CPCI-CPU/5201
CompactPCI® PowerPC™ Board with CAN, ETHERNET and USB

Cost effective 3U/4HP CompactPCI Board

- MPC5121e CPU with e300 core and 400 MHz / 760 MIPS
- Flexible and fast storage via CompactFlash®-card and USB connector
- CAN, 1 Mbit/s, electrically isolated
- QNX® and VxWorks® BSPs available
- CANopen®, J1939 and ARINC 825 protocol available
- EtherCAT® Master stack available

Longevity Program of Freescale™

- Enhanced availability: the CPU is included in the longevity program of Freescale
- Low power consumption

Wide Storage Support (ATA, SDHC™)

- CompactFlash Card slot
- On request ATA devices and SDHC CLASS 10
- On request on-board storage eMMC™ and Magnetoresistive RAM (MRAM)
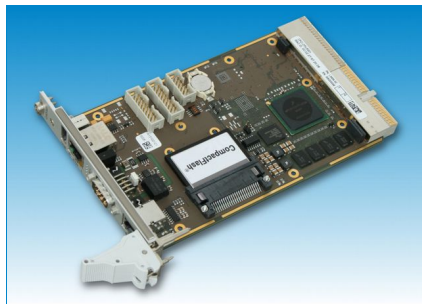
CompactPCI PowerPC Board
This board is specially designed for cost sensitive applications with low power consumption and a long product availability. The Freescale RISC microcontroller MPC5121e with FPU and fast flash memory support is best suited for data processing purposes.

Network Interfaces
The CPCI-CPU/5201 contains one ETHERNET interface for 10/100 Mbit/s nets that is accessible via a RJ45 connector in the front panel. The ISO11898 compatible CAN interface is accessible via a DSUB9 connector in the front panel.

The CAN interface is electrically isolated and supports bit rates up to 1 Mbit/s. Additionally up to two CAN and/or three RS-232 interfaces can be provided via a 4 HP enlargement at the front on request.

MPC5121 Integrated Processor
The MPC5121 CPU contains the e300 Power Architecture® technology processor core and operates with 400 MHz and up to 760 MIPS. It is equipped with 32-Kbyte instruction cache and 32-Kbyte data cache. The superscalar processor core comes with instruction and data MMU and integrated double-precision floating-point unit.

Software Support
The flash memory carries the standard 'U-Boot' program that enables the CPCI-CPU/5201 to boot various operating systems from network or on-board Flash. Thus Real-time OS like QNX and VxWorks are directly supported with full support of on-board drivers by esd, others on request. There is also a bunch of higher layer protocols like CANopen, J1939 and ARINC 825 as well as an EtherCAT Master stack available.
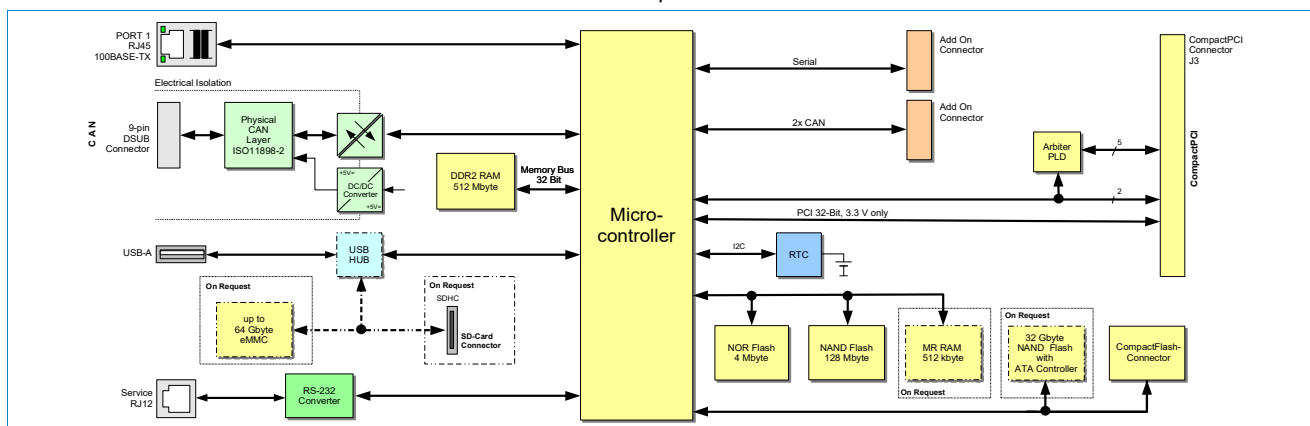
Technical Specifications:

CompactPCI Interface and Microcontroller:

Microcontroller	Freescale MPC5121e, 400 MHz, e300 core, cache: 32 KB / 32 KB, FPU
Memory	SDRAM: 512 Mbyte DDR2, 200 MHz, NOR Flash: 4 Mbyte; NAND Flash: 128 Mbyte; CF-card connector, eMMC (I.2024.01 only): up to 64 Gbyte. On request: MRAM: 512 kbyte; NAND-Flash with ATA controller, 32 Gbyte; SDHC slot: more than 10 MB/s (r/w) capable
RTC	Battery buffered real-time clock
PCI	PCI 2.3, 32 bit, 33 / 66 MHz, 3.3V signaling environment (not 5V tolerant), 7x external bus master support

Interfaces:

ETHERNET	1x 10BASE-T/100BASE-TX, IEEE 802.3, RJ45 connector with LEDs
USB	1x USB 2.0 controller, high-speed (480 Mbit/s), USB-A connector type
Service	1x RS-232 via RJ12 connector
CAN	1x CAN, 1 Mbit/s, electrically isolated, ISO11898, 9-pin DSUB

General:

Ambient temperature	0 ... +55 °C, on request: -40 °C ... +75 °C convection cooled
Relative humidity	Max. 90 % (non-condensing)
Power supply	3.3V, I_{IDLE} = 250 mA, I_{MAX} = 400 mA; 5 V, I_{IDLE} = 300 mA, I_{MAX} = 600 mA
Dimensions	3 U / 4 HP CompactPCI

Order Information:

Hardware		Order No.
CPCI-CPU/5201	MPC5121, 400 MHz	I.2404.02

Software Support		
CPCI-CPU/5201-QNX-BSP	QNX BSP, incl. 1 year support	I.2404.55
CPCI-CPU/5201-VxW-BSP	VxWorks BSP, incl. 1 year support	I.2404.58
EtherCAT Master	Available for QNX and VxWorks OS	P.4500.xx