Enabling SPI Flash Disk on Vortex86

Many Vortex86 modules include an SPI flash device which can be enabled in the BIOS as the boot device. The flash device on the module comes pre-loaded with FreeDos so application development can begin out of the box.
This application note will give a step-by-step procedure for enabling the device and booting into FreeDos. Updating or changing the OS would mean formatting the virtual FDD and installing the new OS.

Prepare the unit

If the module has a graphics card then connect to a VGA monitor and a PS2 or USB keyboard. Otherwise connect a PC running a terminal program to the remote console serial port. The remote console port generally by default is COM1 and is enabled by connecting GPIO 3.7 to GND (Refer to the user manual for the specific module to confirm these details).
The terminal program needs the communications to be set to 115200 BAUD, 8 data bits, No parity and 1 stop bit.

Power up

As the unit boots you should see the BOOT information screen, the final display should be similar to figure 1.

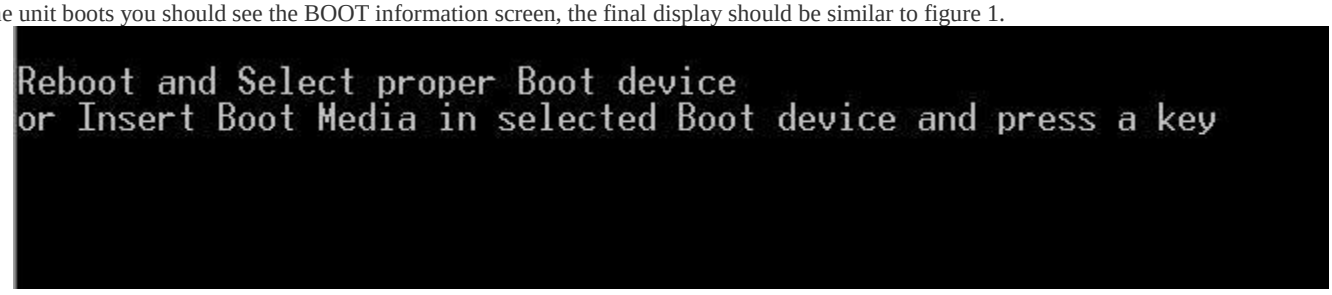

Figure 1

Running the BIOS setup program

Power cycle the module to re-boot and during the boot process press the DEL key if using a PS2 or USB keyboard, if you are using the remote console press the F4 function key.
The display should say ‘Entering Setup’, followed by the screen shown in figure 2.

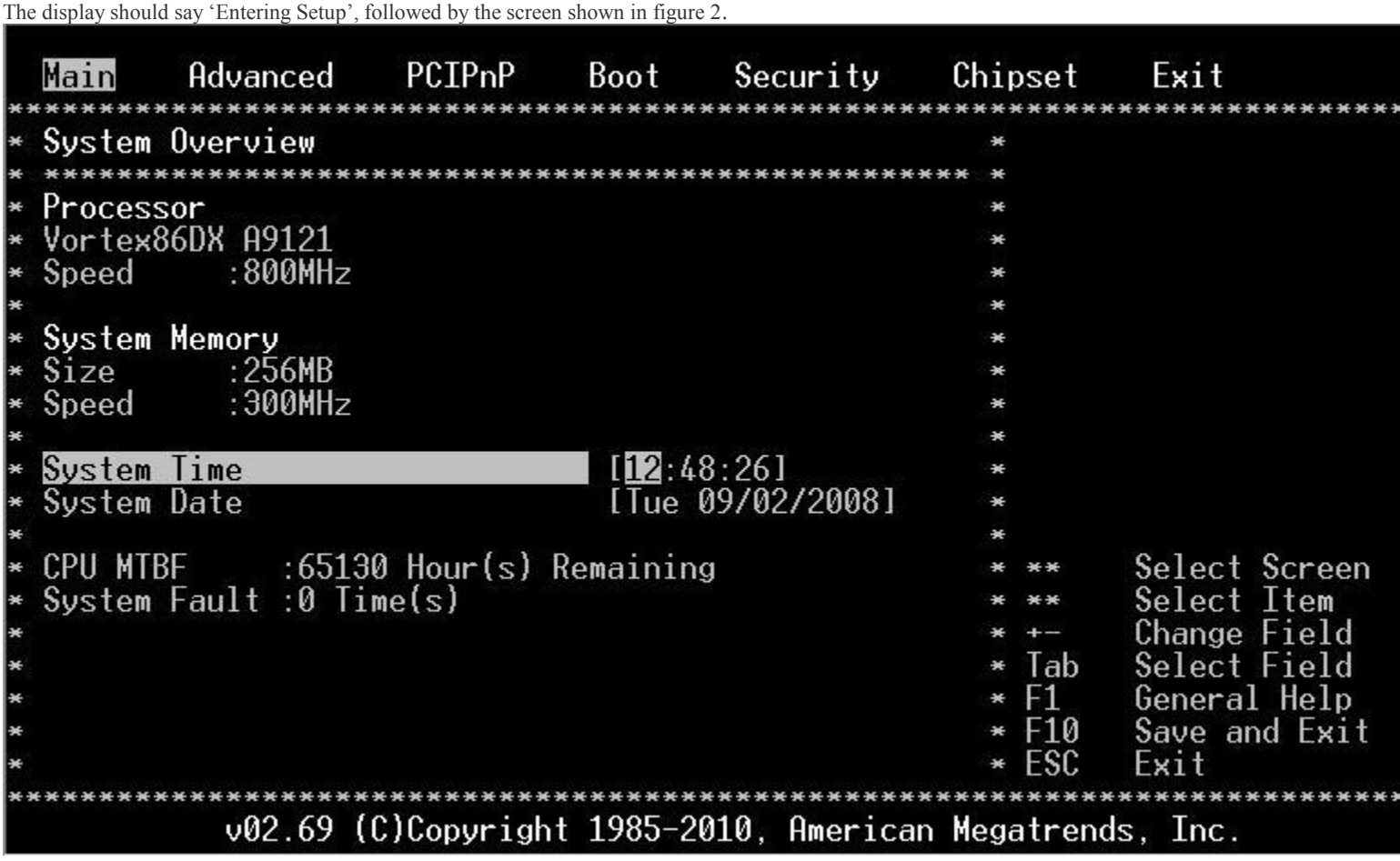

Figure 2

Navigate the setup menu using the left / right arrow keys to highlight ‘Boot’, the ‘Boot settings Configuration’ line should be highlighted.

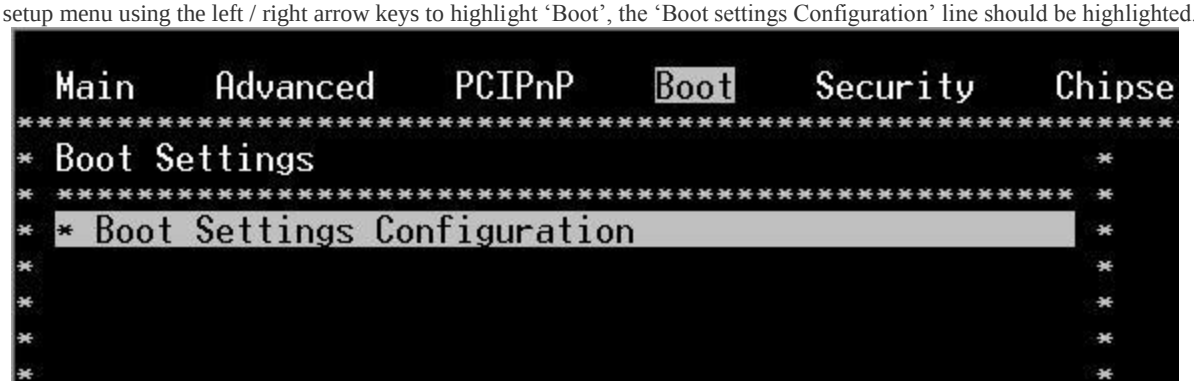

Figure 3

Press ‘Enter’

Use Up/down keys to highlight ‘OnBoard Virtual Flash FDD’

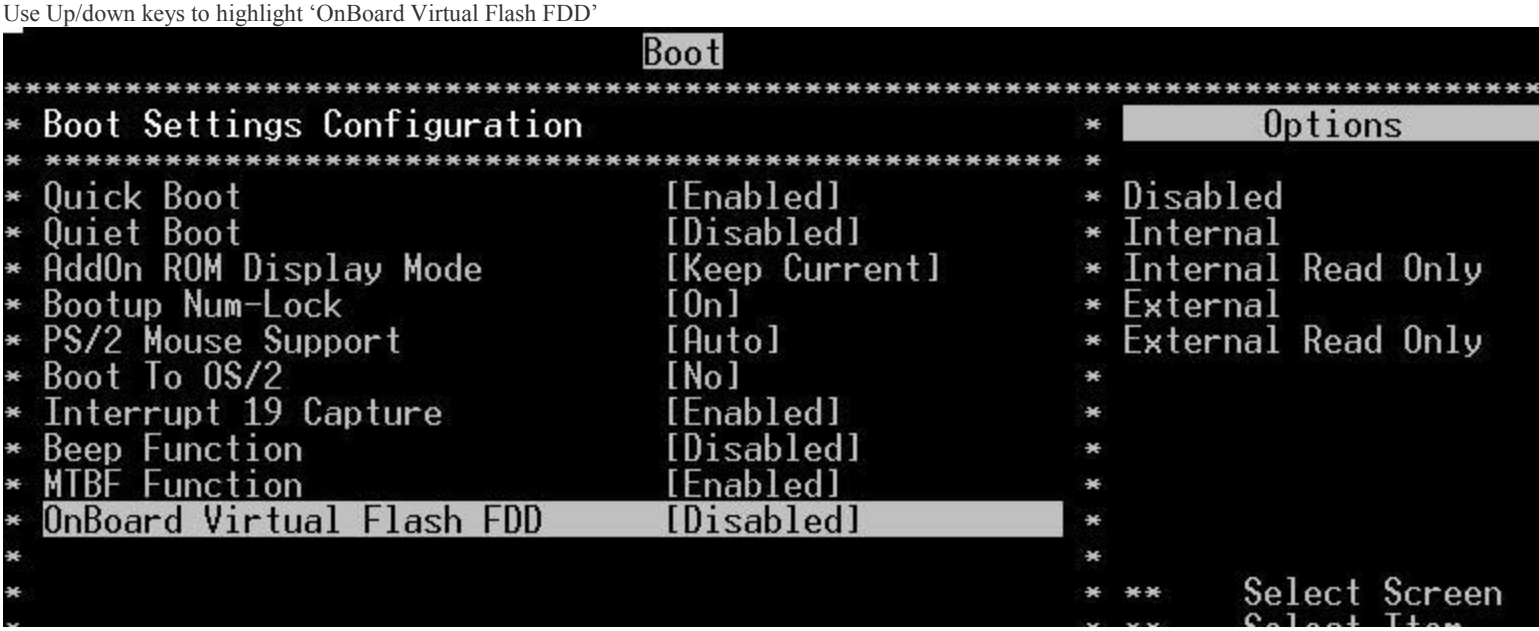

Figure 4

Press ‘Enter’

A Pop-up Box will appear with the available options:

Figure 5

There is a small SPI flash internal to the Vortex86 processor, but the device we wish to select is the larger, external device that is designed into the modules.

Use the up /down keys to select ‘External’ then press ‘Enter’.

Press the ‘Esc’ key to navigate back to the top menu

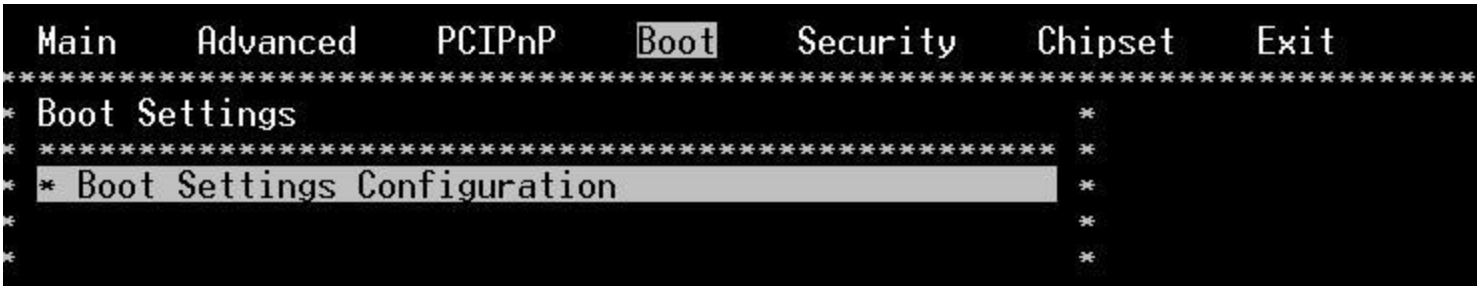

Figure 6

Use left / right keys to navigate to the exit, menu. ‘Save changes and Exit’ should be highlighted.

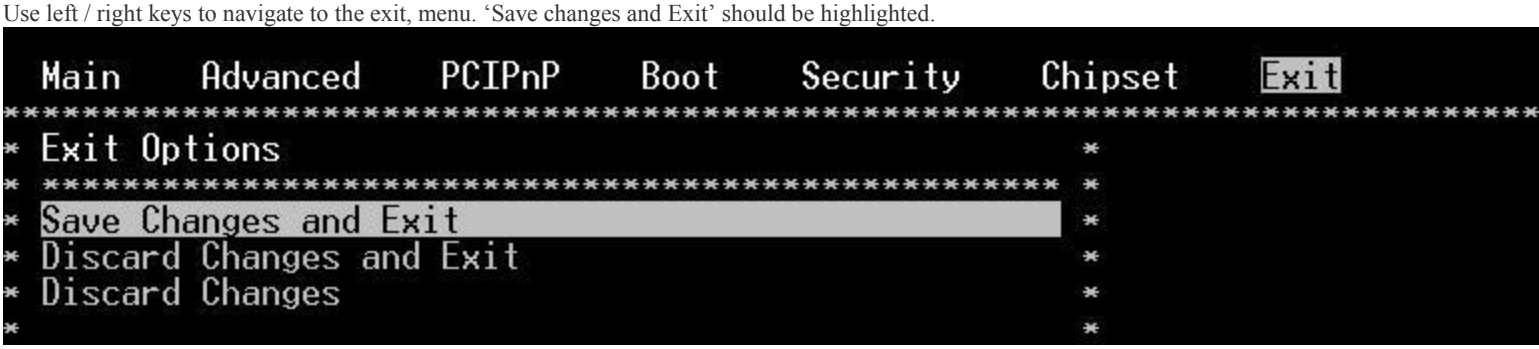

Figure 7

Press ‘Enter’

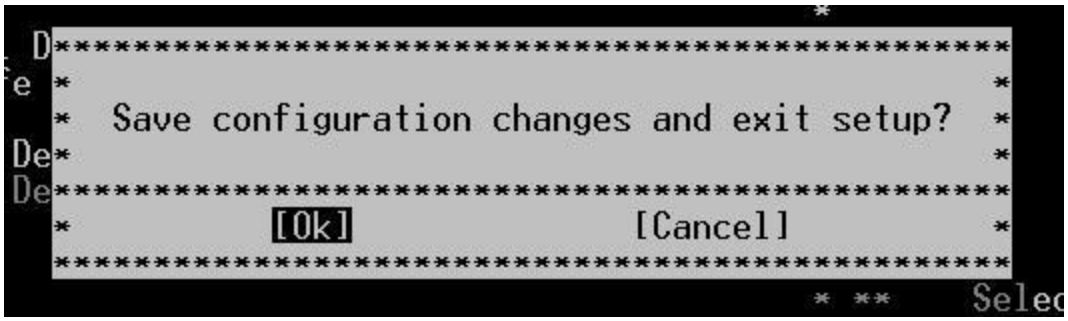

Figure 8

Press ‘Enter’ again and the unit should reboot.

The unit should now detect the drive and boot into FreeDos.

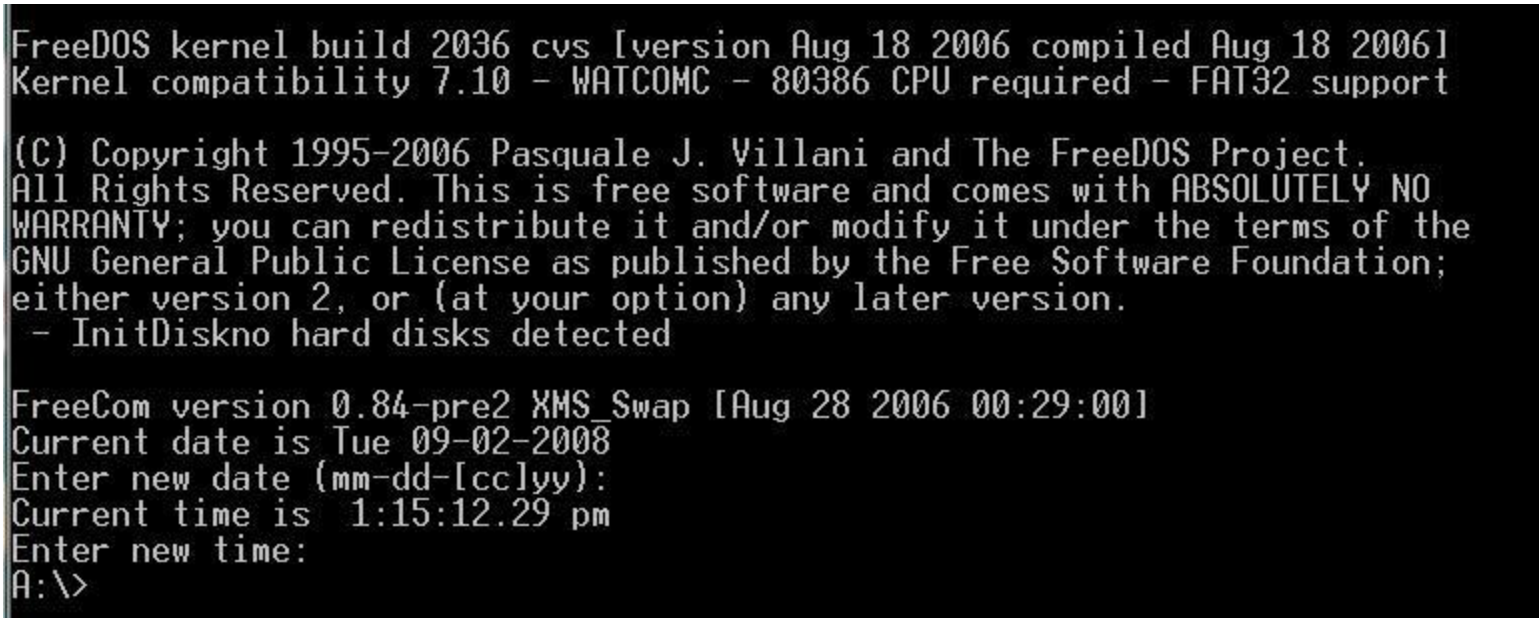

Figure 9

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