



eBox-4300
Bootable Storage
BIOS Settings

By Samuel Phung, Windows Embedded MVP
ICOP Technology Inc.

Introduction

This application note provides general information about bootable storage BIOS settings for eBox-4300.

For the Windows Embedded CE 6.0 JumpStart kit, a 256MB EmbedDisk (IDE bootable flash storage) is installed in the eBox-4300 comes with the kit. The EmbedDisk is preconfigured to boot to Microsoft DOS 6.22 and include the following files in the root directory.

- Autoexec.bat - This is a DOS batch file.
- Config.sys - This is a DOS configuration file.
- Himem.sys – This is an extended memory driver for DOS, needed for Loadcepc to work.
- Loadcepc.exe – Windows Embedded CE DOS loader
- Eboot.bin – Ethernet boot loader
- Nk.bin – Windows Embedded CE OS runtime image.

In addition to the above files, there are hidden system files and other utilities. The above listed files are the primary files which are critical. Missing anyone of the above file will cause the system not to function as intended.

There are different conditions which may be the cause for eBox-4300's failure to boot and function as intended, such as:

- The file system is corrupted.
- One or more of the key files are corrupted.
- One or more of the key files are deleted.
- eBox-4300's BIOS has been altered and causing the system not able to boot.

The remainder of this document will show how to access eBox-4300's BIOS settings to verify the internal EmbedDisk is present and detected by the BIOS, and how to configure the BIOS to boot from USB flash storage device.

When one or more of the files on the internal EmbedDisk is corrupted or deleted, bootable USB storage device can be used to copy the backup file from the CD-ROM ship with the kit.

Accessing eBox-4300 BIOS Settings

To access eBox-4300 BIOS settings, immediately after power-on, press the Delete key multiple times.

As eBox-4300 enters the BIOS settings menu, the following screen is shown.

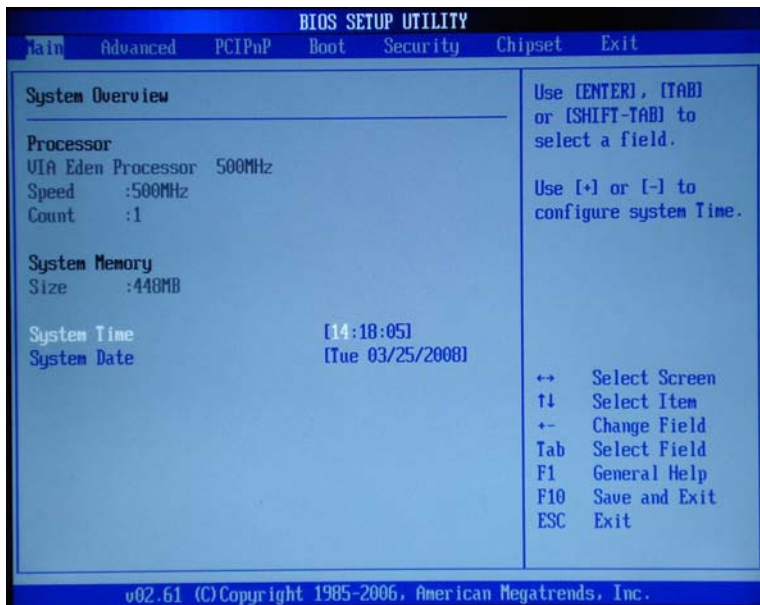


Figure 1 – Main BIOS Settings Menu

The Left and Right Arrow keys are used to move through the following available setting option.

- Main
- Advanced
- PCIPnP
- Boot
- Security
- Chipset
- Exit

Internal IDE Storage

In this section, we will go over the step to check and validate whether the internal IDE flash storage is present and being detected by the BIOS.

From the Main BIOS Settings Menu, use the Left or Right Arrow key to navigate to the Advanced option as shown.

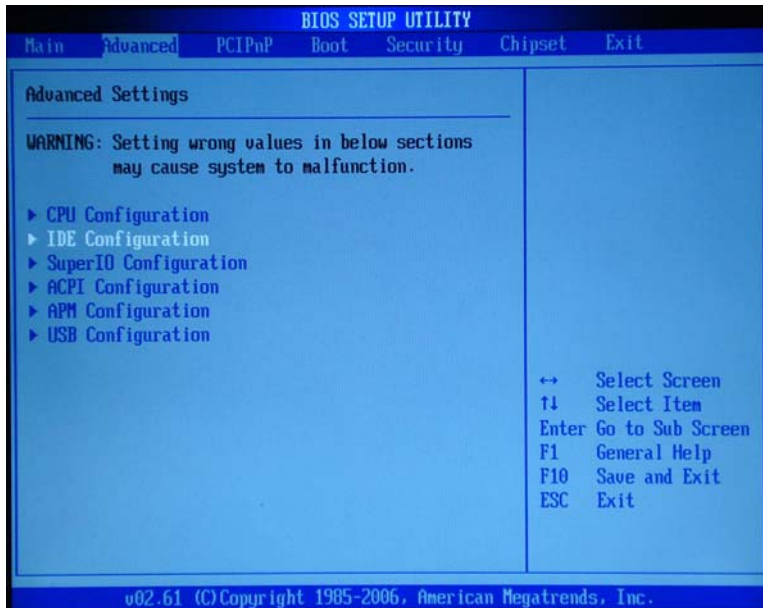


Figure 2 – Advanced BIOS Settings

From the Advanced BIOS Settings menu, use the Up or Down Arrow keys to navigate to the IDE Configuration option and press Enter to show the following screen.

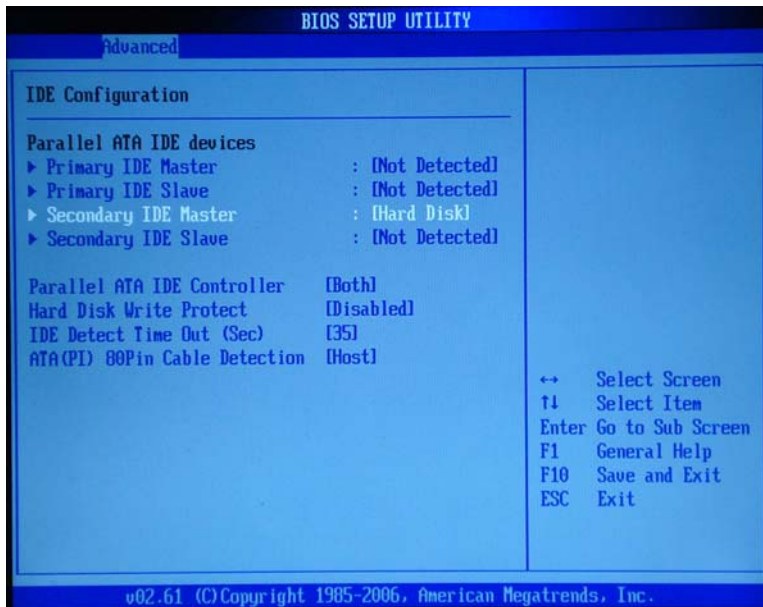


Figure 3 – IDE Configuration

If “Hard Disk” is listed as the Secondary IDE Master option, there is an IDE device connecting to the IDE interface is detected.

Use the UP or Down Arrow keys to navigate to the “Secondary IDE Master” option and press enter to show more detail information about the IDE storage detected by the BIOS, as shown in Figure-4.

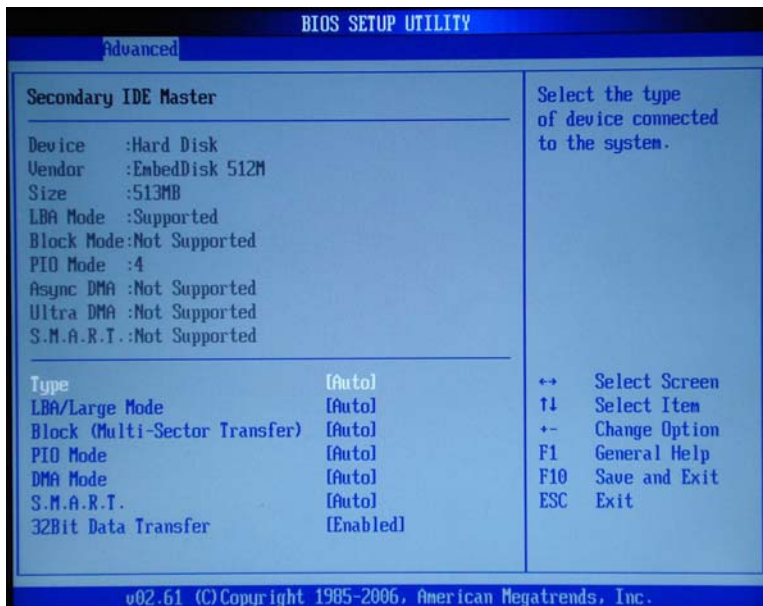


Figure 4 – EmbedDisk is detected.

When any IDE storage is detected, the Vendor information, storage capacity and other general information are presented on this page.

Figure 4 shows a 512MB EmbedDisk, with support for PIO Mode 4, is detected. For eBox-4300 CE 6.0 JumpStart kit, a 256MB EmbedDisk should be detected in this step.

Press the ESC key to navigate back to the previous menu. Use the Left and Right Arrow keys to navigate to the Boot option menu, as shown in Figure 5.

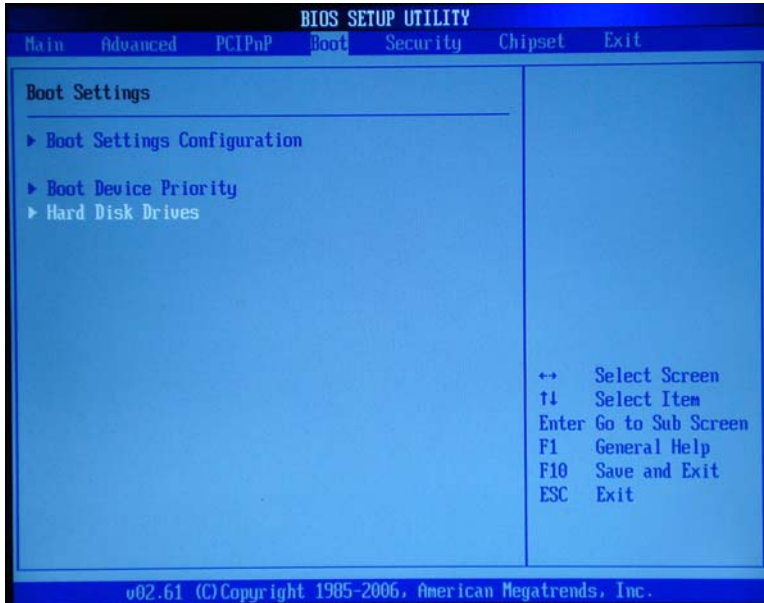


Figure 5 – Boot Settings

Use the Up or Down Arrow key to select Boot Device Priority and press enter to show the Boot Device Priority menu as shown in Figure 6.

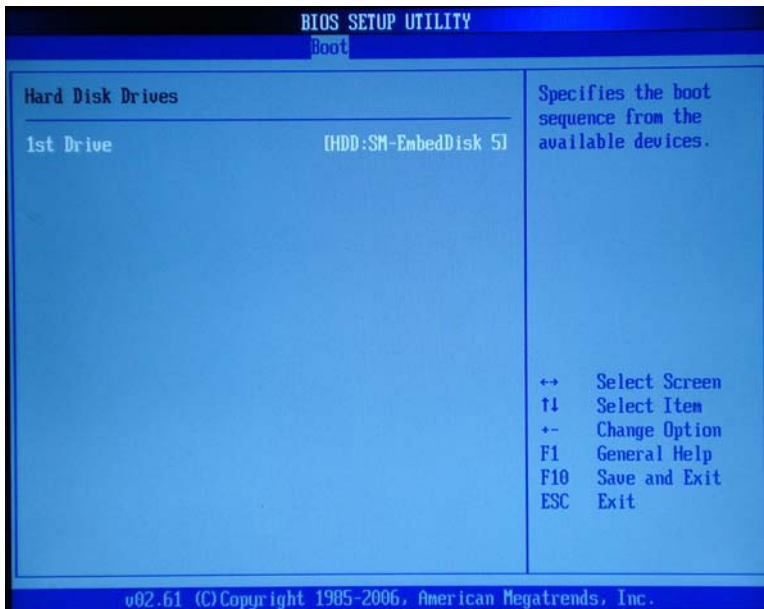


Figure 6 – Boot Device Priority

If "HDD:xxxxxx" is listed, the internal IDE storage is set as the 1st boot device, and indication the internal IDE storage is detected by the BIOS.

Configure eBox-4300 to Boot from USB Storage

eBox-4300 can be configured to boot from USB bootable flash storage.

An USB storage prepared to be bootable is needed. USB flash storage is not preconfigured to be bootable. Most of the USB flash storage can be configured to be bootable.

Depending on the USB flash storage's size or Vendor ID, the USB flash storage may be present to eBox-4300 as Removable Drives or Hard Drive.

Note: USB flash storage must be inserted to one of eBox-4300's USB interface prior to power-on for eBox-4300's BIOS to detect its present.

When the USB flash storage is detected by the BIOS as Removable storage, The BIOS's Boot option menu will list 4 Boot Settings as shown in Figure -7.

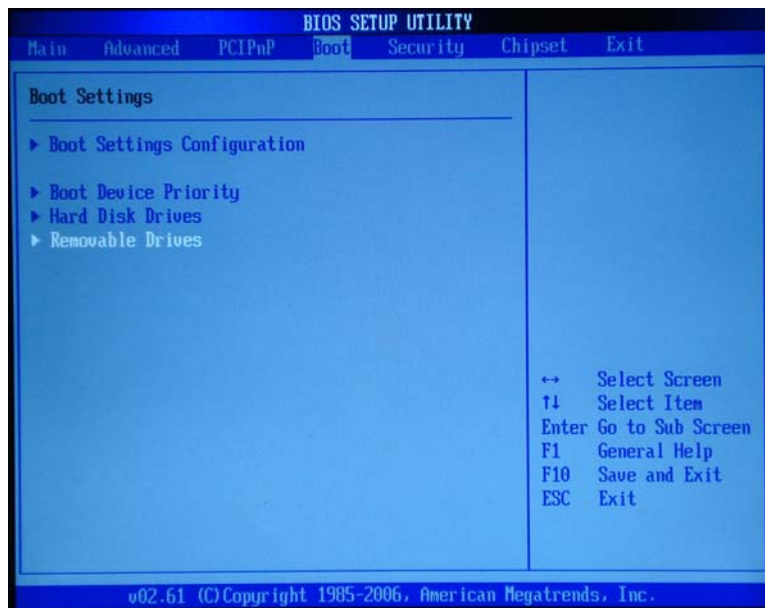


Figure 7 – Boot Settings (USB storage detected as Removable Driv)

Note: When the USB flash storage is detected as Removable Drives, after booting into DOS, the USB flash storage emulate the floppy and shown as drive "A".

When the USB flash storage is detected by the BIOS as Hard Disk, The BIOS's Boot option menu will list 3 Boot Settings as shown in Figure-8.

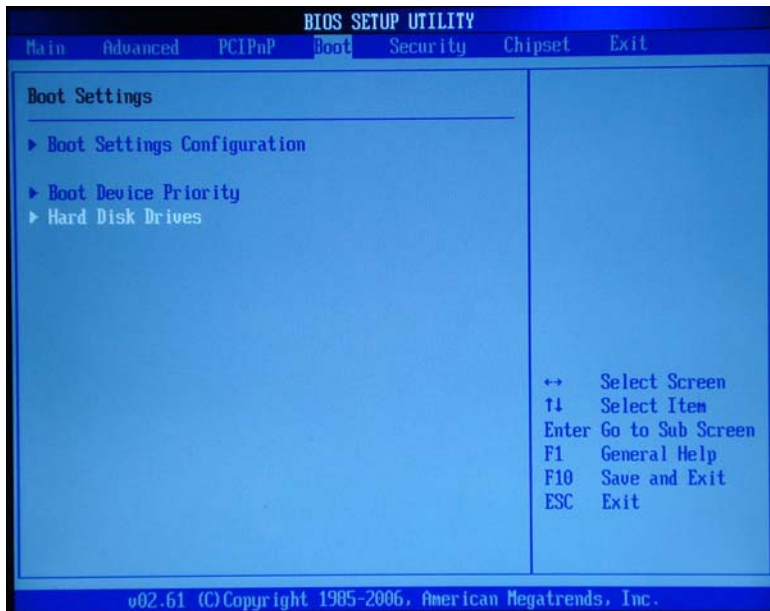


Figure 8 – Boot Settings (USB storage detected as Hard Drive)

Note: When the USB flash storage is detected as Hard Drives, after booting into DOS, the USB flash storage will show as drive C.

Use the Up or Down Arrow key to select Boot Device Priority and press Enter to show the Boot Device Priority screen, as shown in Figure 9.

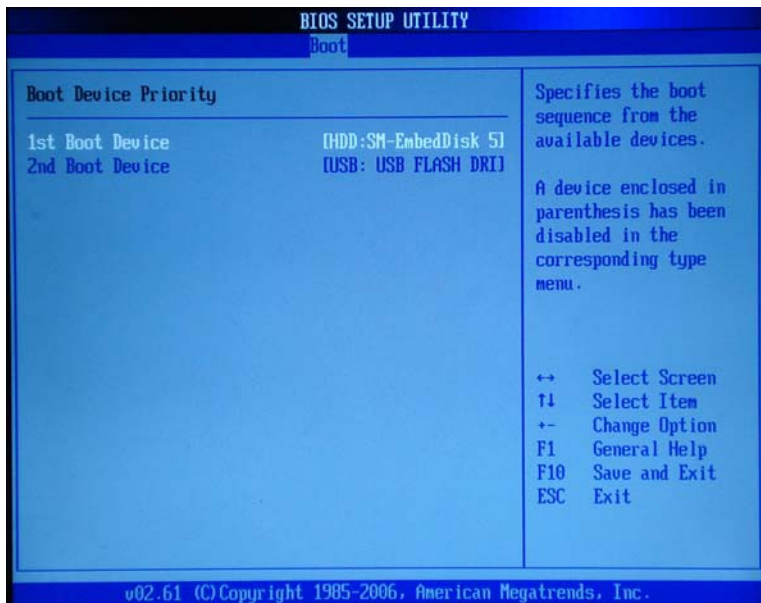


Figure 9 – Boot Device Priority

The Boot Device Priority screen shows SM-EmbedDisk as the 1st boot device and USB FLASH DRIVE as the 2nd boot device.

Use the Up or Down Arrow key to select “1st Boot Device” and press enter to bring up the option screen to set the USB Flash drive as the 1st Boot Device.

After making the selection, press the ESC key to navigate back to the main menu. From the Main BIOS settings menu, use the Left or Right Arrow key to navigate to the Exit option and use the Up or Down Arrow key to select the “Save Changes and Exit” option and press Enter.

The above steps configure the eBox-4300 to boot from the USB flash storage when it’s available. Without USB flash storage present, eBox-4300 will boot from the internal EmbedDisk.

Important Note: While some bootable USB flash storage will show as drive A, after booting into DOS, there are bootable USB flash storage showing as drive C. In the case where the bootable USB flash storage is shown as drive C, the internal EmbedDisk is assigned the drive letter D, when booting from the USB storage.