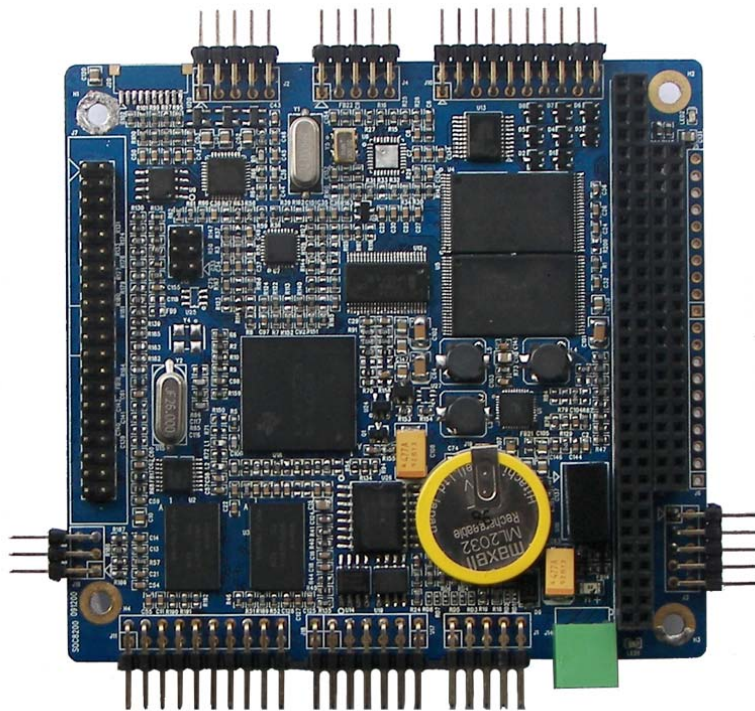


## Embest SOC8200 Single Board Computer

- **TI's AM3517 ARM® Cortex™A8 Microprocessors**
  - 600MHz ARM Cortex-A8 Core
  - NEON SIMD Coprocessor
  - POWERVR SGX™ Graphics Accelerator (AM3517 only)
  - 16KB I-Cache, 16KB D-Cache, 256KB L2-Cache, 112KB ROM, 64KB Share SRAM
- **Memory**
  - 256MB DDR2 SDRAM, 32bit
  - 256MB NAND Flash, 8bit
  - 4MB NOR Flash, 16bit (driver has not been provided at present)
- **Audio/Video Interface**
  - Audio input interface
  - Stereo audio output interface
  - 16-bit TFT LCD interface
  - 15pin standard VGA output interface
- **Peripheral Interfaces**
  - UART, USB Host, USB Device, Ethernet, CAN, RS485, SD/MMC card, CF card,
  - Multi-function expansion interface (McBSP, IIC, McSPI, TV-OUT), PC104 expansion interface (GPMC Bus, MMC, USB, McSPI, UART, Clock, HDQ)
- **Software**
  - Ready-to-Run Linux 2.6.32 operation system
  - Provided with linux2.6 kernel and drivers for onboard peripherals
  - Provided with gcc cross compiler tool



SOC8200 Single Board Computer

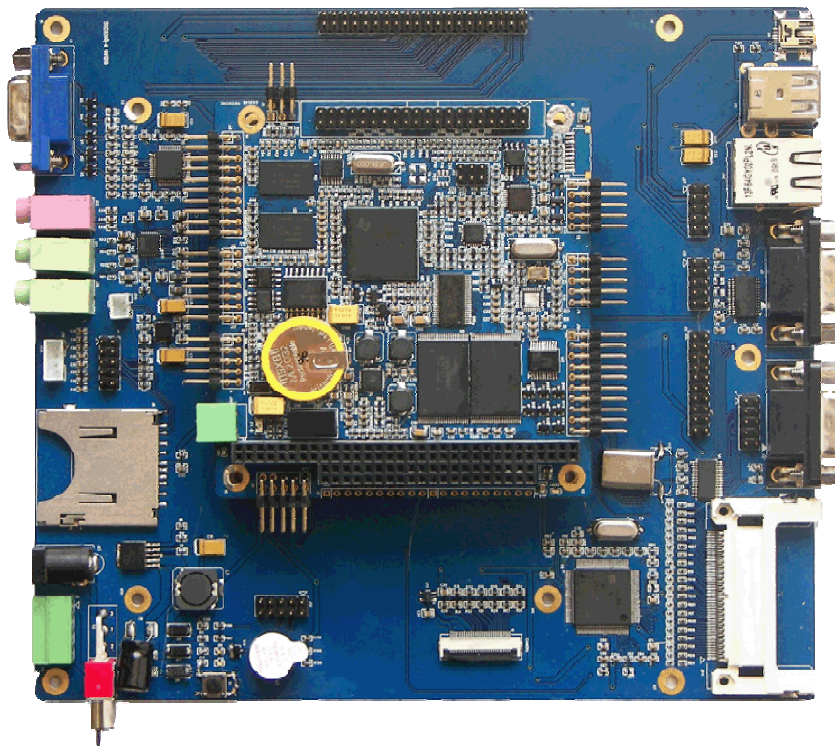
## General Description

Embest SOC8200 is a highly-integrated single board computer with PC104 form factor. It employs TI's high-performance AM3517 microcontroller which is based on 600Mhz ARM Cortex-A8 Core with NEON SIMD Coprocessor and POWERVR SGX™ Graphics Accelerator and offers video, image, and graphics processing capable of supporting single board computers, home and industrial automation, and digital signage.

The SOC8200 board has onboard 256MB DDR2 SDRAM, 256MB Nand Flash and 4MB Nor Flash and extends various functions through pins including serial port, Ethernet, CAN, RS485, SD/MMC card, CF card, Audio In/Out, Camera, LCD, USB Host, USB Device, expansion connector and JTAG.

Embest has designed an expansion board for the SOC8200, along with some accessories, software package and documents, it is an ideal development kit which would be convenient for customers to evaluate the functionality of Texas Instruments' Sitara AM3517 microprocessor. The SOC8200 board is preloaded with Linux 2.6 open-source operation system. Embest provides all drivers in source code and together with user manual and some other tools and documents to help customer immediately start with their code development.

The board industrial level can work stably in wide temperature range from -40℃ to 85℃ which enables it to fit specific industrial needs and can be used in various applications such as industrial control, consumer electronics, medical equipment, instrumentation, security monitoring and so on.



SOC8200 Development Kit

## **Hareware Features**

### **✓ SOC8200 Single Board Computer**

#### **Processor**

- TI AM3517 industrial applications processors
- NEON SIMD Coprocessor
- 600MHz ARM Cortex-A8 Core
- POWERVR SGX Graphics Accelerator (AM3517 only)
- 16KB I-Cache, 16KB D-Cache, 256KB L2-Cache, 112KB ROM, 64KB Share SRAM

#### **Memory**

- 256MB DDR2 SDRAM, 32bit
- 256MB NAND Flash, 8bit
- 4MB NOR Flash, 16bit (driver has not been provided at present)

#### **Signals Routed to Pins**

- One 5-wire Debug serial port (RS232)
- One 5-wire serial port (TTL)
- Two USB 2.0 Host High-speed ports, 480Mbps
- One USB 2.0 Device High-speed port, 480Mbps
- Audio (IIS)
- 16-bit LCD output
- 10-bit Camera video input
- 1-channel S-Video output
- 1-channel AV output
- One RS485 serial port
- 1-channel CAN bus
- 10/100Mbps Ethernet
- SD/MMC card
- Multi-functional expansion interface (McBSP, IIC, McSPI, TV-OUT)
- PC104 expansion interface (GPMC Bus, MMC, USB, McSPI, UART1, Clock, HDQ)
- JTAG interface

### **✓ SOC8200 Expansion Board**

#### **Audio/Video Interface**

- Audio input port
- Stereo audio output port
- 15-pin standard VGA output interface
- Buzzer

#### **Communication Interface**

- One 5-wire RS232 serial port (DB9)
- One 9-wire RS232 serial port (DB9)
- One 9-wire TTL serial port (2\*5pin 2.5mm pitch connector)
- Two High-speed USB 2.0 Host ports, 480Mbps
- One High-speed USB 2.0 Device port, 480Mbps
- One 10/100Mbps Ethernet port (RJ45)
- 10-bit Camera interface
- Reset button
- SD/MMC card slot

- CF card slot

### Electric Characteristic

- SOC8200 Single Board Computer Dimensions: 96mm\*90mm (8 layer PCB design)
- SOC8200 Expansion Board Dimensions: 170mm\*190mm
- Input voltage: +5V (SOC8200 Single Board Computer),  
+12V (SOC8200 expansion board)
- Power Consumption: About 3W
- Working Temp.: -40°C~85°C
- Working Humidity: 20%~90%

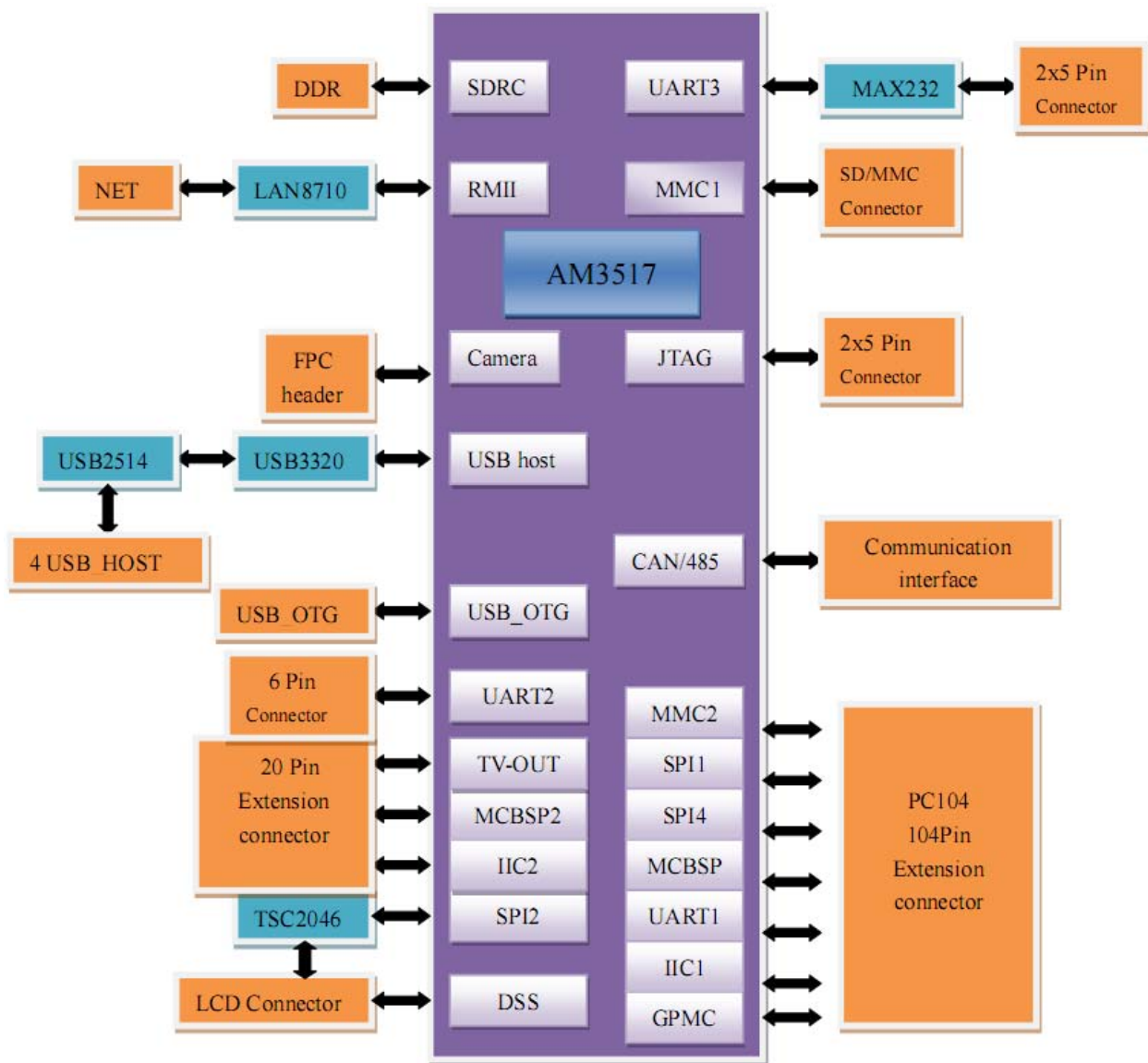
### Software Features

Item		Description
Bootloader	x-loader	NAND / ONENAND
		MMC / SD
		FAT
	u-boot	NAND / ONENAND
		MMC / SD
		FAT
		NET
Kernel	Linux-2.6.32	ROM/CRAM/EXT2/EXT3/FAT/NFS/ JFFS2/UBIFS
Device Driver	serial	Serial port driver
	rtc	Hardware clock driver
	net	10/100M Ethernet driver
	flash	Nand flash driver
	lcd	TFT LCD driver
	touch screen	Touch screen driver
	vga	Supports VGA output
	mmc/sd	MMC/SD controller driver
	cf	Support CF card device
	usb device	USB device driver
	usb ehci	USB ehci driver
	video	Supports video output
	audio	Sound driver (supports audio Play)
	buzzer	Buzzer driver
	camera	Analog camera driver
	can	CAN driver
	led	LED driver
	rs485	RS485 driver
	Analog input	Analog input driver

### Remark:

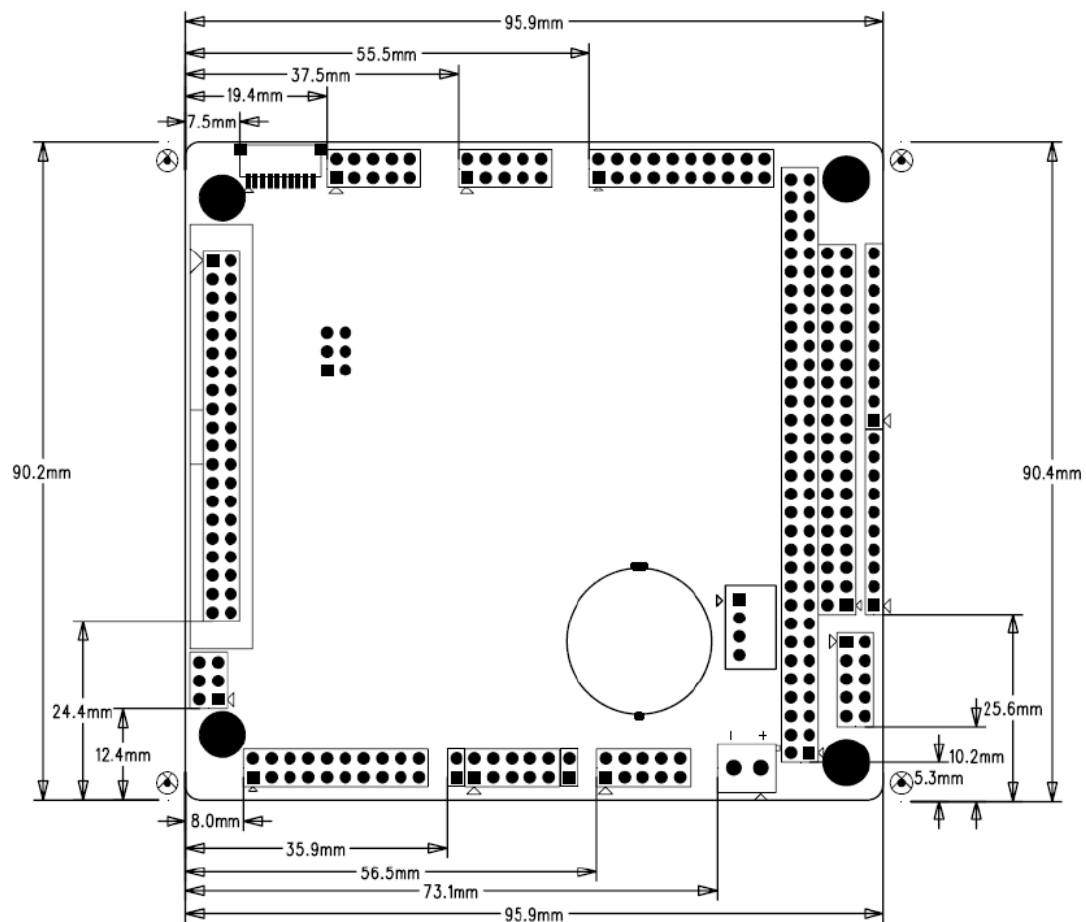
- ✓ Provided with linux2.6 kernel and drivers for onboard peripherals in source code
- ✓ Provided with gcc cross compiler tool

## Function Block Diagram

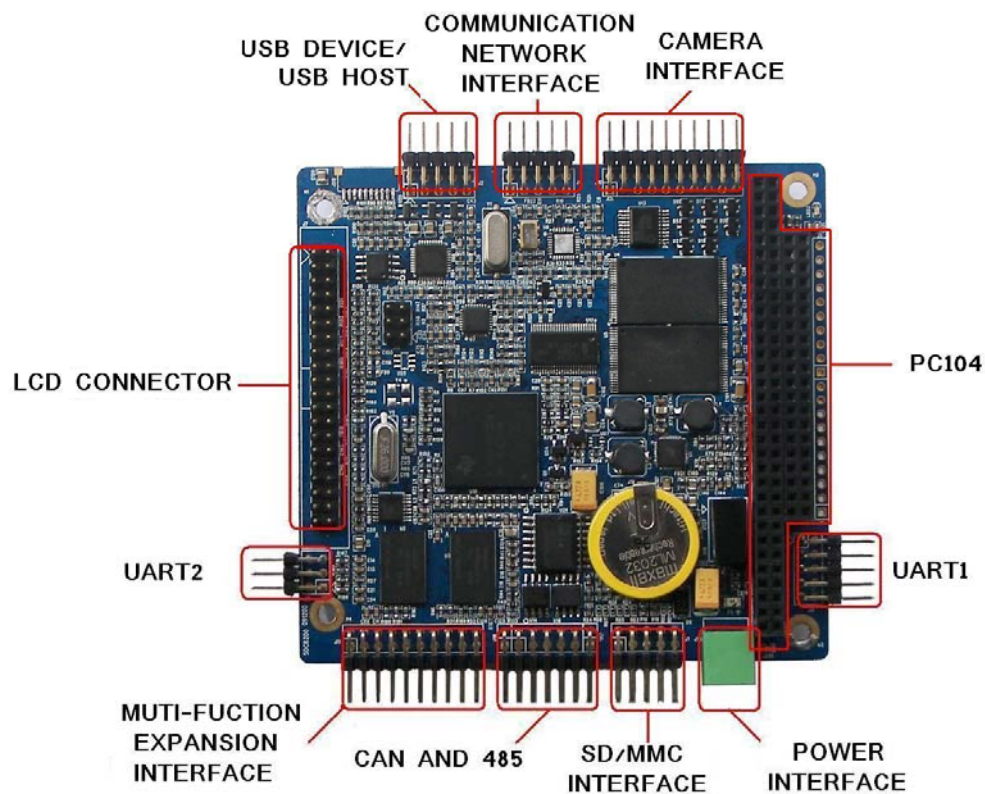




## Dimension Drawing



## Diagram of Interfaces



## Order Information

Order No.	T400197
Item	SOC8200 Single Board Computer
Hardware	One SOC8200 Single Board Computer
Software	Preloaded with Linux image, do not provide Linux BSP or technical support, if you need Linux BSP, please purchase the whole set of <b>SOC8200 Development Kit</b> .
Order No.	T6010107
Item	SOC8200 Development Kit
Hardware	<ul style="list-style-type: none"><li>• One SOC8200 Single Board Computer with Expansion Board</li><li>• One 2G SD card</li><li>• One Serial cable</li><li>• One Ethernet cable</li><li>• One 12V Power adapter</li><li>• One 2x5-pin 12cm cable</li><li>• One 2x10-pin 12cm cable</li><li>• One 2x20-pin 12cm cable</li><li>• One ECAN Module (CAN Module)</li><li>• One CD (including software and documents)</li></ul>
Software and Documents	<ul style="list-style-type: none"><li>• Documents (user manual, schematic drawing, Datasheet)</li><li>• Linux 2.6.32 BSP</li></ul>
Options	<ul style="list-style-type: none"><li>• 7" TFT LCD (LCD6000-70T, Resolution 800*480)</li><li>• 4.3" TFT LCD (LCD6000-43T, Resolution 480*272)</li></ul>
Price	Please contact us.

*Detailed information about the SOC8200 Single Board Computer, please refer to Embest website: <http://www.armkits.com/Product/soc8200.asp>*



### **Embest Info&Tech Co., LTD.**

Room 509, Luohu Science&Technology Building,  
#85 Taining Rd., Shenzhen, Guangdong, China 518020

Tel: +86-755-25635656/25636285

Fax: +86-755-25616057

Email: [market@embedinfo.com](mailto:market@embedinfo.com)

<http://www.embedinfo.com/english>

<http://www.armkits.com>