

# HDBaseT

**NOBODY DOES JARGON AND ACRONYMS** quite like the electronics integration industry. Sometimes tech terms crack the lexicon before everybody completely understands what they mean. So *CI* has asked an experienced integrator, Fred Harding of distributor Capitol Sales, to define a term as it applies to commercial integrators. As a failsafe, we asked HDBaseT Alliance marketing committee chair Micha Risling to fact-check. You can decide who to believe. **This issue's term: HDBaseT.**

**THERE'S A NEW TRANSMISSION FORMAT** on the block called HDBaseT that is justifiably catching a lot of attention. It's based on a single Cat 5 wire and it can deliver video, audio, Ethernet, control and power.

On the video side, HDBaseT will support high-definition video, including 3D and 2K4K standards. The final video connection at transmit and receive sides will still be an HDMI cable.

Yes, the format does support HDCP, so copy protection issues won't haunt integrators. Essentially, the format involves modules at the transmission and receiving ends of the wire. The system will support up to 100 meters of wire between those modules, and integrators can deploy up to eight modules on a line to extend up to 800 meters. The system will support both daisy-chained and star topologies.

The transmission side can have either a very simple one-input configuration, or a more complex matrix mechanism with multiple source inputs and display outputs.

Since the system is designed to support uncompressed video signals up to 10.2 Gbps, HDBaseT will not act as a choke point on moving images from video or gaming sources, regardless of the original format. Integrators simply need to convert that signal into an HDMI format at the insert point and output that HDMI signal to whatever display they wish to deploy. Clearly, any audio signals that accompany those pictures will also transmit just fine.

HDBaseT will also act as a conduit for control signals. Those signals can include the CEC commands that are native to HDMI, as well as infrared and RS 232/USB codes. Note that the CEC commands are frequently branded by specific manufacturers with proprietary names, like Panasonic's "Viera Link." Depending on the application, installers disable those commands to achieve a greater level of control over source and display.

HDBaseT supports Ethernet, up to 100 Mbps. Since it is based on a Cat 5 architecture, integrators can reuse existing network wiring to deploy a new distribution system. Clearly, existing network devices would need to be updated to support HDBaseT.

Power is the last segment that is potentially transmitted down an HDBaseT network. The folks at HDBaseT say that the format can power remote televisions up to 100 watts without having to use conventional electrical outlets. With displays becoming increasingly efficient, this isn't as big a reach as it might appear at first blush.

The folks who are bringing HDBaseT to the market include the component manufacturer Valens Semiconductor, as well as Samsung Electronics, LG Electronics and Sony Pictures Entertainment.

Is this the one-size-fits-all solution to all of our worries? Perhaps not. Distances greater than 100 meters exist in some installation applications, and some folks may feel that the expansive feature set translates to too high an admission price. —Fred Harding

FRED HARDING handles technical sales and design at Capitol Sales.

**Micha Risling:** Collectively, these five features are also known as 5Play.

**Micha Risling :** If you are referring to the HDMI cable itself, this is correct when using a dongle from one of our member companies. However, HDBaseT Alliance expects embedded HDBaseT products to emerge in the not-so-distant future. With embedded HDBaseT, you no longer need any other cable, just a single Cat 5e/6 LAN cable connecting your display to a device 100 meters away. It is truly a single cable solution.

Although, if you are referring to HDMI as an interface, the HDBaseT 1.0 specification currently defines an HDMI I/F to HDMI chip at both the transmitting (source) and receiving (display) ends for video and audio. This clarification is important to note since this is the use of silicon, rather than an additional cable.

**Micha Risling:** Yes, however HDBaseT leverages an inexpensive cable and connector to ease the cost burden when updating devices. Also, HDBaseT has a fall back mode. If an integrator accidentally uses a non-HDBaseT device on one end, the protocol identifies that and falls back to regular Ethernet functionality.

**Micha Risling:** We call this Power Over HDBaseT (POH), the latest addition to the HDBaseT 1.0 specification as of September 2011.

**Micha Risling:** Couldn't agree more, Fred.

**Micha Risling:** These companies are the founding members of the HDBaseT Alliance but the Alliance actually has over 30 members.

**Micha Risling:** Actually, HDBaseT is perfect for installations greater than 100 meters. The technology can send the 5Play feature set over a single, 100 meter cable but can also support multi-hop networking.

Regarding cost, HDBaseT technology sent over a single LAN cable costs less than 10 cents per foot. The alternative? A traditional installation costs approximately \$13 per foot, not including the added cost of repeaters for solving distance limitations.