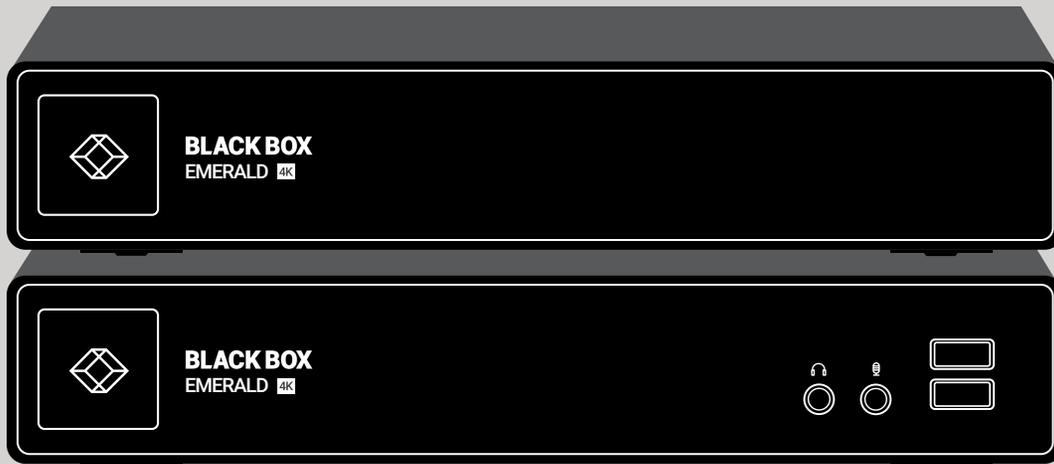


DATA SHEET

EMD SERIES

EMERALD UNIFIED KVM FAMILY

24/7 TECHNICAL SUPPORT AT 877.877.2269 OR VISIT BLACKBOX.COM



BLACK BOX  **X**[®]

OVERVIEW

EMERALD UNIFIED KVM FAMILY DATA SHEET

INTRODUCTION

Emerald High-Performance KVM provides KVM over an existing or dedicated IP network. Extension and switching of 4K video and HD video, along with direct access to Virtual machines from all of our 4K and HD receivers ensures a future-proof system. Transmitters, receivers and Ethernet switches are available.

- EMERALD DESKVUE (EMD5004-R* or EMD5104-R)
- EMERALD 4K SINGLE-HEAD TRANSMITTER (EMD4000T) AND RECEIVER (EMD4000R)
- EMERALD PE SINGLE-HEAD TRANSMITTER (EMD2000PE-T*) AND RECEIVER (EMD2000PE-R* OR EMD2000PE-R-P)
- EMERALD PE DUAL-HEAD TRANSMITTER (EMD2002PE-T*) AND RECEIVER (EMD2002PE-R* or EMD2002PE-R-P)
- EMERALD PE SINGLE-HEAD TRANSMITTER (EMD2000PE-T-R2)
- EMERALD PE DUAL-HEAD TRANSMITTER (EMD2002PE-T-R2)
- EMERALD PE DP SINGLE-HEAD TRANSMITTER (EMD2000PE-DP-T)
- EMERALD PE DP DUAL-HEAD TRANSMITTER (EMD2002PE-DP-T)
- EMERALD SE SINGLE-HEAD TRANSMITTER (EMD2000SE-T*) AND RECEIVER (EMD2000SE-R)
- EMERALD SE DUAL-HEAD TRANSMITTER (EMD2002SE-T*) AND RECEIVER (EMD2002SE-R)
- EMERALD SE SINGLE-HEAD TRANSMITTER (EMD2000SE-T-R2)
- EMERALD SE DP SINGLE-HEAD TRANSMITTER (EMD2000SE-DP-T)
- EMERALD SE DP DUAL-HEAD TRANSMITTER (EMD2002SE-DP-T)
- EMERALD ZEROU DVI TRANSMITTER (EMD200DV-T)
- EMERALD ZEROU DISPLAYPORT TRANSMITTER (EMD200DP-T)
- EMERALD REMOTE APP SOFTWARE (RECEIVER) (EMDRM)
- 1G 48-PORT NETWORK SWITCH (EMS1G48)
- 1G 24-PORT NETWORK SWITCH (EMS1G24F)
- 10G 12-PORT NETWORK SWITCH (EMS10G12)
- 10G 28-PORT NETWORK SWITCH (EMS10G28)
- 100G 32-PORT NETWORK SWITCH (EMS100G32)

* EOL (only referenced for technical reasons)

FEATURES

- 4K VIDEO, COLOR @ 60 HZ (MODEL DEPENDENT)
- PIXEL PERFECT VIDEO—MATHEMATICALLY LOSSLESS
- ACCESS TO VIRTUAL MACHINES USING RDP/REMOTEFX AND PCOIP SUPPORTING MICROSOFT®, VMWARE® AND CITRIX®
- 4K AND PE VERSIONS HAVE DUAL NETWORK OPTION FOR REDUNDANCY
- SELECT PE VERSIONS SUPPORT POWER-OVER-ETHERNET (POE) OR POWER VIA AN EXTERNAL PSU
- PE VERSION HAS DUAL NETWORK INTERFACES – (1) 1GBASE-T AND SFP
- ACCESS RESOURCES ANYWHERE VIA WAN
- CENTRALIZED MANAGEMENT, ACCESS CONTROL, MONITORING AND UPGRADES
- OPTION TO USE EXISTING NETWORK INFRASTRUCTURE
- CHOOSE COPPER OR FIBER CONNECTIONS
- TRANSPARENT USB 2.0 – CONNECT MOST USB DEVICES
- SUPPORT AUDIO OVER DISPLAYPORT, USB AND ANALOG
- ZEROU TRANSMITTER HAS A SMALL FORM FACTOR SO IT USES ZERO RACKSPACE—YOU SAVE MONEY WHEN RACK SPACE IS EXPENSIVE
- ZEROU DVI OR DISPLAYPORT TRANSMITTER IS POWERED OVER USB OR VIA A SEPARATE POWER SUPPLY
- ZEROU DISPLAYPORT TRANSMITTER SUPPORTS EMBEDDED AUDIO
- SUPPORTS INTEROPERABILITY AMONG ALL EMERALD DEVICES



OVERVIEW

SPECIFICATION COMPARISON CHART: TRANSMITTERS AND RECEIVERS								
	# OF VIDEO HEADS	USB PORTS	NETWORK	POE	SERIAL	AUDIO	SFP+	RESOLUTION
RECEIVERS								
DESKVUE (EMD5104-R)	(4) DP	(4) USB TYPE A	(2) RJ-45	NO	NONE	(2) 3.5 mm	NONE	4096 x 2160 (5K:5120 x 2880)
DESKVUE (EMD5004-R*)	(3) HDMI, (1) DP	(4) USB TYPE A	(2) RJ-45	NO	NONE	(1) 3.5 mm	NONE	3840x2160 (HDMI); 5120x1440 (DP)
EMD3000GE	Headless	(4) USB TYPE A (not used)	(2) RJ-45	NO	NONE	(1) 3.5 mm (not used)	NONE	Headless
SE RECEIVER, SINGLE-HEAD (EMD2000SE-R)	(1) DVI	(4) USB TYPE A	(1) RJ-45	NO	(1) DB9	(2) 3.5 mm	NONE	1920 x 1200
SE RECEIVER, DUAL-HEAD (EMD2002SE-R)	(2) DVI	(4) USB TYPE A	(1) RJ-45	NO	NONE	(2) 3.5 mm	NONE	1920 x 1200
PE RECEIVER, SINGLE-HEAD (EMD2000PE-R*)	(1) DVI	(4) USB TYPE A	(1) RJ-45, (1) SFP	NO	NONE	(2) 3.5 mm	NONE	1920 x 1200
PE RECEIVER, DUAL-HEAD (EMD2002PE-R)	(2) DVI	(4) USB TYPE A	(1) RJ-45, (1) SFP	NO	NONE	(2) 3.5 mm	NONE	1920 x 1200
PE POE RECEIVER, SINGLE-HEAD (EMD2000PE-R-P)	(1) DVI	(4) USB TYPE A	(1) RJ-45, (1) SFP	YES	NONE	(2) 3.5 mm	NONE	1920 x 1200
PE POE RECEIVER, DUAL-HEAD (EMD2002PE-R-P)	(2) DVI	(4) USB TYPE A	(1) RJ-45, (1) SFP	YES	NONE	(2) 3.5 mm	NONE	1920 x 1200
DISPLAYPORT SE RECEIVER, SINGLE-HEAD (EMD2000SE-DP-R)	(1) DISPLAYPORT™	(4) USB TYPE A	(1) RJ-45	NO	NONE	(1) 3.5 mm	NONE	1920 x 1200
DISPLAYPORT SE RECEIVER, DUAL-HEAD (EMD2002SE-DP-R)	(2) DISPLAYPORT	(4) USB TYPE A	(1) RJ-45	NO	NONE	(1) 3.5 mm	NONE	1920 x 1200
DISPLAYPORT PE RECEIVER, SINGLE-HEAD(EMD2000PE-DP-R)	(1) DISPLAYPORT	(4) USB TYPE A	(1) RJ-45, (1) SFP	NO	NONE	(1) 3.5 mm	NONE	1920 x 1200
DISPLAYPORT PE RECEIVER, DUAL-HEAD (EMD2002PE-DP-R)	(2) DISPLAYPORT	(4) USB TYPE A	(1) RJ-45, (1) SFP	NO	NONE	(1) 3.5 mm	NONE	1920 x 1200
4K RECEIVER (EMD4000R)	(1) DISPLAYPORT	(4) USB TYPE A	(1) RJ-45*	NO	NONE	(2) 3.5 mm	(2)	4096 x 2160
TRANSMITTERS								
SE TRANSMITTER, SINGLE-HEAD (EMD2000SE-T) ³	(1) DVI	(1) USB TYPE B	(1) RJ-45	NO	(1) RJ-45	(2) 3.5 mm	NONE	1920 x 1200
SE TRANSMITTER, DUAL-HEAD (EMD2002SE-T*)	(2) DVI	(1) USB TYPE B	(1) RJ-45	NO	NONE	(2) 3.5 mm	NONE	1920 x 1200
SE TRANSMITTER, SINGLE-HEAD (EMD2000SE-T-R2)	(1) DVI	(1) USB TYPE B	(1) RJ-45	NO	NONE	(1) 3.5 mm	NONE	1920 x 1080
PE TRANSMITTER, SINGLE-HEAD (EMD2000PE-T) ¹	(1) DVI	(1) USB TYPE B	(1) RJ-45, (1) SFP	NO	NONE	(2) 3.5 mm	NONE	1920 x 1200
PE TRANSMITTER, SINGLE-HEAD (EMD2000PE-T-P)	(1) DVI	(1) USB TYPE B	(1) RJ-45, (1) SFP	YES	NONE	(1) 3.5 mm	NONE	1920 x 1200
PE TRANSMITTER, SINGLE-HEAD (EMD2000PE-T-R2)	(1) DVI	(1) USB TYPE B	(1) RJ-45, (1) SFP	NO	NONE	(1) 3.5 mm	NONE	1920 x 1200
PE TRANSMITTER, DUAL-HEAD (EMD2002PE-T-R2)	(2) DVI	(1) USB TYPE B	(1) RJ-45, (1) SFP	NO	NONE	(1) 3.5 mm	NONE	1920 x 1200
PE TRANSMITTER, DUAL-HEAD (EMD2002PE-T) ²	(2) DVI	(1) USB TYPE B	(1) RJ-45, (1) SFP	NO	NONE	(2) 3.5 mm	NONE	1920 x 1200
PE TRANSMITTER, DUAL-HEAD (EMD2002PE-T-P)	(2) DVI	(1) USB TYPE B	(1) RJ-45, (1) SFP	YES	NONE	(1) 3.5 mm	NONE	1920 x 1200
ZEROU DVI TRANSMITTER (EMD200DV-T)	(1) DVI	(1) USB HID, (1) USB HD for power only	(1) RJ-45	NO	NONE	(1) 3.5 mm	NONE	1920 x 1200
ZEROU DISPLAYPORT TRANSMITTER (EMD200DP-T)	(1) DISPLAYPORT	(1) USB HID, (1) USB HD for power only	(1) RJ-45	NO	NONE	embedded audio on DP	NONE	1920 x 1200
PE DP TRANSMITTER, SINGLE- HEAD (EMD2000PE-DP-T)	(1) DISPLAYPORT	(1) USB TYPE B	(1) RJ-45, (1) SFP	NO	NONE	(1) 3.5 mm and embedded audio on DP	NONE	1920 x 1200
SE DP TRANSMITTER, SINGLE- HEAD (EMD2000SE-DP-T)	(1) DISPLAYPORT	(1) USB TYPE B	(1) RJ-45	NO	(1) RJ-45	(1) 3.5 mm and embedded audio on DP	NONE	1920 x 1200



SPECIFICATION COMPARISON CHART: TRANSMITTERS AND RECEIVERS (CONTINUED)

	# OF VIDEO HEADS	USB PORTS	NETWORK	POE	SERIAL	AUDIO	SFP+	RESOLUTION
PE DP TRANSMITTER, DUAL-HEAD (EMD2002PE-DP-T)	(2) DISPLAYPORT	(1) USB TYPE B	(1) RJ-45, (1) SFP	NO	NONE	(1) 3.5 mm and embedded audio on DP	NONE	1920 x 1200
SE DP TRANSMITTER, DUAL-HEAD (EMD2002SE-DP-T)	(2) DISPLAYPORT	(1) USB TYPE B	(1) RJ-45	NO	NONE	(1) 3.5 mm and embedded audio on DP	NONE	1920 x 1200
4K TRANSMITTER (EMD4000T)	(1) DISPLAYPORT	(1) USB TYPE B	(1) RJ-45*	NO	NONE	(2) 3.5 mm	(2)	4096 x 2160

* EOL

¹ EMD5004-R is EOL (replaced by EMD5104-R).

² EMD2000PE-T is EOL (replaced by EMD2000PE-TR2).

³ EMD2002PE-T is EOL (replaced by EMD2002PE-TR2).

⁴ EMD2000SE-T is EOL (replaced by EMD2000SE-TR2).

⁵ EMD2002SE-T is EOL (replaced by EMD2002PE-TR2).

NOTE: The products listed above cover commercially available options and do not include client-specific part numbers.

COMPARISON CHART: SWITCHES

SPECIFICATION COMPARISON CHART: SWITCHES

NETWORK SWITCHES	SPEED	PORTS	CASCADE PORTS	CAPACITY	MAC ADDRESSES	CPU MEMORY	BUFFER
EMS1G24F	1G	(24) 1G SFP	(2) 10G SFP+	212 GBPS	56 K	2 GB	4 MB
EMS1G48*	1G	(48) 10/100/1000BT RJ-45	(4) 10G SFP+	260 GBPS	UP TO 80 K	2 GB	4 MB
EMS10G12	10G	(12) 10GbE SFP+	(3) 100G QSFP28	840 GBPS	272 K	4 GB	12 MB
EMS10G28	10G	(28) 10GbE SFP+	(2) 100G QSFP28	960 GBPS	272 K	4 GB	12 MB
EMS100G32-R2	100G	(32) 100G QSFP28	—	6.4 TBPS	136 K	8 GB	16 MB

* EOL

¹ EMS1G48 is EOL.

COMPATIBLE SFPS

COMPATIBLE SFPS

PART NUMBER	DESCRIPTION	DISTANCE
1-GBPS CONNECTIONS		
LFP441	SFP, Gigabit Ethernet, 850 nm Multimode Fiber, LC	550 m
LFP442	SFP, Gigabit Ethernet, 1310 nm Single-mode Fiber, LC	20 km
LFP443	SFP, 10/100/1000BASE-T RJ-45 SGMII	100 m
10 GBPS CONNECTIONS		
LSP441	SFP+ - 10-Gb, Extended Diagnostics, 850 nm Multimode Fiber, LC	300 m
LSP442	SFP+ - 10-Gb, Extended Diagnostics, 1310 nm Single-mode Fiber, LC	10 km
LSP443	SFP+, 10GBASE-T, RJ-45	30 m
40 GBPS CONNECTIONS		
QSFP541*	QSFP+ Transceiver – 40GBASE-SR4, Multimode Fiber, 850 nm	100 m
100 GBPS CONNECTIONS		
QSFP441-R2	QSFP28 100GBASE-SR4, 850 nm Multimode, MPO	100 m
QSFP442	QSFP28 100GBASE-LR4, DWM Single-mode, LC	10 km

NOTE: Black Box switches will also support generic SFP+ modules.

* EOL



COMPATIBLE ACTIVE OPTICAL CABLES (AOCs) FOR NETWORKING

COMPATIBLE 10G ACTIVE OPTICAL CABLES FOR NETWORKING	
PRODUCT CODE	LENGTH
SFP-10G-AOC1M-BB*	1 m
SFP-10G-AOC2M-BB*	2 m
SFP-10G-AOC3M-BB*	3 m
SFP-10G-AOC5M-BB*	5 m
SFP-10G-AOC7M-BB*	7 m
SFP-10G-AOC10M-BB*	10 m

COMPATIBLE 100G ACTIVE OPTICAL CABLES FOR NETWORKING	
PRODUCT CODE	LENGTH
QSFP-100G-AOC1M-BB*	1 m
QSFP-100G-AOC3M-BB	3 m
QSFP-100G-AOC5M-BB*	5 m
QSFP-100G-AOC7M-BB*	7 m
QSFP-100G-AOC10M-BB*	10 m
QSFP-100G-AOC15M-BB	15 m
QSFP-100G-AOC30M-BB*	30 m

COMPATIBLE 10G DIRECT ATTACH CABLES (DACs) FOR NETWORKING

COMPATIBLE 10G DIRECT ATTACH CABLES FOR NETWORKING	
PRODUCT CODE	LENGTH
SFP-H10GB-CU50CM-BB	50 cm
SFP-H10GB-CU1M-BB	1 m
SFP-H10GB-CU1M5-BB	1.5 m
SFP-H10GB-CU2M-BB	2 m
SFP-H10GB-CU3M-BB	3 m
SFP-H10GB-CU5M-BB	5 m

* EOL



OVERVIEW

EMERALD DESKVUE PE MULTI-SOURCE RECEIVER DATA SHEET (EMD5004PE-R)

INTRODUCTION

KVM users today need to view, monitor, and interact with multiple clients that can reside on various networks with different work information, such as post-production editing, IPTV, live feeds, email, and rendering jobs. The PE (Professional Edition) of DESKVUE is designed for the user actively working on applications on 4K monitors with extremely low latency.

In a completely new concept in KVM over IP, Emerald® DESKVUE enables these users to arrange their individual workspace for optimal simultaneous interaction with up to 16 different systems when managed by Boxilla®, or 32 systems when not managed. It supports connections to physical systems via Emerald transmitters, Virtual Machines using RDP, PCoIP, PCoIP ultra, and H.264/5.

The Emerald DESKVUE receiver—as part of the Emerald KVM family and Boxilla KVM Manager—uniquely allows users to tailor their own workspace by connecting a single keyboard, mouse, audio, and up to four 4K monitors.

Each system can be positioned across the screens with pre-defined layouts or freely movable tiles. Interacting with each system is as simple as moving the mouse over a tile. In this way, each operator has complete situational awareness and full control within easy reach.

Interact with up to 16 systems simultaneously when managed by Boxilla (32 systems when unmanaged)

Connect to physical systems via Emerald transmitters and Virtual Machines using RDP, PCoIP (Ultra), and H.264/5.

Tailor your individual workspace

Freely place and size your systems across up to four monitors; view and interact with them in the most efficient way.

Up to 4K/5K video resolutions

Attach up to four screens at once, with DisplayPort™ resolutions supporting up to 5120x2880.

Highly Secure KVM over IP

Fully integrates with Emerald Unified KVM and the Boxilla KVM manager for device configuration, monitoring, and authentication.

Design follows User Needs

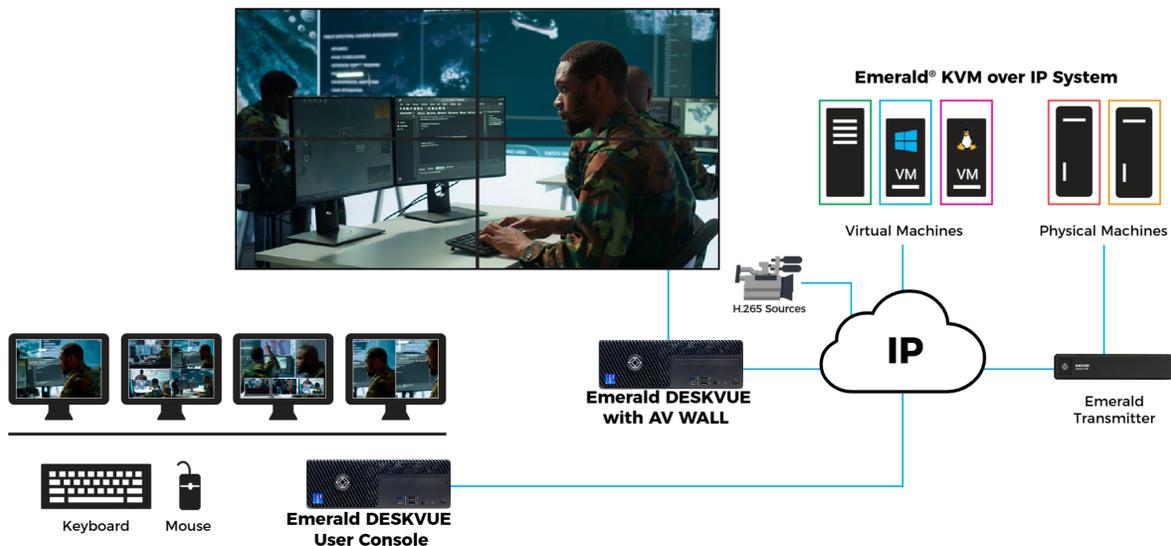
Quiet operation, an extremely small footprint, and various mounting options provide a welcoming workspace.

FEATURES

- FUTURE PROOF KVM, UNIVERSAL ACCESS SYSTEM - ACCESS BOTH PHYSICAL AND VIRTUAL MACHINES INCLUDING EMERALD TRANSMITTERS, PCOIP AND RDP TARGETS
- UP TO 16 CONNECTIONS OVER 4 VIDEO HEADS WHEN DESKVUE IS MANAGED BY BOXILLA, OR 32 CONNECTIONS WHEN NOT MANAGED
- UP TO 4 UHD SCREENS
- OPTION FOR 'DUAL-HEAD" 4K DEPLOYMENTS OUTSIDE POST-PRODUCTION
- UP TO 4K VIDEO
- HIGHLY SCALABLE THROUGH IP NETWORKING / LOW BANDWIDTH
- REMOTE ACCESS TO KVM SYSTEMS TO ALLOW OPERATION ACROSS IP NETWORK THROUGH SOFTWARE APPLICATION
- COMPATIBLE WITH BOXILLA MANAGERS (FOR MANAGEMENT)
- ENHANCED LEOSTREAM BROKER SUPPORT FOR PCOIP CONNECTIONS
- CONNECTS TO EMERALD TRANSMITTERS
- CONNECTS TO VIRTUAL MACHINES (RDP AND PCOIP)
- CAN ALSO BE USED AS A 2X2 VIDEO WALL PRODUCT

APPLICATION DIAGRAM

EMERALD DESKVUE PE MULTI-SOURCE RECEIVER DATA SHEET



WHAT'S INCLUDED/PRODUCT IMAGES

EMERALD DESKVUE PE MULTI-SOURCE RECEIVER DATA SHEET (EMD5004PE-R)

FRONT VIEW



BACK VIEW



WHAT'S INCLUDED

- (1) EMERALD DESKVUE PE KVM RECEIVER
- (1) COUNTRY SPECIFIC POWER CORD

SPECIFICATIONS

EMERALD DESKVUE PE MULTI-SOURCE RECEIVER DATA SHEET

SPECIFICATIONS FOR EMERALD® PE DESKVUE MULTI-SOURCE RECEIVER

DIMENSIONS (H X W X D)	11.42" x 3.65" x 11.53" (290.00 x 92.60 x 292.80 mm)
WEIGHT	8.52 lb. (3.87 kg)
CONNECTORS	(4) Mini DP connectors (mini DP to DP adapters included); (4) Female DP connectors (not active); (1) 3.5 mm Audio; (9) USB Type A Female; (1) Micro SD port (disabled); (1) 1G RJ-45 Network Connection; (1) 2.5G RJ-45 Network Connection; (1) USB-C port; (1) IEC320 C14 for power
MAXIMUM DISTANCE FROM NETWORK	328 feet (100 m), all IP rules apply
USER INTERFACE	Emerald On Screen Display (OSD)
POWER	Internal power supply
INPUT VOLTAGE/VOLTS	100-240VAC, 50/60Hz
POWER CONSUMPTION/WATTS	300 Watts maximum
BTU	1,023 BTU/h maximum
POWER SUPPLY CORD LENGTH	4.5 feet (1.37 m)
TEMPERATURE RANGE	Operating: 32 to 104°F (0 to 40°C); Storage: -22 to +176°F (-30 to +80°C)
RELATIVE HUMIDITY (MAXIMUM)	Operating: 10 to 90% (non-condensing)
MAXIMUM ALTITUDE/FEET	<6,561 feet (2,000 m)
COMPATIBILITY	Boxilla Managers, Emerald Transmitters, and Virtual Machines (RDP, PCoIP)



SPECIFICATIONS

EMERALD DESKVUE (EMD5104-R)

OVERVIEW

KVM users today need to view, monitor, and interact with multiple clients that can reside on various networks with different work information, such as post-production editing, IPTV, live feeds, email, and rendering jobs.

In a completely new concept in KVM over IP, Emerald® DESKVUE enables these users to arrange their individual workspace for optimal simultaneous interaction with up to 16 different systems when managed by Boxilla®, or 32 systems when not managed. It supports connections to physical systems via Emerald transmitters, Virtual Machines using RDP, PCoIP, PCoIP ultra, and H.264/5.

The Emerald DESKVUE receiver—as part of the Emerald KVM family and Boxilla KVM Manager—uniquely allows users to tailor their own workspace by connecting a single keyboard, mouse, USB 2.0 devices, audio, and up to four 4K monitors (one of the monitors can be 5K). Each system can be positioned across the screens with pre-defined layouts or freely movable tiles. Interacting with each system is as simple as moving the mouse over a tile. In this way, each operator has complete situational awareness and full control within easy reach.

Interact with up to 16 systems simultaneously when managed by Boxilla (32 systems when unmanaged)

Connect to physical systems via Emerald transmitters and Virtual Machines using RDP, PCoIP (Ultra), and H.264/5.

Tailor your individual workspace

Freely place and size your systems across up to four monitors; view and interact with them in the most efficient way.

Up to 4k/5k video resolutions

Attach up to four screens at once, with DisplayPort™ resolutions supporting up to DCI 4K 4096x2160 @ 60 Hz; one DP connection can display 5120x2880 @ 60Hz

Highly Secure KVM over IP

Fully integrates with Emerald Unified KVM and the Boxilla KVM manager for device configuration, monitoring, and authentication.

Design follows User Needs

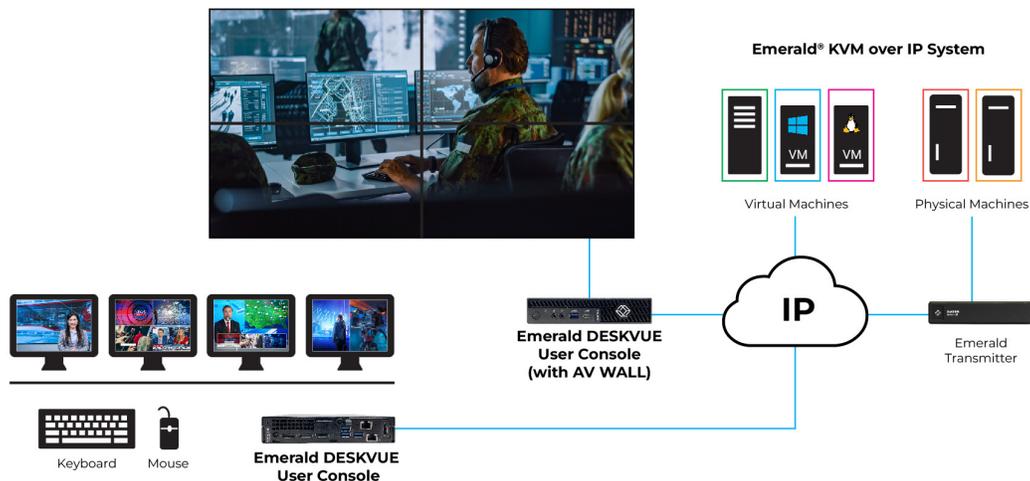
Silent operation, an extremely small footprint, and various mounting options provide a welcoming workspace.

FEATURES

- FUTURE PROOF KVM, UNIVERSAL ACCESS SYSTEM - ACCESS BOTH PHYSICAL AND VIRTUAL MACHINES INCLUDING EMERALD TRANSMITTERS, PCOIP AND RDP TARGETS
- UP TO 16 CONNECTIONS OVER 4 VIDEO HEADS WHEN DESKVUE IS MANAGED BY BOXILLA, OR 32 CONNECTIONS WHEN NOT MANAGED
- UP TO 4 UHD SCREENS, OPTIONALLY 1 CAN BE 5K
- OPTION FOR 'DUAL-HEAD" 4K DEPLOYMENTS OUTSIDE POST-PRODUCTION
- UP TO 4K VIDEO
- HIGHLY SCALABLE THROUGH IP NETWORKING / LOW BANDWIDTH
- REMOTE ACCESS TO KVM SYSTEMS TO ALLOW OPERATION ACROSS IP NETWORK THROUGH SOFTWARE APPLICATION
- COMPATIBLE WITH BOXILLA MANAGERS (FOR MANAGEMENT)
- CONNECTS TO PHYSICAL EMERALD TRANSMITTERS
- CONNECTS TO VIRTUAL MACHINES (RDP AND PCOIP)
- CAN ALSO BE USED AS A 2X2 VIDEO WALL PRODUCT
- TAA COMPLIANT

APPLICATION DIAGRAM

EMERALD DESKVUE KVM RECEIVER DATA SHEET



WHAT'S INCLUDED/PRODUCT IMAGES

EMERALD DESKVUE (EMD5104-R)

WHAT'S INCLUDED

- (1) EMERALD DESKVUE MULTI-SOURCE TAA RECEIVER
- (1) 19.5 VDC, 4.62A, DESKTOP POWER SUPPLY
- (1) COUNTRY SPECIFIC POWER CORD

FRONT VIEW



BACK VIEW



SPECIFICATIONS

EMERALD DESKVUE (EMD5104-R)

SPECIFICATIONS FOR EMERALD® DESKVUE KVM RECEIVER (EMD5104-R)	
DIMENSIONS	7.17" H x 1.42" W x 7.01" D (182 x 36 x 178 mm)
WEIGHT	2.91 lb (1.32 kg)
PROCESSOR	Intel Core i9 processor 14900 vPro (36 MB cache, 24 cores, 32 threads, up to 5.4 GHz Turbo, 65W)
MEMORY	16GB DDR5 Memory, 2X8GB, 5600, Non-ECC, SoDIMM
STORAGE	M.2 2230, 256GB PCIe NVMe SSD Class 35
CONNECTORS	(4) DisplayPort™ outputs: (3) 4K and (1) 5K; (3) USB 3.2 Gen 2x1, Type A (SuperSpeed USB); (1) USB 3.2 Gen 1x1, Type A (SuperSpeed USB); (1) USB-C, USB 3.2 Gen 2x2 (SuperSpeed USB); (1) 3.5 mm Analog Audio Output; (1) 3.5 mm Analog Microphone Input; (2) RJ-45 1Gbps Network Ports; (Note: Only the bottom RJ-45 is functional. The top RJ-45 is for future use.) (1) Power Input
MAXIMUM DISTANCE FROM NETWORK	328 feet (100m) using CATx cabling
USER INTERFACE	Emerald On Screen Display (OSD)
MOUNTING	None
POWER	180 Watt AC adapter, 4.5 mm barrel
INPUT VOLTAGE/VOLTS	100-240VAC, 50/60Hz
INPUT CURRENT/AMPS	2.34 Amp
OUTPUT VOLTAGE/VOLTS	19.5VDC
OUTPUT CURRENT/AMPS	9.23A
POWER CONSUMPTION	180 Watt maximum
HEAT DISSIPATION/BTU/h	613.8 BTU/h
TEMPERATURE RANGE	Operating: 50 to 95°F (10 to 35°C); Storage: -40 to +149°F (-40 to +65°C)
RELATIVE HUMIDITY (MAXIMUM)	Operating: 20 to 80% (non-condensing); Storage: 5 to 95% (non-condensing)
VIBRATION (MAXIMUM)	Operating: 0.26 GRMS; Storage: 1.37 GRMS
SHOCK (MAXIMUM)	Operating: 40 G+; Storage: 105 G+
ALTITUDE RANGE	Operating: <5,518 ft (1,681 m); Storage: <19,234 ft (5,862 m)
COMPATIBILITY	Boxilla Managers, Emerald Transmitters, and Virtual machines (RDP, PCoIP, H.264/H.265)



SPECIFICATIONS

EMERALD DESKVUE (EMD5004-R)* (EOL, REPLACED BY EMD5104-R)

OVERVIEW

KVM users today need to view, monitor, and interact with multiple clients that can reside on various networks with different work information, such as post-production editing, IPTV, live feeds, email, and rendering jobs.

In a completely new concept in KVM over IP, Emerald® DESKVUE enables these users to arrange their individual workspace for optimal simultaneous interaction with up to 16 different systems when managed by Boxilla®, or 32 systems when not managed. It supports connections to physical systems via Emerald transmitters, Virtual Machines using RDP, PCoIP, PCoIP ultra, and H.264/5.

The Emerald DESKVUE receiver—as part of the Emerald KVM family and Boxilla KVM Manager—uniquely allows users to tailor their own workspace by connecting a single keyboard, mouse, USB 2.0 devices, audio, and up to four 4K monitors (one of the monitors can be 5K). Each system can be positioned across the screens with pre-defined layouts or freely movable tiles. Interacting with each system is as simple as moving the mouse over a tile. In this way, each operator has complete situational awareness and full control within easy reach.

Interact with up to 16 systems simultaneously when managed by Boxilla (32 systems when unmanaged)

Connect to physical systems via Emerald transmitters and Virtual Machines using RDP, PCoIP (Ultra), and H.264/5.

Tailor your individual workspace

Freely place and size your systems across up to four monitors; view and interact with them in the most efficient way.

Up to 4k/5k video resolutions

Attach up to four screens at once, with HDMI resolutions supporting up to 3840x2160 and DP resolutions supporting up to 5120x1440.

Highly Secure KVM over IP

Fully integrates with Emerald Unified KVM and the Boxilla KVM manager for device configuration, monitoring, and authentication.

Design follows User Needs

Silent operation, an extremely small footprint, and various mounting options provide a welcoming workspace.

FEATURES

- FUTURE PROOF KVM, UNIVERSAL ACCESS SYSTEM - ACCESS BOTH PHYSICAL AND VIRTUAL MACHINES INCLUDING EMERALD TRANSMITTERS, PCOIP AND RDP TARGETS
- UP TO 16 CONNECTIONS OVER 4 VIDEO HEADS WHEN DESKVUE IS MANAGED BY BOXILLA, OR 32 CONNECTIONS WHEN NOT MANAGED
- UP TO 4 UHD SCREENS, OPTIONALLY 1 CAN BE 5K (USB-C DISPLAYPORT™ ALT MODE)
- OPTION FOR 'DUAL-HEAD" 4K DEPLOYMENTS OUTSIDE POST-PRODUCTION
- UP TO 4K VIDEO
- HIGHLY SCALABLE THROUGH IP NETWORKING / LOW BANDWIDTH
- REMOTE ACCESS TO KVM SYSTEMS TO ALLOW OPERATION ACROSS IP NETWORK THROUGH SOFTWARE APPLICATION
- COMPATIBLE WITH BOXILLA MANAGERS (FOR MANAGEMENT)
- CONNECTS TO PHYSICAL EMERALD TRANSMITTERS
- CONNECTS TO VIRTUAL MACHINES (RDP AND PCOIP)

NOTE: Emerald DESKVUE supports limited integration with Boxilla but is continually being developed to enhance the feature sets.

WHAT'S INCLUDED

- (1) EMERALD DESKVUE KVM RECEIVER
- (1) 19 VDC, 3A, DESKTOP POWER SUPPLY
- (1) VESA MOUNT KIT
- (1) COUNTRY SPECIFIC POWER CORD
- SCREWS AND JUMPER

FRONT VIEW



BACK VIEW

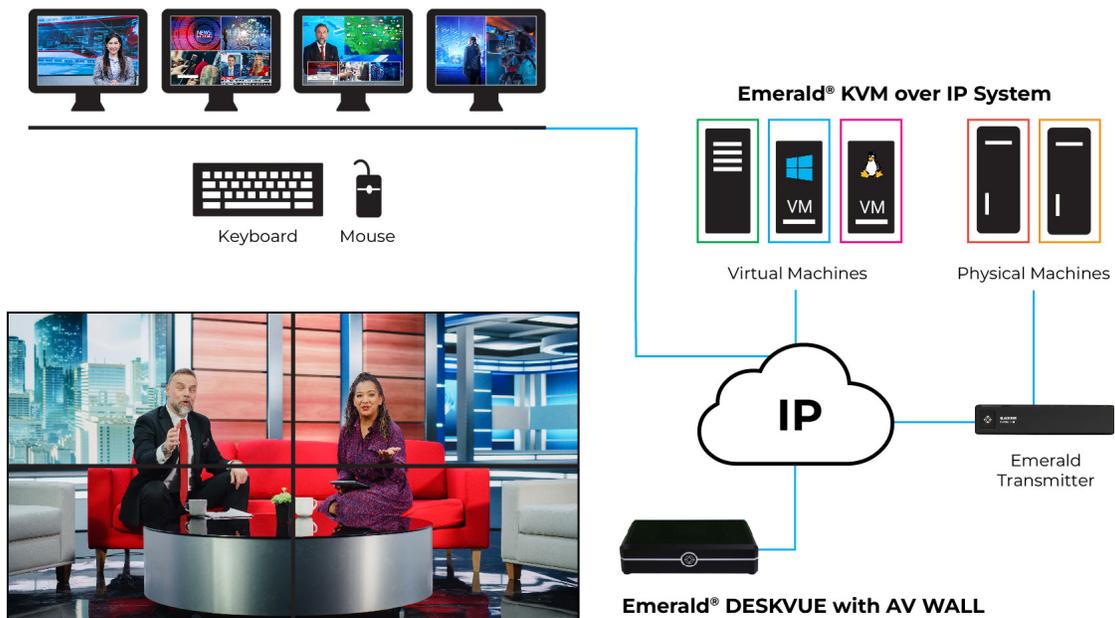


SPECIFICATIONS

EMERALD DESKVUE (EMD5004-R)

SPECIFICATIONS FOR EMERALD® DESKVUE KVM RECEIVER (EMD5004-R)	
DIMENSIONS	Unit: 1.47" H x 6.61" W x 4.52" D, (37.4 x 168 x 115 mm)
WEIGHT	Product: 1.21 lb. (0.55 kg); Power Supply: 0.56 lb. (0.25 kg); Product and Packaging: 3.10 lb (1.4 kg)
CONNECTORS	(3) HDMI Female; (1) USB C (USB4) for DP output; (1) 3.5mm Audio; (4) USB Type A Female; (1) Micro SD port; (1) 1G RJ-45 Network Connection; (1) 2.5G RJ-45 Network Connection; (1) 19VDC Barrel for power
MAXIMUM DISTANCE FROM NETWORK	328 feet, network limits, extend with network switches
USER INTERFACE	Emerald On Screen Display
MOUNTING KITS	VESA Mount included / Kensington Lock Support
POWER	External desktop power supply
INPUT VOLTAGE/VOLTS	100-240VAC, 50/60Hz
INPUT CURRENT/AMPS	1.5 Amps
OUTPUT VOLTAGE/VOLTS	19VDC
OUTPUT CURRENT/AMPS	3 Amps
POWER CONSUMPTION/WATTS	57 Watts MAX (typical usage is 2-3 Amps depending on number of plugged in peripherals)
HEAT DISSIPATION/BTU/h	194.37 BTU/h MAX (Voltage x Nominal Current) * 3.41 = BTU/h
POWER SUPPLY CORD LENGTH	4.5 feet (1.37 meters)
OPERATING TEMPERATURE	32 to 104°F (0 to 40°C)
STORAGE TEMPERATURE	-22 to +176°F (-30 to +80°C)
OPERATING HUMIDITY	10% to 90% non-condensing
MAXIMUM ALTITUDE/FEET	<6,561 feet (2,000 meters)
COMPATIBILITY	Boxilla Managers, Emerald Transmitters, and Virtual machines (RDP, PCoIP)

APPLICATION DIAGRAM



OVERVIEW

EMERALD GE GATEWAY DATA SHEET

INTRODUCTION

Emerald® GE is the latest addition to the Black Box Emerald High-Performance KVM Switching and Extension system. It connects workstations with remote computers, servers, and virtual machines (VM) over an IP network.

Emerald GE introduces a shared mode feature for Virtual Machines, enabling simultaneous connections for up to 8 Emerald users on a single VM. Each Emerald GE unit can service up to 8 VMs (RDP, PCoIP, or PCoIP ultra), allowing for a total support capacity of up to 64 users.

Truly futureproof, Emerald GE is at the forefront of the trend of more and more control rooms adopting PCoIP.

Remote users connected via any type of Emerald receiver unit get a seamless, low-latency desktop experience that is no different when connecting to a physical computer or to a virtual machine.

Emerald GE simply connects to the Emerald IP network giving all Emerald users enhanced connectivity with VM sharing and physical machine access, saving the costs of VM clients.

FEATURES

▪ BETTER COLLABORATION - VM SHARING

KVM Gateway enables multiple users to work on the same virtual machine at the same time.

▪ BEST REMOTE DESKTOP

Emerald supports RDP, PCoIP, and PCoIP Ultra protocols to deliver a seamless and secure remote user experience with high-definition video.

▪ SIMPLIFIED WORKFLOWS

Users can connect to both physical computers and virtual machines with the same experience as a direct connection.

▪ CENTRALIZED CONTROL

The system integrates with the Boxilla KVM Manager, allowing central access management and system monitoring.

▪ COST-EFFICIENT REMOTE ACCESS

The system installs at any IP network node providing all authorized users VM sharing capabilities.

PRODUCT IMAGE

EMERALD GE GATEWAY DATA SHEET



FRONT VIEW



BACK VIEW

WHAT'S INCLUDED

EMERALD GE GATEWAY DATA SHEET

- (1) EMERALD GE GATEWAY
- (1) 19.5V, 9.23A Power Adapter with Detachable Power Cord



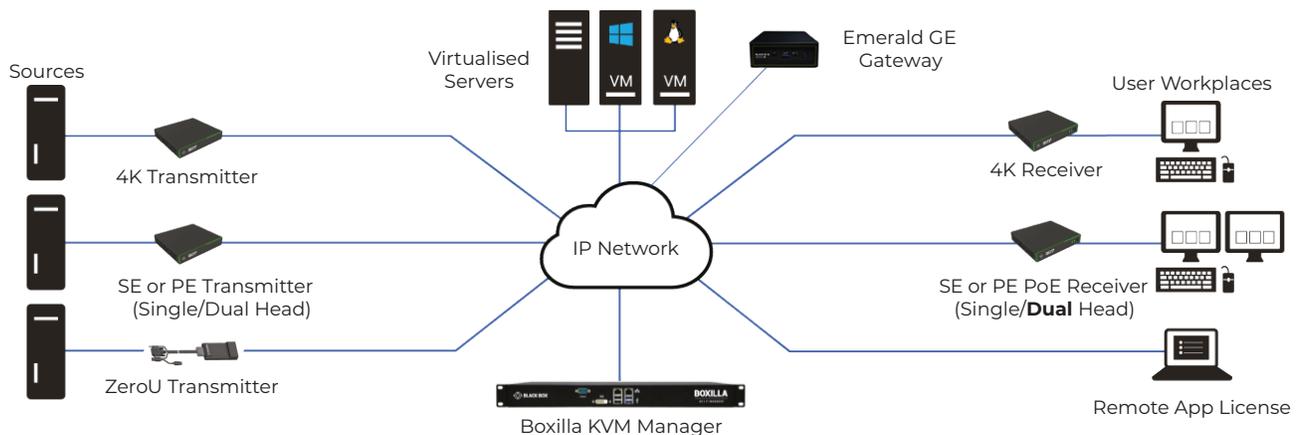
SPECIFICATIONS

EMERALD GE GATEWAY DATA SHEET

SPECIFICATIONS FOR EMERALD® GE GATEWAY (EMD3000GE)	
DIMENSIONS	7.17" H x 1.42" W x 7.01" D (182 x 36 x 178 mm)
WEIGHT	2.91 lb (1.32 kg)
PROCESSOR	Intel Core i9 processor 14900 vPro (36 MB cache, 24 cores, 32 threads, up to 5.4 GHz Turbo, 65W)
MEMORY	16GB DDR5 Memory, 2X8GB, 5600, Non-ECC, SoDIMM
STORAGE	M.2 2230, 256GB PCIe NVMe SSD Class 35
CONNECTORS	(4) DisplayPort™ outputs: (3) 4K and (1) 5K; (3) USB 3.2 Gen 2x1, Type A (SuperSpeed USB); (1) USB 3.2 Gen 1x1, Type A (SuperSpeed USB); (1) USB-C, USB 3.2 Gen 2x2 (SuperSpeed USB); (1) 3.5 mm Analog Audio Output; (1) 3.5 mm Analog Microphone Input; (2) RJ-45 1Gbps Network Ports; (Note: Only the bottom RJ-45 is functional. The top RJ-45 is for future use.) (1) Power Input
MAXIMUM DISTANCE FROM NETWORK	328 feet (100m) using CATx cabling
USER INTERFACE	Emerald On Screen Display (OSD)
MOUNTING	None
POWER	180 Watt AC adapter, 4.5 mm barrel
INPUT VOLTAGE/VOLTS	100-240VAC, 50/60Hz
INPUT CURRENT/AMPS	2.34 Amp
OUTPUT VOLTAGE/VOLTS	19.5VDC
OUTPUT CURRENT/AMPS	9.23A
POWER CONSUMPTION	180 Watt maximum
HEAT DISSIPATION/BTU/h	613.8 BTU/h
TEMPERATURE RANGE	Operating: 50 to 95°F (10 to 35°C); Storage: -40 to +149°F (-40 to +65°C)
RELATIVE HUMIDITY (MAXIMUM)	Operating: 20 to 80% (non-condensing); Storage: 5 to 95% (non-condensing)
VIBRATION (MAXIMUM)	Operating: 0.26 GRMS; Storage: 1.37 GRMS
SHOCK (MAXIMUM)	Operating: 40 G†; Storage: 105 G†
ALTITUDE RANGE	Operating: <5,518 ft (1,681 m); Storage: <19,234 ft (5,862 m)
COMPATIBILITY	Boxilla Managers, Emerald Transmitters, and Virtual machines (RDP, PCoIP, H.264/H.265)

CONNECTION DIAGRAM

EMERALD GE GATEWAY DATA SHEET



SPECIFICATIONS

EMERALD ZEROU DVI TRANSMITTER (EMD200DV-T) DATA SHEET

TRANSMITTER



NOTE: The Emerald® ZeroU DVI transmitter (EMD200DV-T) supports speakers-only audio on the 3.5-mm connector.

WHAT'S INCLUDED WITH THE TRANSMITTER (EMD200DV-T)

- (1) EMERALD ZEROU DVI TRANSMITTER

NOTE: The EMD200DV-T does not support USB-redirected connections or devices.

SPECIFICATIONS FOR EMERALD ZEROU DVI TRANSMITTER (EMD200DV-T)

APPROVALS	
UNIT	Directive 2014/30/EU, CE, FCC, UKCA, 2011/65/EU, 2015/863/EU, Reach, TSCA, CB
PHYSICAL	
LED INTERFACE	(1) Power LED (green); (1) RJ-45 Speed LED (green, located on top left of RJ-45 connector): Blinks three times when the network connection is 1000 Mbps, Blinks two times when network connection is 100 Mbps, Blinks once when the network connection is 10 Mbps, Not blinking: No link to network; (1) Activity LED (green, located on top right of RJ-45 connector): Solid green: Link up, Blinking: Activity on the link, OFF: No link
MAXIMUM DISTANCE FROM CPU TO TRANSMITTER	12" (305 mm) via connected cable harness
MAXIMUM DISTANCE BETWEEN TRANSMITTER AND RECEIVER	328 ft. (100 m), use a network switch to get farther distances
OPERATING SYSTEM SUPPORT	Microsoft Windows® 10/11, Server OS, Linux®, and Mac OS
CONNECTORS	(1) DVI input, (2) USB Type A female, (1) RJ-45 network (10/100/1000BASE-T), (1) 2.5-mm barrel for power; NOTE: The ZeroU transmitter can be powered via (2) USB Type A connectors or via an optional DC power adapter.
DIMENSIONS	0.98" H x 2.78" W x 6.12" D (25 x 71 x 155 mm)
WEIGHT	0.48 lb. (221 g)
OPERATION	
DEFAULT IP ADDRESS	192.168.1.22
ENCRYPTION	Secure Sockets Layer (SSL) over TCP/IP, 128-bit between transmitter and receiver
DDC SUPPORT	Built-in/clone of remote
POWER	
POWER SOURCE	Via USB or an optional 5VDC power adapter
INPUT VOLTAGE	5VDC
ENVIRONMENTAL	
OPERATING TEMPERATURE	32 to 104° F (0 to 40° C)
STORAGE TEMPERATURE	-4 to +140° F (-20 to 60° C)
OPERATING HUMIDITY	5 to 95%, noncondensing
HEAT DISSIPATION	8.52 BTU/h maximum



SPECIFICATIONS

EMERALD ZEROU DISPLAYPORT TRANSMITTER (EMD200DP-T) DATA SHEET

TRANSMITTER

The Emerald® system will take audio from your DisplayPort™ connector and transmit it across the network just like it does with the video signal. The receiver will decode this and send it out the receiver's 3.5-mm audio connector with no configuration required in Emerald.

NOTE: The graphics card and OS must support embedded audio over DisplayPort, and it may need to be enabled on your system.



NOTE: The Emerald ZeroU DisplayPort transmitter (EMD200DP-T) supports embedded audio on the DisplayPort connector.

WHAT'S INCLUDED WITH THE TRANSMITTER (EMD200DP-T)

- (1) EMERALD ZEROU DISPLAYPORT TRANSMITTER

NOTE: The EMD200DP-T cannot support USB-redirected connections.

SPECIFICATIONS FOR EMERALD ZEROU DISPLAYPORT TRANSMITTER (EMD200DP-T)	
APPROVALS	
UNIT	Directive 2014/30/EU, CE, FCC, UKCA, 2011/65/EU, 2015/863/EU, Reach, TSCA, CB
PHYSICAL	
LED INTERFACE	(1) Power LED (green); (1) RJ-45 Speed LED (green, located on top left of RJ-45 connector): Blinks three times when the network connection is 1000 Mbps, Blinks two times when network connection is 100 Mbps, Blinks once when the network connection is 10 Mbps, Not blinking: No link to network; (1) Activity LED (green, located on top right of RJ-45 connector): Solid green: Link up, Blinking: Activity on the link, OFF: No link
MAXIMUM DISTANCE FROM CPU TO TRANSMITTER	12" (305 mm) via connected cable harness
MAXIMUM DISTANCE BETWEEN TRANSMITTER AND RECEIVER	328 ft. (100 m), use a network switch to get farther distances
OPERATING SYSTEM SUPPORT	Microsoft Windows® 10/11, Server OS, Linux®, and Mac OS
CONNECTORS	(1) DisplayPort input, (2) USB Type A female, (1) RJ-45 network (10/100/1000BASE-T), (1) 2.5-mm barrel for power; NOTE: The ZeroU transmitter can be powered via (2) USB Type A connectors or via an optional DC power adapter.
DIMENSIONS	0.98" H x 2.78" W x 6.12" D (25 x 71 x 155 mm)
WEIGHT	0.43 lb. (198 g)
OPERATION	
DEFAULT IP ADDRESS	192.168.1.22
ENCRYPTION	Secure Sockets Layer (SSL) over TCP/IP, 128-bit between transmitter and receiver
DDC SUPPORT	Built-in/clone of remote
POWER	
POWER SOURCE	Via USB or an optional 5VDC power adapter
INPUT VOLTAGE	5VDC
ENVIRONMENTAL	
OPERATING TEMPERATURE	32 to 104° F (0 to 40° C)
STORAGE TEMPERATURE	-4 to +140° F (-20 to 60° C)
OPERATING HUMIDITY	5 to 95%, noncondensing
HEAT DISSIPATION	8.52 BTU/h maximum



SPECIFICATIONS

EMERALD PE SINGLE-HEAD TRANSMITTER (EMD2000PE-T, EMD2000PE-T-P) AND RECEIVER (EMD2000PE-R, EMD2000PE-R-P) DATA SHEET

TRANSMITTER FRONT VIEW



RECEIVER FRONT VIEW



TRANSMITTER BACK VIEW



RECEIVER BACK VIEW



WHAT'S INCLUDED WITH THE TRANSMITTER (EMD2000PE-T* OR EMD2000PE-T-P*)

- (1) EMERALD PE TRANSMITTER, SINGLE-HEAD
- (1) 12VDC POWER SUPPLY WITH POWER CORD
- (1) DVI CABLE
- (1) USB 2.0 TYPE B CABLE

WHAT'S INCLUDED WITH THE RECEIVER (EMD2000PE-R* OR EMD2000PE-R-P)

- (1) EMERALD PE RECEIVER, SINGLE-HEAD
- (1) 12VDC POWER SUPPLY WITH POWER CORD

* EMD2000PE-T IS EOL. IT IS REPLACED BY EMD2000PE-T-R2.

EMD2000PE-T-R IS EOL. IT IS REPLACED BY EMD2000PE-T-R2.

* EMD2000PE-R IS EOL. USE EMD2000PE-R-P.



SPECIFICATIONS

EMERALD PE SINGLE-HEAD TRANSMITTER (EMD2000PE-T, EMD2000PE-T-P) AND RECEIVER (EMD2000PE-R, EMD2000PE-R-P) DATA SHEET

SPECIFICATIONS FOR EMERALD PE TRANSMITTER AND RECEIVER, SINGLE-HEAD (EMD2000PE-T, EMD2000PE-T-P, EMD2000PE-R, EMD2000PE-R-P)

APPROVALS	
UNIT	Directive 2014/30/EU, CE, FCC, ICES, UKCA, 2011/65/EU, 2015/863/EU, Reach, TSCA, CB
POWER SUPPLY	Directive 2014/35/EU, EN 62368-1:2014, UL, cUL, GS, PSE, BSMI, RCM, BIS, CB
PHYSICAL	
LED INTERFACE	(1) Power LED (lights when power is on); NOTE: Unit automatically powers on when plugged in; must be powered off at the power source. (1) RJ-45 Speed LED (green, located on top left of RJ-45 connector): Blinks three times when the network connection is 1000 Mbps, Blinks two times when network connection is 100 Mbps, Blinks once when the network connection is 10 Mbps, Not blinking: No link to network; (1) Activity LED (green, located on top right of RJ-45 connector): Solid green: Link up, Blinking: Activity on the link, OFF: No link
MAXIMUM DISTANCE FROM CPU TO TRANSMITTER	5 m (16.4 ft.), DVI-D and USB limitations
MAXIMUM DISTANCE BETWEEN TRANSMITTER AND RECEIVER	328 ft. (100 m), use a network switch to get farther distances
OPERATING SYSTEM SUPPORT	Microsoft Windows® 10/11, Server OS, Linux®, and Mac OS
CONNECTORS	EMD2000PE-T: (1) DVI input, (1) USB Type B female, (1) RJ-45 network, (1) SFP network, (2) 3.5-mm audio, (1) 3-pin locking connector for power, (1) Micro USB connector; EMD2000PE-T-P: (1) DVI input, (1) USB Type B female, (1) RJ-45 PoE network, (1) SFP network, (2) 3.5-mm audio, (1) 3-pin locking connector for power, (1) Micro USB connector; EMD2000PE-R: (1) DVI output, (4) USB Type A female, (1) RJ-45 network, (1) SFP network, (2) 3.5-mm audio for SPK and MIC, (1) 3-pin locking connector for power, (1) Micro USB connector; EMD2000PE-R-P: (1) DVI output, (4) USB Type A female, (1) RJ-45 PoE network, (1) SFP network, (2) 3.5-mm audio for SPK and MIC, (1) 3-pin locking connector for power, (1) Micro USB connector
DIMENSIONS	1.32" H x 7.62" W x 5.79" D (34 x 194 x 147 mm)
WEIGHT	EMD2000PE-T/EMD2000PE-T-R: 1.08 lbs (490 g); EMD2000PE-R/EMD2000PE-R-P: 1.17 lbs (535 g)
OPERATION	
DEFAULT IP ADDRESS	EMD2000PE-T, EMD2000PE-T-P: 192.168.1.22; EMD2000PE-R, EMD2000PE-R-P: 192.168.1.21
ENCRYPTION	Secure Sockets Layer (SSL) over TCP/IP, 128-bit between transmitter and receiver, user set between receiver and virtual machine
DEFAULT USERNAME	admin
DEFAULT PASSWORD	The password is blank by default.
DDC SUPPORT	Built-in/clone of remote
POWER	
POWER SOURCE	External in-line power supply or PoE IEEE 802.11af (EMD2000PE-T-P, EMD2000PE-R-P only)
INPUT VOLTAGE	100–240 VAC, 50/60 Hz
INPUT CURRENT	1 Amp maximum
POWER CONSUMPTION	Unit: 7.5 W with keyboard and mouse attached; Power supply: 36 W to support USB-based powered devices
HEAT DISSIPATION	122.76 BTW/hr maximum
OUTPUT CONNECTOR	3-pin locking connector (12 VDC, 3 Amp output)
INPUT CONNECTOR	IEC-320, C14
POWER SUPPLY CORD LENGTH	6 ft. (1.8 m)
ENVIRONMENTAL	
OPERATING TEMPERATURE	32 to 104° F (0 to 40° C)
STORAGE TEMPERATURE	-4 to +140° F (-20 to 60° C)
OPERATING HUMIDITY	5 to 95%, noncondensing



SPECIFICATIONS

EMERALD PE DUAL-HEAD TRANSMITTER (EMD2002PE-T, EMD2002PE-T-P) AND RECEIVER (EMD2002PE-R, EMD2002PE-R-P) DATA SHEET

TRANSMITTER FRONT VIEW



RECEIVER FRONT VIEW



TRANSMITTER BACK VIEW



RECEIVER BACK VIEW



WHAT'S INCLUDED WITH THE TRANSMITTER (EMD2002PE-T*, EMD2002PE-T-P)

- (1) EMERALD PE TRANSMITTER, DUAL-HEAD
- (1) 12VDC POWER SUPPLY WITH POWER CORD
- (2) DVI CABLES
- (1) USB 2.0 TYPE B CABLE

WHAT'S INCLUDED WITH THE RECEIVER (EMD2002PE-R* OR EMD2002PE-R-P)

- (1) EMERALD PE RECEIVER, DUAL-HEAD
- (1) 12VDC POWER SUPPLY WITH POWER CORD

* EMD2002PE-R IS EOL. USE EMD2002PE-R-P.

* EMD2002PE-T IS EOL. IT IS REPLACED BY EMD20002PE-T-R2.
EMD2002PE-T-R IS EOL. IT IS REPLACED BY EMD2002PE-T-R2.



SPECIFICATIONS

EMERALD PE DUAL-HEAD TRANSMITTER (EMD2002PE-T, EMD2002PE-T-P) AND RECEIVER (EMD2002PE-R, EMD2002PE-R-P) DATA SHEET

SPECIFICATIONS FOR EMERALD PE TRANSMITTER AND RECEIVER, DUAL-HEAD (EMD2002PE-T, EMD2002-PE-T-P, EMD2002PE-R, EMD2002PE-R-P)	
APPROVALS	
UNIT	Directive 2014/30/EU, CE, FCC, ICES, UKCA, 2011/65/EU, 2015/863/EU, Reach, TSCA, CB
POWER SUPPLY	Directive 2014/35/EU, EN 62368-1:2014, UL, cUL, GS, PSE, BSMI, RCM, BIS, CB
PHYSICAL	
LED INTERFACE	(1) Power LED (lights when power is on); NOTE: Unit automatically powers on when plugged in; must be powered off at the power source. (1) RJ-45 Speed LED (green, located on top left of RJ-45 connector): Blinks three times when the network connection is 1000 Mbps, Blinks two times when network connection is 100 Mbps, Blinks once when the network connection is 10 Mbps, Not blinking: No link to network; (1) Activity LED (green, located on top right of RJ-45 connector): Solid green: Link up, Blinking: Activity on the link, OFF: No link
MAXIMUM DISTANCE FROM CPU TO TRANSMITTER	5 m (16.4 ft.), DVI-D and USB limitations
MAXIMUM DISTANCE BETWEEN TRANSMITTER AND RECEIVER	328 ft. (100 m), use a network switch to get farther distances
OPERATING SYSTEM SUPPORT	Microsoft Windows® 10/11, Server OS, Linux®, and Mac OS
CONNECTORS	EMD2002PE-T: (2) DVI inputs, (1) USB Type B female, (1) RJ-45 network, (1) SFP network, (2) 3.5-mm audio, (1) 3-pin locking connector for power, (1) Micro USB connector; EMD2002PE-T-P: (2) DVI inputs, (1) USB Type B female, (1) RJ-45 PoE network, (1) SFP network, (2) 3.5-mm audio, (1) 3-pin locking connector for power, (1) Micro USB connector; EMD2002PE-R: (2) DVI outputs, (4) USB Type A female, (1) RJ-45 network, (1) SFP network, (2) 3.5-mm audio for SPK and MIC, (1) 3-pin locking connector for power, (1) Micro USB connector; EMD2002PE-R-P: (2) DVI outputs, (4) USB Type A female, (1) RJ-45 PoE network, (1) SFP network, (2) 3.5-mm audio for SPK and MIC, (1) 3-pin locking connector for power, (1) Micro USB connector
DIMENSIONS	1.32" H x 7.62" W x 5.79" D (34 x 194 x 147 mm)
WEIGHT	EMD2002PE-T: 1.10 lbs (503 g); EMD2002PE-R / EMD2002PE-R-P: 1.47 lbs (667 g)
OPERATION	
DEFAULT IP ADDRESS	EMD2002PE-T, EMD2002PE-T-P: 192.168.1.22; EMD2002PE-R, EMD2002PE-R-P: 192.168.1.21
ENCRYPTION	Secure Sockets Layer (SSL) over TCP/IP, 128-bit between transmitter and receiver, user set between receiver and virtual machine
DEFAULT USERNAME	admin
DEFAULT PASSWORD	The password is blank by default.
DDC SUPPORT	Built-in/clone of remote
POWER	
POWER SOURCE	External in-line power supply or PoE IEEE 802.11af (EMD2000PE-T-P, EMD2000PE-R-P only)
INPUT VOLTAGE	100–240 VAC, 50/60 Hz
INPUT CURRENT	1 Amp maximum
POWER CONSUMPTION	Unit: 7.5 W with keyboard and mouse attached; Power supply: 36 W to support USB-based powered devices
HEAT DISSIPATION	122.76 BTW/hr maximum
OUTPUT CONNECTOR	3-pin locking connector (12 VDC, 3 Amp output)
INPUT CONNECTOR	IEC-320, C14
POWER SUPPLY CORD LENGTH	6 ft. (1.8 m)
ENVIRONMENTAL	
OPERATING TEMPERATURE	32 to 104° F (0 to 40° C)
STORAGE TEMPERATURE	-4 to +140° F (-20 to 60° C)
OPERATING HUMIDITY	5 to 95%, noncondensing



SPECIFICATIONS

EMERALD PE SINGLE-HEAD DISPLAYPORT TRANSMITTER (EMD2000PE-DP-T) AND RECEIVER (EMD2000PE-DP-R) DATA SHEET

TRANSMITTER FRONT VIEW



TRANSMITTER BACK VIEW



RECEIVER FRONT VIEW



RECEIVER BACK VIEW



WHAT'S INCLUDED WITH THE TRANSMITTER (EMD2000PE-DP-T)

- (1) EMERALD PE DP TRANSMITTER, SINGLE-HEAD
- (1) 12VDC POWER SUPPLY WITH POWER CORD
- (1) DISPLAYPORT™ CABLE
- (1) USB TYPE A TO B CABLE

WHAT'S INCLUDED WITH THE RECEIVER (EMD2000PE-DP-R)

- (1) EMERALD PE DP RECEIVER, SINGLE-HEAD
- (1) 12VDC POWER SUPPLY WITH POWER CORD



SPECIFICATIONS

EMERALD PE SINGLE-HEAD DISPLAYPORT TRANSMITTER (EMD2000PE-DP-T) AND RECEIVER (EMD2000PE-DP-R) DATA SHEET

SPECIFICATIONS FOR EMERALD PE DISPLAYPORT TRANSMITTER, SINGLE-HEAD (EMD2000PE-DP-T), AND RECEIVER (EMD2000PE-DP-R)	
APPROVALS	
UNIT	Directive 2014/30/EU, CE, FCC, UKCA, 2011/65/EU, 2015/863/EU, Reach, TSCA
POWER SUPPLY	Directive 2014/35/EU, EN 62368-1:2014, UL, cUL, GS, PSE, BSMI, RCM, BIS, CB
PHYSICAL	
LED INTERFACE	(1) Power LED; (1) Network LED; (1) Video 1 Status LED; (1) RJ-45 Speed LED (green, located on top left of RJ-45 connector): Blinks three times when the network connection is 1000 Mbps, Blinks two times when network connection is 100 Mbps, Blinks once when the network connection is 10 Mbps, Not blinking: No link to network; (1) Activity LED (green, located on top right of RJ-45 connector): Solid green: Link up, Blinking: Activity on the link, OFF: No link
MAXIMUM DISTANCE FROM CPU TO TRANSMITTER	5 m (16.4 ft.), DisplayPort™ and USB limitations
MAXIMUM DISTANCE BETWEEN TRANSMITTER AND RECEIVER	328 ft. (100m) CATx Fiber: Distance dependent on SFP and Fiber cable used
OPERATING SYSTEM SUPPORT	Microsoft Windows® 10/11, Server OS, Linux®, and Mac OS
CONNECTORS	EMD2000PE-DP-T: (1) DisplayPort female, (1) USB Type B female, (1) 3.5-mm audio, (1) RJ-45 Interconnect, 1Gbps, (1) SFP Interconnect, 1 Gbps (unpopulated), (1) USB Type B micro (Console), (1) 3-pin locking connector for power (12VDC); EMD2000PE-DP-R: (1) DisplayPort female, (4) USB Type A female, (1) 3.5-mm audio, (1) RJ-45 Interconnect, (1) SFP Interconnect 1Gbps (unpopulated), (1) USB Type B Micro (Console), (2) Power Inputs; (1) 3-pin locking power connector for power (12VDC)
DIMENSIONS	EMD2000PE-DP-T: 1.34" H x 5.39" W x 6.1" D (34 x 137 x 155 mm); EMD2000PE-DP-R: 1.3" H x 7.62" W x 5.81" D (33.11 x 193.6 x 147.8mm)
WEIGHT	EMD2000PE-DP-T: 0.84 lbs (382 g); EMD2000PE-DP-R: 0.85 lbs (384 g)
OPERATION	
DEFAULT IP ADDRESS	EMD2000PE-DP-T: 192.168.1.22; EMD2000PE-DP-R: 192.168.1.21
ENCRYPTION	Secure Sockets Layer (SSL) over TCP/IP, 128-bit between transmitter and receiver, user set between receiver and virtual machine
DDC SUPPORT	Built-in/clone of remote
POWER	
POWER SOURCE	External in-line power supply
INPUT VOLTAGE	100–240 VAC, 50/60 Hz
INPUT CURRENT	1 Amp maximum
POWER CONSUMPTION	36 W maximum (Unit consumes 9 W)
HEAT DISSIPATION	122.76 BTW/hr maximum
OUTPUT CONNECTOR	3-pin locking connector (12 VDC, 3 Amp output)
INPUT CONNECTOR	IEC320, C14
POWER SUPPLY CORD LENGTH	6 ft. (1.8 m)
ENVIRONMENTAL	
OPERATING TEMPERATURE	32 to 104° F (0 to 40° C)
STORAGE TEMPERATURE	-4 to +140° F (-20 to 60° C)
OPERATING HUMIDITY	5 to 95%, noncondensing



SPECIFICATIONS

EMERALD PE DUAL-HEAD DISPLAYPORT TRANSMITTER (EMD2002PE-DP-T) AND RECEIVER (EMD2002PE-DP-R) DATA SHEET

TRANSMITTER FRONT VIEW



TRANSMITTER BACK VIEW



RECEIVER FRONT VIEW



RECEIVER BACK VIEW



WHAT'S INCLUDED WITH THE TRANSMITTER (EMD2002PE-DP-T)

- (1) EMERALD PE DP TRANSMITTER, DUAL-HEAD
- (1) 12VDC POWER SUPPLY WITH POWER CORD
- (2) DISPLAYPORT™ CABLES
- (1) USB TYPE A TO B CABLE

WHAT'S INCLUDED WITH THE RECEIVER (EMD2002PE-DP-R)

- (1) EMERALD PE DP RECEIVER, DUAL-HEAD
- (1) 12VDC POWER SUPPLY WITH POWER CORD

SPECIFICATIONS

EMERALD PE DUAL-HEAD DISPLAYPORT TRANSMITTER (EMD2002PE-DP-T) AND RECEIVER (EMD2002PE-DP-R) DATA SHEET

SPECIFICATIONS FOR EMERALD PE DISPLAYPORT TRANSMITTER, DUAL-HEAD (EMD2002PE-DP-T)	
APPROVALS	
UNIT	Directive 2014/30/EU, CE, FCC, UKCA, 2011/65/EU, 2015/863/EU, Reach, TSCA
POWER SUPPLY	Directive 2014/35/EU, EN 62368-1:2014, UL, cUL, GS, PSE, BSMI, RCM, BIS, CB
PHYSICAL	
LED INTERFACE	(1) Power LED; (1) Network LED; (1) Video 1 Status LED; (1) Video 2 Status LED; (1) RJ-45 Speed LED (green, located on top left of RJ-45 connector): Blinks three times when the network connection is 1000 Mbps, Blinks two times when network connection is 100 Mbps, Blinks once when the network connection is 10 Mbps, Not blinking: No link to network; (1) Activity LED (green, located on top right of RJ-45 connector): Solid green: Link up, Blinking: Activity on the link, OFF: No link
MAXIMUM DISTANCE FROM CPU TO TRANSMITTER	5 m (16.4 ft.), DisplayPort™ and USB limitations
MAXIMUM DISTANCE BETWEEN TRANSMITTER AND RECEIVER	328 ft. (100m) CATx Fiber: Distance dependent on SFP and Fiber cable used
OPERATING SYSTEM SUPPORT	Microsoft Windows® 10/11, Server OS, Linux®, and Mac OS
CONNECTORS	EMD2002PE-DP-T: (2) DisplayPort female, (1) USB Type B female, (1) 3.5-mm audio, (1) RJ-45 Interconnect, 1Gbps, (1) SFP Interconnect, 1 Gbps (unpopulated), (1) USB Type B micro (Console), (1) 3-pin locking connector for power (12VDC); EMD2002PE-DP-R: (2) DisplayPort female, (4) USB Type A female, (1) 3.5-mm audio, (1) RJ-45 Interconnect, 1Gbps, (1) SFP Interconnect, 1 Gbps (unpopulated), (1) USB Type B micro (Console), (2) Power inputs; (1) 3-pin locking connector for power (12VDC)
DIMENSIONS	EMD2002PE-DP-T: 1.34" H x 5.39" W x 6.1" D (34 x 137 x 155 mm); EMD2002PE-DP-R: 1.3" H x 7.62" W x 5.81" D (33.11 x 193.6 x 147.8mm)
WEIGHT	EMD2002PE-DP-T: 0.85 lbs (387 g); EMD2002PE-DP-R: 0.85 lbs (385 g)
OPERATION	
DEFAULT IP ADDRESS	EMD2002PE-DP-T: 192.168.1.22; EMD2002PE-DP-R: 192.168.1.21
ENCRYPTION	Secure Sockets Layer (SSL) over TCP/IP, 128-bit between transmitter and receiver, user set between receiver and virtual machines
DDC SUPPORT	Built-in/clone of remote
POWER	
POWER SOURCE	External in-line power supply
INPUT VOLTAGE	100–240 VAC, 50/60 Hz
INPUT CURRENT	1 Amp maximum
POWER CONSUMPTION	36 W maximum (Unit consumes 9.5 W)
HEAT DISSIPATION	122.76 BTW/hr maximum
OUTPUT CONNECTOR	3-pin locking connector (12 VDC, 3 Amp output)
INPUT CONNECTOR	IEC320, C14
POWER SUPPLY CORD LENGTH	6 ft. (1.8 m)
ENVIRONMENTAL	
OPERATING TEMPERATURE	32 to 104° F (0 to 40° C)
STORAGE TEMPERATURE	-4 to +140° F (-20 to 60° C)
OPERATING HUMIDITY	5 to 95%, noncondensing



SPECIFICATIONS

EMERALD SE SINGLE-HEAD TRANSMITTER (EMD2000SE-T) AND RECEIVER (EMD2000SE-R) DATA SHEET

TRANSMITTER FRONT VIEW



TRANSMITTER BACK VIEW



RECEIVER FRONT VIEW



RECEIVER BACK VIEW



WHAT'S INCLUDED WITH THE TRANSMITTER (EMD2000SE-T*)

- (1) EMERALD SE TRANSMITTER, SINGLE-HEAD
- (1) 5VDC POWER SUPPLY WITH POWER CORD

WHAT'S INCLUDED WITH THE RECEIVER (EMD2000SE-R)

- (1) EMERALD SE RECEIVER, SINGLE-HEAD
- (1) 5VDC POWER SUPPLY WITH POWER CORD

* EMD2000SE-T IS EOL. IT IS REPLACED BY EMD2000SE-T-R2.

SPECIFICATIONS

EMERALD SE SINGLE-HEAD TRANSMITTER (EMD2000SE-T) AND RECEIVER (EMD2000SE-R) DATA SHEET

SPECIFICATIONS FOR EMERALD SE TRANSMITTER AND RECEIVER, SINGLE-HEAD (EMD2000SE-T AND EMD2000SE-R)	
APPROVALS	
UNIT	Directive 2014/30/EU, CE, FCC, UKCA, 2011/65/EU, 2015/863/EU, Reach, TSCA, CB
POWER SUPPLY	Directive 2014/35/EU, EN 62368-1:2014, UL, cUL, GS, PSE, BSMI, RCM, BIS
PHYSICAL	
LED INTERFACE	(1) Power LED/button; NOTE: Unit automatically powers on when plugged in; must be powered off at the power source. (1) RJ-45 Speed LED (green, located on top left of RJ-45 connector): Blinks three times when the network connection is 1000 Mbps, Blinks two times when network connection is 100 Mbps, Blinks once when the network connection is 10 Mbps, Not blinking: No link to network; (1) Activity LED (green, located on top right of RJ-45 connector): Solid green: Link up, Blinking: Activity on the link, OFF: No link
MAXIMUM DISTANCE FROM CPU TO TRANSMITTER	5 m (16.4 ft.), DVI-D and USB limitations
MAXIMUM DISTANCE BETWEEN TRANSMITTER AND RECEIVER	328 ft. (100 m), use a network switch to get farther distances
OPERATING SYSTEM SUPPORT	Microsoft Windows® 10/11, Server OS, Linux®, and Mac OS
CONNECTORS	EMD2000SE-T: (1) DVI input, (1) USB Type B female, (1) RJ-45 network (10/100/1000BASE-T), (1) RJ-45 serial, (2) 3.5-mm audio, (1) 2.5-mm barrel for power; EMD2000SE-R: (1) DVI output, (4) USB Type A female, (1) RJ-45 network (10/100/1000BASE-T), (1) DB9 serial, (2) 3.5-mm audio for SPK and MIC, (1) 2.5-mm barrel for power
DIMENSIONS	1.15" H x 6.2" W x 4.2" D (29 x 157 x 107 mm)
WEIGHT	EMD2000SE-T: 1.30 lbs (590 g); EMD2000SE-R: 1.32 lbs (600 g)
OPERATION	
DEFAULT IP ADDRESS	EMD2000SE-T: 192.168.1.22; EMD2000SE-R: 192.168.1.21
ENCRYPTION	Secure Sockets Layer (SSL) over TCP/IP, 128-bit between transmitter and receiver, user set between receiver and virtual machine
DEFAULT USERNAME	admin
DEFAULT PASSWORD	The password is blank by default.
DDC SUPPORT	Built-in/clone of remote
POWER	
POWER SOURCE	External in-line power supply
INPUT VOLTAGE	100–240 VAC, 50/60 Hz
INPUT CURRENT	0.9 Amps maximum
POWER CONSUMPTION	Unit: 6.5 W with keyboard and mouse attached; Power supply: 20 W to support USB-based powered devices
HEAT DISSIPATION	68.2 BTW/hr maximum
OUTPUT CONNECTOR	2.5-mm barrel (5 VDC, 4 Amp output)
INPUT CONNECTOR	IEC-320, C8
POWER SUPPLY CORD LENGTH	6 ft. (1.8 m)
ENVIRONMENTAL	
OPERATING TEMPERATURE	32 to 104° F (0 to 40° C)
STORAGE TEMPERATURE	-4 to +140° F (-20 to 60° C)
OPERATING HUMIDITY	5 to 95%, noncondensing



SPECIFICATIONS

EMERALD SE SINGLE-HEAD TRANSMITTER (EMD2000SE-T-R2) DATA SHEET

EMD2000SE-T-R2 FRONT VIEW



EMD2000SE-T-R2- BACK VIEW



WHAT'S INCLUDED WITH THE SINGLE-HEAD TRANSMITTER (EMD2000SE-T-R2)

- (1) EMERALD SE-R2 TRANSMITTER
- (1) 5VDC POWER SUPPLY WITH POWER CORD



SPECIFICATIONS

EMERALD SE SINGLE-HEAD TRANSMITTER (EMD2000SE-T-R2) DATA SHEET

SPECIFICATIONS FOR EMERALD SE SINGLE-HEAD TRANSMITTER (EMD2000SE-T-R2)	
APPROVALS	
UNIT	Directive 2014/30/EU, CE, FCC, UKCA, 2011/65/EU, 2015/863/EU, Reach, TSCA
POWER SUPPLY	Directive 2014/35/EU, EN 62368-1:2014, UL, cUL, GS, PSE, BSMI, RCM, BIS
PHYSICAL	
LED INTERFACE	(1) Power LED; (1) Network LED; (1) Video 1 Status LED; (1) RJ-45 Speed LED (green, located on top left of RJ-45 connector): Blinks three times when the network connection is 1000 Mbps, Blinks two times when network connection is 100 Mbps, Blinks once when the network connection is 10 Mbps, Not blinking: No link to network; (1) Activity LED (green, located on top right of RJ-45 connector): Solid green: Link up, Blinking: Activity on the link, OFF: No link
MAXIMUM DISTANCE FROM CPU TO TRANSMITTER	5 m (16.4 ft.), DVI-D and USB limitations
MAXIMUM DISTANCE BETWEEN TRANSMITTER AND RECEIVER	328 ft. (100 m), use a network switch to get farther distances
OPERATING SYSTEM SUPPORT	Microsoft Windows® 10/11, Server OS, Linux®, and Mac OS
CONNECTORS	(1) DVI-D female, (1) USB Type B female, (1) 3.5-mm audio; (1) RJ-45 Interconnect, 1Gbps, (1) USB Type B micro (Console), (1) 2.5-mm barrel connector for power
DIMENSIONS	1.34" H x 6.1" W x 6.07" D (34 x 137 x 155 mm)
WEIGHT	0.78 lb. (355 g)
OPERATION	
DEFAULT IP ADDRESS	192.168.1.22
ENCRYPTION	Secure Sockets Layer (SSL) over TCP/IP, 128-bit between transmitter and receiver, user set between receiver and virtual machine
DDC SUPPORT	Built-in/clone of remote
POWER	
POWER SOURCE	External in-line power supply
INPUT VOLTAGE	100–240 VAC, 50/60 Hz
INPUT CURRENT	0.9 Amps maximum
POWER CONSUMPTION	Unit: 6.5 W with keyboard and mouse attached Power supply: 20 W to support USB-based powered devices
HEAT DISSIPATION	68.2 BTW/hr maximum
OUTPUT CONNECTOR	2.5-mm barrel (5 VDC, 4 Amp output)
INPUT CONNECTOR	IEC-320, C8
POWER SUPPLY CORD LENGTH	6 ft. (1.8 m)
ENVIRONMENTAL	
OPERATING TEMPERATURE	32 to 104° F (0 to 40° C)
STORAGE TEMPERATURE	-4 to +140° F (-20 to 60° C)
OPERATING HUMIDITY	5 to 95%, noncondensing



SPECIFICATIONS

EMERALD SE DUAL-HEAD TRANSMITTER (EMD2002SE-T) AND RECEIVER (EMD2002SE-R) DATA SHEET

TRANSMITTER FRONT VIEW



TRANSMITTER BACK VIEW



RECEIVER FRONT VIEW



RECEIVER BACK VIEW



WHAT'S INCLUDED WITH THE TRANSMITTER (EMD2002SE-T*)

- (1) EMERALD SE TRANSMITTER, DUAL-HEAD
- (1) 5VDC POWER SUPPLY WITH POWER CORD

WHAT'S INCLUDED WITH THE RECEIVER (EMD2002SE-R)

- (1) EMERALD SE RECEIVER, DUAL-HEAD
- (1) 5VDC POWER SUPPLY WITH POWER CORD

* EMD2002SE-T IS EOL. IT IS REPLACED BY EMD2002PE-T-R2.

SPECIFICATIONS

EMERALD SE DUAL-HEAD TRANSMITTER (EMD2002SE-T) AND RECEIVER (EMD2002SE-R) DATA SHEET

SPECIFICATIONS FOR EMERALD SE TRANSMITTER AND RECEIVER, DUAL-HEAD (EMD2002SE-T AND EMD2002SE-R)	
APPROVALS	
UNIT	Directive 2014/30/EU, CE, FCC, UKCA, 2011/65/EU, 2015/863/EU, Reach, TSCA, CB
POWER SUPPLY	Directive 2014/35/EU, EN 62368-1:2014, UL, cUL, GS, PSE, BSMI, RCM, BIS
PHYSICAL	
LED INTERFACE	(1) Power LED/button; NOTE: Unit automatically powers on when plugged in; must be powered off at the power source. (1) RJ-45 Speed LED (green, located on top left of RJ-45 connector): Blinks three times when the network connection is 1000 Mbps, Blinks two times when network connection is 100 Mbps, Blinks once when the network connection is 10 Mbps, Not blinking: No link to network; (1) Activity LED (green, located on top right of RJ-45 connector): Solid green: Link up, Blinking: Activity on the link, OFF: No link
MAXIMUM DISTANCE FROM CPU TO TRANSMITTER	5 m (16.4 ft.), DVI-D and USB limitations
MAXIMUM DISTANCE BETWEEN TRANSMITTER AND RECEIVER	328 ft. (100 m), use a network switch to get farther distances
OPERATING SYSTEM SUPPORT	Microsoft Windows® 10/11, Server OS, Linux®, and Mac OS
CONNECTORS	EMD2002SE-T: (2) DVI inputs, (1) USB Type B female, (1) RJ-45 network (10/100/1000BASE-T), (2) 3.5-mm audio, (1) 2.5-mm barrel for power; EMD2002SE-R: (2) DVI outputs, (4) USB Type A female, (1) RJ-45 network (10/100/1000BASE-T), (2) 3.5-mm audio for SPK and MIC, (1) 2.5-mm barrel for power
DIMENSIONS	EMD2002SE-T: 1.43" H x 6.2" W x 4.2" D (36 x 157 x 107 mm); EMD2002SE-R: 1.15" H x 6.2" W x 4.2" D (29 x 157 x 107 mm)
WEIGHT	EMD2002SE-T: 1.44 lbs (652 g); EMD2002SE-R: 1.32 lbs (600 g)
OPERATION	
DEFAULT IP ADDRESS	EMD2002SE-T: 192.168.1.22; EMD2002SE-R: 192.168.1.21
ENCRYPTION	Secure Sockets Layer (SSL) over TCP/IP, 128-bit between transmitter and receiver, user set between receiver and virtual machine
DEFAULT USERNAME	admin
DEFAULT PASSWORD	The password is blank by default.
DDC SUPPORT	Built-in/clone of remote
POWER	
POWER SOURCE	External in-line power supply
INPUT VOLTAGE	100–240 VAC, 50/60 Hz
INPUT CURRENT	0.9 Amps maximum
POWER CONSUMPTION	Unit: 6.5 W with keyboard and mouse attached; Power supply: 20 W to support USB-based powered devices
HEAT DISSIPATION	68.2 BTW/hr maximum
OUTPUT CONNECTOR	2.5-mm barrel (5 VDC, 4 Amp output)
INPUT CONNECTOR	IEC-320, C8
POWER SUPPLY CORD LENGTH	6 ft. (1.8 m)
ENVIRONMENTAL	
OPERATING TEMPERATURE	32 to 104° F (0 to 40° C)
STORAGE TEMPERATURE	-4 to +140° F (-20 to 60° C)
OPERATING HUMIDITY	5 to 95%, noncondensing



SPECIFICATIONS

EMERALD PE SINGLE-HEAD TRANSMITTER (EMD2000PE-T-R2) DATA SHEET

EMD2000PE-T-R2 FRONT VIEW



EMD2000PE-T-R2 BACK VIEW



WHAT'S INCLUDED WITH THE TRANSMITTER (EMD2000PE-T-R2)

- (1) EMERALD PE TRANSMITTER, SINGLE-HEAD
- (1) 12VDC POWER SUPPLY WITH POWER CORD
- (1) DVI CABLE
- (1) USB 2.0 TYPE B CABLE



SPECIFICATIONS

EMERALD PE SINGLE-HEAD TRANSMITTER (EMD2000PE-T-R2) DATA SHEET

SPECIFICATIONS FOR EMERALD PE SINGLE-HEAD TRANSMITTER (EMD2000PE-T-R2)	
APPROVALS	
UNIT	Directive 2014/30/EU, CE, FCC, ICES, UKCA, 2011/65/EU, 2015/863/EU, Reach, TSCA
POWER SUPPLY	Directive 2014/35/EU, EN 62368-1:2014, UL, cUL, GS, PSE, BSMI, RCM, BIS, CB
PHYSICAL	
LED INTERFACE	(1) Power LED; (1) Network LED; (1) Video 1 Status LED; (1) RJ-45 Speed LED (green, located on top left of RJ-45 connector): Blinks three times when the network connection is 1000 Mbps, Blinks two times when network connection is 100 Mbps, Blinks once when the network connection is 10 Mbps, Not blinking: No link to network; (1) Activity LED (green, located on top right of RJ-45 connector): Solid green: Link up, Blinking: Activity on the link, OFF: No link
MAXIMUM DISTANCE FROM CPU TO TRANSMITTER	5 m (16.4 ft.), DVI-D and USB limitations
MAXIMUM DISTANCE BETWEEN TRANSMITTER AND RECEIVER	328 ft. (100 m), use a network switch to get farther distances
OPERATING SYSTEM SUPPORT	Microsoft Windows® 10/11, Server OS, Linux®, and Mac OS
CONNECTORS	(1) DVI input, (1) USB Type B female, (1) RJ-45 network, (1) SFP network, (1) 3.5-mm audio, (1) 3-pin locking connector for power, (1) Micro USB connector;
DIMENSIONS	1.34" H x 7.64" W x 5.83" D (34 x 194 x 148 mm)
WEIGHT	1.03 lb. (468 g)
OPERATION	
DEFAULT IP ADDRESS	192.168.1.22
ENCRYPTION	Secure Sockets Layer (SSL) over TCP/IP, 128-bit between transmitter and receiver, user set between receiver and virtual machine
DDC SUPPORT	Built-in/clone of remote
POWER	
POWER SOURCE	External in-line power supply
INPUT VOLTAGE	100–240 VAC, 50/60 Hz
INPUT CURRENT	1 Amp maximum
POWER CONSUMPTION	Unit: 7.5 W with keyboard and mouse attached; Power supply: 36 W to support USB-based powered devices
HEAT DISSIPATION	122.76 BTW/hr maximum
OUTPUT CONNECTOR	3-pin locking connector (12 VDC, 3 Amp output)
INPUT CONNECTOR	IEC-320, C14
POWER SUPPLY CORD LENGTH	6 ft. (1.8 m)
ENVIRONMENTAL	
OPERATING TEMPERATURE	32 to 104° F (0 to 40° C)
STORAGE TEMPERATURE	-4 to +140° F (-20 to 60° C)
OPERATING HUMIDITY	5 to 95%, noncondensing



SPECIFICATIONS

EMERALD PE DUAL-HEAD TRANSMITTER (EMD2002PE-T-R2) DATA SHEET

EMD2002PE-T-R2 FRONT VIEW



EMD2002PE-T-R2 BACK VIEW



WHAT'S INCLUDED WITH THE TRANSMITTER (EMD2002PE-T-R2)

- (1) EMERALD PE TRANSMITTER, DUAL-HEAD
- (1) 12VDC POWER SUPPLY WITH POWER CORD
- (2) DVI CABLES
- (1) USB 2.0 TYPE B CABLE



SPECIFICATIONS

EMERALD PE DUAL-HEAD TRANSMITTER (EMD2002PE-T-R2) DATA SHEET

SPECIFICATIONS FOR EMERALD PE DUAL-HEAD TRANSMITTER (EMD2002PE-T-R2)	
APPROVALS	
UNIT	Directive 2014/30/EU, CE, FCC, ICES, UKCA, 2011/65/EU, 2015/863/EU, Reach, TSCA
POWER SUPPLY	Directive 2014/35/EU, EN 62368-1:2014, UL, cUL, GS, PSE, BSMI, RCM, BIS, CB
PHYSICAL	
LED INTERFACE	(1) Power LED; (1) Network LED; (1) Video 1 Status LED; (1) Video 2 Status LED; (1) RJ-45 Speed LED (green, located on top left of RJ-45 connector): Blinks three times when the network connection is 1000 Mbps, Blinks two times when network connection is 100 Mbps, Blinks once when the network connection is 10 Mbps, Not blinking: No link to network; (1) Activity LED (green, located on top right of RJ-45 connector): Solid green: Link up, Blinking: Activity on the link, OFF: No link
MAXIMUM DISTANCE FROM CPU TO TRANSMITTER	5 m (16.4 ft.), DVI-D and USB limitations
MAXIMUM DISTANCE BETWEEN TRANSMITTER AND RECEIVER	328 ft. (100 m), use a network switch to get farther distances
OPERATING SYSTEM SUPPORT	Microsoft Windows® 10/11, Server OS, Linux®, and Mac OS
CONNECTORS	(2) DVI input, (1) USB Type B female, (1) RJ-45 network, (1) SFP network, (1) 3.5-mm audio, (1) 3-pin locking connector for power, (1) Micro USB connector
DIMENSIONS	1.32" H x 7.62" W x 5.79" D (34 x 194 x 147 mm)
WEIGHT	1.04 lb. (474 g)
OPERATION	
DEFAULT IP ADDRESS	192.168.1.22
ENCRYPTION	Secure Sockets Layer (SSL) over TCP/IP, 128-bit between transmitter and receiver, user set between receiver and virtual machine
DDC SUPPORT	Built-in/clone of remote
POWER	
POWER SOURCE	External in-line power supply
INPUT VOLTAGE	100–240 VAC, 50/60 Hz
INPUT CURRENT	0.9 Amps maximum
POWER CONSUMPTION	Unit: 7.5 W with keyboard and mouse attached; Power supply: 36 W to support USB-based powered devices
HEAT DISSIPATION	122.76 BTW/hr maximum
OUTPUT CONNECTOR	3-pin locking connector (12 VDC, 3 Amp output)
INPUT CONNECTOR	IEC-320, C14
POWER SUPPLY CORD LENGTH	6 ft. (1.8 m)
ENVIRONMENTAL	
OPERATING TEMPERATURE	32 to 104° F (0 to 40° C)
STORAGE TEMPERATURE	-4 to +140° F (-20 to 60° C)
OPERATING HUMIDITY	5 to 95%, noncondensing



SPECIFICATIONS

EMERALD SE SINGLE-HEAD DISPLAYPORT TRANSMITTER (EMD2000SE-DP-T) AND RECEIVER (EMD2000SE-DP-R) DATA SHEET

TRANSMITTER FRONT VIEW



RECEIVER FRONT VIEW



TRANSMITTER BACK VIEW



RECEIVER BACK VIEW



WHAT'S INCLUDED WITH THE TRANSMITTER (EMD2000SE-DP-T)

- (1) EMERALD SE DP TRANSMITTER, SINGLE-HEAD
- (1) 5VDC POWER SUPPLY WITH POWER CORD

WHAT'S INCLUDED WITH THE RECEIVER (EMD2000SE-DP-R)

- (1) EMERALD SE DP RECEIVER, SINGLE-HEAD
- (1) 5VDC POWER SUPPLY WITH POWER CORD

SPECIFICATIONS

EMERALD SE SINGLE-HEAD DISPLAYPORT TRANSMITTER (EMD2000SE-DP-T) AND RECEIVER (EMD2000SE-DP-R) DATA SHEET

SPECIFICATIONS FOR EMERALD SE DISPLAYPORT TRANSMITTER, SINGLE-HEAD (EMD2000SE-DP-T) AND RECEIVER (EMD2000SE-DP-R)	
APPROVALS	
UNIT	Directive 2014/30/EU, CE, FCC, UKCA, 2011/65/EU, 2015/863/EU, Reach, TSCA
POWER SUPPLY	Directive 2014/35/EU, EN 62368-1:2014, UL, cUL, GS, PSE, BSMI, RCM, BIS
PHYSICAL	
LED INTERFACE	(1) Power LED; NOTE: Unit automatically powers on when plugged in; must be powered off at the power source. (1) RJ-45 Speed LED (green, located on top left of RJ-45 connector): Blinks three times when the network connection is 1000 Mbps, Blinks two times when network connection is 100 Mbps, Blinks once when the network connection is 10 Mbps, Not blinking: No link to network; (1) Activity LED (green, located on top right of RJ-45 connector): Solid green: Link up, Blinking: Activity on the link, OFF: No link
MAXIMUM DISTANCE FROM CPU TO TRANSMITTER	5 m (16.4 feet), DisplayPort™ and USB limitations
MAXIMUM DISTANCE BETWEEN TRANSMITTER AND RECEIVER	328 ft. (100 m), use a network switch to get farther distances
OPERATING SYSTEM SUPPORT	Microsoft Windows® 10/11, Server OS, Linux®, and Mac OS
CONNECTORS	EMD2000SE-DP-T: (1) DisplayPort input, (1) USB Type B, (1) RJ-45 network, (1) 3.5-mm audio, (1) 2.5-mm barrel connector for power, (1) RJ-45 Serial Console Connector; EMD2000SE-DP-R: (1) DisplayPort input, (4) USB Type A, (1) RJ-45 network, (1) 3.5-mm audio, (1) 2.5-mm barrel connector for power, (1) RJ-45 Serial Console Connector
DIMENSIONS	1.34" H x 5.39" W x 6.07" D (34 x 137 x 154 mm)
WEIGHT	0.73 lb. (335 g)
OPERATION	
DEFAULT IP ADDRESS	EMD2000SE-DP-T: 192.168.1.22; EMD2000SE-DP-R: 192.168.1.21
ENCRYPTION	Secure Sockets Layer (SSL) over TCP/IP, 128-bit between transmitter and receiver, user set between receiver and virtual machines
DDC SUPPORT	Built-in/clone of remote
POWER	
POWER SOURCE	External in-line power supply
INPUT VOLTAGE	100–240 VAC, 50/60 Hz
INPUT CURRENT	0.9 Amps maximum
POWER CONSUMPTION	Unit: 6.5 W with keyboard and mouse attached; Power supply: 20 W to support USB-based powered devices
HEAT DISSIPATION	68.2 BTU/hr maximum
OUTPUT CONNECTOR	2.5-mm barrel (5 VDC, 4 Amp output)
INPUT CONNECTOR	IEC-320, C8
POWER SUPPLY CORD LENGTH	6 ft. (1.8 m)
ENVIRONMENTAL	
OPERATING TEMPERATURE	32 to 104° F (0 to 40° C)
STORAGE TEMPERATURE	-4 to +140° F (-20 to 60° C)
OPERATING HUMIDITY	5 to 95%, noncondensing



SPECIFICATIONS

EMERALD SE DUAL-HEAD DISPLAYPORT TRANSMITTER (EMD2002SE-DP-T) AND RECEIVER (EMD2002SE-DP-R) DATA SHEET

TRANSMITTER FRONT VIEW



RECEIVER FRONT VIEW



TRANSMITTER BACK VIEW



RECEIVER BACK VIEW



WHAT'S INCLUDED WITH THE TRANSMITTER (EMD2002SE-DP-T)

- (1) EMERALD SE DP TRANSMITTER, DUAL-HEAD
- (1) 12VDC POWER SUPPLY WITH POWER CORD

WHAT'S INCLUDED WITH THE RECEIVER (EMD2002SE-DP-R)

- (1) EMERALD SE DP RECEIVER, DUAL-HEAD
- (1) 12VDC POWER SUPPLY WITH POWER CORD



SPECIFICATIONS

EMERALD SE DUAL-HEAD DISPLAYPORT TRANSMITTER (EMD2002SE-DP-T) AND RECEIVER (EMD2002SE-DP-R) DATA SHEET

SPECIFICATIONS FOR EMERALD SE DISPLAYPORT TRANSMITTER, DUAL-HEAD (EMD2002SE-DP-T) AND RECEIVER (EMD2002SE-DP-R)	
APPROVALS	
UNIT	Directive 2014/30/EU, CE, FCC, UKCA, 2011/65/EU, 2015/863/EU, Reach, TSCA
POWER SUPPLY	Directive 2014/35/EU, EN 62368-1:2014, UL, cUL, GS, PSE, BSMI, RCM, BIS, CB
PHYSICAL	
LED INTERFACE	(1) Power LED; NOTE: Unit automatically powers on when plugged in; must be powered off at the power source. (1) RJ-45 Speed LED (green, located on top left of RJ-45 connector): Blinks three times when the network connection is 1000 Mbps, Blinks two times when network connection is 100 Mbps, Blinks once when the network connection is 10 Mbps, Not blinking: No link to network; (1) Activity LED (green, located on top right of RJ-45 connector): Solid green: Link up, Blinking: Activity on the link, OFF: No link
MAXIMUM DISTANCE FROM CPU TO TRANSMITTER	5 m (16.4 ft.), DisplayPort™ and USB limitations
MAXIMUM DISTANCE BETWEEN TRANSMITTER AND RECEIVER	328 ft. (100 m), use a network switch to get farther distances
OPERATING SYSTEM SUPPORT	Microsoft Windows® 10/11, Server OS, Linux®, and Mac OS
CONNECTORS	EMD2002SE-DP-T: (2) DisplayPort female, (1) USB Type B female, (1) 3.5-mm audio, (1) RJ-45 Interconnect, 1Gbps, (1) USB Type B micro (Console), (1) 3-pin locking connector for power (12VDC); EMD2002SE-DP-R: (2) DisplayPort female, (4) USB Type A female, (1) 3.5-mm audio, (1) RJ-45 Interconnect, 1Gbps, (1) USB Type B micro (Console), (1) 2.5-mm barrel for power (5VDC)
DIMENSIONS	EMD2002SE-DP-T: 1.34" H x 5.39" W x 6.07" D (34 x 137 x 154 mm); EMD2002SE-DP-R: 1.3" H x 7.62" W x 5.81" D (33.11 x 193.6 x 147.8mm)
WEIGHT	EMD2002SE-DP-T: 0.77 lbs (350 g) EMD2002SE-DP-R: 0.85 lbs (385 g)
OPERATION	
DEFAULT IP ADDRESS	EMD2002SE-DP-T: 192.168.1.22; EMD2002SE-DP-R: 192.168.1.21
ENCRYPTION	Secure Sockets Layer (SSL) over TCP/IP, 128-bit between transmitter and receiver, user set between receiver and virtual machine
DDC SUPPORT	Built-in/clone of remote
POWER	
POWER SOURCE	External in-line power supply
INPUT VOLTAGE	100–240 VAC, 50/60 Hz
INPUT CURRENT	1 Amp maximum
POWER CONSUMPTION	Unit: 9 W with keyboard and mouse attached; Power supply: 36 W to support USB-based powered devices
HEAT DISSIPATION	EMD2002SE-DP-T: 122.76 BTU/h maximum; EMD2002SE-DP-R: 68.2 BTU/h maximum
OUTPUT CONNECTOR	EMD2002SE-DP-T: 3-pin locking connector (12 VDC, 3 Amp output) EMD2002SE-DP-R: 2.5mm barrel (5 VDC, 4 Amp output)
INPUT CONNECTOR	IEC-320, C14
POWER SUPPLY CORD LENGTH	6 ft. (1.8 m)
ENVIRONMENTAL	
OPERATING TEMPERATURE	32 to 104° F (0 to 40° C)
STORAGE TEMPERATURE	-4 to +140° F (-20 to 60° C)
OPERATING HUMIDITY	5 to 95%, noncondensing



SPECIFICATIONS

4K SINGLE-HEAD TRANSMITTER AND RECEIVER (EMD4000T AND EMD4000R) DATA SHEET

FRONT VIEW



EMD4000T

FRONT VIEW



EMD4000R

BACK VIEW



EMD4000T

BACK VIEW



EMD4000R

WHAT'S INCLUDED WITH THE TRANSMITTER

- (1) TRANSMITTER
- (1) 12VDC POWER SUPPLY WITH POWER CORD
- (1) DISPLAYPORT M/M CABLE
- (1) USB TYPE A TO B CABLE

WHAT'S INCLUDED WITH THE RECEIVER

- (1) RECEIVER
- (1) 12VDC POWER SUPPLY WITH POWER CORD

NOTE: SFP+ sold separately.



SPECIFICATIONS

4K SINGLE-HEAD TRANSMITTER AND RECEIVER (EMD4000T AND EMD4000R) DATA SHEET

4K SINGLE-HEAD EXTENDER (EMD4000R AND EMD4000T)	
APPROVALS	Unit: Directive 2014/30/EU, CE, FCC, ICES, UKCA, 2011/65/EU, 2015/863/EU, Reach, TSCA, CB Power Supply: Directive 2014/35/EU, EN 62368-1:2014, UL, cUL, GS, PSE, BSMI, CB, RCM, BIS
CONNECTORS	Transmitter: (1) DisplayPort™, (1) Power, (1) DB9 serial, (1) USB Type B, (1) RJ-45, (2) SFP+ cages (10GBASE-X), (2) 3.5-mm audio; Receiver: (1) DisplayPort, (1) Power, (1) DB9 serial, (4) USB Type A, (1) RJ-45, (2) SFP+ cages, (2) 3.5-mm audio
DISTANCE	Distance between Transmitter and Receiver: in IP mode: Unlimited using IP rules; in Direct Connect mode: CATx: 328 ft. (100 m); Fiber: 984.2 ft. to 6.2 mi. (300 m to 10 km), based on SFP used
INDICATORS	(1) single bi-color LED (red/green)
MAXIMUM RESOLUTION	4096 x 2160 @ 60 Hz
MATERIAL	Aluminum outer case with plastic bezel
OPERATING SYSTEMS SUPPORTED	Microsoft Windows® 10/11, Server OS, Linux®, Mac OS
OPERATION	Default IP Address for Transmitter:192.168.1.22; Default IP Address for Receiver: 192.168.1.21; Default Username: admin; Default Password: Blank password by default, just press the Enter key; EDID Support: Internal EDID table in transmitter (can be updated from a receiver or manager or real monitor EDID can be used if cloned); Encryption: Secure Sockets Layer (SSL) over a TCP/IP up to 128-bit for transmitter to receiver with virtualized targets, depending on configuration
ENVIRONMENTAL	Operating Temperature: 32 to 104° F (0 to 40° C); Storage Temperature: -4°F to 140°F (-20° C to 60° C); Operating Humidity: 5–95%
POWER	External desktop-style adapter, 100–240 VAC input, 12 VDC, 3 A connection to unit
POWER CONSUMPTION	36 Watts maximum
HEAT DISSIPATION	122.8 BTU/h
DIMENSIONS	Each unit: 1.5" H x 8.5" W x 7.4" D (38 x 216 x 188 mm)
WEIGHT	EMD4000T: 2.49 lbs (1130 g); EMD4000R: 2.48 lbs (1129 g)



SPECIFICATIONS

EMERALD REMOTE APP RECEIVER (EMDRM)

OVERVIEW

The Emerald™ Remote App is software from Black Box that allows users to access their Emerald connections, both physical and virtual, from any Windows 10/11 device. This increases mobility and device access and monitoring in full HD video on the Emerald System. And multiple connections can be launched simultaneously to facilitate multiple device management.

Available licenses are listed below:

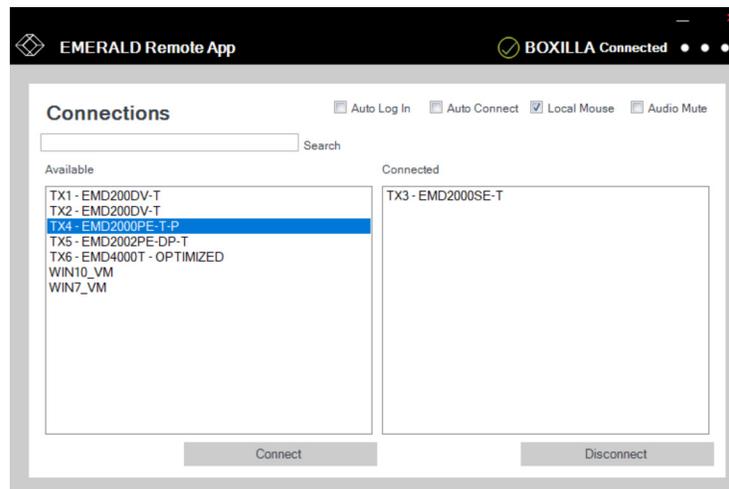
- EMDRMDemo-LIC: Emerald Remote Access, 30-day Trial (4 Connections)
- EMDRM1-LIC: Emerald Remote Access, 1 Connection
- EMDRM5-LIC: Emerald Remote Access, 5 Connections
- EMDRM10-LIC: Emerald Remote Access, 10 Connections
- EMDRM20-LIC: Emerald Remote Access, 20 Connections

FEATURES

- **HIGH-QUALITY USER EXPERIENCE: SUPPORTS HD VIDEO UP TO 1920 X 1200 WITH ACCESS TO BOTH PHYSICAL MACHINES AND VIRTUAL MACHINES**
- **NO HARDWARE REQUIRED: WORKS ON ANY LAPTOP, TABLET AND DESKTOP DEVICES RUNNING WINDOWS 10 OR WINDOWS 11. DOES REQUIRE BOXILLA MANAGER.**
- **MULTIPLE CONNECTIONS: OPEN CONNECTIONS TO MULTIPLE DEVICES SIMULTANEOUSLY. THIS ALLOWS YOU TO INTERACT OR MONITOR MANY SYSTEMS FROM YOUR OWN DEVICE. PURCHASE THE APPROPRIATE NUMBER OF SIMULTANEOUS CONNECTION LICENSES**
- **SECURITY: ALL ACCESS IS AUTHENTICATED BY BOXILLA IN REAL TIME, ENSURING THAT THE EMERALD ADMINISTRATOR HAS FULL CONTROL AND CAN DEFINE ONLY THE USERS REQUIRED TO HAVE REMOTE ACCESS**
- **WAN SUPPORT: USERS CAN CONNECT FROM ANYWHERE WITH ACCESS TO ALL CONNECTED RESOURCES, ONCE THEY CAN AUTHENTICATE VIA BOXILLA**

SPECIFICATIONS FOR EMERALD REMOTE APP (EMDRM)	
HARDWARE/SOFTWARE REQUIREMENTS	
HARDWARE	PC, laptop or tablet
SOFTWARE	Windows® 10/11 (requires Microsoft® Visual C++ Redistributable to run, included in installer)

REMOTE APP SCREEN



SPECIFICATIONS

48-PORT 1G NETWORK SWITCH (EMS1G48*)

FEATURES

- NON-BLOCKING SWITCHING ARCHITECTURE WITH OS 10.X SOFTWARE DELIVERS LINE-RATE L2/L3 FEATURES
- HAS (48) 10/100/1000 MBPS TWISTED-PAIR PORTS
- ALSO HAS (4) SFP+ 10 GBE UPLINK PORTS FOR MAXIMUM FLEXIBILITY AND INVESTMENT PROTECTION
- I/O PANEL TO PSU AIRFLOW
- HOT-SWAPPABLE POWER SUPPLIES AND FANS
- SUPPORTS JUMBO FRAMES FOR HIGH-END PERFORMANCE IN VIRTUALIZED ENVIRONMENTS AND IP STORAGE/SERVER COMMUNICATION

FRONT VIEW



EMS1G48

BACK VIEW



EMS1G48

WHAT'S INCLUDED WITH THE SWITCH

- (1) SWITCH
- (1) POWER SUPPLY
- (1) RJ-45 TO DB9 ADAPTER
- (3) FANS
- (1) RACKMOUNT KIT

48-PORT 1G NETWORK SWITCH (EMS1G48) SPECIFICATIONS

APPROVALS	Directive 2015/35/EU, Directive 2015/30/EU, EN 62368-1, CE, FCC, ICES, RCM, RoHS, Reach, and TSCA
ENVIRONMENTAL	Operating Humidity: 5 to 85%, relative humidity, non-condensing Operating Temperature: 32 to 113° F (0 to 45° C) Storage Humidity: 5 to 95%, relative humidity, non-condensing Storage Temperature: -40 to +158° F (-40 to +70° C)
MANAGEMENT	Console port management: (1) RJ-45 console management port with RS-232 signaling; Protocols: UDP, TCP, Ethernet, Telnet, FTP, IPv4, IPv6; IPv4: ICMP, ARP, DNS (client), NTPv3, CIDR, BOOTP (relay) IPv6: Telnet, FTP, TACACS, RADIUS, SSH, NTP
PERFORMANCE	Switching Capacity: 260 Gbps (full-duplex); Forwarding capacity: 131 Mpps; Packet Buffer Memory: 4 MB; CPU Memory: 2 GB MAC Addresses: Up to 80 K IPv4 Routes: 16 K; IPv6 Routes: 8K (Shared CAM space with IPv4); Link aggregation: 16 links per group, 128 groups per stack; Queues per port: 8 queues; Layer 2 VLANs: 4K; MSTP: 64 instances; VRF-lite: 64 instances; Line-rate Layer 2 switching: all protocols, including IPv4 and IPv6; Line-rate Layer 3 routing: IPv4 and IPv6; IPv4 host table size up to 40k max; IPv6 host table size 8K; IPv4 Multicast table size 8K; LAG load balancing: based on Layer 2, IPv4 or IPv6 headers; Latency: 3.7 µsec for 1000BASE-T, 1.8 µsec for SFP+;

* EOL



SPECIFICATIONS

48-PORT 1G NETWORK SWITCH (EMS1G48)

48-PORT 1G NETWORK SWITCH (EMS1G48) SPECIFICATIONS (CONTINUED)	
PHYSICAL	Connectors/Interfaces: (48) 10/1000/1000BASE-T RJ-45 ports, (4) 10 GbE SFP+ uplink ports, (1) RJ-45 RS-232 serial console port Dimensions: 1.71" H (1 RU) x 17.09" W x 12.6" D (4.4 x 43.4 x 32 cm) Indicators: (1) Power LED, (48) TP Link/Activity LEDs, (48) Speed LEDs, (4) SFP Link LEDs; Mounting: Rackmounted Weight: 12.8 lb. (5.84 kg)
POWER	Input: 90–264 VAC, 50/60 Hz Maximum Power Consumption: 87 W Typical Power Consumption: 65 W Max. Thermal Output: 290 BTU/hr.; Max. Current Draw per System: <1 A at 100/120 VAC, <0.5 A at 200/240 VAC Power Supply Type: Hot-swappable redundant AC power (one power supply provided; optional redundant) Fans: (4) hot-swappable redundant fans
STANDARDS	IEEE: IEEE 802.1ab LLDP; 802.1D Bridging, STP; 802.1p L2 Prioritization; 802.1Q VLAN Tagging, Double VLAN Tagging, GVRP; 802.1s MSTP; 802.1w RSTP; 802.1X Network Access Control; 802.3ab Gigabit Ethernet (1000BASE-T); 802.3ac Frame Extensions for VLAN Tagging; 802.3ad Link Aggregation with LACP; 802.3ae 10 Gigabit Ethernet (10GBASE-X) on optical ports; 802.3az Energy Efficient Ethernet (EEE); 802.3u Fast Ethernet (100BASE-TX) on mgmt ports; 802.3x Flow Control; 802.3z Gigabit Ethernet (1000BASE-X); ANSI/TIA-1057 LLDP-MED, Force10 PVST+, MTU 12,000 bytes; RFC and I-D compliance



SPECIFICATIONS

12-PORT 10G NETWORK SWITCH (EMS10G12)

FEATURES

- (1) RU HIGH-DENSITY 12-PORT 10 GBE SWITCH
- 840 GBPS (FULL-DUPLEX) NON-BLOCKING, CUT-THROUGH SWITCHING FABRIC DELIVERS LINE-RATE PERFORMANCE UNDER FULL LOAD
- SUPPORTS 10GBASE FIBER OPTICS
- COMPLIES WITH IEEE 1588V2
- VXLAN GATEWAY SUPPORT FOR BRIDGING AND ROUTING NON-VIRTUALIZED AND VIRTUALIZED OVERLAY NETWORKS WITH LINE-RATE PERFORMANCE
- I/O PANEL TO PSU AIRFLOW
- CONVERGED NETWORK SUPPORT WITH DCB

WHAT'S INCLUDED WITH THE SWITCH

- (1) ETHERNET SWITCH
- (2) POWER CORDS
- (1) CONSOLE CABLE RJ-45 TO DB9F
- (1) USB TYPE A TO MICRO USB CABLE
- (2) LOCKING POWER CORD CLIPS

FRONT VIEW



EMS10G12

12-PORT 10G NETWORK SWITCH (EMS10G12) SPECIFICATIONS

APPROVALS	Directive 2015/35/EU, Directive 2015/30/EU, EN 62368-1, CE, FCC, ICES, RCM, RoHS, Reach, and TSCA
ENVIRONMENTAL	<p>Operating Humidity: 5 to 85%, relative humidity, non-condensing</p> <p>Operating Temperature: 41 to 104° F (5 to 40° C)</p> <p>Storage Humidity: 5 to 90%, relative humidity, non-condensing</p> <p>Storage Temperature: -40 to +149° F (-40 to +65° C)</p> <p>NOTE: Reduce maximum temperature by 1°/228 ft. (1°/125 m) above 3117 ft. (950 m)</p> <p>Maximum Operating Altitude: 10,000 ft. (3 km)</p> <p>Maximum Non-operating Altitude: 39,370 ft. (12 km)</p> <p>Shock: Dell EMC Spec SV0115</p>
MANAGEMENT	<p>Console port management: (1) RJ-45 serial</p> <p>Security/Authentication: RADIUS, RADIUS and IPv6, SSHv2, Security Architecture for IPSec, IPSec Authentication Header, ESP Protocol</p> <p>Network Management: SNMPv1/2, SSHv2, FTP, TFTP, SCP, Syslog, Port Mirroring, RADIUS, 802.1X, Support Assist (Phone Home, Netconf APIs, XML Schema, CLI Commit (Scratchpad), sFlow</p> <p>Automation: Control Plane Services APIs, Linux Utilities and Scripting Tools</p> <p>Quality of Service (QoS): Access Control Lists, Prefix List, Route-Map, Rate Shaping (Egress), Rate Policing (Ingress);</p> <p>Scheduling Algorithms: Round Robin, Weighted Round Robin, Deficit Round Robin, Strict Priority, Weighted Random Early Detect</p>
PERFORMANCE	<p>Switching Capacity: 840 Gbps;</p> <p>Forwarding Capacity: 720 Mpps;</p> <p>Frame Size: 9416 bytes;</p> <p>Packet Buffer Memory: 12 MB;</p> <p>CPU Memory: 4 GB;</p> <p>MAC Addresses: 272K (in Scaled L2 mode);</p> <p>ARP Table: 200K (in Scaled L3 routes mode);</p> <p>IPv4 routes: 200K (in Scaled L3 routes mode);</p> <p>IPv6 hosts: 64K;</p> <p>IPv6 routes: 130K (in scaled L3 routes mode);</p> <p>Multicast hosts: 8K</p> <p>Link aggregation: 16 links per group, 128 groups;</p> <p>Layer 2 VLANs: 4K;</p> <p>MSTP: 32 instances;</p> <p>LAG load balancing: Based on layer 2, IPv4 or IPv6 headers</p>



SPECIFICATIONS

12-PORT 10G NETWORK SWITCH (EMS10G12)

12-PORT 10G NETWORK SWITCH (EMS10G-28) SPECIFICATIONS (CONTINUED)	
PHYSICAL	Connectors/Interfaces: (12) 10GbE SFP+, (3) 100GbE QSFP28, (1) Micro USB-B console port, (1) RJ-45 Ethernet management port, (1) RS-232 console port, (2) AC PSUs, (3) Fan modules, I/O Panel to PSU Airflow Dimensions: 1.75" H (1 RU) x 17.7" W x 8.2" D (4.4 x 45 x 20.9 cm) Mounting: Rackmounted Rack Clearance Required: Front: 5" (12.7 cm) Back: 5" (12.7 cm) Weight: 8.3 lb. (3.76 kg) with (2) PSUs and (3) fans
POWER	Input: 100–240 VAC, 50/60 Hz Maximum Current Draw per System: 2 A/1.7 A at 100/120 VAC; 1 A/0.8 A at 200/240 VAC Maximum Power Consumption: 180 W Typical Power Consumption: 90 W Max. Thermal Output: 180 W, 614 BTU/hr. Power Supply Type: (2) hot-swappable redundant AC power Fans: (3) hot-swappable redundant fans
STANDARDS	IEEE Compliance: 802.1ab LLDP; TIA-1057 LLDP-MED; 802.1s MSTP; 802.1w RSTP; 802.3ab Gigabit Ethernet (1000BASE-T); 802.3ad Link Aggregation with LACP; 802.3ae 10 Gigabit Ethernet (10GBASE-X); 802.3i Ethernet (10BASE-T); 802.3u Fast Ethernet (100BASE-TX); 802.3z Gigabit Ethernet (1000BASE-X); 802.1D Bridging, STP; 802.1p L1 Prioritization; 802.1Q VLAN Tagging, Double VLAN Tagging, GVRP; 802.1Qbb PFC; 801.2Qaz ETS; 802.1s MSTP; 802.1w RSTP; PVST+; 802.1X Network Access Control; 802.3ac Frame Extensions for VLAN Tagging; 802.3u Fast Ethernet (100BASE-TX) on mgmt ports; 802.3x Flow Control; 802.3z Gigabit Ethernet (1000BASE-X) with QSA; ANSI/TIA-1057, Jumbo MTU support 9416 bytes



SPECIFICATIONS

28-PORT 10G NETWORK SWITCH (EMS10G28)

FEATURES

- (1) RU HIGH-DENSITY 28-PORT 10 GBE SWITCH
- 960 GBPS (FULL-DUPLEX) NON-BLOCKING, CUT-THROUGH SWITCHING FABRIC DELIVERS LINE-RATE PERFORMANCE UNDER FULL LOAD
- REDUNDANT, HOT-SWAPPABLE POWER SUPPLIES AND FANS
- SUPPORTS 10GBASE FIBER OPTICS
- COMPLIES WITH IEEE 1588V2
- VXLAN GATEWAY SUPPORT FOR BRIDGING AND ROUTING NON-VIRTUALIZED AND VIRTUALIZED OVERLAY NETWORKS WITH LINE-RATE PERFORMANCE
- I/O PANEL TO PSU AIRFLOW
- CONVERGED NETWORK SUPPORT WITH DCB

WHAT'S INCLUDED WITH THE SWITCH

- (1) ETHERNET SWITCH
- (2) POWER CORDS
- (1) SET OF RACK RAILS
- (1) INFORMATION SHEET
- (1) CONSOLE CABLE RJ-45 TO DB9F
- (1) USB TYPE A/B CABLE

FRONT VIEW



EMS10G28

28-PORT 10G NETWORK SWITCH (EMS10G28) SPECIFICATIONS

APPROVALS	Directive 2015/35/EU, Directive 2015/30/EU, EN 62368-1, CE, FCC, ICES, RCM, RoHS, Reach, and TSCA
ENVIRONMENTAL	Operating Humidity: 10 to 85%, relative humidity, non-condensing Operating Temperature: 32 to 104° F (0 to 40° C) Storage Humidity: 5 to 95%, relative humidity, non-condensing Storage Temperature: -40 to +158° F (-40 to +70° C)
MANAGEMENT	Console port management: (1) RJ-45 serial Security/Authentication: RADIUS, RADIUS and IPv6, SSHv2, Security Architecture for IPSec, IPSec Authentication Header, ESP Protocol Network Management: SNMPv1/2, SSHv2, FTP, TFTP, SCP, Syslog, Port Mirroring, RADIUS, 802.1X, Support Assist (Phone Home, Netconf APIs, XML Schema, CLI Commit (Scratchpad), sFlow Automation: Control Plane Services APIs, Linux Utilities and Scripting Tools Quality of Service (QoS): Access Control Lists, Prefix List, Route-Map, Rate Shaping (Egress), Rate Policing (Ingress); Scheduling Algorithms: Round Robin, Weighted Round Robin, Deficit Round Robin, Strict Priority, Weighted Random Early Detect
PERFORMANCE	Switching Capacity: 960 Gbps; Forwarding Capacity: 720 Mpps; Frame Size: 9416 bytes; Packet Buffer Memory: 12 MB; CPU Memory: 4 GB; MAC Addresses: 160 K; ARP Table: 128 K; IPv4 routes: 128K; IPv6 hosts: 64K; IPv6 routes: 64K; Multicast hosts: 8K Link aggregation: 16 links per group, 128 groups; Layer 2 VLANs: 4K; MSTP: 64 instances; LAG load balancing: Based on layer 2, IPv4 or IPv6 headers



SPECIFICATIONS

28-PORT 10G NETWORK SWITCH (EMS10G28)

28-PORT 10G NETWORK SWITCH (EMS10G28) SPECIFICATIONS (CONTINUED)	
PHYSICAL	Connectors/Interfaces: (28) 10GbE SFP+, (2) 100GbE QSFP28, (2) AC PSUs, (4) Fan modules, I/O Panel to PSU Airflow Dimensions: 1.75" H (1 RU) x 17" W x 18" D (4.4 x 43.1 x 45.7 cm) Mounting: Rackmounted Weight: 19.66 lb. (8.92 kg)
POWER	Input: 100–240 VAC, 50/60 Hz Maximum Power: 290 W Typical Operating Power: 260 W Max. Thermal Output: 886 BTU/hr. Power Supply Type: (2) hot-swappable redundant AC power Fans: (4) hot-swappable redundant fans
STANDARDS	IEEE Compliance: 802.1ab LLDP; TIA-1057 LLDP-MED; 802.1s MSTP; 802.1w RSTP; 802.3ab Gigabit Ethernet (1000BASE-T); 802.3ad Link Aggregation with LACP; 802.3ae 10 Gigabit Ethernet (10GBASE-X); 802.3i Ethernet (10BASE-T); 802.3u Fast Ethernet (100BASE-TX); 802.3z Gigabit Ethernet (1000BASE-X); 802.1D Bridging, STP; 802.1p L1 Prioritization; 802.1Q VLAN Tagging, Double VLAN Tagging, GVRP; 802.1Qbb PFC; 801.2Qaz ETS; 802.1s MSTP; 802.1w RSTP; PVST+; 802.1X Network Access Control; 802.3ac Frame Extensions for VLAN Tagging; 802.3u Fast Ethernet (100BASE-TX) on mgmt ports; 802.3x Flow Control; 802.3z Gigabit Ethernet (1000BASE-X) with QSA; ANSI/TIA-1057, Jumbo MTU support 9416 bytes



SPECIFICATIONS

32-PORT 100G NETWORK SWITCH (EMS100G32-R2)

FEATURES

- (1) RU HIGH-DENSITY (32) ULTRA-SPEED PORTS (CAN ALSO CONNECT TO HIGH-SPEED)
- UP TO 6.4 TBPS OF SWITCHING I/O BANDWIDTH (FULL DUPLEX) AVAILABLE
- SCALABLE L2 AND L3 ETHERNET SWITCHING WITH QOS AND A FULL COMPLEMENT OF STANDARDS-BASED IPV4 AND IPV6 FEATURES, INCLUDING OSPF AND BGP ROUTING SUPPORT
- L2 MULTIPATH SUPPORT VIA VIRTUAL LINK TRUNKING (VLT) AND MULTIPLE VLT (MVL) MULTI-CHASSIS LINK AGGREGATION TECHNOLOGY
- VRF-LITE ENABLES SHARING OF NETWORKING INFRASTRUCTURE AND PROVIDES L3 TRAFFIC ISOLATION ACROSS TENANTS
- OPEN AUTOMATION FRAMEWORK ADDING AUTOMATED CONFIGURATION AND PROVISIONING CAPABILITIES TO SIMPLIFY THE MANAGEMENT OF NETWORK ENVIRONMENTS
- JUMBO FRAME SUPPORT FOR LARGE DATA TRANSFERS
- 128 LINK AGGREGATION GROUPS WITH UP TO EIGHT MEMBERS PER GROUP, USING ENHANCED HASHING
- REDUNDANT, HOT-SWAPPABLE POWER SUPPLIES AND FANS
- I/O PANEL TO PSU AIRFLOW
- TOOL-LESS MOUNTING KITS REDUCE TIME AND RESOURCES FOR SWITCH RACK INSTALLATION
- POWER-EFFICIENT OPERATION UP TO 45°C HELPING REDUCE COOLING COSTS IN TEMPERATURE-CONSTRAINED DEPLOYMENTS

WHAT'S INCLUDED WITH THE SWITCH

- (1) ETHERNET SWITCH
- (2) POWER CORDS
- (1) SET OF RACK RAILS
- (1) INFORMATION SHEET
- (1) CONSOLE CABLE RJ-45 TO DB9F
- (1) GROUNDING LUG/HARDWARE

32-PORT 100G NETWORK SWITCH (EMS100G32-R2) SPECIFICATIONS

APPROVALS	Directive 2015/35/EU, Directive 2015/30/EU, EN 62368-1, CE, FCC, ICES, RCM, RoHS, Reach, and TSCA
ENVIRONMENTAL	Operating Humidity: 10 to 90% (RH), noncondensing Operating Temperature: 32 to 113° F (0 to 45° C) Storage Humidity: 5 to 95% (RH), noncondensing Storage Temperature: -40 to +158° F (-40 to +70° C)
MANAGEMENT	Network Management: SMIv1, SNMPv1, Concise MIB Definitions, SNMP Traps, Bridges MIB, OSPFv2 MIB, Community-Based SNMPv2, IP MIB, IP Forwarding Table MIB, SMIv2, Textual Conventions for SMIv2; Security/Authentication: RADIUS, RADIUS and IPv6, Radius support for EAP, 802.1X with RADIUS, EAP, AES Cipher Algorithm in the SNMP User Base Security Model, SSHv2, Security Architecture for IPsec, IPsec Authentication Header, ESP Protocol, IPsec Security Policy DB MIB Type



SPECIFICATIONS

32-PORT 100G NETWORK SWITCH (EMS100G32-R2)

32-PORT 100G NETWORK SWITCH (EMS100G32-R2) SPECIFICATIONS (CONTINUED)	
PERFORMANCE	Switching Capacity: 6.4 Tbps; Forwarding capacity: Up to 4400 Mpps (Full Duplex); Packet buffer memory: 16MB; CPU memory: 8GB; MAC addresses: 136 K; ARP entries: 128K; IPv4 Unicast routes: 136 K; IPv6 Unicast routes: 68K; IPv4 Multicast routes: 68K; IPv6 Multicast routes: Not supported; Multicast Hosts: 8K; Layer 2 VLANs: 4K per port; Layer 3 VLANs: Standalone 1K/VLT 4K; MSTP: 64 instances; PVST+: 128 instances; LAG: 128 groups, 16 members per LAG group;; LAG load balancing: Based on layer 2, IPv4 or IPv6 headers;; Latency: Sub 500 ns; QOS data queues: 8; QOS control queues: 12; QOS: Default 1024 entries scalable to 2.5K; ACL Support: 3K
PHYSICAL	Connectors/Interfaces: (32) 100 Gbps Ethernet SFP ports, (2) SFP+ 10 GbE/1 GbE cages, (1) RJ-45 serial console management port, (1) 10/100/1000BT Ethernet port for management, (1) USB 2.0 Type A storage port, (1) micro USB Type B for console/management port access Dimensions: 1.75" H (1 RU) x 17.08" W x 18.11" D (4.4 x 43.4 x 46 cm) Mounting: Rackmounted Weight: 20.1 lb. (9.12 kg), including power modules
POWER	Input: 100–240 VAC, 50/60 Hz Max. Power Consumption: 605 W; Min. Power Consumption: 195 W; Power Supply Type: (2) hot-swappable redundant AC power Fans: (4) hot-swappable redundant fans
STANDARDS	LLDP, Bridging, STP, L2 Prioritization, VLAN Tagging, Double VLAN Tagging, GVRP, PFC, ETS, MSTP, RSTP, Network Access Control, Gigabit Ethernet (1000BASE-T) or breakout, Frame extensions for VLAN Tagging, Link Aggregation with LACP, MORE; ANSI/TIA-1057 LLDP-MED, Force10 PVST+. Jumbo MTU support 9.416 bytes



SPECIFICATIONS

24-PORT 1G NETWORK SWITCH (EMS1G24F)

FEATURES

- (1) RU SWITCH HAS (24) LINE-RATE FIBER PORTS AND (2) INTEGRATED 10G SFP+ PORTS
- NON-BLOCKING ACCESS
- I/O PANEL TO PSU AIRFLOW
- HOT-SWAPPABLE POWER SUPPLIES

WHAT'S INCLUDED WITH THE SWITCH

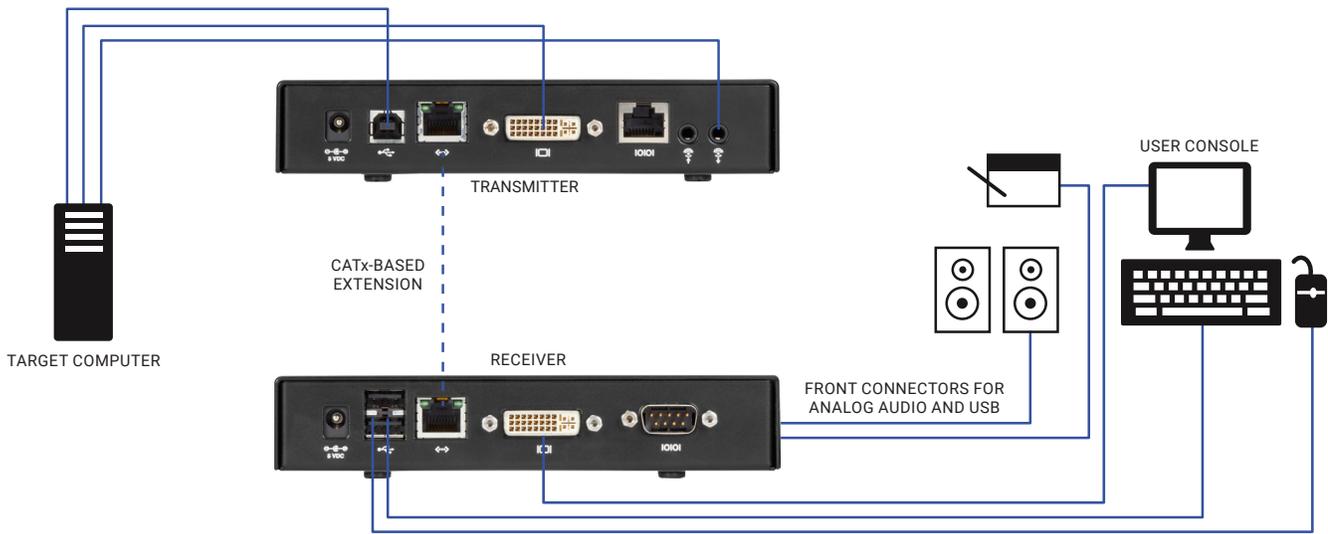
- (1) ETHERNET SWITCH
- (2) POWER CORDS
- (1) SET OF RACK RAILS
- (1) INFORMATION SHEET
- (1) CONSOLE CABLE RJ-45 TO DB9F
- (1) GROUNDING LUG/HARDWARE

24-PORT 1G NETWORK SWITCH (EMS1G24F) SPECIFICATIONS	
APPROVALS	Directive 2015/35/EU, Directive 2015/30/EU, EN 62368-1, CE, FCC, ICES, RCM, RoHS, Reach, and TSCA
ENVIRONMENTAL	Operating Humidity: 8 to 85% (RH), noncondensing Operating Temperature: 32 to 113° F (0 to 45° C) Storage Humidity: 5 to 90% (RH), noncondensing Storage Temperature: -40 to +158° F (-40 to +70° C)
MANAGEMENT	Network Management: SMIv1, SNMPv1, Concise MIB Definitions, SNMP Traps, Bridges MIB, OSPFv2 MIB, Community-Based SNMPv2, IP MIB, IP Forwarding Table MIB, SMIv2, Textual Conventions for SMIv2; Security/Authentication: RADIUS, RADIUS and IPv6, Radius support for EAP, 802.1X with RADIUS, EAP, AES Cipher Algorithm in the SNMP User Base Security Model, SSHv2, Security Architecture for IPsec, IPsec Authentication Header, ESP Protocol, IPsec Security Policy DB MIB Type
PERFORMANCE	Switching Capacity: 212 Gbps; Forwarding capacity: Up to 158 Mpps (Full Duplex); Packet buffer memory: 4 MB; CPU memory: 2 GB; Flash memory: 256 MB; MAC addresses: 56 K
PHYSICAL	Connectors/Interfaces: (24) 1-Gbps Ethernet SFP ports, (2) SFP+ 10 GbE/1 GbE cages, (1) RJ-45 serial console management port, (1) 10/100/1000BT Ethernet port for management, (1) USB 2.0 Type A storage port, (1) micro USB Type B for console/management port access Dimensions: 1.71" H (1 RU) x 17.09" W x 16.02" D (43 x 434 x 407 mm) Mounting: Rackmounted Weight: 13.45 lb. (6.1 kg), including power modules
POWER	Input: 100–240 VAC, 50/60 Hz Max. Power Consumption (excluding PoE power): 63 W; Max.Current Draw per System (excluding PoE power): 0.40 W at 40.41 W/100 VAC; Power Supply Type: (2) hot-swappable redundant AC power
STANDARDS	LLDP, Bridging, STP, L2 Prioritization, VLAN Tagging, Double VLAN Tagging, GVRP, PFC, ETS, MSTP, RSTP, Network Access Control, Gigabit Ethernet (1000BASE-T) or breakout, Frame extensions for VLAN Tagging, Link Aggregation with LACP, MORE; ANSI/TIA-1057 LLDP-MED, Force10 PVST+. Jumbo MTU support 9.416 bytes

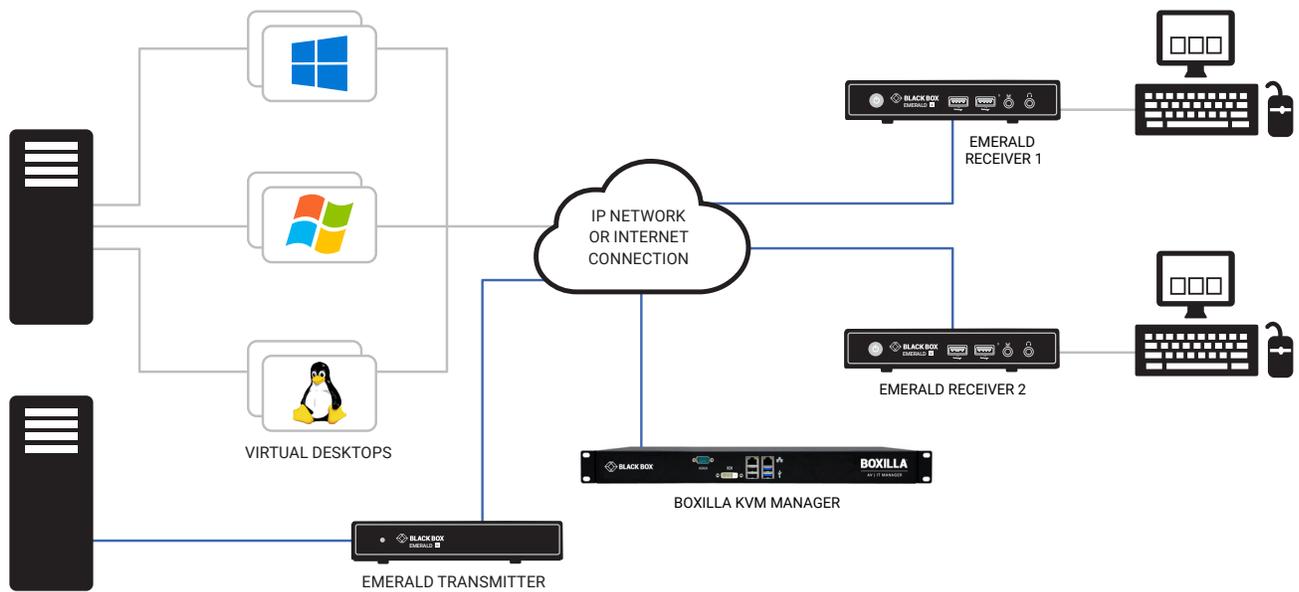


APPLICATION DIAGRAMS

BASIC EXTENDER APPLICATION



EMERALD SE SINGLE-HEAD TRANSMITTER AND RECEIVER MANAGED APPLICATION



COMPATIBLE RACKMOUNT KITS

COMPATIBLE RACKMOUNT KITS		
PART NUMBER	RACKMOUNT KIT(S)	NOTE
EMD200DV-T EMD200DP-T	N/A	Not required
EMD2000SE-T EMD2002SE-T EMD2000SE-R EMD2002SE-R	(1) DTX1000-RMK1 (2) DTX1000-RMK2 (1) EMD2000-RMK2	*EMD2000-RMK2 contains only 1 SE bracket, so only 1 SE can be mounted
EMD2000PE-T (-P) EMD2002PE-T (-P) EMD2000PE-R (-P) EMD2002PE-R (-P)	(2) EMD2000-RMK2	
EMD2000PE-DP-T EMD2002PE-DP-T	(3) EMD2000-RMK3	
EMD2000PE-DP-R EMD2002PE-DP-R	(2) EMD2000-RMK2	
EMD2000SE-DP-T EMD2002SE-DP-T	(3) EMD2000-RMK3	
EMD2000SE-DP-R EMD2002SE-DP-R	(3) EMD2000-RMK3 (2) EMD2000-RMK2	
EMD2000SE-T-R2 EMD2000PE-T-R2 EMD2002PE-T-R2	(3) EMD2000-RMK3 (2) EMD2000-RMK2	
EMD4000T EMD4000R	(2) EMD4000-RMK1 (2) EMD4000-RMK2-SLIM	



MTBF TABLE

MTBF	
EMD200DV-T	1,000,000 Calculated Hours at 25°C , by Telcordia SR-332
EMD200DP-T	930,000 Calculated Hours at 25°C , by Telcordia SR-33
EMD2000SE-T	800,000 Calculated Hours at 25°C , by Telcordia SR-332
EMD2000SE-T-R2	675,000 Calculated Hours at 25°C , by Telcordia SR-332
EMD2000SE-R	800,000 Calculated Hours at 25°C , by Telcordia SR-332
EMD2000SE-DP-T	300,000 hours (estimated)
EMD2000SE-DP-R	>700k
EMD2000PE-T	340,000 Calculated Hours at 25°C , by Telcordia SR-332
EMD2000PE-T-R2	>700k
EMD2000PE-R	320,000 Calculated Hours at 25°C , by Telcordia SR-332
EMD2000PE-R-P	320,000 Calculated Hours at 25°C , by Telcordia SR-332
EMD2000PE-DP-T	300,000 hours (estimated)
EMD2000PE-DP-R	>700k
EMD2002SE-T	950,000 Calculated Hours at 25°C , by Telcordia SR-332
EMD2002SE-R	900,000 Calculated Hours at 25°C , by Telcordia SR-332
EMD2002SE-DP-T	300,000 hours (estimated)
EMD2002SE-DP-R	>700k
EMD2002PE-T	320,000 Calculated Hours at 25°C , by Telcordia SR-332
EMD2002PE-T-R2	>700k
EMD2002PE-R	300,000 hours (estimated)
EMD2002PE-R-P	320,000 Calculated Hours at 25°C , by Telcordia SR-332
EMD2002PE-DP-T	300,000 hours (estimated)
EMD2002PE-DP-R	>700k
EMD4000T	810,000 Calculated Hours at 25°C , by Telcordia SR-332
EMD4000R	860,000 Calculated Hours at 25°C , by Telcordia SR-332

NOTE: The values above are either based upon actual calculations or estimations. This table will be updated over time when calculations are performed. The calculated values are designated with a method while the estimates are more general and have no method. If you require calculated estimates, contact Black Box technical support.



TECH SUPPORT/CONTACT INFORMATION

Visit blackbox.com/discover-bb/global-presence for regional technical support and contact information.



ORDERING INFORMATION

ITEM	CODE
Emerald® DESKVUE (TAA compliant)	EMD5104-R
Emerald 5K DESKVUE 4MON KVM MULTIS RX	EMD5004-R*
Emerald DESKVUE PE IP Multi-source receiver	EMD5004PE-R
Emerald Gateway VM with PColP	EMD3000GE
Emerald 4K High-Performance KVM	
4K Single-Head Extender	
Transmitter	EMD4000T
Receiver	EMD4000R
4K Single-Head Extender Kit, Includes (1) EMD4000T and (1) EMD4000R	EMD4000-KIT
Emerald PE KVM Over IP Technology	
Single-Head Extender	
Transmitter, no PoE	EMD2000PE-T*
Transmitter, PoE	EMD2000PE-T-P*
HD, DVI Transmitter,	EMD2000-PE-T-R2
Receiver	EMD2000PE-R*
Receiver, PoE	EMD2000PE-R-P
Emerald PE TX/RX Kit, HD DVI Single-Head w/ Audio VM Support, Includes (1) EMD2000PE-T and (1) EMD2000PE-R-P	EMD2000PE-K*
Emerald PE TX/RX Kit, includes (1) EMD2002SE-T-R2 and (1) EMD2002SE-R-R2	EMD2002PE-K-R2
Dual-Head Extender	
Transmitter, no PoE	EMD2002PE-T*
Transmitter, PoE	EMD2002PE-T-P*
HD, DVI Transmitter	EMD2002PE-T-R2
Receiver	EMD2002PE-R*
Receiver, PoE	EMD2002PE-R-P

ITEM	CODE
Emerald PE TX/RX Kit, HD DVI Dual-Head w/Audio VM Support, Includes (1) EMD2002PE-T and (1) EMD2002PE-R-P	EMD2002PE-K*
Emerald PE DisplayPort™ KVM Over IP Technology	
Single-Head Extender	
Transmitter	EMD2000PE-DP-T
Dual-Head Extender	
Transmitter	EMD2002PE-DP-T
Emerald SE KVM Over IP Technology	
Single-Head Extender	
Transmitter	EMD2000SE-T*
Receiver	EMD2000SE-R
HD, DVI Transmitter	EMD2000SE-T-R2
Dual-Head Extender	
Transmitter	EMD2002SE-T*
Receiver	EMD2002SE-R
Emerald SE DisplayPort KVM Over IP Technology	
Single-Head Extender	
Transmitter	EMD2000SE-DP-T
Receiver	EMD2000SE-DP-R
Dual-Head Extender	
Transmitter	EMD2002SE-DP-T
Receiver	EMD2002SE-DP-R



ORDERING INFORMATION (CONTINUED)

ITEM	CODE
Emerald 4-Port USB 2.0 Switchable Extender Kit over LAN	EMD100USB
Emerald 4-Port USB 2.0 Switchable Receiver over LAN	EMD100USB-R
Emerald USB 2.0 Switchable Transmitter over LAN	EMD100USB-T
Emerald ZeroU	
DVI Transmitter	EMD200DV-T
DisplayPort Transmitter	EMD200DP-T
Boxilla Endpoint License Only, no Boxilla Manager	
Boxilla Upgrade License, increase endpoints by 25	BXAMGR-LIC-25
Boxilla Upgrade License, increase endpoints by 100	BXAMGR-LIC-100
Boxilla Upgrade License, increase endpoints by 200	BXAMGR-LIC-200
Boxilla Upgrade License, increase endpoints by 300	BXAMGR-LIC-300
Boxilla Endpoint License Only for Primary/Backup, no Boxilla Manager	
Boxilla Manager & Backup + 25 endpoint licenses	BXAMGR-LICBAK-25
Boxilla Manager & Backup + 100 endpoint licenses	BXAMGR-LICBAK-100
Boxilla Manager & Backup + 200 endpoint licenses	BXAMGR-LICBAK-200
Boxilla Manager & Backup + 300 endpoint licenses	BXAMGR-LICBAK-300
RemoteApp Licenses (must be applied to Boxilla)	
30-Day Trial License for 2 Connections	EMDRMDEMO-LIC
Boxilla RemoteApp 1 Connection License	EMDRM1-LIC
Boxilla RemoteApp 2 Connection License	EMDRM2-LIC
Boxilla RemoteApp 5 Connection License	EMDRM5-LIC
Boxilla RemoteApp 10 Connection License	EMDRM10-LIC
Boxilla RemoteApp 20 Connection License	EMDRM20-LIC
Ethernet Switches	
1G 24-Port SFP	EMS1G24F
1G 48-Port	EMS1G48
10G 12-Port	EMS10G12
10G 28-Port	EMS10G28
100G 32-Port	EMS100G32-R2

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ITEM	CODE
Boxilla™ KVM Manager	
with 25 endpoint licenses	BXAMGR-R2
with 75 endpoint licenses	BXAMGR-R2-75
with 125 endpoint licenses	BXAMGR-R2-125
with 225 endpoint licenses	BXAMGR-R2-225
with 325 endpoint licenses	BXAMGR-R2-325
with unlimited endpoint licenses	BXAMGR-R2-ULT
Rackmount Kits	
Emerald Rackmount Kit - 1 or 2 4K KVM Units, 1RU	EMD4000-RMK1
Emerald Rackmount Kit - Slim, 1 or 2 4K KVM Units, 1RU	EMD4000-RMK2-SLIM
Emerald PE Rackmount Bracket for 2 KVM PE Extenders (supports up to 2 EmeraldPE EMD2000PE-T, EMD2002PE-T, EMD2000PE-R, EMD2002PE-R, EMD2000PE-R-P, EMD2002PE-R-P, EMD2000PE-DP-R, or EMD2002PE-DP-R)	EMD2000-RMK2
Emerald Rackmount Bracket for 3 SE or PE DisplayPort™ KVM Extenders (supports EMD2000SE-T-R2 and DP Variants EMD2000SE-DP-T, EMD2002SE-DP-T, EMD2000PE-DP-T, EMD2002PE-DP-T, EMD2000SE-DP-R, and EMD2002SE-DP-R)	EMD2000-RMK3
Emerald Rackmount Bracket for 1 EMD2000SE-T, EMD2002SE-T, EMD2000SE-R, EMD2002SE-R, EMD2000PE-T-R2 and EMD2002PE-T-R2	DTX1000-RMK1
Emerald Rackmount Bracket for 2 EMD2000SE-T, EMD2000SE-R, EMD2002SE-T, EMD2002SE-R, EMD2000PE-T-R2 and EMD2002PE-T-R2 extender units	DTX1000-RMK2
Rackmount kit for EMS10G12 for 4-post rack	EMS10G12-RMK
Spares	
5VDC, 4 Amp Power Supply	EMD2000-PSU
12VDC, 3 Amp Power Supply	EMD4000-PSU
Power Supply for EMS1G24F	EMS1G24FPS
Spare/Redundant Power Supply for EMS10G28	EMS10G28PS
Power Supply for EMS1G48	EMS1G48PS
Spare Fan for EMS1G48	EMS1G48FAN

* EOL

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