The HDBaseT Alliance

Tzahi Madgar, Vice President
We Live in an HDBaseT World!
To standardize & promote HDBaseT technology as the global standard for the transmission of uncompressed ultra-HD multimedia content for professional AV, automotive, industrial and consumer applications.
What is HDBaseT Technology?
The Ultimate Standard of **Digital Connectivity**

Over a **Single Cable**
HDBaseT: 5Play Convergence on a Single Cable

- Audio/Video
- Ethernet
- Power

HDBaseT Device

Control

USB

HDBaseT Display

100M / 328FT CAT6 CABLE
HDBaseT Has Conquered the AV World

Thousands of HDBaseT Products in the Market

Over 180 HDBaseT Alliance Members
And the Emmy goes to...

Winner of a 67th Annual Technology & Engineering Emmy® Award
The Alliance Community
The HDBaseT Alliance

More than 200 Members
The HDBaseT Alliance
200+ members, addressing Pro-Audiovisual, Consumer Electronics, Automotive, Industrial PCs, Medical and more
Introducing HDBaseT Worlds

HDBaseT Audiovisual

HDBaseT Automotive

HDBaseT Industrial

HDBaseT Consumer
HDBaseT Audiovisual
HDBaseT Audiovisual: The One-cable Standard for Digital Connectivity

- All major pro-AV manufacturers are Alliance members, leveraging the strength of the HDBaseT community to promote their business
- Thousands of products in the market: switches, projectors, receivers, extenders and more
- Membership benefits include participating in the global HDBaseT community, certification process for interoperability and marketing promotion
Benefit from Your Membership

Membership provides you with marketing support and bolsters your reputation in the industry

- Tradeshows
- Installer Zone
- Sponsored Marketing
Stand-in-a-Stand Initiative

Cost-effective marketing leverages the Alliance umbrella to spotlight our Members’ solutions.
Online portal for optimized exposure of your company and products
Installer Expert Program

Onsite and online training sessions increase HDBaseT awareness

Onsite...

Online...

Onsite and online training sessions increase HDBaseT awareness
The HDBaseT Product Certification Program provides members with a set standard for ensuring their products are compliant, interoperable and part of the established product ecosystem.”

Ariel Sobelman, President, HDBaseT Alliance
Inclusion in the Certified Product List on the Alliance website and in the smartphone app
HDBaseT Automotive
Valens’ HDBaseT Automotive is the ultimate, feature-rich technology for in-vehicle connectivity, through the most, cost-effective and flexible infrastructure, for a superior end-user and system design experience.
HDBaseT Automotive: The Ultimate Highway for In-vehicle Connectivity

- Introduced in early 2016, to address today’s need for in-vehicle connectivity
- Establishment of the HDBaseT Automotive Working Group to finalize the standard and promote it with OEMs, Tier-1s, silicon vendors and more
- Very positive initial traction: more than 10 automotive players have already joined the Alliance, including Daimler and Delphi as Contributors
Established in 2015

Goal: Finalize HDBaseT Automotive standard

Current members include:
HDBaseT
Industrial
Addressing the connectivity needs of manufacturing plants

Major players in Europe and APAC are members

Promotes interoperability and ease of use to end-users

Activities in major IPC shows, such as Embedded and Electronica
HDBaseT Consumer
HDBaseT Consumer: The Elegance of the One-cable Solution for Home Connectivity

- Elegance & performance in our connected homes
- Major consumer electronics brand are Alliance members: projectors, AV receivers, extenders and switches
- Promoting HDBaseT at major residential shows, such as CES, CEDIA, TecHomeX
DMTF & HDBaseT
Collaborative Domain
Cyber Security Risks for HDBaseT
HDBaseT Security Needs

**Threat Model**
- Supply Chain Attacks (Fake parts installation)
- T-Packet tampering (modification, drop, injection) / eavesdropping

**Desired Security Services**

**Device Authentication**
- Towards peer-device and/or external controller
- Includes device identity authentication and optional key-exchange protocols
- Uses device certifications

**HDBaseT T-Packets Security (Encryption)**
- HDBaseT traffic end-to-end encryption & authentication
- Secure end-to-end connections between HDBaseT devices
HDBaseT Security Services – Collaboration with DMTF

- **About DMTF** (from: [https://www.dmtf.org/about](https://www.dmtf.org/about)):
  
  - “The DMTF (formerly known as the Distributed Management Task Force) creates open manageability standards spanning diverse emerging and traditional IT infrastructures including cloud, virtualization, network, servers and storage. “

- DMTF has formed a new Security Task Force within its Platform Management Components Intercommunication (PMCI) Working Group (from: [https://www.dmtf.org/content/get-involved-dmfts-pmci-security-task-force](https://www.dmtf.org/content/get-involved-dmfts-pmci-security-task-force))

- The DMTF Security Scheme is based on USB Authentication Scheme, and is examined with high probability of adoption by PCI-SIG and MIPI Alliances
  
  - Some of the most important high-Bandwidth Native Interfaces carried over HDBaseT

- The HDBaseT Alliance becoming Alliance Partner with the DMTF, in the context of security, can allow for importing a wide-reviewed, stable, commonly adopted security solutions to the HDBaseT Network
HDBaseT Security Services - Components & Protocols - Example

**First boot**
- Boot, no previous key exists (e.g.: box replacement)
- Regular operation

**Following Boots**
- Boot, previous key exists (e.g.: box replacement)
- Regular operation

**Mutual Authentication and Key Exchange (AKE)**
Using PK and TRNG operations, DMTF Security Scheme

**Secure Data-Path**
T-Packet Encryption and Authentication

**AKE-Resume**
Using TRNG and symmetric operations, DMTF Security Scheme

**Secure Data-Path**
T-Packet Encryption and Authentication

**Rare Control Operation**

**Time-Sensitive Control Operation**

**Boot, no previous key exists (e.g.: box replacement)**

**Boot, previous key exists (e.g.: box replacement)**
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