

Brad® Ethernet Protocol Stacks are the most open, powerful and cost-effective solutions for customers who want to embed EtherNet/IP protocol into industrial controllers and field devices

molex®

Brad® Ethernet Protocol Software Stacks

112106 Brad® Ethernet Software Development Kits (Stacks) for EtherNet/IP

Promoted by ODVA, EtherNet/IP is an Ethernet-based networking solution for industrial automation. EtherNet/IP protocol capitalizes on the advantages that industrial Ethernet brings to the automation environment and has a broader reach than DeviceNet to enable better networking plant-wide.

Brad® protocol-software development kits, (also known as stacks) enable customers to quickly embed EtherNet/IP protocols for both master and slave devices thereby reducing their costs and time-to-market. The stacks enable customers to design EtherNet/IP Scanner/Adapter (master/slave) devices such as PLC couplers, PC-based interface cards, robot controllers and industrial PCs. Or by using the Adapter only (slave only) stack designing products such as I/O modules, robots, field instruments, regulators, operator panels, etc.

Brad® protocol stacks are completely hardware independent and support 32-bit microprocessors (Intel, PowerPC, ARM, Fido, etc) running operating systems real-time or not (Windows, VxWorks, QNX, RTX, Linux, ECOS, ThreadX, etc).

The deliverable development kit package includes: ANSI C source code, user reference guide and samples of implementation in various operating systems.



FEATURES AND BENEFITS

- Master and slave protocol stacks can address both controller (master) or device (slave) manufacturers who want to implement EtherNet/IP networks
- Brad® stacks have no hardware and OS dependencies and can be easily implemented on a large range of hardware system platforms or software operating systems
- OEM engineering console software to quickly create configuration files to initialize the stack and perform commissioning and diagnostic of connected devices (this tool is protected by a USB dongle and can be customer branded)
- Sample applications with source codes are provided and can be quickly and easily implemented
- Brad® stacks are successfully tested with ODVA test tools
- Molex can provide stack training, technical support and engineering development for both hardware and software design

MARKETS AND APPLICATIONS

- Industrial automation manufacturers
 - Controllers (PLC), PC-based controllers (Soft PLC)
 - I/O devices, sensor/actuators, vision systems, displays
 - Process instruments
 - Drives
 - Network interfaces (PC card, gateways)
 - Industrial Ethernet switch
- Machine builders
 - All types of complex machines having Ethernet connectivity (e.g. packaging, textile, printing, etc.
- Robot manufacturers
 - Robot tooling
 - Robot controller
 - Robot monitoring
- Industrial PC manufacturers
 - Machine control
 - Process control
 - Industrial manufacturing
 - Warehouse and logistics
- Non-automotive transportation
 - Vehicle infrastructure (railways, subways)
 - Cranes
 - Agricultural equipment
- Electronic manufacturers
 - Ethernet connectivity
 - Product bundling



SPECIFICATIONS

Basic Characteristics

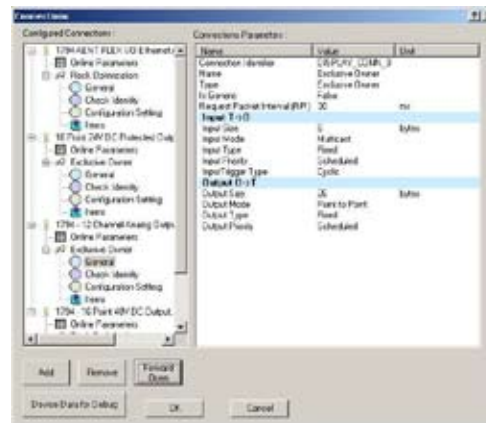
- Conform to ODVA specifications v1.4 and CIP v3.3
- CIP Features:
 - Implicit messaging (I/O process data)
 - Explicit messaging (configuration and diagnostic)
- Extensive Client/Server messaging support
- Fully compatible with EtherNet/IP conformance test suite VA5
- Stack Resolution: Timing resolution in microseconds
- Supported objects according to CIP Standard:
 - Identity Object
 - Message Router Object
 - Assembly Object
 - Connection Manager Object
 - Connection Configuration Object
 - TCP/IP Interface Object
 - Ethernet Link Object
 - QoS Object
- Supported Operating System:
 - Any OS real-time or not (Windows, VxWorks, LinuxRT etc.)
- Hardware Compatibility:
 - Supports Motorola and Intel memory systems
- Stack Implementation:
 - Oriented as a single threaded (all allocated memory is done at initialization of the stack)
- Foot print (estimate but highly customizable):
 - 200 kB for adapter
 - 400 kB for scanner

OEM Engineering Console

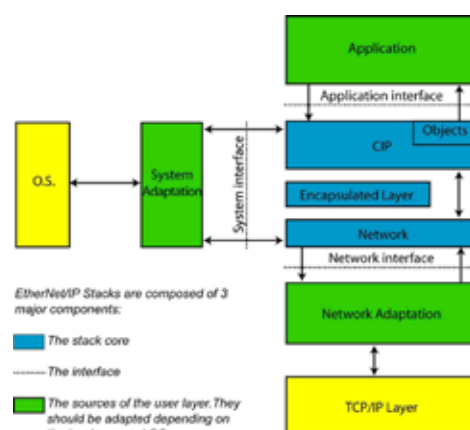
- Windows 32-bit (XP, Vista)
- Generate Scanner stack configuration files
- EDS device library management
- Adapter commissioning (Automatic device detection, On line actions, etc.)
- Support of modular device like Rockwell FlexIO and PointIO devices with chassis & module management
- Integrated diagnostic
- OEM customization
- USB dongle protection
- Used by ODVA during plug fest interoperability tests

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OEM Engineering Console



Common Characteristics

- Multi Platform Stack:
 - Intel, ARM, PowerPC etc.
- Hardware Compatibility:
 - 32-bit processor (Intel, PowerPC, ARM already validated)

ORDERING INFORMATION

Order No.	Engineering No.	Description
112106-5003	SDK-EIP-SCA	EtherNet/IP Scanner and Adapter SDK
112106-5009	SDK-EIP-SCA-L	EtherNet/IP Scanner and Adapter License Fee
112106-5004	SDK-EIP-SCA-UDP	EtherNet/IP Scanner and Adapter Annual Maintenance Update
112106-5011	SDK-EIP-SCA-CNF-U	EtherNet/IP Scanner and Adapter OEM Engineering Console
112106-0000	SDK-EIP-ADP	EtherNet/IP Adapter SDK
112106-5000	SDK-EIP-ADP-UPD	EtherNet/IP Adapter SDK Annual Maintenance Update

SUPPORT / TRAINING INFORMATION

Order No.	Engineering No.	Description
860000-0141	SDK-EIP-EDS	Engineering Support for EtherNet/IP SDK
860000-0143	SDK-EIP-TRN	EtherNet/IP SDK Training

Stacks also available from Molex: CIP Safety Scanner and Adapter, PROFINET IO-Controller and IO-Device, PROFINET MRP, PROFINET LLDP, PROFINET OEM Engineering Console, PROFINET Services (training and engineering support)

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