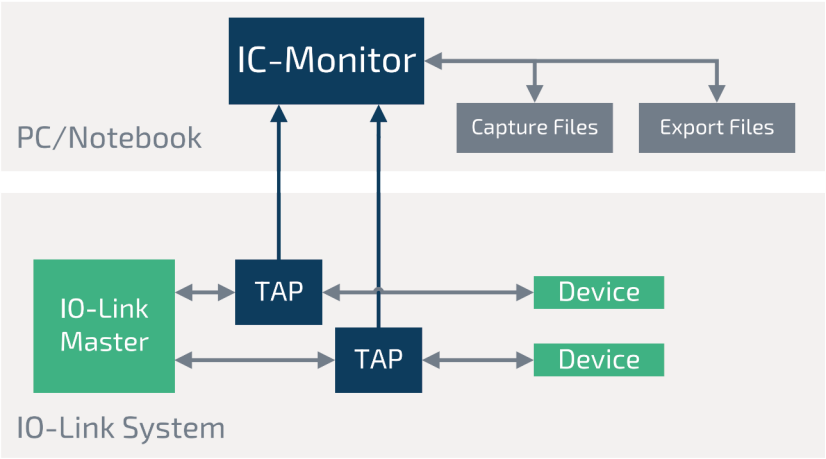
IC-MONITOR

INDUSTRIAL COMMUNICATION MONITOR

IO-LINK FEATURE SHEET

OVERVIEW

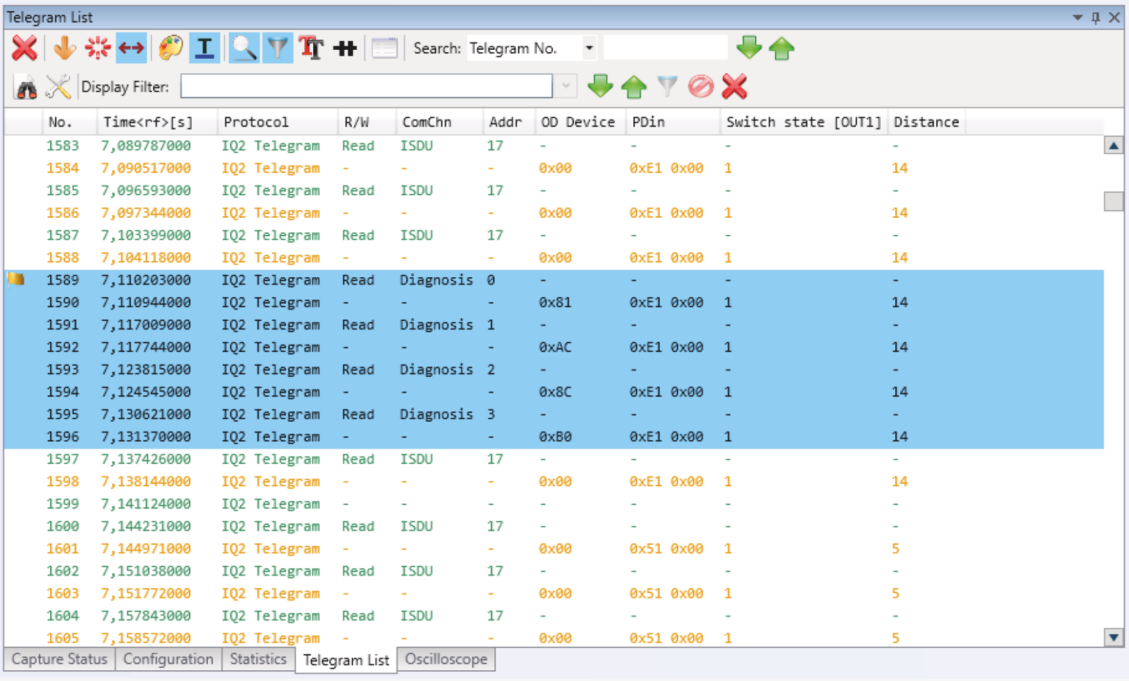
The IC-Monitor enables the analysis of IO-Link systems. In addition to packet-based protocol analysis and the general tools of the IC-Monitor, the user also has access to specific functions and views for analyzing IO-Link communication.



Analysis of an IO-Link system with the IC-Monitor

PACKET-BASED ANALYSIS

- Display of process data, resolved on the basis of device description files (IODDs)
- Individually configurable protocol fields for IO-Link
- Different representation formats of the telegram fields, including Byte, Binary, Hex and String
- Use of filter, trigger and export functions
- Simultaneous analysis with other communication systems, e.g. a higher-level Industrial Ethernet system for connecting the IO-Link master

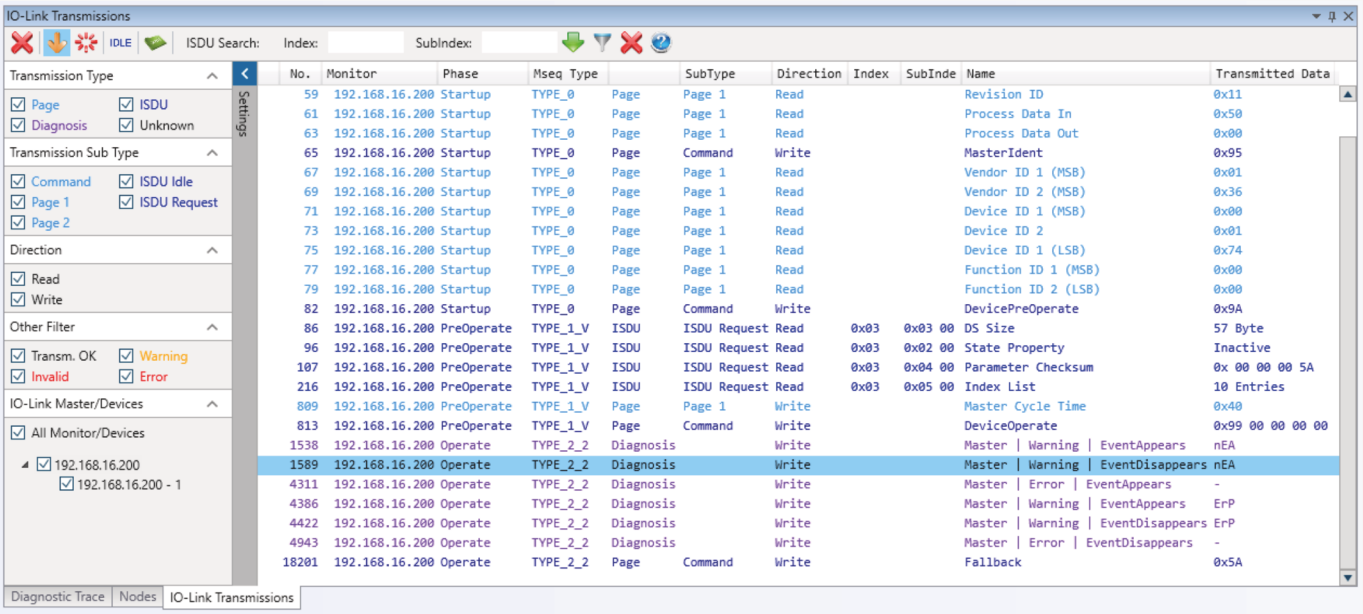


No.	Time<rf>[s]	Protocol	R/W	ComChn	Addr	OD Device	PDin	Switch state [OUT1]	Distance
1583	7,089787000	IQ2 Telegram	Read	ISDU	17	-	-	-	-
1584	7,090517000	IQ2 Telegram	-	-	-	0x00	0xE1 0x00	1	14
1585	7,096593000	IQ2 Telegram	Read	ISDU	17	-	-	-	-
1586	7,097344000	IQ2 Telegram	-	-	-	0x00	0xE1 0x00	1	14
1587	7,103399000	IQ2 Telegram	Read	ISDU	17	-	-	-	-
1588	7,104118000	IQ2 Telegram	-	-	-	0x00	0xE1 0x00	1	14
1589	7,110203000	IQ2 Telegram	Read	Diagnosis	0	-	-	-	-
1590	7,110944000	IQ2 Telegram	-	-	-	0x81	0xE1 0x00	1	14
1591	7,117009000	IQ2 Telegram	Read	Diagnosis	1	-	-	-	-
1592	7,117744000	IQ2 Telegram	-	-	-	0xAC	0xE1 0x00	1	14
1593	7,123815000	IQ2 Telegram	Read	Diagnosis	2	-	-	-	-
1594	7,124545000	IQ2 Telegram	-	-	-	0x8C	0xE1 0x00	1	14
1595	7,130621000	IQ2 Telegram	Read	Diagnosis	3	-	-	-	-
1596	7,131370000	IQ2 Telegram	-	-	-	0xB0	0xE1 0x00	1	14
1597	7,137426000	IQ2 Telegram	Read	ISDU	17	-	-	-	-
1598	7,138144000	IQ2 Telegram	-	-	-	0x00	0xE1 0x00	1	14
1599	7,141124000	IQ2 Telegram	-	-	-	-	-	-	-
1600	7,144231000	IQ2 Telegram	Read	ISDU	17	-	-	-	-
1601	7,144971000	IQ2 Telegram	-	-	-	0x00	0x51 0x00	1	5
1602	7,151038000	IQ2 Telegram	Read	ISDU	17	-	-	-	-
1603	7,151772000	IQ2 Telegram	-	-	-	0x00	0x51 0x00	1	5
1604	7,157843000	IQ2 Telegram	Read	ISDU	17	-	-	-	-
1605	7,158572000	IQ2 Telegram	-	-	-	0x00	0x51 0x00	1	5

Packet-based analysis of an IO-Link Event

WORKING WITH IO-LINK TRANSMISSIONS

For an analysis and diagnosis of an IO-Link system a separate view is available which displays the IO-Link transmissions, the so-called M-Sequences. The transmissions are created automatically based on the communication and identification parameters determined in the startup phase or specified manually. By referencing device description files (IODDs), transmissions such as events or ISDUs are decoded according to the IODDs.



View for displaying the IO-Link transmissions

Functions of the IO-Link Transmission View:

- List of all IO-Link transmissions of the different phases
- ISDU Search by Index and SubIndex
- Performance optimization through active filtering of IDLE transfers
- Advanced filtering options, e.g.:
  - Transmission Type: Page, ISDU, Diagnosis
  - Transmission Sub-Type: Command, Page 1 or 2, ISDU Idle or Request
  - Direction: Read/Write
  - Master/Device: Depending on the IP address
  - Further filter
- Information on individual IO-Link transmissions
  - Listing of the individual master and device messages (M-Sequences)
  - Transmitted process data, parameter data and diagnostic data

In addition to the IO-Link Transmissions view, general tools and views of the IC-Monitor, such as the Oscilloscope view and the Diagnostic Trace view, are also available for further analysis and diagnostics.

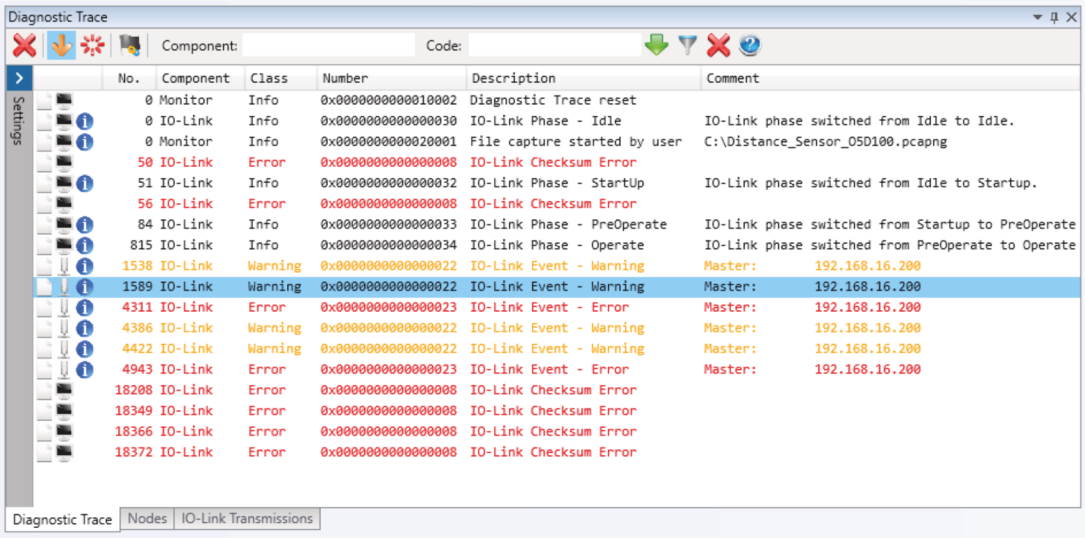
FEATURES

CONFIGURATION

- Storage folder for IODD files
- Automatic detection of properties of an IO-Link device based on stored IODDs
- Overview of all automatically detected and manually set up IO-Link devices and their device-specific information:
  - IP address, Cycle-Times, Capability, PDin und PDout
  - Revision-, Vendor-, Device-, and Function-ID

DIAGNOSIS

The Diagnostic Trace view provides an overview of all diagnostic messages that occur during a packet capture. In addition to general messages such as phase changes, protocol-specific diagnostics such as IO-Link events are also displayed in this view. If required, trigger or filter conditions can be applied to these events, for example to start a packet capture only in the event of an error.



IO-Link Events displayed in the Diagnostic Trace view

TECHNICAL DATA

SUPPORTED TAPs

The IC monitor supports the following TAPs required for capturing IO-Link packets:

- IQ² Development GmbH & Co. KG - iqInterface®
- Germbedded GmbH - IO-Link Analyzer

IO-LINK SPECIFICATIONS

The IC-Monitor supports IO-Link 1.0, 1.1 und 1.1.2.