CPU-1454

Datasheet

Fanless PC/104-Plus 400Mhz Celeron Single Board Computer w/Gigabit and Fast Ethernet

FEATURES

Processor:
Intel ULV BGA Celeron® 400 MHz Tualatin 0.13µm, 256KB L2 cache, 100MHz FSB

Chipset:
Intel® 815E

RAM:
256MB SDRAM soldered onboard

Network:
Gigabit Ethernet (1000Mbps) and 10/100 Ethernet Controllers (RJ-45 Adapters Sold Separately)

USB:
4x USB 1.1 ports

Serial Ports:
2 Serial ports: 1 RS-232, 1 RS-232/422/485

Video:
Analog VGA output and Digital LVDS output

Audio:
AC97 Audio CODEC port (Adapter sold separately)

Other Interfaces:
UltraATA IDE Controller, Keyboard, Mouse, auxiliary power

DESCRIPTION

The CPU-1454 single board computer (SBC) combines an 400MHz Intel® Celeron® processor, Intel® 815E chipset, standard PC interfaces, and dual LAN controllers (Gigabit and Fast Ethernet) to deliver exceptional computational performance and low power consumption for demanding embedded systems applications. System DRAM (256MB) is soldered onboard to enhance shock/vibration resistance.

Like other CPU-146X and CPU-145X boards, this high reliability CPU module is designed to operate without any active cooling (fanless) over standard (0 to +50°C) and extended (-40 to +85°C) operating temperature ranges. All extended temperature range CPU modules are tested and qualified individually to ensure reliability. These rugged CPU cards have been widely deployed in demanding mobile military and commercial applications that involve high shock/vibration and temperature extremes. A structural heat spreader plate is integrated on top of each CPU module to dissipate heat from critical components over a large surface area to the enclosure wall.

This x86 CPU module is compatible with Linux, Windows XP Embedded, Windows CE, VxWorks, and QNX operating systems. The unit incorporates an embedded BIOS in a 1MB Flash re-programmable EPROM. Set-up parameters are also saved in Flash to enable the module to operate without a battery and avoid set-up corruption in the field.

Onboard interfaces include Gigabit Ethernet Controller (1000Mbps), Fast Ethernet Interface (10/100Mbps), 4 USB1.1 ports, 2 serial ports, analog VGA and digital LVDS interfaces, AC97 audio interface, auxiliary power, keyboard and mouse ports, as well as a high speed IDE controller that supports any type of IDE Flash device (DiskonModule, CompactFlash and Flash Disk). Male PC/104 (ISA) and PC/104-Plus (PCI) bus connectors are found on the bottom of the board, enabling it to stack on top of other add-on modules. The module also includes a hardware Watchdog Timer and Real Time Clock (external backup battery needed).

ACCESSORIES: cable set, RJ-45 10/100 Ethernet transceiver, USB adapter, and AC97 CODEC adapter are available separately. For first time users and to ease rapid implementation, a CPU development kit (DTK) is highly recommended. This DTK includes the CPU module, POST code card, cable set, and adapters all pre-installed on a benchtop PC104+ development platform.

Parvus

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SPECIFICATIONS

BIOS:
Eurotech Embedded BIOS in 1MB Flash EPROM

OS Compatibility:
Linux, Windows CE, XP Embedded, VxWorks, QNX

Dimensions:
3.550" x 3.775" x 0.732" (90 x 96 x 18.6 mm), excluding ISA/PCI connectors

Humidity:
Up to 95% non-condensing

RoHS:
RoHS Compliant Replacement for CPU-1453, CPU-1451, or CPU-1450

Operating Temperature:
0ºC to +º50C (Standard); -40°C to +85°C (Extended) with proper structural heatsinking

Power Consumption:
8.0 Watts (Typical)

Power Supply:
+5VDC

Thermal Interface:
For reliable fanless operation, this product integrates a flat aluminum thermal interface plate to facilitate structural heatsinking. A thermally conductive gap pad or coupling compound should be placed on top of this plate with the CPU board mounted in contact with the enclosure wall. Suggested gap pad suppliers include The Bergquist Company or AOS Thermal Compounds.

ORDERING INFORMATION

PART NUMBER	DESCRIPTION
DTK-1454-99	Development Kit - CPU-1454 (Includes PC104 Dev Station, CPU, Cables, Adapters)
CPU-1454-A1	CPU-1454, PC104+ SBC, CELERON 400MHZ 256MB SDRAM, GIG ETH, -40/+85°C
CPU-1454-01	CPU-1454, PC104+ SBC, CELERON 400MHZ 256MB SDRAM, GIG ETH, 0/+50C
CBL-1454-00	Cable Set - CPU-1454/1464
ACS-9096-00	RJ-45 GIGABIT ETHERNET ADAPTER for CPU-1454/1464
ACS-9095-05	RJ-45 10/100 Ethernet Adapter for CPU Modules
ACS-9031-00	Digital LCD/TFT LVDS Receiver for CPU-145X/146X/1851
ACS-9093-01	AC97 Audio CODEC for CPU-1433/145X/146X/1851
ACS-9092-00	4x USB A Connector Adapter for CPU-1233/1433/145X/146X/1851

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