SYSTIMAX® ultra low-loss (ULL) solution guide

Connectivity for high-density environments

COMMSCOPE®

Today's data center is ground zero for society's digital transformation—the point of convergence for every download, message, app and data point on the planet. The more data that pours in, the tougher it becomes to meet the increasing expectations of users.

From small enterprise operations to the largest hyperscale environment, data center teams are re-thinking their physical infrastructure. Will it scale seamlessly, up and out? Can it support the continued migration to faster applications? What happens when transmission optics and cabling standards evolve? Most importantly, they must answer a far more important and basic question: Will my infrastructure support the loss budgets for the distances and applications I need to run?

Everything in the optical path contributes to signal loss. As application speeds increase and links become longer and more complex, loss budgets tend to shrink. Supporting them requires an end-to-end channel approach featuring higher bandwidth fiber and ultra low-loss modular connectivity solutions that enable you to meet lower loss budgets—now and in the future. The answer? SYSTIMAX® ultra low-loss (ULL) solutions from CommScope.

CommScope's SYSTIMAX ULL fiber solutions consist of high-bandwidth fiber and preterminated ULL connectivity that deliver ultra low-loss performance. Used throughout the channel, our SYSTIMAX ULL solutions enable longer link spans and more complex topologies while supporting the infrastructure design needed to deliver operational availability.

Powering the present. Empowering the future.

Longer links

The freedom to design centralized switching, scale across multiple halls, and get the most out of lower cost data center optics
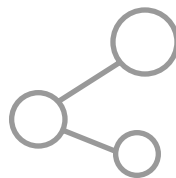
More connections

ULL performance enables enhanced structured designs and standards-based patching and interconnections

More capacity

Application Assurance specifications provide a guaranteed path to higher speeds, backed by the strength of CommScope's 25-year warranty

Scalable

- Built-in migration from 10G to 25G/40G/50G/100G/200G

- Optimized performance with ULL preterminated fiber trunks and cable assemblies

- LazrSPEED® 550 and OM5 wideband maximize multimode bandwidth and capacity

- TeraSPEED® singlemode provides longer reach for emerging low-cost optics like PSM4 and CWDM4 lite

- G.657.A2 fibers offer the lowest macro- and micro-bend losses for G.652.D-compatible fibers

Flexible

- MPO-24 increases fiber density, lowers installation cost, and enables flexible support for duplex and parallel multimode applications

- Modular migration allows for incremental growth to make the most of CapEx investment

- Fiber panels use intuitive, customizable labeling for easy port identification

- Panels support interchangeable duplex LC or MPO connectivity

Agile

- Split-tray design allows for moves, additions and changes without disrupting live channels

- Tool-less install of rear trunk cables significantly reduces deployment time

- Supports imVision® automated infrastructure management, which provides real-time monitoring and control of the entire physical layer

Designed for your most demanding applications

SYSTIMAX ULL solutions were created to maximize speed and minimize attenuation with optical performance that goes far beyond the minimum industry standards. In fact, SYSTIMAX ULL solutions reduce signal loss by more than 50 percent compared with "industry standard" systems. So they're perfect for high-density, high-capacity data center environments where link loss, fiber management and reliability are key.

Build an open path to higher speeds and better performance

SYSTIMAX ULL solutions feature coordinated components—modular panels, ULL fiber and infrastructure intelligence—that enable an end-to-end approach to your high speed migration.

High- and ultra-density fiber panels, modules and adapter packs are easy to install and maintain while providing tremendous deployment flexibility. Preterminated fiber trunks and cable assemblies include OM4 and OM5 wideband multimode as well as singlemode fiber, all of which are rated for ULL applications and distances. Add the power of imVision automatic infrastructure management (AIM) solution, and you've got an open path to 100G, 400G and beyond.

High-density (HD) and ultra high-density (UD) fiber panels

· Go from 10G serial to 40/100G parallel transmission without expanding equipment footprint

· Accepts LazrSPEED multimode and TeraSPEED singlemode G2 ULL modules

· Utilizes same footprint for duplex LC and MPO connections

· Intuitive, flexible labeling for easy port identification

· Intelligence-enabled iPatch® panels for UD and HD support imVision automated management

· Split-tray design provides easy installation while minimizing network downtime

· Tool-less install of rear trunk cables significantly reduces trunk deployment time

· Utilizes same module footprint as the current generation of panels

Enhanced high-density (EHD) fiber panels

· Supports 72 duplex LC or MPO port per RU

· 8-, 12- and 24-fiber MPO connectivity increases migration flexibility

· Unique sliding-tray design enables front and rear access to individual connectors

· Integrated fiber managers reduce the overall cable count

· Replace or update modules without disturbing adjacent live modules

· Deploy panels of varying sizes in the same rack or cabinet

Panel	SYSTIMAX HD 1U		SYSTIMAX HD 2U		SYSTIMAX HD 4U	
Adapter type	Duplex LC	MPO	Duplex LC	MPO	Duplex LC	MPO
Number of ports/panel	48	32	96	64	192	128

Panel	UD 2U		UD 4U			
Adapter type	Duplex LC	MPO	Duplex LC	MPO		
Number of ports/panel	144	96	288	192		

Panel	SYSTIMAX iPatch HD 1U		SYSTIMAX iPatch HD 2U		iPatch UD 2RU	
Adapter type	Duplex LC	MPO	Duplex LC	MPO	Duplex LC	MPO
Number of ports/panel	48	32	96	64	144	96

Panel	SYSTIMAX EHD 1U		SYSTIMAX EHD 2U		SYSTIMAX EHD 4U	
Adapter type	Duplex LC	MPO	Duplex LC	MPO	Duplex LC	MPO
Number of ports/panel	72	72	144	144	288	288

Ultra low-loss modules

- Supports LazrSPEED OM4 and OM5 Wideband multimode and TeraSPEED singlemode fiber

- Nonpinned rear MPO connector

- Front face available with dust plugs for imVision EHD modules, or internal shutters for non-imVision EHD modules

- Method B enhanced polarity simplifies design and migration from duplex to parallel

- The same module can be used on both ends without flipping for polarity

Ultra low-loss MPO trunks
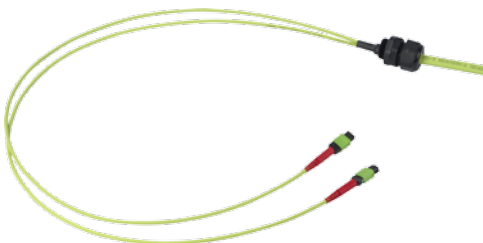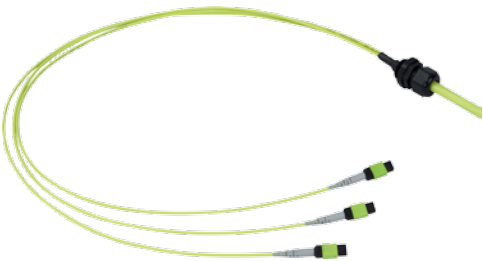
- Use Method B enhanced polarity for efficient migration of duplex and parallel optics

- Support multimode 8-, 12- and 24-fiber MPO connectors

- Singlemode options include 8-fiber and 12-fiber MPO connectors

- MPO trunks are end-marked "ULL" and feature alignment pins on both ends

- Support current and future applications with SYSTIMAX Application Assurance

- Nonpinned patch cords simplify installation and administration

- Available in plenum, low-smoke zero halogen and riser-rated cables (or CPR-rated for EU use)

- Bend-insensitive fiber improves cable management and maintains industry-leading link loss

Application design tools

SYSTIMAX ULL solutions are part of the CommScope High Speed Migration platform, a unified, end-to-end channel approach to your infrastructure's ongoing development. In addition to our portfolio of fiber and connectivity solutions, CommScope's High Speed Migration platform features unique design tools to help speed and simplify the design and planning for your next upgrade.

Extensive Application Specifications define the channel topology limits specific to our SYSTIMAX cabling solutions for a wide range of design options. It covers standards-based, multisource agreements (MSAs) and proprietary specifications for applications you may be running as well as those you may need to support in the future.

The unique Fiber Performance Calculator is a truly innovative tool that makes it fast and easy to determine the attenuation requirements for a proposed cabling channel while simultaneously verifying which applications the channel will support.

Not only do these tools allow rapid design exploration, they form the basis of CommScope's unique SYSTIMAX Application Assurance program. Application Assurance guarantees that the SYSTIMAX channel components will operate in accordance with the Performance Specifications under the CommScope SYSTIMAX Network Infrastructure System 25-year Extended Product Warranty. Just one more way CommScope stands with you and by you.

Fast forward to the future

The direction of network evolution is difficult to predict but the pace of change is easy to call: faster than ever before. Getting ahead of the curve is possible, however, with SYSTIMAX ULL solutions from CommScope.

Why CommScope? We're always anticipating—always ahead. When we see space for improvement, we challenge ourselves to pioneer the technology you deserve. Fueled by unmatched experience and a history of data center innovation, we're continually delivering fresh solutions that address your evolving needs. That's the power and potential you get when you partner with CommScope. Let's make it possible.

For more information on our SYSTIMAX ULL solutions or High Speed Migration platform, contact your CommScope representative.

CommScope (NASDAQ: COMM) helps design, build and manage wired and wireless networks around the world. As a communications infrastructure leader, we shape the always-on networks of tomorrow. For more than 40 years, our global team of greater than 20,000 employees, innovators and technologists have empowered customers in all regions of the world to anticipate what's next and push the boundaries of what's possible. Discover more at commscope.com.

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