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# CCE4510 IO-Link Master

## Quick Start

Version 1.1

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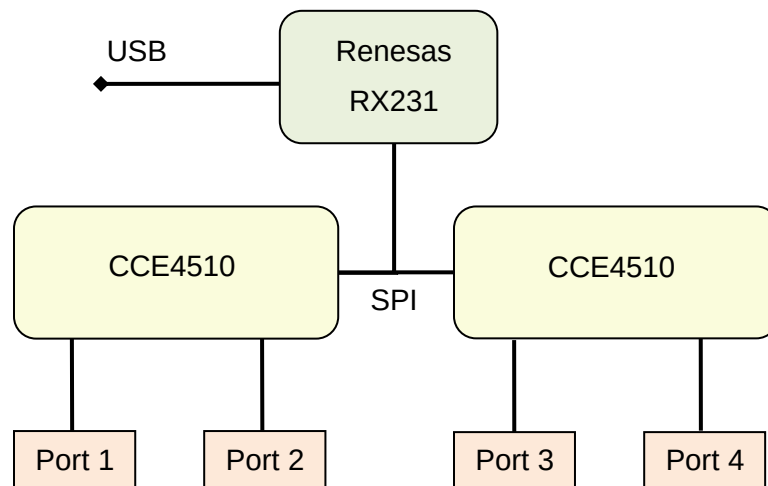
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## 1. System Overview

The system comprises of two CCE4510 IO-Link Master chips that provide two IO-Link ports each. A Renesas RX231 MCU contains the IO-Link Stack software and controls both CCE4510 over one SPI bus. For IO-Link Data Storage the MCU Data Flash is used.



For demonstrating the functionality of the system, it can be controlled over USB using the USB IO-Link Device Tool software, which runs on a Windows PC.

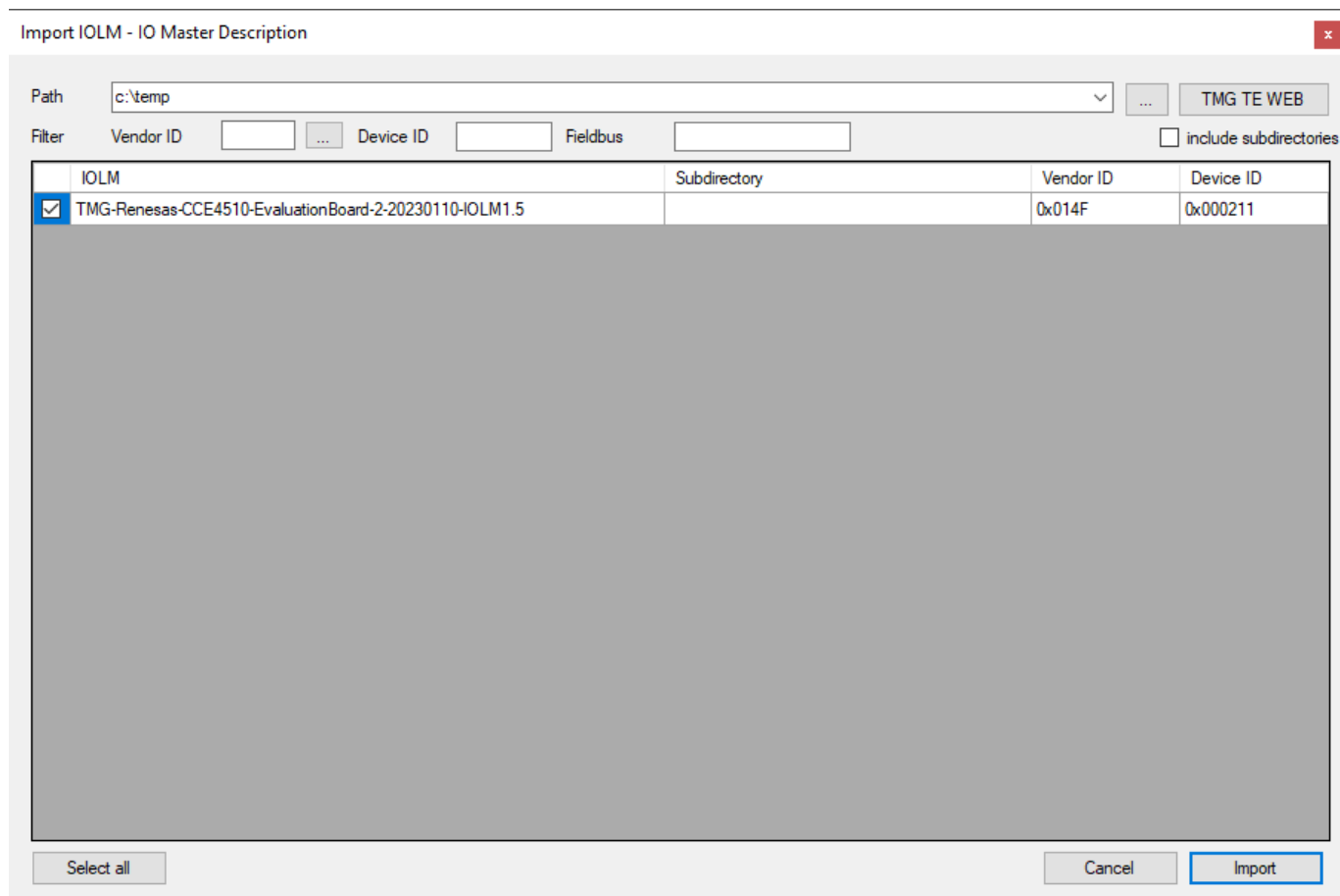
## 2. Software installation

Unzip “IO-Link Device Tool V5.1.1-7475 PE – Setup.zip” and start “IO-Link Device Tool V5.1.1-7475 PE – Setup.exe” and follow the instructions displayed. The version 7475 may be changed, but the installed version must be higher than 7475 to support the Demonstrator.

The USB device driver will be installed automatically by the setup.

After installation of the software you have to import the master description. Use Options->Import IOLM to open a dialog for importing. Please copy the folder path of the folder which contains the file “TMG-Renesas-CCE4510-EvaluationBoard-2-20230110-IOLM1.5.zip” to the field “Path” in the dialog. You don’t have to unzip the description files.

After importing you should see the Master in the catalog.



### 3. Connecting the system

Connect the CCE4510 board to a PC using a micro USB cable. After power on, only the green LED is lit. If everything went right, a new COM port named “TMG-Renesas CCE4510 IO-Link Evaluation Board” appears in Windows Device Manager. Otherwise check driver installation and cabling.

### 4. Using the IO-Link Device Tool

After starting the IO-Link Device Tool, drag&drop the text “TMG-Renesas CCE4510 IO-Link Evaluation Board” from bottom right to the top right white “Topology” area. On left side, a window opens showing a picture of the CCE4510 board. Alternatively, you can right-click the “Topology” area and select “Search Master”. There are two tabs which show either the description of the master, or the configuration of the 4 IO-Link Ports. The following pictures show both views.

IO-Link Device Tool V5.1 - PE

File Options View Help Logged in as: Specialist

(COM6) TMG-Renesas CCE4510 IO-Link Evaluation Board

Common Port Config

Vendor: TMG TE GmbH, IO-Link Vendor ID: 0x014F

Product: TMG-Renesas CCE4510 IO-Link Evaluation Board, IOLM: TMG-Renesas-CCE4510-EvaluationBoard-2-20230110-IOLM1.5.xml, IOLM Revision: 1.0, FW Revision: 3.1.B/1.3.9, IOLM Device ID: 0x000211

Main Communication Interface: USB Vendor ID: VID\_2843, USB Device ID: PID\_0211, COM Port: COM6, Unique Identifier: USB\VID\_2843&PID\_0211\0000000000

Tool Communication Interface: Tool Communication Type: TMG\_USB, Connection Reference: COM6, Unique Identifier: USB\VID\_2843&PID\_0211

Topology: USB (COM6) TMG-Renesas CCE4510 IO-Link Evaluation Board

Catalog: Master, IO-Link

IO-Link Device Tool V5.1 - PE

File Options View Help Logged in as: Specialist

(COM6) TMG-Renesas CCE4510 IO-Link Evaluation Board

Common Port Config

Ports:

| Port       | Mode    | Vendor | Device |
|------------|---------|--------|--------|
| CHAN1, CQ1 | IO-Link |        |        |
| CHAN2, CQ2 | IO-Link |        |        |
| CHAN3, CQ3 | IO-Link |        |        |
| CHAN4, CQ4 | IO-Link |        |        |

Port Config Details:

Vendor ID: , Device ID: , Product ID: , IO-Link Mode: no check

IO-Link Mode: no check

Device PD Length: Inputs: , Outputs:

Topology: USB (COM6) TMG-Renesas CCE4510 IO-Link Evaluation Board

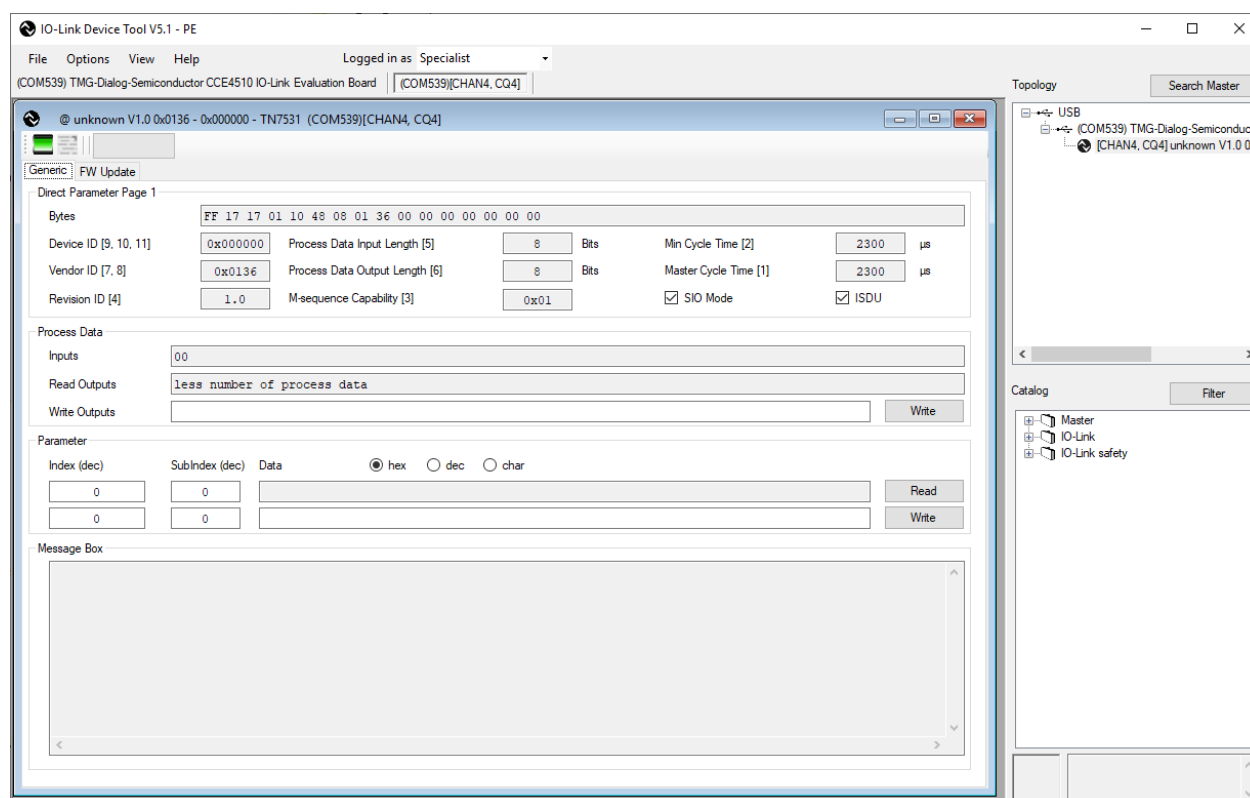
Catalog: Master, IO-Link

If you want to automatically search for the master, click “Search Master” button and a new window opens. Here, select “TMG-Renesas CCE4510 IO-Link Evaluation Board”. If this option is not available, check if the COM port appears in the Windows Device Manager.

If SIO Input mode is desired, right click the port in the Mode column (try twice) and select “DI”. Select “deactivated” to disable the port completely. In the CCE4510 demonstration firmware IO-Link Data Storage is permanently disabled, even if it can be selected in the bottom right area.

Press the “Go online” button in the top area. The orange LEDs are activated and show the status of connected devices (see below). Click “Check Devices”. All devices found are shown. Select “Takeover devices into engineering”.

To see details about a device, double-click in the row of this port. A new window opens with several tabs. If no IODD for this device is available, only the “generic” tab is displayed. To import an IODD, select menu “Options -> Import IODD”.



Further information about the IO-Link Device Tool can be found in menu “Help -> Content”.

## 5. Status LEDs

The orange LEDs show the status of connected devices:

- Off: Port is disabled or in SIO mode.
- Blinking slowly: IO-Link mode selected, but no device is connected.

- Blinking fast: Device is in IO-Link pre-operate mode.
- On: Device is in IO-Link operate mode.

The green LED shows system status:

- Off: No power connected or wrong software.
- On: System is running.

## **6. Firmware updates**

Current firmware version is 3.1.5/1.3.5. This number is displayed in the IO-Link Device Tool.  
At this moment there is no possibility to update the demonstration firmware in the field.