HDBastT Transmitter   HDBastT Receiver

HDMI ——————————— CAT6 Cable ———————————

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VIDEO DISTRIBUTION

Video Distribution – (What is it? and Why is it required?)

Video distribution is the way we connect video signals from a source device eg: PC or Laptop Blu-ray player etc. To a display. Traditionally this was achieved with analogue signals over coaxial or multicore cabling. The introduction of digital video signals have resulted in additional challenges when the source equipment is not located in close proximately to the display.

HDMI is the predominate form of video connection used today, it was originally designed for domestic use and has some limitations in regards to the length of connecting cables and distribution and switching to multiple displays.

To overcome these limitations the HDMI signal is converted to another form that can be transmitted over CAT6 cabling.

There are two major forms of technology commonly used to extend, switch and control HDMI signals over longer distances, these are HDBaseT or Video over IP

Video over IP vs Video over HDBaseT

HDBaseT
This system has an HDMI to HDBaseT conversion transmitter located at each HDMI source device, the signal is then sent directly to an HDBaseT receiver, or in larger systems via an HDBaseT switcher and then on to an HdBaseT receiver located at each display.
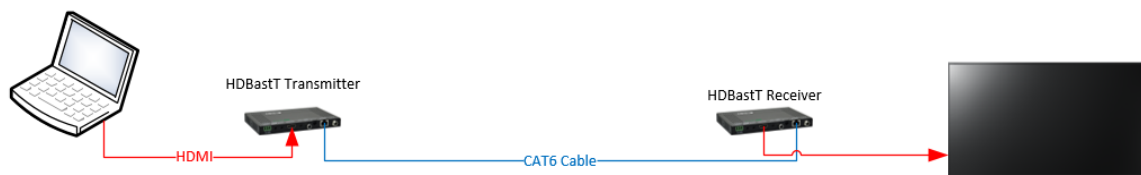
Pros
- Relatively inexpensive – especially for smaller systems
- Some display devices have HdBaseT receivers built in.
- HDBaseT can transport other digital signals such as LAN, IR, RS232 serial, USB, and Power. (device dependant)

Cons
- Requires very high standard of Shielded Cat6 cabling and connectors and installation.

- Switches are often provided with set amount of Inputs and output ports - therefore systems can become expensive to expand with additional inputs and outputs.
- Service delays can be experienced if HDBaseT central switch requires repair or replacement.
- Expensive for larger systems requiring multiple in and outputs.

Video over IP

An HDMI to IP conversion transmitter located at each source, with the signal connected to an IP managed network switch. An IP to HDMI receiver unit is then placed at the each display to convert the IP signal back to HDMI.
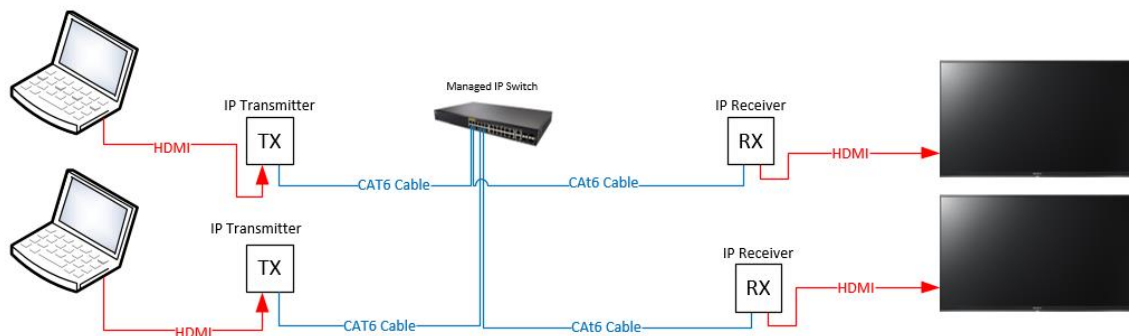
Pros

- Caters well for expansion – virtually unlimited.
- Cost Effective in larger systems with only the amount of transmission and receivers purchased to match project requirements.
- Very stable, in our experience less effected by power outages and voltage drops.
- Easier to handle breakdowns and repairs as distributed system with off the shelf network switches.
- Uses standard Cat6 network cabling and infrastructure.
- Can transport other digital signals such as, IR, RS232 serial, USB, Power. (device dependant)

Cons

- More expensive for smaller configurations.

What is an AV switcher or matrix? (And why may I need it?)

If you are simply connecting one source device to a single display an AV switcher is usually not required.

AV switchers provide a means to switch multiple sources to a single display. Without the inclusion of an AV switcher users would have to run multiple cables to the display or manually disconnect source devices from the display and reconnect the new source they wish to display each time this is required.
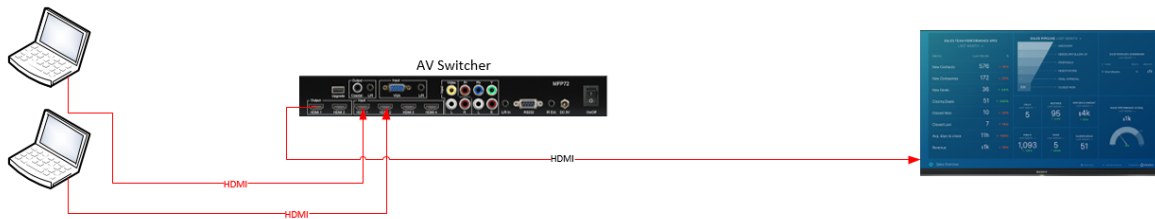
AV Switcher

Matrix switchers are often used in situations where two or more displays are required, allowing users to select any source to any display they wish to present. A common example is the requirement in a boardroom to view and compare two sources of content (two spreadsheets for example) on two separate displays.

OR
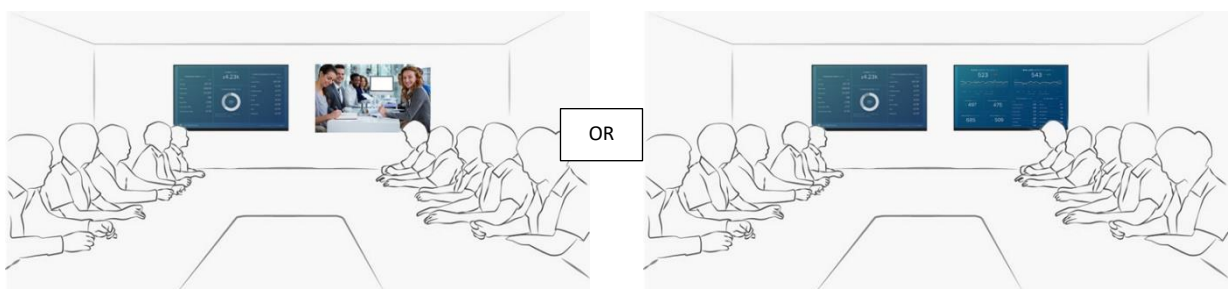
Many Video conferencing systems have facility to support two displays with content able to be displayed on one display and 'people' from the far side of the VC session on the other. This system however, usually requires an AV matrix switch to enable two individual sources of content on the separate displays.

AV Switchers often enable analogue audio to be broken away enabling connection to the room's audio system.

It is important to note that an AV switcher may also require some form of external control to simplify selection of source to display. *(See control system below)*

AV Control system? (What is it and why do I need it?)

An AV control system provides a simple way of controlling your AV system, it removes the necessity for confusing buttons, knobs or multiple remote controls that are often lost or broken, or found to have flat batteries.

AV control systems can come in many forms, this could be as simple as a small push button wall controller, through to a wall mounted or wireless control panel with a custom touch screen interface designed specifically for your facility.

AV control systems can often be programmed to control other devices within the room such as lighting and blinds, with a lot of the commonly required repetitive actions (dimming of lights, closing blinds etc) automated when using the AV system. AV systems can also be programmed to ensure the AV system is turned off after a period of non-use or at a set time to reduce power costs and wear on the AV equipment.