IO-Link master multi-port evaluation board based on L6360

Features

- Master IO-Link stack embedded with read out protection
- Limitation of time of use (10000 minutes)
- Fully compatible with all IO-Link devices
- Main supply voltage 32 V maximum
- 4 L6360 IO-Link master transceiver ICs
- RS-485 serial interface
- CAN serial interface
- USB interface
- DC-DC converter
- On-board reverse polarity protection
- Designed to meet IEC requirement for industrial standards
- RoHS and WEEE compliant

Description

The STEVAL-IDP004V2 evaluation board embeds the STM32F205RB microcontroller and four separate L6360 ICs.

Communication with the ICs is implemented via I²C in master mode and is managed by the STM32F205RB MCU; each L6360 has its own address and shares the bus with the other devices.

The STEVAL-IDP004V2 is developed to create a multi-port master based on serial asynchronous communication to support the IO-Link protocol.

Each node is equipped with an industrial M12 connector (as recommended by the standard) for connection with a single slave node using a cable (max. length 20 meters). The wire is a normal three-pole: one for the IO-Link bus, one for the L+ line (positive supply voltage pole) and one for the L- line (negative supply voltage pole).

The STEVAL-IDP004V2 board also includes RS-485 bus, CAN bus and USB hardware interfaces.

The layout is designed to meet the requirements for IEC61000-4-2/4/5 for industrial segment.
1 Board components

Figure 1. STEVAL-IDP004V2 components

- ST-Link programmer
- RS-485 CAN
- USB
- IO-Link Ports
- Supply voltage and protection
- Power management
Figure 2. STEVAL-IDP004V2 circuit schematic (1 of 11)
Figure 3. STEVAL-IDP004V2 circuit schematic (2 of 11)

IEC 60947-5-2

[Diagram of circuit schematic with labels and connections]

RS:464-8000
Binder 99-3431-202-04
Serie 713763
Figure 4. STEVAL-IDP004V2 circuit schematic (3 of 11)
Figure 5. STEVAL-IDP004V2 circuit schematic (4 of 11)

SPT01-335DEE / Package: QFN (dim. 3.0x3.0 mm)
Figure 6. STEVAL-IDP004V2 circuit schematic (5 of 11)
Figure 7. STEVAL-IDP004V2 circuit schematic (6 of 11)
Figure 8. STEVAL-IDP004V2 circuit schematic (7 of 11)
Figure 9. STEVAL-IDP004V2 circuit schematic (8 of 11)
Figure 10. STEVAL-IDP004V2 circuit schematic (9 of 11)
Figure 11. STEVAL-IDP004V2 circuit schematic (10 of 11)
Figure 12. STEVAL-IDP004V2 circuit schematic (11 of 11)

Common Mode Choke
ACT45B-101-2P
TDK

Optional to be placed close to STM32F103R
## Revision history

<table>
<thead>
<tr>
<th>Date</th>
<th>Version</th>
<th>Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>16-Oct-2019</td>
<td>1</td>
<td>Initial release.</td>
</tr>
</tbody>
</table>

### Table 1. Document revision history
IMPORTANT NOTICE – PLEASE READ CAREFULLY

STMicroelectronics NV and its subsidiaries ("ST") reserve the right to make changes, corrections, enhancements, modifications, and improvements to ST products and/or to this document at any time without notice. Purchasers should obtain the latest relevant information on ST products before placing orders. ST products are sold pursuant to ST’s terms and conditions of sale in place at the time of order acknowledgement.

Purchasers are solely responsible for the choice, selection, and use of ST products and ST assumes no liability for application assistance or the design of Purchasers’ products.

No license, express or implied, to any intellectual property right is granted by ST herein.

Resale of ST products with provisions different from the information set forth herein shall void any warranty granted by ST for such product.

ST and the ST logo are trademarks of ST. For additional information about ST trademarks, please refer to www.st.com/trademarks. All other product or service names are the property of their respective owners.

Information in this document supersedes and replaces information previously supplied in any prior versions of this document.

© 2019 STMicroelectronics – All rights reserved