



# **Operating Guide**

**EPIA-P720 Mainboard**

## Table of Contents

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Table of Contents .....	i
VIA EPIA-P720 Overview .....	2
Layout Diagrams .....	3
EPIA-P720 (top and bottom views) .....	3
VIA EPIA-P720 Specifications .....	4
VIA EPIA-P720 Processor SKU .....	5
VIA EPIA-P720 Dimensions & Mounting Holes .....	6
VIA EPIA-P720 Height Distribution .....	7
Power Consumption .....	8
Tested Configurations .....	8
Configuration 1 .....	8
Configuration 2 .....	8
Configuration 3 .....	8
Configuration 4 .....	8
Boot to Idle .....	9
Stress Tool .....	9
3DMark2003 .....	9
PowerDVD 6.0 .....	9
Power Specifications .....	10
VIA EPIA-P720 Microsoft and Linux Driver Support .....	11
Microsoft Driver Support .....	11
Linux Driver Support .....	11
Contact Information .....	12

## VIA EPIA-P720 Overview

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The VIA EPIA-P720 Pico-ITX mainboard is an ultra compact native x86 platform for a wide range of embedded system applications. The mainboard is based on the VIA VX855 All-in-One System Processor featuring the VIA C-9 HCM DX9 IGP with video accelerators for rich digital media performance.

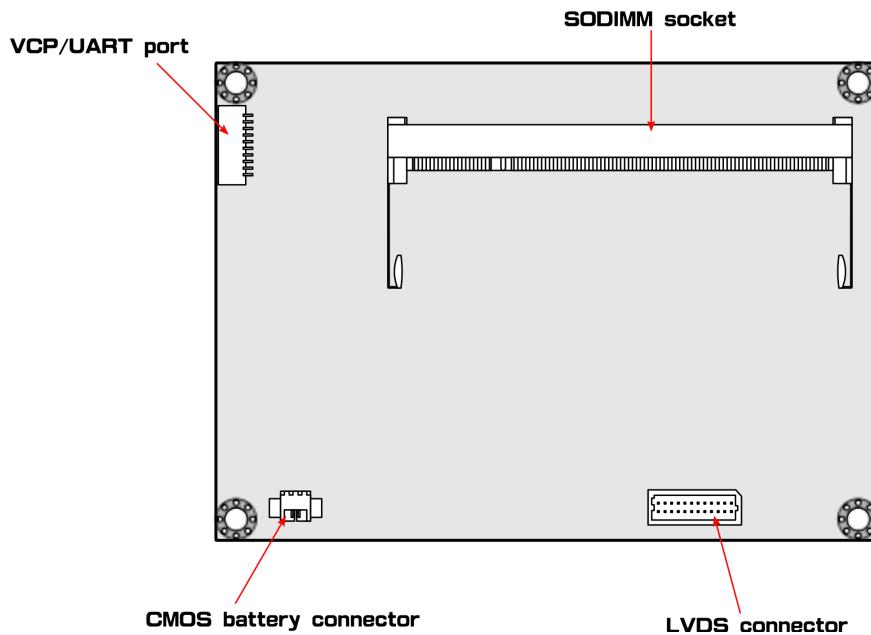
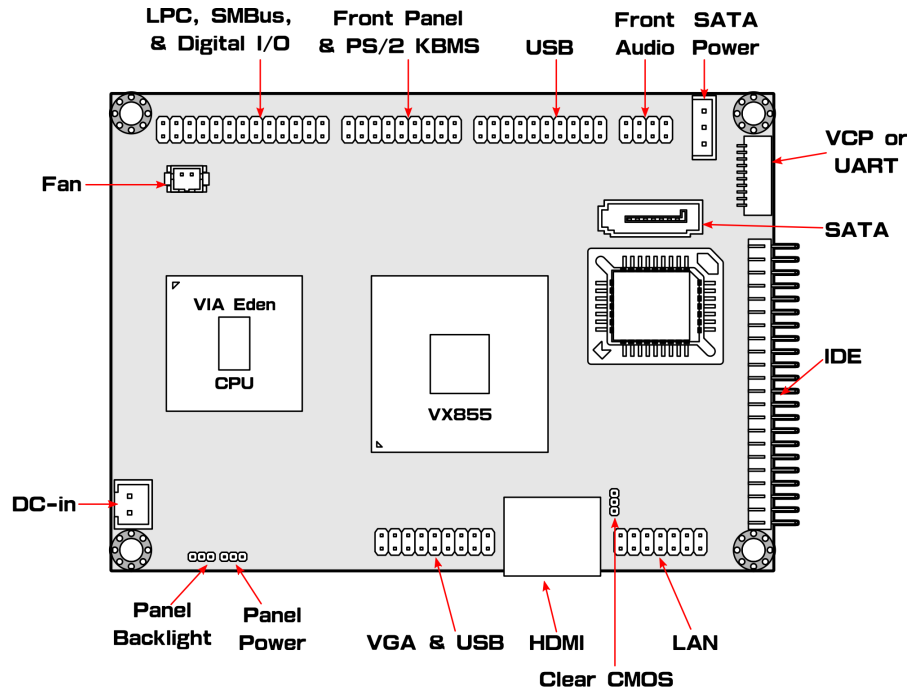
The VIA EPIA-P720 onboard VIA Eden ULV NanoBGA2 processor is a green, secure, and efficient processor with its included VIA Padlock Security Engine, VIA CoolStream™ Architecture, VIA StepAhead™ Technology Suite, and VIA TwinTurbo™ technology.

The VIA EPIA-P720 delivers the performance levels with its included sizeable support of up to 2 GB of 800 MHz DDR2 memory and native support for SATA 3Gb/s storage devices.

The VIA EPIA-P720 is fully compatible with Microsoft® and Linux operating systems.

## Layout Diagrams

### EPIA-P720 (TOP AND BOTTOM VIEWS)



## VIA EPIA-P720 Specifications

<b>Model Name</b>	EPIA-P720-10E
<b>Processor</b>	VIA Eden™ ULV 1 GHz NanoBGA2 processor
<b>Chipset</b>	VIA VX855 All-in-One System Processor
<b>System Memory</b>	<ul style="list-style-type: none"> <li>- 1 x DDR2 800/667 SODIMM socket</li> <li>- Up to 2 GB memory size</li> </ul>
<b>VGA</b>	- VIA C-9 HCM DX9 Integrated Graphics with MPEG-2 accelerators
<b>Onboard Storage</b>	<ul style="list-style-type: none"> <li>- 1 x IDE 2.0 mm 44-pin connector</li> <li>- 1 x SATA 3Gb/s connector</li> </ul>
<b>Onboard LAN</b>	- 1 x VIA VT6122 PCI Gigabit Ethernet Controller
<b>Onboard Audio</b>	- VIA VT1708B High Definition audio codec
<b>Onboard I/O Connectors</b>	<ul style="list-style-type: none"> <li>- 1 x Gigabit LAN pin header</li> <li>- 1 x Audio pin connector for Line-out, Line-in, and MIC-in</li> <li>- 1 x Single-channel LVDS connector (5V/3V)</li> <li>- 1 x backlight control pin header</li> <li>- 1 x CPU fan connector</li> <li>- 1 x PS2 KBMS pin header</li> <li>- 1 x USB pin header</li> <li>- 1 x LPC pin connector</li> <li>- 1 x SMBus pin connector</li> <li>- 1 x DIO pin connector (4 GPI &amp; 4 GPO)</li> <li>- 2 x UART port/VCP pin headers</li> <li>- 1 x Front panel pin header</li> <li>- 1 x +12V DC-in 2-pin connector</li> </ul>
<b>I/O Ports</b>	<ul style="list-style-type: none"> <li>- 1 x HDMI® port</li> <li>- 1 x VGA port</li> <li>- 1 x GigaLAN port</li> <li>- 2 x USB ports</li> </ul>
<b>BIOS</b>	<ul style="list-style-type: none"> <li>- AMI BIOS</li> <li>- 4 Mbit LPC flash memory</li> </ul>
<b>Operating System</b>	Windows XP/Windows CE/Windows XPe and Linux
<b>System Monitoring &amp; Management</b>	<ul style="list-style-type: none"> <li>- Wake-on LAN and keyboard</li> <li>- RTC Timer</li> <li>- WatchDog Timer</li> <li>- System power management, AC Power failure recovery</li> </ul>
<b>Operating Environment</b>	Temperature: 0°C ~ 60°C Humidity: 0% ~ 95% (relative humidity; non-condensing)
<b>Compliance</b>	CE/FCC/BSMI/RoHS
<b>Form Factor</b>	<ul style="list-style-type: none"> <li>- Pico-ITX</li> <li>- 10 cm x 7.2 cm</li> </ul>

\* Specifications subject to change without notice.

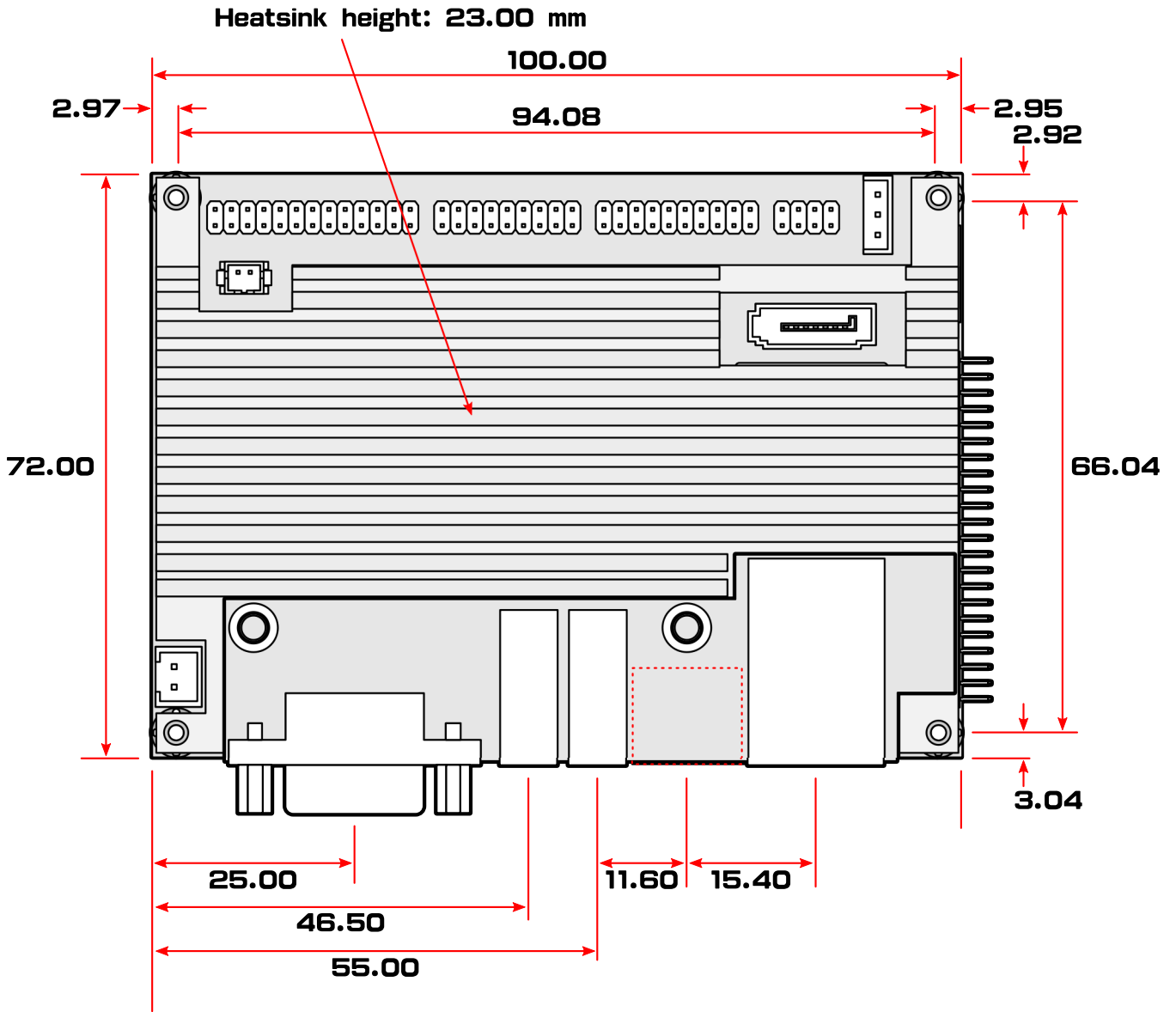
## **VIA EPIA-P720 Processor SKU**

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The VIA EPIA-P720 Pico-ITX mainboard is available in the following speed grades:

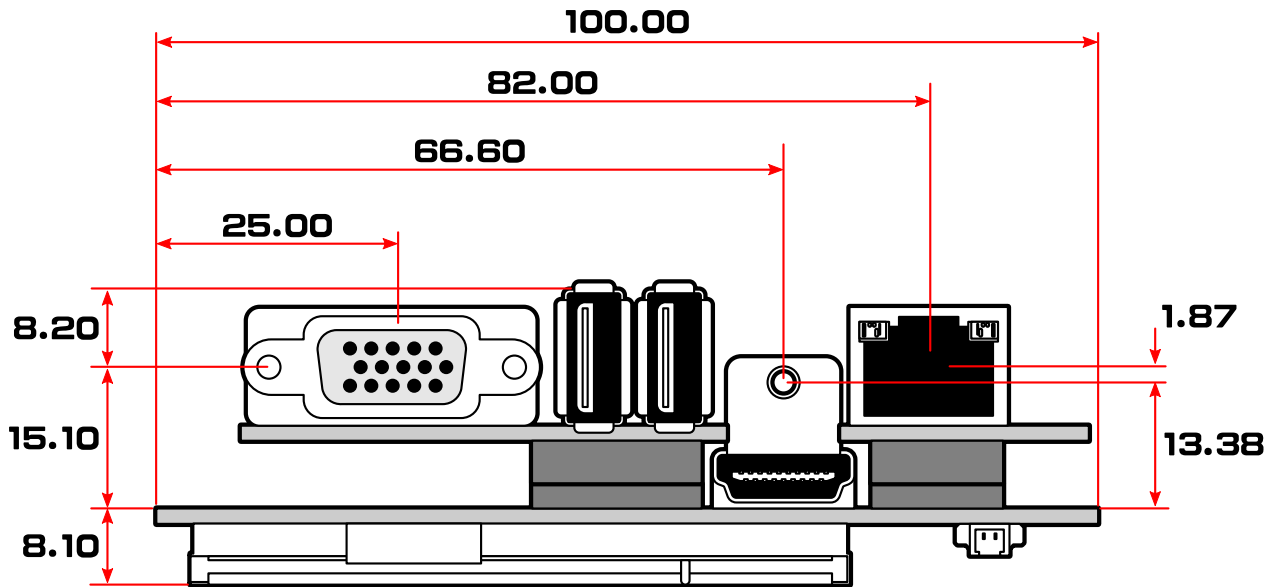
- 1.0 GHz VIA Eden™ ULV NanoBGA2 Processor

**VIA EPIA-P720 Dimensions & Mounting Holes**



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

### VIA EPIA-P720 Height Distribution





## Power Consumption

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Power consumption tests were performed on eight different configurations. The following tables show the mainboard's voltage, amp and wattage values while running common applications in the Windows XP environment.

### TESTED CONFIGURATIONS

#### Configuration 1

- VIA Eden ULV 1 GHz NanoBGA2 Processor with 533 MHz FSB
- 2.5" Fujitsu 80 GB hard drive
- 1 GB Kingston DDR2 800 MHz

#### Configuration 2

- VIA Eden ULV 1 GHz NanoBGA2 Processor with 533 MHz FSB
- 2.5" Fujitsu 80 GB, hard drive
- 3.5" Seagate 80 GB hard drive
- 2 GB Hynix DDR2 800 MHz

#### Configuration 3

- VIA Eden ULV 1 GHz NanoBGA2 Processor with 533 MHz FSB
- 4 GB InnoDisk IDE DOM
- 1 GB Kingston DDR2 800 MHz

#### Configuration 4

- VIA Eden ULV 1 GHz NanoBGA2 Processor with 533 MHz FSB
- 4 GB InnoDisk IDE DOM
- 2 GB Hynix DDR2 800 MHz

**BOOT TO IDLE**

	<b>Measured Voltage</b>	<b>Measure Amp</b>	<b>Watts</b>
Configuration 1	11.997	0.89	10.677
Configuration 2	11.997	1.34	16.076
Configuration 3	11.997	0.66	7.918
Configuration 4	11.997	0.75	8.998

**STRESS TOOL**

	<b>Measured Voltage</b>	<b>Measure Amp</b>	<b>Watts</b>
Configuration 1	11.997	1.00	11.997
Configuration 2	11.997	1.49	17.876
Configuration 3	11.997	0.76	9.118
Configuration 4	11.997	0.85	10.197

**3DMARK2003**

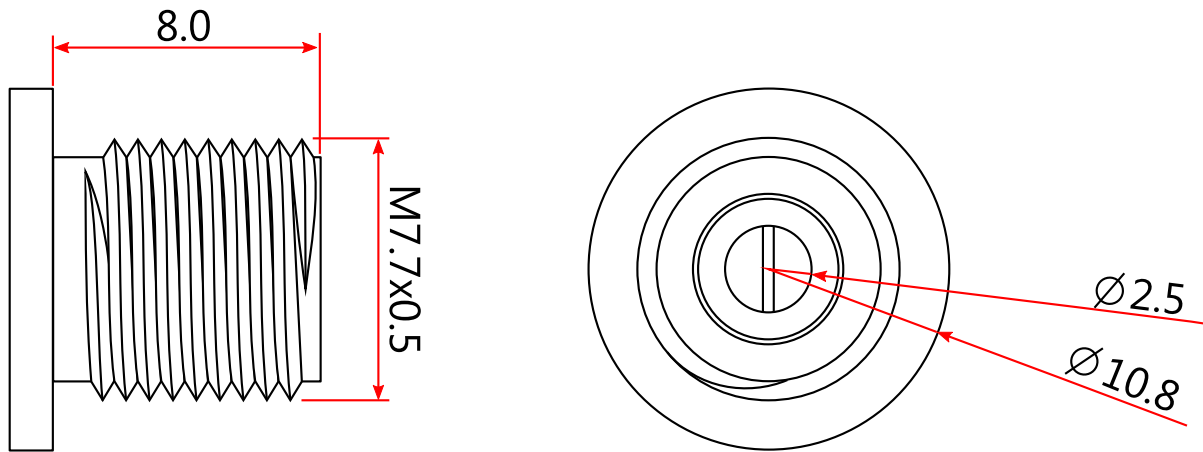
	<b>Measured Voltage</b>	<b>Measure Amp</b>	<b>Watts</b>
Configuration 1	11.997	1.00	11.997
Configuration 2	11.997	1.48	17.756
Configuration 3	11.997	0.78	9.358
Configuration 4	11.997	0.88	10.557

**POWERDVD 6.0**

	<b>Measured Voltage</b>	<b>Measure Amp</b>	<b>Watts</b>
Configuration 1	11.997	0.94	11.277
Configuration 2	11.997	1.41	16.916
Configuration 3	11.997	0.65	7.798
Configuration 4	11.997	0.73	8.758

## Power Specifications

The VIA EPIA-P720 Pico-ITX mainboard utilizes a +12V DC-in power connector for providing power to the mainboard. The dimensions of the DC-in port are show in the figure below.



## VIA EPIA-P720 Microsoft and Linux Driver Support

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### MICROSOFT DRIVER SUPPORT

The VIA EPIA-P720 Pico-ITX mainboard is compatible with Microsoft operating systems. The latest Windows XP drivers can be downloaded from the VIA Embedded website at [www.viaembedded.com](http://www.viaembedded.com).

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

### LINUX DRIVER SUPPORT

The VIA EPIA-P720 Pico-ITX 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 VIA Arena website at [www.viaarena.com](http://www.viaarena.com) for latest updates on a monthly basis
- 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 either through the [Developers portal](#) at VIA Arena, or through your VIA Embedded support contact. Alternatively, VIA can work further towards providing additional drivers to fit your specific needs.

## Contact Information

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For more information on the VIA EPIA-P720 Pico-ITX mainboard contact your sales representative or visit our website at [www.viaembedded.com](http://www.viaembedded.com).

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