



Wireless routers tested

Supercharged internet

Nick Odantzis looks at the latest **superfast routers**, and finds out which really give your wireless internet a speed boost and improve your online experience

Unless you live in a box, the wireless modem router your ISP provides is unlikely to be sufficient for your needs. Your wireless signal will weaken or disappear when you move your laptop into another room. If you have several wireless

devices – PCs, phones, printers and so on – it will struggle to keep up with the amount of data going back and forth.

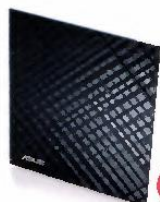
The solution is to upgrade your modem router by attaching a router with Wireless N technology, which will enhance the speed of your wireless

network, increase its range and allow you to connect more than one device to it without it falling over when all systems are go.

We're going to show you which of these routers offers the best performance, which is easiest to set up, and which has the most useful added features.

Don't worry if your home is among the 20 per cent of UK households on a cable broadband connection – we've made sure there are plenty of cable routers included too. Whichever type of broadband you've got, there's a faster router out there for you. **PCP**

Wireless routers tested



Asus RT-N56U
www.asus.com
£100

p93



Belkin Play Max N600 HD
www.belkin.com
£66

p93



D-Link DIR-825
www.dlink.co.uk
£93

p94



Draytek Vigor283Vn
www.draytek.co.uk
£239

p94



FRITZ!Box Fon WLAN 7390
www.fritzbox.eu
£238

p95



Linksys E4200
www.linksysbycisco.com
£140

p95



Netgear RangeMax DGND3300
www.netgear.co.uk
£100

p96



TP-Link TL-WR1043ND
www.tp-link.com
£42

p96



Fast and good looking

The **Asus RT-N56U** hardly puts a foot wrong and turns in a sterling performance

The Asus RT-N56U doesn't look like your typical drab slab of a router. In fact, it doesn't really look like a router at all. The RT-N56U is Asus' effort to stand out from the rather boring-looking crowd.

Not only are its looks unconventional, the location of its connections is too – side-mounted as opposed to located at the rear of the unit. Although this is handy because it makes them easier to access, it also means that they stick out like a sore thumb when the unit is in use.

Connectivity is on the good side, with two USB ports for devices like external hard drives. You can also download files to these devices, even when the router is turned off.

In the documentation, Asus promises an easy installation using its Quick Internet Setup procedure. You simply plug in the router, open a web browser and it automatically detects the connection type. In practice, the web browser never loaded any sort of setup page, so the installation had to be completed using the

included setup CD instead. The RT-N56U redeemed itself during installation, when a problem arose that prevented progress. Instead of leaving it to the user, the router detected the problem and corrected it – a great feature for novices.

One of the RT-N56U's stand-out features is Ai Radar, which lets the router enhance the signal of an attached wireless device by focusing it in one direction. It seems to work, because it turned in one of the fastest performances when we transferred 1GB of data from one PC

to another over wireless. At two metres it took just two minutes 10 seconds, while at 10 metres with two walls separating each computer, it took five minutes 30 seconds.

The Asus certainly isn't cheap, but it's easy to install, performs well and looks good sat in your front room too. **PCP**

PCPlus Verdict

★★★★★
 Features ★★★★★
 Performance ★★★★★
 Value ★★★★★



Wireless routers tested



A great all-rounder

With a bargain price tag, the **Belkin Play Max N600 HD** has plenty to offer

Although the award for cheapest router of the day sadly can't go to the Belkin Play Max N600 HD – the TP-Link has the other routers on test here licked in that regard – it nevertheless offers the greatest range of features and the best performance for its price tag.

Its nearest competitor, the Asus RT-N56U, costs over £30 more and doesn't seem to offer many more features to justify the expense, even if it does look somewhat more interesting. For example, Belkin's router supports cable connections, unlike the Asus.

The N600 is easier to set up too. Simply pop the CD into your PC and you're presented with a giant 'Setup' button that takes up practically the entire screen. It couldn't be clearer what you need to do. Once setup is completed, simply enter the SSID and password provided on the card included with the N600, and your wireless router is ready and protected. It's remarkably easy. The only thing the N600 lacks is a range of status indicator lights for

different criteria – instead, you either have a green light (for good) or red (for bad).

To increase the appeal of its router, Belkin has included a range of apps that give you instant access to features like backing up or downloading torrent files. They're easy to use – just install them and open them when you need to.

When it comes to performance, the Belkin doesn't disappoint – at least from a short range. At the 10-metre test range with a couple of reasonably thick walls separating each PC, however,

the N600 turned in one of the slowest performances.

This aside, the N600 is an excellent router given its price – it's easy to set up and its built-in features are easy to access, so it's a fantastic option for beginners wishing to upgrade their wireless internet connection. **PCP**

PCPlus Verdict

★★★★★
 Features ★★★★★
 Performance ★★★★★
 Value ★★★★★



Wireless routers tested



Solid, but basic

The **D-Link DIR-825** will improve your wireless internet, but offers little else

There's some funny marketing magic going on with the D-Link DIR-825. On the outside of the router's box, D-Link promises a quad-band device - presumably a bid to get one over all the dual-band routers on the market, which are currently the top of the range in terms of performance.

But look closely and you'll see that this is actually just another dual-band router.

Quad-band or otherwise, the DIR-825 offers pretty exhilarating performance, with the 1GB test files

taking just two minutes to transfer from one PC to another over wireless, while at the 10M range it took six minutes 10 seconds.

It's easy to install too. We experienced an initial problem with the installation procedure, in which the D-Link software wouldn't recognise that an Ethernet cable had been connected between itself and a PC. This issue was cured simply by restarting the procedure, after which the process proved to be fuss-free. It's one of the easiest of the group to install.

This router comes with the standard range of connections, plus a single USB port. The only stumbling block we encountered in its setup is that before you can share external storage devices between PCs, the included D-Link SharePort software must be installed on each of these computers individually.

The DIR-825 also works with ADSL and cable internet connections, but other than this it's a fairly basic router. It offers no particularly special additional

features and it doesn't look especially attractive, but the excellent performance and ease of installation make up for this. If all you need is a simple router that will improve the speed of your wireless internet connection, then this is a sensible and affordable option. **PCP**

PCPlus Verdict



Features ★★★★★
Performance ★★★★★
Value ★★★★★



Perfect for the small office

The **Draytek Vigor2830Vn** is packed with features, but it's overkill for the average user

Looks aren't normally important when you're choosing a router, but the Draytek Vigor2830Vn is a bit of a monster. Then again, it's not designed to be propped up next to a home hi-fi - this device is intended for small business use. This is made clear by the fact that the ports are located on the front for ease of access, and because the Vigor2830Vn is bursting at the seams with features.

As well as being ADSL and cable internet compatible, there's the option of having up to three different internet connections active at once: the main ADSL one, an Ethernet port for connecting another modem and a port for adding a 3G modem - which would be useful as a backup if your primary or secondary internet were to fail.

The inclusion of a hardware firewall is good news if you're a regular gamer, because your PC doesn't have to use precious power to process attacks on the software side. It's a fast firewall too, rated at 50MB/s.

You can also create up to four wireless connections, so

different groups of people can access it, and set up the router so users can have their own internet access, which can be restricted by time or the websites they can view.

The installation was one of the least intuitive in this test, with no automatic setup to speak of. You have to choose the router settings you need

manually, and in our case, finding the right settings from our ISP took a huge amount of time.

Performance is good, although not quite as good as some of the cheaper routers in this test.

Our 1GB test file took two minutes 40 seconds to transfer between PCs at two metres, and six minutes 40 seconds at the 10-metre test point.

It might be feature-rich, but the average person isn't going to see the benefit, and there are better and faster options for the money in this test. **PCP**

PCPlus Verdict



Features ★★★★★
Performance ★★★★★
Value ★★★★★



Wireless routers tested



Performance at a price

There's lots to like about the **FRITZ!Box Fon WLAN 7390**, if you can afford it

The FRITZ!Box Fon WLAN 7390 combines an ADSL2+ and VDSL modem in one. Whether you have a regular broadband internet connection running through your phone line or a fibre optic cable one, you can replace your old modem altogether. This is great if you aren't sure which type you need, or if you think you might change the type of broadband service you use in the future.

This convenience comes at a price, and the FRITZ!Box costs over twice as much as a regular router that simply upgrades your standard modem. In fairness though, you get a lot more with the FRITZ!Box than a conventional router and modem combination.

For starters, you can connect up to six cordless phones and make calls over VoIP – provided you have a requisite VoIP phone – even with your computer turned off. It can even be used as a NAS device, although the 7390 comes with a paltry 512MB of internal storage, so you'd have to use its USB port to connect an external storage device.

In fairness, you can't compare the 7390 to many of the cheaper routers in this test, because they're worlds apart in terms of what they offer. You could, however, pit it against the DrayTek, which has a similar plethora of features.

Once you've connected it and logged into the router web interface, the FRITZ!Box, like the DrayTek, needs a manual setup. It's much less involved though – you just need your ISP details handy.

The FRITZ!Box looks a bit like a spaceship, so you'd expect it to be

capable of some seriously fast wireless speeds. Thankfully, it delivers, with 1GB transferring between our PCs at 10 metres in five minutes 20 seconds.

The FRITZ!Box is an expensive solution, but if you can take advantage of at least some of its many features then it may be worth the outlay. **PCP**

PCPlus Verdict



Features ★★★★★
Performance ★★★★★
Value ★★★☆☆



Ultimate user-friendly router

The **Linksys E4200** is ideal if you lack the confidence to upgrade your wireless

The E4200 is a breath of fresh air. In a sea of devices that offer only limited support, it's almost surprising to use a router that feels as if it's been designed to welcome new users with open arms, rather than frighten them off.

The installation process is remarkably easy. Jargon isn't thrown at you as you configure the router – everything is explained in plain English. During the setup process you're given the option of either choosing the default network name and password, or changing it to your own – an option that some other routers hid under layers of menus.

The user interface is also refreshingly well laid out and easy to understand. It's clearly aimed at the new user – someone who doesn't want to be overwhelmed with too many features, and options they either don't understand or are likely not to use.

The router includes parental controls, which let you limit which websites are used and how long for. You can easily add another PC or device to the network,

and you can even test your internet speed – something you'd need to find an online speed-test tool for normally.

There's a slight problem though – once you've finished poring over the wonderful interface, the E4200's actual performance suddenly feels distinctly average. A transfer time of eight minutes 10

seconds at the 10-metre test point is nothing to write home about, and there are no additional features that warrant your attention, aside from the seemingly

standard inclusion of one USB port and compatibility with a cable connection.

If supreme ease of use is your main purchasing criteria when purchasing a new router, we can't recommend the E4200 enough, but you'll need to look elsewhere to get more bang for your buck. **PCP**

PCPlus Verdict



Features ★★★★★
Performance ★★★★★
Value ★★★☆☆



Wireless routers tested



All-in-one solution

A built-in modem puts the **Netgear RangeMax DGND3300** ahead of its rivals

Although the Netgear RangeMax DGND3300 doesn't have the feature set of the FRITZ!Box Fon 7390 or the Draytek Vigor 2870Vn, it's a pleasant surprise to see that for about £100 less than either or these routers (and only marginally more than most of the others on test) it offers the luxury of a built-in modem. Rather than having an additional box sat next to your current modem router, you can replace it altogether and have one device that does it all.

This doesn't apply if you have a cable internet connection, because the modem is ADSL-only. Instead you'll need the WNDR3300, which is the cable alternative.

The DGND3300 doesn't look too bad either. It can be placed face down on a table or desk, but ideally it needs to be propped up on its side using the included stands. The large, flashing button on the top of the router looks quite swish, and a single press lets you easily add a WPS-enabled device to the network without having to enter any details.

Netgear RangeMax DGND3300
Price £100
Info www.netgear.co.uk
Key features
Built-in firewall

Setting up the DGND3300 was simple enough, with a detailed visual explanation provided at each step, so there can be no mistakes. The interface is easy to use too, and one feature in particular stands out: a broadband usage meter, which is very useful if you're one of the many people out there with a cap on how

much data you can download each month.

Not that you'll be downloading too much with this installed. In speed tests the Netgear was one of the slowest, delivering

the 1GB file at short range in just over three minutes, while long distance transfer recorded a disappointing speed of 10 minutes.

Netgear offers a convenient, easy-to-use solution for those wishing to replace their outdated modem, just not a particularly fast one. **PCP**

PCPlus Verdict



Features ★★★★★
Performance ★★★★★
Value ★★★★★



A frugal and fast way to upgrade

The **TP-Link TL-WR1043ND** is a great no-frills option for upgraders on a budget

Just £42 for a superfast modem? Seems fishy. That's the price you'd pay for a standard Wireless G router, not a dual-band Wireless N model. Ah, that's the thing. The TP-Link TL-WR1043ND – one heck of a mouthful – isn't actually a dual-band router; it's just a lowly single-band.

Surely that means it has no chance against the dual-band devices in this test.

Well, no. In fact, it's quite the opposite. Although the TP-Link doesn't benefit from the 5GHz transmission band, it has a crude way of making up for this, using three antennas to ramp the standard 2.4GHz signal to its maximum. And it works, with the fastest recorded transmission speed of the 1GB test file over wireless. There wasn't much difference between this and the other routers at short range, but at the 10 metre range with two walls separating each laptop, it took just four minutes 20 seconds.

Aside from being the fastest router in the test, the TP-Link TL-WR1043ND doesn't really

have all that much to offer – not that it really needs to. The installation proved to be one of the trickiest of the test, which is probably what you get for paying just over £40 for the privilege. After scouring TP-Link's simple but extensive web interface trying to figure out why it wouldn't connect to the internet, we pinpointed it

to a conflicting IP address. A beginner would have given up long before we did.

Other than an additional USB port on the back, which can be used to attach storage devices and access media on them, the TP-Link doesn't really have any other features that help it rise above the others. But then again, not everyone wants all the gimmicks under the sun – there are plenty that just want a no-frills router that delivers what they're really interested in – fast wireless internet. **PCP**

TP-Link TL-WR1043ND
Price £42
Info www.tp-link.com
Key features
IP, MAC, URL filtering, SPI firewall and access control management

PCPlus Verdict



Features ★★★★★
Performance ★★★★★
Value ★★★★★



The Specs



Wireless routers tested



| Products | Asus RT-N56U | Belkin Play Max N600 HD | D-Link DIR-825 | Draytek Vigor283Vn | FRITZ!Box Fon WLAN 7390 | Linksys E4200 | Netgear Range-Max N300 | TP-Link TL-WR1043ND |
|----------------|--|--|--|--|--|--|--|--|
| Price | £100 | £66 | £93 | £239 | £238 | £140 | £100 | £42 |
| Info | www.asus.com | www.belkin.com | www.dlink.co.uk | www.draytek.co.uk | www.fritzbox.eu | www.linksysbycisco.com | www.netgear.co.uk | www.tp-link.com |
| Band | Dual | Dual | Dual | Dual | Dual | Dual | Dual | Single 2.4GHz |
| Broadband type | ADSL | ADSL and cable | ADSL and cable | ADSL and cable | ADSL and cable | ADSL and cable | ADSL | ADSL |
| Built-in modem | No | No | No | Yes | Yes | No | Yes | No |
| USB ports | Two | Two | One | One | Two | One | One | One |

The Award winners

We present our pick of the best routers

There's some good news to be had from this test – no matter which router you choose, there's a clear advantage to upgrading an ageing router with a newer, faster one. The difference is noticeable at just two metres, and at 10 metres, with a couple of heavy-duty walls in the way, it's quite dramatic.

In both cases, a Wireless G router was around 10 times slower

than the best-performing Wireless N router. If you're using wireless a lot, then a Wireless N router is an essential upgrade. Some of them perform marginally better than others, so rather than concentrate solely on performance you need to factor in what sort of features they offer and how easy they are to setup and use – the difference in the test was quite substantial. **PCP**

TP-Link TL-WR1043ND

Price £42
Info www.tp-link.com

With one of the fastest performance at both short and long range, for the cheapest price. TP-Link might not be a household name at the moment, having previously focused on business-orientated products, but it's now moving into the consumer market. Judging by the ease of use, excellent performance and competitive price of the TL-WR1043ND, we're sure it's going to do well. ■



FRITZ!Box Fon WLAN 7390

Price £238
Info www.fritzbox.eu

The FRITZ!Box Fon WLAN 7390 might be expensive, but it's cash well spent. The sheer amount of features this router offers and its impressive performance put it well ahead of the competition. It combines some of the best features of professional office-based routers with the user-friendliness we've come to expect from the top home wireless routers. ■

