Network Cabling Products

High-Density Connectivity Solutions

HellermannTyton

HIGH-DENSITY SOLUTIONS FOR ENHANCING NETWORK PERFORMANCE

HellermannTyton has combined the technologies of high-density connectivity with the efficiency of factory termination to deliver high-performance solutions for those facilities seeking effortless expansion of data center space to more effectively meet their ever increasing data processing needs.

Recognizing that space is at a premium in today's data centers, making density more critical than ever, HellermannTyton offers high-density options in structured cabling technologies that are perfect for optimizing the available floor and rack space capacity. Additionally, high-density solutions provide greater flexibility and efficiency by reducing installation time and costs by simplifying the process of deployment while positioning the data center for future growth.

High-performance, high-density products allow for more cabinet density, delivering greater rack space efficiency. Adding rack space also lends to increased airflow, reduction in heat, and extension of the product's life expectancy while reducing costs. Overall, high-density product deployment streamlines performance for the network environment and provides adaptability for ever-growing capacity requirements.

RAPIDNET® NETWORK CABLING SOLUTION

To assist in the optimization of a data center's performance and efficiency, HellermannTyton's patented RapidNet connect-and-go system offers high-density connectivity options for both fiber and copper solutions. With this factory-terminated and tested system, a number of efficiencies can be gained, including:

- Supports Migration from 1GbE, 10GbE, 40GbE to 100GbE
- Faster installations, more than 85% faster than traditional field-terminated assemblies
- Reduced footprint, energy efficiency
- Minimized network downtimes and lessened security risks
- Immediate and continuing return of investment
- Improved cable management and cost-effective work force utilization
- Flexibility for a variety of applications
- Easier and more accurate job estimations

RapidNet is a pre-terminated cabling solution that provides data centers with the reliability and flexibility they require to increase density and bandwidth, maximize processing capacity, address space constraints, and reduce operational costs.

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

Today, data centers are faced with many challenges – rising operations costs, space constraints, and evolving bandwidth requirements – along with the necessity for faster processing speeds. In response to these pressures, 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 Cassette 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 that is 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 solution which can provide 72 fibers per cassette and 288 fibers on a one rack unit (1U) design.

Product Features

- Available in a variety of fiber types: OM3, OM4, OS1
- Up to 288 fibers in one rack unit of space
- 40GbE and 100GbE ready
- Direct factory termination with test results provided
- Fully interchangeable with other RapidNet RNG Series products

Product Benefits

- Requires two less mated pair connections with direct termination
- Features a floating ferrule design that guarantees fiber contact integrity
- Provides fiber port identification for simple management
- Reduces cable congestion in pathways and spaces
- Increases life cycle of cabling infrastructure

RapidNet MTP VHD
Fiber Cassette

MTP is a registered trademark of US Conec Ltd.

Insertion Loss Comparison

MTP TO MTP TRUNK CONNECTIONS VERSUS MTP DIRECT TERMINATION

The MTP VHD direct termination method provides reduced system insertion loss in the channel compared with the plug and play style cassette which requires two additional mated pair MTPs at the rear side of the cassettes. The direct factory-termination method by HellermannTyton includes factory testing and no need to test the channel once installed. Therefore, it will save additional time and money and provide peace of mind to the network integrity.

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

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

Worst case 0.5dB insertion loss per mated pair

Ethernet supportable distances and attenuation for Multimode and Single Mode fiber applications.

MULTIMODE			
Ethernet	Parameter	Fiber Type 850 nm Laser Optimized 50/125µm TIA 492AAAC (OM3)	Fiber Type 850 nm Laser Optimized 50/125µm TIA 492AAAD (OM4)
1000BASE-SX	Channel Attenuation	4.5dB	4.8dB
	Maximum Distance	800 meter	880 meter
10GBASE-SX	Channel Attenuation	2.6dB	3.1dB
	Maximum Distance	300 meter	450 meter
40GBASE-SR4	Channel Attenuation	1.9dB	1.5dB
	Maximum Distance	100 meter	150 meter
100GBASE-SR10	Channel Attenuation	1.9dB	1.5dB
	Maximum Distance	100 meter	150 meter

SINGLE MODE		
Ethernet	Parameter	Fiber Type 1310 nm Single Mode 9/125µm TIA 492CAAA (OS1)
1000BASE-LX	Channel Attenuation	4.5dB
	Maximum Distance	5,000 meter
10GBASE-LX	Channel Attenuation	6.4dB
	Maximum Distance	10,000 meter
40GBASE-LR4	Channel Attenuation	6.7dB
	Maximum Distance	10,000 meter
100GBASE-LR4	Channel Attenuation	6.3dB
	Maximum Distance	10,000 meter

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. Customers can choose an optional Elite® connector with 0.1db typical insertion loss and maximum 0.35db insertion loss. [Please contact your HellermannTyton representative for additional information]*

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.

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 challenge of data center moves, additions, and changes with the least disruption.

Technical Information

	Typical Insertion Loss	Maximum Insertion Loss	Typical Return Loss
Standard MM	0.2dB	0.5dB	> 25dB
Elite MM	0.1dB	0.35dB	> 20dB
Standard SM	0.25dB	0.75dB	> 60dB (8° Angle Polish)
Elite SM	0.1dB	0.35dB	> 60dB (8° Angle Polish)

SELECT THE FOLLOWING (VARIABLE ITEMS IN RED – FIXED ITEMS IN **BLACK**)

Prefix	Fiber Type	Cable Flame Rating	Termination End 1	Termination End 2	Cable Count	Breakout Length	Polarity	Pull Kits	Length
RV	**C** MM 50/125µm (OM3) **D** MM 50/125µm (OM4) **E** SM 9/125µm (OS1)	**P** Plenum	**M** MTP 12 Fiber Cass. (Male) **N** MTP 12 Fiber Cass. (Female) **Y** Elite MTP 12 Fiber Cass. (M) **Z** Elite MTP 12 Fiber Cass. (F)	**M** MTP 12 Fiber Cass. (Male) **N** MTP 12 Fiber Cass. (Female) **A** MTP 12 Fiber Connector (F) **C** MTP 12 Fiber Connector (M) **Y** Elite MTP 12 Fiber Cass. (M) **Z** Elite MTP 12 Fiber Cass. (F)	**D** 72	**A** .5 **B** 1m **C** 1.5m **D** 2m **E** N/A	**S** Straight Thru **R** Reversed **P** Pair Reversal	**0** **1** **2**	**10' - 500'**

Example Model Number:

RV	C	P	M	M	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

[*Elite® is a registered trademark of US Conec.]

RapidNet® MTP VHD allows for easy Migration from 10GbE up to 100GbE

By using a straight through OM3 or OM4 72 fiber backbone cable design, RapidNet MTP VHD cassette provides a simple migration path from 10GbE, 40GbE, and 100GbE without installing new fiber trunks each time if the hardware changes from 10GbE to 40GbE and to 100GbE.

FIGURE 1 Indicates a typical 10GbE solution.

10GbE

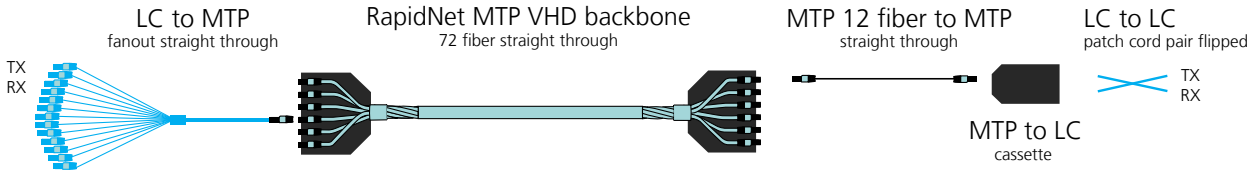


FIGURE 2 Indicates the 40GbE system is the same installed backbone OM3 or OM4 fiber. The IT technician only needs to switch the MTP to LC patch cable with the MTP to MTP trunk at both ends of the cassettes.

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.

40GbE

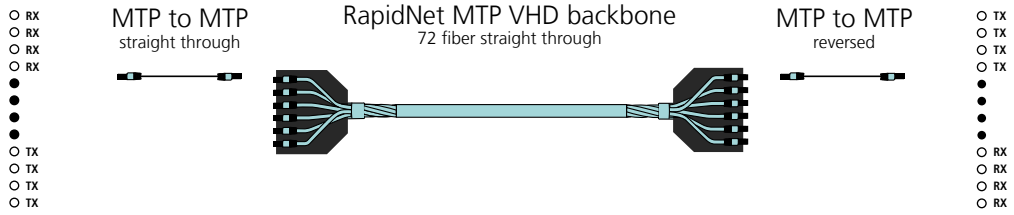
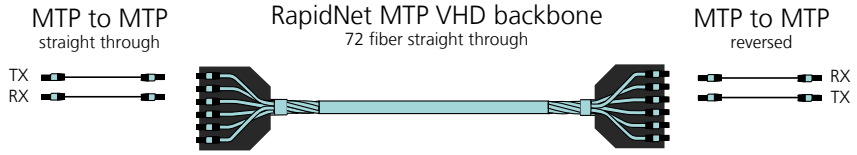


FIGURE 3 Indicates the 100GbE system with the same installed backbone OM3 or OM4 fiber. The IT technician only needs to install two of the MTP to MTP trunks at both ends of the cassettes.

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.

100GbE



Auxiliary Rails

RapidNet Auxiliary Rail offers a simplified solution that maximizes data center real estate. Designed to mount in the rear of most manufacturer server cabinets, the rail provides a solution using zero rack space. When populated with the MTP VHD cassettes, a very high-density solution in a zero rack space is achieved.

Part No.	Description	Color
RNGAR01	Auxiliary Rail, accepts 1 RNG Series Cassette	Black
RNGAR02	Auxiliary Rail, accepts 2 RNG Series Cassettes	Black
RNGAR05	Auxiliary Rail, accepts 5 RNG Series Cassettes	Black
RNGAR10	Auxiliary Rail, accepts 10 RNG Series Cassettes	Black
RNGARINSERT*	Auxiliary Rail Insert for RNG Series Cassettes	Black

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

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

The RapidNet Auxiliary Rails are available in four different sizes for RNG Series cassettes: 1 Cassette, 2 Cassettes, 5 Cassettes, and 10 Cassettes.

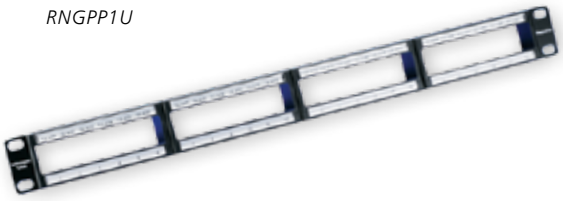
RNG Series Modular Panels

All RNG RapidNet Cassettes are designed for a quick-and-easy insertion into the RNG Series Panel. The Modular Panels fit standard 19" racks.

Part No.	Description
RNGPP1U	RNG Series RapidNet Modular Panel - 1U
RNGPP1URS	RNG Series RapidNet Modular Panel - 1U*
RNGPP2U	RNG Series RapidNet Modular Panel - 2U
RNGPP2URS	RNG Series RapidNet Modular Panel - 2U*

* With Rack-Snap inserts pre-installed.

RNG Series Modular Panel
RNGPP1U



MTP™ Trunks

Fiber optic cable requires unique polarity design consideration to ensure full duplex (two-way) and parallel optic communications. HellermannTyton provides the simplest fiber optic solution migration path from 40GbE to 100GbE with all the extra bandwidth needed. With proper planning and design, today's technology enables transmission up to 100Gbs over existing fiber infrastructures without complex network reengineering.

SELECT THE FOLLOWING (VARIABLE ITEMS IN RED – FIXED ITEMS IN **BLACK**)

Prefix	Cable Count	Fiber Type	Cable Type	Cable Flame Rating	Termination End 1	Termination End 2	Breakout Length	Polarity	Pull Kits	Length
F	**A** 12	**C** MM 50/125µm (OM3) **D** MM 50/125µm (OM4) **E** Single Mode **G** MM 50/125µm BIF (OM3) **H** MM 50/125µm BIF (OM4) **J** Single Mode BIF	**C** Data Center Cable	**P** Plenum **R** Riser	**A** MTP 12 Fiber (Female) **C** MTP 12 Fiber (Male) **Y** ELITE MTP 12 Fiber (M) **Z** ELITE MTP 12 Fiber (F)	**A** MTP 12 Fiber (Female) **C** MTP 12 Fiber (Male) **E** LC 2.0mm w/clips **G** LC 900µm fanout **Y** ELITE MTP 12 Fiber (M) **Z** ELITE MTP 12 Fiber (F)	**A** .5m **B** 1m **C** 1.5m **D** 2m **E** N/A	**S** Straight Thru **R** Reversed **P** Pair Reversal	**0** **1** **2**	**2' - 999'**

Example Model Number:

F	A	C	C	P	A	E	C	R	1	65
Prefix	Cable Count	Fiber Type	Cable Type	Cable Flame Rating	Term. End 1	Term. End 2	Breakout Length	Polarity	No. of Pull Kits	Length

Part No.	Description	Pkg. Qty.
PC6**XY**SC	Category 6 Patch Cords	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.

Available Patch Cord Colors:

BLU YEL GRN RED BLK GRY W

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.

Category 6 Patch Cords

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

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% 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 on site, 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.
- Includes a labeling field for better identification of ports, and a built-in magnification lens.
- Utilizes two of our six bundled cable 5 around 1 (5A1) design for eliminating potential cross talk 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.
- 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.

RapidNet 12 Port Copper Cassette

RNGPP1UHD

ACCESSORY	
Part No	Description
RNGPP1UHD	Modular Patch Panel, RNG Series HD Cassette only, 1U, Black

SELECT THE FOLLOWING (VARIABLE ITEMS IN RED – FIXED ITEMS IN **BLACK**)

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 **R** CMR	**B** Blue **W** White	**H** High-Density Cassette	**H** High-Density Cassette **Z** Split Cassette **J** Jack - Pair Stagger Right **K** Jack - Pair Stagger Left **L** Jack - Stagger Right **M** Jack - Stagger Left **N** Jack - Inline (no stagger) **P** Plug - Pair Stagger Right **Q** Plug - Pair Stagger Left **R** Plug - Stagger Right **S** Plug - Stagger Left **T** Plug - Inline (no stagger) **D** Pod	**20' - 140'**

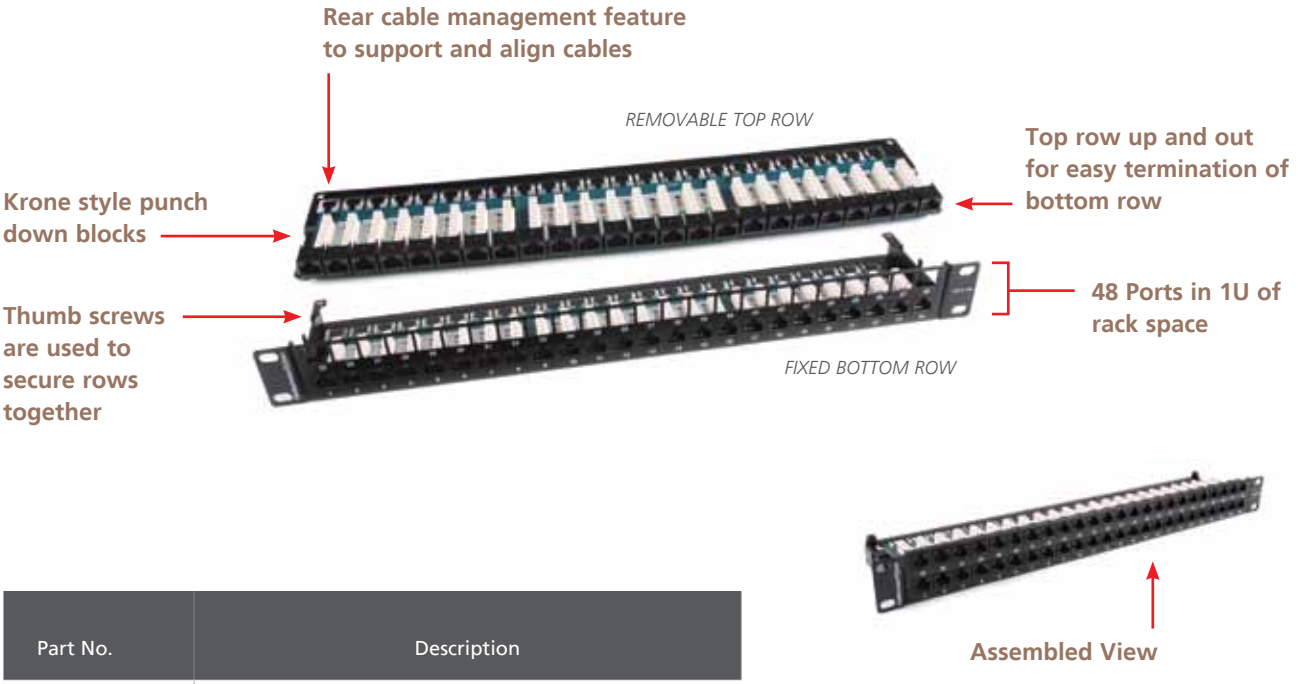
Example Model Number:

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

Category 6 and 5e - 48 Port 1U Patch Panel

HellermannTyton's high-density patch panels are specifically designed to provide high performance in a 1U format. These panels are robust and easy to install, providing double the density of a standard 1U patch panel. The built-in rear cable management design enables each cable to be securely fixed to the back of the panel.



Part No.	Description
PP110C6481U	Category 6 - 1U 48 Port Patch Panel
PP110C5E481U	Category 5e - 1U 48 Port Patch Panel

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