How to Use Modbus TCP to Connect to the ioThinx 4510 Series

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About Moxa

Moxa is a leading provider of edge connectivity, industrial networking, and network infrastructure solutions for enabling connectivity for the Industrial Internet of Things. With over 30 years of industry experience, Moxa has connected more than 50 million devices worldwide and has a distribution and service network that reaches customers in more than 70 countries. Moxa delivers lasting business value by empowering industry with reliable networks and sincere service for industrial communications infrastructures. Information about Moxa's solutions is available at www.moxa.com.

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In this tutorial, you will learn how to use Modbus to read/write data from/to the ioThinx 4510.

Prepare the Following Items

- ioThinx IIoT Starter Kit (ioThinx 4510, 45MR-1601, 45MR-2600, and 45MR-3800)
- Software: Modbus Poll, ioThinx 4510 (with firmware v1.1 installed)

Using Modbus TCP via Modbus Poll

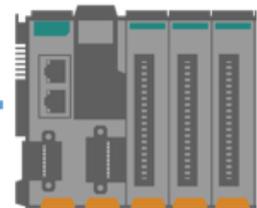## Introduction to Modbus Poll

Please refer to the following web page for information about Modbus Poll:

https://www.modbustools.com/modbus_poll.html

Modbus Poll

IP address: 192.168.127.200

Moxa ioThinx 4510

IP address: 192.168.127.254

Install Modbus Poll

Download **Modbus Poll** from the following website and install it:

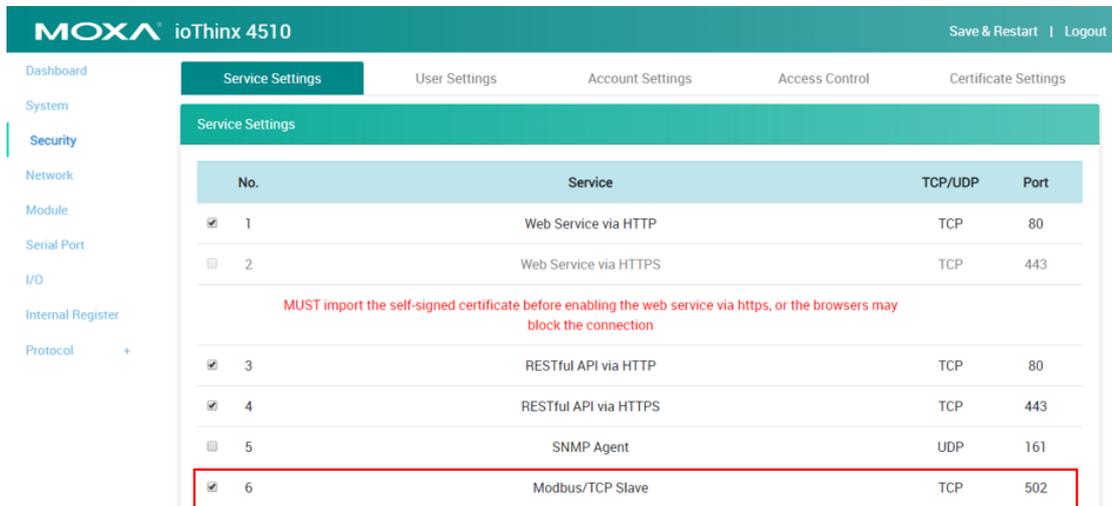https://www.modbustools.com/download.html

Enable Modbus/TCP slave service on the ioThinx 4510
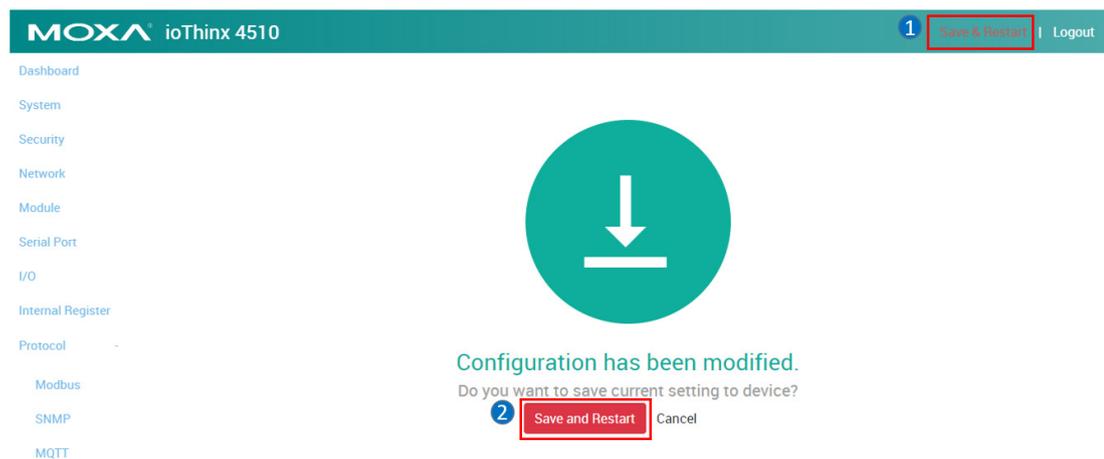
1. Log in to the ioThinx 4510

   Step 1: Open your web browser and type the default IP address of the device: 192.168.127.254.

   Step 2: On the login page, type the default username/password (admin/moxa) to log in to the Web Console.
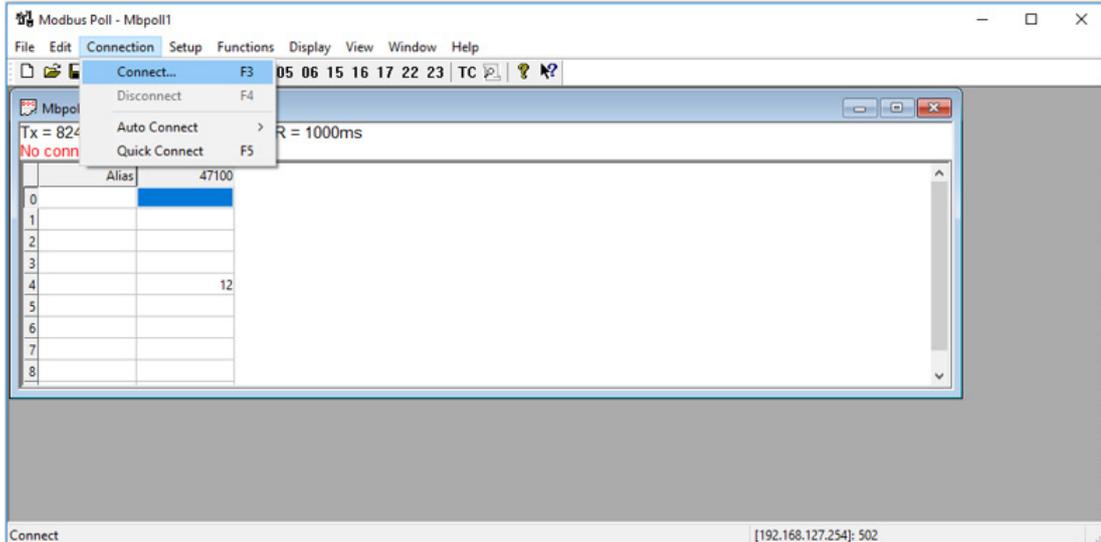
2. Enable Modbus/TCP slave service.

3. Click **Save & Restart** in the top right of the page and then click **Save and Restart** in the center of the page.
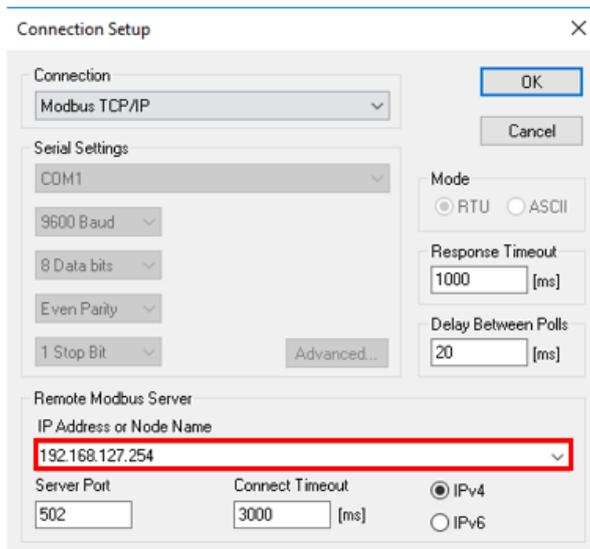
Set Up a Connection on Modbus Poll

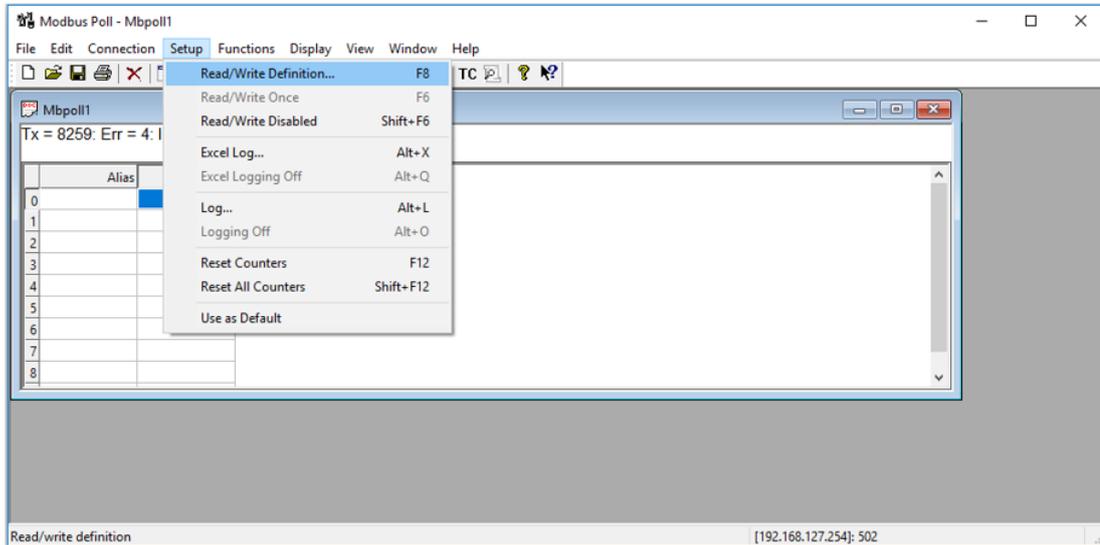1. Select **Connect** on **Modbus Poll**'s **Connection** panel.

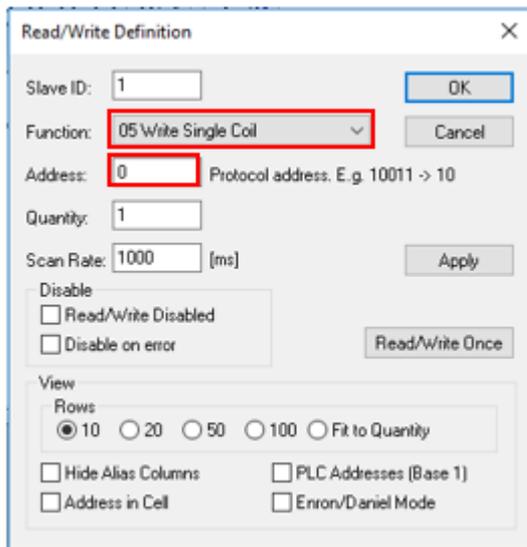2. Enter the IP address of the device (default IP: 192.168.127.254).

Write Single Coil: Use Modbus Poll to turn on an ioThinx 4510 DO channel

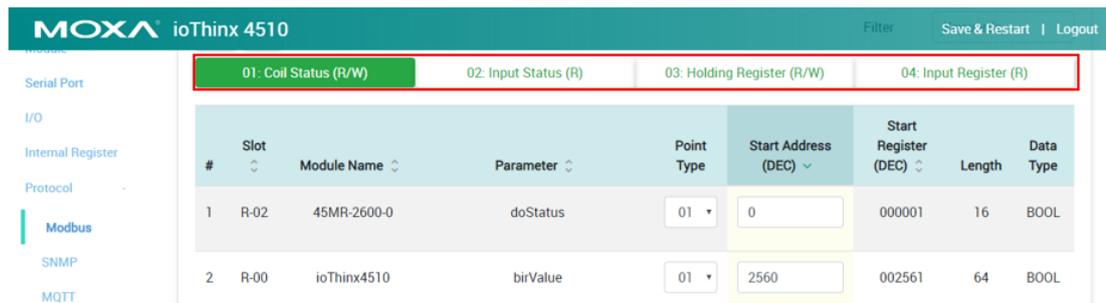1. Select **Read/Write Definition** under the **Setup** menu.

2. Select the **function** code **05 Write Single Coil** and then enter **0**, the start **Address** of the DO channel.
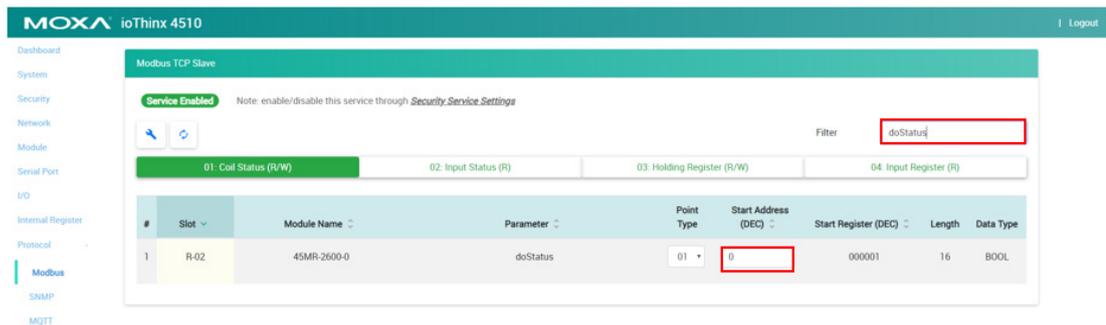
Note 1: Take the following steps to check the **Start Address** of the device in the web console.

1. Open the web console and then click **Modbus** in the left panel. On this page, the Modbus TCP addresses are categorized as **Coil Status**, **Input Status**, **Holding Register**, and **Input Register**.
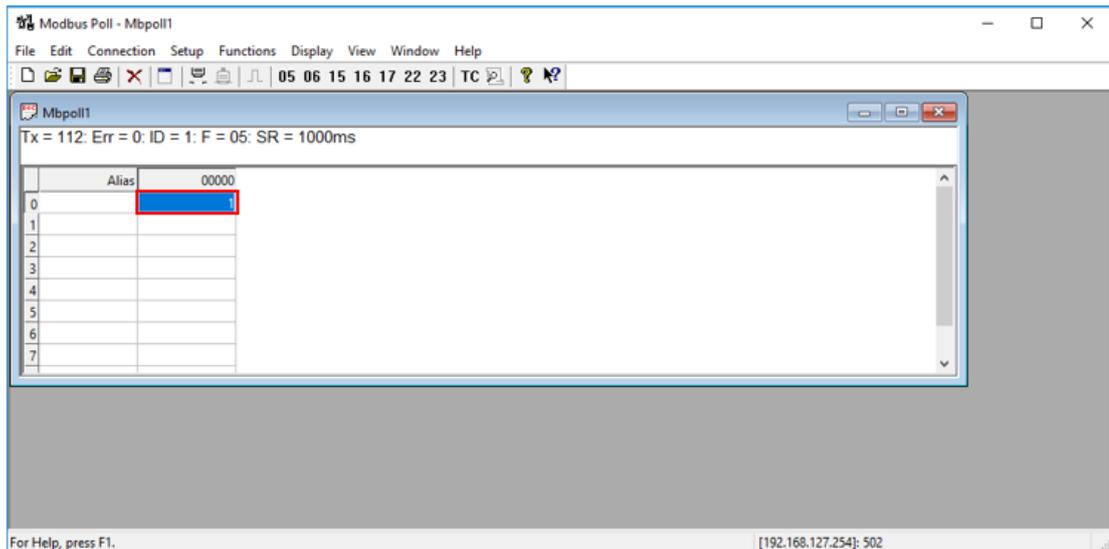

2. Type the text "doStatus" in the filter to find the **Start Address** of the DO channel.

Note 2: You can also manually modify the addresses if needed. To do so, click **Save & Restart** in the top right of the page after changing the **Start Address**.
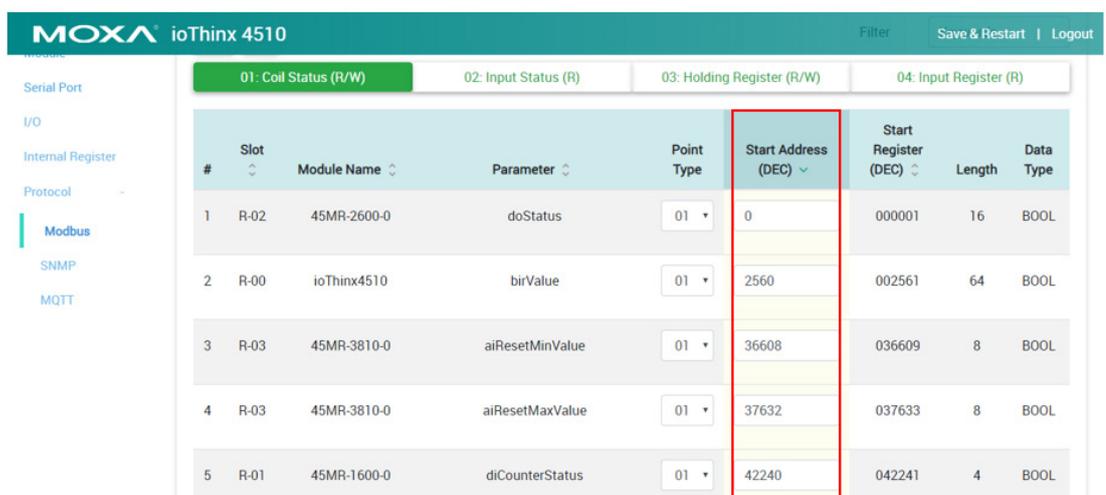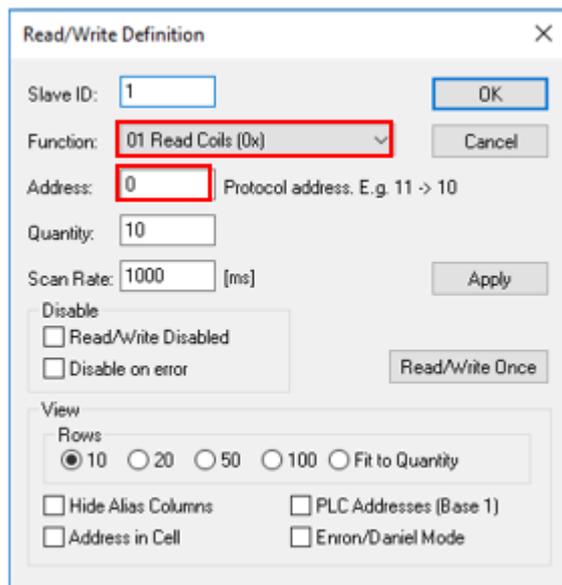
3. Change the DO-00 value from 0 to 1; DO-00 will respond by turning on the LED.

Read Coils: Use Modbus Poll to read the ioThinx 4510 DO channel status.

1. Select **Read/Write Definition** in the **Setup** panel.
2. Select the **function** code **01 Read Coils** and enter **0**, the start **Address** of the DO channel.

3. The status will be shown in the table; when the DO-00 channel is turned on, the value should be 1).