IO-Link Device Tool V5.1

Read Me

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Content

1. IO-Link Device Tool V5.1 Editions

1.1 Professional Edition (PE)

This edition is delivered as pure software product. It supports masters from different manufacturers and for different field bus systems. With first installation an evaluation period of 30 days is available with full functionality. At the latest after 30 days then a workplace license must be acquired. Please contact us for an offer to info@tmgte.de.

1.2 Standard Edition (SE)

This edition is part of the TMG USB IO-Link Masters V2 delivery (SE, TS, EMC). The software is restricted to support only the TMG USB IO-Link Masters V2.

1.3 Test System (TS)

The TMG IO-Link Device Test System V5.1 – TS is the IO-Link Device Protocol Test System for being used for the IO-Link-Conformance-Test. The test report is valid for the Manufacturer Declaration. The test engine TMG IO-Link Device Test System V5.1 AddIn TS is included in the installation. As test interface the TMG USB IO-Link Masters V2 – TS is used and part of the delivery. TMG USB IO-Link Masters V2 - TS is required with Firmware Version 3.1.0 and higher. Masters with Firmware 3.0.0 and higher can be updated. For Masters with Firmware 2.x we offer an inexpensive upgrade.

1.4 OEM Versions

We offer licensing of the software as OEM customized version. In this case the software is restricted to all masters of the OEM.

2. Support

Please contact support@tmgte.de for SE and PE Edition or OEM with OEM version. Contact data are available in the "About" dialog.

Please give some information about your environment:

- Edition?
- Version and build?
- Operation system?
- Language of operating system?
- Type of IO-Link Master?
- Firmware Version of IO-Link Master?

3. Installation

The installation is performed as setup.exe. Here all requested data will be copied into the working directory. For versions supporting the USB IO-Link master at least one link will be installed in the start menu.

'Uninstall' will be accessed by the Windows control panel.

The installation is only possible for users with administrator rights.

If the setup determines that the Device Tool is already running, please also check if another Tool variant (TMG variant or OEM variant) is running.

3.1 Windows Firewall

With the installation the IO-Link device tool Professional Edition will be registered as exception for incoming and outgoing connections for the windows firewall. The tool uses the UDP port 1999 for outgoing telegrams and port 2000 for incoming telegrams.

If you are using another firewall or if the automatic entry at the installation is blocked, please contact your system administrator. The firewall has to be unlocked accordingly.

UDP broadcasts „255.255.255.255" will only be sent from Windows on the network interface with the lowest metrics. Therefore, the tool also searches for all subnets that are entered for the network interfaces.

The IO-Link device tool supports also the import of IO Master and Device Description files from the internet and these are downloaded from the following https addresses:
- IO Master Description (IOLM) for Professional Edition: https://www.tmgte.de/...
- IO Device Description (IODD) for all editions: https://ioddfinder.io-link.com/...

3.2 Activation of licenses

Depending on the edition workplace licenses are required.

For the Professional Edition and some OEM version a link and key is delivered. The license has to be activated in the TMG CodeMeter License Central WebDepot. The license is bound to a PC or to a dongle. It can be transferred be usage of the License Central WebDepot. The dongle hardware is available from WIBU-Systems AG (www.wibu.com).

For the Standard Edition and some other OEM version no license key is required. The software is bundled with the IO-Link Masters of the associated master manufacturer.

4. Version History

4.1 Version 5.1.1 – Build 6066 (2021-07-06)

- Bug fix
    - FW-Update Transfer, hanging in special conditions
    - FW-Update Transfer, some wait improved, CR to specification
    - Switching of Process Data Images with different layout via condition caused exception
    - ModifyOtherVariables with RecordItems didn't work
    - Exception if a Button is located in a menu which is switched off when the button is pressed
- Improvements
    - Codemeter 7.21a (security update)
    - Newest Standard Unit Definitions

4.2 Version 5.1.1 – Build 6011 (2021-05-28)

- Bug fix
    - Check devices: In cases where the Device Product ID is temporarily unknown at the port, the device will also be displayed as identical (green) and the Product ID will be taken over.
    - Port Configuration: When configuring a device from the catalog, Vendor ID, Device ID and also Product ID is displayed.
- Improvements
    - Port Configuration: Devices configured on the master port with Vendor ID = 0 or Device ID = 0, which is an invalid configuration. This is shown e.g. as "invalid V1.1 0x0000 – 0x000000".

4.3 Version 5.1.1 – Build 5965 (2021-05-04)

- Improvements
  - TCI registry with DAP module ID additional to Vendor ID and Device ID. Targeted entry of individual DAPs in the GSD. Only registered DAPs are offered in the TIA Portal for the tool call.
  - Help button with tool tip and more details in the user manual for "Device Search Dialog" and "Take over into engineering"
  - Select correct variant when IODD Viewer is activated
  - Show On Request Data Length (Pre-Operate and Operate) in Generic Dialog and IODD Viewer
  - Show Product ID in Common Dialog
  - V_ProductURI [27] added to pull down in Generic Dialog
- Bug fix
  - Device Firmware Update: Wait until Device has securely disconnected when changing to boot mode.

4.4 Version 5.1.1 – Build 5904 (2021-04-12)

- Improvements
  - New Edition TMG IO-Link Device Tool V5.1 – TS available
  - Included is the add-in TMG IO-Link Device Tool V5.1 AddIn TS
  - IO-Link Device Conformance Tests System for IO-Link V1.1.2/V1.1.3

4.5 Version 5.1.1 – Build 5798 (2021-03-25)

- Known bug
  - Process output data
    - If a BooleanT is described with single values:
      - Pull down menu shows wrong values
      - Using the pull down will cause an error
      - Usage of the radio button works fine
  - In IODD Specification V1.1.3 the behavior and usage of ProcessDataRefCollection is clarified. This behavior will be implemented in the next version
- Bug fix
  - FW Update
    - Fixed exception, if in the IOLFW metafile a description is available but no InfoMessage
  - Storage of device parameters in TCI projects
  - If all master ports are initially deactivated and PLC connected, the port configuration cannot be written
  - Exception with delete key in the catalogs are fixed
  - Broken SMI TCP connection will be indicated
  - Wrong Device Vendor-ID will be indicated in IO-Link Device Control
  - Check devices: Takeover of an other device to a port with validation is no longer possible
  - With StdVariableRef, StdSingleValueRef and SingleValue were not correctly resolved

4.6 Version 5.1.1 – Build 5691 (2021-02-04)

- Bug fix
    - If the port is in IO-Link mode without a device, only 'no check' can be selected
        - master control 2 PortConfig
    - Change Network Parameters: IP address format is now checked for correct input
    - Handling of data types UIntegerT and IntegerT up to 64-bit
    - Units and scaling for arrays
- Improvements
    - Scope Config Min/Max Settings improved
    - Structured table
        - Write Only as a command
        - Messages whether Write Only or Button commands were successful
        - No status display for Button and Write Only command
        - Special handling for commands 128-131. Query dialog instead of Action started message

4.7 Version 5.1.1 – Build 5544 (2020-12-16)

- Bug fix
    - IOLM V1.5 Small changes which should not influence the function
        - If problems occur please delete all IOLM1.5 folders and import again in the folder like:
            - c:\ProgramData\TMG TE GmbH\ IO-Link Device Tool V5.1 – PE \Devices\Master*IOLM1.5
    - Device Firmware Update: device reboot timeout and status message if device does not reboot

4.8 Version 5.1.1 – Build 5351 (2020-11-12)

- Bug fix
    - IODD drag drop to master dialog causes exception or hangs up
        - Only with master control 1
    - TMG USB Master V2 (Identification data in Common TAB)
    - Bugfix exception if ProductID is not implemented in the FW
    - Exception with Master Config State Indication (PLC connected)
    - Wrong error code detection with MAXREF165# driver
        - FW Update stopped with password error message

- Improvements
    - Support of IOLM schema V1.5
        - Fieldbus infos improved and shown in master common tab
    - Data Storage Content upload only, if DS is enabled
        - If the first 12 bytes are 0 then "empty" is detected
        - Data of all other ports are deleted
    - Data Storage Content download only, if DS is enabled
        - If no data available then 12 bytes with 0 are send

4.9 Version 5.1.1 – Build 5236 (2020-10-03)

- Bug fix
    - Firmware Update Transfer, tool blocking fixed
    - Exception or wrong error message (device lost) with some Ethernet masters when opening the device control
    - Sometimes exception when closing the tool in online mode
    - Handling Collapse States
    - ModifiesOtherVariables in record items was not treated
    - AccessRightRestriction with complex datatype and access with Subindex = 0 was not treated
- Improvements
    - IO-Link Safety
        - Start of the dedicated tool and protocol parameter dialog only from the header (all columns)
        - No reset to 0 of authenticity and port for OSSD. For OSSD authenticity and port are don't care
    - Collapse/Expand in IODD tables with left mouse button and column 1
    - Even if master is assigned by entering the IP manually the MAC address is read and displayed
    - Codemeter 7.10a (some security issues)

4.10 Version 5.1.1 – Build 5122 (2020-08-31)

- Improvements
    - DDP1 will be read with each upload. This is relevant only for support.

4.11 Version 5.1.1 – Build 5045 (2020-08-24)

- Bug fix
    - Access Right problems with Firmware Update Packages
    - Bug with condition handling (if condition not described as enumeration)
- Improvements
    - Support of TMG IO-Link Device Test System V5
    - Changed values are stored in and reloaded from the project file if values of variables are changed but not transferred into the device

4.12 Version 5.1.1 – Build 4882 (2020-07-24)

- Bug fix
  - Check master type if the IP was entered manually when the connection is established
  - Exception when closing and reopen the master control
  - FW Update Profile with SMI-TCP communication
    - Exception/hangs with update of large firmware files
  - Behavior with IO-Link devices with product ID not listed in the IODD
  - Display of port name generalized in several forms, dialogs and topology
  - TMG USB IO-Link Master V2 in Safety Operation
    - Bug with Data Storage Content Transfer fixed
  - IO-Link Safety display with sub menus
  - Display of structured table with sub menus with conditions
    - Bug fix: elements with higher level following collapsed menus
- Improvements
  - Performance optimization of the SMI-TCP communication
  - Handling of the password with FW Update Profile

    Now the change from firmware with and without password is possible without creating 2 IOLFW packages.

    The existence of the password variable in the IODD was used identifying password usage. This is skipped now.
  - Some improvement for modular IO-Link masters
  - "Master Search" button active depending on features of the IO-Link Master
  - German translation completed
  - FW Update and HW_ID with wildcards now supported
  - IODD specification V1.1.3 supported

4.13 Version 5.1.1 – Build 4723 (2020-05-18)

- Bug fix
    - o License lost problem with Windows 7 fixed
- Improvements
    - o New Master Control also used for TMG and OEM USB IO-Link Masters
        - ▪ Port configuration aligned with IO-Link Standard Master Interface
            - • IO-Link Interface Specification V1.1.3
    - o IOLM always provided as ZIP archive. Archive name is created from IOLM name (.zip instead of .xml). GSD, EDS, Master GUI and communication drivers can be included.
    - o TMG WEB Database for Master Description (IOLM)
    - o Performance of import dialogs
    - o Some improvements for master GUI and communication plug-in system
        to whom it may concern

4.14 Version 5.1.1 – Build 4418 (2020-02-13)

- Bug fix
    - o IODD Viewer always showed the first variant
- Improvements
    - o Support of Button ActionStartedMessage und Description
    - o Support of Master Variables with SMI-TCP Tool Communication
    - o New Dialog "Enter IP Address" with List of the 10 last used addresses
    - o New Dialog with "GoOnline" when configuration was changed
- Support of Windows 7
    - o The support and test is discontinued. There is no known issue that the software does not run with Windows 7 but we don't test and support this.

4.15 Version 5.1.1 – Build 4324 (2020-01-26)

- Bug fix
    - FW Package Import Exception
    - Tool freeze when closing with master online
    - Installation with old version installed causes in some cases exceptions
    - Device Control shows "Device lost anyway" even though the device is connected
    - Wrong configuration with TCI call and PROFIBUS
- Improvements
    - IODD table behavior of combo box inputs improved
    - Offline Configuration of modular IO-Link Masters
    - Works with DOTNET Framework 4.6.1

4.16 Version 5.1.0 – Build 4219 (2019-12-12)

- Bug fixes
    - Error Message improved if project path to long
    - Exception with reloading TCI projects
        - With PROFIBUS DP IO-Link Masters
        - With some IODD with no default values on Integer and UInteger
    - Exception when delete master or device from topology with delete
    - FW Update CRC calculation
- Improvements
    - Support of Virtual IO-Link Devices Concept. Please ask for white paper.
    - IO-Link Safety Master with support of the Ready Impulse
        - New FW Revision 3.0.4/1.3.2 or newer of TMG USB IO-Link Master V2 – TS required
    - FW Update schema namespace „iolfw:"; „ns1:" is accepted with import
    - New master dialog for masters with master GUI
    - Master GUI for vendor specific port configuration
    - Additional to pure IOLM, Master package (ZIP) with IOLM, GUI and communication plugins can be imported
    - IOLM stored with additional files (Master GUI or Communication Plug Ins) in folders with vendors name
- Known issues
    - Installation can fail, because of inconsistent data in the master catalog. Please uninstall the tool and delete the following folder:

        C:\ProgramData\TMG TE GmbH\IO-Link Device Tool V5.1 – PE

4.17 Version 5.1.0 – Build 3967 (2019-09-16)

- Bug fixes
    - Event handling bug. No events displayed in generic. Error from build 3927
    - FW Update: waiting for reboot was too short

4.18 Version 5.1.0 – Build 3964 (2019-09-09)

- Bug fixes
    - Usage of TMG IO-Link Master V2 – TS for IO-Link Safety
    - FW Update Online Identification
- Improvements
    - User documentation for IO-Link Safety extensions (preview)
    - FS-IOLM for TMG USB IO-Link Master V2 – TS included in installation. Is only visible and can only be used with option package license
- Open Issues
    - IO-Link Safety Status Display (User Manual Chapter 5.3.3.1) is not implemented until now and is planned for the next build.

4.19 Version 5.1.0 – Build 3927 (2019-08-21)

- Bug fixes
    - Exception after start of TMG USB IO-Link Master V2 – EMC
    - More traces and error handling for Korean and Indian PC. If the tool does not find the USB IO-Link Master please restart, enable "Show Log" in options and search for masters. Please copy the content of the window into an E-Mail and sent it to info@tmgte.de.
- Improvements
    - IO-Link Device Firmware Update Profile
        - Metafile format adapted to results from Interop Workshop 7/2019
        - Property fwActivationRetryCount implemented
        - New: Delete FW Package
    - Generic with new standard variables for Common Profile and FW Update
    - IO-Link Safety Support
        - Requires Option License
        - Available for TMG TE IO-Link Safety Device Stack customers
        - Requires TMG USB IO-Link Master V2 – TS with special IOLM

4.20 Version 5.1.0 – Build 3909 (2019-07-06)

- Bug fixes
  - With import IOLM of same device wrong order and doubled display
- Improvements
  - Device Default Settings
    - New function for device types to store default settings of scope configuration, user interface configuration and parameter sets.
  - Tool and installation code signed
  - Collapse state topology and catalog stored for next start
  - This file included in installation
  - FW-Update Profile Support changed to V1.1 Draft 4/2019
    - Please use newest packager too

4.21 Version 5.1.0 – Build 3811 (2019-04-07)

- Bug fixes
  - IO-Link Device Firmware Update
    - Metafile-Format / Import *.iolfw

      The schema and specification is not clear. An interop for test interoperability is planned. In the meantime we tried to accept the different implementations.
  - Scope
    - Devices without input process data
    - If process data is enumeration
    - If more than one process data image
- Improvements
  - Log file
    - Extended Log of USB device discovery

4.22 Version 5.1.0 – Build 3766 (2019-03-17)

- Bug fixes
    - Exception with devices without IODD
    - Open IO Device Interface and Scope
        - Exception with Process Data Read Request when subindex with gaps

4.23 Version 5.1.0 – Build 3739 (2019-03-04)

- Bug fixes
    - Open IO Device Interface
        - Sporadically nothing when reading process data fixed
        - Wrong length of Process Data fixed
    - IODD Viewer
        - Wrong Process Data Length fixed
- Improvements
    - IODD Viewer
        - Profile Characteristics completed and improved
- New Functionality
    - Scope function as new tab in device control

4.24 Version 5.1.0 – Build 3676 (2019-02-07)

- Bug fixes
    - Discovery of USB IO-Link Master on Turkish systems
    - There were some performance issues with the software security system. Performance improved.

4.25 Version 5.1.0 – Build 3646 (2018-11-19)

- New Features
    - Support of SMITCP Protocol
    - Support of PROFINET Integration ED2
    - Also some OEM versions of TMG USB IO-Link Master V2 available in Professional Edition
- Bug fixes
    - Bug with TCI call of some masters (IOLM missing, although IOLM available) fixed
    - Exception with extension of the Cube67 (PN/PB) configuration (TCI)
    - Some (only) English texts translated to German
    - TimeSpan (length overrun error)

4.26 Version 5.1.0 – Build 3569 (2018-09-16)

- Bug fixes
    - Open IO Device Interface
        - Sporadically nothing when reading process data
        - Read PDAccess
        - Exception when reading record items
        - Sample Projects updated and running with V4.0.x and V5.1.x
    - Bug fix "wrong device" with Device without ISDU

4.27 Version 5.1.0 – Build 3516 (2018-08-26)

- Bug fixes
    - Topology not refreshed after IODDFinder Import
    - USB IO-Link Masters V2 (FW 3.x) Device connect/disconnect
    - FW Update: HW_ID_Key Bug when no default in IODD
    - Exception, with some IO-Link Devices when opening Device Control
    - Enter TimeT and TimeSpanT values
- Improvements
    - Dialog to manage/delete FW Update Packages
    - Some OEM USB IO-Link Master V2 available in PE Edition
    - Robustness against some IO-Link Master protocol problems

4.28 Version 5.1.0 – Build 3472 (2018-08-01)

- Changes over V4.x
    - Support of IO-Link masters from different manufacturers (only PE)
    - IODDFinder Support
- Changes over V5.0
    - IODD Viewer
    - IO-Link Device Firmware Update
    - IO-Link Safety (Beta Release , only PE)
    - Software Licensing System Codemeter