# EVA-X4300

#### **Highly Integrated x86 SoC for Industrial Embedded Platforms**



#### **Features**

- 32-bit 486SX instruction set compatible SoC
- Operating frequency up to 300 MHz
- Supports both SDR and DDR 2 SDRAM
- Integrated interfaces: PCI, ISA, IDE, Ethernet PHY, USB, SPI and LPC
- Supports up to 40-bit GPIO and 5 UART
- Stacked 256 KB Flash and 10/100 Mbps Ethernet PHY
- Low power architecture (Fanless, no heatsink required)
- Wide operating temperature range (-20° C ~ 85° C)







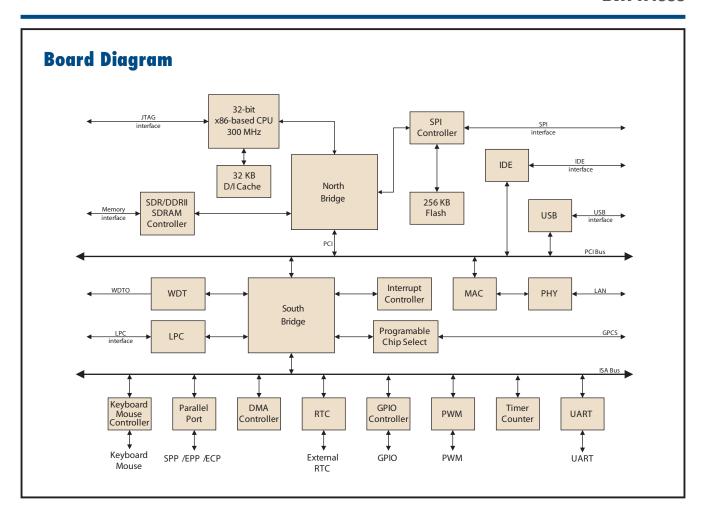


#### Introduction

EVA-X4300 is a fully static 32-bit x86-based processor that powers a wide-range of PC peripherals, applications and OSs, such as DOS, Windows CE, Linux and most popular 32-bit RTOS (Real Time OS) for maximum software re-use and legacy compatibility. EVA-X4300 integrates comprehensive features and rich I/O flexibility within a single System on Chip, to reduce board design complexity and shorten product development schedules. Taking advantage of ultra low power consumption, EVA-X4300 is able to operate in wide temperature range environments without thermal designs, making them the perfect x86-based SoC for diverse embedded applications.

### **Specifications**

Processor Core	x86 core, 6 stage pipe-line, 300 MHz				
Embedded L1 Cache	16 KB I-Cache, 16 KB D-Cache				
	16-bit data bus width				
SDR / DDR2 SDRAM	Supports DLL for clock phase auto-adjustment				
Control Interface	SDR supports up to 133 MHz, 128 MB				
	DDR2 supports up to 166 MHz, 256 MB				
DMA Controller	Provides two 82C37 compatible DMA controllers				
	4-channel 8-bit DMA transfer and 3-channel 16-bit DMA transfer				
Interrupt Controller	Provides two 8259 compatible interrupt controllers				
	Independent programmable level/edge-trigger interrupt channels				
	Serial IRQ supported				
Counter / Timer	Two sets of 8254 timer controller				
	Supports 2 sets Watch Dog Timer (WDT)				
General Chip Selector	Two sets extended Chip Selector				
	Configurable I/O-map or Memory-map				
	I/O Addressing: From 2 byte to 64 KB				
	Memory Address: From 512 byte to 4 GB				
	32-bit, 33 MHz, compliant with PCI spec. Rev. 2.1				
PCI Control Interface	Up to 3 individual PCI master devices				
	3.3 V I/O with 5 V tolerance				
	AT clock programmable				
ISA Bus Interface	8/16-bit ISA device with Zero-Wait-State				
IOA Das Interlace	Generate refresh signals to ISA interface during DRAM refresh cycle				
	Complete IRQ set				
Ethernet Controller	Integrated 10/100 Mbps Ethernet (MAC + PHY)				
	NE2000 Compatible				
IDE Controller	Supports 2 channel Ultra-DMA 100 ( PATA x 4 )				
Universal Serial Bus	USB 1.1/2.0 Host controller, supports 4 USB ports				
	Supports HS, FS and LS mode				
LPC (Low Pin Count) Bus Interface	Supports 2 programmable registers to decode LPC address				
FIFO UART Port	Supports up to 5 COM ports				
	Compatible with 16C550/16C552				
	Default internal pull-high				
	Supports TXD_En signal on COM1 and COM2				
	Supports the programmable baud rate generator with the data rate from 50 to 460.8 Kbps				
	The character options are programmable for 1 start bits; 1, 1.5 or 2 stop bits; even, odd or no parity; 5~8 data bits				
	Port 80h output data may be redirected to COM1				



General Purpose I/O	Up to 40 GPIO, 8 dedicated and 32 multi-functional programmable I/O pins GPIO pins can be individually configured as inputs, outputs, or as interrupt trigger sources Open-drain with a pull-high 75 KW				
SPI Interface	Supports external SPI flash as data storage				
Real Time Clock	Internal RTC or External RTC Under 2 uA power consumption on Internal Mode				
Parallel Port	Supports SPP / EPP / ECP mode				
PS/2 Keyboard and Mouse Interface	Compatible with 8042 controller				
Stacked 256 KB Flash	Internal SPI interface, for BIOS storage				
Speaker Out	Buzzer				
Input Clock	14.318 MHz, 32.768 KHz				
Output Clock	24 MHz, 25 MHz, 14.318 MHz PCI clock, ISA clock, SDRAM clock				
Operating Voltage Range	Core Voltage: $1.32 \text{ V} \pm 5 \%$ I/O Voltage: $1.8 \text{ V} \pm 5 \%$ , $3.3 \text{ V} \pm 10 \%$				
Operating Temperature	-20° C ~ 85° C				
Power Consumption	Approx. 1.2 Watt				
Package Type	PBGA, 581 balls, Lead-free, RoHS compliant Dimensions: 27 mm x 27 mm x 2.23 mm				

## **Ordering Information**

Part Number	Description	F	Part Number	Description
EVA-X43000C-C00E	EVA-X4300	E	EVA-X43000C-V00E	EVA-X4300 bundle with VGA chip
EVA-X43000C-CB0E	EVA-X4300 bundle with BIOS license	Е	EVA-X43000C-VB0E	EVA-X4300 bundle with VGA chip and BIOS license