

Home Control Assistant Hardware Connection Guide

www.HCATech.com

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Version 10

Introduction

Before you can use HCA to control devices in your home, you must first connect your computer to one or more automation interface. The following instructions will help you do that. If you have problems during any of the steps, see the troubleshooting section at the end of this guide.

The information here is intended to supplement, not replace, the instructions that came with the interfaces you will use with HCA.

More information on each of these interfaces is available from their manufacturer. Links to their web sites are found on the support web site resources page.

The HCA support web site is:

www.HCATech.com

Step 1: Test powerline communications in your home

If you are using X10, Insteon or UPB, before connecting the powerline interface to your computer, it's a good idea to first verify that you can control devices in your home. To perform this test you will need a receiver (a lamp module is a good choice) and a keypad transmitter. If you are new to powerline control and you don't have these, a good place to purchase them is from an online reseller.

The steps to get the keypad and the module talking depend upon the technology. For X10 it is simply setting the same address on each. For UPB it requires running the UPB Setup program. For Insteon requires manual linking. Whatever is needed do that now and then from the keypad, try turning the lamp on and off. If it does not work, either you do not have the module and keypad settings correct, the lamp is off at its switch, or there is a problem with communications in your home.

If this test failed, and you can't control the lamp using the remote keypad, you will be unable to control it using HCA. You must resolve any problems before proceeding. See the troubleshooting section below.

Step 2: Locate a free communications port

Commands pass between each interface and your computer through a serial port, sometimes called a communications port or a COM port, or a USB port. If your interface uses a serial port you first need to determine if your computer contains an available serial port, one that is not being used by another piece of hardware or software. For a USB interface all you need do is attach it using the appropriate USB cable.

Most PCs contain two serial ports, referred to as COM1 and COM2. Newer computers typically have only one of these available from a connector on the back of the computer. Older PCs may have both available from the back of the computer. You can locate the serial port by looking at the back of your computer for a 9-pin connector.

There may be other hardware and software in your computer that also uses serial ports. For example, a modem or fax board, a mouse, or a connection to an uninterruptible power supply. In order for HCA to communicate with the interface, you must have a port available for the exclusive use of the interface.

If your computer has no 9 pin serial ports, it may have Universal Serial Bus (USB) ports. There are interface cables that allow you to connect 9-pin devices (your automation interfaces) to USB ports. See the support web site Frequently Asked Questions page for information on this.

If your computer does not have an available port, you will need to add one. The support web site troubleshooting page contains some tips on this. If you need to add a port, install it as directed by the manufacturer.

One way to determine if you have a free serial port is to see what other devices are contained in your computer that are using a serial port. Make a list of each of those devices and the port used. Check your computer's hardware reference to see how many serial ports are available.

Step 3: Connect each interface

The connection instructions differ, depending upon the interface you are using. Follow the section appropriate to your hardware.

Not all versions of HCA support all of these interfaces. Refer to the User Guide appendix on HCA versions for what version supports which interfaces.

UPB Serial PIM

Follow these steps in connecting the USB serial PIM:

- Connect the PIM to the computer using the supplied serial cable.
- Plug the PIM into the wall. **Don't plug the interface into a power strip that contains a surge suppresser or filter as it can attenuate powerline signals.** If possible don't use a power strip at all - plug the interface directly into a wall electrical outlet.

Unlike other powerline interfaces, the UPB PIM continuously sends a lot of data to and from the computer. If at all possible use one of the base ports on your computer rather than a serial port created from a USB port or add-in card.

UPB USB PIM

Follow these steps in connecting the UPB USB interface:

- Connect the PIM to the computer using a USB cable.
- Plug the PowerLine into the wall. **Don't plug the interface into a power strip that contains a surge suppresser or filter as it can attenuate powerline signals.** If possible don't use a power strip at all - plug the interface directly into a wall electrical outlet

Once this is completed, Windows may offer to install a driver for this new USB interface. Follow the instructions.

There are two types of USB PIM. The first operates like a USB device and you identify the communications port to HCA as "USB".

The second type of USB PIM, when installed, creates a virtual serial port. When you identify this device to HCA on the Hardware – Setup tab, supply that serial port. To figure out what serial port was created, you may need to open the Windows Control Panel.

For XP, open the system applet, choose the Hardware tab and press the device manager button. Look at the ports section of the tree.

For Vista, open the device manager applet and look at the ports section of the tree.

SmartHome Insteon USB PowerLinc Controller (2414U)

Follow these steps in connecting the Insteon USB PowerLinc Controller interface:

- Connect the PowerLinc to the computer using a USB cable.
- Plug the PowerLinc into the wall. **Don't plug the interface into a power strip that contains a surge suppresser or filter as it can attenuate signals.** If possible don't use a power strip at all - plug the interface directly into a wall electrical outlet, and if at all possible, don't use the electrical pass through outlet on the interface.

Once this is completed, Windows may offer to install a driver for this new USB interface. Follow the instructions.

SmartHome Insteon USB PowerLinc Modem (2412U and 2413U)

Follow these steps in connecting the Insteon USB PowerLinc Modem interface:

- Connect the PowerLinc to the computer using a USB cable.
- Plug the PowerLinc into the wall. **Don't plug the interface into a power strip that contains a surge suppresser or filter as it can attenuate signals.** If possible don't use a power strip at all - plug the interface directly into a wall electrical outlet, and if at all possible, don't use the electrical pass through outlet on the interface.

Once this is completed follow the instructions that came with the interface as you must download and install a device driver. This driver comes from SmartHome.

This device, when installed, creates a virtual serial port. When you identify this device to HCA on the Hardware – Setup tab, supply that serial port. To figure out what serial port was created, you may need to open the Windows Control Panel.

For XP, open the system applet, choose the Hardware tab and press the device manager button. Look at the ports section of the tree.

For Vista, open the device manager applet and look at the ports section of the tree.

SmartHome Insteon USB PowerLinc Modem (2412S)

Follow these steps in connecting the Serial Insteon PowerLinc Modem interface:

- Connect the PowerLinc to the computer using a serial cable.
- Plug the PowerLinc into the wall. **Don't plug the interface into a power strip that contains a surge suppresser or filter as it can attenuate signals.** If possible don't use a power strip at all - plug the interface directly into a wall electrical outlet, and if at all possible, don't use the electrical pass through outlet on the interface.

SmartHome USB PowerLinc (1132U) and PowerLinc Controller (1132CU)

Follow these steps in connecting the USB PowerLinc interface:

- Connect the PowerLinc to the computer using a USB cable.
- Plug the PowerLinc into the wall. **Don't plug the interface into a power strip that contains a surge suppresser or filter as it can attenuate X10 signals.** If possible don't use a power strip at all - plug the interface directly into a wall electrical outlet, and if at all possible, don't use the electrical pass through outlet on the interface.

Once this is completed, Windows may offer to install a driver for this new USB interface. Follow the instructions.

SmartHome Serial PowerLinc and Serial PowerLinc Controller

Follow these steps in connecting the serial PowerLinc interface:

- Connect the PowerLinc to the computer using the supplied serial cable. For the Serial PowerLinc, the cable is attached to the PowerLinc and an adapter is used to change its telephone like end to a serial 9 pin connector. For the PowerLinc Controller, a special cable connects to the PowerLinc and then to a computer serial port.
- Plug the PowerLinc into the wall. **Don't plug the interface into a power strip that contains a surge suppresser or filter as it can attenuate X10 signals.** If possible don't use a power strip at all - plug the interface directly into a wall electrical outlet, and if at all possible, don't use the electrical pass through outlet on the interface.

CM11A / HD11A

The CM11A / HD11A is supplied with a special cable that has a modular connector on one end and a DB9 connector at the other end. Connect this cable between the interface and the serial port on your computer. Then plug the interface into an electrical outlet. **Don't plug the interface into a power strip that contains a surge suppresser or filter as it can attenuate X10 signals.** If possible don't use a power strip at all - plug the interface directly into a wall electrical outlet, and if at all possible, don't use the electrical pass through outlet on the interface. For use by HCA, the batteries need not be installed in the interface.

CM15

Using a CM15 with HCA requires use of a special device driver. The procedure is outlined in a technical note on the support web site.

W800RF32

The W800RF32 wireless receiver can be used with HCA to receive wireless signals from motion sensors and keypads directly into your computer. This is fully described in the User Guide Wireless appendix.

The power supply for the W800RF32 must be plugged into the wall and the W800RF32 is connected to a unused serial port on your computer. There are no other setup or configuration options for the hardware. HCA's use of this interface can be configured. See the Wireless appendix in the User Guide.

Marrick LynX-10PLC

Supplied with the LynX-10PLC is a cable that has DB9 connectors at each end. (This cable is the same as described in the LynX-10 Coprocessor section.) Connect this cable to the interface and the serial port on your computer. Plug the interface into an electrical outlet. Check that the outlet is **not** controlled by a switch. **Don't plug the interface into a power strip that contains a surge suppresser or filter as it can attenuate X10 signals.** If possible don't use a power strip at all - plug the LynX-10PLC directly into a wall electrical outlet. If you are using an uninterruptible power supply, see the note below.

Once plugged in correctly, all the LEDs on the front of the LynX-10PLC should come on briefly and, after a short time, only the LED labeled *Power* should remain illuminated.

Marrick LynX-10 Coprocessor (Enclosed version)

NOTE: This device has been designated a Legacy device. To enable support you must open the HCA – Properties dialog and choose the legacy tab. On that tab are checkboxes to enable older hardware and features.

If you did not purchase the LynX interface with its cables, you will need:

- A power line interface called a TW523. If you don't have one of these, look for one from any of the online retailers of automation gear.
- The cable from the TW523 to the LynX-10 with RJ11 connectors at each end. This cable contains four wires and looks similar to the modular cable used for telephones. Some inexpensive telephone cables may have only two wires and will **not** work. Some cables may look correct but are wired differently than needed by the LynX-10. To see if the cable is correct, line up the RJ11 connectors at each end of the cable with their front ends touching and with the locking clips on the same side. You should be able to see the colors of the wires through the RJ11 connectors. A correct cable will have the same wire colors lining up.
- A serial cable to connect the LynX-10 to your computer. This cable has a DB9 connector at each end. This cable is wired straight through with pin 2 at the computer end connected to pin 2 at the interface end. All nine pins must be connected – some lower quality cables don't provide all nine wires. Some serial cables swap pins 2 and 3 between the cable ends. This type of cable will **not** work with the LynX-10.

These cables are readily available. Again, look for them online.

Follow these steps in connecting the LynX-10 interface:

- Connect the telephone-like cable from the TW523 to the LynX-10. Plug the TW523 into an electrical outlet. **Don't plug the TW523 into a power strip that contains a surge suppresser or filter as it can attenuate X10 signals.** If possible don't use a power strip at all - plug the TW523 directly into a wall electrical outlet. Once plugged in, the red LED on it should be illuminated.
- Connect the serial cable from your computer to the LynX-10.
- Plug the AC power adapter into an electrical outlet, and connect it to the LynX-10. If you are using an uninterruptible power supply see the UPS section below.

If you connected it all correctly, all the LEDs on the front of the LynX-10 should come on briefly and, after a short time, only the LEDs labeled *TW523* and *PWR* should remain illuminated.

Marrick LynX-10 PC Addin card

NOTE: This device has been designated a Legacy device. To enable support you must open the HCA – Properties dialog and choose the legacy tab. On that tab are checkboxes to enable older hardware and features.

Even though you are adding the LynX-10 directly into your computer, it still uses a serial port. **Before** adding the card to your computer you must set jumpers on the board to select a serial port and an interrupt number. The settings chosen must not conflict with other devices in your computer. Windows can assist you in choosing appropriate settings. Perform these steps **before** adding the card to your computer.

Once you know the interrupt and port settings for the LynX-10 addin card, set the jumpers on the card as appropriate. Power down your computer and install the card. If you have never done this before, find an experienced helper.

Refer to the Marrick LynX-10 Coprocessor section above for instructions on connecting the TW523.

Marrick LynX-10 Kit version

NOTE: This device has been designated a Legacy device. To enable support you must open the HCA – Properties dialog and choose the legacy tab. On that tab are checkboxes to enable older hardware and features.

To connect the LynX-10, follow the same directions as given for the LynX-10 Coprocessor. Pay particular attention to the notes on the correct cables.

Marrick LynX-PORT

NOTE: This device has been designated a Legacy device. To enable support you must open the HCA – Properties dialog and choose the legacy tab. On that tab are checkboxes to enable older hardware and features.

To connect the LynX-PORT, follow the same directions as given for the LynX-10 Coprocessor. To fully configure the LynX-PORT, you must use the setup program provided by Marrick. The setup program and HCA both send commands to the LynX-PORT through its serial port: they can't both be in use at the same time. Make sure that after you use the setup program you exit that program before starting HCA.

Elk Products Magic Module

NOTE: This device has been designated a Legacy device. To enable support you must open the HCA – Properties dialog and choose the legacy tab. On that tab are checkboxes to enable older hardware and features.

In addition to the Elk Magic Module, you must also have a RS-232 to RS-485 Data Bus Converter, available from Elk Products as part number MB-485.

Complete instructions on connecting it to the computer and to the Magic Module are included with the MB-485 and should be followed carefully.

All the additional hardware in the Magic Module family, voice modules, security panel interface, etc, are connected directly to the RS-485 bus. Again, for connection and power hookup, refer to the instructions included with these products.

Take careful note of the bus address you selected on the Magic Module, using the small black jumpers. You will need this when identifying your modules and ports to HCA later on.

If you will be using the Magic Module for sending and receiving X10 commands, you will need to connect a TW523 / PSC05 to the J5 connector on the Magic Module.

SmartHome HouseLinc

NOTE: This device has been designated a Legacy device. To enable support you must open the HCA – Properties dialog and choose the legacy tab. On that tab are checkboxes to enable older hardware and features.

Follow these steps in connecting the HouseLinc interface:

- Connect the telephone-like cable from the TW523 / PSC05 to the back of the HouseLinc into the connector labeled *X10 Port*. Plug the TW523 into an electrical outlet. **Don't plug the TW523 into a power strip that contains a surge suppresser or filter as it can attenuate X10 signals.** If possible don't use a power strip at all - plug the TW523 directly into a wall electrical outlet. Once plugged in, the red LED on it should be illuminated.
- Connect the serial cable from your computer to the HouseLinc.
- Plug the AC power adapter into an electrical outlet, and connect it to the HouseLinc. If you are using an uninterruptible power supply see the UPS section below.

Once this is completed, the green Status/X10 ELD on the front of the HouseLinc should be blinking.

Lightolier Compose PLC Firewall

NOTE: This device has been designated a Legacy device. To enable support you must open the HCA – Properties dialog and choose the legacy tab. On that tab are checkboxes to enable older hardware and features.

The Lightolier Compose PLC Firewall is not used as an X10 interface like the other interfaces described here. If connected to your computer using a serial cable, you can download schedules and control their actions. This is described in the User Guide Lightolier appendix.

Support for the Lightolier Compose system is only included in HCA with Lightolier Extensions, and requires the use of a special LynX-10PLC. Refer to the User Guide for more information on this.

The Firewall is connected by running a serial cable from the firewall communication port to your computer. Note the baud rate of this connection – set on the Communications card – as you will need to specify this to HCA.

The communications port used and the baud rate are specified in the Lightolier Control panel.

MR26

NOTE: This device has been designated a Legacy device. To enable support you must open the HCA – Properties dialog and choose the legacy tab. On that tab are checkboxes to enable older hardware and features.

The MR26 wireless receiver can be used with HCA to receive wireless signals from motion sensors and keypads directly into your computer. This is fully described in the User Guide Wireless appendix.

There is no power supply to plug in when using the MR26.

The MR26 is connected to a unused serial port on your computer. There are no other setup or configuration options for the hardware. HCA's use of this interface can be configured. See the Wireless appendix in the User Guide.

Special Note for users of uninterruptible power supplies.

If your computer power is supplied from an uninterruptible power supply, you must make sure that:

- The AC adapter used with the LynX-10 (enclosed or kit form), LynX-PORT, HouseLinc, and Magic Module, must also be powered from the UPS.
- The TW523 (LynX-10 and LynX-PORT) must **not** be plugged into the UPS.
- The power adapter for the W800RF32 can be plugged into the wall or the UPS. Your choice.
- All others must not be plugged into the UPS.

Step 4: Test the interface

Now that you have the interfaces connected, the last step is to install the HCA software and configure it to work with your hardware.

Once the software installation process is complete, select from the menu:

HCA – Hardware – Setup

On this tab you select the type of interfaces you are connecting and what communications port are used. Once you have made your selections, use the Connect button to confirm that each interface is attached and working correctly.

If you receive any error messages, go back and check that all the cables are correctly connected and the appropriate selections have been made in the dialog box. If problems persist, refer to the Troubleshooting section below.

Troubleshooting

The hardest part of setting up HCA on your computer is connecting the interfaces. Any problems getting HCA to talk to the interface are most likely related to the serial port. The support web site contains more troubleshooting tips than printed here. **If your problem is not listed here or the suggested resolutions don't work, try the support web site.**

The support web site for HCA is located at www.HCATech.com

Problem: The communications test described in step one did not work.

Possible resolutions for this problem:

- Make sure that the lamp has its switch on.
- Make sure that the lamp module and the keypad are addressed correctly.
- Try plugging the control panel into another receptacle. If possible, try the other plug in the same receptacle that the lamp is plugged into. If this still does not work, the lamp module and/or control panel may be functioning incorrectly.
- If you can control the lamp from the control panel, but only when it is plugged into some receptacles and not others, there may be a problem with powerline communications working in your home. Refer to the Troubleshooting page on the support web site.

Problem: All the serial ports are in use on the computer

In this case, you need to add another serial port. Many different manufacturers make add-in cards for serial ports. See the support web site for links to online sites that sell serial add-in cards and cables. Before purchasing an add-in card, make sure that your computer has an open slot for it.

If you have USB ports there are adapters that convert them into serial ports. **Be careful!** Not all of these work with HCA. They all should because HCA doesn't use any communication methods that are not Windows standard, but some don't. Send email to technical support for recommendations.

Problem: The HCA software did not install without error

HCA only installs on computers running the Windows operating system (Windows XP or later). Make sure that you have the correct operating system. Also, make sure that no other applications are running on your computer when you install HCA.

**Problem: When using the Connect button this error appears:
"The port you chose is not available..."**

This message tells you that HCA can't open the selected port. Possible reasons for this are:

- The port chosen is not available because another program is using it. If this is the case, that other program must be shut down or another port chosen for HCA to use.
- The hardware for the port has not been correctly set up, or it has been incorrectly described to Windows. If this is a new port added to the computer, make sure the manufacture's directions were correctly followed when it was installed.

**Problem: When using the Test button this error appears:
"An error has occurred writing (or reading) to the port you selected" or
"The interface hardware can't be reset"**

This message tells you that HCA can open the serial port but when it tries to send or receive data using that port it fails. Possible resolutions for this problem are:

- Make sure you have made the correct selection for the type of hardware you have connected.
- Make sure you have selected the correct serial port. You may want to try other selections and use the Test button to verify.
- Make sure that the interface is connected to the computer with the correct cables and is powered on.

- Make sure that you are using the correct cables. It can be difficult to determine if a cable is correct just by looking at it. For the CM11A/HD11A you must use the cable supplied with the interface. For the other interfaces, check the cable requirements described above.