Control4™

Home Controller HC-800 Installation Guide

Supported Model

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

Introduction

The Control4® Home Controller HC-800 provides many ways to control lights, home theaters, distributed audio and video systems, and other devices controlled using various protocols, for example, IP, infrared (IR) Serial, Contact, and Relay. This version comes with a faster processor, built-in WiFi, HDMI for audio and video, improved ZigBee radio, and more.

The HC-800 also provides extensive media management services for audio and video sources, for example, CDs, DVDs, or BluRays stored in connected devices. It allows you to use an external storage device with USB or eSATA support for media storage, and it supports multi-zone audio capabilities, sending music to rooms throughout the home. The device installs on a rack or shelf, can be stacked, and uses 1 RU rack space.

When you install and configure the Controller and other system components (using Control4 Composer software), your users can control the system using one of two user interfaces included in this Controller: On-Screen Navigator or a System Remote Control, or any other Control4-supported user interface device (sold separately).

Box Contents

The following items are included in your Home Controller box:

- Home Controller HC-800
- AC to DC power adapter with power cord
- Six (6) IR emitters
- Three (3) antennae: One (1) for ZigBee and two (2) for WiFi
- Warranty card

Accessories for Purchase

- Rack Ear Kit (C4-1UREK-B)
- Antenna Kit (C4-AK-WIFI)

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.

WARNUNG! Um das Risiko des elektrischen Schlages zu verringern, setzen Sie diesen Apparat nicht Regen oder Feuchtigkeit aus.

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

For a more information, refer to the Product pages at http://www.control4.com.

Requirements and Specifications

Prior to installing this product, ensure that Ethernet network wiring is in place. If you're using WiFi, see "Antenna Considerations."

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HC-800 Specifications

Model Number	C4-HC800-BL
Network	Ethernet—required WiFi (only supported when the unit is used as a Secondary Controller)
Media Recognition	Online CD/DVD/BluRay recognition and media information service
Audio Playback Formats	MP3: 32kbps to 320kbps, CBR, VBR, AAC, and FLAC
Display	LED indicators
Power Requirements	100-240 VAC, 60/50 Hz, 0.26 A MAX
Dimensions	H x W x D: 2.80" (71 mm) x 11.98" (304 mm) x 7.24" (184 mm)
Weight	4.7 pounds (xx kg)
Shipping Weight	x.xx pounds (xx kg)

* Home Controller 19Vdc, 3A

Additional Resources

The following resources are available for more support.

- Your Control4 Reseller
- Control4 website: http://www.control4.com
- Composer documentation in online help or PDF format available on the Dealer portal.

Front View

Figure 1. Front View

1. **WiFi LED**. This LED blinks first Red, then Orange, and finally 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 and signal strength are as follows: Orange=Fair to Good, Blue=Excellent, and No Light=No connection.
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 in a Control4 Composer project.
4. **Power LED**. The Blue LED indicates that AC power is present. It turns on immediately after power is applied to the Controller.
5. **IR Window / IR Blaster**—For capturing third-party IR codes from hand-held devices (such as remote controls) or blasting IR codes.

Back View

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

Figure 2. Back View
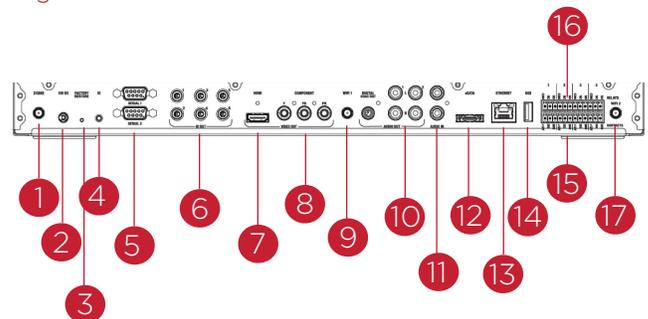
1. **ZigBee**. Antenna for the ZigBee radio.
2. **Power Plug Port**. AC power receptacle for the AC to DC power cord.
3. **Factory Restore Button**. A recessed button that restores the Controller to the factory defaults.
4. **Identification Button**. Easily-pressed button used when identifying this device in Composer.
5. **Serial**. DB9 connectors for two (2) serial devices, such as a receiver or disc changer. See "Connect the Serial Ports" for more 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 more information.
7. **Video Out (HDMI)**. HDMI port for displaying

navigation menus on a monitor or TV.

8 **Video Out (Component)**. Component jack used for displaying high-definition video.

9 **WiFi 1**. WiFi port to attach a WiFi antenna.

> Note: WiFi cannot be used for Primary Controllers; use for Secondary Controllers only.

10 **Audio Out** (2 left-right pairs). RCA jacks for stereo channel line output (line level) for amplifiers or audio switches. Includes one (1) digital audio ouput and two (2) analog audio outputs.

11 **Audio In** (1 left-right pair). RCA jacks for stereo channel input (line level) for one (1) stereo analog source.

12 **eSATA**. External serial ATA port for connecting a hard drive to store media.

13 **Ethernet**. RJ-45 jack for a 10/100 BaseT Ethernet connection.

14 **USB**. For external storage device with USB support (such as FAT32-formatted devices). See "Set up External Storage Device" for information.

15 **Relay**. 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).

16 **Contact**. Pluggable terminal block connector for four (4) normally closed or normally opened 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 **WiFi 2**. WiFi port to attach a WiFi antennae.

> Note: WiFi cannot be used for Primary Controllers; use for Secondary Controllers only. See "Antenna Considerations" below.

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.

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

3 **Connect the HC-800 to the network:** To connect using an Ethernet connection, plug the data 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.

> Notes: (1) WiFi can only be used for Secondary Controllers. (2) Only use the power supply included in this box.

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

> Note: The HC-800 may take several minutes to boot up and become operational. Please allow sufficient time for boot-up.

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

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

Connect the Devices

> Note: Use Composer to step through the connection process before or after the physical connections are completed.

The following section provides more information about other connection options.

Use 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, which is 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 (refer to Figure 1 below). For example, if you add a motion sensor, you would connect its wires to the following Contact openings: power input to +12V output signal to SIG, and ground connector to GND. See the following sections for instructions about connecting the various protocols.

2 Repeat Step 1 for all wires required for your device.

Note: When you connect dry contact closure devices, such as door switches, 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 the following figures to determine how to connect the device to a contact port.

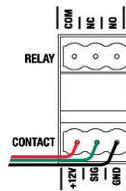Figure 3. Contact Port for Voltage Source (e.g., Motion Sensor)

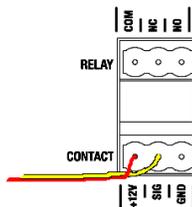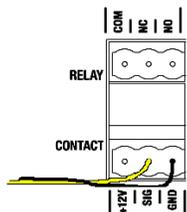Figure 4. Contact for Dry Contact (e.g., Door Contact Sensor)

Figure 5. 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. For most applications, attach one (1) wire to the common terminal and the other to the normally open terminal. The relay switches close when the relay is activated.

The HC-800 can support applications that require a normally closed contact.
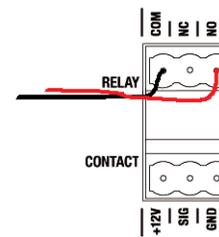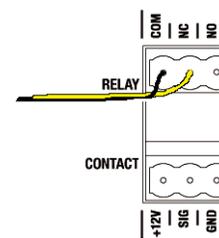
Figure 6. Relay Port: Normally Open

Figure 7. 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
Serial Port 2	X	X	X	X

Set Up IR Emitters or IR Blaster

Your 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 the following setups:

- IR Emitters
- IR Blaster

IR Emitters

1   Plug the 3.5mm 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 BluRay 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 Out** #6 of 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 your HC-800 and the network setup, you'll need to consider which, if any, antennas to connect to your HC-800.

On a Rack, Not Using ZigBee Access Point (ZAP)

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

On a Rack, Using ZAP

In this case, if you're HC-800 is installed on a rack, you'll need to purchase the Antenna Kit (C4-AK-WIFI) and then use the External WiFi Antenna in that kit. Connect the External WiFi Antenna to one of the WiFi connectors on the back of the HC-800 (see

Figure 1, "Back View").

Stacked, with an Ethernet Connection

In this case, if you have an HC-800 stacked with other devices the standard CAT5 Ethernet cable works well. No other antenna is needed.

Stacked, with a Wireless Connection

In this case, you're stacking the HC-800 with other devices and you're connecting wirelessly.

1   Connect ? to the ZigBee port on the back of the HC-800 (see Figure 1, "Back View") unless you're not using this Controller as a ZAP. If you aren't using it as a ZAP, you don't need the ZigBee antenna.
2   Use the WiFi antenna when you don't have an Ethernet connection and you're using the HC-800 as a Secondary Controller.

Set Up External Storage Devices

You can store and access media from an external storage device, for example, a network hard drive, eSATA hard drive, or USB memory device by plugging the USB drive into the USB port and configuring or scanning the media in Composer.

Composer Driver Information

Choose the HC-800 driver in Composer and add it to your project. If the correct driver doesn't appear, right-click a driver in the My Drivers tab, and select Restore Default List to refresh the list. See *Composer Pro Getting Started* for details.

Troubleshooting

Factory Restore Button

1   To restore the HC-800 for system recovery to the factory default image, insert the end of a paper clip into the small hole on the back of the Controller labeled "Restore. "
2   Power cycle the device while pressing and holding the Factory Restore button for about five (5) to seven (7) seconds and until the Status LED

blinks Orange. This action starts the recovery process.

Identification Button

1 To reset the HC-800 to the network defaults, power cycle the device and hold the **Identification** button until the Data, Link, and Power LEDs are solid Blue. Immediately release the button.

2 If during the boot sequence, the Status LED stays Orange, press and hold the **Identification** button until the LED blinks Blue, and then release it.

Power Button

If any time you plug in the Controller or it power cycles but doesn't reboot, press the Power button to initiate the reboot it. See Figure 1, "Back View" for the Power button's location.

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. A, 8/05/2011, Draft 4

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FEDERAL COMMUNICATIONS COMMISSION INTERFERENCE STATEMENT
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
-Reorient or relocate the receiving antenna.
-Increase the separation between the equipment and receiver.
-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
-Consult the dealer or an experienced radio/ TV technician for help.

CAUTION:
Any changes or modifications not expressly approved by the grantee of this device could void the

user's authority to operate the equipment.

Labeling requirements

This device complies with Part 15 of the FCC Rules. Operation is

subject to the following two conditions: (1) this device may not cause

harmful interference, and (2) this device must accept any interference

received, including interference that may cause undesired operation.

RF exposure warning

This equipment must be installed and operated in accordance with provided instructions and

the antenna(s) used for this transmitter must be installed to provide a separation distance of at

least 20 cm from all persons and must not be co-located or operating in conjunction with any

other antenna or transmitter. End-users and installers must be provide with antenna

installation instructions and transmitter operating conditions for satisfying RF exposure

compliance.

Canada, Industry Canada (IC) Notices
This Class B digital apparatus complies with Canadian ICES-003 and RSS-210. Operation is subject to

the following two conditions: (1) this device may not cause interference, and (2) this device must

accept any interference, including interference that may cause undesired operation of the device.

Radio Frequency (RF) Exposure Information

The radiated output power of the Wireless Device is below the Industry Canada (IC) radio frequency

exposure limits. The Wireless Device should be used in such a manner such that the potential for human

contact during normal operation is minimized.

This device has also been evaluated and shown compliant with the IC RF Exposure limits under mobile exposure conditions. (antennas are greater than 20cm from a person's body).

This device has been certified for use in Canada. Status of the listing in the Industry Canada's REL (Radio Equipment List) can be found at the following web address:
http://www.ic.gc.ca/app/sitt/reltel/srch/nwRdSrch.do?lang=eng

Additional Canadian information on RF exposure also can be found at the following web address:
http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf08792.html

Canada, avis d'Industry Canada (IC)

Cet appareil numérique de classe B est conforme aux normes canadiennes ICES-003 et RSS-210. Son fonctionnement est soumis aux deux conditions suivantes : (1) cet appareil ne doit pas causer d'interférence et (2) cet appareil doit accepter toute interférence, notamment les interférences qui peuvent affecter son fonctionnement.

Informations concernant l'exposition aux fréquences radio (RF)

La puissance de sortie émise par l'appareil de sans fil est inférieure à la limite d'exposition aux fréquences radio d'Industry Canada (IC). Utilisez l'appareil de sans fil de façon à minimiser les contacts humains lors du fonctionnement normal.

Ce périphérique a également été évalué et démontré conforme aux limites d'exposition aux RF d'IC dans des conditions d'exposition à des appareils mobiles (les antennes se situent à moins de 20 cm du corps d'une personne).

Ce périphérique est homologué pour l'utilisation au Canada. Pour consulter l'entrée correspondant à l'appareil dans la liste d'équipement radio (REL - Radio Equipment List) d'Industry Canada rendez-vous sur:

http://www.ic.gc.ca/app/sitt/reltel/srch/nwRdSrch.do?lang=eng

Pour des informations supplémentaires concernant l'exposition aux RF au Canada rendez-vous sur :
http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf08792.html