



***Intel Pentium or K6 processors up to 266 MHz***

***Support for Windows CE, 95, NT***

***Intel 430TX PCIset***

***PCI Ultra-IDE supports four IDE drives***

***512K synchronous Pipeline Burst cache***

***Floppy controller supporting 2.8-MB floppy drives***

***On-board PCI Flat Panel VGA controller***

***PC-104 expansion mezzanine connector for expansion***

***Ultra DMA/33 IDE controller***

***USB and IrDA on-board***

***ACPI (Advanced Configuration Power Interface) Support***

***Two 16550 serial ports (RS232, RS422 and RS485 selectable)***

***0° to +60° C operation temperature range***

***One parallel port (IEEE 1284)***

***Two year warranty***

***Solution***

***IX***

## OVERVIEW

The Zykrnix Solution IX is a high-performance, Tillamook (Pentium) PCI Industrial Single Board Computer that is highly flexible and very small form factor (only 4.80" x 7.28"). Based on the new, highly integrated Intel 430TX PCIset, the Solution IX (S IX) combines Pentium® processor performance with an impressive array of on-board functions including Flat Panel VGA controller, Ultra-IDE, floppy controller, USB, serial and parallel ports. A watchdog timer for critical applications is also included.

With its on-board switching voltage regulator, the S IX runs a complete range of new Intel, AMD and Cyrix processors with MMX™ technology at speeds of 75 to 266MHz and is easily Upgradable to even higher speeds. For added power and performance, the Solution IX has 512 KB Pipeline Burst L2 Cache and up to 128 MB EDO memory via two-72-pin SIMM socket on-board.

The Solution IX's advanced Chips & Technologies 65550Flat Panel controller incorporates up to 2MB of video memory. The S IX's VGA graphics controller is designed to support high performance graphics and video acceleration for all supported display resolutions, display types, and color modes. There is no compromise in performance operating in 8, 16, or 24-bpp color modes allowing true acceleration while displaying up to 16.7M colors and display resolutions up to 1280 X 1024.

The Solution IX comes with a full set of I/O features including two USB connectors. Also, the Solution IX has an integrated PCI Bus Master Enhanced IDE controller with support for the new Ultra DMA33 protocol, which doubles ATA-2 Hard Disk Drive data transfer rates to 33MB/Sec. while maintaining full backwards compatibility with existing PIO Mode 3, PIO Mode 4 and DMA Mode 2 devices.

Fully compliant with the Microsoft PC 97 standard at both the hardware and BIOS levels, the Solution IX comes optional with support for intelligent Hardware Monitoring features, which continuously check the thermal status of the CPU.

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### Zykrnix, Inc.

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# Main features:

- **Optimized for MMX™ Processor Performance**

The Solution IX is very flexible in CPU type and speed. Intel, AMD and Cyrix processors up to 266 MHz are supported.
- **4<sup>th</sup> Generation Intel Pentium chipset optimized for performance**

The Solution IX utilizes the advanced features of the Intel 430TX PCIset to optimize the unrivaled performance of the Intel Pentium® processor with MMX™ technology. Intel 82430TX PCIset supports Intel's new Dynamic Power Management Architecture (DPMA), Concurrent PCI (PCI 2.1), and USB.
- **High-performance EDO memory**

The Solution IX supports Fast page and EDO DRAM via the 72-pin SIMM socket. EDO DRAM delivers an added boost to overall system performance by increasing the CPU-to-memory data transfer rate to 264MB/Sec.
- **Advance BIOS**

The Solution IX comes standard with AWARD Soft BIOS. The BIOS is user configurable to boot an operating system residing in a HDD, CD-ROM or floppy drive. The Solution IX supports popular PC operating systems such as Windows 95 and Windows NT. Zykrnix provides extended support for these operating systems and offers Windows 95 and Windows NT as an orderable option.
- **Ultra-fast L2 Cache**

Supports up to 512KB Pipeline Burst L2 direct-mapped, write-back cache. Most Pentium class processor contains 16 or 32 Kbytes of internal Level 1 (L1) cache memory.
- **Versatile Main Memory Support**

Accepts up to 128MB of EDO memory using two SIMM's of 8, 16, 32, 64MB and on-board memory.

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- **ISA Plug and Play (PnP) Extension**

Unlike PCI cards which are plug and play, ISA cards require setting jumpers to resolve hardware conflicts. To make a computer system PnP, an ISA PnP standard is established and supported by new Oses, such as Windows 95. Under Windows 95, the BIOS must have ISA PnP extension to support the new ISA PnP cards. 16-bit ISA and 32-bit PCI expansion slots provide all the room you need to install a full range of add-on cards.

- **Enhanced PCI Bus Master IDE Controller with Ultra DMA/33 Support**

The Integrated Enhanced PCI Bus Master IDE controller features two dual channel connectors that accept up to four Enhanced IDE devices, including CD-ROM and Tape Backup Drives, as well as Hard Disk Drives supporting the new Ultra DMA/33 protocol which doubles data transfer rates to 33MB/Sec. Standard PIO Mode 3, PIO Mode 4 and DMA Mode 2 devices are also supported.

- **Super Multi I/O**

The Integrated SMC 37C669 Plug and Play super I/O chip features two high-speed 16550A compatible serial ports, one IR port, one high speed EPP/ECP capable parallel port, and one FDD connector. The floppy controller supports 2.88MB format. The I/O port addresses of the serial and parallel ports are programmable via BIOS set-up.

- **USB Support**

The emerging Universal Serial Bus (USB) will provide a common interface to slower speed peripherals in the future. Functions such as keyboard, serial ports, printer port and mouse ports will be consolidated into the USB, greatly simplifying the cabling requirements of future computers. The Solution IX provides two USB ports through the optional USB cable. USB will be supported in the BIOS and operating systems such as Windows NT and Windows 97.

- **IrDA Connector**

An IrDA connector for wireless infrared connections is available on board.

- **Advance Flat Panel VGA controller**

The Chips & Technologies 65550 Flat Panel controller with one or two Mbytes of video memory supports up to 1024 x 768 display resolution.

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# Specifications:

## Processing

### **Flexible Processor support**

Intel, AMD and Cyrix Pentium class processor support  
Up to 266 MHz processing speed is supported  
512K Pipeline Burst Synchronous level 2 cache

### **Up to 128MBytes of main memory**

32 bit wide DRAM interface  
72 pin SIMM connector for field memory expansion

### **Stackable and self-configuring ISA**

Up to 8 ISA bus masters  
Full DMA and IRQ support

### **Flash BIOS with protection**

256Kbytes  
Holds BIOS, POST, PCIBIOS, Plug & Play, Video BIOS  
Boot Block protection

### **Real Time Clock**

Battery or capacitor backup  
Battery life of 2 years - removable standard battery

### **Watchdog**

I/O port 0443H to enable watchdog  
I/O port 0441H to disable watchdog  
Programmable as OFF, or in 2 second steps to greater than 30 seconds

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## I/O

### **Dual PCI IDE controller**

- Supports up to 4 Ultra-IDE drives
- Transfer rates to 33MB/Sec.
- Fully compliant with ATA-2
- PCI Bus Mastering

### **Super I/O System**

- Two serial ports, which are full modem control
- Fully compatible with 16550A
- FIFO on each port
- One port may be IrDA, Infrared Data capable
- COM 2 is RS232, RS422 and RS485 selectable
- Bi-directional parallel port
- DMA capable
- EPP & ECP (IEEE 1284 level 2) compliant

### **Floppy Disk Controller**

- 2.88 Mbytes floppy format support
- DMA control
- Support for 3.5" & 5.25" drives

## Video

### **Chips and Technologies 65550 controller**

- Simultaneous Flat Panel and CRT support
- One or 2MBytes integrated EDO video memory
- Hardware Windows Acceleration
- Flat Panels up to 1024 x 768 resolution
- 256 Gray shades on STN displays
- 16.7M colors on STN displays
- Power management support
- Power sequencing support

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## Power

### **Advanced Power Management**

Power savings by slowing down the CPU clock  
System Management Interrupts for power control

### **On-board Power Module**

Voltages monitored and reported  
5V operation only  
Polarity & Over current protection

### **Thermal management**

Temperature sensor on-board  
Processor throttling to prevent over-heating  
Temperature sensing coupled with power management

## Operating Environment

### **Temperature & Humidity**

0 to +60 °C operating temperature range  
-40 to +80 °C non-operating temperature range  
8 to 85 % Relative Humidity range  
26 °C maximum wet bulb temperature  
20 °C maximum rate of change of temperature per hour  
(Maximum rate of change of temperature must be less than that which causes condensation)

### **Shock & Vibration**

1G Vibration from 50 Hz to 1 kHz  
30G Shock

## Board Dimensions

**PCB Dimension 4.8" X 7.28"/ 122mm X 185mm**

## Reliability & MTBF

### **8-layer PCB construction with full power and ground planes**

MTTR: 5 minutes (based on board replacement)  
Highly reliable construction

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# Ordering Information

The Solution IX , 512K Pipelined Burst Cache,  
Two serial ports, Parallel port, Floppy, IDE and Flat Panel VGA controller with 2 MB of video memory and  
no USB cable would be ordered as:  
Solution9-H1U1V2

## Choose one option from each category:

### Hardware Monitoring options:

- H1 No hardware monitoring
- H2 With hardware monitoring

### USB options:

- U1 No USB cable
- U2 With USB cable

### Video options:

- V1 1 MB EDO video memory on-board
- V2 2 MB EDO video memory on-board

## Warranty

Two years with an optional 5-year extension.  
Call Zykronix for full warranty information.

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