

Belkin Gigabit Powerline HD Starter Kit

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BOTTOM LINE:

The Belkin Powerline HD adapter is the fastest powerline device we have ever tested.

PROS:

Plug into outlet for an instant, incredibly-fast network connection. Dead-simple push-button security connection.

CONS:

Bulky case. Consumes power even when network cables are not connected.

COMPANY:

Belkin Corporation

EDITOR RATING: ●●●●○

By [Mario Morejon](#)

How do you turn the electrical wiring in your office into a top notch network? Buy the Belkin Gigabit Powerline [HD](#) Starter Kit (model F5D4076-S). Within seconds of plugging the adapters into outlets, you have a high-speed network connection running at almost half a gigabit per second, which is astounding for real-world speed. Plus, it's less expensive than running cables through the walls, more reliable than Wi-Fi at long distances, and easy to secure. The adapter retails for the very reasonable price of \$149.99 (direct).

Design and Setup

Each [Belkin](#) Gigabit Powerline HD adapter is glossy black and has three blue LED lights. Despite all the attention Belkin placed on this product, it failed to shrink the electronics: each case measures around 4.5 x 3.25 x 1.6 inches. Once connected to a typical dual outlet in a home, you typically can't use the spare plug. You don't want to plug powerline adapters into a powerstrip, it kills the performance.

Like most power line adapters, each Belkin HD has one port, so at both ends you can connect it to one Ethernet device, typically the router at one end and a switch or Ethernet devices at the other. There's nothing to configure through [software](#). By looking at the three lights, you can tell if you are connected to your network and if there's power to the unit.

The third light indicates use of network encryption, which you activate with a push button on top of the adapter. Once pushed for a period of half a second to three seconds, the security button leaves the power line network opened for two minutes. During this time the encryption key is available to other Belkin HD adapters; press the button on second, third, or even fourth adapter to add them to the secure network. (The Netgear Powerline AV Ethernet Adapter Kit (XAVB101) is secured the same way; older powerline adapters were needlessly complicated, with security configured via software after hooking directly to a [computer](#).)

Belkin HD adapters support government-grade 128-bit AES link encryption. You'll want it if you live in an old apartment building or rent office space and the power breakers are shared with tenants. You can turn it off with a press of the recessed reset button.

The Belkin HD is powered by a special chip from Gigle Semiconductor, and the only one, for now. However, they support the HomePlug AV protocol and should work with adapters from others vendors, but not at Gigabit speed. But our tests with Belkin HD and an adapter from Linksys that also supports HomePlug was highly unstable, at best.—Next: PERFORMANCE

Performance

I tested the Belkin power line using [Ixiacom's IxChariot](#) with a PC on one end and [laptop](#) on the other. IxChariot flooded the network with data with two downstream and two upstream network connections. I plugged all devices on my network into a Gigabit Ethernet switch, so I had plenty of bandwidth.

One gigabit per second (1000 Mbps) is the data rate one would get with no network overhead; I expected about a third of that in real world use. I was flabbergasted with the results. On the same circuit on the same floor about 20 feet away, IxChariot produced 560 Mbps. The Netgear Powerline AV can only clock in at 96 Mbps (but in fairness, the Netgear makes no claim at being a Gigabit adapter). As I moved the Belkin adapters around, IxChariot's results averaged around 410 Mbps. Connected to a power strip, as expected, throughput was lower number (below 80 Mbps).

During use, the Gigabit adapters run hot. The adapters clearly consume power at all times, even when the Ethernet cables were disconnected. Luckily, they did not get as hot as previous adapters I have tested, so I don't expect performance to drop throughout the life of the device as can happen with too much heat.

Bottom Line

The Belkin Gigabit HD is the fastest powerline adapter that we have tested. Belkin made it drop dead simple to install and use it, and nice looking, albeit on the bulky side. If you are looking for a powerline device that can stream HD video and much more, this is it.

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