



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	2. add Vx900 platform	Julian Lan

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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

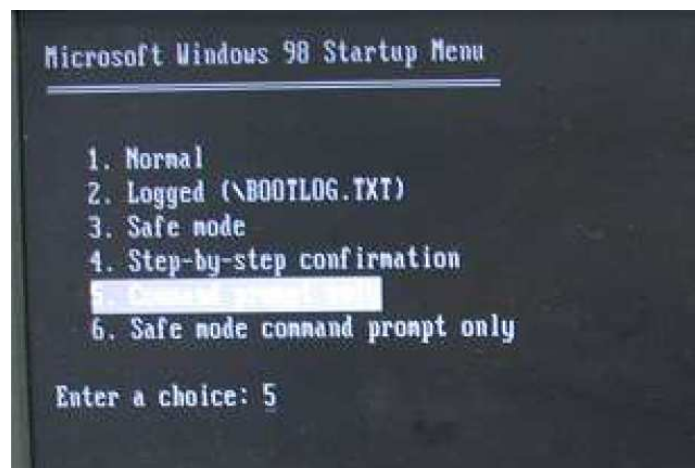
You would install windows 98 on your hard disk, then get win98 DOS environment. Insert the Windows 98 CD-ROM in the CD-ROM drive, and then follow the prompt to install.

Please pay attention Windows 98 supports the FAT16 and FAT32 file systems.

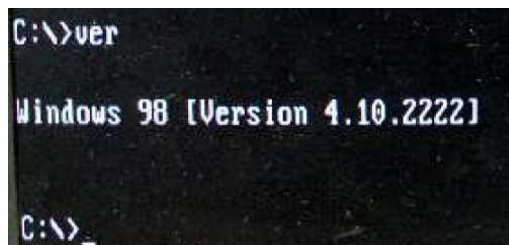
The FAT16 file system has a maximum of 2 gigabytes (GB) for each allocated space, or drive Letter. The FAT32 file system supports drives up to 2 terabytes in size. The FAT32 file system does not support drives that are smaller than 512 MB.

After installation, restart your computer, press F8 in the boot up process.

When you do this, the Windows 98 Startup menu is displayed.



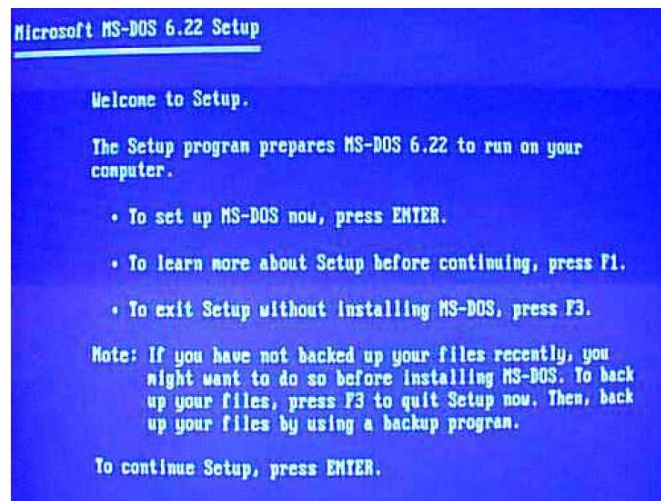
Select the “5. Command prompt only” menu option from the Startup menu, and then press Enter. You can enter Win98 DOS. Type command ver, you can see the DOS version.



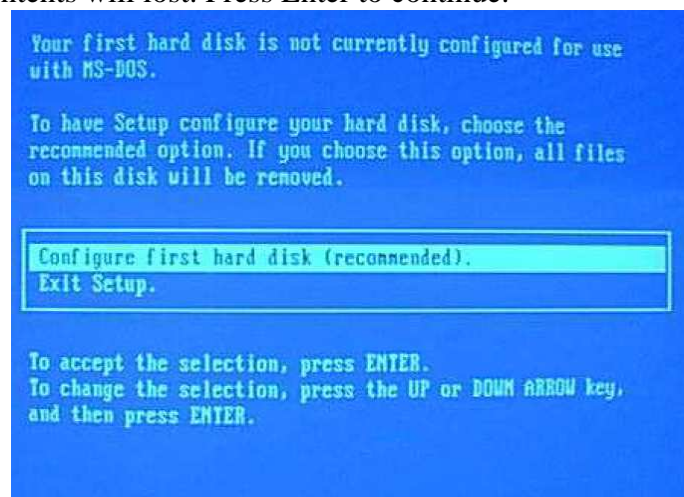
(2) Install DOS 6.22 on HDD

Install Microsoft Dos 6.22:

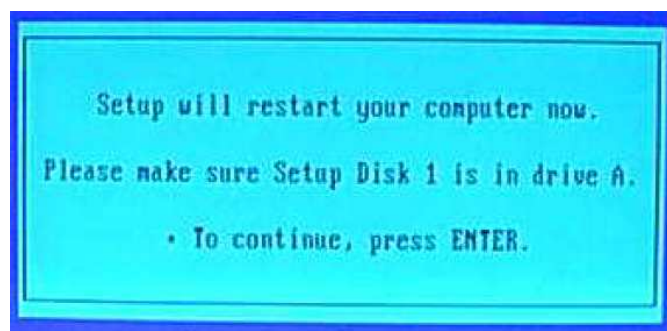
A. Start up your computer with the MS Dos Disk 1 in the floppy drive. Boot up from the floppy. The following screen will now appear. Press Enter to continue.



B. Then, you will be prompted to configure the Hard Drive, this means it will be formatted and all contents will be 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.

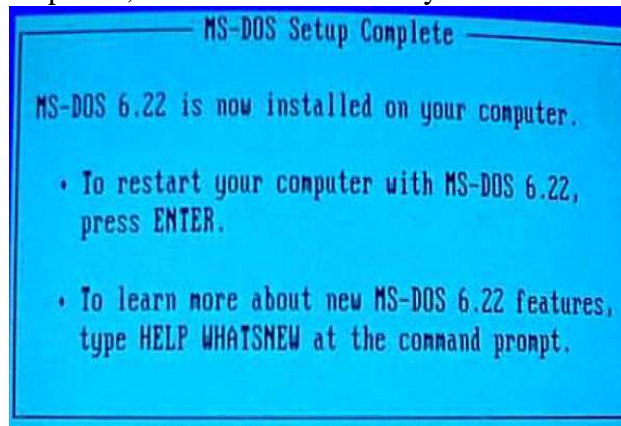
Use arrow keys to highlight what needs to be changed and press Enter, then select a different option to install.

Once changes have been made, press Enter once you highlight "The Settings are Correct".

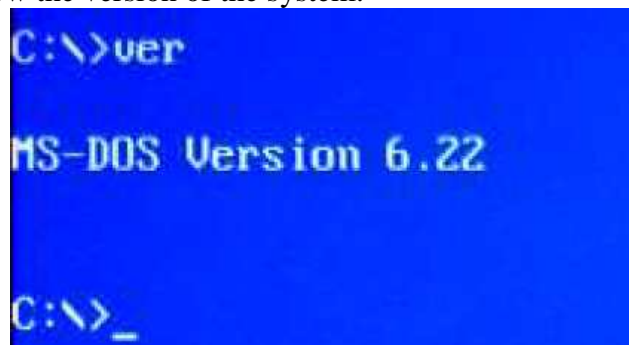
D. You will be asked where you want to install MS-DOS, leave defaults and Press enter. MS-DOS will start to copy files.

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



Command “ver” will show the version of the system.



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 to show the user menu. You would see the chipset and flash ROM type of the board as below.

```
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:_
```

a. Choose “1” to backup BIOS. Then enter the filename you want to backup. Please see the example shown in picture below

```
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:1

Save current BIOS as: backup.rom
Saving BIOS to backup.rom, Please wait!

BIOS Saved!
```


b. VFlash -b -c

If running “vflash -b -c” and enter menu UI to select update BIOS, it would clear CMOS and program bootblock after writing new BIOS. In this case, it is equivalent to execute command “vflash -p newbios.bin -b -c”.

If running “vflash -c” and enter menu UI to select backup BIOS, it has no effect on backing up BIOS.

```
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:2

File Name to update: test.rom
Programing now, Please wait!
Warning: Do NOT turn off/reboot your computer!
Bootblock will be updated.
!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!
56 % finished.
```

c. VFlash -p test.rom -b -c

It means after flash new bios, clear CMOS and program bootblock.

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

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!!!
```

d. VFlash -p test.rom -c -r

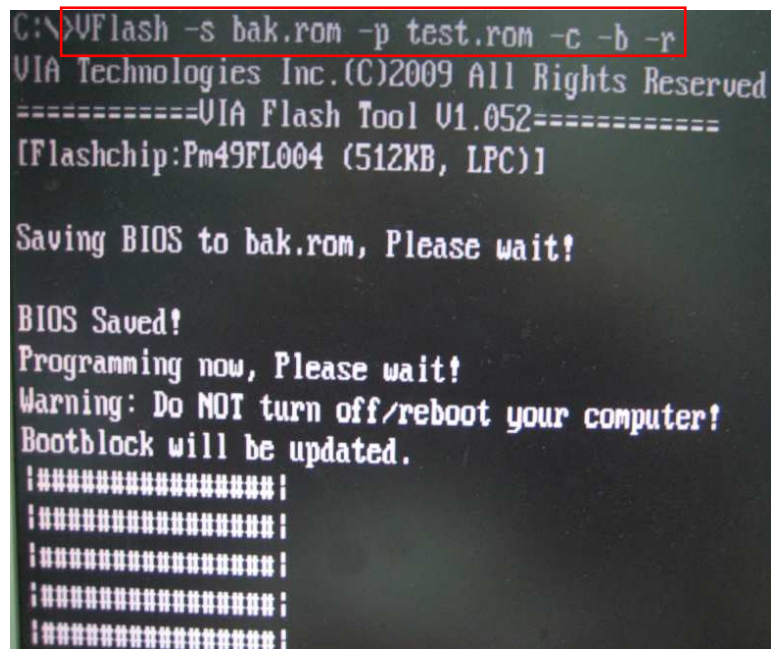
It will first write new BIOS, then clear CMOS and reboot the computer.

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

Programming now, Please wait!
Warning: Do NOT turn off/reboot your computer!
Will not update Boot block.
!#####!
!#####!
!#####!
!#####!
!#####!
!#####!
!#####!
!#####!
!#####!
57 % finished
```

e. 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.



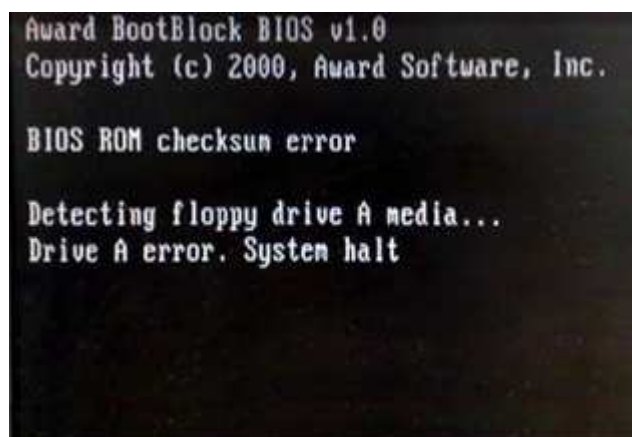
```
C:\>VFlash -s bak.rom -p test.rom -c -b -r
VIA Technologies Inc.(C)2009 All Rights Reserved
=====VIA Flash Tool V1.052=====
[Flashchip:Pm49FL004 (512KB, LPC)]

Saving BIOS to bak.rom, Please wait!

BIOS Saved!
Programming now, Please wait!
Warning: Do NOT turn off/reboot your computer!
Bootblock will be updated.
!*****!
!*****!
!*****!
!*****!
!*****!
```

f. vflash -p newbios.bin -f

It will flash BIOS **without** check whether it is a VIA board. When enter bootblock, 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 test.rom -f -b -c
VIA Technologies Inc.(C)2009 All Rights Reserved
=====VIA Flash Tool V1.052=====
[Flashchip:Pn49FL004 (512KB, LPC)]

Programing 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!!!
```

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

4. Notes

- (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, please 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