

# HomePlug Ethernet

Having trouble with your home network? You can use the power lines in your house to make things run a little smoother







In theory, it's extremely easy to share an internet connection around your home or office. Simply connect a wireless router to your ADSL or cable modem, and anyone near the router can use a wired Ethernet connection, while laptop users can connect to the wireless signal. The snag is, there are a number of scenarios where this approach won't work.

While you'll have very little trouble flooding an open plan office with a wireless signal, as there are very few obstructions, it's a different story if you have solid walls between the router and the client laptop, as the wireless signal will be degraded. That's bad enough if you require a simple network or internet connection, but it's disastrous if you want to stream High Definition media around your home.

One answer is to install Ethernet cabling throughout your house, but a simpler method is to use cabling that's already in place in every property in the land. We're talking about the mains power electrical wiring and HomePlug hardware makes it easy to make a network connection with the minimum of hassle.

Reviews: Leo Waldo

	<b>DEVOLO</b> 200AV <b>£130</b> (inc. VAT)	Slick and elegant, these are simply the best looking adapters on test
	<b>D-LINK</b> DHP-301 <b>£87</b> (inc. VAT)	Offering ease-of-use and a great price, these are a great all-round package
	<b>LINKSYS</b> PLK200-UK <b>£113</b> (inc. VAT)	They may be for consumers but they come across a little too techy for the home
	<b>SLINGLINK</b> Turbo 1-port <b>£60</b> (inc. VAT)	Designed to work with media streamers, this has a novel design approach
	<b>SOLWISE</b> HomePlug <b>£100</b> (inc. VAT)	They stick out from the wall but these plugs are slim, so won't block the powerbrick

HOME PLUG ETHERNET

## WHAT LAPTOP

SUPPLIER	WWW.DEVOLO.COM
ETHERNET TECHNOLOGY	10/100 BASE-TX
HOMEPLUG STANDARD	HOMEPLUG AV
POWERLINE FREQUENCY	OFDM, QPSK, BPSK 1024/256/64-QAM
MAXIMUM POWERLINE DATA RATE	200MBPS
MAXIMUM ETHERNET DATA RATE	10/100MBPS
SECURITY	128-BIT AES ENCRYPTION
SYSTEM REQUIREMENTS	WINDOWS XP/VISTA
DIMENSIONS	63 X 78 X 57MM
WEIGHT PER ADAPTER	148G

**RATING** **8**



## DEVOLO 200AV Easy Starter Kit

► **PRICE £130** (inc. VAT) ► **PRICE CHECK:** [www.techradar.com/247072](http://www.techradar.com/247072)

The new Devolo 200AV Easy Starter Kit consists of two dLAN 200AV Easy adapters. At present we only have a guide price of £130 (inc. VAT) which may well have dropped by the time you read this review. It got off to a good start as the two Ethernet cables in the package measure some two metres in length which is considerably better than the other manufacturers. Then there's the look and feel, which is smart and shiny with a retro look that is straight out of Poirot.

Plug the adapters in and hook up the Ethernet cables and you're rewarded with a network connection within seconds. There are three green illuminated symbols on the front of the unit to indicate power, power line and network connections are present and correct.

Software is an extra instead of a necessity and consists of three utilities. The dLAN configuration wizard allows you to assign a password based on the

security ID which is printed on a sticker on the base of each unit.

The second piece of software is Devolo Informer that advises you of the MAC addresses and firmware versions of the adapters on the network. The software is concise and spells out which adapter is local and which is connected via the power supply grid. The third utility is Devolo Easyshare, which assists in sharing folders and files across your network.

The CD-ROM also offers a firmware update to version 2.0, which is the same version on the review units but it could be handy if you end up adding more adapters to an existing network.

We were hugely impressed by the Devolo kit and would choose it over the other contenders if money were no object, but of course that's not the case. As things stand, the Devolo 200AV Easy Starter Kit is excellent but needs to drop below £100 to be a winner. **WHAT LAPTOP**

## D-LINK DHP-301 PowerLine HD

► **PRICE £87** (inc. VAT) ► **PRICE CHECK:** [www.techradar.com/31617](http://www.techradar.com/31617)

D-Link takes the plug-in air freshener approach with its DHP-301 PowerLine HD Ethernet Starter Kit. The adapters are moulded from matt white plastic with a black ring that makes the adapter resemble a heating thermostat or security timer. In fact, the ring is cosmetic and carries three low-key green LEDs to indicate the usual Power, Power Line and Ethernet connections.

Although it's easy to link up the DHP-301 adapters there's no escaping that D-Link approaches the system from the stance of a networking company. The quick start guide is a dauntingly thick book that covers 15 languages and you cannot avoid a sigh of relief when you realise that only 12 pages are in English.

As with so much networking kit you start by running the D-Link utility to configure the units to enable encryption painlessly and automatically. Although the system requirements refer to Windows XP and 2000 the software ran on our Windows Vista laptop without any problem.

The other piece of software on the CD-ROM is WinPcap 3.1 which is used for link-layer network access. This is exactly the sort of thing the home user doesn't want to see and while we're complaining we feel that D-Link could also do with some work on the presentation of its software.

The D-Link utility refers to the adapters as nodes so the router end of the link is the 'ETH connected node' and the laptop at the other end of the power line is the 'PLC connected node'. That may be clear to a networking technician but it's hardly the sort of thing your granny will be happy about. The point here is that the D-Link hardware is called a PowerLine HD Ethernet Starter Kit so it is clearly intended for use at home rather than the office so we should be able to expect some help from the manufacturer.

Having said that, the D-Link kit still manages to work very effectively. On top of that, it also looks inconspicuous and is very cheap, and that's more than enough to make it a winner. **WHAT LAPTOP**

## WHAT LAPTOP

SUPPLIER	WWW.D-LINK.CO.UK
ETHERNET TECHNOLOGY	10/100 BASE-TX
HOMEPLUG STANDARD	HOMEPLUG AV
POWERLINE FREQUENCY	OFDM SYMBOL MODULATION
MAXIMUM POWERLINE DATA RATE	200MBPS
MAXIMUM ETHERNET DATA RATE	10/100MBPS
SECURITY	MIXED DES/3DES ENCRYPTION
SYSTEM REQUIREMENTS	WINDOWS 2000/XP
DIMENSIONS	72 X 102 X 42MM
WEIGHT PER ADAPTER	172G

**RATING** **9**

**WHAT LAPTOP**  
**GOLD**



## WHAT LAPTOP

SUPPLIER	WWW.MEDIAATLANTIC.COM
ETHERNET TECHNOLOGY	10/100 BASE-TX
HOMEPLUG STANDARD	HOMEPLUG AV
POWERLINE FREQUENCY	NOT GIVEN
MAXIMUM POWERLINE DATA RATE	200MBPS
MAXIMUM ETHERNET DATA RATE	10/100MBPS
SECURITY	128-BIT AES ENCRYPTION
SYSTEM REQUIREMENTS	WINDOWS 2000/XP
DIMENSIONS	71 X 102 X 42MM
WEIGHT PER ADAPTER	136G

RATING

7



## LINKSYS PLK200-UK

▶ PRICE £113 (inc. VAT) ▶ PRICE CHECK: [www.techradar.com/247259](http://www.techradar.com/247259)

Linksys told us it was unable to supply its PLK200 kit for this group test so we called Media Atlantic and received a box by return of post.

The appearance of the PLK200-UK system indicates that it is manufactured by a networking company rather than a consumer electronics company such as, say, Apple or Sony. The adapters are painted in a bright silver finish that would look a bit tacky on a router and simply looks out of place in your living room. The other snag is the HomePlug adapters are very wide at 71mm and risk blocking adjacent power sockets.

The Ethernet ports on the two adapters are covered by stickers that warn you to 'Run CD first before connecting the cables.' As it happens you can rush ahead and plug the system together but you're best advised to do things the Linksys way if you want to change the password for the 128-bit AES encryption. Provided

you're using the PLK200-UK at home and are confident no outsiders have access to your cabling then you may be perfectly happy with the default settings.

Once the configuration utility is installed it appears in the Control Panel as 'PLE200' without any mention of the Linksys name so you may overlook it if you uninstall the hardware at a later date.

There are three blue activity LEDs on each unit for Power as well as Power Line and Ethernet connections. They are located on the corner of the unit so you can see them from both the front and from one side. It's possible that the blue-on-silver colour scheme appeals to you but it seems more at home in a teenagers bedroom and isn't really the sort of thing you want in your living room.

The connection speed and the function of the Linksys units is perfectly acceptable but the styling and high price greatly reduce their appeal.

WHAT LAPTOP

## Why isn't wireless always the right answer?

A decent wireless connection will solve many problems, but it's not the answer to all of your prayers. You may be perfectly happy sharing your broadband connection around the home or office with an 802.11b Wi-Fi router until the situation changes. Perhaps your neighbours have also started to use Wi-Fi and it spills over and causes interference, or maybe you have increased the speed of your internet connection and find your wireless network is the weak link in the chain? Possibly you have been successful getting a wireless link between your router and the living room but now you need to extend the network to your kids' bedrooms. Or you may live in a traditional home with solid walls that defeats any wireless signal from making the jump from one room to the next.

You might find success by upgrading your router and adapters from 802.11b to 802.11g or G+ or to

one of the unratified 802.11n standards. This approach splices together a number of wireless channels to increase speed and penetration but it's far from certain that it will work.

We can adopt a sure-fire method of success from Germany where many houses receive their utilities in the basement including the phone connections. You're unlikely to be able to send a wireless signal from a router that is located in a concrete basement so the Germans have gone for Ethernet-over-power in a big way. It's a bit like the Maginot Line; why blast your way through an obstacle when you can elegantly slip around the side with the minimum of hassle and expense?

Connect a HomePlug adapter to a socket near your router and a second adapter near your laptop, plug in two short Ethernet cables and you are guaranteed to get a stable, reliable network connection.



HOME PLUG ETHERNET

Wireless LAN is ideal for most occasions but it won't work through thick walls or at a distance

## WHAT LAPTOP

SUPPLIER	UK.SLINGMEDIA.COM/HOMEPLUG
ETHERNET TECHNOLOGY	10/100 BASE-TX
HOMEPLUG STANDARD	HOMEPLUG 1.0
POWERLINE FREQUENCY	NOT GIVEN
MAXIMUM POWERLINE DATA RATE	85MBPS
MAXIMUM ETHERNET DATA RATE	85MBPS
SECURITY	56-BIT DES ENCRYPTION
SYSTEM REQUIREMENTS	WINDOWS XP SP2
DIMENSIONS	172 X 25 X 82MM
WEIGHT PER ADAPTER	130G

RATING

7

## SLINGLINK Turbo 1-port

▶ PRICE £60 (inc. VAT) ▶ PRICE CHECK: [www.techradar.com/247302](http://www.techradar.com/247302)

Sling Media sells its SlingLink Turbo system as an accessory to its media streaming units. The visual difference is the design, which is angled at each end with a slotted base that can be used as a stand or mounted on a wall or other surface. Unlike the other HomePlug units, the SlingLink boxes don't sit directly over the mains wall socket but instead use a separate power cord.

There are two models; a 1-port model and a 4-port model. We had the 1-port to review which made connection simple and is the most convenient for most homes.

Each unit has both a mains power and Ethernet connection but for some reason Sling Media only provides one Ethernet cable in the box. The quick start guide is the briefest document we have seen in some time and boils down to 'Once you've plugged in the cables you've got a network connection.'

You don't get any software so there are no minimum system requirements but if you want to download and install the SlingLink Utility v1.1 from Sling Media's website to add security features then you need to be running Windows XP SP2. The software doesn't work on Mac or Linux and while it installed on our Vista laptop it failed to find the Sling Link hardware.

Sling Media was cautious about joining this group test because the SlingLink uses the slower HomePlug 1.0 Turbo standard instead of HomePlug AV. The slower speed isn't a problem but as the SlingLink is only a little cheaper than the D-Link DHP-301, making it hard to recommend. **WHAT LAPTOP**



## HomePlug

Sending a data signal down your mains cabling may sound like witchcraft as you imagine electricity flowing like water through a pipe with your data magically finding its way to the correct tap. We can thank the HomePlug trade group for sorting out the standards that make the feat possible, starting with HomePlug 1.0 in 2001 which has a maximum theoretical speed of 14Mb/second. In the real world you can expect to get 7.5MB/second which is faster than 802.11b wireless LAN.

HomePlug 1.0 was trumped – just – by 802.11g, which can typically manage a true 15Mb/second so the HomePlug industry came back with the unofficial 1.0 Turbo standard with a headline speed of 85Mb/second. This is the technology used by the SlingLink Turbo in this group. Turbo manages a true speed of 25MB/second which is a step forward, but

it's not up to the demands of the modern digital lifestyle that we all apparently lead. That boils down to streaming High Definition video around the home and using a VoIP connection anywhere you want it which is possible with the HomePlug AV standard. This was finalised in 2005 with a theoretical maximum speed of 200Mb/second which delivers a genuine 40Mb/second or more. That's sufficient for the most demanding home and will take a substantial load off the wireless part of your network.

The other aspect of HomePlug is the inherent secure nature of the network. Wireless extends in every direction and can probably be received in the street outside your windows. By contrast the signals you send down a HomePlug connection can only be sniffed by someone on the same ring main circuit.

Paul Johnson, Managing Director of Media Atlantic told us. "Wireless Networking does have its disadvantages and a cable connection, even over power, does offer peace of mind when you do your online shopping or online banking."



A fixed wire connection a better security risk than the average wireless LAN setup

# SOLWISE HomePlug

▶ PRICE £100 ▶ PRICE CHECK: [www.techradar.com/247364](http://www.techradar.com/247364)

Solwise takes a direct approach with its HomePlug hardware. The packages are plain white boxes and the model codes are a sight to behold. These £50 (inc. VAT) units are called HomePlug Net-PL-200AV-PUSH because they have a push button to assist the process of linking your network. Pay an extra £4.95 and you can choose the Net-PL-200AV-PIGGY which carries a mains plug socket on the body of the adapter. That allows you to plug in the Solwise adapter and then piggyback another device, which is handy if you have very few sockets in the room. This is especially handy as every HomePlug manufacturer advises that you plug the unit directly into a wall socket without resorting to a four-gang adapter.

The adapters aren't the most compact and are relatively deep and project 75mm from the socket but are slender so you'll have no problem connecting them next to other devices.

These were among the simplest devices to connect in the group. Plug in the first

adapter, push the Simple Connect button, then plug in the second unit and push its button within two minutes and the green activity lights come to life. Job done

There's no need to use the supplied software but you'll find it is worth the effort. It offers the ability to update firmware and also has a Quality of Service option that allows you to select Gaming, Audio Visual or VoIP traffic as your priority. We've seen the QoS option on a number of recent routers where you have to make a decision about sharing the available bandwidth on your home network. If you use VoIP it makes sense to give it priority so your kids can't flood the network with their pesky on-line gaming.

The minimum system requirements don't mention Windows Vista but the software ran flawlessly on our test laptop.

The look and feel of the Solwise adapters isn't quite up to the standard of the devolo hardware but the price is more reasonable.

## WHAT LAPTOP

SUPPLIER	WWW.SOLWISE.COM
ETHERNET TECHNOLOGY	10/100 BASE-TX
HOMEPLUG STANDARD	HOMEPLUG AV
POWERLINE FREQUENCY	OFDM, 1024/256/64-QAM, QPSK, BPSK
MAXIMUM POWERLINE DATA RATE	200MBPS
MAXIMUM ETHERNET DATA RATE	10/100MBPS
SECURITY	128-BIT AES ENCRYPTION
SYSTEM REQUIREMENTS	WINDOWS 98SE
DIMENSIONS	48 X 87 X 75MM
WEIGHT PER ADAPTER	186G

**RATING 5**



## HOMEPLUG ETHERNET AWARD WINNERS

Separating this group of hardware was difficult as any of the contenders could have walked away with an award. They offer a simple way to extend your home network with plenty of bandwidth to stream movies, handle VoIP or get you online to play games. You won't have to mess around with lengths of cable or drill holes in your walls, so it's a hassle-free technology that makes life easy without breaking the bank.

## GOLD AWARD

### D-Link DHP-301

We weren't especially kind about the cosmetic appearance of the D-Link adapters or its configuration software but, despite these misgivings, the DHP-301 did a superb job at a low price and we have no hesitation giving D-Link our Gold Award



HOME PLUG ETHERNET

DETAILS	Devolo 200AV	D-Link DHP-301	Linksys PLK200-UK	SlingLink Turbo 1-port	Solwise HomePlug
PRICE	£130 (inc. VAT)	Free to £87 (inc. VAT)	£113 (inc. VAT)	£60 (inc. VAT)	£100 (inc. VAT)
RATING	8	9	7	7	5
SUPPLIER	<a href="http://www.devolo.com">www.devolo.com</a>	<a href="http://www.dlink.co.uk">www.dlink.co.uk</a>	<a href="http://www.linksys.com">www.linksys.com</a>	<a href="http://uk.slingmedia.com">uk.slingmedia.com</a>	<a href="http://www.solwise.com">www.solwise.com</a>
ETHERNET TECHNOLOGY	10/100 BASE-TX	10/100 BASE-TX	10/100 BASE-TX	10/100 BASE-TX	10/100 BASE-TX
HOMEPLUG STANDARD	HomePlug AV	HomePlug AV	HomePlug AV	HomePlug 1.0	HomePlug AV
POWERLINE FREQUENCY	OFDM, 1024/256/64-QAM, QPSK, BPSK	OFDM Symbol Modulation	Not given	Not given	OFDM, 1024/256/64-QAM, QPSK, BPSK
MAXIMUM POWERLINE	200Mbps	200Mbps	200Mbps	85Mbps	200Mbps
MAXIMUM ETHERNET	10/100Mbps	10/100Mbps	10/100Mbps	85Mbps	10/100Mbps
SECURITY	128-bit AES encryption	Mixed DES/3DES	128-bit AES encryption	56-bit DES encryption	128-bit AES encryption
SYSTEM REQUIREMENTS	Windows XP/Vista	Windows 2000 SP4/XP SP2	Windows 2000/XP Server	Windows XP SP2	Windows 98SE
DIMENSIONS	63 x 78 x 57mm	72 x 102 x 42mm	71 x 102 x 42mm	172 x 25 x 82mm	48 x 87 x 75mm
WEIGHT	148g	172g	136g	130g	186g