

## AXS Port Network Without a Router

### Introduction

The OutBack AXS Port was designed to be used with an external router. However, some customers may need to access it without a router to interface with SunSpec Modbus. This document will describe the procedure to connect to the AXS Port using SunSpec Modbus by connecting directly to a desktop or laptop computer.



**Figure 1: AXS Port without router**

### Solution

Creating this local network without a router will require adjustments to your computer's (PC or laptop) network (IP and DNS settings).

The AXS Port will arrive with the default IP address of 192.168.0.64 and configured to DHCP. However, if the AXS Port was previously connected to a network, it must be reset.

### Procedure

- Reset AXS Port if required (see details below)
- Connect AXS Port to OutBack power-supplying device (inverter, charge controller, or HUB connected to those devices)
- Verify connectivity

#### Resetting AXS Port (if required):

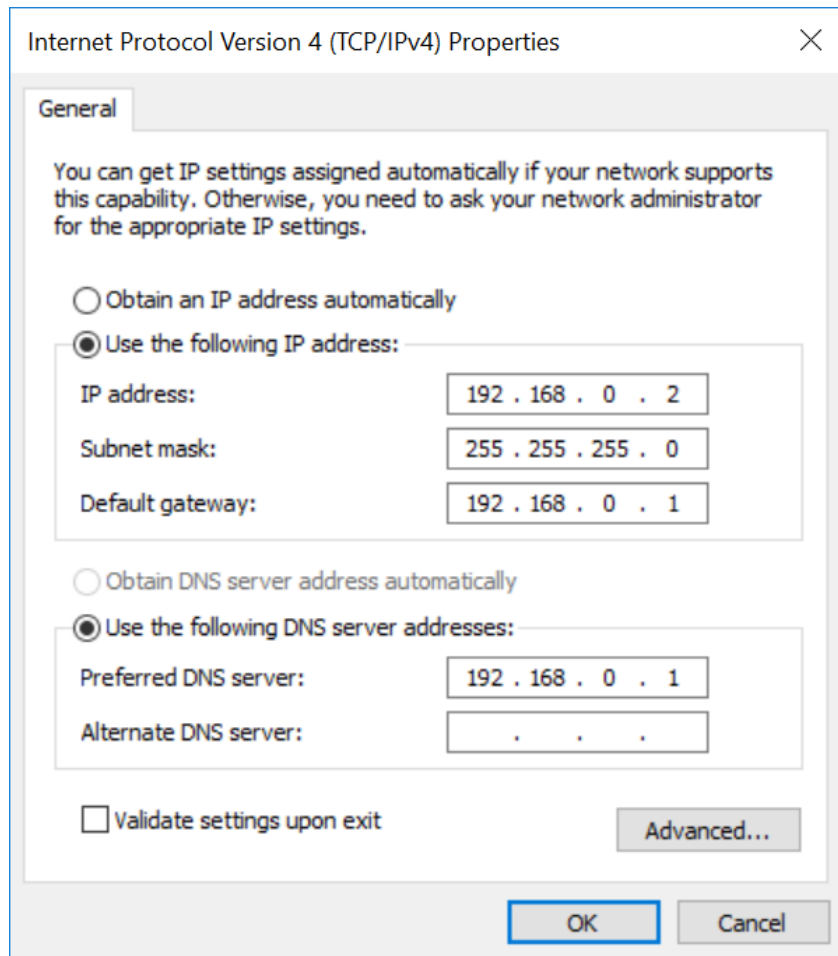
The AXS Port has a reset switch located below the micro SD card. Using the reset switch will restore all settings to factory default values, including the IP address.

- Insert a paper clip (or other narrow tool) to press the reset switch on the AXS Port.
- Connect an OutBack CAT5 patch cable from the OutBack power-supplying device to the HUB device port of the AXS Port (powered on) while the tool is still inserted. Hold the reset switch for five seconds. The LED will blink during the resetting process.

## Application Note

### Connect AXS Port to OutBack Device:

- If the last step was skipped, connect an OutBack CAT5 patch cable from the OutBack power-supplying device to the HUB device port of the AXS Port.
- Connect a CAT5 Ethernet crossover cable from the Ethernet port on the AXS Port to your PC or laptop.
- Adjust your network, Ethernet, and DNS server settings in accordance with Figure 2 below.



**Figure 2: Settings**

### Verify Connectivity:

To verify that your network settings have been configured correctly, test the connection between your computer and the device.

- Open a command prompt window. In Windows 7 or 10, open the “Start” menu and type “cmd” and then hit “Enter”. On Mac, open “Launchpad” and select the “Other” folder and then select “Terminal”.
- Ping your device in the command prompt. Type “ping 192.168.0.64”. If configured correctly, the command prompt will reply with the number of packets sent equal to the number of packets received. Otherwise, the command prompt will indicate errors with each round of bytes sent.
- If an error occurs, recheck your network configuration settings and ensure they match the previous diagram.

## For Advanced Users & Developers

OutBack's Software Engineering team released Outback Modbus Interface Device Client Software in 2012, a development package designed to interface with your AXS Port. This package will not be updated or maintained by OutBack Power Technologies and may not operate correctly on future models. **As the commands enabled in this shell program enable the user to execute system changes, we highly advise only advanced users with extensive programming experience attempt to utilize this software.** Other Modbus client software packages are commercially available through other developers.

The software is available on [www.outbackpower.com](http://www.outbackpower.com). To run the software, a C compiler must be installed on your machine. On Windows, if a C compiler is not present, download and install MinGW. Follow all installation instructions on [www.mingw.org/wiki/Getting\\_Started](http://www.mingw.org/wiki/Getting_Started). You will need to verify your environment settings as noted in the document in order to run the compiler on the command line.

Unzip the Modbus Development Package file from OutBack Power. Locate the package and READ ME file for your operating system. The READ ME includes instructions on how to run the program.

### To verify connectivity with the Modbus Interface Device Client Software:

- In the command prompt, navigate to the "src" folder and compile the files using the following command: **gcc OutBackShell.c outback.c modbus.c modbus-tcp.c modbus-data.c -o shell**
- Run the program: **./shell**
- Establish a connection: **c**
- Enter the IP address: **192.168.0.64**
- The program will reply that it has successfully connected to the specified address or that the connection has failed. If failure occurs, recheck your network configuration settings and ensure they match the previous diagram.

```
OutBack Communications Shell
Version 3.0.48
Type command or 'h' for help
>> c
Connect to: 192.168.0.64
getSunSpecID() Addr 40001 ID 53756E53
SunSpec Device Detected!
Connected successfully to 192.168.0.64:502
>> _
```

**Figure 3: Connection Success**

```
OutBack Communications Shell
Version 3.0.48
Type command or 'h' for help
>> c
Connect to: 192.168.0.64
Connection failed: Connection timed out
Connection failed
>>
```

**Figure 4: Connection Failure**

## Application Note

### About OutBack Power Technologies

OutBack Power Technologies is a leader in advanced energy conversion technology. OutBack products include true sine wave inverter/chargers, maximum power point tracking charge controllers, and system communication components, as well as circuit breakers, batteries, accessories, and assembled systems.

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### Other

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