KMMLED156 Rack Mount 15.6" Console Tray for Dell EMC

Installer/User Guide

The information contained in this document is subject to change without notice and may not be suitable for all applications. While every precaution has been taken to ensure the accuracy and completeness of this document, Vertiv assumes no responsibility and disclaims all liability for damages resulting from use of this information or for any errors or omissions. Refer to other local practices or building codes as applicable for the correct methods, tools, and materials to be used in performing procedures not specifically described in this document.

The products covered by this instruction manual are manufactured and/or sold by Vertiv. This document is the property of Vertiv and contains confidential and proprietary information owned by Vertiv. Any copying, use or disclosure of it without the written permission of Vertiv is strictly prohibited.

Names of companies and products are trademarks or registered trademarks of the respective companies. Any questions regarding usage of trademark names should be directed to the original manufacturer.

Technical Support Site

If you encounter any installation or operational issues with your product, check the pertinent section of this manual to see if the issue can be resolved by following outlined procedures.

Visit https://www.vertiv.com/en-us/support/ for additional assistance.

TABLE OF CONTENTS

1 Overview **1**

1.1 Safety Precautions 1

1.2 General 1

2 Installation **3**

2.1 Installing the Slide Rails in a Standard EIA Rack 3

2.2 Installing the KMMLED156 Console Tray Assembly 7

2.3 Securing the Cable Management Arm (CMA) 8

2.4 Connecting the KMMLED156 Assembly 10

3 Operating the Console **13**

3.1 Using the OSD Menus and Submenus 14

3.2 OSD Menu Options 14

4 Appendices **17**

Appendix A: Technical Specifications 17

Appendix B: USB 2.0 Speed Chart 18

Appendix C: KMMLED156 Console Tray Assembly Maintenance 19

Appendix D: Vertiv™ KVM Switch Bracket Kit (DRMK-81) 24

1 OVERVIEW

The KMMLED156 Rack Mount 15.6" Console Tray for Dell EMC local rack access system provides keyboard, monitor and mouse functionality within a 1U rack space. This system includes the KMMLED156 console and slide tray assembly and a separate slide rail kit. The two provided video cables are the VGA cable (installed) and the replacement DisplayPort cable. A customer-provided DVI cable can also be used.

Features include:

- Modular KMM console designed for easy system installation and console service
- VGA, DisplayPort and DVI video inputs
- Removable USB keyboard for quick exchange or replacement
- Tool free start to finish for standard installations
- Dual USB 2.0-compliant passthrough ports

NOTE: Separating the KMMLED156 console from the slide tray can make it easier to position and install the slide tray into the rack-mounted slide rails. See for instructions to remove the KMMLED156 console from the slide tray.

NOTE: The slide rail kit (DRMK-82), is included with the KMMLED156 console tray. If it is necessary to install the slide rails on your rack, see Installing the Slide Rails in a Standard EIA Rack on page 3 and Replacing the slide rail assemblies on page 23.

NOTE: The console assembly is configured with a VGA video cable. If you plan to use a DisplayPort video monitor source, you must replace the VGA cable with the provided DisplayPort cable or a customer-supplied DVI cable before you install the console assembly into the rack-mounted slide rails. See Replacing the video cable on page 23.

NOTE: KVM switch bracket kit (DRMK-81) is available to install certain Dell EMC branded KVM appliances within the same 1U rack mount space as the KMMLED156 console tray. The slide rail kit (DRMK-82), included with the KMMLED156 console tray, is compatible with the Vertiv™ KVM switch bracket kit. See Vertiv™ KVM Switch Bracket Kit (DRMK-81) on page 24 for installation instructions.

1.1 Safety Precautions

Use the following safety guidelines to help ensure your own personal safety and to help protect your system and working environment from potential damage.

WARNING! The power supplies in your system may produce high voltages and energy hazards, which can cause bodily harm. Only trained service technicians are authorized to remove the covers and access any of the components inside the system.

This document pertains only to the KMMLED156 Rack Mount 15.6" Console Tray for Dell EMC. You should also read and follow the additional safety instructions in the following guides:

- KMMLED156 Rack Mount 15.6" Console Tray for Dell EMCQuick Installation Guide
- Safety, Environmental and Regulatory Guide

1.2 General

Review and observe the following safety instructions:

- Observe and follow service markings.

- Do not service any product except as explained in your system documentation.
- Opening or removing covers that are marked with the triangular symbol with a lightning bolt may expose you to electrical shock.
- Components inside these compartments should be serviced only by a trained service technician.
- Do not attempt to open this product unless you have proper service documentation.
- If any of the following conditions occur, unplug the product from the electrical outlet and replace the part or contact your trained service provider:
    - The power cable, extension cable, or plug is damaged.
    - An object has fallen into the product.
    - The product has been exposed to water.
    - The product has been dropped or damaged.
    - The product does not operate correctly when you follow the operating instructions.
- Keep your system away from radiators and heat sources.
- Do not spill food or liquids on your system components, and never operate the product in a wet environment. If the system gets wet, see the appropriate section in your troubleshooting guide or contact Technical Support.
- Use the product only with approved equipment.
- Allow the product to cool before removing covers or touching internal components.
- Operate the product only from the type of external power source indicated on the electrical ratings label. If you are not sure of the type of power source required, consult your service provider or local power company.

NOTE: To help avoid damaging your system, be sure the voltage selection switch (if provided) on the power supply is set for the voltage that most closely matches the AC power available in your location. Also be sure that all devices are electrically rated to operate.

- Be sure that your monitor and attached devices are electrically rated to operate with the power available in your location.
- Use only power cables provided with this product.
- To help prevent electric shock, plug the system and peripheral power cables into properly grounded electrical outlets. These cables are equipped with three-prong plugs to help ensure proper grounding. Do not use adaptor plugs or remove the grounding prong from a cable.
- Observe extension cable and power strip ratings. Make sure the total ampere rating of all products plugged into the power strip does not exceed 80 percent of the ampere ratings limit for the power strip.
- To help protect your system from sudden, transient increases and decreases in electrical power, use a surge suppressor, line conditioner or uninterruptible power supply (UPS).
- Position the system cables and power cables carefully. Route the cables so that they cannot be stepped on or tripped over. Be sure that nothing rests on any cables.
- Do not modify the power cables or plugs. Consult a licensed electrician or your power company for site modifications. Always follow your local/national wiring rules.

2 INSTALLATION

The provided slide rails must be installed prior to installing the KMMLED156 console assembly.

CAUTION: If you are installing more than one unit concurrently, keep the outer slides matched with the inner slides that are mounted on the slide tray. Rails and slide trays that ship together must be paired together. Mismatched pairs may result in damage to the slide rail assemblies, slide tray or rack cabinet.

2.1 Installing the Slide Rails in a Standard EIA Rack

The slide rail assemblies are marked L for the left rail assembly and R for the right rail assembly. The front of both assemblies are marked FRONT to ensure proper installation in the rack.

The slide rail mounting mechanism has two spring-loaded pins at each end of the rail assembly that retract. The pins fit 10-32 threaded holes or EIA-standard square- or round-hole racks. The spring-loaded pins self-adjust to adapt to the rack rail holes.

NOTE: Each set of spring-loaded sleeves is equipped with release tabs to pull and disengage the slide rail assembly.

To install the slide rail assemblies into a rack:

1. Align the two back spring-loaded pins of the slide rail assembly with the corresponding holes on the rack and pull to secure.
2. Extend the rail assembly to the appropriate length of the rack.
3. Align the two front spring-loaded pins of the slide rail assembly with the corresponding holes on the rack and push to secure.

NOTE: The release tabs click to indicate the pins are fully engaged.

4. Repeat the steps for the rail on the opposite side of the rack.

Figure 2.1 Slide Rail Assembly Installation (Square-hole Configuration Shown)

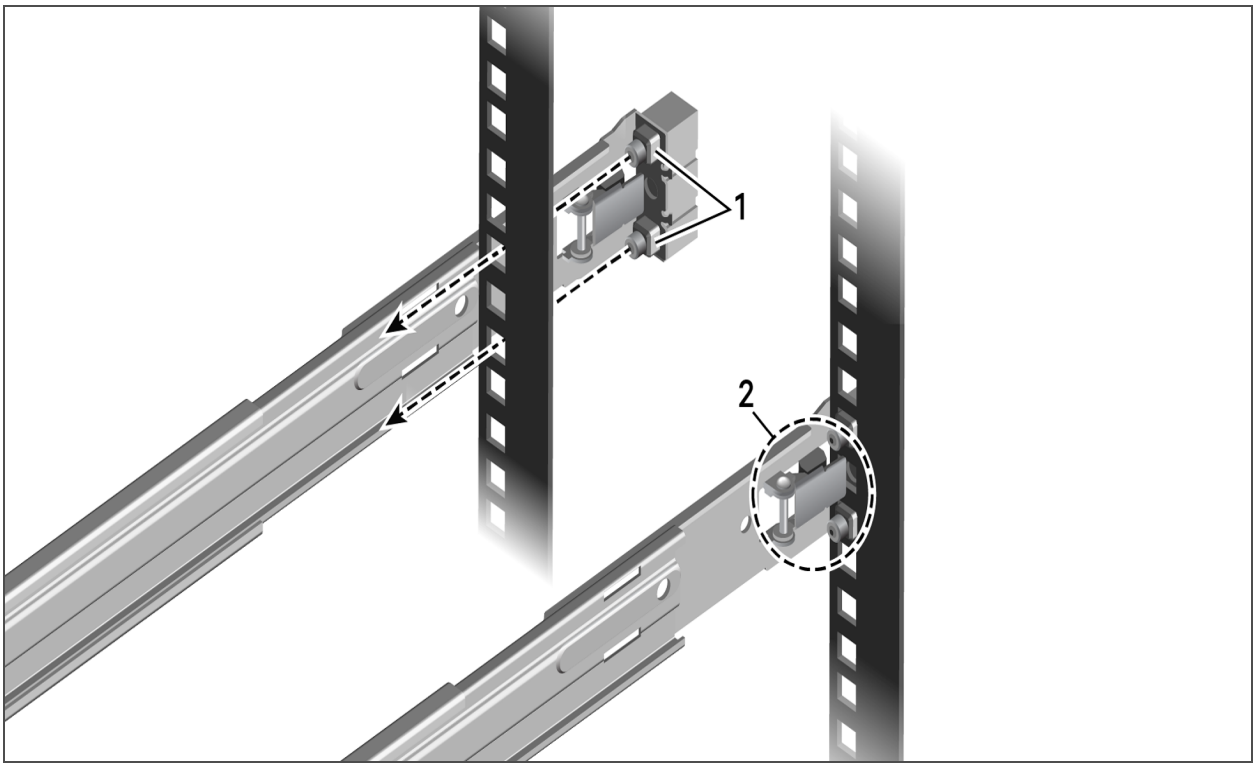


Table 2.1 Slide Rail Assembly Components

ITEM	DESCRIPTION
1	Spring-loaded pins
2	Release tab

Figure 2.2 Extending the Left and Right Rail Assemblies

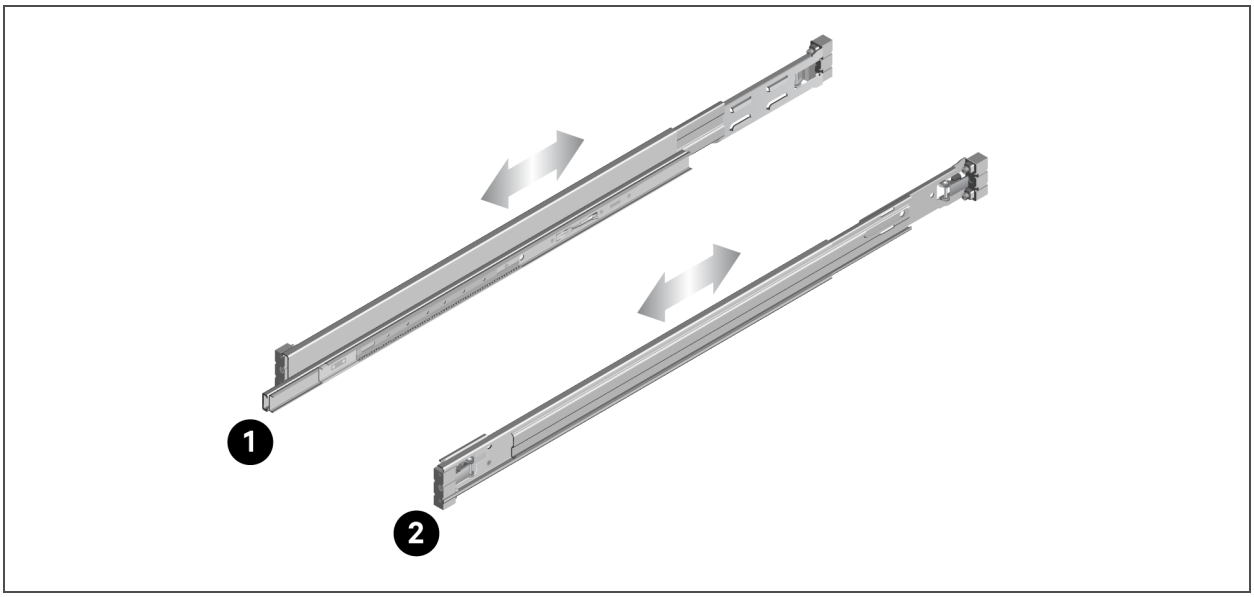


Table 2.2 Slide Rail Assemblies

ITEM	DESCRIPTION
1	Left slide rail assembly
2	Right slide rail assembly

Figure 2.3 Outer Slide Rail Extension

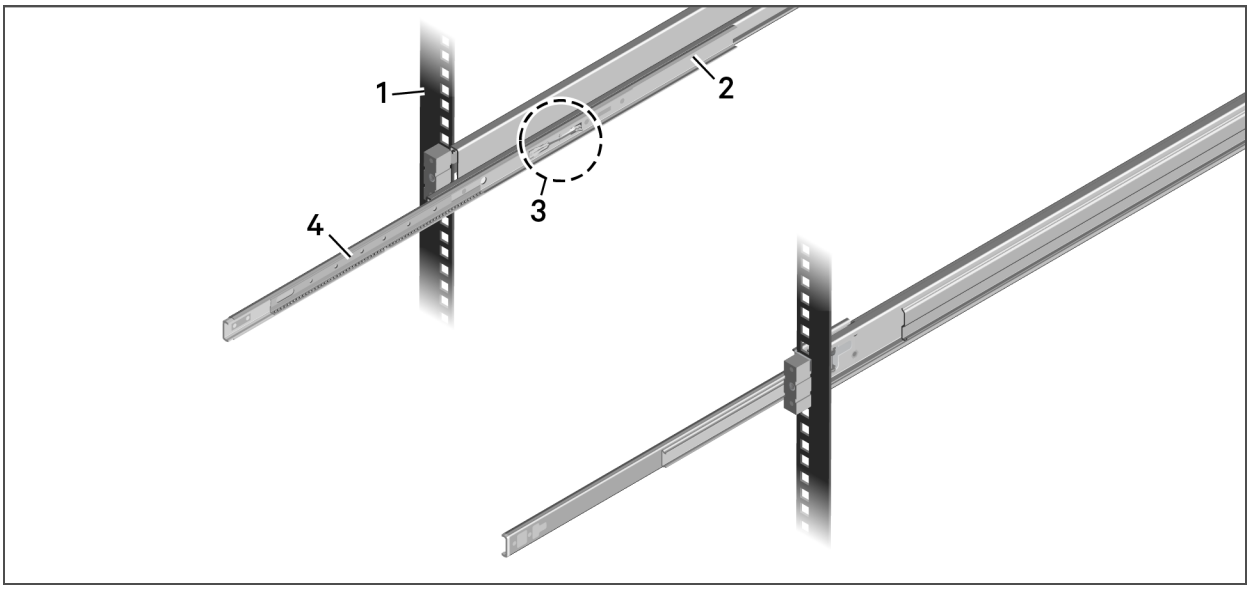


Table 2.3 Inner and Outer Slider Components

ITEM	DESCRIPTION
1	Rack
2	Rack slide rail
3	Outer slide rail latch release
4	Outer slide rail

To lock the fully extended outer slide rail:

Press the outer slide rail latch release.

To attach the end caps to the front rail ends:

NOTE: The end caps can be installed at any time during the assembly of the console.

CAUTION: The center pin of the cap is off-center. The cap may need to be rotated 180° to achieve proper alignment.

1. Loosely insert the end cap's center pin into the center hole of the rail end.

NOTE: Do not seat the cap. Determine if the sides of the cap will be flush with sides of the rail end before the final seating of the cap. It may be necessary to rotate the cap 180° to achieve proper alignment.

2. Once aligned, seat the cap by pushing.
3. Align the end cap cover and push it to engage the internal clips.
4. Repeat for the second end cap.

Figure 2.4 Installing the Rail End Cap and Cover

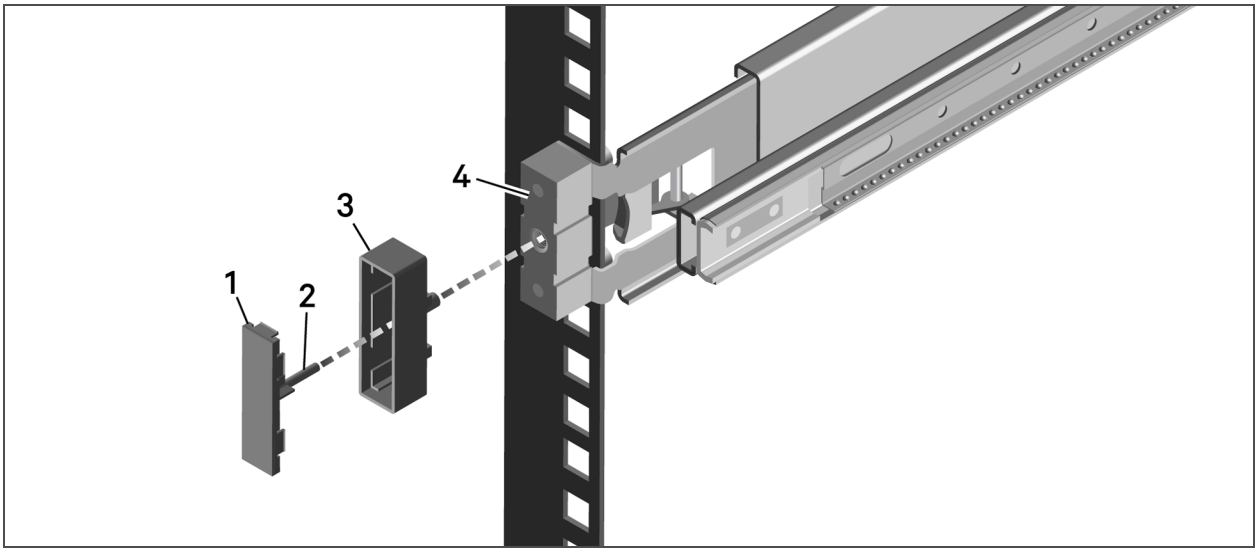


Table 2.4 Slide Rail Assembly Installation

ITEM	DESCRIPTION
1	End Cap Cover
2	End Cap Cover Post
3	End Cap
4	End of Rail

2.2 Installing the KMMLED156 Console Tray Assembly

Your slide tray comes pre-assembled with the KMMLED156 console tray and USB keyboard.

CAUTION: Failure to secure the ball-bearing race prior to installing the slide tray can cause damage to the slide rail assembly. To avoid damage to the ball-bearing race, pull the outer slide member and the bearing sleeve fully forward prior to installing the slide tray assembly.

Figure 2.5 Ball-Bearing Race and Clip Components

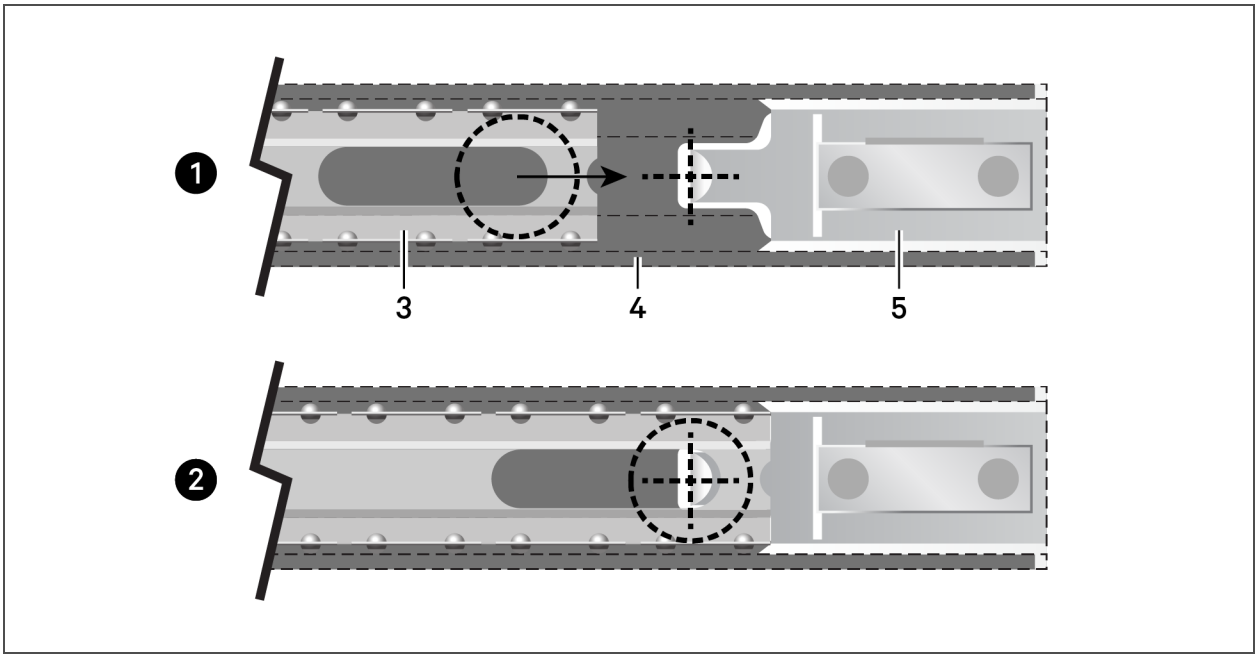


Table 2.5 Ball-Bearing Race and Clip Components

ITEM	DESCRIPTION
1	Inner bearing race disengaged from bearing race clip
2	Inner bearing race engaged with bearing race clip
3	Inner bearing race
4	Bearing sleeve
5	Bearing race clip

To install the KMMLED156 assembly:

1. Extend the left and right outer slide rails until the outer slide latch engages.
2. Verify the ball-bearing races are secure (in the fully forward position).
3. Align and couple the ends of the inner and outer slide rails. The rails must be properly nested before continuing. If necessary, decouple and reposition the slide rails to achieve correct alignment.
4. Push the aligned slide tray until fully inserted into the rack.
5. Fully extend and retract the slide tray at least once to ensure all components are properly seated.

Figure 2.6 KMMLED156 Console Tray Assembly Installation

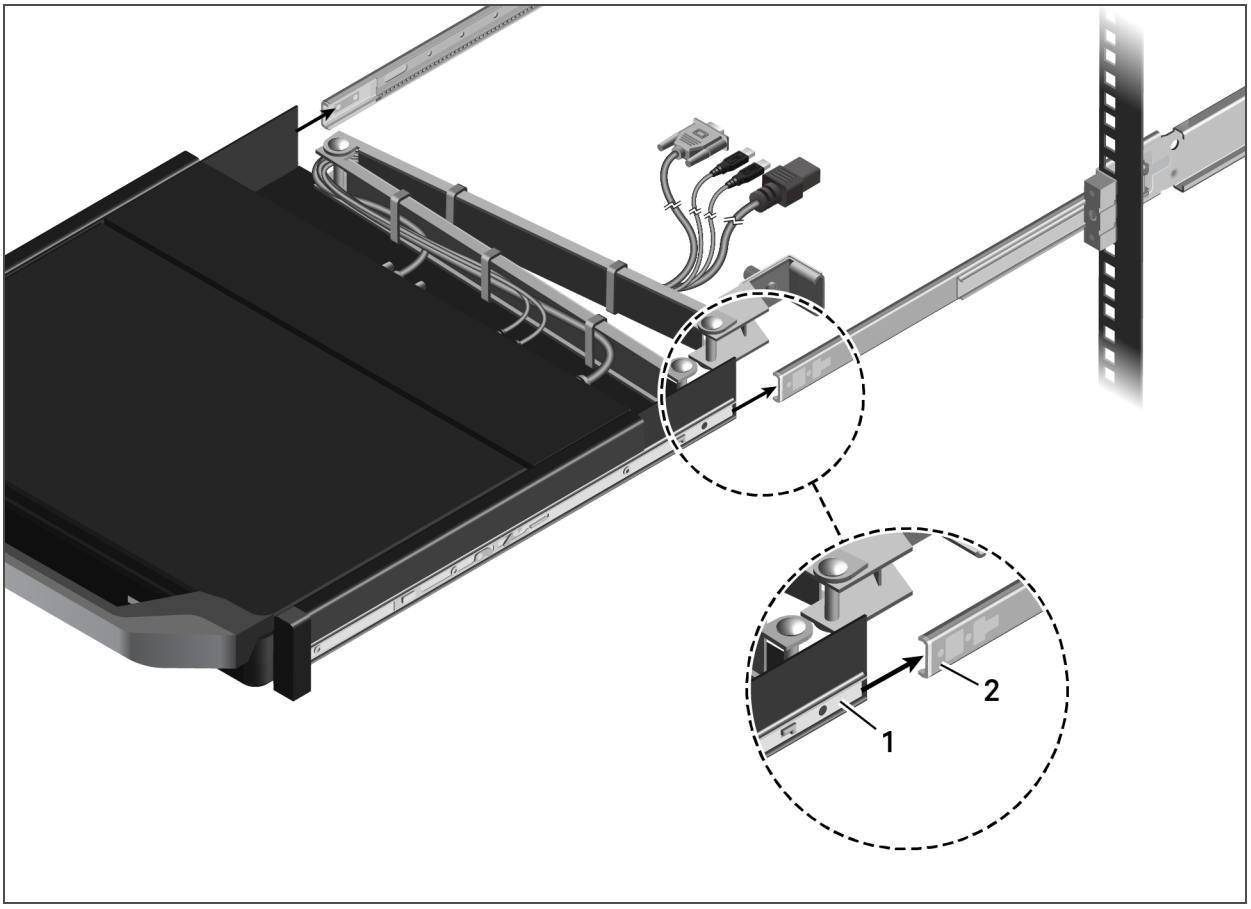


Table 2.6 KMMLED156 Console Tray Assembly Installation

ITEM	DESCRIPTION
1	Inner slide rail
2	Outer slide rail

2.3 Securing the Cable Management Arm (CMA)

After the slide tray is mounted in the rack, you can secure the Cable Management Arm to the slide rail assembly bracket.

To secure the CMA and cables to the slide rail assembly bracket:

1. Slide the CMA latch over the CMA attachment flange.
2. Secure the CMA latch to the CMA attachment flange with the thumbscrew.

NOTE: In tightly-spaced racks, a Phillips® head screwdriver can be used to tighten the thumbscrew.

3. Gently thread the cables through the cable channel on the CMA and use a zip tie to secure the cables to the rear bracket.

Figure 2.7 Securing the CMA

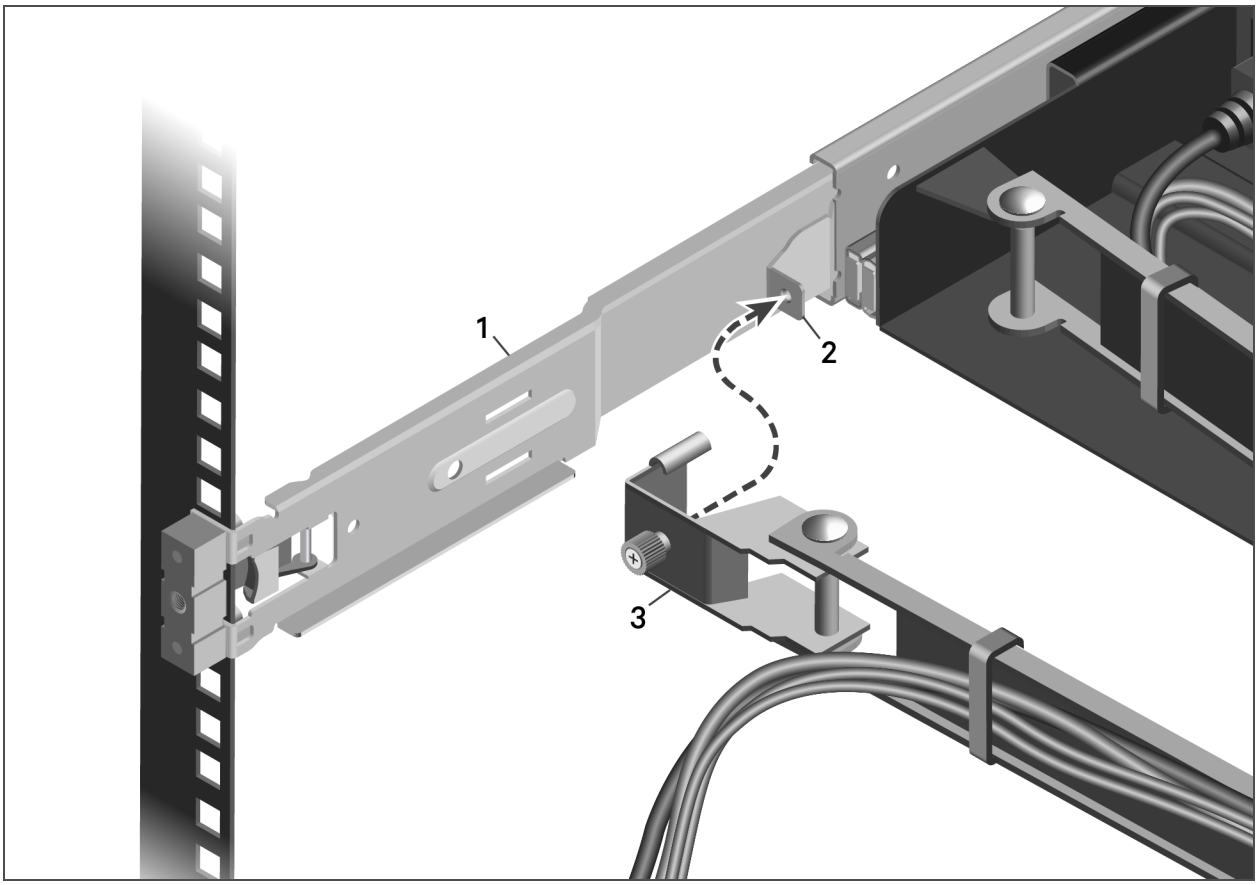
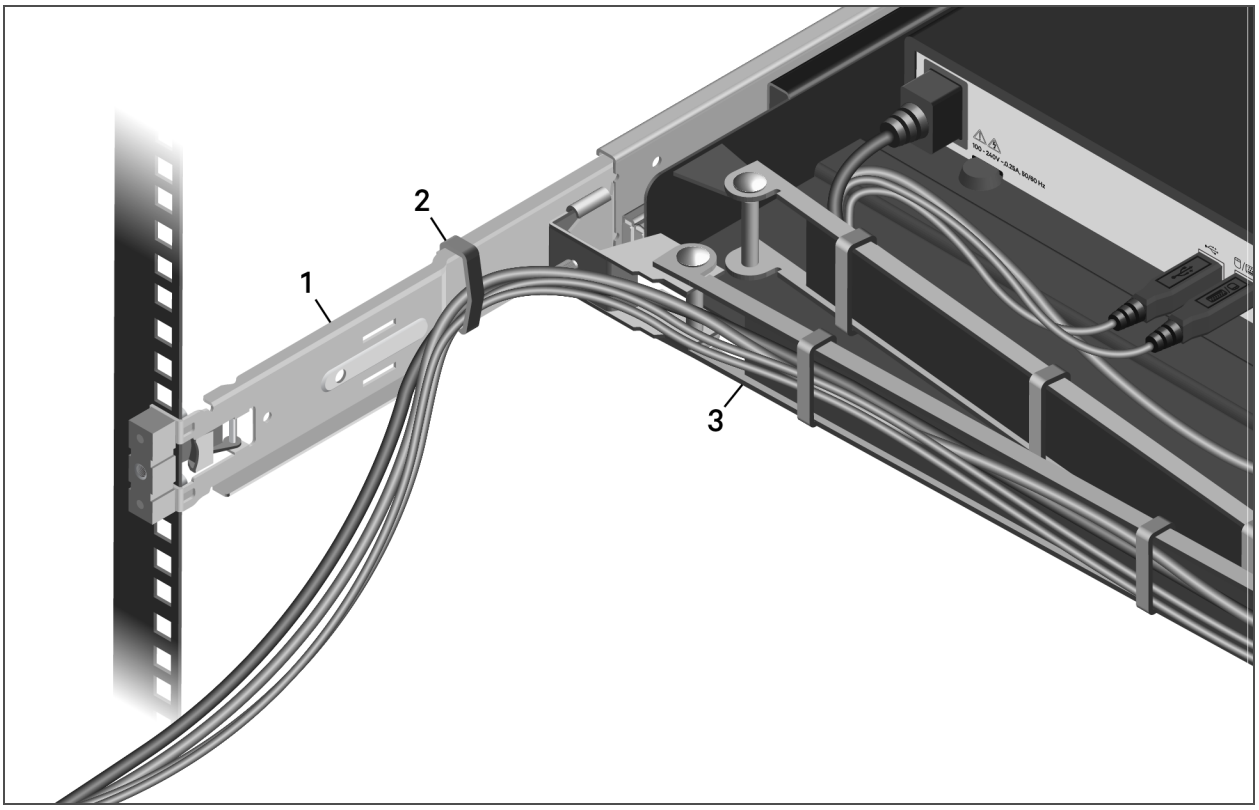


Table 2.7 Cable Management Arm Descriptions

ITEM	DESCRIPTION
1	Slide rail assembly
2	CMA attachment flange
3	CMA latch (with thumbscrew)

Figure 2.8 Securing the Cables to the Rear Bracket



2.4 Connecting the KMMLED156 Assembly

After the KMMLED156 assembly is installed in the slide rails, you can connect the target and power cables to the console.

To connect the KMMLED156 assembly:

1. Connect the video and USB connectors to the target device.
2. Connect the power cord to a properly grounded electrical outlet or power distribution unit (PDU).
3. (Optional) Bundle excess cables into a figure-eight loop and secure with a cable strap.

NOTE: Do not coil the cables. To minimize electrical interference from the video cable, arrange the cable in figure-eight loops.

Figure 2.9 KMMLED156 Assembly Connections

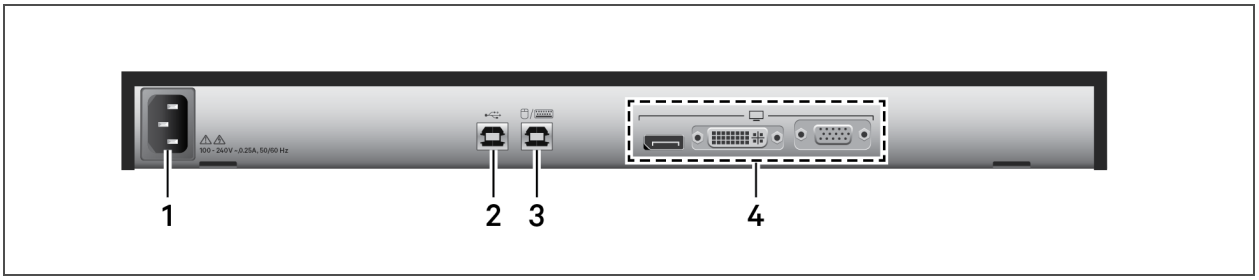


Table 2.8 KMMLED156 Assembly Connections

ITEM	CONNECTIONS
1	AC Power
2	Passthough USB
3	Keyboard and mouse USB
4	DisplayPort, DVI and VGA input cable connections (left to right)

This page intentionally left blank

3 OPERATING THE CONSOLE

The flat-panel On-Screen Display (OSD) is configured using the icons on the upper right corner of your keyboard. These navigation icons are defined in the following table.

Figure 3.1 OSD Menu

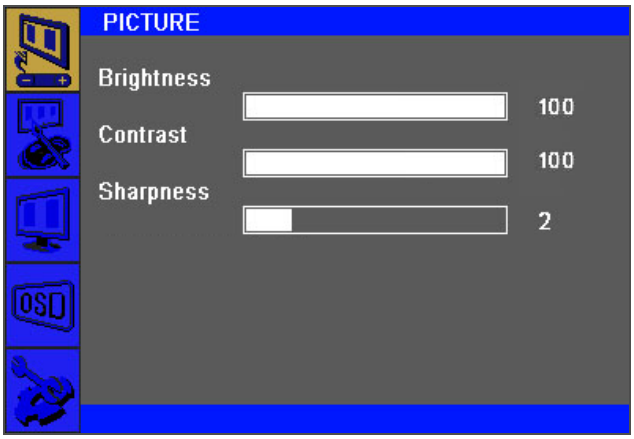


Table 3.1 Keyboard Icon Functions to Navigate and Configure the OSD

ICON	NAME	FUNCTION
	Power/LED (Status)	Illuminated: On Not Illuminated: Off Blink: No video signal detected
	MENU	Displays/enables the menus, submenus and configuration categories.
	SELECT	After tapping the Power icon, tap the Select icon and tap the Up or Down icon to select the video source. The source options are Auto, RGB (VGA), DP and DVI.
	UP	Cycles up through the four or five tab options; the Menu icon must be tapped to select a submenu function.
	DOWN	Cycles down through the four or five tab options; the Menu icon must be tapped to select a submenu function.

* No on-screen display window.

3.1 Using the OSD Menus and Submenus

The following is an example procedure. If you change the settings and then proceed to another menu or exit the OSD menu, the changes are automatically saved.

To configure the OSD:

1. Tap the Menu icon to access the on-screen display.
2. Tap the Menu icon to access the Main Menu (Picture, Color, Screen [VGA only], OSD and SETUP).
3. Tap the Menu icon again to select the Main Menu Picture icon and move the cursor to the submenu (Brightness).

   -or-

   Tap the Up or Down icon to select another Main Menu icon.
4. Tap the Up or Down icon to select the submenu item and tap the Select icon to select the value.

3.2 OSD Menu Options

Configuration options are listed in the following table.

Table 3.2 OSD Configuration Options

MAIN MENU	SUB MENU	VALUES
Picture	Brightness	100 (0~100)
	Contrast	100 (0~100)
	Sharpness	2 (0 ~ 4)
Color	Color Status Management	User (Custom Values), Warm, Normal, Cool
	Red	50 (0~100)*
	Green	50 (0~100)*
	Blue	45 (0~100)*
	Auto Color	To Start*
Screen (VGA only)	Auto Configure - Auto Adjust screen	Resets all VGA settings to factory defaults; screen is black for a few seconds and returns with the factory VGA defaults
	H Position (Horizontal)	50 (0~100)*
	V Position (Vertical)	50 (0~100)*
	Clock	50 (0~100)*
	Phase	42 (0~100)*
	WXGA Mode	(1366 x 768, 1360 x 768, 1024 x 768)*, OFF (Default)
OSD	H Position	50 (0~100)
	V Position	50 (0~100)
	Transparency	2 (0~7)
	Osd Time	10 (0~60)

Table 3.2 OSD Configuration Options (continued)

MAIN MENU	SUB MENU	VALUES
SETUP	Source	Auto, RGB (Red, Green, Blue/VGA), DP (DisplayPort), DVI (Digital Video Input)
	Factory reset	To Start - Resets everything to factory defaults; screen is black for a few seconds and returns with the factory defaults
	Aspect Ratio	16:9 (Native default)
		4:3
* PC only.		

NOTE: The selected OSD configuration is stored in memory. The OSD configuration menu is automatically cleared after a few seconds of non-use.

This page intentionally left blank

4 APPENDICES

Appendix A: Technical Specifications

Table A.1 Technical Specifications

CATEGORY	VALUE		
LCD Panel			
Size	15.6-inch diagonal		
Type	TFT active matrix		
Pixel pitch (horizontal x vertical)	.017925 mm x .017925 mm		
Characteristics			
Brightness	220 cd /m2 (Typical)		
Display color	262,144 million colors		
Aspect ratio	16:9 (Native default) or 4:3		
Resolution options	640 x 480 at 60 Hz 800 x 600 at 56 Hz 800 x 600 at 60 Hz 1024 x 768 at 60 Hz 1152 x 864 at 60 Hz	1280 x 720 at 60 Hz 1280 x 800 at 60 Hz 1280 x 960 at 60 Hz 1280 x 1024 at 60 Hz 1366 x 768 at 60 Hz	1440 x 900 at 60 Hz 1600 x 1200 at 60 Hz 1680 x 1050 at 60 Hz 1920 x 1080 at 60 Hz
Optimum mode/Maximum mode	1920 x 1080 at 60 Hz		
Connector	VGA, DisplayPort or DVI		
Power Supply	AC 100 - 240 V, 60 Hz - 50 Hz		
Power Consumption			
Standard usage	5 watts		
Maximum usage	<10 watts		
Power supply maximum	15 watts		
Power saving	Less than 1 watt		
Environmental Conditions			
Operating temperature	0°C to 50°C at 50% relative humidity		
	0°C to 45°C at 60% relative humidity		
	0°C to 40°C at 80% relative humidity		
Operating humidity	10% to 80%		
Operating altitude	Maximum 3048 meters		
Storage temperature	20°C to 90°C up to 40°C		
Storage humidity	10% to 90%		

Appendix B: USB 2.0 Speed Chart

Table B.1 USB Maximum Speed Chart

DEVICE/TARGET	USB 1.1 TARGET	USB 2.0 TARGET	USB 3.0 TARGET
USB 1.1 device	12 megabits per second	12 megabits per second	12 megabits per second
USB 2.0 device	12 megabits per second	480 megabits per second	480 megabits per second
USB 3.0 device	12 megabits per second	480 megabits per second	480 megabits per second

Appendix C: KMMLED156 Console Tray Assembly Maintenance

The USB keyboard, KMMLED156 console, slide tray and slide rail assemblies, can be removed and replaced, if necessary. These instructions and video cable replacement instructions are provided in this appendix.

C.1 Replacing the USB keyboard (DKMMLED156)

The keyboard is located by opening the console display. Access to release the keyboard is under the slide tray assembly.

Figure C.1 Keyboard Removal

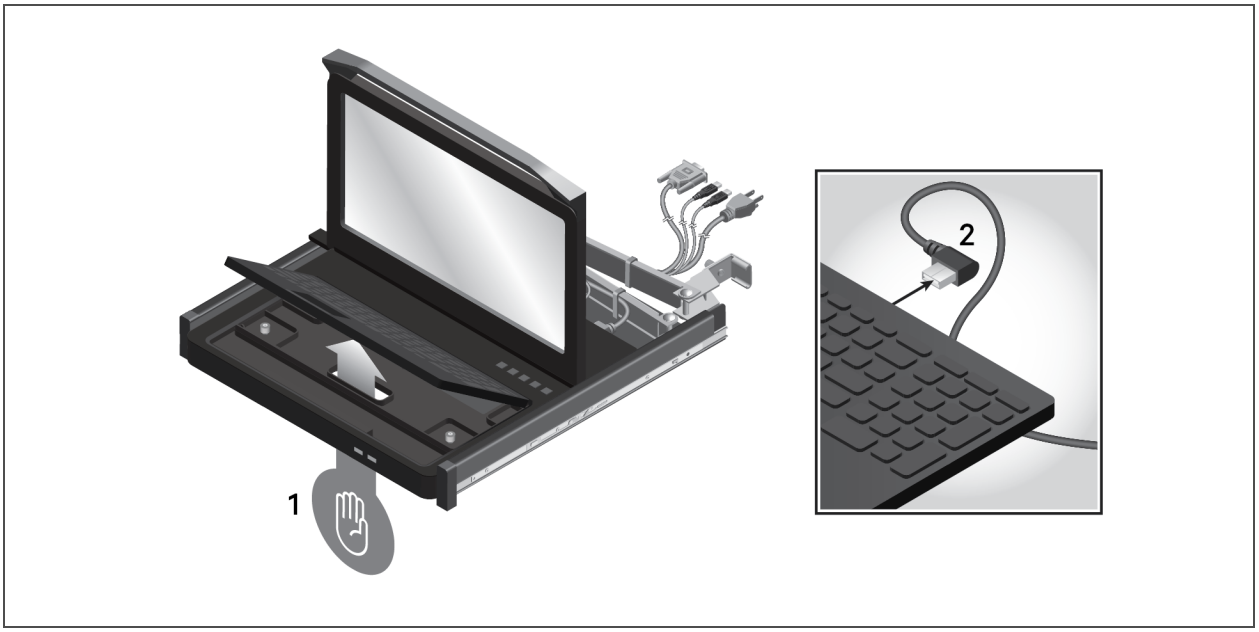


Table C.1 USB Keyboard Tray Access

ITEM	DESCRIPTION
1	USB keyboard access
2	USB connector

To remove the USB keyboard from the KMMLED156 console:

1. Fully extend the KMMLED156 tray forward and open the console display.
2. Find the opening, push up to release it and lift the keyboard from the console tray.
3. Disconnect the keyboard from the attached USB cable.
4. If replacing only the keyboard, proceed to the following keyboard installation procedure.

   -or-

   If replacing the console, tray or rails, proceed to the applicable procedures in this appendix.

To install the USB keyboard into the KMMLED156 console:

1. Connect the USB cable from the keyboard to the console.
2. Angle the rear of the keyboard into the console keyboard tray and push the keyboard into position.

C.2 Replacing the KMMLED156 console in the slide tray

The slide tray assembly is equipped with two positioning tabs that catch and hold the back of the KMMLED156 console. Once in position, the console is further secured onto the slide tray by three thumbscrews located in the keyboard recess.

To remove the KMMLED156 console from the slide tray:

1. Pull the KMMLED156 console tray fully forward (to access the cables attached to the rear of the console) and disconnect the cables.
2. Remove the USB keyboard to access the console thumbscrews. See Replacing the USB keyboard (DKMMLED156) on page 19.
3. Unscrew the three thumbscrews securing the console to the slide tray.
4. Lift the front of the console to tilt it up, and pull the console forward.
5. If replacing only the KMMLED156 assembly, proceed to the following KMMLED156 assembly installation procedure.

   -or-

   If you are replacing the tray or rails, proceed to the applicable procedures in this appendix.

To install the KMMLED156 console on the slide tray:

1. Angle and slide the KMMLED156 console back until the rear of the unit catches the two slide tray positioning tabs.
2. Once these rear tabs are engaged, lower the front of the console to seat it in the tray.
3. Verify the rear of the console is not sitting on top of the positioning tabs.
4. Secure the KMMLED156 console onto the slide tray with three thumbscrews.
5. Go to Installing the KMMLED156 Console Tray Assembly on page 7 to install the console tray onto the rails.

Figure C.2 KMMLED156 Console and USB Keyboard Installation

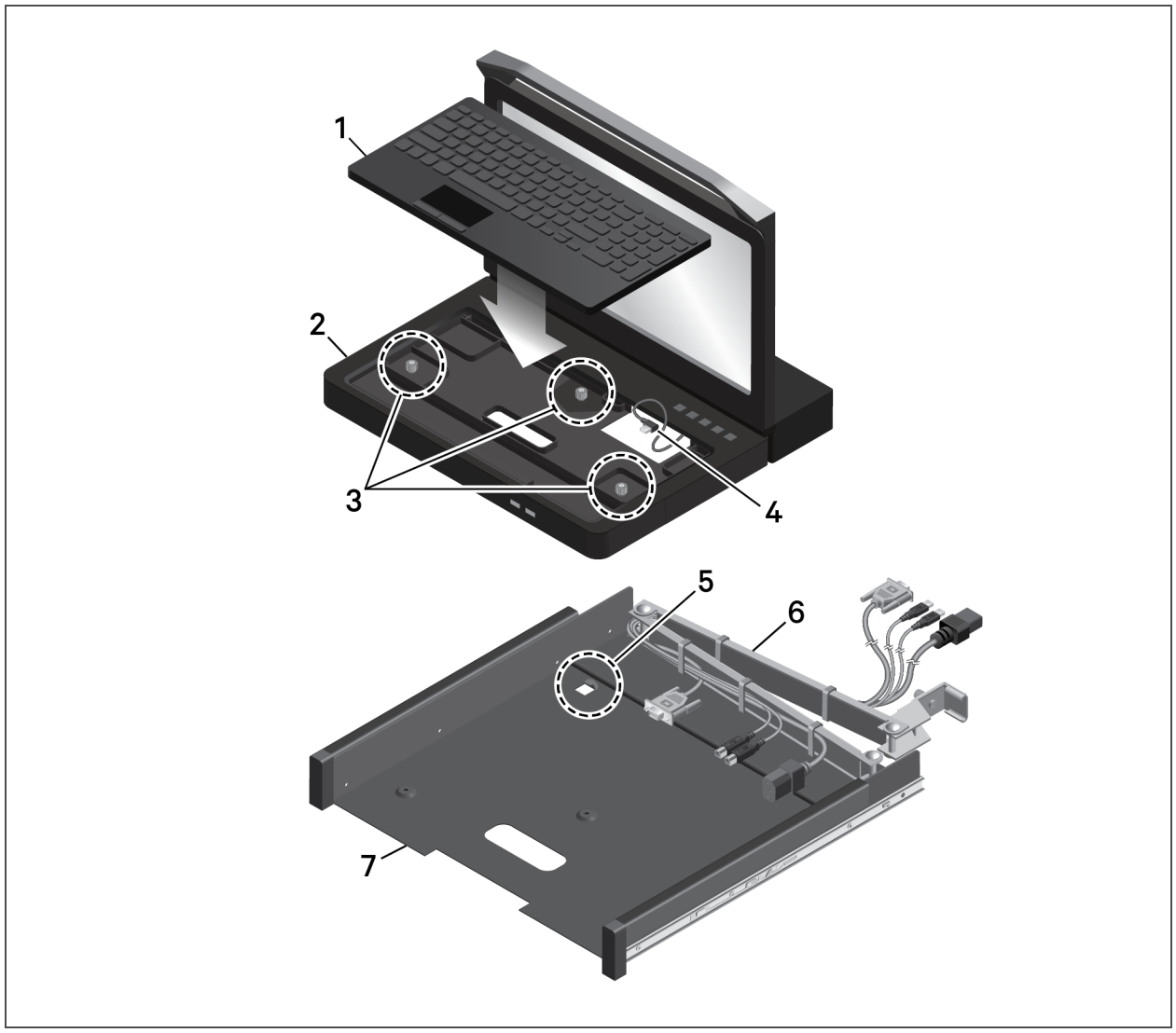


Table C.2 KMMLED156 Console and USB Keyboard Components

ITEM	DESCRIPTION
1	USB keyboard
2	KMMLED156 console
3	Thumbscrews
4	USB connector for keyboard
5	Positioning tabs (2)
6	Cable management arm (CMA)
7	Slide tray

C.3 Replacing the slide tray on the slide rails

The slide rail assembly comprises an inner slide rail and an outer slide rail. An inner slider is mounted on each side of the slide tray and is held in place on the outer slider by a spring latch mechanism. You can release the spring latch to remove the slide tray from the slide rail assemblies by disengaging the release leaver on the inner slider.

Figure C.3 KMMLED156 Slide Tray Removal

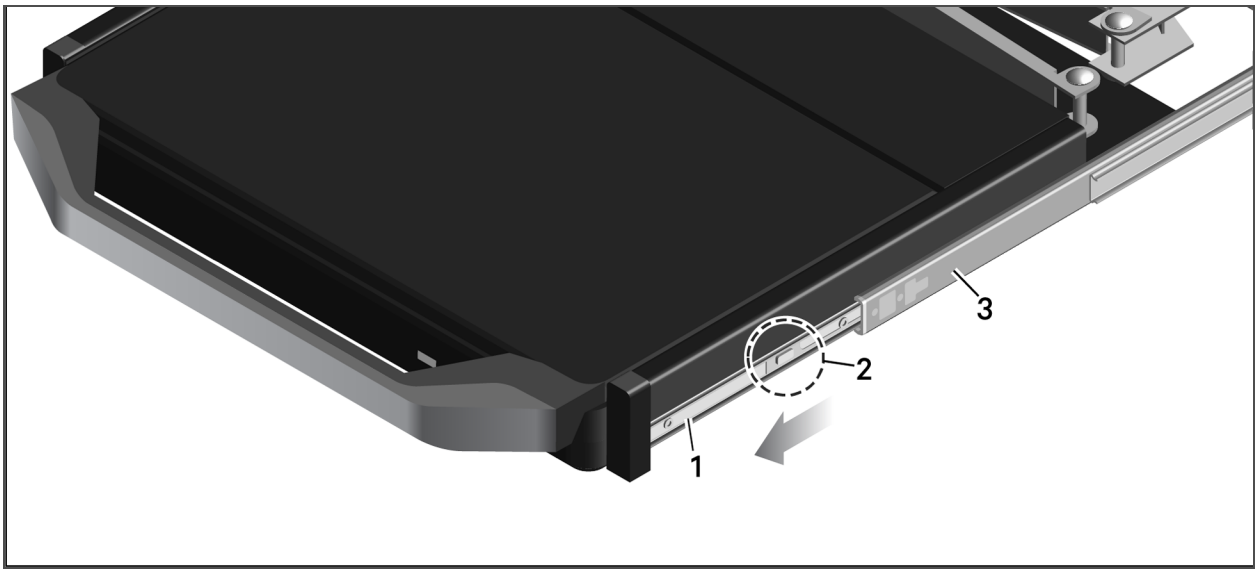


Table C.3 Inner and Outer Slider Disengagement

ITEM	DESCRIPTION
1	Inner slide rail
2	Inner slide release leaver
3	Outer slide rail

To remove the slide tray assembly:

1. Locate all cables extending from the CMA to external devices and power sources and disconnect them. Ensure these cables are gathered or arranged to not interfere with the extraction of the slide tray from the rack mount space.
2. Disengage the CMA latch and thumbscrew from the CMA attachment flange.
3. Collapse the CMA at the rear of the slide tray.
4. Fully extend the slide tray forward to expose the inner slide release leaver.
5. Actuate both left and right inner slide release leavers and pull the slide tray forward.

NOTE: Keep the slide tray parallel until the inner slide rails have disengaged from the outer slide rails.

6. If replacing only the slide tray assembly, go to Installing the KMMLED156 Console Tray Assembly on page 7.

   -or-

   If you are replacing the rails, proceed to the applicable procedure in this appendix.

C.4 Replacing the slide rail assemblies

To remove the rail assemblies from the rack:

1. Locate the forward release tab and pull to disengage the lock while moving the slide rail positioning pins away from the rack post.
2. Once the forward end of the slide rail is clear of the rack post, repeat step 1 for the aft section of the slide rail. (See Slide Rail Assembly Components on page 4 for component details.)
3. Remove the disengaged slide assembly from the rack enclosure.
4. Repeat steps 1 to 3 to remove the slide rail assembly from the opposite side of the rack enclosure.

The replacement rail kit (DRMK-82) must be installed prior to installing the KMMLED156 assembly. To install the slide rail assemblies, see Installing the Slide Rails in a Standard EIA Rack on page 3.

C.5 Replacing the video cable

If your video source is DisplayPort or DVI, replace the VGA cable before you install the KMMLED156 console, keyboard and tray assembly into the rack slide rails. The DisplayPort or DVI cable is installed using the CMA in the same manner as with the VGA cable. See Securing the Cable Management Arm (CMA) on page 8.

NOTE: Make sure to install the video cable with the CMA fully extended. This ensures there is enough length for CMA movement.

Appendix D: Vertiv™ KVM Switch Bracket Kit (DRMK-81)

The 1U rack mount KMMLED156 assembly enables you to mount a KVM switch behind the KMMLED156 assemblyin the same 1U space.

NOTE: The minimum EIA flange spacing for the console tray and console switch is 450 mm.

Figure D.1 KVM Switch Installation

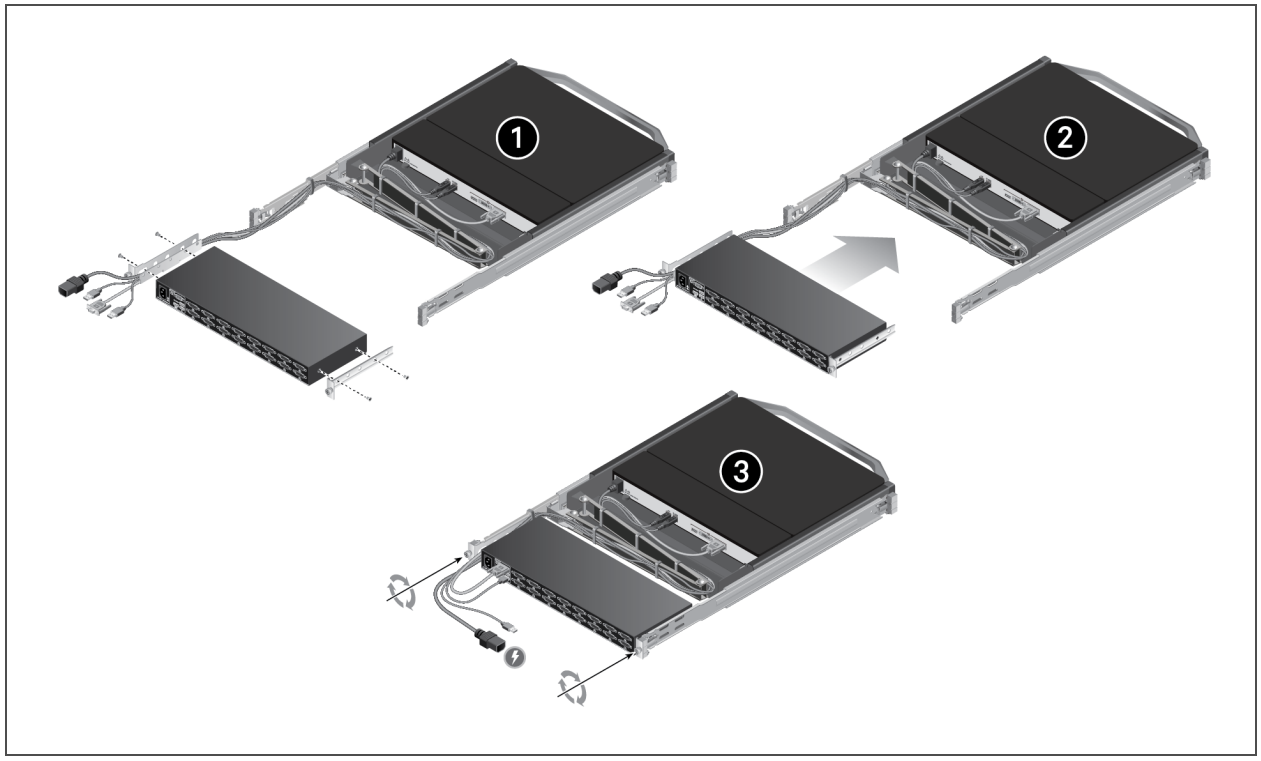


Table D.1 KVM Switch Installation

ITEM	DESCRIPTION
1	Securing the kit brackets to the KVM switch
2	Aligning the brackets with the brackets in the rack
3	Sliding the KVM switch towards the console tray

To attach the mounting brackets and install your KVM switch:

1. Remove any brackets and standoffs that shipped with the KVM switch.
2. Using the four screws provided in the DRMK-81 kit, attach a bracket from the kit to each side of the KVM switch.
3. Route the provided cables through the cable channel on the side of the switch.
4. From the back of the rack, push the KVM switch in behind the KMMLED156 assembly and secure the switch with the supplied thumbscrews.
5. Connect the switch to the console tray and connect any servers or target devices to the switch. See Connecting the KMMLED156 Assembly on page 10.

Vertiv.com | Vertiv Headquarters, 1050 Dearborn Drive, Columbus, OH, 43085, USA

© 2020 Vertiv Group Corp. All rights reserved. Vertiv™ and the Vertiv logo are trademarks or registered trademarks of Vertiv Group Corp. All other names and logos referred to are trade names, trademarks or registered trademarks of their respective owners. While every precaution has been taken to ensure accuracy and completeness here, Vertiv Group Corp. assumes no responsibility, and disclaims all liability, for damages resulting from use of this information or for any errors or omissions. Specifications, rebates and other promotional offers are subject to change at Vertiv's sole discretion upon notice

59E-2131-501D