KVM
SOLUTIONS FOR

Broadcast
Production
Post Production

Welcome to the world of High Performance **KVM**

ADDER®

adder.com

Welcome to the world of
High Performance KVM

FLEXIBILITY & AGILITY

High Performance KVM solutions transform a single screen into a portal to all of your computers, none of which need to be in the same physical location as the screen and input device. This allows computers to be moved to secure location - another room, floor or building - saving space, increasing security and enabling preventative maintenance to take place behind the scenes.

While increasing security, High Performance KVM solutions also increase flexibility and productivity. A user only requires a single keyboard, screen and mouse to control any number of remotely-located computers, switching instantly between applications and carrying out multiple functions in quick succession. Whether you're an artist moving between editing tools, or a producer controlling a live production, that level of flexibility enables you to deliver better content to your audience, faster.

Focus on the user
The user is at the centre of all great technology deployments for creative industries, and there should be no lesser expectation when it comes to the choice of connectivity. If users have to spend time thinking about the connectivity, they aren't spending time thinking

about the task that pays the bills. High performance KVM should be absolutely transparent to the user until the critical moment of interaction when it must be fast, intuitive and reliable.

Focus on the engineer
By selecting an IP-based solution, we further exploit intuition during installation through to ongoing management. IP has been and will be around for a very long time, so expertise already exists in most businesses. The concept doesn't change here. Adding devices to a network is very straight forward, making scalability truly fluid. This differs greatly from traditional setups where the cost of increasing the system by just one end point is significant, and needs additional equipment installed by engineers with specific knowledge of the proprietary technology.

POST PRODUCTION

Revenue

Maintaining suite occupancy is critical in the Post Production environment as it directly correlates to revenue. IP-based high performance KVM technologies allow a facility to reconfigure suites at the press of a button, or customise a series of suites to handle a specific production. The idea of the 'cookie cutter' suite has really caught on, allowing a facility to roll-out standard sets of interface equipment, monitors and audio and then re-function the suite in less than a second. One minute it could be NLE, then grading, CGI, VFX, audio and so on. What's more, users can duplicate connections to multiple suites allowing collaborative rather than silo based workflows across large productions. High performance KVM really does allow you to set your suites free.

Security

The value of Broadcast and Post Production lies in the data that flows around the facility. Naturally, this information holds great commercial value, and as such needs to be protected. High Performance KVM delivers this security. Beyond the operation benefits KVM delivers, it also creates an 'air gap' between data and user. Adderlink Infinity can help you to prevent content theft by limiting direct access computing & network hardware, preventing the use of mass storage devices and utilizing network security protocols.

VISUAL EFFECTS & COLOUR GRADING

Video Performance

Adders KVM technologies are designed to deliver reference-grade video performance. Our KVM is designed to deliver 'Pixel Perfect' video so the pixels the user sees are exactly the same as those leaving the computer. Our 1:1 pixel mapping combines this pixel perfect principle alongside delivery of advanced EDID information, maintaining communication between computer and monitor for absolute precision. The highest quality video, in real-time and at the frame rate you desire.
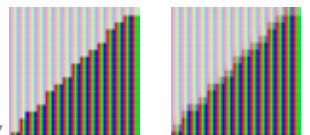
Performance Peripherals

Using the right tools for the job is an important aspect of workflow. Ensuring those tools are supported by your choice of connectivity is therefore essential. Our depth and breadth of experience with specialist USB devices helps you make sure, your careful device selection and familiarity with the tools you love is never wasted. From graphics tablets and touch screens through to advanced grading control surfaces or even production switchers, your investment is safe.

LIVE BROADCAST

Managed Reliability

Having reliable access to the systems around you is a must in critical environments such as MCR or production studios. When the pressure is on, no one wants to think about connectivity. Our silent hero approach to connectivity ensures your primary access is supported by a multi-layer redundant strategy. From redundant networking to synchronized control systems, you can work securely in the knowledge that your KVM connectivity will not let you down. In addition, by employing advanced power solutions such as RED PSU, you can expand your reliability beyond connectivity and into devices from other manufacturers that do not benefit from such forethought.
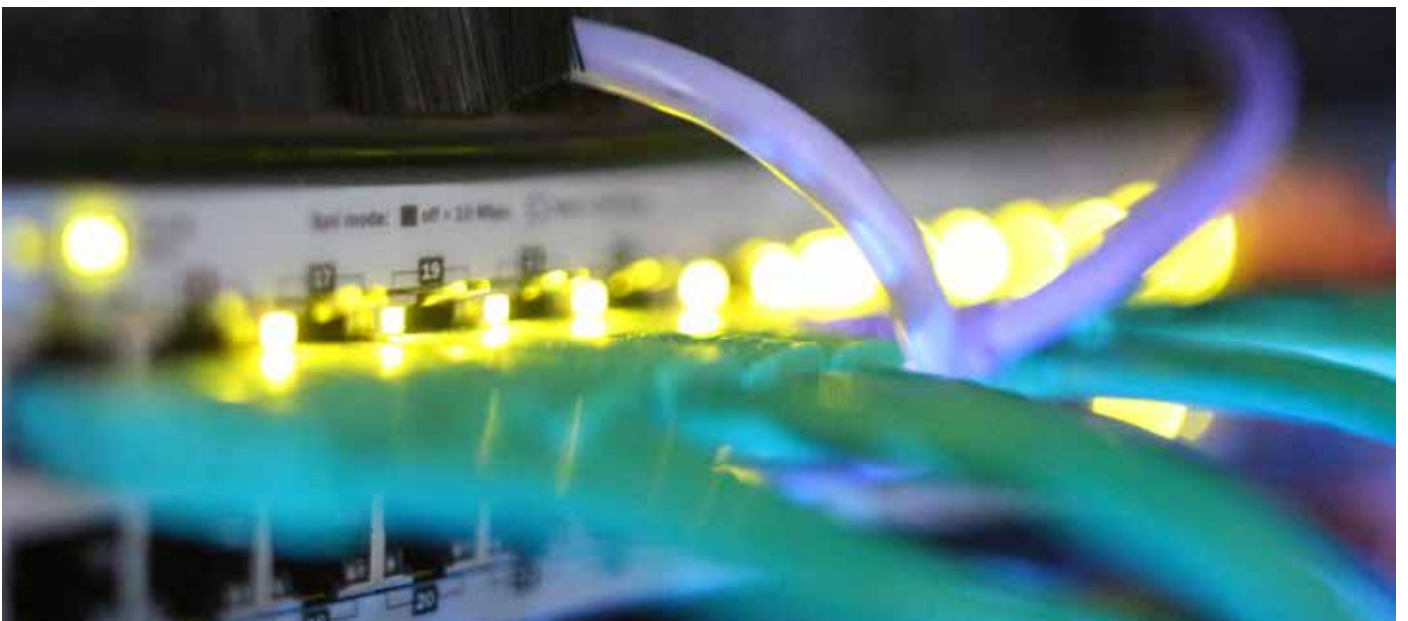
Twickenham Studios:
Cutting edge creativity

At the beginning of 2012 the future was uncertain for the historic and world-renowned film facility, Twickenham Studios. The ailing, but much-loved studios were at one point on the verge of being sold for re-development, before being bought by London-based businessman and film enthusiast, Sunny Vohra. Vohra had the vision of turning Twickenham Studios around and re-awakening its reputation as a centre of excellence for filmmaking.

Part of this ambitious project was to modernise the out-dated sound stage to create one of the best post-production audio facilities in the world. As Tim Cavagin, head of sound at Twickenham Studios explains: "We needed to go digital to compete with other sound facilities. There has been massive investment in audio equipment to bring the studio up to date with its competitors as it was lagging behind for several years. When the studios

were analogue, the equipment used to take up an entire room the size of the dubbing stage itself. Mixers had to wait until a project was in their console before they could work on the sound, which meant they could only change the volume and equalisation."

To attract filmmakers from competitors such as Pinewood Shepperton, Twickenham Studios had to offer not only the latest post-production sound technology, but also a working environment that allows creative talent to work productively and comfortably. This is vital as directors, engineers and designers spend long days working collaboratively on complex projects. Further, they need the flexibility to seamlessly pass files between workstations or work on two files at the same time. Cavagin explained: "The director, mixers and myself, as Head of Sound, might want to work on the one screen."

Not least, Twickenham Studios needed equipment that offered superior controllability and reliability, as any mistakes could result in lost time and money.

Rebirth
To provide the best working environment for sound professionals, Twickenham

Studios has created two open plan sound rooms that enable individuals to access and share platforms from wherever they are, whether that is relaxing in a breakout area or sitting at the state-of-the-art Neve sound console. This has been made possible through using the Adderlink Infinity Dual, the most advanced keyboard, video and mouse (KVM) extension and matrix solution in the world.

Carl Childs, head of engineering at Twickenham Studios, said: "Our aim was to have the best equipment. Adderlink Infinity Dual allows us to treat a monitor as an IP address and allows us to ping a signal to whatever location we need to view it on, which is increasingly a need in this environment. The Adderlink Infinity has a great interface that is very user friendly. It is also extremely reliable. In the event of a power outage, everything remains as it was when power is restored. I've used various different brands over the years and I have always come back to Adder kit, I find it the most reliable. From this perspective it was quite an easy decision for me to choose Adder.

"The centre piece of the room is the digital mixing console, which receives inputs from

Mac and PC based playback machines, video servers and 2K projection editor solutions. This is why we needed a KVM solution of the calibre of the Adderlink Infinity. The Dual head capability is great, because there is often the need for our mixers to see what is happening on two different machines on the screens in front of them."

Both theatres now have exactly the same equipment, meaning a job can start in one room and finish in another, which was not previously possible.

Bright future

Twickenham Studios now has Dolby Premier Studio Certification, a standard awarded technical excellence at every level of the studio's operation. This includes room acoustics, monitoring standards, equipment selection and installation standards, which are all measured and evaluated as part of the certification.

Cavagin said: "We now surpass our competitors and have the best dubbing theatre in the country, bar none. We offer the highest grade equipment in the best sound room, which is bigger than any other room in Soho."
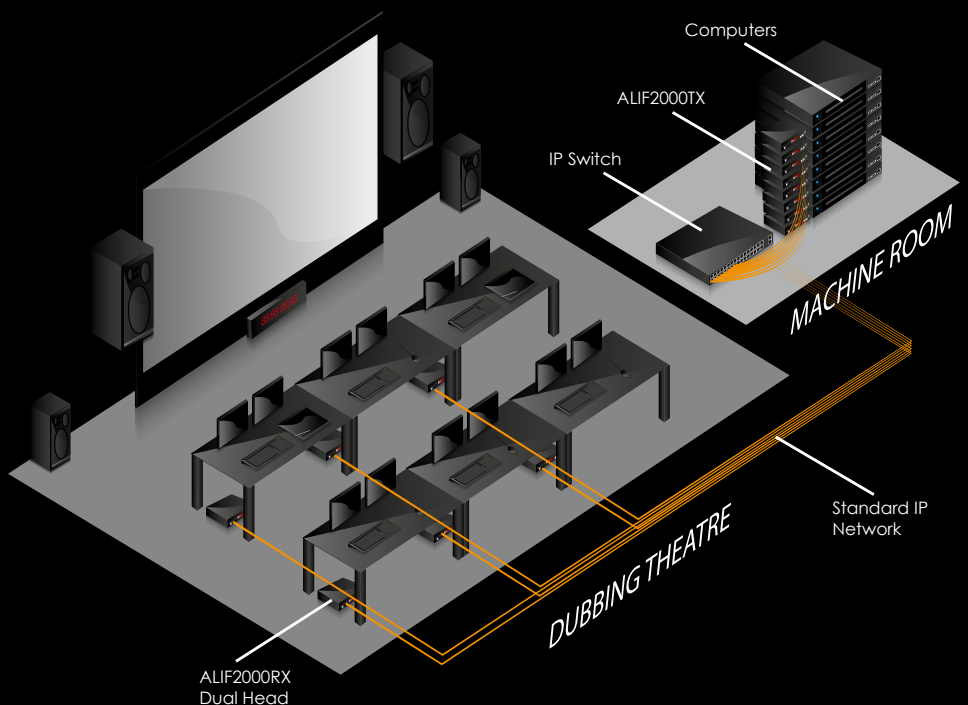
Childs explained the necessity of the Adderlink Infinity in the new studio setup: "People often forget how important KVM solutions are. This is because if the system is working exactly how you want it to, then you will not notice it."

"An example of how it has improved working is the ability to relay system controls. Before, we had a hotkey solution, which meant editors had to remember combinations of keys, but now there is

an interface, which enables the operators to bring up exactly what they want. This is great for when the pressure is on and removes the hassle so that you can get on with the job in hand."

Cavagin concludes: "Flexibility is key, being able to see whatever is going on in the studio at any particular point on one screen is vital: We need to get our hands on the audio ProTools and the visual ProTools; we have to access all of these screens at the flick of a switch. The switching capability makes us the UK's most flexible sound theatre. Mixers can now work with audio before it gets to the console, meaning they have control over every single element. What we have in the Adder system is fantastic."

Computers

ALIF2000TX

IP Switch

MACHINE ROOM

Standard IP Network

DUBBING THEATRE

ALIF2000RX
Dual Head

The Farm:
Multi site workflow

The Farm Group gives producers worldwide the finest creative talent and production support to help make award winning programming. From London to LA, from data to delivery, The Farm makes your journey sing.

William, the latest building to be opened by The Farm Group is located on the site where William Blake was born in 1752 and now houses the AdderLink Infinity Solution.

Challenge
When The Farm Group, an international post production company, built its newest facility in Soho, London, it sought a high performance KVM (keyboard, video and mouse) provider to supply the infrastructure for a series of editing and effects suites.

With locations in the UK and the US, The Farm Group provides both talent and facilities for television, broadcast and post-production companies. Its Soho site incorporates four buildings

which house various configurations of editing and effects suites, audio studios, and various other creative technical equipment which needed to be linked together and enable a variety of talent to use them.

William, the new building, named after William Blake, is situated on the birth site of the poet and includes 18 offline suites, six online suites, three effects rooms, seven sound studios and four sound preparation areas. The suites are rented out to production companies on an hourly, daily and weekly basis. KVM was the obvious choice so all equipment and hardware could be stored in a central location, outside of the suites, freeing up space, increasing security and eliminating excess heat and noise.

Solution
"We knew that we wanted a KVM infrastructure for William and began investigating our options. In 2012 we visited IBC where we spotted Adder Technology," said Adam Peat, head of engineering, The Farm Group. "Adder supplied us with a few systems to test, and as this was a significant installation

that would affect our future business, we needed to be completely sure. A large part of our business sees freelance editors making use of our suites and we needed to ensure that they would be happy with the system and not find fault with the KVM, such as lagging."

After the successful testing and evaluation phase Adder Technology, the high performance IP-based KVM specialist, provided its AdderLink Infinity Matrix to The Farm.

"The entire infrastructure of the facility is based on the IP-based AdderLink Infinity KVM solution," said Peat. "We did investigate other vendors, both IP-based and traditional KVM, but the major selling point for the Adder solution was able to support the 2560x1600 monitor resolution required in some of our suites at the refresh rate required."

Result

"A number of the suites feature a single dual link high resolution user interface display on a 30 inch screen with 2560x1600 resolution and the use of the AdderLink extension technology ensures that the refresh rate is not negatively affected as it supplies the bandwidth needed.

"The AdderLink Infinity meets our requirements as we are able to keep the equipment out of the edit suites which is great from an ergonomic point of view, with less heat and noise, and also from an aesthetic perspective. With the matrix functionality, we also have the flexibility to connect any room to any bit of equipment. This makes the lives of the suite users a lot easier with near instant switching speeds between systems while sitting at one workstation."

The AdderLink Infinity Matrix also gives The Farm additional flexibility in terms of downtime. Historically, if a machine was faulty it either had to be replaced immediately, plugged in and configured, or the client using it had to be shifted to a new room. Now, however, if a computer should fail, downtime is eliminated with a simple switch over to another machine.

"Usability was also an important consideration for us," said Peat. "From the backend, installation and administration perspective we have a good technical team on site. But the actual user interface needed to be user-friendly and seamless, so that the creative and editors weren't even aware that they were using KVM technology, and this is definitely the case with the Adder solution."

The IP-based KVM solution is also being used elsewhere in the facility in the support offices where a lot of switching is required. Previously The Farm used small hardware-based KVM over Cat6 systems but were limited by size and the difficulty and expense of adding user points.

"Given the opportunity, I would consider using the IP-based AdderLink Infinity solution in our other buildings if an upgrade was needed as the benefits are significant and the performance excellent," concluded Peat.
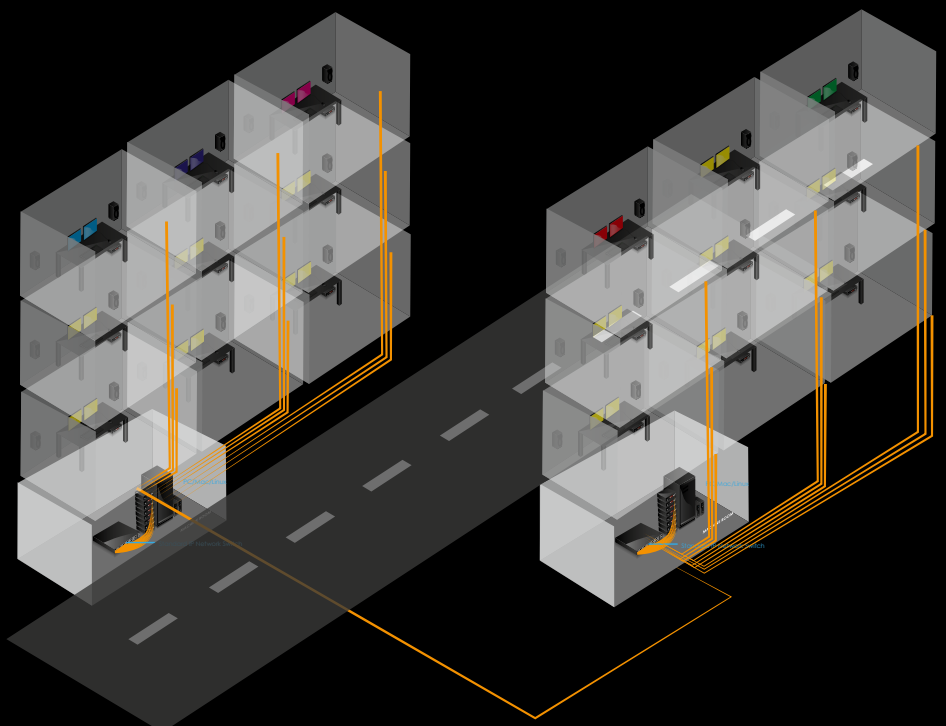
"Our business is making video look good so we have to ensure that it looks right before we send it to client. If it doesn't meet those standards as a result of the technology, then that's a major flaw,"

Smoke & Mirrors:
Visual Effects

Planning a move to a new building, Smoke & Mirrors identified a requirement for high-end computer resources to be available to multiple locations across the entire facility. Initially the computers would also need to be accessed from the existing and new site whilst keeping all computing equipment in a central server room location. The system needed to be flexible and deliver video, fast switching between resources and audio performance expected of a professional post-production company.

A challenge in making this a reality lay in the design of the new building, which comprised a number of different editing suites with users stations and larger office areas with multiple stations and users. As a result, the computers needed to be extended from the server room to each station in single and dual head format, with switching capability and without loss of quality or any lag.

Smoke & Mirrors' IT team chose to contact Adder Technology, the high performance IP-based KVM (keyboard, video and mouse) specialist, who they worked with in defining the exact requirements and then specifying the best solution.

"We were looking for flawless switching and extension capabilities," said George Cook, head of engineering, Smoke &

Mirrors. "The move provided us with the ideal opportunity to upgrade the technology and get more functionality for our artists and designers.

"We wanted a technology solution that would enable us to take control of different workstations at any location and share screens, all while the computers themselves are located in a server room, away from the user."

The relocation of computing equipment brings ergonomic benefits to the office environment – freeing up room on desks and workspaces, while eliminating additional heat and noise, the latter, particularly, can be a drawback in post production.

A further requirement was that the system needed to be user-driven and access controlled, with certain users only able to access designated machines. However, the two most important needs were that the system had to deliver pixel perfect video, ensuring that video over the network is displayed without losing quality or dropping frames and the user experience had to be flawless with no juddering, jittering or lagging.

"Basically our business is making video look good so we have to ensure that it looks right before we send it to client. If it doesn't meet those standards as a result of the technology, then that's a major flaw," explained Cook.
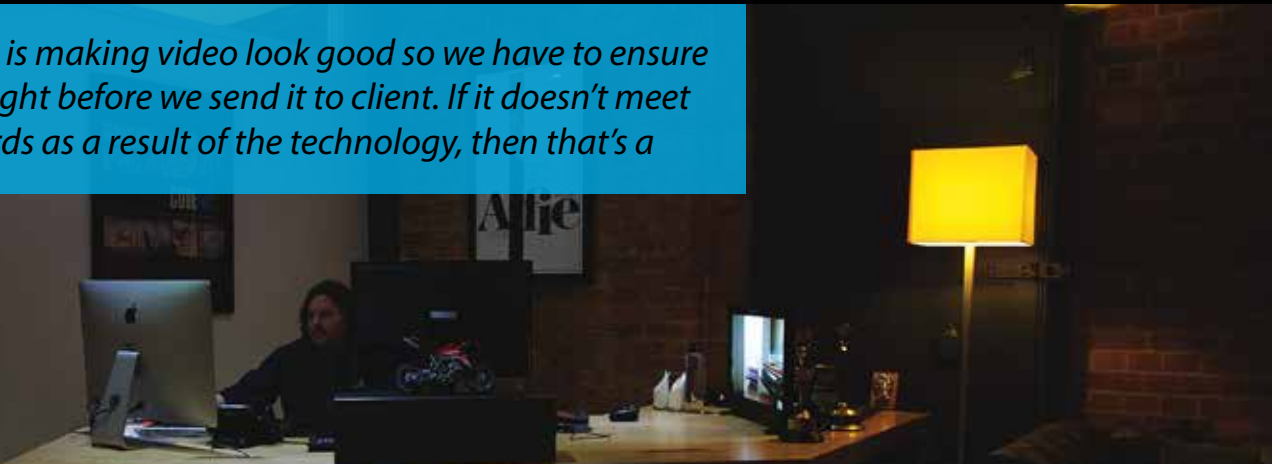
The benefits of using a standard IP network to transport the signals throughout the facility are significant and have had an impact on the cost-effectiveness of operations, as well as ensuring easy scaling and flexible operation. Using the IP infrastructure adds flexibility to the system, enabling operational changes and the addition of end points without changes to the infrastructure.
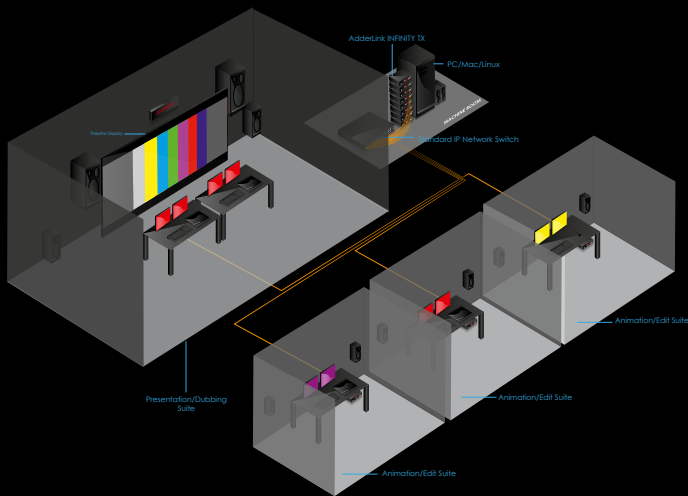
"Due to the complexity of the layout, we learned a lot about Smoke & Mirrors network design during the installation process. Any issues that presented were dealt with by our technical support team who worked with the facility's engineers," said Adkin.

Going forward, the next steps will be adding 4K-capable solutions. This can be easily accomplished through the use of the IP network as the infrastructure already exists to support it.
"I am looking forward to exploring how we can roll out Adder's 4K solutions into our facility as they become available".

"The installed AdderLink Infinity solution more than met our requirements and expectations and was backed by great service from the Adder team. As a result, I am looking forward to exploring how we can roll out the 4K solution from Adder Technology," concluded Cook.

Labels on diagram:
AdderLink INFINITY TX
PC/Mac/Linux
Standard IP Network Switch
Animation/Edit Suite
Animation/Edit Suite
Presentation/Dubbing Suite
Animation/Edit Suite

"I spent a great deal of time researching KVM manufacturers, and Adder was the only company with a solution flexible enough to meet our needs."

Illumination Entertainment:
Edit workflow

With the enormous success of the Despicable Me franchise, Illumination Entertainment outgrew its editorial infrastructure creating challenges in their studio workflow. Production increased, requiring additional edit bays and the ability for the editors to swap in and out of the review suite for dailies.

In the past, an editor worked in the review suite on a dedicated Avid system tied to a specific edit bay. Editors working in other edit bays would come into the review suite, import their settings and open their projects on the Avid system tied to that review suite. This would not only take time to setup, but many times they would encounter playback glitches and/or errors. Many of these errors could be traced back to the fact that not all productions were running the same version of the software (both OS and Avid). Sometimes, hardware settings on the system would be the culprit, requiring a full machine reboot for the reconfiguration to take place.

The editors at Illumination Entertainment needed to set up for dailies on their Avid systems prior to entering the review suite and then move into the review suite after setup was complete. Each system is comprised of an Avid system, with dual displays, a dual link playback monitor, a keyboard, a mouse, and audio output.

When another editor occupied the review suite, the displaced editor would either have to open their settings and project in another free bay or wait until the review session was over.

Illumination Entertainment wanted a solution that would allow editors to utilize theirown system for reviews and would provide seamless switching between workstations.

Prior to the growth in production, they knew that the Avid systems would remain in the data center. The new space identified for the editorial expansion was in a location not contiguous to the existing editorial space which necessitated a digital KVM switching and extension solution.

There were only a few players in this space that could support dual displays, and fewer that could support yet another display for playback and that also had a simple and easy end-user interface.

The go-to source turned out to be Adder Technology, who provided a solution for their existing workflow challenges and also positioned the company favourably for future scalability and flexibility in production capacity and performance.

Each workstation was outfitted with two AdderLink Infinity Dual, fanless, units. One unit serviced dual displays from the Avid, keyboard, mouse and audio, while the other unit outputted directly from the Avid software to a review monitor for playback review.

After deploying the AdderLink Infinity solution, editors can now sit at any one of (currently) seven locations and work on their own Avid system. When they need to run dailies, they simply logout of the Adder system at their current location, go to the review suite, and login to bring up their own system in that room. Each editor is always working on and using the same Avid so there are no surprises when reviewing media.

"I spent a great deal of time researching KVM manufacturers, and Adder was the only company with a solution flexible enough to meet our needs. Using the AdderLink Infinity products, our editors are now able to setup for dailies or a review session on their Avid systems in their edit bay and then bring up that system in the review suite without interrupting any other sessions," said Joe Stevano, Illumination Entertainment, IT director. "Adding Adder's digital KVM matrix solution to our editorial infrastructure has given us increased flexibility in working on multiple productions" he added.

Control Rooms:
MCR, TCR, PCR

Control rooms are some of the most important spaces in the broadcast chain.

The MCR or Master Control Room coordinates content prior to final broadcast, ensuring quality, standards adherence and scheduling.

TCR or Transmission Control Room feeds the MCR with program content. Each channel traditionally has a unique TCR featuring automated scheduling, monitoring and live switching. Channel specific idents will also be inserted at this point.

The PCR is the familiar Production Control Room, often referred to as Gallery. Live and prerecorded studio production and live ingest switching take place in this area. Application of program specific graphics are also applied here.

High performance KVM delivers the flexibility and agility broadcasters need to react instantly while maintaining absolute reliability, critically:

• Centralise computing equipment
• Single point access to multiple systems
• Instant access to backup systems

• Shared video feeds between multiple users
• Preventative Maintenance
• Scenario switching
• Disaster recovery
• Connection monitoring
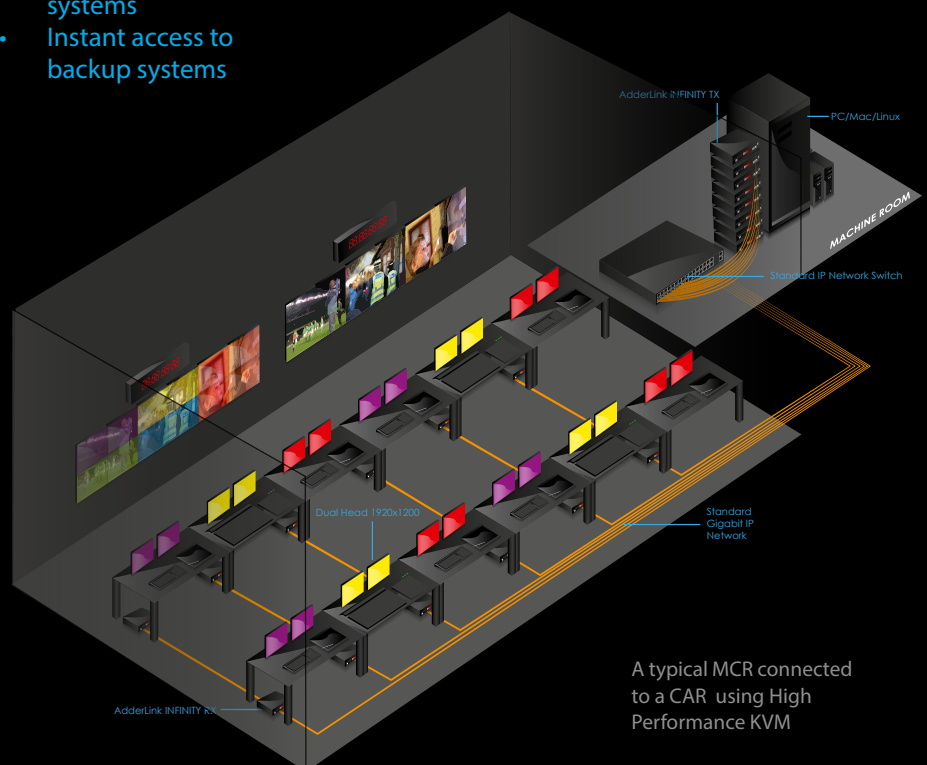
A typical MCR connected to a CAR using High Performance KVM

The role computers play

Convergence is now an old idea, most modern broadcast facilities should be considered converged. The reliance on traditional I.T. technologies from computers and standard networking protocols such as I.P. is overwhelmingly dominant. As such, I.T. technologies like KVM have become critical to the efficient operation of the facility.

Why centralize?

The Central Apparatus Room or CAR is by no means a new idea. Broadcasters have been centralizing hardware for many years, utilizing Adders KVM technology to remotely access specialised computing equipment from within a facility, or even from the other side of the world.

Today advances in KVM technology make it possible to link many CAR's or create a centralized CAR, accessible by multiple business units or production teams. Centralizing our computing and networking hardware delivers a multitude of benefits to the modern broadcaster.

Key benefits that modern broadcasters have identified;

- Single location of critical hardware
- Redundant second location for disaster recovery
- Secure and controlled environment
- Extending life of core hardware
- Minimal disruption during system maintenance
- Improved user ergonomics
- Reduced cost of cooling
- Maintaining clean/dust free environments
- Controlled physical layer access (Air Gap)
- Simplifies file based workflow infrastructure
- Secured Intellectual Property

Design Services

The Adder Professional Services group help to ensure your connectivity solution will deliver the functionality and flexibility you require. With in-depth understanding of I.T. infrastructure alongside years of supporting enterprise and SME installations, our design team can work alongside end users, system integrators or consultants to develop bespoke solutions.

We employ specialists from a range of industries to deliver the bespoke design that suits you best.

Project Support

Adders experienced project support team are there to help you every step of the way. From pre-configuration through to customer acceptance, we are there to get you running quickly and without stress.

Contact us to discuss your requirements

Project support includes:

- On Site Configuration
- Training for System Integrators, Administrators and Operators
- Remote System Health Checks
- Extended Warranty Options
- Advanced Hardware Replacement Options
- Remote and On Site Support Options
- System Upgrade Services

and much more.

3 YEAR *Extended* WARRANTY
4 YEAR *Extended* WARRANTY
5 YEAR *Extended* WARRANTY

2 YEAR *Standard* WARRANTY
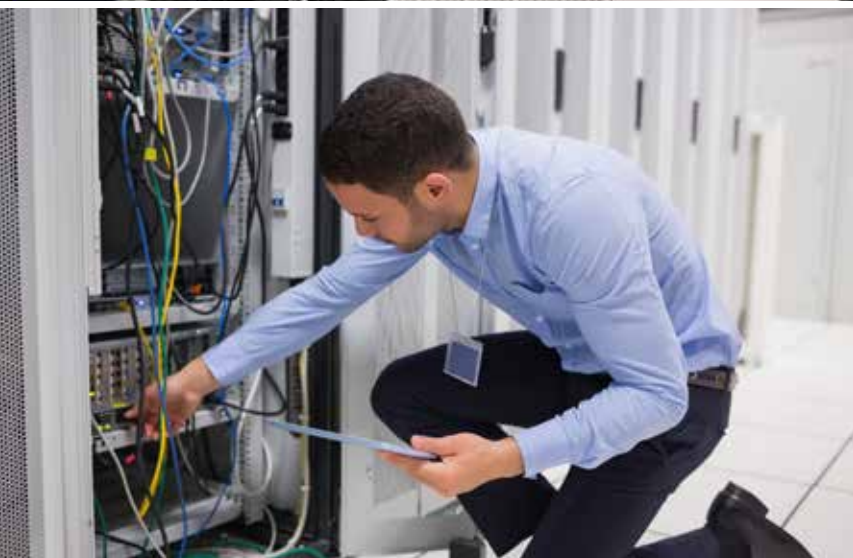
Quick Extender Comparison Please refer to product datasheets for specific details

Product	Video Connector Type: Video 1	Video Connector Type: Video 2	Maximum resolution: Video 1	Maximum Resolution: Video 2	Local Feed Through	USB	Extension Distance	Cable Type	Audio: Line Out	Audio: Line In	RS232
X50	VGA				Yes	2.0	50m	CAT5e	Yes		
X50-MS2	VGA	VGA			Yes	2.0	50m	CAT5e	Yes		Yes
X-USBPRO	VGA				Yes	2.0	300m	CAT5e	Yes		
X-USBPRO-MS2	VGA	VGA			Yes	2.0	300m	CAT5e	Yes		Yes
X-DVIPRO	DVI		1920x1200			2.0	50m	CAT6 STP	Yes		
X-DVIPRO-MS2	DVI	DVI	1920x1200	1920x1200		2.0	50m	CAT6 STP	Yes		
X-DVIPRO-DL	DVI		2560x1600			2.0	50m	CAT6 STP	Yes		
XD150	DVI		1920x1200			2.0 High	150m	CAT6 STP	Yes		
XD522	DisplayPort		3840x2160	1920x1200		2.0 High	100m	CAT6 STP	Yes	Yes	
ALIF1002	DVI		1920x1200			2.0	100m	CAT5e	Yes	Yes	Yes
ALIF2020	DVI	DVI	1920x1200	1920x1200		2.0	100m	CAT5e	Yes	Yes	Yes
ALIF2002	DVI	DVI	2560x1600	1920x1200		2.0	100m	CAT5e	Yes	Yes	Yes
ALIF1002FX	DVI		1920x1200			2.0	500m/10km	Fibre	Yes	Yes	Yes
ALIF2020FX	DVI	DVI	1920x1200	1920x1200		2.0	500m/10km	Fibre	Yes	Yes	Yes
ALIF2002FX	DVI	DVI	2560x1600	1920x1200		2.0	500m/10km	Fibre	Yes	Yes	Yes

Welcome to the world of
High Performance KVM