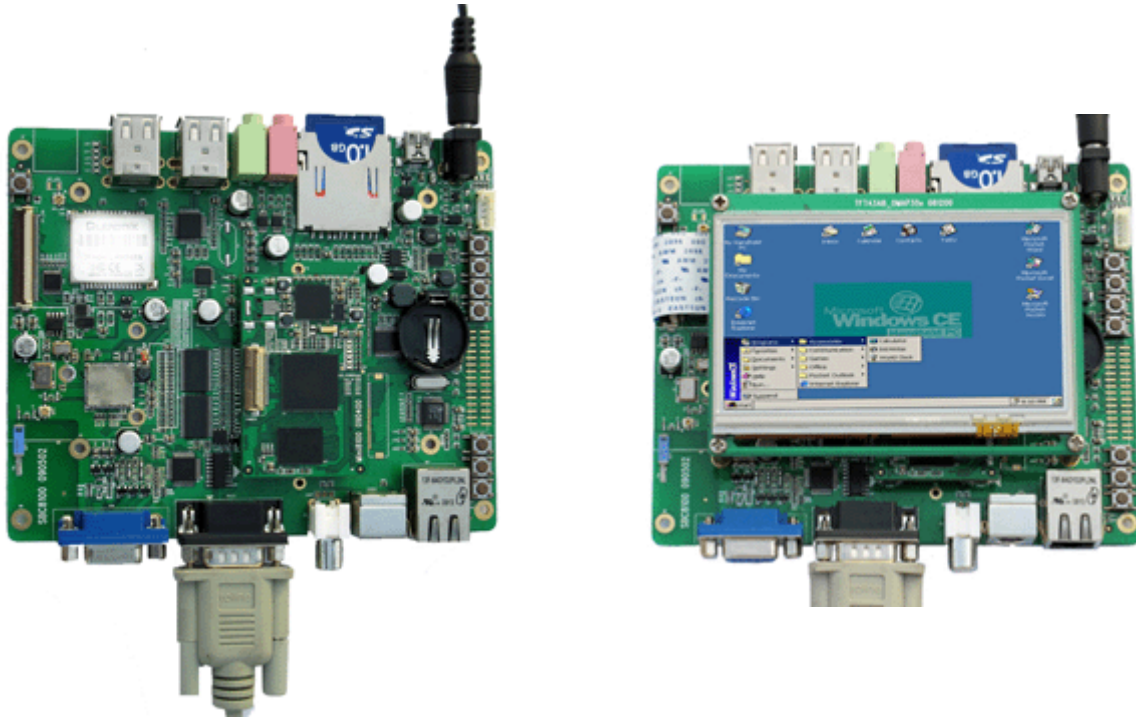


SBC8100 Single Board Computer

- ✓ *TI OMAP3530 Processor based on 600MHz ARM Cortex-A8 core*
- ✓ *Flexible Design with a Tiny CPU Board mounted on Expansion Board*
- ✓ *Memory supporting up to 256MByte DDR SDRAM and 256MByte NAND Flash*
- ✓ *UART, USB, Ethernet, WiFi/Bluetooth, GPS, Camera, Audio, SD, Keyboard...*
- ✓ *Supports 24-bit TFT LCD, VGA, S-Video/TV Output Display*
- ✓ *Supports Linux2.6.29 and WinCE 6.0*



Overview

The SBC8100 Single Board Computer is a high-performance controller board introduced by Embest after Devkit8000. It is designed based on the Mini8100 processor card which integrates an OMAP3530 microcontroller, 128MByte DDR SDRAM, 128MByte Nand Flash, RTC, LEDs and one Camera interface on board. It is connected with SBC8100 expansion board through two 1.27mm space 90-pin biserial dip connectors.

In addition to those features provided by the CPU board Mini8100, the expansion board has exposed many of other features of the OMAP3530. It has integrated RS232, USB, Ethernet, WiFi/Bluetooth, GPS, Audio In/Out, Keyboard, LCD, VGA, S-Video/TV out, SD card and more other functions on board. So many hardware resources provided by the expansion board, it becomes a solid reference board for customer design.

Embest also offers a complete software development package to customers. The board supports linux 2.6.29 and WindowsCE 6.0 operating system and is provided with complete basic drivers which enable a quick channel to evaluate the TI OMAP3530 processor and customize application software. It would be an ideal development platform for multimedia and communication applications.

Hardware Features

The OMAP3530 processor is based on the market's first broad offering of the ARM® Cortex™-A8 core to provide an unprecedented combination of laptop-like performance at handheld power levels in a single chip. With more than four times the processing power of today's 300MHz ARM9 devices, the superscalar 600 MHz Cortex-A8 core is integrated into four new OMAP35x applications processors. The processor offer a variety of combinations of the Cortex-A8 core, multimedia- rich peripherals, OpenGL® ES 2.0 compatible graphics engine, video accelerators and TMS320C64x+ DSP core.

The SBC8100 Single Board Computer is based on OMAP3530 processor and designed with a tiny processor card Mini8100 mounted directly onto an expansion board. This board is characterized as follows:

CPU Board Mini8100



Mechanical Parameters

- Dimensions: 67 mm x 37 mm
- Input Voltage: +3.3V
- Power Consumption: 0.17A @ 3.3V
- Temperature Range: 0 °C ~ 70 °C
- Temperature Range: 20% ~ 90%

Processor

- OMAP3530 processor (pin-to-pin compatible with OMAP35x families)
- 600-MHz ARM Cortex™-A8 Core
- 430-MHz TMS320C64x+™ DSP Core
- Integrated L1 memory for ARM CPU (16kB I-Cache, 16kB D-Cache, 256kB L2) and On-Chip memory (64kB SRAM, 112kB ROM)

Memory

- 128MByte DDR SDRAM, 166MHz
- 128MByte NAND Flash, 16bit

Input Interface

- 1 Camera interface (30-pin FPC connector on CPU board, support CCD or CMOS camera, support analog camera module [CAM8000-A](#) for option)

Others

- RTC (Real-time clock)
- Six programmable status LEDs
- Two 1.27mm space 90-pin biserial dip connectors for connecting with expansion board

Expansion Board of SBC8100

Mechanical Parameters

- Dimensions: 144.9 mm x 114.1 mm
- Input Voltage: +5V
- Power Consumption: 0.34A @ 5V
- Temperature Range: 0 °C ~ 70 °C
- Humidity Range: 20% ~ 90%

Audio/Video Interfaces

- A 4 line S-VIDEO interface / A TV out interface
(can only select one to use at present)
- A audio input interface
- A two-channel audio output interface
- A TFT LCD interface, resolution supporting up to 2048*2048
- 4 line Touch Screen
- A standard VGA interface

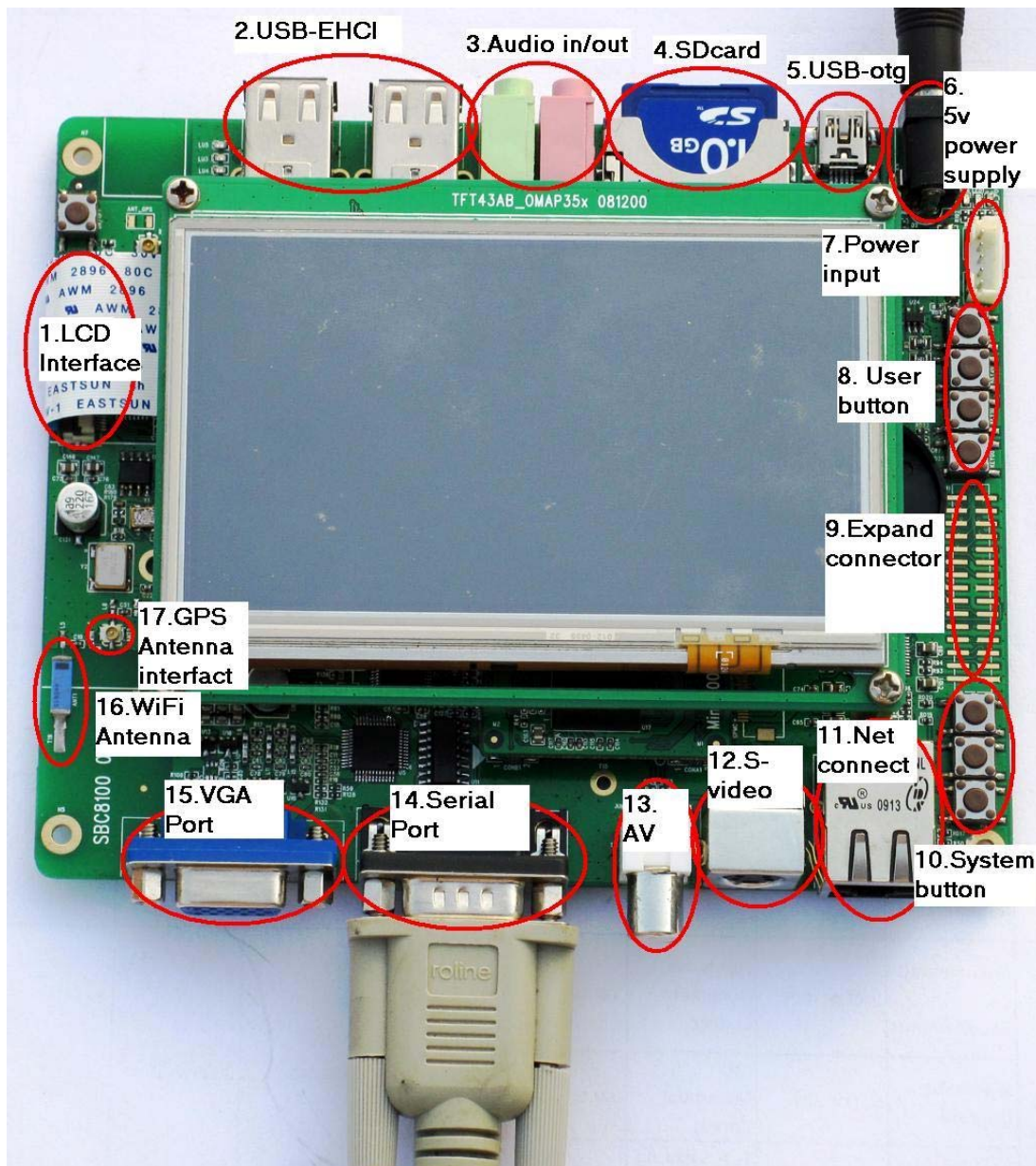
Data Transfer Interface

- Serial port:
 - 1 x 3 line Debug serial port, RS232 voltage
 - 1 x WiFi/Bluetooth Module (WG7201, Bluetooth can only used for data transmitting at present)
 - 1 x GPS Module
- USB port:
 - 1 x USB2.0 OTG, High-speed, 480Mbps (Can only be used as USB Device at present.)
 - 4 x USB2.0 Host, High-speed, 480Mbps
- SD card slot:
 - 1 channel SD card slot, support 3.3V and 1.8V logic voltage
- Ethernet: 10/100Mbps, RJ45 connector
- 1 channel McSPI Interface (Multichannel Serial Port Interface)
- 1 channel I2C interface
- 1 channel HDQ interface (HDQ/1-Wire)
- 2 channel ADC input
- 1 channel PWM output

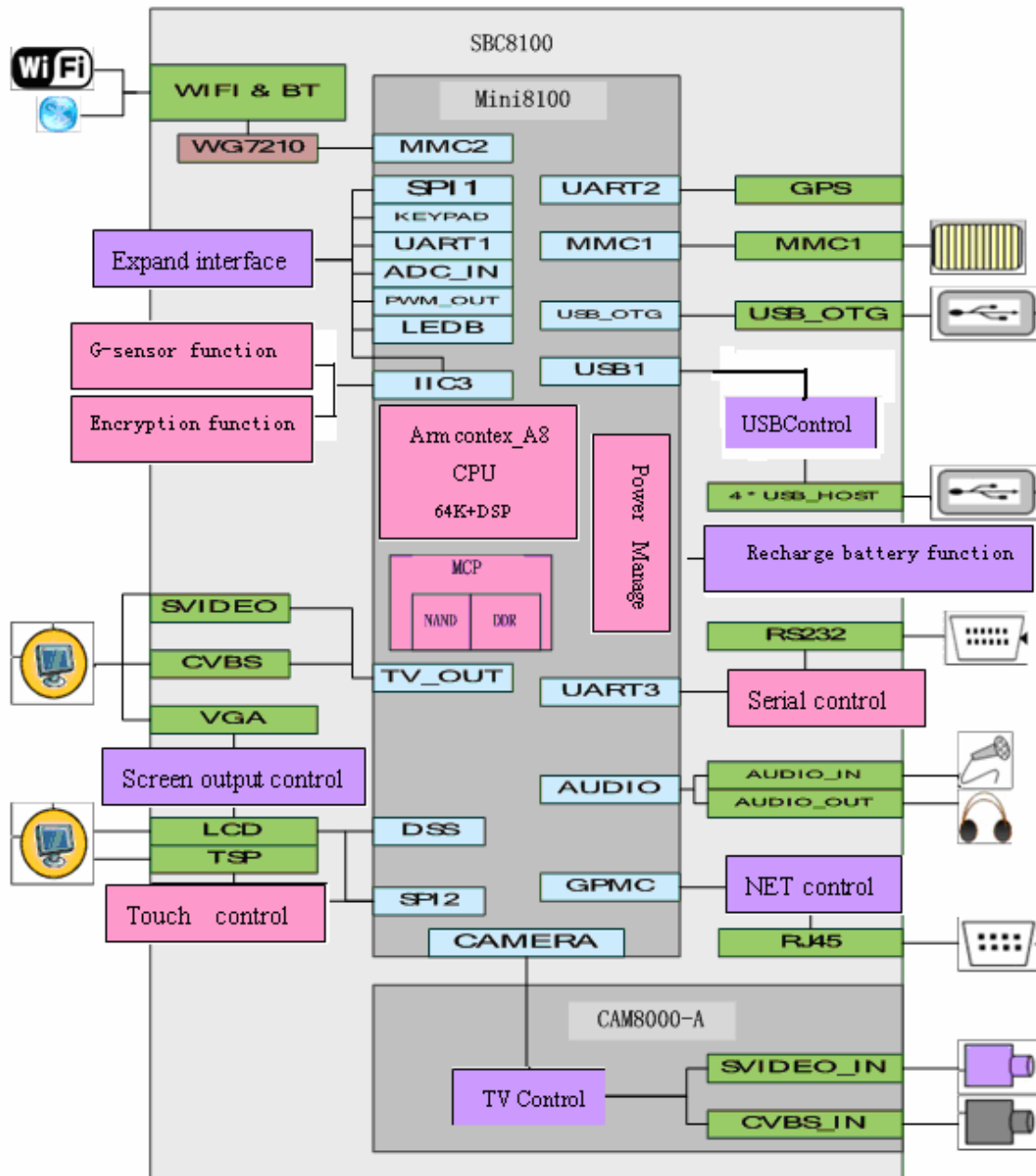
Input Interface

- 4*5 keyboard interface
- One BOOT button
- One RESET button
- One USER button
- One ON/OFF button

Interface Introduction



Function Block Diagram



Software

The SBC8100 Single Board Computer provides Window CE 6.0.net BSP and Linux 2.6.29 BSP, steady-going drivers, many of which are all in source code. Please refer to below table.

OS	Item	Feature	Description
Linux	Boot	Version	X-loader-1.41 U-boot 1.3.3
		Boot Mode	Boot Linux from SD card, NAND Flash or Ethernet
		Image update	Support updating image from SD card or Ethernet
		Logo update	Support updating logo
	Kernel and drivers	Version	Linux 2.6.29
		File System Format	ROM/CRAM/EXT2/EXT3/FAT/NFS/ JFFS2/UBIFS
		Driver	Serial, RTC, Net, Flash, LCD, Touch screen, S-Video, TV out, VGA, Audio In/Out, SD, USB Host, USB OTG, Keypad, WiFi, GPS, LED
	File System	File System Format	Ramdisk File System, UBI File System
		function	Provided Lib (ALSA -lib, tslib, glibc), udev support
	Demo	Android	Google developed a platform based on Linux open-source mobile phone operating system
DVSDK		Support MPEG4, MPEG2, H264, mp3, aac audio/video formats and Codecs	
WinCE	Boot	Version	x-load-1.41, eboot
		Boot Mode	Boot WINCE from SD card, NAND Flash or Ethernet
		Image update	Support updating image from SD card or Ethernet
	System	Characteristics	KITL kernel debug, Reboot, Watchdog, RTC
		Driver	display driver (DVI, TFT LCD)
			Serial, RTC, Net, Flash, LCD, Touch screen, S-Video, TV out, VGA, Audio In/Out, SD, USB OTG, USB Host, Keypad, WiFi/BT, GPS, LED, VRFB, DSPLINKK/CMEMK, PWM, ADC, GPIO/I2C/SPI/MCBSP
		System function	Power Management (backlight drive, battery-driven, sleep/ wake-up function)
			Hive registry support
			ROM file system support
		Software features	Mediaplayer 9.0, Word and Internet Explorer 6.0
	.NET Compact Framework 3.5		

Order Information

Order No.	T6010092
Item	SBC8100 Single Board Computer
Hardware	<ul style="list-style-type: none"> ✓ One SBC8100 Single Board Computer ✓ One 512MB SD card ✓ One Serial cable ✓ One net cable ✓ One USB cable (Type A Male to Type Mini-B Male) ✓ One S-Video cable ✓ One 5V@2A Power adapter ✓ Optional TFT LCD (With Touch panel, we provide 4.3"/7"LCD Models for options) ✓ Optional CAM8000-A Analog Camera Module (Only support linux, provided with Linux driver source code, supporting analog camera with BNC connector and PAL or NTSC video output)
Software and Documents	<ul style="list-style-type: none"> ✓ Documents (user manual, Datasheet, Schematic drawing of SBC8100 expansion board) ✓ WinCE.net 6.0 BSP ✓ Linux 2.6.29 BSP
Price	Please contact us.


Embest Info&Tech Co., LTD.

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

Tel: +86-755-25635656/25635626

Fax: +86-755-25616057

Email: market@embedinfo.com

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