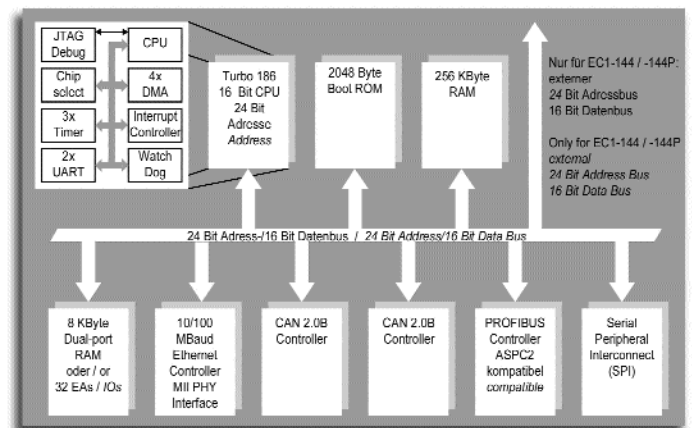


EC1 Embedded Communication Controller

- Powerful 80186 with a performance of more than 12 MIPS together with CAN, Ethernet and PROFIBUS in one ASIC
- Original Siemens ASPC2-Technology
- Operating temperature range -40° C till 105° C
- One design for all leading fieldbuses
- Reduces the number of components
- Reduces costs
- Deliverable together with our proven protocol stacks



Hilscher Gesellschaft für Systemautomation mbH
 Rheinstraße 15, D-65795 Hattersheim
 Tel. +49 (0) 61 90 / 99 07-0, Fax +49 (0) 61 90 / 99 07-50
 www.hilscher.com, info@hilscher.com


hilscher
COMPETENCE IN
COMMUNICATION

EC1 Embedded Communication Controller

■ The ASIC EC1

is a System on Chip-Design of a multi-functional communication system specially for industrial applications in the automation and embedded market. It offers interfaces to the world wide leading Fieldbuses CANopen, DeviceNet, PROFIBUS and Ethernet.

EC1 combines a powerful processor and an on-chip memory with 10/100 MBit Ethernet, PROFIBUS Interface, two CAN channels and two serial interfaces, so that any application can be connected to the Internet.

The processor used is an Intel-compatible Turbo 80186 processor with 48 MHz and a capacity of more than 12 MIPS. Besides a DMA, Interrupt Controller, Timer and Watchdog, there is 256 KByte static RAM on chip, so that only a few external components are needed. The Firmware can be loaded via the SPI Interface from a serial EEPROM.

As a stand-alone Controller, the EC1 possesses 32 programmable I/Os or, alternatively can simple be coupled to a Host System via the integrated 8 KByte Dual-port memory.

■ CIF or COM in one Chip

The EC1 has the highest level of integration for fieldbus communication. CPU, memory, Fieldbus controller and Dual-port memory respectively IOs are integrated in a single chip. The hardware structure is identically to our CIF PC cards or COM Modules. The software compatible CPU permits the utilisation of the well-proven protocol stacks with the same application interface.

We offer a migration strategy from CIF Cards to COM Modules down to the chip level with the same application interface and a general configuration tool.

■ Standard Software Tools

The EC1 includes a JTAG-Interface on which directly an Incircuit Emulator can be connected. Difficult adaption can be avoided. For the development the established software tools of the company Paradigm are used. We offer these devices together with a training as kit for a rapid starting the development.

■ The fast start-up: Evaluationkits

To make the start-up more easier for you we offer so-called Evaluationkits. They contain Firmware, driver, CAD drawings, the ASICs for the first devices and a training for the fast start-up. This is the simple way to integrate the EC1 in your product. No software development and no search for errors. Shortest time to market.

■ 'Stacks and Chips' as one product

You get the EC1 together with the Firmware license as one product. This will reduce the 'total cost of ownership' for your fieldbus interface, because

- one article in stock
- one design
- less board space
- no software development
- no costs for software maintenance

Product Overview

Product	Description
EC1-100	Embedded Communication Controller, 100 Pin, packing quantity 200 units
EC1-100P	Embedded Communication Controller mit PROFIBUS, 100 Pin, packing quantity 200 units
EC1-160	Embedded Communication Controller, 160 Pin, packing quantity 200 units
EC1-160P	Embedded Communication Controller mit PROFIBUS, 160 Pin, packing quantity 200 units
EC1-100P-SLV	Embedded Communication Controller mit PROFIBUS, 100 Pin, packing quantity 200 units incl. Slave license for CANopen, DeviceNet, PROFIBUS-DP TCP/IP protocol suite with Open Modbus as Application Layer
EC1-160P-MST	Embedded Communication Controller with PROFIBUS, 160 Pin, packing quantity 200 units incl. Master license for CANopen, DeviceNet, PROFIBUS-DP TCP/IP protocol suite with Open Modbus, Ethernet/IP and PROFInet as Application Layer
EC1-SLV-EKIT	Evaluationkit EC1-Slaves incl. 40 units EC1-100P loadable Slave-Protokollstacks for CANopen, DeviceNet, PROFIBUS-DP TCP/IP protocol suite with Open Modbus as Application Layer Manuals and example programs, one day training for up to four persons
EC1-MST-EKIT	Evaluationkit EC1-Master incl. 40 units EC1-160P and single user license of SyCon loadable Master-Protokollstacks for CANopen, DeviceNet, PROFIBUS-DP TCP/IP protocol suite with Open Modbus, Ethernet/IP and PROFInet as Application Layer Manuals and example programs, one day training for up to four persons
EC1-DKIT	Developmentkit with EC1 development board, 40 units EC1-100P, 40 units EC1-160P Paradigm C/C++ Compiler, Debugger, JTAG In-Circuit Emulator (ICE) Manuals and example programs, one day training for up to four persons
EC1-DEB	EC1 development board

Technical Data

Micro Processor	
16-Bit Micro Processor	80186 compatible 48 MHz 12 MIPS
Periphery	Interrupt Controller DMA Controller Timer Watchdog Timer Memory Select Logic SPI Interface
Ext. Address-/Databus	16 MByte only EC1-160 and EC1-160P

Controller	
Ethernet	AMD 960 compatible 10/100 MBaud MII PHY-Interface
CAN, 2 channels	V2.0B 1 MBaud
PROFIBUS	DP-Master/Slave ASPC2 compatible 12 MBaud only EC1-100P and EC1-160P
UART, 2 channels	RTS / CTS DMA operation 115 kBaud

Memory	
SRAM	256 KByte
Boot ROM	2 KByte
Dual-port memory	8 KByte

Application Interface	
Dual-port memory or 32 IOs	

Debug Interface	
JTAG Interface with Incircuit Emulator Support for Breakpoints and Tracebuffer	

Operation Voltage	
2,5 V / 100 mA 3,3 V / 200 mA	

Operation Temperature	
-40°C – 105° C	

Housing	
LQFP, 100 Pin	EC1-100, EC1-100P
LQFP, 160 Pin	EC1-160, EC1-160P

Dimensions (L x W x H)	
16 x 16 x1,4 mm	EC1-100, EC1-100P
26 x 26 x1,4 mm	EC1-160, EC1-160P