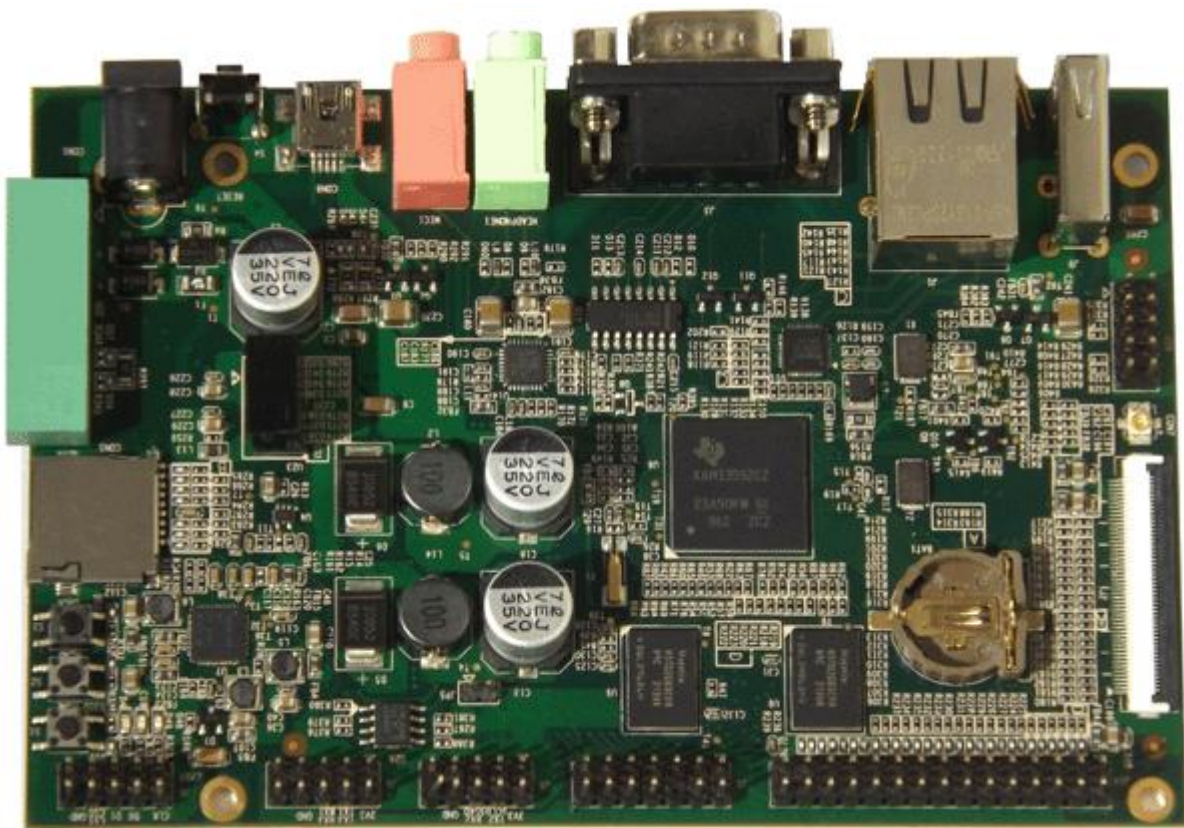


## DevKit8600 AM3359 Evaluation Kit

**Order#:** DevKit8600 (T6030037 / T6010183)

*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

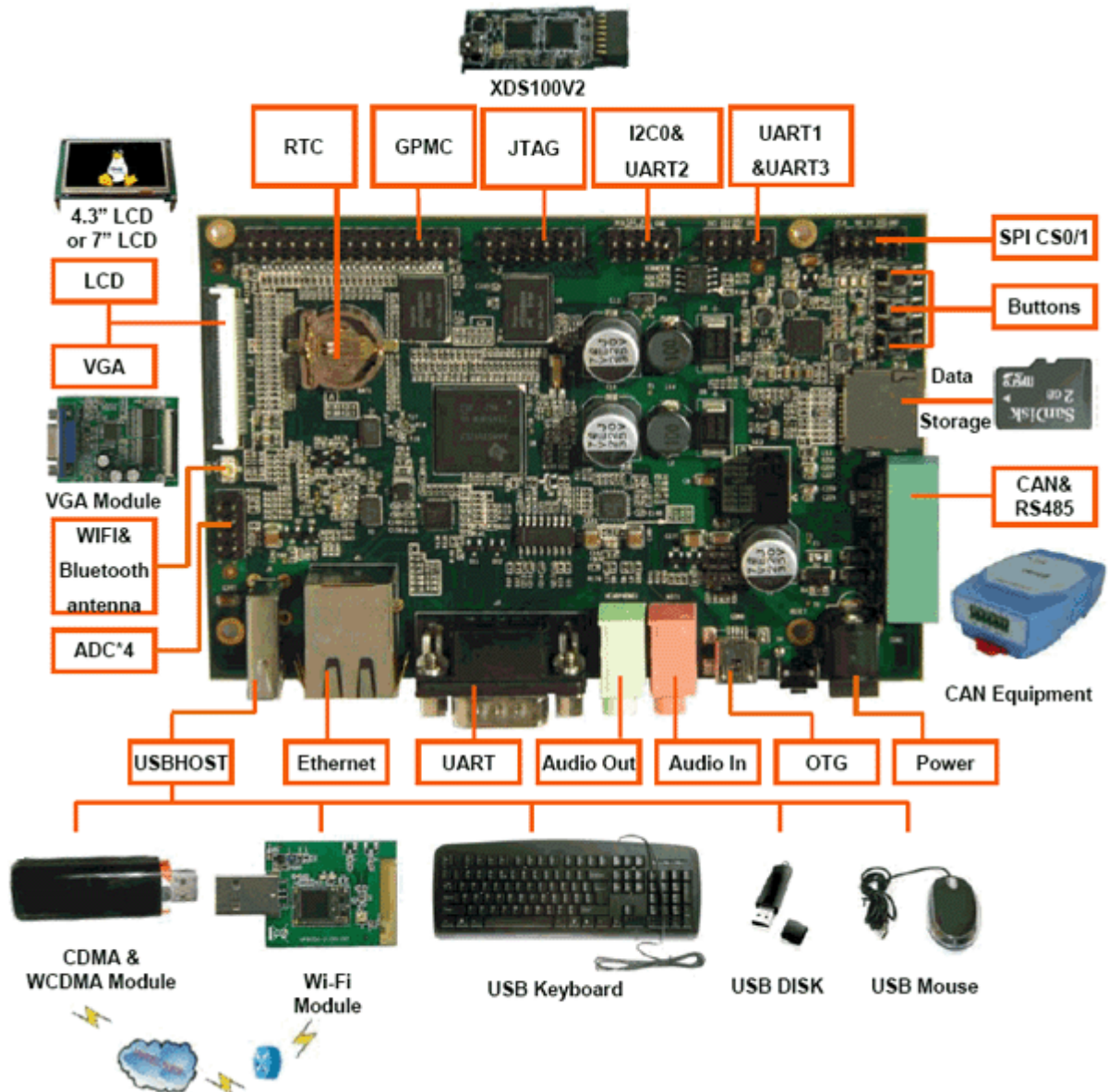


DevKit8600 Evaluation Board

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.



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

## Hardware Features

### Mechanical Parameters

- - Dimensions: 130mm x 80mm
  - Power Supply: +12V
  - Working Temp.: 0~70°C

### 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

## **Data Transfer Interfaces**

- - One 5 line Debug serial port, RS232 voltage (brings out by DB9 connector)
  - One 5 line serial port, TTL voltage (brings out by 2.0mm pitch 10-pin dip connector J6)
  - Two 3 line serial ports, TTL voltage (brings out by 2.0mm pitch 10-pin dip connector J5)
  - One RS485 serial port (brings out by 8-pin Phoenix Connector)
  - One USB2.0 OTG port with Integrated PHY, High-speed (Mini USB type)
  - One USB2.0 Host port with Integrated PHY, High-speed (USB-A type)
  - WiFi/Bluetooth Module (only support linux at present)
  - One CAN 2.0 interface (8-pin Phoenix Connector)
  - One 10/100/1000Mbps Ethernet interface (RJ45 connector)
  - One GPMC bus interface (brings out by 2.0mm pitch 30-pin dip connector J14)

## **Audio/Video Interfaces**

- - One audio input interface (3.5mm audio jack)
  - One 2-channel audio output interface (3.5mm audio jack)
  - One TFT LCD interface / 4 line Resistive Touch Screen interface (50pin FPC connector)

## **Input/Output Interfaces and Other Facilities**

- - Battery backed RTC (User needs to prepare battery himself, CR1220 model is ok)
  - One Reset button
  - Three User buttons (HOME, MENU, BACK)
  - One 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)

## ***Add-on Hardware Options and Support OS***

The DevKit8600 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, USB Camera, USB 3G (with

CDMA2000 or WCDMA standard) and LVDS modules, which are flexible for user selections to meet their own needs. More other modules are under development and will be released continuously.

| Item                        | Description                   | Interface to Board | Linux    | Android  | WinCE    |
|-----------------------------|-------------------------------|--------------------|----------|----------|----------|
| <a href="#">VGA8000</a>     | VGA Module                    | LCD                | Support* | Support* | Support* |
| <a href="#">WF8000-U</a>    | WiFi Module                   | USB Host           | Support* | Not yet  | Not yet  |
| <a href="#">CAM8100-U</a>   | Digital Camera Module         | USB Host           | Support* | Not yet  | Not yet  |
| <a href="#">CDMA8000-U</a>  | 3G Module (CDMA2000 standard) | USB Host           | Support* | Not yet  | Not yet  |
| <a href="#">WCDMA8000-U</a> | 3G Module (WCDMA standard)    | USB Host           | Support* | Not yet  | Not yet  |
| <a href="#">LVDS8000</a>    | LVDS Module                   | LCD                | Support* | Support* | Support* |
| <a href="#">XDS100v2</a>    | Emulator for debugging        | JTAG               |          |          |          |

\* = Provided with Source Code

# = Not Provided with Source Code

### Software Features

| OS      | Item                                                                                                                                                            |                                | Remark                                                       |
|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------------------------------------------------------|
| Linux   | BIOS                                                                                                                                                            | SPL<br>(First boot loader)     | NAND                                                         |
|         |                                                                                                                                                                 |                                | MMC/SD                                                       |
|         |                                                                                                                                                                 |                                | FAT                                                          |
|         |                                                                                                                                                                 | U-boot<br>(Second boot loader) | NAND                                                         |
|         | MMC/SD                                                                                                                                                          |                                |                                                              |
|         | FAT                                                                                                                                                             |                                |                                                              |
|         | NET                                                                                                                                                             |                                |                                                              |
|         | Kernel                                                                                                                                                          | Linux-3.1.0                    | Supports ROM/CRAM/EXT2/EXT3/FAT/NFS/JFFS2/UBIFS file systems |
| Drivers | 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 | Kernel                                                                                                                                                          | Linux-3.1.0                    | Gingerbread                                                  |

|                                               |         |                                                                                                                                                        |                                       |
|-----------------------------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|
| Demo<br>(do not<br>provide<br>source<br>code) | Drivers | Debug serial port, RTC, Ethernet, NAND Flash, Touch screen,<br>TF card, USB Device, USB host, Audio input/output, LED, Keypad, 2D/3D                   |                                       |
| WinCE7                                        | BIOS    | X-loader<br>(First boot loader)                                                                                                                        | NAND                                  |
|                                               |         |                                                                                                                                                        | TF                                    |
|                                               |         | EBOOT<br>(Second boot<br>loader)                                                                                                                       | NAND                                  |
|                                               |         |                                                                                                                                                        | TF                                    |
|                                               | OAL     | OAL module                                                                                                                                             | Boot parameter                        |
|                                               |         |                                                                                                                                                        | KILT (EMAC)                           |
|                                               |         |                                                                                                                                                        | Serial debug                          |
|                                               |         |                                                                                                                                                        | REBOOT                                |
|                                               |         |                                                                                                                                                        | Watchdog                              |
|                                               |         |                                                                                                                                                        | RTC                                   |
|                                               |         |                                                                                                                                                        | Kernel profiler                       |
|                                               |         |                                                                                                                                                        | System timer                          |
|                                               |         |                                                                                                                                                        | Interrupt controller                  |
|                                               |         |                                                                                                                                                        | MMU                                   |
|                                               | Drivers | Debug serial port, RTC, Ethernet, NAND Flash, TFT LCD, Touch screen, TF<br>card, USB Device, USB host, Audio input/output, RS485, NLED, Keypad,<br>PRU |                                       |
|                                               |         | PowerVR (2D/3D) DDK & SDK                                                                                                                              |                                       |
|                                               | APP     | Application module                                                                                                                                     | Flash Player plug-in and Flash player |