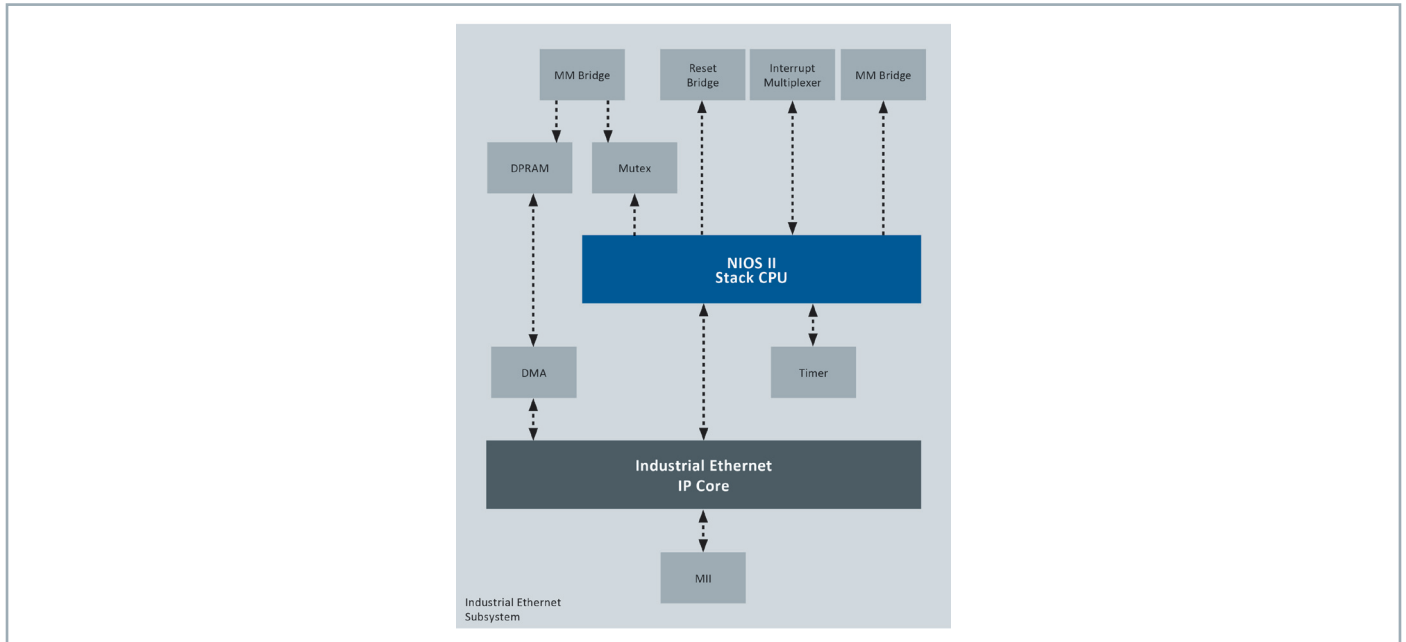


# Softing Protocol IP - EtherCAT

## Simplifying EtherCAT Design for Devices Using Altera FPGA

Softing Protocol IP is a combination of IP Cores and protocol software designed to offer all required communication capabilities for an EtherCAT implementation based on the Altera FPGA. It provides an identical Programming Interface (API) for integrating various Industrial Ethernet protocols onto one hardware platform.



### Easy and Inexpensive Development of EtherCAT Field Devices Using Altera FPGAs

- Ready-to-use EtherCAT Qsys system
- Demo application included
- Future versions available for free download

### One API For Quick Integration

- Simple Device Application Interface (SDAI) designed as efficient protocol abstraction layer to use different protocols with same application
- PROFINET IRT, EtherCAT, EtherNet/IP, POWERLINK and Modbus TCP using the same API
- Single and dual processor systems supported

### Improved Performance

- Minimum I/O data delay between physical layer and application
- Process data processed by DMA logic
- Guide to efficient application programming included

### Standard IT Support in Parallel with Industrial Ethernet

- Direct forwarding of IP packets to application
- No need to change existing IP structure
- Socket interface for simple integration

## Technical Data

|                             |   |  |
|-----------------------------|---|--|
| Functionality               | Full Slave Device (Data Link Layer) with two Ethernet Ports | <ul style="list-style-type: none"> <li>Stack based on sample code version V5.10 of EtherCAT Slave stack</li> <li>EtherCAT Slave controller ESC30 based on version V3.0.3 of EtherCAT Slave controller</li> </ul>   |
| Performance Characteristics | FMMUs   | 3  |
|                             | Sync Managers   | 4  |
|                             | Process Data RAM  | 8 KB   |
|                             | External Data Bus Width                                     | 32 Bit   |
| Functional Scope            | Distributed Clocks  | Supported, 64 Bit  |
|                             | Generation of Synchronous Outputs                           | (SYNC0/1)  |
|                             | SDO Upload/Download, SDO Information Services               | Supported  |
|                             | Complete SDO Access   | Supported  |
|                             | Mailbox Interface and PDI                                   | Supported  |
|                             | CAN Application Protocol Over EtherCAT CoE)                 | Supported  |
|                             | Object Dictionary with Standard CoE Objects                 | <ul style="list-style-type: none"> <li>Device Type</li> <li>Manufacturer Device Name</li> <li>Manufacturer Hardware Version</li> <li>Manufacturer Software Version</li> <li>Identity</li> <li>RxPDO Mapping (up to 32 instances)</li> <li>TxPDO Mapping (up to 32 instances)</li> <li>Sync Manager Communication Type</li> <li>Sync Manager 2 PDO Assignment</li> <li>Sync Manager 3 PDO Assignment</li> </ul> |
|                             | Ethernet Over EtherCAT (EoE)                                | Supported  |
|                             | File Access over EtherCAT (FoE)                             | Supported  |
|                             | Station Alias   | Supported  |
|                             | Diagnosis Handling Including Emergency Messages             | Supported  |

## Scope of Delivery

|                |                                   |
|----------------|-----------------------------------|
| Qsys Component | Downloadable from Softing website |
|----------------|-----------------------------------|

## Additional Products and Services

|               |   |
|---------------|---|
| KEL-AB-010001 | Altera Cyclone V E FPGA Development Kit and MAX V licensing board                       |
| SIA-YY-012501 | Integration workshop for implementing field devices based on Altera Cyclone FPGA family |
| SIA-YY-012503 | Integration support provided by e-mail or phone   |



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