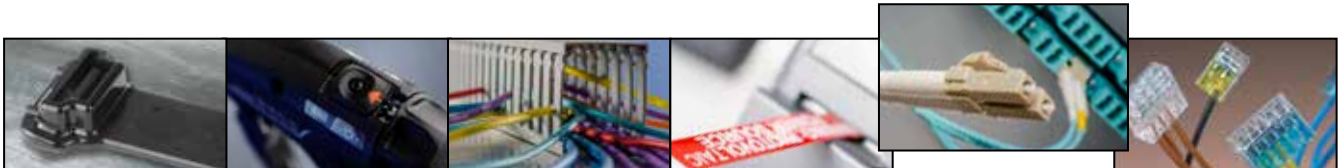HellermannTyton

Data Center Solutions

HellermannTyton is a leading global manufacturer of network cabling solutions that connect, manage and identify cable and components. Located in 37 countries, HellermannTyton utilizes global resources channeled to local implementations to offer its customers an integrated approach to design, operation and delivery. Flexibility, agility and the ability to create value-added, market-driven results are the hallmarks of every HellermannTyton company across the world.

*No matter the complexity of a project, whether it entails global or local management, HellermannTyton is uniquely poised to bring high-performance solutions and service to the data center.*

### WE ARE FLEXIBLE AND FAST

HellermannTyton is structured to address any cabling need within a data center, no matter the scale. We can assist quickly and easily with every step of the process and always lend the support required for meeting mission-critical deadlines. As the original provider of pre-terminated Category 6 copper solutions, we know how important it is to be flexible in order to meet changing deadlines. We recognize the significance of accommodating for the different configurations essential to meet a precise need. And, our communication style is constant and straightforward, so the product is delivered as specified and on time. Our knowledge and experience provide the peace of mind our customers need, so they can focus their time and effort on other challenges.

### CUSTOM IS THE STANDARD

This catalog is only one small portion of what we offer our customers. At HellermannTyton, "custom is the standard." Not every data center connector or cable requirement can be found in our catalog, as we are more than an "off-the-shelf" supplier. If you need to add to an existing infrastructure or want to implement something new, contact us. Sure, we want your business, but we do more than take orders. We discuss the need, provide options and supply samples, when requested, to assure a customer that we have the optimal solution to the challenge.

### PERSONALIZED TECHNICAL LEADERSHIP

At HellermannTyton, we utilize the current and emerging standards required to guide any data center project, regardless of scale. We have built our reputation, as evidenced by our repeat customers and their referrals, on personalized technical leadership to ensure the cabling infrastructure performs as expected and meets the installation deadline. Our sales engineers are experienced in identifying the correct solution for the specified need and will assist in designing the cabling requirements for the particular environment, whether it is for today's application or decades down the road. No fears. No worries. Just the personalized technical leadership every customer receives from HellermannTyton.

# THE HELLERMANNTYTON ADVANTAGE

## PERSONAL ASSISTANCE

We offer personalized technical leadership to ensure a project's success. We are true partners in the design, measurement, and implementation of data center cabling.

## DRAWINGS

If layouts or other drawings are needed to determine the course of your project, HellermannTyton will provide you with what you require.

## EXPERIENCE

HellermannTyton was the first to introduce a package of copper and fiber pre-terminated solutions to the marketplace. Many variables need to be considered when delivering an exceptional pre-terminated solution on-time and to specification. Our experience is invaluable in delivering you the product you need, when you need it – exceeding your expectations.

HellermannTyton also serves on TIA/EIA standards committees, so we are able to help you interpret current and future standards and their applicability to you.

## ASSURANCE

Each RapidNet® port is factory tested and verified to ensure performance levels exceed current TIA/EIA standards. Test results are included with each shipment. A 25-year warranty is offered to registered RapidNet projects.

## PACKAGING

The specially designed RapidNet packaging maintains critical bend radius requirements and protects the cassette ends.

## UNIQUE DESIGN

RapidNet's patented cassette is tough. It thoroughly protects the cable and terminations from initial installation through moves, adds and changes. HellermannTyton's other products also feature design differences which make our products easier to install, perform better and last longer than other choices in the market.

## LABELING

RapidNet comes to you pre-labeled for easier administration. Leaders in data center identification, HellermannTyton also offers RapidNet with customized labeling upon request. In addition, HellermannTyton offers stand-alone labeling solutions that increase productivity and produce highly legible text.

## CONCENTRIC
TECH SOLUTIONS

Gentlemen,

I write this note in great satisfaction with the superlative efforts of our HellermannTyton sales engineer. He deserves strong praise. He has consistently provided superior support, information, and communication throughout our purchasing process and I am considerably impressed. The products supplied are second to none and allow my company to provide an excellent installation experience for my customer.

The project, in which our sales engineer played an instrumental role, was for a government agency with a crushing schedule and a number of external groups who exist, it seems, to only frustrate progress. Without his involvement, this project was headed directly for disaster.

Thank you for having such a positive, professional, intelligent ambassador to your company available to us. He continues to impress us and we look forward to a long and fruitful relationship with HellermannTyton.

Best regards,
Joe Sladek
CEO | Concentric Technical Solutions

As the need for data center capacity increases, so do the internal demands on the data center. The data center now faces a number of issues that impact its success, profitability and operational effectiveness, including:

- **Data storage capacity**
- **Speed of return on investment**
- **Infrastructure performance**
- **Power consumption**
- **Temperature control**
- **Onsite security**
- **Environmental impact**

### Reduce Installation Times

Speed of installation is one of the most important factors in data center applications. With mission-critical and time-sensitive deadlines, cabling infrastructure schedules are often compressed. The quicker the infrastructure is up and running, the quicker it is ready for use.

Through RapidNet®, the pre-terminated and pre-tested solution from HellermannTyton, it is possible to reduce installation times by up to 85% with copper and 95% with fiber compared to traditional field-terminated systems.

Through identification, HellermannTyton enables better administration and deployment. HellermannTyton's systems help you better organize your cabling infrastructure so you easily know "what goes where."

By using TagPrint® Pro labeling software, Excel database files can be opened directly into the program and then printed on labels using a HellermannTyton portable thermal transfer, laser or inkjet printer. Using an existing database reduces keyboard entry errors, automates the transfer of data to printed labels and can save hundreds of labor hours. In addition, entire identifier libraries can be emailed to a jobsite and then printed on demand as the drops are labeled and installed. TagPrint Pro is compatible with any database format, but also supports the ANSI/TIA/EIA-606-B requirements for general infrastructure and data centers.

### Space Efficiency

Space within a data center comes at a premium. It is important to use the available space as effectively and efficiently as possible. The more space and connectivity that can be offered within any rack space is a clear benefit.

HellermannTyton offers many products that address the issue of space within a data center – from the 1U 48-port, high-density patch panel to MTP Fiber RapidNet cassettes, RapidNet Distribution Chassis and RapidNet Auxillary Rails for Cabinets.

## Performance Readiness

Our cabling solution is the best end-to-end structured cabling system in the industry today for data center applications. Our Category 6A system can support a large enterprise data center with extra headroom. Our standard Category 6 system performance exceeds the TIA/EIA 568-C.0, C.1 cabling standards and ISO Class E standards, which offers high-quality network infrastructure for a typical Class 1 and 2 data center installation.

As the line transmission rates continue to increase, HellermannTyton is ready to support the physical layer connectivity with high-performance, multi-lane distribution of OM3 and OM4 and OS2 fiber-optic components that enable next generation fiber-optic telecommunications and data communications networks. HellermannTyton offers a broad portfolio of high-speed fiber-optic MTP® devices including pre-terminated MTP connector cables, adapters, bend insensitive fiber with

MTP connectors, and high-density MTP communication adapters.

HellermannTyton labels are UL recognized for indoor and outdoor use and offer superior abrasion and chemical resistance. High carbon inks mean that printed text will not fade and disappear over time.

## Onsite Security

In addition to the reduced installation times seen with the RapidNet® system, minimized security risks are realized. Fewer personnel are required in the data center, and they are onsite for reduced periods of time.

## Environmental Impact

At HellermannTyton, we work hard to be a greener company. In addition to achieving ISO:14001 accreditation for environmental management, we continually assess our performance as a business and the impact our business has on the environment.

The HellermannTyton RapidNet solution carries its very own **environmental credentials** as a pre-terminated system. At the factory, each cable is pre-terminated and cut to its specified length, minimizing bulk cable waste up to 40 percent. The RapidNet pre-terminated system is a lean, clean and efficient method of cabling in the data center, streamlining processes and improving quality. In addition, HellermannTyton thermal transfer labels are wound on recyclable cardboard cores – no plastic or electronic RFID chips to worry about during disposal.

MTP is a registered trademark of US Conec Ltd.

## The Data Center Standard – TIA-942

Aimed at the data center designer, TIA-942 addresses data center infrastructure, site and space layout, cabling infrastructure, tiered responsibility and environmental considerations.

### SITE AND SPACE LAYOUT
When allocating space within a data center, it is important to consider the flexibility to accommodate future relocation and expansion requirements. The data center should be designed with consideration toward the space needed now and flexible "white space" for the future, which will allow room for additional racks and cabinets.

The TIA-942 standard also recommends the specific functional areas as listed below and in the illustration to the right.

- Entrance Room (ER)
- Main Distribution Area (MDA)
- Equipment Distribution Area (EDA)
- Zone Distribution Area (ZDA)
- Horizontal Distribution Area (HDA)

These areas should be designed to anticipate growth and create an environment where equipment can be upgraded with minimal disruption and downtime.

### CABLING INFRASTRUCTURE
TIA recommends the use of laser-optimized OM3 multimode fiber for any backbone cabling because of its capability to support higher network speeds and bandwidth over longer distances while being more cost effective to implement than single mode fiber.

For horizontal cabling, the TIA-942 standard recommends installing the highest capacity media available to reduce or avoid the need for re-cabling in the future. A high-quality Category 6 system will provide adequate performance in most situations, but consideration should be given to the 10 Gb performance of a Category 6 Augmented system (CAT 6A) for the horizontal cabling.

### TIERED RELIABILITY
In order to determine specific data center needs, the TIA-942 standard defines data center availability tiers, which have been based upon information provided from the Up-Time Institute.

**Tier 1 –** Basic:
99.671% availability

**Tier 2 –** Redundant Components:
99.741% availability

**Tier 3 –** Concurrently Maintainable:
99.982% availability

**Tier 4 –** Fault Tolerant: 99.995% availability

The standard describes each of the four tiers detailing architectural, security, electrical, mechanical and telecommunications recommendations. The higher the tier, the higher the availability. Tier descriptions also include information such as raised floor heights, watts per square foot and points of failure.

### ENVIRONMENT
The TIA-942 standard makes several environmental considerations. These include fire suppression, humidity levels, operating temperatures and architectural, electrical and mechanical system requirements, some of which are dependent on the desired reliability tier above.

**Entrance Room (ER)** The Entrance Room is the location for access provider equipment and demarcation points as well as the interface with campus cabling systems. The entrance room can be located either inside or outside the computer room (the area of the data center that houses data processing equipment) however, for security, the standard recommends that the entrance and computer rooms remain separate. Larger data centers may provide multiple entrance rooms to their providers.

**Main Distribution Area (MDA)** The MDA is a centrally located area that houses the main cross-connect as well as core routers and switches for LAN and SAN infrastructures. The MDA can include a horizontal cross-connect to a nearby EDA (equipment distribution area). Standard compliance requires at least one MDA and also specifies separate racks for fiber and copper.
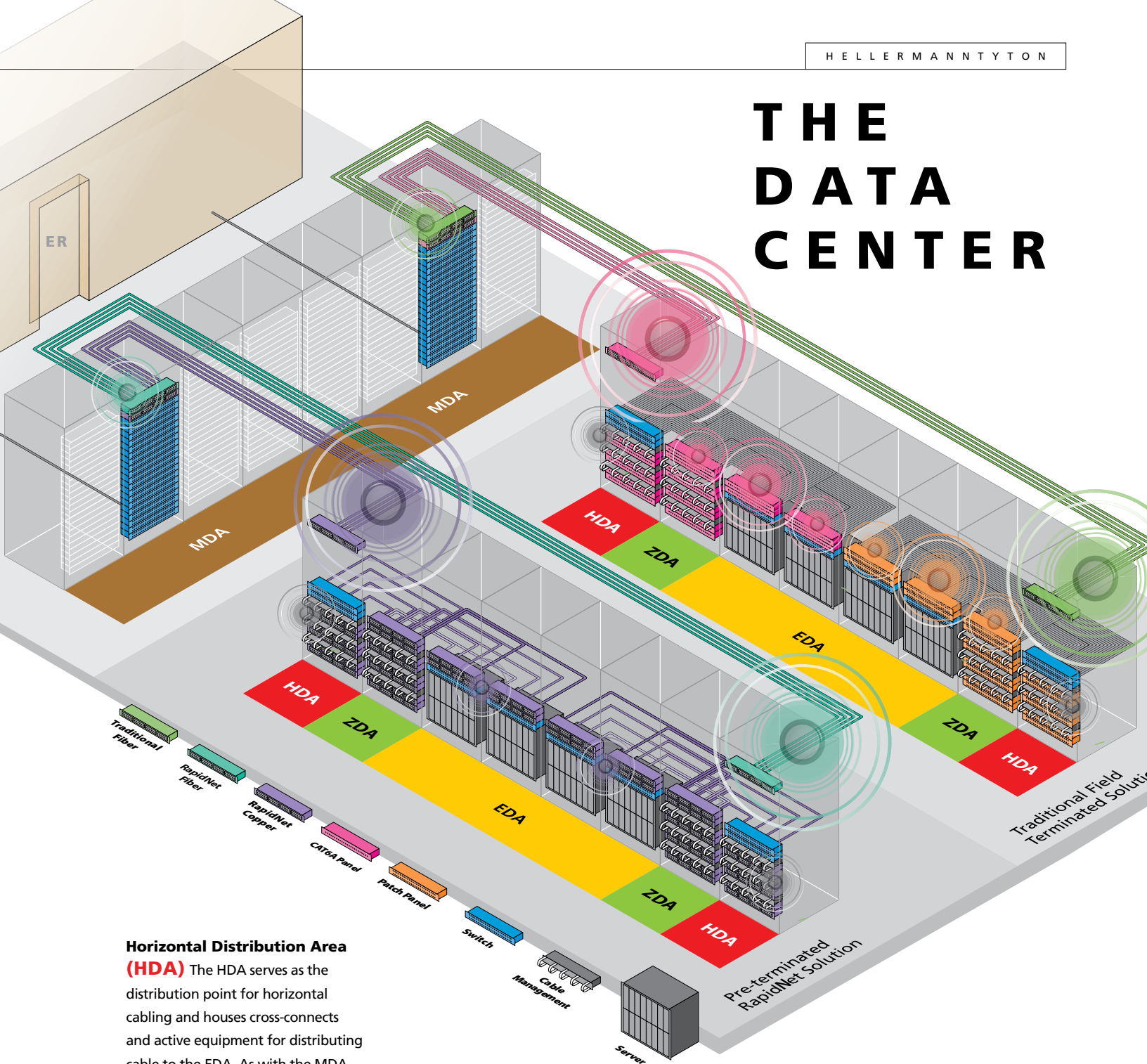
**Equipment Distribution Area (EDA)** The EDA is where equipment cabinets and racks house the switches and servers and where the horizontal cabling from the HDA is terminated at patch panels. In the EDA, racks and cabinets should be arranged in a hot aisle/cold aisle configuration to encourage airflow and reduce heat.
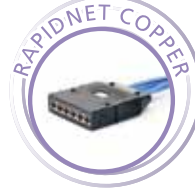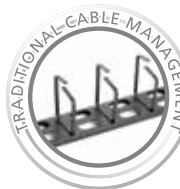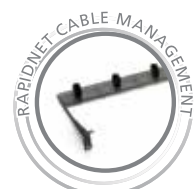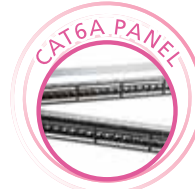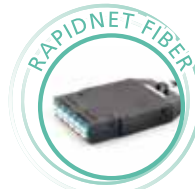
**Zone Distribution Area (ZDA)** The ZDA sits between the horizontal distribution areas and equipment distribution areas. The ZDA is optional design in the location of a zone outlet or consolidation point in horizontal cabling, accommodating both copper and fiber between the HDA and EDA.
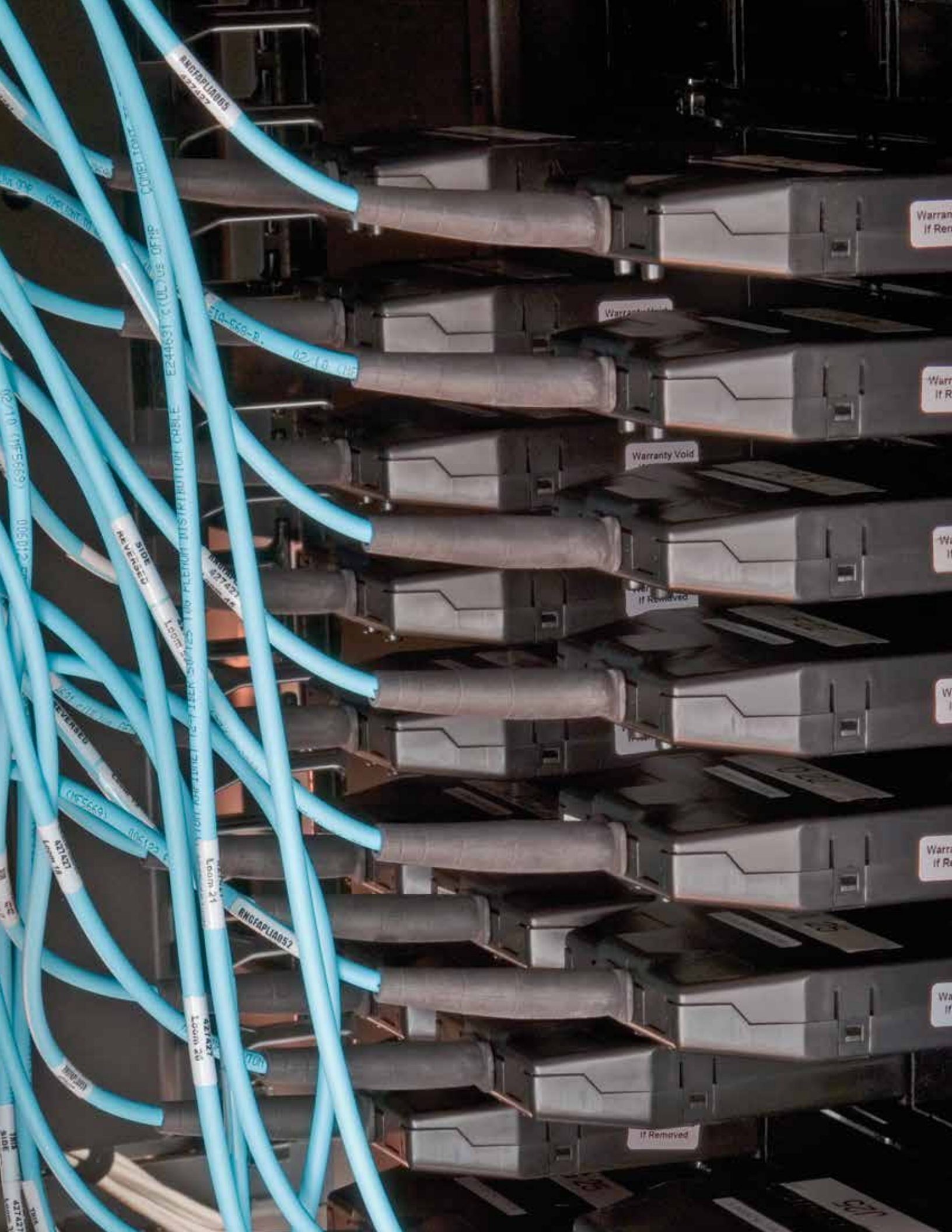
# T H E
# D A T A
# C E N T E R

**ER**

MDA

MDA

HDA

ZDA

EDA

Traditional
Fiber

RapidNet
Fiber

RapidNet
Copper

CAT6A Panel

Patch Panel

Switch

Cable
Management

HDA

ZDA

EDA

ZDA

HDA

Server

HDA

ZDA

Pre-terminated
RapidNet Solution

Traditional Field
Terminated Solution

**Horizontal Distribution Area (HDA)** The HDA serves as the distribution point for horizontal cabling and houses cross-connects and active equipment for distributing cable to the EDA. As with the MDA, the standard specifies that fiber and copper are installed in separate racks. The standard also recommends locating switches and patch panels close to each other to minimize patch cord lengths. An HDA is limited to 20,000 points/connections and the number of HDAs in a data center is determined largely by the size of the data center.

PATCH PANEL

RAPIDNET FIBER

CAT6A PANEL

RAPIDNET CABLE MANAGEMENT

TRADITIONAL CABLE MANAGEMENT

RAPIDNET COPPER

TRADITIONAL FIBER

# PRODUCT INDEX

# RapidNet® Network Cabling System

RapidNet is HellermannTyton's patented pre-terminated "connect and go" system that offers high performance in copper and fiber solutions within the same footprint. Our pre-terminated solutions do not require onsite termination or certification testing, so installations are completed in record time while quality and performance are never compromised. Our RapidNet solutions address the critical issues for cabling installations such as minimizing network downtime and disruption to business, increased quality control, consistent repeatable terminations, enhanced security, dramatically reduced installation time and the human resources required onsite to complete a successful project on time and within budget. Cut to customer specified lengths, each individual link is terminated, tested and labeled by HellermannTyton before being delivered to the site.

### Applications

- Mission-Critical Data Centers

- Enterprise Data Centers

- Disaster Recovery

- Storage Area Networks

- Redundancy Planning

- Central Office

- Temporary Networks

- Server Farms

- Cloud Computing

- Colocation Facilities

**Copper Cabling Solutions:**
CAT 6 UTP, CAT 6A F/UTP, CAT 6A UTP

**Fiber Cabling Solutions:**
62.5/125µm (OM1), 50/125µm (OM2), Multimode 50/125µm (OM3), 50/125µm (OM4) and Single Mode (OS2)

| Material | Packaging Options |
|----------|-------------------|
| Copper | Box up to 75 ft* / Reel from 76-295 ft |
| Fiber | Box up to 200 ft* / Reel 201+ ft |

*Duplicate, shorter lengths packaged in multiples to condense materials on jobsite.

Whether your copper or fiber solution arrives onsite in a box or on a reel, the integrity of the product is never compromised.

Once RapidNet® arrives onsite,
all you need to do is "plug it in."
It's that easy!

**RNG Solutions**

**RNC & RNS
Solutions**

# RapidNet® Series Cassette

**The cassette is the heart of the RapidNet system, allowing for fast installations and full protection of the terminations. Our RapidNet Series cassette has been designed to provide a jack life of a minimum of 1000 insertions. The cassette is manufactured with a simple push clip mechanism and alignment guides to prevent incorrect insertion. Rear cable management is provided within the RapidNet cassette with the integral strain relief, which provides protection to all the cables and their terminations.**

## Product Features

- Release Mechanism – a quick-release lever that makes the insertion and release of the cassette easier.

- Alignment Guides – ensure the cassette is properly inserted into the panel.

- Large Cassette – allows the higher density options for fiber in a 1U footprint; up to 96 fibers/48 ports in 1U.

- Modular Panel – accepts both copper and fiber solutions in the same footprint.

- RNC/RNS cassettes allow for color coding of the jacks for defining networks.

## Copper Cassette



Quick-Release Mechanism
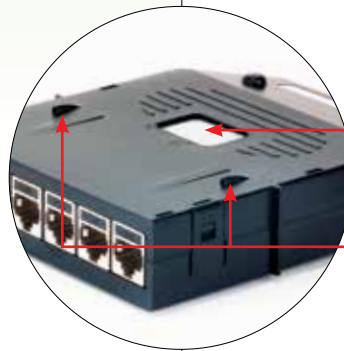


Integral grounding system in the cassette that connects to springs in the panel, applies to CAT 6A F/UTP solution only

Alignment Guides

## Fiber Cassette
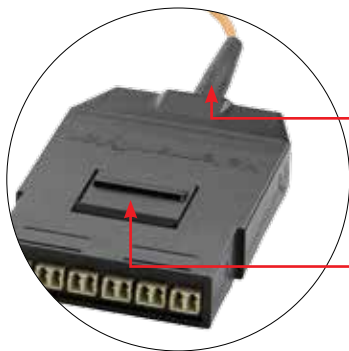


Grommet provides additional strain relief for direct connect solutions

Single-Release Lever



Up to 24 fibers / 12 duplex ports

MTP® *(12 fiber connector)* options

MTP is a registered trademark of US Conec Ltd.

## Product Features

- Cassette design features single-release lever.

- Cassettes are manufactured from high-strength, lightweight thermoplastic material.

- Integral grounding system in the cassette connects to springs in the panel to ensure effective grounding of system.

- Exceeds ANSI/TIA-568-C Category 6A and ISO/IEC 11801:2002 / Amd 2, Class EA.

- Category 6A cassette loaded with HellermannTyton Category 6A modular jacks.

- Alignment guides located on the top of the cassette to ensure the correct orientation in the modular panel (RNGSPP1U).

- Available in lengths from 10 ft - 295 ft.

- Permanent Link test results included with all looms/orders.

- Made in the USA.

# RNG Series RapidNet® Category 6A Copper F/UTP Solutions

**HellermannTyton's Deca[10] Series RapidNet is a Category 6A solution that offers uncompromised support for 10 Gigabit Ethernet. The shielded construction aids higher performance by eliminating the effect of alien crosstalk and external interference, making this an ideal solution for 10 Gigabit Ethernet applications. RapidNet utilizes a bundled cable with six high-performance Category 6A F/UTP cables bound together with a Kevlar binder. The Category 6A cassette is populated with six HellermannTyton Category 6A shielded modular jacks whose die-cast bodies fully enclose the PCB and cable terminations. The new cassette design offers an integral grounding system that connects to springs in the modular panel. The cassette is equipped with a single-lever release mechanism that makes the insertion and release of the cassette easier to use.**

| FIXED | | | VARIABLE – Select the following | | | | |
|---|---|---|---|---|---|---|---|
| Prefix | Cable Bundle | Cable Type | Cable Flame Rating | Cable Color | Termination End 1 | Termination End 2 | Length |
| RNGC | 6 | C  CAT 6A F/UTP | P  Plenum<br>R  Riser* | B  Blue | C  Cassette | C  Cassette<br>J  Jack-Pair Stagger Right<br>K  Jack-Pair Stagger Left<br>L  Jack-Stagger Right<br>M  Jack-Stagger Left<br>N  Jack-Inline (no stagger)<br>P  Plug-Pair Stagger Right<br>Q  Plug-Pair Stagger Left<br>R  Plug-Stagger Right<br>S  Plug-Stagger Left<br>T  Plug-Inline (no stagger) | 10' - 295' |

Pair Stagger Right = 1/2 longest, 3/4 next, 5/6 last and shortest pair.

*Option available with longer lead times and minimum order requirements.

c(UL)us LISTED

**Example Model Number:**

| RNGC | 6 | C | P | B | C | C | 65 |
|---|---|---|---|---|---|---|---|
| Prefix | Cable Bundle | Cable Type | Cable Flame Rating | Cable Color | Term. End 1 | Term. End 2 | Length |

RapidNet Category 6A Cassette to Cassette

RapidNet Category 6A Cassette to Jack
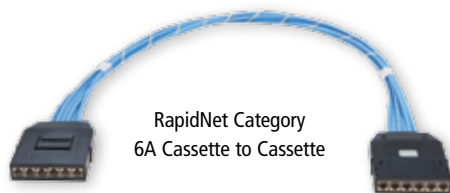
# RNC Series RapidNet® 6A UTP

Category 6A UTP RapidNet is designed to drastically reduce alien crosstalk (AXT) and to extend usable bandwidth up to 500 MHz for 10Base-T applications. Central to the system is the performance optimized PCB and contact set design of the Category 6A GST jack, which provides the necessary inherent performance to deliver a component compliant solution to ANSI/TIA-568-C.2.

The patented contact set is designed to cancel near-end crosstalk (NEXT) at the point of insertion by providing capacitive compensation through a flexible PCB mounted onto the contact set. The jacks are pre-terminated and populated in our RapidNet cassettes, making installation a quick and simple insertion. Fully compatible with RNG Series panels and accessories.

## RapidNet Features

- Exceeds ANSI/TIA-568-C Category 6A and ISO/IEC 11801:2002 / Amd 2, Class EA.

- Jack is component compliant performance to ANSI/TIA-568-C.2-2009 Category 6A standard.

- Category 6A UTP cassette loaded with HellermannTyton Category 6A GST modular jacks.

- Alignment guides located on the top of the cassette to ensure the correct orientation in the modular panel (RNGPP1U).

- Available in lengths from 15 ft - 295 ft.

Jack termination

## Available Colors *(Ordering code in red)*

| BLK | YEL | RED | GRN | BLU |
|-----|-----|-----|-----|-----|
| K | Y | R | G | B |

| FIXED | | | VARIABLE – Select the following | | | | | | |
|-------|---------------|--------------|----------------------|--------------|------------------|----------------------------|----------------------------------------|----------------------|----------|
| Prefix | Cable Bundle | Cable Type | Cable Flame Rating | Cable Color | Termination End 1 | Color Termination* End 1 | Termination End 2 | Color Termination* End 2 | Length |
| RNC | 6 | B CAT 6A UTP | P CMP<br>R CMR | B Blue<br>W White | C Cassette | K Black<br>B Blue<br>G Green<br>R Red<br>Y Yellow | C Cassette<br>J Jack - Pair Stagger Right<br>K Jack - Pair Stagger Left<br>L Jack - Stagger Right<br>M Jack - Stagger Left<br>N Jack - Inline (no stagger) | K Black<br>B Blue<br>G Green<br>R Red<br>Y Yellow | 15' - 295' |

**Example Model Number:**

| RNC | 6 | B | P | B | C | B | C | B | 30 |
|-----|---|---|---|---|---|---|---|---|-----|
| Prefix | Cable Bundle | Cable Type | Cable Flame Rating | Cable Color | Term. End 1 | Color Term. End 1 | Term. End 2 | Color Term. End 2 | Length |

Pair Stagger Rgt = 1/2 longest, 3/4 next, 5/6 last and shortest pair.

*Color Termination standard is black. Other colors are available with longer lead times.

# RNS Series Short Body RapidNet® Category 6A UTP

The Short Body RapidNet cassette has been specifically designed to be used with angled RapidNet panels, but is fully compatible with other standard RapidNet panels and accessories.

RNS cassettes provide 6 ports per cassette or 24 ports in 1U. The ports come standard in black but are available in a choice of colors to help define network features such as routes, services, hierarchies or security levels. In addition, the colors can be used to define connections within a shared space such as in colocation data centers.

## RapidNet Features

- Short body length for areas with limited space or restricted access.

- Versatile product offering allows customization for structured cabling requirements.

- When used in angled panels, the design provides increased rack capacity by eliminating the need for horizontal cable management.

| ACCESSORY | | |
|---|---|---|
| Part No. | Description | Port Count |
| RNSAPP1U | RNS Series Angled Modular Panel - 1U - RNS Series Only | 24 UTP copper ports |
| RNSAPP2U | RNS Series Angled Modular Panel - 2U - RNS Series Only | 48 UTP copper ports |

RNSAPP1U

RNSAPP2U

## Available Colors *(Ordering code in red)*

| BLK | YEL | RED | GRN | BLU |
|---|---|---|---|---|
| K | Y | R | G | B |

| FIXED | | | VARIABLE – Select the following | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Prefix | Cable Bundle | Cable Type | Cable Flame Rating | Cable Color | Termination End 1 | Color Termination* End 1 | Termination End 2 | Color Termination* End 2 | Length |
| RNS | 6 | B CAT 6A UTP | P CMP<br>R CMR | B Blue<br>W White | C Cassette | K Black<br>B Blue<br>G Green<br>R Red<br>Y Yellow | C Cassette<br>J Jack - Pair Stagger Right<br>K Jack - Pair Stagger Left<br>L Jack - Stagger Right<br>M Jack - Stagger Left<br>N Jack - Inline (no stagger) | K Black<br>B Blue<br>G Green<br>R Red<br>Y Yellow | 15' - 295' |

Example Model Number:

| RNS | 6 | B | P | B | C | K | C | K | 20 |
|---|---|---|---|---|---|---|---|---|---|
| Prefix | Cable Bundle | Cable Type | Cable Flame Rating | Cable Color | Term. End 1 | Color Term. End 1 | Term. End 2 | Color Term. End 2 | Length |

Pair Stagger Rgt = 1/2 longest, 3/4 next, 5/6 last and shortest pair

*Color Termination standard is black. Other colors are available with longer lead times.

# RapidNet® 12-Port Copper Cassette

**In response to the ever-increasing demand for space within cabinets, communications rooms and data centers, HellermannTyton has developed a 12-port cassette for increasing port density and cable management capability within a data center to achieve 48 copper ports in 1U of rack space. This 12-port cassette is perfect for meeting the challenge of maximizing valuable data center floor and rack space.**

**Ideal for installations where quality and speed are fundamental, this HellermannTyton copper solution delivers a time savings up to 85 percent when compared to traditional field terminated systems. Networks can be up and running quickly because this high-density cassette is pre-terminated and pre-tested, not only reducing onsite labor but overall costs as well. With the 12-port copper cassette, there is the combined benefit of optimum reliability and maximized space for cabinets and racks.**

**Factory termination and testing provides assurance of performance onsite, ensures rapid installation, minimizes network downtimes and business disruptions, and allows for retained control.**

## Product Features

- Doubles the density of standard RapidNet and traditional 24-port 1U panels.

- Accepts four high-density cassettes, achieving 48 ports in 1U of space when fully populated.

- Utilizes two of our six bundled cable 5 around 1 (5A1) design for eliminating potential crosstalk issues.

- For use with the 1U 48-port high-density panel designed for the 12-port high-density copper cassette.

- Pre-terminated and 100% tested in a controlled factory environment.

- Increased flexibility when combining the high-density copper and fiber RapidNet using the RapidNet Hybrid Panel.

- Permanent Link test results included with all looms/orders.

- Made in the USA.

## Product Benefits

- This high-density solution offers better cabling efficiencies and reduces installation time up to 85%.

- Pre-terminated solution reduces personnel access, thus minimizing security risks.

- Waste generated from field terminations is reduced.

Configuration 1
RNGPP1UHD-HHSS
Front View

RapidNet 12-port
Copper Cassette

Alignment Guides

The label sits between
the two rows of the RJ45
connectors, so one label
identifies two ports

To aid identification, the
ID window has a built-in
magnification lens

Quick-Release Mechanism

The front presentation is two
rows of 6 RJ45 connectors
mirroring each other

*RNGPP1UHD*

| ACCESSORY | |
|---|---|
| Part No. | Description |
| RNGPP1UHD | Modular Patch Panel, RNG Series HD Cassette only, 1U, Black |
| RNGPP1UHD-HHSS | RapidNet Hybrid Panel 2 x 12-port Copper, 2 x STD RNG Cassette |
| RNGPP1UHD-HSHS | RapidNet Hybrid Panel 2 x 12-port Copper, 2 x STD RNG Cassette Alternating Openings |
| RNAD-BLANK | 12-port HD RapidNet Blank |
| RNRCMHD | Rear Cable Manager for High-Density Copper Panel |

| FIXED | | | VARIABLE – Select the following | | | | |
|---|---|---|---|---|---|---|---|
| Prefix | Cable Bundle | Cable Type | Cable Flame Rating | Cable Color | Termination End 1 | Termination End 2 | Length |
| RNGC | 12 | A CAT 6 UTP | P CMP<br>R CMR | B Blue<br>W White | H High-Density Cassette | H High-Density Cassette<br>Z Split Cassette<br>J Jack - Pair Stagger Right<br>K Jack - Pair Stagger Left<br>L Jack - Stagger Right<br>M Jack - Stagger Left<br>N Jack - Inline (no stagger)<br>P Plug - Pair Stagger Right<br>Q Plug - Pair Stagger Left<br>R Plug - Stagger Right<br>S Plug - Stagger Left<br>T Plug - Inline (no stagger) | 20' - 140' |

**Example Model Number:** ▶

| RNGC | 12 | A | R | W | H | H | 20 |
|---|---|---|---|---|---|---|---|
| Prefix | Cable Bundle | Cable Type | Cable Flame Rating | Cable Color | Term. End 1 | Term. End 2 | Length |

Pair Stagger Rgt = 1/2 longest, 3/4 next, 5/6 last and shortest pair

# RNG Series RapidNet®
# Category 6 Copper UTP Solutions

**RNG Series RapidNet Category 6 is an ideal solution for high-performance cabling requirements, such as Gigabit Ethernet. RapidNet utilizes a unique six-cable bundle that eliminates potential alien crosstalk issues. A Kevlar® binding ensures a high-quality, well-managed installation. Cut to the customer-specified length at HellermannTyton, each 6-port loom is supplied terminated at both ends to at least one of the patented RapidNet cassettes. Lengths up to 75 feet are supplied in the RapidNet box; lengths from 76-295 feet are supplied on the RapidNet reel.**

## Product Features

- Positive PSACR over 350 MHz and a typical worst-case margin of 15 dB at 250 MHz.

- Exceeds ANSI/TIA-568-C specifications.

- Permanent Link test results included with all looms/orders.

- Cassettes are manufactured from high-strength, lightweight thermoplastic material.

- Cassette design features single-release mechanism.

- Alignment guides are located on the top of the cassette to ensure the correct orientation in the modular panel (RNGPP1U).

- Available in lengths from 10 ft - 295 ft.

- Made in the USA.

| FIXED | | | VARIABLE – Select the following | | | | |
|---|---|---|---|---|---|---|---|
| Prefix | Cable Bundle | Cable Type | Cable Flame Rating | Cable Color | Termination End 1 | Termination End 2 | Length |
| RNGC | 6 | A  CAT 6 UTP | P  Plenum<br>R  Riser | B  Blue<br>W  White | C  Cassette | C  Cassette<br>J  Jack-Pair Stagger Right<br>K  Jack-Pair Stagger Left<br>L  Jack-Stagger Right<br>M  Jack-Stagger Left<br>N  Jack-Inline<br>P  Plug-Pair Stagger Right<br>Q  Plug-Pair Stagger Left<br>R  Plug-Stagger Right<br>S  Plug-Stagger Left<br>T  Plug-Inline<br>D  Pod<br>O  Open | 10' - 295' |

Kevlar is a registered trademark of DuPont

c(UL)us LISTED

**Example Model Number:** ▶

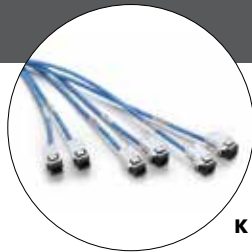| RNGC | 6 | A | R | W | C | C | 65 |
|---|---|---|---|---|---|---|---|
| Prefix | Cable Bundle | Cable Type | Cable Flame Rating | Cable Color | Term. End 1 | Term. End 2 | Length |

Each pre-labeled 6-port cassette snaps easily into the modular panel. Removal of the cassette is just as easy with the release mechanism.
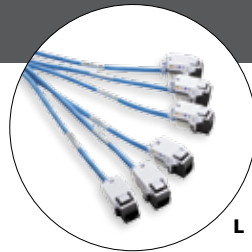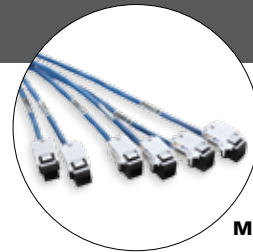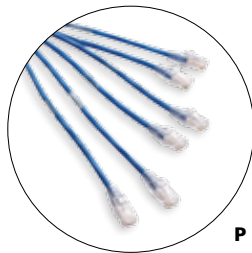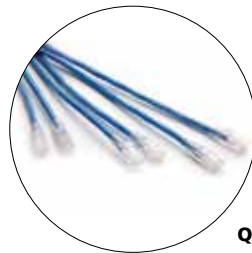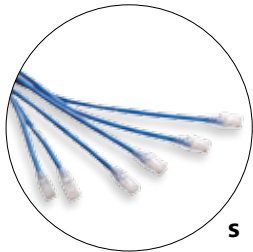
C

J

K

L

M

N

P

Q

R

S

T

D

# RNC Series RapidNet®
# Category 6 UTP

**New RNC Series RapidNet Category 6 is an ideal solution for high-performance cabling requirements such as Gigabit Ethernet. The RNC Series utilizes individual jacks to allow for color coding within a standard size RapidNet cassette. The ports come standard in black, but are available in a choice of colors, to help define network features such as routes, services, hierarchies or security levels. In addition, colors can be used to define connections within a shared space such as in colocation data centers.**

**RapidNet is HellermannTyton's patented pre-terminated "connect and go" system that offers high performance copper and fiber solutions for data centers and storage area network applications. These pre-terminated solutions do not require onsite termination or certification testing, which dramatically reduces installation time – by up to 85 percent.**

## Product Features

- Versatile product offering allows customization for structured cabling requirements.

- Exceeds ANSI/TIA-568-C specifications.

- Factory terminated and 100% tested for consistent performance.

- Patented cassette design allows copper and fiber solutions within the same footprint.

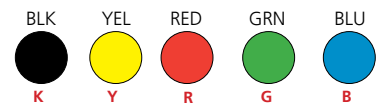The RNC Series solution is fully compatible with RNG Series RapidNet panels and accessories.

Plug termination

Jack termination

### Available Colors *(Ordering code in red)*

| BLK | YEL | RED | GRN | BLU |
|-----|-----|-----|-----|-----|
| K | Y | R | G | B |

| FIXED | | | VARIABLE – Select the following | | | | | | |
|-------|---|---|---|---|---|---|---|---|---|
| Prefix | Cable Bundle | Cable Type | Cable Flame Rating | Cable Color | Termination End 1 | Color Termination* End 1 | Termination End 2 | Color Termination* End 2 | Length |
| RNC | 6 | A CAT 6 UTP | P CMP<br>R CMR | B Blue<br>W White | C Cassette | K Black<br>B Blue<br>G Green<br>R Red<br>Y Yellow | C Cassette<br>J Jack - Pair Stagger Right<br>K Jack - Pair Stagger Left<br>L Jack - Stagger Right<br>M Jack - Stagger Left<br>N Jack - Inline (no stagger)<br>**P Plug - Pair Stagger Right<br>**Q Plug - Pair Stagger Left<br>**R Plug - Stagger Right<br>**S Plug - Stagger Left<br>**T Plug - Inline (no stagger) | K Black<br>B Blue<br>G Green<br>R Red<br>Y Yellow<br>**Z No Color | 10' - 295' |

**Example Model Number:**

| RNC | 6 | A | P | B | C | B | J | B | 20 |
|-----|---|---|---|---|---|---|---|---|-----|
| Prefix | Cable Bundle | Cable Type | Cable Flame Rating | Cable Color | Term. End 1 | Color Term. End 1 | Term. End 2 | Color Term. End 2 | Length |

Pair Stagger Rgt = 1/2 longest, 3/4 next, 5/6 last and shortest pair.

* Color Termination standard is black. Other colors are available with longer lead times.

** If option P, Q, R, S or T is selected, the only Color Termination End 2 option is Z for no color. Plugs do not come in colors.

# RNS Series Short Body RapidNet® Category 6 UTP

The Short Body RapidNet cassette has been specifically designed to be used with angled RapidNet panels, which by routing patch cords directly into vertical cable management, increase rack capacity by up to 50 percent. The RNS Series RapidNet line is available in Category 6 UTP, providing 6 ports per cassette or 24 ports in 1U, and is fully compatible with standard RNG Series RapidNet panels and accessories.
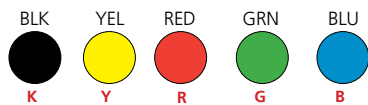
The ports come standard in black but are available in a choice of colors, which can help define network features such as routes, services, hierarchies or security levels. In addition, the colors can be used to define connections within a shared space such as in colocation data centers.

## Product Features

- Short body length for areas with limited space or restricted access.

- Versatile product offering allows customization for structured cabling requirements.

- Exceeds ANSI/TIA-568-C specifications.

- Factory terminated and 100% tested for consistent performance.

- Patented cassette design allows copper and fiber solutions within the same footprint.

| ACCESSORY | | |
|---|---|---|
| Part No. | Description | Port Count |
| RNSAPP1U | RNS Series Angled Modular Panel - 1U - RNS Series Only | 24 copper ports |
| RNSAPP2U | RNS Series Angled Modular Panel - 2U - RNS Series Only | 48 copper ports |

### Available Colors (Ordering code in red)

| BLK | YEL | RED | GRN | BLU |
|---|---|---|---|---|
| K | Y | R | G | B |

RNSAPP1U

RNSAPP2U

| FIXED | | | VARIABLE – Select the following | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Prefix | Cable Bundle | Cable Type | Cable Flame Rating | Cable Color | Termination End 1 | Color Termination* End 1 | Termination End 2 | Color Termination* End 2 | Length |
| RNS | 6 | A CAT 6 UTP | P CMP<br>R CMR | B Blue<br>W White | C Cassette | K Black<br>B Blue<br>G Green<br>R Red<br>Y Yellow | C Cassette<br>J Jack - Pair Stagger Right<br>K Jack - Pair Stagger Left<br>L Jack - Stagger Right<br>M Jack - Stagger Left<br>N Jack - Inline (no stagger)<br>**P Plug - Pair Stagger Right<br>**Q Plug - Pair Stagger Left<br>**R Plug - Stagger Right<br>**S Plug - Stagger Left<br>**T Plug - Inline (no stagger) | K Black<br>B Blue<br>G Green<br>R Red<br>Y Yellow<br>**Z No Color | 10' - 295' |

**Example Model Number:**

| RNS | 6 | A | R | W | C | R | L | R | 20 |
|---|---|---|---|---|---|---|---|---|---|
| Prefix | Cable Bundle | Cable Type | Cable Flame Rating | Cable Color | Term. End 1 | Color Term. End 1 | Term. End 2 | Color Term. End 2 | Length |

Pair Stagger Rgt = 1/2 longest, 3/4 next, 5/6 last and shortest pair.

* Color Termination standard is black. Other colors are available with longer lead times.

**If option P, Q, R, S or T is selected, the only Color Termination End 2 option is Z for no color. Plugs do not come in colors.

# RNG Series RapidNet®
# Fiber Solutions

RNG Series RapidNet Fiber is an excellent solution for high bandwidth needs or extended distances. The RNG Series cassette offers double the density of our classic version, up to 24-fiber or 12 duplex ports. RapidNet Fiber utilizes a 12-fiber (6-port), single unit plenum (OFNP) distribution cable for LC and SC connections or a 24-fiber (12-port) loose tube plenum (OFNP) cable for LC connections. Cut to customer specified length at HellermannTyton, each 12- or 6-port loom is supplied terminated at both ends to at least one of the patented RapidNet cassettes. Lengths up to 200 feet are supplied in the RapidNet box; lengths of 201 feet or more are supplied on the RapidNet reel. Each pre-labeled 12- or 6-port fiber cassette snaps easily into the modular panel.

## Product Features

- Exceeds ANSI/TIA-568-C.3 and IEEE 802.3ae 10GbE standards.

- Certification test reports included with all fiber looms/orders.

- Cassettes are manufactured from high-strength, lightweight thermoplastic material.

- Cassette design features single-release mechanism.

- Alignment guides located on the top of the cassette to ensure the correct orientation in the modular panel (RNGPP1U).

- Modular panel accepts four RapidNet cassettes, allowing up to 96 fibers / 48 ports in 1U.

| FIXED | VARIABLE – Select the following | | | | | | |
|---|---|---|---|---|---|---|---|
| Prefix | Cable Type | Cable Flame Rating | Termination End 1 | Termination End 2 | Cable Count | Pull Kits | Length |
| RNGF | C = 62.5/125 (OM1)<br>B = 50/125 (OM2)<br>A = 50/125 (OM3)<br>H = 50/125 (OM4)<br>D = Single Mode | P = Plenum<br>R = Riser | L = LC Cassette<br>S = SC Cassette<br>C = LC/APC Cassette<br>D = SC/APC Cassette | L = LC Cassette (Straight Thru)<br>J = LC Cassette (Pair Reversed)<br>K = LC Simplex 900um Fanout<br>H = LC Duplex 2mm Fanout<br>C = LC/APC Cassette (Straight Through SM)<br>V = LC/APC Duplex 2mm Fanout (SM)<br>U = LC/APC Simplex 900um Fanout (SM)<br>S = SC Cassette (Straight Thru)<br>T = SC Cassette (Pair Reversed)<br>R = SC Simplex 900um Fanout<br>Q = SC Duplex 2mm Fanout<br>D = SC/APC Cassette (Straight Through SM)<br>W = SC/APC Duplex 2mm Fanout (SM)<br>Y = SC/APC Simplex 900um Fanout (SM)<br>M = MTP 12 Elite (Male - With Pins)<br>N = MTP 12 Elite (Female - No Pins)<br>Z = MTP 24 Fiber (Male - With Pins)<br>B = MTP 24 Fiber (Female - No Pins) | A = 12<br>B = 24 | 0<br>1 | 3' - 500' |

SC Version Only Available in 12 fiber count
Breakout length is 0.5 meters standard
Other breakout options may be available upon request

c (UL) us
LISTED

**Example Model Number:**

| RNGF | A | P | L | C | A | 1 | 65 |
|---|---|---|---|---|---|---|---|
| Prefix | Cable Type | Cable Flame Rating | Term. End. 1 | Term. End 2 | Cable Count | No. of Pull Kits | Length |

LC Cassette
12 FIber

L - J
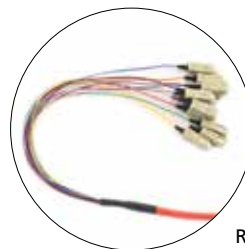
K

LC Cassette
24 FIber

H

SC Cassette

S - T

**Fiber Options**

- 62.5/125µm (OM1) Multimode Fiber

- 50/125µm (OM2) Multimode Fiber

- 50/125µm (OM3) Multimode Fiber

- 50/125µm (OM4) Multimode Fiber

- 8.3/125µm (OS2) Single Mode Fiber

R

Q

# RNG Series RapidNet® Cassette and MTP® Fiber Solutions

**HellermannTyton offers pre-terminated MTP solutions for the RapidNet system. This modular system utilizes our pre-loaded, RNG Series RapidNet cassette to breakout the MTP connector to LC or SC connector options. MTP trunk and fanout cables complete the "connect and go" solution up to 96 (48 ports) fibers in 1U.**

| FIXED | VARIABLE – Select the following | |
|-------|---------------------------------|---|
| **Prefix** | **Cable Type** | **Cable Count** |
| RNGF | A   50/125µm (OM3) Multimode<br>H   50/25µm (OM4) Multimode<br>D   8.3/125µm Single Mode (OS2) | 12<br>24 |

Note: For SC connection option add SC to the end of the cable count. Available in 12-fiber count only. OM1 and OM2 options are available.

| Example Model Number: ▶ | **RNGF**<br>Prefix | **B**<br>Cable Type | **24**<br>Cable Count |
|---|---|---|---|

MTP is a registered trademark of US Conec Ltd.

## Product Features

- Scalable solution with modular components allowing the flexibility for data network design or upgrades.

- Pre-terminated modular cassette offers labor savings with quick deployment.

- All cassettes and trunks are factory terminated and 100% tested with test documentation included with products.

- Round cable design eliminates preferential bend issues, which results in increased density and greater manageability.

- All trunks have crossover polarity using TIA-568.C.3-1 Method C.

- Modular cassettes easily adapt to RapidNet auxiliary rails using zero rack space.

- Flexible manufacturing to meet custom specified lengths or fiber counts.

- MTP ports identified as A and B.

## Technical Information:

*Compliant with the following standards:*

- TIA-568-C
- IEC-61754-7
- TIA/EIA-604-5 (FOCIS-5)
- TIA-568-C Method C
- IEEE 802.3ae 10GbE Standards
- IEEE 802.3ba 40/100GbE Standards

**Insertion Loss:** 0.2db Typical,

Per mated MTP: 0.5db Max (MM/SM)

**Return Loss:**

Per Fiber: 25db min (MM); 55db min (SM)

## Product Features

- Available in a variety of fiber types: OM3, OM4, Single Mode.

- Up to 576 fibers in one rack unit of space.

- 40GbE and 100GbE ready with other RapidNet RNG Series products.

- Elite® MTP® Connectors as standard.

- Direct factory termination with test results provided.

- Fully interchangeable with other RapidNet solutions.

## Product Benefits:

- Requires two less mated pair connections with direct connect termination.

- Smaller diameter cables provide more flexibility and tighter allowable bend radius.

- Provides fiber port identification for simple management.

- Reduces cable congestion in pathways and spaces.

- Increases life cycle of cabling infrastructure.

# RapidNet® MTP® Very High Density (VHD) Fiber Cassette

**Data centers are faced with many challenges – rising operational costs, space constraints and evolving bandwidth requirements – along with the necessity for faster processing speeds. In response to these needs, HellermannTyton introduces its high-density fiber solution for conserving space, achieving faster access times and simplifying installations with minimal downtimes.**

**The RapidNet MTP VHD Fiber product line is the ideal solution for data center designers looking to be more efficient with existing architecture as well as future proof their IT investment for technological advancements. Data center environments can benefit from MTP connectivity capable of meeting today's requirements of 10GbE support and tomorrow's performance levels with a solution that is 40GbE and 100GbE ready.**

**IT technical staff can replicate their high-density fiber-optic switch ports, and have the flexibility to make adds, moves and changes in a convenient manner. The MTP VHD is there to support a high-density fiber solutions providing 144 fibers per cassette and 576 fibers on a one-rack-unit (1U) design.**

RapidNet MTP VHD
Fiber Cassettes
72 Fiber and 144 Fiber

Elite and MTP are registered trademarks of US Conec Ltd.
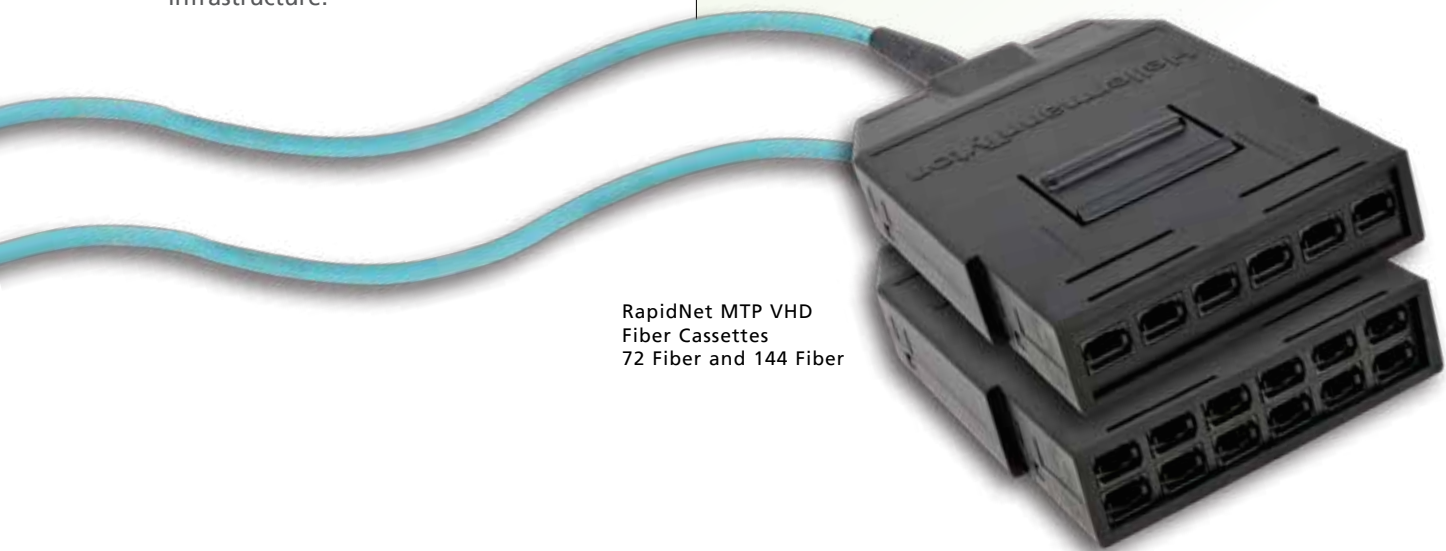
# RapidNet® MTP® VHD Fiber Solution Delivers . . .

**NETWORK PERFORMANCE** This factory-terminated and tested cassette provides simple-to-install, compact, modular fiber networks with the capacity to easily migrate to 40GbE and 100GbE networks.

RapidNet MTP VHD offers standard MTP typical insertion loss of 0.2db and maximum insertion loss of 0.50db per mated pair.

**EXTENDED FUNCTIONALITY** Fully interchangeable with other Fiber RNG RapidNet components, the MTP VHD cassette presents six MTP 12-fiber connectors that enable up to 288 fibers in 1U of rack space or 12 MTP 12-fiber connectors that enable up to 576 fibers in 1U of rack space.

**SCALABILITY** The use of the RapidNet MTP VHD cassette in a topology will minimize pathway congestion and enable scaling to thousands (and hundreds of thousands) of fiber-optic connections.

**FLEXIBILITY** The RapidNet MTP VHD cassette provides the flexibility to easily configure and reconfigure the cabling infrastructure to meet current and future networking requirements.

**MANAGEABILITY** The RapidNet MTP VHD cassette is engineered for ease of implementation and improved manageability for meeting the challenges of data center moves, additions and changes with the least disruption.

| FIXED | VARIABLE – Select the following | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Prefix | Fiber Type | Cable Flame Rating | Termination End 1 | Termination End 2 | Cable Count | Breakout Length | Polarity | Pull Kits | Length |
| RV | A = 62.5/125um MM (OM1)<br>B = 50/125um MM (OM2)<br>C = 50/125um MM (OM3)<br>D = 50/125um MM (OM4)<br>E = Single Mode | P = Plenum<br>R = Riser | Y = MTP 12 Elite (M) Cassette<br>Z = MTP 12 Elite (F) Cassette | Y = MTP 12 Elite (M) Cassette<br>Z = MTP 12 Elite (F) Cassette<br>M = MTP 12 Elite (M) Connector<br>N = MTP 12 Elite (F) Connector | D = 72<br>F = 144 | A = .5<br>B = 1m<br>C = 1.5m<br>D = 2m<br>E = No Breakout | S = Straight Thru (1-1, 1-1) "Method A"<br>R = Reversed (1-12, 12-1) "Method B"<br>P = Pair Reversals (1-2, 2-1, 3-4, 4-3..) "Method C" | 0<br>1<br>2 | 3' - 500' |

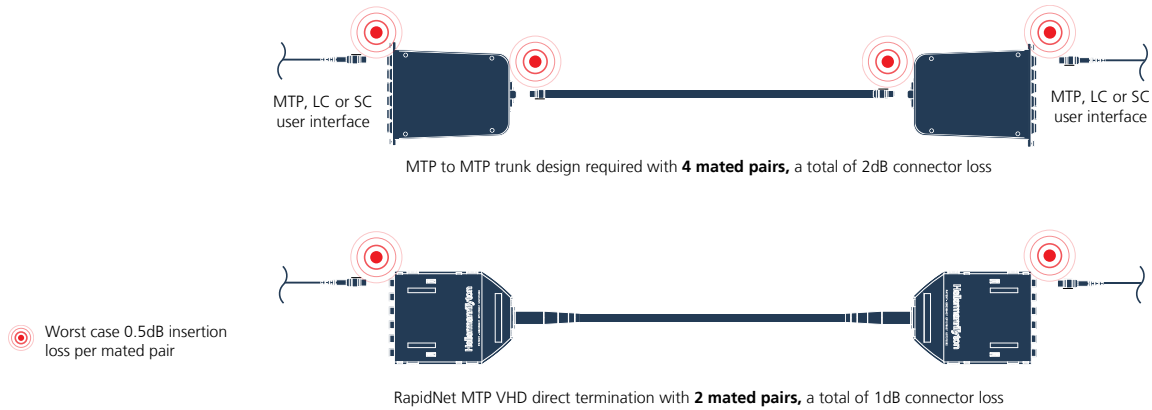**Example Model Number:**

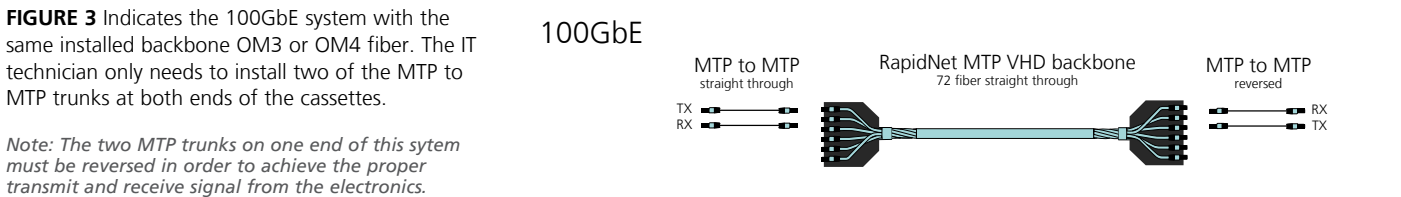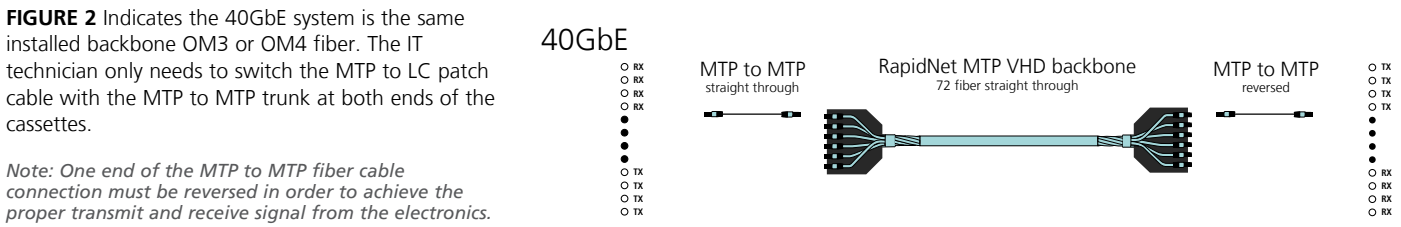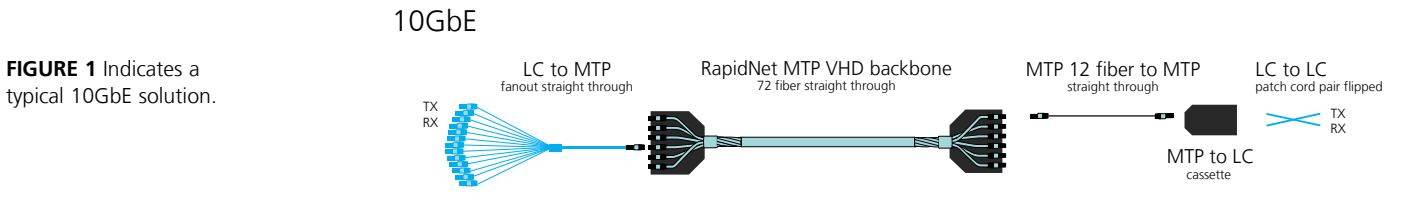| RV | C | P | Y | Y | D | E | S | 0 | 20 |
|---|---|---|---|---|---|---|---|---|---|
| Prefix | Fiber Type | Cable Flame Rating | Term. End 1 | Term. End 2 | Cable Count | Breakout Length | Polarity | No. of Pull Kits | Length |

# Insertion Loss Comparison

The HellermannTyton Direct Connect solution provides reduced system insertion loss in the channel compared with the traditional plug-and-play style cassettes. Utilizing pre-terminated cassettes, the loss budget required to connect the cassettes is eliminated, providing much lower losses and an organized connection point. This solution offers the opportunity to either extend the link length or include additional connections elsewhere to maximize the link routing.

In applications where it is not feasible or desirable to install pre-terminated cassettes, a Semi-Direct Connect solution can be utilized to improve performance by incorporating a HellermannTyton pigtailed cassette on one side, which provides a smaller, MTP breakout, that can connect to either fiber adapter panels or to traditional cassette solutions.

Overall, the Direct Connect Solution will save additional time and money, improve link loss and provide peace of mind to the network integrity.



MTP, LC or SC user interface

MTP, LC or SC user interface

MTP to MTP trunk design required with **4 mated pairs,** a total of 2dB connector loss

Worst case 0.5dB insertion loss per mated pair

RapidNet MTP VHD direct termination with **2 mated pairs,** a total of 1dB connector loss

# 10G - 40G - 100G VHD is Migration Ready

## 10GbE

**FIGURE 1** Indicates a typical 10GbE solution.



LC to MTP
fanout straight through

RapidNet MTP VHD backbone
72 fiber straight through

MTP 12 fiber to MTP
straight through

LC to LC
patch cord pair flipped

TX
RX

TX
RX

MTP to LC
cassette

## 40GbE

**FIGURE 2** Indicates the 40GbE system is the same installed backbone OM3 or OM4 fiber. The IT technician only needs to switch the MTP to LC patch cable with the MTP to MTP trunk at both ends of the cassettes.

*Note: One end of the MTP to MTP fiber cable connection must be reversed in order to achieve the proper transmit and receive signal from the electronics.*



RX
RX
RX
RX

TX
TX
TX
TX

MTP to MTP
straight through

RapidNet MTP VHD backbone
72 fiber straight through

MTP to MTP
reversed

TX
TX
TX
TX

RX
RX
RX
RX

## 100GbE

**FIGURE 3** Indicates the 100GbE system with the same installed backbone OM3 or OM4 fiber. The IT technician only needs to install two of the MTP to MTP trunks at both ends of the cassettes.

*Note: The two MTP trunks on one end of this sytem must be reversed in order to achieve the proper transmit and receive signal from the electronics.*



MTP to MTP
straight through

RapidNet MTP VHD backbone
72 fiber straight through

MTP to MTP
reversed

TX
RX

RX
TX

# RapidNet® Distribution Chassis

**HellermannTyton's 4U Distribution Chassis is designed for use with the industry-leading RapidNet pre-terminated system where high-density patching is required together with patch cord management.**

**The Distribution Chassis is designed to help maximize the return on valuable rack space while maintaining access to connectors, even when fully loaded – a real advantage when undertaking moves, adds and changes (MACs).**

**From standard density 384 fiber (LC connections) to high-density 2,304 fiber (MTP connections) in each 4U of rack space, a range of different density requirements is available. The chassis can also accommodate 96 UTP copper ports.**

**The RapidNet Distribution Chassis has applications in the Core, Horizontal, Equipment and Intermediate zones within a data center as well as single rack applications within telecommunications rooms.**

## Features and Benefits

- Fits into standard 19" racks and cabinets.

- 4U of vertical space can accommodate up to 16 RapidNet fiber or copper cassettes.

- High-quality look and finish enhances the presentation of the patching area.

- Removable hinged front and rear doors to make initial patch cord and cable installation easier.

- Port labeling and identification, both front and rear.

- Front cable management supports patch cords and helps manage bend radii.

- Rear cable management for cables from 3 to 20mm and anchoring points provide strain relief for cables entering the chassis.
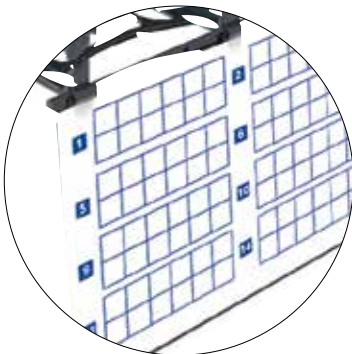
Front cable management


Rear cable management


Easy and clear labeling

## Increase Space Utilization

Combining the patching area with the front cable management into a single 1U of rack space saves valuable room within racks or cabinets. This in turn allows for higher density patching or installation of additional active equipment within the same cabinet. This can be particularly valuable in applications such as Storage Area Networks and high-density Virtualized Server Clusters.

## Facilitates Pre-termination

For both in-house and third-party data centers, speed of deployment can be critical to the success of a project. The use of RapidNet® in combination with the 4U Distribution Chassis provides reduced installation time together with the simplified layout facilitated by the Distribution Chassis. Equal length looms reduce the risk of over-length cables.

## Improve Speed and Ease of Deployment

The RapidNet Distribution Chassis has a number of features designed to aid the deployment of RapidNet within the infrastructure:

• Front cable management across the horizontal space means patch cords are well supported before entering the vertical cable managers of the rack or cabinet.

• Rear access with eight cable entry points gives strain relief directly to the cables.

• Extensive labeling fields, both front and rear, to aid port identification and ease-of-use.

## Capacity

| Suitable RapidNet Cassettes | • MTP VHD 72 & 144 fiber<br>• MTP cassette 12 & 24 fiber<br>• Pre-terminated 12 & 24 fiber<br>• Copper 6-port UTP: Category 6 | | | |
|---|---|---|---|---|
| Maximum Capacities | VHD | MTP® | Pre-Term | Copper |
| Per U | 576 | 96 | 96 | 24 |
| Per Chassis | 2,304 | 384 | 384 | 96 |
| Quantity of Cassettes | 16 cassettes maximum of any listed above, blank inserts are available to close any unused openings | | | |

MTP is a registered trademark of US Conec Ltd.

# RapidNet® Fiber Adapter Panels

**The RapidNet Fiber Adapter Panel is designed to allow the RapidNet solution to be used in areas with limited access or restricted space where a RapidNet Cassette cannot be used. Panels are pre-loaded with a choice of LC, SC or MTP® adapters, which allow ruggedized fan-outs to be installed in standard RapidNet panels. RapidNet Fiber Adapter Panels offer a maximum of 288 fibers in a single adapter panel, or up to 1152 fibers in 1U of space and are compatible with the RapidNet Fiber Distribution Chassis, RapidNet Panel with Rear Cable Management and standard RapidNet panels.**

## Features and Benefits

- Available in 6- or 12-adapter configurations.

- Choose from LC, SC or MTP.

- Supports a maximum of 1,152 fibers in 1U of space.

- Provides more density than traditional fiber solutions.
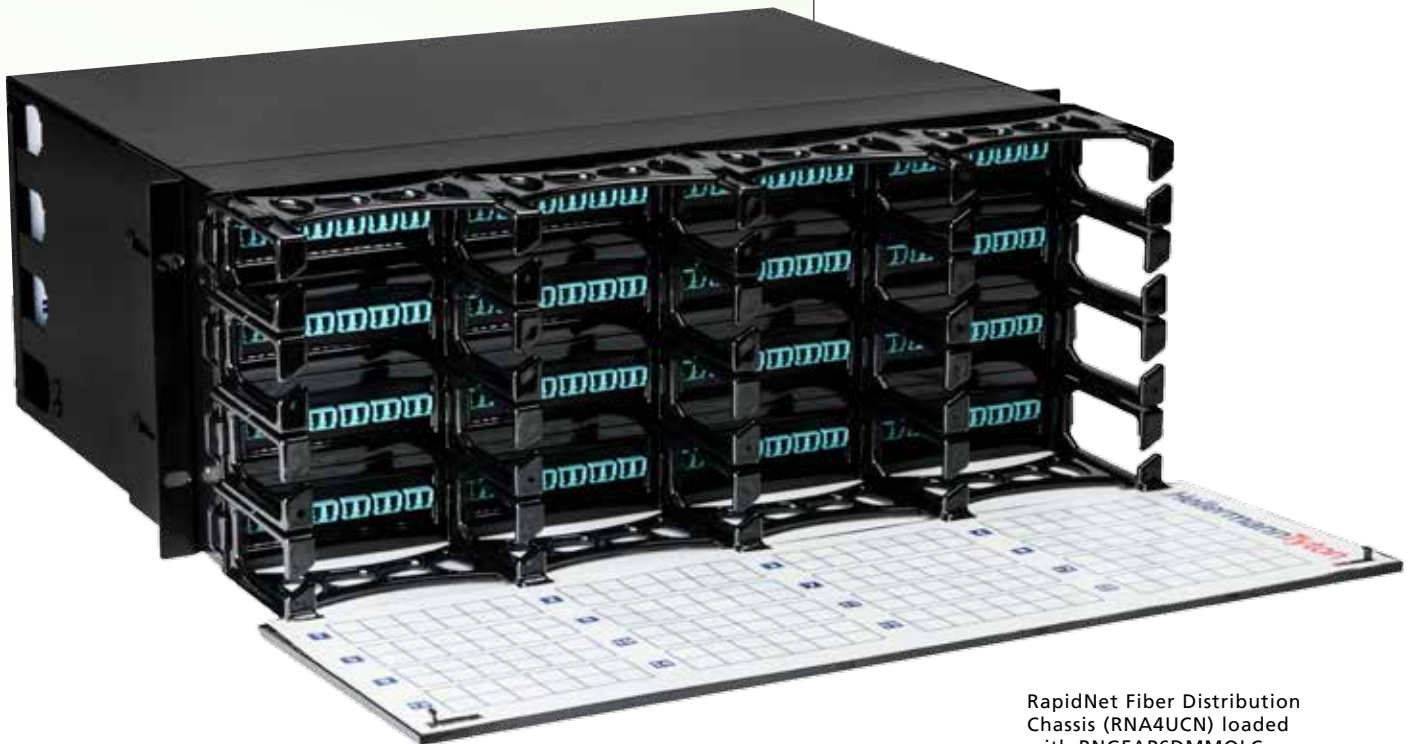
RapidNet Fiber Distribution Chassis (RNA4UCN) loaded with RNGFAP6DMMQLC Adapter Panels
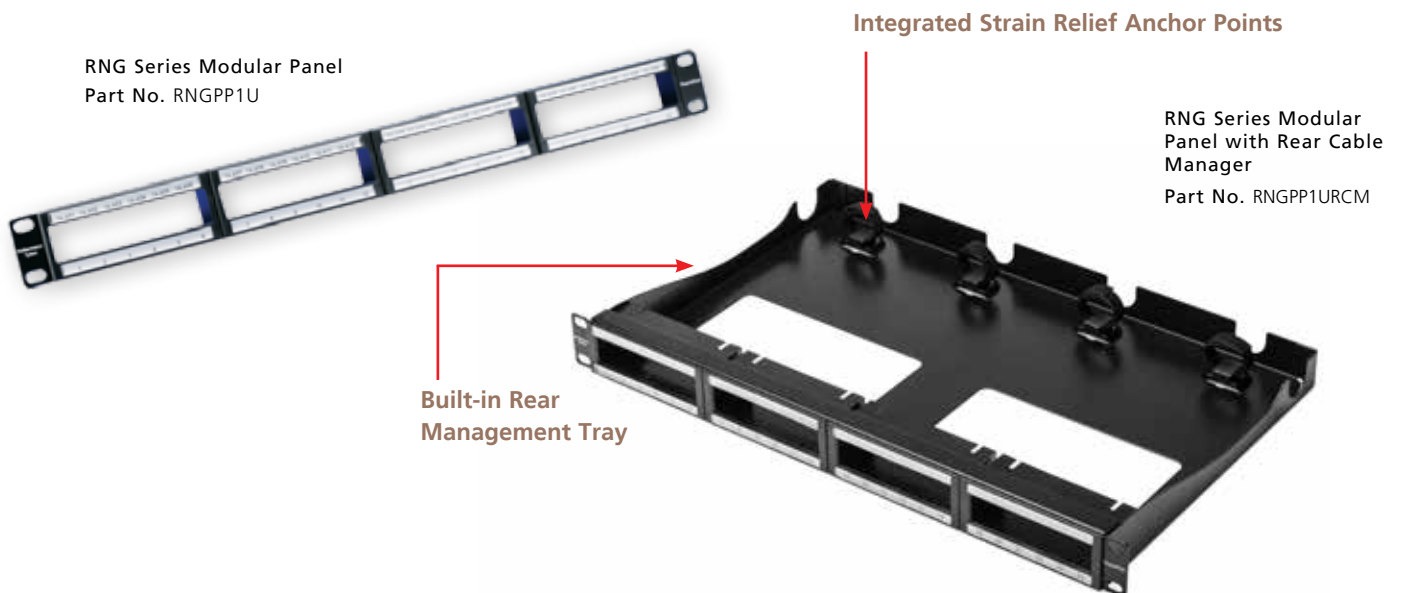
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LC Panel


SC Panel


MTP® Panel

| Part No. | Description | Fiber Count (Max) | Ferrule Type | Color | Pkg. Qty. |
|---|---|---|---|---|---|
| **LC** | | | | | |
| RNGFAP12DMMLC | RapidNet® FAP 12 Dup MM LC | 24 | Phosphor Bronze (PB) | Beige | 1 |
| RNGFAP12DMMQLC | RapidNet FAP 12 Dup 10G MM LC | 24 | Zirconia Ceramic (ZC) | Aqua | 1 |
| RNGFAP12DSMLC | RapidNet FAP 12 Dup SM LC | 24 | Zirconia Ceramic (ZC) | Blue | 1 |
| RNGFAP6DMMLC | RapidNet FAP 6 Dup MM LC | 12 | Phosphor Bronze (PB) | Beige | 1 |
| RNGFAP6DMMQLC | RapidNet FAP 6 Dup 10G MM LC | 12 | Zirconia Ceramic (ZC) | Aqua | 1 |
| RNGFAP6DSMLC | RapidNet FAP 6 Dup SM LC | 12 | Zirconia Ceramic (ZC) | Blue | 1 |
| **SC** | | | | | |
| RNGFAP6DMMSC | RapidNet FAP 6 Dup MM SC | 12 | Phosphor Bronze (PB) | Beige | 1 |
| RNGFAP6DMMQSC | RapidNet FAP 6 Dup 10G MM SC | 12 | Zirconia Ceramic (ZC) | Aqua | 1 |
| RNGFAP6DSMSC | RapidNet FAP 6 Dup SM SC | 12 | Zirconia Ceramic (ZC) | Blue | 1 |
| **MTP** | | | | | |
| RNGFAP12MTP | RapidNet FAP 12 MM MTP® | 288 | N/A | Black | 1 |
| RNGFAP6MTP | RapidNet FAP 6 MM MTP | 144 | N/A | Black | 1 |
| **Accessories** | | | | | |
| RNA4UCN | RapidNet Distribution Chassis 4U | N/A | N/A | Black | 1 |
| RNGPP1URCM | RapidNet Panel with Rear Cable Management | N/A | N/A | Black | 1 |
| RNGPP1U | RapidNet Modular Panel (1U) | N/A | N/A | Black | 1 |
| RNGBLANK | RNG Series RapidNet Modular Panel Blank Insert | N/A | N/A | Black | 1 |

MTP is a registered trademark of US Conec Ltd.

**Integrated Strain Relief Anchor Points**

RNG Series Modular Panel
**Part No.** RNGPP1U



RNG Series Modular Panel with Rear Cable Manager
**Part No.** RNGPP1URCM

**Built-in Rear Management Tray**

# RNG Series Modular Panels and Accessories

**All RNG Series RapidNet® cassettes are designed for a quick-and-easy insertion into the RNG Series panels. The 1U and 2U modular panels fit standard 19" racks and accept four or eight cassettes.**
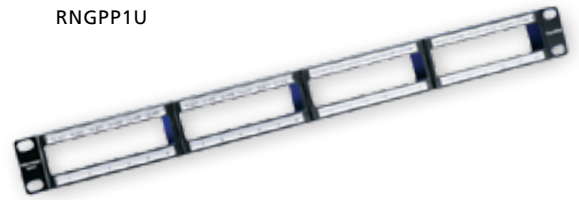
RNG Series Modular Panel
RNGPP1U

| Part No. | Description |
|----------|-------------|
| RNGPP1U | RNG Series RapidNet Modular Panel - 1U |
| RNGPP1URS | RNG Series RapidNet Modular Panel - 1U* |
| RNGSPP1U | RNG Series RapidNet Shielded Modular Panel - 1U |
| RNGPP2U | RNG Series RapidNet Modular Panel - 2U |
| RNGPP2URS | RNG Series RapidNet Modular Panel - 2U* |
| RNGBLANK | RNG Series RapidNet Modular Panel Blank Insert |
| RNSE1U | RapidNet Secure Enclosure - 1U |
| RNRCMU | RapidNet Rear Cable Manager |
| TFCM | Front Cable Manager |

* With Rack-Snap inserts pre-installed.

RNG Series Blank Insert
RNGBLANK

Rack-Snap - Replace caged nuts and snap into standard square holes in most cabinets.

RNG Series Shielded Modular Panel
RNGSPP1U

RNG Series RapidNet® Modular Panel
RNGPP2U

Rear Cable Manager
RNRCMU

Secure Enclosure
RNSE1U

Front Cable Manager
TFCM

The RapidNet Secure Enclosure fits standard 19" racks and can be used with both RN and RNG Series Solutions. It has a removable lid for access as well as a drop-down front.
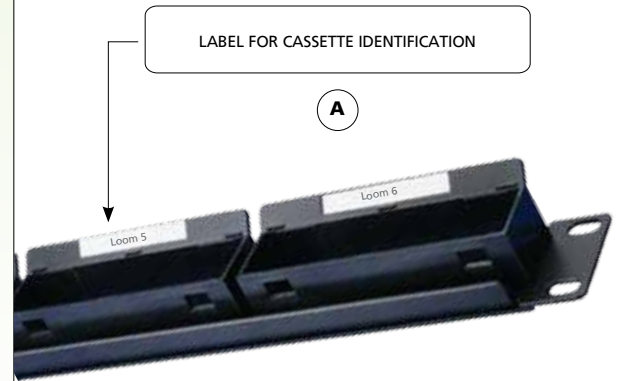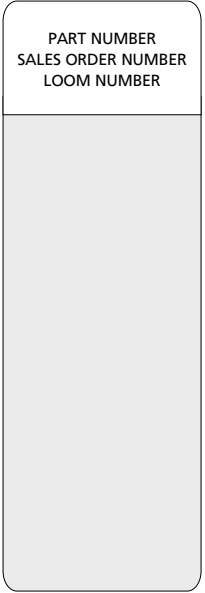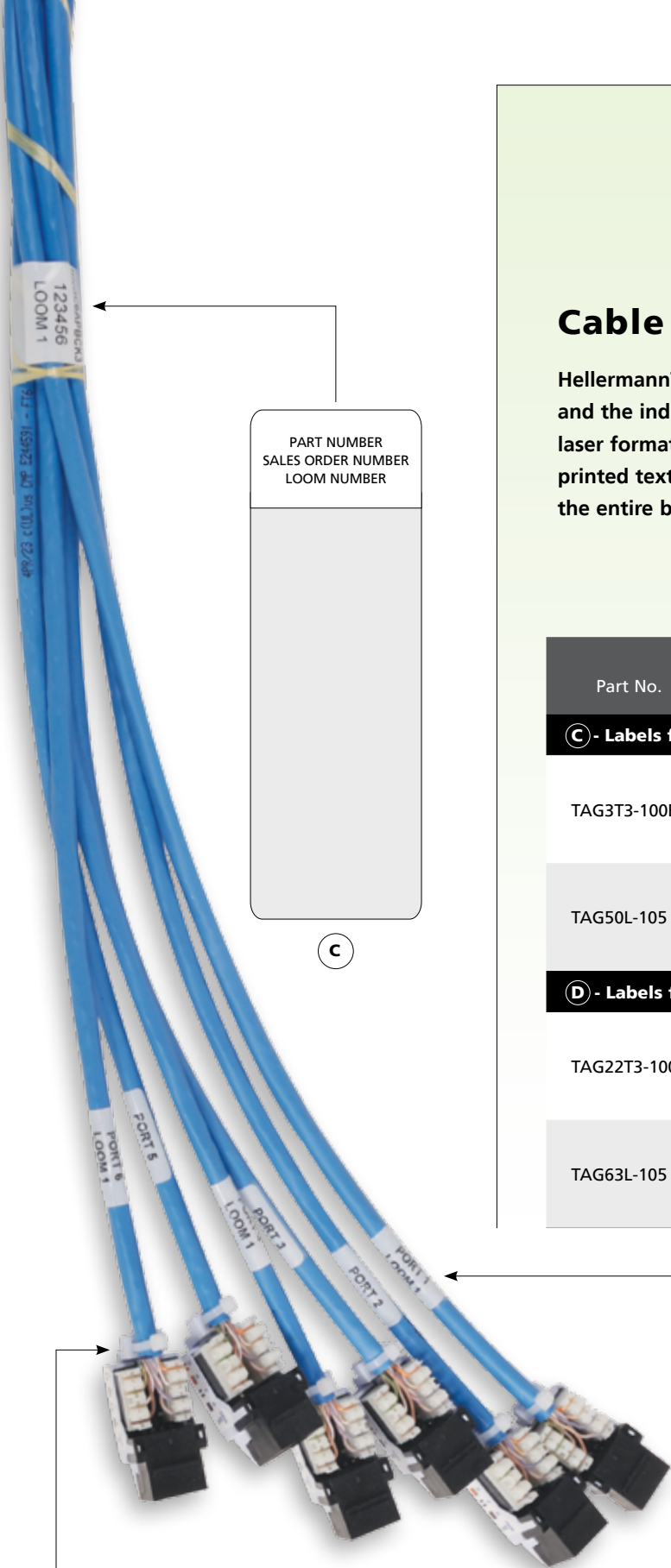
View from
back of unit

# Identification Solutions for RapidNet®

**Modular Panel Identification – HellermannTyton offers the following identification solutions for use with RapidNet products. The front identification labels allow users to easily meet TIA/EIA-606-B and TIA-942 administration standards**

| Part No. | Description | Dimensions | Pkg. Qty. |
|---|---|---|---|
| **Ⓐ - Labels for Cassette Identification on rear of panel** | | | |
| TAG69T1-336 | Thermal Transfer Label | 2" x .275" | 10,000/Roll |
| TAG69L-789 | Laser Label | 2" x .275" | 5,000/Pack |
| **Ⓑ - Labels for Port Identification on front of panel** | | | |
| TAG68T1-336 | Thermal Transfer Label | 3.8" x .275" | 10,000/Roll |
| TAG68L-789 | Laser Label | 3.8" x .275" | 2,500/Pack |

LABEL FOR CASSETTE IDENTIFICATION

Ⓐ

Loom 6

Loom 5

LABEL FOR PORT IDENTIFICATION

Ⓑ

PART NUMBER
SALES ORDER NUMBER
LOOM NUMBER

(C)

# Cable Identification

**HellermannTyton provides high-quality labels to mark the loom and the individual cables. Printable in both thermal transfer and laser formats, the labels come in different lengths to ensure the printed text is overlaminated and protected when placed around the entire bundle of wires or if marking each individual wire.**

| Part No. | Description | Dimensions | Pkg. Qty. |
|----------|-------------|------------|-----------|
| **(C) - Labels for Loom Identification** | | | |
| TAG3T3-100B | Thermal Transfer Label | 1" x 1" x 3.75" | 3,000/Roll |
| TAG50L-105 | Laser Label | 1" x 1" x 3.16" | 1,000/Pack |
| **(D) - Labels for Individual Cable Identification** | | | |
| TAG22T3-100B | Thermal Transfer Label | 1" x .5" x 1.437" | 5,000/Roll |
| TAG63L-105 | Laser Label | 1" x .5" x 1.437" | 2,500/Pack |

LOOM NUMBER
PORT NUMBER
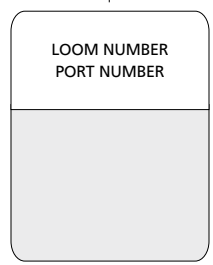
(D)

Our Category 6 RJ45 Jacks have a unique strain relief design to secure the cable. The small Cable Tie is used to secure the cable and prevents the conductors from becoming loose at the IDC during installation.

# Raised Floor Enclosure

**HellermannTyton's Raised Floor Enclosure serves as a distribution point for zone cabling for low voltage cabling under raised floors of 8" deep or more and is UL approved for use in air handling spaces. It can be used with traditional patch panel applications as well as copper and fiber RapidNet® solutions. The enclosure is supported by the raised floor support brackets and uses the 2' x 2' floor tile as a cover. Designed to store and secure rack mount equipment, the enclosure is equipped with firestop foam sealing kits to seal the two openings. Firestop blocks accommodate single or bundled cable.**

| Part No. | Description | Pkg. Qty. |
|---|---|---|
| HTZB2X2 | 2' x 2' Raised Floor Enclosure | 1 |

Firestop block adds protection to network wiring.



## Product Features

- Designed to fit into 2' x 2' raised floor grids, 8" depth.

- Holds two 2RU (4RU) racks.

- Inside mounting brackets for 19" EIA rack mounting.

- Accepts #12-24 equipment mounting screws (included with all HellermannTyton patch panels).

- Firestop foam kits/blocks to seal cable access ports.

- Load capacity equals 85 lbs. of equipment total.

- Indoor use only, environmentally controlled areas.

- Seal provided on top flange to secure floor tile.

## Includes

- 4 raised floor support brackets

- 4 leveler bolts

- 2 grounding screws to outside of box

## Product Features

- Uses zero rack mount space by incorporating RapidNet within the cabinet space.

- Maximizes data center real estate in existing cabinets.

- Auxiliary Rail maintains 19" rackable surface for equipment mounting on existing cabinet rails.

- Ports where you need them – aligns connectivity with your servers.

- Allows for cassette moves, adds and changes without interrupting rack routed equipment in a fully populated cabinet.

- Promotes proper cable management.

# RapidNet® Zero U Auxiliary Rails

**HellermannTyton offers a simplified solution that maximizes data center real estate. Auxiliary rails are designed to mount in the rear of most manufacturer server cabinets and is best suited for server cabinets 42" deep or greater to provide a solution using zero rack space. Due to the versatile mounting design and size options of the rail, it may be installed in shallower cabinets or even horizontally above the cabinet.**

| Part No. | Description | Color | No. of Inserts Required |
|---|---|---|---|
| **RNG Series Auxiliary Rails** | | | |
| RNGAR01 | Auxiliary Rail, accepts 1 RNG Series Cassette | Black | 1 |
| RNGAR02 | Auxiliary Rail, accepts 2 RNG Series Cassettes | Black | 2 |
| RNGAR05 | Auxiliary Rail, accepts 5 RNG Series Cassettes | Black | 5 |
| RNGAR10 | Auxiliary Rail, accepts 10 RNG Series Cassettes | Black | 10 |
| RNGARINSERT* | Auxiliary Rail Insert for RNG Series Cassettes | Black | N/A |

* Includes 1 RapidNet Shroud, 2 Clear ID Windows, Labels 1-60, 10 Blank Labels.

**Auxiliary Rails ship without shroud assembly (plastic insert) to facilitate cabinet mounting. Order the appropriate number of RNGARINSERT to complete Auxiliary Rail and accept RapidNet cassettes.**

**Auxiliary Rail is designed to support mounting of RapidNet cassettes only. No other equipment, active or otherwise, should be mounted to the Auxiliary Rails.**
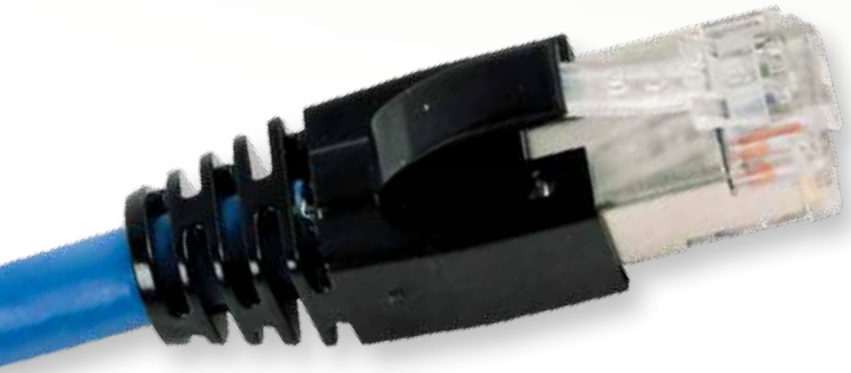
# Copper Patch Cords

**Designed to maintain signal integrity, HellermannTyton offers a full line of high-quality patch cords. These products are critical to the performance of the entire system. All patch cords comply with industry standards including ANSI/TIA-568-C.2.**

Available Patch Cord Colors:

BLU    YEL    GRN    RED    BLK    GRY    W

| Part No. | Description | Pkg. Qty. |
|----------|-------------|-----------|
| PCS6AXY | Category 6A Shielded Patch Cords | 1 |
| PC6ABLUY* | Category 6A Unshielded Patch Cords | 1 |
| PC6XYSC | Category 6 Patch Cords - Component Compliant | 1 |
| PC6XYS | Category 6 Patch Cord - Channel Compliant | 1 |

Replace "X" in the part number with the following letters for the desired color: X = BLU (Blue), YEL (Yellow), GRN (Green), RED (Red), GRY (Gray), W (White), BLK (Black).

Replace "Y" in the part number with the following numbers for the desired length: 3 = 3 feet, 5 = 5 feet, 7 = 7 feet, 10 = 10 feet, 14 = 14 feet, 20 = 20 feet.

**Category 6 Patch Cords**
Category 6 patch cords offer a slimline boot. This molded strain-relief boot helps prevent tangling and excessive bending while reducing the stress on the cable.

**Category 6A Shielded Patch Cords**
Category 6A shielded patch cords feature foil shielding to ensure signal integrity and a strain-relief boot that helps prevent tangling and excessive bending while reducing the stress on the cable.

**Category 6A Unshielded Patch Cords**
Category 6A UTP patch cords offer a slimline boot. This clear strain-relief boot helps prevent tangling and excessive bending while preventing stress on the cable.

# Fiber-Optic Cable Jumpers

**For fiber patching requirements, HellermannTyton offers Fiber-Optic Jumpers in various lengths with a wide variety of connector configurations. Fiber jumpers are available in two types – standard and GSA-compliant. Our standard jumpers combine quality with value, meeting all ANSI/TIA/EIA fiber-optic cable requirements while allowing installers to maximize project budgets. In addition to meeting industry standards, GSA-compliant jumpers meet Trade Agreement Act (TAA) requirements, making them acceptable for use in U.S. government contract projects.**

| Part No. | Description | Pkg. Qty. |
|---|---|---|
| **Standard Jumpers** | | |
| VFAXLCLCOM3 | LC - LC Duplex MM 50/125µ(OM3) Fiber Assembly | 1 |
| VFAXLCSCOM3 | LC - SC Duplex MM 50/125µ(OM3) Fiber Assembly | 1 |
| VFAXSCSCOM3 | SC - SC Duplex MM 50/125µ(OM3) Fiber Assembly | 1 |
| VFAXLCLCOS2 | LC - LC Duplex Single Mode (OS2) Fiber Assembly | 1 |
| VFAXLCSCOS2 | LC - SC Duplex Single Mode (OS2) Fiber Assembly | 1 |
| VFAXSCSCOS2 | SC - SC Duplex Single Mode (OS2) Fiber Assembly | 1 |

Replace "X" in the part number with the length in METERS.
i.e., 1 = 1 meter, 3 = 3 meters, 10 = 10 meters.

| Part No. | Description | Pkg. Qty. |
|---|---|---|
| **GSA-Compliant Jumpers** | | |
| FADLCDLC20M3XXX | LC - LC Duplex MM 50/125µ(OM3) Fiber Assembly | 1 |
| FADLCDSC20M3XXX | LC - SC Duplex MM 50/125µ(OM3) Fiber Assembly | 1 |
| FADSCDSC20M3XXX | SC - SC Duplex MM 50/125µ(OM3) Fiber Assembly | 1 |
| FALCLC10M3XXX | LC - LC Simplex Single Mode (OS2) Fiber Assembly | 1 |
| FALCSC10M3XXX | LC - SC Simplex Single Mode (OS2) Fiber Assembly | 1 |
| FASCSC10M3XXX | SC - SC Simplex Single Mode (OS2) Fiber Assembly | 1 |
| FALCALCA10M3XXX | LC/APC – LC/APC Simplex Single Mode (OS2) Fiber Assembly | 1 |
| FASCASCA10M3XXX | SC/APC -SC/APC Simplex Single Mode (OS2) Fiber Assembly | 1 |

Replace "XXX" in the part number with the length in FEET.
i.e., 3 = 3 feet, 10 = 10 feet, 25 = 25 feet.

**Technical Information**

| Jumper Type | Insertion Loss | | Return Loss Typical |
|---|---|---|---|
| | Typical | Max | |
| Standard MM PC | ≤ .2dB | ≤ .3dB | ≤ -25dB |
| Standard SM UPC | ≤ .22dB | ≤ .3dB | ≤ -57dB |
| Standard SM APC | ≤ .22dB | ≤ .3dB | ≤ -68dB |
| GSA Compliant MM | ≤ .35dB | ≤ .5dB | ≤ -25dB |
| GSA Compliant SM UPC | ≤ .2dB | ≤ .35dB | ≤ -58dB |
| GSA Compliant SM APC | ≤ .25dB | ≤ .4dB | ≤ -70dB |

# Fiber-Optic Trunk Cables

HellermannTyton's Fiber-Optic Trunk Cables are built to order to meet custom specified lengths or fiber counts. Available in MTP®, LC or SC connectors, these factory-terminated assemblies can be adapted to meet any project's needs.

Using the matrix below, choose an option from each column to build the custom fiber assembly needed for your application.

| FIXED | | VARIABLE – Select the following | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Prefix | Fiber Count | Fiber Type | Cable Type | Cable Flame Rating | Termination End 1 | Termination End 2 | Breakout Length | Polarity* | Pull Kits | Length |
| F | K 8<br>A 12<br>B 24<br>C 48<br>D 72<br>E 96<br>F 144 | A MM 50/125µm (OM1)<br>B MM 50/125µm (OM2)<br>C MM 50/125µm (OM3)<br>D MM 50/125µm (OM4)<br>E Single Mode | C Data Center Cable<br>D Distribution Cable | P Plenum<br>R Riser | A MTP 12 Fiber (female)<br>B MTP 24 Fiber (female)<br>C MTP 12 Fiber (male)<br>D MTP 24 Fiber (male)<br><br>E LC 2.0mm w/clips<br>F LC 3.0mm w/clips<br>G LC 900µm fanout<br>H LC/APC 2.0mm w/clips<br>J LC/APC 3.0mm w/clips<br>K LC/APC 900µm fanout<br><br>O SC 2.0mm w/clips<br>P SC 3.0mm w/clips<br>Q SC 900µm fanout<br>R SC/APC 2.0mm w/clips<br>S SC/APC 3.0mm w/clips<br>T SC/APC 900µm fanout | A MTP 12 Fiber (female)<br>B MTP 24 Fiber (female)<br>C MTP 12 Fiber (male)<br>D MTP 24 Fiber (male)<br><br>E LC 2.0mm w/clips<br>F LC 3.0mm w/clips<br>G LC 900µm fanout<br>H LC/APC 2.0mm w/clips<br>J LC/APC 3.0mm w/clips<br>K LC/APC 900µm fanout<br><br>O SC 2.0mm w/clips<br>P SC 3.0mm w/clips<br>Q SC 900µm fanout<br>R SC/APC 2.0mm w/clips<br>S SC/APC 3.0mm w/clips<br>T SC/APC 900µm fanout | A .5m<br>B 1m<br>C 1.5m<br>D 2m<br>E N/A | S Straight Thru<br>R Reversed<br>P Pair Reversal* | 0<br>1<br>2 | 10' - 999' |

\* HellermannTyton specifies pair reversal/flipped polarity cables to be used with the RNG Series MTP cassettes to maintain Method C polarity.
MTP is a registered trademark of US Conec Ltd.

**Example Model Number:** ▶

| F | A | A | C | P | H | H | A | S | 1 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|
| Prefix | Cable Count | Fiber Type | Cable Type | Cable Flame Rating | Term. End 1 | Term. End 2 | Breakout Length | Polarity | No. of Pull Kits | Length |

## Fiber Type



| **A** MM 62.5/125µm (OM1) | **B** MM 50/125µm (OM2) | **C** MM 50/125µm (OM3) | **D** MM 50/125µm (OM4) | **E** Single Mode |

## Cable Type



**C** Data Center Cable
(250µm bare fibers)

**D** Distribution
(966µm buffered fibers)

## Termination End



| **A** MTP 12 Fiber (female) | **B** MTP 24 Fiber (female) | **C** MTP 12 Fiber (male) | **D** MTP 24 Fiber (male) | **E** LC 2.0mm w/ clips |

| **F** LC 3.0mm w/ clips | **G** LC 900µm fanout | **H** LC APC 2.0mm w/ clips | **J** LC APC 3.0mm w/ clips | **K** LC APC 900µm fanout |

| **O** SC 2.0mm w/ clips | **P** SC 3.0mm w/ clips | **Q** SC 900µm fanout | **R** SC APC 2.0mm w/ clips | **S** SC APC 3.0mm w/ clips |

**T** SC APC 900µm fanout

## Pulling Kit

# Fiber Rack Mount Enclosures

**HellermannTyton Rack Mount Fiber Enclosures provide durable protection for direct termination and splice of LAN applications. Capable of supporting up to 1,728 fibers, our enclosures are equipped with cable management and routing accessories to control cable slack, limit bend radius and add strain relief control. Optional splice trays and sleeves are available for added convenience and versatility. Rack Mount Fiber Enclosures work in a standard LGX footprint.**

## Product Features

- Removable front and rear covers provide easy access to cables.

- Slide-out tray with easy-to-grip raised edge.

- Cable management spools for effective slack management.

- Optional splice trays to assist with cable splicing.

- Panel positioning for easier patch cord access.

- Meet ANSI/TIA/EIA 568-C standards.





FERM18S



FERM36S

| Part No. | Description | Height | Width | Depth | Pkg. Qty. |
|---|---|---|---|---|---|
| **STANDARD RACK MOUNT ENCLOSURES** | | | | | |
| **FERM1U** | Rack Mount Fiber Enclosure-Unloaded Accepts 3 Adapter Panels, 1U, Black | 1.75" | 17.0" | 14.0" | 1 |
| **FERM2U** | Rack Mount Fiber Enclosure-Unloaded Accepts 6 Adapter Panels, 2U, Black | 3.5" | 17.0" | 14.0" | 1 |
| **FERM4U** | Rack Mount Fiber Enclosure-Unloaded Accepts 12 Adapter Panels, 4U, Black | 7.0" | 17.0" | 17.0" | 1 |
| **FERM1UV** | Rack Mount Fiber Enclosure-Unloaded, No Door Accepts 3 Adapter Panels, 1U, Black | 1.75" | 19.0" | 8.15" | 1 |
| **GSA-COMPLIANT RACK MOUNT ENCLOSURES** | | | | | |
| **FERM18S** | Rack Mount Fiber Enclosure-Unloaded Accepts 3 Adapter Panels, 1U, Black | 1.75" | 17.0" | 12.14" | 1 |
| **FERM36S** | Rack Mount Fiber Enclosure-Unloaded Accepts 6 Adapter Panels, 2U, Black | 3.5" | 17.0" | 14.0" | 1 |

# Fiber Adapter Panels
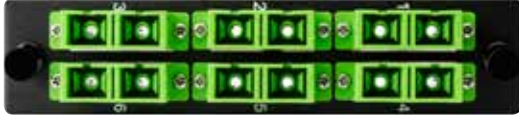


*VFAP6DSMASCZ*



*FAP6MQMTP*

For customized rack mount fiber optic enclosures, HellermannTyton offers a variety of adapter panels suitable for data center applications. Adapter panels are available with standard LC, SC and MTP® connections to accommodate single mode in both standard and angled versions, as well as multimode 50/125µm 10Gb OM3/4. Available with zirconia ceramic or phosphor bronze alignment sleeves for minimal insertion loss contribution. Zirconia ceramic alignment sleeves provide excellent durability and are an ideal choice for use in laser optimized MM and SM applications. HellermannTyton offers both standard and GSA-compliant adapter panels. Adapter panels easily install into enclosures with "snap lock" mounting fixtures and are color coded according to industry guidelines.

| Part No. | Description | Color | Fiber Count | Ferrule Type | Pkg. Qty. |
|---|---|---|---|---|---|
| **STANDARD ADAPTER PANELS** | | | | | |
| **LC** | | | | | |
| VFAP6DMMLC | Adapter Panel Preloaded with 6 Duplex LC MM | Beige | 12 | PB | 1 |
| VFAP6QMMQLCZ | Adapter Panel Preloaded with 6 Quad LC MM | Aqua | 24 | ZC | 1 |
| VFAP6DSMLCZ | Adapter Panel Preloaded with 6 Duplex LC SM | Blue | 12 | ZC | 1 |
| VFAP6QSMLCZ | Adapter Panel Preloaded with 6 Quad LC SM | Blue | 24 | ZC | 1 |
| **SC** | | | | | |
| VFAP6SMMQSCZ | Adapter Panel Preloaded with 6 Simplex SC MM | Aqua | 6 | ZC | 1 |
| VFAP6DMMQSC | Adapter Panel Preloaded with 6 Duplex SC MM | Aqua | 12 | ZC | 1 |
| VFAP6SSMSCZ | Adapter Panel Preloaded with 6 Simplex SC SM | Blue | 6 | ZC | 1 |
| VFAP6DSMSCZ | Adapter Panel Preloaded with 6 Duplex SC SM | Blue | 12 | ZC | 1 |
| VFAP6SSMASCZ | Adapter Panel Preloaded with 6 Simplex SC/APC | Green | 6 | ZC | 1 |
| VFAP6DSMASCZ | Adapter Panel Preloaded with 6 Duplex SC/APC | Green | 12 | ZC | 1 |
| **GSA-COMPLIANT ADAPTER PANELS** | | | | | |
| FAPB | Blank Adapter Panel | Black | N/A | N/A | 1 |
| **LC** | | | | | |
| FAP6DMMQLC | Adapter Panel Preloaded with 6 Duplex LC MM | Aqua | 12 | PB | 1 |
| FAP12DMMQLC | Adapter Panel Preloaded with 6 Quad LC MM | Aqua | 24 | PB | 1 |
| FAP6DSMLC | Adapter Panel Preloaded with 6 Duplex LC SM | Blue | 12 | ZC | 1 |
| FAP12DSMLC | Adapter Panel Preloaded with 6 Quad LC SM | Blue | 24 | ZC | 1 |
| **SC** | | | | | |
| FAP6DMMQSCZ | Adapter Panel Preloaded with 6 Duplex SC MM | Aqua | 12 | ZC | 1 |
| FAP6SSMSC | Adapter Panel Preloaded with 6 Simplex SC SM | Blue | 6 | ZC | 1 |
| FAP6DSMSC | Adapter Panel Preloaded with 6 Duplex LC SM | Blue | 12 | ZC | 1 |
| **MTP** | | | | | |
| FAP6MMTP | Adapter Panel Preloaded with 6 MTP MM | Black | 72/144 | N/A | 1 |
| FAP6MQMTP | Adapter Panel Preloaded with 6 MTP MM | Aqua | 72/144 | N/A | 1 |
| FAP6SMTP | Adapter Panel Preloaded with 6 MTP SM | Blue | 72/144 | N/A | 1 |

MTP is a registered trademark of US Conec Ltd.

# Patch Panels & Modular Jacks

**HellermannTyton's Deca[10] Series is a Category 6A solution that offers uncompromised support for 10 Gigabit Ethernet. GigaBand Category 6 patch panels provide unbeatable Category 6 performance. With positive PowerSum ACR up to 400 MHz, Category 6 patch panels exceed the latest Category 6 specifications covering hardware, link and channel performance.**

| Part No. | Description | Pkg. Qty. |
|---|---|---|
| **Category 6A Shielded Patch Panels** | | |
| PP24MOD6AS | Category 6A - 1U 24-Port Shielded Patch Panel | 1 |
| PP24SMOD6AS | Category 6A - 1U 24-Port Sliding Shielded Patch Panel | 1 |
| **Category 6 Universal Patch Panels** | | |
| PP110C624 | Category 6 - 1U 24-Port 110 Universal Patch Panel | 1 |
| PP110C648 | Category 6 - 1U 48-Port 110 Universal Patch Panel | 1 |
| APP110C624 | Angled, Category 6 UTP - 1U 24-Port 110 Universal Patch Panel | 1 |
| APP110C648 | Angled, Category 6 UTP – 2U 48-Port 110 Universal Patch Panel | 1 |
| **Category 6 - 48 Port 1U Patch Panel** | | |
| PP110C6481U | Category 6 - 1U 48-Port Patch Panel | 1 |
| **Modular Patch Panels** | | |
| P108-24-MOD1U* | Blank Modular Patch Panel - 24 Port - 1U | 1 |
| P108-24-MOD | Blank Modular Patch Panel - 24 Port - 2U | 1 |
| P108-48-MOD | Blank Modular Patch Panel - 48 Port - 3U | 1 |
| PP24MOD1AU | Angled Modular Patch Panel - 24 Port - 1U | 1 |
| PP24SMOD1AU | Angled Modular Patch Panel, Shielded - 24 Port - 1U | 1 |
| PP48MOD1AU | Angled Modular Patch Panel - 48 Port - 1U | 1 |
| **Modular Jacks** | | |
| RJ45FC6AS** | Category 6A Shielded Modular Jack | 1 |
| RJ44FC6-X | Category 6 Unshielded Modular Jack | 1 |

*The 1U modular panel allows for increased density in one rack space. The panel also makes patch cord insertion and removal easy by having jacks mounted sideways in the panel.
**Category 6A Termination Tool required, part number HT6ASCT.
Replace "X" with: W (White)  FW (Office White)  I (Ivory)  GRY (Gray)  BLK (Black)  YEL (Yellow)  ORN (Orange)  BRN (Brown)  BLU (Blue)  GRN (Green)  VIO (Violet)  RED (Red)



### Category 6A Shielded Patch Panels
HellermannTyton's Category 6A Shielded Patch Panels accept HellermannTyton Shielded Category 6A Jacks to complete a shielded system solution. The panel provides a choice of ground stud positions on the integral grounding bar and includes rear cable management.

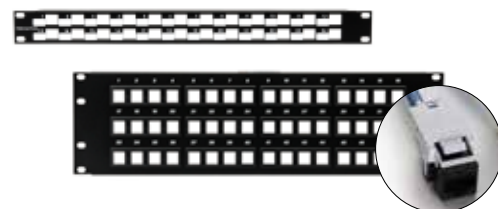Use with Part No. RJ45FC6AS - Category 6A Shielded Modular Jack (see photo).



### Category 6 - 48-Port 1U Patch Panel



### Category 6 Universal Patch Panels
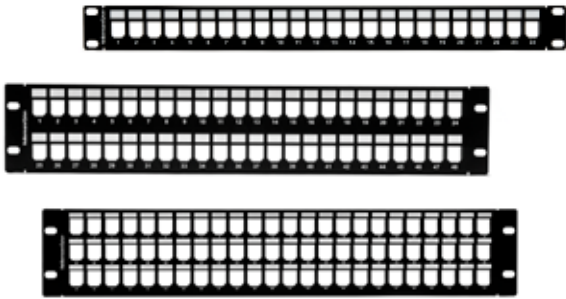Available in standard and angled versions.
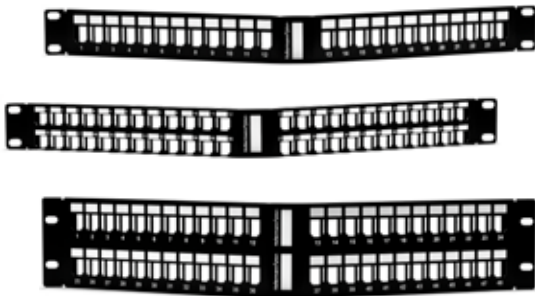


### Modular Patch Panels
The modular patch panel is designed to accept HellermannTyton Modular Jacks.Use with Part No. RJ45FC6–BLK Category 6 Modular Jack (see photo).

**GST Modular Patch Panels**



**GST Angled Modular Patch Panels**



**GST Modular Jack**

# GST Patch Panels & Modular Jacks

HellermannTyton's proprietary GST Connectivity line centers on the compact, high performance UTP RJ45 keystone connectors, which include Category 6A and Category 6 UTP Jacks that have been tested to exceed the latest published versions of ISO/IEC 1180 and ANSI/ TIA/EIA 568C and offer backward compatibility. The jacks can be terminated with the GST Termination Tool or the Pocket Tool. The GST solution includes a comprehensive range of Modular Panels, available in both flat and angled versions, standard and high density options as well.

| Part No. | Description | Pkg. Qty. |
|---|---|---|
| **GST Modular Patch Panels** | | |
| GSTPP-2U48SC* | GST Modular Patch Panel 48 Port, 2U, Steel, Black | 1 |
| GSTPP-1U48SC* | GST Modular Patch Panel 48 Port, 1U, Steel, Black | 1 |
| GSTPP-1U24SC* | GST Modular Patch Panel 24 Port, 1U, Steel, Black | 1 |
| GSTPP-2U72SC* | GST Modular Patch Panel 72 Port, 2U, Steel, Black | 1 |
| GSTAPP-2U48SC* | GST Angled Modular Patch Panel 48 Port, 2U, Steel, Black | 1 |
| GSTAPP-1U48SC* | GST Angled Modular Patch Panel 48 Port, 1U, Steel, Black | 1 |
| GSTAPP-1U24SC* | GST Angled Modular Patch Panel 24 Port, 1U, Steel, Black | 1 |
| GSTAPP-2U72SC* | GST Angled Modular Patch Panel 72 Port, 2U, Steel, Black | 1 |

**\***GST Modular Panels work with GST UTP Modular Jacks only.

| Part No. | Description | Pkg. Qty. |
|---|---|---|
| **Modular Jacks** | | |
| GSTJ6AU-Y** | GST Category 6A UTP Modular Jack | 1 |
| GSTJC6U-Y** | GST Category 6 UTP Modular Jack | 1 |

Replace "Y" in the part number with the following letters for desired color: WH (White), FW (Office White), IV (Ivory), GY (Gray), BK (Black), YE (Yellow), OR (Orange), BR (Brown), BL (Blue), GN (Green), VI (Violet), and RD (Red).
**Proprietary design requires HT-TT02U or HT-PT tool to terminate jack.

# Grip Ties

The Grip Tie is a low-profile, one-piece fastening device. Constructed of polyethylene hook and nylon loop and laminated back to back, the Grip Tie features quick release for repetitive access to cable and wire. It can be opened and closed numerous times without failure. The Grip Tie is reusable, adjustable, releaseable and easy to install. The rolls are ideal for jobsite applications where desired lengths can be cut on the spot. The plenum-rated Grip Tie is UL Listed in accordance to the NEC regulation and has been tested to meet the UL 94 V-2 flame rating.

| Part No. | Width | Length | Color | Pkg. Qty. |
|----------|-------|--------|-------|-----------|
| **Standard Grip Ties** | | | | |
| GT.75X1800 | .75" | 180" | Black | 1 |
| GT.75X1804 | .75" | 180" | Blue | 1 |
| GT.75X18010 | .75" | 180" | White | 1 |
| GT.75X6000 | .75" | 600" | Black | 1 |
| GT.75X9000 | .75" | 900" | Black | 1 |
| **Grip Ties for Plenum Applications** | | | | |
| GT.75X180MV2 | .75" | 180" | Maroon | 1 |

Standard Grip Ties

Grip Tie for
Plenum Applications

HELLERMANNTYTON

## TagPrint® Pro Professional Label Creation Software

**TagPrint Pro label creation and printing software is powerful, multi-functional and extremely easy to use. Created to provide solutions for telecom identification, TagPrint Pro speeds production and offers many options for a wide variety of labeling requirements. "What You See Is What You Get" (WYSIWYG) label creation and the ability to open and print directly from an Excel database make this perfect for managing and printing to meet TIA-606-B or any labeling format. Print one or two labels or labels for thousands of drops. TagPrint Pro also prints barcodes, graphic images, label sets and wire lists. Use with HellermannTyton's wide array of label options including laser, inkjet, dot matrix and thermal transfer printable labels.**

| Part No. | Description |
|----------|-------------|
| 556-00035 | Single-User TagPrint Pro 3.0 |
| 556-00042 | Single-User Upgrade to TagPrint Pro 3.0 |
| 556-00036 | 3-User Network Version |
| 556-00037 | 5-User Network Version |
| 556-00038 | 10-User Network Version |
| 556-00039 | 25-User Network Version |
| 556-00052 | 50-User Network Version |

# TagPrint® Xpress Data

**The TagPrint Xpress Data mobile app is a code standard reference and labeling tool designed specifically for the data center market. The app provides an easy guide through the TIA-606-B labeling standard for telecommunications infrastructure and allows for ultra-efficient wireless printing of required labels.**
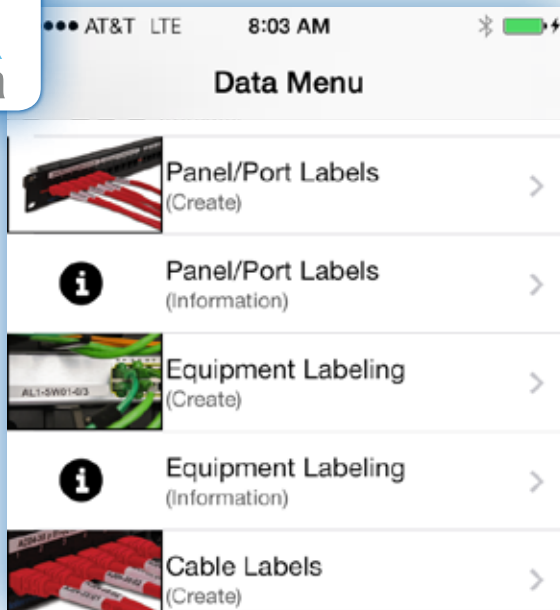


## Product Features

- Print TIA-606-B or client-specified labels, wirelessly.

- Includes pre-configured settings for all standard HellermannTyton patch panels as well as RapidNet® patch panels and cassettes for easy selection and printing.

- Eliminates the need for a laptop or desktop computer to print labels.

- TIA-606-B code standard reference tool explains the principles of the standard by application.

- Allows the user to search for labels by application (ex: patch panels, cable labels, rack labels).

- Makes printing faster and easier with multiple printers.

- Optimizes workflow by allowing multiple users to print from their mobile devices.

# Labels

| Article No. | Part No. | Type | Width | | Length | | Height of Printable Area | | Color | Labels per Row | Labels per Column | Labels per Sheet | Pkg. Qty. | Pkg. Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | in. | (mm) | in. | (mm) | in. | (mm) | | | | | | |
| **Laser Tag** | | | | | | | | | | | | | | |
| 594-00003 | TAGPP11010 | TAGPP11010 | 0.66 | (16.76) | 0.33 | (8.38) | N/A | N/A | White | 23 | 12 | 276 | 1000 | Pack |
| 594-01788 | TAGPP1-788 | TAGPP1 | 0.625 | (15.87) | 0.37 | (7.87) | N/A | N/A | White | 12 | 30 | 360 | 1000 | Pack |
| 594-62788 | TAG62L-788 | TAG62L | 1.50 | (38.10) | 0.375 | (9.52) | N/A | N/A | White | 5 | 25 | 125 | 1000 | Pack |
| 594-96789 | TAG96L-789 | TAG96L | 1.875 | (47.62) | 0.25 | (6.35) | N/A | N/A | White | 4 | 36 | 144 | 1000 | Pack |
| 594-69789 | TAG69L-789 | TAG69L | 2.00 | (50.80) | 0.275 | (6.98) | N/A | N/A | White | 4 | 35 | 140 | 5000 | Pack |
| 594-61788 | TAG61L-788 | TAG61L | 2.62 | (66.67) | 1.00 | (25.40) | N/A | N/A | White | 3 | 10 | 30 | 7500 | Pack |
| 594-67789 | TAG67L-789 | TAG67L | 2.87 | (73.00) | 0.375 | (9.52) | N/A | N/A | White | 2 | 25 | 50 | 1000 | Pack |
| 594-03000 | 594-03000 | FDCLASER | 3.50 | (88.90) | 0.50 | (12.70) | N/A | N/A | White | 2 | 20 | 40 | 1000 | Pack |
| 594-66789 | TAG66L-789 | TAG66L | 3.59 | (91.40) | 0.375 | (9.52) | N/A | N/A | White | 2 | 25 | 50 | 1000 | Pack |
| 594-68789 | TAG68L-789 | TAG68L | 3.80 | (96.50) | 0.275 | (6.98) | N/A | N/A | White | 2 | 35 | 70 | 2500 | Pack |
| 594-45789 | TAG45L-789 | TAG45L | 4.00 | (101.60) | 0.80 | (20.32) | N/A | N/A | White | 2 | 12 | 24 | 5000 | Pack |
| 594-02788 | TAGPP1-788C | TAGPP1 | 0.625 | (15.87) | 0.333 | (8.45) | N/A | N/A | Clear | 12 | 30 | 360 | 1000 | Pack |
| 594-00002 | TAGPP2-788C | TAGPP2 | 0.66 | (16.70) | 0.33 | (8.38) | N/A | N/A | Clear | 12 | 30 | 360 | 1000 | Pack |
| **Laser Tag Self-Laminating** | | | | | | | | | | | | | | |
| 594-63105 | TAG63L-105 | TAG63L | 1.00 | (25.40) | 1.33 | (33.70) | 0.35 | (12.70) | White | 8 | 7 | 56 | 2500 | Pack |
| 594-50105 | TAG50L-105 | TAG50L | 1.00 | (25.40) | 3.16 | (80.40) | 1.00 | (25.40) | White | 8 | 3 | 24 | 1000 | Pack |

| Article No. | Part No. | Type | Width | | Length | | Labels per Row | Color | Pkg. Qty. | Pkg. Type |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | in. | (mm) | in. | (mm) | | | | |
| **Thermal Transfer** | | | | | | | | | | |
| 596-00028 | TAGPP1T6-822 | TAGPP1T6 | 0.625 | (15.87) | 0.31 | (7.92) | 6 | White | 1000 | Roll |
| 596-00046 | TAGPP2T6-822 | TAGPP2T6 | 0.66 | (16.70) | 0.31 | (7.92) | 6 | White | 1000 | Roll |
| 596-27822 | TAG27T1-822 | TAG27T1 | 1.50 | (38.11) | 0.75 | (19.05) | 1 | White | 3000 | Roll |
| 596-00026 | TAG96T1-336 | TAG96T1 | 1.875 | (47.60) | 0.25 | (6.35) | 1 | White | 5000 | Roll |
| 596-00041 | TAG69T1-336 | TAG69T1 | 2.00 | (50.80) | 0.275 | (6.98) | 1 | White | 10000 | Roll |
| 596-00040 | TAG68T1-336 | TAG68T1 | 3.80 | (96.50) | 0.275 | (6.98) | 1 | White | 10000 | Roll |
| 596-00023 | TAG83T1-822 | TAG83T1 | 4.00 | (101.60) | 0.31 | (7.92) | 1 | White | 5000 | Roll |
| 596-00029 | TAGPP1T6-822C | TAGPP1T6 | 0.625 | (15.87) | 0.31 | (7.92) | 6 | Clear | 1000 | Roll |
| 596-00001 | TAG15T3-822C10M | TAG15T3 | 1.00 | (25.40) | 0.50 | (12.70) | 3 | Clear | 10000 | Roll |
| **Thermal Transfer Self-Laminating** | | | | | | | | | | |
| 596-00006 | TAG22T2-100B | TAG22T2 | 1.00 | (25.40) | 1.43 | (36.30) | 2 | White | 5000 | Roll |
| 596-00007 | TAG22T3-100B | TAG22T3 | 1.00 | (25.40) | 1.43 | (36.30) | 3 | White | 5000 | Roll |
| 596-00013 | TAG3T3-100B | TAG3T3 | 1.00 | (25.40) | 3.75 | (95.25) | 3 | White | 3000 | Roll |
| 596-00010 | TAG2T5-100B | TAG2T5 | 0.50 | (12.70) | 1.43 | (36.30) | 5 | White | 10000 | Roll |

| Article No. | Part No. | Type | Width | | Length | | Color | Pkg. Qty. | Pkg. Type |
|---|---|---|---|---|---|---|---|---|---|
| | | | in. | (mm) | in. | (mm) | | | |
| **Solid Colored Continous Rolls** | | | | | | | | | |
| 558-00313 | 558-00313 | HT2WH250 | 2.0 | (50.8) | 250.0 | (76.2) | White | 250 | Roll |
| 558-00309 | 558-00309 | HT1WH250 | 1.0 | (25.4) | 250.0 | (76.2) | White | 250 | Roll |

*Note: Dimensions are approximate and subject to technical changes.* Use **Part No.** for ordering and **Type** for specification purposes.

# TT230SM / TT230SMC
# Thermal Transfer Printers

**HellermannTyton's TT230SM and TT230SMC Thermal Transfer Printers are the next generation of printer for small- to medium-volume users looking for an easy-to-use and functional thermal transfer printer. TT230SM Series Printers print on a wide variety of materials including all HellermannTyton labels and ShrinkTrak, and are also Ethernet network ready, which gives the user options on placing the unit away from the host computer. Each printer comes with a label "caddy" that holds large label rolls behind the printer for easier dispensing and printing. There is also an optional carrying case that can be used to safely transport the printer to remote jobsites. The TT230SMC model includes an integrated cutter for use with continuous vinyl label rolls.**

## Product Features

- 300 dpi thermal transfer print head.

- Print speed up to 3" (76mm) / second.

- Integrated cutter - TT230SMC only.

- 2 MB flash / 8 MB SDRAM.

- Easy setup and loading without adjustments.

- Label holder included with purchase.

- Highly accurate, adjustable gap sensor.

- Low calibration waste.

- No complicated settings.

- Lightweight / minimal footprint.

- Approvals: CE, FCC, Class A, cULus, UL, GS, TUV-GS, LCC, C-Tick, BSMI, RoHS.

- Works with TagPrint® Xpress Data mobile app.

| Article No. | Part No. | Type | Description | Pkg. Qty. |
|---|---|---|---|---|
| 556-00230 | 556-00230 | TT230SM | TT230SM Printer | 1 |
| 556-00240 | 556-00240 | TT230SMC | TT230SMC Printer with Cutter | 1 |
| 556-00231 | 556-00231 | CASE 230SM | Optional Carrying Case | 1 |
| 556-00232 | 556-00232 | RPH TT230SM | Replacement Print Head | 1 |
| 556-00233 | 556-00233 | RPS TT230SM | Replacement Power Supply | 1 |
| 556-00234 | 556-00234 | RPR TT230SM | Replacement Platen Roller | 1 |
| 556-00235 | 556-00235 | LABEL HOLDER | Replacement Label Holder | 1 |
| 556-00145 | TT822OUTSM | TT822OUTSM | Thermal Transfer Ribbon, Black | 1 |

Use **Part No.** for ordering and **Type** for specification purposes. The TT230SMC with cutter is not recommended for use with ShrinkTrak labels.

*Caddy 556-00235 comes automatically FREE with each printer purchase.

## Product Features

- Lightweight, compact design makes it easy to transport to remote jobsites.

- Connect several printers together for ultimate printing efficiency (requires router).

- 300 dpi print head for quality print results.

- Fast print speed up to 3" (76mm) / second.

- Easy to setup and load.

- Label caddy holds larger rolls.

- Highly accurate sensor reduces label waste.

- Includes USB 2.0 port and Ethernet port for connection to network or wireless router.

- 4 MB flash / 8 MB SDRAM.

- Approvals; CE, FCC, Class A, cULus, UL, GS, TUV-GS, LCC, C-Tick, BSMI, RoHS.

- Works with TagPrint® Xpress Data mobile app.

# TT130SMC Compact Thermal Transfer Printer

**Designed with space and portability in mind, the TT130SMC Thermal Transfer Printer's compact footprint allows for highly efficient printing in applications where space is tight or when portability is important. The smaller size and optional hard-shell carrying case make it easy to transport to remote jobsites. The printer accommodates label roll stock up to 2" wide to satisfy many industrial labeling requirements – especially useful in data center and solar installation applications. The TT130SMC includes an Ethernet port that allows the user to connect to an existing network or to a wireless router for portable printing\*. TT130SMC Kits also come with a label "caddy" to hold larger label rolls. The carrying case includes space for two printers, as well as a wireless router, cables and label stock.**

| Article No. | Part No. | Type | Description | Pkg. Qty. |
|---|---|---|---|---|
| 556-00250 | 556-00250 | TT130SMC | TT130SMC Printer with Cutter | 1 |
| 556-00254 | 556-00254 | TT130SMCKIT | TT130SMC Printer Kit | 1 |
| 556-00257 | 556-00257 | 2TT130SMCKIT | 2 Printer TT130SMC Printer Kits | 1 |
| 556-00251 | 556-00251 | TT130RPHEAD | TT130SMC Print Head | 1 |
| 556-00252 | 556-00252 | TT130PWRSLY | TT130SMC Replacement Power Supply | 1 |
| 556-00255 | 556-00255 | TT130SMCCORD | TT130SMC Replacement Power Cord | 1 |
| 556-00253 | 556-00253 | TT130SMCCASE | Optional Carrying Case | 1 |
| 556-00235 | 556-00235 | Label Holder | Replacement Label Holder | 1 |
| 556-00205 | 556-00205 | TTWHITEOUTSM-2 | White Ribbon 2" X 154', 1/RL | 1 |
| 556-00206 | 556-00206 | TT822OUTSM-2 | TT822 Black Ribbon 2" X 242', 1/RL | 1 |
| 556-00212 | 556-00212 | TT100OUTSM-2 | TT100 Black Ribbon, 2" x 242', 1/RL | 1 |

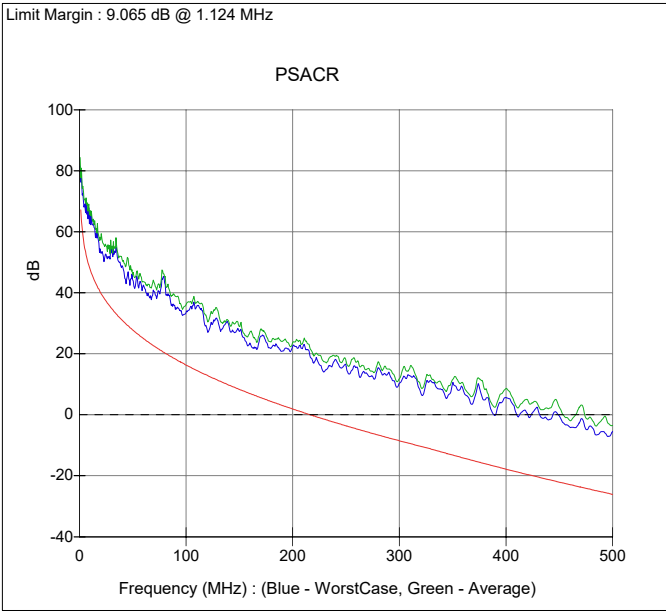Use **Part No.** for ordering and **Type** for specification purposes. *Router not included.

# Intertek

## Summary

| | | | |
|---|---|---|---|
| **Client** | Hellermann | **Report No** | 3161280 |
| **Specification** | TIA 568B2-10 - Augmented Cat 6 (Channel) | | |
| **Part No** | Cat. 6A shielded | **Length(m)** | 100 |
| **Test Started** | 9/17/2008 4:46:15 PM | **Temperature** | 20 °C |
| **Description** | 4 Connector Channel | **Appendix** | A |
| **Technician** | Development | **Test Status** | Complies |

Limit Margin : 9.381 dB @ 22.978 MHz

ACR

Frequency (MHz) : (Blue - WorstCase, Green - Average)
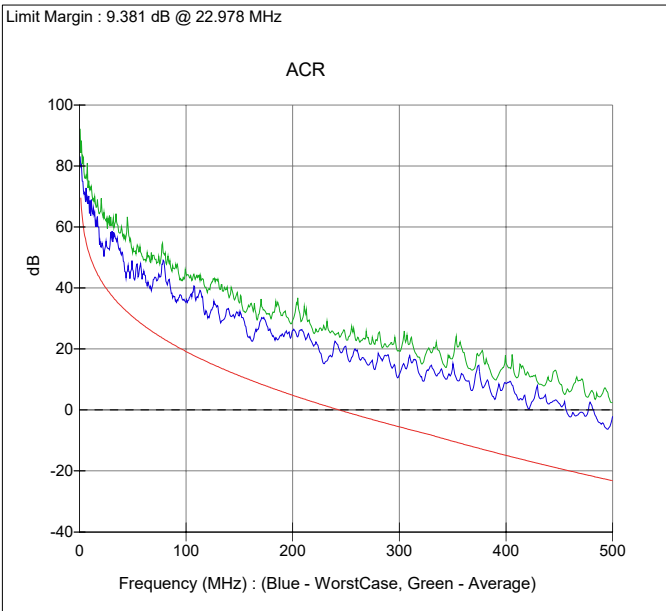
| ACR | | | |
|---|---|---|---|
| Freq | Worst Case | Average | Spec |
| 1. | 81.6 | 85.9 | 70.3 |
| 4. | 71.1 | 79.7 | 59.0 |
| 8. | 67.5 | 72.8 | 52.4 |
| 10. | 69.1 | 72.9 | 50.2 |
| 16. | 60.9 | 66.5 | 45.1 |
| 20. | 53.5 | 66.1 | 42.6 |
| 25. | 54.9 | 62.2 | 39.9 |
| 31.25 | 56.2 | 62.2 | 37.0 |
| 62.5 | 41.7 | 49.0 | 27.1 |
| 100. | 35.6 | 44.7 | 19.2 |
| 250. | 20.4 | 23.4 | -0.7 |
| 500. | -2.1 | 2.3 | -23.2 |

Limit Margin : 9.065 dB @ 1.124 MHz

PSACR

Frequency (MHz) : (Blue - WorstCase, Green - Average)

| PSACR | | | |
|---|---|---|---|
| Freq | Worst Case | Average | Spec |
| 1. | 77.3 | 79.1 | 67.9 |
| 4. | 69.0 | 71.6 | 56.5 |
| 8. | 64.3 | 66.8 | 49.9 |
| 10. | 65.8 | 66.6 | 47.6 |
| 16. | 58.6 | 59.9 | 42.5 |
| 20. | 53.0 | 57.7 | 39.9 |
| 25. | 52.3 | 55.3 | 37.2 |
| 31.25 | 52.5 | 53.9 | 34.3 |
| 62.5 | 40.0 | 42.6 | 24.3 |
| 100. | 33.5 | 36.1 | 16.3 |
| 250. | 16.4 | 17.6 | -3.6 |
| 500. | -5.4 | -3.5 | -26.1 |

## LINKWARE — CABLE TEST MANAGEMENT SOFTWARE

**Cable ID: RNF62P100-L10-F1A**  **Test Summary: PASS**

Date / Time: 08/06/2010 07:49:04am
**Headroom: 0.99 dB (Loss)**
**Test Limit: TIA568C Backbone MM**
Cable Type: * RAPIDNET 62/125 FIBER *

Operator: DEE
Software Version: 2.2400
Limits Version: 1.3700

Model: DTX-1800
Main S/N: 8655063
Remote S/N: 8655083
Main Adapter: DTX-MFM2
Remote Adapter: DTX-MFM2

### Loss R->M PASS

Date / Time: 08/06/2010 07:49:04am
Cable Type: * RAPIDNET 62/125 FIBER *
Modal Bandwidth: 160 MHz-km
MAIN: DTX-1800 (8655063 v2.2200)
Module: DTX-MFM2 (9437053)
Remote: DTX-1800R (8655083 v2.2200)
Module: DTX-MFM2 (9437055)

| | | |
|---|---|---|
| Propagation Delay (ns) | 165 | |
| Length (ft) | 109 | PASS |
| Limit 6562 | | |
| | 850 nm | 1300 nm |
| Result | PASS | PASS |
| Loss (dB) | 0.23 | 0.19 |
| Loss Limit (dB) | 1.62 | 1.55 |
| Loss Margin (dB) | 1.39 | 1.36 |
| Reference (dBm) | -19.67 | -19.74 |

n = 1.4900
Number of Adapters: 2
Number of Splices: 0
Patch Type: * RAPIDNET 62/125 FIBER *
Patch Length1 (ft): 3.3
Patch Length2 (ft): 3.3
Reference Date: 08/06/2010 07:08:16am
1 Jumper

### Loss M->R PASS

Date / Time: 08/06/2010 07:49:04am
Cable Type: * RAPIDNET 62/125 FIBER *
Modal Bandwidth: 160 MHz-km
Remote: DTX-1800R (8655083 v2.2200)
Module: DTX-MFM2 (9437055)
MAIN: DTX-1800 (8655063 v2.2200)
Module: DTX-MFM2 (9437053)

| | | |
|---|---|---|
| Propagation Delay (ns) | 165 | |
| Length (ft) | 109 | PASS |
| Limit 6562 | | |
| | 850 nm | 1300 nm |
| Result | PASS | PASS |
| Loss (dB) | 0.45 | 0.56 |
| Loss Limit (dB) | 1.62 | 1.55 |
| Loss Margin (dB) | 1.17 | 0.99 |
| Reference (dBm) | -19.31 | -19.23 |

n = 1.4900
Number of Adapters: 2
Number of Splices: 0
Patch Type: * RAPIDNET 62/125 FIBER *
Patch Length1 (ft): 3.3
Patch Length2 (ft): 3.3
Reference Date: 08/06/2010 07:08:16am
1 Jumper

Compliant Network Standards:
FDDI
1000BASE-SX
ATM 155 Fiber Optic
ATM 622SWL Fiber Optic
Fibre Channel 266SWL
Fibre Channel 400-M6-SN-I

10BASE-FL
1000BASE-LX
ATM 155SWL Fiber Optic
Fibre Channel 133
Fibre Channel 100-M6-SN-I

100BASE-FX
ATM 52 Fiber Optic
ATM 622 Fiber Optic
Fibre Channel 266
Fibre Channel 200-M6-SN-I

Fibre Channel 400-M6-SN-I: This channel is certified for 400 Megabytes per second Fibre Channel application over multimode fiber with short wavelength 850 nm laser source.

Project: DEFAULT
Site: TGM-544

448838-new.flw

**Test Summary: PASS**

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## LINKWARE — CABLE TEST MANAGEMENT SOFTWARE

**Cable ID: RNGC6ARBCC88-L43-P4**  **Test Summary: PASS**

Date / Time: 07/14/2010 06:25:02am
**Headroom: 6.9 dB (NEXT 12-36)**
**Test Limit: TIA Cat 6 Perm. Link**
Cable Type: * RAPIDNET CAT6  CMR *

Operator: WAYNE
Software Version: 2.2400
Limits Version: 1.3700
NVP: 68.0%

Model: DTX-1800
Main S/N: 9437027
Remote S/N: 9435138
Main Adapter: DTX-PLA001
Remote Adapter: DTX-PLA001
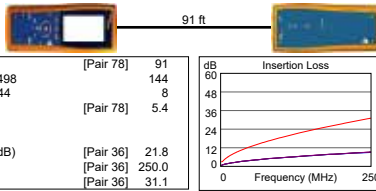
**Wire Map (T568B)** PASS

91 ft

| | | |
|---|---|---|
| Length (ft), Limit 295 | [Pair 78] | 91 |
| Prop. Delay (ns), Limit 498 | | 144 |
| Delay Skew (ns), Limit 44 | | 8 |
| Resistance (ohms) | [Pair 78] | 5.4 |
| Insertion Loss Margin (dB) | [Pair 36] | 21.8 |
| Frequency (MHz) | [Pair 36] | 250.0 |
| Limit (dB) | [Pair 36] | 31.1 |

Insertion Loss

| | Worst Case Margin | | Worst Case Value | |
|---|---|---|---|---|
| **PASS** | MAIN | SR | MAIN | SR |
| Worst Pair | 12-36 | 36-78 | 12-36 | 36-78 |
| **NEXT (dB)** | 6.9 | 7.1 | 6.9 | 7.1 |
| Freq. (MHz) | 235.0 | 241.5 | 235.0 | 241.5 |
| Limit (dB) | 35.8 | 35.6 | 35.8 | 35.6 |
| Worst Pair | 36 | 78 | 36 | 78 |
| **PS NEXT (dB)** | 7.3 | 7.7 | 7.3 | 7.7 |
| Freq. (MHz) | 234.5 | 244.5 | 234.5 | 244.5 |
| Limit (dB) | 33.2 | 32.9 | 33.2 | 32.9 |
| **PASS** | MAIN | SR | MAIN | SR |
| Worst Pair | 12-36 | 12-36 | 12-36 | 78-45 |
| **ACR-F (dB)** | 11.0 | 11.0 | 14.3 | 13.8 |
| Freq. (MHz) | 13.6 | 12.3 | 247.5 | 234.5 |
| Limit (dB) | 41.5 | 42.3 | 16.3 | 16.8 |
| Worst Pair | 12 | 12 | 36 | 45 |
| **PS ACR-F (dB)** | 13.2 | 13.2 | 16.1 | 15.5 |
| Freq. (MHz) | 12.5 | 12.5 | 247.5 | 235.5 |
| Limit (dB) | 39.3 | 39.3 | 13.3 | 13.7 |
| **N/A** | MAIN | SR | MAIN | SR |
| Worst Pair | 12-36 | 12-78 | 12-36 | 36-78 |
| **ACR-N (dB)** | 16.2 | 16.0 | 28.7 | 28.9 |
| Freq. (MHz) | 8.8 | 3.9 | 242.0 | 245.0 |
| Limit (dB) | 53.6 | 60.8 | 5.0 | 4.7 |
| Worst Pair | 36 | 12 | 36 | 78 |
| **PS ACR-N (dB)** | 17.0 | 16.5 | 28.3 | 29.3 |
| Freq. (MHz) | 13.6 | 7.3 | 234.5 | 244.5 |
| Limit (dB) | 46.9 | 53.0 | 3.2 | 2.2 |
| **PASS** | MAIN | SR | MAIN | SR |
| Worst Pair | 36 | 36 | 36 | 36 |
| **RL (dB)** | 8.4 | 8.9 | 8.4 | 10.5 |
| Freq. (MHz) | 242.0 | 32.5 | 242.0 | 249.5 |
| Limit (dB) | 10.2 | 18.4 | 10.2 | 10.0 |

Compliant Network Standards:
10BASE-T  100BASE-TX  100BASE-T4
1000BASE-T  ATM-25  ATM-51
ATM-155  100VG-AnyLan  TR-4
TR-16 Active  TR-16 Passive

Project: DEFAULT
Site: Client Name

LinkWare Version 6.1

FLUKE networks

444204-a.flw

*FLUKE is a registered trademark of Fluke Corporation

## RapidNet® Fiber Polarity

In a traditional fiber cabling system, it is important to maintain the proper signal polarity to ensure that the optical transmitter at one end is connected to the optical receiver at the other end. Optical transceivers typically deploy a duplex fiber connection, LC or SC, and have a transmit side and a receive side. Polarity is maintained when Side A of one connector pair is mated with Side B of the other connector pair. HellermannTyton's RapidNet Cassette-to-Cassette looms are available in two options.

### STRAIGHT THROUGH WIRING

| 1 (A) | 1 (A) |
| 2 (B) | 2 (B) |
| 3 (A) | 3 (A) |
| 4 (B) | 4 (B) |
| 5 (A) | 5 (A) |
| 6 (B) | 6 (B) |
| 7 (A) | 7 (A) |
| 8 (B) | 8 (B) |
| 9 (A) | 9 (A) |
| 10 (B) | 10 (B) |
| 11 (A) | 11 (A) |
| 12 (B) | 12 (B) |

### REVERSED WIRING

| 1 (A) | 1 (A) |
| 2 (B) | 2 (B) |
| 3 (A) | 3 (A) |
| 4 (B) | 4 (B) |
| 5 (A) | 5 (A) |
| 6 (B) | 6 (B) |
| 7 (A) | 7 (A) |
| 8 (B) | 8 (B) |
| 9 (A) | 9 (A) |
| 10 (B) | 10 (B) |
| 11 (A) | 11 (A) |
| 12 (B) | 12 (B) |

## Modular Jack Options

For those installations where the pathway may be obstructed or space is limited, HellermannTyton offers a Jack to Cassette solution in a variety of standard stagger options to meet your cabling requirements. Use with RNG Series Copper Solutions available on pages 13 and 14.
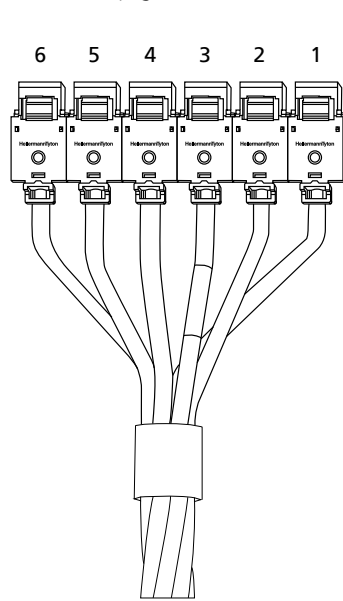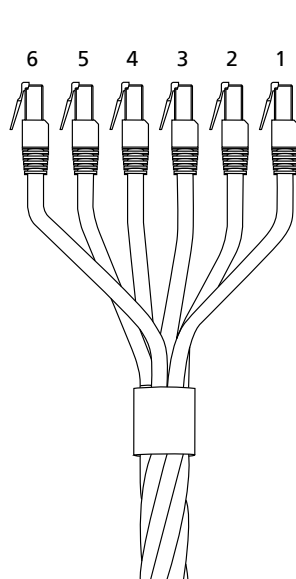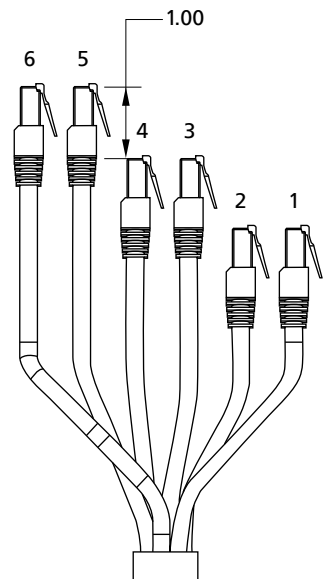
N = Jack - Inline
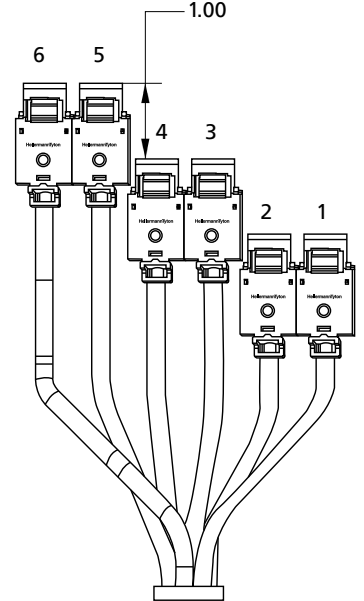
K = Jack - Pair Stagger Left
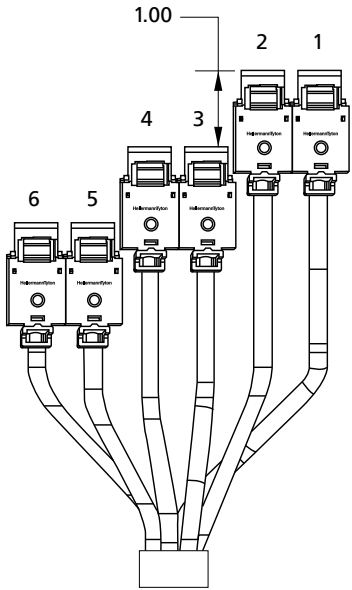
## Modular Plug Options

HellermannTyton offers a variety of standard stagger options to meet your cabling needs. Use with RNG Series Copper UTP Solutions available on page 14.
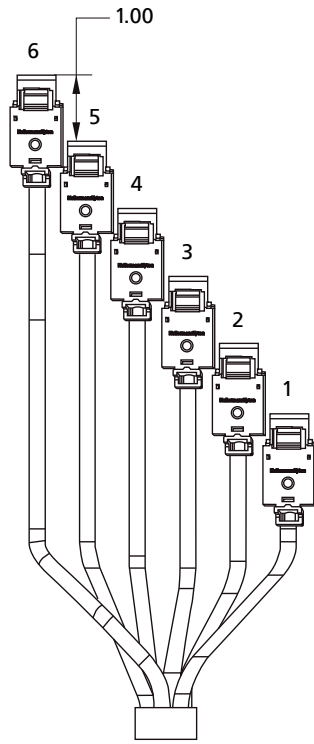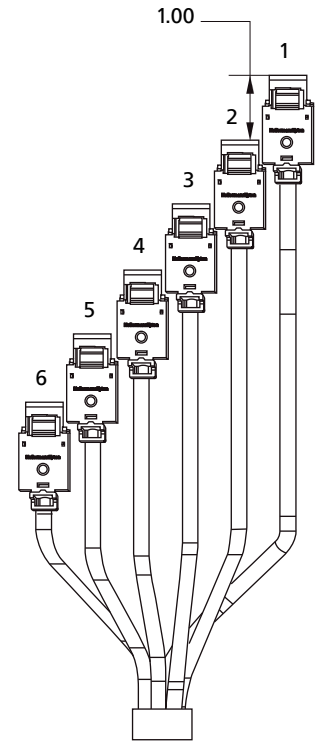
T = Plug - Inline
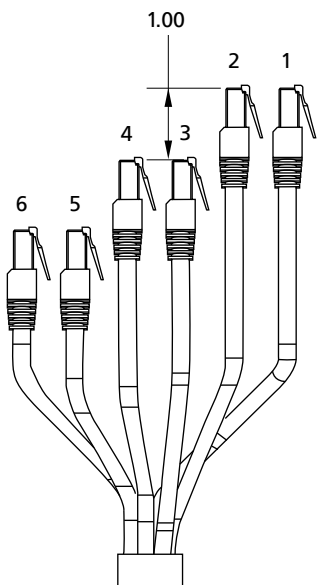
Q = Plug - Pair Stagger Left
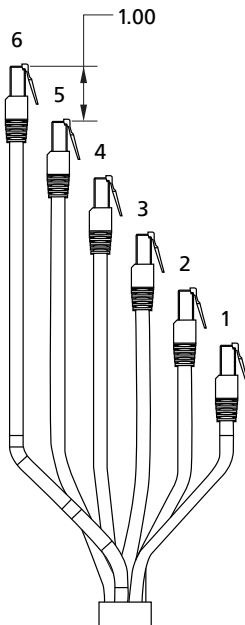
J = Jack - Pair Stagger Right
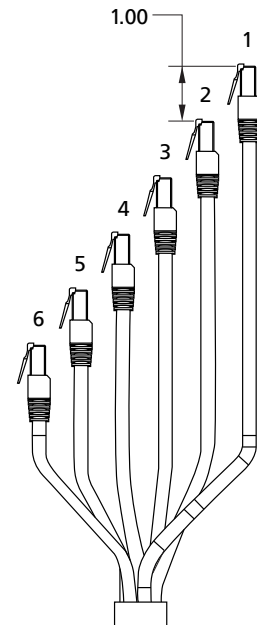
M = Jack - Stagger Left

L = Jack - Stagger Right

P = Plug - Pair Stagger Right

S = Plug - Stagger Left

R = Plug - Stagger Right

## SYSTEM WARRANTY

HellermannTyton ensures installation dependability and maximum performance with its 25-Year Network Sciences Warranty program. The Network Sciences Warranty guarantees the consistent quality and performance of HellermannTyton's structured cabling products and installed systems for 25 years. The 25-year warranty covers the copper and fiber connectivity products and cable, ensuring system performance in accordance with the current TIA standards.

The 25-Year Network Sciences Warranty is only offered through HellermannTyton Certified Installers. These Certified Installers have been trained and successfully passed the required exams to install a Network Sciences warranted system. HellermannTyton Certified Installers are the essential connection between HellermannTyton connectivity products and the design, installation, testing and maintenance of a structured cabling system.

## PROJECT CERTIFICATIONS

### LINK WARRANTY *

• Use HellermannTyton connectivity products
• Use approved horizontal cable
• Permanent Link test required with approved tester

### RAPIDNET ® LINK WARRANTY *

• Use HellermannTyton copper and/or fiber RapidNet products
• Permanent Link test required with approved tester
• For project certification, one port per cassette must be tested to TIA-568B standards with an approved tester

\* The Permanent Link is defined as all the horizontal cabling between the Telecommunications Room (TR) and Work Area. This includes cable, modular jacks, patch panels and an optional consolidation point. The maximum length that the horizontal cabling can be as defined in TIA/EIA-568-B.1 is 90 meters (295 ft.).

## CHANNEL WARRANTY * *

• Use HellermannTyton connectivity products
• Use approved horizontal cable
• Permanent Link test required with approved tester
• Use only HellermannTyton CAT 6e/CAT 6A patch cords

\* \*The Channel is defined as all the horizontal cabling between the Telecommunications Room (TR) and Work Area with the addition of patch cords at each location. The maximum length of the equipment cord, patch cord and work area cord shall not exceed 10 meters (33 ft.).

## PRODUCT WARRANTY

In addition to a performance warranty, HellermannTyton also offers a lifetime warranty on its connectivity products. This guarantees that products are free of factory defects in material and workmanship.

## CORPORATE WARRANTY POLICY

HellermannTyton Products are warranted to be free from defects in material and workmanship at the time sold by us; but our obligation under this warranty and that of the seller is limited to the replacement of the product, and neither we nor the seller are bound by any other warranty, expressed, implied or statutory. Under no circumstances are we or the seller liable for any loss, damage, expenses or consequential damages of any kind arising out of the use or inability to use these products. All are sold with the understanding that the user will test them in actual use and determine their adaptability for the intended uses.

The above warranties and remedies are exclusive and in lieu of all other warranties and remedies whatsoever, expressed or implied, including but not limited to, any implied warranties of merchantability or fitness for a particular purpose which HellermannTyton expressly disclaims.

For more warranty information, go to:
**www.hellermann.tyton.com**
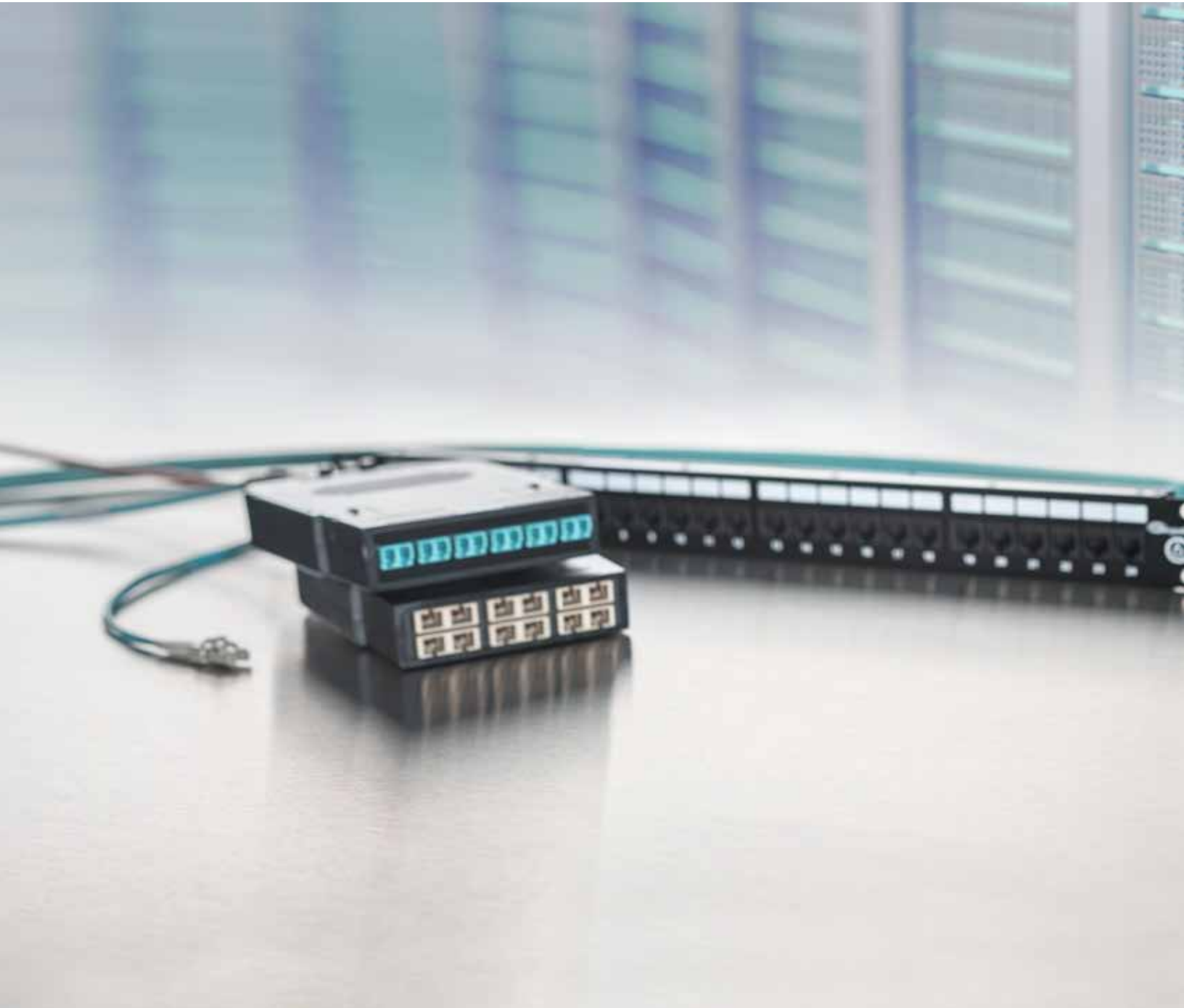
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*ISO 9001 certified*