MAXREFDES79# IO-Link Master
Quick Start Guide

Rev 0; 3/15

For pricing, delivery, and ordering information, please contact Maxim Direct at 1-888-629-4642, or visit Maxim Integrated's website at www.maximintegrated.com.

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1. Required Equipment

- PC with Windows® 7 or Windows 8 (**Verify with TEConcept that your version of Windows is supported before purchasing their software license. See Section 4 Software License Keys.)**
- MAXREFDES79# (Box Contents)
  - MAXREFDES79# 4-Port IO-Link® Master
  - AC-to-DC 24V/1A output power converter
  - USA-to-Euro power adapter
  - Two Black 1 meter IO-Link cables (1 meter)
  - Micro-USB cable (2 meters)
- Necessary downloadable software includes:
  - TEConcept IO-Link Control Tool (CT) Software (see note)
  - STM32F4 VCP Driver (see note)
- An IO-Link compliant sensor or actuator (MAXREFDES27# IO-Link proximity sensor was used in this document, but any IO-Link compliant sensor or actuator from any company can be used. Other Maxim options are MAXREFDES23#, MAXREFDES36#, MAXREFDES37#, or MAXREFDES42#.)

Note: Download files from the Design Resources tab at: www.maximintegrated.com\MAXREFDES79.

Figure 1. MAXREFDES79# box contents.

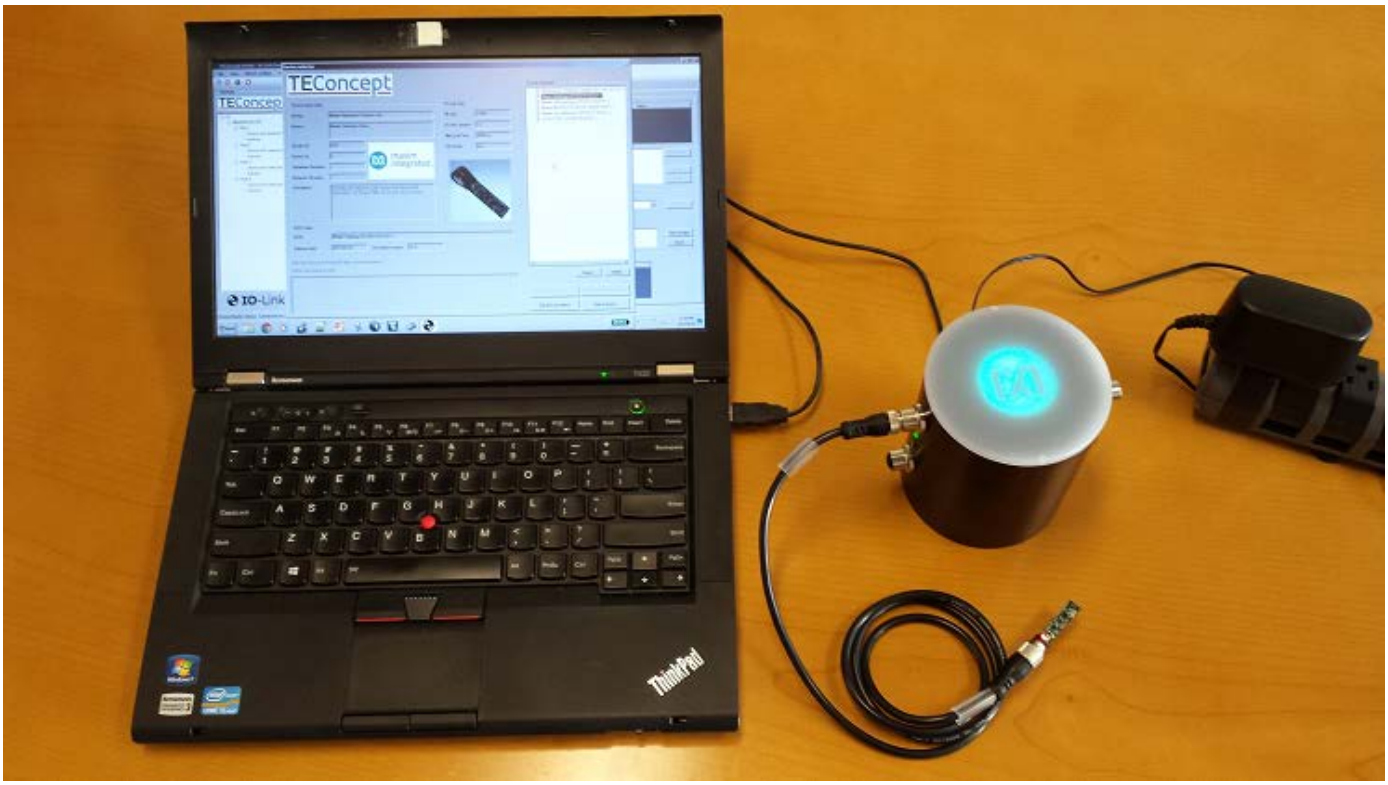

Figure 2. MAXREFDES79# system connected and running.

2. Overview

1. Install the **TEConcept CT** software (**TC_Installer.msi**).
2. Install the **STM32F4 VCP** driver.
3. Connect the Micro-USB cable from the PC to the MAXREFDES79#.
4. Connect the AC-to-DC 24V DC power converter.
5. Connect the MAXREFDES27# to Port 1 of the MAXREFDES79# IO-Link master.
6. Run the **TEConcept CT** software and connect to the MAXREFDES79#.
7. Load in the IODD file for your sensor or actuator.
8. Press the **IO-Link** button to connect to sensor or actuator.
9. Read and write to sensor or actuator parameters.

3. Procedure

1. Download the **TEConcept CT** software and **STM32F4 VCP** driver from the **DESIGN RESOURCES** tab at **www.maximintegrated.com/MAXREFDES79**.

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

3. Install the appropriate **STM32F4 VCP** driver depending on the version of Windows operating system (32-bit or 64-bit) as shown in Figure 3.

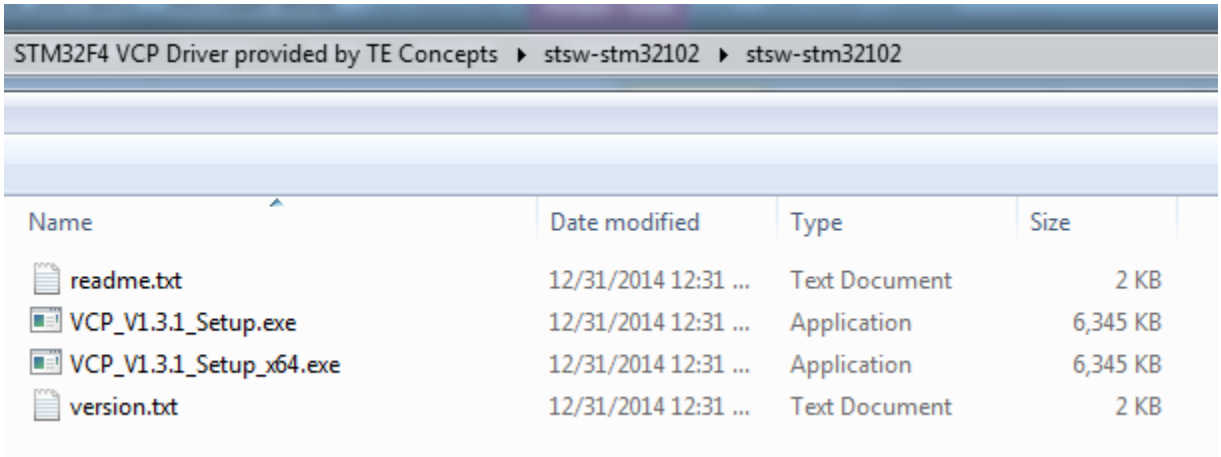

Figure 3. STM32F4 VCP Driver for 32-bit and 64-bit Windows 7/Windows 8.

4. Connect the Micro-USB cable from the PC to the MAXREFDES79# as shown in Figure 4.

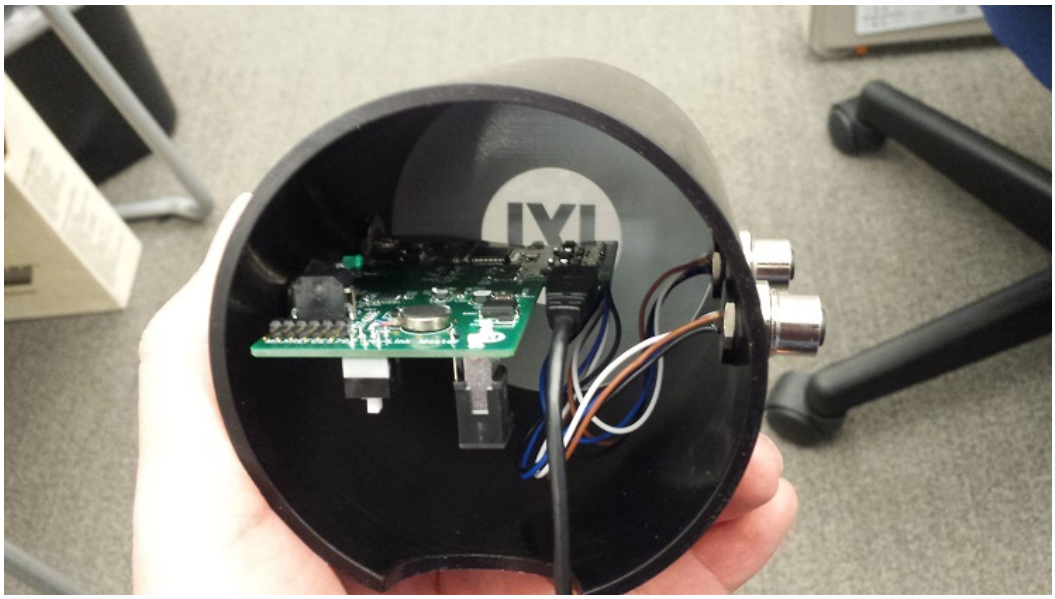

Figure 4. Connect the Micro-USB cable from underneath the MAXREFDES79# and then connect it to the PC.

5. Ensure that switch SW1 is in the “Down” or “In” position as shown in Figure 5.

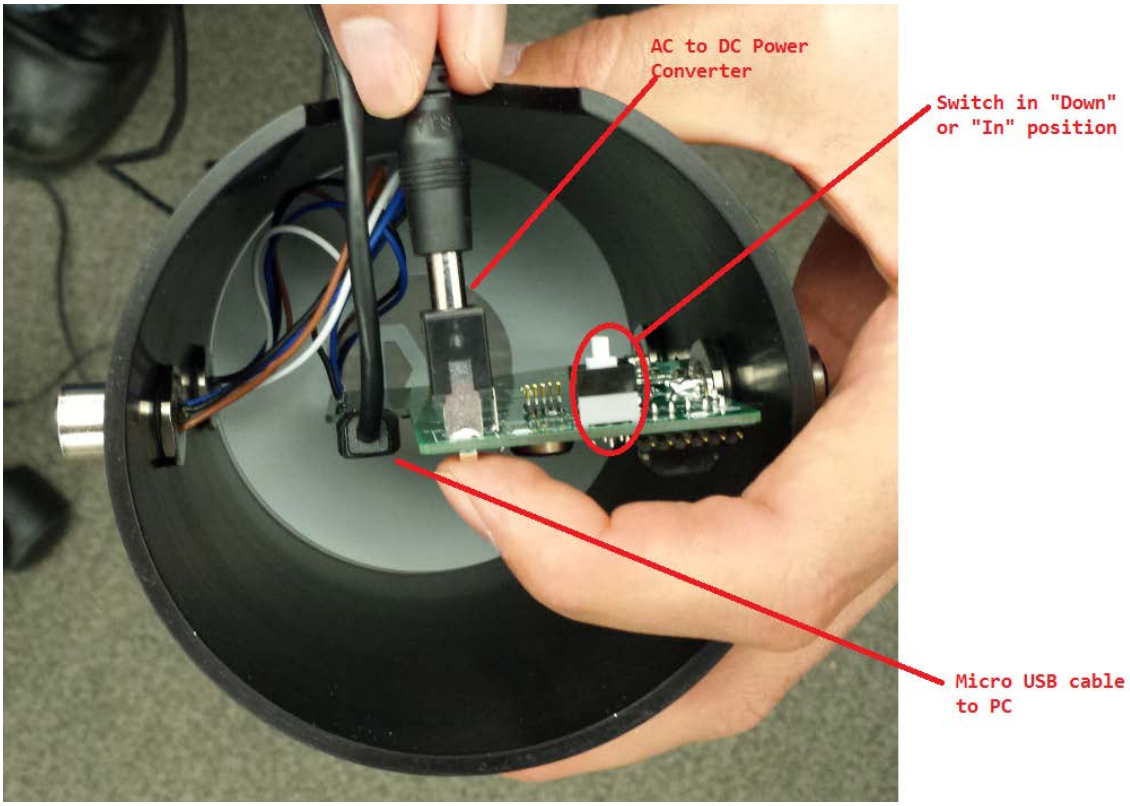

Figure 5. Verify the SW1 position and connect the AC-to-DC 24V DC power converter.

6. Connect the AC-to-DC 24V DC power converter as shown in Figure 5.

7. Connect the MAXREFDES27# to Port 1 of the MAXREFDES79# IO-Link master. Port 1 is the top M12 female connector on the LED side of the IO-Link master.

8. Open Windows **Device Manager** and verify the connected COM port number connected as **STMicroelectronics Virtual COM Port (COMx)** shown in Figure 6.

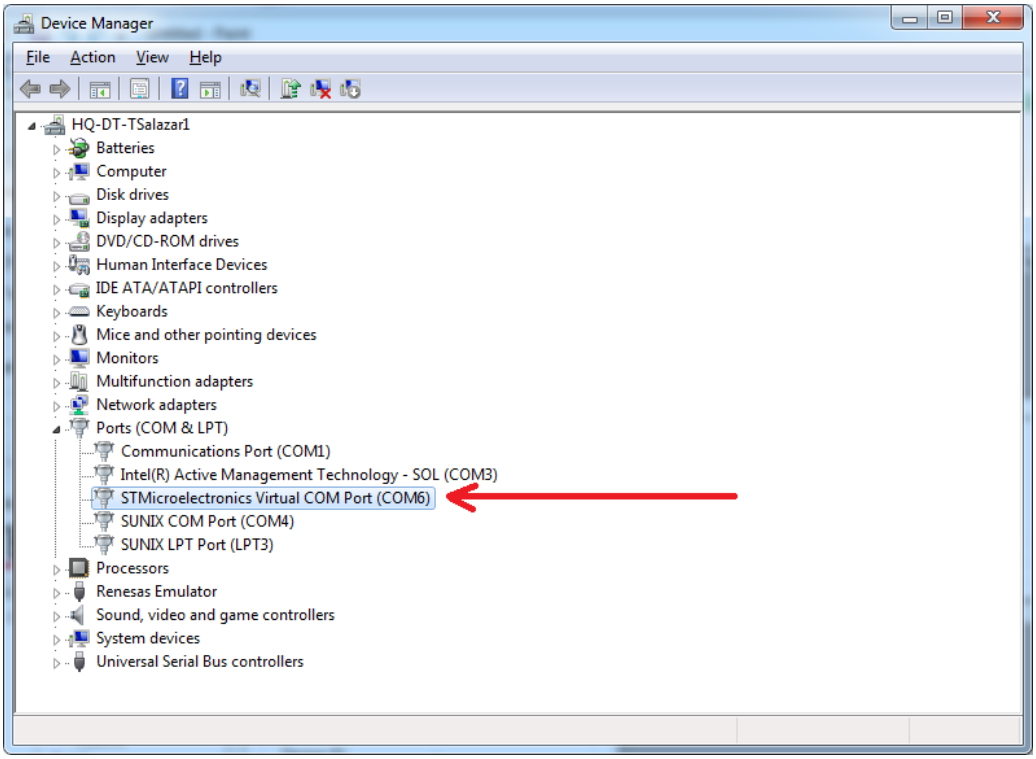

Figure 6. Verify COM port connected as "STMicroelectronics Virtual COM Port (COMx)." It may be a different COM port number on your PC.

9. Run the **TEConcept CT** software as shown in Figure 7. Press the **connection settings** icon, which is a gray gear. (COM port may be different on your PC.) Press the **Connect** button and it will show a flashing green COM connection label at the bottom of the GUI once connected.

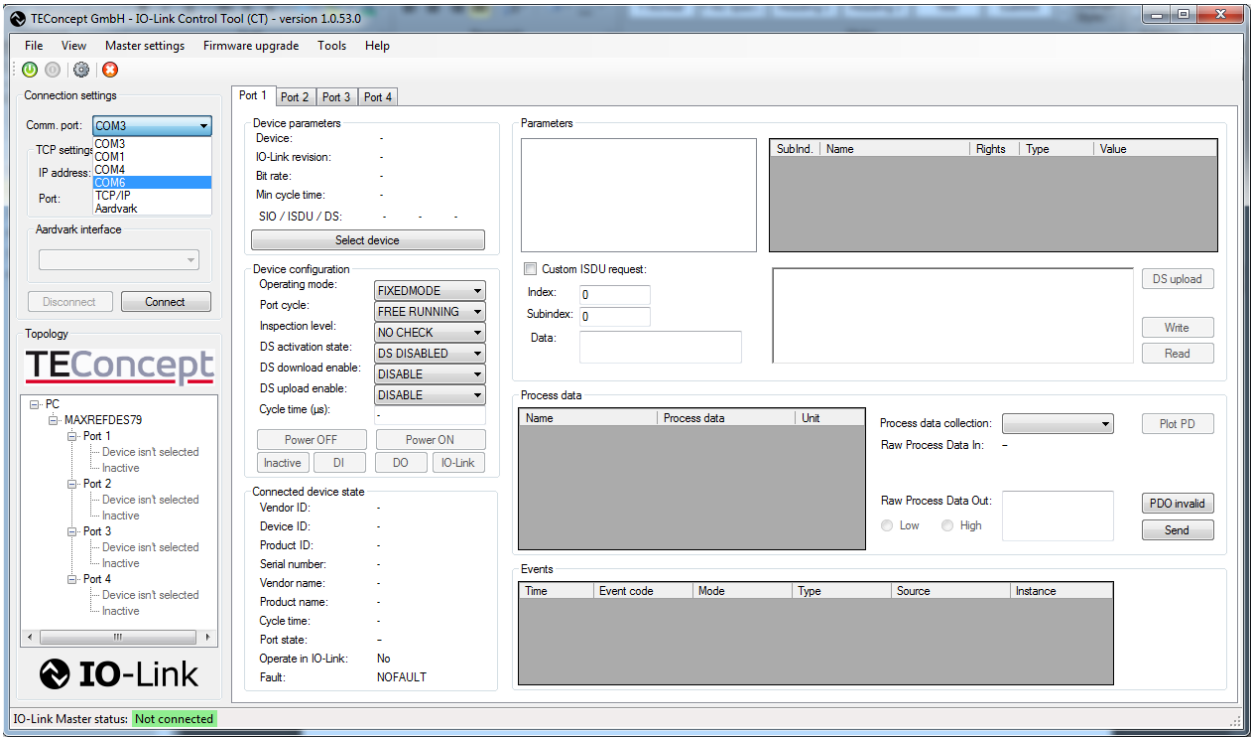

Figure 7. TEConcept IO-Link CT Software. Tested with version 1.0.53.0.

10. Load in the IODD file for your sensor or actuator. In this case, we will 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 8 and Figure 9.

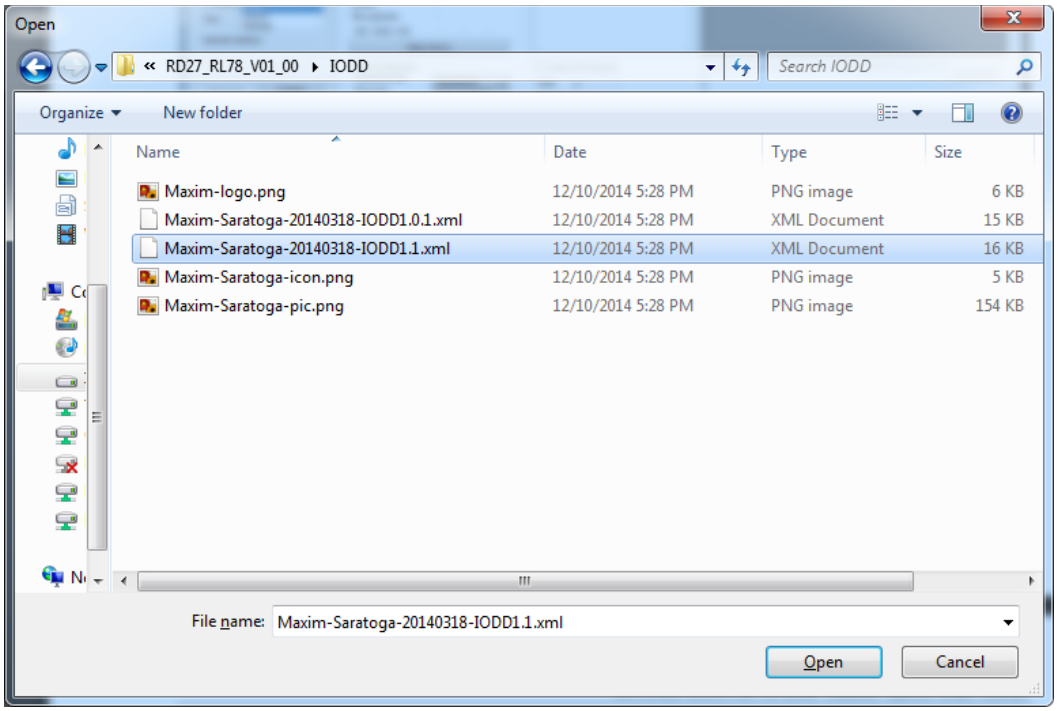

Figure 8. Sensor IODD file (*1.1.xml).

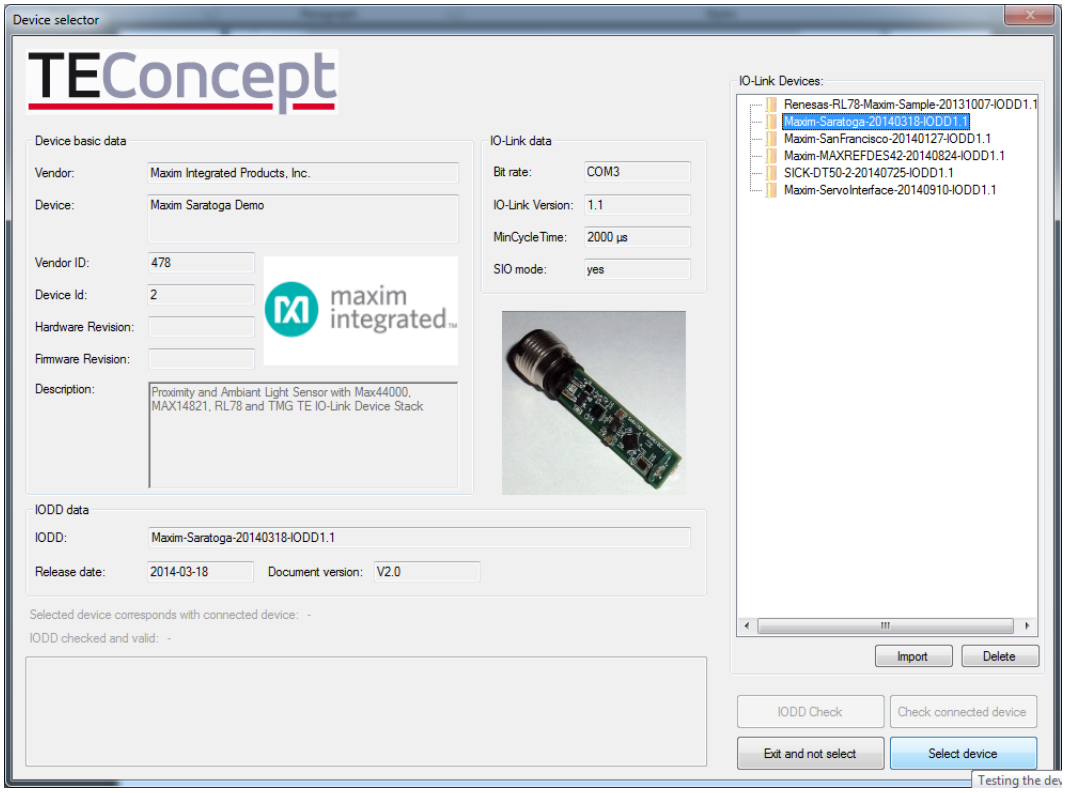

Figure 9. Press the Select device button when imported IODD files are highlighted.

11. The **IO-Link** button becomes active once the IODD file is assigned to a port and the MAXREFDES79# is connected to the PC. Press the **IO-Link** button once it becomes active as shown in Figure 10.

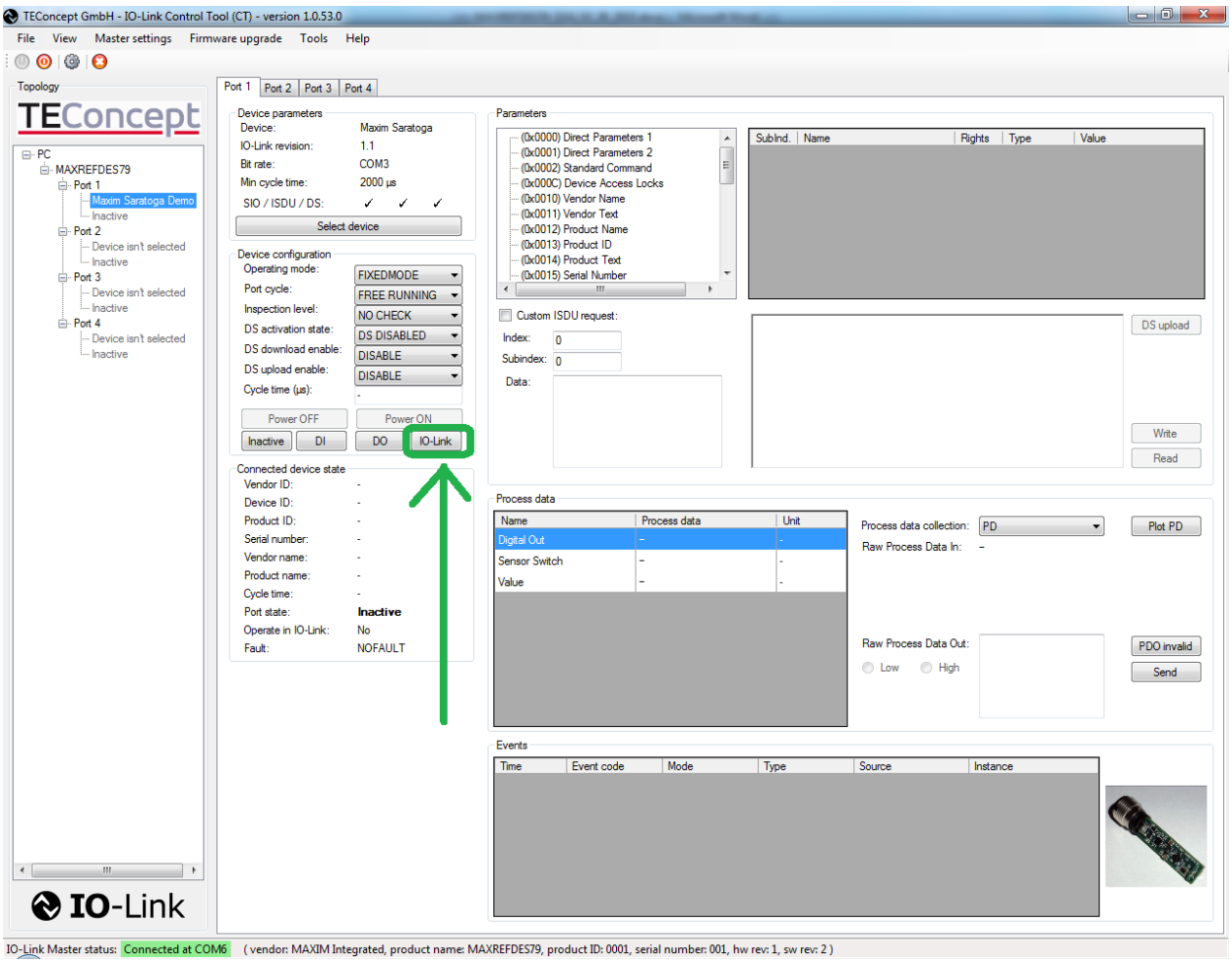

Figure 10. IO-Link button becomes active once an IODD is assigned to a port and the MAXREFDES79# is connected to the PC.

12. 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 11. 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. See Figure 11.

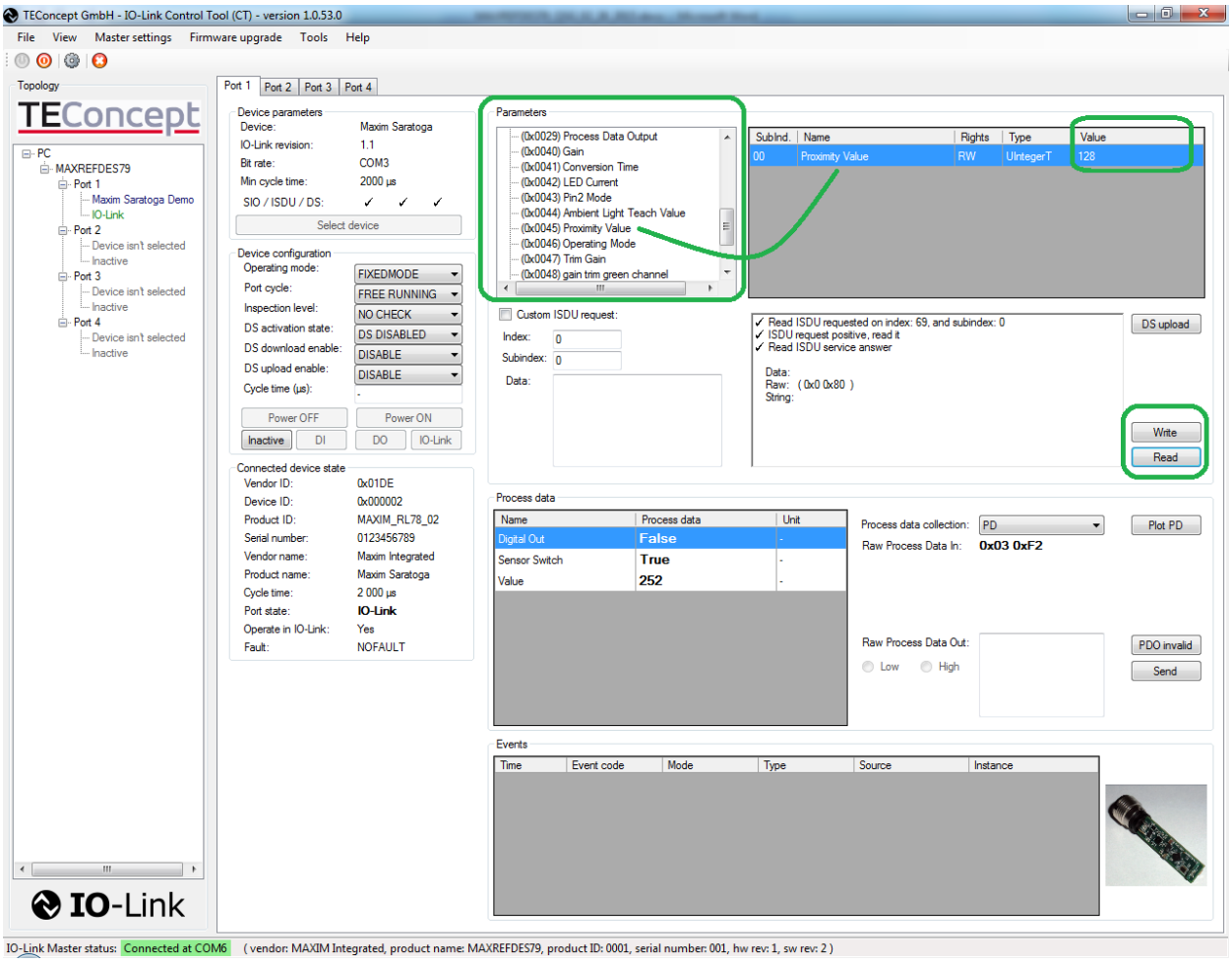

Figure 11. Read and write to parameters by using the Read and Write buttons.

4. Software License Keys

The**TEConcept** IO-Link master stack ships with a finite time license displayed by the **TEConcept CT** software. The MAXREFDES79# ships with more than 9000 minutes of use time. When the time in the **Remained time** field goes to 0 minutes, the Master switches off all the IO-Link ports and shows the error message: **LICENSEFAULT**.

A new infinite time license can be easily purchased from TEConcept GmbH for less than a quarter of the price of the MAXREFDES79# by providing them a valid **Hardware ID** and **Key number**. Press the **Export hardware ID** button located in the **License key management** window. Provide the **hardwareID.txt** file when requesting the infinite time license from TEConcept GmbH. Contact info for TEConcept GmbH is provided below.

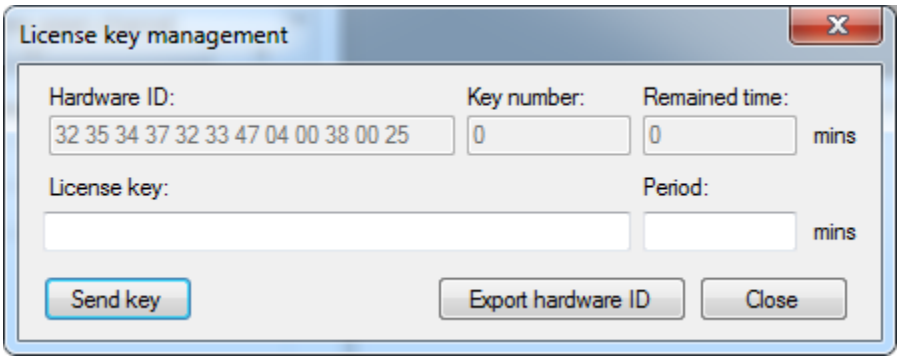

Figure 12. License key management window.

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Figure 13. TEConcept GmbH contact information.

5. Trademarks

IO-Link is a registered trademark of ifm electronic GmbH.
Windows is a registered trademark and registered service mark of Microsoft Corp.

6. Revision History

REVISION NUMBER	REVISION DATE	DESCRIPTION	PAGES CHANGED
0	3/15	Initial release	—

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