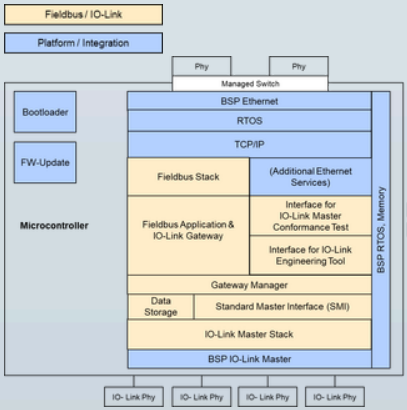
TMG TE

IO-LINK MASTER SOFTWARE

IO-Link Master Software

- Support of all IO-Link functionality
- According to the latest IO-Link Package
- Data storage functionality included

The IO-Link Master Software, which is compliant to the latest IO-Link Specification, delivers a complete communication stack incl. Standardized Master Interface (SMI) and TMG SMI-TCP protocol for seamless IO-Link Master integration. Built for high portability across many microcontroller platforms and transceivers. The included SMI-TCP protocol is used to connect to the IO-Link Device Tool, IO-Link Master Test and also for IoT applications. Additional option packages for gateway applications, such as PROFINET, make it the standard for flexible, scalable IO Link Master solutions.



We also assist in integrating the test interface for conformance testing, fieldbus mapping and integration with the IO-Link Device Tool V6.

- All bit rates: 230.4, 38.4, 4.8 Kbit/s
- 400µs cycle time at 230kBit/s
- All telegram types, compatible to IO-Link V1.0
- ISDU with 8/16 Bit index and 8 Bit subindex
- Events with and without details
- No restriction in number of ports or performance
- Modular design following the specification
- Strictly separation of protocol stack, application and hardware abstraction
- Framehandler Modules for all IO-Link Master Transceivers
- API follows IO-Link Standardized Master Interface (SMI)
- Includes SMI-TCP protocol stack for Engineering, IT and Conformance Test
- Includes Conformance Test Gateway for STCS protocol
- Written in ANSI-C
- Ported to (samples):
  - Rx, V850, 78K0R, ARM9
  - STM32, Sitara AM2,3,4,6 / AMIC, NetX
  - CORTEX M0/M3/M4/H7
  - XC 167, PIC32
  - Microblaze

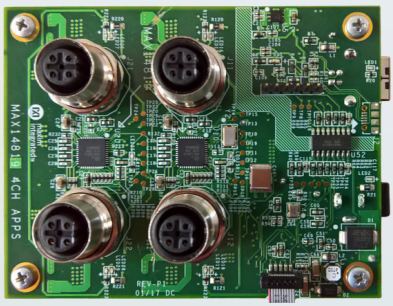
TMG IO-Link Master In-Design Solution

- Ready to use solution
- Reduces your time to market
- Proved quality
- Pre certified firmware for fixed hardware schematics
- 4 Port and 8 Port design available

The concept is to offer pre certified solutions which can be easily integrated. The schematics contains all necessary elements for a full usable IO-Link Master according to the latest IO-Link Package. The IO-Link Master controller is connected to its host controller via a serial interface (SPI). All software is delivered as binary code. ANSI-C source code is available as an optional package. The firmware (binary code) can be used as it is (test report available).

Characteristics:

- Flash handling for data storage
- TMG IO-Link Master Stack according to the latest IO-Link Package
  - Data storage functionality included
  - All bit rates (230,4k / 38,4k / 4,8K).
- IO Ports for Pin2 (I/O or diagnostic)
- Firmware download over SPI
- TMG SPI API interface
- Host Library as ANSI-C source code
- Test report for binary code is available
- Uses STM32G4 und MAX14819A
- Can be evaluated with
  - MAXIM MAXREFDEF165#
  - Board with STM32G4 available soon



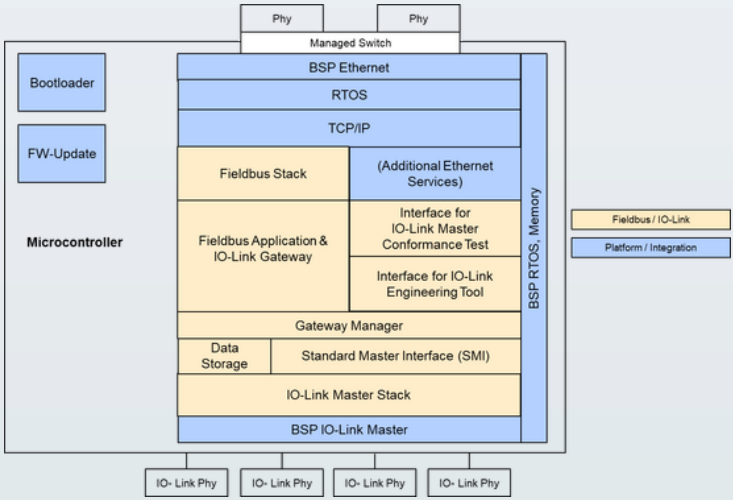
The host library is delivered as ANSI-C source code and can be ported easily to different host controllers. Host controller requirements:

- SPI interface (4 pins)
- DMA for send and receive

IO-Link Gateway Solutions

When developing IO-Link masters, not only the respective fieldbus stacks and the IO-Link master stack are required, but also the gateway application that maps the fieldbus to IO-Link.
The ready-made gateway applications from TMG TE implement the available integration specifications. Where they are not complete or up-to-date, we have supplemented them accordingly.
Manufacturer-specific extensions have been taken into account so that they can be easily supplemented.

EtherNet/IP PROFINET EtherCAT IO-Link



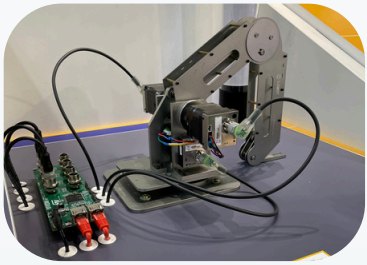
- For PROFINET and EtherNet/IP the stacks from TMG TE are used
- For EtherCAT we use the EtherCAT stack of the ETG / Beckhoff
- We also support the development of IO-Link Safety Masters
  Certified IO-Link Safety Libraries available

IO-Link Virtual Device Concept

Decentralization helps to structure systems better and improves performance. However, the available solutions are very manufacturer and fieldbus specific. The IO-Link Virtual Device concept from TMG TE offers an approach that uses the standardized integration of IO-Link into higher-level systems and thus also the user's know-how in dealing with IO-Link and the IODD.

The pre-processing function is represented as a virtual IO-Link device. The "function blocks" look like additional ports and are described by IODDs.

- Standardized pre processing
- Integration via IODD
- Applicable for local technology functions
- New catalog category in the tool
- New communication profile to
  configure the ports to be preprocessed
  describe the runtime environment



Use Cases:

- Machine technology functions that are to be implemented independently of the higher-level system
- IO-Link for numeric control and motion control
- Together with time and clock synchronization, applications can be realized here that were previously reserved for EtherCAT or PROFINET CC-C (IRT)
- Simpler, more cost-effective, open and powerful
- Fieldbus devices (PROFINET, EtherNet/IP, EtherCAT, ….) with a common device engineering based on IODD

Get in touch with us!

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