HC-800 Controller Installation Guide

Supported Model

- C4-HC800-BL – HC-800 Controller, Black

Introduction

The Control4® HC-800 Controller (HC-800) provides ways to control lights, home theaters, whole-home music and video systems, and other devices controlled by IP, infrared (IR), Serial, Contact, or Relay connections. The Controller has a fast processor, built-in WiFi, HDMI for audio and video, improved ZigBee radio, and more.

The HC-800 also provides extensive media management support for audio and video content, including CDs, DVDs, Blu-ray Discs, or digital media stored in connected devices. You can use an external storage device with USB, NAS, or eSATA connectivity, and it supports multi-zone audio capabilities, sending music to various rooms in the home. The device can be stacked with AV devices or rack-mounted using the optional rack ears.

After you install and configure the HC-800 (using the Composer Pro software) along with the other system components, your customers can control their system using the On-Screen Navigator, the MyHome app, System Remote Controls, Touch Screens, or any other Control4-supported interface devices (sold separately).

Box Contents

The following items are included in the HC-800 box:

- HC-800 Controller
- AC to DC power adapter with power cord
- IR emitters (6)
- Antennas (3): ZigBee (1) and dipole antennas (2) for wireless (WiFi).
- Pluggable Contact/Relay connectors (2)
- Warranty Card

Accessories for Purchase

- Rack Ear Kit (C4-1UREK-B)
- 10’ Antenna Kit (C4-AK-3M)

Warnings

WARNING! 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.

WARNING! This CLASS I apparatus must be connected to an AC mains socket outlet that has a protective earthing connection (e.g., third-prong ground conductor). DO NOT DEFEAT THE PROTECTIVE EARTHING CONNECTION!

AVERTISSEMENT! Cette appareil de classe I doit être raccordé à une prise de courant qui a une connexion Mise à la terre (par exemple, conducteur avec troisième broche). NE PAS DÉFAIRE LA CONNEXION DE MISE À LA TERRE!

For general information about the product, see the Product pages at http://www.control4.com.

Requirements and Specifications

Prior to installing the HC-800, ensure that Ethernet network wiring is in place. If you’re using WiFi, see “Antenna Considerations” which includes information

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about ZigBee Access Points (ZAPs).

HC-800 Specifications

Model Number	C4-HC800-BL
Network	- Ethernet—required - WiFi (only supported when the device is used as a Secondary Controller)
Media Recognition	Online CD/DVD/Blu-ray recognition and media information service. Supports MP3, AAC, FLAC.
Video	HDMI 1.4 output; Component Video output; SD 480I; HD 720p 50-60 Hz.
Audio Playback Formats	MP3: 32kbps to 320kbps, CBR, VBR, AAC, and FLAC
Display	LED indicators
Power Requirements	100-240 VAC, 60/50 Hz, 0.4A MAX DC Input: 19V DC
Power Consumption	Max: 44W, 150 BTUs/hour Idle: 24W, 82 BTUs/hour
Operating Temperature	3˚- 95˚ F (0˚ - 35˚ C)
Storage Temperature	-4˚ - 149˚ F (-20˚ - 65˚ C)
IR Out	5V 27mA, max/output
IR Capture	0-60KHz
Contacts	DC - 36V maximum operation (low voltage) The available current for 12V contact outputs is 1.25A maximum, shared across all outputs.
Relays	AC - 36V, 2A DC - 24V, 2A Maximum operation (low voltage)
Dimensions	H x W x D: 2.80" (71 mm) x 11.98" (304 mm) x 7.24" (184 mm)
Weight	6.1 pounds (2.766 kg)
Shipping Weight	7.95 pounds (3.606 kg)

Additional Resources

The following resources are available for additional support.

- Control4 Knowledgebase or Forums
- Control4 Technical Support
- Control4 website: http://www.control4.com
- Composer documentation in online help or PDF format available on the Dealer portal (http://dealer.control4.com/).

Front View

Figure 1. Front View

1 WiFi LED. This LED blinks Orange and then Blue during the boot process. When the operating system starts running, the WiFi driver changes the LED color depending on the signal strength of its connection to its associated access point. Colors for signal strength: Orange=Fair to Good, Blue=Excellent, No Light=No connection or not enabled, and Red=Poor signal strength.

2 Data LED. The Blue LED indicates that streaming audio is received.

3 Link LED. The Blue LED indicates that the Controller has been identified into a project.

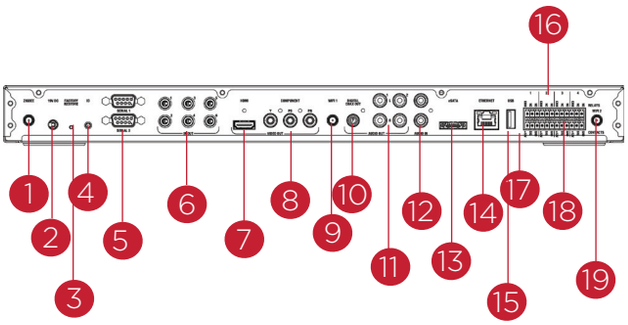
4 Power LED. The Blue LED indicates that AC power is present. The LED blinks during the boot process.

5 IR Window/IR Blaster—For learning IR codes.

Back View

Connect all applicable devices to the HC-800 using the connection options described next.

Figure 2. Back View



1 ZigBee. The antenna for the ZigBee radio.

NOTE: If you run ZigBee, use the external antenna (provided).

2 Power Plug Port. AC to DC power adapter for the power cord.

3 Factory Restore Button. A recessed button that restores or resets the Controller to the factory defaults. See "Troubleshooting" for details.

4 Identification Button. An easily-pressed button used to identify this device in Composer Pro to revert the device back to Ethernet with its default settings.

5 RS-232 Serial. DB9 connectors for two (2) serial devices, such as a receiver or disc changer. See "Connect the Serial Ports" for information.

6 IR Out. 3.5 mm jacks for up to six (6) IR output transmitters. See "Set Up IR Emitters or IR Blaster" for information.

7 HDMI Out (Audio/Video). HDMI port for displaying navigation menus on a monitor or TV.

NOTE: HDMI and Component cords can be connected at the same time, but only one is active.

8 Video Out (Component). Component jack used for displaying navigation menus on a monitor or TV.

9 WiFi 1. Reverse SMA connector to attach a WiFi antenna. Supports 802.11 b/g/n.

NOTES: (1) WiFi cannot be used for Primary Controllers; use WiFi for Secondary Controllers only. See "Antenna Considerations" below. (2) For best results, we recommend that you use 802.11 n.

10 Digital Audio Out. Digital audio output jack for stereo line output for amplifiers or audio switches.

11 Audio Out. RCA jacks for stereo channel line output (line level) for amplifiers or audio switches.

12 Audio In. (One (1) pair). RCA jacks for stereo channel input (line level) for one (1) stereo analog source.

13 eSATA. External serial ATA port for connecting a hard drive on which to store media. See "Setting up External Storage Devices" for information. For information about eSATA storage limitations, see *eSATA Installation Guide* in the Knowledgebase.

14 Ethernet. RJ-45 jack for a 10/100/1000 BaseT Ethernet connection.

15 USB. For external storage device with USB support. See "Setting up External Storage Devices" for information. For information about USB storage limitations, see the *eSATA Installation Guide* in the Knowledgebase.

16 Relays. Pluggable terminal block connector for four (4) switchable connections, such as a blind, a fireplace, or a projector screen. The connectors are for Normally Opened (NO), Normally Closed (NC), and Common (COM).

17 Power. For troubleshooting purposes only. After plugging in the HC-800, it it does not power on, insert a paper clip into the pinhole to power it on.

18 Contacts. Pluggable terminal block connector for four (4) Normally Closed or Normally Opened switchable connections. Provides power for small devices (12V), signal input (SIG), and return path (GND).

19 WiFi 2. Reverse SMA Connector to attach a WiFi antenna.

NOTES: (1) WiFi cannot be used for Primary Controllers; use WiFi for Secondary Controllers only. See "Antenna Considerations" below. (2) For best results, we recommend that you use 802.11 n.

Installation Instructions

To install this Controller:

1 Ensure that your home network is in place before starting your system setup. The HC-800 requires a network connection (wired or WiFi) to use

all features as designed. When connected, the Controller can connect to other IP devices on the home network and access web-based media databases and Control4 system updates. For more information, see the Knowledgebase article #3 about recommended networking hardware.

2 **Mount options.** The HC-800 is designed to be stackable with other AV equipment or mounted in a rack or on a shelf using the optional Rack Ear Kit (C4-1UREK-B, sold separately).

3 **Connect the HC-800 to the network.** To connect using an Ethernet connection, plug the data cable (Ethernet cable or RJ-45 patch cable) from the home network connection into the Controller's RJ-45 port (labeled "Ethernet") and the network port on the wall or at the network switch.

4 **Power up the Controller.** Plug the HC-800 power cord (provided) into the Controller's power plug port and an electrical outlet.

NOTES: (1) Only use the power supply included in this box. (2) The HC-800 may take several minutes to boot up and become operational. Please allow sufficient time for bootup. This LED blinks Orange and then Blue during the bootup process.

5 **Connect system devices.** Attach the devices as described in "Connect the Devices" below.

6 Set up any external storage devices as described in "Setting up External Storage Devices."

Connect the Devices

NOTE: Use Composer Pro to step through the connection process before or after the Controller is physically connected.

The following section provides more information about other connection options.

Pluggable Terminal Block Connectors

For the Contact and Relay ports, the HC-800 makes use of a pluggable terminal block connector—a removable plastic part that locks in individual wires (included).

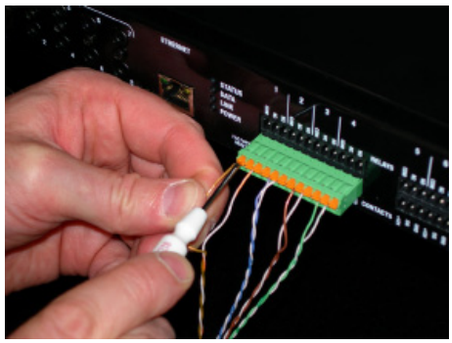
To connect a device to the Pluggable Terminal Block:

1 Insert one of the wires required for your device into the appropriate opening in the Pluggable Terminal Block you reserved for that device (see Figure 3).

2 Insert the wire as follows:

- If using solid core wire, push the wire into the hole below the slotted retention tab, and ensure that it's tightly secured.
- If using stranded wire, push the slotted retention tab in using a small flat-blade screwdriver. Insert the wire into the hole below the tab, and then release the tab to secure the wire (see Figure 3).

Figure 3. Connect to Terminal Block



EXAMPLE: If you add a motion sensor (see Figure 5), connect its wires to the following Contact openings:

a Power input to +12V
b Output signal to SIG
c Ground connector to GND

See the following sections for instructions about connecting the various protocols.

3 Repeat Steps 1 and 2 for all wires required for your device.

NOTE: If you connect dry contact closure devices, such as doorbells, connect the switch between +12V (Power) and SIG (Signal).

Connect to the Contact Port

The HC-800 provides four (4) contact ports for the pluggable terminal block provided.

See Figures 4 through 8 to learn how to connect the device to a contact port.

Figure 4. Contact Port for Voltage Source (e.g., Motion Sensor)

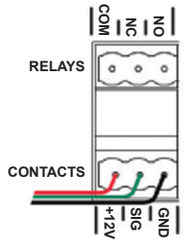


Figure 5. Contact for Dry Contact (e.g., Door Contact Sensor)

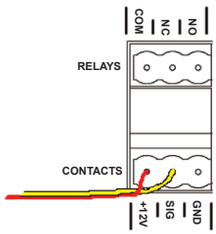
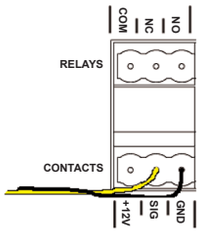


Figure 6. Contact for Self-Powered Voltage Source Device



Connect to the Relay Port

The HC-800 provides four (4) relay ports for the pluggable terminal block provided. With most applications, attach one (1) wire to the common terminal and the other to the Normally Opened terminal. The relay switches close when the relay is activated.

The HC-800 can support applications that require a Normally Closed contact.

Figure 7. Relay Port, Normally Open

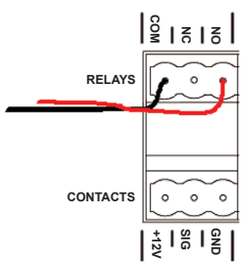
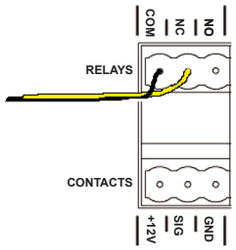


Figure 8. Relay Port, Normally Closed



Connect the Serial Ports

The HC-800 has two (2) DB9-style serial ports. Connect a device, for example, a receiver or disc changer, to the HC-800 by aligning the pins and tightening the screws.

See the next table for serial communication values.

	Hardware Flow Control	Odd Parity	Even Parity	No Parity
Serial Port 1	X	X	X	X
Serial Port 2	X	X	X	X

Set Up IR Emitters or IR Blaster

The system may contain third-party products that are controlled with IR commands (usually through remote controls). To provide a way for the Controller to control a device that only recognizes IR commands, complete one of these setups for

- IR Emitters
- IR Blaster

NOTE: All IR ports deliver the same amount of power.

IR Emitters

1. Plug the 3.5 mm connector end of one of the six (6) IR stick-on emitters provided into an IR Out port on the HC-800.
2. Place the stick-on emitter end over the IR receiver on the Blu-ray player, TV, or other target device to drive IR signals from the HC-800 to the target.

IR Blaster

In addition to IR emitters, the HC-800 is also equipped with an IR blaster located just left of the front LEDs.

To use the blaster rather than an IR emitter:

1. In Composer, connect the Front IR Blaster Out on the Controller to the IR In for the device you want to control.
2. Test and verify that the HC-800 is positioned in such a way that the blaster can reach the device you want to control.

Antenna Considerations

Depending on the location of the HC-800 and the network setup, you'll need to consider which, if any, antennas to connect to the HC-800.

Not Using WiFi

In this case, the standard CAT5 Ethernet cable works well with the HC-800 installed on a rack. No WiFi antenna is required.

Using as a ZigBee Access Point (ZAP)

Attach one (1) of the antennas provided to the HC-800 RSMA connector labeled 'ZigBee' as needed. If the HC-800 is mounted in a metal rack, use the optional 10' Antenna Kit (C4-AK3M, sold separately).

Using with a WiFi Connection

In this case, you're connecting the HC-800 wirelessly.

NOTES: (1) This option is not recommended if the HC-800 is mounted in a rack. (2) WiFi is not supported on HC-800s as Primary Controllers.

Use the WiFi antenna when you don't have an Ethernet connection, and you're using the HC-800 as a Secondary Controller.

NOTE: For best results, we recommend that you use 802.11 n.

Install in a Rack (Optional)

To install the Controller in a rack (front or back):

1. Turn the Controller over and remove the four (4) screws that secure the feet (each corner on the Controller).
2. Remove the rubber feet.
3. Use the same screws to attach the rack ears (Rack Ear Kit, C4-1UREK-B, sold separately) into the screw holes.
4. Attach the Controller to the rack.

Setting Up External Storage Devices

You can store and access media from an external storage device, for example, a NAS or eSATA drive, or USB memory device by plugging the USB drive into the USB port and then configuring and scanning the media (if required) in Composer Pro. For information about adding storage devices, see *eSATA Installation Guide* in the Knowledgebase.

NOTE: When using eSATA or USB storage devices on an HC-800, you can only use one (1) partition with a 2TB maximum size. This limitation applies to the USB storage on all other Controllers also.

Composer Information

- Driver. Choose the Home Controller HC-800 driver in Composer (OS 2.2 and later) and add it to your project. See *Composer Pro Getting Started* for details.
- Properties. There is a special section for configuring the video resolution. Select the video output you are using from the Connections view (HDMI or Component), and then select the preferred video mode. The default is 720p @ 60 Hz for Component and HDMI. HDMI also uses auto configuration to select the best possible resolution for the display device. After making the selection, click Set Resolution. If the video resolution has to change, the Controller will reboot; this is normal. See "Configuring an HC-Class Controller" in the *Composer Pro User Guide* on the Dealer website for more details.

Troubleshooting

Factory Restore Button

CAUTION! The Factory Restore process will remove the Composer project.

To restore the HC-800 for system recovery to the factory default image, perform the following steps:

1. Insert one (1) end of a paper clip into the small hole on the back of the HC-800 that is labeled 'Factory Restore.'
2. Hold the button until the WiFi Status LED blinks Orange, and then release it. This should take five (5) to seven (7) seconds. The Status LED will blink Orange while the restore is running.

Identification Button

- Identify. Press the Identification button to identify the device to the system.
- Network and Password Resets. To reset the HC-800 to the network and password defaults, hold the ID button and apply power to the unit. Wait for either a prompt on the display/monitor or wait for the Power, Link, and Data LEDs to all turn on (solid) at the same time. Immediately release the button and the network and password will be reset.

- Boots/Reboots. Press and hold the Identification button for five (5) seconds to initiate a Controller reboot. This sequence of LEDs follows:
  - The Power LED blinks briefly, and then turns solid Blue.
  - The Link LED blinks Blue briefly, and then turns off.
  - The Data LED blinks once, and then turns off.
  - The WiFi LED blinks Orange, blinks Blue until the system reboots, and then turns off.

  If the device is configured for WiFi, the WiFi LED reports the status (Red=Bad; Orange=OK; Blue=Good).

Regulatory/Safety Information

To review regulatory information for your particular Control4 products, see the information located on the Control4 website at: http://www.control4.com/regulatory/.

Warranty

Limited 2-year Warranty. Go to http://www.control4.com/warranty for details.

About This Document

Part number: 200-00241, Rev. D, 11/13/2012