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"Gamers need this router and software if they want full control of their gaming experience."

Netgear Nighthawk Pro Gaming XR500 review:

This router gives gamers complete control

The Good Gamers have total control with tons of options to reduce lag, stabilize ping and ensure local connections while playing console games. The menu has helpful pop-up screens to explain what each setting does. The router's range on 2.4GHz was impressive.

The Bad Some of the gaming features don't work for PC games. Its top speed on 5GHz was a little slower than I've seen with other similar routers and there's no useful app.

The Bottom Line Netgear and NetDuma teamed up to create a gamer's delight inside a futuristic-looking router. The XR500's speed and range are more than enough for a medium-to-large home. The DumaOS interface has lots of customization options and helpful hints for even novice router users.

★★★★☆

8.0 OVERALL

- **Setup8.0**
- **Features9.0**
- **Performance7.0**

Netgear's Nighthawk XR500 Pro Gaming Wi-Fi router is built for gamers who want to customize their experience and gain complete control of their home network. The menu is powered by UK-based **NetDumas's** DumaOS and gives gamers all the tools and analytics they need to minimize latency and keep their games running smoothly. With geofiltering you can even set a radius from your location to ensure that you only connect with local servers and players.

The AC2600 router also offers top speeds, great Wi-Fi coverage and detailed parental controls. For $300, this router is a gamer's dream, but everyone in your household will benefit from Netgear's powerful hardware. It's available now in the UK for £240 and in mid-April in Australia for AU$449.

It looks like the aliens have landed

The XR500 looks like something straight out of the show "Battlebots." Its wide, flat design is similar to others in the Nighthawk line, but this one has sharp angles all around it. The myriad LED lights on the front are pretty bright and distracting, but you can flip a switch in back to shut them off. A wall mount option would have been nice, but the router is pretty cool looking, so displaying it on a shelf won't be too problematic.

The 4x4 dual-band antennas offer four streams for faster, more reliable coverage.

Tyler Lizenby/CNET

It has four dual-band antennas, labelled Antenna 1 (two of them), Antenna 2 or Antenna 3. Make sure you attach each one to the corresponding spot on the router or you may run into connectivity issues.

You'll find two USB 3.0 ports conveniently located on the side for easy access. The back has four gigabit LAN ports, one gigabit WAN port, a DC port for power, a reset button, a power button and the previously mentioned switch to shut off the status lights (except for the power light) if they get annoying. The top also has a Wi-Fi on/off button and a WPS button to connect new devices.

Overall, the XR500 looks cool enough that you can keep it out in the open, which will also help your Wi-Fi coverage. And after testing it out, this router has plenty of speed no matter where you put it. More on that later.

The XR500 has similar hardware specs to the Netgear R7800 gaming router. The only major difference I see is that the XR500 has twice the flash memory, most likely because it includes the advanced gaming software from NetDuma.

Setup was easy but there's no usable app

The Netgear XR500 was easy to set up via a web browser. After connecting the router to a modem and plugging it in, I just had to connect to the Netgear network and open a browser window.

It checked my internet speed to optimize performance and gave me an estimated bandwidth. The number was lower than the max speed promised by our internet service provider (ISP), but Netgear advised that I should go with what the router detects. Netgear also said, however, that underestimating your bandwidth means you will waste some of your available speed and overestimating bandwidth will cause some of the pro gaming features to miscalculate your traffic. If you run into problems, you can always manually change the numbers or rerun the test from the menu by going to QoS and clicking the three bars on the top left of the Anti-Bufferbloat panel.

I continued the setup by updating the router password, adding security questions and updating the network names. It was nice to have the extra security questions, which most routers don't ask. You also have a smart connect option of giving both your 2.4GHz and 5GHz bands the same name and letting the router choose the optimal one for your devices to connect to. This band-steering feature is a good idea if you aren't terribly router-savvy.

Finally, it automatically checked for a firmware update and asked if I wanted to install it. You should definitely do this, as many manufacturers include important security enhancements with firmware updates.

The XR500 does work with the Netgear Up app and the Netgear Genie app, but the functionality on both is sparse. You can use the Up app to set up the XR500 or other Nighthawk routers as well as manage some router functions, but not enough to be useful. The Genie app is compatible with a wider variety of Netgear products and looks similar to the Up app. Between the two, you can check your password, see which devices are connected, set up a guest network, share files and test your signal strength, but that's about it. Unless Netgear updates them soon, I wouldn't recommend using either one.

DumaOS is gaming control on steroids

The browser menu is a dream for anyone looking to customize their settings. NetDuma's DumaOS gaming software provides the real features that set this router apart. When the dashboard menu first pops up, you can take a short tutorial, which I highly recommend -- it's full of helpful tips. In addition, just about every setting has a clickable question mark icon to further explain what each does. I couldn't be happier with the experience.

There are seven features listed, called R-Apps (for Router App). Clicking on each one brings up tons of ways to customize your home network, including in-depth parental controls, gaming tools and standard network settings. Most R-Apps are related to gaming and quality of service, but you can find the regular router settings, such as wireless setup and guest network, in the one called Settings.

The gaming features are the difference maker. The fun starts with a geofilter that allows you to set a radius around your location to ensure that you connect to a nearby server. Netgear recommends that you set the maximum radius to somewhere between 311 and 1,864 miles (500 and 3,000 km). The one downside is that this only works on console systems such as the PS4 or Xbox One ($425.75 at Amazon.com). PC gamers can only use "Spectating Mode" to see where they're connected and the ping, but you can't change it. Often you can choose the server through the actual game, though.

The first QoS setting is called Anti-Bufferbloat. This option lets you limit the bandwidth used by nongaming devices. You can set it up so that they're always limited or only limited when games are being played. There's a slider bar to customize the exact percent you want nongaming devices to be able to use. Netgear recommends you set this to about 70 percent.

Next is Bandwidth Allocation. Here you can specify how much bandwidth (both download and upload) each individual device can use. NetDuma provides a colorful, clickable chart where you can simply drag your mouse to distribute usage based on percentage.

In the Traffic Prioritization section, you can tell the router to automatically prioritize games above everything else by simply checking a box. There's also a sweet chart that tells you when the router detects high priority traffic and how many packets of data are being sent.

These are just a few of the settings you can customize. There are many others that allow you to manually add games and devices to ensure you have the best gaming experience possible.

Netgear isn't the first manufacturer to team up with another company to create a high-end gaming router. Linksys did the same with Killer and Asus with WTFast, but the level of customization and real-time analytics NetDuma provides is more impressive. You can spend as much time as you want getting your router exactly the way you need it. And best of all, you don't have to pay an additional subscription charge like you do with WTFast.

High-end features give you incredible control

The XR500 router has lots of top-end features that give it great speed, range and usability. The AC2600 rating means 800 megabits per second (Mbps) on 2.4GHz and 1,733Mbps on 5GHz. It's only dual-band so you don't have an extra 5GHz network to help alleviate network congestion, but tri-band is still rare these days. It does have MU-MIMO for fast simultaneous connections and beamforming for a stronger signal on each device though. The XR500 also has 4x4 external antennas, each with four streams to give you a faster, more reliable signal.

You can also use the XR500 in access point (AP) mode by wiring it to your current router to extend your current network. The functionality in this mode is limited. The Netgear apps won't work and the gaming software will be moot, but you can still take advantage of network storage.

The router has smart connect, so it will automatically choose the best Wi-Fi band for your devices to connect to. The menu even gives you more control over the LED lights, letting you disable blinking but leave them on. You can also enable a guest Wi-Fi network, but beware that the router leaves it open by default. Make sure to check the box for the security setting WPA2-PSK [AES] and set a password.

Netgear doesn't have extra antimalware software or services with this router, but it does have robust content filtering, virtual private network (VPN) support and parental controls. You can block by keyword, domain, device or service. On the flip side, you can also give unrestricted access to one device on your network to act as a master device.

One of the best bonus features of this router is that it supports wide 160MHz channels and Dynamic Frequency Selection (DFS) channels on 5GHz. This helps you avoid interference from the more crowded standard channels. If you want to enable the wider channels, it's a little hard to find. Go to Settings, then Advanced Settings, then Advanced Wireless and check the box for "Enable HT160." With 160MHz, you should also use either channel 50 or 114.

DFS means you have 15 more channels available to help find the most reliable signal. In an odd twist, Netgear set the default 5GHz channel to 153 (a non-DFS channel), as opposed to auto. It said the reasoning is because 153 provides the best performance while meeting FCC requirements for power transmission. If you happen to run into any issues while using 5GHz, you may want to start with changing the channel to auto when troubleshooting. If you leave the setup as is, you'll never take advantage of the extra DFS channels.

Gamers will not be disappointed

The XR500 is made for gamers, so I tested it out using League of Legends on a PC. It did exactly what it promised, keeping my game lag-free and running smoothly.

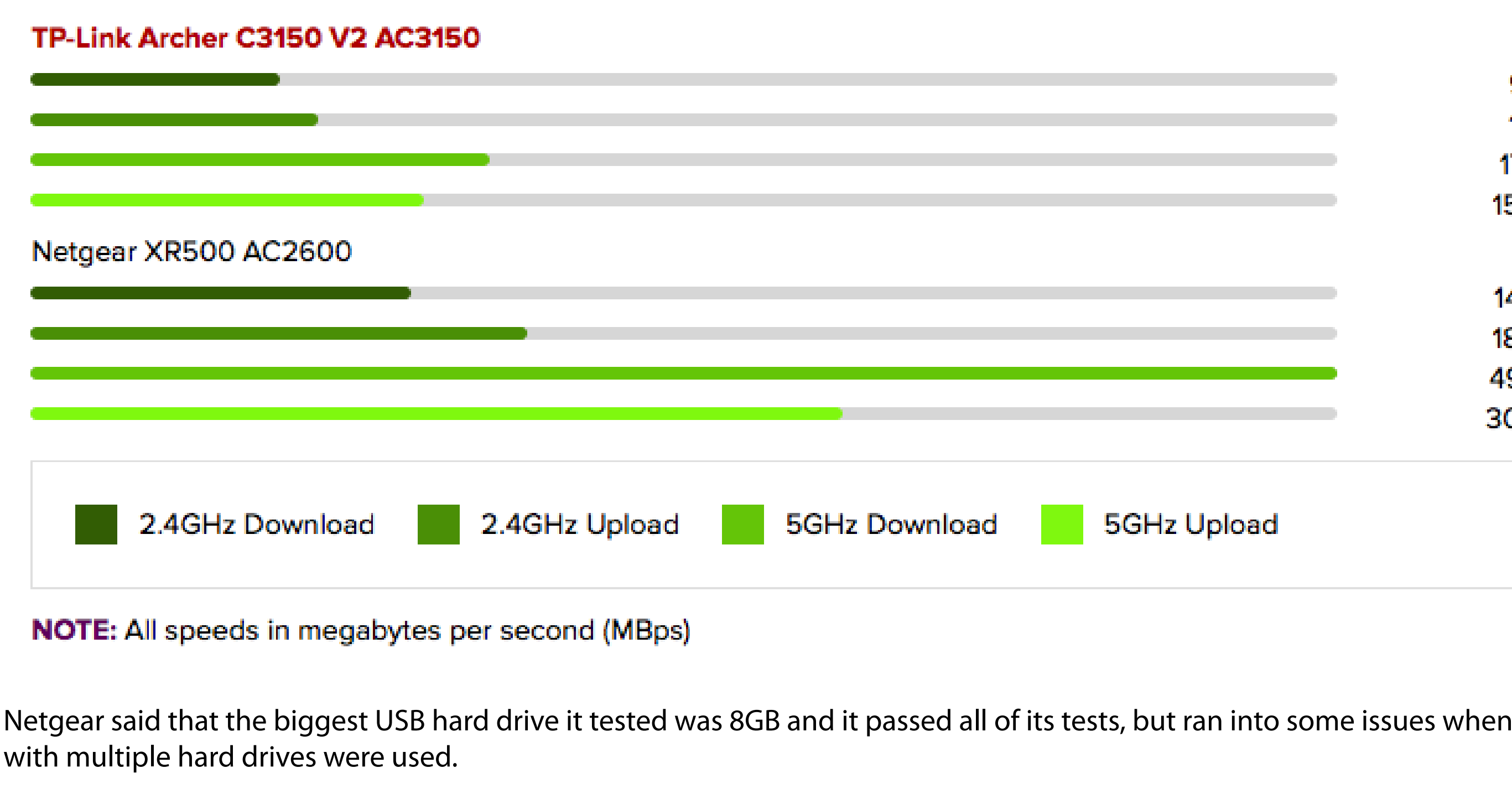
I turned off QoS and starting playing the game. I then saturated my network with four devices streaming HD video and one device downloading large files as well as streaming HD video. My in-game ping went from 40 to 70 and then erratically jumped around, disrupting my game. In the router menu, I set Anti-Bufferbloat to "always" and both slider bars (download and upload) to 70 percent.

Nothing changed, so I then enabled "DumaOS Classified Games," which automatically prioritizes online gaming over other types of data. Within seconds, my ping went back to 40 and stayed there. Netgear also recommends changing the bandwidth allocation for the gaming device to 20 percent or more, but I didn't need to do this to get the game back on track. Some combination of these three settings should work for you, depending on your setup and how many devices are using up bandwidth.

The speed tests on the XR500 were pretty good, but not the fastest I've seen. On 2.4GHz, I saw great performance, with a top speed of 166 Mbps from close range. Up to 50 feet, the XR500 only dropped off slightly, staying above 150Mbps. That means it should provide good coverage throughout your medium to large home.
2.4GHz Wi-Fi Performance

I was a little disappointed by the close range speed on 5GHz, but it's still fast enough for any size home. The XR500 topped out at 772 Mbps and only dropped to 224Mbps at two rooms and 50 feet away. Some routers like the TP-Link Archer C3150 V2 performed at around 900Mbps at close range. Here's how the XR500 compares to other routers I've tested.

The final testing I put the XR500 through was network storage and it passed with flying colors. On 2.4GHz, I was able to wirelessly download at nearly 19 megabytes per second (MBps) and upload at nearly 15MBps. On 5GHz, I saw downloads of almost 50MBps and uploads of more than 30MBps. Compared to other routers I've recently tested, these speeds are overall the best so far, especially on 5GHz.

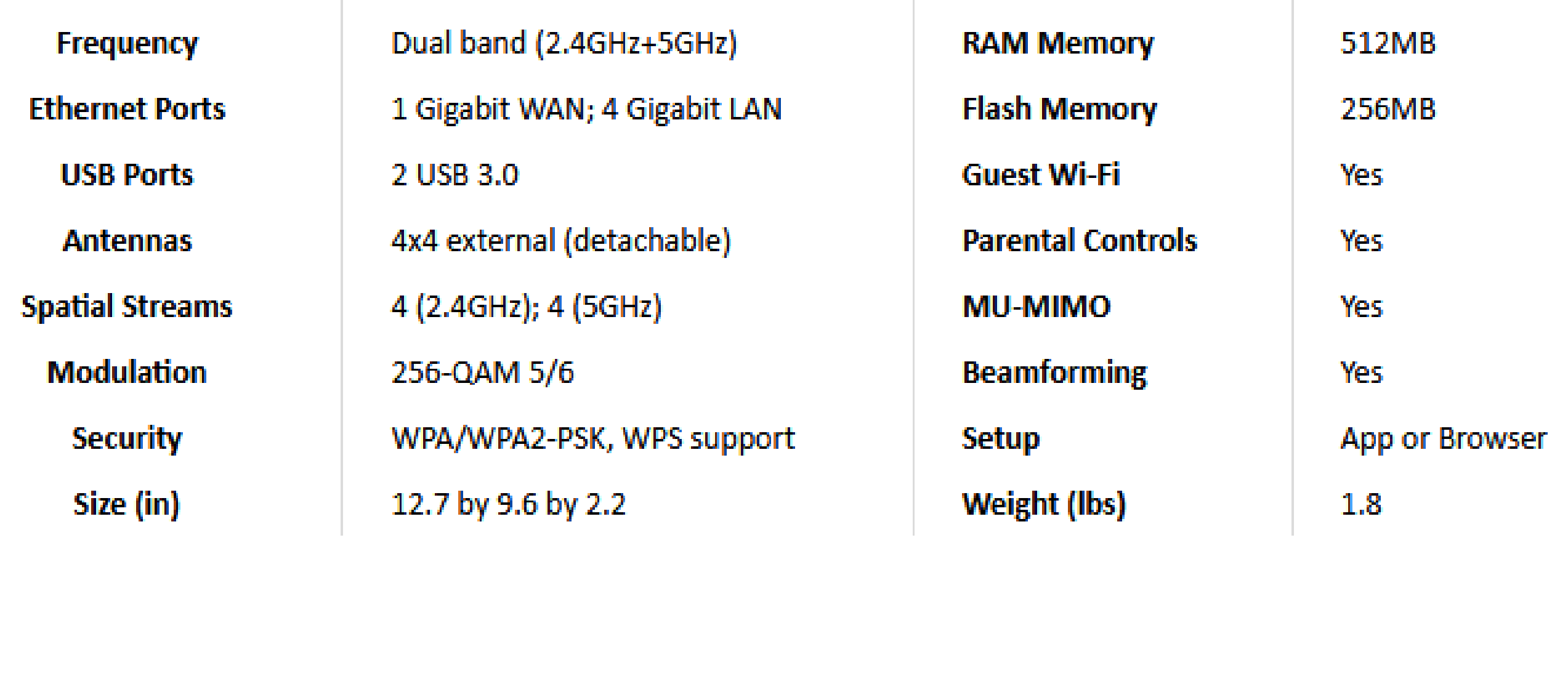


Netgear said that the biggest USB hard drive it tested was 8GB and it passed all of its tests, but ran into some issues when enclosures with multiple hard drives were used.

Should you buy one?

The Netgear Nighthawk XR500 Pro Gaming router is great for console gamers due to its DumaOS software. PC gamers can't take full advantage of its features, but the router will definitely help reduce lag and stabilize your ping. The menu is super complex with monitoring and analytics, but the tutorial and help icons make sense of everything for you. Someone with any level of router knowledge can quickly become comfortable navigating the web interface.

Gamers need this router and software if they want full control of their gaming experience. Regular folks can save $100 and get the Netgear R7800, which has almost identical hardware specs.



Netgear XR500 Specs

Brand	Netgear	**Model**	XR500
IEEE 802.11 Standard	a/b/g/n/ac	**Class**	AC2600
Speed (Mbps)	2,533 (800+1,733)	**CPU Processor**	Dual core 1.7GHz
Frequency	Dual band (2.4GHz+5GHz)	**RAM Memory**	512MB
Ethernet Ports	1 Gigabit WAN; 4 Gigabit LAN	**Flash Memory**	256MB
USB Ports	2 USB 3.0	**Guest Wi-Fi**	Yes
Antennas	4x4 external (detachable)	**Parental Controls**	Yes
Spatial Streams	4 (2.4GHz); 4 (5GHz)	**MU-MIMO**	Yes
Modulation	256-QAM 5/6	**Beamforming**	Yes
Security	WPA/WPA2-PSK, WPS support	**Setup**	App or Browser
Size (in)	12.7 by 9.6 by 2.2	**Weight (lbs)**	1.8