



MAXREFDES165# Four-Channel IO-Link Master Quick Start Guide

UG6772; Rev 0; 09/18



Abstract

The MAXREFDES165# 4-Channel IO-Link® Master Quick Start Guide describes the steps required to quickly get the MAXREFDES165# reference design up and running by controlling it with TMG TE's IO-Link Device Tool.

Table of Contents

Required Equipment.....	3
Overview	4
Procedure.....	4
Software License Keys.....	10
TMG Technologie Management Gruppe	10
Trademarks.....	11

List of Figures

Figure 1. MAXREFDES165# box contents.....	3
Figure 2. FTDI driver.....	5
Figure 3. Connect the Power and USB cables to MAXREFDES165# and then connect it to the PC.....	6
Figure 4. TMG TE's IO-Link Device Tool software.....	7
Figure 5. TMG software – IO-Link Master.....	7
Figure 6. MAXREFDES27# sensor found.....	8
Figure 7. MAXREFDES27# sensor listed.	9
Figure 8. MAXREFDES27# IODD.....	9
Figure 9. MAXREFDES27# process data out.....	10

Required Equipment

- PC with Windows® 7 or Windows 8 or Windows 10. Verify with TMG that your version of Windows is supported before purchasing their software.
- MAXREFDES165# (Box Contents)
 - MAXREFDES165# 4-Port IO-Link Master
 - TMG TE's IO-Link Device Tool (Note 1)
 - FTDI® Driver (Note 1)
 - AC-to-DC 24V/1A (min) output power converter
 - 1 meter IO-Link cable
 - USB 2.0 Type B cable

Note 1: Download files from the Design Resources tab at [www.maximintegrated.com\MAXREFDES165](http://www.maximintegrated.com/MAXREFDES165).



Figure 1. MAXREFDES165# box contents.

Overview

- Install the **TMG TE's IO-Link Device Tool V5** software.
- 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 **MAXREFDES165#** board.
- Connect the AC-to-DC 24V DC-power converter.
- Run the **TMG TE's IO-Link Device Tool** software and connect to the **MAXREFDES165#** 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 **TMG TE's IO-Link Device Tool** software at <https://tmgte.de/en/IO-Link-component/io-link-engineering-software.html>
2. Install the **TMG GUI IO-Link Device Tool V5**.

3. Install the FTDI_Driver driver as shown in Figure 2.

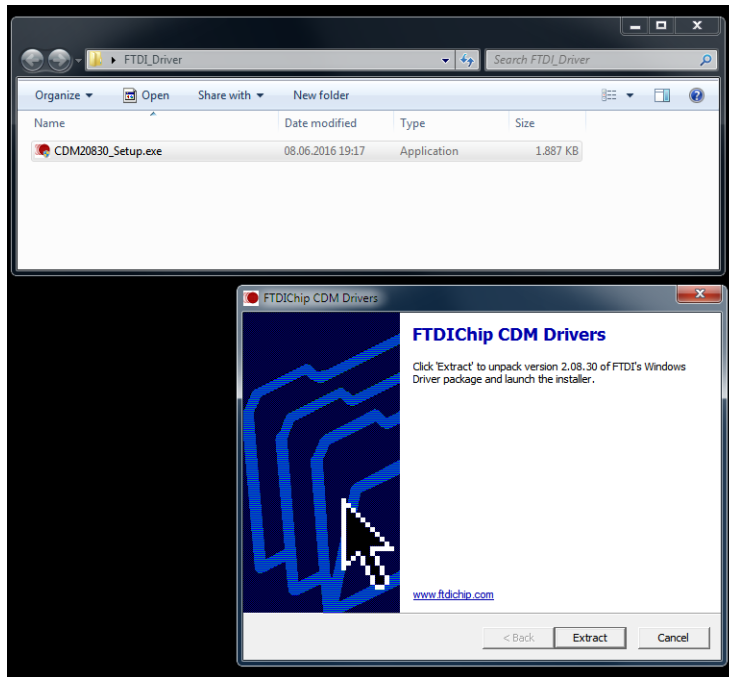


Figure 2. FTDI driver.

4. Connect the 24V Power-Supply, then connect the USB cable from the PC to the MAXREFDES165# as shown in Figure 3.



Figure 3. Connect the Power and USB cables to MAXREFDES165# and then connect it to the PC.

5. Run the TMG TE's IO-Link Device Tool software as shown in **Figure 4**. At the top right, select **Search Master**. A window pops up and shows the master that is found on the PC.

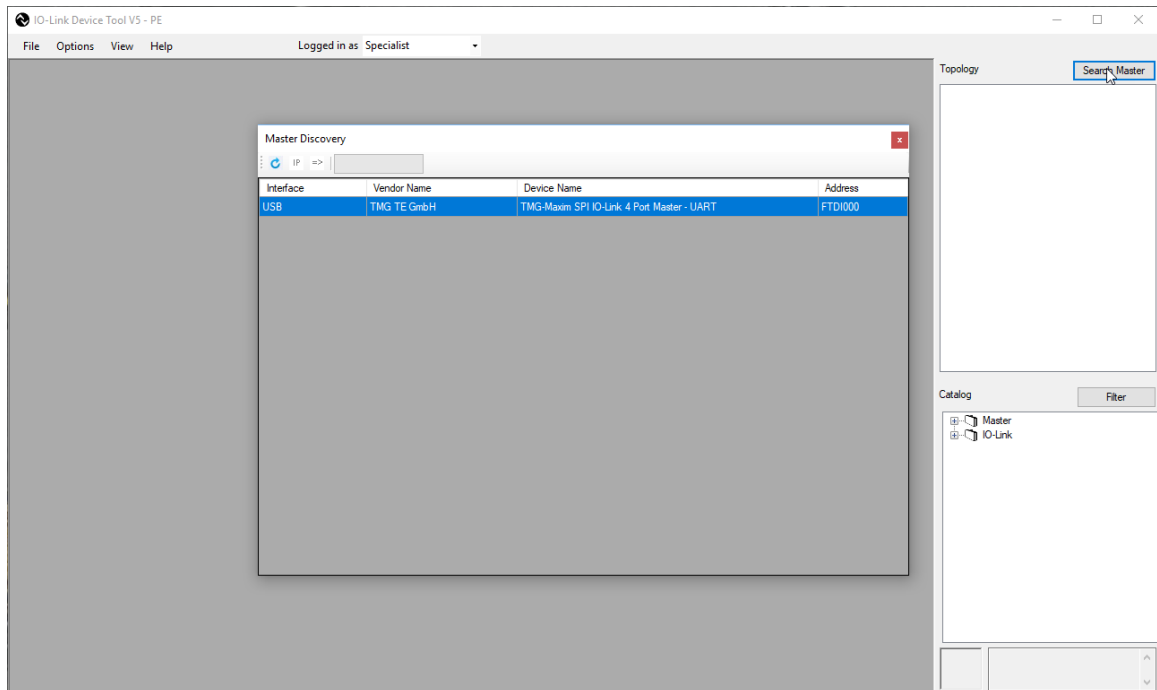


Figure 4. TMG TE's IO-Link Device Tool software.

6. Double-click the displayed master. The GUI shows the 4-port master as shown in **Figure 5**. Click **Go Online** and the four red LEDs on the MAXREFDES165# should turn on.

Figure 5. TMG software - IO-Link Master.

7. Connect an IO-Link sensor. In this case, we show the MAXREFDES27# IO-Link proximity sensor (not included). The device should be found and listed. Select **Takeover devices into engineering**.

Note: MAXREFDES27# is the part number; this design is also known by the product name 'Maxim-Saratoga' as shown in **Figure 6** to **Figure 10**.

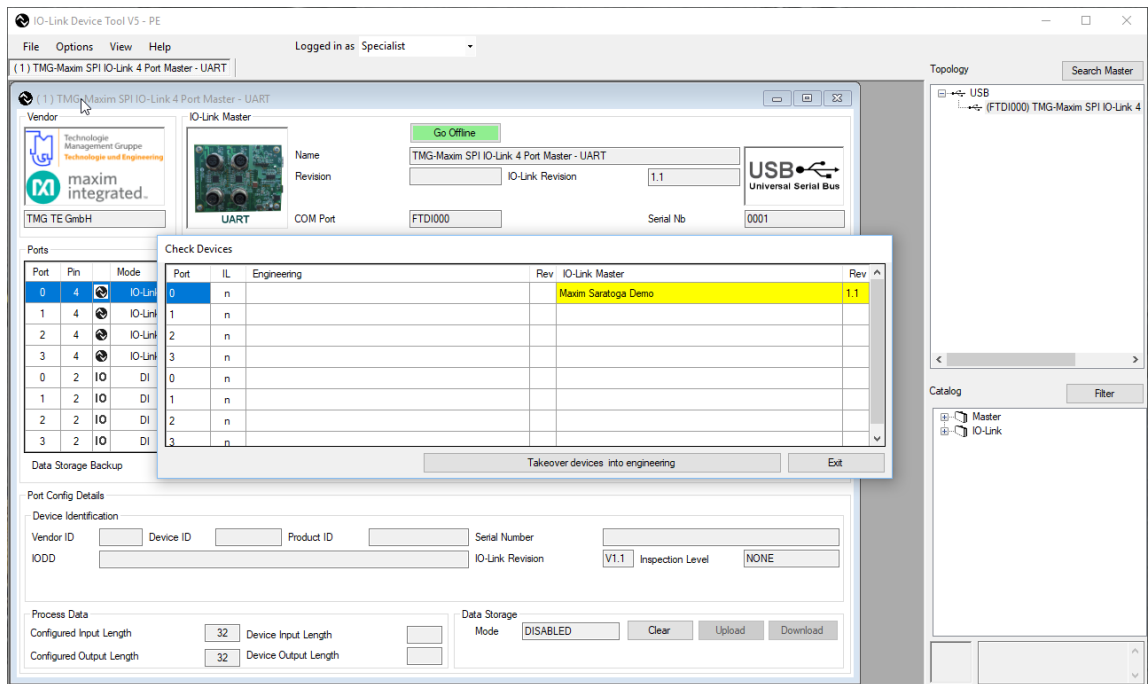


Figure 6. MAXREFDES27# sensor found.

- The device is listed in the main window.

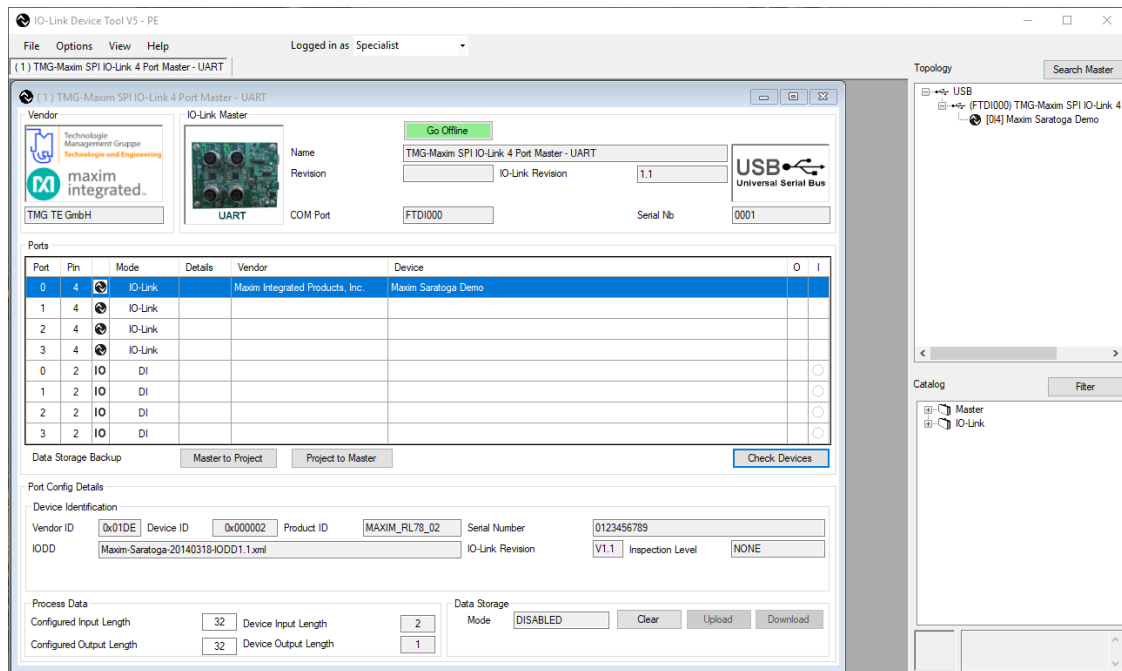


Figure 7. MAXREFDES27# sensor listed.

- Double click on the device to open and display the data from the MAXREFDES27# IODD file, as shown in Figure 8.

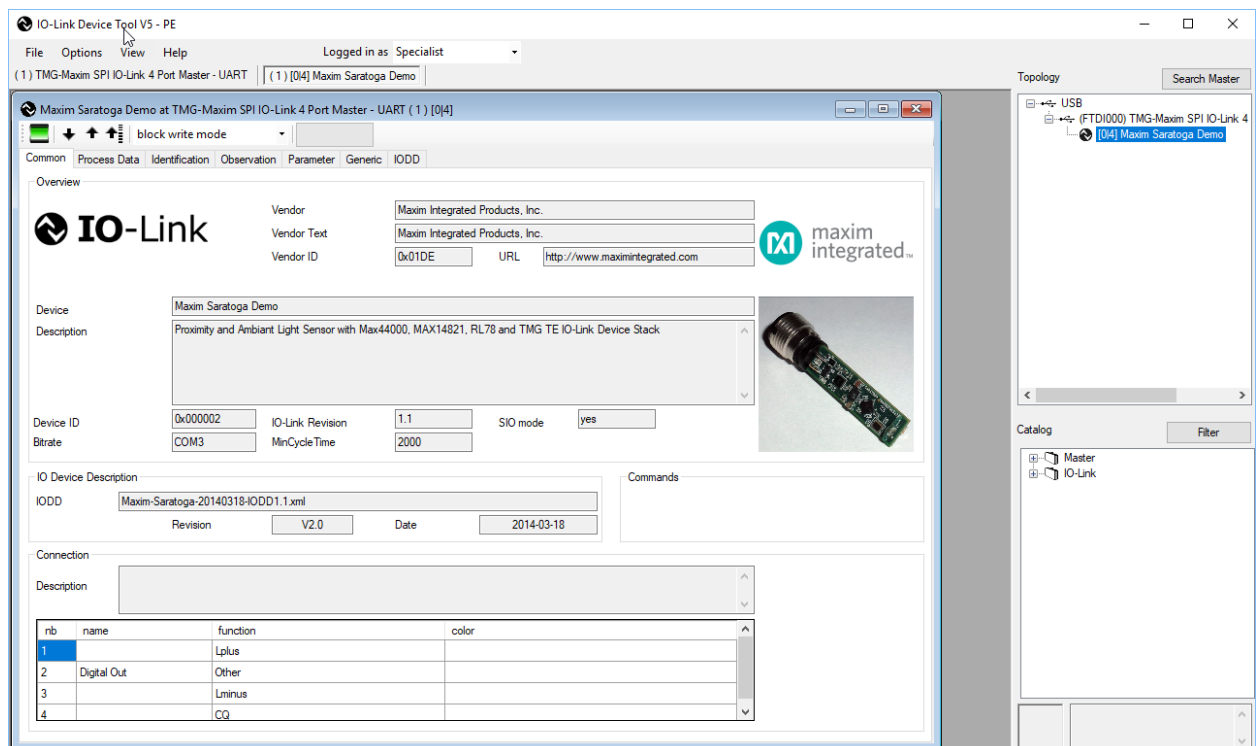


Figure 8. MAXREFDES27# IODD.

10. Select the tab **Process Data**, as shown in Figure 9.

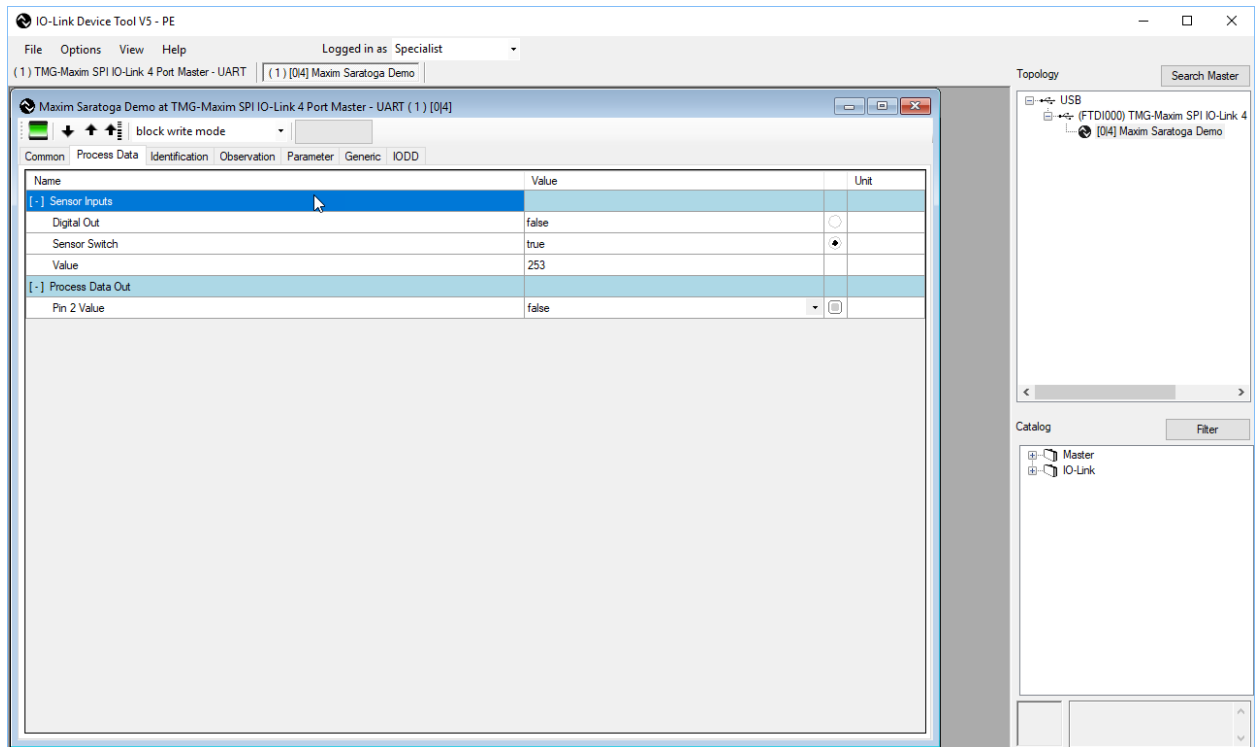


Figure 9. MAXREFDES27# process data out.

11. Trigger the sensor to continuously update the data.

Software License Keys

The TMG TE IO-Link master stack ships preprogrammed inside the MAXREFDES165# hardware with a perpetual license. TMG contact information is as follows:

TMG Technologie Management Gruppe

Technologie und Engineering GmbH

Zur Gießerei 10

76227 Karlsruhe

Phone +49 721 82 806 0

Fax +49 721 82 806 10

Trademarks

FTDI is a registered trademark and service mark of Future Technology Devices International Limited.

IO-Link is a registered trademark of Profibus User Organization (PNO).

Windows is a registered trademark and registered service mark of Microsoft Corporation.

©2018 by Maxim Integrated Products, Inc. All rights reserved. Information in this publication concerning the devices, applications, or technology described is intended to suggest possible uses and may be superseded. MAXIM INTEGRATED PRODUCTS, INC. DOES NOT ASSUME LIABILITY FOR OR PROVIDE A REPRESENTATION OF ACCURACY OF THE INFORMATION, DEVICES, OR TECHNOLOGY DESCRIBED IN THIS DOCUMENT. MAXIM ALSO DOES NOT ASSUME LIABILITY FOR INTELLECTUAL PROPERTY INFRINGEMENT RELATED IN ANY MANNER TO USE OF INFORMATION, DEVICES, OR TECHNOLOGY DESCRIBED HEREIN OR OTHERWISE. The information contained within this document has been verified according to the general principles of electrical and mechanical engineering or registered trademarks of Maxim Integrated Products, Inc. All other product or service names are the property of their respective owners.