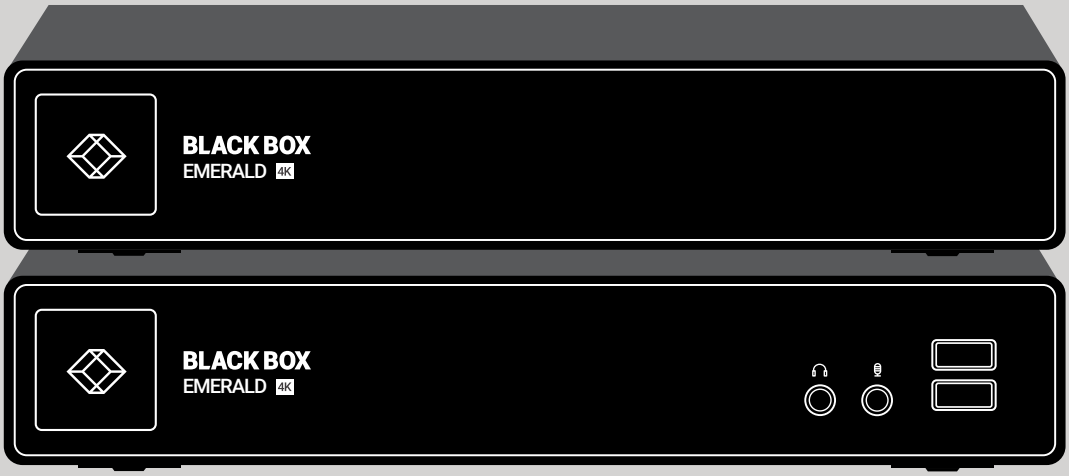
DATA SHEET

EMD SERIES

EMERALD UNIFIED KVM FAMILY

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



BLACK BOX®

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)

– 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 VERSION HAS 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**

EMERALD UNIFIED KVM FAMILY DATA SHEET

COMPARISON CHART: TRANSMITTERS AND RECEIVERS

SPECIFICATION COMPARISON CHART: TRANSMITTERS AND RECEIVERS								
	NUMBER OF VIDEO HEADS	USB PORTS	NETWORK	POE	SERIAL	AUDIO	SFP+	RESOLUTION
RECEIVERS								
4K RECEIVER (EMD4000R)	(1) DISPLAYPORT™	(4) USB TYPE A	(1) RJ-45*	NO	(1) DB9	(2) 3.5 mm	(2)	4096 x 2160
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 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 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, 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
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
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
TRANSMITTERS								
4K TRANSMITTER (EMD4000T)	(1) DISPLAYPORT	(1) USB TYPE B	(1) RJ-45*	NO	(1) DB9	(2) 3.5 mm	(2)	4096 x 2160
PE POE TRANSMITTER, SINGLE-HEAD (EMD2000PE-T)[1]	(1) DVI	(1) USB TYPE B	(1) RJ-45, (1) SFP	YES	NONE	(2) 3.5 mm	NONE	1920 x 1200
PE POE TRANSMITTER, DUAL-HEAD (EMD2002PE-T)[2]	(2) DVI	(1) USB TYPE B	(1) RJ-45, (1) SFP	YES	NONE	(2) 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 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
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 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, SINGLE-HEAD (EMD2000SE-T-R2)	(1) DVI	(1) USB TYPE B	(1) RJ-45	NO	NONE	(1) 3.5 mm	NONE	1920 x 1080
SE TRANSMITTER, DUAL-HEAD (EMD2002SE-T[4])	(2) DVI	(1) USB TYPE B	(1) RJ-45	NO	NONE	(2) 3.5 mm	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
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
ZEROU DVI TRANSMITTER (EMD200DV-T)	(1) DVI	(2) USB TYPE A	(1) RJ-45	NO	NONE	(1) 3.5 mm	NONE	1920 x 1200
ZEROU DISPLAYPORT TRANSMITTER (EMD200DP-T)	(1) DISPLAYPORT	(2) USB TYPE A	(1) RJ-45	NO	NONE	embedded audio on DP	NONE	1920 x 1200

* EOL

[1] EMD2000PE-T is EOL. It is replaced by EMD2000PE-T-R2.

[2] EMD2002PE-T is EOL. It is replaced by EMD2002PE-T-R2.

[3] EMD2000SE-T is EOL. It is replaced by EMD2000SE-T-R2.

[4] EMD2002SE-T is EOL. It is replaced by EMD2002PE-T-R2.

NOTE: The products listed above cover the 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

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

SPECIFICATIONS

EMERALD DESKVUE

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. 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
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**
- **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

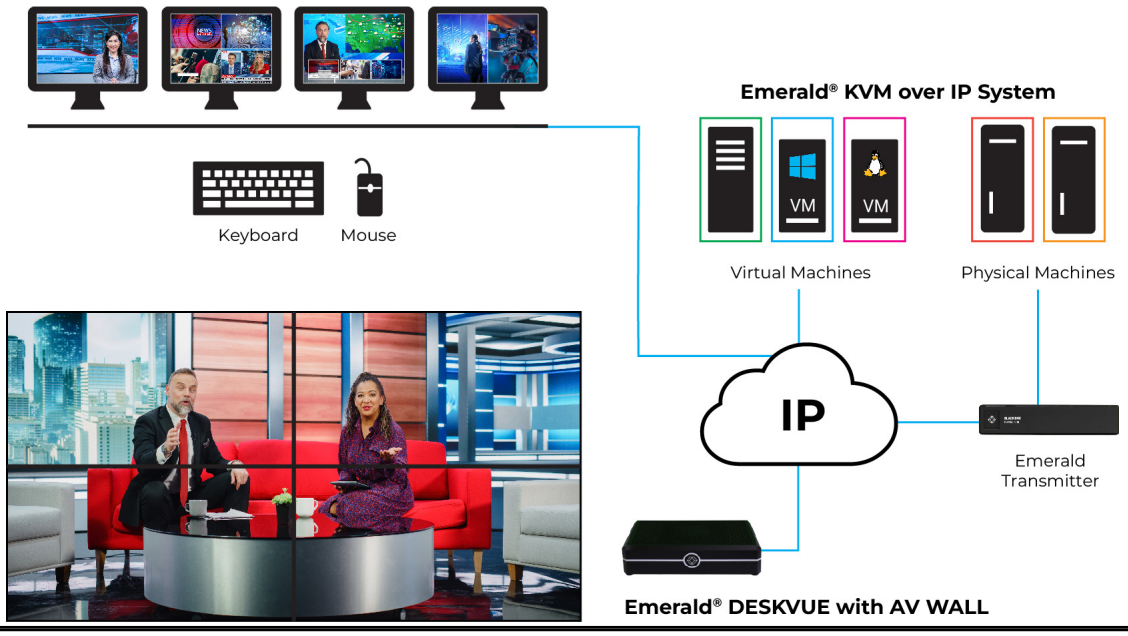
BACK VIEW

SPECIFICATIONS

EMERALD DESKVUE

SPECIFICATIONS FOR EMERALD® DESKVUE KVM RECEIVER	
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



SPECIFICATIONS

EMERALD ZEROU DVI TRANSMITTER (EMD200DV-T)

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	EMD200DV-T: 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, Llnux®, and Mac OS
CONNECTORS	EMD200DV-T: (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	0.4 lb. (181 g)
OPERATION	
DEFAULT IP ADDRESS	EMD200DV-T: 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

SPECIFICATIONS

EMERALD ZEROU DISPLAYPORT TRANSMITTER (EMD200DP-T)

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.

TRANSMITTER

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	EMD200DP-T: 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	EMD200DP-T: (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	0.4 lb. (181 g)
OPERATION	
DEFAULT IP ADDRESS	EMD200DP-T: 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

SPECIFICATIONS

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

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

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

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

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-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)

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	1.18 lb. (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 (12VDC, 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)

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

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

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

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.**

SPECIFICATIONS

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

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: 1.47 lb. (667 g); EMD2002PE-R, EMD2002PE-R-P, EMD2002PE-T-P: 1.36 lb. (617 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 (12VDC, 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)

TRANSMITTER FRONT VIEW

TRANSMITTER 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

SPECIFICATIONS

EMERALD PE SINGLE-HEAD DISPLAYPORT TRANSMITTER (EMD2000PE-DP-T)

SPECIFICATIONS FOR EMERALD PE DISPLAYPORT TRANSMITTER, SINGLE -HEAD (EMD2000PE-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) 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);
DIMENSIONS	1.34" H x 5.39" W x 6.1" D (34 x 137 x 155 mm)
WEIGHT	0.85 lb. (385 g)
OPERATION	
DEFAULT IP ADDRESS	EMD2000PE-DP-T: 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	36 W maximum (Unit consumes 9 W)
HEAT DISSIPATION	122.76 BTW/hr maximum
OUTPUT CONNECTOR	3-pin locking connector (12VDC, 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)

TRANSMITTER FRONT VIEW

TRANSMITTER 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

SPECIFICATIONS

EMERALD PE DUAL-HEAD DISPLAYPORT TRANSMITTER (EMD2002PE-DP-T)

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)
DIMENSIONS	1.34" H x 5.39" W x 6.1" D (34 x 137 x 155 mm)
WEIGHT	0.85 lb. (385 g)
OPERATION	
DEFAULT IP ADDRESS	EMD2002PE-DP-T: 192.168.1.22
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 (12VDC, 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)

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

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

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

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

SPECIFICATIONS

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

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	1.18 lb. (535 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 (5VDC, 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)

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)

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 (5VDC, 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)

TRANSMITTER FRONT VIEW

RECEIVER FRONT VIEW

TRANSMITTER BACK 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

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

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

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

SPECIFICATIONS

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

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: 1.47 lb. (667 g); EMD2002SE-R: 1.36 lb. (617 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 (5VDC, 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)

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)

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 (12VDC, 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)

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)

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 (12VDC, 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)

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

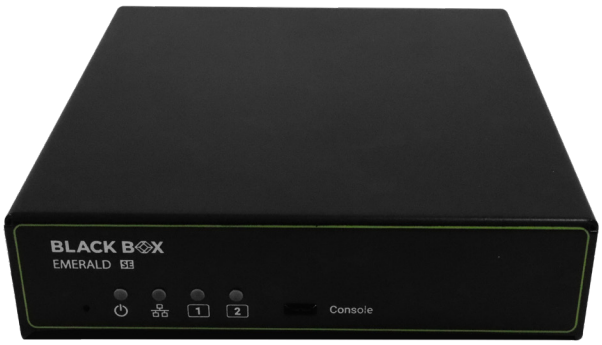
EMERALD SE SINGLE-HEAD DISPLAYPORT TRANSMITTER (EMD2000SE-DP-T) AND RECEIVER (EMD2000SE-DP-R)

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 (5VDC, 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)

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) 5VDC POWER SUPPLY WITH POWER CORD

SPECIFICATIONS

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

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	1.34" H x 5.39" W x 6.07" D (34 x 137 x 154 mm)
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 BTW/hr maximum; EMD2002SE-DP-R: 68.2 BTU/h maximum
OUTPUT CONNECTOR	EMD2002SE-DP-T: 3-pin locking connector (12VDC, 3 Amp output); EMD2002SE-DP-R: 2.5-mm barrel (5VDC, 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)

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

SPECIFICATIONS

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

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: -4ºF to 140ºF (-20º C to 60º C); Operating Humidity: 5–95%
POWER	External desktop-style adapter, 100–240 VAC input, 12 VDC, 3 A connection to unit
DIMENSIONS	Each unit: 1.5" H x 8.5" W x 7.4" D (38 x 216 x 188 mm)
WEIGHT	EMD4000T: 2.50 lb. (1.1 kg); EMD4000R: 2.55 lb. (1.2 kg)

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

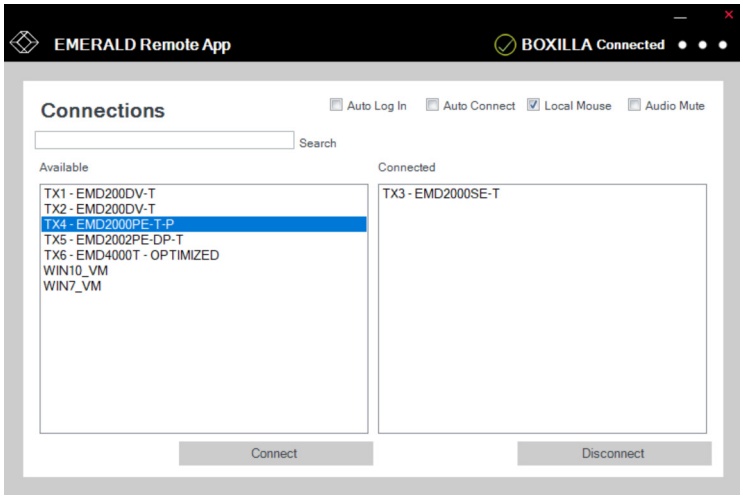
– EMDRM20-LIC: Emerald Remote Access, 20 Connections

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

WHAT'S INCLUDED WITH THE SWITCH

- (1) SWITCH
- (1) POWER SUPPLY
- (4) 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+;

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	Operating Humidity: 5 to 85%, relative humidity, non-condensing Operating Temperature: 41 to 104° F (5 to 40° C) Storage Humidity: 5 to 90%, relative humidity, non-condensing Storage Temperature: -40 to +149° F (-40 to +65° C) NOTE: Reduce maximum temperature by 1°/228 ft. (1°/125 m) above 3117 ft. (950 m) Maximum Operating Altitude: 10,000 ft. (3 km) Maximum Non-operating Altitude: 39,370 ft. (12 km) Shock: Dell EMC Spec SV0115
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: 840 Gbps; Forwarding Capacity: 720 Mpps; Frame Size: 9416 bytes; Packet Buffer Memory: 12 MB; CPU Memory: 4 GB; MAC Addresses: 272K (in Scaled L2 mode); ARP Table: 200K (in Scaled L3 routes mode); IPv4 routes: 200K (in Scaled L3 routes mode); IPv6 hosts: 64K; IPv6 routes: 130K (in scaled L3 routes mode); Multicast hosts: 8K Link aggregation: 16 links per group, 128 groups; Layer 2 VLANs: 4K; MSTP: 32 instances; LAG load balancing: Based on layer 2, IPv4 or IPv6 headers

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 (MVLT) 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**

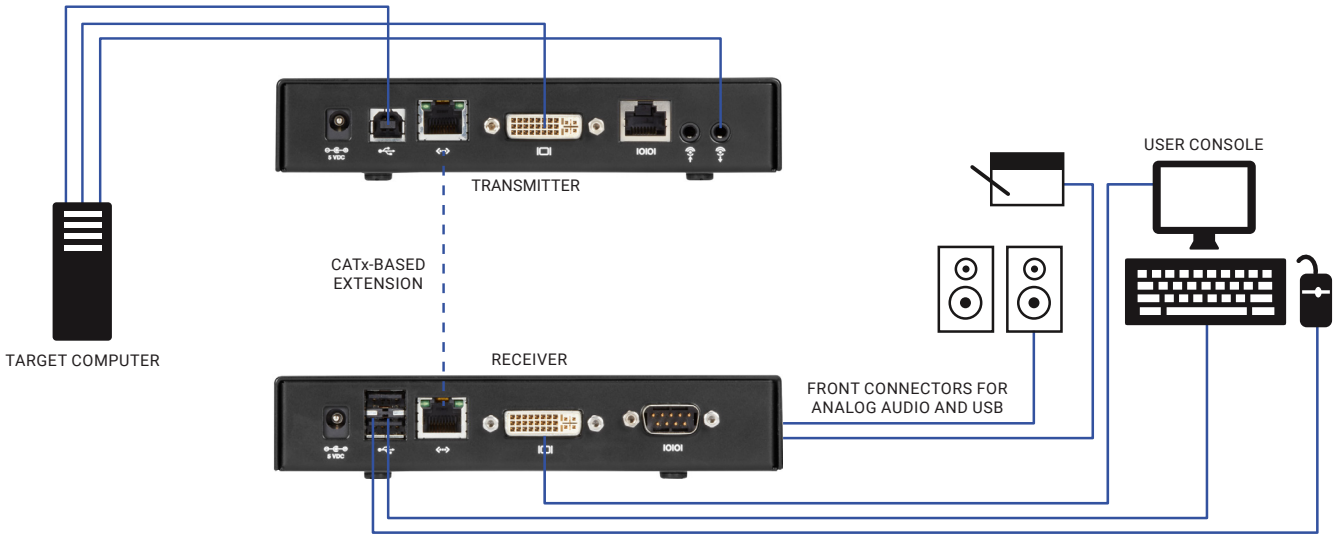
WHAT'S INCLUDED WITH THE SWITCH

- **(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**

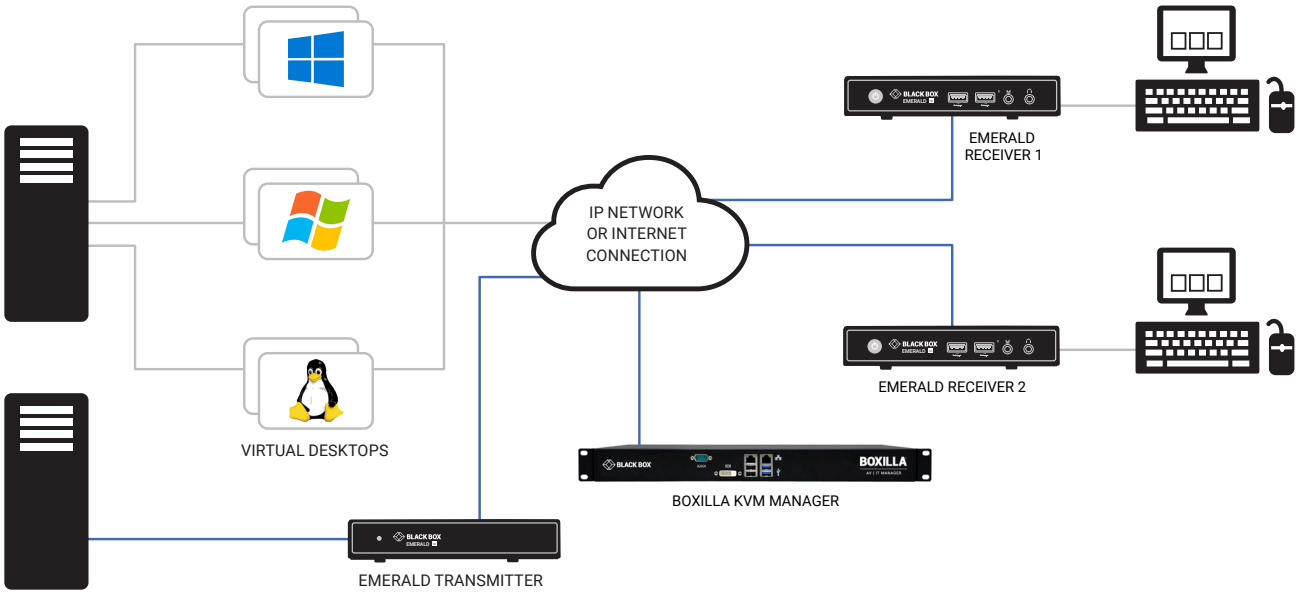
24-PORT 1G NETWORK SWITCH (EMS1G24F) SPECIFICATIONS	
APPROVALS	Directive 2015/35/EU, Directive 2015/30/EU, EN 62368-1, CE, FCC, ICES, RCM, RoHS, Reach, and TSCA
ENVIRONMENTAL	Operating Humidity: 8 to 85% (RH), noncondensing Operating Temperature: 32 to 113° F (0 to 45° C) Storage Humidity: 5 to 90% (RH), 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



RACKMOUNT KITS

EMD4000-RMK1
Mount one or two EMD4000 series in 1RU of space.

NOTE: Use EMD4000-RMK2 for a blank if mounting only one unit.

EMD4000-RMK2-SLIM
Mount up to two EMD4000 units in 1RU.

EMD2000-RMK2
Mount up to 2 EmeraldPE EMD2000PE-T, EMD2002PE-T, EMD2000PE-R, EMD2002-PE-R, EMD2000PE-R-P, or EMD2002PE-R-P.

EMD2000-RMK3
Mount three units in 1RU. This kit supports EMD2000PE-DP-T, EMD2002PE-DP-T, EMD2000SE-DP-T, and EMD2002SE-DP-T.

DTX1000-RMK1
Mount one Emerald® SE EMD2000SE-T, EMD2002SE-T EMD2000SE-R, or EMD2002SE-R.

DTX1000-RMK2
Mount two Emerald SE EMD2000SE-T, EMD2000SE-R, EMD2002SE-T, or EMD2002SE-R extender units.

ABOUT BLACK BOX

Black Box® is a trusted IT solutions provider delivering cutting-edge technology solutions and world-class consulting services to businesses on every continent. The breadth of our global reach and depth of expertise accelerate customer success by bringing people, ideas, and technology together to solve real-world business problems. Our IT infrastructure solutions, services, and products enable secure, flawless connectivity and meaningful collaboration across town or around the globe. To learn more, visit the Black Box website at https://www.blackbox.com. Follow the company on Twitter @BlackBox_ns.

DISCLAIMER

ORDERING INFORMATION

ITEM	CODE
Emerald® DESKVUE	**EMD5004-R**
Emerald 4K High-Performance KVM	
4K Single-Head Extender	
Transmitter	**EMD4000T**
Receiver	**EMD4000R**
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***
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**
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**

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ITEM	CODE
Dual-Head Extender	
Transmitter	**EMD2002SE-DP-T**
Receiver	**EMD2002SE-DP-R**
Emerald ZeroU	
DVI Transmitter	**EMD200DV-T**
DisplayPort Transmitter	**EMD200DP-T**
Emerald Remote App	
Emerald Remote Access, 30-day Trial (4 Connections)	**EMDRMDEMO-LIC**
Emerald Remote Access, 1 Connection	**EMDRM1-LIC**
Emerald Remote Access, 5 Connections	**EMDRM5-LIC**
Emerald Remote Access, 10 Connections	**EMDRM10-LIC**
Emerald Remote Access, 20 Connections	**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**
Management Device	
Boxilla™ KVM Manager	**BXAMGR-R2**
Rackmount Kits	
Emerald Rackmount Kit - 1 or 2 4K KVM Units, 1 RU	**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	**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, and EMD2002PE-DP-T)	**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**

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