

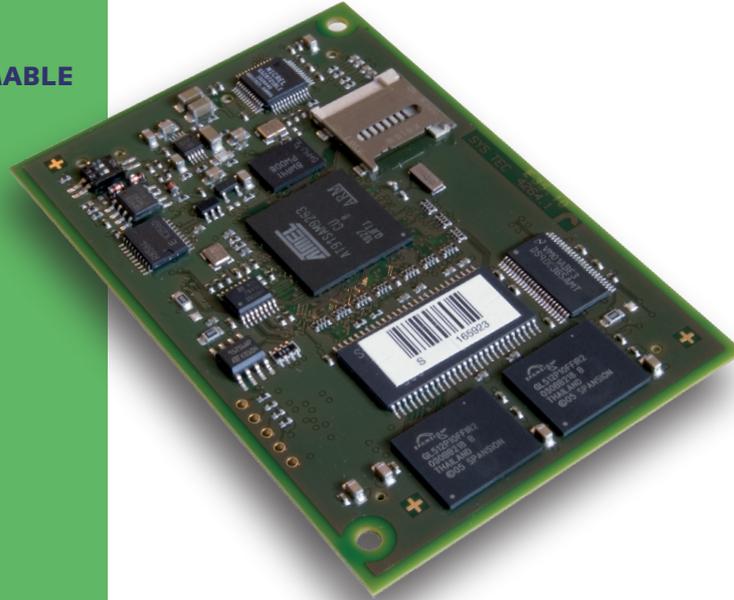
PLCcore-9263

**IEC 61131-3
AND C/C++
PROGRAMMABLE
SYSTEM ON
MODULE**

Order Information

PLCcore module: 3390055
Development Kit: KIT-163
Driver Development Kit: SO-1103

SYS TEC
ELECTRONIC



**LCD
Touch
ARM926 core
220MIPS
LVDS
Linux
IEC 61131-3**

Low-cost HMI-enabled IEC 61131-3 programmable System on Module

Developing modern and sophisticated control systems requires versatile, interdisciplinary know-how. This does not only involve hardware and application software development. In fact, operating system adaptations, the integration of communication and field buses as well as the inter-process communication and data exchange between processes running in parallel become necessary. Applying a PLCcore as the core component in user-specific controls minimizes this development effort.

The PLCcore-9263 is an insert-ready, OEM-able single board computer subassembly running a Linux OS and a ready-to-use IEC 61131-3 runtime kernel with pre-integrated CANopen manager.

The module allows for integrating a compact and high-performance Hard-PLC into customized, user-applications with minimum efforts. Using a PLCcore-based design approach eliminated the cost that normally apply for development licenses of IEC 61131-3 compliant PLC systems. No resale licenses apply on PLCcore-based products.

The PLCcore-9263 is powered by an ARM926EJ-S core running at 240 MHz with considerably low power consumption. Backed by a Linux operating system, the PLCcore-9263 allows for simultaneous execution of user applications besides PLC firmware. At the same time, the Shared Process Image technology provides mechanisms for inter-process communication and bidirectional exchange of process data.

The on-board LCD controller with dedicated fast Video-RAM and pre-integrated X server allows for interfacing TFT LC displays directly via CMOS and LVDS. LCDs with up to 800x600px resolution are supported. The pre-installed QT framework supports users in developing portable GUI applications. The integrated touch controller allows for interfacing resistive touch screens.

The PLCcore-9263 has one CAN interface running a CiA 302/314 compliant CANopen manager. Furthermore, the board provides one Fast Ethernet with on-board PHY, two USB 2.0 Full Speed host ports, one USB device port and up to 4 UARTs.



PLCcore-9263 Development Kit

The PLCcore-9263 was designed to be plugged onto an applicable carrier board. Both, the PLCcore module and a reference carrier board, are included in the PLCcore-9263 Development Kit. The carrier board contains the I/O connectors required for immediate start-up of the module as well as other interface circuitry not provided on the PLCcore module itself. The Development Kit provides an excellent platform to evaluate controllers, develop software as well as determine the feasibility of new embedded designs based on the PLCcore-9263.

Designed for:

**HMI applications in
embedded machine control**

The PLCcore Concept

IEC 61131-3 Programmable System on Module (SOM)



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 pre-installed 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 pre-installed production-ready 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.

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.

PLCcore Main Features

- PLC kernel supports full set of IEC 61131-3 standard function blocks.
- 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
- Target Visualization (optional)
- Transparent process data communication through CANopen network variables.
- CiA 302 CANopen manager boot-up procedure, automatic remote node configuration from DCF files.
- Program download and debugging via Ethernet or CANopen.
- 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.

Technical Specification PLCcore-9263

ON-BOARD HARDWARE CONFIGURATION

- Atmel AT91SAM9263 with 240MHz,
- ARM926EJ-S core with MMU and DMA
- 128 MiB NOR-Flash
- 256 MiB NAND-Flash
- 64 MiB SDRAM
- 1 MiB dedicated Video RAM
- LCD controller supports up to 800x600px resolution with 16-bit color depth
- Touch controller (resistive, 4-wire)
- Micro-SD socket (optional boot-device)
- Real time clock (RTC)
- Temperature sensor
- Hardware watchdog
- Single-voltage power supply with 3.3 VDC, 0.3A max.
- Two 2x50 pin-header socket board-to-board connectors
- Dimensions: 80 mm x 54 mm

ON-BOARD SOFTWARE

- U-boot bootloader
- Linux 2.6
- IEC 61131-3 PLC runtime kernel
- Target Visualization (optional)

DEFAULT I/O CONFIGURATION

- 4 Timer/Counter or DIO
- 3 PWM or DIO
- 18 DIO

EXTERNAL BUS INTERFACES

- One 10/100 Mbps Fast Ethernet Controller with on-board PHY
- 1 ISO 11898-1/2 CAN controller
- 2 USB 2.0 host, 12 Mbps full-speed
- 1 USB 2.0 device, 12 Mbps full-speed
- 2 SPI, I²C, SSC, 2 SD/MMC
- 3 UART
- 1 DBGU/UART

HMI ELEMENTS

- TFT-LCD CMOS and LVDS interface
- Run/Stop switch (on base board)
- Run/Error LED (on base board)
- DIP and HEX-encoding switches for device configuration (on base board)

OPERATING CONDITIONS

- Temperature: -40 °C to +85 °C
- Humidity: 10 to 90% (non-condensing)



广州虹科电子科技有限公司 广州市五山华南理工大学国家科技园 2 号楼 504-505 室 (510640)

电话: 020-3874 4528; 3874 4538 e-mail: sales@hkaco.com 网站: www.hkaco.com