Wi-Fi 6 IS WHAT GAMERS HAVE BEEN WAITING FOR

In the **Internet of Things (IoT)**, where smart devices connect with each other and the cloud, the latest version of Wi-Fi is very big news. Based on IEEE 802.11ax and known simply as Wi-Fi 6, it improves network speed by as much as 4x – but there's more to it than that. Wi-Fi 6 also does a much better job of managing network congestion and minimizing latency, so there are fewer lost connections and people can enjoy dramatically better experiences.

Wi-Fi 6 is designed for the ways we're using data today and how we're planning to use it over time. More specifically, Wi-Fi 6 brings WLANs into the era where everything is connected, and where internet gateways have far more devices to manage, demanding far more bandwidth, than ever before.

WI-FI 6 AND THE CONSUMER EXPERIENCE

Support for local connectivity, at the edge of the network, means Wi-Fi 6 brings next-level performance and capabilities to a wide range of applications in the IoT, but especially in those areas that consumers experience directly. In home automation, for example, Wi-Fi 6 enables industrial-grade features in private residences, with things like outdoor, IP-enabled security cameras that can run on battery power while delivering real-time monitoring in HD/4k resolution. In home entertainment, Wi-Fi 6 delivers cinema-quality performance in home theaters, with 4k/8k video streaming, high-end wireless speakers, and video-enabled smart assistants.

But if there's one corner of the IoT where Wi-Fi 6 basically redefines the experience, it's gaming.

All the things gamers have been waiting for are finally possible with Wi-Fi 6:

1. UNTETHERED, TRULY IMMERSIVE AV/VR EXPERIENCES

With Wi-Fi 6, AV/VR technology can finally catch up with the artistry of what content creators and gamers envision. There's little to no latency, so there's a tighter relationship between your movements and what's happening with the headset. Truly immersive experiences, without a wire, add a new level of freedom and interaction to headsets and other AV/VR gear.

2. GAMING CONSOLES WITH SEAMLESS STREAMING

Game files are bigger than ever (100 GB per title is not unusual), which means gamers who don't have fast download speeds can be forced to wait for hours before they can start playing. With Wi-Fi 6 for game streaming, there's no more waiting. What's more, if someone in the next room starts streaming a 4k-resolution video, your gaming experience won't take a hit.

3. CLOUD GAMING AS IT SHOULD BE

Games that are hosted in the cloud give on-demand satisfaction, since there's no need to download the latest updates or content. Rather everything associated the game, including saved data, served up on a remote server requires a persistent internet connection that keeps up with the content. Wi-Fi 6 provides that reliable and optimized connection, so you can enjoy games that, in the past, you wouldn't have been able to run on your local console, TV, mobile phone, tablet, or computer.

4. NXP IW620 FOR WI-FI 6 IN GAMING

At NXP, we're excited about what Wi-Fi 6 promises to do for gaming, and we're actively working with industry leaders to enable Wi-Fi 6 experiences throughout the gaming universe. Our groundbreaking new Wi-Fi 6 + Bluetooth solution, the IW620, is optimized for the kinds of advanced features that gamers crave. Our recent gaming design win for the IW620 underscores NXP's ability to deliver high-performance WLAN for the ultimate in gaming.

## 5. BETTER EXPERIENCES WITH OFDMA & MU-MIMO

One of the most important things to know about the IW620, beyond its ability to deliver Wi-Fi 6 data rates, is that it leverages advanced techniques to improve network utilization and minimize latency. The IW620 uses OFDMA access so multiple users, with varying bandwidth needs, can use the channel simultaneously, letting everyone enjoy faster, more efficient service. Working alongside OFDMA, the MU-MIMO communication format expands capacity, improves coverage, and increases performance in ultra-high-density environments. That means each access point can transmit to a larger number of concurrent clients at once, so there's less waiting at each receiving device and the quality of the connection goes up even though there are more users.

6. BROADER CONNECTIVITY WITH BLUETOOTH

By providing easy access to the latest Bluetooth standards (BLE LR / 2 Mbps, BLE AoA / AoD, BLE Mesh), the IW620 lets gaming devices support dual/independent wireless headsets, robust audio streaming, and separate accessory control - including speakers, voice assistants, audio hubs and soundbars, and physical remote controls.

7. LONGER BATTERY LIFE

For battery-operated gaming devices, the IW620 enables a more than 50% reduction in standby power compared to previous generations of Wi-Fi, so gamers can go longer between battery charges. The careful integration of Bluetooth functionality saves on power, too, since the onboard Bluetooth radios use ultra-low-power communication for its interactions.
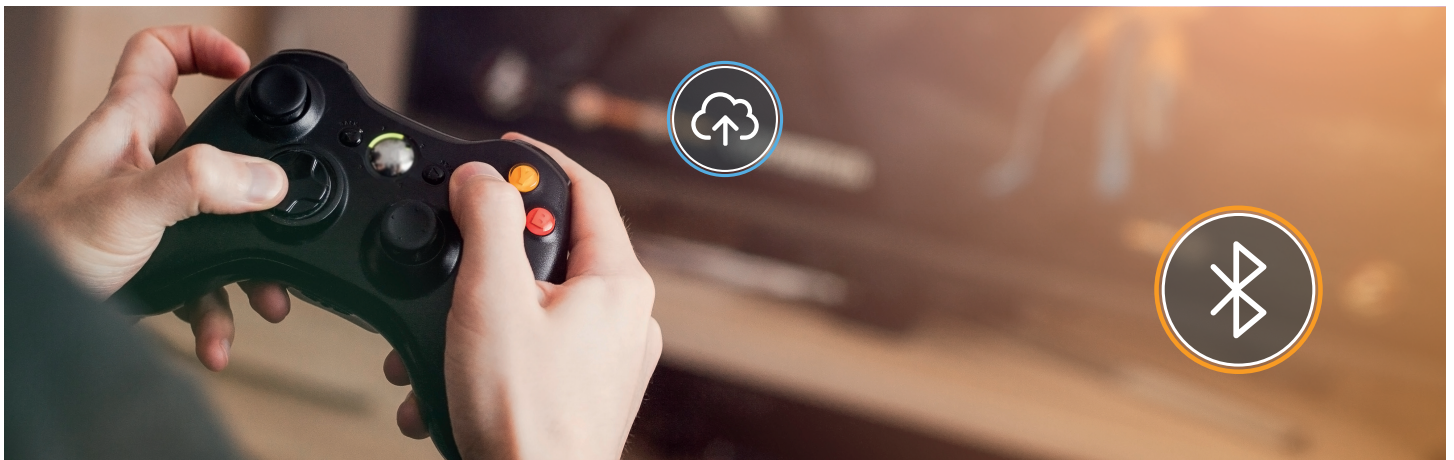
8. GLOBAL INTEROPERABILITY

The IW620 has received full Wi-Fi 6 compliance certification, so it's completely interoperable with the global ecosystem of Wi-FI 6 certified devices. Developers and end-users alike can be confident that systems built around the IW620 will deliver the functionality and performance that Wi-Fi 6 is designed for.

9. FAST, LOW-COST DESIGN-IN

NXP chip designers have enabled an exceptionally high level of integration with the IW620, making it easier and less expensive to add to a design. Along with the necessary radios, the IW620 also integrates transmit power amplifiers and receive low noise amplifiers to support 2.4 and 5 GHz, along with antenna switches and, for easier power management, an on-chip PMU. The result is a lower bill of materials and a smaller PCB size compare to other solutions that don't offer an equivalent level of integration.

DON'T BE LATE

Wi-Fi 6 is a pivotal technology for gaming, and now is the time to start putting it to work. Time-to-market is an important factor here, and nobody wants to be later than they have to be to meet consumer demand.

CONNECT WITH NXP TO DISCOVER THE POSSIBILITIES

NXP offers one of the broadest wireless portfolios in the industry, and our early successes with Wi-Fi 6 show just how committed we are to creating a connected world that anticipates and automates. To learn more about how our Wi-Fi 6 solutions can transform gaming, visit **www.nxp.com/wifi6.**

Sid Shaw

Sid is Senior Director of Connected IoT at NXP Semiconductors. As seasoned veteran of the wireless industry, he currently manages the company's Wi-Fi+ Bluetooth business for the Consumer, Smart Home, Gaming, Voice, and Industrial business.