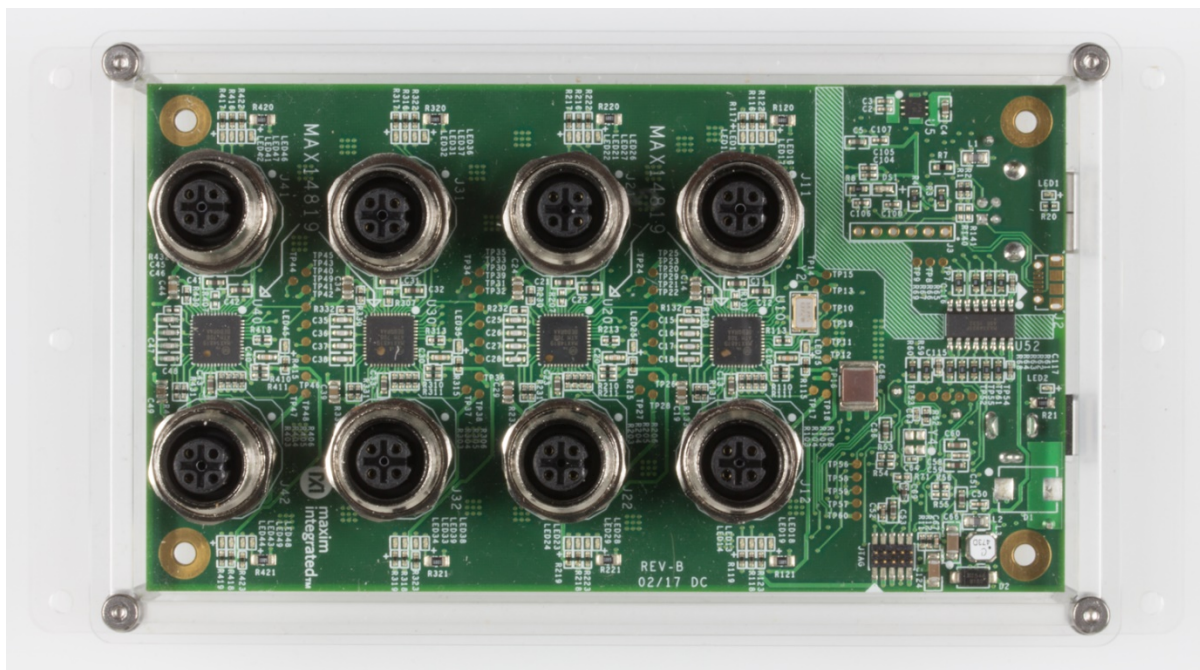# MAXREFDES145# 8-Channel IO-Link Master Quick Start Guide

UG6424; Rev 0; 04/17

Abstract

The MAXREFDES145# 8-Channel IO-Link® Master Quick Start Guide describes the steps required to quickly get the MAXREFDES145# reference design up and running by controlling it with TEConcept's Control Tool IO-Link master software.

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Required Equipment

- PC with Windows® 7 or Windows 8 or Windows 10. Verify with TEConcept that your version of Windows is supported before purchasing their software.

- MAXREFDES145# (Box Contents)

  - MAXREFDES145# 8-Port IO-Link Master

  - TEConcept IO-Link Control Tool (CT) Software (Note 1)

  - FTDI Driver (Note 1)

  - AC-to-DC 24V/3A (min) output power converter

  - Black 1 meter IO-Link cable

  - USB 2.0 Type B cable

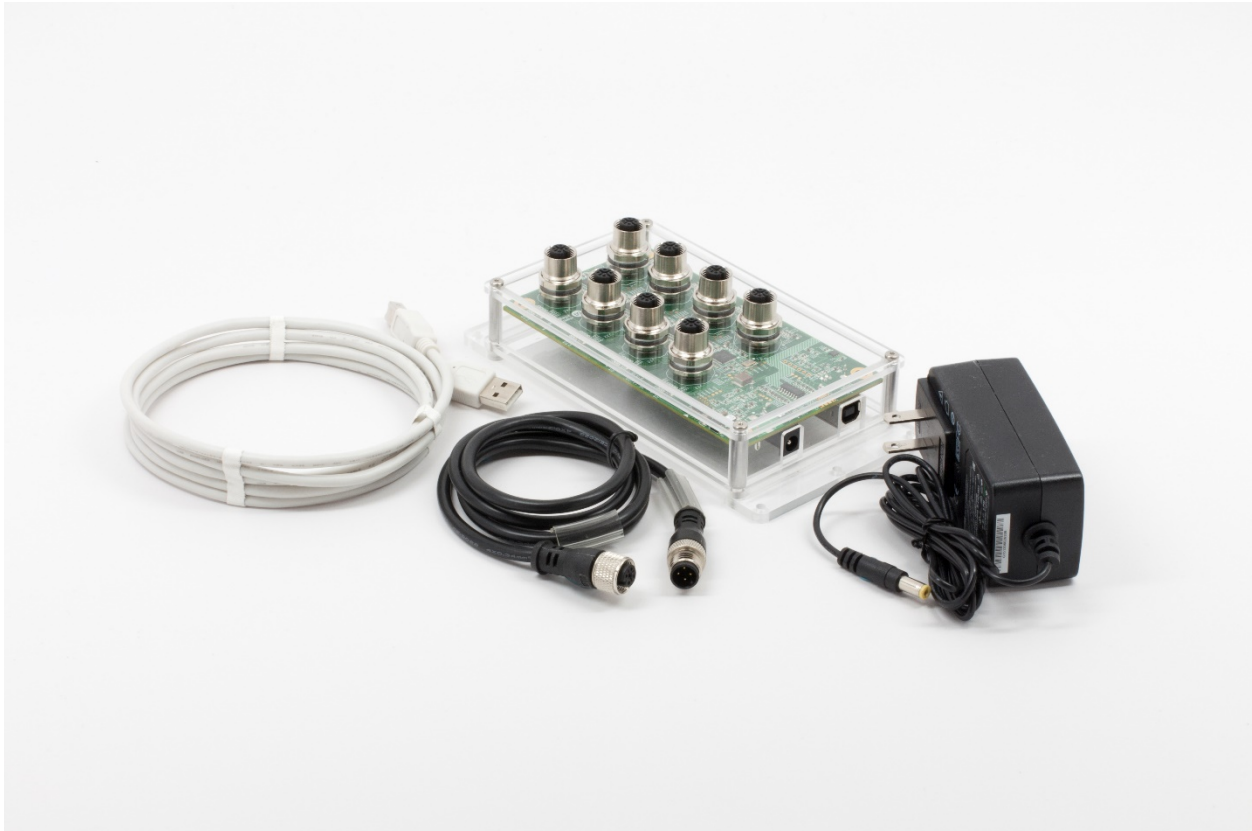**Note 1:** Download files from the Design Resources tab at www.maximintegrated.com\maxrefdes145.

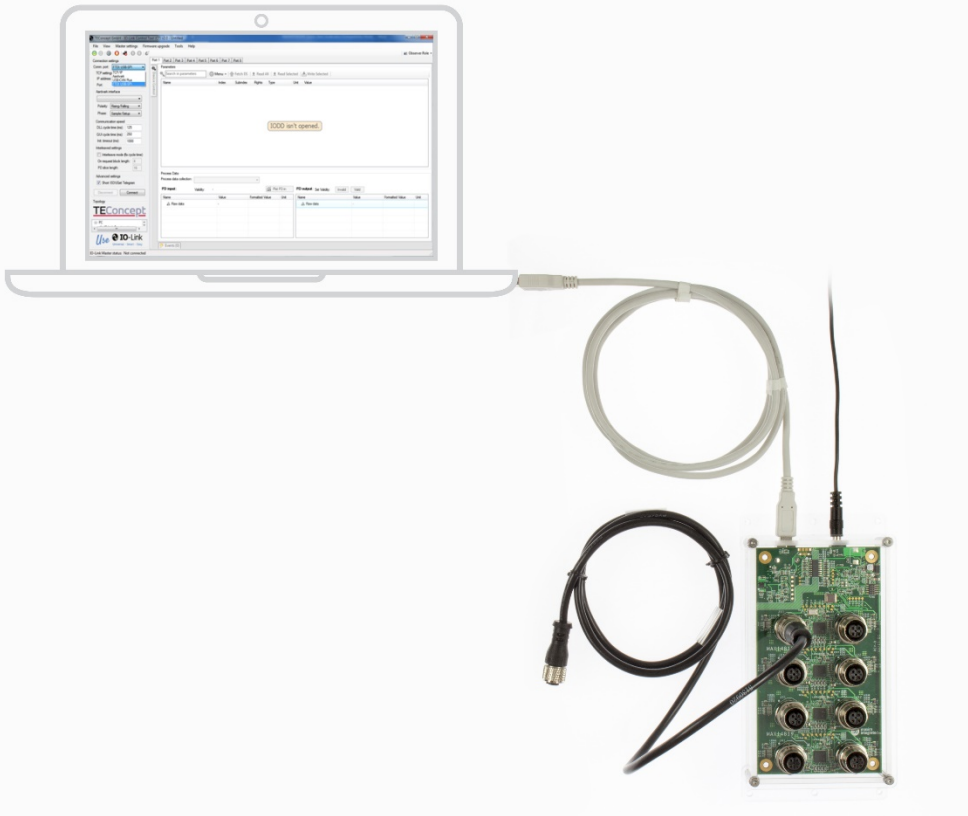
Figure 1. MAXREFDES145# box contents.

Figure 2. MAXREFDES145# system connected and running.

Overview

- Install the **TEConcept CT** software (TC_Installer.msi).

- Install the **FTDI Driver** (in most cases, this installs automatically from the internet when connected first time). Otherwise use the installer.

- Connect the USB cable from the PC to the **MAXREFDES145#** board.

- Connect the AC-to-DC 24V DC-power converter.

- Run the **TEConcept CT** software and connect to the **MAXREFDES145#** board.

- Load in the IODD file for your sensor or actuator.

- Press the **IO-Link** button to connect to a sensor or actuator.

- Read and write to sensor or actuator parameters.

Procedure

1. Download the **TEConcept CT** software and **STM32F4 VCP** driver from the Design Resources tab at www.maximintegrated.com\maxrefdes145.

2. Install the **TEConcept CT** software (**TC_Installer.msi**).

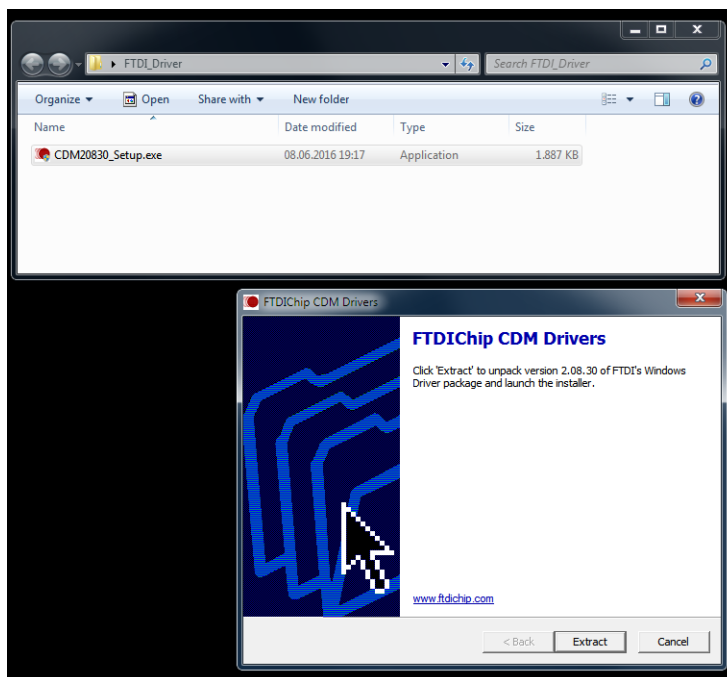3. Install the **FTDI_Driver** driver as shown in **Figure 3**.

Figure 3. FTDI driver.

4. Connect the 24V Power-Supply, then connect the USB cable from the PC to the MAXREFDES145# as shown in **Figure 4**.

Figure 4. Connect the Power and USB cables to MAXREFDES145# and then connect it to the PC.

5. Run the **TEConcept CT** software as shown in **Figure 5**. Press the **connection settings** icon, which is a gray gear icon. Select FTDI USB-SPI. Pressing the **Connect** button shows a flashing green COM connection label at the bottom of the GUI once connected.
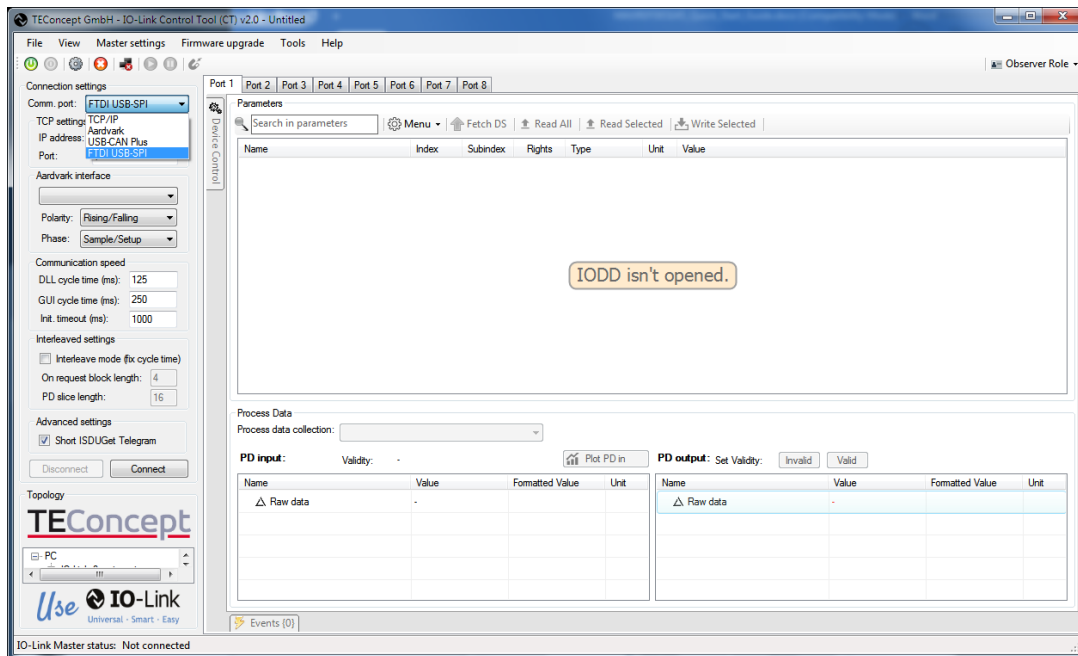

Figure 5. TEConcept IO-Link CT software (tested with version 2.0.6099.29897).

6. Load in the IODD file for your sensor or actuator. In this case, we show the MAXREFDES27# IO-Link proximity sensor (not included). First press the **Select device** button. In the **Device selector** window, press the **Import** button and select the sensor's ***1.1.xml** IODD file. Highlight the IODD file in the **IO-Link Devices** box and press the **Select device** button. See **Figure 6** and **Figure 7**.

Note: MAXREFDES27# is the part number; this design is also known by the product name 'Maxim-Saratoga' as shown in Figures 6 and 7.
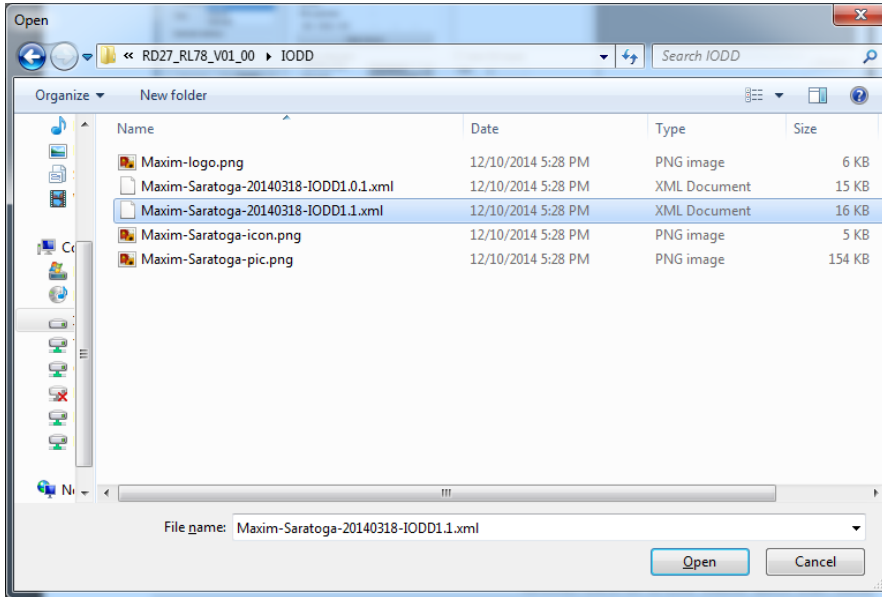

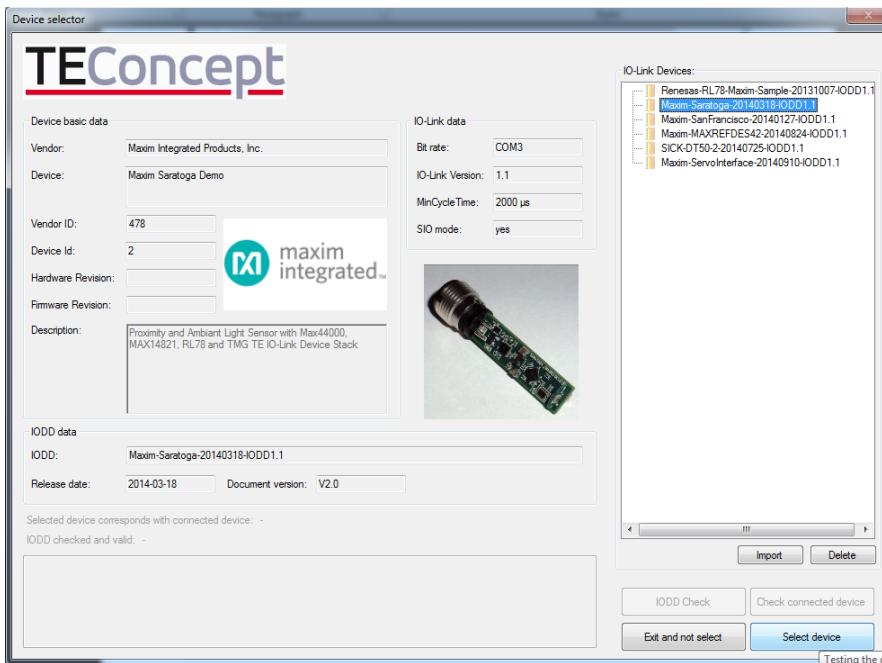*Figure 6. Sensor IODD file (*1.1.xml).*

Figure 7. Press the Select device button when imported IODD files are highlighted.

7. It's not necessary to assign an IODD file to the port, but it could be done using the "Select Device" button, for imported IODD files, the sensor automatically detects the correct IODD file for each sensor.

Press the "Power ON" button to enable 24V power for the sensor.

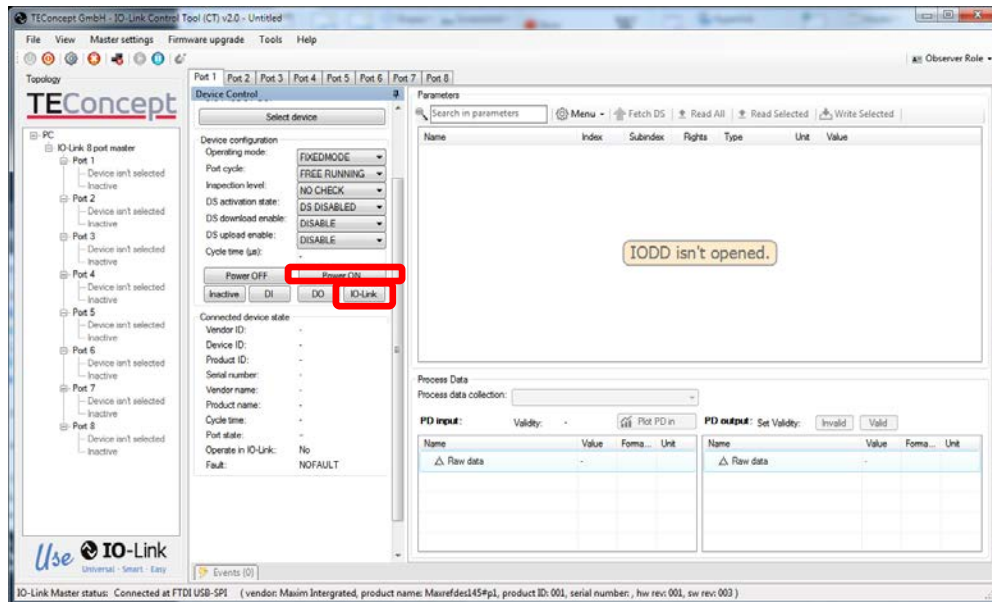Then press the "IO-Link" button on the port with the sensor connected.

Figure 8. Click Button "Power ON," then Button "IO-Link."

8. Read and write to parameters by selecting a parameter in the **Parameters** box and then use the **Read** button to read the parameter. The value gets displayed in the **Value** field circled in **Figure 9**. Also, when writing to a parameter, first edit the value in the **Value** field using the mouse/keyboard and then press the **Write** button. Verify by pressing the **Read** button.
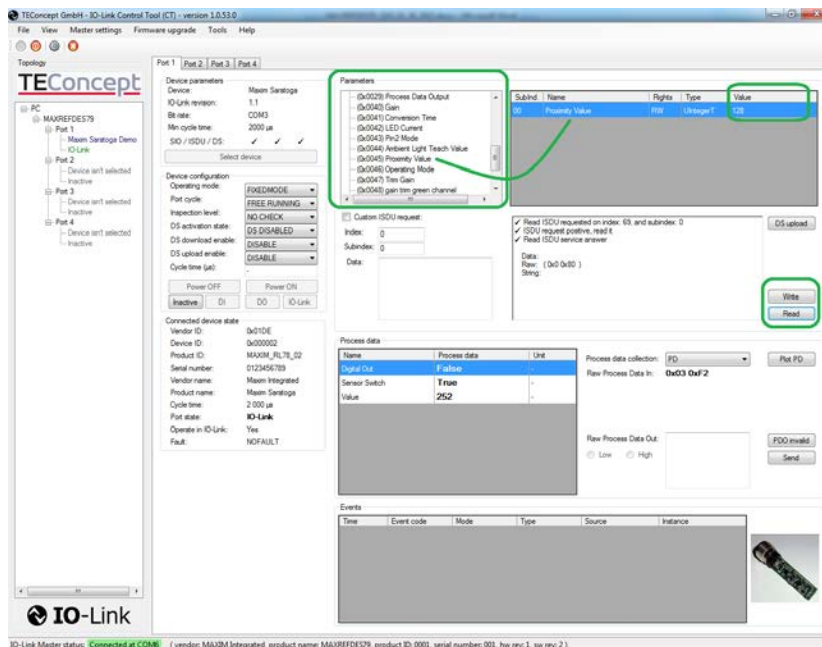

Figure 9. Read and write to parameters by using the Read and Write buttons.
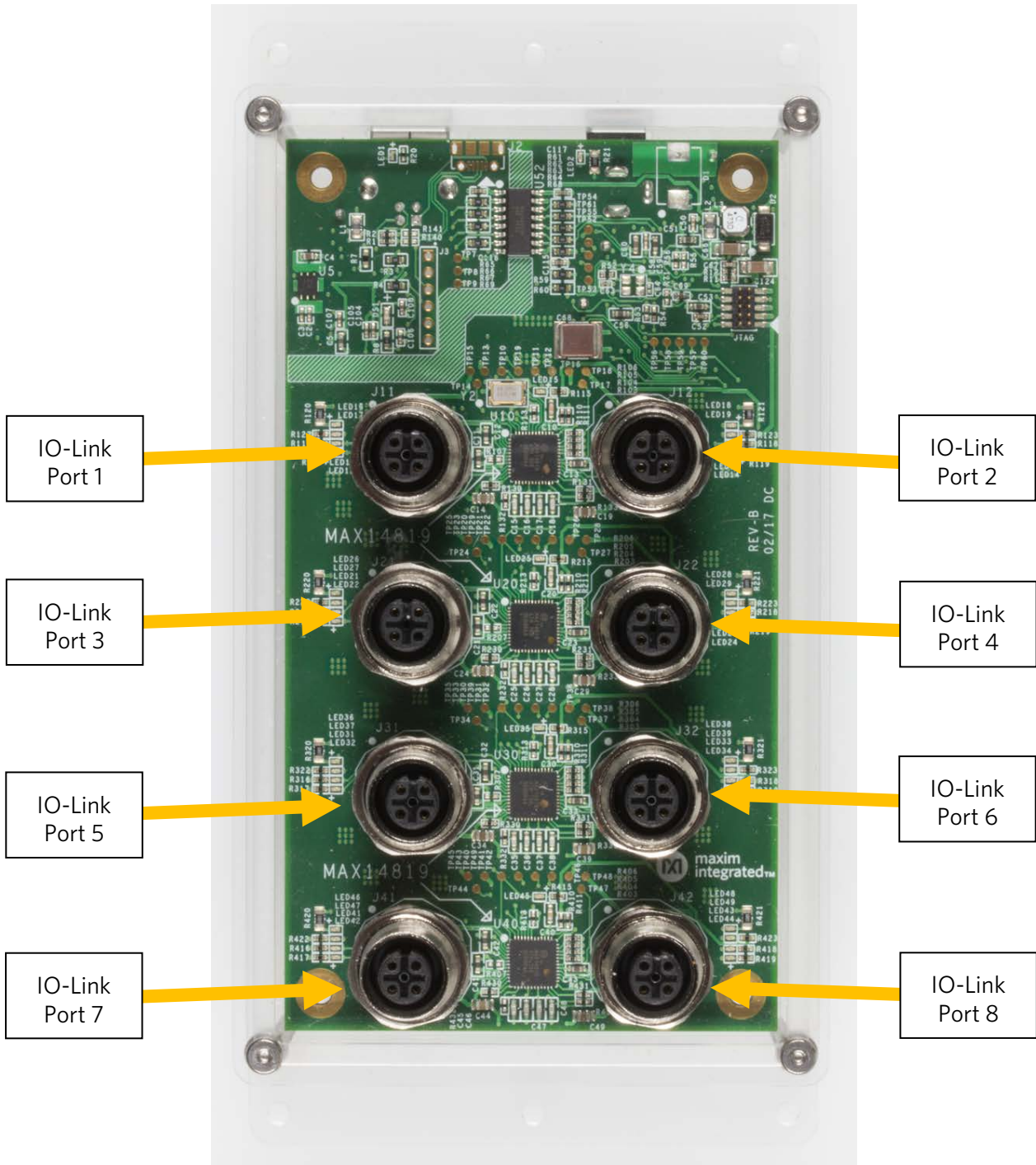
Port Numbering

Figure 10. Port numbering.

Software License Keys

The **TEConcept** IO-Link master stack ships with an infinite time license displayed by the **TEConcept CT** software.

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