GEM-EX

Dual 4K HDMI, USB, Audio, & RS-232 Extender Over 1 CAT6 up to 100M Daisy-Chainable Receivers

Specifications

Rev. 1.0 — October 16, 2026





INTRODUCTION

Features

- Supports high resolution HDMI video including FHD (1920x1080), WQHD (2560x1440), and 4K UHD (3840x2160)
- Two video streams, one USB port, one audio signal, and two RS-232 ports extended over a single CAT6 cable up to 100 m/328 ft.
- Full plug-and-play support with USB keyboard, mouse, and connected peripherals
- Computer OS independent - No driver or software required
- Local HDMI and USB outputs on the Sender
- Two Sender extension outputs and one Receiver daisy-chain output to distribute video to multiple locations
- No video calibration required; no video quality reduction due to cable length or resolution
- Locking power supply connector to prevent inadvertent disconnection
- Sender includes mounting ears for standard 19” rack; Receiver includes mounting brackets for surface mounting.

Description

The GEM-EX is a Dual-Head HDMI and USB 2.0 KVM Extender over just one CAT6 cable to 100m. The GEM-EX Sender provides 2 HDMI inputs, one audio input (for DVI sources), a dual-port RS-232, and one USB port for connection to a host PC. The Sender provides local HDMI outputs and a 2 port USB hub. Remote Receiver connects to the Sender using just one Cat6 cable. The Sender provides 2 RJ45 outputs so more than one Receiver can be connected to allow access to the PC from multiple remote locations. When more than one Receiver is connected, all Receivers show the same two video screens and keyboard/mouse data from either remote location are automatically routed to the PC based on user activity. The system is transparent to the PC and does not require any drivers. RS-232 baud rates are configured using a simple PC GUI.

The GEM-EX Receiver provides two HDMI video outputs, an analog audio output, dedicated keyboard and mouse ports (with auto switching), a 4-port USB 2.0 hub for connection of other USB devices such as touch-screens, printers, etc., and two RS-232 control outputs (splitter cables required for second RS-232 port.) No calibration is required, just connect the Sender to the Receiver using a Cat5e/6 cable and you are ready to go! A PC GUI is used to configure the RS-232 baud rates. The system supports video resolutions to 3840 x 2160 (UHD/4K), but it also supports and is ideal for applications requiring 2560 x 1600, 2560 x 1440, and 1920 x 1080. Other standard HDTV and PC resolutions are also supported.

The GEM-EX system is ideal for high resolution KVM applications requiring computers to be kept in a secure server room and accessed remotely from either single or multiple locations such as in trading rooms in financial institutions or accessing information or monitoring patients in healthcare facilities.

SPECIFICATIONS

Specification	GEM-EX
Video Standards	DVI (single link) HDMI 1.4a video specifications including 12 bit color depth, 3D video HDCP 1.4
Connectors	**GEM-EX-S** (2) HDMI Inputs, (2) HDMI Outputs (1) 3.5MM Audio Input (Stereo Analog) (1) USB-B Host Port, (2) USB-A Device Ports (1) RS-232 Dual Port (Splitter required) (2) RJ45 Link Outputs (1) 2.1MM Locking DC Power Input **GEM-EX-R** (2) HDMI Outputs (1) 3.5MM Audio Output (Stereo Analog) (2) USB-A 1.1 Device Ports , (4) USB-A 2.0 Device Ports (1) RS-232 Dual Port (Splitter required) (1) RJ45 Link Input , (1) RJ45 Link Output (1) 2.1mm Locking DC Power Input
Resolutions	**PC** VGA to WQXGA (2560x1600) **HDTV** 480p to 4K/UHD including QHD (2560x1440)
Refresh Rates	60Hz for resolutions up to and including HD (1920x1080) and WUXGA (1920x1200) 30 Hz for resolutions above and including QHD (2560x1440)
Power Supply / Current Draw	100 VAC to 240 VAC, 47-63 Hz, External; 5V DC @ 4A **GEM-EX-S:** 2.5A DC depending on # and type of connected USB devices **GEM-EX-R:** 1.5A DC depending on # and type of connected USB devices
Temp/Humidity	Storage: -40 to +158 °F (-40 to +70 °C) / 10% to 90%, non-condensing Operating: +32 to +122 °F (0 to +50 °C) / 10% to 90%, non-condensing
Cooling	Convection
Enclosure type	Metal (Steel)
Dimensions	**GEM-EX-S:** 6.09" L x 11.23" W x 1.66" H **GEM-EX-R:** 5.04" L x 9.00" W x 1.12" H
Product weight	Model Only **GEM-EX-S** 2.8 lbs (1.3 kg) **GEM-EX-R** 1.3 lbs (0.6 kg) Shipping **GEM-EX-S** 4.4 lbs (2.0 kg) **GEM-EX-R** 3.1 lbs (1.4 kg)

Specification	GEM-EX
Certifications	
Safety	CE per IEC / EN 60601-1-2
EMI/EMC	CE, FCC Class B

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