ZCorum™

G.hn vs. MoCA – A Simplified Guide to MDU Networking Solutions

Introduction

Internet service providers know that delivering high speed internet to Multi-Dwelling Units (MDUs) is a great way to boost revenue, but if not done right it could also mean costly rewiring of the entire building. Two available technologies, G.hn and MoCA, stand out as viable solutions for extending broadband access in MDUs while using the building's existing wiring.

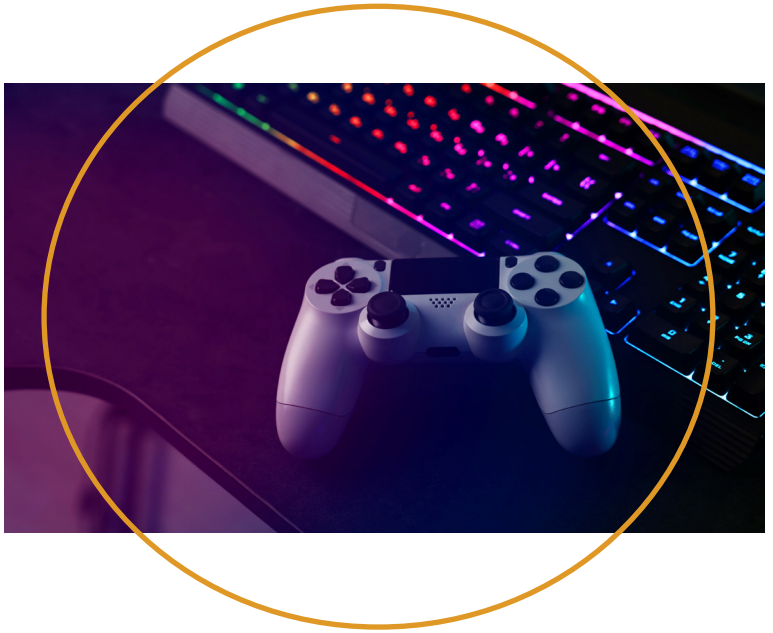
The Two Technologies

What is G.hn?

G.hn (Gigabit Home Networking) is a standard designed to deliver high-speed data over existing wiring such as power lines, phone lines, coaxial cables and optical fiber. Developed by the International Telecommunication Union (ITU), G.hn enables broadband service providers to offer internet connections without the need for entirely new wiring installations.

Key Features of G.hn:

- ✓ **Flexible Infrastructure:** G.hn can operate over multiple types of existing wiring which makes it a highly adaptable solution for a range of environments.
- ✓ **High-Speed Performance:** G.hn supports data speeds that can reach gigabit levels, making it ideal for high-bandwidth applications such as HD streaming, gaming, and video conferencing.
- ✓ **Scalability:** Whether MDU or single-family home, G.hn scales to meet the needs of both residential and commercial settings.



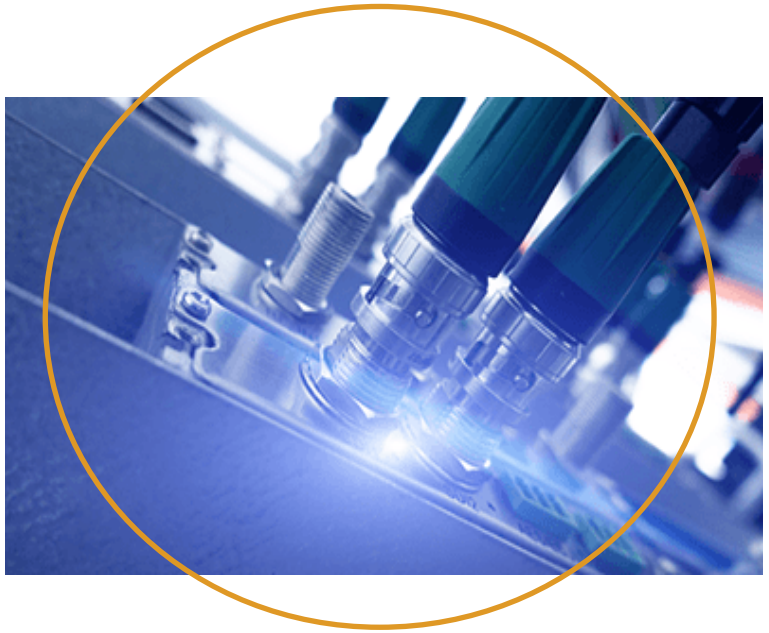
G.hn offers flexibility and scalability, but it also comes with some challenges. Its performance can vary depending on the quality of the wiring used. Power lines, for example, are more susceptible to electrical noise and interference, which can impact G.hn's performance in certain environments.

What is MoCA?

MoCA (Multimedia over Coax Alliance) is a technology that extends high-speed data transmission over coaxial cables, which are already commonly used for cable TV installations. MoCA is often used to improve networking by providing a reliable, low-latency, and high-speed backbone for internet connections.

Key Features of MoCA:

- ✓ **Dedicated to Coaxial Cables:** MoCA is built to work over coaxial cables, which are found in most MDUs and homes with cable TV. This simplifies installation for service providers who don't need to run new cabling.
- ✓ **Low-Latency and High-Speed:** MoCA provides consistently high speeds, often up to 2.5 Gbps, with low latency—making it an excellent choice for real-time applications like online gaming, streaming, and video conferencing.
- ✓ **Ease of Deployment:** With existing coaxial cable infrastructure, MoCA is easy to deploy. A simple plug and play setup is all that's required to get started.



While MoCA is an excellent solution for MDUs with coaxial networks, it is limited to those with coaxial infrastructure. If coaxial wiring isn't available or needs to be upgraded, MoCA may not be the best option.

Key Differences Between G.hn and MoCA

Infrastructure Flexibility:

- ✓ G.hn is more flexible in terms of infrastructure. It can use power lines, phone lines, coaxial cables and Plastic Optical Fiber, making it an ideal solution for buildings with mixed wiring or older infrastructure.
- ✓ MoCA, on the other hand, is confined to coaxial cables, which limits its applicability to homes or buildings that already have this type of wiring.

Speed and Reliability:

- ✓ G.hn supports gigabit speeds but may experience variable performance, especially over phone or power lines, which are prone to electrical noise and interference.
- ✓ MoCA offers a reliable and consistent performance, delivering speeds up to 2.5 Gbps with low latency, making it ideal for bandwidth-heavy applications like streaming and gaming.
- ✓ G.hn offers dynamic bandwidth sharing between subscribers, and between upstream and downstream traffic based on real-time needs and conditions.

Deployment Complexity:

- ✓ G.hn requires more careful setup, particularly when using non-coaxial wiring types like power lines and phone lines. However, its flexibility can be beneficial in older buildings or areas where coaxial cable is not readily available.
- ✓ MoCA is straightforward to deploy in apartments with existing coaxial cable. Its setup is typically a matter of plugging in MoCA adapters to the coaxial outlets, making it easy and fast to install.

Pros and Cons of G.hn

Pros:

- **Versatility:** G.hn supports multiple wiring types (power lines, phone lines, and coaxial cables), which allows it to be used in a wide variety of settings.
- **Gigabit Speed:** G.hn can deliver gigabit speeds over existing wiring, which is ideal for users who require high-bandwidth connectivity for activities such as streaming and video conferencing.
- **Scalable for MDUs:** G.hn is suitable for both residential homes and MDUs, making it a scalable solution for broadband providers with a diverse range of customers.

Cons:

- **Inconsistent Performance:** Performance can vary depending on the quality of the wiring used, with power lines being especially prone to interference that can reduce speeds and reliability.
- **Complex Setup:** Although G.hn offers flexibility, it may require more technical setup and optimization compared to other solutions, particularly when using non-coaxial wiring.
- **Less Total Bandwidth:** Total throughput for G.hn is limited to 1.7 Gbps, which is less than MoCA 2.5. While it cannot provide symmetrical gig service, it is near symmetrical with G.hn's dynamic bandwidth allocation.

Pros and Cons of MoCA

Pros:

- **Reliability and High-Speed Performance:** MoCA provides a reliable, high-speed connection, with speeds up to 2.5 Gbps and low latency, making it perfect for streaming, gaming, and other bandwidth-intensive tasks.
- **Easy to Install:** MoCA is easy to install in units that already have coaxial wiring. It requires minimal setup, often just connecting MoCA adapters to coaxial outlets.
- **Ideal for HD Streaming:** MoCA's low-latency performance makes it an excellent choice for households that need a stable, fast connection for HD or 4K video streaming and gaming.

Cons:

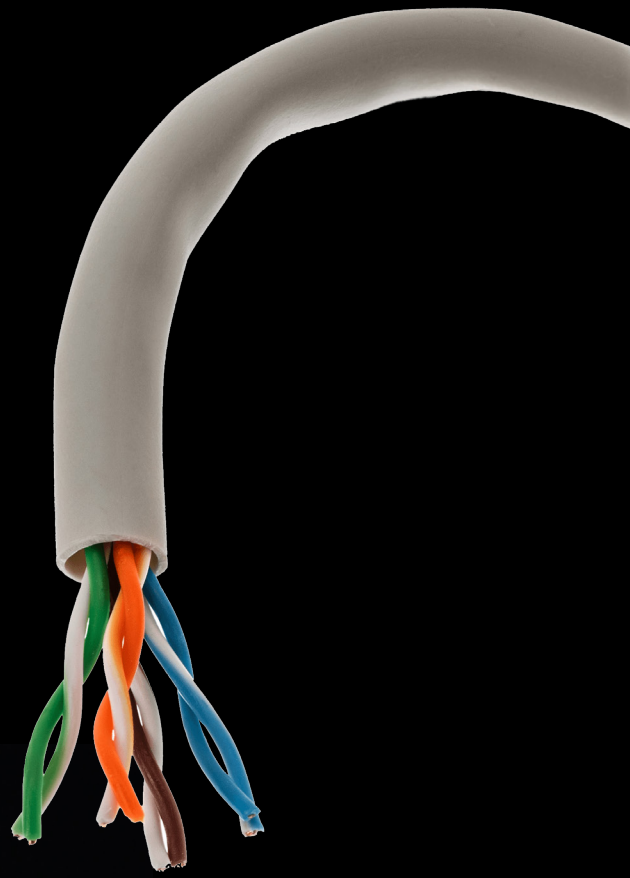
- **Limited to Coaxial Cable:** MoCA can only be used in homes or buildings with existing coaxial cable infrastructure, making it unsuitable for homes that don't have coaxial cable or for locations that require new wiring.
- **Potential for Interference:** Since coaxial cables may carry other services (like cable TV), MoCA's performance can sometimes be affected by interference from other devices on the same network.
- **Upfront Costs:** In some cases, MoCA can be more expensive than Wi-Fi or other alternatives, particularly if the coaxial network needs to be upgraded.

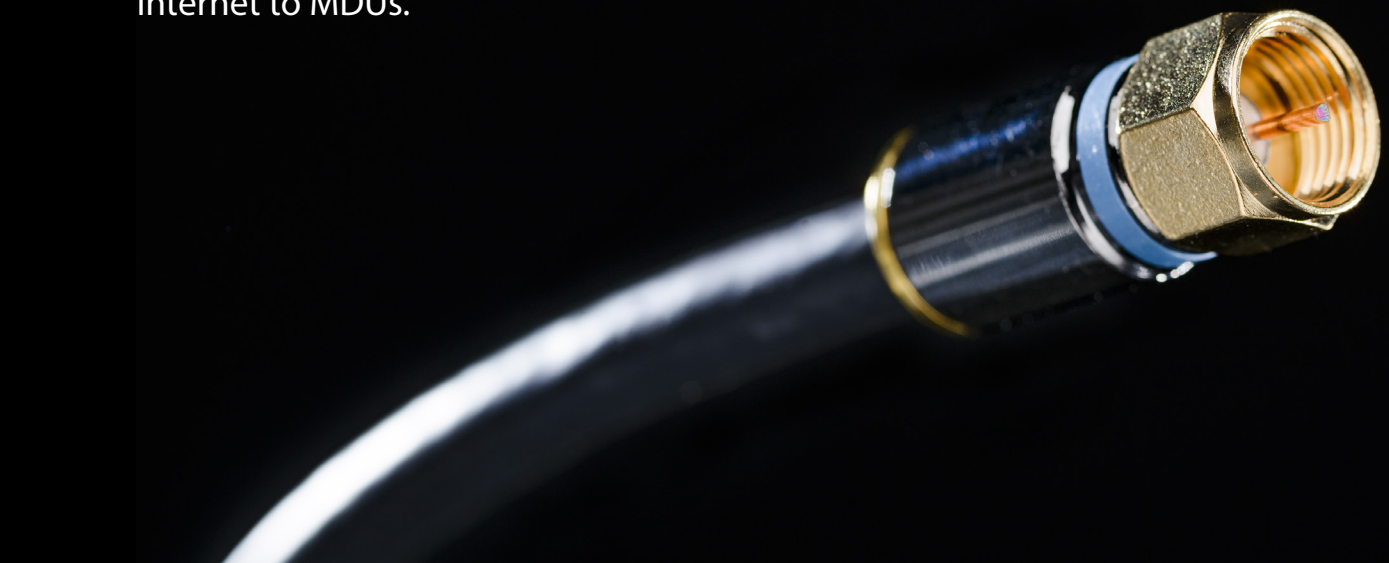
Choosing the Right Solution

When deciding between G.hn and MoCA, the best choice will depend on the infrastructure in place, your specific needs, and the needs of your customers

If the building already has coaxial cable, MoCA may be the best solution due to its reliability, ease of setup, and high-speed performance. If your the building has a mix of wiring types or need to upgrade existing infrastructure, G.hn offers a flexible, scalable solution that can meet a variety of needs. For service providers looking to deploy high-speed internet in MDUs, both technologies provide viable solutions, but the final choice will depend on the wiring infrastructure and performance requirements for individual MDU's.

G.hn and MoCA each provide valuable solutions for delivering high-speed internet over existing infrastructure. Whether you choose G.hn or MoCA, both technologies offer innovative ways to bring high speed internet to MDUs.





Next Steps

Ready to take the next step towards extending your broadband network into those lucrative MDUs in your service area?

Whether you're looking to streamline installations or boost your subscriber base, ZCorum is here to support you every step of the way. That includes helping you select the right MDU technology for your specific situation, acquiring the equipment, and assisting with the setup and support.

For a deeper dive into how our G.hn and MoCA solutions can transform how you address MDU opportunities, give us a call at 800-909-9441, or send an email to info@ZCorum.com.

ZCorum™

4501 North Point Parkway,
Suite 125
Alpharetta, GA 30022
Toll Free: 1-800-909-9441
info@ZCorum.com

ZCorum provides broadband Internet and communication solutions to telcos, cable companies, utilities, and municipalities, assisting in all facets of broadband implementation, integration, engineering and consulting, network monitoring and diagnostics. ZCorum also offers wholesale, privatelabeled Internet services, including data and VoIP provisioning, email, Web hosting, and 24x7 support for end-users, enabling service providers to compete effectively in their local rural and suburban markets. ZCorum is headquartered in Alpharetta, GA.