DevKit8600 Evaluation Kit

- *720MHz TI's Sitara AM3359 ARM Cortex-A8 Microprocessor*
- *Onboard 512Mbytes of DDR3 SDRAM and 512Mbytes of NAND Flash*
- *UART, USB Host/OTG, Ethernet, CAN, RS485, WiFi/Bluetooth, TF, JTAG…*
- *LCD/TSP, Audio input/output*
- *Optional VGA, USB WiFi, Camera and 3G Modules*
- *Supports for Linux 3.1.0, Android 2.3 and WinCE 7 OS*

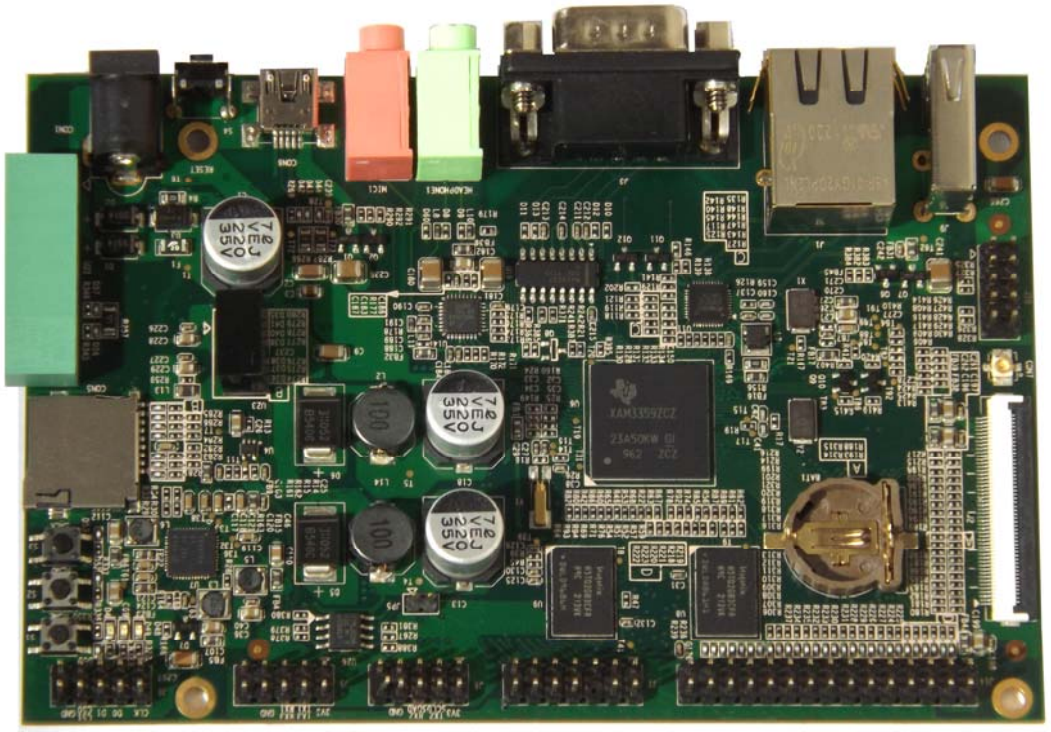


Figure 1-1 DevKit8600 Evaluation Board

Overview

Embest DevKit8600 is a complete development platform for Texas Instruments' Sitara AM3359 ARM Cortex-A8 processor, it supports running high-level operating systems such as Linux, WinCE and Android which is a reliable and solid reference design and embedded product for development or applications such as Gaming Peripherals, Home and Industrial Automation, Consumer Medical Appliances, Printers, Smart Toll Systems, Connected Vending Machines, Weighing Scales, Educational Consoles and Advanced Toys.

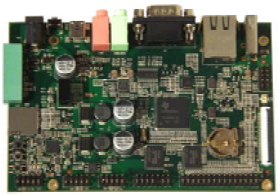
The DevKit8600 Evaluation Board takes full features of the 720MHz AM3359 processor. It has 512MBytes of DDR3 SDRAM and 512Mbytes of NAND Flash on board. It has exposed rich hardware peripherals through connectors or headers including serial ports, USB Host, OTG, Ethernet, CAN, RS485, LCD/TSP, TF, WiFi/Bluetooth, Audio, ADC, SPI, I2C and JTAG. The Board is able to support Linux 3.1.0, Android 2.3 and WinCE7 OS. The software package includes the BSP and drivers of which many are in source code.

The DevKit8600 Evaluation Kit includes the DevKit8600 evaluation board and all necessary accessories to help users start their development. It is preloaded with Linux OS in NAND flash and WinCE OS in TF card. User can display the system by using a 4.3" or 7"TFT LCD and Touch screen. Embest provides user manual, schematic drawing, datasheet documents and software BSP to help customers better understand and use the kit. Besides, it is provided with Android 2.3 demo. Embest gives instructions on how to boot Android demo image from NAND flash or TF card.

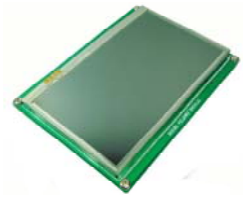
Cross Net cable

USB cable
A to Mini-A, A to Mini-B

DB 9-DB9
Serial cable



DevKit8600 board



4.3” or 7”LCD+Touch Screen

DVD

12V@1.25A Power adapter

WiFi antenna

2G TF card

Figure 1-2 DevKit8600 Evaluation Kit (Complete Configuration)

Hardware Features

Embest DevKit8600 is a complete development platform for TI’s Sitara AM3359 ARM Cortex-A8 processor and features as following:

Mechanical Parameters

- Dimensions: 130 mm * 80 mm
- Power Input: +12V
- Power Consumption: 12V@0.19A (boot Linux without external devices)
- Working temperature: 0~70 Celsius
- Humidity Range: 20% ~ 90%

Processor

- TI AM3359 ARM Cortex-A8 microprocessor
  - 720-MHz ARM Cortex-A8 32-bit RISC MPU
  - NEON™ SIMD Coprocessor
  - 32KB/32KB of L1 Instruction/Data Cache with Single-Error Detection (parity)
  - 256KB of L2 Cache with Error Correcting Code (ECC)
  - SGX530 Graphics Engine
  - Programmable Real-Time Unit Subsystem

Memory and Storage

- 512MBytes DDR3 SDRAM
- 512MBytes NAND Flash
- TF Card slot

Audio/Video Interfaces

- An Audio input interface (3.5mm audio jack)
- A two-channel audio output interface (3.5mm audio jack)
- A TFT LCD interface / 4 line Resistive Touch Screen interface (50pin FPC connector)

Data Transfer Interfaces

- Serial ports:
  1 x 5 line Debug serial port, RS232 voltage (brings out by DB9 connector)
  1 x 5 line serial port, TTL voltage (brings out by 2.0mm pitch 10-pin dip connector J6)
  2 x 3 line serial ports, TTL voltage (brings out by 2.0mm pitch 10-pin dip connector J5)
  1 x RS485 serial port (brings out by 8-pin Phoenix Connector)
- USB ports:
  1 x USB2.0 OTG port with Integrated PHY, High-speed (Mini USB type)
  1 x USB2.0 Host port with Integrated PHY, High-speed (USB-A type)
- WiFi/Bluetooth Module (only support Linux at present)
- 1 x CAN 2.0 interface (8-pin Phoenix Connector)
- 1 x 10/100Mbps Ethernet interface (RJ45 connector)
- 1 x GPMC bus interface (brings out by 2.0mm pitch 30-pin dip connector J14)

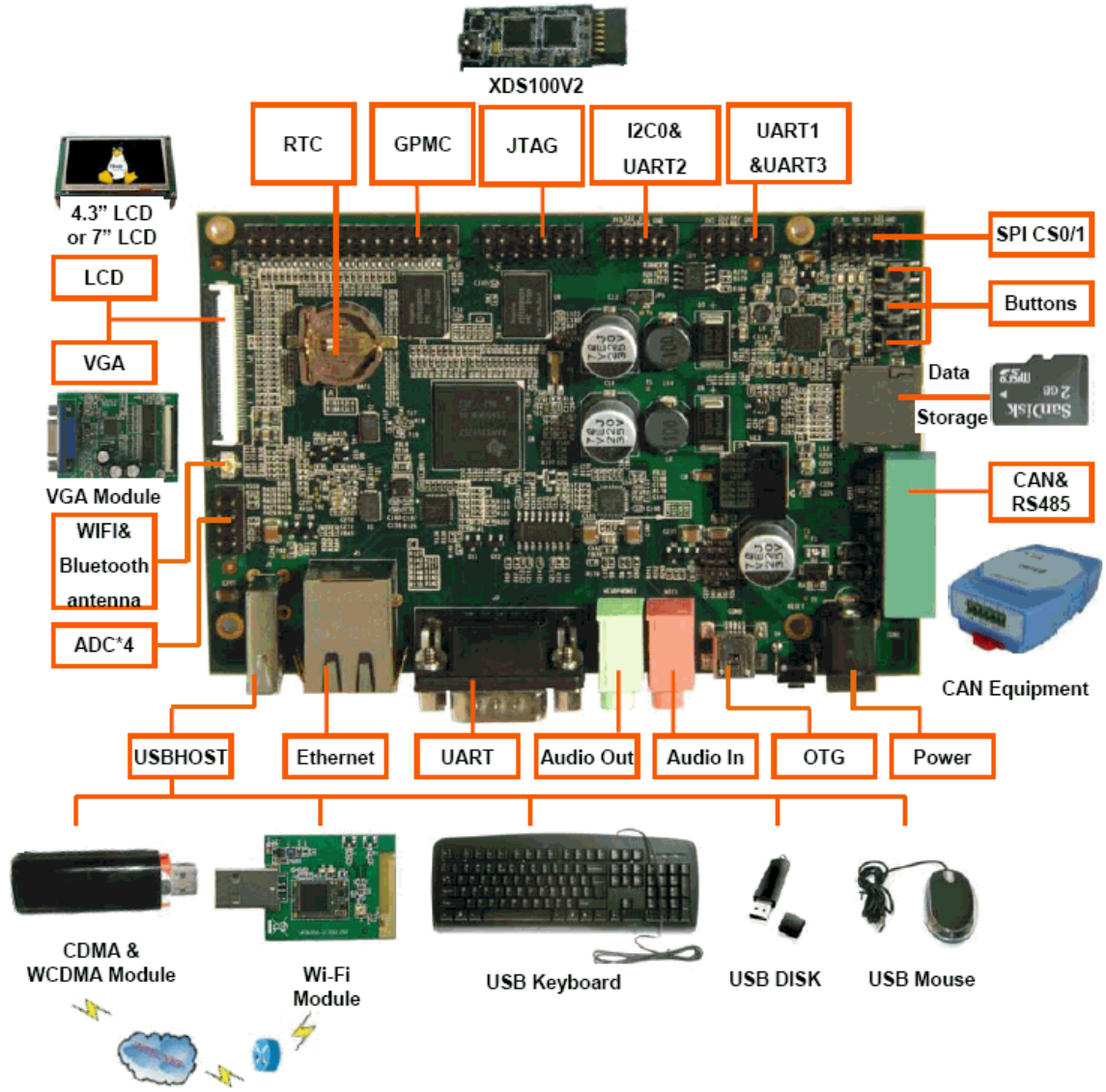
Input Interface and others

- Battery backed RTC (User needs to prepare battery himself, CR1220 model is ok)
- 1 x Reset button
- 3 x User buttons (HOME, MENU, BACK)
- 1 x JTAG connector (2.54mm pitch 14-pin dip connector J7)
- 4-channel ADC (brings out by 2.0mm 10-pin dip connector J10)
- 1-channel SPI interface (brings out by 2.0mm 10-pin dip connector J8)
- 1-channel I2C interfaces (brings out by 2.0mm 10-pin dip connector J6)

Figure 1-3 DevKit8600 Evaluation Board with 4.3” LCD

Interface Introduction

The board takes full features of TI's AM3359 microprocessor and has exposed many hardware peripherals through connectors or headers. Embest has also designed various function modules to further enhance the performance of DevKit8600 board including VGA, USB WiFi, Camera and 3G (with CDMA2000 or WCDMA standard) modules, which are flexible for user selections to meet their own needs. More other modules are under development and will be released continuously.



Note: The WiFi/BT module and 512MBytes Nand Flash is on rear of the DevKit8600 board

Figure 1-4 DevKit8600 Interface Diagram

Dimensions (Unit: mm)

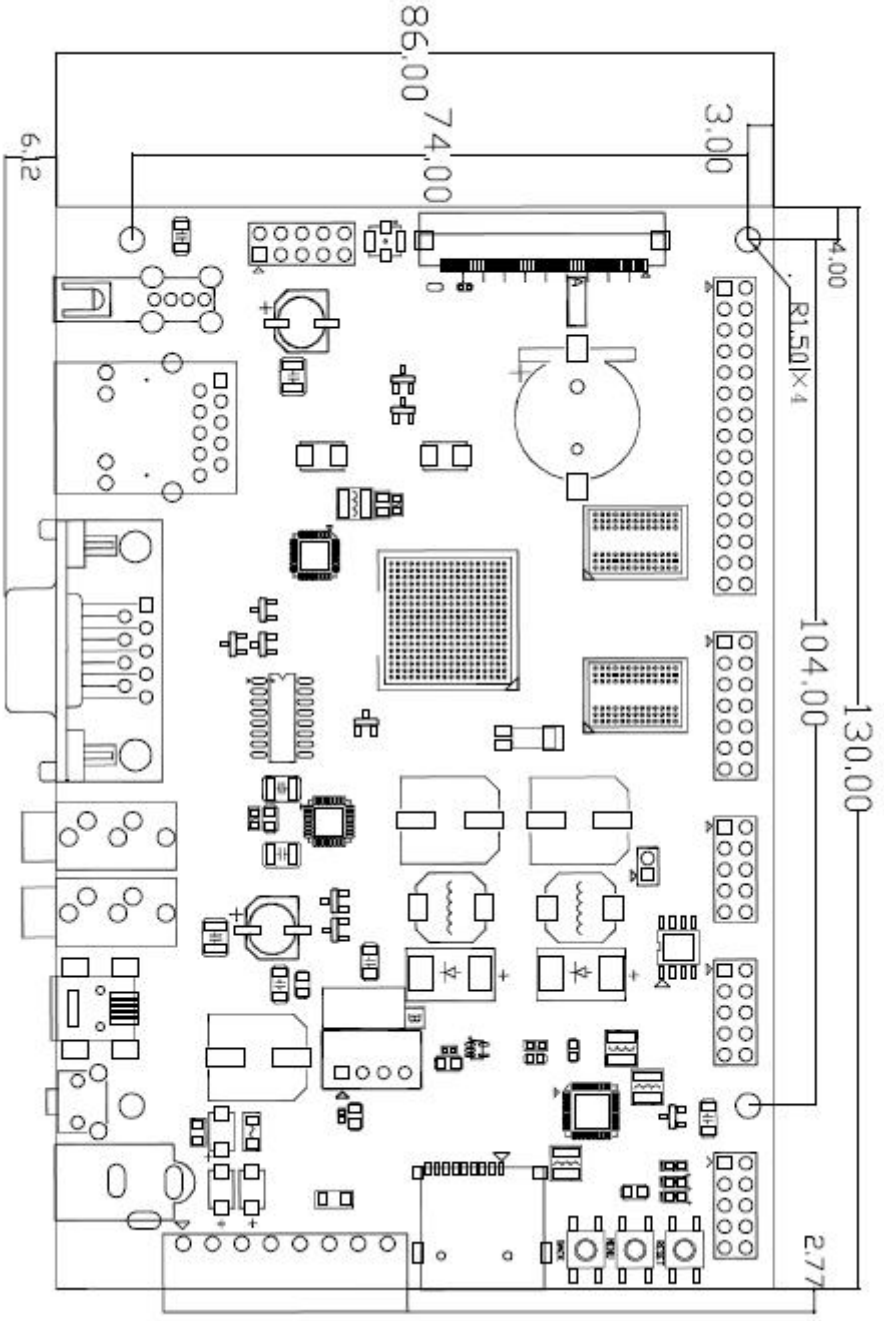


Figure 1-5 DevKit8600 Dimension Chart

Function Block Diagram

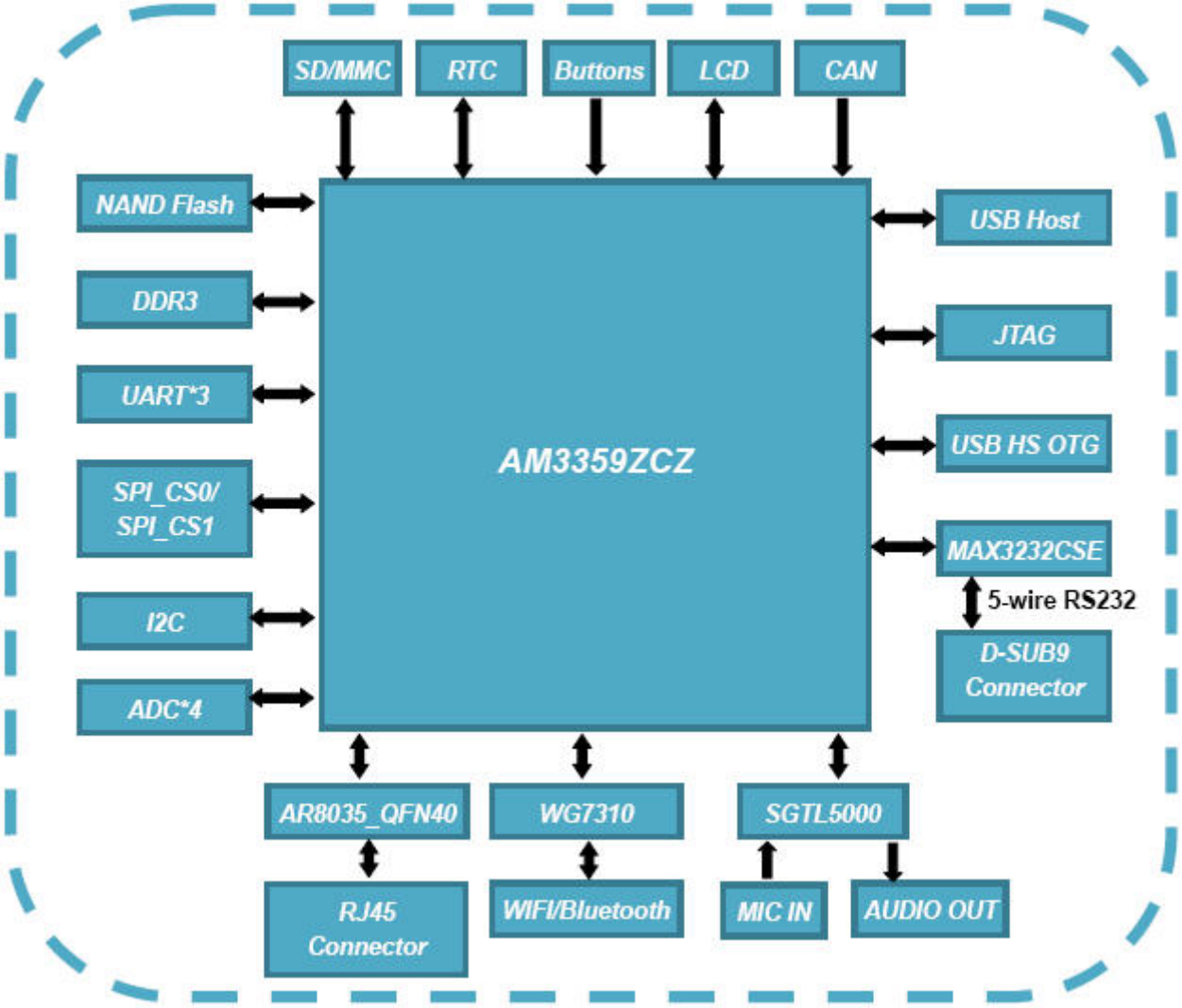


Figure 1-6 DevKit8600 Function Block Diagram

Software Features

The DevKit8600 Evaluation board provides Window CE 7.net BSP, Linux 3.1.0 BSP and Android 2.3 Demo, with steady-going drivers, many of which are all in source code. Please refer to below table.

OS	Item		Remark
Linux	BIOS	SPL (First boot loader)	NAND
			MMC/SD
			FAT
		U-boot (Second boot loader)	NAND
			MMC/SD
			FAT
			NET
	Kernel	Linux-3.1.0	Supports ROM/CRAM/EXT2/EXT3/FAT/NFS/ JFFS2/UBIFS file systems
	Driver	Debug serial port, RTC, Ethernet, NAND Flash, TFT LCD, Touch screen, TF card, USB Device, USB host, Audio input/output, LED, Keypad, CAN, RS485, WiFi/Bluetooth	
Android Demo (do not provide source code)	Kernel	Linux-3.1.0	Gingerbread
	Driver	Debug serial port, RTC, Ethernet, NAND Flash, Touch screen, TF card, USB Device, USB host, Audio input/output, LED, Keypad, 2D/3D	
WinCE7	BIOS	X-loader (First boot loader)	NAND
			TF
		EBOOT (Second boot loader)	NAND
			TF
	OAL	OAL module	Boot parameter
			KILT(EMAC)
			Serial debug
			REBOOT
			Watchdog
			RTC
			Kernel profiler
			System timer
			Interrupt controller
			MMU
	Driver	Debug serial port, RTC, Ethernet, NAND Flash, TFT LCD, Touch screen, TF card, USB Device, USB host, Audio input/output, RS485, NLED, Keypad, PRU	
		PowerVR (2D/3D) DDK & SDK	
	APP	Application module	Flash Player plug-in and Flash player

Module	Description	Interface to Board	Linux	Android	WinCE
VGA8000	VGA Module	LCD	Support*	Not yet	Support*
WF8000-U	WiFi Module	USB Host	Support*	Not yet	Not yet
CDMA8000-U	3G Module (CDMA2000 standard)	USB Host	Support*	Not yet	Not yet
WCDMA8000-U	3G Module (WCDMA standard)	USB Host	Support*	Not yet	Not yet
CAM8100-U	Digital Camera Module	USB Host	Support*	Not yet	Not yet
LVDS8000	RGB-to-LVDS Module	LCD	Support*	Support*	Support*

*** = Provided with Source Code** **# = Not Provided with Source Code**

Order Information

Order No.	T6010181
Item	DevKit8600 Evaluation Board
Deliveries	• One DevKit8600 Evaluation board • One Product DVD (including user manual, schematic in PDF format, datasheet, Linux 3.1.0 BSP, Android 2.3 BSP and WinCE 7 BSP)
Order No.	T6030037
Item	DevKit8600 Evaluation Kit Standard Configuration
Deliveries	• One DevKit8600 Evaluation board • One WiFi/BT antenna • One 2GB TF card • One Serial cable (DB9-DB9) • One 12V@1.25A Power adapter • One USB cable (Type A Male to Type Mini-B Male) • One USB cable (Type A Female to Type Mini-A Male) • One Cross Ethernet cable • One Product DVD (including user manual, schematic in PDF format, datasheet, Linux 3.1.0 BSP, Android 2.3 BSP and WinCE 7 BSP)
Order No.	T6010182 (with 4.3” LCD) | T6010183 (with 7” LCD)
Item	DevKit8600 Evaluation Kit Complete Configuration
Deliveries	• One DevKit8600 Evaluation Kit Standard Configuration • One 4.3" LCD or 7" LCD (With touch screen) Remark: 4.3”LCD (resolution: 480*272), 7"LCD (resolution: 800*480)
Options	• VGA8000 VGA Module • WF8000-U USB WiFi Module • CAM8100-U USB Camera Module • CDMA8000-U USB 3G Module (CDMA2000 Standard) • WCDMA8000-U USB 3G Module (WCDMA Standard) • LVDS8000 RGB-to-LVDS converter module
Price	Please contact us.

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