

**Pentium III EBX-SBC designed for  
Mobile and Outdoor Applications**  
-40°C to +85° Operating Temp.

# 5831

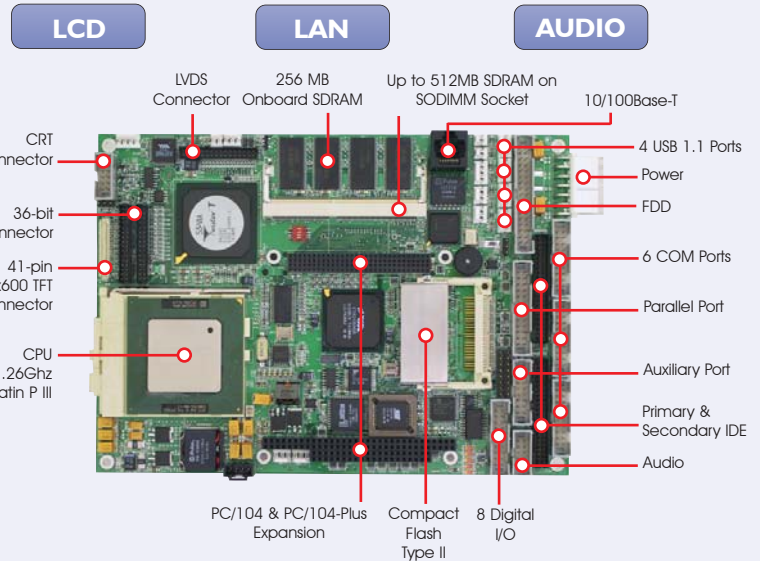
## EBX CELERON/PENTIUM III SBC 800MHz to 1.2GHz

### Features

- Ultra low power, Passive Heat Sink for CPU running at 900 MHz
- Soldered on-board 256MB SDRAM, expandable to 768MB SDRAM using SODIMM socket
- 10/100Base-T Ethernet Interface
- PCI on PC104+ and ISA on PC104 connectors
- 6 serial ports, 4 USB 1.1, 256 Bytes EEPROM, 64-bit unique electronic ID
- Intelligent thermal management with independent microcontroller
- Integrated AC'97 2.1 Audio
- Less than 5 second boot up time
- Over 200,000 hours MTBF
- 5 year product availability guarantee
- Supports DOS, Windows 98, NT, 2000, XP, CE, QNX, pSOS, Linux, VxWorks

### Applications

Robotic  
Medical  
Test & Measurement  
Transportation  
Avionics  
Mil/Aerospace  
e-Kiosks  
Industrial Automation  
Inventory Management  
Point Of Sale Terminal



### Technical Data

#### System

CPU	Ultra low power Tualatin (Celeron/Pentium III) processor up to 1.26GHz with 256 KB/512 KB L2 cache
SYSTEM MEMORY	256MB to 768MB system SDRAM
CHIPSET	VIA PN133T (VT8606, & VT82C686B), 133MHz FSB
BIOS	Customized embedded BIOS on 256KB flash memory
FLASH DISK	Supports CompactFlash™ card Type II up to 6Gbytes
WATCHDOG TIMER	Software enable/disable/programmable up to 120 sec.
BUS EXPANSION	PCI on PC104-Plus(33 MHz) / ISA on PC104(8.33 MHz)

#### I/O

Main I/O	2 x EIDE (Ultra DMA33/66/100), 1 x FDD, 1 x K/B, 1 x Mouse, 6 x RS-232 (optional RS485), 1 x LPT ( ECP/EPP)
USB	4 USB ports (USB 1.1 compliant)
AUDIO	AC'97 2.1 compliant
ETHERNET	10/100BASE-T (Intel 82559ER), (Gigabit Ethernet optional)
DIGITAL I/O	8-bit input / 8-bit output

#### Display

CHIPSET	Integrated S3 Savage4 2D/3D w/ Mpeg 2 / AC-3
MEMORY SIZE	8/16/32MB UMA Frame Buffer using system memory
RESOLUTION	Support up to 1600 x 1200 @ 32-bit color
LCD INTERFACE	Standard 41-pin VESA connector for 800 x 600 TFT LCD Connectors for 36-bit TFT LCD up to 1280 x 1024
LVDS	2-Channel (2 x 18-bit) LVDS Interface
TV-OUT	Supports NTSC/PAL, S-video (optional)

#### Mechanical and Environmental

POWER CONSUMPTION (W/256MBYTES)	Typical: 5 V @ 3.0 A [900MHz Tualatin/Celeron CPU] 5 V @ 6.0 A [1.26GHz Tualatin/Pentium III CPU]
DIMENSION (L X W)	8" x 5.75" EBX form factor
OPERATING TEMPERATURE	-40°C ~ 85°C (on selected models)
OPERATING HUMIDITY	0% ~ 90% relative humidity, non-condensing

#### Performance Comparison

740MFLOPS LESS THAN 500MFLOPS 525MFLOPS	5831 with 1.2 GHz Tualatin Celeron (256KB L2 cache) Generic EBX SBC with 700 MHz Pentium III 5831 with 900 MHz Tualatin Celeron (256KB L2 cache)
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## Features Description

<b>CPU</b>	<b>5831</b> supports ultra low power Intel Tualatin processor (0.13 micron technology) Celeron and Pentium III (800MHz ~ 1.26GHz) with low core voltage L1 Cache - 16 KB instruction, 16 KB write-back data L2 Cache - 256-KB for Tualatin Celeron CPU, 512K L2 cache for Tualatin Pentium III CPU Core voltage - 1.2V - 1.5V Passive heatsink for CPU running at 900Mhz processor (with 100LFM air flow)
<b>Chipset</b> <b>Intelligent Thermal management</b>	VIA PN133T (VT8606, & VT82C686B), 66/83/100/133MHz FSB On-board independent microcontroller is used to monitor CPU and System temperatures and can adjust CPU and System fan speeds based on parameters set by user in order to maximize service life of board. CPU speed can also be adjusted to maintain CPU temperature within it's limits. All above parameters can be set by using CMOS setup. These features are very useful especially in the event of a CPU fan or System fan failure
<b>BIOS</b> <b>(5 second bootup time)</b>	BIOS designed for embedded applications with 5 second boot up time, integrated VIDEO BIOS supports many LCD panels. CMOS setup is stored on eeprom to prevent system failure due to battery loss. The Embedded BIOS can be customized with customer's features
<b>Video</b>	Integrated ProSavage AGP 4X Graphics DVD Multimedia Accelerator, MPEG2, AC-3 CRT mode up to 1600 X 1200 @ 32-bit color resolution LCD mode up to 1280 X 1024 @ 32-bit color resolution Supports LCD/TFT/STN/EL 3.3V or 5V displays Supports up to 36-bit LCD on both TTL Built-in LVDS
<b>Network</b>	10/100 Base-T using Intel 82559ER Fast Ethernet controller (Gigabit Ethernet using Intel 82540EM optional)
<b>Audio</b>	Integrated AC'97 2.1, Mic in, Line in, CD Audio in, Line out, Speaker out
<b>Storage</b>	Integrated Dual PCI-bus Enhanced Ultra DMA/33/66/100 Synchronous IDE interface Supports up to four EIDE devices Compact Flash socket Type II for on-board flash disk up to 6Gbytes
<b>COM1 - COM6</b>	RS-232, 16C550 compatible, 115K baud max, ( Optional RS485 on COM1 and COM2)
<b>LPT1</b>	Bi-directional/EPP/ECP compatible
<b>USB</b>	Four USB 1.1 ports
<b>Battery backed SRAM</b>	On-board 512K Battery backed SRAM
<b>Other Embedded Features</b>	Electronic ID Digital I/O (8/8) Voltage monitoring reset circuit System Management Bus (SMBus) Power management logic support Programmable Watch Dog Timer 2s to 120s Intelligent thermal management with independent micro-controller CMOS setup data stored on Serial EEPROM to support batteryless boot capability 128 Bytes EEPROM available for OEM use ESD protection on serial ports: 15,000V MTBF 200,000 Hours

## Ordering Information

<b>5831LV-90C</b>	LOW POWER 900MHZ INTEL TUALATIN CPU, 256KB L2 CACHE, 256MBYTES SDRAM, 0°C TO 65°C OPERATING TEMPERATURE, 3.0A @ +5V
<b>5831LV-12C</b>	HIGH PERFORMANCE 1200MHZ INTEL TUALATIN CPU, 256KB L2 CACHE, 256MBYTES SDRAM 0°C TO 65°C OPERATING TEMPERATURE, 5.5A @ +5V
<b>5831LV-12P</b>	HIGH PERFORMANCE 1.26GHZ INTEL TUALATIN CPU, 512KB L2 , 133MHZ FSB, 256MBYTES SDRAM 0°C TO 65°C OPERATING TEMPERATURE, 6A @ +5V
<b>5831LV-90E</b>	LOW POWER 900MHZ INTEL TUALATIN CPU, 256KB L2 CACHE, 256MBYTES SDRAM, <b>-40°C TO +85°C OPERATING TEMPERATURE</b> , 3.0A @ +5V
<b>5831LV-12E</b>	LOW POWER 1.2GHZ INTEL TUALATIN CPU, 256KB L2 CACHE, 256MBYTES SDRAM, <b>-40°C TO +85°C OPERATING TEMPERATURE</b> , 4.7A @ +5V
	CONTACT TME FOR OTHER CPU AND MEMORY OPTIONS