

Make or Buy?

The below table indicates a cost and time comparison between making a mobile controller device from scratch based on available source code products and the approach of creating a product solution based on the MBC-1784 design package provided by SYS TEC electronic.

	Make	Buy
Hardware design; from specification to passing certification	3 engineers x 2 years 388.800 EUR	Design package available within 4 weeks 163.000 EUR
Integration of system startup, flash drivers, I/O drivers and IEC 61131-3 runtime system	2 engineers x 8 months 86.400 EUR	Design package available within 4 weeks
Integration of CANopen Manager according to CiA 302 based on a available source code package	1 engineer x 6 months 32.400 EUR	38.000 EUR
Re-work of device design		3 engineers x 4 months 64.800 EUR
Time and engineering cost to serial ready prototype	Invested time: 38 months Invested engineering cost: 507.600 EUR	Invested time: 6 months Invested engineering cost: 265.800 EUR

Ordering Information

Order#	Available Packages and Products
13132900	Design Package MBC-1784
13132910	Design Package Option IEC 61131 (OpenPCS)
13132920	Production Quality Package
13132930	Design Package Option CANopen Manager C/C++
13132940	Certification Package 2004/108/EC
13139000	Reference and Evaluation System MBC-1784 and HMI-3570

详细资料? 请通过sales@hkaco.com联系我们。

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SYS TEC electronic offers a ready-to-use reference design of a mobile controller device as base for your own product developments. Using this design package will save you valuable time and efforts to develop and integrate a market-ready device solution.

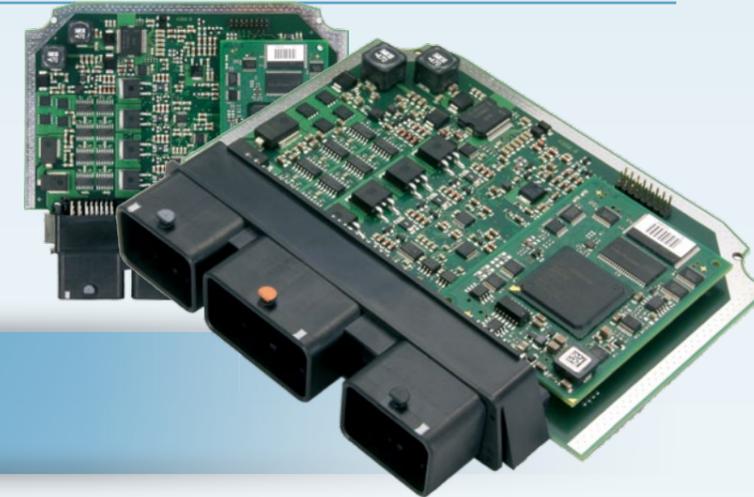
Significantly shortens time-to-market

Reduces effort for realizing own product designs

Includes sourcing information for all components

One-time buy-out fee; No royalties or product licenses

Complementary design services and training available



IEC 61131-3

CANopen

The MBC-1784 reference design is meant for OEM that plan to develop own mobile controller solutions use in machinery that is operating under harsh conditions.

SYS TEC electronic offers customized product development for more than 20 years. With the MBC-1784 design package we offer our accumulated experiences in design of rugged controllers for mobile machinery.

The MBC-1784 electronic design meets the requirements toward electromagnetic interference (EMI) as well as the temperature and mechanical stress that typically occurs in such applications.

The MBC-1784 product design is finished and has already been verified. Thus customers that want to create own mobile controller solutions may directly use this design package and save valuable time.

The reference design is delivered in source format, including the corresponding project files and the component libraries of the electronic

components used in the design.

Customers can instantaneously start working with the design material to create own product solutions. You may want to adapt the PCB to fit in an own enclosure or incorporate specific functionality into the design.

The design package includes a board support package (BSP) that has been optimized for the Infineon Tricore 17xx microcontroller family that is used in the reference design.

With the design package we deliver reference software projects for C/C++ application development on the Tricore 17xx family. A professional IDE is available from HighTec company (<http://www.hightec-rt.com>) and suitable debugger solutions are provided by PLS company (<http://pls-mc.com>).



Design Package Overview

(1) IEC 61131-3 with integrated CANopen Manager

This design package integrates an IEC 61131-3 runtime kernel with CAN communication and CANopen Manager functions. It includes a pre-integrated IEC 61131-3 runtime environment specifically adapted for the hardware and software environment on the MBC-1784. The IEC 61131-3 runtime environment comes with a seamless integrated CANopen Manager according to CiA specification 302. The CANopen Manager supports automatic remote node configuration and handles network management tasks transparently from the IEC 61131-3 user application. Additional CAN-Layer 2 function blocks allow for implementation of customer-specific CAN-based protocols in IEC 61131-3 language.

(2) Design package CANopen Manager for C/C++

The CANopen Manager available with the add-on design packages allows for easy integration into CANopen functionality in own C/C++ applications. It supports automatic configuration of CANopen nodes at system startup and monitors their operational status. The CANopen Manager is fully compliant to CiA specification 302 and supports easy integration into own user-applications. This design package includes the CANopen Manager Source Code and demo applications specific to the MBC-1784 reference design. With this design package OEM may scale the CANopen functionality and offer flexible CANopen communication libraries to their customers.

Production Quality Package

Producing high volume serials at continuous high quality level requires sophisticated device tests and quality guidelines to follow throughout the assembly process.

SYS TEC electronic offers a special Production Quality Package that includes sophisticated end-of-line tests, technological informations and processing instructions to achieve that goal.

The Production Quality Package includes:

- Processing and Assembly flow chart
- SMD assembly processing instructions
- THT assembly processing instructions
- Mask and processing instructions for conformal coating of PCB
- Device assembly and finishing instructions
- Quality Assurance Checklist
- QA Certificate Template
- End-of-Line Test documentation
- Device test reference manual for test developers
- Test equipment manufacturing documentation (mechanical drawings, wiring schema, BOM, hardware)
- Automated test application for end-of-line device test (Labview runtime executable for Windows PC)

	Design Package	Optional Packages
Hardware Design Material		
Schematic Diagram (Altium Designer Project)	X	
PCB Layout data (Mentor Expedition PCB project)	X	
3D-Model of PCB (Step file, 3D PDF)	X	
Gerber Files	X	
Bill of Material with sourcing information	X	
Datasheets of key components	X	
Hardware Design Manual ¹⁾	X	
Prototype Assembly Instructions	X	
Software Design Material		
Tricore TC17xx Board Support Package	X	
Bootloader and firmware update functions	X	
Target-specific drivers		
CAN driver	X	
RS232 driver	X	
Digital input and output drivers	X	
LIN driver	X	
Analog input and output drivers	X	
Power supply management (ignition signal handling)	X	
SPI driver	X	
Watchdog	X	
System diagnostics (on-board temperature and voltage monitoring)	X	
IEC 61131-3 runtime system ⁴⁾		(1)
CANopen Manager for IEC 61131-3 runtime system		(1)
CANopen Library for C/C++		(2)
Reference Application for IEC 61131-3		(1)
Reference Application for C/C++	X	
Software Design Manual	X	
Documentation		
Getting Started Guide	X	
MBC-1784 Device Manual	X	
IEC 61131-3 OpenPCS User Manual		(1)
CANopen for IEC 61131-3 User Manual		(1)
CANopen User Manual		(2)
Hardware		
3x MBC-1784 devices, assembled and tested	X	
Adapter cables for MBC-1784	X	
USB/CAN interface (incl. driver CD for Windows PC)		(1)+(2)
Software		
IDE for IEC 61131-3 application development (OpenPCS Automation Suite) ²⁾		(1)
IDE for C/C++ application development		Optional ³⁾
CANopen Configuration Suite ²⁾		(1)+(2)
CAN-REport, CAN-bus Analyser tool ²⁾		(1)+(2)
Service and Support		
5-days workshop on customer site		Optional
6 months support via e-mail/phone	X	

¹⁾ Labview is a product of National Instruments. The Labview runtime executable is executable under Windows 7 and does not require a Labview Developer License. However, in order to alter the automated test control application a Labview Developer License is required.

²⁾ Delivered as binary executable ready for use with a standard PC running Windows 7 or higher

³⁾ Integrated Development Environment (GNU toolchain with compiler, linker, debugger, Eclipse IDE) for C/C++ application development on Tricore TC17xx is available from HiTec EDV-Systeme company (<http://www.hightec-r.com>). A suitable debugger is available from PLS Development Tools company (<http://pls-mc.com>).

⁴⁾ The IEC 61131-3 runtime kernel is used under license from Infoteam Software GmbH, Bubenreuth, Germany. Delivery of IEC 61131-3 runtime kernel requires prior purchase of a Development License and a valid OEM contract must be signed with Infoteam Software company.

⁵⁾ Enclosure design material not included in scope of delivery