Control4 CORE 5 Controller

Installation Guide

Supported model

- C4-CORE5   Control4 CORE 5 Hub & Controller

Introduction

Designed for the ultimate multi-room automation and entertainment experience, the Control4® CORE 5 Controller features the highest-quality audio of the Control4® CORE Series and an advanced smart automation experience for those larger projects including hundreds of smart devices. The CORE 5 is built to automate sophisticated home theaters, complex interior and exterior lighting scenes, vital security and communications systems, and multi-zone climate controls.

The CORE 5 delivers a beautiful, intuitive, and responsive on-screen user interface with the ability to create and enhance the entertainment experience for any TV in the house. The CORE 5 can orchestrate a wide range of entertainment devices including Blu-ray players, satellite or cable boxes, game consoles, TVs, and virtually any product with infrared (IR) or serial (RS-232) control. It also features IP control for Apple TV, Roku, televisions, AVRs, or other network-connected devices, as well as smart automation control utilizing contact, relay, and secure wireless Zigbee and Z-Wave control for lights, thermostats, smart locks, and more.

For entertainment, the CORE 5 also includes a built-in music server that allows you to listen to your own music library, stream from a variety of leading music services, or from your AirPlay-enabled devices using Control4 ShairBridge technology

Box contents

The following items are included in the box:

- CORE 5 controller
- AC power cord
- IR emitters (4)
- Rack ears (2, pre-installed)
- Rubber feet (4)
- External antennas (2, 1 for Zigbee and 1 for Z-Wave)
- Terminal blocks for contacts and relays

Accessories sold separately

- Control4 3-Meter Wireless Antenna Kit (C4-AK-3M)
- Control4 Dual-Band Wi-Fi USB Adapter (C4-USBWIFI OR C4-USBWIFI-1)
- Control4 3.5 mm to DB9 Serial Cable (C4-CBL3.5-DB9B)

Warnings

⚠️ **Caution!** To reduce the risk of electrical shock, do not expose this apparatus to rain or moisture.

Avertissement ! Pour réduire le risque de choc électrique, n'exposez pas cet appareil à la pluie ou à l'humidité.

⚠️ **Caution!** In an over-current condition on USB or contact output the software disables the output. If the attached USB device or contact sensor does not appear to power on, remove the device from the controller.

Avertissement ! Dans une condition de surintensité sur USB ou sortie de contact le logiciel désactive sortie. Si le périphérique USB ou le capteur de contact connecté ne semble pas s'allumer, retirez le périphérique du contrôleur.

⚠️ Caution! If this product is used as a means to open and close a garage door, gate, or similar device, use safety or other sensors to ensure safe function. Follow appropriate regulatory and safety standards governing project design and installation. Failure to do so may result in property damage or personal injury.

Requirements and specifications

📝 **Note:** We recommend using Ethernet instead of Wi-Fi for the best network connectivity.

📝 **Note:** The Ethernet or Wi-Fi network should be installed before you install the CORE 5 controller.

📝 **Note:** The CORE 5 requires OS 3.3 or higher.

Composer Pro is required to configure this device. See the *Composer Pro User Guide* (*ctrl4.co/cpro-ug*) for details.

Specifications

Inputs / Outputs	
Video out	1 video out—1 HDMI
Video	HDMI 2.0a; 3840x2160 @ 60Hz (4K); HDCP 2.2 and HDCP 1.4
Audio out	7 audio out—1 HDMI, 3 stereo analog, 3 digital coax
Audio playback formats	AAC, AIFF, ALAC, FLAC, M4A, MP2, MP3, MP4/M4A, Ogg Vorbis, PCM, WAV, WMA
High-res audio playback	Up to 192 kHz / 24 bit
Audio in	2 audio in—1 stereo analog, 1 digital coax
Audio delay on audio in	Up to 3.5 seconds, depending on network conditions
Digital signal processing	Digital coax in—Input level Audio out 1/2/3 (analog)—Balance, volume, loudness, 6-band PEQ, mono/stereo, test signal, mute Digital coax out 1/2/3—Volume, mute
Signal-to-noise ratio	<-118 dBFS
Total harmonic distortion	0.00023 (-110 dB)
Network	
Ethernet	1 10/100/1000BaseT compatible port (required for controller setup).
Wi-Fi	Optional Dual-Band Wi-Fi USB Adapter (2.4 GHz, 5 Ghz, 802.11ac/b/g/n/a)
Wi-Fi security	WPA/WPA2
Zigbee Pro	802.15.4
Zigbee antenna	External reverse SMA connector
Z-Wave	Z-Wave 700 series
Z-Wave antenna	External reverse SMA connector
USB port	2 USB 3.0 port—500mA
Control	
IR OUT	8 IR out—5V 27mA max output
IR capture	1 IR receiver—front; 20-60 KHz
SERIAL OUT	4 Serial out—2 DB9 ports and 2 shared with IR out 1-2
Contact	4 contact sensors—2V-30VDC input, 12VDC 125mA maximum output
Relay	4 relays—AC: 36V, 2A maximum voltage across relay; DC: 24V, 2A maximum voltage across relay
Power	
Power requirements	100-240 VAC, 60/50Hz
Power consumption	Max: 40W, 136 BTUs/hour Idle: 15W, 51 BTUs/hour
Other	
Operating temperature	32˚F ~ 104˚F (0˚C ~ 40˚C)
Storage temperature	4˚F ~ 158˚F (-20˚C ~ 70˚C)
Dimensions (H × W × D)	1.65 × 17.4 × 9.92" (42 × 442 × 252 mm)
Weight	5.9 lbs (2.68 kg)
Shipping weight	9 lbs (4.08 kg)

Additional resources

The following resources are available for more support.

- Control4 CORE series help and information: ctrl4.co/core
- Snap One Tech Community and Knowledgebase: tech.control4.com
- Control4 Technical Support: ctrl4.co/techsupport
- Control4 website: www.control4.com

Front view
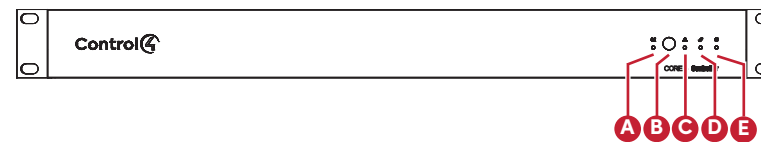
A Activity LED—The LED indicates that the controller is streaming audio.
**B IR window**—IR receiver for learning IR codes.
C Caution LED—This LED shows solid red, then blinks blue during the boot process.

📝 **Note:** The Caution LED flashes orange during the factory restore process. See "Reset to factory settings" in this document.

D Link LED—The LED indicates that the controller has been identified in a Control4 project and is communicating with Director.
E Power LED—The blue LED indicates that AC power is connected. The controller turns on immediately after power is applied to it.

Back view
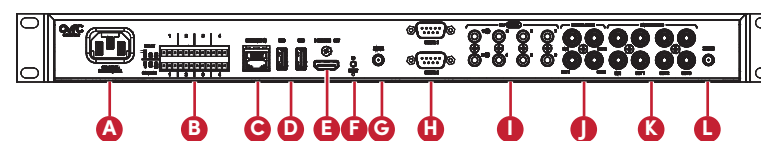
A Power plug port—AC power receptacle for an IEC 60320-C13 power cord.
B Contact/Relay port—Connect up to four relay devices and four contact sensor devices to the terminal block connector. Relay connections are **COM**, **NC** (normally closed), and **NO** (normally open). Contact sensor connections are **+12**, **SIG** (signal), and **GND** (ground).
C ETHERNET—RJ-45 jack for a 10/100/1000 BaseT Ethernet connection.
D USB—Two port for an external USB drive or the optional Dual-Band Wi-Fi USB Adapter. See "Set up external storage devices" in this document.
E HDMI OUT—An HDMI port to display system menus. Also an audio out over HDMI.
F ID and FACTORY RESET—ID button to identify the device in Composer Pro. The ID button on the CORE 5 is also an LED that displays feedback useful during a factory restore.
G ZWAVE—Antenna connector for the Z-Wave radio
H SERIAL—Two serial ports for RS-232 control. See "Connecting the serial ports" in this document.
I IR / SERIAL—Eight 3.5 mm jacks for up to eight IR emitters or for a combination of IR emitters and serial devices. Ports 1 and 2 can be configured independently for serial control or for IR control. See "Setting up IR emitters" in this document for more information.
J DIGITAL AUDIO—One digital coax audio input and three output ports. Allows audio to be shared (IN 1) over the local network to other Control4 devices. Outputs audio (OUT 1/2/3) shared from other Control4 devices or from digital audio sources (local media or digital streaming services such as TuneIn.)
K ANALOG AUDIO—One stereo audio input and three output ports. Allows audio to be shared (IN 1) over the local network to other Control4 devices. Outputs audio (OUT 1/2/3) shared from other Control4 devices or from digital audio sources (local media or digital streaming services such as TuneIn.)
L ZIGBEE—Antenna connector for the Zigbee radio.

Installing the controller

To install the controller:

1 Ensure that the home network is in place before starting system setup. The controller requires a network connection, Ethernet (recommended) or Wi-Fi (with optional adapter), to use all of the features as designed. When connected, the controller can access web-based media databases, communicate with other IP devices in the home, and access Control4 system updates.

2 Mount the controller in a rack or place it on a shelf. Always allow plenty of ventilation. See "Mounting the controller in a rack" in this document.

3 Connect the controller to the network.

- **Ethernet**—To connect using an Ethernet connection, plug the data cable from the home network connection into the controller's RJ-45 port (labeled **ETHERNET IN**) and the network port on the wall or at the network switch.

- **Wi-Fi**—To connect using Wi-Fi, first connect the controller to Ethernet, and then use Composer Pro System Manager to reconfigure the controller for Wi-Fi.

4 Connect system devices. Attach IR and serial devices as described in "Connecting the IR ports/serial ports" and "Setting up IR emitters."

5 Set up any external storage devices as described in "Setting up external storage devices" in this document.

6 Power up the controller. Plug the power cord into the controller's power plug port and then into an electrical outlet.

Mounting the controller in a rack

Using the pre-installed rack-mount ears, the CORE 5 can easily be mounted in a rack for convenient installation and flexible rack placement.

Connecting the serial ports

The CORE 5 controller provides four serial ports. SERIAL 1 and SERIAL 2 can connect to a standard DB9 serial cable. IR ports 1 and 2 (SERIAL 3 and 4) can be reconfigured independently for serial communication. If not used for serial, they can be used for IR. Connect a serial device to the controller using the Control4 3.5 mm-to-DB9 Serial Cable (C4-CBL3.5-DB9B, sold separately).

1 The serial ports support many different baud rates (acceptable range: 1200 to 115200 baud for odd and even parity). Serial ports 3 and 4 (IR 1 and 2) do not support hardware flow control.

2 See Knowledgebase article #268 (ctrl4.co/contr-serial-pinout) for pinout diagrams.

3 To configure a port's serial settings, make the appropriate connections in your project using Composer Pro. Connecting the port to the driver will apply the serial settings contained in the driver file to the serial port. See the *Composer Pro User Guide* for details.

📝 **Note:** Serial ports 1, 2, 3, and 4 can be configured as straight-through or null with Composer Pro. Serial ports by default are configured straight-through and can be changed in Composer by selecting the option *Null Modem Enabled (SERIAL 1, 2, 3, or 4)*.

Setting up IR emitters

The CORE 5 controller provides 8 IR ports. Your system may contain third-party products that are controlled through IR commands. The included IR emitters can send commands from the controller to any IR-controlled device.

1 Connect one of the included IR emitters into an **IR OUT** port on the controller.

2 Remove the adhesive backing from the emitter (round) end of the IR emitter and affix it to the device to be controlled over the IR receiver on the device.

Setting up external storage devices

You can store and access media from an external storage device, for example, a USB drive, by connecting the USB drive to the USB port and configuring or scanning the media in Composer Pro. A NAS drive can also be used as an external storage device; see the *Composer Pro User Guide* (ctrl4.co/cpro-ug) for more details.

📝 **Note:** We support only externally powered USB drives or solid-state USB drives (USB thumb drives). USB hard drives that do not have a separate power supply are not supported.

📝 **Note:** When using USB storage devices on an CORE 5 controller, a single primary partition formatted FAT32 is recommended.

Composer Pro driver information

Use Auto Discovery and SDDP to add the driver to the Composer project. See the *Composer Pro User Guide* (ctrl4.co/cpro-ug) for details.

OvrC setup and configuration

OvrC gives you remote device management, real-time notifications, and intuitive customer management, right from your computer or mobile device. Setup is
plug-and-play, with no port forwarding or DDNS address required.

To add this device to your OvrC account:

1 Connect CORE 5 controller to the Internet.

2 Navigate to OvrC (www.ovrc.com) and log in to your account.

Add the device (MAC address and Service Tag numbers needed for authentication).

Pluggable terminal block connectors

For the contact and relay ports, the CORE 5 makes use of pluggable terminal block connectors which are removable plastic parts that locks in individual wires (included).

To connect a device to the pluggable terminal block:

1 Insert one of the wires required for your device into the appropriate opening in the pluggable terminal block you reserved for that device.

2 Use a small flat-blade screwdriver to tighten the screw and secure the wire in the terminal block.

> 🖉 **Example:** To add a motion sensor (see Figure 3), connect its wires to the following contact openings:
> - Power input to **+12V**
> - Output signal to **SIG**
> - Ground connector to **GND**

> 🖉 **Note:** To connect dry contact closure devices, such as doorbells, connect the switch between **+12** (power) and **SIG** (signal).

Connecting the contact ports

The CORE 5 provides four contact ports on the included pluggable terminal blocks. See the examples below to learn how to connect devices to the contact ports.

Wire the contact to a sensor that also needs power (Motion sensor)

Wire the contact to a dry contact sensor (Door contact sensor)

Wire the contact to an externally powered sensor (Driveway sensor)

Connecting the relay ports

The CORE 5 provides four relay ports on the included pluggable terminal blocks. See the examples below to learn now to connect various devices to the relay ports.

Wire the relay to a single-relay device, normally open (Fireplace)

Wire the relay to a dual-relay device (Blinds)

Wire the relay with power from the contact, normally closed (Amplifier trigger)

Troubleshooting

Reset to factory settings

> ⚠️ Caution! The factory restore process will remove the Composer project.

To restore the controller to the factory default image:

1 Insert one end of a paper clip into the small hole on the back of the controller labeled **RESET**.

2 Press and hold the **RESET** button. The controller resets and the **ID** button changes to solid red.

3 Hold the button until the **ID** flashes double orange. This should take five to seven seconds. The **ID** button flashes orange while the factory restore is running. When complete, the **ID** button turns off and the device power cycles one more time to complete the factory restore process.

> ✅ **Note:** During the reset process, the **ID** button provides the same feedback as the Caution LED on the front of the controller.

Power cycle the controller

1 Press and hold the **ID** button for five seconds. The controller turns off and back on.

Reset the network settings

To reset the controller network settings to the default:

1 Disconnect power to the controller.

2 While pressing and holding the **ID** button on the back of the controller, power on the controller.

3 Hold the **ID** button until **ID** button turns solid orange and the Link and Power LEDs are solid blue, and then immediately release the button.

> ✅ **Note:** During the reset process, the **ID** button provides the same feedback as the Caution LED on the front of the controller.

LED status information

Activity	Caution	Link	Power

—*Flashing LED* ●—*Solid LED*

Activity	Caution	Link	Power	Status
			●	Just powered on
●	● (red)		●	Boot started
			●	Boot complete
●	● (orange)	●	●	Network reset check
	✳		●	Factory restore underway
		●	●	Connected to Director
●		●	●	Playing audio
		✳	●	Updating
	✳	✳	●	Update error
	✳		●	No IP address

More help

For the latest version of this document and to view additional materials, open the URL below or scan the QR code on a device that can view PDFs.

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ctrl4.co/**core5-ig**

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