

DATA CENTER SOLUTIONS

Empowering a Global Future of IT Infrastructure
Space with Passive Networking Solutions



DATA CENTER SOLUTIONS

With the exponential growth, reliability and scalability data center needed to be designed, implemented and maintained as they have become a critical part of any organization. Within the increase in technologies such as AI, VR, IoT and even Plant automation are the key drivers that are evolving Data Center today.

High-density data center cabling solution can simplify deployment, provide reliable operation, and realize flexible expansion and quick upgrade with the ever-increasing business traffic requirements to adapt to changing market needs.

Today, they house numerous devices which address variety of application which define the type of Data center such as Process Based, Hosting Website, Hyperscale / Cloud Based, Maintain your financial records, Multitenant or even to route e-mails.

Therefore with the Type one needs to keep in mind in their design

- Weather the Data Center is Scalability
- Is the Data Center Flexibility and Manageable
- The Uptime or Availability of the Data Center

Advantages

Stable Transmission: 40G and 100G Ethernet applications. High bandwidth and low latency. High performance and high density MTP® / MPO solutions.

Scalability for Upgrades: High density solution for optimizing space. More powerful compatibility, network upgrade without replacing the backbone cabling. Flexible solution for easy replacement.

Efficient Maintenance: Modular cabling is designed for simple deployment and reliable operation. Reducing the cost and performance risk of changing or increasing product.



ZETACORE™ DC SOLUTIONS

Ultra-High-Density Fiber Connectivity for Next-Generation Data Centers.

In today's rapidly evolving digital world, data centers demand infrastructure that is compact, scalable, and capable of handling massive bandwidth requirements. Traditional cabling solutions often consume valuable rack space, complicate management, and slow down deployment.

ZETACORE™ DC Solutions are engineered to overcome these challenges by offering 192 fibers (192F) in just 1U, enabling unparalleled density without compromising on accessibility or performance. From hyperscale cloud providers to ISPs and colocation facilities, Zetacore ensures that your network infrastructure is future-ready, high-performing, and space-efficient.

Why Choose ZETACORE™?

Space Efficiency – Support more fibers in less rack space.

Scalability – Grow seamlessly from 10G to 400G and beyond.

Future-Proofing – Compatible with latest fiber types (OM3, OM4, OM5, OS2).

Ease of Deployment – Pre-terminated solutions reduce installation time.

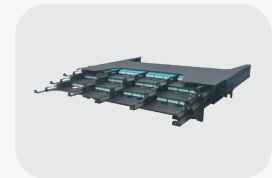
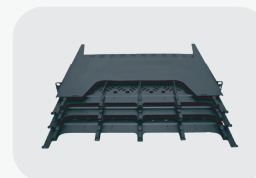
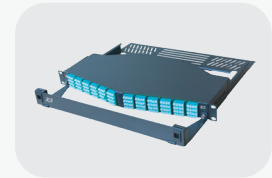
Operational Simplicity – Pull-tab patch cords and uniboot design streamline management.

Applications

- **Hyperscale Data Centers:** Supporting massive cloud storage and compute.
- **Colocation Facilities:** Multi-tenant deployments needing flexibility and density.
- **ISP Data Centers:** High-capacity backbones for internet and telecom networks.
- **Hosting & Enterprise DCs:** Scalable networks for hosting, SaaS, and IT workloads.

Benefits

- **High Performance:** Supports 10G, 40G, 100G, 400G, and beyond.
- **Space Optimization:** Maximize fiber count without consuming extra rack units.
- **Quick Deployment:** Factory pre-terminated for plug-and-play installation.
- **Reliability:** Reduced risk of cabling errors and minimized insertion loss.
- **Easy Maintenance:** Pull-tab and uniboot design simplify ongoing operations.
- **Future-Proof:** Ready for next-gen network evolution and bandwidth expansion



ZETACORE™ DC SOLUTIONS

Key Features

1. Space-Saving Design & Faster Deployment

- Fits 192F in 1U maximizing rack utilization in dense environments.
- Compact design eliminates cabling clutter, ensuring neat infrastructure.
- Pre-terminated assemblies reduce dependency on field splicing.
- Clean, simplified routing lowers installation errors and enhances reliability.

2. Multiple Connectivity Options

- **MPO – MPO:** High-speed backbone links with low insertion loss.
- **MPO – LC FanOut:** Direct connection from backbone to network equipment.
- **LC – LC:** Ideal for traditional point-to-point fiber links.
- Custom Lengths available to match unique data center layouts.

3. Wide Fiber Compatibility

- **OM3 & OM4:** Short-reach, high-speed multimode fiber for 10G–100G.
- **OM5:** Designed for SWDM applications, supporting cost-effective 100G/400G.
- **OS2:** Singlemode fiber for long-haul, ultra-low-loss connectivity.

4. Density Configurations for Every Scale

- **Standard Density:** 1U – 144F (ideal for smaller deployments).
- **High Density:** 2U – 288F (growing networks with space constraints).
- **Ultra-High Density:** 4U – 576F (hyperscale and large enterprises).
- Modular, scalable design ensures easy upgrades as capacity grows.

5. Smart Cable Management

- Pull-tab fiber patch cords for quick access in high-density racks.
- Uniboot connectors minimize cable bulk and simplify polarity changes.
- Reduced congestion improves airflow and thermal management.
- Faster maintenance and less downtime during upgrades.

ZETACORE™ DC Solutions empower your data center with a future-ready, high-density fiber backbone delivering performance, scalability, and operational excellence for next-generation connectivity.



ULTRACORE™ DC SOLUTIONS

High-Density Fiber Connectivity for Space-Constrained Data Centers

As data centers evolve to handle increasing volumes of data and higher bandwidth demands, infrastructure must deliver maximum performance in minimal space. Traditional cabling systems consume valuable rack units, complicate installation, and make long-term management challenging.

ULTRACORE™ DC Solutions are purpose-built to solve these challenges by offering 120 fibers (120F) in just 1U delivering space-efficient, high-performance connectivity without compromise. Designed to support 10G, 40G, and 100G networks, Ultracore provides reliable, low-loss transmission across OM3, OM4, OM5, and OS2 fiber types, making it ideal for hyperscale, colocation, ISP, and enterprise data centers. Equipped with Uniboot polarity-changeable connectors patch cords, Ultracore simplifies installation, improves manageability, and ensures your infrastructure is scalable for future growth.

Why Choose ULTRACORE™?

High Density: Up to 120F in 1U / 288F in 2U for maximum rack space efficiency.

Future-Ready: Supports 10G/40G/100G and scalable for 400G+.

Fast Deployment: Pre-terminated & tool-less installation saves time and cost.

Smart Cabling: Uniboot polarity-changeable & pull-tab cords for easy management.

Versatile Use: Optimized for hyperscale, colocation, ISP & enterprise data centers.

Reliable Performance: Low-loss design with improved airflow & cable organization.

Applications

- **Hyperscale Data Centers** – Cloud-scale facilities requiring massive fiber density.
- **Colocation Facilities** – Multi-tenant data centers needing space-efficient connectivity.
- **ISP Networks** – High-speed backbone hubs for internet and telecom providers.
- **Enterprise & Hosting Data Centers** – Scalable, future-ready fiber solutions for business critical workloads.

Benefits

- **Maximized Rack Space** – Accommodates up to 120F in 1U, reducing footprint.
- **Reduced Deployment Time** – Pre-terminated, tool-less design for faster installation.
- **Scalable Performance** – Seamlessly supports 10G to 100G, with readiness for 400G+.
- **Simplified Cable Management** – Organized routing, uniboot cords, and pull-tab access.
- **Lower Operational Costs** – Less space, faster setup, and reduced maintenance overhead.
- **Improved Network Reliability** – Low-loss transmission for consistent high-speed connectivity.
- **Flexible Fiber Options** – Works with OM3, OM4, OM5, and OS2 for short- and long-distance needs.
- **Optimized for Modern Data Centers** – Tailored for hyperscale, colocation, ISP, and enterprise environments.

Key Features

1. Space-Efficient & Time-Saving Design

- **Compact Rack Utilization:** Accommodates up to 120F in 1U, optimizing space in high density environments.
- **Pre-Terminated Solutions:** Minimize the need for on-site splicing, reducing labor costs and installation time.
- **Tool-less Installation:** Enables quick setup with simplified mounting and connections.
- **Organized Cable Management:** Clean, optimized routing ensures neat, reliable, and accessible infrastructure.

2. Flexible Connectivity Options

- **MPO–MPO:** High-speed backbone connections with minimal insertion loss.
- **MPO–LC FanOut:** Directly connects to switches, routers, and servers for breakout applications.
- **Supports 10G/40G/100G:** Fully compatible with modern enterprise and data center bandwidth requirements.

3. Multiple Fiber Type Support

- **OM3 & OM4:** Laser-optimized multimode fibers for 10G, 40G, and 100G over short distances.
- **OM5:** Wideband multimode fiber (WBMMF) for SWDM, reducing fiber count in high-speed links.
- **OS2:** Singlemode fiber for long-distance, low-loss transmission ideal for hyperscale and metro networks.

ULTRACORE™ DC SOLUTIONS

4. High-Density Scalability

- **1U:** 120F – Compact density for small to mid-size deployments.
- **2U:** 288F – Scalable option for environments requiring higher port density.
- Optimized for hyperscale, colocation, and enterprise data centers where space efficiency is critical.

5. Smart Patch Cord Options

- **Pull-Tab Patch Cords:** Allow quick insertion and removal in dense panels, reducing maintenance time.
- **Uniboot Polarity-Changeable Cords:** Enable polarity switching without re-terminating connectors, providing deployment flexibility.
- **Improved Airflow & Thermal Management:** Reduced clutter supports efficient cooling.

ULTRACORE™ DC Solutions deliver a compact, scalable, and future-ready fiber backbone designed for space-constrained, high-performance data centers.



GIGACORE™ DC SOLUTIONS

High-Density Fiber Infrastructure for Scalable, Next-Gen Data Centers.

GIGACORE™ DC Solutions are purpose-built for space-efficient, high-performance data centers, accommodating 96 fibers (96F) in just 1U. Designed to support 10G/40G applications with seamless scalability toward 100G, it offers MPO-MPO and MPO-LC FanOut configurations for easy integration into modern architectures. Supporting OM3, OM4, OM5, and OS2 fiber types, GIGACORE™ delivers low-loss, high-speed transmission for hyperscale, colocation, and ISP environments. Equipped with Pull-Tab and Uniboot polarity-changeable patch cords, it ensures quick deployment, simplified cable management, and future-ready scalability.

Why Choose GIGACORE™?

High Density: Accommodates 96F in just 1U for maximum space efficiency.

Future-Ready: Designed for 10G / 40G today with seamless scalability to 100G.

Plug-and-Play: Factory-terminated for fast, tool-free installation and reduced downtime.

Flexible Connectivity: Supports MPO-MPO, MPO-LC FanOut, and LC-LC configurations.

Versatile Fiber Options: Works with OM3, OM4, OM5, and OS2 for both short- and long distance applications.

Simplified Management: Equipped with pull-tab & uniboot polarity-changeable cords for easy handling in dense racks.

Reliable Performance: Low-loss design ensures consistent high-speed data transmission.

Scalable Infrastructure: Modular 1U design allows easy expansion as network demands grow.

Applications

- **Hyperscale Data Centers** – High-density backbone cabling for cloud providers.
- **Colocation Facilities** – Shared infrastructure requiring flexible and scalable fiber management.
- **ISP & Telecom Networks** – Reliable high-speed interconnects for core and edge networks.
- **Enterprise Data Centers** – Compact solutions for organizations needing efficient 10G/40G connectivity.
- **High-Performance Computing (HPC)** – Bandwidth-optimized cabling for AI, ML, and advanced workloads.

Benefits

- **Space Efficiency:** 96 fibers in 1U reduces rack footprint and optimizes capacity.
- **Future-Proof Scalability:** Smooth migration path from 10G/40G to 100G.
- **Fast Deployment:** Factory-terminated, plug-and-play design shortens installation time.
- **Flexible Fiber Options:** OM3, OM4, OM5, and OS2 support both short- and long-distance needs.
- **Simplified Maintenance:** Pull-tab and uniboot cords enable quick access in dense racks.
- **Lower Operational Costs:** Less space, faster setup, and reduced downtime.
- **Reliable Connectivity:** Low-loss, high-performance fiber links ensure stable network performance.
- **Optimized Cable Management:** Modular design improves airflow and reduces clutter.

Key Features

1. Preparing Data Centers for Next-Level Transmission

- **High-Speed Support:** Engineered for 10G, 40G, and scalable to 100G Ethernet, enabling next-gen performance.
- **Optimized for Hyperscale & Cloud:** Built to handle AI, ML, and HPC workloads demanding massive bandwidth.
- **Future-Ready:** Designed for smooth transitions to higher transmission rates with minimal upgrades.

2. Cabling with MPO-MPO Parallel Fiber Technology

- **Parallel Fiber Performance:** Uses four pairs of fibers for efficient high-speed data transmission.
- **High-Density MPO-MPO Links:** Simplifies deployment with pre-terminated, low-loss solutions.
- **Ideal for Spine-Leaf Topologies:** Enhances high-speed interconnects, reducing complexity in modern data center designs.

3. Fiber Options for Any Application (OM3, OM4, OM5, OS2)

- **OM3/OM4:** Reliable multimode fibers for 10G/40G/100G over short distances.
- **OM5:** Next-gen WBMMF fiber enabling SWDM for 100G/400G, reducing fiber counts.
- **OS2:** Low-loss single-mode fiber for long-distance, high-capacity transmission.
- **LC-LC Support:** Flexibility for point-to-point links and direct device connectivity.

GIGACORE™ DC SOLUTIONS

4. Modular 1U Design for Maximum Density

- Up to 4 MPO Plates per 1U Panel: Supports 24 MPO ports (96F) in compact space.
- **Scalable & Flexible:** Expand capacity modularly as network demands grow.
- **Efficient Cable Management:** Clean routing reduces clutter, improves airflow, and enhances reliability.

5. Pull-Buckle Fixed Modular Adapter Plates

- **Secure & Vibration - Resistant:** Prevents accidental disconnections in mission - critical environments.
- **Quick-Access Design:** Enables easy insertion/removal during maintenance without downtime.
- **Durable Construction:** Built for long-term reliability in demanding data center conditions.

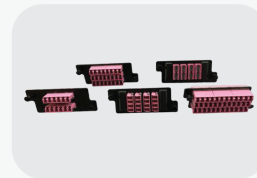
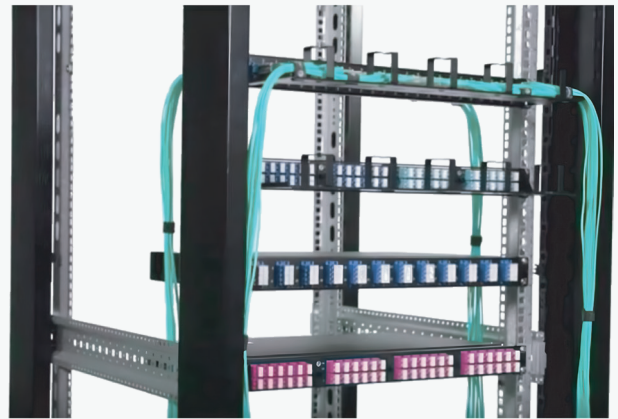
6. Factory-Terminated, Plug-and-Play Ready

- **Zero On-Site Splicing:** Pre-terminated for faster, simpler deployment.
- **Precision Performance:** Low insertion loss and consistent optical quality.
- **Reduced Downtime:** Enables rapid installation and quick swaps when needed.

7. Faster Installation & Seamless Upgrades

- **Tool-Free Deployment:** Modular, pre-terminated design accelerates installation.
- **Compatibility with Legacy & Next-Gen Gear:** Easy integration into existing setups.
- **Future-Proof Scalability:** Designed to grow with evolving 100G and beyond requirements.

GIGACORE™ DC Solutions – Compact, Scalable, High-Speed, Perfect for hyperscale, colocation, ISP, and enterprise data centers aiming for optimized fiber density and seamless scalability.



CONTAINMENT SOLUTIONS

Cold Aisle Containment

Cold Aisle Containment (CAC) solutions are advanced airflow management systems designed to optimize cooling efficiency, reduce energy consumption, and enhance equipment performance in data centers. By enclosing cold aisles and preventing hot and cold air from mixing, CAC solutions ensure consistent cooling, improved thermal management, and cost savings for data centers of all sizes.

Key Features & Benefits of Cold Aisle Containment Solutions

1. Improved Cooling Efficiency

- **Eliminates Hot & Cold Air Mixing:** Cold aisles are enclosed using doors, walls, or ceiling panels, ensuring that chilled air remains within the contained space.
- **Enhanced Cooling Effectiveness:** Directs cold air to server intakes, preventing recirculation and ensuring optimal temperature control.
- **Higher Cooling Capacity Utilization:** Supports higher rack densities by allowing cooling systems to work at peak efficiency.

2. Energy Savings & Cost Reduction

- **Reduces Cooling Power Consumption:** By containing cold air, CAC reduces the amount of energy required to maintain ideal temperatures.
- **Increases CRAC/CRAH Efficiency:** Cooling units operate more effectively at higher return air temperatures, reducing overall energy costs.
- **Potential for Free Cooling:** In certain climates, CAC enables economizer (free cooling) operations, further cutting cooling expenses.

3. Increased Equipment Lifespan & Reliability

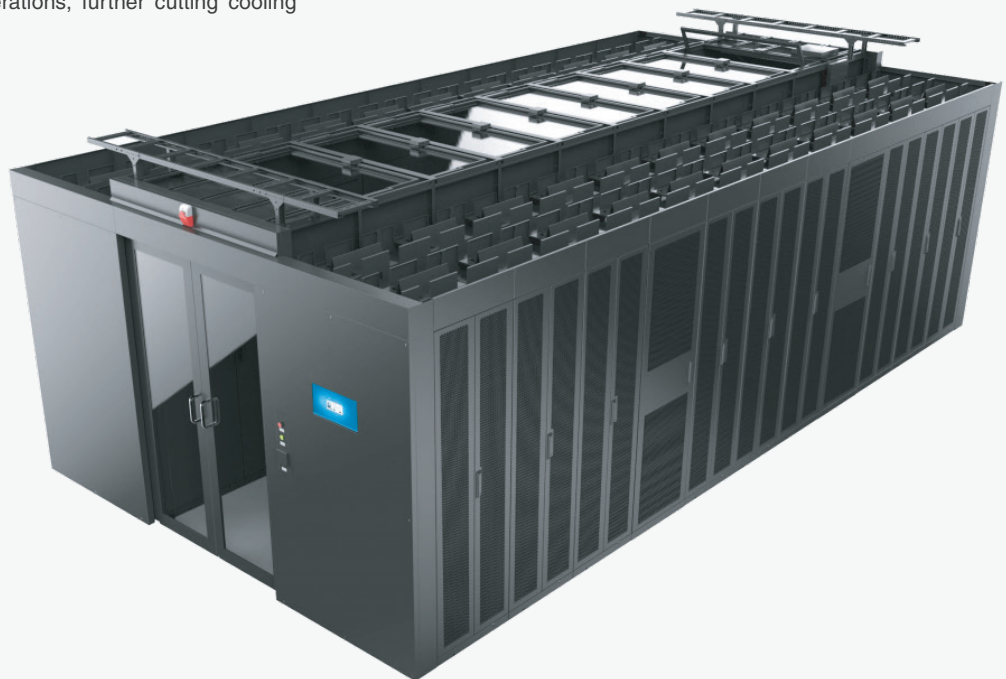
- **Prevents Overheating:** Ensures a consistent and controlled airflow to IT equipment, reducing the risk of thermal hotspots.
- **Enhances Server Performance:** Stable temperatures lead to improved reliability and longer hardware lifespan.
- **Reduces Cooling-Related Downtime:** Minimizes temperature fluctuations, decreasing the likelihood of equipment failures due to overheating.

4. Scalable & Customizable Designs

- **Modular Configurations:** Available in various designs, including sliding doors, swing doors, soft curtains, and rigid panels, to fit any data center layout.
- **Adaptable to Different Rack Heights & Widths:** Can be configured to match existing racks or new infrastructure.
- **Retrofitting Capabilities:** Easily integrates with existing data centers without major structural changes.

5. Compliance & Sustainability

- **Supports Industry Standards:** Aligns with ASHRAE TC 9.9 guidelines and helps meet energy efficiency goals.
- **Enhances PUE (Power Usage Effectiveness):** Optimizes power usage, reducing PUE and making data centers more sustainable.
- **Contributes to Green Initiatives:** Lowers carbon footprint by reducing excessive energy consumption.



Passive pathway solutions, such as OOPS and OHMS, are essential components of a structured cabling system that provide a safe and organized route for cables to traverse within a building or data center. These solutions ensure proper cable management, protection, and easy access for maintenance and expansion. OOPS are designed to accommodate and protect fiber optic cables along their paths. These pathways ensure the orderly routing of fiber cables, preventing tangling, bending, and potential damage. Fiber runners come in various materials, sizes, and configurations to meet different installation requirements. OHMS also serve a similar purpose to OOPS but are specifically designed for copper cables, such as Ethernet cables. OHMS provide a pathway for copper cables to run along walls, ceilings, or under floors while maintaining organization and protection.

Overhead Optical Pathway Systems(OOPS)

High Overhead Optical Pathway Systems (OOPS) are designed to protect and route fiber optic patch cords, cable assemblies to and from network cabinets, ODF and other terminal devices. Optical cable tray offers ideal solutions for optical raceway requirements & application with pleasing appearance and easy maintenance.

Features

- Faster Deployment
- Quick, Easy & Speedy of Installation
- Optical Fiber Protection
- Modular & Flexibility Optical Pathway Systems
- Durable and Strong System
- Constructed with Frame-retardant materials rated V0
- Tool-less design to enhance the system for easy and quick installation including snap- on cover, hinged over option as well as quick exists.
- Available in five sizes without covers, or with regulars, or hinged covers.
- Slotted ducking ideal for cable with varying exit locations.
- Maintains bend radius & safely routes & guides optical fiber cables.

Overhead Patching Frame

Overhead Patching Frame is a 19" width frame that attaches directly to overhead cable management systems above racks or enclosures for patching or installation of small switches. Patching Frame provides flexibility in network and datacenter design by decoupling the physical network cabling from the enclosure, allowing easy movement of racks and upgrades to the network.

Zero U Panel

The Zero U Panel is designed specifically for situations where rack space is limited, offering an efficient and space-saving solution. Instead of occupying valuable rack units, this panel can be conveniently mounted over or alongside the rack, maximizing utilization of available space. It supports up to 6 LC Quad adapters and 4 Keystone modules, making it highly versatile for fiber and copper connectivity requirements. This flexibility allows seamless integration of both network and structured cabling components within a single panel.

The Zero U Panel is particularly well-suited for data center environments, where space optimization, high-density connectivity, and ease of access are critical. By enabling additional connectivity without consuming rack units, it enhances overall rack efficiency and supports scalable infrastructure growth.



PATHWAY SOLUTIONS

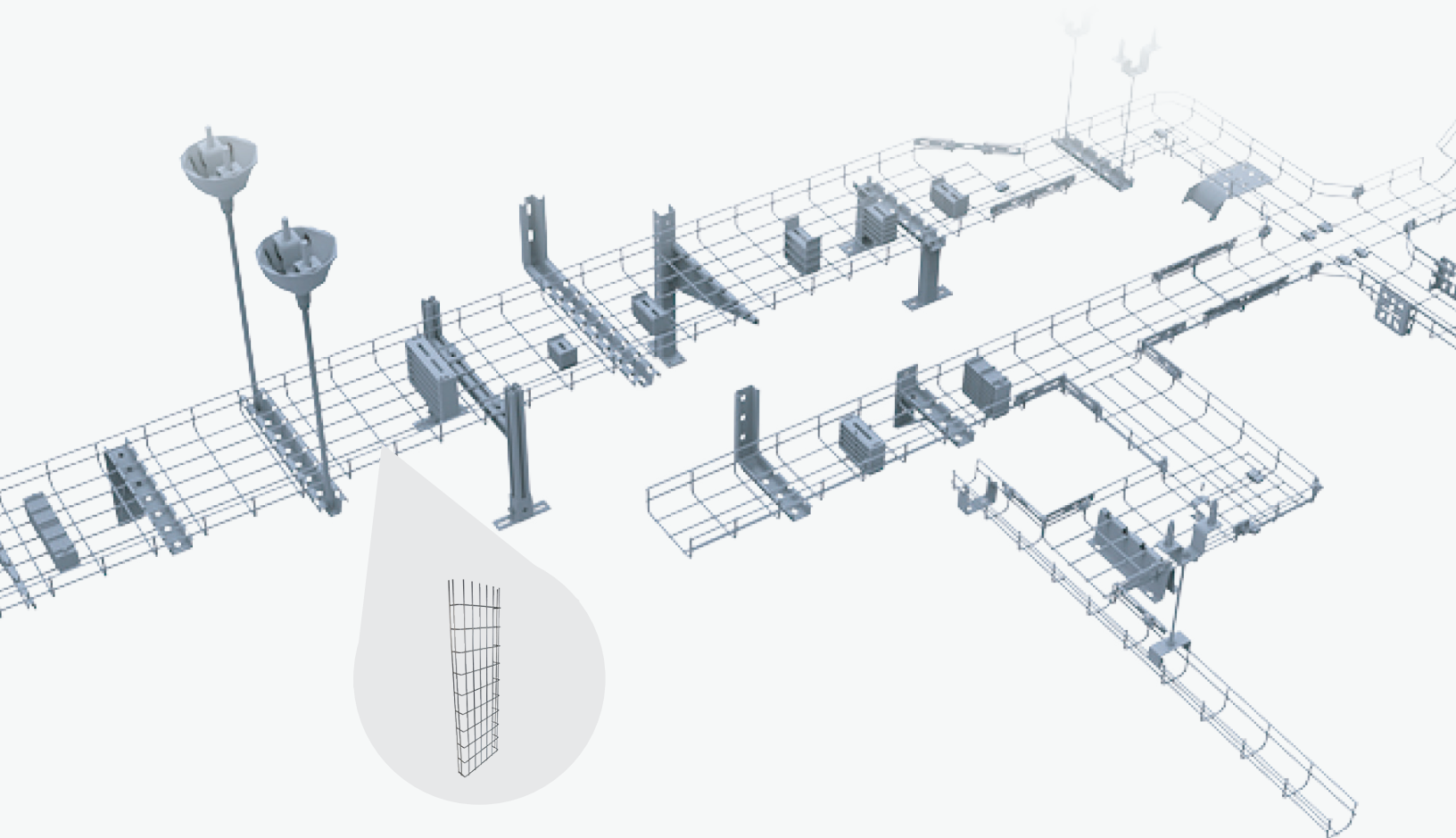
Over Head Mesh Systems (OHMS)

Over Head Mesh System (OHMS) utilizes high quality mechanical strength wires welded in a 2"4" grid pattern, producing a strong, versatile & economical cable support system & is designed for maximum flexibility. These prefabricated fittings are a time-saving and cost effective and can be easily field cut, bent, assembled & can have convenient cable drops.

The Over Head Mesh System is designed to route and manager copper data cables within a data center, connected building & industrial automation application. In addition OHMS provide a segregated copper and fiber cabling system and available in Electroplated Zinc finish after fabrication.

Features

- Faster Deployment
- Time-saving and cost effective
- Field fabrication for Easy transitions & Adaptability
- Excellent ventilation
- Maximum strength for minimum weight
- Reduce dust retention and improve hygiene of the working environment.
- Ideal for routing and supporting cables throughout fiber cable networks.
- OMHS can be installed from the ceiling, on the wall or over the Network/ Server Cabinets using different accessories.





Why Partner with 3C3®

As a trusted OEM of passive, structured networking cables and components, we combine advanced production facilities, rigorous quality control, and deep industry expertise to deliver products that consistently perform in the most demanding environments. From fiber and copper cables to FTTx solutions, data center racks, and industrial-grade components, our portfolio is built on a commitment to engineering precision, durability, and compliance with global standards.



Built on Manufacturing Excellence

State-of-the-art manufacturing with advanced extrusion, molding, and assembly technologies, backed by automated quality checks, experienced engineering teams, and in-house R&D to deliver defect-free, innovative passive network solutions



Quality You Can Count On

Strict adherence to ISO, RoHS, and industry compliance norms, with 100% product testing and rigorous environmental reliability checks to ensure consistent, high-performance quality in every batch and project.



Our Commitment to Partners

Field-proven products backed by transparent quality reporting, on-demand certifications, expert technical support, and long-term reliability that enhances your reputation with end customers.

We Don't Just Make Products, We Manufacture Excellence.

Let's grow together!

By partnering with **3C3**, you gain a manufacturing partner who puts quality, reliability, and your customer's trust at the center of our process.

Contact us today and become part of a network built for success.



Notes

Date: __/__/__

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