

ETX Modules

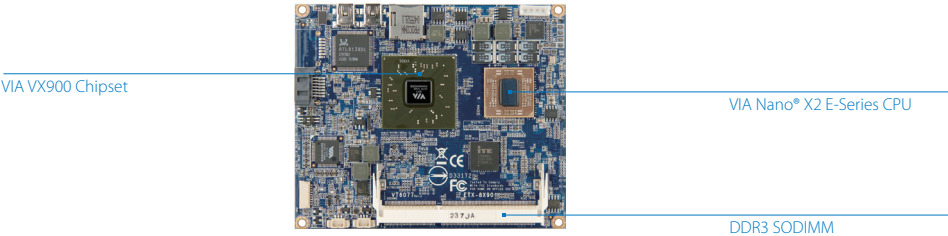
VIA
ETX-8X90

ETX® Module with high-performance multimedia capabilities

Features

- 1.2GHz VIA Nano® X2 E-Series processor
- Supports up to 4GB 1066 DDR3 SDRAM
- DX9 graphics with MPEG-2/WMV9/VC1/H.264 decoding acceleration
- Display interface for VGA, supporting resolutions of up to 2048 x 1536, and one 18/24-bit dual-channel LVDS panel
- Supports four USB 2.0 and two mini USB ports

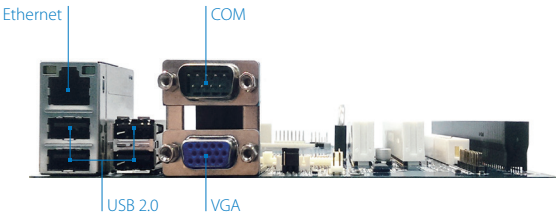
Board Placement



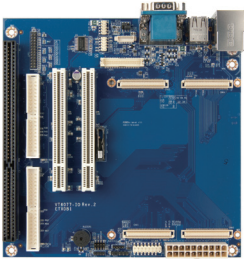
Specifications

Model Name	ETX-8X90
Processor	1.2GHz VIA Nano® X2 E-Series
Chipset	VIA VX900 Media System Processor
BIOS	AMI BIOS, 8Mbit Flash memory
System Memory	1 DDR3 1066 SODIMM slot Up to 4GB memory size
Storage	Up to 2 SATA or 2 EIDE (master mode only)
Graphics	Integrated VIA Chrome®9 HD DX9 3D/2D graphics with MPEG-2, WMV9, VC1 and H.264 video decoding acceleration
LAN	Realtek RTL8139DL 10/100M Ethernet controller
Audio	1 HD audio digital interface
Super I/O	Fintek F71869ED
Supported Expansion I/O	2 PCI
Left Panel I/O	2 SATA connectors (1 optional) 2 Mini USB 2.0 1 Micro SD card slot 1 Audio pin header for Line-in, Line-out, Mic-in
Supported I/O	4 USB 2.0 ports 1 VGA 1 Dual-channel 18-bit/24-bit LVDS panel 2 COM 1 10/100M Ethernet 2 IDE (master mode only) 1 SMBus 1 I²C 1 ISA (not support DMA transfer)
Operating System	Windows 7, WES 7, Windows CE, Linux
System Monitoring & Management	CPU temperature reading, CPU fan speed reading, System voltage monitoring, Watch Dog Timer, Wake-on-LAN, System power management, AC power failure recovery
Operating Temperature	0°C ~ 60°C
Operating Humidity	0% ~ 95% (non-condensing)
Form Factor	11.4cm x 9.5cm (4.45" x 3.7")
Compliance	ETX 3.02, compact module

Carrier Board Back Panel I/O



Carrier Board (ETXDB1)



* The carrier board is only for evaluation purpose.

Specifications

Model Name	ETXDB1
Super I/O	Fintek F71869ED
Onboard I/O	1 ISA connector (compatible with ISA ETX 3.0) 2 EIDE connectors (master mode only) 1 COM port pin headers 1 LPT connector 1 Dual-channel 18/24-bit LVDS panel connector 1 Audio pin header for Line-out, Mic-in 1 SMBus pin header 1 I ² C pin header 1 Backlight voltage selects pin header 1 SIR pin header 1 RTC external battery holder 1 ATX power connector 2 PCI slots (compatible with PCI 2.3, 32bit/33Mhz)
Rear Panel I/O	4 USB 2.0 ports 1 VGA port 1 COM port 1 10/100Mbps Ethernet connector
Power Supply	ATX power connector
Operating Temperature	0°C ~ 60°C
Operating Humidity	0% ~ 95% (non-condensing)
Form Factor	Mini-ITX (17cm x 17cm, 6.7" x 6.7")

Ordering Information

Model Name	CPU Frequency	Description
ETX-8X90	1.2GHz VIA Nano® X2 E-Series	ETX Board with 1.2GHz VIA Nano® X2 E-Series CPU with VGA, LVDS, 4 USB 2.0, 2 Mini USB 2.0, COM, 10/100Mbps Ethernet, SATA, 2 IDE, 2 PCI, Micro SD card slot, ATX power connector
ETXDB1	N/A	ETX-8X90 evaluation carrier board
99G42-01381Q	N/A	Heatsink with fan for ETX-8X90
99G42-01413Q	N/A	Heat spreader for ETX-8X90
STK-E8X90-00A0	1.2GHz VIA Nano® X2 E-Series	ETX-8X90 starter kit
STK-E8X90-01A0	1.2GHz VIA Nano® X2 E-Series	ETX-8X90 starter kit with Panel

The diagram illustrates the system architecture for the VIA Nano X2 E 1.2GHz. The central component is the **VIA Nano® X2 E 1.2GHz** processor, which is connected to various system components:

- Power and I/O Connectors:** LPC CONN, DC-in CONN (+5VSB), SPI CONN, VGA CONN, SATA PWR CONN, and SATA CONN.
- System Management:** A **Clock Generator IC59UM709B** provides $\pm 1\%$ CPU CLK and $\pm 1\%$ HCLK signals to the processor.
- Memory:** The system includes **DDR3 SDRAM Slot SODIMM x1** and **DDR3 800-1066MHz** memory modules.
- Storage:** SATA storage is supported via **SATA1** and **SATA2** ports, connected through a **SATA Gen2** controller.
- Expansion and Peripherals:**
 - Network:** Ethernet connectivity via **10/100 LAN RTL8139DL**.
 - Storage:** **PCIe to SATA JMD330** and **PCIe to SATA JMD330** controllers for SATA storage.
 - Audio:** **System BIOS**, **SPI ROM**, **Micro SD**, and **Mini USB x2** for audio and storage.
 - Video:** **VGA** output via **VGA Transmitter V1636** and **DVI** output via **Dual CH LVDS**.
 - USB:** **USB x2** and **USB x4** ports.
 - Other:** **Super IO F71869ED** for **LPT**, **SIR**, and **IZC Bus** connections.
- System Management:** **PCI to ISA Bridge IT888BG** and **Ext PCI Arbitrator IT8209R-L** for system management.
- Expansion:** **Ext PCI x1** and **Ext PCI x1** slots for additional expansion.
- System Bus:** **ISA Bus** and **PCI Bus** for system expansion.
- System Power:** **+5V CPU FAN** and **+5V System FAN** for cooling.

Items for STK-E8X90-00A0
ETX-8X90 ETX module board
ETXDB1 ETX carrier board
SATA cable
PATA cable
KB/MS cable
COM cable
LPT cable

ETX-8X90 module
ETXDB1 carrier board
SATA cable
PATA cable
KB/MS cable
COM cable
LPT cable
LVDS cable
Inverter cable
12.1" LCM