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

**Easy and Inexpensive Development of EtherNet/IP Field Devices Using Altera FPGAs**
- Ready-to-use EtherNet/IP Qsys system
- Demo application included
- Future versions available for free download
- Transparent IT channel for direct IP access to/from the application

**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
- Socket interface for IP communication

**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

**Ongoing Enhancements**
- Continuous Softing maintenance of Qsys components
- Use in Softing products as well
- Easy update to future versions
## Technical Data

<table>
<thead>
<tr>
<th>Description</th>
<th>Specified Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cycle Time</strong></td>
<td>505 Bytes output, 509 Bytes input</td>
</tr>
<tr>
<td><strong>I/O Data</strong></td>
<td>10 (default; configurable depending on available socket resources)</td>
</tr>
<tr>
<td><strong>Number of IO Connections</strong></td>
<td>10 (default; configurable depending on available socket resources)</td>
</tr>
<tr>
<td><strong>Number of Encapsulation Sessions</strong></td>
<td>10 (Voreinstellung; konfigurierbar in Abhängigkeit von vorhandenen Socket-Ressourcen)</td>
</tr>
<tr>
<td><strong>Number of Explicit Messaging Connections</strong></td>
<td>2 Explicit Messaging Connections per encapsulation session (20 Explicit Messaging Connections in total, configurable)</td>
</tr>
<tr>
<td><strong>Number of User-Specific Objects</strong></td>
<td>Unlimited</td>
</tr>
<tr>
<td><strong>Maximum Number of Connections</strong></td>
<td>2 Explicit Messaging Connections x 10 Encapsulation Sessions + 10 I/O Connections (30 connections)</td>
</tr>
</tbody>
</table>

### Predefined Standard Objects
- Identity
- Message Router (with Implemented Functionality)
- Up to 32 Assemblies
- Connection Manager
- Device Level Ring
- Quality of Service
- TCP/IP Interface
- Ethernet Link

### Functional Scope
- Adapter
- Support of 2 Ethernet Link Objects for implementing line and daisy chain topologies
- Device Level Ring (DLR) Protocol (Announce-Based Ring Node)
- Quality of Service (QoS)
- IPv4 address conflict detection

### Application Programming Interface
Simple Device Application Interface (SDAI)

### Certificate
Plugfest 2013

## 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