

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)



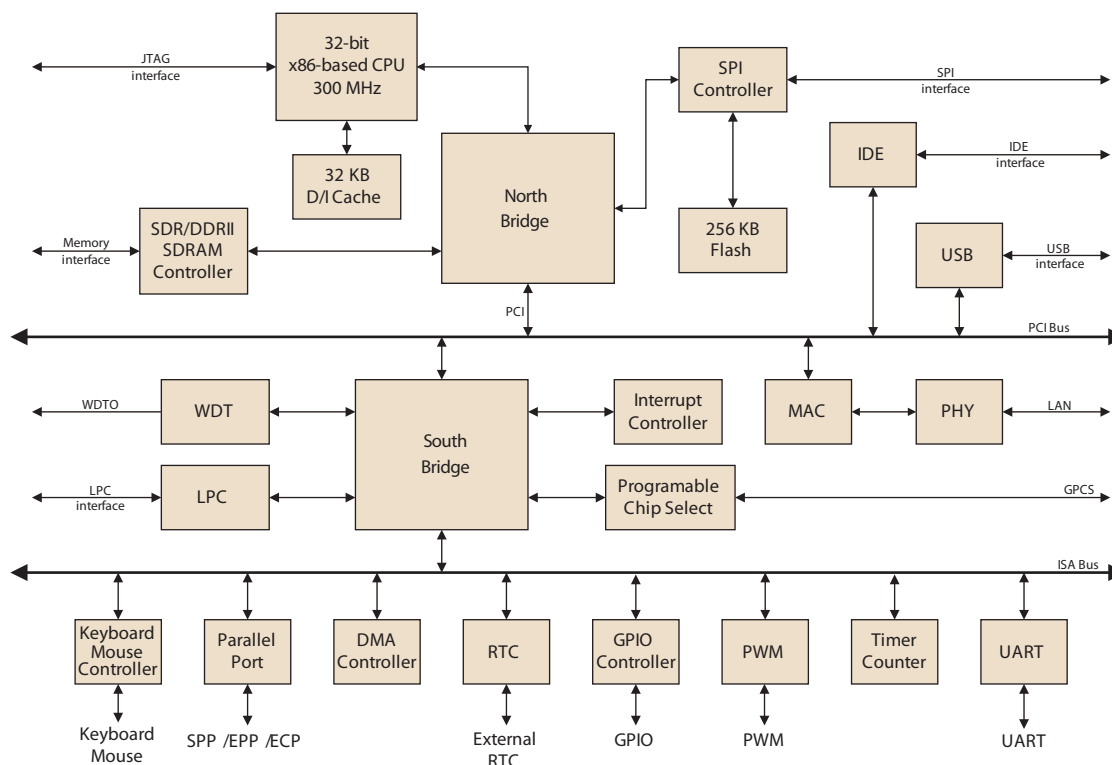
Introduction

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
SDR / DDR2 SDRAM Control Interface	16-bit data bus width Supports DLL for clock phase auto-adjustment 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
PCI Control Interface	32-bit, 33 MHz, compliant with PCI spec. Rev. 2.1 Up to 3 individual PCI master devices 3.3 V I/O with 5 V tolerance
ISA Bus Interface	AT clock programmable 8/16-bit ISA device with Zero-Wait-State 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

Board Diagram



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 V \pm 5 % I/O Voltage: 1.8 V \pm 5 %, 3.3 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	Part Number	Description
EVA-X43000C-C00E	EVA-X4300	EVA-X43000C-V00E	EVA-X4300 bundle with VGA chip
EVA-X43000C-CB0E	EVA-X4300 bundle with BIOS license	EVA-X43000C-VB0E	EVA-X4300 bundle with VGA chip and BIOS license