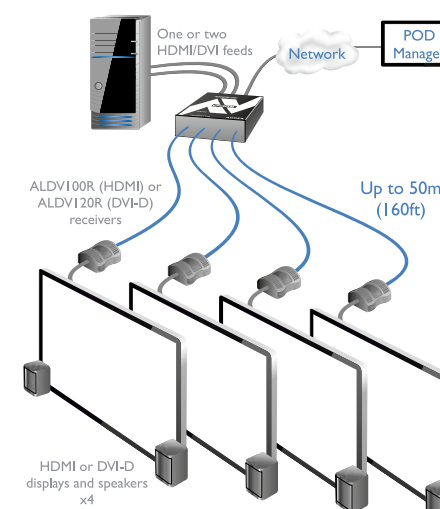
FEATURES

Two video inputs, four video output splitter and extender
The ALDV104 is an intelligent non blocking cross point switch and extender. These configurations can be selected dynamically via the web interface or controlled by a 3rd party control system.

Proof of display via IP network
The unit determines if the entire system is operating correctly and video is visible on the monitors. It can detect if video is present from the player and whether the cables to the monitors are attached and the monitor is turned on. This information is available by an IP socket thus allowing remote diagnostics and integration into content management systems.

Source failover
The unit can be set to detect that a video stream is present at the input. The unit can be set to automatically switch over to the second video input if the primary fails.

Security
Security on the web interface is by HTTP digest authentication (RFC 2617) with username and password as requested information.

API for 3rd party integration
The API documentation to control and receive data from the unit is provided with the system.

Digital audio
Supports 8 channels of HDMI audio.

Perfect HD Digital Video
The ALDV104T uses an uncompressed video system where every frame is sent without loss with resolutions up to 1920 x 1200@60Hz (WUXGA) including 1080p, 720p and 480p resolutions.

50 meters over a single CATx cable
Video, audio and power all pass along a single CATx cable, providing up to 50m of extension. Distance can be dependent upon CATx cable types and the number of connection breaks for patch panels and wall plates. See overleaf for details.

Dual head extension
With two inputs, the system is suited to extending and splitting dual head systems.

Highly energy efficient - no external power supplies are required
The receivers are designed to be highly power efficient, using less than an eighth of the power required by competing systems. Power is supplied along the CATx cable meaning the support infrastructure required is minimal.

EDID management
The system has intelligent EDID management allowing the true characteristics of the monitor to be passed back to the computer.

Plug and Play
The DV104T is delivered in a zero config state so you can plug and play. There is no need for additional drivers or software.

High density, small form factor line powered video distribution

High density, small form factor line powered video distribution

ADDERLink LPV150
Line powered video distribution up to 150 meters

ADDERLink LPV154
Video distribution up to 150 meters with up to four remote displays

PRODUCT IN BRIEF

The ADDERLink LPV has been designed to deliver stunning results at a really attractive price, making it the perfect introduction to professional digital signage.

The ADDERLink LPV digital signage extender is possibly the easiest to install point to point extender available today. In addition to its simplicity, the LPV also delivers fantastic video up to 150m away.

FEATURES

Video performance
Full HD 1080p, 1080i & 720p
Distances up to 150m (500ft)

Line power
To help reduce cable clutter, the ADDERLink LPV has been designed to be powered by a USB port on your computer. What's more though, is that this power is also transmitted alongside the video over CATx cable, in turn powering your receiver unit.

Absolute simplicity
Getting into professional digital signage has never been so easy. Simply plug the transmitters VGA port into your computer and plug in the USB port, then plug the receiver unit into your screen. Finally, connect the two units together with a length of CATx cable, and you're finished. Now start delivering your message to customers, clients, staff or who ever you wish.

Advanced DDC Protocol
Unless an extender actively supports DDC (Dynamic Data Channel), some well-known high performance video cards cannot be used at high resolutions. The ADDERLink LPV fully supports DDC.

Fit and forget
Adder digital signage products are the professional choice because they give you the ability to deliver, fit and forget

installations. The LPV is no exception. Rigorously tested in Adder's technology labs, so you can buy with real confidence.

Targeted Messages
Targeting messages to specific areas of your business is perfectly simple too. By using a multihead graphics card, you can deliver different messages around your installation with minimal additional investment.

Video sharpness adjustment
The remote module has a video adjustment skew to control picture sharpness on the display screen.

Choosing your signage technology
There are many types of signage technology available on the market, from small players which sit alongside the screen to streaming MPEG around large high bandwidth networks. Adder's solution is based upon reliability, quality and simplicity. The three qualities most requested by professional users.

Delivery of content over CATx cable is by far the simplest and safest way to deliver your message, requiring minimal disruption to install, CATx cable can be routed invisibly to your screens.
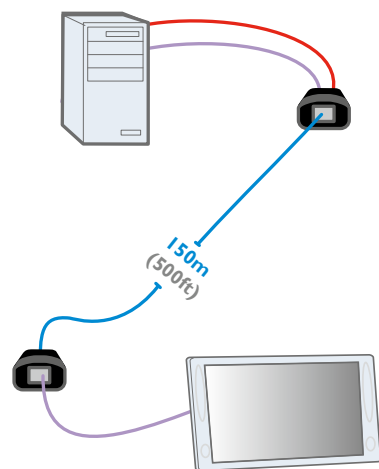
PRODUCT IN BRIEF

The ADDERLink LPV delivers HD quality digital signage video via CATx cable over distances of 150 meters

This digital signage extender is possibly the easiest to install point-to-point extender available today. By transmitting the power to the receiver via the cable it removes the need for extra power supplies and sockets at the screen

A 4-way transmitter is available for point-to-multipoint transmissions.

FEATURES

Video performance
Full HD 1080p, 1080i & 720p
Distances up to 150m (500ft)

Line power for simplicity
To help reduce cable clutter, the ADDERLink LPV150 has been designed to be powered by a USB port on your computer. Furthermore, this power is also transmitted alongside the video over the CATx cable, in turn powering your receiver unit.

4-way transmitter for point-to-multipoint
The ALPV154T is able to take the same HD input and send it to 4 different screens connected via the ALPV150R receivers. There is a feed through port on the unit to allow a local display or you can cascade another ALAV154T so you can supply 8 screens.

Video sharpness adjustment
The remote module has a video adjustment screw to control picture sharpness on the display screen.

Absolute simplicity
Getting into professional digital signage has never been so easy. Simply plug the transmitter's VGA port into your computer and plug in the USB port, then plug the receiver unit into your screen. Finally, connect the two units together with a length of CATx cable, and you're finished. Now start delivering your message to customers, clients, staff or whoever you wish.

Advanced EDID cloning
The ADDERLink LPV enables the user to clone the EDID (Extended Display Identification Data) from a display or use a default EDID. This approach enables the widest possible compatibility whilst also providing a plug and play experience for most applications.

On/off control via RS232
The LPV154T unit is fitted with a serial port that enables you to remotely switch video on and off. This feature provides a simple way of switching remote screens on and off as most will go into standby when the video signal is removed.

Rack mountable
The LPV154T units are rack mountable at high density using the AdderLink rack mount chassis.

Fit and forget
Adder digital signage products are the professional choice because they give you the ability to deliver, fit and forget installations. The LPV is no exception.

150m (500ft)

150m (500ft)
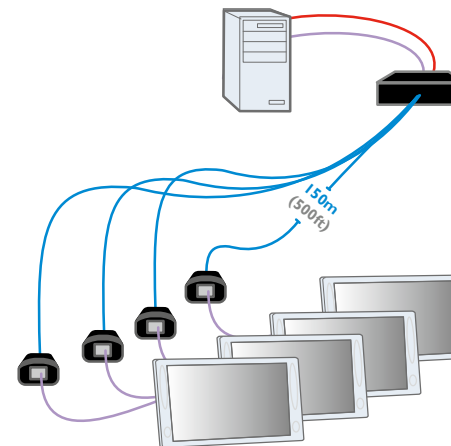
ADDER®

DIGITAL SIGNAGE
EXTENSION SOLUTIONS

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