

# Extended Reach with Siemon Smart Building **COMPLETE**

## Go Beyond 100m without Costly Extensions

### The Challenge:

Modern buildings are not designed around telecom rooms. Devices are placed where they deliver value, not where cable distance is convenient. Wireless access points in open spaces. Security cameras parking lots, walkways and around building perimeters. Lighting controllers, AV endpoints, and sensors spread across floors and campuses.

Traditional Ethernet limits create design trade-offs:

- Additional IDFs just to stay under 100 meters
- More switches, power, and cooling
- Higher cost and added design complexity

Extended reach exists to remove those constraints.



Data | Power | Reach | Delivered

### The Solution:

Extended reach – a 3rd party verified and tested capability within Siemon Smart Building COMPLETE. It allows you to:

- Connect and power devices beyond traditional distance limits
- Use existing Siemon copper cabling infrastructure
- Maintain performance, PoE delivery, and warranty coverage

Extended reach supports a smarter approach to building design, one that prioritizes application placement, flexibility, and long-term value. This is not an exception or a workaround. It is engineered, tested, and supported.

### How It Works:

Extended reach is enabled through PowerGUARD+ technology and application specific design validation. PowerGUARD+ improves power and data delivery over distance by:

- Reducing resistance through optimized conductor size and construction
- Managing heat rise to support reliable PoE delivery
- Maintaining performance under real-world installation conditions

Extended reach supports all PoE types (Types 1 through 4) when systems are designed correctly.

## Supported Distances by Application:

APPLICATION	CAT 6A/7/7A 22AWG */FTP	CAT 6A/7/7A 23AWG */FTP	CAT 6A 23AWG F/UTP	CAT 6A 23AWG UTP	CAT 6 23AWG UTP
10BASE-T	270	200	200	200	185
100BASE-T	150	140	130	130	130
1000BASE-T	170	160	160	160	150
2.5GBASE-T	210	170	170	170	N/A
5GBASE-T	150	140	140	140	N/A
10GBASE-T	110	110	100	100	N/A


The distances shown above represent best case subject to system selection and installation conditions and are based upon the following:

- 3-connector channel using a consolidation point\*
- 2m of total stranded (26AWG) cordage
- Unbundled cable in open space
- Ambient temperature range of 20-24 °C (68-75 °F)

These distances support data rates to the application stated as well as all 4 types of PoE (1-4). They have been validated by extensive testing at Siemon Labs and verified externally by a 3rd party to multiple end-point devices. Siemon's Cabling Reach Calculator is required to determine specific extended reach lengths. Consult Siemon for more details.

\*Siemon recommends a consolidation point at  $\leq 90$  meters for extended reach applications to efficiently enable future support of 100m standards-based applications.

Every extended reach deployment is validated using **Siemon's Cabling Reach Calculator**.



Siemon Cabling Reach Calculator V1.0										Outputs				
PoE Type	Maximum Ambient Temperature (°C)	Number of Cables in Bundle or Pathway	% of Cables in Pathway Using PoE	Pathway Type	Cable Bundle Shape	Conduit Size		Number of Conduit Bends	Overall Channel Length (m)	Maximum Supported Application Length (m)	Application Supported	Calculated Operating Cable Temperature (°C)	Cable Jacket Rating	Cable Condu Capacit
						Pathway Width (mm)	Pathway Height (mm)							
Type 4	20	1	100%	Ventilated	Round	100	50	100	109.00	Pass	22.78	Pass	N/A	
													1.58%	
	20	1	100%	Ventilated	Round	100	50						21.41	Pass
											22.78	Pass	1.58%	

The Cabling Reach Calculator tool accounts for real installation conditions and helps:

- Determine maximum supported distance for the planned installation environment
- Confirm PoE delivery
- Verify cable jacket rating and pathway fill
- Assign the correct Remote Power category

This ensures systems perform as intended and qualify for warranty support.

## Testing and Assurance:

Extended reach installations are:

- Field tested using application-specific limits
- Supported for MPTL configurations when required
- Designed and validated by Siemon Certified Installers

When properly designed, installed, and tested, extended reach is backed by a full applications warranty.



THIRD  
PARTY  
VERIFIED

**SIEMON**

IP convergence, IoT and AI are driving exponential growth in the number of interdependent connected devices and systems. Simultaneously, wireless is supporting higher speeds. Facility-wide security and surveillance systems remain essential, and AV systems are rapidly evolving to deliver high-resolution interactive media experiences.

Such complexity demands high-performance data. Reliable PoE support. Extended reach. Delivered. Sustainably.

**Check out Siemon Smart Building COMPLETE.**  
Powering and connecting dynamic workplaces.

Embedded with PowerGUARD+ technology. Engineered to support:

**Data | Power | Reach | Delivered**

**PowerGUARD+**

**DATA**  
Unlock superior performance that scales with your application.

- Outperforms industry standards, ensuring reliability.**
- Supports 10Mb/s to 10Gb/s, covering a full range of smart building applications.**
- Proven ease of termination and installation efficiency.**
- Excels in demanding 10G applications I.E. high-res imaging and next-gen Wi-Fi.**
- Backed by Siemon's 120+ years of technology and innovative designs.**

**POWER**  
Connectivity built to deliver power and peace of mind.

- Our patented crowned outlet contact design ensures long-term, seamless delivery of power and data to connected devices. Critical connections withstand arcing damage from un-mating under PoE load.
- Designed to operate in real world adverse conditions with cables, cords and connectors rated for higher operating temperatures up to 75°C.

efficiently mitigate heat rise in cable bundles and optimize solutions.

Explore PowerGUARD+ technology via our [infographic](#) or scan the QR code to discover the full Smart Building COMPLETE story.

