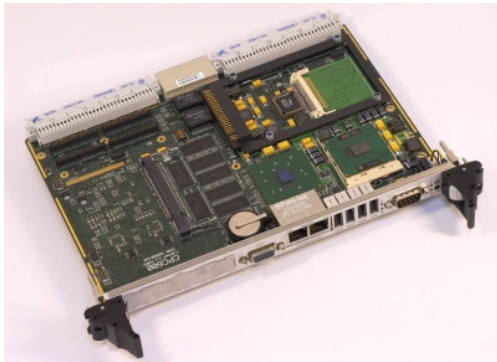


**VME64/VME64x/2eSST 6U processor board
based on Intel Pentium M up to 1.8 GHz and 4 Gigabit Ethernet channels**

CPC600



Specifications

- Intel Pentium M processor (up to 1.8 GHz, 400 MHz system bus) from long-term manufacturing program
- VITA31.1 - Gigabit Ethernet and VME64/64x standards compliance
- Up to 2 GB DDR SDRAM with ECC: 1 GB soldered and 1 GB in SODIMM socket
- Video interface: CRT monitors support, resolutions up to 2048x1536 at 75 Hz
- Two Gigabit Ethernet channels at front panel and two – via backplane
- 64-bit PMC interface
- Interfaces for 1.8" and 2.5" HDD
- Passive cooling versions
- Industrial (-40...+85 °C) or commercial (0...+70 °C) operating temperature ranges
- Moisture-proof coating (option)

Description

CPC600 based on Intel Pentium M 1.8 GHz is one of the most efficient and reliable boards in its class.

Most interesting key features of the Fastwel CPC600 are described below.

Fastwel CPC600 offers system developers to take full advantage of VME 64x parallel bus capabilities as well as opportunity to use x86 compatible software components. CPC600 architecture is based on Intel Pentium M CPUs from long-term manufacturing program, and on Tundra Semiconductor Tsi148, which is the highest bandwidth VME64 bridge available. This bridge provides data exchange rate up to 320 MB/s (2eSST protocol) between south bridge and VME peripheral cards and is backward compatible with VME32, VME64, and VME64x protocols.

High I/O bus bandwidth allows using CPC600 in high-performance computer systems with numerous peripherals or to replace obsolete processor boards in off-the-shelf systems in order to raise reliability and VME bus data exchange rate.



Intel long-term availability line includes processors from ULV Celeron M at 1 GHz with thermal budget of as low as 5.5 W allowing to use it in systems with free convection cooling, and up to Pentium M at 1.8 GHz capable to operate within wide temperature range in VME crates with forced ventilation.

CPC600 employs DDR SDRAM memory with Error-Correction Code. This function corrects 1-bit errors in 64-bit memory blocks, thus increasing system persistence in environments with unstable power supply, static discharges, high RFI levels, and radiation interference.

Maximum memory capacity is 2 GB, including 512 KB/1GB soldered and 512 KB/1GB installed into SODIMM socket.

Fastwel CPC600 has vast communication capabilities – four independent Gigabit Ethernet channels, two of which are available at front panel, and the rest two are routed to P0 backplane connector according to VITA31.1 standard. This allows using CPC600 in cluster systems with packet switching via backplane. Gigabit Ethernet controllers are connected via PCI-X bus, giving opportunity to reach data exchange rate of up to 950 MB/s. Therefore, using CPC600, VME system developers have at their disposal a choice of three high-speed communication channels – two Gigabit Ethernet and highest bandwidth VME parallel bus – in building most efficient architecture for data, commands and modules monitoring information exchange.

CPC600 uses onboard graphics controller for video signal output via two independent interfaces, VGA and LVDS. VGA interface is available through front panel connector; supported resolutions up to 2048x1536 at 75 Hz. LVDS signals are routed to P0 backplane connector and are available via rear I/O board.

Fastwel CPC600 has unique data and software components storage subsystem architecture. Except using standard CompactFlash socket and soldered onboard 32 MB solid-state disk, user can install two IDE 1.8" or 2.5" HDDs, either both or separately, keeping within boundaries of one 4HP slot.

CPC600-01 version has a site, where either 1.8" HDD or 64-bit PMC module is installed. CPC600-02 version is capable to carry additionally a 2.5" HDD at the expense of heatsink size. In this configuration, reduced heatsink size requires more efficient forced system ventilation to draw heat from CPU and GMCH.

Besides, CPC600 has two SATA and one EIDE interfaces accessible via rear I/O board connectors. This allows utilizing external hard drives available in the market.

To increase applications reliability, Fastwel CPC600 is equipped with a number of hardware and software solutions, lowering risk of system hang-ups and providing opportunity to monitor system state remotely. These solutions include power supply voltages and temperatures monitoring, watchdog timer, and possibility of using data from baseboard management controller.

All key components of Fastwel CPC600 including CPU and memory are soldered onboard, thus allowing the board to withstand vibration loads up to 5G and shocks up to 50G. Moreover, it makes protective coating more effective, which in return better prevents surface shorts.

For customers developing systems with conductive cooling Fastwel offers cost-effective adaptation of CPC600. This 8HP variant has wide choice of interfaces at the front panel –



Gigabit Ethernet, two USB 2.0, two COM ports, SVGA, and audio – along with onboard connectors to attach SATA, IDE, and floppy disk drives.

CPC600 supports different operating systems from real-time to wide spread industrial automation systems.

Operating temperature range for industrial version of CPC600 is -40 to +85°C, commercial version is intended for operation at temperatures from 0 to +70°C.

Fastwel CPC600 provides developers with highly integrated multipurpose configurable embedded computing platform for use with application-specific boards through both VME bus and Gigabit Ethernet channels. It is possible to build systems with both front and rear side cabling using Fastwel RIO680 rear I/O module. Plurality of usage models makes CPC600 a multipurpose tool in hands of VME systems developers. It helps to generate solutions for wide range of applications from data acquisition and processing systems in industrial automation to extremely reliable high-performance concurrent systems consisting of 21 CPC600 boards interconnected via three data-exchange networks.

Details at <http://www.fastwel.com/products/356046/vme/240095.html>

About the author:

Alexander Buravlev,
Sales Director
Fastwel Ltd
buravlev@fastwel.com

In his current role Alexander Buravlev drives strategic sales opportunities for Fastwel (www.fastwel.com) - one of the leading Embedded Computers manufacturers in Eastern Europe. Fastwel provides highly reliable solutions with focus on robust , mission critical applications for high availability systems to be used in various markets like transport, avionics/aerospace, telecom, industrial, machinery etc. Before Fastwel Alexander worked for Intel Corp. developing projects and pushing sales of Intel IA-32, network processors and other wireline and wireless silicons as well as system solutions in telecommunication and industrial market segments. Alexander came to Intel from Philips Semiconductors where he developed projects and drove sales of Philips chips to key accounts in automotive, industrial, identification and communcation segments. Alexander received education in the field of Solid State Physics followed by PhD in Semiconductors Technology. Aged 42, lives in Moscow, Russia.

Translated from Russian by Boris Kalinin
Fastwel technical writer
kalinin@fastwel.ru