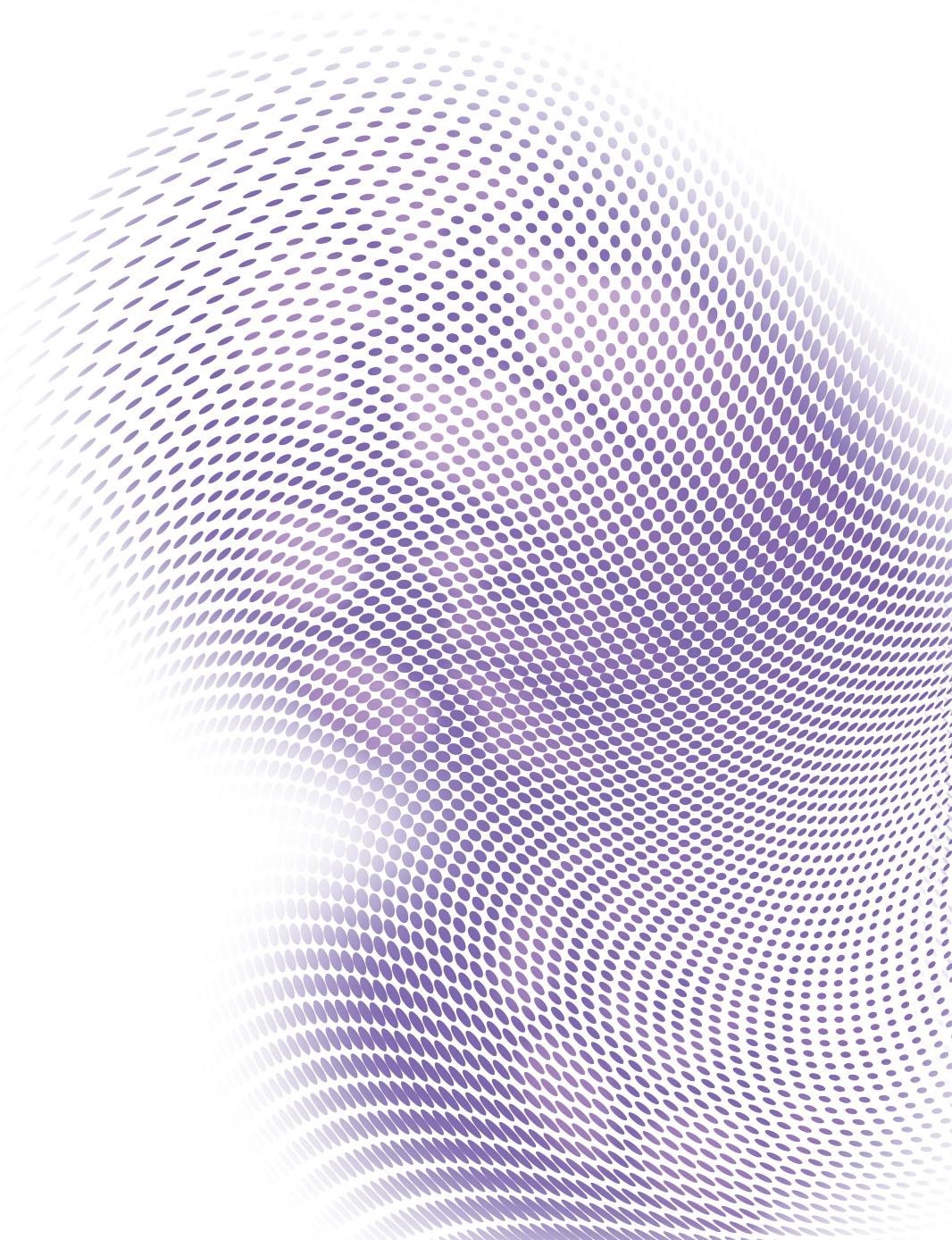




How to Select a Wireless Presentation System



For the last two decades, an effective conference or boardroom presentation system consisted of projectors that were connected to AV switchers, touch panels, and a lot of cables built in to the table. These systems costs typically start at \$10,000 plus custom programming.

Today's new HDMI wireless presentation systems offer far more flexibility and ease of use – at a fraction of the cost of a traditional wired system. But how do you pick the best one for your needs? There are three major types of wireless presentation systems available today:

- 1) **Hardware Based Solutions** – that use a physical connection to your notebook
- 2) **WiFi Network Hub Solutions** – that use the company WiFi network to connect your notebook
- 3) **TV Based Wireless Transmitters** – single unit HDMI transmitter / receivers typically for consumer use

We will take a look at the three types of presentations solutions to look at the pros and cons of each system and what the tradeoffs are based on your usage models. The key factors we will look at will be:

- 1) How easy they are to use, especially for visitors?
- 2) How much do they cost and how much IT support is needed to setup and manage?
- 3) How do these systems secure your presentation content from hackers and unauthorized viewing?

Hardware Based Solutions

These systems use physical button transmitter that connects to a visitor's laptop and wirelessly transmits the HDMI signal to a receiver located near the projector or flat panel. To switch presenters, the new presenter simply presses their button and the screen switches to their notebook or device. These systems also have a major security advantages of these over generic systems since the wireless signal is encrypted to keep hackers and sniffers from viewing the signal on an unauthorized receiver.

From a setup perspective, they are IT-friendly and easy to install, since the receivers setup their own hidden wireless network and don't require any special IT support for basic functionality. They have capability to be managed over an enterprise network, and the self-contained hardware design eliminates many of the bandwidth issues found on wireless only solutions.

The two most popular solutions using this approach are the BenQ InstaShow and Barco ClickShare. Both will work with nearly any HDMI source – including new laptops with USB-C – and can support between 8-16 sources on their entry level models. The BenQ's unique feature is that it does not require any special software or app to work, enabling meeting room visitors to use to quickly connect to the system.



Figure 1 – *InstaShow WDC-10 Wireless Presentation System comes with two Transmitters and tabletop holder*

WiFi Network Hub Based Solutions

These solutions utilize the company network to enable laptops and other devices to share a screen. The system uses a receiver hub that is connected to the corporate network, similar to the receivers used in the hardware approach used by Barco and BenQ, but relies on specialized software apps to capture and transmit the signal to the correct screen over the enterprise WiFi network.

For a visitor to use a system, they will need to 1) install the manufacturer's display application software onto their notebook or device, and 2) log onto the correct enterprise network to access the receiver, and 3) pick the correct display receiver. Some devices have special passcodes to ensure that the correct screen is connected – which avoids confidential information such as HR data or sensitive financial information being routed to the wrong screen.

The primary advantage of this approach is that it eliminates the button transmitters used in the hardware based solution. In most cases the cost of the receivers and software is similar to the hardware solutions above, and the signals between the laptop and display are properly encrypted to ensure that a network snooper cannot view the presentation over the network.

There are two primary disadvantages of the WiFi network hub based solution. First, the system typically requires a proprietary app be loaded onto the laptop, which can be a major problem when a visitor does not have the rights – or is concerned that the software could contain malware or other hidden codes. Many companies “lock down” their notebooks from third party software to remove the threat of malware. This could delay a meeting – or cause the system to be unusable to a visitor.

The second disadvantage is that these devices need to be installed and managed by the IT staff. Typically, the visitor's notebook used for presenting must be logged on to the same network as the presentation receiver hub. Since meeting rooms represent the most exposure to external threats, these might be setup on different VLAN networks, which would require a more complicated setup and security protection from the IT department, including specific port usage. In addition, the bandwidth requirement to manage video and other rich content could require changing network priorities or settings.

There are many vendors that offer this type of system, including Crestron, Huddle, Airtame, and Mersive.



Figure 2 – HRT Huddle Hub One

TV Based Wireless HDMI Transmitters / Receivers

The third type of wireless HDMI solution is designed for consumers to share video content from a source such as a game console to a television and eliminate the need for a HDMI cable. These systems have the advantage of being less expensive than the other solutions and easy to setup. Most systems use a single transmitter that attaches to the HDMI port on a computer, with power coming from the USB port or DC power source. The receiver is attached to the display and configured with a remote.

The major disadvantage of these systems is that they do not provide any encryption or other security protection to protect the information sent from the transmitter to be received by an unauthorized third party. While this is not a major concern in a home environment transmitting a movie to a projector, it is a significant risk in a corporate or engineering environment where company information could be stolen.

The second disadvantage is that only one transmitter is linked to the receiver, making it difficult for multiple presenters to share their screens in a collaborative manner. This solution is best suited for a consumer application to overcome cabling issues or applications where there is no data confidentiality concern (such as a small house of worship).



Figure 3 – StarTech HDMI System

There are a number of vendors that offer these solutions including Nyrius, IoGear, and StarTech.

Here is a summary of the three different types of wireless presentation systems. Because Amazon reviews are commonly used as a buyer research tool, we provided a rough average of what their reviews were based on April 2019 ratings. These reviews will change over time, and are provided only as a general guideline for the more popular units in their category.

Key Decision Point	Hardware Based e.g., BenQ InstaShow	Network Based e.g., HRT Huddle Hub	TV Based e.g., StarTech Wireless HDMI
• Usage model	• Push button • Present	• Load manufacturer app • Login to network • Select screen • Present	• Attach transmitter • Change source on TV • Present
Number of Presenters	8-16 per receiver	No specific limit	One unit per receiver
Wireless Security	Highly Secure Encryption	Highly Secure Encryption	Unsecure – no encryption
Network Requirements	Not needed – optional network monitoring	IT setup and security recommended	No networking capability
Typical Amazon Rating (April 2019)	4 - 5 Stars	3 - 3.5 Stars	3 - 3.5 Stars
Approximate Cost	~\$1000	~\$400 - \$1200	~\$300