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

**Easy and Inexpensive Development of PROFINET Field Devices Using Altera FPGAs**

- Ready-to-use PROFINET 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 RT/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

| PROFINET RT | Tested and Described IP Core Configurations | • Switch IP Core with 2 external ports and 1 internal port  
• 1 Nios II IP core for processing the protocol  
• DPRAM interface to application processor (FPGA Internal or External) |
| Switch Clock | 125 MHz |
| Functionality | • PROFINET Device According Specification V2.3, Conformance Class B  
• Media Redundancy Client  
• Multicast Provider and Subscriber |
| Shared Devices (Supported Number of PROFINET Controllers for Simultaneous Communication) | Yes (2) |
| Number of Connections per PROFINET Controller | 2 |
| Maximum Size of I/O Data Per Communication Relationship | 1,024 Bytes |
| Support of Profiles | Yes |
| Operating System | eCos V3.0 |
| API | Simple Device Application Interface |

| PROFINET IRT | Requirements and Supported Quantity Structures | See PROFINET RT |
| Functionality | • PROFINET Device According Specification V2.3, Conformance Class C  
• PTCP, Relative Forwarder, Fast Forwarding, cycle time down to 250 µs, legacy support for Siemens drive products (already available)  
• Dynamic Frame Packing, Media Redundancy for Planned Duplication (MRPD), cycle time < 250 µs (in preparation) |

### 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 with 8 hours of technical assistance |
| 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 |
| TRA-PN-TECH | Training "PROFINET – Technology" |
| TRA-PN-CERTENG | Training "PROFINET - Certified Engineer" |

### Optimize Softing

Softing Industrial Automation GmbH  
Richard-Reitzner-Allee 6  
85540 Haar / Germany  
Tel.: +49 89 456 56-340  
Fax: +49 89 456 56-488  
info.automation@softing.com  
http://industrial.softing.com

Softing Inc.  
US Headquarters  
7209 Chapman Highway  
Knoxville, TN 37920 / USA  
Tel.: +1 865 251 52 52  
Fax: +1 865 579 47 40  
info@softing.us  
http://www.softing.us

Softing Industrial Automation GmbH  
Äußere Sulzbacher Straße 159-161  
90491 Nürnberg / Germany  
Tel.: +49 911 544 27-0  
Fax: +49 911 544 27-27  
info.automation@softing.com  
http://industrial.softing.com

Softing Inc.  
US Sales Office  
29 Water Street, Suite 301  
Newburyport, MA 01950 / USA  
Tel.: +1 978 499 96 50  
Fax: +1 978 499 96 54  
info@softing.us  
http://www.softing.us

Buxbaum Automation GmbH  
Thomas-Alva-Edison-Straße 1  
7000 Eisenstadt / Austria  
Tel.: +43 2682 704 560  
Fax: +43 2682 205 77 00-5610  
office@myautomation.at  
http://myautomation.at

Softing Italia Srl  
Via Padre Massimiliano Kolbe, 6  
20090 Cesano Boscone (MI) / Italy  
Tel.: +39 02 450 51 71  
Fax: +39 02 450 41 41  
info@softingitalia.it  
http://softingitalia.it