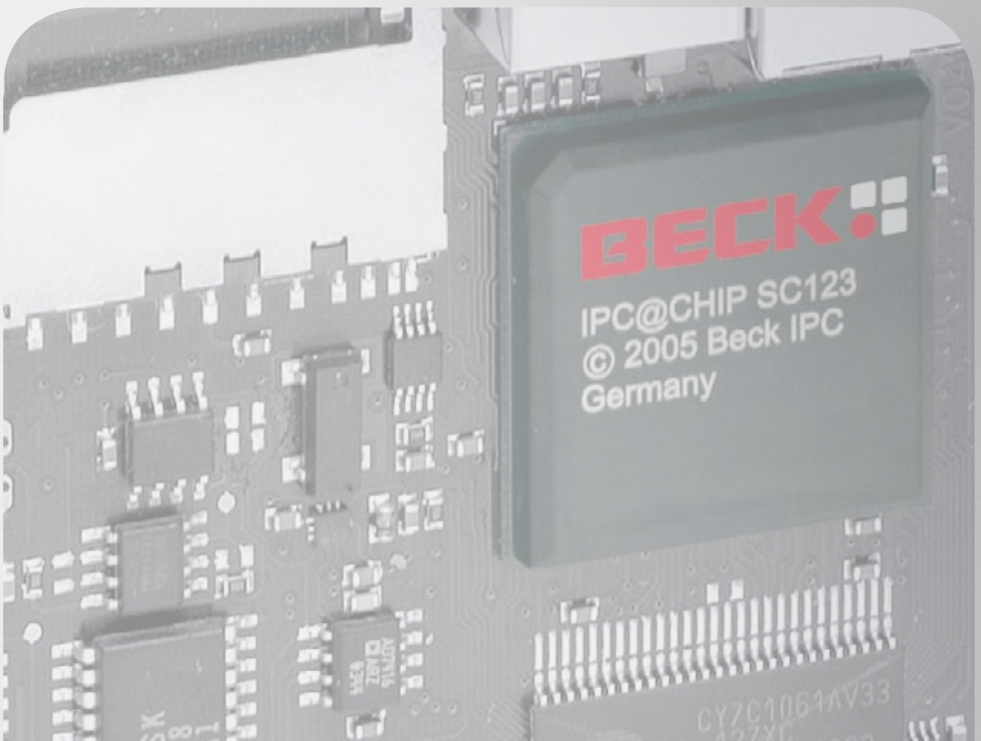
BECK
THE POINT OF SYNERGY

Products



Everything at your convenience !

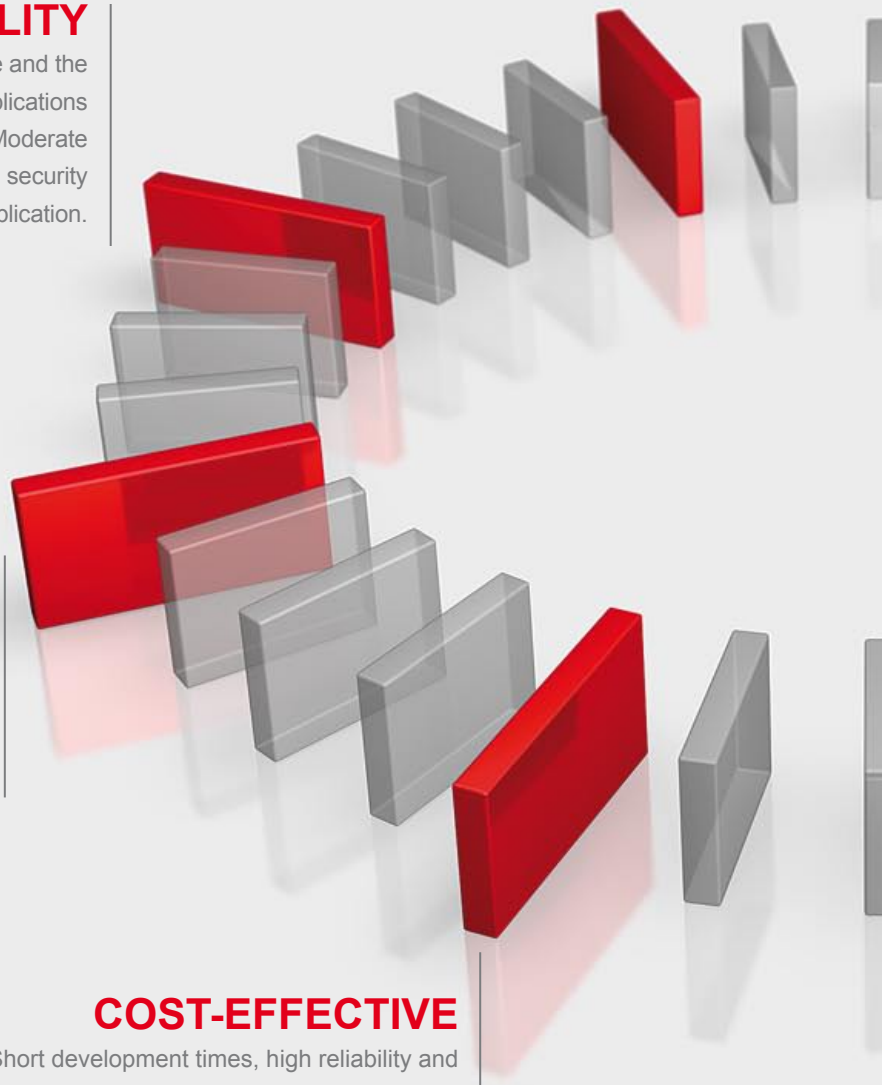
The convenient embedded platform for your control and communication application

SIMPLE

The IPC@CHIP® combines hardware and software in one platform product and therefore not only simplifies your product development. Requirements in acquisition, production and support are also considerably reduced.

RELIABILITY

The rugged controllers designed for industrial use and the software that has been tried and tested in many applications increase the fail-safe performance of your products. Moderate hardware and software complexity and integrated security protocols offer additional protection for your application.



FLEXIBLE

The large range of control and communication functions and the selection of different performance classes and designs enable the IPC@CHIP® to be used flexibly in many different applications.

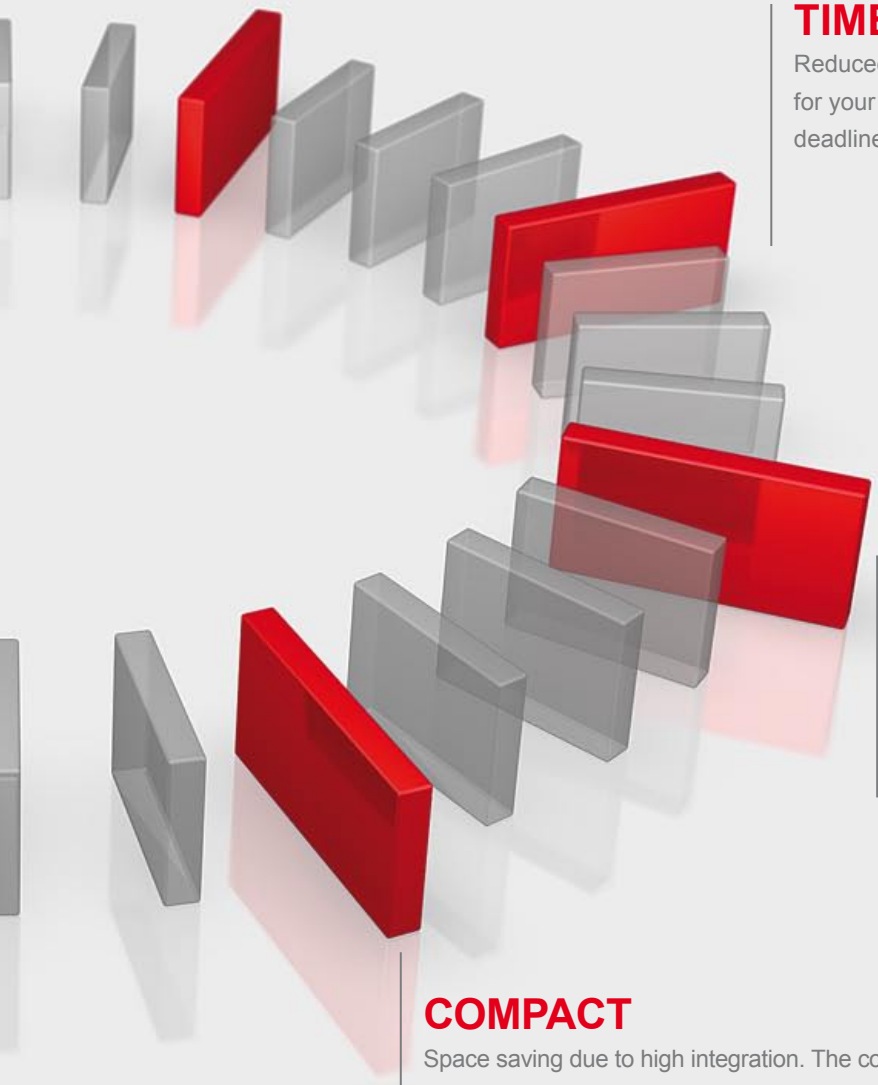
COST-EFFECTIVE

Short development times, high reliability and low maintenance reduce the entire time of life costs of your end products.

The IPC@CHIP® Embedded Platform makes it possible to implement your embedded application quickly and cost-effectively. The IPC@CHIP® Embedded Controllers come with all the required hardware and software components already integrated for implementing simple and complex control and communication tasks. Regardless of whether your customer wishes to program in C/C++ or IEC61131-3 and communicate via Ethernet, CAN or Wireless LAN. The IPC@CHIP® always provides the right solution. The Starter and Development Kits on offer provide you with a fast entry to the technology and contain everything you need for the development.

MODERN

Stay with the latest state of the art – not only at the beginning of your product development. The continuous further development of the hardware and software of the IPC@CHIP® means that you can always rely on a state of the art platform.



TIME SAVING

Reduced development effort shortens the time to market for your products and enables you to set reliable completion deadlines.

FUTURE-PROOF

Not only the continuous further development of the IPC@CHIP® but also the large number of well-known customers ensures the long-term availability of your products and your investments in this platform element.

COMPACT

Space saving due to high integration. The compact system on chip solution makes very compact electronic designs possible. With only a few external components you can implement complete control solutions.

Our Solution Approach

Control, communication and visualization – everything from a single source from your embedded solution provider.

Control, communication and visualization are our solution approaches for your automation needs. The IPC@CHIP® technology offers you optimum solutions. Regardless of whether you wish to implement control, communication or visualization, we have the right components in our portfolio.

Control

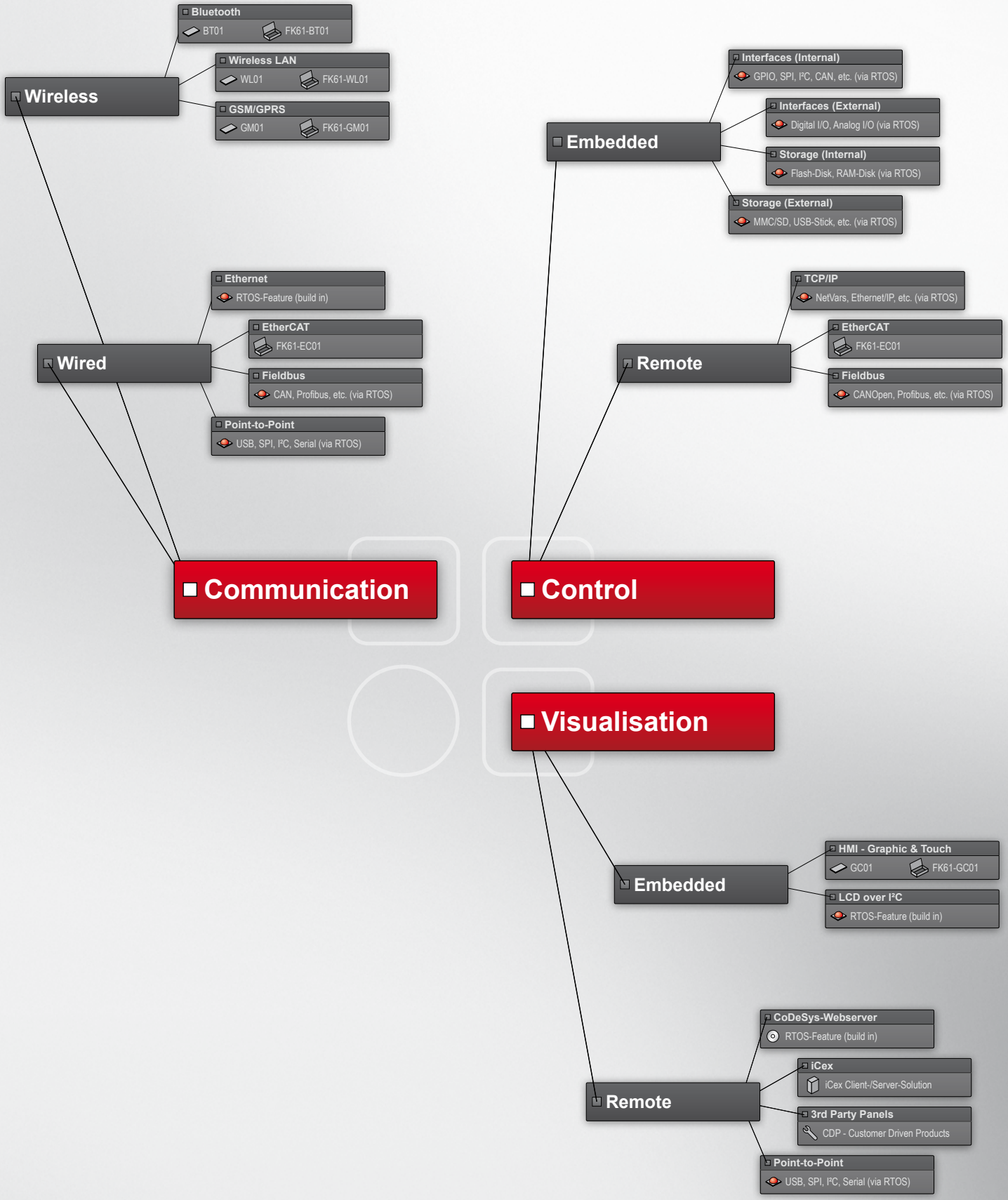
Connecting controllers, in SoC or CoM designs offer the basis of the solution approach. Their hardware and software components are ideal for any application. Whether as an embedded module or as a complete controller.
All controllers are equipped with a state-of-the-art real-time/multi-tasking operating system which is already preinstalled. The IEC 61131-3 CoDeSys SP runtime system is also implemented as an option and is optimally adapted to the controller‘s RTOS operating system. In this way, we can always provide your solution even when demanding requirements are involved.

Communication

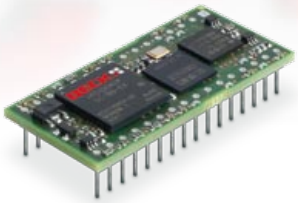
Communication features are the most important options of all. After all, only with seamless TCP/IP support can the platform for global data communication be provided in the embedded world.
Wireless or wired, the module system offers both. The WL01 Wireless-LAN module adds a wireless LAN connection to IPC@CHIP® in no time. The module also contains Bluetooth which has very quickly established itself as a standard. This is particularly useful in areas that are difficult to access and for connecting laptops, PDAs or mobile devices.

Visualisation

In addition to control and communication functions, many embedded applications also need a user interface for operation, setting parameters and for displaying operating states. The graphic module offers the hardware to fit every display. The software with ready-to-use libraries and the CoDeSys Target Visualisation make your own development simple and fast.
The latest full graphics TFT displays with touch options offer here maximum user-friendliness and optimum flexibility since it is possible to design both display and input as required via the software.


Communication
Wireless
Bluetooth
BT01
FK61-BT01
Wireless LAN
WL01
FK61-WL01
GSM/GPRS
GM01
FK61-GM01
Wired
Ethernet
RTOS-Feature (build in)
EtherCAT
FK61-EC01
Fieldbus
CAN, Profibus, etc. (via RTOS)
Point-to-Point
USB, SPI, I²C, Serial (via RTOS)
Control
Embedded
Interfaces (Internal)
GPIO, SPI, I²C, CAN, etc. (via RTOS)
Interfaces (External)
Digital I/O, Analog I/O (via RTOS)
Storage (Internal)
Flash-Disk, RAM-Disk (via RTOS)
Storage (External)
MMC/SD, USB-Stick, etc. (via RTOS)
Remote
TCP/IP
NetVars, Ethernet/IP, etc. (via RTOS)
EtherCAT
FK61-EC01
Fieldbus
CANOpen, Profibus, etc. (via RTOS)
Visualisation
Embedded
HMI - Graphic & Touch
GC01
FK61-GC01
LCD over I²C
RTOS-Feature (build in)
Remote
CoDeSys-Webserver
RTOS-Feature (build in)
iCex
iCex Client-/Server-Solution
3rd Party Panels
CDP - Customer Driven Products
Point-to-Point
USB, SPI, I²C, Serial (via RTOS)

SC2x



Flexible, simple and powerful

The IPC@CHIP® Controllers in a compact computer-on-module (CoM) design have all the functions onboard for your controller, communication and HMI tasks. All basic functions such as processor, memory and interface, as well as the IPC@CHIP® RTOS multitasking/real-time operating system, are already integrated. Only the specific application components have to be added for your application.
With a 96 MHz CPU, the SC23 and the SC24 offer the performance needed for high-speed control tasks and sufficient memory for extensive application programs and data.

SC2x3

Maximum performance for demanding automation tasks

The SC223 and SC243 controller modules are specially designed for demanding control, communication and HMI tasks. The Freescale power processor offers 760 MIPS processing performance and a high-speed Floating Point Unit – ideal for fast data communication or complex control tasks for example in the field of motion control.
The IPC@CHIP® RTOS of the SC2x3 modules is compatible with the RTOS versions of other IPC@CHIP® platform products enabling you to transfer your applications easily.

Type	SC23	SC24	SC223	SC243
Processor	SC186-EX / 96 MHz	SC186-EX / 96 MHz	MPC5200 / 400 MHz	MPC5200 / 400 MHz
DRAM	8 MB	8 MB	32 MB	64 MB
Flash	2 MB	8 MB	16 MB	32 MB
Ethernet	2 x 10 / 100 MBit/s with PHY	2 x 10 / 100 MBit/s with PHY	1 x 10/100 MBit/s	1 x 10/100 MBit/s
Interfaces*	3 x Serial / TTL, 2 x CAN, 1 x USB (Host / Device)	3 x Serial / TTL, 2 x CAN, 1 x USB (Host / Device)	6 x Serial/TTL, 2 x CAN, 1 x USB (Host)	6 x Serial/TTL, 2 x CAN, 1 x USB (Host)
Expansion*	I²C, SPI	I²C, SPI	2 x I²C, SPI, A/D Bus	2 x I²C, SPI, A/D Bus
GPIO*	17	17	40	40
Housing	DIL32 (CoM)	DIL32 (CoM)	Module (CoM)	Module (CoM)
Operating System	IPC@CHIP RTOS, CoDeSys optional	IPC@CHIP RTOS, CoDeSys optional	IPC@CHIP RTOS-PPC, CoDeSys optional	IPC@CHIP RTOS-PPC, CoDeSys optional
Order no.	Base: 553944 IEC: 553945	Base: 566821 IEC: 566822	Base: 563962	Base: 563963

*) The functions are not available all at once.

SC1x3

Maximum functionality in a minimum of space

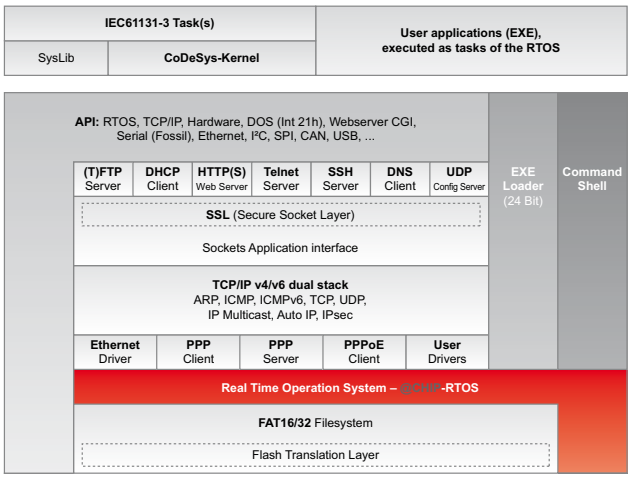
Maximum interface provision in a minimum of space are the main features of the IPC@CHIP® controller in system-on-chip design (SoC). The compact multipole BGA housing allows space saving and production optimised designs for large volumes whilst using all available controller interfaces at the same time.
They are 100% software compatible with the SC23 CoM controllers.

RTOS

For hard real-time and demanding communication tasks

The modern real-time/multi-tasking operating system (IPC@CHIP® RTOS) comes preinstalled on all IPC@CHIP® Controllers, contains a full-featured TCP/IP stack, and ensures secure communication via telephone networks or the Internet using PPP, PPPoE and SSL/SSH encryption.
The integrated API interface allows the user application to access all the hardware and software functions of the IPC@CHIP® and at the same time provides the software compatibility for the different controller types.

Type	SC123-LF	SC143-LF
Processor	SC186-X / 96 MHz	SC186-X / 96 MHz
DRAM	8 MB	8 MB
Flash	2 MB	8 MB
Ethernet	2 x 10/100 MBit/s with PHY	2 x 10/100 MBit/s with PHY
Interfaces	3 x Serial/TTL, 2 x CAN, 1 x USB (Host / Device)	3 x Serial / TTL, 2 x CAN, 1 x USB (Host / Device)
Expansion	I²C, SPI	I²C, SPI
GPIO	31	31
Housing	BGA177 (SoC)	BGA177 (SoC)
Operating System	IPC@CHIP® RTOS, CoDeSys optional	IPC@CHIP® RTOS, CoDeSys optional
Order no.	Base: 543257 IEC: 543259	Base: 543258 IEC: 543260



IPC@CHIP® RTOS architecture

Add-ons

Overview

The IPC@CHIP® platform controllers are factory shipped with all the most important functions for your control and communication task. Other application-related functions can be added simply by using hardware and software add-ons.

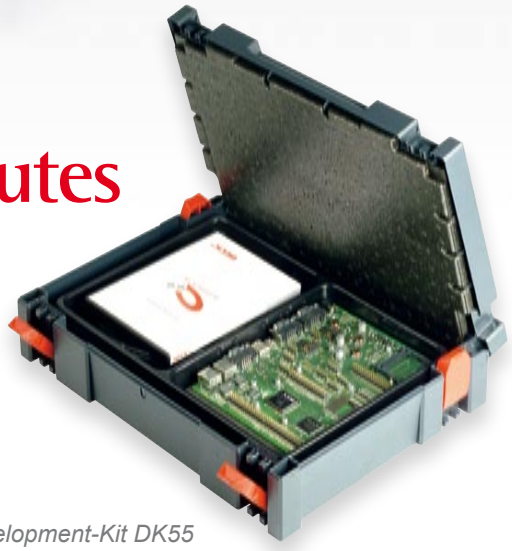
The add-ons increase flexibility and ensure that you are always up to date with state-of-the-art technology. The entire IPC@CHIP® solution in combination with the add-ons offers an embedded module system consisting of many perfectly matched individual components, and enabling embedded solutions with HMI, Ethernet, wireless communication and real-time control functions to be combined quickly and flexibly. IPC@CHIP® + Add-ons offer a wide range of technologies from a single source. BECK's portfolio is being continually expanded.

	SC2x	SC1x3	SC2x3
Wireless LAN 	✔	✔	✔
Order no.: 548872			
Bluetooth 	✔	✔	✔
Order no.: 558334			
GSM/GPRS 	✔	✔	✔
Order no.: 566813			
Graphic/HMI 	✔	✔	✔
Order no.: 560307			

	SC2x	SC1x3	SC2x3
CoDeSys CoDeSys	✔	✔	✔
Fieldbusses 	✔	✔	✔
EtherCAT EtherCAT Technology Group		✔	✔
M2M Communication 	✔	✔	✔

Up and Running in 15 Minutes

The IPC@CHIP® Starter and Development Kits not only enable you to make a fast evaluation of the IPC@CHIP®, but also contain all the hardware and software components you require to develop your IPC@CHIP® solution.. Commissioning the kits via Ethernet only takes a few minutes and in a short space of time you can start to develop your own application software within the supplied C/C++ development environment.



→ *Development-Kit DK55*

Type	DK55 Development-Kit	DK61 Development-Kit	EK61 Evaluation-Kit	DK241 Development-Kit
Development-Board	DB54 with SC23-IEC	DB60 with SC143-IEC-LF	EB60 with SC143-IEC-LF	DB240 with SC243
Software (on CD)	Paradigm C/C++ development environment and CoDeSys IEC61131-3 Software Development-Kit	Paradigm C/C++ development environment and CoDeSys IEC61131-3 Software Development-Kit	Paradigm C/C++ development environment (40 days eval), CoDeSys IEC61131-3 Software Development-Kit	Eclipse development environment and CoDeSys IEC61131-3 Software Development-Kit
Order no.	553947	542750	547953	563965

Simple entry level with the Function Kits

For a fast entry into IPC@CHIP® technologies and for developing applications quickly, we are also offering the appropriate Function Kits as an addition to our Development Kits.
The Function Kits contain all the necessary hardware and software components as well as several examples for simple and fast development.

Type		Order no.
Wireless-LAN	(FK61-WL01)	548873
Bluetooth	(FK61-BT01)	558359
GSM/GPRS	(FK61-GM01)	566814
EtherCAT	(FK61-EC01)	546949
Graphic/HMI	(FK61-GC01)	560306

10/08

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