

## Em-ITX Series

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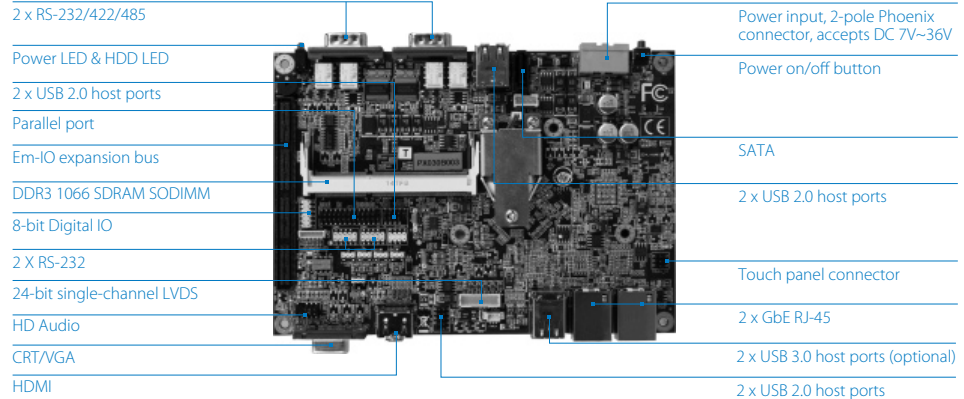
# VIA EITX-3002

Em-ITX Dual Core Board with  
VGA, 2 GigaLAN, HDMI, LVDS,  
4 COM, 6 USB 2.0, 2 USB 3.0,  
Built-in DC Power

## Features

- VIA Eden™ X2 and Nano™ X2 E (2 MB L2 Cache)
- Em-ITX form factor: 17 cm (W) x 12 cm (L)
- Dual-sided multiple I/O connector coastlines
- Em-IO expansion bus socket
- Integrated VIA Chrome 9™ HD DX9 3D/2D video processor with MPEG-2, DivX, WMV9/VC1, H.264 video decoding acceleration
- Two Gigabit Ethernet
- Supports one HDMI port, one VGA port and one 24-bit single channel LVDS
- Two RS-232 and two RS-232/422/485
- Onboard six USB 2.0 ports
- Supports two USB 3.0 ports (optional)

## Board Placement

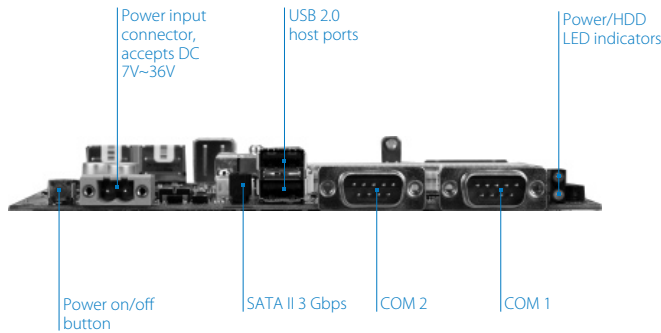


## Specifications

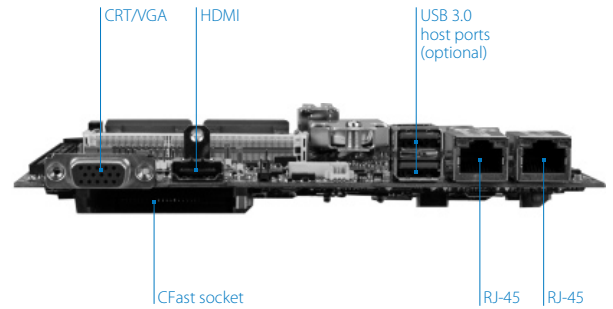
Part Number		EITX-3002-1D10A1/2D10A1	EITX-3002-1D12A1/2D12A1
<b>Processor System</b>	<b>Processor</b>	1.0GHz VIA Eden™ X2	1.2GHz VIA Nano™ X2 E
	<b>Front Side Bus Speed</b>	800 MHz	1066 MHz
	<b>L2 Cache</b>	2 MB	2 MB
	<b>Chipset</b>	VIA VX900H Unified Digital Media IGP chipset	
<b>BIOS</b>	AMI BIOS, 8 MBit SPI Flash BIOS		
	<b>System Power Management</b>	Timers Power on ACPI supported	
	<b>Memory</b>		
<b>Memory</b>	<b>Technology</b>	1 x DDR3 1066 204-pin SDRAM SODIMM socket	
	<b>Max. Capacity</b>	Up to 4GB memory size	
<b>Graphic</b>	<b>Controller</b>	Integrated VIA Chrome 9™ HD DX9 3D/2D video processor with MPEG-2, DivX, WMV9/VC1, H.264 video decoding acceleration	
	<b>Display Memory</b>	Optimized Unified Memory Architecture (UMA) Supports up to 512 MB frame buffer using system memory	
	<b>CRT Interface</b>	Onboard 1 x VGA connector Supports pixel resolution up to 2560 x 1600	
	<b>LVDS Interface</b>	Supports 1 x 24-bit single-channel LVDS interface with inverter control signals by an onboard 2 x 15-pin wafer box connector as LVDS1, panel resolution up to WXGA (1366 x 768) Onboard 5V/3.3V LCD power switch (default at 3.3V)	
	<b>HDMI Interface</b>	VX900H integrated and multiplexed HDMI interface Onboard 1 x single-link HDMI connector with flange	
<b>Dual Independent Display</b>	Two independent display engines built-in VX900H chipset, supports CRT+LVDS, CRT+HDMI, LVDS+HDMI at different resolutions, pixel depths, and refresh rates with completely two different video contents		
	<b>Ethernet</b>		
<b>Ethernet</b>	<b>Controller</b>	2 x Onboard VIA VT6130G Gigabit Ethernet controllers	
	<b>Interface</b>	Supports two RJ-45 connectors Supports Wake on LAN (WOL) Supports Preboot Execution Environment (PXE)	
<b>HD Audio</b>	<b>Controller</b>	VIA VT2021 HD Audio Codec	
	<b>Interface</b>	TI TPA1517 6W stereo audio power amplifier Onboard Line-in, Speaker-out, Mic-in pin-headers	
<b>USB 3.0 (Optional)</b>	<b>Controller</b>	Optional support VIA Labs VL801 USB 3.0 host controller	
	<b>Interface</b>	Optional support 2 x USB 3.0 host ports (mini-DIN Type A connectors)	
<b>USB 2.0</b>	<b>Controller</b>	Integrated USB 2.0 host controller built-in VX900H IGP chipset	
	<b>Interface</b>	Supports 6 x USB 2.0 host ports, which consist of • 2 x USB ports (mini-DIN Type A connectors) • 4 x USB ports (pin headers with individual VCC power)	



### Front I/O Coastline



### Rear I/O Coastline



## Specifications

Part Number	EITX-3002-1D10A1/2D10A1		EITX-3002-1D12A1/2D12A1	
<b>Serial Ports</b>	<b>Controller</b>	Onboard Fintek F81865 LPC I/O controller		
	<b>Interface</b>	Supports 4 COM ports, which consist of <ul style="list-style-type: none"> <li>• 2 x RS-232/422/485 by 2 x DB-9 connectors of COM 1 and COM 2, configurable via BIOS setup</li> <li>• Supports RS-485 AutoFlow Control functions of COM 1 and COM 2</li> <li>• 2 x RS-232 by pin-headers of COM 3 and COM 4</li> <li>• Supports COM port 5V/12V power selector for COM 1 ~ COM 4</li> </ul>		
<b>Digital I/O</b>	<b>General Purpose I/O</b>	Supports 8-bit GPIO with DC 5V and DC 12V power source by a 2 x 6-pin header		
<b>Resistive Touch Interface</b>	<b>Controller</b>	EETI ETP-CP-S5XU resistive touch panel controller		
	<b>Interface</b>	1 x 5-wire/4-wire resistive touch sensor interface by a 2 x 3-pin header		
<b>Storage Interface</b>	<b>Serial ATA</b>	1 x Onboard SATA II port, maximum data transfer rate up to 300MB/s Onboard SATA power connector output 5V and 12V support 2.5" SATA hard disk drives		
	<b>Compact Flash</b>	1 x CFAST socket onboard, support Type I/II of CFAST storage disk		
<b>H/W Monitoring</b>	<b>Temperature Sensor</b>	Built-in one thermal sensor by onboard 1 x 3-pin header		
<b>System Indicator</b>	<b>Power Status LED</b>	1 x Green color LED		
	<b>HDD Activity LED</b>	1 x Red color LED		
<b>Watchdog Timer</b>	<b>Output</b>	System reset		
	<b>Interval</b>	Programmable 1~255 sec		
<b>System Expansion</b>	<b>Em-IO Bus Expansion Interface</b>	Built-in onboard Em-IO bus expansion interface, supports expansion interface signals 1 of PCIe x 8, LPC, SMBus, GPIO, DVP display interface, VCC power signals of 3.3V, 5V, 12V, and ACPI 3.0		
<b>Onboard I/O Connectors</b>	<b>Front I/O Coastline</b>	1 x HDD & PWR LED 2 x RS-232/422/485 as COM 1 and COM 2 2 x USB 2.0 mini-DIN connectors 1 x 2-pole of Phoenix power input connector 1 x ATX power on/off button		
	<b>Rear I/O Coastline</b>	1 x VGA connector 1 x Single-link HDMI connector with flange 1x CFAST socket 2 x USB 3.0 mini-DIN connectors (optional) 2 x Gigabit Ethernet connectors		
<b>Onboard I/O Pin-headers</b>	<b>Onboard I/O Pin-headers</b>	4 of USB 2.0 pots by 2 of 2 x 5-pin headers, with individual VCC power support 4 of 5V/12V voltage selectors for COM 1 ~ COM 4 by 4 of 1 x 3-pin headers 1 of signal channel 24-bit LVDS interface by a 2 x 15-pin box header 1 of 1 x 3-pin headers for LCD power 3.3V/5V selection 1 of 1 x 3-pin headers for selecting the AT or ATX mode 1 of 2-pin headers reserved for external ATX power on/off control 1 of 7-pin SATA data connector 1 of 4-pin SATA power pin headers support both 5V /12V SATA power 1 of 3-pin header for thermal sensor 1 of 2 x 5-pin header for Speaker-out, Line-In and Mic-In 1 of 2 x 6-pin header support 8-bit Digital IO with 5V DC and 12V DC power source 1 of parallel port by a 2 x 13-pin header onboard 1 of 5-wire/4-wire resistive touch sensor interface by a 2 x 3-pin header 1 of reserved 3-pin 12V power connector for system fan control		

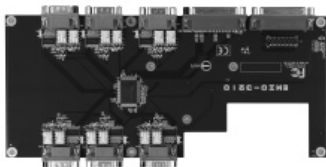
## Specifications

Part Number	EITX-3002-1D10A1/2D10A1		EITX-3002-1D12A1/2D12A1	
Power Supply	Power Consumption	Typical 24.86W	Typical 27.67W	
	Input Voltage	Built-in onboard DC-to-DC converter Accepts wide range of Power Input of DC 7V ~ 36V Supports AT and ATX mode		
	Power Input Connector	1 x 2-pole Phoenix connector		
	AT/ATX Selector	Onboard AT/ATX mode switch by a 1 x 3-pin headers		
	Fuse Rating	7A / 125V		
Heatsink	Construction	Aluminum Alloy		
	Dimensions (WxHxD)	250.2 (W) x 36 (H) x 123.6 mm (D)		
Physical Characteristics	Form Factor	Em-ITX		
	Board Dimension	17 cm (W) x 12 cm (L)		
	Weight	1 Kg (net weight of board plus heatsink only)		
Environmental Specification	Operating Temperature	-10°C up to 65°C for EITX-3002-1D10A1/2D10A1 -10°C up to 55°C for EITX-3002-1D12A1/2D12A1		
	Storage Temperature	-20°C ~ 70 °C		
	Operating Humidity	10% ~ 90%, relative humidity, non-condensing		
Software Compatibility	Operation System	Microsoft Windows XP, Windows 7, Windows XP Embedded, Windows Embedded Standard 7, Debian Linux		

## Em-ITX I/O Cards

### EMIO-3210

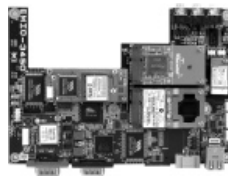
Em-IO Card with 6 COM Ports and  
2 Parallel Ports  
Requires special heatsink



- Applications: Kiosk, factory automation

### EMIO-3450

Em-IO Card with 2\*Mini PCIe Connector ,  
1\*SIMM, 1\*GPS/WiFi /Bluetooth 2.0 Slot,  
HD Audio by 3\*3.5 ø Jacks, 1\*UART ,  
8-bit GPIO , 2 USB



- Application: Vehicle, fleet management, logistic control

## Ordering Information

Part Number	System Built-in CPU	Description
EITX-3002-1D10A1	1.0GHz VIA Eden™ X2	1.0GHz Eden™ X2 CPU Based Fanless Em-ITX Board, with 1 x VGA, 1 x HDMI, 1 x LVDS, 2 x RS-232/422/485, 2 x RS-232, 8-bit Digital I/O, 6 x USB 2.0, 2 x GigaLAN, 1 x SATA II, 1 x CFast socket, DC-in 7~36V, EmIO AT/ATX mode selectable
EITX-3002-1D12A1	1.2GHz VIA Nano™ X2 E	1.2GHz Nano™ X2 E CPU Based Fanless Em-ITX Board, with 1 x VGA, 1 x HDMI, 1 x LVDS, 2 x RS-232/422/485, 2 x RS-232, 8-bit Digital I/O, 6 x USB 2.0, 2 x GigaLAN, 1 x SATA II, 1 x CFast socket, DC-in 7~36V, EmIO AT/ATX mode selectable
EITX-3002-2D10A1	1.0GHz VIA Eden™ X2	EITX-3002-1D10A1 with Full Cable Kit
EITX-3002-2D12A1	1.2GHz VIA Nano™ X2 E	EITX-3002-1D12A1 with Full Cable Kit

## Optional Accessories

Function I/O Cable	
Part Number	Description
99G33-060219	1 x 2-port USB 2.0 cable
99G33-191256	1 x Touch panel cable
99G33-050033	1 x Print port cable
99G33-080185	1 x Digital IO cable
99G33-080127	2 x 1-port COM port cable
99G30-100236	1 x 3-port Audio Jack (3 x 3.5Ø) cable
99G33-290010	1 x Thermal sensor cable
99G33-300011	1 x HDMI to DVI cable

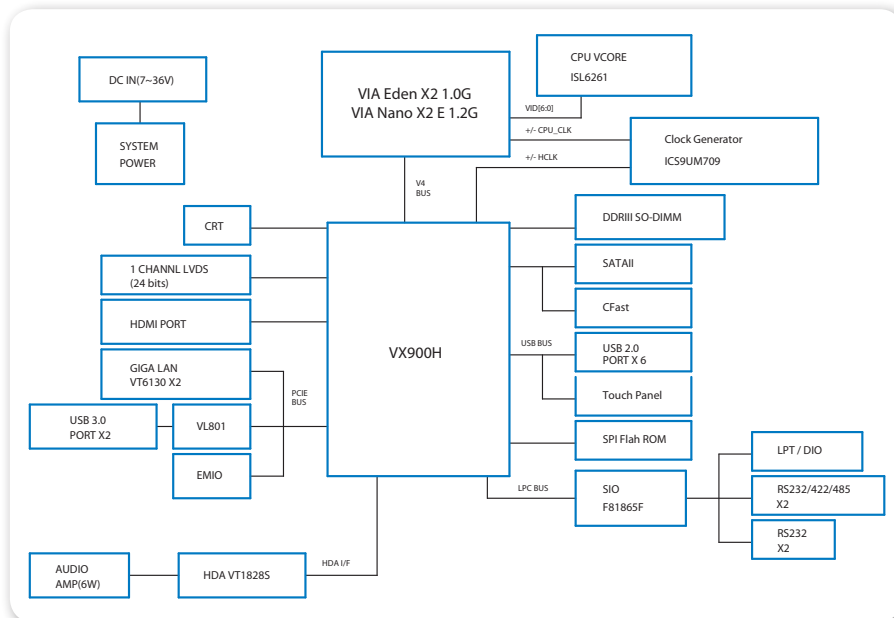
External AC-to-DC Adapter and Power Cable	
Part Number	Description
99G63-020246	AC-to-DC adapter, DC 19V/90W with 2-pole Phoenix Plug
99G33-02032C	Power cord, 180 cm, USA type
99G33-02033C	Power cord, 180 cm, Europe type
99G33-02034C	Power cord with PSE mark, 180cm for Japan

WLAN USB Module	
Part Number	Description
EMIO-1530-00A1	802.11 b/g Wireless LAN USB module for USA
EMIO-1530-10A1	802.11 b/g Wireless LAN USB module for Europe

## Certificated RAM Module, Flash Disk, and 2.5" Hard Disk Drive

Part Number	Description
99G06-011031	1GB DDR3-1333, 128M x 8bits SODIMM, Industrial Grade, -40°C~85°C, Transcend
99G06-011041	2GB DDR3-1333, 256M x 8bits SODIMM, Industrial Grade, -40°C~85°C, Transcend
99G06-011051	4GB DDR3-1333, 256M x 8bits SODIMM, Industrial Grade, -40°C~85°C, Transcend
99G06-010871	1GB DDR3-1333, 128M x 8bits SODIMM, Industrial Grade, 0°C~85°C, Transcend
99G06-01096K	1GB DDR3-1333, 128M x 8bits SODIMM, Industrial Grade, 0°C~85°C, Memoright
99G06-010901	2GB DDR3-1333, 256M x 8bits SODIMM, Industrial Grade, 0°C~85°C, Transcend
99G06-01097K	2GB DDR3-1333, 256M x 8bits SODIMM, Industrial Grade, 0°C~85°C, Memoright
99G06-010911	4GB DDR3-1333, 256M x 8bits SODIMM, Industrial Grade, 0°C~85°C, Transcend
99G06-01098K	4GB DDR3-1333, 256M x 8bits SODIMM, Industrial Grade, 0°C~85°C, Memoright
99G61-060193	4GB CFast Flash Disk, SATA II, Quad Channel, Industrial Grade, -40°C ~ 85°C, Transcend
99G61-060254	4GB CFast Flash Disk, SATA II, Quad Channel, Industrial Grade, -40°C ~ 85°C, Memoright
99G61-060183	8GB CFast Flash Disk, SATA II, Quad Channel, Industrial Grade, -40°C ~ 85°C, Transcend
99G61-060264	8GB CFast Flash Disk, SATA II, Quad Channel, Industrial Grade, -40°C ~ 85°C, Memoright
99G61-060173	16GB CFast Flash Disk, SATA II, Quad Channel, Industrial Grade, -40°C ~ 85°C, Transcend
99G61-060274	16GB CFast Flash Disk, SATA II, Quad Channel, Industrial Grade, -40°C ~ 85°C, Memoright

## Block Diagram



## Packing List

### Items for EITX-3002-1D10A1/ 1D12A1

- 1 x EITX-3002 board
- 1 x Driver and Utility CD
- 1 x SATA power cable
- 1 x Power cable, 2-pole Phoenix plug to DC-plug
- 1 x Screw pack of 7 pieces of Nickel-Plated Round Head M3\*20mm screw
- 1x 2-port USB 2.0 cable

### Item for EITX-3002-2D10A1/2D12A1

- 1 x EITX-3002 board
- 1 x Driver and Utility CD disc
- 1 x SATA data cable
- 1 x SATA power cable
- 1 x Power cable, 2 pole Phoenix plug to DC-plug
- 1 x Screw pack of 7 pieces of Nickel-Plated Round Head M3\*20mm screw
- 2 x 2-port USB 2.0 cables
- 1 x Touch sensor cable
- 1 x Digital IO cable
- 1 x 2-port COM port cable
- 1 x 3-port Audio Jack (3 x 3.5Ø) cable
- 1 x Thermal sensor cable
- 1 x Print port cable

## Dimensions

