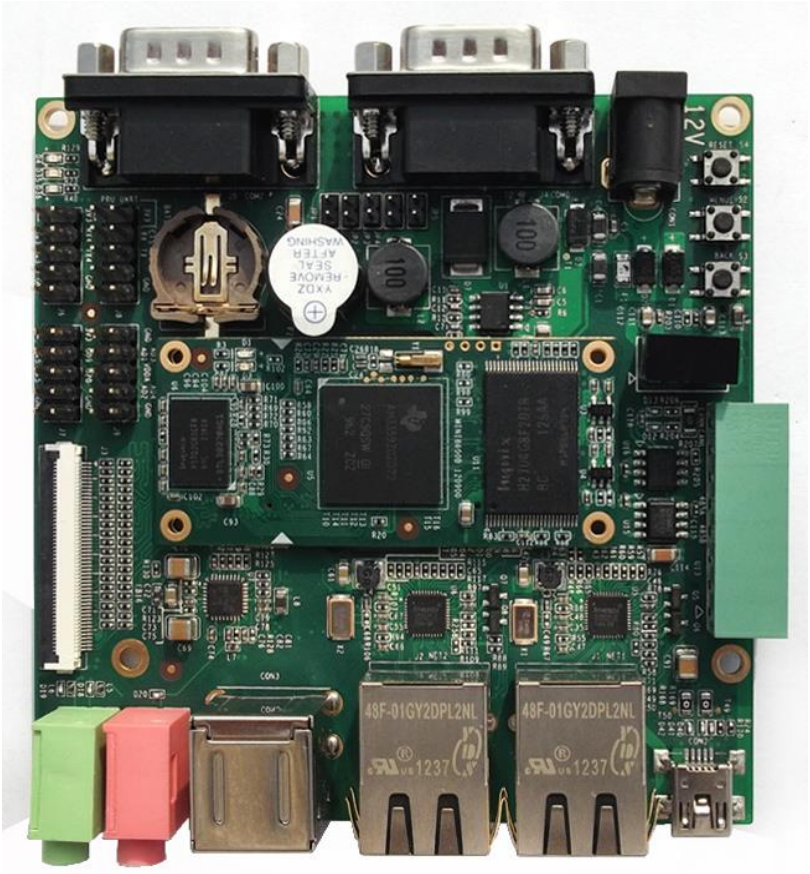
SBC8600B
Quick Operation Guide



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Product Overview

1. Packing List

- SBC8600B×1
- Serial Cable (DB9-DB9)×1
- 12V Power Adapter×1
- Cross-Over Network Cable×1
- DVD-ROM×1
- 4.3-inch LCD or 7-inch LCD×1 (Optional)

2. DVD-ROM Contents

- SBC8600B Quick Guide
- SBC8600B User Manual
- SBC8600B Starterware User Manual
- SBC8600B Schematic and Chip Datasheets
- SBC8600B Software Kits (Linux/Windows Embedded Compact 7/Android/Starterware)

3. Factory Default Conditions

- A Linux system is already programmed in the on-board NAND flash and supports 4.3-inch LCD by default; If another display mode is required, please refer to the Display Mode Configurations in user manual.
- SBC8600B has no CR1220 battery installed on board; Please purchase it if necessary.
- SBC8600B Single Board Computer preferably boots from NAND Flash by default, if you want to boot from TF Card, you need to short the jumper JP5 on the board.

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Preparations

1. Setting Up HyperTerminal

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

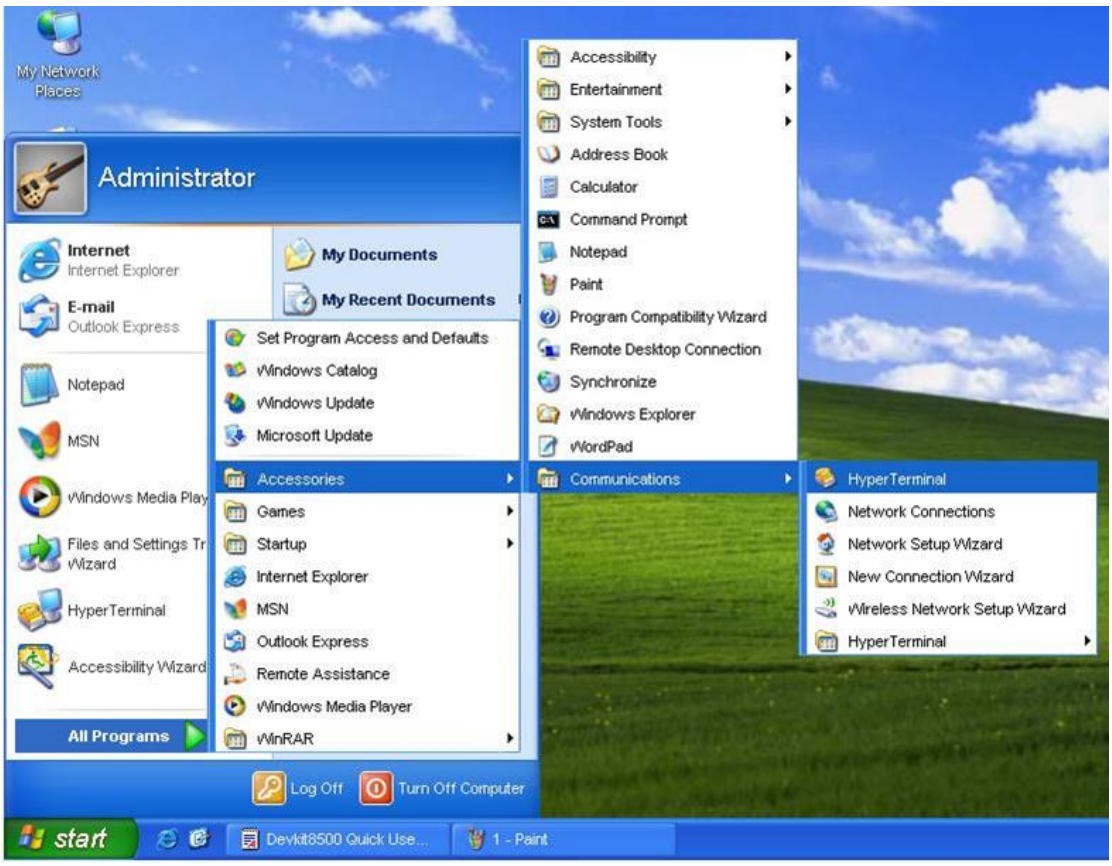

Figure 1 Start HyperTerminal

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

Figure 2 Enter a Name

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

Figure 3 Select Port

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

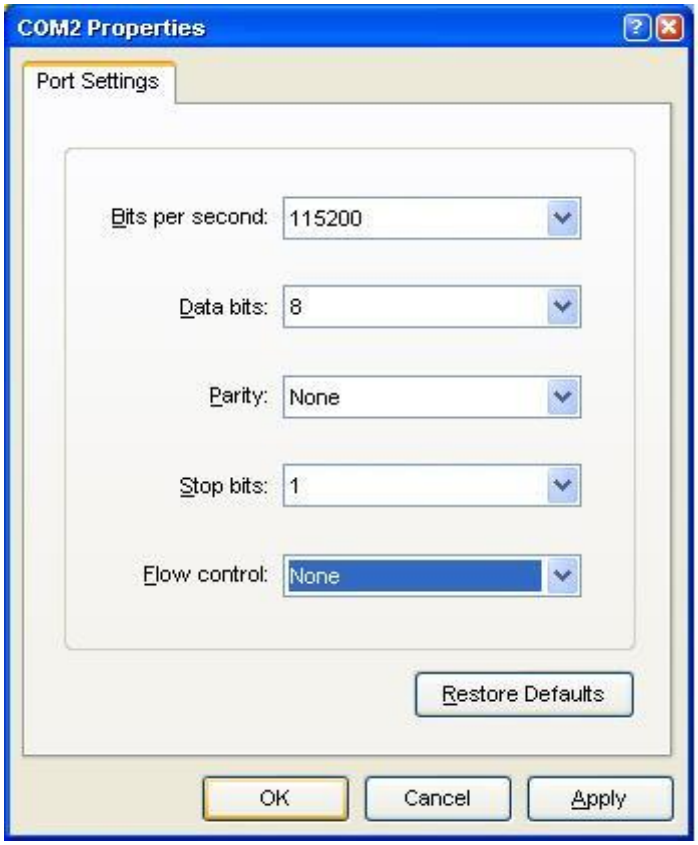

Figure 4 Configure Port

5） HyperTerminal has been set up successfully.

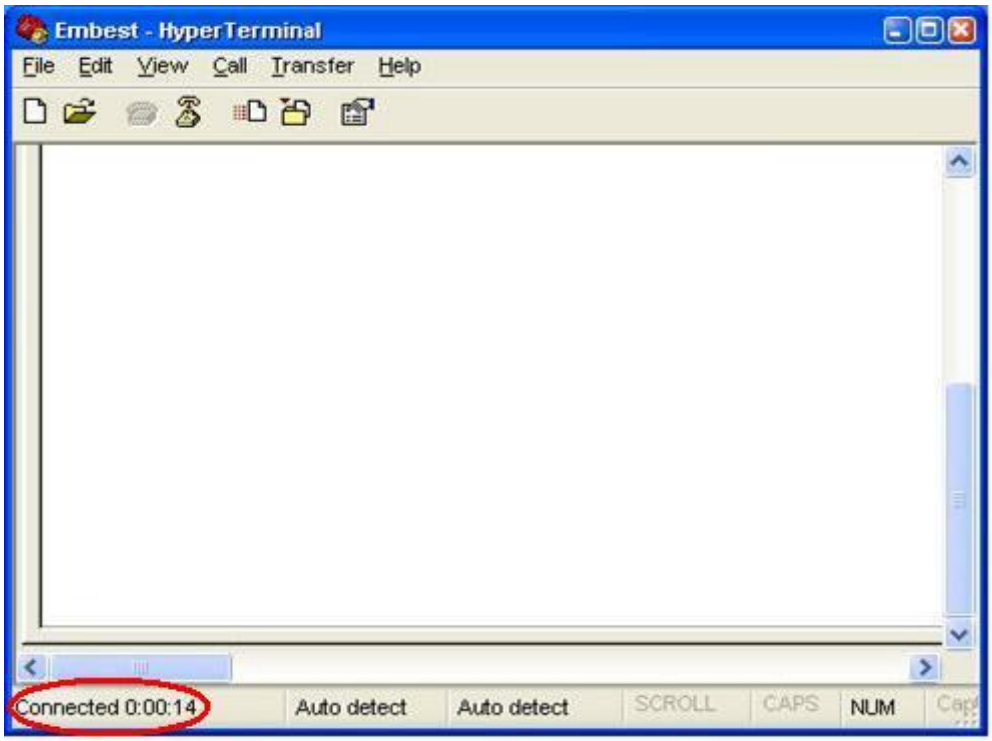

Figure 5 HyperTerminal Window

2. Hardware Connects

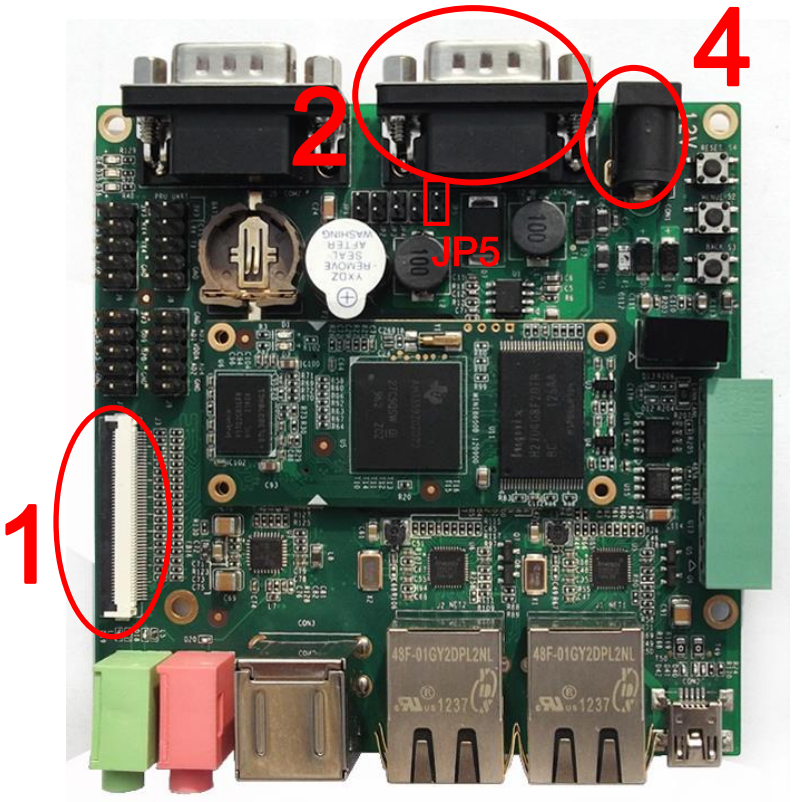

Figure 6 Hardware Connections

Table 1 Connection Details

No.	Descriptions	No.	Descriptions
1	Connect a LCD	**3**	If you want to boot from TF card, short the jumper JP5
2	Connect a Serial Cable	**4**	Connect a Power Adapter

Linux Operating System

1. Updating TF Card and Booting from It

1） You can download HP USB Disk Storage Format Tool 2.0.6 from here, and use it to format TF card; the figure shown below is the tool's interface;

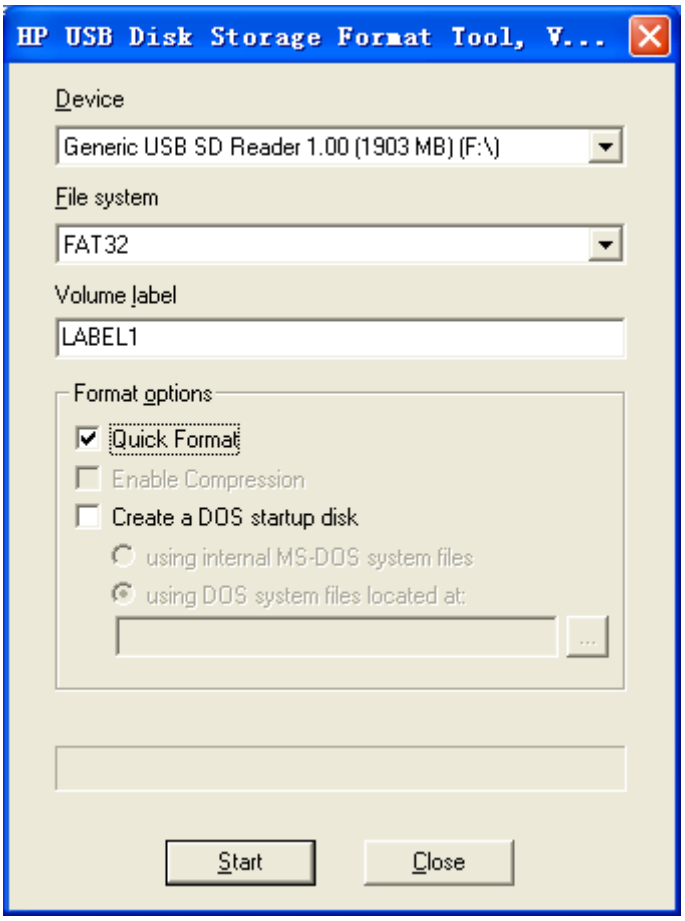

Figure 7 Format TF Card

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

Note:

- It is not recommended to use other versions of HP USB Disk Storage Format Tool.
- HP USB Disk Storage Format Tool will erase the partitions of TF card.

2） Copy all the files under \linux\image\ of the DVD-ROM to the TF card, and then insert it on SBC8600B;

3） Short the jumper JP5 and power on the system, the system boots up successfully when the following information appears in the HyperTerminal window; Enter root to log in Linux system;

Table 2 Log in Linux

SBC8600 login: **(enter "root" to log in)**

4） U-boot configuration

The system image has a default setting for 4.3-inch LCD. You can change the settings in UBOOT according to the detailed instructions contained in 3.10 Display Mode Configurations.

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 TF card.

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

2） Copy the files MLO, u-boot.img, zImage, embest-SBC-SBC8600.dtb and rootfs.tar.xz from \linux\image in the DVD-ROM to the TF card;

3） Insert the TF card on SBC8600B and short the jumper JP5

4） Power the board on;

5） When the LEDs on the board blink quickly, the update is in progress.

6） When the LEDs on the board blink as heart frequency and buzzer alarmed, the

update is completed; please remove the TF card and JP5 jumper cap, and then reboot the system;

7） U-boot configuration

The system image has a default setting for 4.3-inch LCD. You can change the settings in UBOOT according to the detailed instructions contained in 3.10 Display Mode Configurations.

WinCE Operating System

1. Updating TF Card and Booting from It

1） You can download HP USB Disk Storage Format Tool 2.0.6 from here, and use it to format TF card; the figure shown below is the tool's interface;

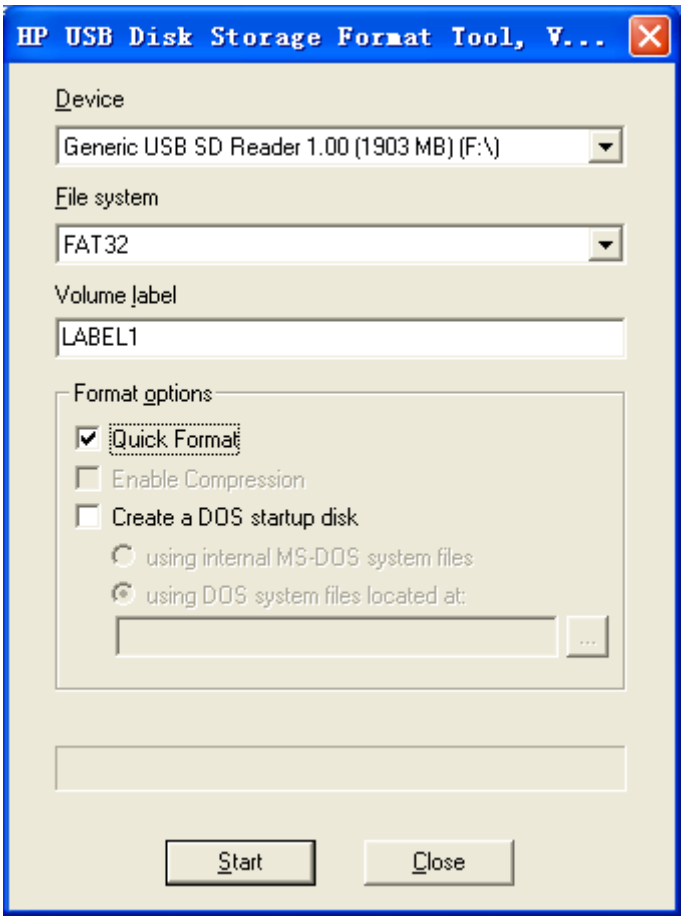

Figure 8 Format TF Card

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

Note:

- It is not recommended to use other versions of HP USB Disk Storage Format Tool.
- 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） After formatting is done, copy MLO, EBOOTSD.nb0 and NK.bin from \WINCE700\image of the DVD-ROM to TF card;

3） Insert the TF card on SBC8600B and short the jumper JP5, and then power it on; When you see information counting down in seconds in the HyperTerminal window, please press **Space** key on your PC's keyboard to enter EBOOT menu.

Table 3 Enter EBOOT Menu

Hit space to enter configuration menu [56] 5... **(press Space key to enter eboot menu)**

4） Type **2** twice as shown in the following EBOOT menu to select TF card as boot device;

Table 4 Select Boot Device

```
---------------------------------------------------------------------------
 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
 [b] Select OPP Mode
 [0] Exit and Continue

 Selection: 2

---------------------------------------------------------------------------
 Select Boot Device
---------------------------------------------------------------------------
 [1] Internal EMAC
 [2] NK from SDCard FILE
 [3] NK from NAND
 [0] Exit and Continue
```

```
Selection (actual Internal EMAC): 2
Boot device set to NK from SDCard FILE
```

5） Type **a** as shown in the following EBOOT menu to enter **Select Display Resolution** sub-menu and then select **LCD\LVDS** display mode;

Table 5 Select Display Mode

```
---------------------------------------------------------------------------
 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
 [b] Select OPP Mode
 [0] Exit and Continue

 Selection: a

---------------------------------------------------------------------------
 Select Display Resolution
---------------------------------------------------------------------------
 [1] LCD   480x272 60Hz                    //For 4.3-inch LCD
 [2] DVI   640x480 60Hz(N/A)
 [3] DVI   640x480 72Hz(N/A)
 [4] LCD   800x480 60Hz                    //For 7-inch LCD
 [5] DVI   800x600 60Hz(N/A)               //For LVDS
 [6] DVI   800x600 56Hz(N/A)
 [7] VGA 1024x768 60Hz                     //For VGA
 [8] DVI 1280x720 60Hz(N/A)
 [0] Exit and Continue Selection (actual LCD   480x272 60Hz): 4
```

6） Type **0** as shown in following EBOOT menu to continue booting process;

Table 6 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
 [b] Select OPP Mode
 [0] Exit and Continue

 Selection: 0
```

Wait for the end of booting process and then the updated WinCE system is ready for use.

2. Updating NAND Flash and Booting from It

1） Please refer to the previous contents to learn how to format TF card. After TF card formatting is done, copy MLO, EBOOTSD.nb0, EBOOTND.nb0, NK.bin and XLDRNAND.nb0 from \WINCE700\image\ of the DVD-ROM to the TF card;

2） Insert the TF card on SBC8600B and short the jumper JP5, and then power it on; When you see information counting down in seconds, please press **Space** key on your PC's keyboard to enter EBOOT menu.

3） Type **8** in EBOOT menu to enter flash management sub-menu;

4） Type character groups **9-4-a**, **9-3-b** and **9-2-c** in sequence to write XLDR,

EBOOT and NK images into NAND flash;

5） Type **0** to go back to main menu and then type **2** and **3** to select NAND flash as the boot device;

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

7） Remove the TF card and the jump cap from SBC8600B, and then reboot the system; Now it 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:

- Customers fail to provide valid purchase vouchers or the product identification tag is damaged, unreadable, altered or inconsistent with the products.
- Products are damaged caused by operations inconsistent with the user manual;
- 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;
- Products are damaged in appearance or function caused by power failure, external forces, water, animals or foreign materials;
- 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;
- Product failures caused by the software or system installed by customers or inappropriate settings of software or computer viruses;
- Products purchased from unauthorized sales;
- 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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