

## Appendix 6

### Wireless Interfaces

This appendix describes the W800RF32 and MR26 wireless receiver and covers these topics:

- What are the W800RF32 and the MR26?
- Use and configuration
- MR26
- W800RF32
- Creating wireless devices
- Using wireless triggers

The MR26 has been designated a legacy device and support is normally unavailable. Open the HCA Properties dialog and choose the legacy tab to enable support.

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#### What are the W800RF32 and the MR26?

Both of these devices are receivers of wireless signals produced by motion sensors and wireless keypads. They receive the signal and send the command directly into the computer using a serial connection.

Until they were available, these signals were received by a wireless transceiver and retransmitted onto the powerline. The powerline transmission was then received by the computer and processed by HCA. Pictorially it looked like this:

Motion sensor → Transceiver → powerline → X10 interface → HCA

With a wireless interface it now looks like this

Motion sensor → Wireless Interface → HCA

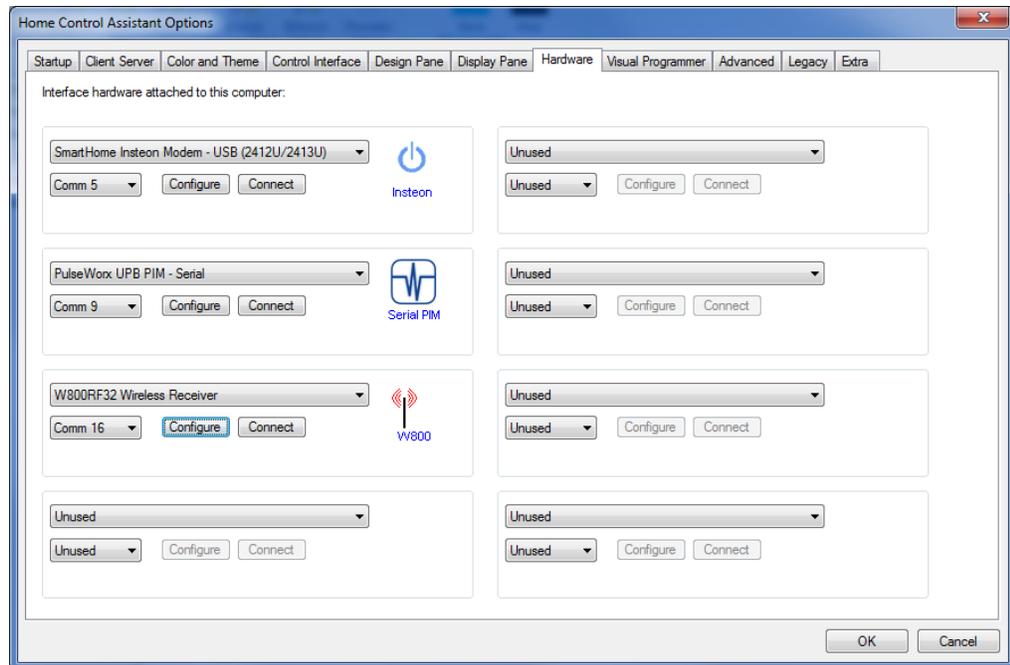
The advantage of this is that the wireless signal gets into the computer much quicker. If you have programs that start when you walk in front of a motion sensor, for example, the program starts much faster than if you used a Transceiver.

There is one major potential problem with using a wireless interface that you should be aware of. In the old method where you used a transceiver, the signal from the wireless sensor (for example a motion sensor) made it on to the powerline. This allowed you to set up a lamp, for example, that goes on as soon as the motion sensor detects motion. If the motion sensor was set to B7 for example, and a lamp module was also set to B7, the motion sensor's transmission would be received by the transceiver, and when put on the powerline the lamp would come on – as well as HCA receiving the signal.

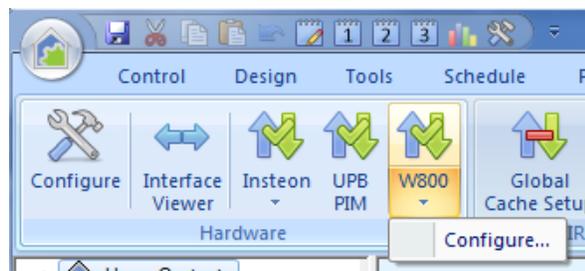
By eliminating the transceiver the signal gets to HCA quicker, but not onto the powerline. HCA has a way to fix this and is explained below.

## Use and Configuration

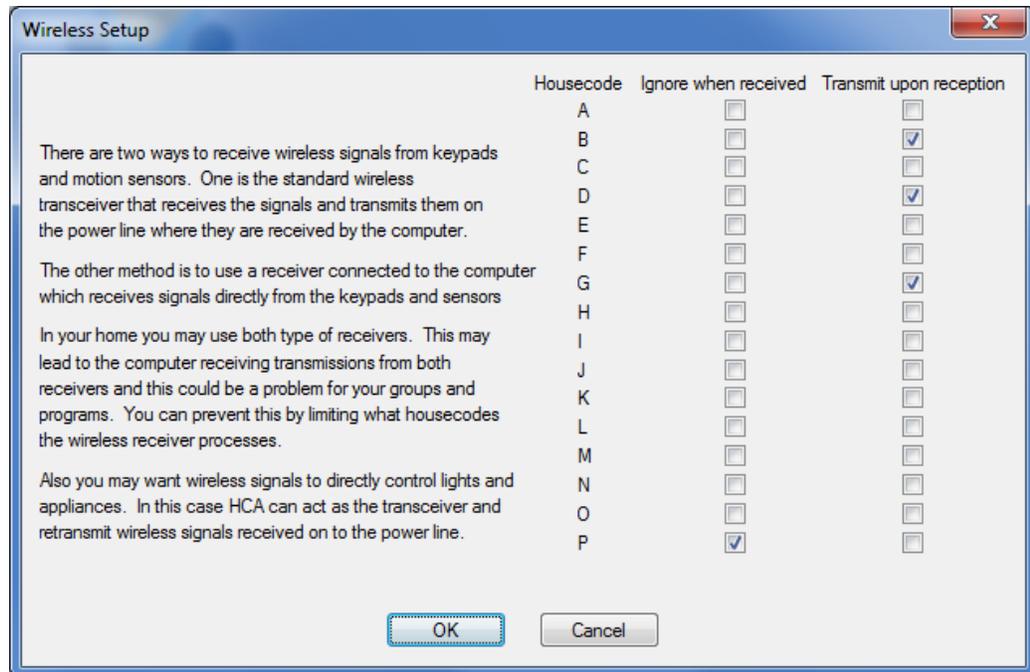
To use one of these interfaces attach it to an unused serial port on your computer. Then open the HCA properties options and select the hardware tab.



Once this is done, the next step is to configure how it works with HCA. Open the dropdown menu from the interface button.



Press the *Wireless* button in the ribbon *Interfaces* category and select *Configure* from the menu.



As this text in this dialog explains, you can have HCA both ignore transmissions from some house codes and also act as a transceiver for others.

While you may think that a Wireless Interface can replace all the X10 transceivers in your home – and it can – there may be a few problems yet to solve.

What problems? For example you have a wireless remote for housecode B and a transceiver set for housecode B and a lamp on B3. You send a B3 and the lamp comes on. This happens because the transceiver picks up the wireless broadcast and sends the B3 out on the power line. No computer involvement.

Now without the transceiver and using a wireless interface the B3 goes right into the computer bypassing the powerline so the light doesn't come on. To recover the function you want you could write a program that is triggered on the wireless reception, but there is a better way. Another option in this Setup dialog is to broadcast onto the powerline signals it receives, thus replacing the transceiver function. You can make this happen for selected housecodes. If you checked this option for housecode B, what would happen is this:

Wireless keypad → Wireless Interface → HCA → X10 interface → lamp

Thus HCA becomes the transceiver.

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## MR26

While all this sounds great there are some technical problems. The MR26 comes with an antenna that is insufficient, and you will be disappointed in its reception range. If you feel capable of working on electronic projects there are ways to improve the MR26.

See the HCA technical notes directory on the support web site for more information on the MR26.

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## W800RF32

The W800RF32 is a wireless interface from WGL and Associates. Like the MR26 it can receive all transmissions from X10 motion sensors (those that you set an X10 address using little push buttons) and wireless keypads.

More information about the W800RF32 is available at

<http://www.wgldesigns.com/>

The best news is that this device works very well and has an excellent range. This makes it much more usable than the MR26.

In addition to the X10 address motion sensors and keypads the W800RF32 can receive, it also can receive transmissions from a second series of keypads and sensors.

The X10 corporation makes a wireless security system that uses motion sensors, door and window closure contacts, and keypads. All of these items transmit wireless signals that can be received by the W800RF32 (but not the MR26).

Even though these are sold as "security" devices don't be convinced that they need be used for security. For example, you can use one of the door/window contacts to send a signal that turns lights on when you open a closet door, for example.

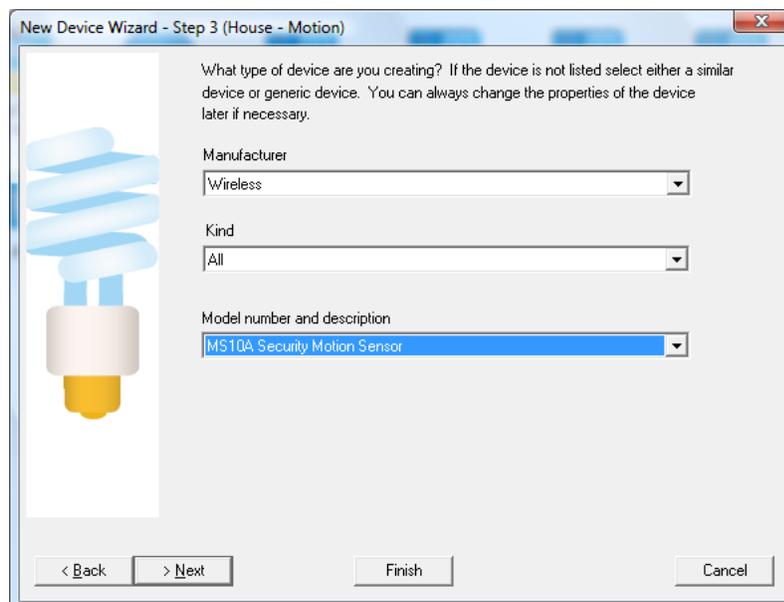
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## Wireless Devices

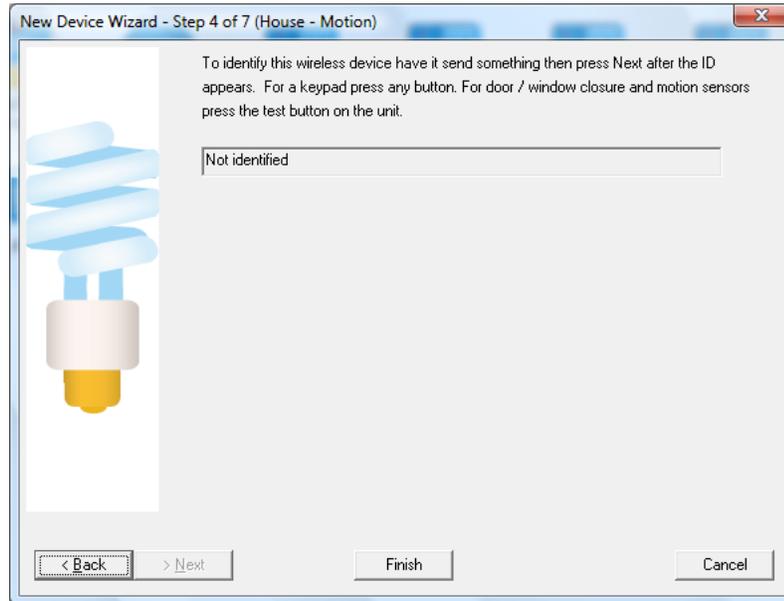
Before discussing the Wireless Component Inventory, don't get the concept of "security" motion sensors and the "security" keypads confused with other wireless keypads and motion sensors - those that transmit house and unit codes. If the motion sensor and keypad has a method for setting its X10 address, then its transmissions can already be received by HCA from either the MR26, W800RF32, or by plug in wireless transceivers. These kinds of motion sensors and keypads are added to your design by using the New Device wizard.

**Hint:** Before you start adding wireless components, you must have the W800RF32 hooked up and working.

To add wireless components that don't send a house and unit code, add them to your design as any other device. At step 3 of the wizard select as the manufacturer "Wireless" and choose the device type.



The next step of the wizard asks you to identify the device so that HCA can capture its assigned address.



The way these types of wireless devices work is that they transmit an identifying unique code as well as a command. The code that they transmit must be different than any other wireless sensor so there is a method to cause it to choose a new code.

Hint: Read the documentation that comes with the wireless security sensor or with the whole X10 wireless security system on how to select the codes.

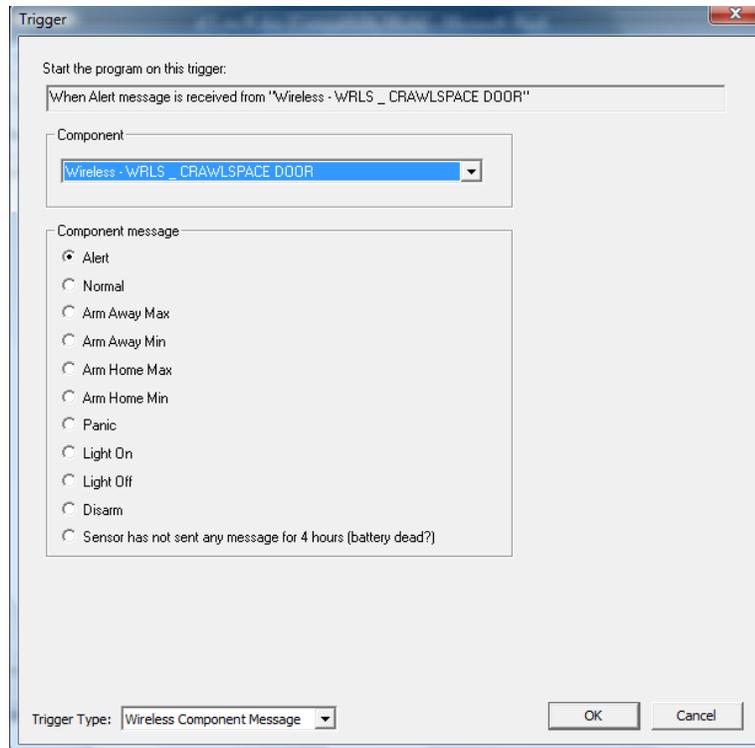
Once this step is on the screen, do something that causes the device to transmit. If it is a door/window contact closure, open and close the door. For a keypad, press any button on the keypad. For a motion sensor, all you need do is to walk in front of it.

When HCA receives the transmission through the W800RF32, it displays it in the lower box. Press Finish when done.

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## Using Wireless Triggers

Once you add wireless components using the Inventory dialog described above you can now make use of their transmissions to trigger programs. To do this open the program's properties and select the Triggers tab. Select Wireless Component Message as the trigger type and press add.



To create a trigger, select the component and the type of message. The types of messages depend upon the type of sensor. These are:

#### **Door / Window Sensor**

When open sends an Alert message. When closed sends a Normal message

#### **Motion Sensor**

When motion detected sends an Alert message. After motion stops and a time delay passes, sends a Normal message.

#### **Keypads**

All the other commands are sent by the Security keypads.

The last choice in the dialog takes advantage of a nice feature of the motion sensors and the contact sensors. About every 90 minutes they send a message to "check-in". If they don't send a message within 4 hours the sensor should be checked as it might be broken or its battery dead.

Instead of selecting a component in the dialog you can also select the "Any" choice. This gives you the ability to create a program that responds to a message from any sensor.

**Hint:** By choosing *Any* for the component and the *Sensor has not sent a message in 4 hours* message choice you can create a program that alerts you when any sensor should be looked at.

**Hint:** Don't forget that these kinds of messages can only be received if you are using the W800RF32 interface.