V2/24

Release Date: 1/15/2024

ASIX IO-Link Device Software Stack

The ASIX IO-Link Device Software Stack is developed on AXM-IOLS IO-Link device evaluation board, which is equipped with STMicroelectronics STM32F469AI microcontroller and L6362A IO-Link device transceiver. The software stack is developed using the STM32CubeIDE development tool, based on STMicroelectronics STEVAL-BFA001V2 software development kit, and seamlessly integrates ASIX's proprietary IO-Link device software stack library. It is suitable for a variety of smart IO-Link device applications, such as IO-Link sensors, IO-Link actuators, IO-Link hubs/valve islands.

The ASIX IO-Link device software stack package includes ASIX IO-Link device software stack trial library, a demonstration application, AXM-IOLS evaluation board reference circuit and PCB layout file, etc. The trial version of ASIX IO-Link device software stack library provides the complete functionality, excluding only the firmware upgrade feature. Designers can evaluate the comprehensive capabilities of ASIX IO-Link device software stack using the AXM-IOLS evaluation board, expediting product development timelines.

Key Features:

- Compliant with IO-Link Interface and System Specification V1.1.2
- Support backward compatibility for operation on IO-Link V1.0 masters
- Written in ANSI-C 99
- Operating modes: IO-Link and SIO mode
- Support firmware upgrade via IO-Link
- Support ISDU communication
- Support data storage
- Consistent Process Data Exchange (PDE) through alternating buffers
- Support all telegram types and transmission rates: 4.8Kbps (COM1), 38.4Kbps (COM2) and 230.4Kbps (COM3)
- Small footprint: <1KB RAM, <10KB Flash
- Designed to operate seamlessly with ASIX AXM-IOLS IO-Link device board, equipped with ST L6362A IO-Link device transceiver

Target Applications

- **IO-Link Sensors**
  Temperature/Pressure/Photoelectric/ Vision/Time-of-Flight (ToF)/etc.
- **IO-Link Actuators**
  Valve Actuators/Motor Controllers/ Smart LED Towers/etc.
- **IO-Link Hubs/Valve Islands**

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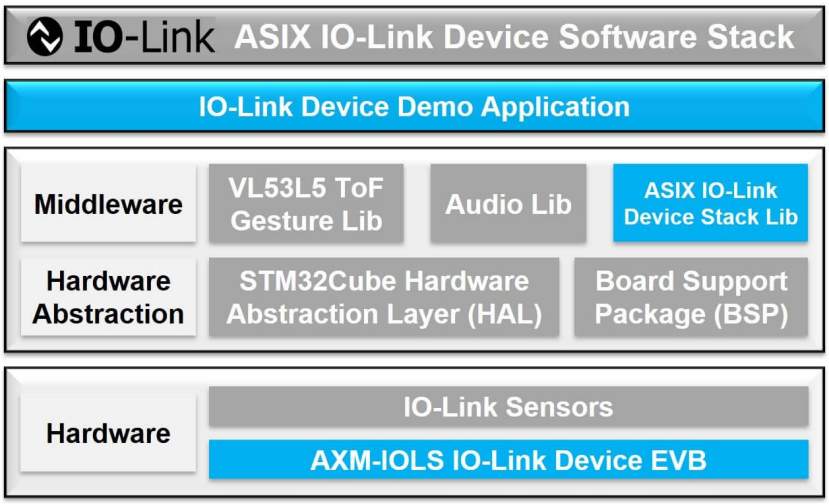
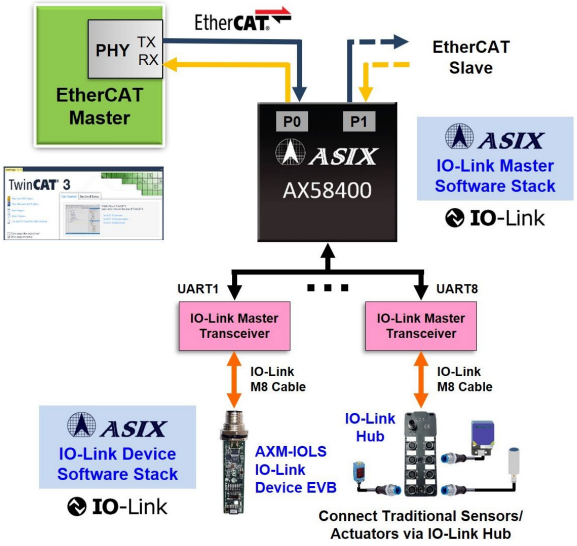
Software Architecture



The grey blocks originate from ST STEVAL-BFA001V2 software package.

Application Diagram



AX58400 EtherCAT to IO-Link Gateway Module

AXM-IOLS IO-Link Device EVB

Alcom electronics
Singel 3 | B-2550 Kontich | Belgium | Tel. +32 (0)3 458 30 33
info@alcom.be | www.alcom.be
Rivium 1e straat 52 | 2909 LE Capelle aan den IJssel | The Netherlands
Tel. +31 (0)10 288 25 00 | info@alcom.nl | www.alcom.nl