

Putting the HD in HDBaseT

So what is [HDBaseT](#)? It is a new technology that has many installers and Home Theater/DIY techies excited. HDBaseT will facilitate connecting consumer electronics equipment in the home/office in the manner that high end multimedia systems are connected. Thus it is optimized for whole-home and commercial multimedia distribution. It will connect all the entertainment devices in a setting through its 5Play™ feature set, converging uncompressed full HD digital video, audio, 100BaseT Ethernet, power over cable and various control signals through a single CAT5e/6 cable with RJ45 connectors (Up to 100m/328ft). 5Play™ makes it possible to cut the assortment of cables going to the device to a single cable.



What is HDBaseT's 5Play™ Feature set and what does it include?

Why should I care about 5Play™ you say? 5Play™ is an unrivaled feature-set that merges full uncompressed HD video, audio, 100BaseT Ethernet, power and various control signals through a single inexpensive CAT5e/6 LAN cable. The fact that 5Play™ does all of this, creating a network of your displays and sources, is what makes it so amazing. Imagine replacing a huge bundle of cables from the front of your media room to the back with a single Cat5e or Cat6 cable. You could even use [Flat CAT5e UTP cable](#) to hide that single line under carpet.

1) Full, Uncompressed HD Video

HDBaseT supports TV and PC video formats including standard, enhanced, high-definition and 3D video. It delivers Full HD/3D and 2K/4K uncompressed video to a network of devices or as a point-to-point connection. Uncompressed content supports all video sources, including legacy products, accurately renders gaming graphics and features such as electronic program guides, and does not degrade video quality or add latency.

2) Audio

Audio is a requirement for most consumer electronics devices and is passed through the same media as video. HDBaseT supports all standard formats including 7.1 channel Dolby TrueHD and DTS-HD Master Audio.

3) 100BaseT Ethernet

HDBaseT supports 100Mb Ethernet capabilities, enabling televisions, hi-fi equipment, computers and other devices to communicate with each other and access multimedia content, including video, pictures and music stored around the house or on the web.

4) Power Over HDBaseT (100W)

Sending power over the same [CAT5e](#) / [CAT6](#) cable gives people the option to forego plugging devices into the wall outlet for power, allowing greater mobility. HDBaseT can power remote TVs and other devices up to 100 watts, even devices not anywhere near a power outlet.

5) Various Control Signals

HDBaseT delivers different types of control signals for different purposes, starting from CEC, to RS232/USB and IR that operate remote equipment even when located in a different room.

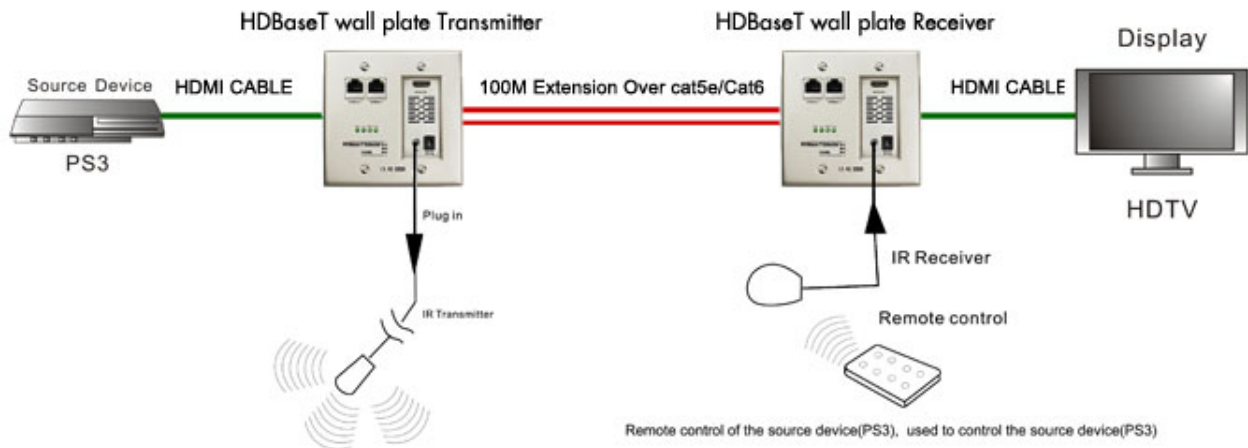


Diagram showing how to extend HDMI to 100M with HDBaseT wall plate transmitters and receivers.

Who and what industries will benefit from HDBaseT?

Consumer Whole Home Networking

The HDBaseT-enabled home networking experience allows the consumer to easily push content as desired from a central HDBaseT hub and reap the benefits of fewer cables, enhanced features and freedom from the electrical outlet, all with an inexpensive, long-reach LAN cable. An HDBaseT media hub can manage numerous HDBaseT enabled devices and seamlessly push the 5Play™ feature set from a chosen device to an HDBaseT enabled display anywhere in the home.

Digital Sign Manufacturers

Imagine an airport installation with multiple displays spread throughout the building. Although HDBaseT was developed as a point-to-point technology, it allows cascading and single point to multipoint distribution supporting both daisy chain and star topologies. Distribution flexibility, coupled with the unmatched 5Play™ feature set, positions HDBaseT as an ideal commercial connectivity technology for applications such as digital signage.

The Hospitality Industry

Whether connecting devices within a suite or accommodating a large conference within the hotel, the existing Ethernet infrastructure allows an HDBaseT network to be easily implemented. Using HDBaseT, professional installers can now network displays and devices (i.e. projectors) throughout hotel suites, lobbies and conference rooms to create a unified viewing experience for guests.

Healthcare IT Industry

HDBaseT healthcare uses include display installations in patient rooms, lobbies, waiting areas and more. HDBaseT can also link medical imaging devices such as CT and X-ray scanners to remote monitors, reducing a technician's exposure to radiation.

The Surveillance & Security Industries

Installation of multiple surveillance cameras spread throughout a large outdoor area usually requires very large distances and resistance to extreme environmental conditions. All camera and video intelligence resides at the server side and therefore is less costly and simpler to maintain.

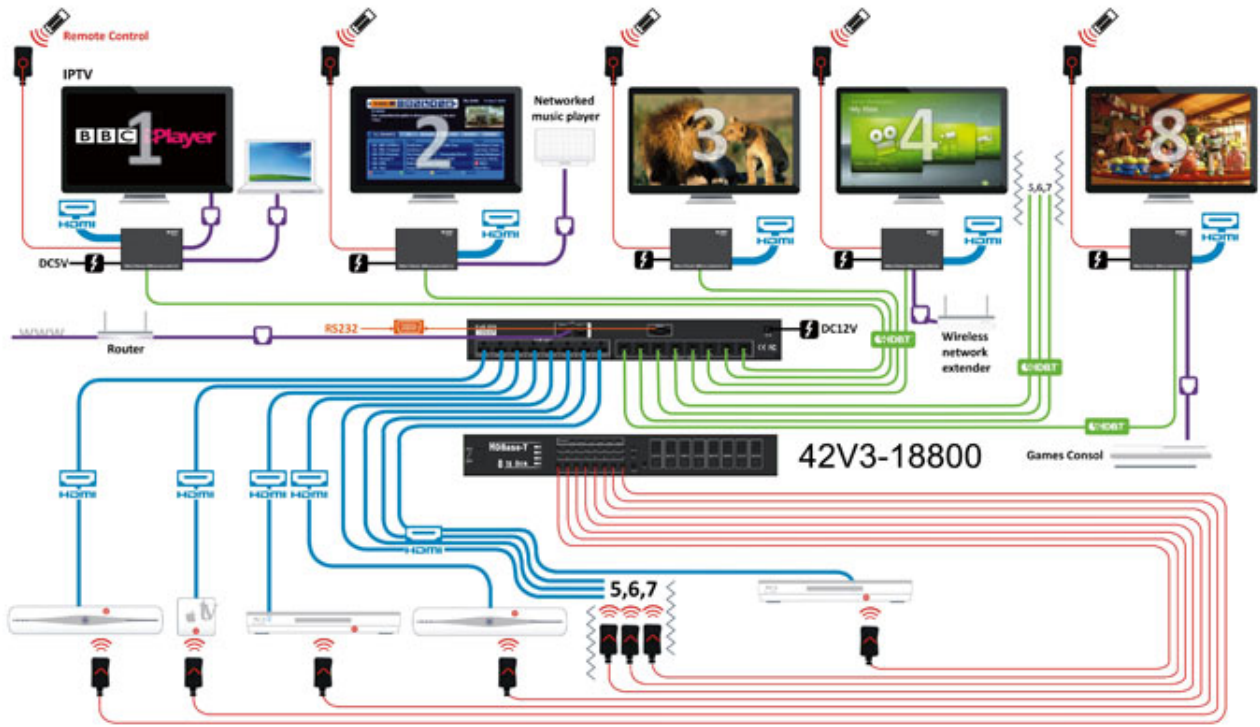


Diagram showing how to connect current non HDBaseT devices with HDBaseT transmitters and receivers.

Another benefit of HDBaseT is the reduced cabling cost and smaller cable footprint.

Long [HDMI cables](#) can be very expensive because of the heavy gauge wire required. Long [SVGA cables](#) can be hard to find, are subject to ghosting and are also expensive. If your building code requires plenum, the cost of HDMI and SVGA can go through the roof. Cat5e is very inexpensive; even if you are required by code to use plenum-grade wire, it's far less expensive than plenum versions of power cables, HDMI cables or VGA cables at the same or longer lengths. Also, because you are replacing 5 different cables with one Cat5e cable you need far less space to hide the cables. And for even more space savings you can use flat CAT5e or CAT6. At 1.87mm thick, you can hide these cables just about anywhere.




HDMI cable vs Flat Cat5E cable

So let's review... What makes HDBaseT better than what's currently on the market?

And how does it compare to existing HDMI, DiiVA and DisplayPort technologies?

HDBaseT represents a digital home networking alternative to standards such as HDMI, RF, Coax, Composite Video, S-Video, SCART, component video, D-Terminal, or VGA, presenting a feature set previously unavailable in the CE industry. HDBaseT connects and networks CE devices such as set-top boxes, DVD players, Blu-ray Disc players, personal computers (PCs), video game consoles and AV receivers to compatible digital audio devices, computer monitors, and digital televisions. HDBaseT supports all TV and PC video formats, including standard, enhanced, high-definition, and 3D video. It allows you to create a multimedia network of all of your home entertainment and consumer electronic devices. The cabling is inexpensive and takes up very little space. HDBaseT could mark the end of other HD transmit and receive technologies, especially when most homes are coming prewired with multiple Ethernet cable runs.

				
Criterion	HDMI (Hsw/Eth)	DiiVA	DisplayPort 1.2	HDBaseT 1.0
Uncompressed Video/Audio	10.2 Gbps	13.5 Gbps	21.6 Gbps (17G of actual data)	Up to 10.2Gbps HDBaseT is capable of scaling up to 20Gbps
Maximum Cable Length	Few Meters	26m	15m for 5Gbps (limited to 1080p, 24bit) 3m for 5G-21.6Gbps	Up to 100m Including the support of multi hops (8 x 100m)
Cable	HDMI Cable	A DiiVA Proprietary Cable	DisplayPortCable	Low cost standard Cat5e/6 LAN Cable
Connector	HDMI Connector	A DiiVA Proprietary Connector	DisplayPort Connector	Standard RJ-45 Connector
Charging power	No	5W	No	Up to 100W Can be used for powering remote TVs
Ethernet	100 Mbps	Gigabit	720Mbps	100 Mbps HDBaseT is capable of scaling up to Gigabit
Daisy Chain	No	Yes	Yes	Yes
Installation-friendly	No	No	No	Yes Use existing network wiring, field terminated connector.
USB	No	Yes	Yes	Yes
Networking	None	Daisy Chain and Star topologies	Daisy Chain and StarStar topologies	Extended-range Daisy Chain and Star topologies Entire home and in-room coverage as well as commercial and industrial installations.

Parts related to this article can be found with the following links:

[HDBaseT Products](#)

[CAT5e Network Cables](#)

[CAT6 Network Cables](#)

[HDMI High Speed Cables](#)

