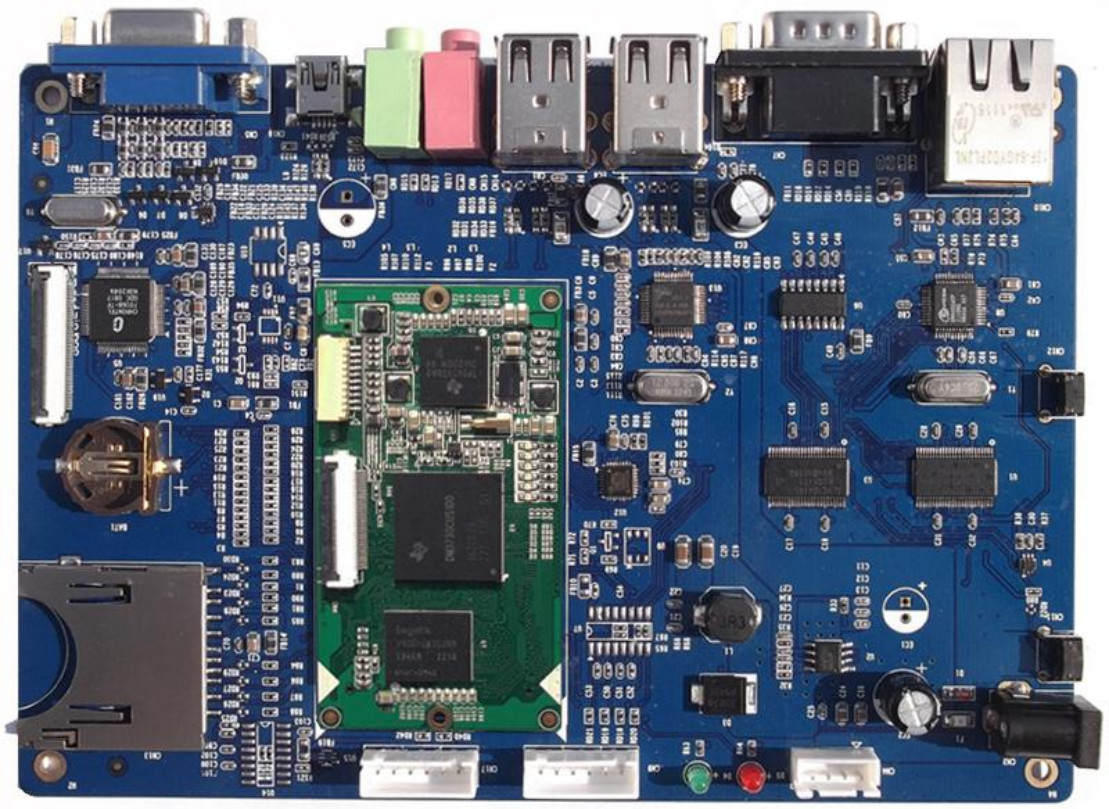
SBC8140
Single Board Computer



Quick Guide

Version 1.0 – Mar. 20th, 2013

Copyright Statement:

Revision History:

Version	Date	Note
1.0	2013-3-20	Original Version

Table of Contents

Chapter 1 Product Overview

1.1 Packing List

- SBC8140 x 1
- Cross-over serial cable（DB9 to DB9）x 1
- 10-pin JTAG cable x 1
- JTAG8000 module x 1
- 5V/2A power adapter x 1
- DVD-ROM x 1
- LCD screen x 1 (optional item, available in 4.3-inch 480*272 or 7-inch 800*480)

1.2 Default Specifications

- SBC8140 does not have RTC battery on board by default
- SBC8140 has a Linux2.6.32 system in NAND Flash by default
- SBC8140 boots from NAND Flash by default; pressing and holding BOOT button (button CN11) before connecting power can make it boot from SD card;

Chapter 2 Preparations

2.1 Hardware Connections and Buttons

Please connect hardware components and find locations of button according to the figure shown below;

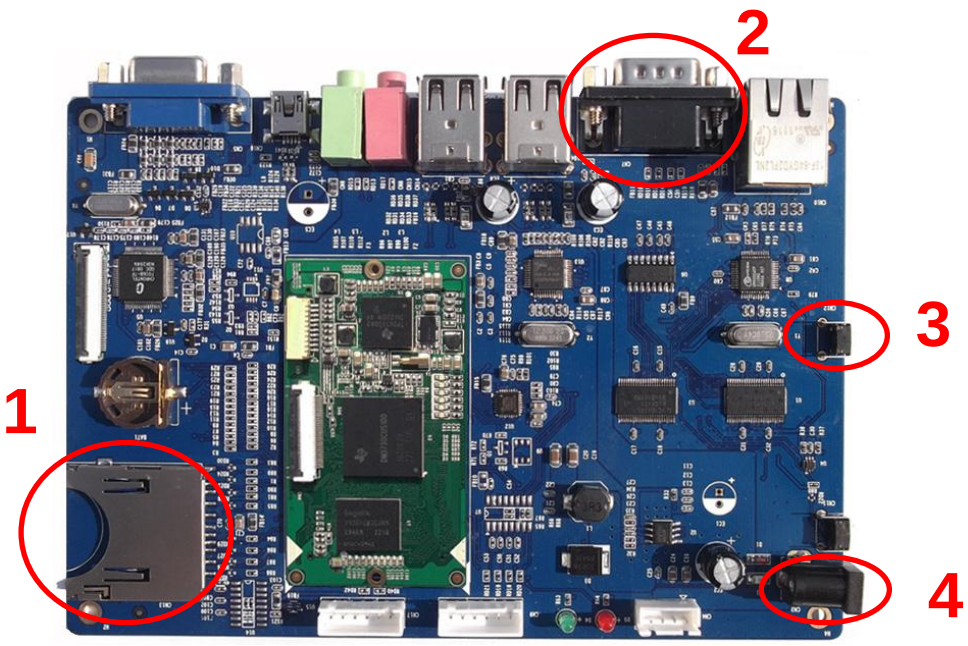


Figure 2-1 Hardware connections

Table 2-1 Hardware Connections

No.	Descriptions	No.	Descriptions
1	Insert a SD card	3	BOOT button
2	Connect serial cable	4	Connect power adapter

2.2 Setting Up HyperTerminal

1） Click **Start** > **Programs** > **Accessories** > **Communications** > **HyperTerminal** on your PC's desktop;

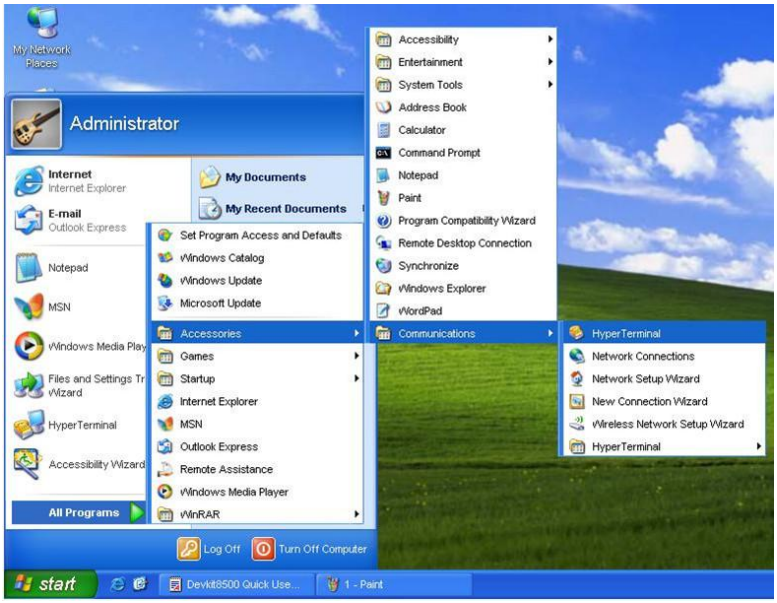


Figure 2-2 Start HyperTerminal

2） Enter a name in the **Name** field and select an icon below, and then click **OK**;

Figure 2-3 Create a new HyperTerminal

3） Select the port to be used and click **OK**;

Figure 2-4 Select port

4） Please configure the port you selected as shown in the following window, and then click **OK**;

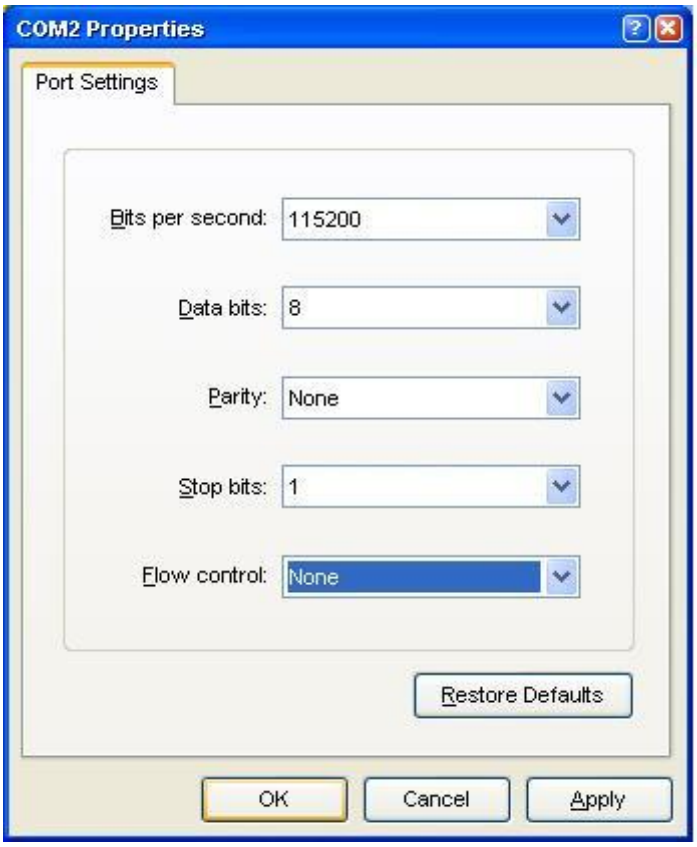


Figure 2-5 Configure port

5） HyperTerminal has been set up successfully.

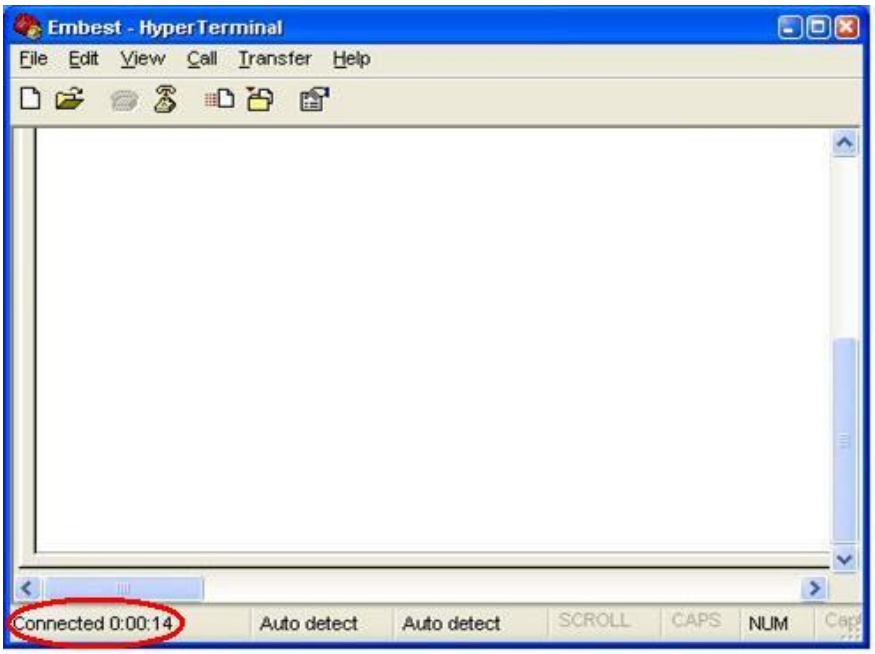


Figure 2-6 HyperTerminal window

Chapter 3 Linux Operating System

This chapter will introduce how to update SD card and NAND Flash and boot Linux system from them respectively.

3.1 Updating SD Card and Booting from It

1） You can download HP USB Disk Storage Format Tool 2.0.6 from http://www.embedinfo.com/english/download/SP27213.exe, and use it to format SD card; the figure shown below is the tool's interface;

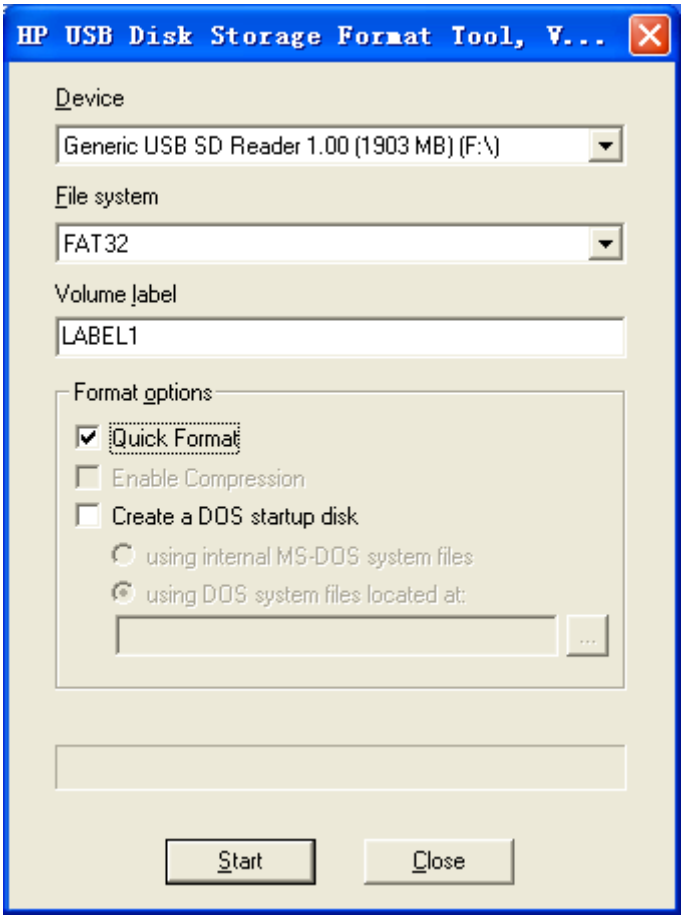


Figure 3-1 Format SD card

Select **FAT32** in the **File system** drop-down menu, and then click **Start** to format SD card.

Note:

🕮 HP USB Disk Storage Format Tool will erase the partitions of TF card. If partitions need to be retained, please use the format function of Windows system.

2） Copy all the files under X:\linux\image\ to a SD card (X is label of your DVD drive), and then insert it on SBC8140 and power on the system;

3） When the following information is shown in HyperTerminal window, the system boots up successfully; now enter **root** to log into the Linux system;

Table 3-1 Log in Linux

SBC8100_PLUS login: (enter "**root**")

Note:

🕮 By default SBC8140 boots from NAND Flash; pressing and holding BOOT button before connecting power can make it boot from SD card.

🕮 By default, the system support 4.3-inch screen. If you need to select another display mode, please refer to SBC8140 User Manual section 3.7 Display Mode Configurations to change the display mode and type boot under u-boot mode to continue boot-up process.

3.2 Updating NAND Flash and Booting from It

Updating image files in NAND Flash requires the help of u-boot. No matter whether there is data in NAND Flash, image files can be updated by running u-boot from SD card.

1） Use HP USB Disk Storage Format Tool 2.0.6 to format SD card to FAT or FAT32 filesystem;

2） Copy the files MLO, u-boot.bin, x-load.bin.ift_for_NAND, flash-uboot.bin, uImage and ubi.img from \linux\image of DVD-ROM to SD card;

3） Insert SD card on SBC8140 and power it on; when the information on serial interface shows countdown in seconds, press any key on your PC's

keyboard to enter u-boot mode;

Table 3-2 Enter u-boot Mode

Hit any key to stop autoboot: 0 **(press any key to enter u-boot mode)**

4） Type **run updatesys** and press **Enter** key to start system update;

5） When the LEDs on the kit start to blink, the update is completed; please remove SD card and reboot the system;

Chapter 4 WinCE Operating System

This chapter will introduce how to update SD card and NAND Flash and boot Linux system from them respectively.

4.1 Updating SD Card and Booting from It

1） Please refer to the step 1）in 3.1Updating SD Card and Booting from It to format SD card, and then Copy the files MLO, EBOOTSD.nb0 and NK.bin from X:\WINCE600\image\ (X is label of your DVD drive) to SD card;

2） Insert the SD card on SBC8140 and power it on while pressing and holding BOOT button (refer to 2.1 Hardware Connections and Buttons to find the button); When you information counting down in seconds, please press Space key on your PC's keyboard to enter eboot menu.

Table 4-1 Enter EBOOT Menu

Hit any key to stop autoboot: 0 **(press Space key to enter eboot menu)**

3） Type **a** in the following eboot menu;

Table 4-2 EBOOT Menu

```
---------------------------------------------------------------------------
 Main Menu
---------------------------------------------------------------------------
 [1] Show Current Settings
 [2] Select Boot Device
 [3] Select KITL (Debug) Device
 [4] Network Settings
 [5] SDCard Settings
 [6] Set Device ID
 [7] Save Settings
 [8] Flash Management
 [9] Enable/Disable OAL Retail Messages
```

```
[a] Select Display Resolution
[0] Exit and Continue

Selection:a
```

4） Select a proper display mode in the following menu according to your display device;

Table 4-3 Select Display Mode

```
---------------------------------------------------------------------------
Select Display Resolution
---------------------------------------------------------------------------
[1] LCD   480x272 60Hz      //4.3-inch LCD display, default device
[2] DVI   640x480 60Hz
[3] DVI   640x480 72Hz
[4] LCD   800x480 60Hz      //7-inch LCD display
[5] DVI   800x600 60Hz      // LVDS display
[6] DVI   800x600 56Hz
[7] VGA 1024x768 60Hz       // VGA display
[8] DVI 1280x720 60Hz
[0] Exit and Continue

Selection (actual LCD   480x272 60Hz):4
```

5） Type **7** and **y** in the following menu to save settings, and then type number **0** to continue booting system;

Table 4-4 Continue Booting

```
Main Menu
---------------------------------------------------------------------------
[1] Show Current Settings
[2] Select Boot Device
[3] Select KITL (Debug) Device
[4] Network Settings
[5] SDCard Settings
[6] Set Device ID
[7] Save Settings
[8] Flash Management
[9] Enable/Disable OAL Retail Messages
[a] Select Display Resolution
[0] Exit and Continue
```

```
Selection:0
```

The WinCE system is updated and booted up successfully after booting process is completed.

Note:

📖 By default SBC8140 boots from NAND Flash; pressing and holding BOOT button before connecting power can make it boot from SD card.

4.2 Updating NAND Flash and Booting from It

1） Please refer to the step 1）in 3.1Updating SD Card and Booting from It to format SD card; After SD card formatting is done, copy the files MLO, EBOOTSD.nb0, EBOOTNAND.nb0, NK.bin and XLDRNAND.nb0 from X:\WINCE600\image\ (X is label of your DVD drive) to SD card, and then rename EBOOTNAND.nb0 to EBOOTND.nb0.

2） Insert SD card on SBC8140, and then power it on while pressing and holding BOOT button; when you see information counting down in seconds, press **Space** key to enter eboot menu;

3） Type **8** in eboot meu to enter flash management menu;

4） Type **a**, **b** and **c** to program XLDR, EBOOT and NK image file into flash;

5） Type number **0** to go back to main menu, and then type **2** and **4** to select booting from NAND Flash;

6） Type **a** in main menu to select display mode, and then type **7** and **y** to save changes;

7） Remove SD card from SBC8140 and reboot it; the system will boot up from NAND Flash;

Technical Support and Warranty

Technical Support

Embest Technology provides its product with one-year free technical support including:

- Providing software and hardware resources related to the embedded products of Embest Technology;
- Helping customers properly compile and run the source code provided by Embest Technology;
- Providing technical support service if the embedded hardware products do not function properly under the circumstances that customers operate according to the instructions in the documents provided by Embest Technology;
- Helping customers troubleshoot the products.

The following conditions will not be covered by our technical support service. We will take appropriate measures accordingly:

- Customers encounter issues related to software or hardware during their development process;
- Customers encounter issues caused by any unauthorized alter to the embedded operating system;
- Customers encounter issues related to their own applications;
- Customers encounter issues caused by any unauthorized alter to the source code provided by Embest Technology;

Warranty Conditions

1） 12-month free warranty on the PCB under normal conditions of use since

the sales of the product;

2） The following conditions are not covered by free services; Embest Technology will charge accordingly:

A. Customers fail to provide valid purchase vouchers or the product identification tag is damaged, unreadable, altered or inconsistent with the products.

B. Products are damaged caused by operations inconsistent with the user manual;

C. Products are damaged in appearance or function caused by natural disasters (flood, fire, earthquake, lightning strike or typhoon) or natural aging of components or other force majeure;

D. Products are damaged in appearance or function caused by power failure, external forces, water, animals or foreign materials;

E. Products malfunction caused by disassembly or alter of components by customers or, products disassembled or repaired by persons or organizations unauthorized by Embest Technology, or altered in factory specifications, or configured or expanded with the components that are not provided or recognized by Embest Technology and the resulted damage in appearance or function;

F. Product failures caused by the software or system installed by customers or inappropriate settings of software or computer viruses;

G. Products purchased from unauthorized sales;

H. Warranty (including verbal and written) that is not made by Embest Technology and not included in the scope of our warranty should be fulfilled by the party who committed. Embest Technology has no any responsibility;

3） Within the period of warranty, the freight for sending products from customers to Embest Technology should be paid by customers; the freight from Embest to customers should be paid by us. The freight in any direction occurs after warranty period should be paid by customers.

4） Please contact technical support if there is any repair request.

Note:

Embest Technology will not take any responsibility on the products sent back without the permission of the company.

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