Consulting, Development, Prototyping, Manufacturing

SYS TEC electronic, 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, System on Module 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 electronic SoM into your target application?

With over 25 years of experience in customer-specific prodct design and assembly, our in-house layout and production enables us to offer cost-effective customized production runs for all sizes, including small quantity. 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 25 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 electronic off-the-shelf products
- Full-custom design, customer-specific board and SoM designs
- Interconnection/periphery design
- Standard peripherals

OEM Services

- System integration support
- Control and visualization software design
- Integration of SoMs into own target hardware
- Customer-specific I/O circuitry and application carrier boards
- Enclosure design services
- Thermal simulations and heat management optimization
- MTBF calculations
- Obsolescence management

Custom Software Design

- OS adaptations
- 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
- Automated tools for test and validation
- Long-term support contracts

OEM Integration & Beyond...

In addition to consulting, design and production, SYS TEC electronic offers special services for implementation of SYS TEC electronic's 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 life cycle and accompany you in all stages of embedded development: from product specification to design as well as OEM production and beyond.

Backed By In-House Production

SYS TEC electronic is well equipped to produce your custom hardware,regardless of its 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 electronic is able to support our customer at all stages of their development cycle, from prototype and evaluation to OEM production. We offer the same flexibility to custom-specific products, in terms of delivery time and production volume quantity, that you come to expect from standard SYS TEC electronic modules.

Quality Assurance

SYS TEC electronic has implemented and established an internal quality management system encompassing all material, labor, production and development inputs.

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

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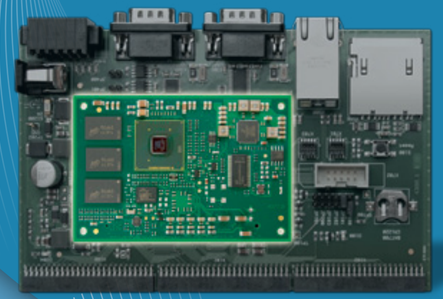
Release 2016/12

System on Module

made by SYS TEC electronic



- ECUcore-1021
- ECUcore-1798
- ECUcore-E660
- ECUcore-1793
- ECUcore-iMX35
- PLCcore-F407

SYS TEC ELECTRONIC

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

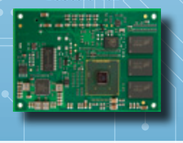
Middleware:
- CANopen® Protocol Stack Source Code
- Ethernet POWERLINK Protocol Stack Source Code

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-1021	Dual-core, QorIQ LS1021A Cortex®-A7	2x 1.0GHz	1GB DDR3L-1600MT	128 MB QSPI (NOR)	-	up to 3x 10/100/1000 Mbps	4	7	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, Flex Timer, 1x GPIO, 1x ADC (optional)	•	•	•	•	•	-	-40°C … +85°C	Linux	IEC61131-3[*3], 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[*5]	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 1x Device USB 2.0		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	1MB / 2MB SRAM	1MB (NOR) 4MB CPU intern	64KB(SPI)	-	2	2	-		3/-	-	43x ADC, 96x GPIO, MSC, MLI, GPTA, LTCA, CAPCOM6, GTP	•	-	•	•	•	-	-40°C .. +125°C	PxROS[*5]	IEC61131-3[*3], C/C++
ECUcore-iMX35	NXP i.MX357 with ARM11 Core	532MHz	128MB DDR2-SDRAM	128MB (NOR)	32KB (SPI)	10/100 Mbps	2	3	1x Host 1x OTG		1/1	2x SD[*1]	LCD CMOS-Interface, up to 800 x 600 max. 18bit	•	•	•	•	•	-	-40°C … +85°C	Linux	IEC61131-3[*4], C/C++
PLCcore-F407	STMicroelectronics STM32F407 with ARM 32-bit Cortex™-M4	168MHz	192KB SDRAM	1MB	-	10/100Mbps	2	3	-		-/-	Micro-SD	24x DI (2x Counter), 22x DO (2x PWM), 8x AI, 2x AO	-	-	•	•	•	-	-40°C … +85°C	-	IEC 61131-3[*4]

*1) Available as interface signals on board-to-board connector.
*3) IEC 61131-3 runtime system available as customizing option upon request.
*4) IEC 61131-3 firmware and programming environment available with PLCcore option.
*5) PxROS Board Support Package not included in scope of delivery

PLCcore-F407

ECUcore-1021



ECUcore-iMX35

ECUcore-E660

ECUcore-1793

ECUcore-1798

STMicroelectronics

freescale semiconductor

intel

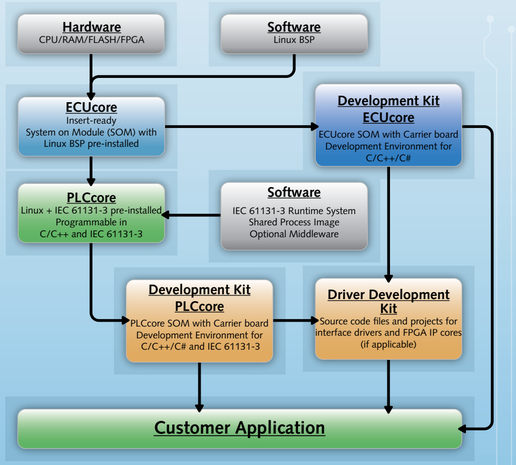
Infineon

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?

- Insert-ready, low-EMI, hardware platform with pre-installed operating system and IEC 61131-3 runtime kernel.
- No development licenses for PLCcore -based product designs.
- No resale licenses when deploying PLCcore-based products.
- 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.
- Seamless integrated CiA® 302/CiA® 314 compliant CANopen® manager.
- Open and I/O layer concept allows for own adaptation to different application carrier boards.
- Comprehensive starter kit packages accelerate your PLCcore-based product development.



PLCcore Main Features

- Supports full set of IEC 61131-3 standard function blocks.
- Transparent process data communication through CANopen® network variables.
- CiA® 302 CANopen® manager with automatic remote node configuration from DCF files.
- Shared process image technology for easy inter-process communication and data sharing between OS and PLC.
- Linux operating system with pre-installed webserver, FTP and Secure 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 IEC 61131-3 function block libraries:

- 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
- Modbus RTU/TCP support
- 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 full-custom product design.
- If your product series allow for small to medium quantity only.