Consulting, System Design, Production, OEM Integration Services and more...

SYS TEC, well known for its high quality design and production of customized automation solutions, has earned a reputation in numerous successfully managed customer projects.
Our excellent software products, OEMable automation devices, Single Board Computer module subassemblies and Rapid Development Kits accelerate embedded designs.

Do you require assistance in:

- selecting the optimal controller solution
- creating product requirement specifications
- design or production of your end product
- integration of a SYS TEC product into your target application?

With over 15 years of experience in design and assembly, our in-house layout and production enables us to offer cost-effective customized production runs for all lot sizes, including smaller quantities.
Beyond production, we offer cost-free technical support and optional integration services to assist implementing our products into target applications.

Consulting & Design Services and more...

Our development team consists of dedicated experts in the fields of hardware and software design. Advanced design and layout tools - combined with more than 15 years of experience - guarantee high-quality hardware design in adherence to specified product requirements, such as electromagnetic conformance, usability and handling. Furthermore we provide complementary software services and products, such as a sophisticated and advanced implementation of the CANopen protocol or an industry proven IEC 61131-3 runtime kernel.

Custom Hardware Design

- Semi-custom design based on SYS TEC off-the-shelf products
- Full custom design, customer-specific board and SBC designs
- Interconnection/periphery design
- Standard peripherals

OEM Integration Services

- System Design
- Development Tool Adaptation (Operating Systems, IEC 61131-3 runtime kernel)
- Integration of Single Board Computer subassemblies into target hardware
- Customer-specific I/O and base boards
- Board Support Packages, Software Drivers, Firmware
- Start-up, Test, Validation
- Technical Support
- Quality Control, Enhanced EMI Protection, MTBF Life-Span Analysis

Custom Software Design

- Operating Systems
- Drivers, Board Support Package (BSP) Development
- CANopen and Ethernet Powerlink protocol stack source code
- OPC and COM object servers
- IEC 61131-3 runtime system and programming environment
- Application Code Development
- Software Installation
- Start-up, Test, Validation
- Software Maintenance
- Technical Support

OEM Integration & Beyond...

In addition to consulting, design and production, SYS TEC offers special services for implementation of SYS TEC products in target applications, including on-site support and consulting.

We measure our success by the success of our customers in implementing our products in their own applications. We provide support for your product during its entire lifecycle and accompany you in all stages of embedded development: from product specification to design to OEM production and beyond.

Backed By In-House Production

SYS TEC is well equipped to produce your custom hardware, regardless of complexity. We offer both SMD and through-hole assembly. Our new, automated production line increases our production capacity; handles advanced SMD assembly of miniature 0402 and microBGA components; and provides for improved production scheduling and flexibility. With our enhanced in-house facilities, SYS TEC is now even better able to support our customers at all stages in their development cycle, from prototype and evaluation to OEM production. We offer the same flexibility in terms of delivery time and production volume quantities for custom-specific products that you have come to expect from standard SYS TEC modules.

Quality Assurance

SYS TEC has implemented and established an internal quality control program encompassing all material, labor and production inputs.

Our qualifications include:

- ISO 9001:2008
- IPC-610A-C class 2 assembly
- IPC-600A-F class 3 PCBs
- CE conformance
- MTBF predictions
- other conformance and standards testing upon request

High product quality is only one facet of customer satisfaction. Accordingly, SYS TEC strives to ensure adherence to customer deadlines and provision of expert technical and economic aspects of the microcontroller and industrial PC market and its many product applications.

德国思泰电子有限公司北京代表处

北京市朝阳区十里堡甲3号城市广场A座都会国际大厦20层G室
邮编：100025

电话 +86-10-51315760
传真 +86-10-51315761
邮箱 beijing@systec-electronic.com
主页 http://www.systec-electronic.cn

SYS TEC electronic GmbH

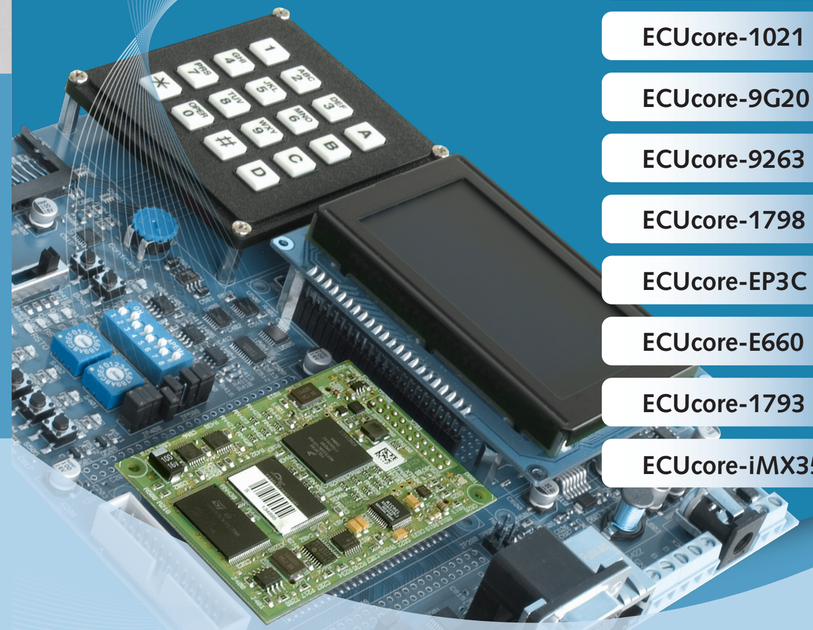
Am Windrad 2
08468 Heinsdorfergrund
Germany

phone +49 3765 38600-0
fax +49 3765 38600-4100
info@systec-electronic.com
www.systec-electronic.com

Release 2014/11

SYS TEC ELECTRONIC

System On Module



- ECUcore-5484
- ECUcore-1021
- ECUcore-9G20
- ECUcore-9263
- ECUcore-1798
- ECUcore-EP3C
- ECUcore-E660
- ECUcore-1793
- ECUcore-iMX35

Module Overview

Based on the accumulated experience of numerous customer projects, the ECUcore series combines a state-of-the-art hardware design with integrated operating system and extended software support.

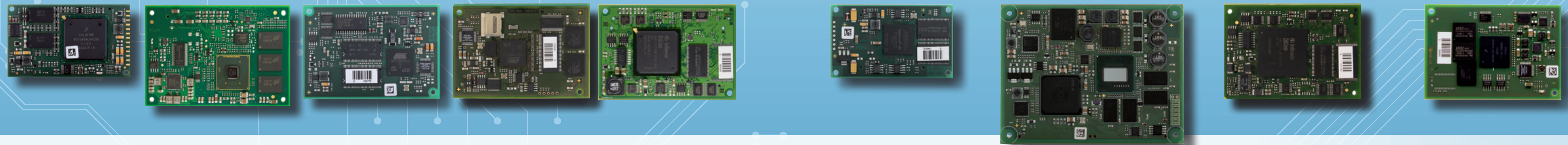
Integrated Development Environment
- Enhanced Eclipse-based integrated development environment (IDE)
- GNU C/C++ Toolchain
- Source- and assembly-level debugger
- Comprehensive user documentation in HTML and PDF

Middleware:
- CANopen® Protocol Stack Source Code
- Ethernet POWERLINK Protocol Stack Source Code

Feature Overview						Interfaces								Board features								
	Controller	Frequency (internal)	RAM (default/ optional)	FLASH (default/ optional)	EEPROM	Ethernet	CAN	UART	USB		SPI/I²C	optional memory expansion	Others	DMA	MMU	Watch-dog	Temperature Sensor	RTC	FPGA/PLD	Operating Temperature	Operating System	Programmable in
ECUcore-5484	Freescale MCF 5484 with ColdFire V4e Core	200MHz	64/128MB DDR-SDRAM	16/32MB (NOR)	32KB (SPI)	2x 10/100 Mbps	2	4	-		1/1	-	driver for dot-matrix display and 4x4 keypad	•	•	•	•	•	Lattice LFE2-6 or LFE2-20 MACH XO 640	-40°C … +85°C	Linux eCos[*2]	IEC61131-3[*4], C/C++
ECUcore-1021	Freescale Dual-core Cortex®-A7	2x1,0GHz	1GB DDR3L-1600MT	128 MB QSPI (NOR)	-	up to 3x 10/100/1000 Mbps	4	9	2x host 1x device USB2.0 1x host USB3.0		1/1	SD[*1] SDHC[*1]	2x PCIe, 1x SATA, 2x UCC, 4x I²S/ASRC/ SPDIF, 1x SATA, Flex Timer, 1x GPIO, 1x ADC	•	•	•	•	•	-	-40°C … +85°C	Linux	IEC61131-3[*3], C/C++
ECUcore-9G20	Atmel® AT91SAM 9G20, with ARM 926EJ-S Core	400MHz	32/64MB SDR-SDRAM	16/64MB (NOR)	-	10/100 Mbps	1	4	2x host 1 device USB2.0		1/1	MMC[*1], SD[*1]	SSC	•	•	•	•	•	Lattice ECP2-6	-40°C … +85°C	Linux	IEC61131-3[*4], C/C++
ECUcore-9263	Atmel® AT91SAM 9263, with ARM 926EJ-S Core	240MHz	64/32MB SDR-SDRAM	256 MB (NAND) 64/128MB (NOR)	32KB (SPI)	10/100 Mbps	1	3	2x host 1 device USB2.0		2/1	MMC, on-board Micro-SD card slot	SSC, AC97 CMOS/LVDS-TFT, Video-RAM, Touch controller	•	•	•	•	•	-	-40°C … +85°C	Linux	IEC61131-3[*4], C/C++
ECUcore-1798	Infineon TC 1798 with TriCore V1.6 Core	300MHz	64MB SDR-SDRAM	64MB (NOR)	32KB (SPI)	10/100 Mbps	4	3	-		2	-	28x ADC, 135x GPIO, timer and counter units	•	•	•	•	•	-	-40°C … +85°C	PxROS	C/C++
ECUcore-EP3C	Altera Nios II CPU on EP3C25F256I7N FPGA	50MHz oscillator	2MB SRAM	serial Flash for FPGA ST M25P80-VMN6P	32KB (SPI)	2x 10/100 Mbps openMAC and openHUB available as IP core	IP core	IP core	-		IP core	-	-	-	-	IP core	-	-	FPGA Altera Cyclon® III	-40°C … +85°C	all Nios II compatible OS	C/C++
ECUcore-E660	Intel® Atom™ Processor E660T	1,3GHz	1/2GB DDR2	2GB (NAND) eMMC	64KB(SPI)	2x 10/100/1000 Mbps	1	4	6x host 1 device USB2.0		1/1	SD[*1]	2x SATA, 2x PCIe, HD-Audio	•	•	•	•	•	-	-40°C … +85°C	Linux	IEC61131-3[*4], C/C++
ECUcore-1793	Infineon TC 1793 with TriCore V1.6 Core	270MHz	2MB SRAM	1MB (NOR) 4MB CPU intern	64KB(SPI)	-	2	2	-		3/-	-	44x ADC (12bit), MSC, MLI, GPTA, LTCA, CAPCOM6, GPT	•	-	•	•	•	-	-40°C .. +125°C	PxROS	IEC61131-3[*3], C/C++
ECUcore-iMX35	Freescale i.MX357 with ARM11 Core	532MHz	64MB	128MB (NOR)	32KB (SPI)	10/100 Mbps	2	3	1x host 1OTG		1/1	2x SD[*1]	LCD LVDS / parallel, 1024x1024 max 24bit Touchscreen over SPI, Audio (S/PDIF)	•	•	•	•	•	-	-40°C … +85°C	Linux	IEC61131-3[*4], C/C++

1. Interface signal lines available.
2. eCos available as extension to the development kit. No PLCcore option for eCos available.
3. Target-specific adaptation of IEC 61131-3 runtime system available.
   Not available as PLCcore option.
4. IEC 61131-3 firmware and programming environment available with PLCcore option.

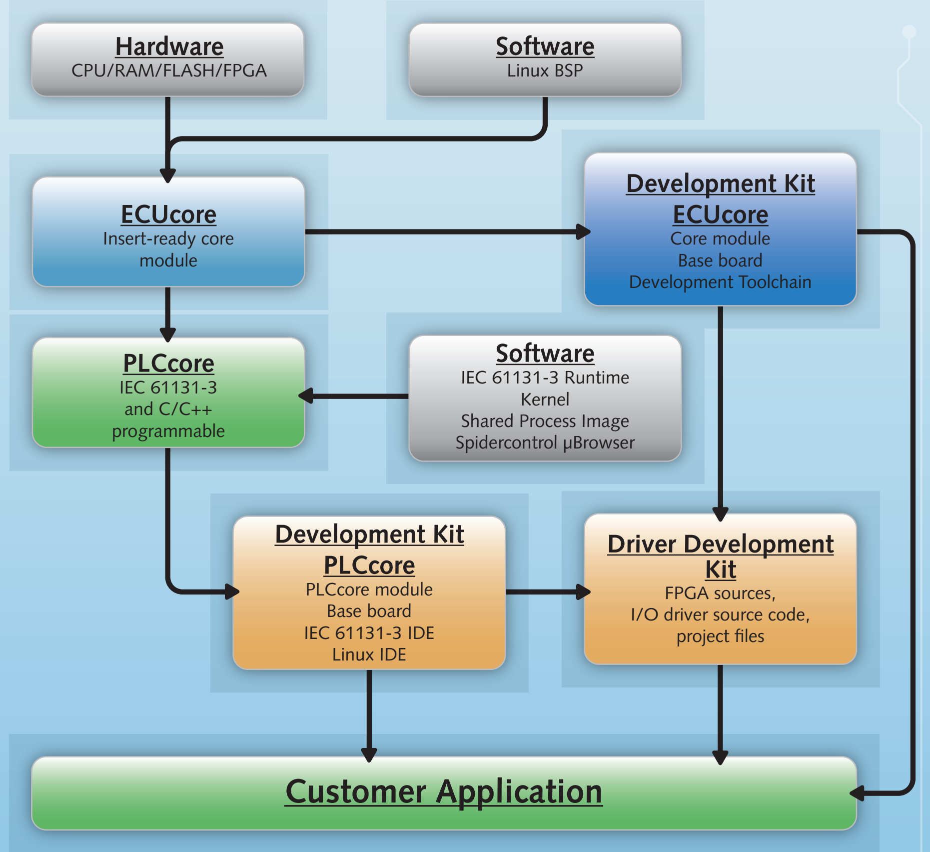
ECUcore-5484 ECUcore-1021 ECUcore-9G20 ECUcore-9263 ECUcore-1798 ECUcore-EP3C ECUcore-E660 ECUcore-1793 ECUcore-iMX35



The PLCcore Concept

The PLCcore SOM is an insert-ready, OEM-able single board computer subassembly, coming with a state-of-the-art operating system and IEC 61131-3 runtime kernel preinstalled on the module. Performance-optimized 32-bit CPU core components, value-adding peripherals and the fully customizable I/O layer makes the PLCcore a truly generic platform for own control application developments.

What's special about it?
- No development licenses for PLCcore -based product design.
- No resale licenses when distributing PLCcore-based products.
- Insert-ready, low-EMI, 32-bit hardware platform with preinstalled productionready operating system and PLC runtime kernel.
- Supports simultaneous execution of OS-level and PLC-level user applications.
- Integrated Development Environment (IDE) for C/C++ and IEC 61131-3 application development included.
- Seamlessly integrated CiA®302/ CiA®314 compliant CANopen® manager.
- The open and customizable I/O layer concept allows for adaptation to different application carrier boards.
- Comprehensive starter kit packages accelerate your PLCcore-based application development.



PLCcore Main Features
- PLC kernel supports full set of IEC 61131-3 standard function blocks.
- Transparent process data communication through CANopen® network variables.
- CiA® 302 CANopen® manager bootup procedure, automatic remote node configuration from DCF files.
- Shared process image technology for easy inter-process communication and data sharing between OS-level and PLC user applications.
- Linux operating system with pre-installed webserver, FTP server, Telnet and Login shell.
- Complete I/O driver source code and reference documentation provided with the Driver Development Kit.
- Target Visualization (optional)
- Program download and debugging via Ethernet or CANopen®.
- Comprehensive vendor-specific function block library, including:
  - CiA® 302 and CiA® 314 compliant CANopen® functions for PDO/SDO data communication, synchronized process data transmission, network management and error control
  - CANopen® slave and manager mode
  - Serial I/O and string processing
  - Ethernet communication
  - Non-volatile memory access
  - PTO/PWM, counter and encoder
  - Real time clock (RTC)
  - Industrial PID controller

When to consider starting with a PLCcore-based design?
- If you want to create tangible solutions under extreme cost and time constraints.
- If you want to boost a product idea yet lacking reliable market forecasts.
- If starting a conventional product design cycle does not seem to be feasible.
- If you want to make concept studies or prototyping in preparation to a fullcustom product design.
- If your product series allow for small to medium quantity only.