

GENESIS™ 1G-HDMI Transceiver



Overview

The **G1G-HDMI Transceiver** is a high-performance KVM over IP solution designed for real-time video distribution and workstation control over standard Gigabit Ethernet. Supporting up to 4K60 4:4:4, it combines dedicated video codec and KVM processing to deliver high-quality video with imperceptible latency. Each unit can be configured as either a transmitter (TX) or receiver (RX), providing a flexible and scalable architecture for system deployment and expansion.

Designed for demanding multi-workstation environments, G1G enables operators to monitor, access and control multiple sources across single or multiple displays. Flexible multiview layouts, intuitive move & switch operation, and layout save & recall allow each workstation to be configured around individual operational requirements. Multiple workstations can operate independently while sharing access to sources across the same network.

G1G provides a comprehensive KVM platform for professional control rooms, command & control centres and other mission-critical applications.

Features

- Supports up to 4096×2160@60Hz with 4:4:4 colour sampling
- End-to-end KVM latency as low as 4 ms
- Dedicated video codec and KVM processing architecture
- Configurable TX / RX in one unit
- Supports single, dual & quad-view layouts and save & recall
- Supports Multi-screen KVM workstation
- Move & switch across multiple displays
- Supports multi-workstations
- Flexible user and permission management
- Supports videowall management from workstation
- Supports Internal communication & source sharing
- Supports centralised configuration and management
- Supports USB KVM extension and routing over IP with high OS compatibility: Windows, macOS, Android, Linux, etc.
- Supports audio embedding and de-embedding
- Supports real-time source preview
- Supports control via RS-232, IR and UDP
- Supports both DC and PoE for simplified installation
- Standard Gigabit Ethernet infrastructure
- OLED display for IP address and status
- No PC vulnerabilities
- Integrated environmental control

Specifications

Video Input	1 × HDMI 2.0: Up to 4096 × 2160 @ 60 Hz
Video Output	1 × HDMI 2.0: Up to 4096 × 2160 @ 60 Hz
Video Encoding	FPGA: Up to 1 × 4096 × 2160 @ 60 Hz; H.265: Up to 1 × 4096 × 2160 @ 60 Hz + 1 × 2048 × 1080 @ 60 Hz + 1 × 1024 × 540 @ 30 Hz; JPEG: Up to 1 × 1024 × 540 @ 30 Hz
Video Decoding	FPGA: 1 × 4096 × 2160 @ 60 Hz / 4 × 2048 × 1080 @ 60 Hz; H.265: 1 × 4096 × 2160 @ 60 Hz / 4 × 2048 × 1080 @ 60 Hz
Audio Encoding	48 kHz sampling: PCM, G.711, AAC
Audio Decoding	48 kHz sampling: PCM, G.711, AAC
Audio Input	HDMI embedded audio; 1 × single-ended stereo; 3-pin 3.5 mm Phoenix connectors
Audio Output	HDMI embedded audio; 1 × single-ended stereo; 3-pin 3.5 mm Phoenix connectors
Serial Ports	1 × RS-232 / 1 × RS-485: 3-pin 3.5 mm Phoenix connectors
Relay	1 × 24 V low-voltage relay: 2-pin 3.5 mm Phoenix connectors
I/O	4 × 5 V: 5-pin 3.5 mm Phoenix connectors
IR	Shared with I/O
USB	1 × USB 2.0 for PC USB; 2 × USB 2.0 for USB peripherals; 1 × dedicated USB 2.0 for USB pass-through
Network	1 × Gigabit RJ-45; 1 × 1G SFP
Power	PoE: IEEE 802.3at; 12 VDC / 3 A
OLED Display	White OLED: Displays IP address, device status, etc.
Mode Switch	Up: RX Receiver; Down: TX Transmitter
Dimension	210 x 150 x 48 mm
Weight	1.2kg
Temperature	0 - 40°C
Humidity	10–90% RH, non-condensing

System Diagram

