



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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Table of Contents

- 1. Required Equipment 3
- 2. Overview 5
- 3. Procedure 6
- 4. Software License Keys..... 13
- 5. Trademarks 14
- 6. Revision History 15

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.



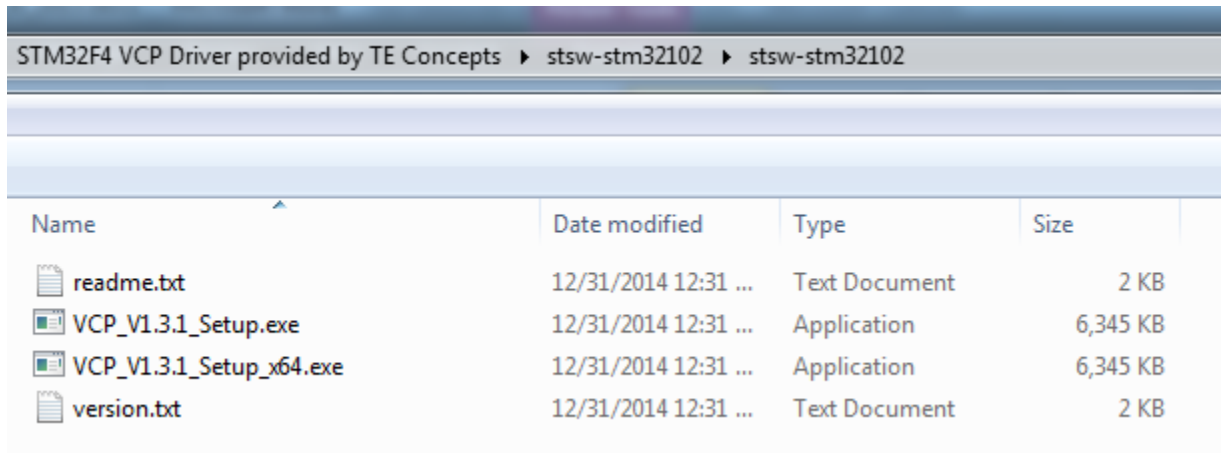
Figure 2. MAXREFDES79# system connected and running.

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](#).



The screenshot shows a Windows File Explorer window titled "STM32F4 VCP Driver provided by TE Concepts". The address bar shows the path "stsw-stm32102 > stsw-stm32102". The main area displays a list of files with columns for Name, Date modified, Type, and Size.

Name	Date modified	Type	Size
readme.txt	12/31/2014 12:31 ...	Text Document	2 KB
VCP_V1.3.1_Setup.exe	12/31/2014 12:31 ...	Application	6,345 KB
VCP_V1.3.1_Setup_x64.exe	12/31/2014 12:31 ...	Application	6,345 KB
version.txt	12/31/2014 12:31 ...	Text Document	2 KB

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](#).

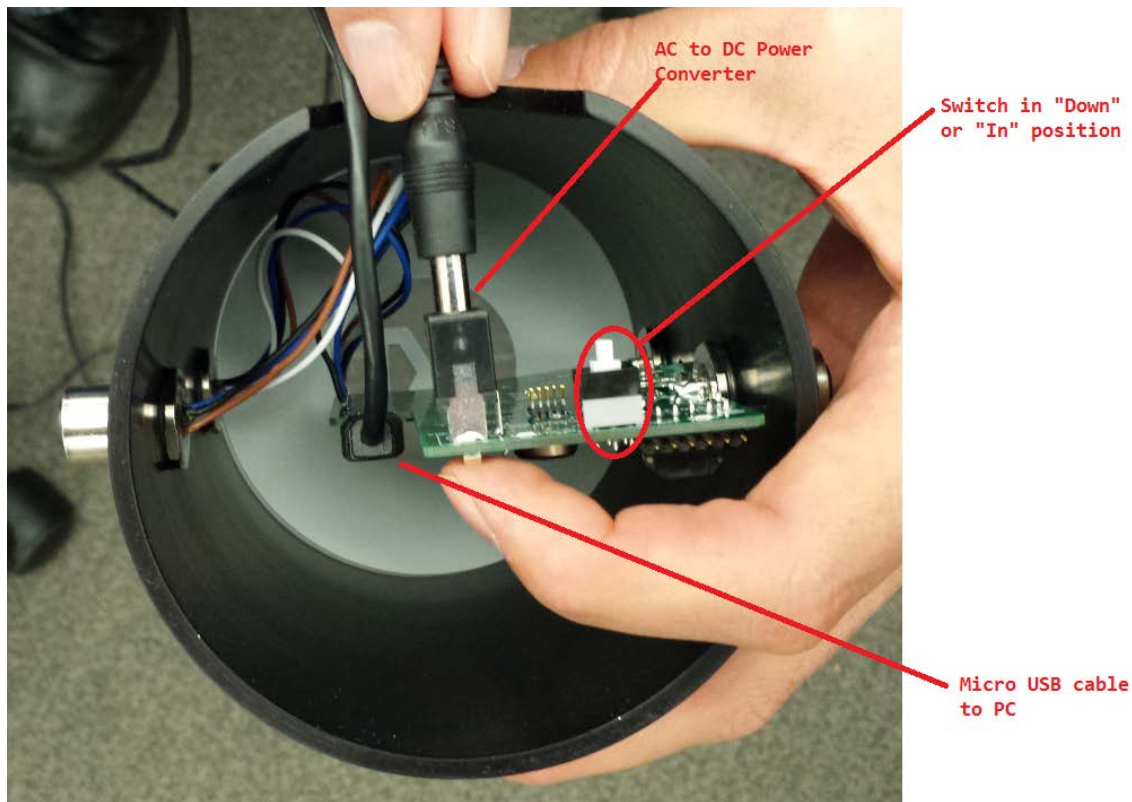


Figure 5. Verify the SW1 position and connect the AC-to-DC 24V DC power converter.

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](#).

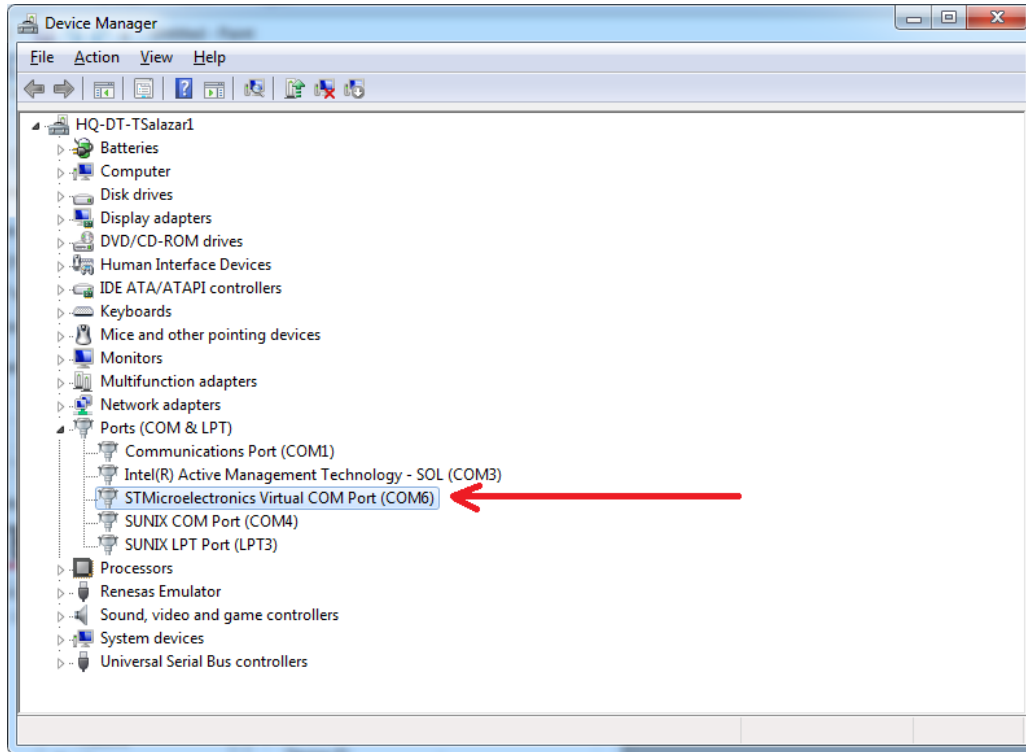


Figure 6. Verify COM port connected as “STMicroelectronics Virtual COM Port (COMx).” It may be a different COM port number on your PC.

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.

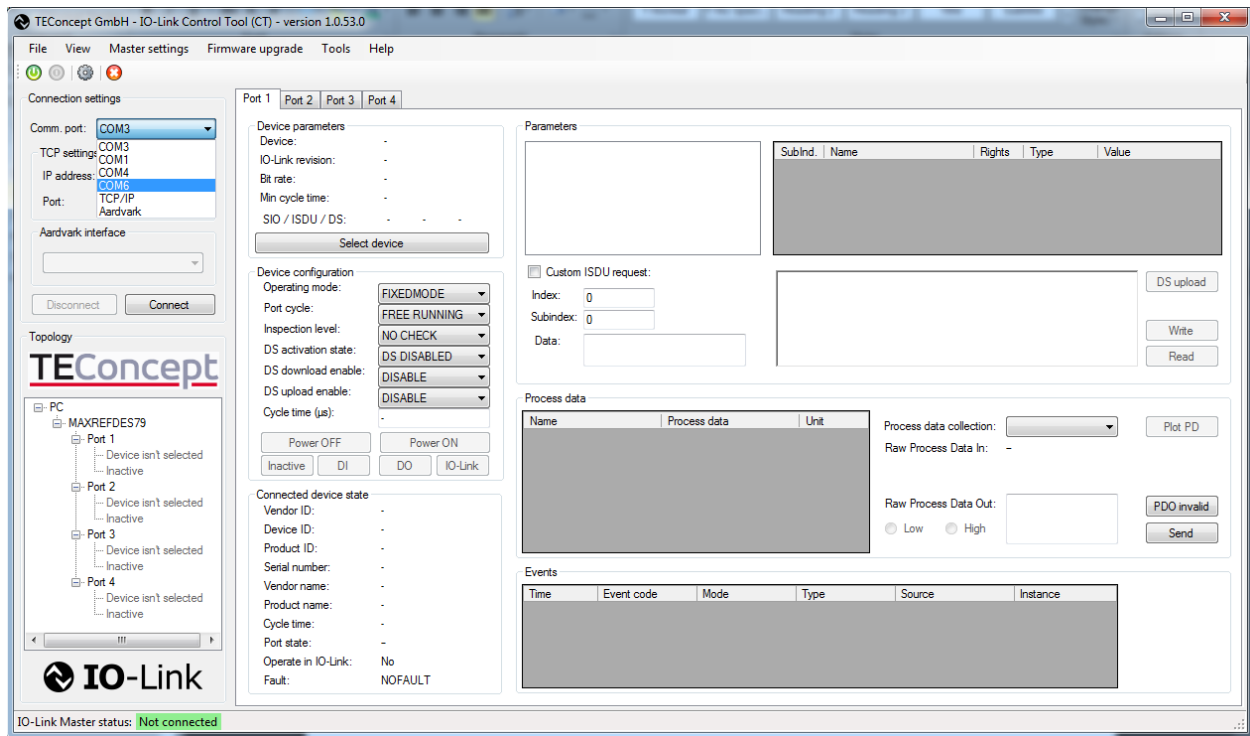


Figure 7. TEConcept IO-Link CT Software. Tested with version 1.0.53.0.

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](#).

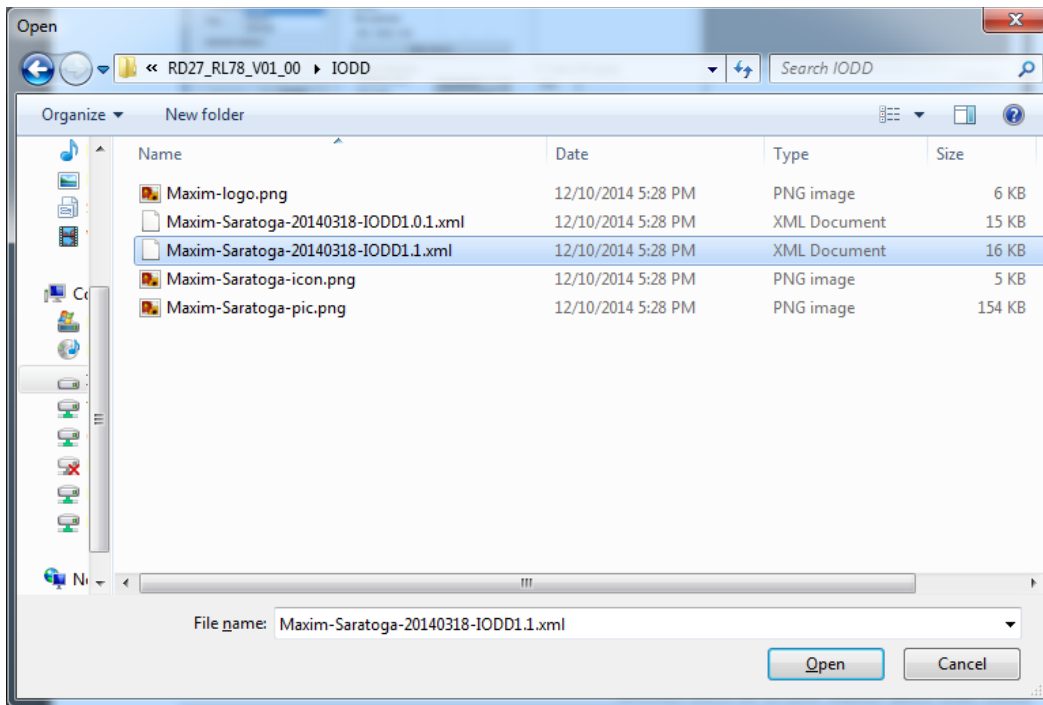


Figure 8. Sensor IODD file (*1.1.xml).

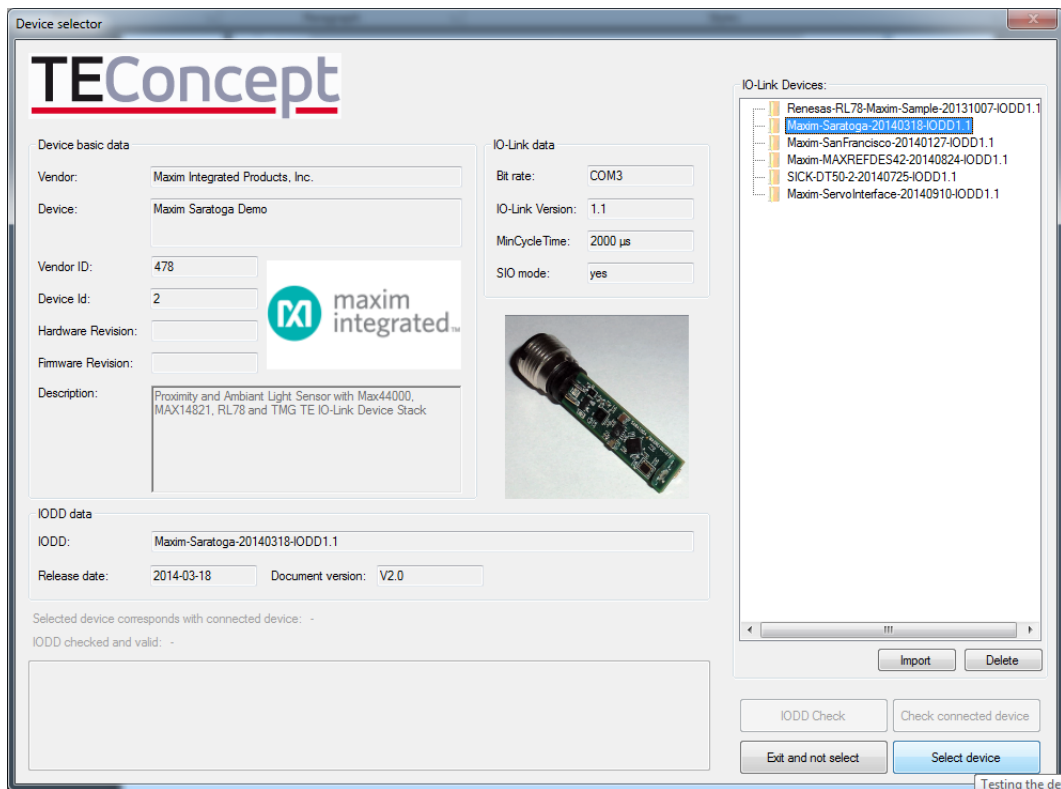


Figure 9. Press the Select device button when imported IODD files are highlighted.

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](#).

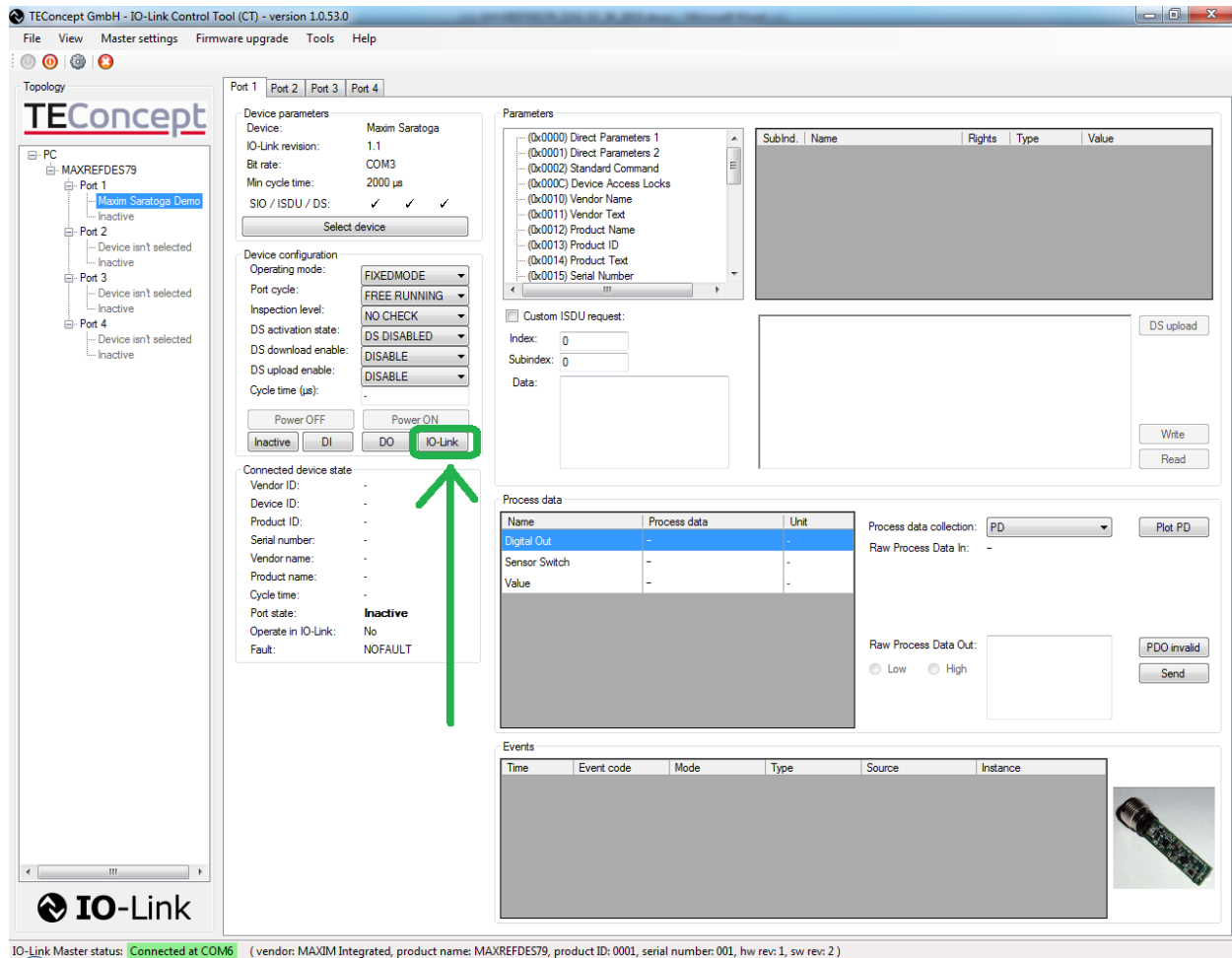


Figure 10. IO-Link button becomes active once an IODD is assigned to a port and the MAXREFDES79# is connected to the PC.

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](#).

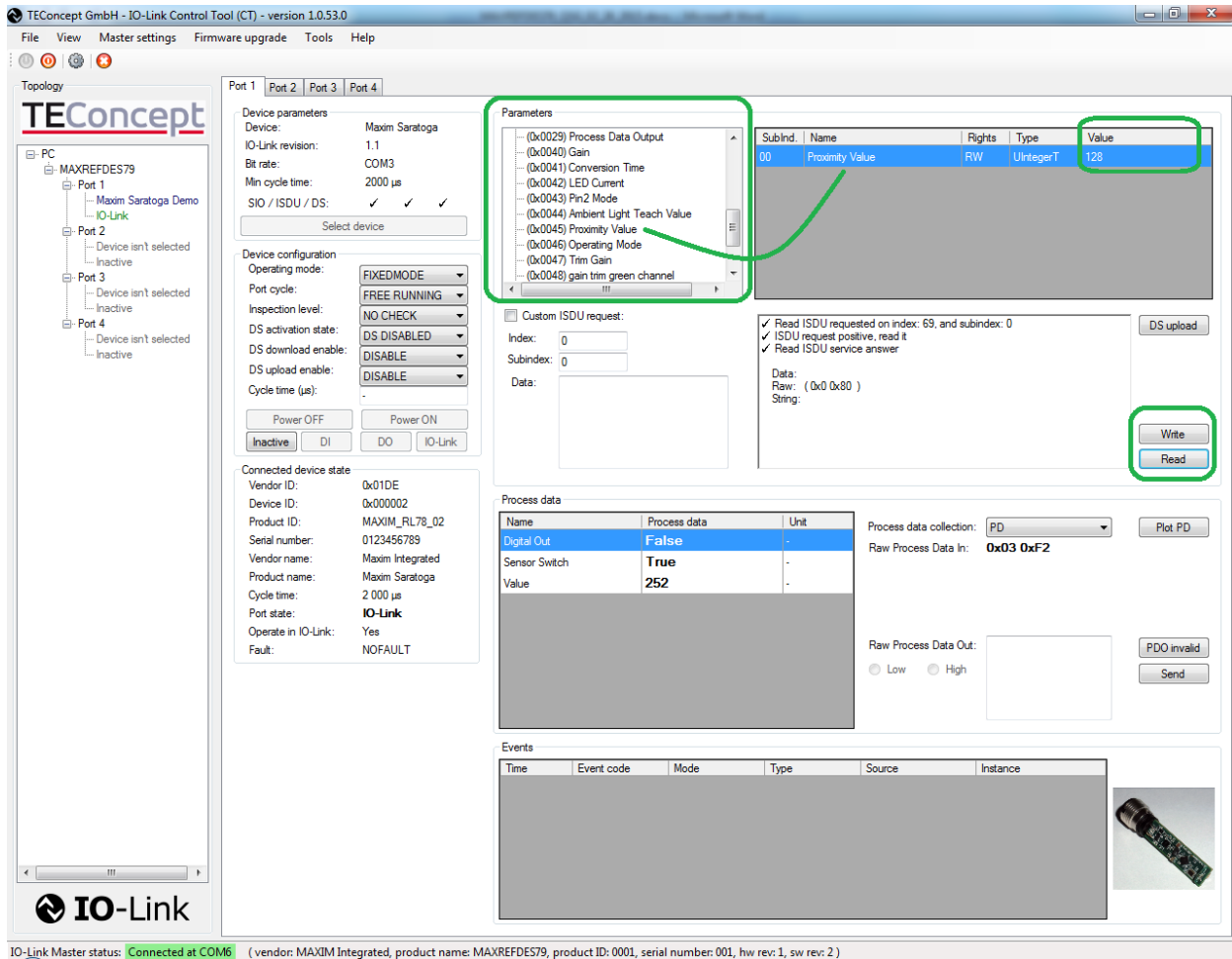


Figure 11. Read and write to parameters by using the Read and Write buttons.

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.

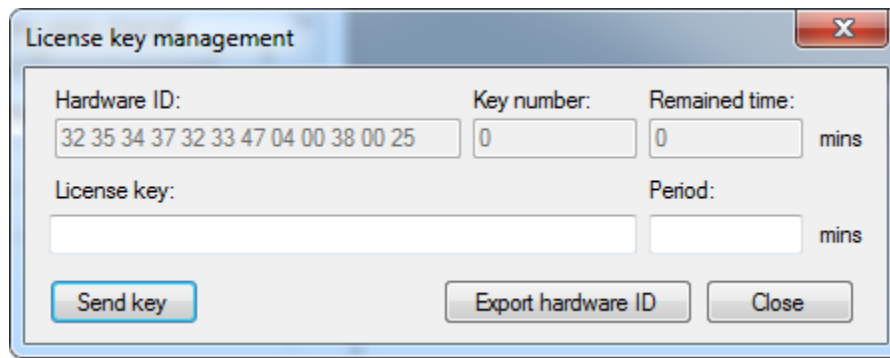


Figure 12. License key management window.

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<http://www.teconcept.de/Contact.php>

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	—

Mouser Electronics

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[MAXREFDES79#](#)