

SERCOS III Evaluation Kit

Low Cost Solution for Real-Time Industrial Ethernet

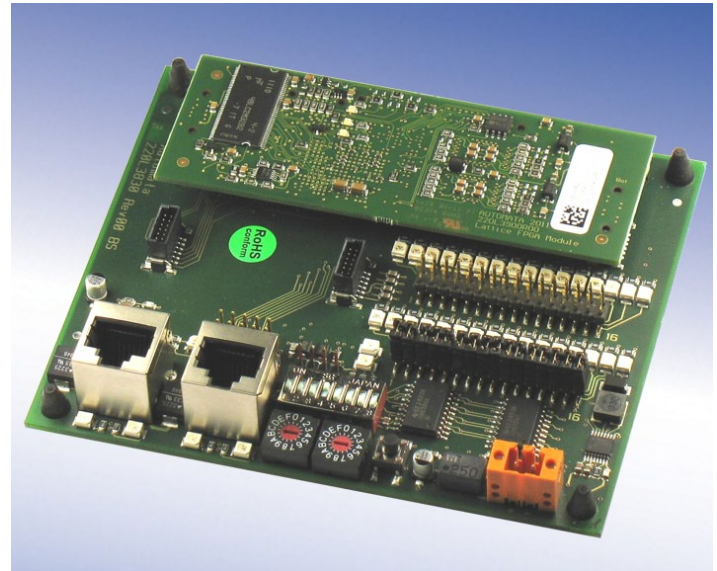
The low power LatticeECP3™ FPGA-enabled SERCOS III solution provides a low cost and flexible design alternative for real-time industrial networking applications. SERCOS III is supported by SERCOS International e.V., the worldwide user organization for SERCOS technology.

SERCOS is a digital bus that interconnects motion controls, drives, I/O, sensors and actuators for numerically controlled machines and systems. It is designed for the high-speed serial communication of standardized closed-loop real-time data over Industrial Ethernet. The SERCOS III Real-time Industrial Ethernet evaluation kit consists of two boards (FPGA module and base board), plus an optional expansion module. It is designed for test implementations and performance measurements of SERCOS III slave devices based on the SERCON100S slave IP core in combination with the LatticeMico32™ soft microprocessor and other optional system functions.

The FPGA module consists of a LatticeECP3-35 FPGA, 8 MB Flash and 8 MB DRAM. Due to its compact dimensions and its wide bus and I/O interface, the FPGA module can also be integrated “as is” into SERCOS III slave devices. This saves cost and reduces the time to market for slave devices like I/O units or drives.

The base board has 16DI and 16DO, all with status LEDs, an RS232 interface, various switches and the standardized bi-color SERCOS III diagnostic LED. The board is supplied with 24V DC or 5V DC. A socket for expansion modules allows the addition of more functions or interfaces, such as analog I/O.

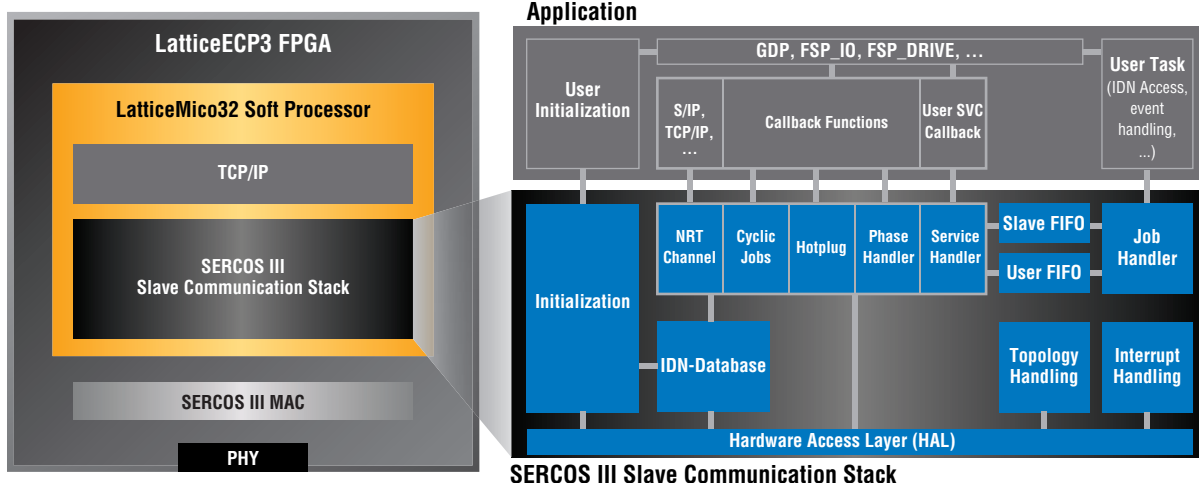
The FPGA module is supported by the proven AUTOMATA SERCOS III slave communication stack and test tools such as a master simulator for Windows XP. A sample implementation of the SERCOS III I/O profile (FSP-I/O) is available.



Key Features and Benefits

- **Designed for Test Implementations and Performance Measurements of SERCOS III Slave Devices**
- **Based on the SERCON100S Slave IP Core in Combination with LatticeMico32 Soft Microprocessor and Other Optional System Functions**
- **FPGA Module Includes:**
 - Low Cost, Low-Power LatticeECP3-35 FPGA
 - 8MB FLASH; 8MB DRAM; 16DI and 16DO – all with status LEDs
 - 1 x RS232 interface; 2 x RJ45 interfaces
 - Various switches and the standardized bi-color SERCOS III diagnostic LED
 - Socket for expansion modules allows the addition of more functions or interfaces, such as analog I/O
 - Proven AUTOMATA SERCOS III slave communication stack and test tools
 - Power Supply Requirements: 24V DC or 5V DC

LatticeECP3 SERCOS III Solution Block Diagram



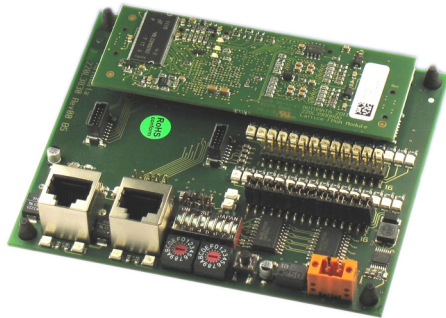
SERCOS III Slave Communication Stack

SERCOS III Evaluation Kit and Board

The SERCOS III Real-Time Industrial Ethernet Evaluation Kit is available for purchase from Automata GmbH. The list price for the SERCOS III Evaluation Kit, including the Evaluation Board plus the LatticeECP3 FPGA Module, product ID: 70038300, is 445€, and that of the Lattice FPGA module alone, product ID: 70039000 is 165€. The photo below shows the evaluation board and the FPGA module.



LatticeECP3 FPGA Module



SERCOS III evaluation board with LatticeECP3 FPGA Module connected

SERCOS III Slave Communication Protocol Stacks (Source Code)

S3SDRV-SH: Sercos III slave protocol stack running on hardware produced by Automata (e.g. Lattice FPGA module) is available for a single payment of 3,650€.

S3SDRV-SD: Sercos III slave protocol stack for running on hardware not produced by Automata is available for a single payment of 5,950€ + royalties (annual quantity: 20pcs./30€pp; 50pcs/24€pp; 100pcs/19€pp; 250pcs/16€pp; 500 pcs/12€pp; 1000pcs/7€pp).

In addition to the protocol stacks above, either a bitstream license or a netlist license is available from SERCOS International.

Ordering Information

Additional quantity prices for SERCOS evaluation kits, boards and protocol stacks may be obtained directly from AUTOMATA (<http://www.automataweb.com/>). More information on SERCOS III and licensing is available at the SERCOS International website at www.sercos.com.

Aforementioned kit and board pricing is controlled by AUTOMATA GmbH, while SERCOS International controls IP pricing. Please verify pricing with AUTOMATA GmbH and SERCOS International. Lattice Semiconductor is not liable for inaccuracies in pricing.

SERCOS III Real-Time Industrial Ethernet Evaluation Kit

Evaluation Kit / Module	Description	Order #	Cost
SERCOS III Real-Time Industrial Ethernet Evaluation Kit	Evaluation kit includes SERCOS III evaluation board plus LatticeECP3 FPGA module	70038300	€445
LatticeECP3 FPGA Module	Standalone LatticeECP3 FPGA module for use with SERCOS III evaluation board	70039000	€165

Note: Contact AUTOMATA GmbH to order SERCOS Evaluation Kit and LatticeECP3 FPGA Module – www.automataweb.com.

Applications Support

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February 2012
Order #: I0223