

**SYSTIMAX**<sup>®</sup>  
COMMSCOPE

# Extended Reach Solutions ebook

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# Introduction

Pushing network cabling beyond the limits

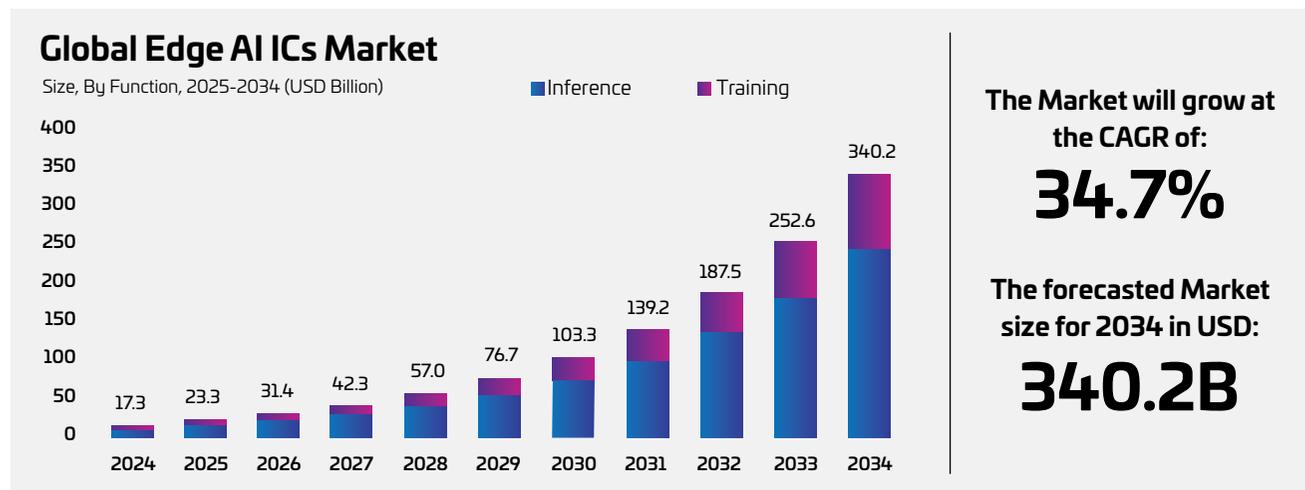


Like the roots of a growing tree, the enterprise network is branching out from the core and making its way into the farthest reaches of buildings and campuses as network managers try to stay one step ahead of the hyperconnected enterprise.

The value of the global edge AI integrated circuits (ICs) market, which measured \$17.3 billion USD in 2024, is expected to reach \$340.2 billion by 2034—a compound annual growth rate (CAGR) of 34.70%<sup>1</sup>.

The surge in connectivity is being driven by multiple dynamics, two of which are closely connected. One is AI's ability to synthesize data from previously distinct and discrete platforms and systems to provide a more meaningful and holistic perspective of the entire enterprise network. That ability requires the input of a dizzying array of devices, sensors and systems, many of which are being deployed at the edge. These emerging and expanding edge-based technologies include advanced building automation and control, ubiquitous in-building wireless, campus-wide CCTV security and digital signage, smart manufacturing/distribution and more.

The growth in edge-based connectivity presents a number of key challenges for enterprise network managers. Among them: how to extend the reach of their networks to deliver the required



power and bandwidth beyond the traditional 100-meter distance limitation. The issue isn't just about taking the network further; it's also about satisfying the increasing power requirements.

In this ebook, we address the extended reach challenge facing today's enterprise and campus network managers. We'll look at the major

obstacles experienced when pushing beyond the standards-defined threshold, some of the solutions that have been proposed, and three new technologies that just might change your approach to the problem.

We've got a lot of ground to cover—more than 100 meters, in fact. Let's get going.

<sup>1</sup> Global Edge AI ICs Market Size, Share, Statistics Analysis Report By Chipset; Markets.U; March 2025

# Chapter 1

What's with the 100-meter barrier?

## Before discussing how to solve the problem, let's understand it a little better. Why exactly is there a 100 m limit?

The 100-meter distance limitation as codified by industry standards (namely, ANSI/TIA-568, ISO 11801 and other cabling standards for commercial buildings) is based on the electrical limitations of twisted-pair copper cabling. As the signal travels from one end of the cable to the other, its strength is affected by certain parameters, primarily insertion loss. The longer the cable, the greater the insertion loss. Based on these performance parameters, the industry standardized on the 100-meter distance.

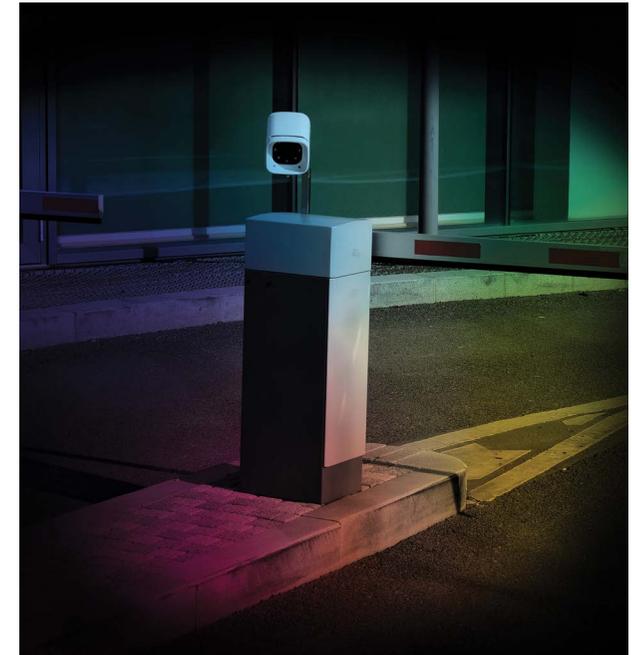
The distance limitation represents a worst-case scenario for a given application and length when conducting a signal at the cable's maximum frequency. It assumes a four-connector channel using a 90 m trunk and a combined length of 10 m of patch cables at the ends.

The limit was standardized in the 1990s and has stood the test of time, even as higher-frequency applications and new cable constructions

have entered the market. In that time, network equipment vendors cost-optimized their transceivers based on the 100-meter limit—further solidifying it as the accepted distance boundary.

On one hand, the 100-meter channel limit has simplified the job of developing reliable performance specifications for new technologies extrapolating supportable distances for each new generation of cabling.

On the other hand, the distance barrier has created a new challenge for network designers. Enterprise networks are expanding faster than the budgets that are needed to implement and manage them. This is happening as available space for additional network components shrinks. As major trends such as Industry 4.0 and the onslaught of IoT/IIoT<sup>2</sup> advance, network managers must be able to support more network-connected devices and systems—throughout buildings, across campuses, and especially at the edge.



Simplicity and innovation, agility and sustainability. These are the hallmarks of tomorrow's evolved RF path and a more powerful, prepared and profitable wireless network. We know because we've been involved from the beginning.

<sup>2</sup> Industrial internet of things

# Chapter 2

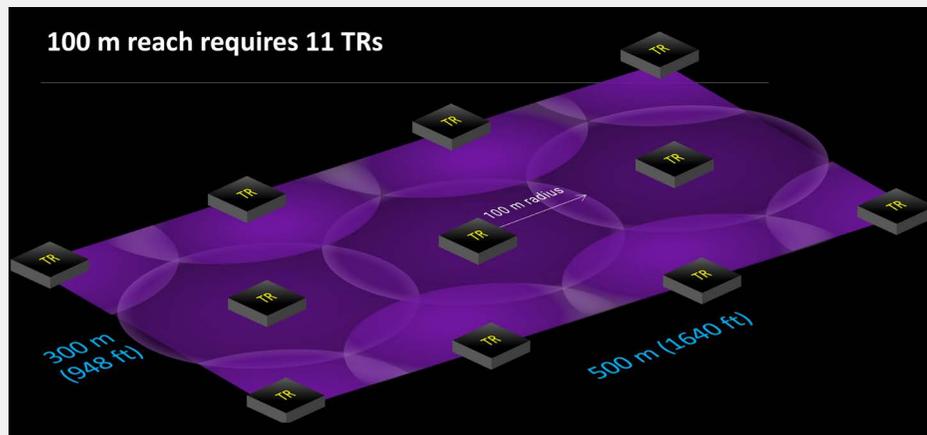
## The cost of compliance



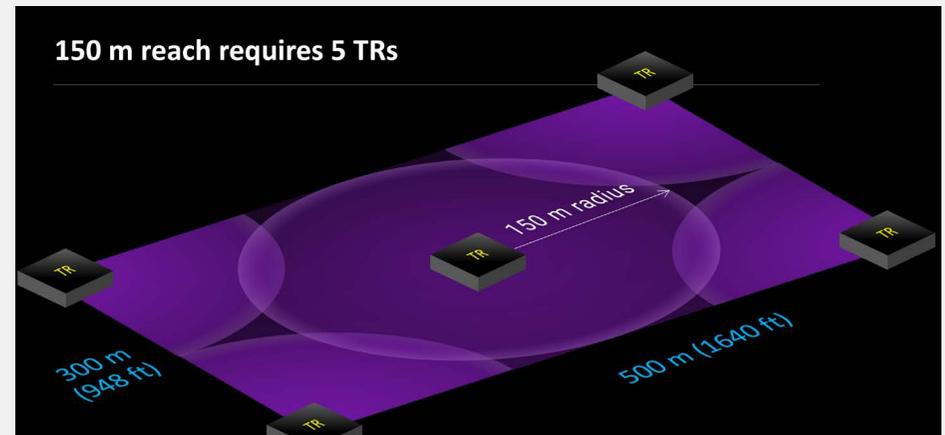
In most indoor environments, the issue comes down to floor coverage. How many telecom rooms (TRs) are needed to cover each floor? It all depends on how far your transmission cabling can reach from the TR. Let's consider four scenarios involving the same 150,000-square-meter (1.55-million-square-foot) floor space.

### Four scenarios<sup>3</sup>

**Scenario #1** assumes a standards-based link that can support PoE applications up to 100 meters. As you can see in the diagram, you'd need 11 TRs to reach every corner of the floor. Also notice that the four TRs on the perimeter are delivering just a fraction of their coverage capacity, while the four on the corners are delivering even less.

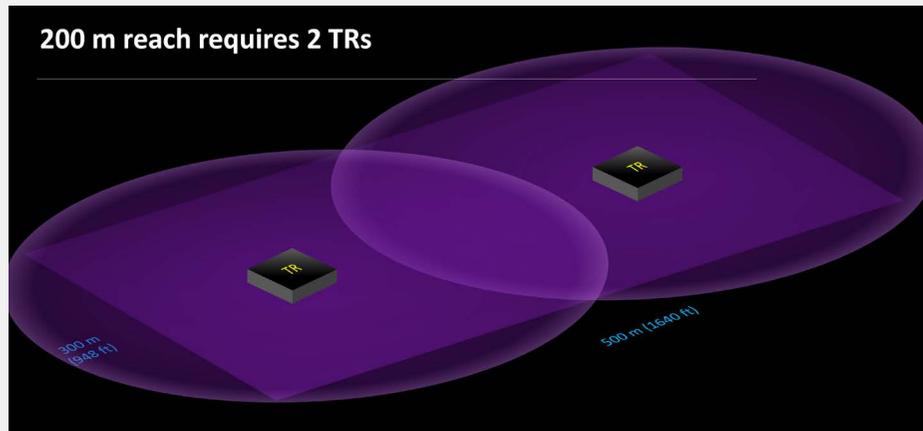


**Scenario #2** is based on a link that can span 150 meters. By increasing the reach 50% compared to scenario #1, we can reduce the number of required TRs by more than 50%—from 11 TRs to five. What's more, we've reduced the amount of wasted coverage.

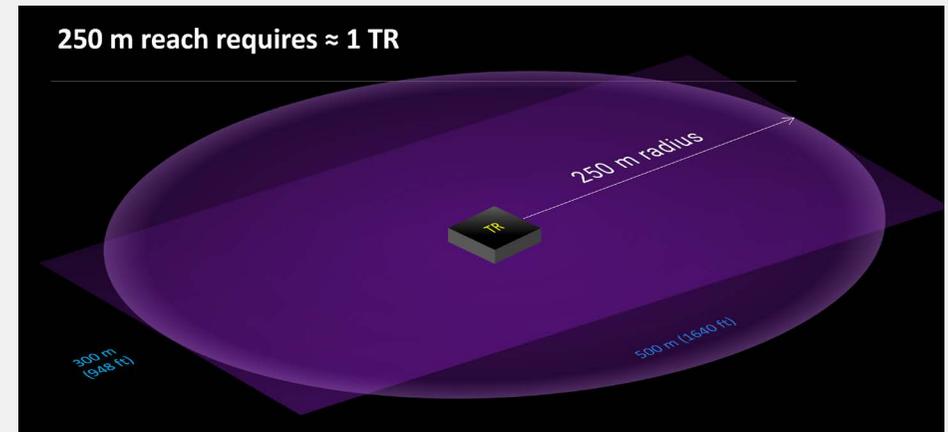


<sup>3</sup> These scenarios are simplistic for educational purposes. The models don't account for vertical up and down segments of the cable runs and assume a straight point-to-point layout between the TR and the outlet.

**Scenario #3** uses a transmission link that can span 200 meters. Now, we can cover the entire floor with just two TRs and improve the coverage efficiency of each substantially.



**Scenario #4** represents the best case solution. It models a link that can reach 250 meters from the TR to any connected and powered device on the floor. One telecom room and nearly 100% coverage efficiency.



Obviously, the farther your horizontal cabling can reach from the telecom room, the fewer TRs you need. That makes Scenario #4 the most desirable. It's a great solution, assuming you have a link that can reliably deliver high-wattage power and gigabit or multi-gig bandwidth as far as 250 meters from the TR. We'll get to that in a minute, but for now, let's talk about the impact of having to support all these telecom rooms.

### Direct and indirect costs of telecom rooms

Whether you're talking about Class A office space in a Manhattan high-rise, a manufacturing and distribution complex in Manila, Gatwick Airport in Scotland, or a shopping mall in Tokyo, the average cost of real estate continues to increase. As a result, there is cost associated with all those telecom rooms.

As of mid-2025, the average annual cost for Class A office space in Chicago was **\$57 per square foot**. In Madrid it's about **€42 (\$49.35 USD) per square meter per month**.<sup>4,5</sup> In London's West End, **Q2 2025 rents surged to £160 (\$216.56 USD) per square foot** as of August 2025.<sup>6</sup>

So, let's make a couple of safe assumptions and run the numbers. First, we'll assume the real estate is worth \$100/square foot. Next, we need to get a handle on how large a typical telecom room is. It really depends on the size of the space it is designed to support. According to guidance from TIA-569-D and Cabling, Installation & Maintenance (ISO 11801 sets minimum sizes slightly larger):

- If the TR is serving up to 5,000 ft<sup>2</sup> (464 m<sup>2</sup>), a common minimum recommendation is about an 8 ft x 10 ft, or 80 ft<sup>2</sup> (7.4 m<sup>2</sup>).
- If it needs to support 5,000 to 8,000 ft<sup>2</sup> (464 to 743 m<sup>2</sup>), a room around 90 ft<sup>2</sup> (8.4 m<sup>2</sup>) is typically recommended.
- To support 8,000 to 10,000 ft<sup>2</sup> (743 to 929 m<sup>2</sup>), the recommended size increases to approximately 110 square feet (10.2 m<sup>2</sup>), or 10 ft x 11 ft.

Based on our scenario #1 above, the only one that would be standards-compliant with a Category 6 or 6A Ethernet link, the average area to be covered by each of the 11 TRs would be about 13,600 ft<sup>2</sup> (1,263 m<sup>2</sup>). That would require TRs that are at least 10 ft x 11 ft or 110 ft<sup>2</sup> (10.2 m<sup>2</sup>).

Now, it's just simple multiplication.

$$110 \text{ ft}^2 \times \$100 \text{ per ft}^2 \times 11 \text{ TRs} = \$121,000 \text{ per floor in annual real estate cost.}$$

There are additional costs, as well. You need to add in the equipment, maintenance, cooling and power costs needed to support the TRs. On top of that, you also have indirect opportunity costs, which are the unrealized productivity gains lost by not being able to use that space. Once you add everything up, the total annual cost of being constrained by the 100 m PoE channel limit can quickly approach seven figures per 150,000 m<sup>2</sup> floor.

<sup>4</sup> <https://avalonreal.com/blog-chicago-office-space-investment-2025-growth-insights/>

<sup>5</sup> <https://www.cushmanwakefield.com/en/spain/insights/spain-marketbeat/office-marketbeat>

<sup>6</sup> <https://www.pilcher.london/offices/what-are-the-top-5-most-expensive-areas-to-have-an-office-in-london/>

# Chapter 3

## Options for extending your network's reach



Considering the costs of all those TRs, there is a lot more incentive to find a way around the 100-meter distance limitation. The question is, how? If the standards don't support Ethernet links that are more than 100 meters long, how can you reliably provide data and power to devices at the very edges of the network?

There are some options. Each introduces an engineered solution that has its pros and cons.

#### Solution #1: Add a PoE extender

The first approach is to install an in-line PoE extender between the power source equipment (PSE) and device. A PoE extender offers two major advantages. Each side of the link—from the PSE to the extender and from the extender to the device—can span over 100 m, meaning network designers can essentially double the length of the channel. Some PoE extenders support daisy-chaining multiple units for spans of 500+ meters. This also provides a relatively inexpensive standards-based solution.

However, a PoE extender (aka "repeater") is subject to the power and bandwidth limitations of the PoE technology and cable medium used. This means it can only serve a few devices. It also requires dedicated space and, without careful tracking and documentation of where extenders have been installed, management and troubleshooting can be difficult. While an extender allows remote devices to leverage the existing copper cabling, it may require local power, which can be difficult to access in some areas.

Pros:	Cons:
<ul style="list-style-type: none"><li>• Good solution for a few devices</li><li>• Inexpensive compared to other solutions</li><li>• Uses existing copper plant</li></ul>	<ul style="list-style-type: none"><li>• Finding space can be difficult</li><li>• Ad hoc solution, must be carefully documented</li><li>• Difficult to troubleshoot</li></ul>

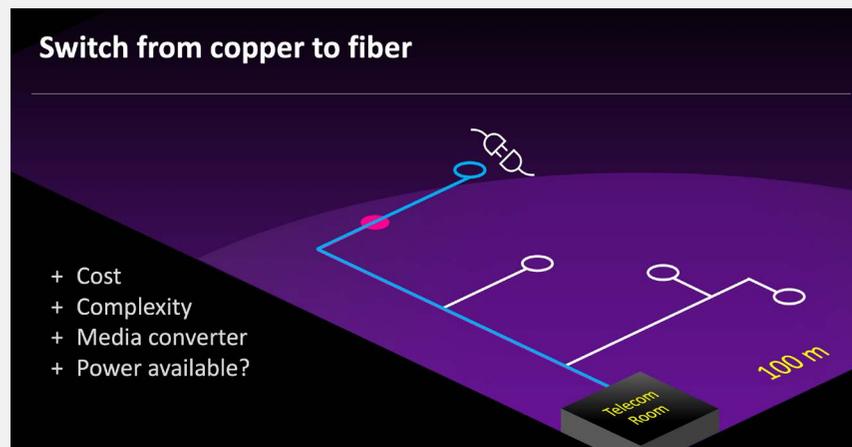
#### Solution #2: Replace copper with fiber

Another option is to switch from copper to fiber, which eliminates the distance problem but does not address the critical power issue. And, while the long-term cost to operate and maintain a fiber network may be lower than a copper network, it adds more upfront cost and complexity.

Migrating to fiber requires a thorough analysis of your current infrastructure to identify network bottlenecks and to define coverage, bandwidth, security and scalability requirements. This is followed by network design, which includes establishing the network's topology and cable routing.

Fiber cabling is also more expensive than twisted-pair cabling in terms of material and installation costs and requires a significant investment in all new equipment. Existing switches, routers, and network interface must be replaced by fiber-optic switches, optical media converters, etc.

Assuming you can justify the cost of the fiber, you'll still need a separate power feed in parallel with the fiber, since meaningful amounts of power can't be delivered over optical fiber. This involves purchasing additional power-handling equipment and bringing in a certified electrician. One fiber-related option is to use hybrid cables (combining fiber for data and copper for power). More about that later.



Pros:	Cons:
<ul style="list-style-type: none"><li>• <i>Unlimited bandwidth</i></li><li>• <i>Lower operational costs, long term</i></li></ul>	<ul style="list-style-type: none"><li>• <i>Does not address the need for power</i></li><li>• <i>High upfront planning and deployment costs</i></li><li>• <i>Requires full network infrastructure overhaul</i></li></ul>

### Solution #3: Use extended reach Ethernet

Another option is to use alternatives to four-pair copper cable.

#### Single-pair Ethernet (SPE)

A third method for extending the network's reach involves the use of single-pair Ethernet (SPE) technology. As its name suggests, SPE transmits data and power over a single twisted pair of copper wires. Introduced in the early 2010s, it was developed to address the need for high-bandwidth, low-power, short-reach applications, specifically in automotive, building automation and industrial environments.

Among the touted benefits of the technology are its reduced size and weight, a result of reducing the number of twisted pairs from four to one. It also eliminates the need for multi-protocol fieldbus systems and gateways, which can accelerate the learning for installers and potentially reduce cost.

However, attempting to use SPE to deliver meaningful power and data over extended distances quickly reveals its shortcomings. The primary issue with SPE is its inability to support more than 10 Mbps of data and 8 watts of power up to 1,000 meters. This limits its use to mainly low-power applications such as monitoring devices, like temperature or pressure sensors. At gigabit and multi-gigabit speeds, the range drops to 40 m, 25 m and 15 m depending on the application.

As a newer disruptive technology, SPE also has limited compatibility with existing hardware and components, including the ubiquitous RJ45 connectivity ecosystem. As a result, switching to SPE requires new, dedicated hardware, including specialized switches, cables, and connectors.

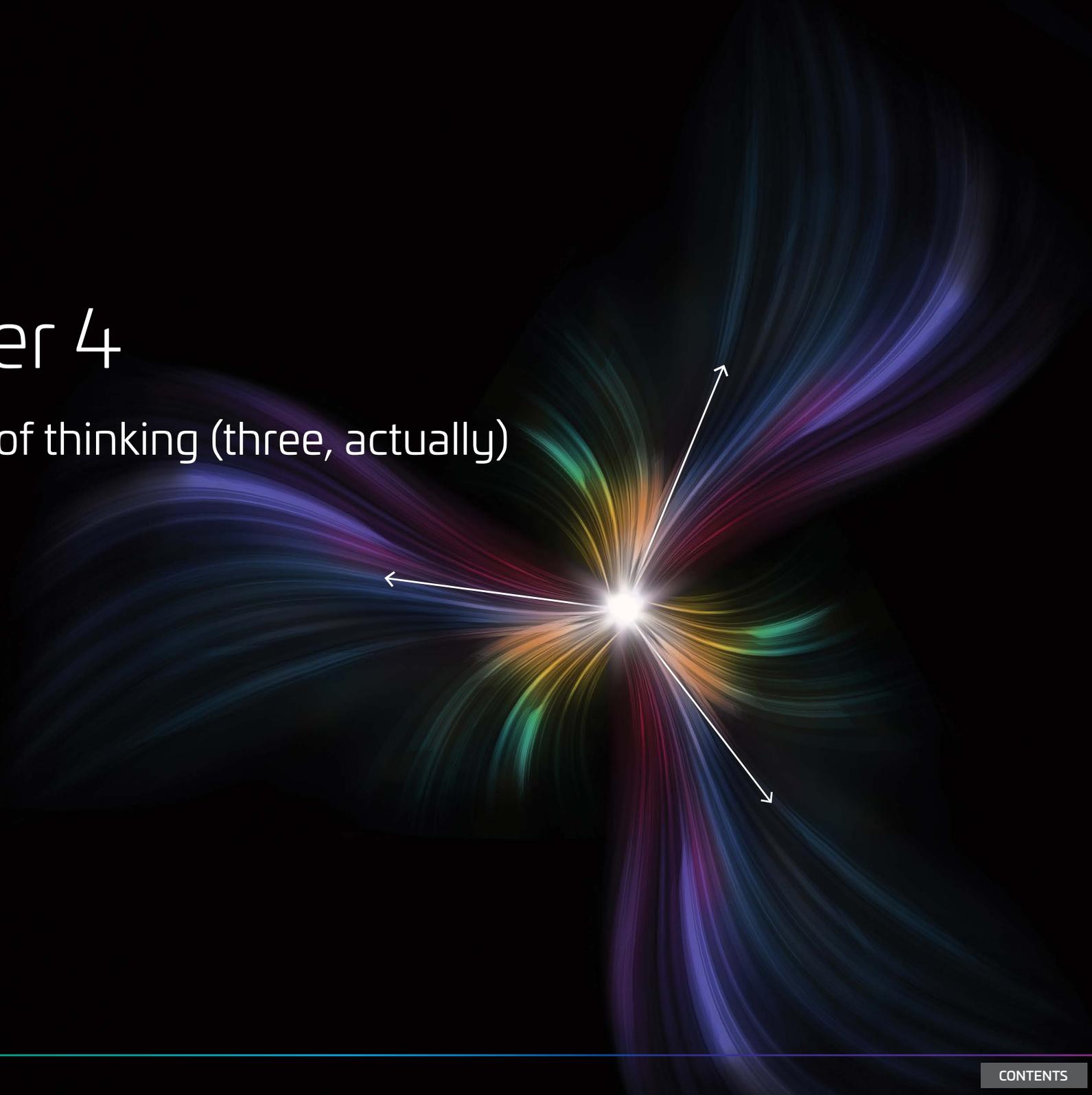


SPE can power low-power applications such as temperature sensors at long distances.

Pros:	Cons:
<ul style="list-style-type: none"><li>• <i>Reduced cable diameter and weight</i></li><li>• <i>Eliminates the need for a fieldbus</i></li><li>• <i>May reduce some OpEx costs</i></li></ul>	<ul style="list-style-type: none"><li>• <i>Distances over 100 m are limited to 10 Mbps and low power</i></li><li>• <i>Incompatible with the RJ45 ecosystem</i></li><li>• <i>Incompatible higher-power PoE devices</i></li></ul>

# Chapter 4

A new line of thinking (three, actually)



# 1. SYSTIMAX® GigaREACH™ XL



Launched in April 2024, the SYSTIMAX GigaREACH XL solution is a product of CommScope innovation and experience. It is the industry's first extended-reach Category 6 UTP solution that supports:

- 1 Gbps/90 W up to 150 m
- 100 Mbps/90 W up to 200 m
- 10 Mbps/90 W up to 250 m

*How did we do it? We leaned into our 40+ years of experience and passion for innovative thinking.*

## It's all in the twist

As noted earlier, the reach of a twisted-pair Ethernet cable is primarily limited by its insertion loss. Find a way to reduce insertion loss without sacrificing electromagnetic/transmission performance and you can extend the cable's length while maintaining signal integrity beyond 100 meters. One of the most effective ways to lower insertion loss is to switch to a larger diameter conductor, which disperses the electromagnetic field (signal) over a greater area. But upsizing the conductor isn't that simple.

In 2002, TIA/EIA ratified the first Cat 6 standard, which standardized use of the 23 AWG copper wire for Cat 6. As a result, all components in a Cat 6 link that interface directly with the cable (jacks, outlets, connectors, etc.) must be designed for 100-ohm cables and a maximum conductor size of 23 AWG. So, increasing the size of the conductor would require creating an entirely new ecosystem of connectors and termination equipment.

## Or would it?

- 21 AWG
- Plenum, riser, LSZH or outdoor
- Outside diameter: <6.6 mm (<0.26 inch)\*
- Connectivity: GigaSPEED XL
- Certified to meet Cat 6 cable specs
- Meets Cat 6 channel specs when used with GigaSPEED XL cords and connectors

\* outdoor cable is approximately 1 mm larger diameter

Equipment compatibility isn't really about the size of the conductor. It's about the overall diameter of the cable. You can use a larger conductor so long as you reduce the size of something else inside the cable. For CommScope engineers, that "something else" was the insulating material surrounding the individual conductors used in each of the four twisted pairs.

Typically, the individual conductors in a Cat 6 cable are centered in a layer of polyethylene (PE) or high-density polyethylene (HDPE). Each twisted pair is further insulated by central spline to help control near-end crosstalk (NEXT). Splines, commonly consisting of plastic or PE, are relatively bulky.

So, CommScope developed a proprietary “tape-pair-separator twist technology” that reduces the thickness of the insulation around the individual wires and replaces bulkier splines with a much thinner tape-pair-separator. This provided the “extra room” needed to increase the conductor from 23 AWG to 21 AWG, the industry’s lowest loss conductor. The final step was to re-engineer the common twist rate for Cat 6 to ensure the required 100-ohm impedance and NEXT performance mandated by TIA and other standards.

The result is SYSTIMAX GigaREACH XL, a unique extended-reach UTP Cat 6 solution. By reducing direct current (DC) resistance to just 4.69 ohms/100 m—half the DC resistance allowed for standardized Category 6 cables—network planners can reduce power transmission loss between power source and device by 50%, or double the distance for the same transmission loss, or some combination of both.

That means improved energy savings, more sustainability and/or a higher power budget over longer distances.

*Now that is innovation!*

### Benefits of GigaREACH XL extended reach cable

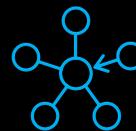
GigaREACH XL provides a fast, simple and non-invasive UTP solution for connecting and powering devices that your existing structured cabling network can’t reach. One home run from the TR to the device eliminates the need for additional TRs, PoE extenders, patch panels, optical transceivers, media converters and more.

Fewer components means fewer points of failure, lower OpEx and a simplified network that’s faster to deploy, more reliable and easier to manage.



#### Go farther

- 1 Gbps/90 W up to 150 m
- 100 Mbps/90 W up to 200 m
- 10 Mbps/90 W up to 250 m



#### Simplify the network

- No PoE extenders, media converters
- Less equipment, faster deployment
- Fits any structured cabling architecture
- Consolidation of power supply and UPS backup



#### Increase sustainability

- 50% less drop in voltage per meter of cable
- Fewer TRs, lower environmental impact
- Fewer points of failure and truck rolls reduce GHGe



#### Peace of mind

- Performance backed by Application Assurance
- Components covered by 25-Year Extended Warranty
- 80+ systems engineering teams around the world
- 10,000+ SYSTIMAX-certified partners in 130 countries

GigaREACH XL cables and components meet all Category 6 requirements, easily integrating into your structured cabling architecture. SYSTIMAX GigaSPEED customers can use the same installation tools, procedures, panels and jacks for GigaREACH XL deployments. Using an optional plug that terminates directly on the GigaREACH XL cable, you can quickly create a Modular Plug Terminated Link (MPTL) that is Cat 6 compliant and testable.

The GigaREACH XL solution and its performance are not only warranted; they're covered by our proactive and comprehensive SYSTIMAX Assurance™ support program. It includes the SYSTIMAX 25-year Extended Warranty, Application Assurance Warranty, and a full suite of technical support, training, education and resources available both online and onsite.

Assured, warranted and backed by CommScope's unrelenting commitment to your success, GigaREACH XL enables you to expand your reach, not your risk.

**LEARN MORE**

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**View the Ordering Guide**

**Read the brochure**

**Read the Design Guidelines**

## 2. SYSTIMAX® Constellation® building edge infrastructure

Until now, we've limited our discussion of how to extend your network's reach with twisted-pair cabling infrastructure. We've shown how it can be done effectively and efficiently by modifying the design of the twisted-pair cable. In this section, we'll take a look at how—by modifying the network's architecture and using Ethernet in a supporting role—we can achieve so much more. To do this, we must expand our perspective beyond a single floor and consider the entire enterprise facility.

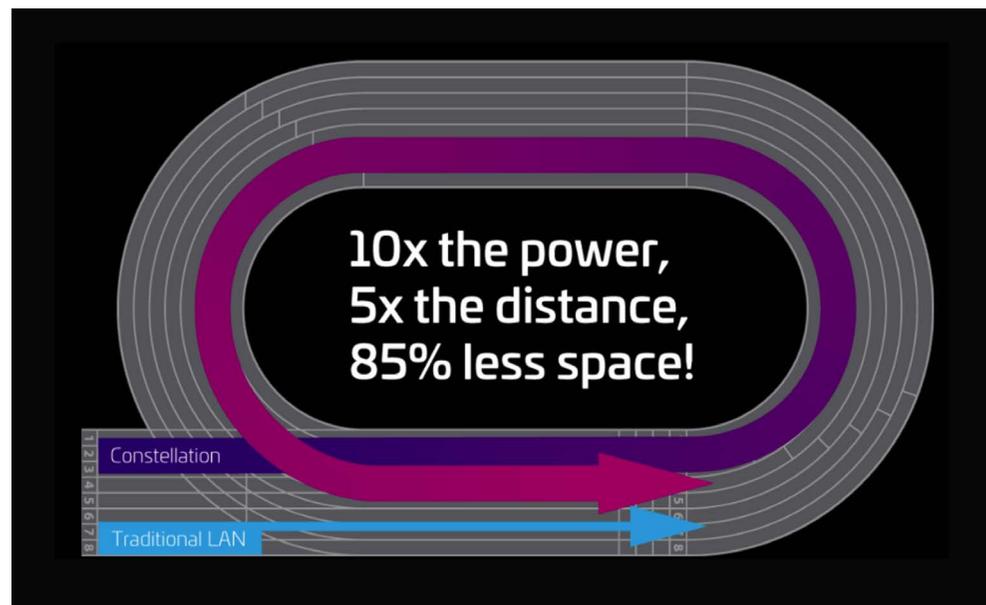
First, we must understand why this is important and why now.

### Challenges of the hyperconnected enterprise

Today's enterprise network managers are responsible for supporting billions of high-powered, connected devices at the network edge—in the ceilings, walls and outdoors—often far beyond the standards-defined reach of the structured cabling network.

The move to the edge is disrupting traditional LAN/IP network designs, requiring more TRs, intermediate distribution field (IDFs), wiring closets, and UPS equipment and increasing the network's carbon footprint. The network is densifying and converging; IT and OT devices and their power requirements are rapidly increasing, threatening to outstrip the budgets and amount of skilled techs needed to design, deploy and manage them.

In short, network and facility managers face challenges that traditional structured cabling architectures and standards were not designed to address. It's time to rethink the network.



### SYSTIMAX Constellation

The CommScope® Constellation power/data network platform is a highly adaptable solution that supports today's rapidly expanding and densifying edge-based networks. The Constellation platform combines fault-managed power, configurable powered fiber cabling and compact Constellation Stars in an easy-to-deploy star topology. The design enables facility and network managers to quickly and easily extend their networks, delivering 1,800 watts of power up to 220 meters, or 1,000 watts up to 500 meters.

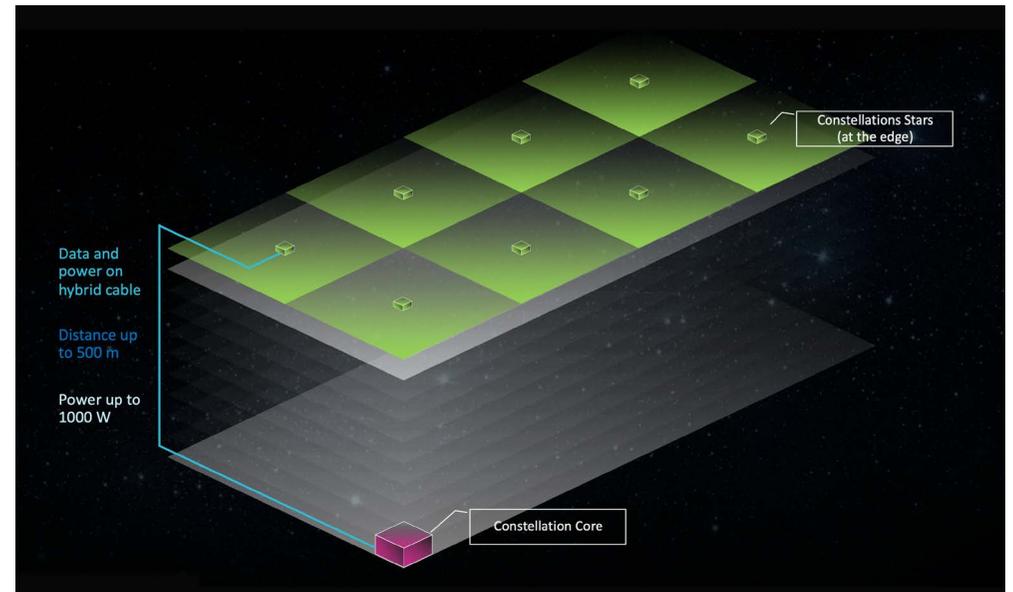
The Constellation platform supports converged and segmented networks, alternating current (AC) and DC, and IT/OT applications. Its modular, flexible design makes it ideal for use cases like high-end Wi-Fi®/DAS access points, IoT edge devices, UPS centralization and multitenant applications. By reducing the amount of equipment, copper and energy requirements, The Constellation platform is also a more responsible and sustainable long-term solution.

### How it works

It begins in the main equipment room/distribution field (MER/MDF) with the Constellation Core, featuring a power transmitter, transition panel and fiber panel. Here, power and fiber feeds are merged onto a hybrid powered fiber cable which exits the equipment room and runs up to 500 m to Constellation Stars located in coverage zones throughout the building.

Each Constellation Star is a compact distribution node that can be installed in the ceiling, walls or outdoors, eliminating the need for a TR or IDF on every floor. One Constellation Star supports up to 50 connected devices with 1 kilowatt of power and up to 16 fiber strands. Multiple service outlets power PoE access layer switches, building automation controllers, DAS fiber and other high-power devices.

From the Constellation Star, short runs of preterminated Cat 6/6A cabling supply power and data to the devices in the coverage zone.



### Powerful benefits across the enterprise

#### Consolidate network resources



Can reduce real estate usage by as much as

# 85%

The extended reach capabilities and simplified design of the Constellation solution enable network managers to dramatically shrink the network's footprint, equipment and cabling requirements. For example, each compact Constellation Star provides the essential functions of a telecom room, IDF or wiring closet while using a fraction of the size. By eliminating the need for these larger distribution points on every floor, the Constellation platform shrinks the network's real estate requirements by as much as 85%.

Perhaps more importantly, it eliminates the need for redundant power and connectivity equipment on every floor, as well as the cost and resources to operate and maintain them. This includes being able to consolidate and centralize all UPS systems and bulky AC/DC transformers in the MER/MDF. This not only delivers bottom-line savings, but it also frees up valuable real estate that can be redeployed as revenue positive space.

### Simplify and accelerate deployment and management



Can reduce reduce  
deployment time by

# 57%

The Constellation platform reduces the amount of network equipment by more than half compared to a traditional LAN/IP network. It also replaces the long runs of traditional horizontal copper used to connect each device with much shorter and easier-to-install preterminated/field-terminated Cat 6A or Cat 6 patch cords.

As a result, the Constellation platform reduces deployment time by up to 57% and can cut skilled labor requirements in half.

Management and upgrades are faster and easier, too. The ceiling-, wall- or rack-based Constellation Stars are easy to access and configure, reducing the risk of potential service outages and management costs. Using hybrid cables consisting of one or more 16-AWG twisted pairs and future-ready 16 singlemode fibers, the Constellation solution gives network managers all the bandwidth and power needed for long-term growth on Day 1.

### Improve sustainability



Can reduce network  
equipment by as much as

# 59%

By reducing network complexity, space requirements and infrastructure materials, the Constellation platform provides a more responsible and sustainable long-term solution. Its simplified architecture reduces the amount of network equipment by as much as 59% while using less than half the number of components of a traditional LAN/IP network. This translates to significantly reduced raw materials and manufacturing requirements and up to 57% lower labor cost and installation time.

The cumulative effects are fewer truck rolls, less fuel consumption and lower greenhouse gas emissions. By leveraging the extended product life of powered fiber cabling and Category 6 and 6A patch cables, the Constellation platform extends the infrastructure lifecycle, further reducing the effects of the building network on the environment.

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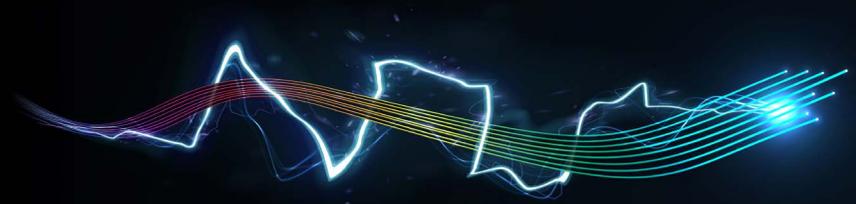


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### 3. SYSTIMAX® FiberREACH™ powered fiber

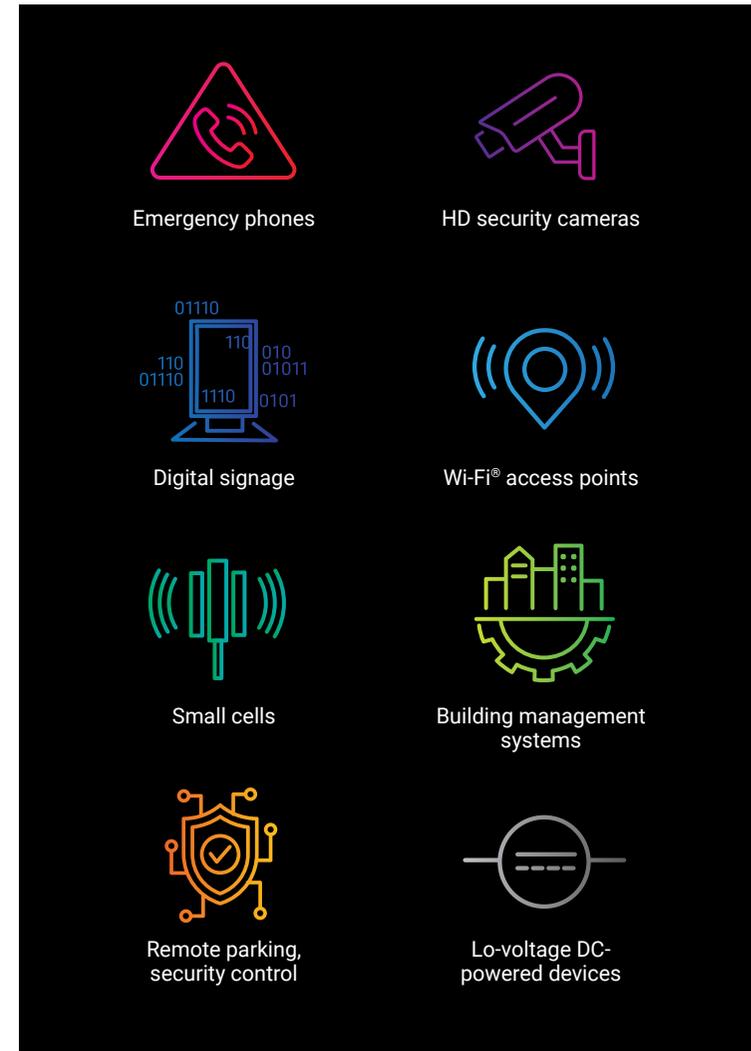


So far, we've introduced you to innovative solutions for extending your copper structured cabling network (GigaREACH XL). We've also shown you how you can streamline and extend your LAN/IP across the entire enterprise—core to edge—by combining powered fiber and copper and reimagining the traditional network architecture. But what if you need to reach powered and connected devices that aren't just hundreds of meters from the closest power source, but thousands?

One of the biggest challenges of the hyperconnected enterprise is that the need for reliable power and data is quickly spreading beyond a single building and is now branching across sprawling campuses. Often, these devices are remotely located and not close enough to other devices to warrant a large investment in network expansion. Think HD campus security cameras, Wi-Fi access points, small cells and remote parking lots. How do you support each of them quickly and easily without breaking the bank?

While the GigaREACH XL solution enables you to extend your Ethernet PoE links from 50% to 150% farther than the cabling standards, sometimes you need more—more distance, more data, more power—with all the performance assurance of a standards-based solution. And none of the hassle of complex planning and deployment.

We get it. That's why we developed the SYSTIMAX FiberREACH powered fiber solution for use cases that don't need to serve hundreds of devices.





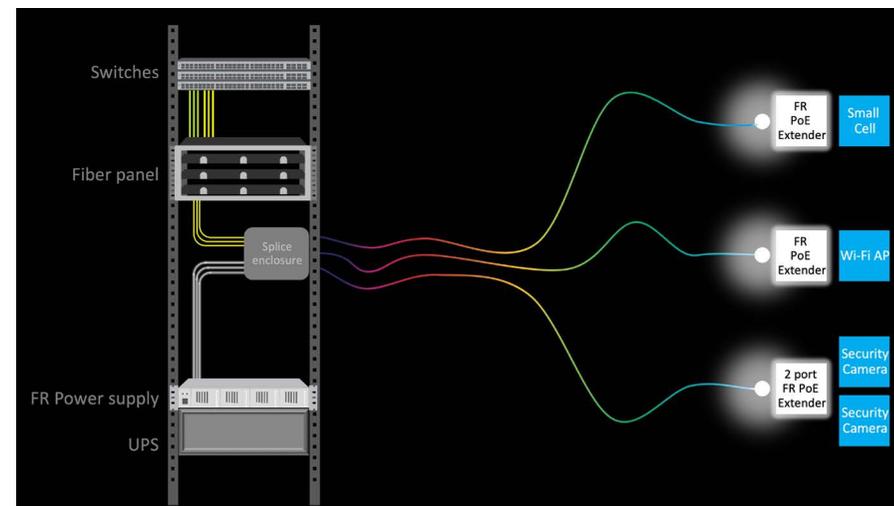
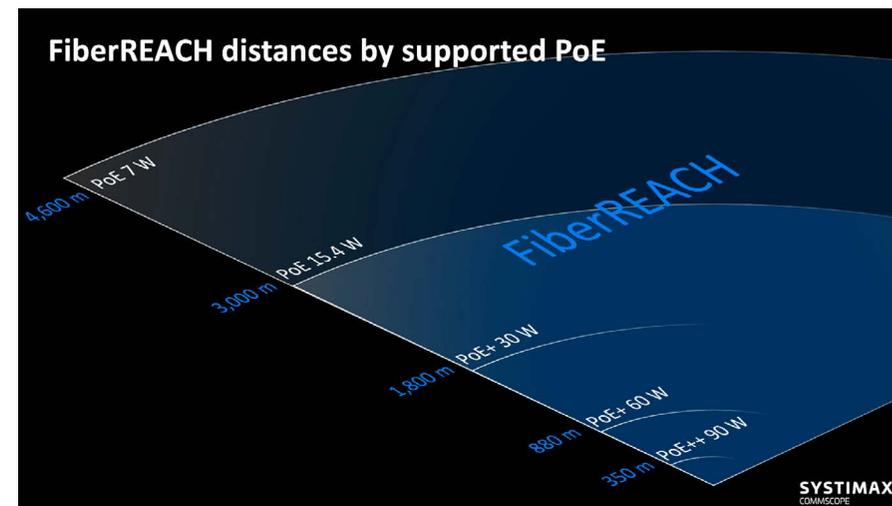
## Empower potential at the edge.

With the FiberREACH platform, enterprise network and facility managers can deliver more power and data over longer distances—7 W PoE up to 4,600 m—to support more advanced AI and IoT devices, indoors and out. All while simplifying the network architecture and reducing deployment time and costs.

The SYSTIMAX FiberREACH portfolio provides the innovative performance, end-to-end flexibility, and ease of use needed to maximize PoE-based edge devices over extended distances. Backed by SYSTIMAX Assurance, it gives network and facility managers a reliable, repeatable extended reach solution with the confidence and performance of a standards-based deployment.

The FiberREACH system features an innovative hybrid cable design that combines multimode or singlemode fiber and low-voltage copper power conductors in a single bend-tolerant cable. The cable is pliable, is effortless to pull and fits easily in standard conduit.

A rack-mounted central power supply panel is located in the telecom room, and Ethernet PoE extenders connect the hybrid cable and networked devices. One power supply feeds up to 32 devices at once. The FiberREACH system design enables the connection of any number of powered remote devices without the need for new conduit, bulky extra cable runs or certified electricians. Combining power and fiber in one cable reduces overall design complexity and the need for additional power circuits.





## Benefits

CommScope FiberREACH solutions combine high-performance, low-latency fiber-optic data connectivity with a low-voltage copper DC power connection. This enables the connection of powered remote devices without the need for new conduit, bulky extra cable runs, or certified electricians.

### Extended reach



- 7 W up to 4,600 m
- 15 W PoE up to 3,000 m
- 30 W PoE up to 1,800 m
- 60 W PoE up to 880 m
- 90 W PoE up to 350 m

### Fast deployment



- No extra telecom rooms or PoE extenders
- One hybrid, conduit-sized cable
- Class 2/low-voltage power, no electricians
- Consolidate power supply and UPS backup in one

### Peace of mind



- Backed by SYSTIMAX Assurance support and 25-Year Warranty (3-Year Warranty for active equipment components)
- FiberREACH system calculator optimizes design accuracy
- PoE-compliant, supports spanning tree fiber redundancy
- SNMP management and local alarms
- IP68-rated remote enclosure

### Improve sustainability



- 50% less copper, 60% less plastic vs legacy design
- Reduces need for new AC power installation
- Remote power reduces use of local UPS systems
- Fewer components reduces network GHGe

Now you can deliver reliable power and fiber to almost any network device, indoors or out, up to at least three kilometers from the nearest telecom room. With one compact, easy to-handle hybrid cable, the FiberREACH solution makes it easy.

## LEARN MORE



[Visit our website](#)



[Read the solution guide](#)



[Read the flyer](#)

The changes in how organizations deploy, use and manage data are, in a word, transformative. Increasing use of augmented reality, IoT, and building automation/control are leading to increased workforce productivity, collaboration and safety, and buildings that are more efficient and sustainable. For network managers, however, designing networks that can support and sustain these new capabilities is a significant challenge.

While networks—including IT, OT, power and data—are converging to become more efficient, the number of connected devices and systems is exploding and moving to the network edge, closer to where data is being created and consumed. Supporting these changes means rethinking the role, design and capabilities of the structured cabling infrastructure, something CommScope anticipated years ago.

Our ongoing work in cabling solutions and sustainable network architecture has produced the GigaREACH XL Cat 6 UTP solution, SYSTIMAX Constellation building edge platform and SYSTIMAX FiberREACH powered fiber solution. Now, customers can confidently extend the reach of their structured cabling networks to support tomorrow's next-generation connected devices and systems.

For more information on CommScope's portfolio of Extended Reach solutions for the enterprise, visit [www.systimax.com](http://www.systimax.com).



CommScope pushes the boundaries of communications technology with revolutionary 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.

For more information, visit the SYSTIMAX 2.0 solutions page [www.systemax.com](http://www.systemax.com)



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EB-120307-EN (02/26)