Deliver fast, reliable broadband with Fixed Wireless Access solutions

Reach new subscribers and increase ROI on 5G

COMMSCOPE®

End-user bandwidth hunger continues to grow… how to keep up?

Home user bandwidth demands are increasing. This is the result of growing trends in remote work and education, video streaming, cloud applications, gaming, and other connected home activities.

Increasing numbers of connected devices and concurrent users are creating ever-growing demands on the broadband connection and a need for better Wi-Fi throughout the home. As technologies advance, including the internet of things, 4K/8K UltraHD TV, virtual and augmented reality, and smart buildings and grids, the demand only becomes more pressing. Consumers expect reliable, seamless, and immediate interaction with applications, games, and video streams, with fast, uninterrupted downloads.

In short, consumers need a high-speed, low-latency, "always-on" connection that can effortlessly keep up with advancing applications, services, and features. What's more, they want their broadband service to be easy to install, simple to navigate, and affordable. While fiber offers the necessary multi-gigabit bandwidth potential, it requires a significant investment to run wirelines to every home and premises. Installation is time-consuming, with challenges around right-of-way, access, and cost. Luckily, fiber is not the only solution for last-mile connectivity.

Fixed wireless access (FWA) for broadband

For years, fixed wireless access has been successfully used in rural and other areas underserved by wireline broadband services. The distances involved required the use of expensive outdoor CPE with line of sight to the cell site, and needed to be installed by trained technicians, adding cost and time. Until recently, these factors limited the use of fixed wireless access technology.

Expanding fixed wireless access from rural applications to mass market

Advances in wireless technology, in particular 5G NR, make FWA a viable alternative for delivering broadband services at speeds that can compete with fixed networks in urban and suburban areas. In suburban areas covered by copper, the distances involved can limit broadband speeds to 10 Mbps with single-line VDSL2 and 20-30 Mbps with bonded VDSL2. FWA can offer gigabit speeds with 5G NR. That means you can offer broadband access over the mobile network without compromising on quality or reliability.

There is now a strong business case for fixed wireless access to address urban and suburban areas using indoor, non-line-of-sight broadband gateways that can be installed by the consumer. These devices, which use internal antennas, can be shipped to the consumer, who can simply plug in the device and get started—there's no need for a technician to install. That means fast, low-cost installation and near-instant connectivity.

Indoor CPE

Key benefits

- Competitive broadband services
- Easily connect new customers to provide instant connectivity
- Fast, easy CPE self-installation and management by the end user
- A "pay as you grow" model allows you to leverage existing mobile infrastructure and scale up capacity in line with subscriber growth
- New capacity faster and at lower cost than fiber

Competitive broadband services for mobile operators

Mobile operators are well placed to use FWA to offer competitive broadband services in urban, suburban and rural geographies.

With mobile network operators projected to invest more than $1.1 trillion in their networks by 2025[1], and about 80 percent of that in 5G technology, FWA provides a solid business case to deliver recurring revenue streams and a return on 5G investment to compete with fiber services.

FWA—an alternative to fiber for new build

Setting up new fiber customers requires each home or business to be individually connected. This involves significant investment per customer, with challenges related to right-of-way, digging, civil works planning, and entering subscriber property—and the entire process of running fiber to the home can take weeks. With FWA, however, right-of-way and civil works are only required if a new cell site is needed; but, once finished, each cell site provides coverage for a large number of potential customers. After a short wait for the gateway to be delivered, customers can then be online in minutes with a simple plug-and-play installation and setup.

Additionally, fiber consumers are often asked to enter into long-term contracts, which are necessary to recover the investment in a fiber connection to the individual home. With a wireless connection, the investment is spread across multiple customers and allows for differentiated or shortened contract terms.

5G will account for a third of global FWA subscriptions by 2027

FWA was one of the first use cases for 5G, and 52 operators around the world had launched 5G FWA networks by 2Q 2022.

5G FWA has good growth prospects, and Omdia forecasts that the number of 5G FWA subscriptions worldwide will rise from 1.6 million at the end of 2021 to 35.1 million at the end of 2027.

5G FWA will account for 58 percent of the growth in global FWA subscriptions between the end of 2022 and 2027. By 2027, 5G FWA will account for 33 percent of the 105 million FWA subscriptions worldwide.[2]

FWA for fixed-line service providers

FWA is not just for mobile operators; it can also be an attractive access option for telcos and cable operators with access to their own or MVNO[3] 5G networks. The rapid deployment of FWA can complement a fiber strategy, particularly when faced with competitive pressure to deploy broadband service quickly in a specific area.

FWA can also be used to connect new subscribers where fixed-line providers have yet to deploy the last mile of their wired networks. By shipping new subscribers a self-installable FWA gateway, service providers can deliver broadband services and begin generating revenue immediately—rather than waiting for a technician to run fiber to the home. Once the wireline is in place, the FWA gateway can serve as a backup network connection, automatically switching to the wireless connection if the wired network fails. This provides an additional layer of reliability for end users who depend on broadband for many aspects of their lives, including work, school, healthcare, home security, and more.

The benefits of self-install CPE

Indoor FWA gateways with internal antennas have transformed the business case of FWA in urban and suburban areas where the distances allow for non-line-of-sight connections.

- The cost of the devices is much lower using indoor CPE, as a single unit can be used instead of the two boxes needed for outdoor CPE installation. Outdoor CPE also requires additional cables, mounting brackets, and power supplies—with the second unit needing to be ruggedized and weatherproofed.
- Installation costs are slashed because there is no need for a technician to visit, except in unusual circumstances.
- Where additional performance is required, external units are an option that may also be installed by the consumer, if capable (technicians are available as needed).

The consumer experience

For FWA customers, accessing broadband services is as simple as buying a mobile phone. Once purchased at the store, or delivered, the gateway can be set up in just a few minutes. That means no waiting for a technician appointment, no drilling holes in walls for cables and brackets, and no time-consuming setup process.

HomeVantage™

Introducing CommScope's HomeVantage™ FWA solutions

CommScope's fixed wireless access gateways are part of the HomeVantage portfolio of high-performance home networking solutions powered by open-source firmware stacks, designed to deliver flexibility, simplicity, and advanced services. Our FWA gateways offer options for Wi-Fi (including tri-band Wi-Fi 6, Wi-Fi 6E, and soon Wi-Fi 7) and may be used with Wi-Fi EasyMesh™ extenders to deliver high-performance Wi-Fi to every corner of the home.

HomeVantage solutions support containerized applications that enable efficient delivery of value-added services and applications on the home gateway, with the flexibility to add and remove applications without the need to update the gateway platform software.

HomeVantage gateways support open-standards based management, including USP, TR-069, and Wi-Fi EasyMesh, interoperable with leading cloud management platforms including HomeAssure® for device management, Wi-Fi management, container life-cycle management, and service orchestration.

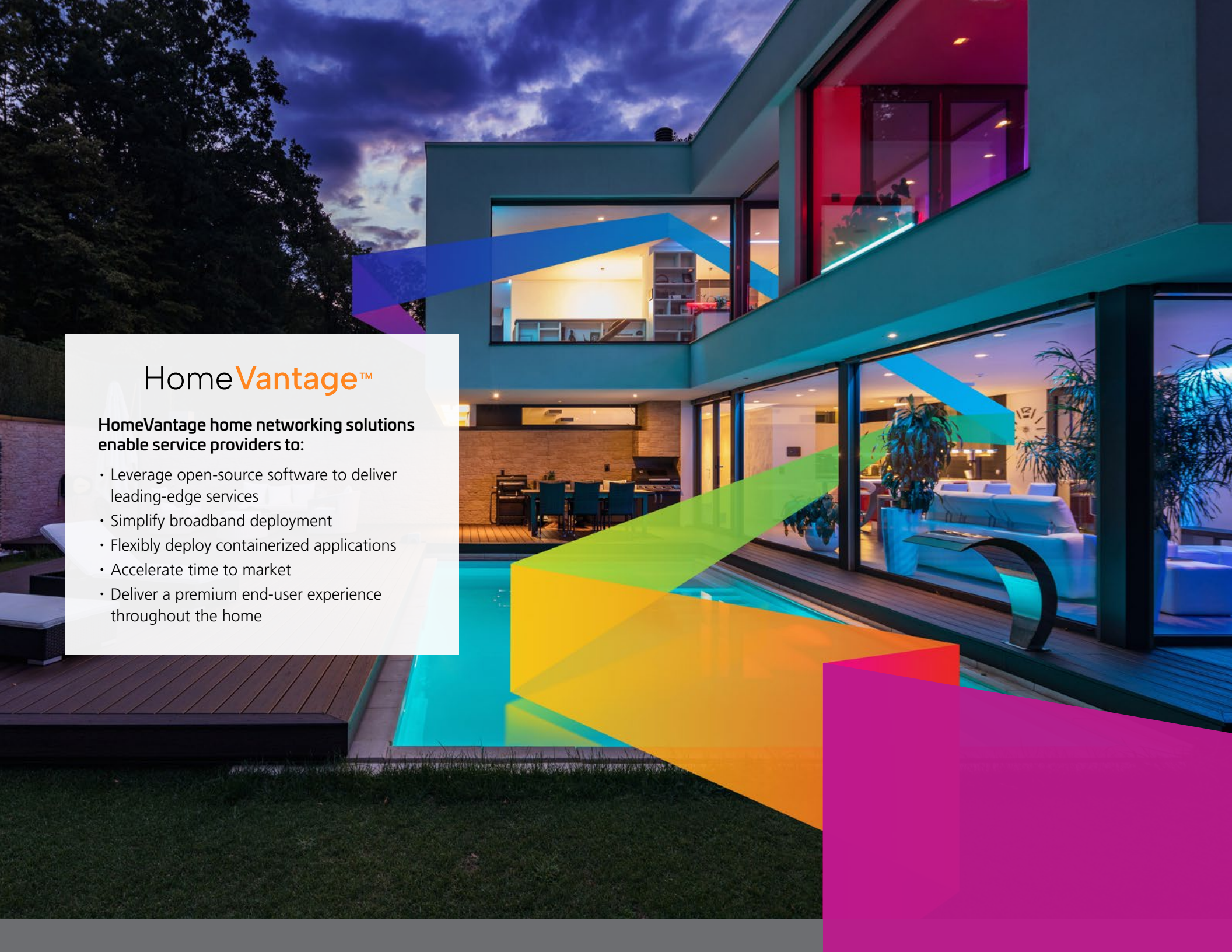
Quality gateways

Our NVG653UX 5G NR sub-6 GHz gateway offers speeds up to 4.67 Gbps for downloads and 1.25 Gbps for uploads. With dual-band Wi-Fi 6, consumers can enjoy a high-speed, optimized connection for home devices. Internal antennas make these gateways ideal for urban and suburban applications. Installation doesn't require a technician, so end users can connect it right out of the box. This equates to cost savings and ensures the consumer is online faster. Cost-effective outdoor units are also available in the rare case where indoor coverage is insufficient. This can also be done by the consumer if they choose, avoiding the added cost of a technician. A 2.5/1 Gbps LAN/WAN Ethernet port supports fixed-line WAN to mobile failover. A WAN signal strength indicator assists installation in identifying the best location in the home.

CommScope offers ready-for-market products as well as bespoke solutions for major service providers supported by professional services. The use of high-quality components and thorough testing reduces failure rates and extends the life of the products. If an issue arises, CommScope reacts promptly with support and resolution options.

Find out more about our Customer Premises Equipment portfolio here!

Go to CommScope



HomeVantage™

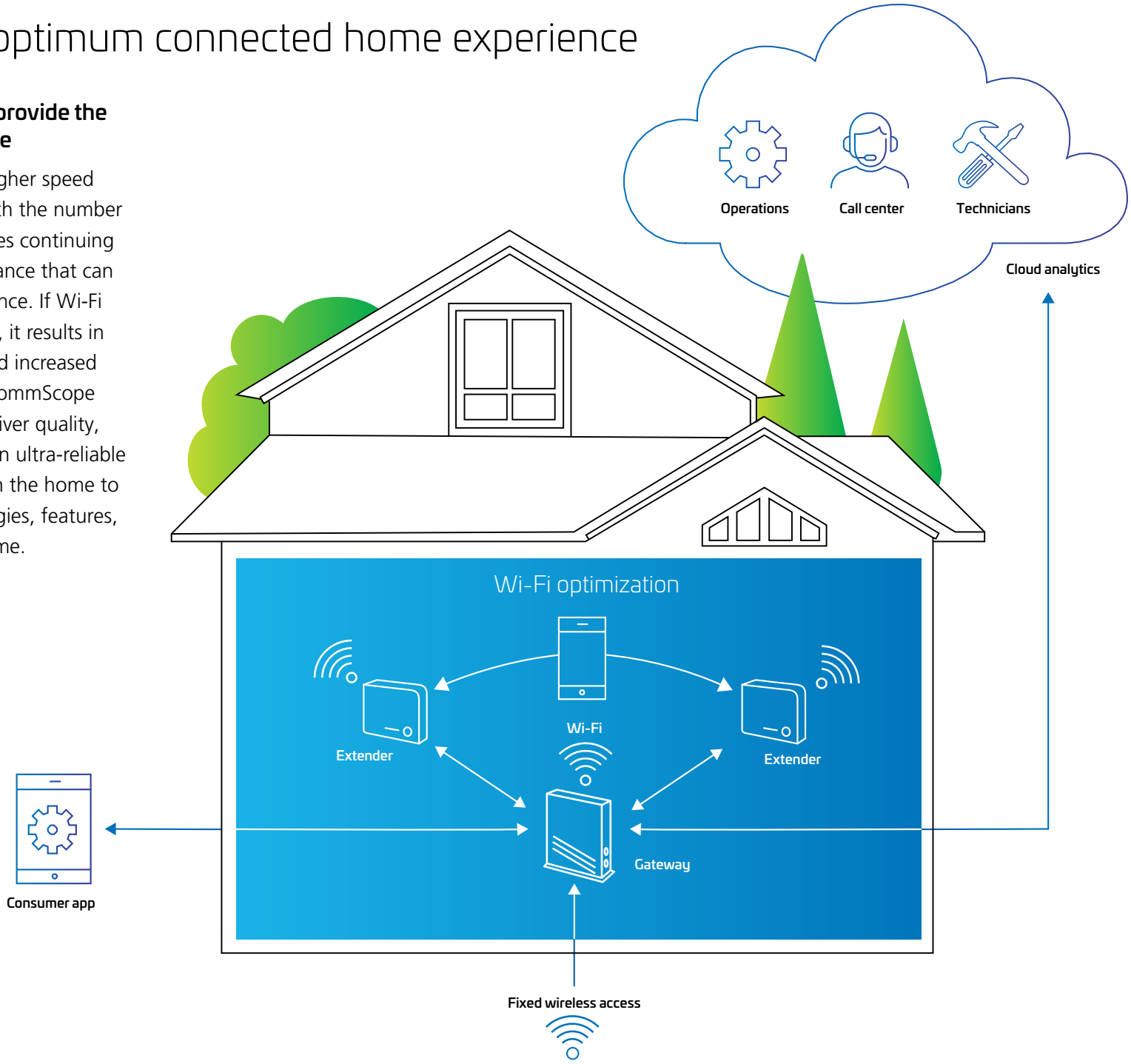
HomeVantage home networking solutions enable service providers to:

- Leverage open-source software to deliver leading-edge services
- Simplify broadband deployment
- Flexibly deploy containerized applications
- Accelerate time to market
- Deliver a premium end-user experience throughout the home

Delivering an optimum connected home experience

Avoiding bottlenecks to provide the best customer experience

Today, consumers expect higher speed broadband services, and with the number of wireless connected devices continuing to grow, it is Wi-Fi performance that can make or break their experience. If Wi-Fi isn't reliable and ubiquitous, it results in consumer dissatisfaction and increased support costs. That's why CommScope Home Networks devices deliver quality, managed Wi-Fi, providing an ultra-reliable gigabit wireless backbone in the home to support emerging technologies, features, and services for years to come.



Wireless access

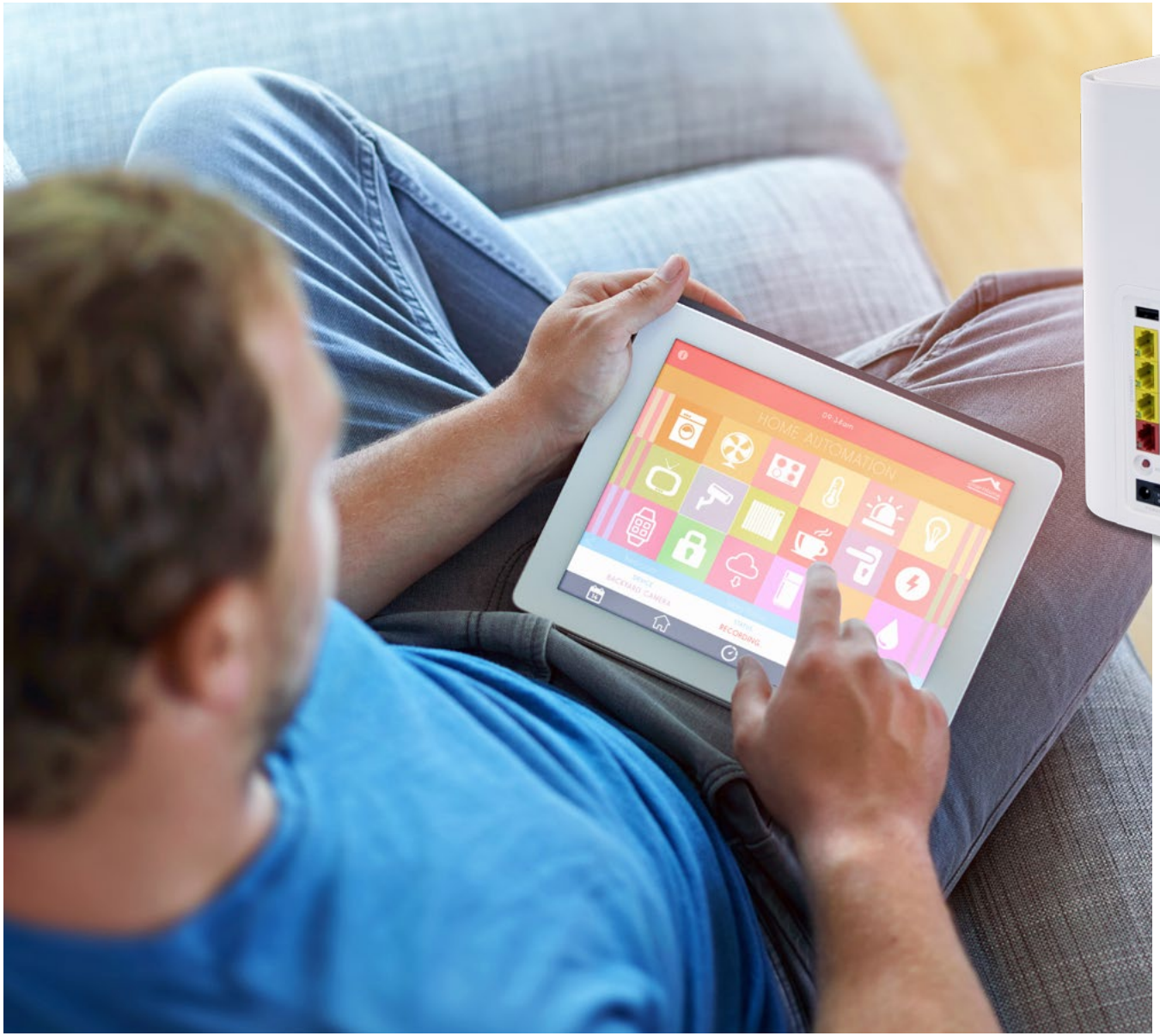
Based on proven technology and years of practical experience, CommScope has developed a fully integrated range of RAN solutions. These include macro cell products that enable fast upgrades and deployments to boost capacity; small cell solutions for fast, cost-effective network densification; and everything to support the required fiber backhaul.

Operators and service providers can leverage CommScope's longstanding experience in all things wireless. And, because the company offers everything to expand the network—from power and cabinets to masts and antennas—we support operators as they expand network capacity and continue to deploy 5G.

Find out more about our 5G solutions here!

Go to CommScope

CommScope NVG653UX 5G FWA home gateway with Wi-Fi 6



HomeVantage™

- 5G NR sub-6 GHz offering speeds up to 4.67 Gbps for downloads and 1.25 Gbps for uploads
- Dual-band 4x4 Wi-Fi 6
- WAN/LAN Ethernet port to support fixed-line WAN to mobile failover
- 2.5 GigE option LAN ports
- 3x GigE LAN port
- Optional voice/telephony (VoIP) (NVG658UX)

Why CommScope?

CommScope Home Networks has shipped over 300 million broadband home devices. This deep experience, along with a focus on quality and low total cost of ownership (TCO), a resilient supply chain, and proven support makes us a worldwide leader in home networking solutions.

With decades of wireless and wired know-how and end-to-end expertise, CommScope covers all technical areas and market developments and maintains a solid reputation for quality products and solutions.

Our comprehensive services include everything from consultancy and system integration to customization and software development. We are happy to work closely with service providers to deliver complete solutions that meet their unique business goals.

Let CommScope help you stay ahead

Would you like more information on any of the topics discussed in this ebook? **Learn more.**

Want to discuss how our solutions could benefit your business cases and network? Don't hesitate to get in touch! We're happy to help. **Contact your local CommScope representative for more information or contact us via our website.**

Contact CommScope

We are committed to environmentally sound corporate responsibility. Reducing power consumption, removing single-use plastics, and using recycled plastics are just some of the ways we are improving environmental sustainability.

Discover more at commscope.com.

CommScope pushes the boundaries of communications technology with game-changing ideas and ground-breaking discoveries that spark profound human achievement. We collaborate with our customers and partners to design, create and build the world's most advanced networks. It is our passion and commitment to identify the next opportunity and realize a better tomorrow. Discover more at commscope.com.

Wi-Fi is a trademark of the Wi-Fi Alliance.

[1] GSM Association. The Mobile Economy 2022, 2022.
[2] Reed, Matthew. 5G Pioneers in Service Provider Markets, Omdia, September 2022.
[3] MVNO—mobile virtual network operator

COMMSCOPE®

EB-114488.1-EN (05/23)