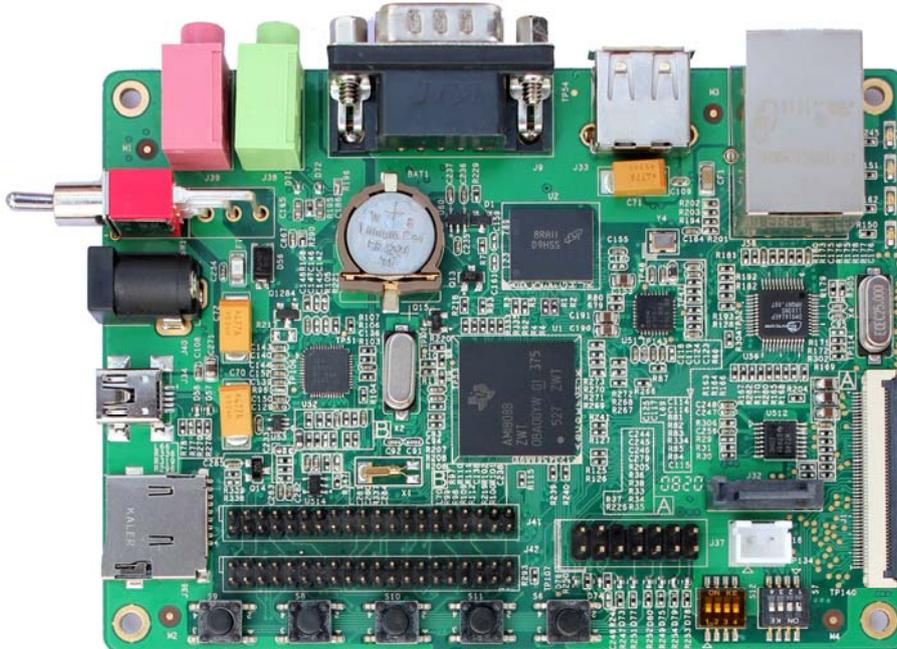


SBC8018 Single Board Computer

- 375MHz TI AM1808 ARM926 Microprocessor
- Onboard 128MByte DDR and 128MByte NAND Flash
- UART, USB Host/OTG, Ethernet, LCD/TSP, SATA, Camera, Audio, TF, JTAG,...
- Optional WiFi, Camera and 3G Modules
- Ready-to-Run Linux2.6.33 and WinCE 6.0 OS



SBC8018 Single Board Computer

Overview

The SBC8018 Single Board Computer is a compact, low-cost with high-performance controller board designed by Embest. It is based on TI's AM1808 ARM9 low-power application processor which enables OEMs and ODMs to quickly bring to market devices featuring robust operating systems support, rich user interfaces, and high processing performance life through the maximum flexibility of a fully integrated mixed processor solution.

The SBC8018 Single Board Computer takes full features of the AM1808 microprocessor and has 128MB DDR2 SDRAM and 128MB Nand Flash on board. It has exposed many other hardware interfaces including Serial port, LCD/TSP, USB Host/OTG, Ethernet, Audio, SATA, Camera, TF card, etc. It has one 14-pin JTAG interface which can be used with XDS100v2 emulator available from Embest. Embest also offers 4.3" and 7" LCD display with touch screen as optional modules for this board.

The board is a ready-to-run solution which is provided with Linux 2.6.33 and WinCE 6.0 BSP. It would be an ideal development platform for customers requiring a low power ARM9 processor with cost-effective price point and small form factor for consumer, embedded industrial, medical and other embedded connectivity applications.

Additionally, Embest offers various optional modules for SBC8018 which greatly enhanced the functions of this board.

Optional Module	Description	Interface to Board	Linux	WinCE
CAM8000-A	Analog Camera Module	Camera	Support*	Support*
WF8000-U	WiFi Module	USB Host	Not Support	Support#
CDMA8000-U	3G Module (CDMA2000 standard)	USB Host	Not Support	Support#
WCDMA8000-U	3G Module (WCDMA standard)	USB Host	Not Support	Support#

* = Provided with Source Code

= Not Provided with Source Code

Hardware Features

The SBC8018 Single Board Computer takes full features of the TI's AM1808 ARM9 Microprocessor and the hardware is characterized as following:

Mechanical Parameters

- Dimensions: 112.24 mm * 82.29 mm
- Power Input: +5V
- Power Consumption: 5V@0.22A (working without LCD)
- Working temperature: 0~70 Celsius
- Humidity Range: 20% ~ 90%

Processor

- TI AM1808 ARM9 microprocessor
 - 375-MHz ARM926EJ-S RISC MPU, also supports 456MHz operation
 - ARM926EJ-S Core
 - ARM9 Memory Architecture
 - Enhanced Direct-Memory-Access Controller 3 (EDMA3)
 - 128K-Byte On-chip Memory
 - 1.8V or 3.3V LVCMOS IOs (except for USB and DDR2 interfaces)
 - Two External Memory Interfaces
 - Three Configurable 16550 type UART Modules
 - LCD Controller
 - Two Serial Peripheral Interfaces (SPI) Each With Multiple Chip-Selects
 - Two MMC/SD Card Interface with Secure Data I/O (SDIO) Interfaces

Memory

- 128MByte Mobile DDR
- 128MByte NAND Flash (on the rear of the board)

Audio/Video Interfaces

- An Audio input interface (Mic In)
- A two-channel audio output interface (Line Out)
- A TFT LCD interface (50pin FPC connector)
- 4 line Resistive Touch Screen interface
- Two Camera interfaces (30pin FPC connector on the rear of the board, supports CCD or CMOS camera)

Data Transfer Interface

- Serial port:
 - 1 x 5 line Debug serial port, RS232 voltage (brings out by DB9 connector)
 - 2 x 3 line serial ports, TTL voltage (brings out by extension connector)
- USB port:

1 x USB2.0 OTG port, High-speed (Mini USB type)

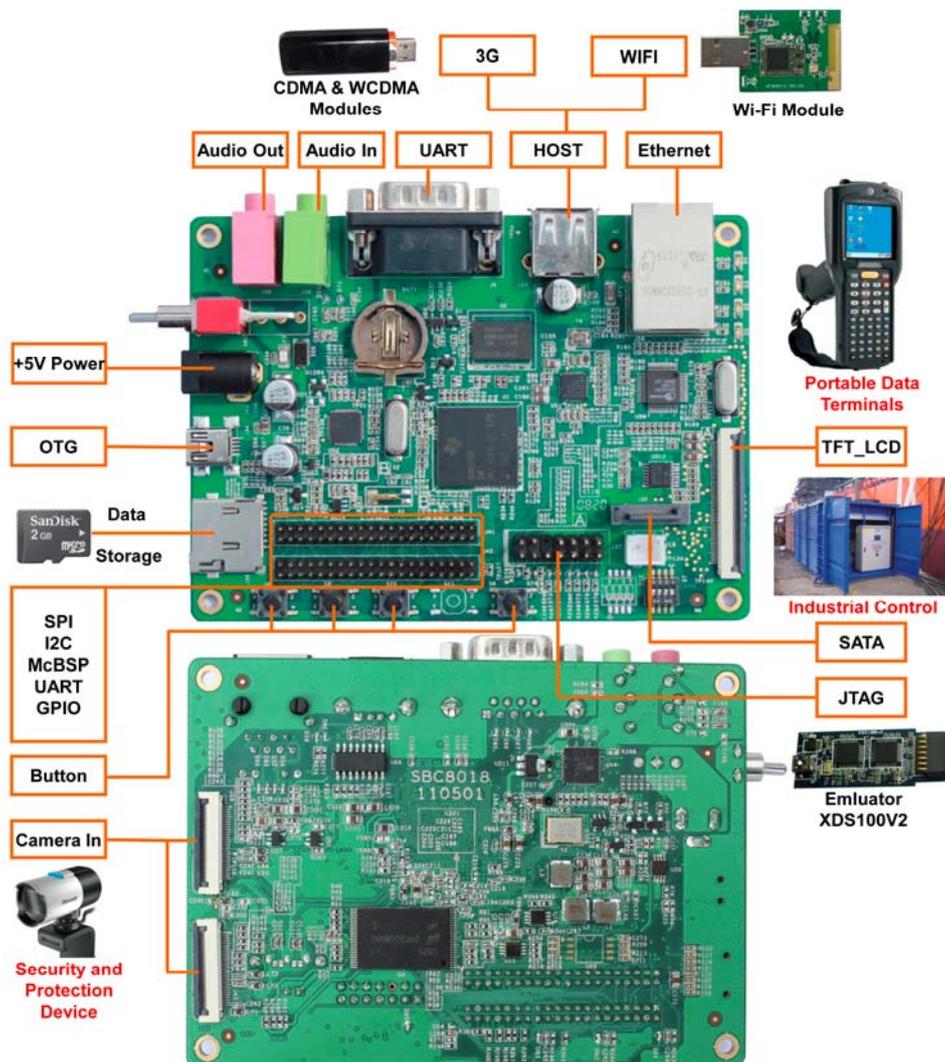
1 x USB1.1 Host port, Full-speed (USB-A type)

- 1 x TF card slot
- 1 x Serial ATA connector, supports both SATA I (1.5 Gbps) and SATA II (3.0 Gbps)
- 1 x 10/100Mbps Ethernet interface (RJ45 connector)

Input Interface and others

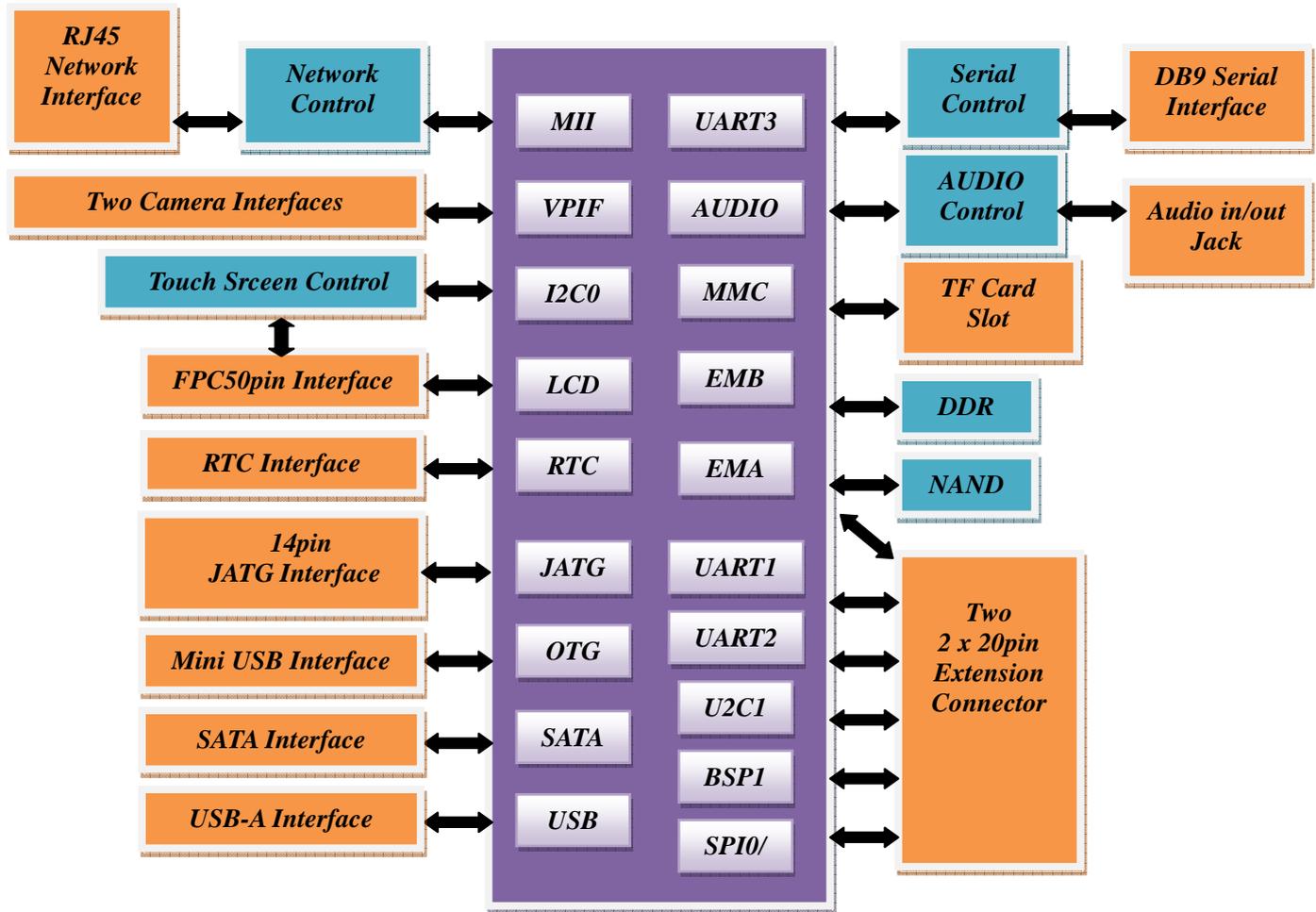
- Battery backed RTC (User needs to prepare battery himself, CR1220 model is ok)
- 1 x RESET button
- 1 x BACK button
- 1 x HOME button
- 1 x MENU button
- 1 x 14-pin JTAG connector (for using TI's XDS100v2 Emulator)
- 2 x 40-pin extension connectors (SPI, I2C, McBSP, UART, 1.8V, 3.3V, 5V, GPIO are brought out from these connectors)

Interface Introduction

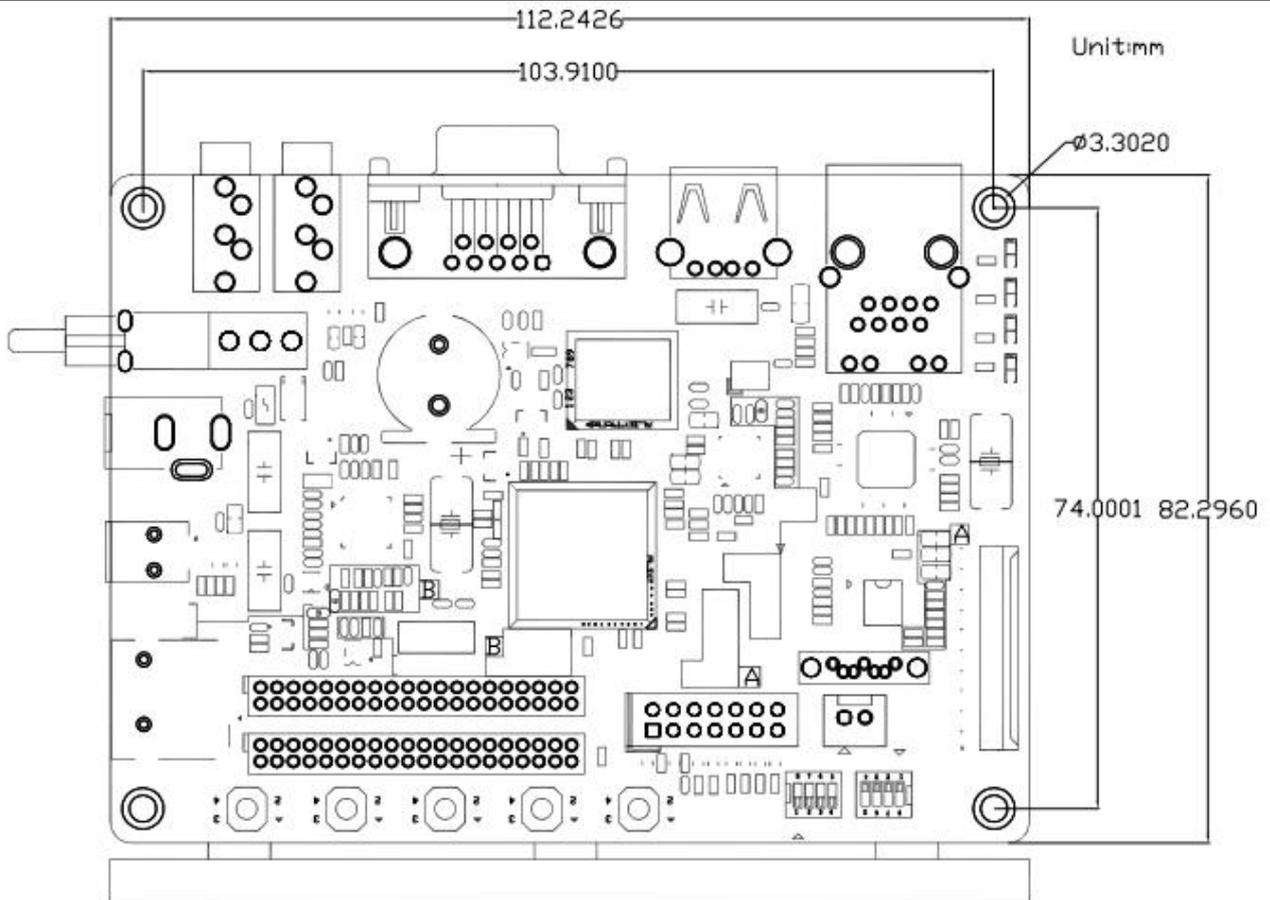


Note: Two camera interfaces and Nand Flash are on rear of the SBC8018 board

Function Block Diagram



Dimensions



Software

The SBC8018 Single Board Computer is provided with Window CE 6.0.net and Linux 2.6.33 BSP, with steady-going drivers, many of which are all in source code. Please refer to below table.

OS	Item		Remark
Linux	BIOS	x-loader	NAND / ONENAND
			MMC / SD
			FAT
		u-boot	NAND / ONENAND
			MMC/SD
			FAT
	Kernel	Linux-2.6.33	Supports ROM/CRAM/EXT2/EXT3/FAT/NFS/JFFS2/UBIFS file systems
Device Driver	Serial port, RTC, Ethernet, Nand Flash, LCD, Touch screen, TF card, USB OTG, USB Host, SATA, Audio input/output, key, LED		
WinCE	BIOS	x-loader	NAND / ONENAND
			MMC / SD
			FAT
		u-boot	NAND / ONENAND
			MMC / SD
			FAT
	Device Driver	Serial port, RTC, Ethernet, Nand Flash, LCD, Touch screen, TF card, USB OTG, USB Host, Audio input/output, key, LED	
		Power Management (backlight, battery, Sleep/Wakeup, PWM, ADC)	
	APP	application module	Flash Player plug-in and Flash player

Order Information

Order No.	T6010140
Item	SBC8018 Single Board Computer
Deliveries	<ul style="list-style-type: none">• One SBC8018 Single Board Computer• One 5V power adapter• One cross serial cable• One Product CD (including user manual, schematic in PDF format, datasheet, Linux 2.6.33 and WinCE 6.0 BSP)
Options	<ul style="list-style-type: none">• CAM8000-A Analog Camera Module• WF8000-U WiFi Module• CDMA8000-U USB 3G Module (CDMA2000 Standard)• WCDMA8000-U USB 3G Module (WCDMA Standard)• XDS100v2 USB JTAG Emulator• 4.3" or 7" TFT LCD (including touch screen)
Price	Please contact us.

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