COMMSCOPE®

User Manual

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commscope.com

Propel Panel



Propel Panel (2RU Shown)

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1 INTRODUCTION

The CommScope Propel Panel is a modular fiber connection platform that allows MPO modules, splice cassettes, and adapter packs of different sizes to be installed in any position in the panel where space is available. This user manual describes the Propel Panel and tells how to unpack the panel, mount it on a rack, and install connection components including MPO modules, splice cassettes, and adapter packs. In addition, this manual tells how to route and secure cables and patch cords, and how to obtain technical assistance if needed.

1.1 Propel Panel Configurations Covered by This User Manual

Table 1 lists the Propel panel configurations covered in this user manual.

Table 1.

Material ID (MID)	Catalog #	Density
760252002	PPL-1U	72 duplex LC, 72 MPO, 288 SN
760252003	PPL-2U	144 duplex LC, 144 MPO, 576 SN
760252004	PPL-4U	288 duplex LC, 288 MPO,1152 SN

1.2 Available Connection Components and Recommended Cables

For a listing of the available Propel connection components, including MPO modules and adapter packs, see Table 2. Splice cassettes are not available at this time.

Table 2. Available MPO Modules and Adapter Packs

Modules & Adapter Packs	Material ID (MID)	Catalog Number	Fiber Type	Fiber Count
MPO8 Modules with MPO/UPC				
18 per 1RU	760252332	PPL-DM-8U-8LC-OM4-BEU	OM4	8
	760252333	PPL-DM-8U-8LC-OM5-BEU	OM5	8
	760252334	PPL-DM-8AU-8LC-SM-BEU	OS2	8
6 per 1RU	760252337	PPL-DM-8U-24LC-OM4-BEU	OM4	24
	760252338	PPL-DM-8U-24LC-OM5-BEU	OM5	24
	760252339	PPL-DM-8AU-24LC-SM-BEU	OS2	24
MPO8 Modules with MPO/APC in multimode				
18 per 1RU	760252335	PPL-DM-8AU-8LC-OM4-BEU	OM4	8
	760252336	PPL-DM-8AU-8LC-OM5-BEU	OM5	8

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Table 2. Available MPO Modules and Adapter Packs, continued

Modules & Adapter Packs	Material ID (MID)	Catalog Number	Fiber Type	Fiber Count
8-fiber Adapter Packs				
18 per 1RU	760252359	PPL-AP-8-LC-SM	OS2	8
	760252360	PPL-AP-8-LC-OM4	OM5	8
	760252361	PPL-AP-8-LC-OM5	OS2	8
	760252371	PPL-AP-4-MPO-ALL-B	All	32
MPO12 Modules				
12 per 1RU	760252343	PPL-DM-12U-12LC-OM4-BEU	OM4	12
	760252344	PPL-DM-12U-12LC-OM5-BEU	OM5	12
	760252345	PPL-DM-12AU-12LC-SM-BEU	OS2	12
6 per 1RU	760252346	PPL-DM-12U-24LC-OM4-BEU	OM4	24
	760252347	PPL-DM-12U-24LC-OM5-BEU	OM5	24
	760252348	PPL-DM-12AU-24LC-SM-BEU	OS2	24
12-fiber Adapter Packs				
12 per 1RU	760252362	PPL-AP-12-LC-SM	OS2	12
	760252363	PPL-AP-12-LC-OM4	OM4	12
	760252364	PPL-AP-12-LC-OM5	OM5	12
	760252372	PPL-AP-6-MPO-ALL-B	All	72
MPO16 Modules				
9 per 1RU	760252352	PPL-DM-16AU-16LC-SM-BEU	OS2	16
	760252353	PPL-DM-16AU-16LC-OM4-BEU	OM4	16
	760252354	PPL-DM-16AU-16LC-OM5-BEU	OM5	16
16-fiber Adapter Packs				
9 per 1RU	760252365	PPL-AP-16-LC-SM	OS2	16
	760252366	PPL-AP-16-LC-OM4	OM4	16
	760252367	PPL-AP-16-LC-OM5	OM5	16
	760252804	PPL-AP-8-MPO16-ALL-B	All	128
18 per 1RU	760252806	PPL-AP-4-MPO16-ALL-B	All	64
12 per 1RU	760252805	PPL-AP-6-MPO16-ALL-B	All	96
6 per 1RU	760252803	PPL-AP-12-MPO16-ALL-B	All	96

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Table 2. Available MPO Modules and Adapter Packs, continued

Modules & Adapter Packs	Material ID (MID)	Catalog Number	Fiber Type	Fiber Count
MPO24 Modules				
6 per 1RU	760252356	PPL-DM-24U-24LC-OM4-BEU	OM4	24
	760252357	PPL-DM-24U-24LC-OM5-BEU	OM5	24
24-fiber Adapter Packs				
6 per 1RU	760252368	PPL-AP-24-LC-SM	OS2	24
	760252369	PPL-AP-24-LC-OM4	OM4	24
	760252370	PPL-AP-24-LC-OM5	OM5	24
	760252374	PPL-AP-12-MPO-ALL-B	All	288
S/N Modules				
18 per 1RU	760252342	PPL-DM-8AU-8SN-SM-BEU	OS2	16
12 per 1RU	760252349	PPL-DM-12AU-12SN-SM-BEU	OS2	24
18 per 1RU	760252355	PPL-DM-16AU-8SN-SM-BEU	OS2	16
S/N Adapter Packs				
18 per 1RU	760252375	PPL-AP-8-SN-SM	OS2	16
12 per 1RU	760252376	PPL-AP-12-SN-SM	OS2	24
9 per 1RU	760252377	PPL-AP-16-SN-SM	OS2	32
6 per 1RU	760252378	PPL-AP-24-SN-SM	OS2	48

1.3 Important Safety Cautions

When installing or operating the panel, observe these safety cautions:

- To reduce the risk of fire, electric shock, and injury to persons, read, understand, and adhere to the following instructions as well as any warnings marked on the product.
- This product has a remote risk of electric shock. Never install the product in wet conditions or during lightning storms. Never touch uninsulated communication wires or terminals.
- Wearing safety glasses during installation of this panel is recommended. Although standard safety glasses provide no protection from potential optical radiation, they offer protection from accidental airborne hardware and cleaning solvents.
- Disconnected optical components may emit invisible optical radiation that can damage your eyes. Never look directly into an optical component that may have a laser coupled to it. Serious and permanent retinal damage is possible. If accidental exposure to laser radiation is suspected, consult a physician for an eye examination.

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1.4 Precautions

When installing or operating the panel, observe the following precautions:

- Fiber optic trunk cable and jumper performance is sensitive to bending, pulling, and crushing. Minimum bend radius must be maintained during installation per the manufacturer's specification. Appropriate pulling grips must be used during installation, and pulling forces shall not exceed manufacturer's recommendations.
- All wiring that connects to this equipment must meet applicable local and national building codes and network wiring standards for communication cable.
- **IMPORTANT**: Dust covers are installed in the ports to protect the fibers connected to the back of the ports. Do not remove a dust cover from a port until you connect a patch cord to that port. If you remove a patch cord later, replace the dust cover in the port.
- **Prior** to installation, clean the trunk cable and jumper connectors per the manufacturer's recommendations.
- Isopropyl alcohol is flammable, and can cause eye irritation on contact. If eye contact occurs, flush with water for at least 15 minutes. In case of ingestion, consult a physician. Use only in well ventilated areas.
- Care should be taken not to compromise the stability of the rack by installation of this equipment.

1.5 Related Publications

The related publication listed is available by contacting the CommScope Support Center at https://www.commscope.com/SupportCenter

Publication Title	Publication Number
Propel Panel Quick Start	**TC-96305-IP**

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2 PRODUCT DESCRIPTION

2.1 General Description

The Propel Panel is a 19-inch rack-mount fiber optic connector panel intended for indoor use. Rack adapter kits are available that enable the panel to be mounted in a 23-inch or ETSI rack. The panel is available in one, two, or four rack unit sizes (abbreviated as 1RU, 2RU, or 4RU). Figure 1 shows the three sizes.

The Propel panel contains three “blades” per RU, installed in the factory. A blade is a metal drawer that can be slid in or out of the panel. Each blade supports multiple sizes of connection components including MPO modules, adapter packs, and splice cassettes. Connection components are installed by positioning them in any available location on the blade and sliding them in until they click into position.

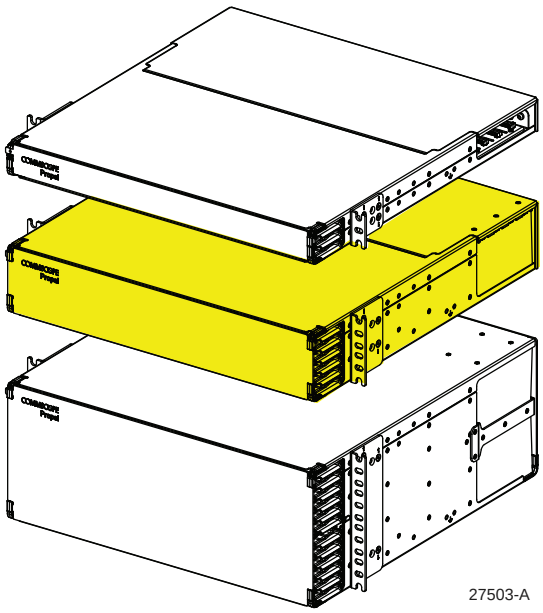


Figure 1. Propel Panel 1RU, 2RU, and 4RU Sizes

Precise positioning on the blade is enforced by rails that the connection components slide onto when installed. The rails direct the components into 12 equal-sized lanes, labeled A to L. Each lane accommodates 4 fibers or the connector equivalent. For example, an MPO module with 4 front duplex LC ports and a rear MPO 8 connector occupies two lanes. Propel connection components are available in 4 sizes accommodating 8, 12, 16, or 24 fibers. The largest size component occupies 6 lanes, which is half of the blade. The Propel panel capacity per blade is 48 fibers (24 duplex LC ports). Capacity per RU is 144 fibers (72 duplex LC ports). If SN connection components are used, the fiber capacity of the panel doubles in comparison to LC, because a single SN connector has 4 fibers, while LC has 2.

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2.2 Main Product Features

Figure 2 shows a front view of a 2RU Propel panel. The main features are:

- **Rear Cover**—can be removed providing top access to rear of the panel.
- **Cable Entry Area**—is the portal through which cables are routed into the rear of the panel.
- **Mounting Brackets (one on each side)**—provide for mounting the panel in a frame or cabinet. The panel is shipped with 19-inch mounting brackets. Kits are available for mounting in a 23-inch or ETSI rack or cabinet.
- **Blade Handles**—are used to slide the blade in and out.
- **Blade**—can be slid out or removed giving better access to the connection component lanes.
- **Patch Cord Managers**—are used to manage patch cords.

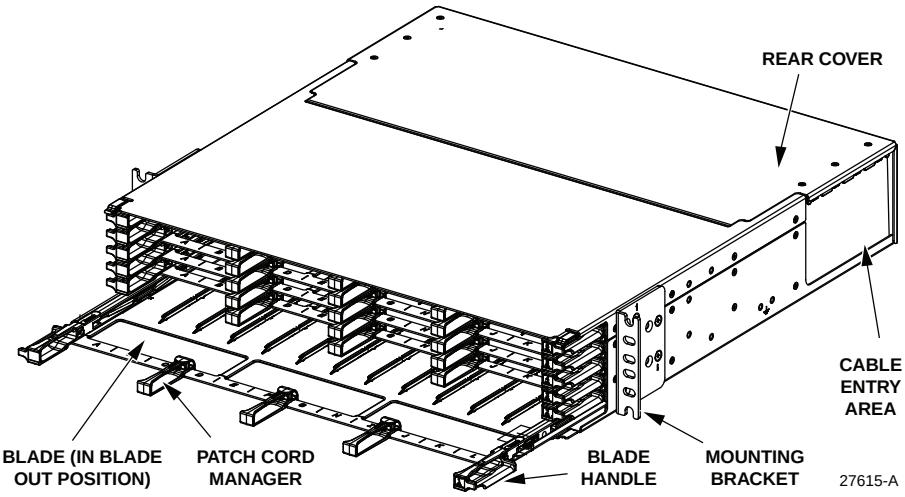


Figure 2. Propel Panel Front View (2RU Shown)

Figure 3 shows a rear view of a 2RU Propel panel. The main features visible from this view include the following.

- **Rear Cover**—can be removed providing top access to the panel.
- **Cable Entry Area**—is the portal through which cables are routed into the rear of the panel.
- **Cable Management Bracket**—holds the rear cable management clips. Each clip holds one cable tied to it with tie wraps.
- **Cable Routing Platform**—is a surface across which cables are routed from connection components out of the panel.

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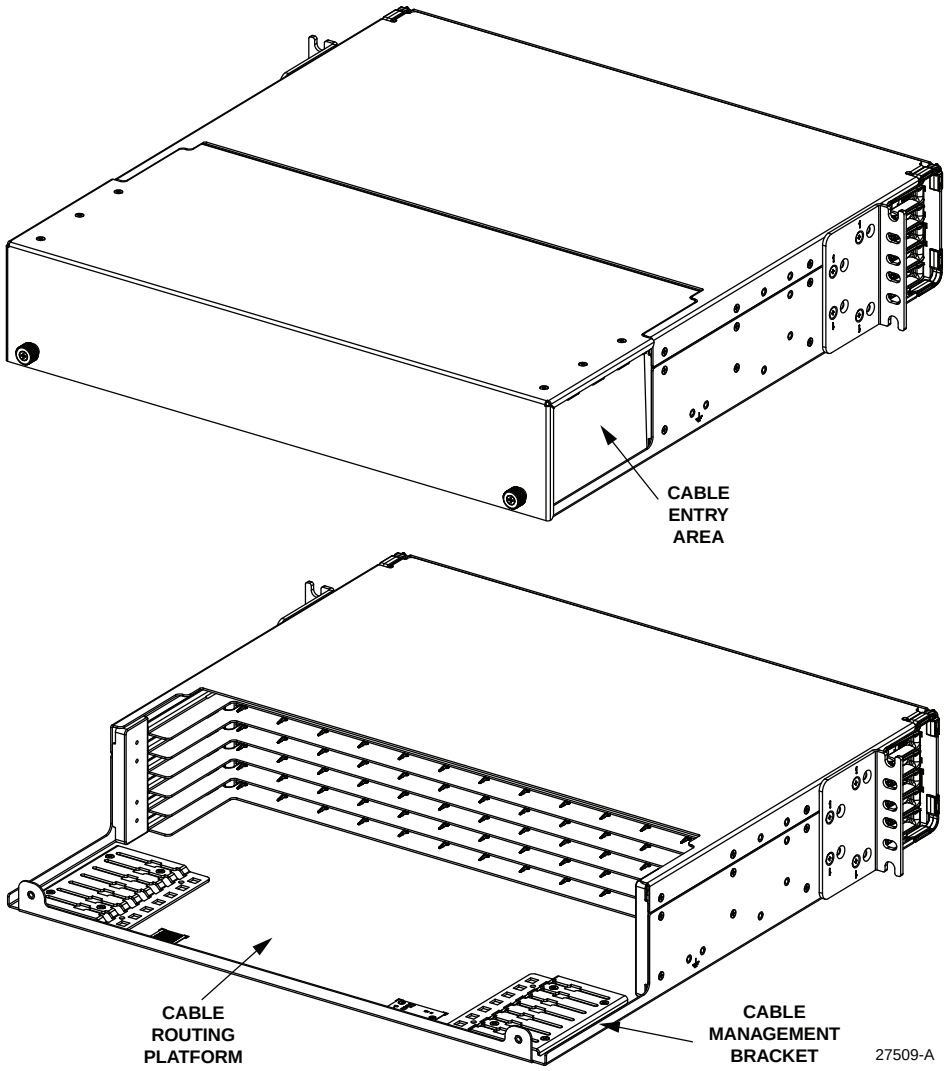


Figure 3. Propel Panel Rear View (2RU Shown)

2.3 Specifications and Dimensions

Figure 4 shows dimensions for the three Propel panel sizes. Table 3 lists dimensions.

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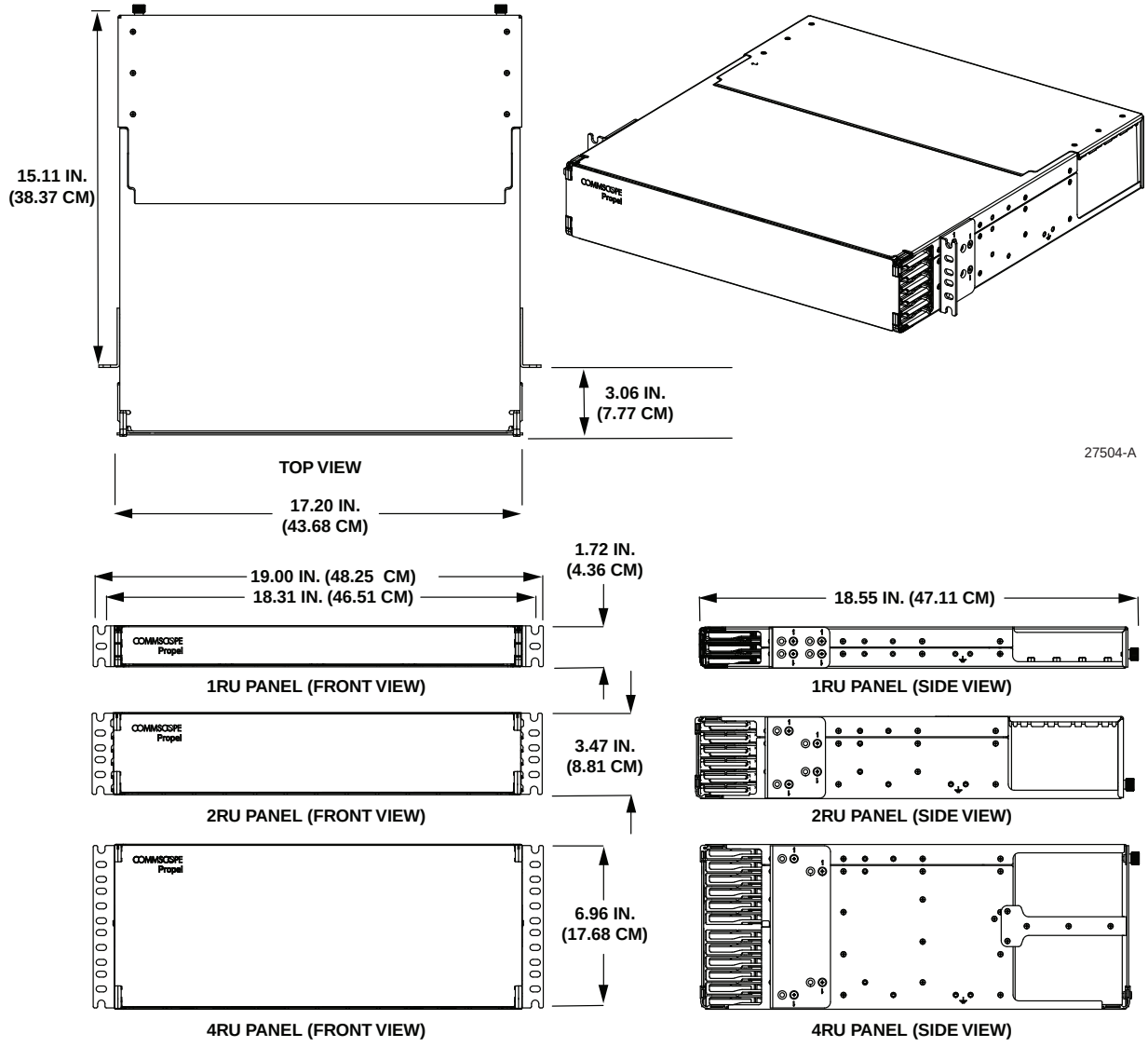


Figure 4. Propel Panel Dimensions

Table 3. Propel Panel Specifications

Parameter	Propel 1U	Propel 2U	Propel 4U
Height	1.72 in (4.36 cm)	3.47 in. (8.81 cm)	6.97 in (17.70 cm)
Width	19.0 in. (48.26 cm)	19.0 in. (48.26 cm)	19.0 in. (48.26 cm)
Depth	18.55 in. (47.12 cm)	18.55 in. (47.12 cm)	18.55 in. (47.12 cm)
Weight (Panel Only)	11.75 lbs. (5.32 kg)	17.60 lbs. (7.98 kg)	33.15 lbs. (15.03 kg)
Weight (Packaged Panel)	15.95 lbs. (7.23 kg)	21.80 lbs. (9.88 kg)	38.95 lbs. 17.66 kg)

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2.4 Blades

Propel blades have rails that guide Propel connection components into lanes. Each blade has 12 lanes labeled A to L. Figure 5 shows a fully occupied blade. The components shown are 3 of the available 4 sizes. As shown in Figure 6, Propel components can be installed from front or rear.

Note: For a component to be installed from the front, the front cable management clip(s) must be removed to provide access to the desired installation lane(s).

Table 4. Available MPO Modules and Adapter Packs

Catalog #	8-fiber modules/ adapter packs	12-fiber modules/ adapter packs	16-fiber modules/ adapter packs	24-fiber modules/ adapter packs
PPL-1U	up to 6 per blade/18 per panel	up to 4 per blade/12 per panel	up to 3 per blade/9 per panel	up to 2 per blade/6 per panel
PPL-2U	up to 6 per blade/36 per panel	up to 4 per blade/24 per panel	up to 3 per blade/18 per panel	up to 2 per blade/12 per panel
PPL-4U	up to 6 per blade/72 per panel	up to 4 per blade/48 per panel	up to 3 per blade/36 per panel	up to 2 per blade/24 per pane
Each blade has 12 lanes				
	Requires 2 lanes	Requires 3 lanes	Requires 4 lanes	Requires 6 lanes



Figure 5. Fully Loaded Blade

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Figure 6. Connection Components Can Be Installed from Front or Rear

2.5 QR Codes

Propel products are labeled with QR codes providing different types of information of interest to the user. Included are the QR code types described below.

2.5.1 Product QR code on Panel

Each panel is affixed with a QR code (shown in Figure 7) that goes to the Propel Panels product page in the CommScope electronic catalog. The product page has documentation, including specifications, the Propel Panels Quick Start, and this user manual available for downloads. Other customer aides such as videos when available are placed on the product page. Figure 8 shows where the QR code is located in the panel.

Figure 7. Propel Panel QR Code

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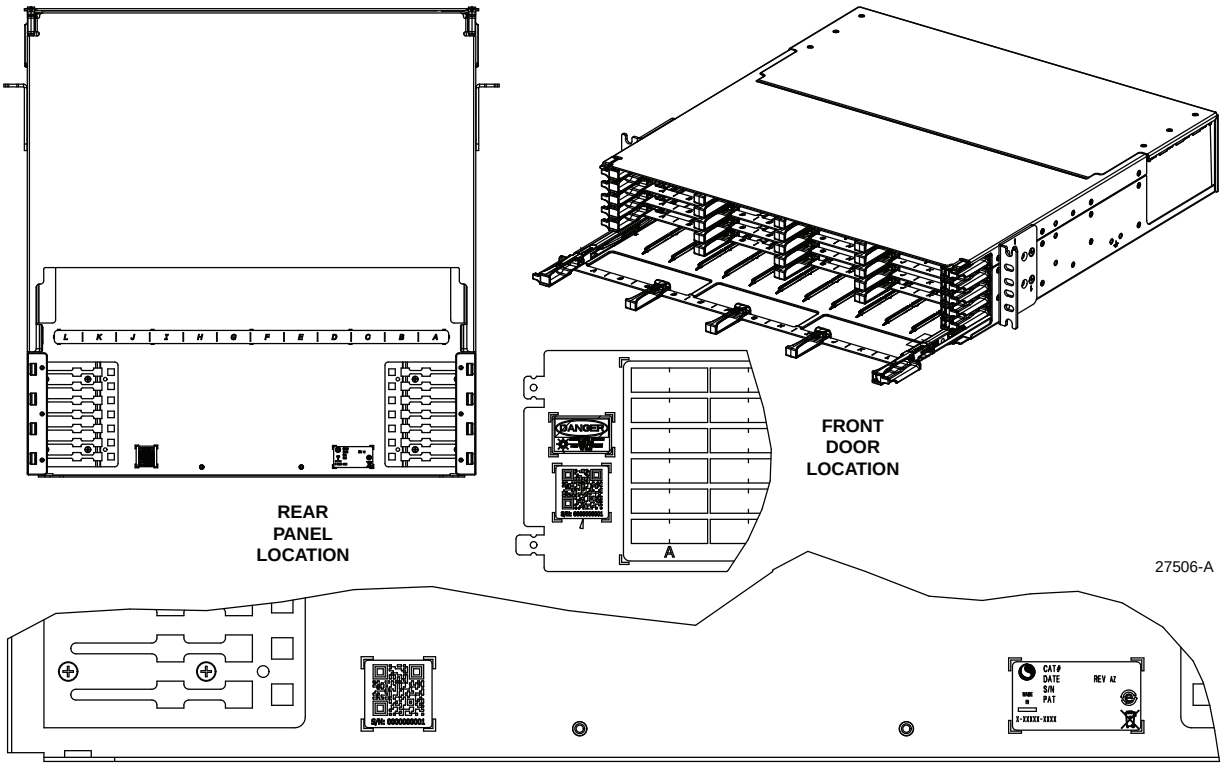


Figure 8. Panel QR Code Location

2.5.2 Component QR Codes

Each Propel connection component (MPO module, adapter pack, or splice cassette) has a label specific to that particular item. The label is sized to the width of the component and has information such as the item serial number (for a module only) and test results.

Refer to Figure 9 and Figure 10.

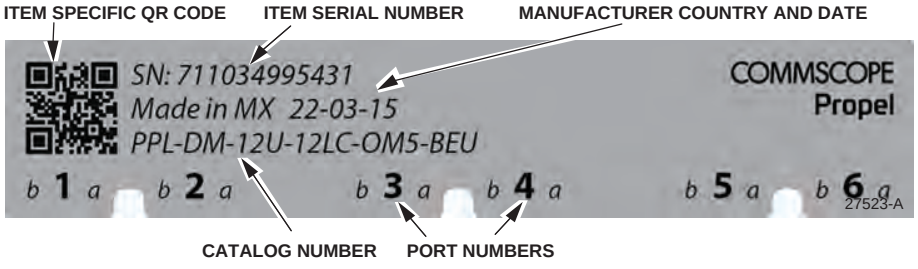


Figure 9. Example of Module Labeling

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Figure 10. Another View

3 UNPACKING AND INSPECTION

Use the following procedure to unpack and inspect the product. Verify parts against Table 5 below.

Table 5. Propel Panel Parts List

Description	Quantity
Propel Panel Quick Start (TC-96305-IP)	1
Propel panel (1RU, 2RU, or 4RU)	1
Blades (inside panel)	3 per RU
Panel fastener pack	1 per panel

1. Inspect the exterior of the shipping container(s) for evidence of rough handling that may have damaged the components in the container.
2. Unpack each container while carefully checking the contents for damage.
3. If damage is found or parts are missing, contact the CommScope Support Center using the URL: http://www.commscope.com/SupportCenter
4. Save any damaged cartons for inspection by the carrier.

Refer to Figure 11 for an exploded view of product packaging.

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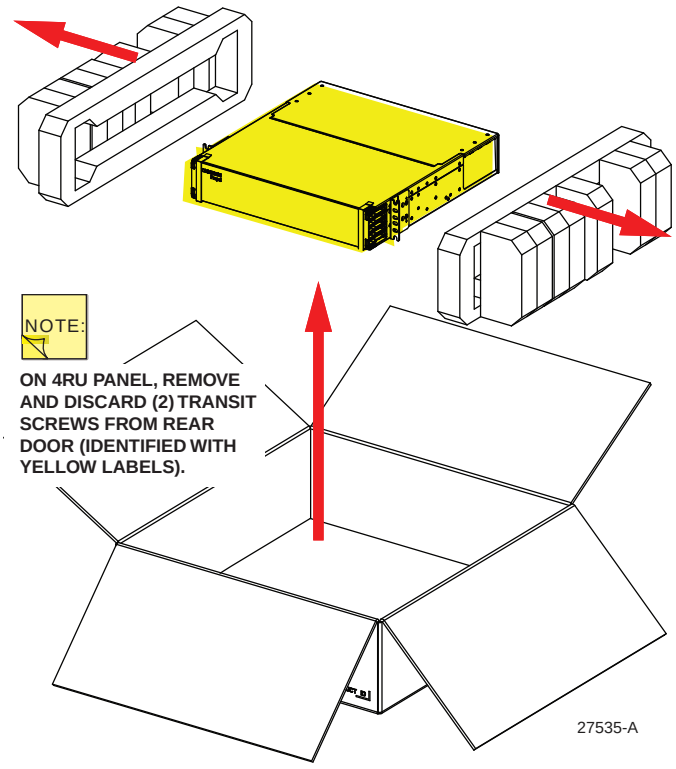


Figure 11. Unpacking a Propel Panel

4 OVERVIEW OF INSTALLATION

Installing the panel and accessories involves the following procedures:

- Determining rack size and mounting hardware (covered in Section 5.1 on Page 16).
- Selecting mounting bracket position (Section 5.3 on Page 16).
- Mounting the panel on a rack (Section 5.4 on Page 18).
- Installing connection components (Section 5.4 on Page 18).
- Installing cables (Section 5.4 on Page 18).
- Installing patch cords (Section 5.4 on Page 18).

The installation procedures listed above describe the sequential steps for a typical installation in a way that facilitates going quickly and efficiently through the installation.

For operational details for covers, doors, blades, connection components, cables, cable management clips, patch cords, and patch cords managers, refer to Section 6 on Page 22. Refer to these sub-sections during installation if any problem arises in moving through the installation procedures.

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5 INSTALLING THE PANEL

5.1 Determining Rack Size and Mounting Hardware

The Propel Panel is shipped with mounting brackets suitable for mounting on a 19-inch equipment rack or cabinet.

Accessory kits are available mounting on a 23-inch or ETSI rack.Whatever the type of rack being used, four recess options are available for positioning the mounting brackets.

The mounting brackets shown in illustrations are those used for 19-inch rack mounting. Refer to the following sections for more information.

5.2 Installing Kits for Alternative Rack Sizes (Not 19-Inch)

5.2.1 23-Inch Rack (584mm) Mount Kit

To mount the panel on a 23-inch (584mm) rack**,** use the G2-23BRKT accessory kit (one kit per RU, available separately) and install two conversion brackets to pre-installed mounting brackets, using the four #10-32 x 3/8-inch conversion screws included in accessory kit.

Use one conversion bracket and two screws per side. Mount the panel to rack using four #12-24 x 1/2-inch screws (provided as part of basic panel).

5.2.2 ETSI Rack Mount Kit

To mount the panel on an ETSI rack**,** use the G2-23BRKT accessory kit (available separately) and install one conversion bracket to either of the pre-installed mounting brackets, using two of four #10-32 x 3/8-inch conversion screws included in accessory kit.

The panel will not be centered when mounted in rack.

Mount the panel to rack using four M6 x 12mm screws (provided as part of basic panel).

5.3 Panel Recess Options

The Propel Panel is shipped with the mounting brackets in a 3-inch offset position for front of rack mounting.

The mounting brackets can be relocated to 3.5-inch or 6-inch offset positions for front of rack mounting, or to a 9-inch offset position for rear of rack mounting.

Note: The mounting brackets are stamped with the letter “1” at key locations to assist in orienting the mounting brackets in the following procedures.

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5.3.1 Mounting Bracket Position on Panel as Shipped

Figure 12 shows the mounting bracket position when shipped.

Note: The holes used for this mounting location are marked “1”.

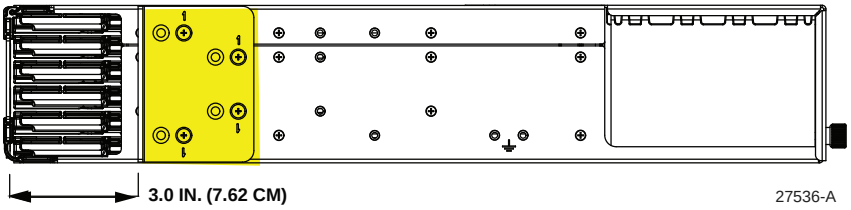


Figure 12. Rack Mounting Position for 3.0-Inch Recess (Shipped Panel)

5.3.2 Mounting Bracket in 3.5-Inch Offset Position (Front of Rack Mounting)

Figure 13 shows the mounting bracket in the 3.5-inch offset position for front of rack mounting.To mount a mounting bracket at this position, remove screws from holes marked “1” and remount the mounting bracket using the unmarked holes shown in Figure 13.

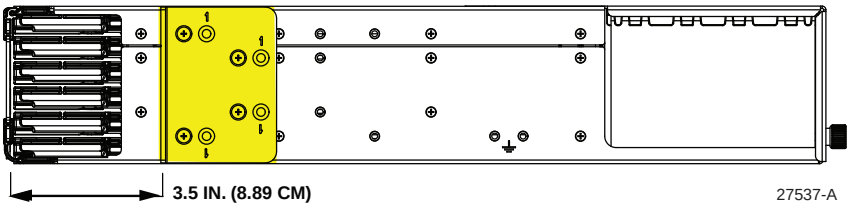


Figure 13. Rack Mounting Position for 3.5-Inch Recess

5.3.3 Mounting Bracket in 6-Inch Offset Position (Front of Rack Mounting)

Figure 14 shows the mounting bracket in the 6-inch offset position for front of rack mounting. To mount a mounting bracket at this position, remove screws from holes marked “1” and rotate the bracket 180 degrees. Reinstall 4 screws in holes marked “1”.

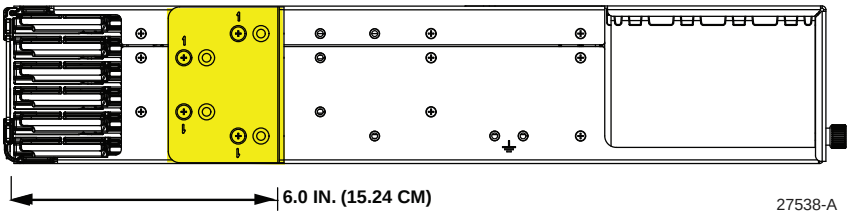


Figure 14. Rack Mounting Position for 6-Inch Recess

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5.3.4 Mounting Bracket in 9-Inch Offset Position (Rear of Rack Mounting)

Figure 15 shows the mounting bracket at the 9-inch offset position for rear of rack mounting. To mount a mounting bracket at this position, remove the 4 screws from holes marked “1”, rotate the bracket 180 degrees, reposition the bracket at the rearward position, and reinstall 4 screws in the holes marked “1”.

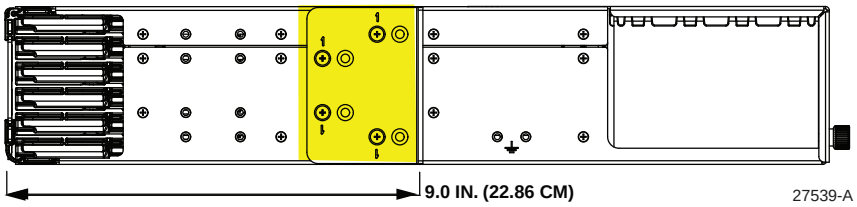


Figure 15. Rack Mounting Position for 9-Inch Recess

5.4 Mounting the Panel on the Rack

The panel is shipped with mounting brackets suitable for mounting on a 19-inch equipment rack or cabinet. If mounting on a 23-inch or ETSI equipment rack or cabinet, see Section 5.3 on Page 16. Install two screws on each side of the panel.

Use the following procedure. Refer to Figure 16; the steps shown are numbered corresponding to numbered steps below.

1. Install the bottom two screws at the desired panel location.
2. Set the panel into position on the screws just installed.
3. Secure the panel to the rack by installing the remaining two mounting screws.

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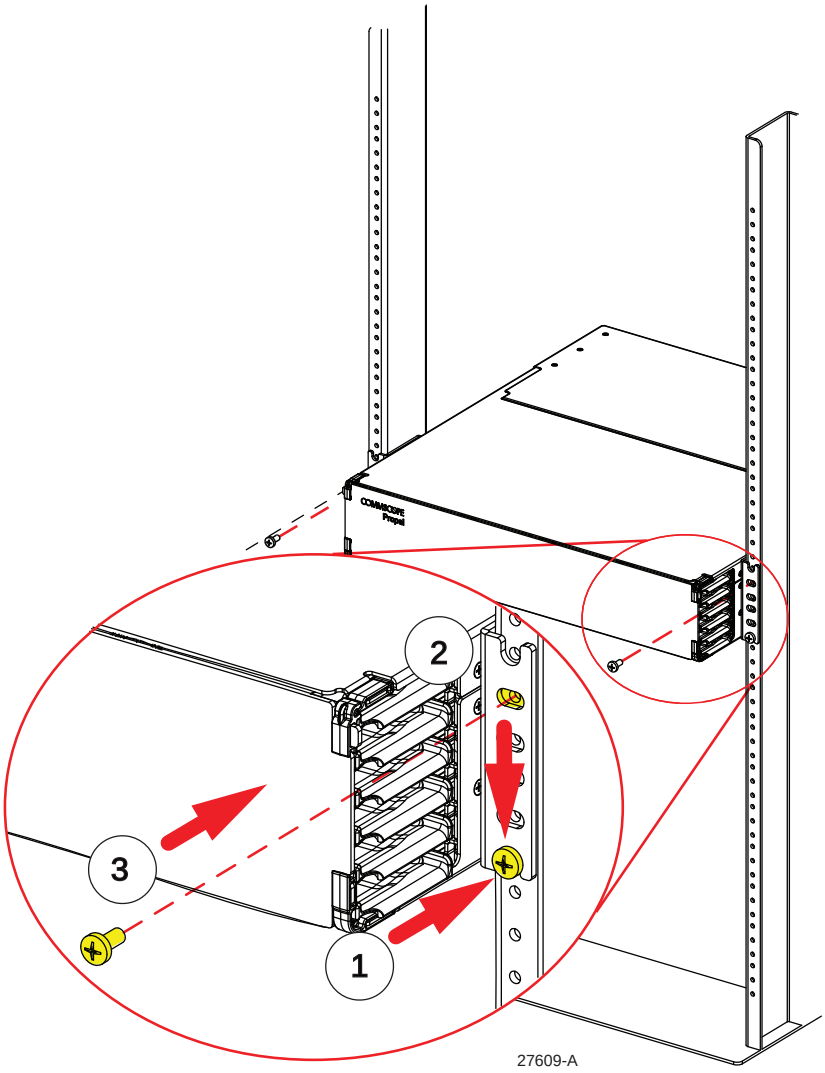


Figure 16. Mounting the Propel Panel (2RU Panel Shown)

5.5 Installing Connection Components

Connection components include MPO modules, adapter packs, and splice cassettes. Precise positioning on the blade is enforced by rails that the connection components slide onto when installed. The rails direct the components into 12 equal-sized lanes, labeled A to L. Connection components are available in 4 sizes occupying 2, 3, 4, or 6 lanes.

Use the following procedure, referring to Figure 17.

1. Open the front cover of the panel.
2. Determine where the connection component will be installed. It can be installed where there is enough space for it.

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3. Determine whether the component will be installed from the front or rear, as shown in Figure 17. Either option is possible, though connection components with pre-attached or spliced in cables are more easily installed from the rear.

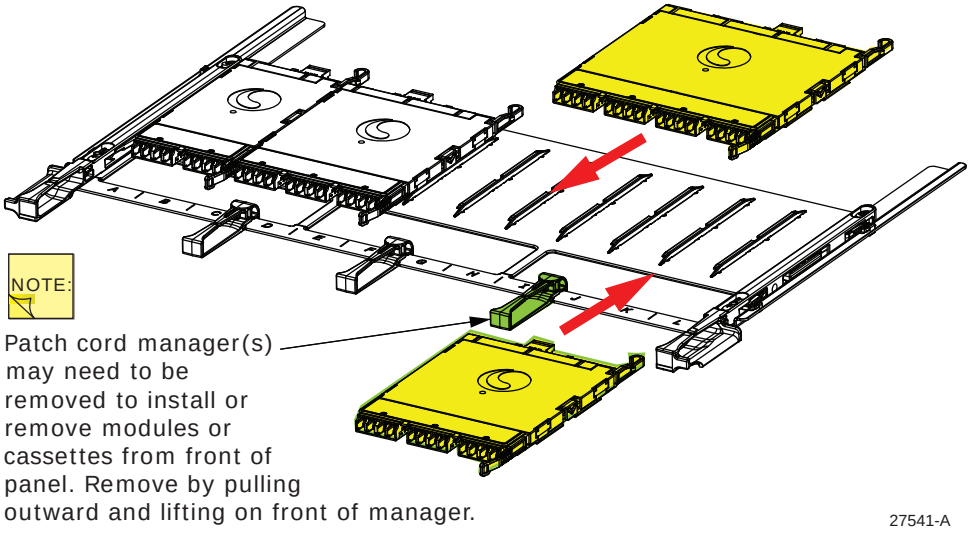


Figure 17. Connection Components Can be Installed from Front or Rear

4. If the component is being installed from the front, remove any patch cord manager(s) that would prevent the component from being slid in (refer to Figure 17). For instructions on removing a patch cord manager, refer to Section 6.6.2 on Page 33.
5. Position the component on the rails as indicated in Figure 18.

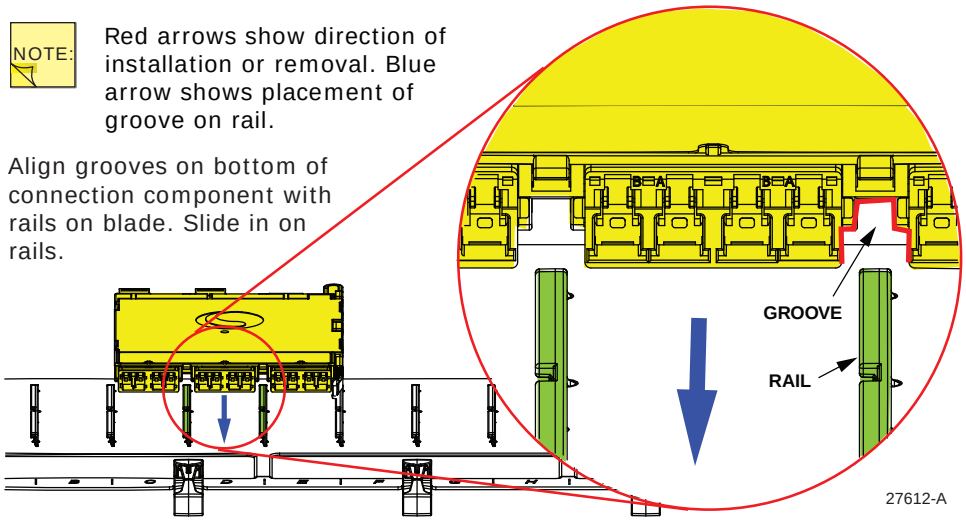


Figure 18. Positioning Connection Component on Rails

6. Slide in the connection component until it clicks into place.

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5.6 Installing Cables

Cables are installed on the rear of the Propel panel to transition from the rear of the connection components to other equipment. If the connection component is an MPO module or adapter pack, the cable needs to be terminated with the appropriate connectors. If the connection component is a splice cassette, the cable must have a pigtail termination for splicing to the fibers within the splice cassette.

Once connected or spliced, the cables are routed from the connection components across the cable management platform to the cable management bracket where the individual cables are secured using cable management clips. From the cable management bracket, the cables are routed to the far end equipment.

Use the following procedure.

1. Route the cable in an arc to the cable management bracket. Avoid kinking the cable or bending it beyond the minimum bend radius as specified by the cable manufacturer.
2. At the point where the cable passes over the cable management bracket, install a cable management clip. For detailed instructions, refer to Section 6.5.1 on Page 28.

Note: Further instructions for the cable management clip are provided with the cable assembly.

3. Insert the cable management clip within the cable management bracket. For detailed instructions, refer to Section 6.5.2 on Page 29.
4. Route the cables neatly on the cable management platform and secure the cables with cable ties if needed to hold them in place. Refer to Section 6.5.3 on Page 31.

5.7 Installing Patch Cords

Patch cords are installed on the front of the Propel panel to connect the front of the connection components to other equipment at the same site.

Patch cords are secured and routed using the factory-installed patch cord managers on the front edge of the blade. If the patch cord managers are not present, they should be installed because they keep the patch cords in neat order when the blade is slid open.

To install patch cords, do the following procedure.

1. If not already present, install patch cord managers as instructed in Section 6.6.1 on Page 31.
2. Connect the patch cords to the desired port.
3. Route the patch cords neatly to both sides of the blade as shown in Figure 19. The number of patch cords routed to each side does not matter so long as the patch cords are neatly arranged.

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Figure 19. Patch Cords Fanned to Both Sides

6 OPERATIONAL DETAILS

This section contains operational details that can be accessed separately outside of the installation procedures. Electronically, the most direct way to access these operational details is through the table of contents for this user manual on page 1.

6.1 Front Door

6.1.1 Opening the Front Door

To open the front door:

1. Grasp the top corners of the door with thumb and forefingers as shown in Figure 20. Look for the tabs on the upper corners of the door,
2. Swing open the top of the door as shown in Figure 20.

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Figure 20. Swinging Down the Front Door

6.1.2 Closing the Front Door

To close the front cover, swing it up until it clicks into place.

6.2 Rear Cover

Note: Rear cover operation on the 4RU panel is different than on the 1RU and 2RU panels.

6.2.1 Removing the Rear Cover on the 1RU and 2RU panel

To remove the rear cover of the Propel panel, loosen the two captive screens on the bottom corners of the cover, and lift off the cover.

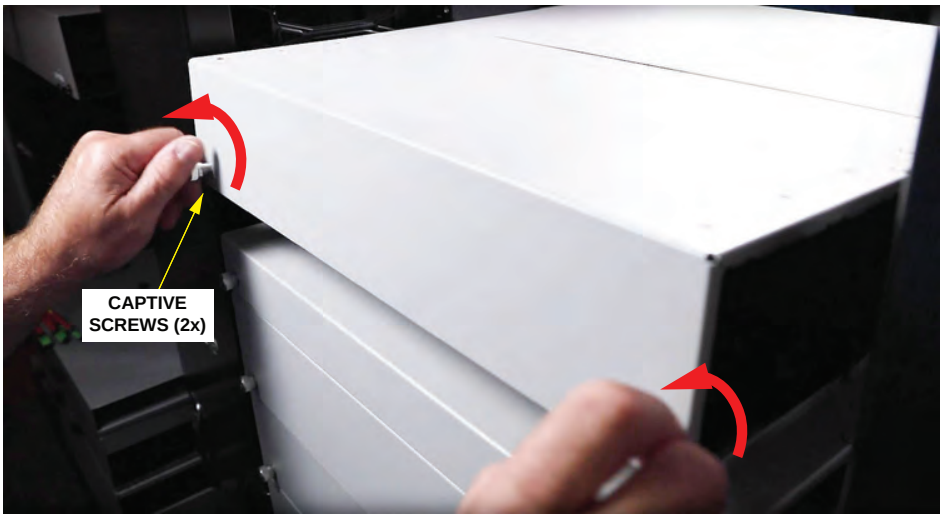


Figure 21. Loosening the Captive Screws

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6.2.2 Re-installing the Rear Cover on the 1RU and 2RU Panel

To re-install the rear cover on a 1RU or 2RU panel, place it into position and secure it with the two captive screws.

6.2.3 Opening the Rear Cover on the 4RU Panel

To open the rear cover of the 4RU panel, loosen the two captive screws to release the door and swing it down on its hinges.

6.2.4 Closing the Rear Cover on the 4RU panel

To close the rear cover of the 4RU panel, swing the door up into its closed position and secure it with its two captive screws.

6.3 Blades

6.3.1 Sliding Out a Blade

To slide out a blade, grasp it by its right handle and pull it out. Refer to Figure 22.



Figure 22. Sliding Out a Blade

6.3.2 Removing a Blade from the Panel

To remove a blade from the panel:

1. Grasp the blade by the right handle and slide it out as shown in Figure 22 on Page 24.

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2. With blade in open position, place both hands with thumb behind handle and index finger on inside edge of blade cross bar, as shown in Figure 23.

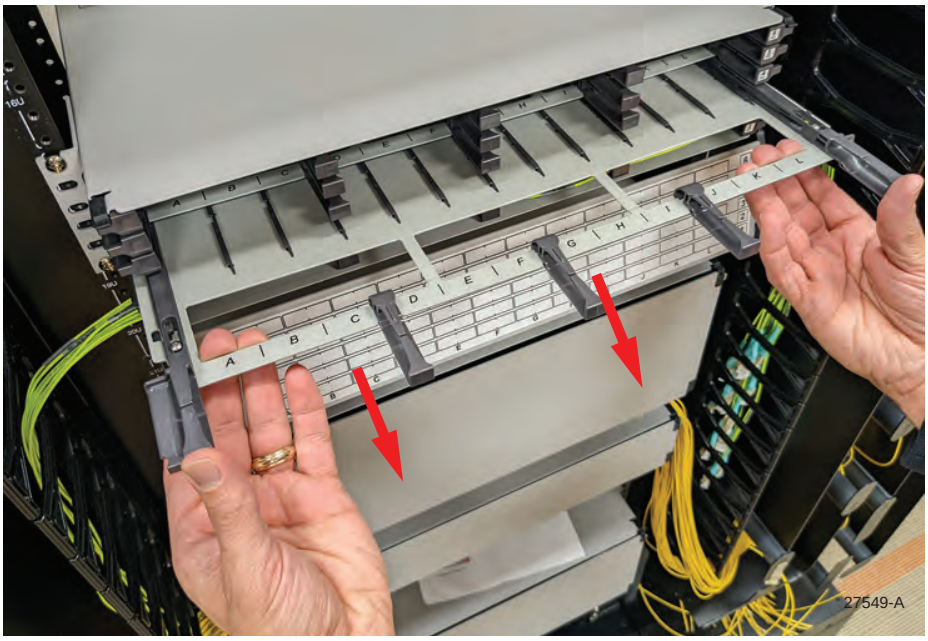


Figure 23. Hand Position to Release Blade

3. Holding the cross bar stationary, push the handle toward the inside of the panel to release the blade from panel, and pull outward as shown in Figure 24.

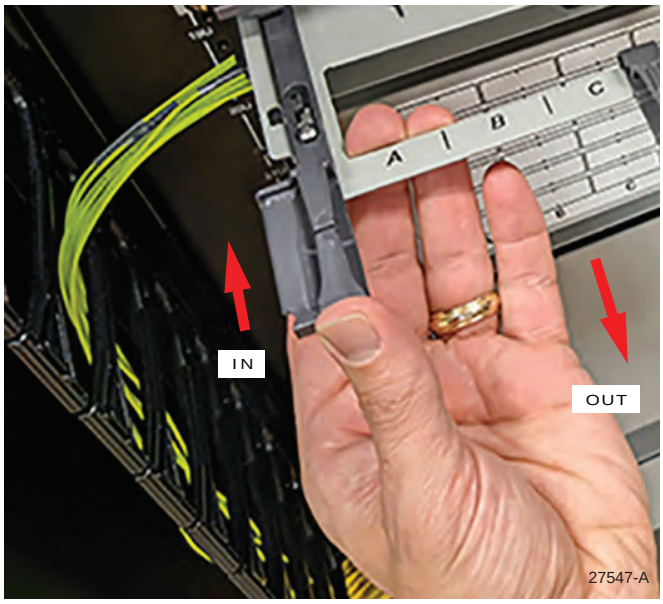


Figure 24. Sliding Out Blade from Panel.

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4. Slide the blade fully from panel.

6.3.3 Installing a Blade

To install a blade, place it in position and slide it in until it clicks into place. To stow blade completely, push on both outer handles of the blade. Refer to Figure 25.



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Figure 25. Installing a Blade

6.4 Connection Components

6.4.1 Placement of Connection Components on a Blade

When installing a connection component, take care to align the grooves on the bottom of the component with the rails on the blade, as shown in Figure 17 on Page 20.

6.4.2 Installing a Connection Component

To install a connection component, position it on the blade rails wherever there is space for it. Slide the component in until it clicks into place. Refer to Figure 27 and Figure 28.

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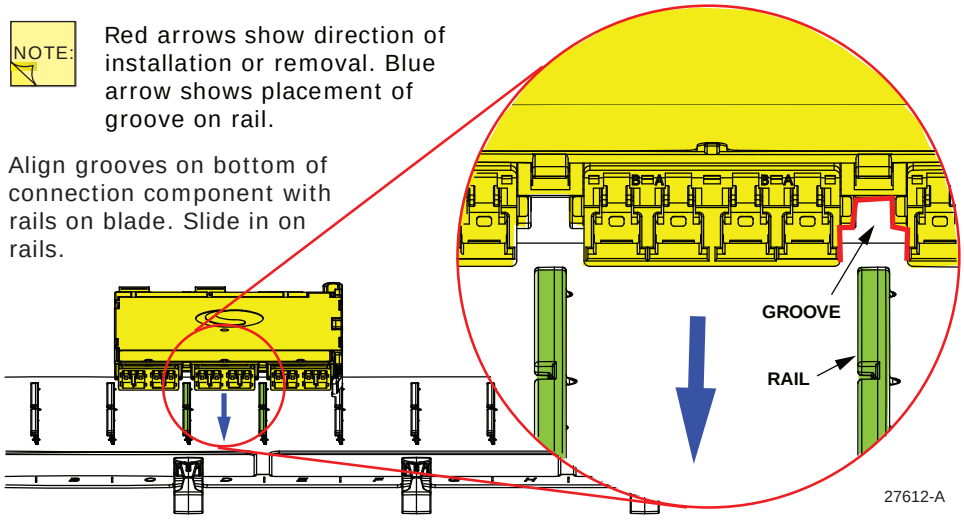


Figure 26. Positioning Connection Component on Rails

Figure 27. Connection Components Can be Installed from Front or Rear

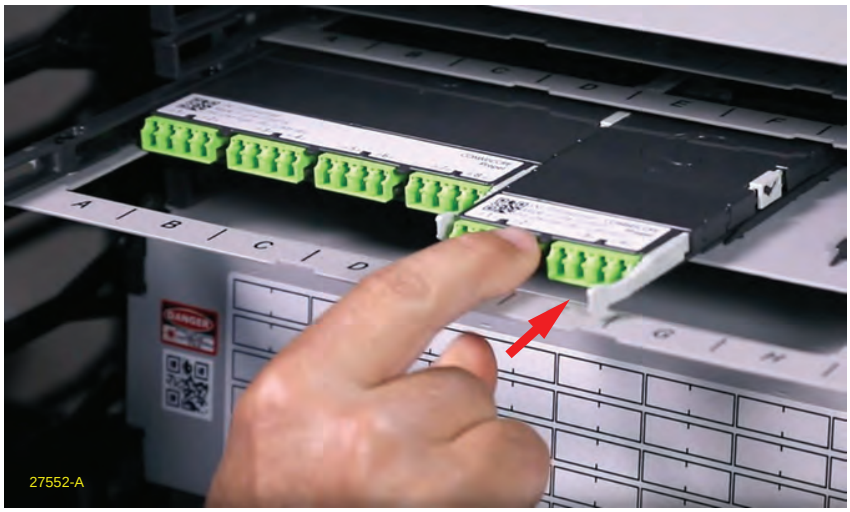


Figure 28. Installing a Connection Component

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6.4.3 Removing a Connection Component

Danger! *Disconnected optical components may emit invisible optical radiation that can damage your eyes. Never look directly into an optical component that may have a laser coupled to it. Serious and permanent retinal damage is possible. If accidental exposure to laser radiation is suspected, consult a physician for an eye examination.*

To remove a connection component, disconnect it by pulling on the light gray handle, and slide it off the blade, heeding the **Danger** warning above.

6.5 Cables and Rear Cable Management Clips

6.5.1 Installing a Rear Cable Management Clip on a Cable.

To attach a cable management clip on a cable, perform the following steps:

1. Obtain two tie wraps and a cable management clip. Refer to Figure 29.

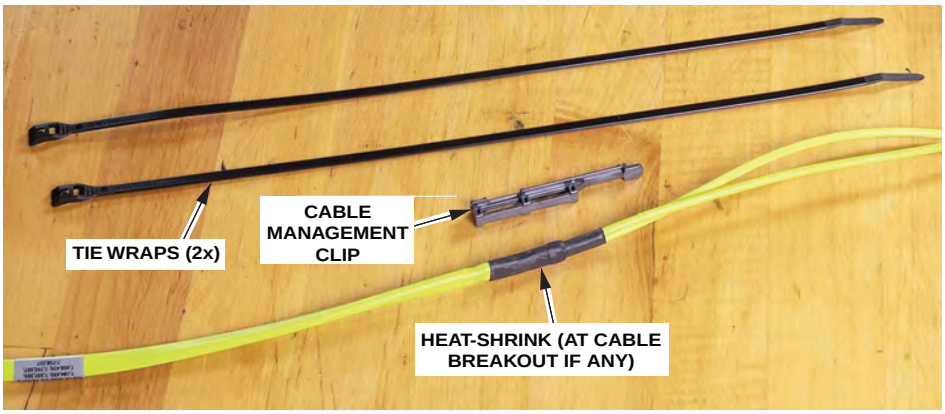


Figure 29. Tie Wraps, Cable, and Cable Management Clip

2. Lay out the cable in a gentle arcing route to the cable management bracket. Mark the cable at the point where it will enter the cable management bracket. If the cable has multiple sub-units, break out the cable per local practice at the mark just made on the cable in the previous step.
3. Wrap the cable at the breakout location in heat-shrink or, if no breakout is present at the mark made on the cable in the previous step
4. Secure the cable jacket to the clip with the tie wraps referring to Figure 30 as follows
   a. Attach the cable or cables to the snap-in mounting clip with the included cable ties or any style of cable tie you prefer.

Note: The snap-in cable mounting clip can accommodate single or multiple cables in a variety of cable sizes. For more instructions and an illustration, refer to the installation drawing that came with the cable assembly.

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b. After securing the cable tie to cable, use a side cutter or bend cable tie to remove excess cable tie.:

Note: Ensure that the cable breakout is not retained by the tie wrap, referring to the guidelines provided in Figure 30 and in the installation drawing provided with the cable assembly.

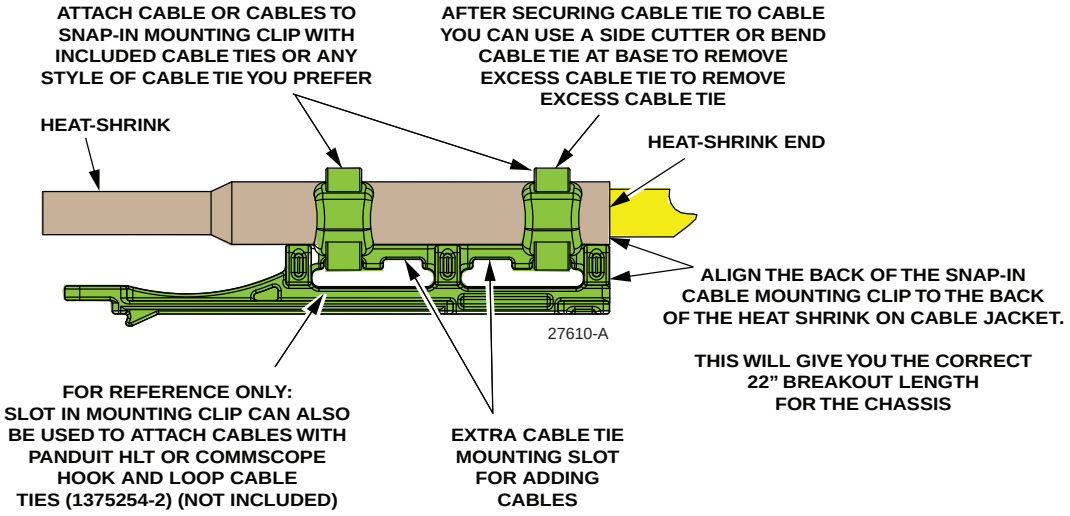


Figure 30. Cable Management Clip Detailed View

5. Refer to Figure 31 for an example of how the cable management clip should look when installed (in the case on a single cable).

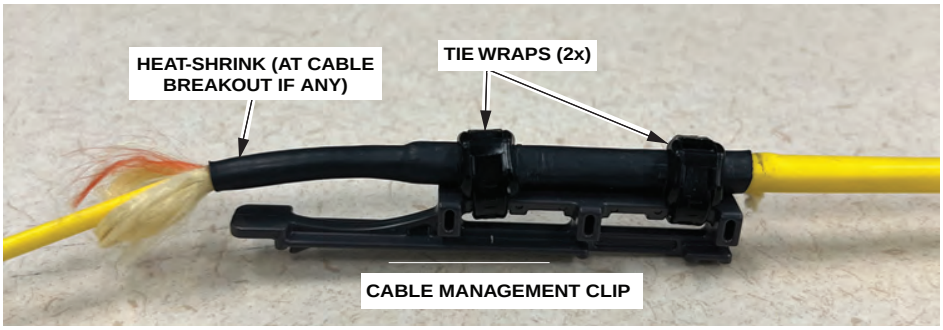
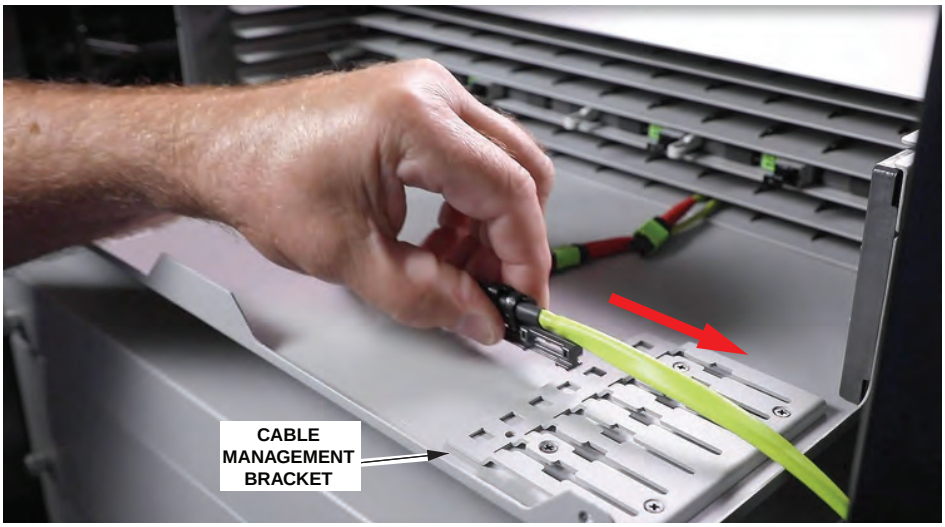


Figure 31. Cable Assembled on Cable Management Clip

6.5.2 Installing a Cable and Clip Assembly onto the Cable Management Bracket

To install a cable and clip assembly in the cable management bracket. insert the lead bottom feature of the clip into the selected slot, and slide it in to the final position shown in Figure 31 and Figure 32. Start at forward most position and install additional cables working toward back of panel.

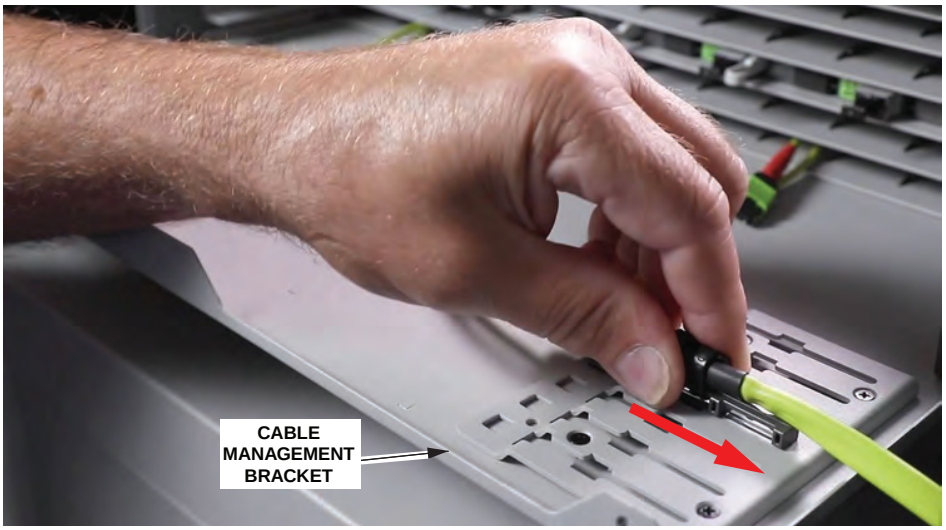
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Figure 32. Inserting and Sliding in a Cable and Clip Assembly

Note: Detailed instructions for the cable management clip are provided with the cable assembly.



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Figure 33. Final Position of Cable and Clip Assembly in Cable Management Bracket

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6.5.3 Routing and Securing Cables on the Cable Management Platform

On the cable management platform, route the cables in a neat arc from the connection components to the cable management bracket as shown in Figure 34.

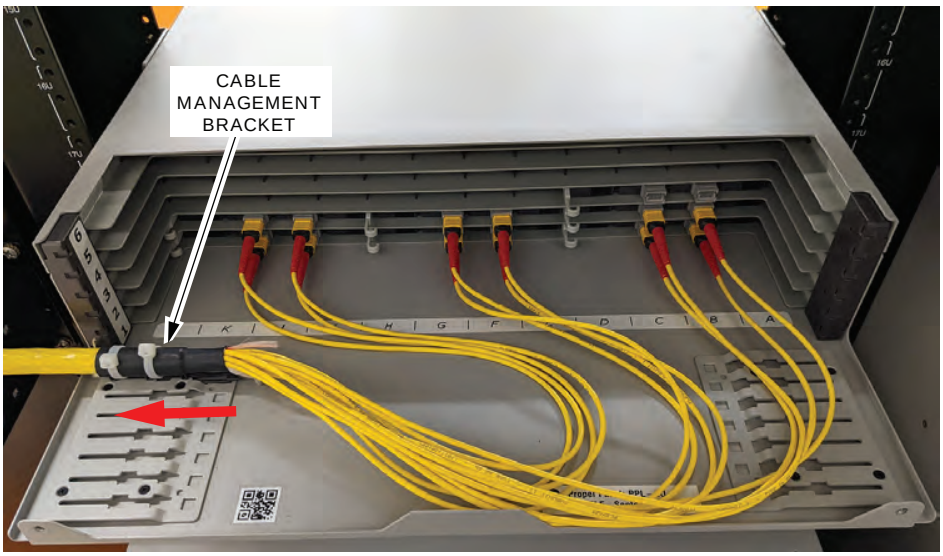


Figure 34. Cables Routed on Cable Management Platform

6.6 Patch Cords and Patch Cord Managers

Patch cords are secured and routed using the factory-installed patch cord managers on the front edge of the blade. If the patch cord managers are not present at the time of patch cord installation, they should be installed before installing the patch cords.

6.6.1 Installing a Patch Cord Manager

To install a patch cord manager:

1. Insert the patch cord manager into the notch on blade and rotate it upward as shown in Figure 35.

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Figure 35. Inserting Patch Cord Manager in Notch

2. Push down on back of the manager to snap it into place as shown in Figure 36.

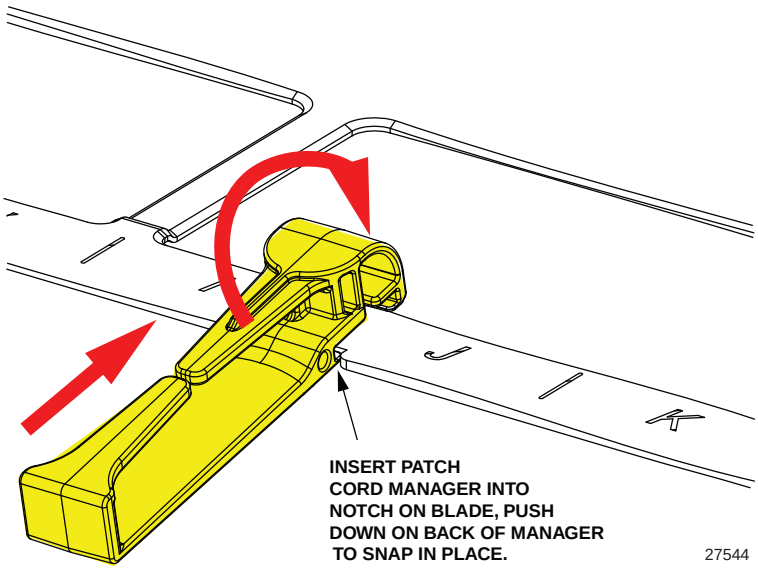


Figure 36. Snapping Patch Cord Manager into Place

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6.6.2 Removing a Patch Cord Manager

Remove by pulling outward and lifting on front of manager.

6.6.3 Installing Patch Cords

To install a patch cord, connect the connector to the selected front port of the connection module. Route patch cords neatly through patch cord managers as needed. Refer to Figure 37.

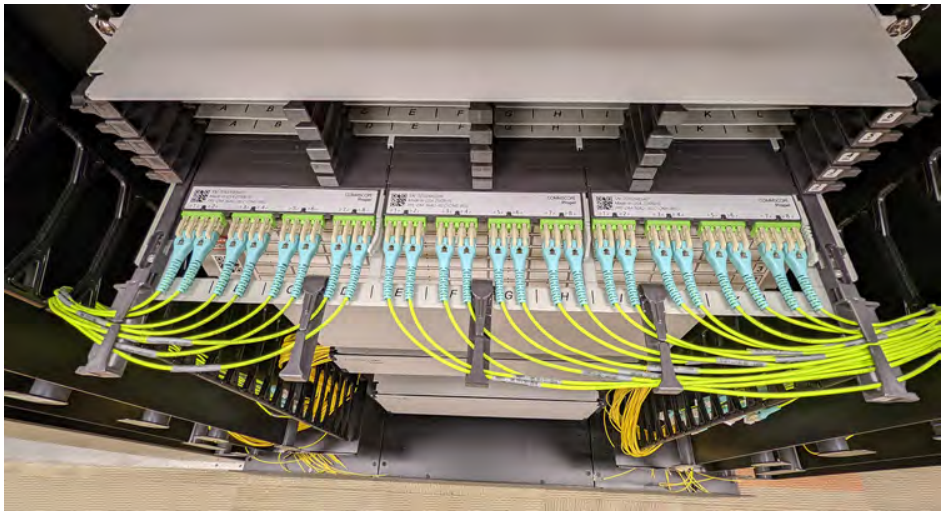


Figure 37. Patch Cords Fanned to Both Sides and Secured Within Patch Cord Managers

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7 CONTACT INFORMATION

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