



KEY FEATURES

- ▶ Very low power X86 based processor with typical 2 Watt power profile
- ▶ Mini PCI expansion
- ▶ Compact Flash
- ▶ Two USB 1.1 ports
- ▶ Two serial ports - RS232 and RS232/RS422/RS485 software selectable
- ▶ 8 off GPIO channels
- ▶ Single voltage operation

MINI PCI OPTIONS

- ▶ Graphics - VGA and LCD
- ▶ Wireless Connectivity - IEEE 802.11 Mini PCI card
- ▶ Additional COMS - 4 serial port Mini PCI card

APEX ZF PC104+ BOARD

The Apex ZF is a versatile, reliable X86 PC104+ board, offering a viable alternative for 186, 386 and 486 boards being phased out of production by AMD, Intel and STMicroelectronics. Available in 33MHz, 66MHz or 100Mhz processor options, the APEX ZF was conceived expressly for embedded applications, designed from the ground up with the most comprehensive set of x86 PC functionality.

The board's low power consumption eliminates the need for a fan and heat sink, combining a neat 96mm x 90mm footprint with a low physical profile. A typical 2 Watt power profile means the board can easily operate from batteries during a power failure or in remote locations draw power from a solar cell array. Extended temperature options are available for harsh environments.

Storage options include one ATA-4 compatible IDE channel supporting up to 2 devices and a CompactFlash socket, located on the board underside. Soldered directly to the PCB, the SDRAM is more mechanically robust than a SIMM or DIMM and will withstand the physical abuse found in industrial environments. An EEPROM device provides onboard non volatile storage. Comprehensive IO is provided by two USB 1.1 ports, two serial ports, a bi-directional parallel port and a 10/100baseT ethernet port. Eight 5V, 10mA, TTL GPIO lines support onboard data acquisition functionality. Mini PCI expansion supports a graphical interface and more special function I/O options such as wireless or dual LAN.

The APEX ZF includes a programmable watchdog timer and hardware monitor device managing the voltage rails and temperature. APEX ZF comes with OS support for Windows® CE 6.0, Windows® 98, Embedded Linux, ROM DOS, VxWorks and QNX. The APEX ZF range is fully RoHS compliant with guaranteed availability through to 2011.

System

- ▶ ZF Micro ZFx86 running at 33MHz, 66MHz or 100MHz, a single 8KB unified L1 cache
- ▶ Phoenix BIOS, with integrated Ethernet, support for APM and hardware disabling of on board PCI devices
- ▶ 64MB SDRAM soldered directly to the processor board
- ▶ Customer Splash screen option

Local Storage

- ▶ One ATA-4 compatible IDE channel supporting up to 2 drive devices
- ▶ Compact flash socket located on the board underside
- ▶ 500 byte (byte addressable) I2C EEPROM for non-volatile storage

Operating System Support

- ▶ Windows® CE 6.0, Embedded Linux, QNX, ROM DOS and VxWorks

Enhanced IO

- ▶ Two USB 1.1 ports
- ▶ 8 TTL lines (4 configurable as analogue)
- ▶ Bi-directional parallel port
- ▶ PS/2 mouse and keyboard
- ▶ Two serial ports (one RS232 only and one RS232/RS422/RS485 software selectable)

Local Area Network

- ▶ 10/100 BaseT - with PXE boot ROM for remote booting

Expansion

- ▶ PC104, PC104+ and mini PCI slot

Display/Audio

- ▶ Graphics option via plug-in Mini-PCI board supporting VGA and LCD
- ▶ In-built software support for character-mode LCD modules utilising HD44780 or compatible controllers
- ▶ PC Speaker interface

Power

- ▶ 5V operation only

System Management

- ▶ All power supplies have voltage monitoring, reset generated if the 5.0 volt rail falls below 4.75 volts
- ▶ System and CPU thermal monitoring
- ▶ Hardware Watchdog timer with programmable timeout for re-set or interrupt. Device driver support
- ▶ Real Time Clock with external battery backup

Environmentals/Mechanicals

- ▶ Operating temperature range 0°C to +60°C
- ▶ Storage temperature -20°C to +70°C
- ▶ Relative Humidity 5 - 95% non-condensing
- ▶ Extended temperature range options
- ▶ Dimensions 96mm x 90mm

Board Cable Kit

- ▶ 1 off 10 way 2mm IDC cable for Ethernet
- ▶ 1 off 20 way 0.1" IDC cable for 2 serial ports
- ▶ 1 off 9 way 0.1" IDC cable for USB 1.1 interfaces
- ▶ 1 off 43 way 2mm IDC cable for primary IDE channel
- ▶ 1 off 50 way 2mm IDC cable for GPIO, PS/2, IrDA, Reset, Beep, Battery, Parallel
- ▶ Molex KK power cable