

Think More Thunk

ideas, instincts, and insights about emerging wireless technologies

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Don't Bet Against Ethernet

This is something that a technically savvy friend advised me during a somewhat freeform discussion of wireless technologies a few years back. For a technology first described in 1977, Ethernet has proved a successful and long-lived technology supporting a broad range of applications with a broad range of performance capabilities.

An Israel based startup Valens Semiconductor recently announced a technology called HDBaseT described as "an innovative PHY that defines a new digital connectivity positioned to be the next HDMI" that is claimed to deliver HDMI 1.3b level performance over standard CAT5e cables at distances up to 100 meters.

Why is this interesting? And more importantly, what is an analyst firm specializing on wireless technologies doing writing about this?

There exist an ever expanding number of approaches utilizing wireless technologies to distribute high quality audio and video content. All of these approaches enjoy varying degrees of technical maturity, and for particular use cases, varying degrees of applicability. WTRS covers many of these technologies as part of our report portfolio:

WTRS Wireless Connectivity Technology Trends Report (published July 2008)

WTRS UWB Emerging Technology Report (published September 2008)

WTRS Wireless Technology Trends Report (published August 2008)

One of the incumbent solutions that must be displaced for these wireless approaches to be successful is traditional cabled infrastructure. This includes HDMI compliant cables, switches and signal boosters. HDBaseT provides another option for wired point to point connectivity that has applicability across a wide range of applications particularly those identified by MOCA, HomePlug and IEEE 802.11n, but while those technologies fail to support uncompressed video HDBaseT can support uncompressed Full-HD resolutions of up to 1080P, 60Hz, 48 bps. HDBaseT also has the ability to support video throughput equal to the HDMI 10.2Gbps, it can send it over a single 100m Cat5e cable.

HDBaseT also expands on the number of available services by making provision for the simultaneous delivery of uncompressed high definition video (HDMI 1.3b equivalent) Audio, Standard 100BaseT Ethernet, Power over Ethernet and support for converged controls (RS232, IR, USB low speed).

The basic underlying technology is described in US Patent application US2008/0187028, "Method and apparatus for communicating different types of data over a same network" as "A method of transmitting a data stream over a communication channel, the method comprising: providing symbol sets having different numbers of symbols; modulating data in the data stream that warrant different degrees of protection against noise onto symbols from symbol sets having different numbers of symbols, wherein which symbol set given data in the stream is modulated onto is independent of symbol sets onto which other data in the data stream is modulated onto; and transmitting the symbols."

It is important to remember that this is a wired point to point technology. The addition of the capability to

switch signals will expand the architecture into areas similar to those familiar with networked media applications. In the near term we expect that this will see the most success in application areas without requirements to support mobility.

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