

HDMI GOES WIRELESS

It's taken years longer than expected for wireless HDMI systems to appear. Prices are now relatively affordable — but do they work?



**Belkin
ScreenCast AV 4**
Price: \$299.95

**Pro.2
WHDMI2
Wireless HDMI AV Sender Kit**
Price: \$249

Getting HDMI video from here to there can become somewhat of an expensive and difficult proposition when your 'here' and 'there' are a significant distance apart. Reliability for HDMI cable runs typically top out at 10 to 15 metres. Even if your AV projector, say, is only five or six metres from your equipment, you may still need a 10-metre cable to run up a wall and through the ceiling. And many 10-metre HDMI cables are very expensive indeed.

Which makes wireless HDMI an attractive proposition. If it works. If it isn't too expensive.

EQUIPMENT

Now something strange has happened with this quest. Two or three years ago, a couple of

the major TV manufacturers had their own ways of doing this. Their systems were short in range, somewhat flaky in operation, and were limited in bandwidth (at least one of them could manage no better than 1080i).

The state of physics hasn't changed materially since then, yet now there are at least two effective systems, both of which are capable of full 1080p content and reliable connections. One is called WirelessHD, which is most prominently seen in Epson's AV projectors (see last issue), although there are plenty of other companies behind its consortium of supporters. WirelessHD works in the extremely high frequency radio band of 60GHz, and has a range of up to ten metres.

But both of the two products we're looking at here use a competing technology, called the Wireless Home Digital Interface (WHDI). This uses radio spectrum in the 5GHz band — an area used by a number of other devices. It still supports full high definition video, and the latest specification includes support for video up to full HD in 3D format. The Belkin ScreenCast AV 4 offers that. The other unit, the Pro.2 WHDMI2 doesn't, although it does support full 1080p/50 and 1080p/60, which actually require a higher bit-rate than 3D at 24 frames per second.

To be clear, the video carried by HDMI is uncompressed, so if the connection is solid, there should be no loss of picture quality at all.

Audio support is up to 6Mbps for the Pro.2 unit, so the company says, while the Belkin unit claims full 5.1-channel audio support.

These figures for audio aren't particularly important, because you're likely to be using these units in one of two situations. Either it will be from your AV receiver to a TV or projector, in which case the wireless connection is only required for video. Or it might be from, say, a Blu-ray player directly to a TV, in which case two-channel PCM or multichannel Dolby Digital/DTS support is all that is needed.

In both products, the system comprises two parts — a transmitter, which you plug into the signal source, and a receiver, which you plug into your display device. Your source delivers an HDMI signal to the transmitter, which sends it via RF to the receiver, which converts it back to HDMI. Several communication channels are provided in that 5GHz range to avoid clashes and congestion.

A small remote control is also provided with each system. The Belkin system has just three keys, and you interact with it entirely by means of an on-screen menu. The Pro.2 system has some extra keys so that you can select source and channel directly with the remote control.

The transmitter for the Belkin system has four HDMI inputs, while that for the Pro.2 system only has two. But unlike the Belkin,

the Pro.2 has an HDMI passthrough output. If you have an AV projector but also a TV for everyday use, this passthrough would be very useful for the TV.

The remote in both cases operates with the receiver unit, since that is the part connected to the television, which can produce an on-screen response.

Both units also include an extra very useful function. They act as remote control repeaters. You point your normal remote control (Blu-ray, receiver, whatever) at the receiving unit, and it will send the command to the transmitter. Both systems come with IR blasters that plug into the transmitter, the Belkin one having four IR blaster heads, the Pro.2 unit three. Position these artfully, and you can then have full remote control over equipment that you have tucked away in an optically opaque cabinet. The Pro.2 unit also has a plug-in extender to receive IR from your remote, so you can tuck its normal receiver out of view as well, and just have the small head of the extender in line of sight.

With both systems, these repeaters worked beautifully with all my remotes.

Belkin's website has a couple of minor inaccuracies for its unit. The user manual, for example, is printed rather than on CD. More importantly, the included HDMI cable is 1.2 metres, not three metres.

PERFORMANCE

What can you write about a device that is, effectively, a digital cable? Well, basically, that it — they, rather — worked for the most part pretty much as they should. As we'll get to shortly, this depended on the equipment employed. But with fully compatible equipment, things weren't much more difficult than simply plugging in a HDMI

cable. Yes, you need to provide an additional power point at each end for the two units' two compact power supplies. And on first switch on, you need to be patient for a minute or two while the units flash their indicator lights as they find each other and lock in their signals. Then that's pretty much it.

I stretched the distance as far as I could within the dimensional constraints of my office. The eight-metre range this yielded didn't prevent perfect performance from both units. There was nothing to pick between them on this front.

The Belkin unit did indeed fully support 3D. The Pro.2 unit apparently informed the Blu-ray player that 2D was the extent of its capabilities, so that's what the Blu-ray player delivered. I am a little puzzled by this, since the connection clearly has bandwidth sufficient to handle the frame-packed format of Blu-ray 3D (it's equivalent to 1080p/48, and the system was happy with both 1080p/50 and 1080p/60). The front of the Pro.2 unit's box said 'Passed HDMI 1.4 Compliance Test'.

Both supported 1080p/60, 1080p/50 and 1080p/24 signals.

But it may be a problem for some systems that neither brand supports either 480i/60 or 576i/50, the latter a common broadcast resolution for digital TV in Australia. That means your PVR (or receiver) would have to at least deinterlace before outputting; we often prefer to select auto output resolution and employ the higher quality deinterlacer in a projector or TV. You won't be able to do that using either of these systems.

Neither unit supports the Audio Return Channel (ARC), the capability which came in with HDMI version 1.4 to allow a TV tuned to a TV station to send the sound back down the HDMI cable to the connected AV receiver,

which then produces the sound. But both do support the CEC component of HDMI — Consumer Electronics Control — in which a TV can talk to connected equipment and thereby control it.

That can lead to some confusing behaviour. At one point I got kind of stuck, with CEC switching the receiver to a non-existent HDMI audio signal from the TV. So just take a moment to think things through. If you like using CEC, but your TV and AV receiver are recent enough to implement ARC, then find the settings in your AV receiver and TV to switch this part of it off. (ARC depends on CEC.)

A completely certain way of making sure that you don't have any problems there is just to make sure you don't use the single ARC-enabled HDMI input on the TV, but one of the others.

Now we do have to report that there were some equipment compatibility issues with the Pro.2 unit. On my normal AV receiver it simply would not establish a reliable

"with fully compatible equipment, things weren't much more difficult than simply plugging in a HDMI cable..."



VERDICT

Belkin ScreenCast AV 4

Price: \$299.95

- Effective replacement for HDMI cable
- Four HDMI inputs
- Useful IR extender function
- No support for 480i/60 or 576i/50
- No ARC

SIGNAL SUPPORT: HDMI up to full 3D and 5.1 audio

RANGE: Up to 30 metres line of sight, shorter through solid objects

INPUTS: 4 x HDMI

OUTPUTS: 1 x HDMI, 4 x IR blaster

ACCESSORIES: Remote control, IR blaster cable, 1 x 1.2 metre HDMI cable, fitting screws, USB cable

TRANSMITTER DIMENSIONS (whd):

234 x 36mm x 145mm

TRANSMITTER WEIGHT: 320g

RECEIVER DIMENSIONS (whd):

172 x 36 x 130mm

RECEIVER WEIGHT: 215g

WARRANTY: 'Lifetime'

CONTACT: Belkin Limited

TEL: 02 4350 4600

WEB: www.belkin.com/au

VERDICT

Pro.2 WHDMI2 Wireless HDMI AV Sender Kit

Price: \$249

- Effective replacement for HDMI cable
- IR receiver extender
- Useful IR extender function

- No Blu-ray 3D signal support
- No support for 480i/60 or 576i/50
- No ARC

SIGNAL SUPPORT: HDMI up to full HD and 5.1 audio

RANGE: Up to 20 metres line of sight, shorter through solid objects

INPUTS: 2 x HDMI, 1 x IR receiver

OUTPUTS: 1 x HDMI, 3 x IR blaster

ACCESSORIES: Remote control, IR receiver cable, IR blaster cable, 1 x 1.2 metre HDMI cable, fitting screws, USB cable

TRANSMITTER DIMENSIONS (whd):

196 x 34 x 135mm

TRANSMITTER WEIGHT: 297g

RECEIVER DIMENSIONS (whd):

196 x 34 x 135mm

RECEIVER WEIGHT: 278g

WARRANTY: 12 months

CONTACT: Pro.2

TEL: 1800 337 366

WEB: www.pro2.com.au

connection, even though the distance between receiver and sender was only a little over three metres. Its blinking lights would eventually stabilise on both units at once and then a picture would appear on the screen, but after about 20 seconds it would disappear again. It would go away even sooner if the picture resolution changed at the source. Sometimes it would take five or more minutes to reconnect.

But once switched to a direct connection from two different Blu-ray players, and then to a different AV receiver, the function was restored with a totally solid connection and fast resolution changes.

As to what exactly was happening with the problematic receiver, well it's hard to say. But my guess is that most of the trouble was a kind of ricocheting between multiple instances of HDMI handshaking down the chain. This somehow provoked the Pro.2 to seek a new connection on a different wireless channel. Anyway, the lesson is that reliable

performance — even today after several years of widespread HDMI adoption — cannot always be guaranteed. I'd suggest that with both units you obtain an assurance from the retailer that you can return the unit if it proves incompatible with your current equipment.

CONCLUSION

If you have a choice, I'd suggest you stick with real physical wire for your display connections. Not that it provides a better picture, but you can be confident it is highly compatible with, basically, everything. And if you like ARC from a TV, well, wire it has to be.

But if you do need to get a signal to a projector and can't get a cable into place, or perhaps if you would find the remote repeater function especially useful, then both of these units will do the job very nicely indeed. Most likely. Depending on your equipment. Just get a promise from your retailer that you can return the system. Chances are you will be happy. *Stephen Dawson* +

NOW AVAILABLE ON ZINIO
for iPad, Android & PC/Mac

TOUCH US PINCH US

WE'VE ALL GONE DIGITAL

- ★ SOUND+IMAGE
- ★ AUSTRALIAN HI-FI
- ★ GEARE
- ★ CAMERA
- ★ PRO PHOTO
- ★ AUSTRALIAN INCAR
ENTERTAINMENT



Find the special three-issue
ZINIO SUBSCRIPTION RATES
at AVHub.com.au and
www.zinio.com/soundandimage

