OPERATION GUIDE

VIA Flash v1.052 for DOS Environment

History:

Version	Date	Modification	Writer
V1.051	2009/08/19	1. Initial Version.	Kirk Wang
V1.052	2012/05/30	1. add Vx900 platform	Julian Lan

1. Operating Environment

OS	Win98 DOS/DOS 6.22
Support BIOS	Award BIOS/ AMI BIOS

2. Set up the DOS Environment
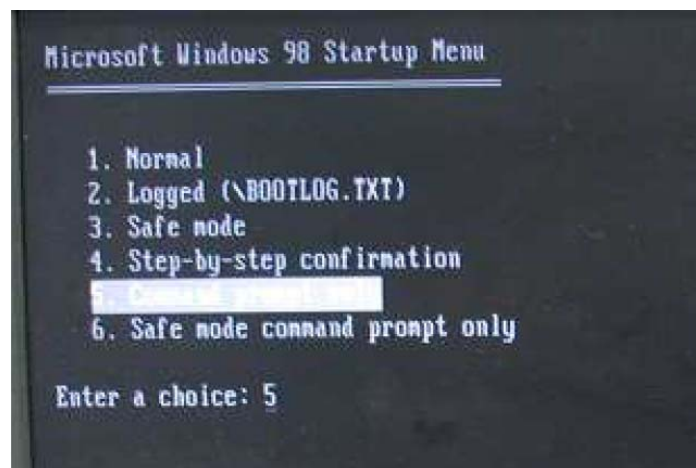
(1) Install Win98 DOS on HDD

You would install windows 98 on your hard disk, then get win98 DOS environment. Insert the Windows 98 CD-ROM in the CD-ROM drive, and then follow the prompt to install.
Please pay attention Windows 98 supports the FAT16 and FAT32 file systems.
The FAT16 file system has a maximum of 2 gigabytes (GB) for each allocated space, or drive Letter. The FAT32 file system supports drives up to 2 terabytes in size. The FAT32 file system does not support drives that are smaller than 512 MB.
After installation, restart your computer, press F8 in the boot up process.
When you do this, the Windows 98 Startup menu is displayed.

Select the "5. Command prompt only" menu option from the Startup menu, and then press Enter. You can enter Win98 DOS. Type command ver, you can see the DOS version.
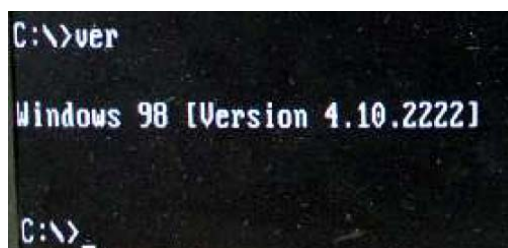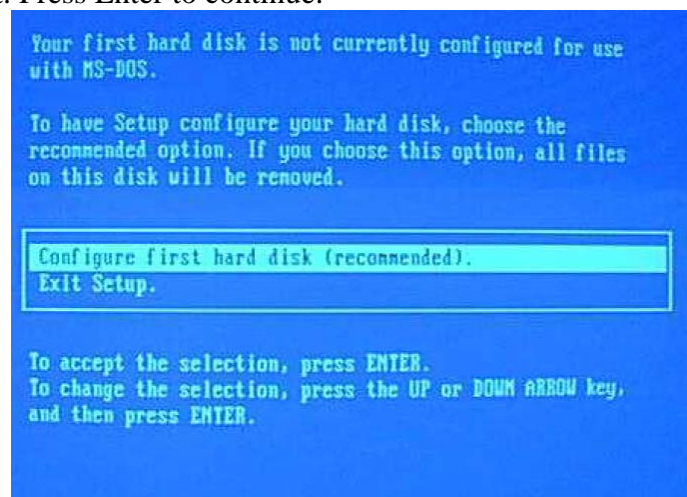

(2) Install DOS 6.22 on HDD

Install Microsoft Dos 6.22:
A. Start up your computer with the MS Dos Disk 1 in the floppy drive. Boot up from the floppy. The following screen will now appear. Press Enter to continue.
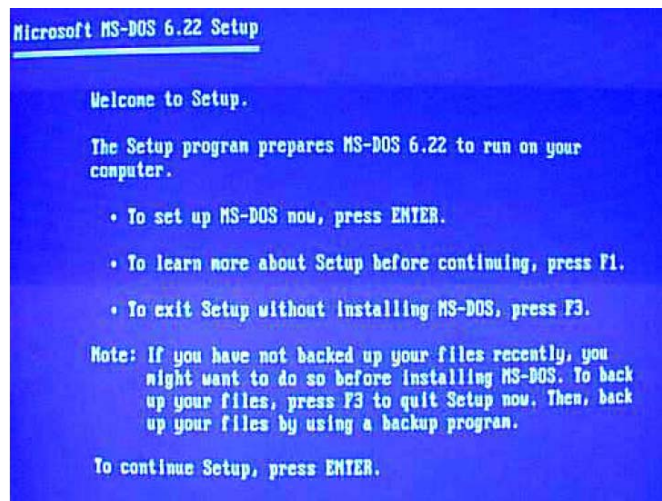
B. Then, you will be prompted to configure the Hard Drive, this means it will be formatted and all contents will lost. Press Enter to continue.

You are now prompted that the system will restart, press Enter to continue and keep Disk 1 in the drive.
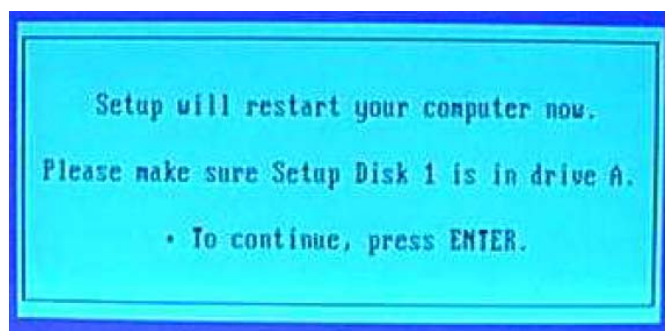
MS Dos will check the configuration. And then continue to setup and format the drive using Fat16.
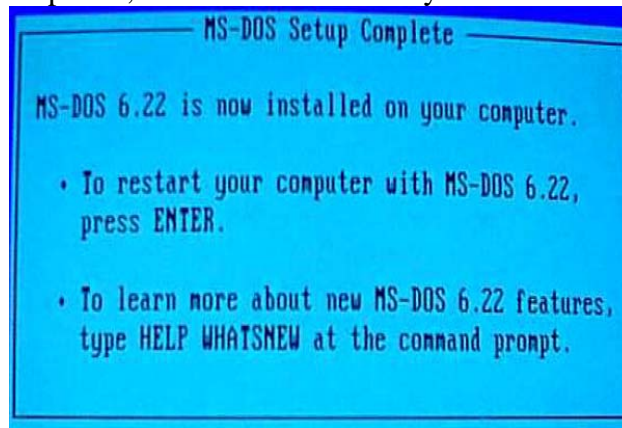
C. Confirm your country and keyboard settings.
Use arrow keys to highlight what needs to be changed and press Enter, then select a different option to install.
Once changes have been made, press Enter once you highlight "The Settings are Correct".
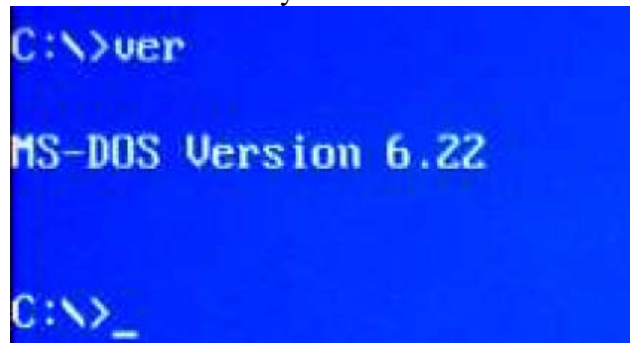
D. You will be asked where you want to install MS-DOS, leave defaults and Press enter.
MS-DOS will start to copy files.

At the following prompt insert disk 2 and disk 3 and press Enter .MS-DOS will continue to copy files.

After all the steps are completed, click Enter to restart system in MS-DOS

```
—————— MS-DOS Setup Complete ——————

MS-DOS 6.22 is now installed on your computer.

  · To restart your computer with MS-DOS 6.22,
    press ENTER.

  · To learn more about new MS-DOS 6.22 features,
    type HELP WHATSNEW at the command prompt.
```

Command "ver" will show the version of the system.

```
C:\>ver

MS-DOS Version 6.22

C:\>_
```

2. Boot up & Copy file

A. Connect HDD to the target board.
B. Turn on the computer
C. Copy the tool (vflash.exe) and BIOS files to PATA-HDD (or SATA-HDD) which have DOS environment (win98 DOS/DOS6.22). Make sure BIOS file and tool (vflash.exe) are in the same directory.

3. Execute

A. Execute "vflash –b –c" to show the user menu. You would see the flash ROM type of board and Tool version as below:

Notice: Please follow our normal BIOS programming procedure to program the BIOS. If BIOS fails caused by wrong programming procedure, VIA will not take responsibility for the RMA cost.

a. Choose "1" to backup BIOS. Then enter the file name you want to backup. Please see the example shown in picture below

b. Choose "2" to flash new BIOS. Then enter the BIOS file name you want to update. In this situation, it would clear CMOS and program boot block after writing new BIOS. And, it is equivalent to execute command "vflash –p newbios.bin –b –c". Please see the example below.

c. Choose "0" to return to DOS.

d. If choose wrong option (except "0", "1" and "2") in option menu, if will display warning message to remind user enter unsupported option.

```
C:\>vflash -b -c
VIA Technologies Inc.(C)2009 All Rights Reserved
============VIA Flash Tool V1.052============
[Flashchip:Pm49FL004 (512KB, LPC)]

(1)Backup BIOS
(2)Update BIOS
(0)Exit
Please input your option:4
Your choice is not 1, 2 or 0. Please reinput your opti
```

B. Execute vflash -h, with the following command line parameters.

```
C:\>VFlash -h

usage: C:\VFLASH.EXE [-s backup.bin] [-p newbios.bin] [-r] [-c] [-b]
   -s:        read flash and save into file
   -p:        write file into flash
   -r:        reboot after programming
   -c:        clear cmos after programming
   -b:        update BootBlock when programming

Note: When update AMI BIOS, you should add parameter '-b -c' at the same time !
```
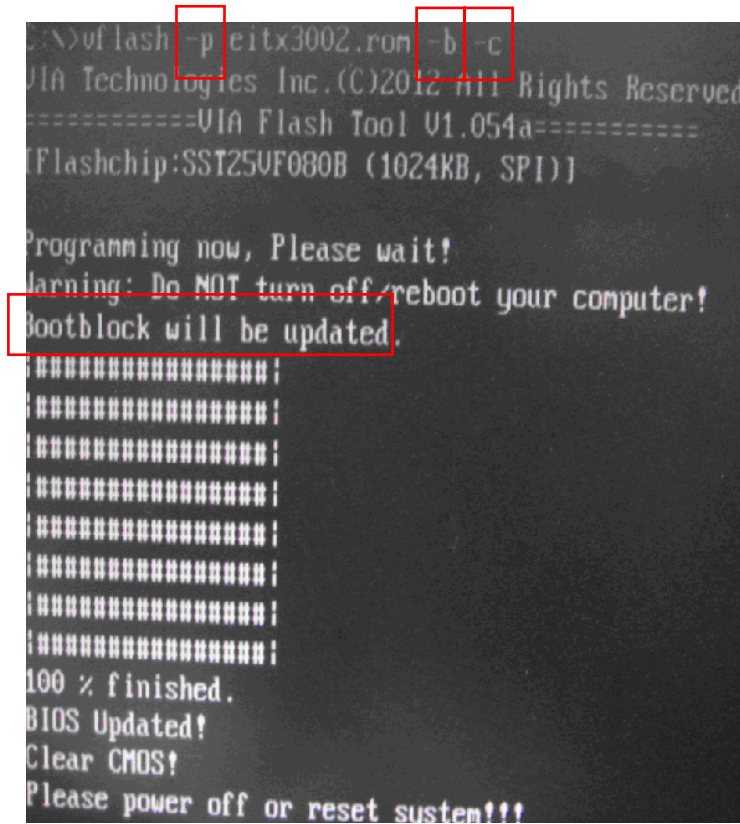
Example:

a. VFlash –s backup.rom –p xxx.rom –b –c

PS: You will see all # change to @ that means we update boot block, so which is full update at ROM storage!!

b. VFlash –p xxx.rom –b –c

It means we flash new bios, clear CMOS and program boot block; and the parameter "p" is attended bios file name into to the vflash tool, if adding "p" of parameter with BIOS name after then we don't need to key BIOS file name in the UI menu again.

```
:\>vflash -p eitx3002.rom -b -c
VIA Technologies Inc.(C)2012 All Rights Reserved
============VIA Flash Tool V1.054a============
[Flashchip:SST25VF080B (1024KB, SPI)]

Programming now, Please wait!
Warning: Do NOT turn off/reboot your computer!
Bootblock will be updated.
|################|
|################|
|################|
|################|
|################|
|################|
|################|
|################|
100 % finished.
BIOS Updated!
Clear CMOS!
Please power off or reset system!!!
```

c. VFlash –p xxx.rom –b –c –r

It will first write new BIOS, then program boot block, clear CMOS and reboot the computer.

If the bios image is upload finish then reboot can see as below boot logo!!

d. VFlash –s bak.rom –p test.rom –c –b –r

It will backup onboard BIOS and then write in new BIOS. After that, clear CMOS, program boot block and reboot the computer.

If upload finish then can see all @ change to #, because the parameter "–b" is update boot black.

e. vflash -p newbios.bin –f

It will flash BIOS without check whether it is a VIA board. When enter bootblacks, you can update BIOS by adding command line parameter '-f'. For example, when your onboard BIOS is corrupt and fallback to Boot Block code as showing below:
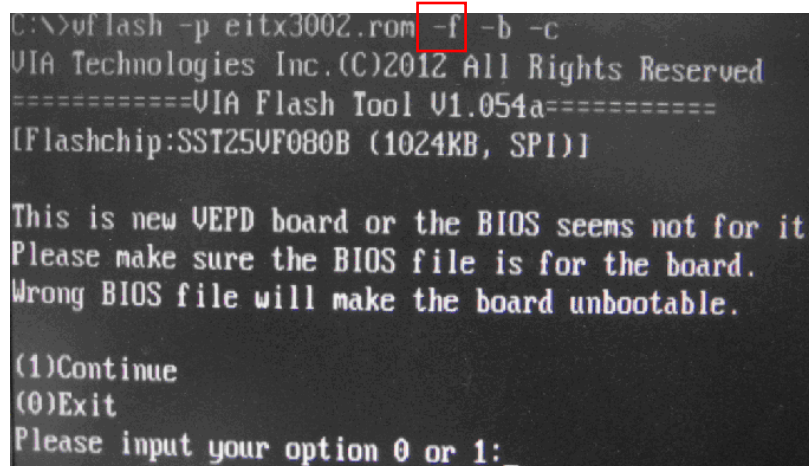
```
Award BootBlock BIOS v1.0
Copyright (c) 2000, Award Software, Inc.

BIOS ROM checksum error

Detecting floppy drive A media...
Drive A error. System halt
```

If you want to flash new BIOS to recovery system, you can boot from floppy with DOS environment, and execute vflash with command parameter '-f' as below showing:

```
C:\>vflash -p eitx3002.rom -f -b -c
VIA Technologies Inc.(C)2012 All Rights Reserved
============VIA Flash Tool V1.054a============
[Flashchip:SST25VF080B (1024KB, SPI)]

This is new VEPD board or the BIOS seems not for it.
Please make sure the BIOS file is for the board.
Wrong BIOS file will make the board unbootable.

(1)Continue
(0)Exit
Please input your option 0 or 1:_
```

After finish updating BIOS in Bootblacks, you can reboot and start system normally.

(1) EPIA-EN/NAS7800/MMC-7010/COME7N80 have WP (write protect) pin on the board, If you found cannot update BIOS, please make sure WP jumper is right. And please also pay attention in CMOS Setup, Advanced BIOS Features —> Flash ROM Write Protect [Disable]
(2) For CLE266 board (EPIA-M/EPIA-ML/EPIA-PD/EPIA-PE), they are not support boot block function.
(3) To AMI BIOS, it is suggest that add command line parameter "-b -c" (which is update boot block and clear CMOS) when update BIOS. Otherwise, AMI BIOS would be updated incompletely.

6. Known issues/limitations

(1) The flash tool is used for VIA boards, it utilizes VIA protect functions to check whether the board is made by VIA.
If it is VIA board, then can use the flash tool, otherwise would not use the flash tool and exit. No matter the BIOS is Aware or AMI, the flash tool would divided into three steps to check whether the board is the VIA. First check permit code in BIOS, then check "VIAVPED" Signature in BIOS, finally check board name. Any one of these three conditions is meet means the board is VIA. So, before using flash tool please make sure these protection data is in BIOS.

(2) EPIA-EN/NAS7800/MMC-7010/COME7N80 have WP (write protect) pins on the board, If BIOS can not be updated, please make sure WP jumper is set properly. And pay attention Settings in CMOS:
Advanced BIOS Features -> Flash ROM Write Protect [Disable]

(3) To update AMI BIOS, command line parameters "-b -c" (which is update boot block and clear CMOS) should be added. Otherwise, AMI BIOS may not work completely.

(4) VT6058-M and VT6058-M1 may select LPC Flash ROM (Pm49L004T) or SPI Flash ROM (M25P40) by setting "SW1" on the board.
So when updating BIOS, please pay attention to the Flash ROM type on the screen after run vflash, it would show the board boot from LPC BIOS or SPI BIOS. If it use LPC flash ROM, please choose LPC BIOS file to flash. And if it use SPI flash ROM, Please select proper SPI BIOS file to flash.

(5) EITX-3000 boards have different revisions. EITX-3000(Rev:1) uses SPI flash ROM (ST M25P40, 512KB). And EITX-3000(Rev:A) uses SPI flash ROM (SST 25VF080B, 1024KB). So, plese use correct BIOS file when updating BIOS according to board's revision.

(6) Because most BIOS do not have "VIAVEPD" signature in boot block, when updating BIOS in Boot Block, please add command line option "-f" to force update without checking whether it is board made by VIA.
For example: vflash -p newbios.bin –f

(7) When testing boot block recovery function, please make sure the BIOS on your board support boot block. For CLE266 board (EPIA-M/EPIA-ML/EPIA-PD/EPIA-PE), they do not have boot block support And if simulate BIOS be corrupt by power-off in updating BIOS, please wait for a few seconds, rather than power-off immediately, the following boot block recovery test steps for your reference:

　　1. Confirm you have the right version BIOS with boot block function

　　2. Run the command under DOS

```
vflash.exe –p XXX.bin –b –c -r
```

　　3. After updating, reboot, enter CMOS setting Load default

　　4. Run the command under DOS

```
vflash.exe –p XXX.bin
```

　　5. After the "Programming" message is shown, wait for a longer time (for 512Kb BIOS, 7 seconds),
then Power off

　　6. Boot up the system

　　7. Confirm if the system can enter the boot block stage

　　8. Under boot block stage, enter DOS, run the command

```
vflash.exe –p XXX.bin –c
```

　　9. after the updating finished, reboot, confirm the right version BIOS has been updated and system can normally booted

(8) QSM-8Q90 is need special bios version like v900.106; QEVQS80 is need special bios version like QEVQS80.001, for customization bios can by pass from string "VIAVPED"!! <New>

(9) As below project id of the board that not get from permit info!! <New>
　　- COME8X90 / COME8X91 / COME8X92 / P900 / VB8004 / M900