



# **Operating Guide**

**EPIA-P830 Mainboard**

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## **VIA EPIA-P830 overview**

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The VIA EPIA-P830 Pico-ITX Mainboard is a compact native x86 mainboard optimized for multimedia applications. The mainboard is based on the VIA VX900 Unified Digital Media IGP chipset featuring the VIA Chrome™ 9 HC with 2D/3D graphics and video accelerators for rich digital media performance.

The VIA EPIA-P830 includes a powerful, secure, and efficient VIA Nano™ processor. The VIA Nano processor includes the VIA Padlock Security Engine, VIA CoolStream™ Architecture, VIA StepAhead™ Technology Suite, and VIA TwinTurbo™ technology.

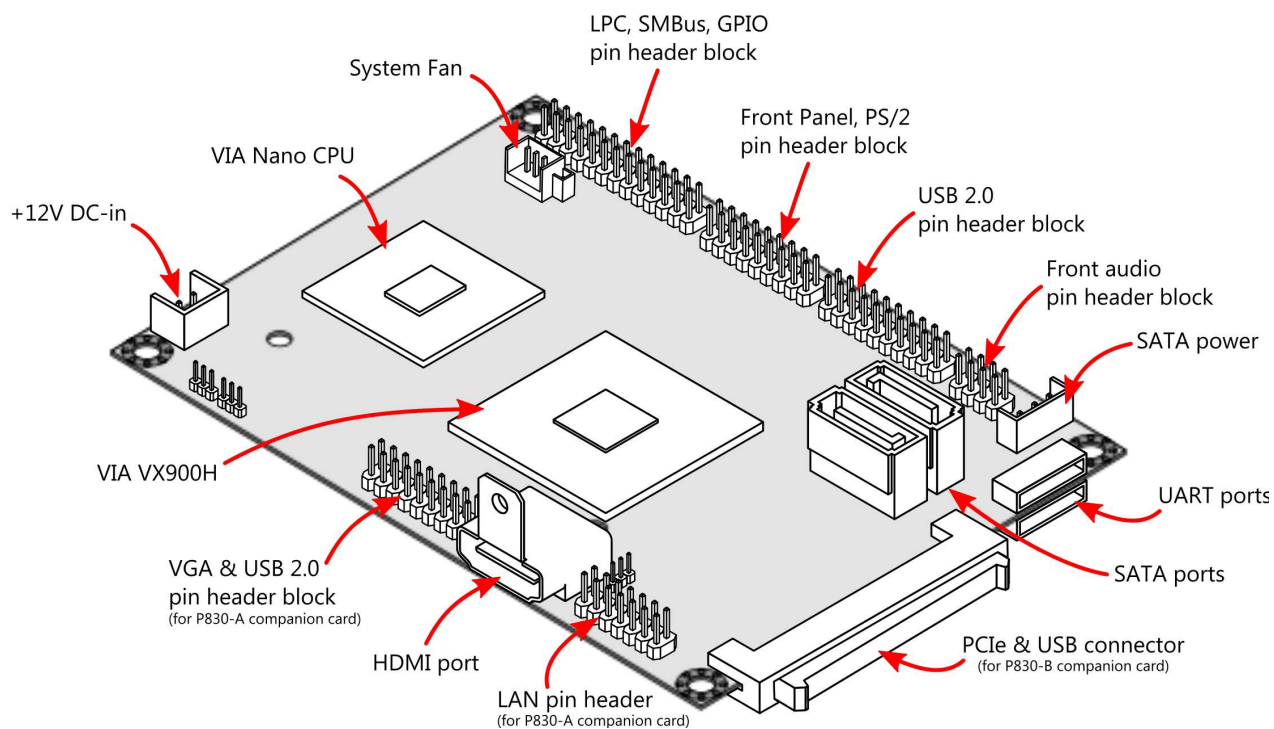
The VIA EPIA-P830 includes one 1066/800 MHz DDR3 SODIMM slot that supports up to 4 GB. The VIA EPIA-P830 provides support for high fidelity audio with its included VIA VT1708S High Definition Audio codec. In addition it supports two SATA 3Gb/s storage devices.

The VIA EPIA-P830 is fully compatible with Microsoft® and Linux operating systems.

## VIA EPIA-P830 layout

# EPIA-P830

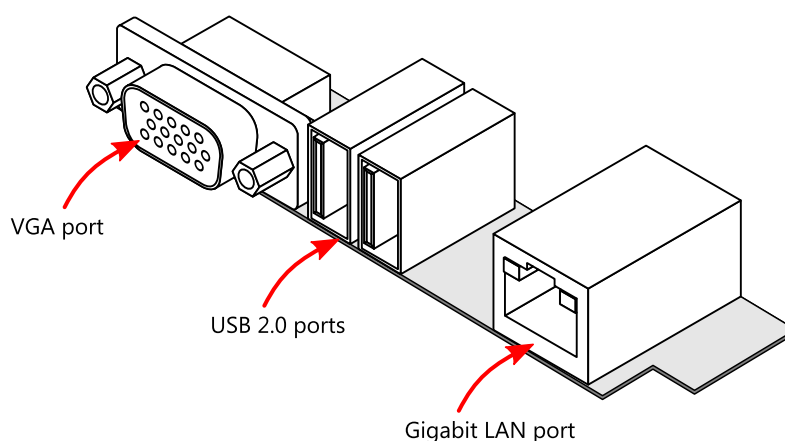
Pico-ITX Embedded Board



**Figure 1: EPIA-P830 layout**

## P830-A

Companion Card



**Figure 2: P830-A companion card**

## VIA EPIA-P830 specifications

<b>Model Name</b>	EPIA-P830-12L
<b>Processor</b>	- VIA 1.2GHz U3300 Nano processor
<b>Thermal Solution</b>	- Heatsink with fan
<b>Chipset</b>	- VIA VX900 Unified Digital Media IGP Chipset
<b>System Memory</b>	- 1 x DDR3 1066/800 MHz SODIMM slot (up to 4 GB)
<b>VGA</b>	- Integrated VIA Chrome™ 9 HD DX9 3D/2D Graphics with MPEG-2, WMV9, an H.264 video decoding acceleration
<b>Onboard SATA</b>	- 2 x SATA connectors (with configurable 5V input on pin #7 for DOM) - 1 x SATA power connector
<b>Onboard LAN</b>	- 1 x VIA VT6130 PCIe Gigabit LAN controllers
<b>Onboard Audio</b>	- VIA VT1708S High Definition Audio Codec
<b>Onboard SuperIO</b>	- Fintek 81801U-I
<b>Onboard I/O Connectors</b>	- 1 x Single-channel 24-bit LVDS connector - 1 x LVDS inverter - 1 x VGA-USB pin header - 1 x 20-pin USB pin header for 5 additional USB ports - 1 x LAN pin header - 1 x Digital I/O pin header (GPI x 4, GPO x 4) - 2 x UART pin headers - 1 x LPC pin header - 1 x SMBUS pin header - 1 x Front audio pin header: Line-out, Line-in, Mic-in - 1 x SPI pin header - 1 x PS2 keyboard/mouse pin header - 1 x Front-panel pin header - 1 x System fan connector - 1 x +12V±5% DC-in power connector
<b>Expansion Slot</b>	- 2 x 1-lane PCIe expansion connector (with one USB support)
<b>Back Panel I/O</b>	- 1 x VGA port (on P830-A) - 1 x HDMI® port - 1 x RJ-45 Gigabit LAN port (on P830-A) - 2 x USB 2.0 ports (on P830-A)
<b>BIOS</b>	- AMI BIOS - 8Mbit SPI flash ROM
<b>Operating System</b>	Windows 7 / Windows XP / Windows XPe / Windows CE / Linux
<b>System Monitoring &amp; Management</b>	- Wake-on-LAN, Keyboard power-on, RTC Timer power-on, Watch Dog Timer - System power management, AC Power failure recovery
<b>Operating Temperature</b>	0° C ~ 60° C
<b>Operating Humidity</b>	0% ~ 95% (relative humidity; non-condensing)
<b>Form Factor</b>	- 12 layer Pico-ITX (10 cm x 7.2 cm)
<b>Compliance</b>	CE/FCC/RoHS/BSMI

\* Specifications subject to change without notice.

## **VIA EPIA-P830 processor SKUs**

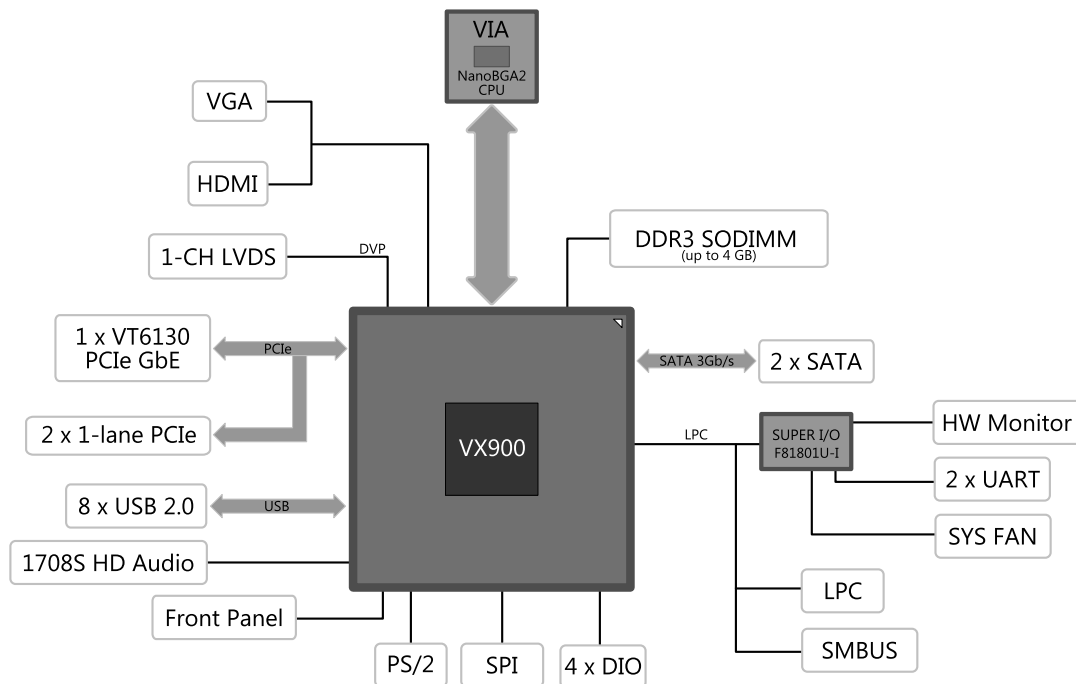
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The VIA EPIA-P830 is available in the following speed grade:

- VIA 1.2 GHz U3300 Nano processor (EPIA-P830-12L)

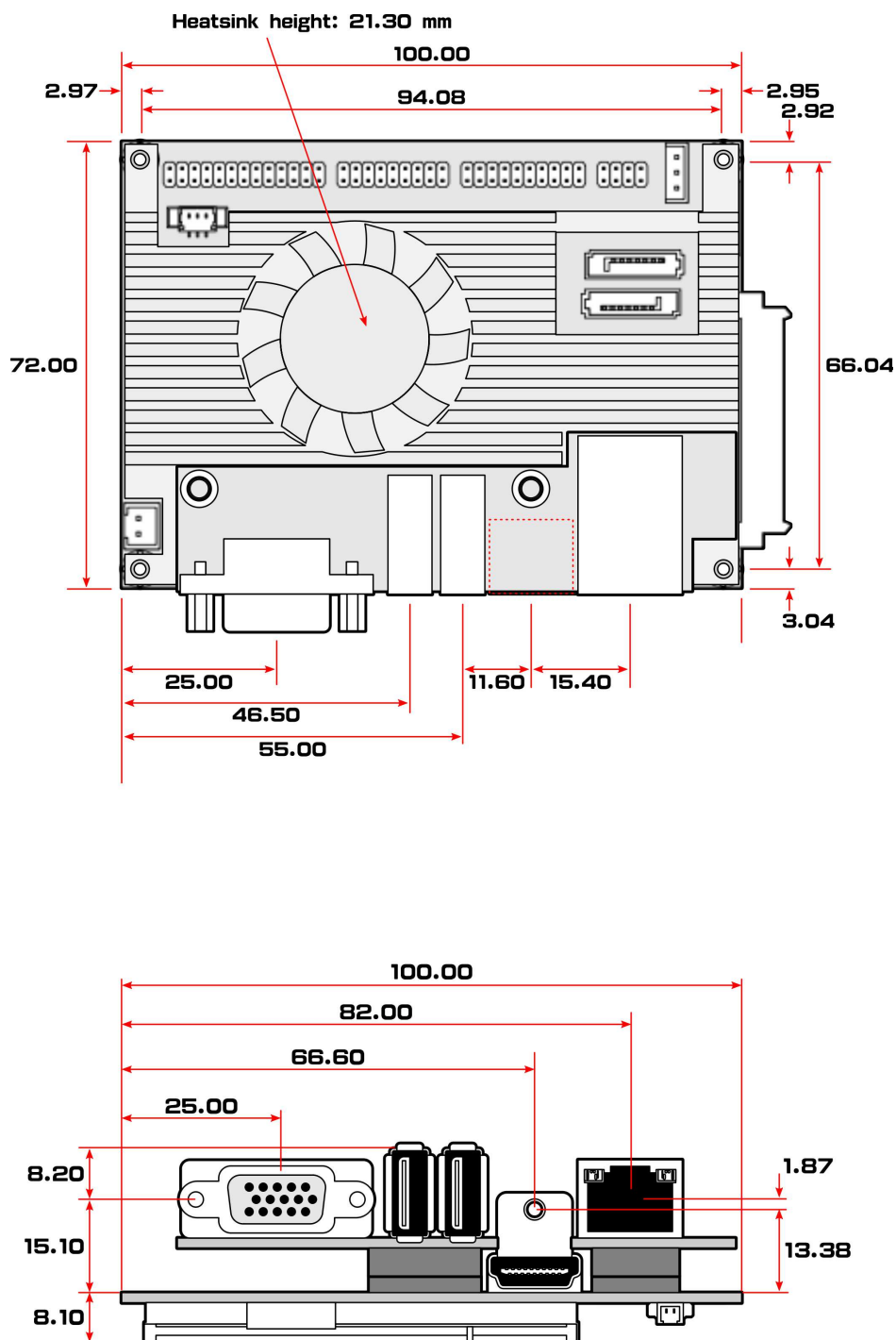
## VIA VX900 chipset overview

The VIA VX900 Unified Digital Media Chipset is designed to enable high quality digital video streaming and DVD playback in a new generation of small form factor PCs and IA devices. The VIA VX900 features VIA Chrome™ 9 HD with 2D/3D graphics and video acceleration, DDR3 1066/800 MHz support, motion compensation and dual display support to ensure a rich overall entertainment experience.



**Figure 3: VX900 as implemented in the EPIA-P830**

## VIA EPIA-P830 and P830-A board dimensions



**Figure 4: EPIA-P830 mainboard and P830-A daughterboard dimensions**

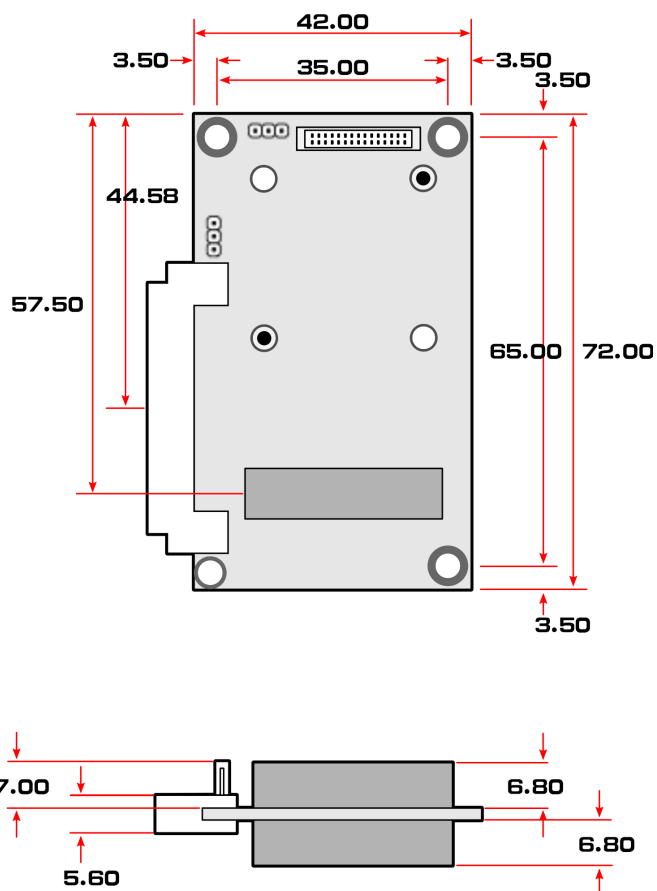


**Note:**

The mounting holes at the four corners can only fit M2 size screws (Ø1.86 mm – Ø1.89 mm).



## VIA P830-B board dimensions



**Figure 5: P830-B daughterboard dimensions**

## Power consumption

Power consumption tests were performed on the VIA EPIA-P830 with the following components as shown in the table below.

Component	Description
Memory	Corsair DDR3 2GB
Hard disk drive	Fujitsu 2.5" STAT2 160GB
Power supply	Seasonic SSA-0651-1 AC Input 110-240~2A, 50/60Hz DC Output +12V/5A

The following table shows a breakdown of the voltage, amp and wattage values while running common system applications.

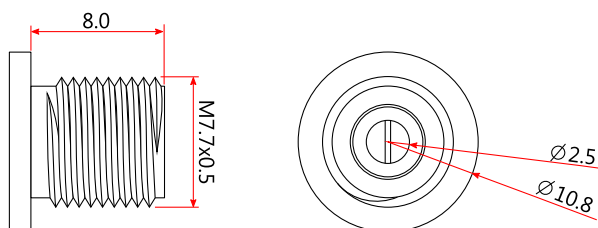
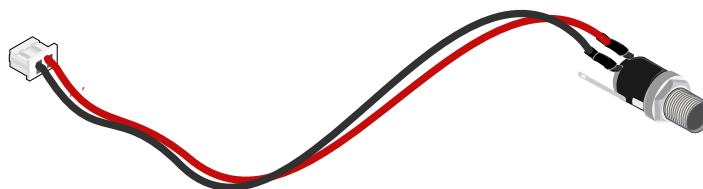
### VIA EPIA-P830 1.2 GHz

Test	Measured Voltage	Measure Amp	Watts
100% CPU usage	11.99	1.482	17.769
Burn-in 3DMark06, 1280 x 1024 (bench mode)	12.03	1.393	16.758
Power DVD 8.0 (H.264 1080i, 10MB movie)	12.08	1.080	13.046
Power DVD 8.0 (MPEG2 1080p, 40MB movie)	12.06	1.182	14.255
Idle	12.13	0.863	10.468
Suspend 1	12.18	0.625	7.613
Suspend 3	12.29	0.122	1.499
Suspend 4	12.29	0.112	1.376
Suspend 5	12.29	0.112	1.376

## Power Specifications

The VIA EPIA-P830 mainboard is available with a 2-pin +12V<sub>DC</sub> power connector for connecting to an external power block that outputs +12V<sub>DC</sub>±5%/5A.

Pin	Signal
1	+12V
2	GND



## VIA EPIA-P830 Microsoft and Linux driver support

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### MICROSOFT DRIVER SUPPORT

The VIA EPIA-P830 mainboard is compatible with Microsoft operating systems. The latest Windows 2000 and Windows XP drivers can be downloaded from the VIA Embedded website at [www.viaembedded.com](http://www.viaembedded.com).

For embedded operating systems (Windows CE and Windows XP Embedded), the related drivers can be found in the VIA Embedded website at [www.viaembedded.com](http://www.viaembedded.com).

### LINUX DRIVER SUPPORT

The VIA EPIA-P830 mainboard is highly compatible with many Linux distributions.

Support and drivers are provided through various methods including:

- Drivers provided by VIA
- Using a driver built into a distribution package
- Visiting [www.viaembedded.com](http://www.viaembedded.com) for the latest updated drivers
- Installing a third party driver (such as the ALSA driver from the Advanced Linux Sound Architecture project for integrated audio)

For OEM clients and system integrators developing a product for long term production, other code and resources may also be made available. You can submit a request to your VIA Embedded support contact.

## Contact information

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For more information on the VIA EPIA-P830 Pico-ITX mainboard contact your sales representative or visit our website at [www.viaembedded.com](http://www.viaembedded.com)

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