iWire Flex Radio installation guide

iWire Flex Radios (**model IWIRE-FLEX**) install inside the Phason Communication Hub (PCH) or any Phason Flex-compatible device and provide wireless RS485 communication with other iWire Radios and connected devices.

iWire Radios are for users who want to avoid running communication cable between buildings, or to remote, hard-to-get-to devices or locations. Typical applications include using iWire Radios in place of expensive trenching of underground CAT5 cable. The system is also ideal for reaching devices, such as Weather Stations, that are normally mounted outside or in remote locations.

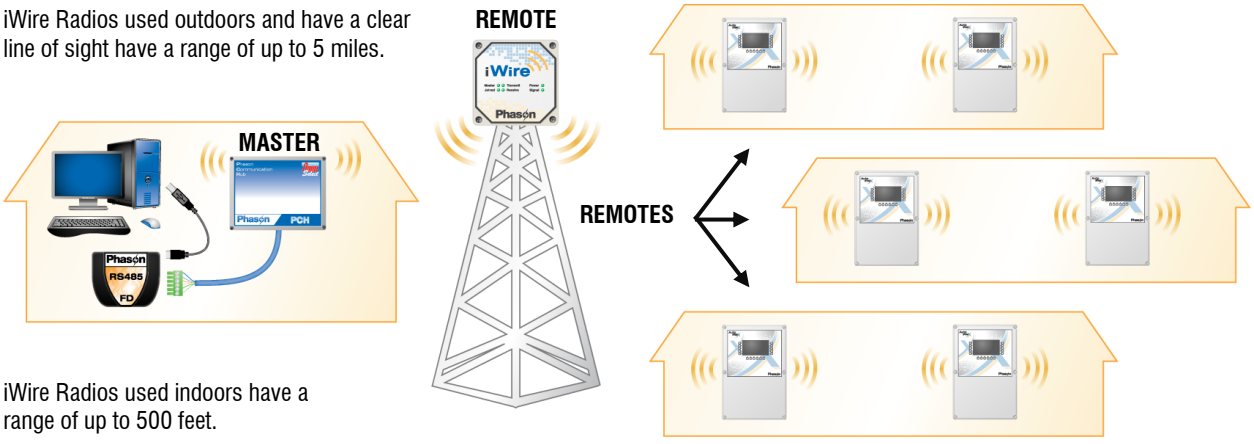
iWire Radios are for use exclusively in OMNI Select systems and are compatible with all OMNI devices except PB-1 to PB-6 Power Blocks.

How iWire works

An iWire network consists of two or more iWire Radios or iWire Flex Radios. One Radio on the network is a **Master Radio**; all others are **Remote Radios**.

The Master Radio connects to the communication channel after the RS485 Converter. The Master Radio communicates with all Remote Radios on the network. The Remote Radios send information from the OMNI Select devices to the Master.

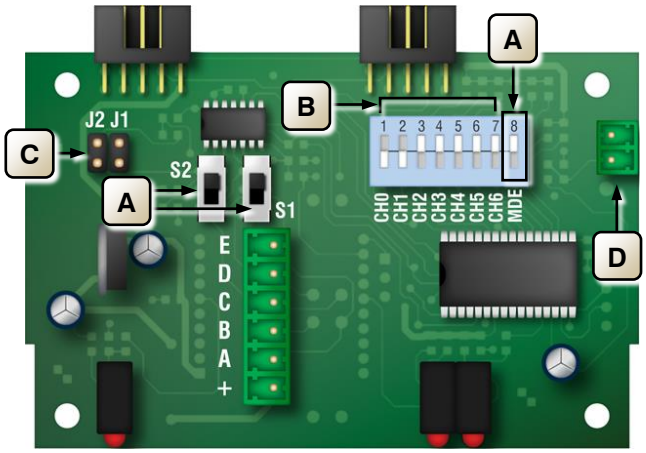
The example below shows an iWire Flex mounted in the Phason Communication Hub (PCH) as the Master Radio. All other iWires are Remote Radios. A standard iWire Radio is mounted on a tower to enhance communication between the office and the outer buildings. An iWire Flex is mounted in each AutoFlex control in the buildings.



iWire range

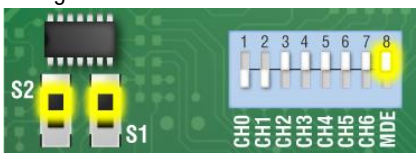
iWire Radios have an outdoor, line-of-sight range of up to 5 miles, and an indoor range of up to 500 feet. Range can vary depending on obstacles, building structure, or interference from other electrical devices.

iWire layout

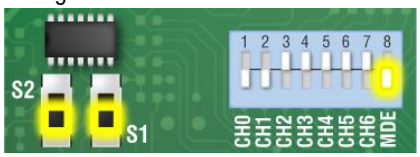


A **Mode switches (S1, S2, MDE)**

Set all three mode switches in the **UP** position to configure the radio as a **MASTER**.

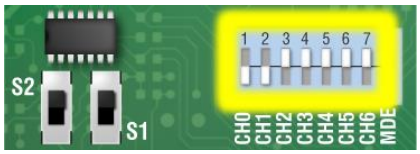


Set the switches in the **DOWN** position to configure the radio as a **REMOTE**.



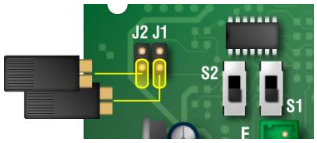
B **Channel switches (CH0 to CH6)**

Make sure the channel switch positions on the MASTER match the switch positions on all REMOTES.



C **Termination jumpers (J1, J2)**

Make sure the shunts are on a single pin.



D **Outdoor temperature probe connection (when connected to the PCH only)**

If you have the iWire Flex connected to a Phason Communication Hub, you can connect a Phason temperature probe for reading outdoor temperatures in OMNI Select. For more information, read **Connecting a temperature probe** on page 4.

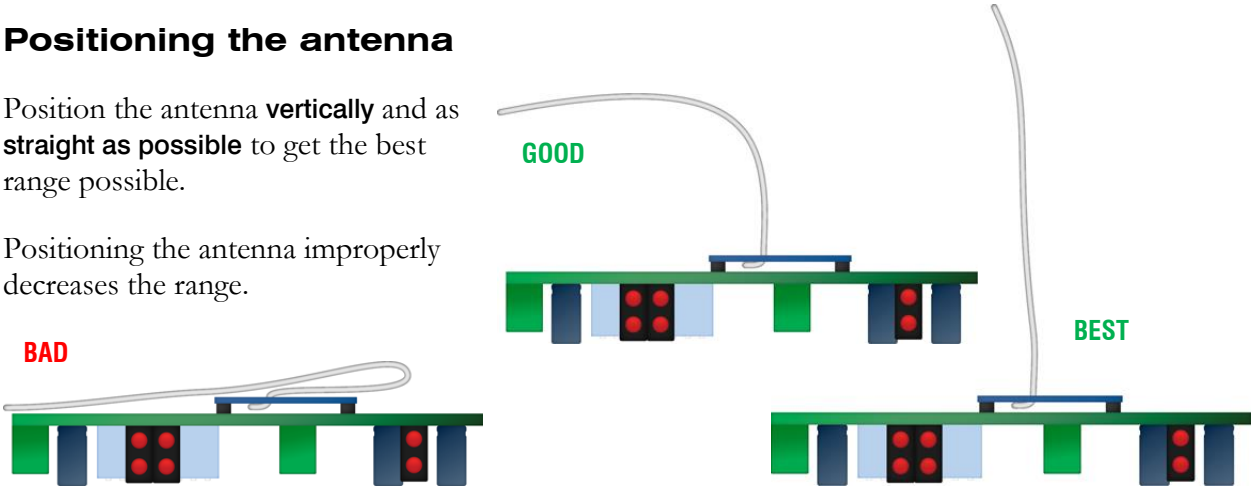
Configuring and installing the Radios

1. Decide which Radio will be the Master Radio. Set its three mode switches in the UP position. This is the radio that will go in the PCH.
2. Set the mode switches on all other Radios in the DOWN position. These are the radios that will go in the Flex devices.
3. Plug the radios into the RADIO socket on the Phason Communication Hub, and the SERIAL 1 sockets on the Flex-compatible devices.

Positioning the antenna

Position the antenna **vertically** and as **straight as possible** to get the best range possible.

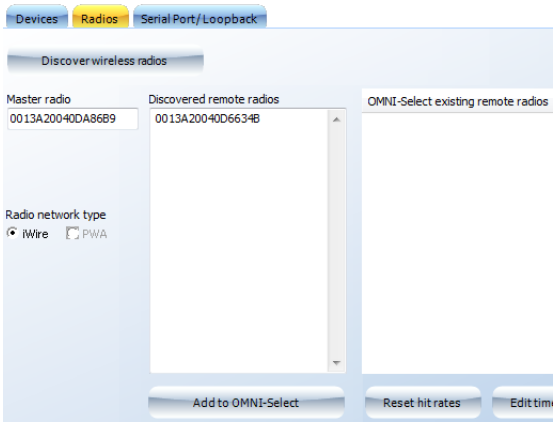
Positioning the antenna improperly decreases the range.



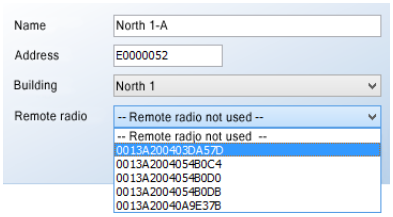
Adding iWire Radios to OMNI Select

After you have configured and installed the iWire Radios, you need to add them to OMNI Select. You must have the power wiring, RS485 Converter, and all communication wiring properly connected to the computer.

1. On the computer, start **ToolKit**.
2. Click **Radios**.
3. Click **Discover wireless radios**.
   ToolKit searches for Radios. This can take up to one minute. A successful search will have one entry below *Master radio*, and one or more entries below *Discovered remote radios*. If the search was not successful, check communication and power wiring.
4. Click **Add to OMNI Select**.
   All discovered Radios are added below *OMNI Select existing remote radios*.
5. When finished, close ToolKit.



To use a Remote Radio for a device, configure or edit the device in **OMNI Select**.



Verifying operation

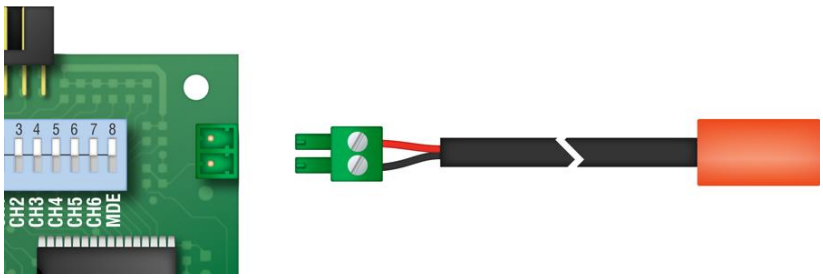
You can verify the iWire Radios are operating properly by observing the LEDs. When operating properly and connected to an iWire network, the **Power** and **Master** LEDs are on, and the **Joined** LEDs flash on all radios. For additional information, read the *Troubleshooting* section of the **OMNI Select user manual**.

- **Master** On when the Radio is on
- **Joined** For radios configured as **REMOTE**, the LED flashes continuously when the radio is connected to an iWire network.
  For radios configured as **MASTER**, the LED flashes continuously at all times.
- **Transmit** Flashes when data is sent
- **Receive** Flashes when data is received
- **Power** On when the Radio has power
- **Signal** Flashes when data is sent or received

Connecting a temperature probe

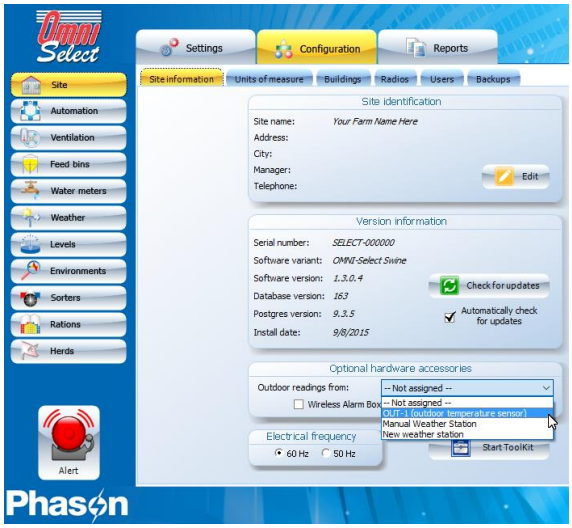
If you have the iWire Flex connected to a Phason Communication Hub, you can connect a temperature probe for reading outdoor temperatures in OMNI Select. You cannot connect a temperature probe if the iWire Flex is connected to any other type of device, such as an AutoFlex.

Connect the temperature probe to the two-position connector, as shown in the following diagram. Plug the connector into the iWire Flex.

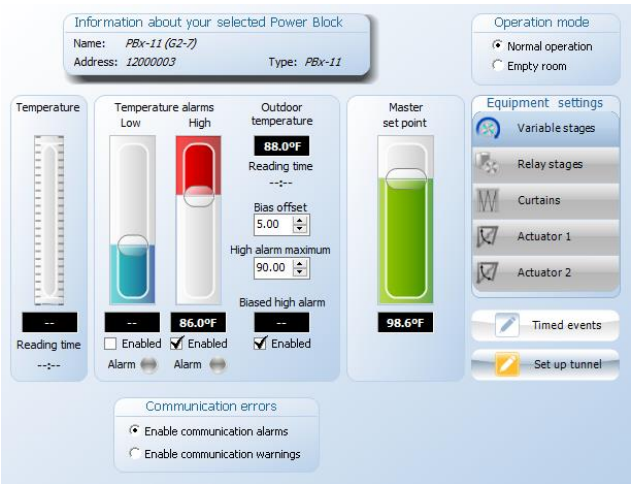


Configure OMNI Select for the outdoor temperature probe

1. In the main window of the OMNI Select software, click **Configuration** and then **Site**.
2. Click **Site Information**.
3. Below *Optional hardware accessories*, select *OUT-1*.



4. If you have the Select Ventilation module, you can adjust the outdoor temperature biasing. To adjust the bias settings, click **Settings** and then **Ventilation**.
5. Below *Your Power Blocks*, select the Power Block you want to edit.
6. Click **Edit Settings**. The *Ventilation settings* window displays.



7. To enable biasing, below *Biased high alarm*, select *Enabled*.
8. To adjust the biasing, below *Bias offset*, click **Up** or **Down**.
9. Click **OK** to save the settings and return to the main window.

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