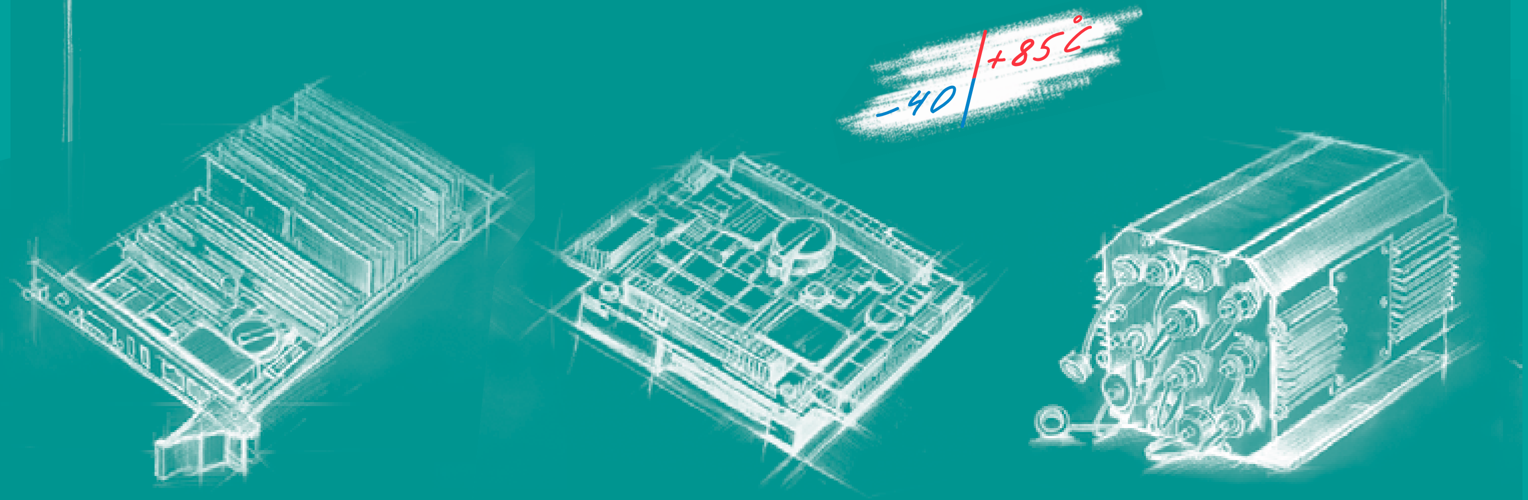
Fastwel



Embedded Modules, Box and Panel PCs

for Mission Critical Applications

www.fastwel.com

Our membership

PC/104 Consortium is an international organization of PC/104 products manufacturers that maintains the PC/104 specifications, disseminates PC/104 technology, and promotes the welfare of its members.
Executive Member

PICMG (PCI Industrial Computer Manufacturers Group) is a consortium of companies who collaboratively develop open specifications for high performance telecommunications and industrial computing applications.
Associate Member

Intel® Embedded and Communications Alliance (Intel® ECA) is a community of developers and solution providers committed to the design and implementation of modular systems based on Intel technologies in the area of communication and embedded applications.

CAN in Automation (CiA) is the international users' and manufacturers' organization that develops and supports CAN based higher layer protocols.

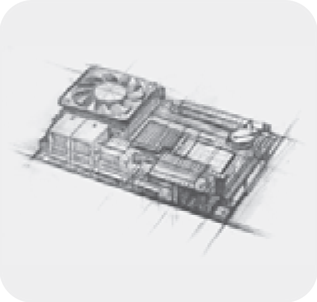
The OPC Foundation is dedicated to ensuring interoperability in automation by creating and maintaining open specifications that standardize the communication of acquired process data, alarm and event records, historical data, and batch data to multi vendor enterprise systems and between production.

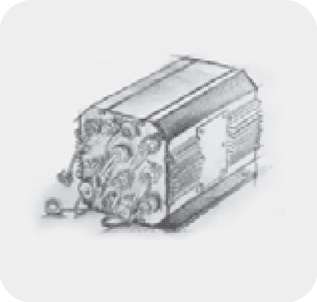
The EtherCAT Technology Group (ETG) is the forum in which key user companies from various industries and leading automation suppliers join forces to support, promote and advance the EtherCAT technology. EtherCAT Technology Group aims to ensure the compatibility of EtherCAT implementations by defining functional requirements, conformance tests as well as certification procedures.

StackPC – New Standard of Embedded Stackable Systems Design. The StackPC Specification defines new approach to stackable systems design and development. The specification includes all valuable heritage of PC/104 standards along with the new features of StackPC connector. The main competitive distinction of the StackPC connector is the combination of most popular low speed interfaces such as USB, COM, CAN, SPI, LPC and high speed SATA, Gigabit Ethernet and PCI-Express x1, x4 within one stack expansion connector.

VPX is a broadly defined technology utilizing the latest in a variety of switch fabric technologies in 3U and 6U format blades. OpenVPX is the architecture framework that defines system level VPX interoperability for multi-vendor, multi-module, integrated system environments.

Content





About company

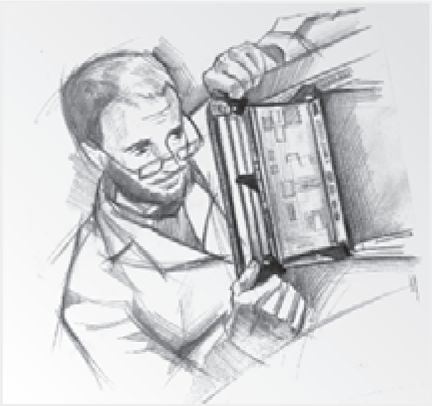
Embedded modules

Industrial PCs

Systems & Customization

Who we are

Fastwel
Creating the Future!



For more than 15 years Fastwel has been one of the leading companies developing and manufacturing rugged Single Board Computers for mission-critical applications in transport, security and telecom. We deliver a wide range of CPU modules designed in PC/104, StackPC, EPIC, CompactPCI, 3.5", MicroPC form-factors and Computer-on-Modules. Besides standard products manufacturing, Fastwel offers a full range of OEM and ODM services.

READY FOR RoHS

ISO 9001:2000

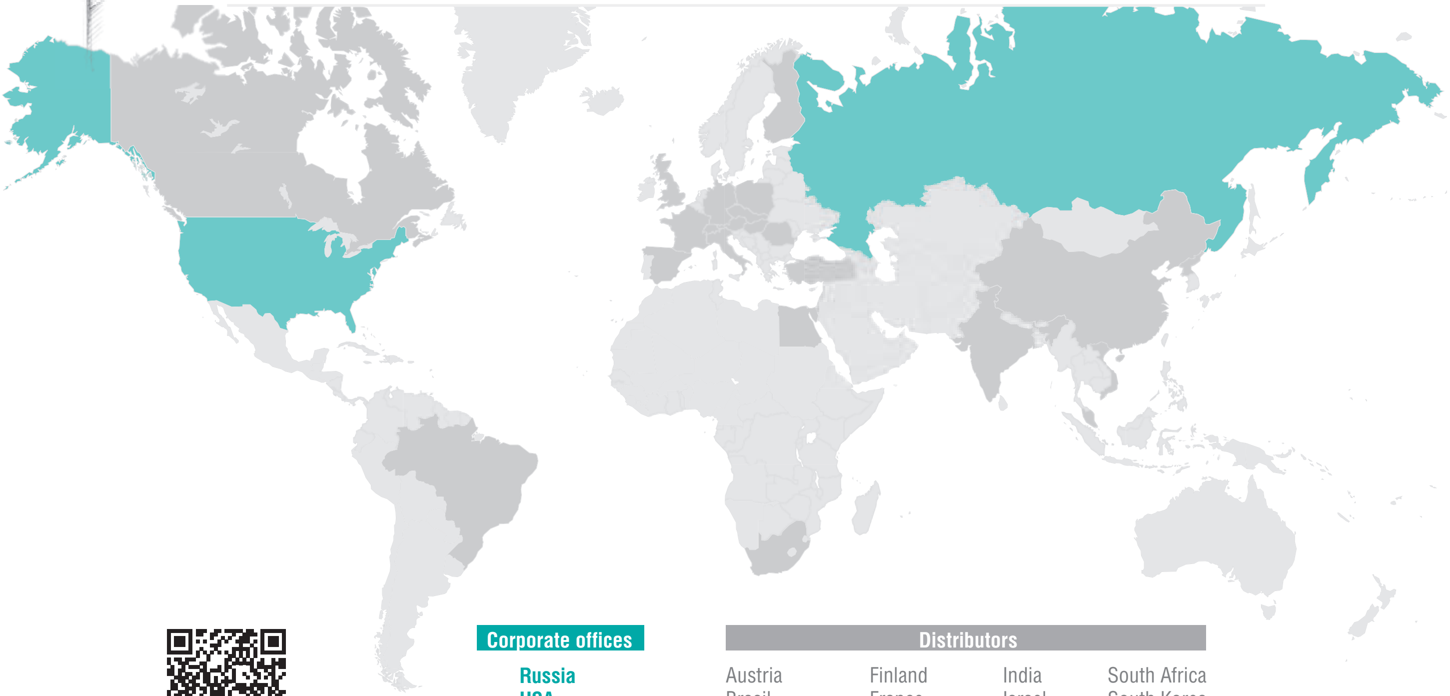
EN 50155 Compliance

ГОСТ

Customer approach

- Customer support within the whole project life-cycle
- 10+ years products availability
- 3 years warranty
- Standard products customization
- Strict compliance with the International Industry Standards (EN50155, IEC)

World wide

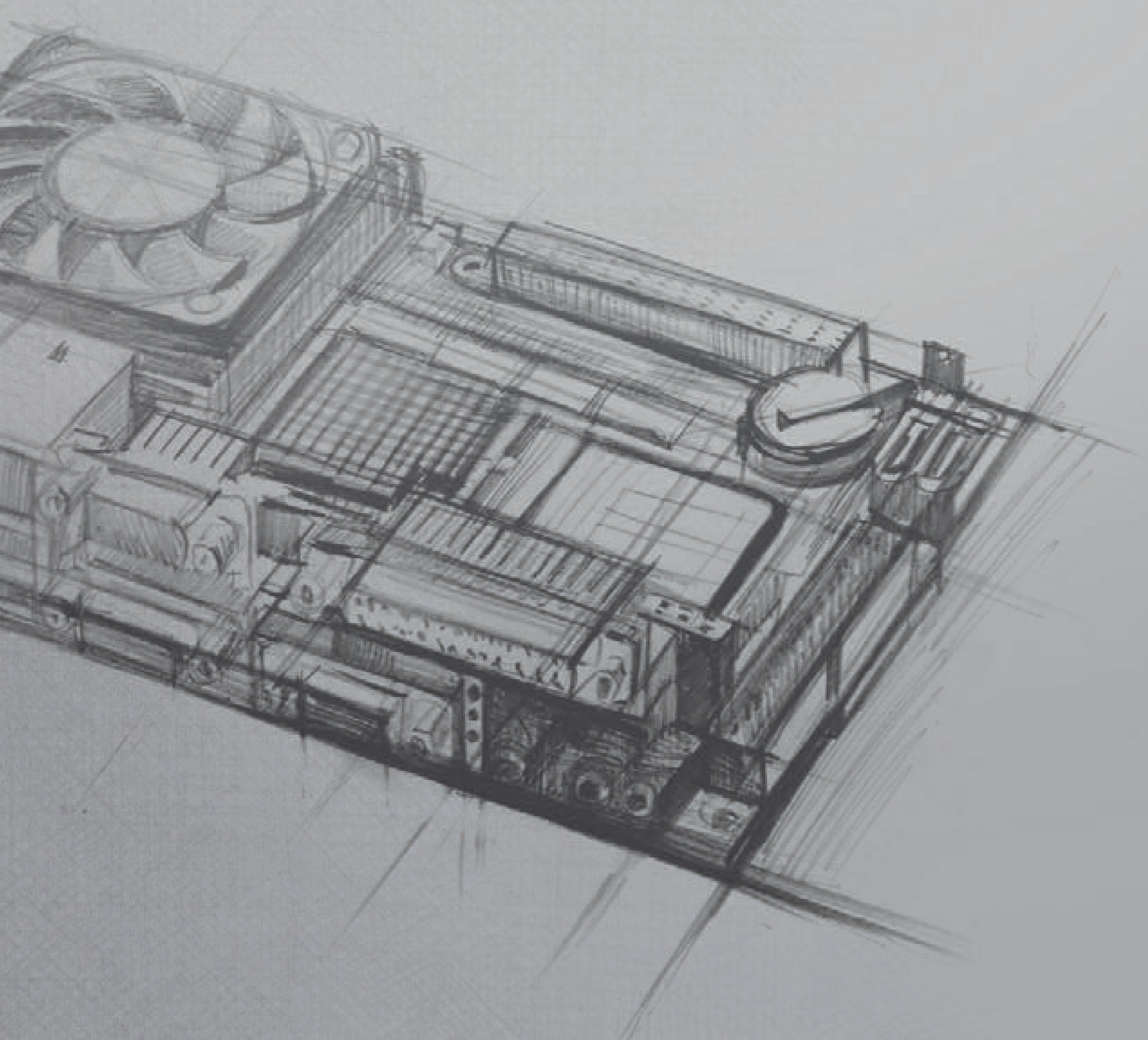


Corporate offices

Russia
USA

Distributors

Austria	Finland	India	South Africa
Brasil	France	Israel	South Korea
Canada	Germany	Italy	Spain
China	Great Britain	Poland	Switzerland
Czech Republic	Hong Kong	Romania	Turkey
Egypt	Hungary	Singapore	Vietnam



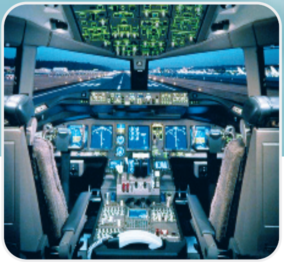
Embedded modules

- PC/104 and StackPC
- EPIC, 3.5"
- 3U CompactPCI
- 6U CompactPCI
- COMs
- Legacy Products

Embedded modules

PC/104 and StackPC

Avionics



Automatic pilot and landing system

Video surveillance system

Ticketing System

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PC/104 and StackPC **CPU modules**

Basic comparison chart

	Field	USB 2.0	Ethernet	Video	ISA 16-bit (PC/104)	PCI 32-bit (PC/104+)	Storage
CPC304	2×RS-232 2×RS-485/422 isolated	2	2 FE	VGA or LVDS or TFT	+	+	CF, IDE
CPC307	4×RS-232 2×RS-485/422 isolated CAN	4	1 FE	—	+	+	2 SD, IDE
CPC309	2×RS-232	8 (6 channels routed to StackPC* connector)	2GE (routed to StackPC* connector)	VGA and LVDS	—	+	1×Compact Flash, SATA NAND 4 GB, 2×SATA (routed to StackPC* connector)
CPC310	2×RS-232 2×RS-485/422 galvanically isolated	4	2GE	VGA and LVDS	+	+	CF, SATA

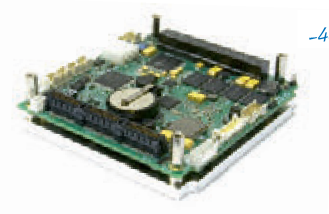
*StackPC: 4×1 PCI_Express, 6×USB 2.0, 2×SATA II, 2×USB 2.0, 2×SATA II, 2×RS-232, LPC, SMbus.


-40...+85°C

CPC310

PC/104-Plus Intel Atom E38xx Based SBC

- Intel Atom E38xx (1.33–1.46 GHz)
- DDR3L-1066/1333 SDRAM up to 4 GB with ECC support
- Integrated video controller: 2D/3D-accelerator; VGA output (resolution up to 2560×1600 60 GHz); 2×LVDS ports (resolution up to 1600×1200 60 GHz 18/24-bit)
- USB ports: support of USB 1.1 (12 Mb/sec), USB 2.0 (480 Mb/sec); connection up to 4x devices
- PS/2 keyboard and mouse port
- Power supply: +5 V
- Linux, QNX, Microsoft Windows Embedded Standard 8, Microsoft Windows Embedded Standard 7


-40...+85°C

CPC309

Intel Atom D510 Based SBC with StackPC* Extension Connector

- Intel PineviewD Dual Core (D510) 1.66 GHz
- VGA output (resolution up to 2048×1536 60 Hz)
- LVDS interface (resolution up to 1366×768 60 Hz, single channel 18-bit mode)
- DDR2-667 64-bit up to 2 GB (Onboard)
- 4 GB SATA SLC Flash drive (Onboard)
- 2×SATA II on StackPC
- Compact Flash Card slot
- 2×USB 2.0, 6×USB 2.0 on StackPC 2×SIMcards
- Watchdog 1×Fixed; 1×Programmable
- MS DOS 6.22, FreeDOS, Windows XP (Embedded), Linux 2.6, QNX 6.4

PC/104 CPU modules

CPC307

PC/104-Plus DM&P Vortex86DX

- DM&P Vortex86DX, 600 MHz CPU
- 16-bit ISA and 32-bit PCI buses
- 256 MB DDR2 SDRAM soldered
- Up to 2 MicroSD
- Fast Ethernet 10/100 Mb/s
- 4×USB ports 2.0
- 2×Isolated CAN 2.0 ports
- 2×RS-232, 2×RS-232/485/422, 2×RS-485/422
- Shock/vibration resistance: 100g/10g
- Fastwel DOS, MS DOS, Linux, QNX

CPC304

PC/104-Plus AMD® Geode™ LX800

- AMD® Geode™ LX800 CPU, 500 MHz
- 16-bit ISA and 32-bit PCI buses
- 256 MB soldered DDR SDRAM
- VGA, LVDS and TFT interfaces
- 2×Fast Ethernet 10/100 Base T-ports
- Soldered Flash 1 GB, CF Type I/II, IDE interface
- 2×USB 2.0
- 2×RS-232, 2×RS-422/485 isolated
- Shock/Vibration resistance: 50g/3g
- MS DOS, QNX, Windows XPe, Windows CE, Linux

PC/104 Extension modules

-50…+85°C

PS351

PC/104 Power Supply and System Control

- Input voltage range: 11…36 VDC
- Overall power output: 50 W max
- Surge overvoltage protection, Input/output isolation – 1500 V
- Capability to supply power from main and reserve sources
- System control and monitoring via isolated RS-232/422
- Automatic power control modes
- Watchdog, Real time clock, Temperature sensor
- System events log (switch to reserve power, input voltage reduction, etc.)
- Heater and fan control povering at T > –50°C
- Shock/vibration 50g/5g

-40…+85°C

NIM351

PC/104 Field Bus module

- Compliance to PC/104 Plus v2.2
- 2×CAN 2.0a and 2.0b, isolated
- 2×RS-422/RS-485, isolated
- ISA based controller, PCI path through
- Protective coating (optional)
- Support for FreeDOS, QNX, Windows XPe, Linux

0…+70°C

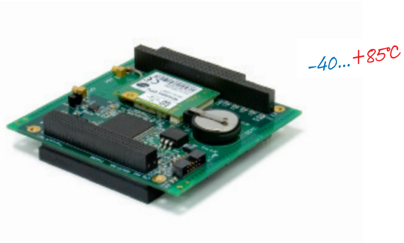
-40…+85°C

VIM301

PC/104-Plus Graphics CoProcessor Module

- Lynx3DM8+(SM722G8) GPU
- Graphics memory 8 MB, 64-bit, 100 MHz
- PCI/104 (PCI) interface to Host processor
- VGA up to 1280×1024
- 2×LVDS interfaces
- 2×Flat Panel (FP) interfaces
- 1×SGD 4-bit LCD (EL Planar) interface
- 4×Analog video input channels
- Shock/vibration resistance: 50g/10g
- Fastwel DOS, Windows CE/XPe, Linux, QNX

PC/104 Extension modules



CNM350

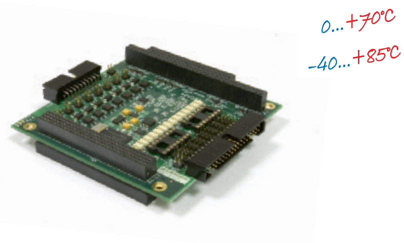
PC/104-Plus Communication and Navigation Module

- PC/104 Plus complainace
- 4-band GSM 850/900/1800/1900 modem, GPRS/EDGE Class 10
- Two SIM cards support
- GPS/GLONASS reciever, 24 channels
- PCI/104 (PCI) interface to Host processor
- Shock/vibration resistance: 50g/10g
- QNX, Windows XPE, Linux

AIC324

PC/104 Analog and Digital Input/Output Module

- System controller interface – PC/104 (ISA 16-bit)
- Pass-through PCI bus
- 32 analog inputs; ADC 16-bit; 250 kHz; ±10 V … ±0.625 V
- 4 analog outputs; DAC 16-bit; 6 s; ±10 V … ±2.5 V programmable calibration of analog circuits
- 24 discrete input/output channels; 3.3 V or 5 V CMOS; support for 16-bit and 32-bit counters; electrostatic protection of outputs
- Analog/discrete isolation: 500 V
- Supported operating systems: Fastwel DOS, Linux, QNX



DIC324 **NEW**

Digital I/O Card with Galvanic Isolation

- System Bus – 8-bit ISA bus
- 16×Digital/Frequency Input Channels
- 8×Digital Output Channels
- Delay of input signals: 25 µs
- Frequency measurement via any channel
- Optical isolation of inputs between channels: 500 V
- Optical isolation of inputs between a channel and the “ground”: 1000 V
- Generation of the event hardware interrupts at inputs
- Programmed time interval for de-bouncing for inputs
- Maximum switch on/switch off time: 3 ms
- Software compatibility with OS: FDOS, FreeDOS, Windows XP (Embedded), Linux 2.6

StackPC Extension modules

-50...+85°C

KIC301

Interface Module in StackPC-PCI Form-factor

- RS-232/485/482 interface
- PCI-104 interface
- SATA, up to 300 Mb/s
- Mini PCIe card slot
- Shock/vibration resistance: 50g/25g

-40...+85°C

NIM354

Network Module in StackPC-PCI Form-factor

- Integrated switch for 7 Ethernet channels
- QoS IEEE 802.1p, IPv4, IPv6, 4096 VLAN IDs with three safety levels of the 802.1Q standard
- PoE PSE 4 ports with galvanic isolation from other circuits, corresponding to IEEE 802.3af/at standards and compatible with the devices up to 25 W
- PoE PSE program control via SMBus (libraries for Windows, Linux and QNX)

-40...+85°C

NIM355 NEW

Interface Module in StackPC-PCI Form-factor

- PCI System Bus: 32-bit/33 MHz
- 4×CAN channels, 4×Digital Input Channels, 4×Digital Output Channels
- Dimensions: no more than 90,2×95,9×23,5 mm
- Weight: no more than 120 g
- Power supply: power supply voltage of +5 V ± 5%, and current consumption: no more than 300 mA
- MTBF: no less than 170 000 hours
- Windows XPe, Linux 2.6.x, QNX 6.5

StackPC Extension modules

-40...+85°C

PS352 **NEW**

StackPC-PCI Power Supply Module

- StackPC-PCI form-factor
- Input voltage: 9–36 V; Output voltage: 48 V ± 5%
- Module's power supply without load: 2.4 W
- Maximum output power: 75 W
- Galvanic isolation input/output: 1500 V
- Overload and overheating protection
- Vibration resistance: 5g
- Single shock resistance: 100g
- Multiple shock resistance: 50g

-40...+85°C

VIM302 **NEW**

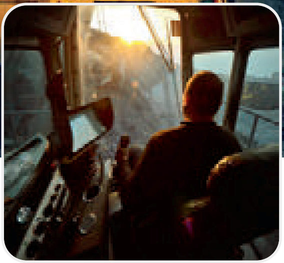
PC104 Video Graphics Controller Card with StackPC expansion connector

- System-on-a-chip TMS320DM8186 (VLIW-processor C674X) DSP; RISC-processor ARM cortex-A8; 3D-graphics accelerator SGX530
- RAM: DDR3 SDRAM 1 GB
- NAND Flash 256 MB for storing OS
- PCI-E BUS: Compatibility with the PCI-E 2.0 specification
- SATA interface: transfer rate up to 300 MB/sec
- USB interface: support of USB 1.1 (12 MB/sec), USB 2.0 (480 MB/sec)
- Software compatibility: Open Source Linux

Embedded modules

EPIC, 3.5"

Transportation



Command desk control

Vehicle Management System

Video surveillance

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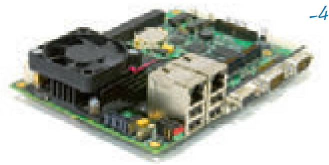
EPIC, 3.5"

0...+70°C
-40...+85°C



CPC805

EPIC Single Board Computer with PCI-104 and StackPC Extensions

- Intel® Atom N450 CPU 1.66 GHz soldered
- 1 or 2 GB DDR2 SDRAM soldered
- VGA and LVDS up to 1400×1050 pixels
- Extensions: PCI-104 32/33 and StackPC (4×1 PCI-Express, 6×USB 2.0, 2×SATA II, LPC, 2×RS-232, SM bus)
- 1×SATA II, CF, Soldered 2 GB IDE Flash
- 4×RS-232, 2×RS-485, isolated
- 7–30 V DC or ATX power supply
- Shock/vibration resistance: 50g/5g
- DOS, Windows XP Embedded, Windows Embedded Compact 7, QNX, Linux

0...+70°C
-40...+85°C

CPB909 **NEW**

Intel Atom E38xx-based SBC with StackPC Expansion Connector in 3.5" Form-Factor

- CPU Intel Atom E38xx (1.33–1.91 GHz)
- DDR3L-1066/1333 SDRAM up to 4 GB with ECC support
- Integrated graphics controller, 2D/3D-accelerator
- FLASH BIOS: 64 Mb SPI-Flash
- PS/2 keyboard and mouse port
- Power supply: +5 V
- Linux, QNX, Microsoft Windows Embedded Standard 7, Microsoft Windows Embedded Standard 8

Embedded modules

6U CompactPCI (PICMG 2.30, 2.16, 2.0)

Marine applications

Navigation system

Command desk control

Control monitoring

www.fastwel.com

0...+70°C

-40...+85°C

CPC503

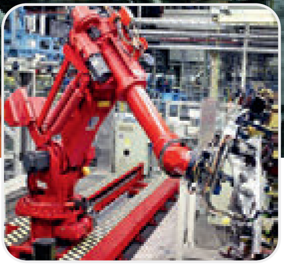
6U CompactPCI Host Blade Intel Core i7 CPU Module

- PICMG 2.0, PICMG 2.16, PICMG 2.1 compliant
- Intel Core i7 CPU, Dual (2.2 and 1.5 GHz) and Quad (2.1 GHz) core
- 4 or 8 GB DDR3 SDRAM ECC 1333 MHz, soldered
- 4 Gbit Ethernet: 2 on front, 2 on rear (PICMG 2.16)
- 4×SATA II, site for onboard 1.8 HDD, 4×USB 2.0 (front)
- PCI 64-bit/ 66 MHz, hot swap support
- **XMC mezzanines:** x8 PCI-Express Gen II, 64/133 PCI-X, 2×USB2.0, 1×SATA II
- **MIC1901:** 2×10/100/1000 Mbit Ethernet, LineIn, LineOut, Mic, SATA interface
- Linux 2.6, QNX 6.5.0, Windows 7 (Windows Embedded Standart 7)

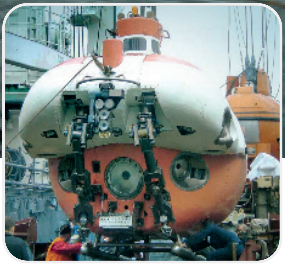
Embedded modules

3U CompactPCI (PICMG S.0, 2.30, 2.16, 2.0)

Unmanned Vehicles



On-board computer



Navigation system

System Control

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0...+70°C

-40...+85°C

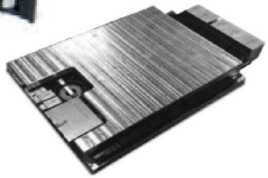
CPC512 **NEW**

3U CompactPCI S.0 Intel® Core i7 Based CPU Module

- Intel IvyBridge (2/4 Cores)
- RAM: DDR3 SDRAM 1333, 1600 MHz or DDR3L SDRAM 1066, 1333 MHz with ECC up to 8 GB soldered, 2-channel
- Interfaces: LPC Bus/ PCI-E Bus/ SMBUS/ Micros SD/ SATAIII/ SATAII/ 2x ports LAN 10/100/1000 Mbit on PCI-E x4 Gen3/1×port LAN 10/100/1000 Mbit with AMT support/ USB ports: 13×USB 1.1 (12 Mb/sec), USB 2.0 ports (480 Mb/sec) and 4×USB 3.0 (4.8 Gb/sec) ports
- Power supply: Supply voltage: +12V, +5V_STBY (optional)
- Single/Multiple shock resistance: 100g/50g
- Windows 7 Embedded, Linux 2.6, QNX 6.5.0

0...+70°C

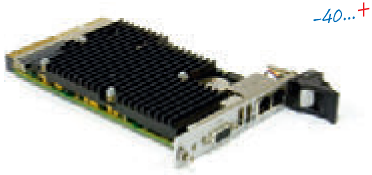
-40...+85°C



CPC510

3U CompactPCI Intel® Core i7 Based CPU Module

- Intel IvyBridge processors (2/4 Cores, up to 2.5 GHz)
- Up to 8 GB soldered, dual_channel DDR3 SDRAM with ECC
- 2×DisplayPort up to 2560×1600@60Hz at the front panel, 1×DisplayPort up to 2560×1600@60Hz is routed to the mezzanine module
- 2×Gigabit Ethernet ports (front panel)
- 2×USB 2.0 (front panel)
- Intermodule communication (PICMG CPCI_S.0 CompactPCI® Serial): two x8 FatPipe PCI_E 2.0; 4×4 PCI_E 2.0; 8×USB 2.0 or 4×USB 2.0 + 4×USB 3.0; 2×SATA II and 2×SATA III
- Windows 7 Embedded, Linux 2.6



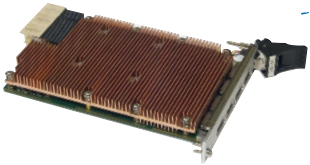
0...+70°C

-40...+85°C

CPC508

3U CompactPCI Intel® Atom Based CPU Module

- Intel Atom N450 or D510 CPU, soldered
- 1GB DDR2 SDRAM soldered
- VGA up to 2048×1536; 2 GbEthernet front-rear switchable
- PICMG 2.30: PCI 32/33, 4×1 PCI-Express, 2×SATA II, 4×USB
- CF and SD interfaces, 1 or 2 GB Flash SSD soldered
- **Mezzanine MIC589:** 2×USB, 2×RS-232, 2×RS-485 isolated, 2×CAN 2.0 isolated, HD Audio, LVDS
- **Mezzanine MIC584:** 2×USB, 4×RS-232, 2×RS-485, PS/2, HD Audio
- MS DOS 6.22, Free DOS, Windows XP Embedded, Linux 2.6, QNX



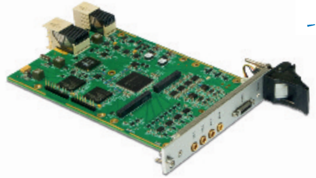
0...+70°C

-40...+85°C

VIM556 **NEW**

3U CompactPCI Graphics Controller Module

- NVIDIA Quadro K2100M: Graphics Controller Module: 665 MHz, 576 CUDA cores
- RAM: 2 GB GDDR5, 128-bit, 48 GB/s
- Graphics: 2×3840×2160 @ 60 Hz
- DisplayPort: 4×DisplayPort interfaces on the front panel
- Power supply: Supply voltage: +12 V ± 10%
- MTBF: no less than 250 000 hours
- Windows 7 Professional 32/64-bit, Windows Embedded Standard 7 32/64-bit, Linux Debian 7.0 32-bit



0...+70°C

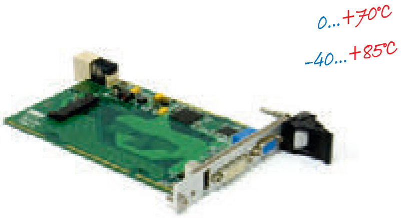
-40...+85°C

VIM554

CompactPCI S.0 Audio/Video Capture Module

- Form-factor: PICMG CPCI-S.0 R1.0 CompactPCI® Serial Specification 3U
- System bus: PCI Express x4
- LED-indication of module’s operation modes
- Power supply: Supplying voltage: +12.0 V, consumed current: no more than 0.8 A
- Vibration resistance: 5g
- Single/multiple shock resistance: 100g/50g
- Windows 7 (Embedded) 32/64-bit, Linux 3.2.0

Peripheral 3U CompactPCI modules



VIM552

CompactPCI S.0 Graphics Processing Module

- Compliance with PICMG 2.30 and PICMG S.0 standards
- LynxExp SM750 graphics processor
- 64 MB DDR SDRAM
- VGA (up to 1920×1440) and DVI-I (up to 1920×1200) front panel interfaces
- 1×USB 2.0 on front panel
- 1×SATA channel with possibility
- Passive cooling
- Windows XP (Embedded), Linux 2.6

KIC550

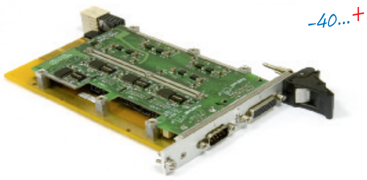
CompactPCI S.0 Storage Module for Connection of 2.5" HDD

- Compliance with PICMG 2.30 and PICMG S.0 standards
- Place for mounting a 2.5" disk with SATA interface
- USB 2.0 at the front panel or USB 3.0 via on-board connector

NIM550 **NEW**

3U CompactPCI S.0 10GB Ethernet Module

- 2×Channels 10 GBASE-SR/SW
- Windows 7 Embedded, Linux 2.6, QNX 6.5.0



DIC551 **NEW**

3U CompactPCI S.0 Mezzanine Carrier Module

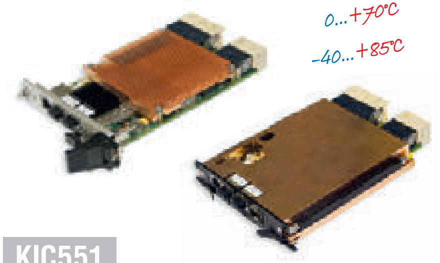
- System Bus PCIe x1
- Support of up to 2 single size mezzanine boards and 1 double size mezzanine board
- "Hot swap" of modules
- Availability of rear output of signals form the module
- Developer kit on the basis of M551T for the development of proprietary mezzanine boards

CNM550

GSM/UMTS Wireless Communication and GPS/GLONASS Positioning Module

- Compliance with PICMG 2.0 specification (32-bit/ 33 MHz)
- GSM 850/900/1800/1900 MHz, UMTS 850/1900/2100 MHz
- Data transmission:
  GPRS (up to 48 Kbit/s reception/transmission), EDGE (up to 236.8 Kbit/s reception), HSDPA (up to 7.2 Mbit reception), HSUPA class 5 (up to 2 Mbit transmission)
- 2×SIM/USIM card sockets
- USB 2.0 device interface
- 24 universal GPS/GLONASS channels; maximum positioning error – 5 m (2 m in differential mode)
- External GSM/UMTS and GSM/GLONASS antennas support
- Supports Windows XP Embedded/Vista/7, Linux

Peripheral 3U CompactPCI modules



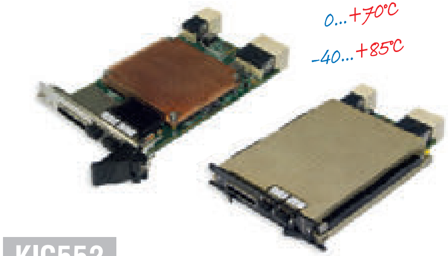
0...+70°C

-40...+85°C

KIC551

3U CompactPCI S.0 PCIe/GB Ethernet Switchboard

- Compliance with PICMG® CPCI-S.0 R1.0, PCI Express® 3.0 specification, PCI Express® External Cabling Specification rev.1
- Dimensions: 3U: 160×100 mm , 4HP
- Power supply: +12 V
- MTBF: no less than 80 000 hours
- Windows 7, Linux 2.6



0...+70°C

-40...+85°C

KIC552

3U CompactPCI S.0 PCIe (External) Switchboard

- Compatibility with PICMG/VITA standards: PICMG CPCI-S 1.0 D0.70
- CompactPCI Serial
- PCI Express External Cabling
- PCI Express Fiber Optics
- Weight: no more than 600 g
- Power supply: +12 B ± 10%, power consumption: no more than 40 W
- MTBF: no less than 100 000 hours
- Linux Debian 7.0 32-bit, Astra Linux 64-bit

-40...+85°C

PS510 **NEW**

3U CompactPCI S.0 Power Supply Module

- Input voltages: 24, 48, 72, 110 V
- Power: 200 W
- Insulation voltage: 1000 V
- Hot redundancy
- Control over I²C bus
- Connector type: 51939-667

Embedded modules

Computer-on-modules

Industrial Automation

Rugged PCs

Internet-of-Things/M2M

Control monitoring

www.fastwel.com

CPC1310

COM Express Intel Atom N450/D510 Based Module

- COM Express Basic
- Intel Atom N450 Single Core/ D510 Dual Core, 1.66 GHz, 512 KB cache/1 MB cache
- 512 MB/ 1 GB DDR2 SDRAM 667 MHz w/o ECC, 64-bit addressing, soldered
- SATA interface (50 MB/s read, 35 MB/s write)
- 8×USB 2.0
- Shock/vibration: 50g/5g
- Microsoft Windows® 7/8, Linux 2.6, QNX 6.4

CPC1302 **NEW**

Mezzanine COM Express Basic Intel BroadWell-H 47W CPU Module

- 64-bit CPU Intel BroadWell-H 47W (37W CTDP), 13 nm or Intel Core i5-4422E 4th Gen 25W (Haswell Refresh), 22 nm
- DDR3L-1600 SDRAM up to 8 GB with ECC support
- FLASH BIOS: 128 Mb SPI-Flash, modifiable within the system
- FRAM 32 KB (SPI port) for storing user data
- COM-Express Type 6 connector
- SSD 8GB on SATA interface
- RTC with power supply from “RTC battery” port
- Watchdog timer
- Power supply: +12 V from COM-Express connector (+5 V (SBY) as option)
- Linux, QNX, Microsoft Windows Embedded Standard 8, Microsoft Windows Embedded Standard 7

-40...+85°C

CPC1311

COM Express Intel Atom E3845/E3825/E3827 Based Module

- Intel Atom: E3845: 1.91 GHz, 4x core, (CPC1311-01 version); E3825: 1.33 GHz, 2x cores, (CPC1311-02 version); E3827: 1.75 GHz, 2x cores, (CPC1311-03 version)
- L1-Cache (32 KB of instructions, 24 KB of data); L2-Cache 1024 KB
- DDR3L-1066/1333 SDRAM up to 4 GB with ECC support
- SSD SATA Flash-drive: 4 GB (SLC NAND Flash)
- Linux 2.6, QNX 6.5, Windows Embedded 8, Windows Embedded 7

-40...+85°C

CPB907

Mezzanine CPU Module COM Express® mini, Type 10

- Intel Atom E6xxT™ 0.6/1.6 GHz CPU
- DDR2-800 SDRAM, 512/1024 MB, soldered
- Integrated graphics controller 400 MHz
- 4 GB NAND flash (SLC)
- COM Express® Type 10 connector signals
- Shock/vibration stability: 50g/5g
- Microsoft™ MS-DOS®6.22, FreeDOS, Linux 2.6, QNX 6.5.x, Microsoft™ Windows® CE 6.0, Microsoft™ Windows® XP Embedded

Computer-on-modules

0...+70°C

-40...+85°C

CPB906

"FemtoCore" Module Based on Vortex86DX

- Vortex86DX processor 600 MHz
- 256 MB DDR2 SDRAM
- 10/100 Mbit/s Fast Ethernet
- 32-bit PCI, 8-bit ISA, LPC
- Two USB 2.0
- IDE interface (alternative 2×SDIO)
- Two RS-232, PS/2
- Eight digital I/O ports

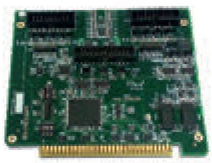
-40...+85°C

CPB904

ETX

ETX Module Based on AMD® Geode™ LX800

- AMD® Geode™ LX800 500 MHz
- Soldered 256/512 DDR SDRAM or SODIMM
- VGA and LCD up to 1024×768
- 10/100 Fast Ethernet controller
- 32-bit PCI, 16-bit ISA
- 4×USB2.0 ports, 3×RS-232
- EIDE: ATA-5/ATAPI UDMA100
- Windows XP Embedded, Linux, QNX



-40...+85°C

AIC124

Analog I/O Module

- 16x single-wire or 8x differential channels;
- 8x channel digital output port: CMOS levels; Group galvanic isolation
- Maximum voltage between module channels and ISA bus: 500 V DC
- MTBF: 180 000 hours
- Dimensions: 125×123×27 mm
- Vibration resistance: 5g
- Single shock resistance: 100g
- Multiple shock resistance: 50g

-40...+85°C

DIC120

Programmable I/O Module

- System bus: 8-bit ISA bus
- Digital I/O: 96 (DIC120-01) or 48 (DIC120-02) digital I/O channels with logical signal levels (CMOS, TTL)
- Support of timers/pulse counters
- Power consumption: +5 V ± 5%, no more than 340 mA
- Dimensions: no more than 125×115 mm
- FDOS, FreeDOS, Windows XP (Embedded), Linux 2.6

-40...+85°C

DIC122

Digital Input Card with Galvanic Isolation

- 32x digital/frequency input channels
- Single-wire or two-wire connection of signals
- Frequency measurement via any channel
- Generation of the event hardware interrupts at inputs
- System bus: 8-bit ISA bus
- Delay of input signals: 25 µs
- Frequency measurement via any channel
- Isolated voltage source of: +12V for potential-free contacts (isolation 1000 V)
- Optical isolation of inputs between channels: 500 V
- Optical isolation of inputs between a channel and the “ground”: 1000 V
- Programmed time interval for de-bouncing for inputs
- Software compatibility with DIC112
- Programming of interrupts

Legacy Products MICROPC

-40...+85°C

DIC 123

Digital Output Card with Galvanic Isolation

- System bus: 8-bit ISA bus
- 32x digital output channels
- Single-wire or two-wire connection of signals
- Switching output voltages/ currents 60 V/ 500 mA (by differential load connection)
- LED indication of requests (addressing)
- Maximum switch on/switch off time: 3 ms
- Galvanic isolation of inputs between channels: 500 V
- Galvanic isolation of inputs between a channel and the “ground”: 1000 V
- Control of output states (prior to isolation)
- Six separated lines of hardware interrupts
- Software compatibility with: FDOS, FreeDOS

-40...+85°C

PS151

Power Supply Module in MicroPC format

- MicroPC form–factor
- Input voltage: 10,5…36 V
- Protection against surge overvoltages at input of the primary power supply
- Consumption current in switched-on condition: 5 mA
- Galvanic isolation at input/output: 1000 V
- Protection against overloads and overheating
- Vibration/Single shocks/Multiple shocks resistance: 5g/100g/50g

CPC108

MicroPC AMD® Geode™ LX800 CPU Module

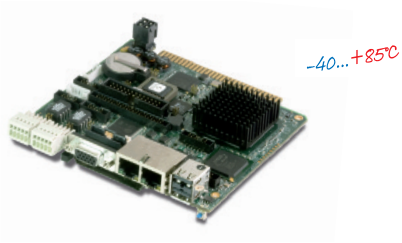
- AMD® Geode™ LX800 CPU, 500 MHz
- 256 MB DDR SDRAM
- Support for LCD panels (resolution up to 1600×1200) and CRT monitors (resolution up to 1920×1440)
- 2×Isolated CAN ports via KIB985
- Fast Ethernet controller 10/100 Mb/s
- 4×USB 2.0, 2×RS-232, isolated 2×RS-422/485, PS/2
- DOS, QNX, Windows CE/XP Embedded, RTOS32, Linux

CPC109

MicroPC Vortex86DX 600 MHz CPU Module

- Vortex86DX 600 MHz
- 256 MB DDR II SDRAM (soldered)
- 1 GB SLC NAND Flash (soldered)
- CompactFlash socket
- Ethernet port: 10/100 Mbit/s
- 4×USB 2.0
- 8×Isolated analog inputs, 12-bit ADC
- 2×Isolated analog outputs: 12-bit DAC
- 72 DIO
- MS DOS 6.22, Fastwel FDOS 6.22, Linux 2.6, QNX, Windows CE 5

Legacy Products MICROPC



CPC150

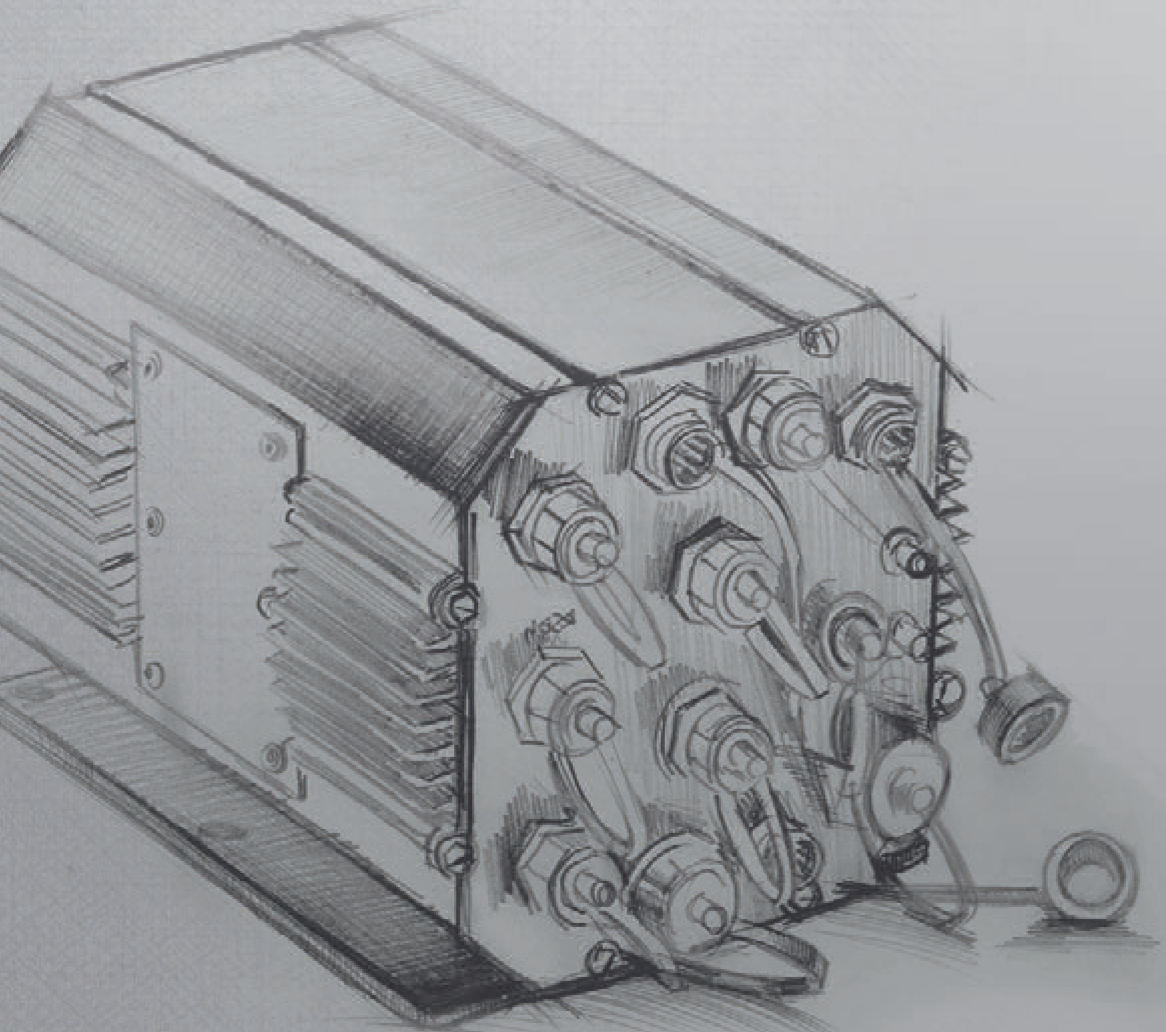
MicroPC AMD® Geode™ LX800 CPU Module

- AMD® Geode™ LX 800 (500 MHz)
- System memory: 256 MB DDR SDRAM
- Flash-disk: 1 GB with IDE interface
- CompactFlash (Type I or II) socket
- Graphics controller: CRT, LCD (TFT or DSTN) up to 1920×1440
- 2×Ethernet 10/100 Mbit controllers
- FPGA with open programming interface and 256 KB SRAM
- Serial ports: 2×RS-232, 2×RS-422/485 isolated
- 4×USB 2.0
- Linux 2.6, Fastwel FDOS 6.22, QNX 4.25, 6.3, Windows CE/XP Embedded

CPC152

MicroPC Vortex86DX™ 600 MHz CPU Module

- Vortex86DX™ 600 MHz CPU
- DDR2 SDRAM 256 MB
- 2 GB NAND Flash (SLC)
- Serial ports: COM1, COM2 with the rate of exchange up to 750 KB/s via RS-422/485; COM3, COM4: RS-232 (9-wire), exchange rate up to 250 KB/s via RS-232
- PS/2 port
- RTC with integrated lithium battery 3 V
- Shock/vibration resistance: 50g/5g
- MS-DOS 6.22, FreeDOS, Linux 2.6, QNX 4.25, QNX 6.5x, Windows CE 5.0, Windows XP Embedded



Industrial PCs

Industrial Box and Panel PCs

Industrial PCs

Industrial Box and Panel PCs

System Control

CCTV

Infotainment

Industrial Box and Panel PCs

ГОСТ Р 54434-2011

EN 50155 Compliance

The products below are the examples of basic platforms.
They are fully configurable and can be customized according to the specific demands of your application.

-50...+60°C

BS04

Fanless Panel PC

- Dual core 32-bit/64-bit Intel Pineview-D (D510) x86 CPU
- RAM: DDR2 SDRAM 667 MHz 1 GB, soldered
- NAND Flash Drive 4 GB, soldered and connected to SATA interface
- 10.4" display, resolution 800×600
- 2×CAN, 2×RS4-22/485, 2×Ethernet 10/100/1000 MB/s
- 2×CFAST, 1×SDHS,
- No less than IP65 – enclosure front surface; no less than IP40 – enclosure steel surface
- EN50155 compliant
- FREEDOS 6.22, Windows XPe, CE5.0, Linux 2.6, QNX 6.4

-30...+50°C

ONYX08

Freescale i.MX6 Based Tablet Computer

- Freescale iMX6 applications processor 1 GHz (4 cores)
- RAM DDR3L 1(2) GB or SSD soldered 8 GB (16/32 GB as customized option)
- 1×SDHC slot up to 64 GB
- USB 2.0 OTG
- 2×SIM-cards
- Display 8.4" with 800×600 resolution; screen brightness: 400 CD/MI, shock resistant and antiglare touch-screen
- Docking station availability
- Global positioning systems (integrated active GLONASS/GPS aerial)
- Modifications according to customer’s requirements
- Possibility to install video camera

-30...+65°C

IMS28/38

28"/38" Network Information Module

- Intel Atom E6xxT
- RAM: up to 1024 MB, soldered
- Flashdrive 4 GB, soldered; slot for CFast
- 28"/38" display
- Resolution: 1366×256/ 1920×502
- Brightness: 1000 cd/m^2
- EN50155 compliant
- Linux 2,6

Industrial Box and Panel PCs

The products below are the examples of basic platforms.
They are fully configurable and can be customized according to the specific demands of your application.

-40...+85°C

MK300

Box-PC with StackPC Extension Option

- Intel Pineview D Dual Core (D510) 1.66 GHz
- RAM: DDR2-667 64-bit up to 2 GB (Onboard)
- VGA (from I/O connectors of CPC309)
- 4×USB (from interface module, from Stack PC)
- 4×GbE with PoE, switch (from I/O connectors from NIM354 switch)
- Wi-Fi (from a module in miniPCIe connectors on KIC301)
- GPS/GLONASS (from miniPCIe USB module on KIC301)
- Single/Multiple shock resistance: 50g/25g (at 1000 shocks)
- MS DOS 6.22, FreeDOS, Windows XP (Embedded), Linux 2.6, QNX 6.4

-40...+70°C

MK308

PC Platform for Modules in PC/104+ Form-factor

- Intel® Atom D510, 1.66 GHz
- Compact Flash: 16 GB
- 2×LAN 10/100/1000 Mb/s, 3×USB 2.0
- 1×RS-232, 4×RS-485/422 serial ports, 2×CAN, PS/2, 4×GPIO
- GLONASS/GPS aerial input, GSM aerial input, WiFi aerial input
- Vibration/single shocks/multiple shocks resistance: 5g/100g/50g
- IP65
- Installation of up to 7 PC/104+ module
- FreeDOS, Windows XPe, Linux 2.6, QNX 6.5

0...+70°C

-40...+85°C

MK307

Box-PC with PC/104 Extension Option

- DM&P Vortex86DX 600 MHz CPU
- 256 MB DDR2 SDRAM
- VGA, LVDS, LCD up to 1280×1024
- Ethernet controller 10/100 Mb/s
- 4×USB 2.0 ports
- Housing up to five PC/104 Extension modules
- 50g/5g – shock/vibration resistance
- 10…36 V DC Power in
- IP65 Sealed

Industrial Box and Panel PCs

-40...+70°C

NM350

Gigabit Ethernet Network Switch

- Integrated switch for 6×Gigabit Ethernet channels operating at the data link (second) level of OSI model
- 4×ports with PoE PSE technology support according to the IEEE 802.3af standard; compatibility with devices up to 15.4 W per channel
- Industrial M12 connectors
- IP65

-40...+70°C

BUK02

CCTV Video Server for Railway

- Intel Pineview_M (_D) 1.66 GHz Dual Core (D510)
- RAM: 1 GB DDR2 SDRAM 667 MHz
- User Interfaces: 2×USB 2.0, 3×Gigabit Ethernet,
- 2×RS-422/485, 2×CAN, LVDS
- Video output: Connection of up to 8x analog
- cameras of PAL/NTSC standard
- Data storage subsystem: 2x removable SATA drives up to 1 TB
- Supported OS: Linux 2.6
- IP20
- EN50155 compliant

High performance embedded computers

This computer below is fully configurable and can be customized according to the specific demands of your application.

3U CPCI S.0 based High-Performance Heterogeneous Computing Platform — Grifon

Key features

- PICMG CPCI-S.0 R1.0 CompactPCI® Serial Specification compatible enclosure
- Supports installation of up to 9 modules (CPU and / or IO modules)
- Supported computational architectures: x86, NVIDIA, GPU AMD, FPGA
- Resistance to sinusoidal vibration: 6g
- Resistance to single/ multiple shocks: 75g/ 15g
- DC power supply voltage: +24 V, +48 V
- Weight: ~ 20 kg
- Dimensions: 460×400×190 mm

Overview

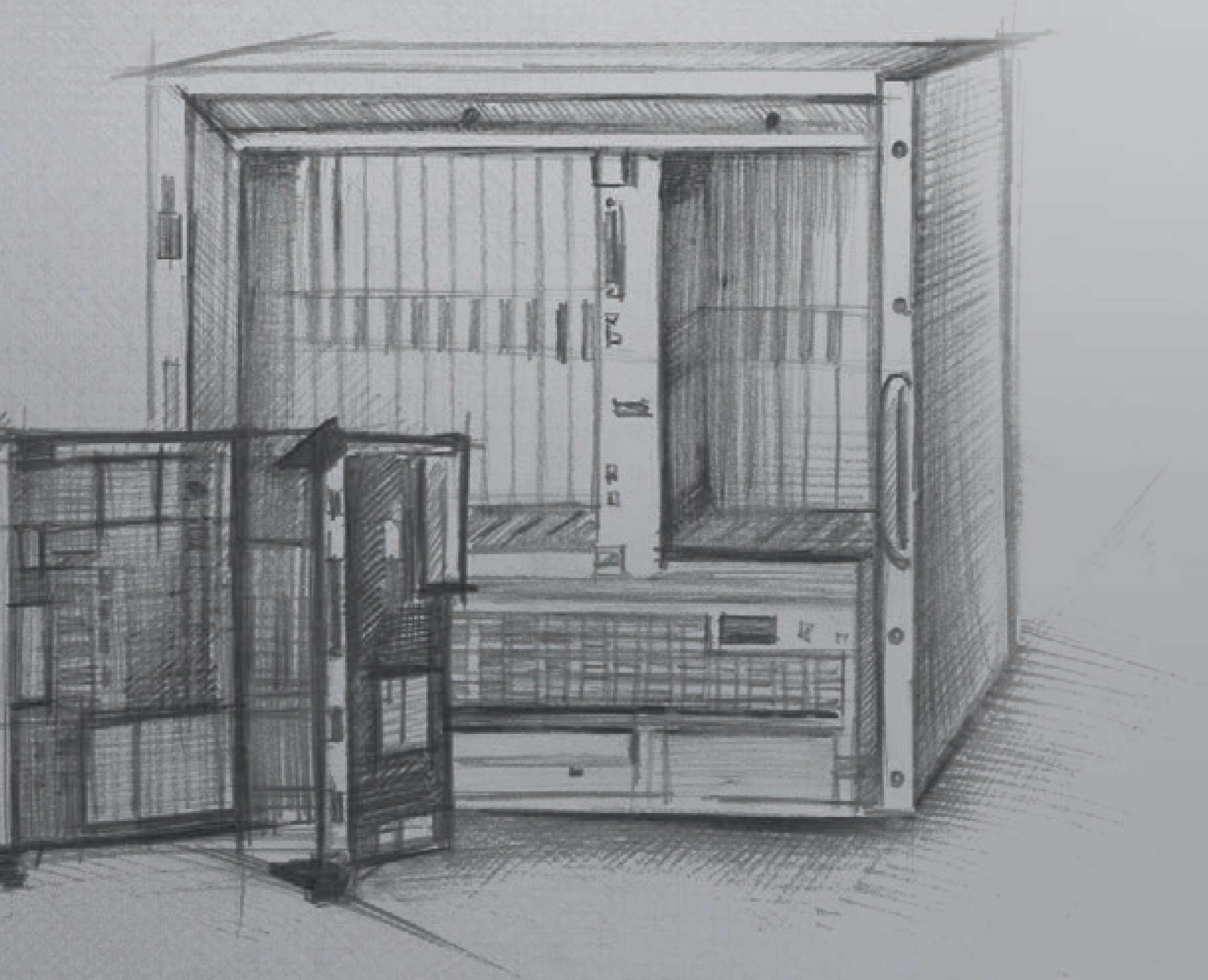
Grifon is a high-performance heterogeneous computing platform implemented in rugged enclosure with conduction heat removal. This computer is designed for creation of high-performance platforms, including multichannel video processing systems in ground\water and air transport vehicles.

The core feature of the platform is its capability to arrange parallel-pipeline computations.

High performance embedded computers

Technical specification

- PICMG CPCI-S.0 R1.0 CompactPCI® Serial Specification compatible enclosure
- Supports installation of up to 9 modules (CPU and / or IO modules)
- Supports installation of two power supply sources. REDUNDANCY
- Supported computational architectures: x86, NVIDIA, GPU AMD, FPGA
- Broad capabilities in terms of connector installation: front or rear cover, horizontal or vertical plane
- Significant flexibility in configuration selection: random amount of computing modules of various architectures
- Possibility to build a unified system based on several units, connected with optical communication lines
- Conduction heat-removal from modules in accordance with the PICMG CPCI-S.0 R1.0 standard
- Availability of rear I/O of signals via passive RIO modules.



Systems & Customization

- Coating
- Fastwel EcoSystems
- Assembling & Customization
- System Partnership

Coating

Protective coating is a thin protective polymeric film (25–75 µm thick) applied on an assembled electronic module or PCB. It is mainly intended for protection of electronics operating in rugged environments, exposed to moisture, aggressive chemicals, salt mist, vibration, and risk of fungous organics buildup.

For high quality protection of its products against various environmental impacts Fastwel employs the HumiSeal® 1A33 urethane protective coating.

Main Specifications of the Coating

Service Life:	Not less than 20 years
Coating Thickness:	25 µm to 75 µm
Dielectric Breakdown Voltage:	Not less than 7500 V
Insulation Resistance:	Not less than 200×10^{12} ohms (200T)
Continuous Use Operating Range:	–65 to +125°C

- Polyurethane (PU) coatings provide excellent chemical stability, good moisture protection, dielectric and temperature characteristics.
- This coating is certified to conform UL American standards. In addition, PU coatings comply with the requirements of IEC-1086 and IPC-CC-830B industry standards accepted by most aerospace companies in the United States and European Union.

Protective coating is a proven and efficient way to increase the resistance of electronic modules against all types of surface shortings caused by various environmental impacts, such as dewfall, salt mist, ingress of metallic particles. Fastwel products with protective coating have proved themselves to be a good advantage among the customers from different branches of industry, transport, and defense.

Fastwel Ecosystem

We work in close alliance with more than 90 embedded electronics manufacturers and can be your primary one-stop buy supplier. You may benefit from having fully compatible and tested electronics from a single source at a competitive pricing level.

Order together with our boards!

3U & 6U Rugged CPCI CPU modules

Chassis

- 3U
- 6U

Storage

- CF
- SSD
- HDD
- mSATA

OS

- Linux
- Windows
- QNX

Peripherals

- PICMG 2.0, 2.16, 2.30, S.0 Extension modules
- CompactPCI power suppliers

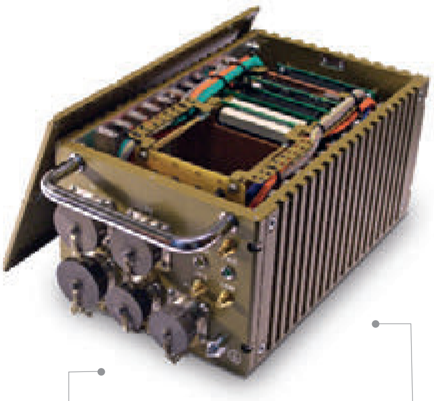
Accessories

- Displays
- Industrial keyboards and pointing devices
- IP/Analog cameras

Fastwel Ecosystem

Order together with our boards!

PC/104 and StackPC Rugged SBCs



Storage

- CF
- SSD
- HDD
- mSATA

OS

- Linux
- Windows
- QNX

Peripherals

- Graphical Processor boards
- Wireless communication boards
- Interface Modules
- Power suppliers
- DIO/AIO modules

Accessories

- Displays
- Industrial keyboards and pointing devices
- IP/Analog cameras

Assembling

To make a better approach to customers' needs, Fastwel offers electronic modules, cases and card cages assembly service. Due to developed network of integration partners we are capable to assemble complicated products, including industrial computers, servers, special purpose monitors, 19-inch stands, cases and blocks.

It is widely known that not only mechanical features determine the assembly process quality. The human factor, hidden development and production defects are of great significance as well. Competent testing of assembled products plays an important role in the manufacturing process. It requires both appropriate equipment and professional engineering team, which is not only developing test stands and software, but can also find defects and do rework operations.

Fastwel Testing Department has all the necessary equipment; its staff consists of specialists who have experience in complicated rework stations and test desks development. All together, it allows the company to reveal defects and rework products even before they get off the production line. Product testing minimizes the risk of failure during the operating time, which is extremely important for mission critical applications.

Contract manufacturing

Having long-term experience in complex electronics development, Fastwel offers contract manufacturing services which include not only separate electronic modules production, but also complete solutions incorporating hardware and software components.

The cooperation with customer is not finished at the elaboration of performance specifications, but continues throughout all stages of product development – construction of testing equipment and software, prototyping, preproduction samples building and setup, creation of design and maintenance documentation, pilot lot production.

System and application software is developed as well. Among supported operating systems are Windows XPe/CE, Linux, RTOS32, QNX 4.25, QNX 6.3, VxWorks.

System Platforms

Our important system partnership with Elma Electronics allows us to meet the demands of our customers for integrated platforms based on Elma housing solutions and Fastwel CPU boards.

Elma has vast expertise in Eurocard-based system platforms with most relevant PICMG and VITA bus architectures, such as AdvancedTCA, MicroTCA, CompactPSB, CompactPCI, CompactPCI Serial/PlusIO, OpenVPX, VPX, VXS, VME64x, VME etc.

We are able to integrate almost every Fastwel "passive backplane suitable" CPU module with Elma products and provide our customer with a validated platform, which can become the base of his embedded solution and save time for other complicated tasks.

Software Systems

QNX Board Vendor Enablement Program is designed to support single board computer vendors by enabling them to market QNX-based products, speed up time-to-market and build strong out-of-the-box solutions.

Embeded Flash Storage

The industrial CPU modules and SBCs from Fastwel can be supplied with the Innodisk rugged 2.5", ATA, SATA, CF Cards on your request. You may benefit from having fully compatible products from a single source at a competitive pricing level.

Device Software Optimization

Wind River device software optimization technologies, including industry-leading multicore solutions, are available on Fastwel mission-critical hardware, enabling Fastwel customers to benefit from Wind River software and tools like VxWorks RTOS, Wind River embedded virtualization technologies and the award-winning integrated development environment, Wind River Workbench, in their projects.

Fastwel
Creating the Future!

CORPORATE OFFICES:

EUROPE, MIDDLE EAST, AFRICA AND ASIA PACIFIC

Fastwel Group Co. Ltd

108 Profsoyuznaya Str.
Moscow, 117437 Russia
Tel: +7-495-232-1681
Fax: +7-495-232-1654
E-mail: info@fastwel.com

NORTH, CENTRAL AND SOUTH AMERICA

Fastwel Corporation US

4370 La Jolla Village Drive
Northern Trust Building, Suite 400
San Diego, California 92122-1249, USA
Phone: 858-775-3887
E-mail: info@fastwel.com

Ver.13