Coffee Break

Take 15 minutes with HDBaseT and simplify connectivity

HDBaseT Automotive: The Ultimate Highway for In-vehicle Connectivity

The Connected Car

The car as we know it has changed dramatically over the years, and it has now become an extension of our ever-connected lives: cameras, sensors, controls, and entertainment are all part of today's driving. This connection goes beyond the infotainment domain – connecting our smart phones, GPS systems, or movies for the children in the back seat. As we raise awareness towards safety assistance systems, such as sensors, cameras, autonomous driving platforms and more, the connected car must meet our expectations of a better, safer, and more enjoyable driving experience.

Underlying the Connected Car Infrastructure

To deliver the experience that drivers and passengers expect, the underlying vehicle infrastructure must deliver ultra-high-definition & high bandwidth content (whether infotainment or Advanced Driver Assistance Systems – ADAS), with virtually zero latency, over the simplest, lowest-cost and lowest-weight infrastructure.

Common Challenges for the Connected Car Infrastructure

- **Latency:** Delayed transmission of content can be annoying at best (for infotainment purposes) and dangerous at worst (when one is relying on cameras and sensors for safer driving). Latency can directly impact the quality of experience and the reliance drivers put on the system. With latency, it may be too late to see the truck in your blind spot camera if there is too much latency.

- **Bandwidth needs:** High bandwidth is essential to deliver all the necessary features in the connected car – whether video, audio, Ethernet, USB. As with any connected environment, sufficient bandwidth is expected to cater to the system's needs. When there is not enough bandwidth, quality of transmission suffers, and not all features may be delivered.

- **Cabling:** The cable infrastructure in the car is a major weight and cost component. Because the car environment is a noisy, EMC-prone environment, the connected car demands a high-quality cable to withstand interference, aging, variable temperatures and more. The right cable choice can impact design and driving experiences.

HDBaseT Automotive

HDBaseT Automotive is the solution to today's challenges in in-vehicle connectivity. HDBaseT Automotive is the only technology today that enables up to 6Gbs tunneling of video & data, with native networking capabilities over 15m (50ft) of a single unshielded twisted-pair (UTP) cable, targeting the existing 100BASE-T1 channel utilized today in the automotive sector. This combination of high bandwidth, top performance, feature-rich capabilities and low-cost, existing infrastructure makes HDBaseT the definite solution for in-vehicle connectivity.

The HDBaseT Difference

- **Near-zero latency:** HDBaseT Automotive delivers uncompressed video and audio, with virtually zero latency (less than 10μsec). This guarantees real-time transmission of content from cameras, videos, smart phones, and more, improving performance.

- **Bandwidth:** HHDBaseT Automotive is able to transmit an unprecedented 6Gbps of simultaneous streams of high-definition uncompressed video & audio, data, USB, controls and power. USB transmission is a major element in this scenario, as USB cable length, number of ports and type of cable can affect transmission over USB cables. HDBaseT simplifies the underlying infrastructure for USB connectivity. In addition, HDBaseT brings native networking capabilities, supporting multi-hop and multistreaming packet switching.

- **Cabling:** With HDBaseT Automotive, tunneling is done over a low-cost, low-weight, and easy-to-install single pair, 15 meters (50ft) unshielded twisted pair (UTP) cable (targeting current automotive 100BASE-T1 comparable channel), with up to four standard inline connectors, such as MQS. Although UTP cables are notoriously prone to EMC interference, HDBaseT's adaptive mechanism allows high-quality transmission, without impact on performance, for a highly robust solution.

HDBaseT Automotive Device — Audio/Video — Ethernet — Power — Control — USB — **HDBaseT Automotive Device**
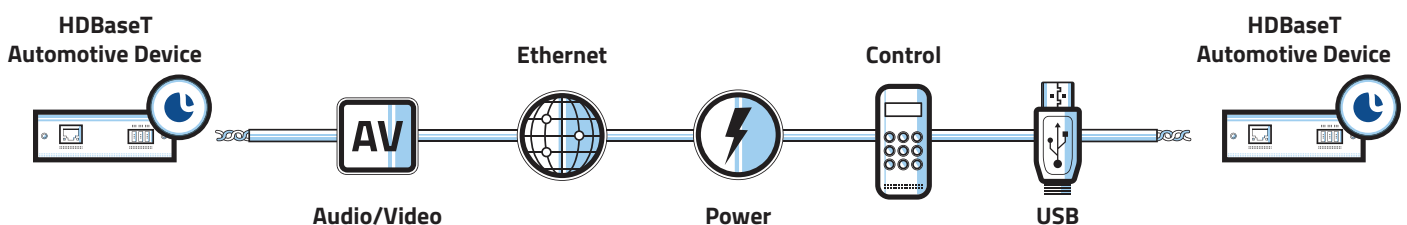
15M / 50FT UTP (100BASE-T1) WITH 4 INLINE CONNECTORS

6Gbps Full-duplex with Virtually Zero Latency