

IP-Based IR, RS-232 and Relay Controller with PoE

16 Macros, 4× IR Output with Learning, 4× Relay, RS-232/422/485, 8 Trigger Inputs — WebGUI & Telnet

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1. Introduction

The KanexPro CR-3XCONTROL is a compact, IP-based AV control system that consolidates IR, RS-232/422/485, relay, and TCP/IP device control into a single PoE-powered unit. Sixteen user-defined macros — 8 directly linked to external trigger inputs and all 16 accessible via WebGUI or Telnet — can send commands across its 4 IR blaster outputs, 4 relay outputs, 1 RS-232/422/485 COM port, or the network. An integrated IR learning function captures and stores IR codes from virtually any remote.

2. Package Contents

- 1× Control System Center
- 1× IR Learner/Extender cable (3.5mm)
- 4× IR Blaster cables (3.5mm)
- 7× Terminal block connectors
- 1× 5V/2.6A DC power adapter (CE/FCC/UL certified)
- 1× Operation manual

3. System Requirements

- Active Ethernet network (switch or router) on the same subnet as controlled devices
- PoE switch (802.3af PSE) for PoE power — or local 5V AC outlet for DC adapter power
- IR, RS-232, or relay-controlled devices for output control
- Contact-closure trigger devices (5V DC min) for trigger input automation (optional)

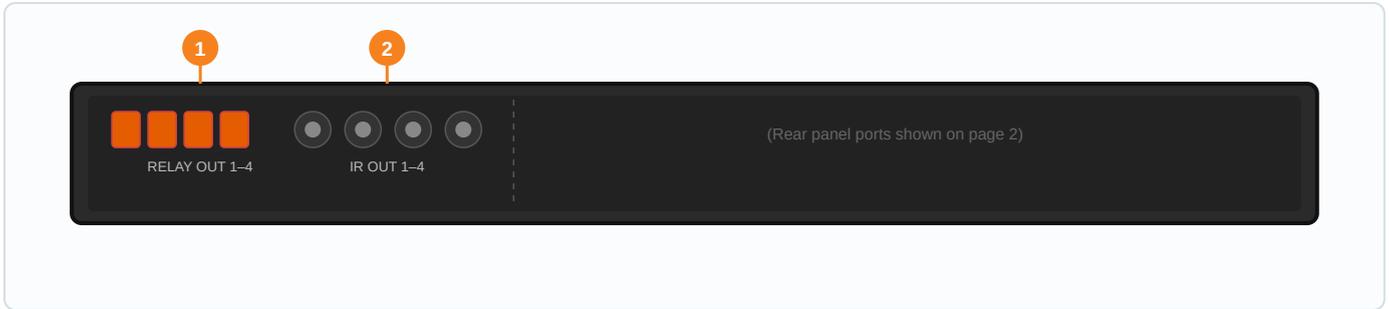
4. Key Features

- 8 trigger inputs linked directly to 8 user macros for instant automated control activation
- 4 relay outputs (0–30VDC/10A or 0–250VAC/10A) for screens, lighting, and power control
- 4 IR blaster outputs (3.5mm) — transmit IR codes to devices within line-of-sight
- 1× RS-232/422/485 COM port (5-pin terminal block) — baud rates up to 115200bps
- Integrated IR code learning via IR IN port (3.5mm)
- 16 total macros: 8 trigger-linked + 8 extension (WebGUI/Telnet only)
- WebGUI, Telnet, and RS-232 console control interfaces
- PoE powered (802.3af) or included 5V/2.6A DC adapter
- Field firmware updates via USB SERVICE port — no tools required
- DHCP or static IP; default IP: 192.168.1.50
- Metal chassis, black — compact 5.00" wide form factor



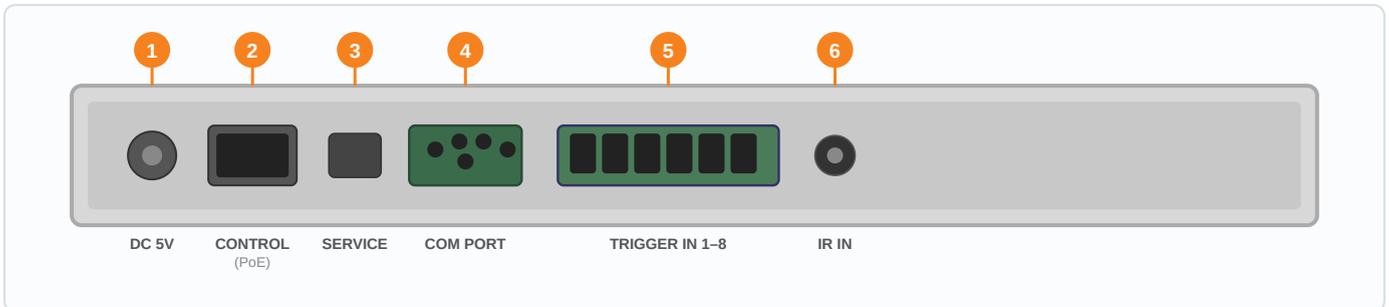
5. Operation Controls & Functions

5.1 FRONT PANEL



NO.	NAME	FUNCTION DESCRIPTION
1	RELAY OUT 1-4	Connect to devices supporting relay-triggered power (0-30VDC/10A or 0-250VAC/10A). Controlled via RELAY OPEN, CLOSE, or TOGGLE commands in macros.
2	IR OUT 1-4 (3.5mm)	Connect the provided IR Blaster cables. Transmit IR codes to devices within direct line-of-sight of the IR Blaster emitter.

5.2 REAR PANEL



NO.	NAME	FUNCTION DESCRIPTION
1	DC 5V	Connect the 5V/2.6A DC adapter to this barrel jack for AC wall power. Optional when powered by PoE.
2	CONTROL (PoE)	RJ45 Ethernet port. Connect to a network switch for WebGUI/Telnet control. Supports PoE (802.3af) — when connected to a PoE switch, no DC adapter is required.
3	SERVICE	USB port reserved for field firmware updates only.
4	COM PORT	5-pin terminal block for RS-232/422/485 serial control. Supports baud rates up to 115200bps. See section 5.3 for pin assignment.
5	TRIGGER IN 1-8	10-pin terminal block for contact-closure inputs (min 5V DC). Each trigger input activates its linked macro (1-8) instantly on signal. Compatible with door switches, motion detectors, alarms.
6	IR IN (3.5mm)	Connect the IR Learner/Extender cable. Used for IR code learning and for receiving IR remote commands to control the unit.



5.3 IR Cable Pin Assignment

CABLE	PIN 1	PIN 2	PIN 3
IR Blaster	Power IR	Signal	NC
IR Extender	IR Signal	Power	Ground
IR Learner	IR Signal	Power	Ground

5.4 Telnet Commands

Connect via Telnet (port 23) at the unit's IP address. Commands are not case-sensitive and must be followed by a carriage return.

COMMAND	DESCRIPTION
IPCONFIG	Display current IP configuration
SIPADDR X.X.X.X	Set Ethernet IP address (X=0–255)
SNETMASK X.X.X.X	Set Ethernet netmask
SGATEWAY X.X.X.X	Set Ethernet gateway
SIPMODE N	Set IP mode. N=STATIC or DHCP
VER	Display firmware version
FADEFAULT	Reset all settings to factory defaults
ETH_FADEFAULT	Reset Ethernet settings to factory defaults
REBOOT	System reboot
RELAY N N1	Relay control. N=1–4 (port); N1=OPEN, CLOSE, TOGGLE
IREMIT N N1	Send IR code. N=IR1–IR4; N1=IR data string
IRLEARN N	Initiate IR learning. N=0 (native format). Displays captured data when 30–50kHz IR received.
COMCONF N N1 N2 N3 N4	COM port config. N=RS232/RS422/RS485; N1=baud (4800–1000000); N2=data bits (7–8); N3=parity (NONE/ODD/EVEN); N4=stop bits (1)
COMSEND N	Send data via COM port. N=data string (1–512 chars)
MACRO N N1	Start or stop macro. N=RUN or STOP; N1=1–16 or NONE
TELNET_TIMEOUT N	Set Telnet timeout. N=ON or OFF
HELP [N]	Show command list or description of command N

Minimum recommended delays: 100ms for system/IR/relay/RS-232 commands; 500ms for Telnet commands sent to other devices.

5.5 WebGUI Control

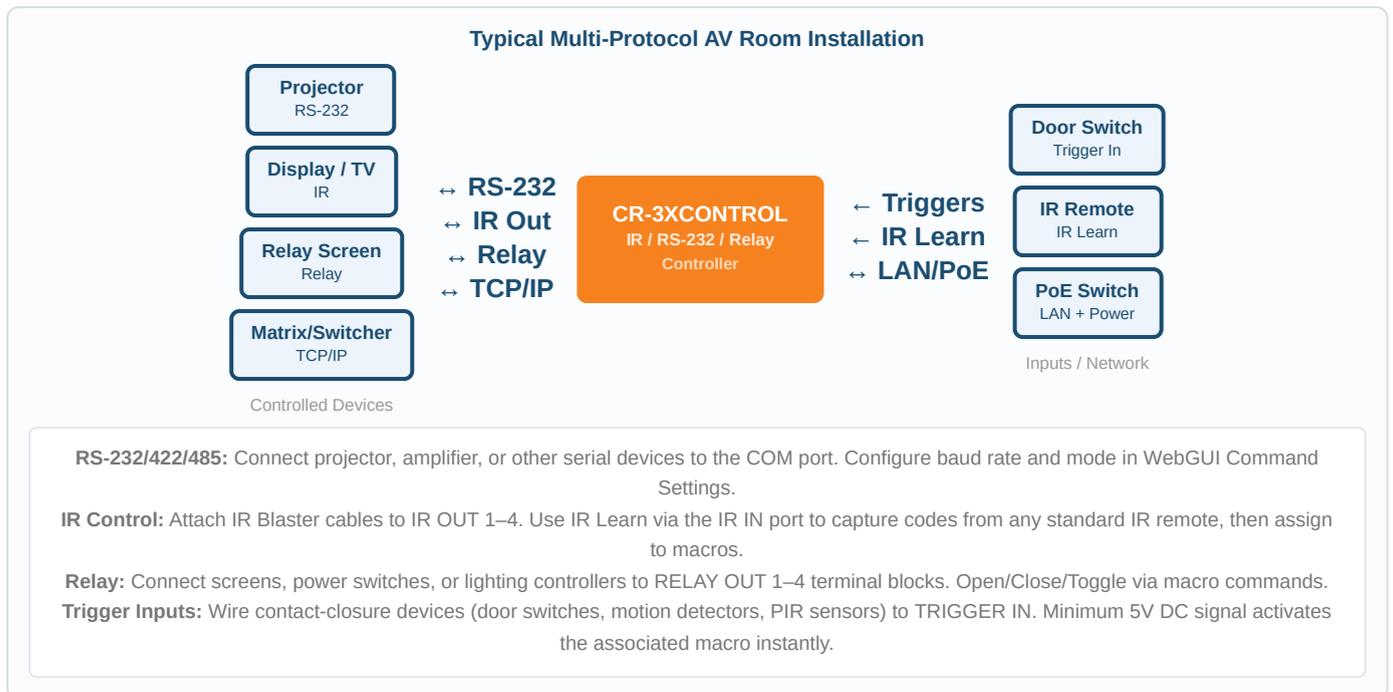
Open a browser on the same network and navigate to the unit's IP address (default: **192.168.1.50**). Login: username **admin**, password **admin**. Use the Device Discovery Tool to locate the unit on the network if needed.

WebGUI Tabs

- **Macro Settings** — Edit macros 1–8 (trigger-linked). Each macro supports multiple commands with configurable delay and interface (SysCMD, Telnet, COM, IR, Relay).
- **Extension Macro** — 8 additional software-only macros (WebGUI/Telnet only). Same editing interface.
- **Command Settings** — Create, edit, and store reusable command strings. Use IR Learn to capture IR codes from remotes. Max 128 chars recommended (512 chars for up to 32 commands).
- **Network Settings** — Set static IP/netmask/gateway or enable DHCP.
- **System Settings** — Change password, set timeout, save/restore full configuration, factory reset, reboot.



6. Connection Diagram



7. Specifications

INPUT PORTS	
IR Learner/Extender	1× 3.5mm
Trigger Inputs	8× (10-pin terminal block, min 5V DC)
OUTPUT PORTS	
IR Blaster	4× 3.5mm
Relay	4× (2-pin terminal block, 0–30VDC/10A or 0–250VAC/10A)
COM Port	1× RS-232/422/485 (5-pin terminal block)
CONTROL	
IP Control	1× RJ45 (WebGUI, Telnet)
Baud Rate	Up to 115200bps
IR Frequency	30–50kHz (30–60kHz under ideal conditions)
Macros	16 total (8 trigger-linked + 8 extension)
Default IP	192.168.1.50
POWER	
PoE	802.3af standard
DC Power	5V/2.6A adapter included (CE/FCC/UL)
Power Consumption	3.63W
PHYSICAL	
Dimensions (W×H×D)	5.00" × 0.98" × 4.64" (128 × 25 × 118mm) All Inclusive
Net Weight	0.88 lbs (400g)
Chassis Material	Metal
Color	Black
ENVIRONMENTAL	
Operating Temp	32°F – 104°F (0°C – 40°C)
Storage Temp	–4°F – 140°F (–20°C – 60°C)
Humidity	20–90% RH (non-condensing)
CERTIFICATIONS & PROTECTION	
Certifications	CE, FCC, UL
ESD Protection	±12kV air discharge / ±8kV contact discharge



Application Example

Classroom Automation — Door-Triggered Sequence



How it works: Door switch closes → Trigger In 1 fires Macro 1 → RS-232 powers on projector (500ms delay) → IR sets TV to HDMI 1 (500ms delay) → Relay closes to lower projection screen. When class ends, a second trigger or Telnet MACRO RUN 2 command reverses all actions.
No user interaction required — the room configures itself on occupancy.

8. Troubleshooting / FAQ

Q: IR Blaster is not controlling the device after programming a macro.

A: Confirm the IR Blaster cable is fully inserted in the correct IR OUT port and the emitter is within direct line-of-sight of the device IR receiver. Verify the captured IR code string is correct by testing via WebGUI Command Settings before assigning to a macro.

Q: RS-232 device is not responding to COM port commands.

A: Check COMCONF settings match the device: RS-232/422/485 mode, baud rate, data bits, parity, and stop bits. Ensure the terminal block wiring follows the pin assignment in section 5.3. Add a minimum 100ms delay after RS-232 commands in the macro.

Q: Trigger inputs are not firing their macros.

A: Verify the trigger device provides a minimum 5V DC signal on activation. Check the 10-pin terminal block wiring against the pin diagram in section 5.2. Confirm the corresponding macro (1–8) is populated with at least one command in Macro Settings.

Q: I cannot connect to the WebGUI.

A: Ensure your PC and the unit are on the same network subnet. The default IP is 192.168.1.50. Use the Device Discovery Tool to locate the unit. If IP is unknown, use Telnet IPCONFIG to display current settings, or FADEFAULT to restore defaults.

Q: How do I learn an IR code from my remote?

A: Connect the IR Learner cable to the IR IN port. In WebGUI → Command Settings, click IR Learn. When prompted, point the remote at the learner and press the desired button within 5 seconds. The captured code string will appear automatically. Click Save Change.

Q: Can the CR-3XCONTROL work alongside WP-IPKEYPAD8 in the same room?

A: Yes. The WP-IPKEYPAD8 sends TCP/IP commands — it can send a Telnet MACRO RUN command to the CR-3XCONTROL, triggering its IR/RS-232/relay sequences. Together they provide complete room control: button-press interface (keypad) + multi-protocol device control (CR-3XCONTROL).

