1U AV Control System with 8 Serial, 8 Relay, 8 IR/Serial & 8 Digital I/O

Rack-mount room controller with up to 16 serial connections and open protocol support

MPN: CR-HOST8R

Version 1.0

Important: Read these instructions carefully before connecting, operating, or adjusting this product. Keep this manual for future reference.

Surge Protection Recommended: Sensitive electrical components may be damaged by spikes, surges, or lightning. Surge protection is highly recommended.

TABLE OF CONTENTS

1. INTRODUCTION

The KanexPro CR-HOST8R is a rack-mount integrated control system host designed for commanding centers, automated offices, multi-media rooms, and large venues. With 8 bidirectional serial ports (COM 1–4: RS-232/RS-422/RS-485 + HW flow; COM 5–8: RS-232), 8 IR/serial outputs, 8 relay ports, 8 digital I/O, and Gigabit Ethernet, it is suitable for large-scale control of multiple devices. Powered by AC 110–220V. Standard 1U rack mount.

2. FEATURES

- ✓ ARM Cortex-A53, 1.8GHz, 2GB DDR4 RAM, 8GB eMMC, Android 9
- ✓ 8× bidirectional serial — COM 1–4: RS-232/RS-422/RS-485 + HW flow; COM 5–8: RS-232
- ✓ 8× IR outputs configurable as one-way RS-232 (up to 16 serial total)
- ✓ 8× relay ports for lights, doors, curtains, motorized screens (2A 30VDC / 1A 125VAC)
- ✓ 8× digital I/O inputs for sensors (0–24V dry contact)
- ✓ Gigabit Ethernet (10/100/1000M) with TCP/UDP/HTTP/WebSocket
- ✓ IR learning (20KHz–60KHz)
- ✓ Built-in web server with password protection and firmware upgrade
- ✓ Built-in sync clock, factory reset
- ✓ Standard 1U rack mount (19″), AC 110–220V 50/60Hz

3. PACKAGE CONTENTS

- 1× Control System Host
- 4× 3-pin Phoenix Connector
- 1× 4-pin Phoenix Connector
- 2× 5-pin Phoenix Connector
- 4× 8-pin Phoenix Connector
- 4× 9-pin Phoenix Connector
- 2× Mounting Ears
- 6× Machine Screws
- 1× 220V/10A AC Power Cord
- 1× User Manual

Specifications

Technical	
CPU	ARM Cortex-A53, 1.8GHz
Operating System	Android 9
RAM	2GB DDR4
Flash Memory	8GB eMMC
LEDs	1× IR Learning (Yellow), 1× Power (Red), 1× LAN (Green), 1× Status (Blue), 8× TX (Yellow), 8× RX (Yellow), 8× IR/Serial (Yellow), 8× Relay (Yellow), 8× I/O (Yellow)
Connection	
COM 1–4	4× 9-pin Phoenix — RS-232/RS-422/RS-485 + HW flow, 2400–115200bps
COM 5–8	4× 3-pin Phoenix — RS-232 (TXD/GND/RXD), 2400–115200bps
IR-Serial Output	2× 8-pin Phoenix — 8 ports, IR (20K–60KHz) or one-way RS-232 (0–5V)
Relay Output	2× 8-pin Phoenix — 8 channels, normally open, 2A 30VDC / 1A 125VAC
Digital I/O	2× 5-pin Phoenix — 8 channels, 0–24V dry contact input
LAN	1× 10/100/1000M Gigabit Ethernet RJ45
USB	1× USB Type-A (reserved), 1× USB Type-B (computer/debug)
H-NET	1× 4-pin Phoenix — private bus interface (reserved)
Reset	1× Factory reset button
IR Learning	1× IR learning window
Mechanical	
Housing	Metal enclosure + aluminum alloy front panel, black
Installation	Standard 19″ rack (1U) with ears, or flat mount
Dimensions	17.32″ × 7.87″ × 1.73″ (440 × 200 × 44 mm)
Weight	4.63 lbs (2.1 kg)
Power Supply	AC 110–220V 50/60Hz (IEC inlet, 220V/10A cord included)
Power Consumption	55W
Operating Temp	32°F – 104°F (0°C – 40°C)
Humidity	10%–90% RH (non-condensing)
Package Contents	
1×	Control System Host
4×	3-pin Phoenix Connector
1×	4-pin Phoenix Connector
2×	5-pin Phoenix Connector
4×	8-pin Phoenix Connector
4×	9-pin Phoenix Connector
2×	Mounting Ears + 6× Machine Screws
1×	220V/10A AC Power Cord
1×	User Manual

Operation Controls

5.1 FRONT PANEL

#	NAME	DESCRIPTION
1	**IR Learning LED**	Yellow LED blinks when IR wave is received
2	**IR/Serial LEDs (8)**	Yellow — blinks when corresponding IR/serial port is transmitting
3	**Relay LEDs (8)**	Yellow — on when corresponding relay port is closed
4	**I/O LEDs (8)**	Yellow — blinks on signal level fluctuation at I/O port
5	**Power LED (Red)**	On when device is powered
6	**LAN LED (Green)**	On when Ethernet is linked; blinks during data communication
7	**STA LED (Blue)**	On when device functions normally; blinks during factory reset
8	**RX LEDs (8)**	Yellow — blinks when corresponding COM RX port is receiving data
9	**TX LEDs (8)**	Yellow — blinks when corresponding COM TX port is transmitting

5.2 REAR PANEL

#	NAME	DESCRIPTION
1	**COM 1–4**	4× RS-232/RS-422/RS-485 + HW flow (9-pin Phoenix), 2400–115200bps
2	**COM 5–8**	4× RS-232 (3-pin Phoenix: TXD/GND/RXD), 2400–115200bps
3	**H-NET**	Reserved private bus port (4-pin Phoenix)
4	**Ground**	Chassis ground terminal for rack earthing
5	**AC Power**	IEC inlet — AC 110–220V 50/60Hz (220V/10A cord included)
6	**RESET**	Reboot (1–5s) or factory reset (5s+). Default IP: 192.168.0.101

5.2 REAR PANEL (CONTINUED)

#	NAME	DESCRIPTION
7	**USB (Type-A)**	Reserved port for function extension
8	**COMPUTER (Type-B)**	Reserved port for test debugging
9	**LAN**	Gigabit Ethernet RJ45 (default: 192.168.0.101/255.255.0.0)
10	**DIGITAL I/O**	8× GPIO dry contact input (2× 5-pin Phoenix), 0–24V
11	**RELAY OUTPUT**	8× low-voltage relay (2× 8-pin Phoenix), normally open, 2A 30VDC / 1A 125VAC
12	**IR-SERIAL OUTPUT**	8× IR or one-way RS-232 (2× 8-pin Phoenix). IR: 20K–60KHz. Serial: 0–5V TXD/GND

5.3 COM 1–4 PIN-OUT TABLE (9-PIN PHOENIX)

Pin	Function
PIN 1	RX− (RS-422 and RS-485)
PIN 2	RX+ (RS-422 and RS-485)
PIN 3	TX− (RS-422 and RS-485)
PIN 4	TX+ (RS-422 and RS-485)
PIN 5	GND
PIN 6	TXD (RS-232 and RS-232 + HW flow)
PIN 7	RXD (RS-232 and RS-232 + HW flow)
PIN 8	RTS (RS-232 + HW flow only)
PIN 9	CTS (RS-232 + HW flow only)

Note: In RS-485 mode, short-circuit PIN 1 (RX−) and PIN 3 (TX−) together as B, and PIN 2 (RX+) and PIN 4 (TX+) together as A.

Application Example

APPLICATION DIAGRAM

1U AV Control System with 8 Serial, 8 Relay, 8 IR/Serial & 8 Digital I/O — CR-HOST8R

How it works: The CR-HOST8R mounts in a standard 19" rack alongside your AV equipment. All 8 COM ports independently manage devices via serial — matrix routing, projector power, DSP volume, display inputs, PTZ cameras. The 8 IR outputs handle legacy gear or reconfigure as RS-232 for additional serial devices. 8 relay channels trigger motorized screens, curtains, and lighting. Gigabit Ethernet provides IP control and remote management. RTC scheduling automates daily operations.

TROUBLESHOOTING

ISSUE	SOLUTION
Device does not power on	Verify AC power cord is connected (110–220V). Check front panel POWER LED (red). Try a different AC outlet.
Serial device not responding	Confirm baud rate and protocol (RS-232/422/485) match device settings. Verify pin wiring — see pin-out table for COM 1–4. Check TX/RX LEDs for activity.
Cannot access web GUI	Verify Ethernet cable on LAN port. Default IP: 192.168.0.101, subnet: 255.255.0.0. Ensure PC is on same subnet.
IR commands not working	Check IR blaster cable connection. Verify carrier frequency (20–60KHz). Re-learn IR codes via the IR learning window on front panel.
Relay not triggering	Check RELAY LED on front panel. Verify wiring polarity. Max load: 2A 30VDC / 1A 125VAC per channel. Test via web GUI.
Factory reset needed	Hold RESET on rear panel for 5+ seconds. IP restores to 192.168.0.101, password to “admin”. User projects are NOT deleted.