



PC/II+zT Features

- ❑ ZF x86 133MHz Processor, 586-class
- ❑ 128MB of System SDRAM
- ❑ 66MHz Front side bus
- ❑ CRT and Panel Video w/4MB SDRAM
- ❑ Dual 10Base-T or 100Base-TX Ethernet
- ❑ 16MB of Flash memory
- ❑ PC/104-Plus form factor and bus interface
- ❑ Eight IDE Devices, ATA-4 and ATA-5
- ❑ Keyboard, mouse and parallel ports
- ❑ Dual USB and serial ports

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Specifications

Board Form Factor:

3.775 x 3.550 inch, PC/104-Plus compliant, FR4 type

Architecture:

PC@/AT, 586-class compatible, x86 32-bit

586-Class Cpu:

586-Class ZFx86 Low Power S.O.C.
 133 MHz Core Frequency (to 33 MHz minimum)
 66 MHz or 33 MHz FPCI (Internal) Bus
 33 MHz BPCI External (On- & Off-board) bus
 32-Bit x86 Core
 North & South Bridges included
 I/O controller included

Cache Memory

L1 On-Chip Cache
 8 KB – Unified Code/Data Organization
 High performance write-back or Write-through
 Data cache – Four-way set associative LRU algorithm
 Read Line Size – 16-byte, Write Line Size – 4-byte
 Read/Write Cache Access – 1 Clock
 Software Enable/Disable, Write-back/Write-through
 TLB Translation Lookaside
 Linear to physical translation for Paging
 TLB Cache – Four-way set associative 32-entry

Memory

8MB, 16MB, 32MB, 64MB or 128MB SDRAM, Soldered
 32-Bit, 1 to 8 parts of 8M16 or 4M16
 Normal Memory Speed – 66 MHz (10 ns)

Flash Array

4-16 MB Flash Array, Soldered
 BIOS occupies maximum of 256 KB of Flash Array

Dual Serial Ports

(1) or (2) Standard 16550A-compatible UARTs
 16-byte Send/Receive FIFOs
 Baud rates to 230 Kbps are supported
 Full EIA-RS232E and CCITT V.28 Transceivers included
 Output swing ±9V with all Transmitter Outputs
 loaded with 3K ohms to Ground.

Dual USB Ports

Integrated controller supports one root hub with two USB ports
 USB ports signals are pulled to Mass I/O connector
 Supports OpenHCI 1.0a specification
 Supports USB 1.1 Compliance
 Average Bit Rate – 12 Mbps _ 0.25%, or 1.5 Mbps _ 1.5%
 On-board termination (IC terminator)

Dual 10/100 Ethernets

(1) or (2) Complete Ethernet 10Base-T/100Base-TX Controllers
 Your choice – (0), (1), or (2) Ethernet 10/100 Mbps Sub-systems
 Each on-board Ethernet sub-system includes
 Intel GD82559 controller (MAC & PHY)
 Isolation Transformer
 Terminators
 Configuration EEPROM
 Header (10 pins per Ethernet)
 82559 High-integration Controller supports:
 Master interface on local PCI bus
 IEEE 802.3u Auto-negotiation
 IEEE 802.3 10BASE-T & 100BASE-TX compatible PHY
 IEEE 803.3x 100BASE-TX Flow Control
 Chained memory structure for High Performance
 Full or Half Duplex at both 10 and 100 Mbps
 3 KB Transmit FIFO memory
 3 KB Receive FIFO memory

Dual Watchdog Timers

Integrated Dual Watchdog Timers
 Dual timers, 16-bit (2 Secs) & 8-bit (7.2 ms)
 Chained: First timer routable, Second causes unconditional Reset
 Software Controlled, Multi-mode
 External hardware can Enable/Disable

1284 Parallel Port

1) 1284-compliant ECP (Level 2) Multi-mode port
 Support for ECP / EPP 1.9 / EPP (Mode 4) / PS2 / SPP / FIFO
 Output buffers sink & source 14 mA
 Includes Protection Circuit (Printer Powered Up or at higher voltage)
 On-board termination (IC terminator)

Quad ATA/IDE Channels

(4) Channels, IDE/ATA I/O
(8) Devices supported
Integrated 2-Channel PCI IDE ATA-4 Bus-Mastering Controller
ATA-4 Controller Integral to ZF86
Internal Controller on FS PCI bus (FPCI configured at 33 MHz)
Dual Channels, with shared data path
Speed Programmable per Device
Ultra-DMA, Multiword DMA, & PIO modes
Separate 2-Channel PCI IDE ATA-5 Bus-Mastering Controller
ATA-5 Controller on local PCI bus
Dual channels, with independent data paths
Data Transfer Rate – up to 66 MB/sec
Burst – Bus master DMA at 133 MB/sec PCI
Buffers – 128 Byte
Ultra Dma 66, Multiword DMA, & PIO modes (0-4)
CRC support
On-board termination
Drivers – Available
From CMD – DOS, Windows 95/98, NT 4.0, & 2000
From Microsoft – default IDE drivers available.

Video CRT & Flat Panel

Asilant/Intel 69030 or 69000 HiQVideo Accelerator
VGA register set compatibility and I/O accessibility
Includes On-Chip SDRAM
4 MB or 2 MB of high-speed SDRAM for video buffer
Video Memory SDRAM operation at 83 MHz
Video Memory SDRAM transfers up to 664 MBytes/sec
Supports Analog CRT RGB Video Interface
Supports 24-Bit Flat Panel Interface
Flexible Panel Interface – TFT/MIM, DSTN, SSTN, EL, Plasma
Supports Mono and Color
Supports Panel Power On/Off Sequencing
Supports VGA, SVGA, XGA, SXGA, UXGA resolutions
Supports Quarter VGA 32-x240, 320x200
Supports 16:9 Aspect Ratio Panels, 1024x600
Supports HiQColor Technology
Up to 16.7M Colors on STN LCDs and 24-bit active matrix LCDs
256 Gray Shades
Support for Dot Clock to 170 MHz
Support for Flexible Display Modes
Single View Mode – up to 1600 x 1200 x 16 bpp at 60 Hz refresh
Dual Independent Mode – up to 1280 x 1024 x 8 bpp at 60 Hz refresh
Supports Simultaneous CRT / Flat Panel operation
Supports Graphics Acceleration
64-bit Single Cycle BitBLT Engine
Many Features
Supports panels from popular manufacturers
such as Sharp, Optrex, Toshiba, Hitachi, Fujitsu, Samsung,
NEC, Sanyo and others
Asilant/Intel/Chips drivers & Option BIOS included

Real-Time Clock, Alarm

Integral Real-time Clock Controller & Non-volatile Configuration RAM
Periodic Interrupt Generator – settable from 122 _ s to 500 ms
Periodic Alarm Interrupt – settable to any time 24 hour period
242-byte NVRAM included
12 or 24 hour format
Daylight savings time support, Y2KOK.

PC Speaker Output

Available on Mass I/O connector
Conditioned output – _ 9v Typical (_ 5v Minimum)

Power Monitoring

Dual 5% monitor – 5V & +3.3V rails
Reset hold time – 100 ms Minimum, 180 ms Typical
Transient voltage immunity
RESET is valid above +1V

Manual Reset

Available on Mass I/O Connector
Debounce, generates minimum of 100 ms reset on Low to High
Initiated by pulling Manual Reset signal line Low (then High)
TTL/CMOS-compatible input

Keyboard, Mouse

AT-style Keyboard supported
PS/2 Mouse supported
On-board termination for Keyboard & Mouse (IC terminator)

Floppy Disk

Integrated Floppy Disk Controller – 2.88 MB (formatted)
Compatible to PD765A and 82077SL Architecture
FDD Support – 3.5" & 5.25", one Device
Data Transfer Rates – 1 Mbps, 500 Kbps, 300 Kbps, 250 Kbps
(2) Data FIFOs, 16-byte
Recording Format – FM, MFM
Formatted Capacities – 720 KB / 1.2 MB / 1.44 MB

DMA

(7) Standard channels, 32-Bit addressing
(4) 8-Bit Channels,
(3) 16-Bit Channels
8237-compatible

Timer/Counters

(3) Standard timer/counters
8254-compatible
Input Clock – Standard 1.193 (14.31818_ 12) MHz
Timer-0 is Available (Legacy uses for Refresh but in ZF86, its unused)
Timer-1 Creates PC Speaker Output
Timer-2 Creates a Timer Interrupt

Interrupts

(16) Standard interrupts
(13) External
(4) PCI interrupts can be routed to any PIC IRQ
Selectable Edge/level type of IRQ
8259-compatible (dual, cascaded using master IRQ2).

Memory & Address Bus

32-Bit Data bus
32-Bit Address bus

Connectors

Power Connector –
(1) Standard 1x12 Right-Angle header (+5V & +3.3V – Required)
PC/104-Plus (PCI bus) Connectors –
(1) 4x30 2mm pitch Pin and Socket header
Stack-through and non stack-through
Board stacking or other arrangements are customer specified
Shroud available
Ethernet Headers –
(1) 2x5 Right-Angle header (Single Ethernet), or
(1) 2x10 Right-Angle header (Dual Ethernet), or
Customer specified
Mass I/O Connectors –
(1) 5x11 IEC 2mm HM connector, and / or
(1) 5x22 IEC 2mm HM connector, and / or
Customer specified
Total grid size – 5x33 2mm
Support Top Mounting
Support 2mm headers on request (including board stacking headers)
IrDA Header – 2x5 Header
IDE Headers –
(1) or (2) 80-pin FH16-80S Flex connectors
All connectors except for Power are optional

Supply Voltage

Dual supplies at +5V 5% and +3.3V 5%

Bios Software

256 KB BIOS, Flash-based
Flash BIOS SECTOR LOCK Protection
Asilant/Intel (Chips) 69030/69000 VGA Driver BIOS included
CMD IDE Driver BIOS included
Intel Ethernet Driver BIOS included
AT compatible BIOS and Architecture