

# WHITE PAPER

## TRANSFORMING PROFESSIONAL AV CONNECTIVITY WITH HDBaseT®

### Why HDBaseT® Continues to Power Modern AV Infrastructure

#### Executive Summary

The demand for high-performance audiovisual systems continues to grow across corporate workplaces, education, healthcare, hospitality and digital signage environments. As installations become larger and more sophisticated, the need to transport high-resolution video, audio, USB, Ethernet, control signals and power over longer distances has become increasingly important.

Traditional HDMI® cabling performs well over short distances but quickly reaches its practical limitations in professional installations, often requiring multiple cable runs, additional signal extenders and separate infrastructure for control and networking. HDBaseT® was developed to overcome these challenges. By transmitting multiple signal types over a single category cable, HDBaseT® simplifies installation while delivering the reliability, performance and flexibility required for modern professional AV environments.

Today, HDBaseT® has become one of the world's most widely adopted professional AV standards, enabling organisations to design scalable, future-ready infrastructures using familiar structured cabling.

This white paper explores how HDBaseT® technology addresses the challenges of modern AV distribution and demonstrates how Lindy's Professional HDBaseT® portfolio supports reliable, long-distance connectivity across a wide range of commercial applications.

### The Evolution of Professional AV Connectivity

Professional AV systems have evolved significantly over the past two decades. Early installations typically relied on dedicated point-to-point cabling, with separate connections required for video, audio, network access, USB peripherals, device control and power. While effective for smaller installations, this approach became increasingly

complex as organisations demanded larger meeting spaces, collaborative environments and centralised AV management.

Traditional installations often required:

- Separate HDMI® cables for video
- Dedicated audio connections
- Independent Ethernet cabling
- RS-232 or IR control cables
- USB extension systems
- Individual power supplies for connected devices

As systems expanded, so did the complexity of installation, maintenance and troubleshooting. Multiple cable runs increased infrastructure costs, consumed valuable conduit space and introduced additional points of failure.

HDBaseT® was developed specifically to meet this need. By leveraging standard Cat5e, Cat6 and Cat6A cabling, HDBaseT® enables high-quality AV transmission over distances of up to 100 metres while significantly reducing installation complexity.

## **What is HDBaseT®?**

HDBaseT® is a globally recognised connectivity standard developed specifically for professional AV transmission over standard twisted-pair cabling. Designed to simplify AV infrastructure, it enables multiple signal types to be transported simultaneously through a single Cat5e, Cat6 or Cat6A cable while maintaining exceptional reliability and signal integrity.

Unlike conventional HDMI® extension technologies that focus solely on transporting video and audio, HDBaseT® combines video, audio, Ethernet, USB, control signals and power within one integrated platform.

HDBaseT® supports:

- Uncompressed 4K Ultra HD video transmission
- Multi-channel digital audio
- USB extension
- Gigabit Ethernet connectivity
- RS-232 and IR control

- Power over HDBaseT® (PoH)
- Transmission distances of up to 100 metres

Supported by a broad ecosystem of manufacturers, HDBaseT® enables interoperable professional AV systems while avoiding vendor lock-in.

## **Understanding HDBaseT® 5Play**

5Play™ is the core framework of HDBaseT®, enabling video, audio, Ethernet, control and power to be transmitted simultaneously over a single category cable.

Video – High-quality HDMI® transmission supporting Full HD, 4K Ultra HD and HDR.

Audio – Multi-channel digital audio with synchronised playback.

Control – RS-232 and IR pass-through for remote device management.

Ethernet – Integrated Gigabit Ethernet connectivity.

Power – Power over HDBaseT® (PoH) powers compatible devices over the same cable.

Together these capabilities simplify installation, reduce infrastructure costs and improve system reliability.

## **Why HDBaseT® Has Become the Industry Standard**

HDBaseT® has become one of the most widely adopted professional AV standards because it delivers long-distance transmission, simplified installation, exceptional reliability, lower infrastructure costs and broad interoperability.

By transporting multiple signal types through a single cable, HDBaseT® reduces cabling complexity while providing dependable performance for meeting rooms, education, hospitality, digital signage and control room environments.

## **Bridging AV and IT**

HDBaseT® utilises standard structured cabling already familiar to IT professionals, allowing AV connectivity to integrate more easily with modern building infrastructure.

This convergence simplifies deployment, reduces costs and provides a flexible foundation for future expansion.

## **Core Applications**

### Corporate and Enterprise

Meeting rooms, boardrooms, executive briefing centres, training facilities and hybrid collaboration spaces benefit from reliable long-distance HDMI® extension, USB connectivity and integrated control over a single cable. HDBaseT® simplifies installation while providing dependable connectivity for modern workplace environments.

### Education

Classrooms, lecture theatres, auditoriums and training centres use HDBaseT® to extend high-quality video, audio and control signals to projectors, interactive displays and presentation systems. The technology supports flexible room layouts while reducing infrastructure complexity and installation costs.

### Command and Control

Security operations centres, utilities, transport networks and industrial control rooms require reliable video transmission, remote device control and USB extension. HDBaseT® provides stable, low-maintenance connectivity for mission-critical environments where system reliability is essential.

### Hospitality, Retail and Public Venues

Hotels, conference centres, casinos, retail stores, museums and digital signage installations benefit from long-distance AV distribution using standard structured cabling. HDBaseT® enables displays, projectors and presentation systems to be connected with simplified infrastructure and reliable performance.

### Entertainment, Media and Live Events

Broadcast studios, theatres, houses of worship, live event venues and production facilities require dependable signal transmission between AV equipment and displays. HDBaseT® delivers high-quality video, audio and control over extended distances while simplifying temporary and permanent installations.

## Healthcare and Specialist Environments

Medical training facilities, simulation centres, healthcare campuses and specialist visualisation rooms benefit from reliable transmission of high-resolution video where image quality and system stability are critical. HDBaseT® supports simplified installation while maintaining dependable long-distance AV connectivity.

## Solving Real-World AV Challenges

Organisations adopting HDBaseT® are usually looking to simplify AV infrastructure while maintaining reliable, high-quality signal transmission over longer distances. The technology addresses common AV connectivity challenges in a practical and efficient way.

| Challenge                                    | HDBaseT® Solution                                                                             |
|----------------------------------------------|-----------------------------------------------------------------------------------------------|
| Limited HDMI® cable distance                 | Long-distance AV transmission of up to 100m over a single Cat5e/Cat6/Cat6A cable              |
| Multiple cables for video, audio and control | HDBaseT 5Play™ combines video, audio, Ethernet, USB, control and power into one cable         |
| Complex installation and cable management    | Simplified infrastructure with fewer cables, reduced installation time and lower labour costs |
| Remote device management                     | Integrated RS-232 and IR pass-through for centralised control                                 |
| Separate power requirements                  | Power over HDBaseT® (PoH) powers compatible devices through the same cable                    |
| USB extension for peripherals                | Supports USB connectivity for touch displays, cameras, keyboards and collaborative devices    |
| Future expansion                             | Standard structured cabling provides a scalable, future-ready AV infrastructure               |
| Vendor compatibility                         | Interoperable technology supported by a broad ecosystem of professional AV manufacturers      |

## Why HDBaseT® Still Matters

While AV-over-IP technologies such as SDVoE™ excel in large-scale networked deployments, HDBaseT® remains the preferred solution for reliable point-to-point AV extension. Its simplicity, performance and ease of installation make it ideal for meeting rooms, classrooms, digital signage and collaborative environments.

## Enabling HDBaseT® Connectivity with Lindy

Lindy's HDBaseT® portfolio delivers reliable long-distance transmission of video, audio, USB, Ethernet and control signals over a single Cat.6/Cat.6A cable. Designed for professional AV environments, these solutions simplify installation, reduce cabling complexity and ensure consistent performance across meeting rooms, classrooms, digital signage, control rooms and other commercial applications.

- **70m Cat.6 HDBaseT® HDMI® & IR Extender with PoC (No. 38139)**  
Extends HDMI® signals together with IR control up to 70 metres over a single Cat.6 cable, making it ideal for digital signage, home automation and commercial AV installations.
- **150m Cat.6 HDMI® 4K60 HDBaseT® Extender (No. 38217)**  
Delivers uncompressed 4K60 HDMI® transmission over distances of up to 150 metres, providing an ideal solution for large conference rooms, auditoriums and educational facilities.
- **5-Port Seamless Presentation Switch HDBaseT® Extender (No. 38338)**  
Combines multiple presentation sources with seamless switching and HDBaseT extension, enabling effortless collaboration in boardrooms, classrooms and training spaces.
- **100m Cat.6 HDMI® 4K60 HDBaseT® Extender (No. 38340)**  
Extends 4K Ultra HD HDMI® signals up to 100 metres, delivering dependable AV performance for meeting rooms, hospitality environments and digital signage.
- **100m Cat.6 HDMI® 4K60 HDBaseT® Transmitter (No. 38341)**  
Provides a flexible transmitter solution for custom HDBaseT installations, allowing system designers to build or expand professional AV infrastructures.

- **100m Cat.6 HDMI® 4K60 HDBaseT® Receiver (No. 38342)**  
Designed to complement compatible HDBaseT transmitters, enabling flexible system expansion and simplified AV distribution.
- **100m Cat.6 HDMI® KVM HDBaseT® Extender (No. 38343)**  
Extends HDMI® video together with USB keyboard and mouse control, making it ideal for remote workstation access, industrial control systems and control room environments.
- **100m Cat.6A HDMI® 4K60 HDBaseT® 3.0 KVM Extender (No. 38344)**  
Utilises HDBaseT 3.0 technology to extend uncompressed 4K video, USB and control signals, supporting demanding KVM applications in enterprise and mission-critical environments.
- **150m Cat.6 4x4 HDMI® 4K60 HDBaseT® Matrix Extender (No. 38345)**  
Distributes multiple HDMI® sources to multiple displays over long distances, making it an excellent solution for corporate campuses, education and large-scale AV installations.
- **70m Cat.6A USB-C & HDMI® HDBaseT® 3.0 KVM Extender (No. 38346)**  
Designed for modern USB-C collaboration spaces, extending video, USB peripherals and KVM functionality over a single Cat.6A cable. Ideal for BYOD meeting rooms and hybrid workspaces.
- **70m Cat.6 HDMI® 4K60 HDBaseT® Extender with ARC (No. 38349)**  
Extends HDMI® signals while supporting Audio Return Channel (ARC), enabling seamless integration with modern AV systems and display technologies.
- **100m Cat.6A USB 3.2 Gen 1 & HDMI® HDBaseT® Extender (No. 39365)**  
Extends high-speed USB 3.2 Gen 1 together with HDMI® over distances of up to 100 metres, making it ideal for USB cameras, storage devices, interactive displays and professional conferencing applications.
- **150m Cat.6 DisplayPort & USB KVM HDBaseT® Extender (No. 39385)**  
Combines DisplayPort video with USB KVM functionality over long distances, providing reliable remote workstation access for broadcast, control rooms, engineering and industrial applications.