

# Real-Time Ethernet Evaluation Kit

## Featuring Hyperstone Processors

**Complete Evaluation Set**  
Hardware, Software, Tools, Demos  
Licences and Technical Support



### Description

Already today Real-Time Ethernet (RTE) is a successful replacement for all sorts of traditional fieldbus systems in industrial automation. This trend is continually developing with a growing acceptance of different protocol standards, and three of the most widely used are available on a single piece of hardware using the **Hyperstone E1-16XS** or **hyNet32** as its core. Using one of these chip with SND's Embedded Network Operating System 4NetOS<sup>®</sup> allows device manufacturers to support multiple standards through the use of pre-engineered interface turnkey solutions. With the choice of SND's 4NetOS<sup>®</sup> as the base for Ethernet Powerlink (CN and MN), EtherNet/IP (CIP Adapter) or PROFINET IO (RT Device) device manufacturers get a lot more benefits than just the bare protocol. Full TCP/IP functionality, a file system, HTTP and FTP servers, E-Mail, a variety of device drivers and a whole set of comprehensive tools for debugging, monitoring and firmware updates makes the difference as it comes to add value to an RTE product. And because all of the complexity and real-time requirements of these protocol stacks are hidden from the application programmer, it allows the programmer to focus on the actual product application having results in the shortest possible time. This Kit is designed for an easy and hassle-free integration of different Real-Time Ethernet stacks into all sorts of automation components such as sensors and actuators.

### Kit Contents




The Kit comes complete with hardware, 4NetOS<sup>®</sup> Operating System including RTE Protocol Stack(s) as compiled library, development and administration tools and complete documentation. A host PC (Windows 2000/XP) is also required.

#### Supplied Hardware:

- 1 Micro WebTarget CPU module on Shuttle board with attached I/O interface board (8DI + 8DO) as RTE Slave
- 1 Router/Gateway featuring 1 legacy Ethernet Port and 1 Real-Time Ethernet port including RTE-Master.
- All necessary power supplies and cables

#### Supplied Software:

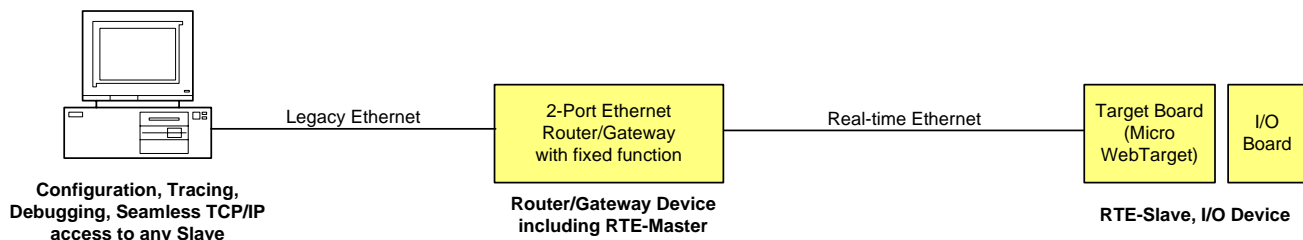
- 4NetOS<sup>®</sup> with all extensions incl. evaluation license.
- Complete set of development tools including C-Compiler, Assembler, Linker, Library Manager and Makefiles
- Complete set of Ethernet administration tools for loading, tracing, loading and flash disk formatting

Version		EPL V2.0 CN Protocol Stack EPL V2.0 MN Protocol Stack
Version		RT Device Protocol Stack Mini Controller for testing
Version		Adapter with CIP Protocol Stack Mini Scanner for testing

### Kit Editions

In the **Base Edition** the kit is ready to operate a full Real-Time Ethernet network offering adaptations on application and device profile level. The 4NetOS<sup>®</sup> Operating System can be rebuilt using SND's standard driver library targeting boards of the Micro WebTarget board family. The Base Edition is ideal as an entry level kit, and for those device manufacturers who intend to purchase SND's Micro WebTarget boards for integration in their products as a piggy-back.

The **Professional Edition** extends the Base Edition with additional hardware development information (such has hardware schematics, a component list and further hardware design instructions) and the firmware can be adapted to support ANY customer specific hardware. The Professional Edition specifically addresses device manufacturers, who intend to integrate the hardware design onto their own PCB.



### Licensing

The kit price includes permanent licences to the development tools as well as an Evaluation Licence for 4NetOS<sup>®</sup> Base Version with all Extensions including 30 days of technical support and update service for the Base Edition and 90 days for the Professional Edition. Up to 10 development seats can be equipped with this licence. For serial products based on 4NetOS an upgrade to any of the production licence levels is required. The licence policy is based on a royalty system.

### Additional Information

Please refer to the separate flyer **4NetOS<sup>®</sup> Overview** for more detailed technical information about the Operating System 4NetOS<sup>®</sup>. Details of the Micro WebTarget family boards are available upon request. Further details on Ethernet Power link are available at [www.ethernet-powerlink.org](http://www.ethernet-powerlink.org) on EtherNet/IP at [www.odva.org](http://www.odva.org), and on PROFINET at [www.profinet.com/pn/](http://www.profinet.com/pn/).