

# Coffee Break



Take 15 minutes with HDBaseT  
and simplify AV connectivity

## HDBaseT Networking: A New World of Possibilities

### The Rise of the AV Network

Audiovisual systems are designed to allow the transmission, management and sharing of content. With point-to-point topologies, a direct link is established between source and display, enabling direct data transmission without the need for additional devices. As installations become increasingly complex, we see the need for topologies that go beyond point-to-point towards multipoint-to-multipoint and multistreaming. Network-based installations enable a wider range of applications. To meet market demand for more advanced audiovisual infrastructures, there is a need for the flexible flow of data, which must be routed efficiently without necessarily being directly linked.

Audiovisual installations with multiple devices, connections and complex configurations require an infrastructure that enables various data routing scenarios.

Whether designing a conference room in a corporate setting, or a multipoint installation for digital signage or video walls, the key is to efficiently maximize routing possibilities, in a way that simplifies the infrastructure and minimizes cost.

### Simplifying Complex Networks

As networks expand and become more complex to allow added functionality and an increased number of devices, implementing systems that simplify the transmission of ultra-high-resolution content is a must. A packet-based technology solution allows for the switching of data packets to address as many use cases as possible. In addition, devices must be able to connect and communicate with ease and flexibility. With this increased complexity, networking will continue to play a major role in the future of AV.

### Common Challenges of Complex Architectures

- **Infrastructure limitations:** Complex networks usually involve excessive cabling, and when not done right, such cabling may not provide optimal distance and may lead to noise and interference in the connections. For example, in a star topology with multiple cables running in close proximity, there is far more likelihood for crosstalk interference to affect system performance, when compared to a daisy-chain topology using a single cable.
- **Data Flow Obstruction & Performance:** Networks can suffer from bandwidth limitations, blocking architectures and variations in timing of data, leading to latency and diminished performance. How the data flows on the physical infrastructure and the transmission rates affect overall performance of the network. If packet flow optimization is not achieved, it may introduce further complexities and delays.
- **Flexibility:** By definition, networks are comprised of many components. If the network protocol is not consistent, devices cannot be easily incorporated into the network, nor utilized in different ways as to be expected in an efficient network. A flexible network means that use cases can be changed on demand without rewiring or redesigning the infrastructure.

### The HDBaseT Network for Optimized Installations

HDBaseT is a high-performance packet-based AV network protocol that allows for the expansion of the system on a port-by-port basis, bringing new possibilities for connectivity to fruition. As a standard, native HDBaseT packet switching can simplify and optimize complex topologies, while maintaining reliable connectivity with better and faster transmission rates over longer distances.

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## The HDBaseT Difference

- **More possibilities, more simplicity:** HDBaseT technology simplifies complex networks by delivering a multitude of possibilities for a simple-to-configure installation. HDBaseT is a plug-and-play technology— where devices in the network do not have to be individually configured to function as an inherit part of that network. This can be achieved without complicated switch configuration or dedicated software drivers. Sophisticated networks do not have to be complex when routing of packets and mapping of components are running on the same HDBaseT protocol. HDBaseT also allows for non-HDBaseT devices to be used as control elements for the HDBaseT network.
- **Dynamic Hybrid Topology :** HDBaseT allows for the transmission of content from any point to any point by giving clear data routing information. Once the network is set up, the topology can be continually reconfigured and re-mapped to suit the immediate needs of the use case, all on the existing infrastructure. Being able to dynamically change topology makes HDBaseT a scalable solution allowing for the network to expand, introduce new components, and re-route content. HDBaseT is also backward compatible and future proof.
- **Unobstructed Data Flow & Infrastructure Optimization:** HDBaseT network enables non-blocking data flow of multiple high-quality, time-sensitive data streams. HDBaseT is the optimal solution for allowing high-bandwidth data to flow unobstructed, even when traveling through an indirect route. The HDBaseT network can reduce the number of cables, without jeopardizing transmission distance. HDBaseT lays the foundation for a cost-efficient network, guided by the principle that physical and logical topologies must enable efficient mapping of data, for optimized transmission of content.

