iWire Radio installation guide

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 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.

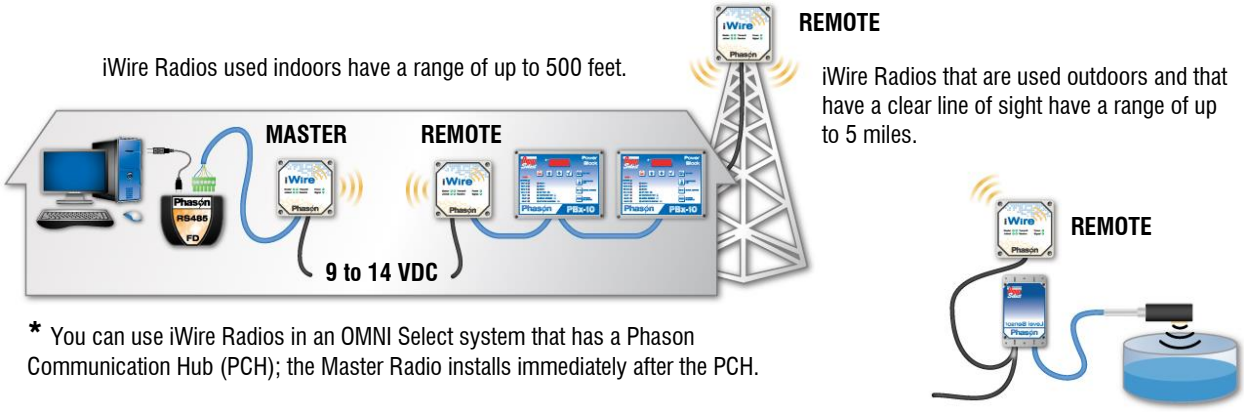
iWire range

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 the obstacles, building structure, or interference from other electrical devices.

How iWire works

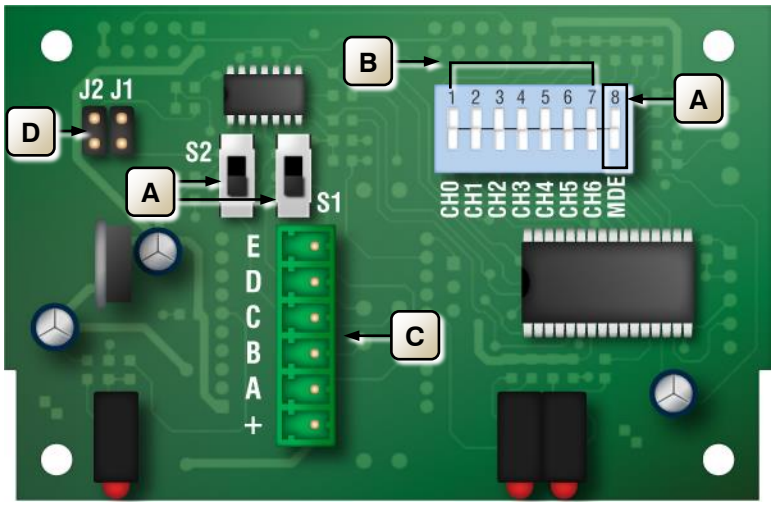
An iWire network consists of two or more iWire Radios. One of the Radios on the network is a **Master Radio**; all others are **Remote Radios**.

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



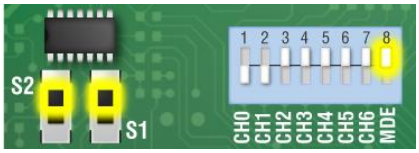
* You can use iWire Radios in an OMNI Select system that has a Phason Communication Hub (PCH); the Master Radio installs immediately after the PCH.

iWire layout

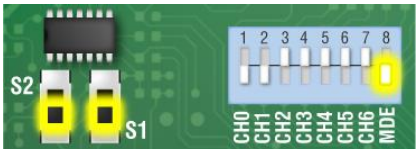


A **Mode switches (S1, S2, MDE)**

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

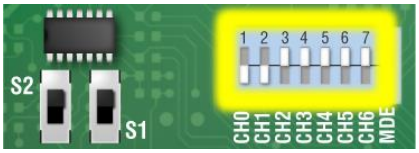


Set the switches in the **DOWN** position to configure the radio as a **REMOTE**.



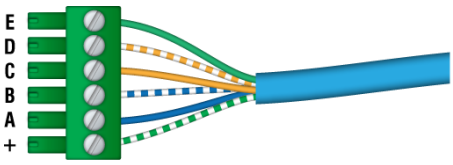
B **Channel switches (CH0 to CH6)**

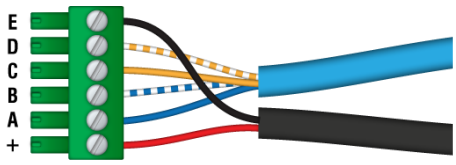
Make sure the channel switch positions on the MASTER match the switch positions on all REMOTES.



C **Communications and power connection**

Connect the communications (**A**, **B**, **C**, **D**) and the DC power (**+**, **E**) to the connector. You can use two cables, one for communication and one for power, or you can use a single cable if additional wires are available.



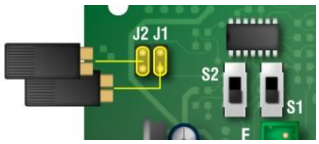


For information about power requirements, read **Power requirements and options** on page 3.

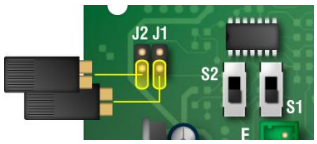
For information about communication wiring, read the instructions in the **RS485-FD installation guide**.

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

If this is the *last device* on the communication channel, place the shunts both pins.



If this is *NOT the last device* on the channel, place the shunts on a single pin.



For more information about termination resistors, read **Termination jumpers explained** on page 3.

Termination jumpers explained

Phason devices have termination jumpers or termination resistors. These terminate the communication signal at the ends of a communication channel.

Whatever type of device is at the end of the channel, it is the last device and must have the termination jumpers or resistors in place. All other devices on the channel must have the shunts on a single pin or the termination resistors removed. Below are two examples of communication channels. The **T** shows where termination is installed.

For the location of the termination jumpers or resistors on other Phason devices, see the installation guide for that device.

Power requirements and options

iWire Radios require 9 to 14 VDC, 250 mA. There are several power options available.

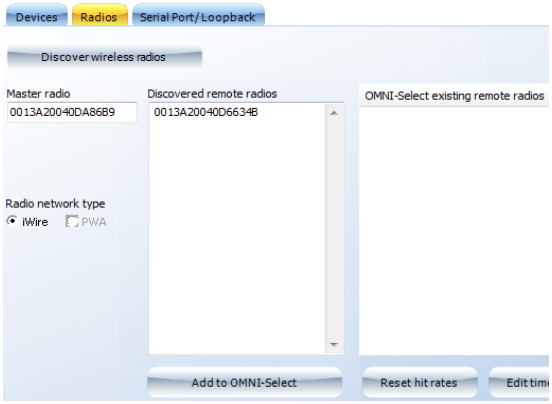
- Use the Phason 12 V, 800 mA adapter (**model PA12-800**).
- Take power from a Phason device. For example, if you have an iWire Radio connected to an *OMNI Water Monitor*, you can take 12 V power from it.
- Use a Phason *Regulated Power Supply* (**model RPS**). The RPS is required to power Phason devices such as *OMNI Water Monitors* and *Local Environment Monitors*. If you are using an iWire Radio with one of these devices, you can take power from the RPS.

Configuring and installing the Radios

1. Decide which Radio will be the Master Radio. Set its three mode switches in the UP position. For the location of the switches, see the diagram on page 2.
2. Set the mode switches on all other Radios in the DOWN position.
3. Mount the Radios on sheltered, vertical surfaces. The strain reliefs must face down.
4. If a Radio is the last device on a communication channel, place the termination jumper shunts on both pins. For more information, read **Termination jumpers** above.
5. Connect the communication wiring.
6. Connect the power wiring. For more information, read **Power requirements and options** above, and the instructions on page 2.
7. Fasten the covers to the enclosures.

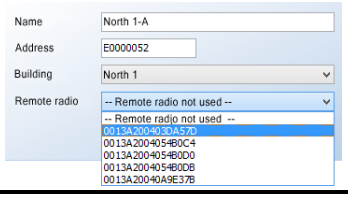
Adding iWire Radios to OMNI Select

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 the mode switch positions, and the 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.

- **Master** OFF for radios configured as **REMOTE**
  ON for radios configured as **MASTER**
- **Joined** FLASHES when the radio is on
- **Transmit** FLASHES when data is sent
- **Receive** FLASHES when data is received
- **Power** ON when the Radio has power
- **Signal** ON when connected to an iWire network, brighter or dimmer depending on signal strength.

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

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