FAQ C6 IPC

# Bios Settings FAQ No.0004

| Part | Version | Revision | Date | Status |
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Wolfgang Wiele CTO

## Introduction

As it is possible, that an IPC's BIOS settings get relocated this guide is meant to provide a guideline, which settings are to be made in order to have the IPC set up as desired.

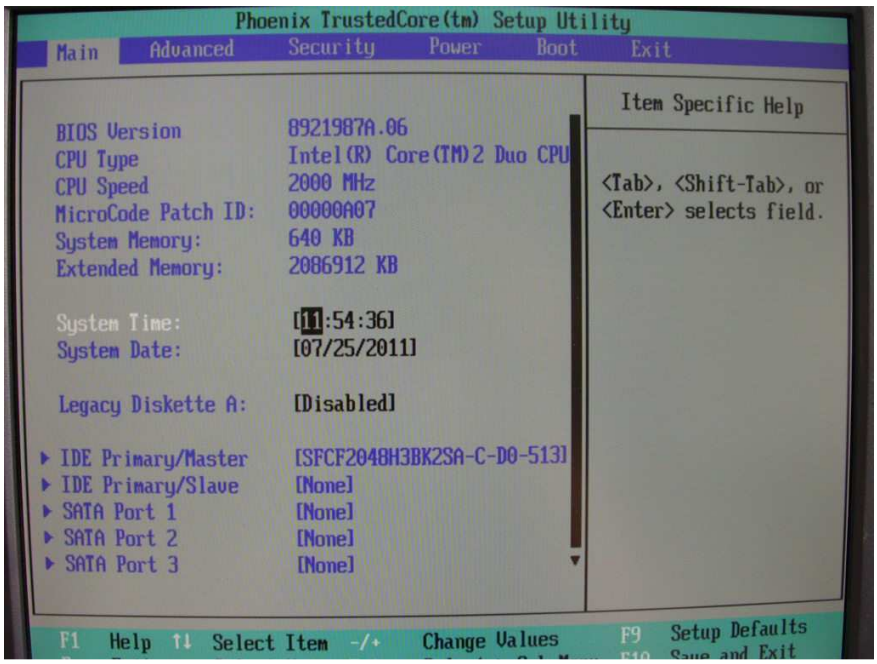
## Access the BIOS

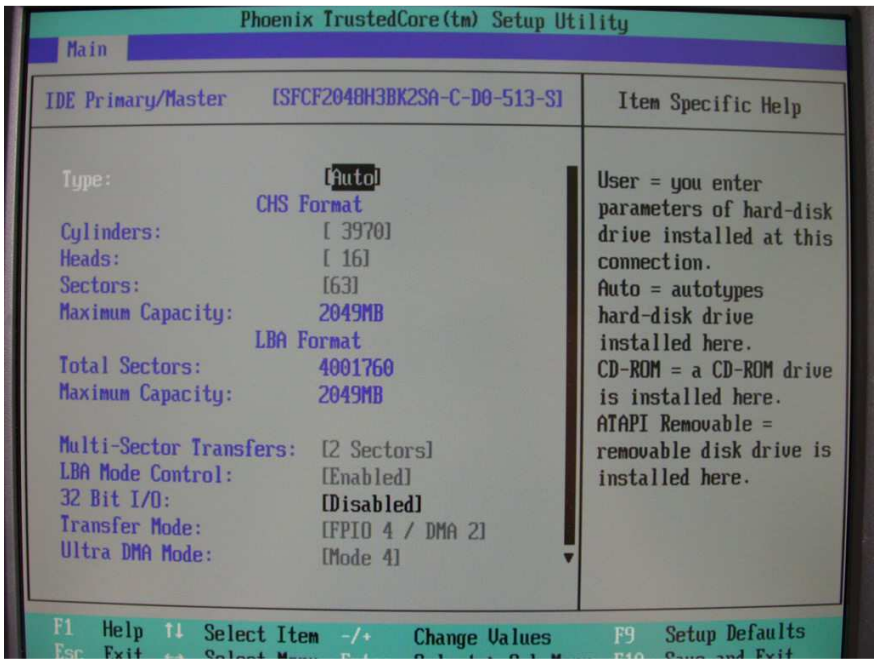
On all IPC systems, the BIOS can be accessed by pressing F2 during the Power-On-Self-Test on a connected keyboard.

# BIOS Settings for IPC C6 Perform

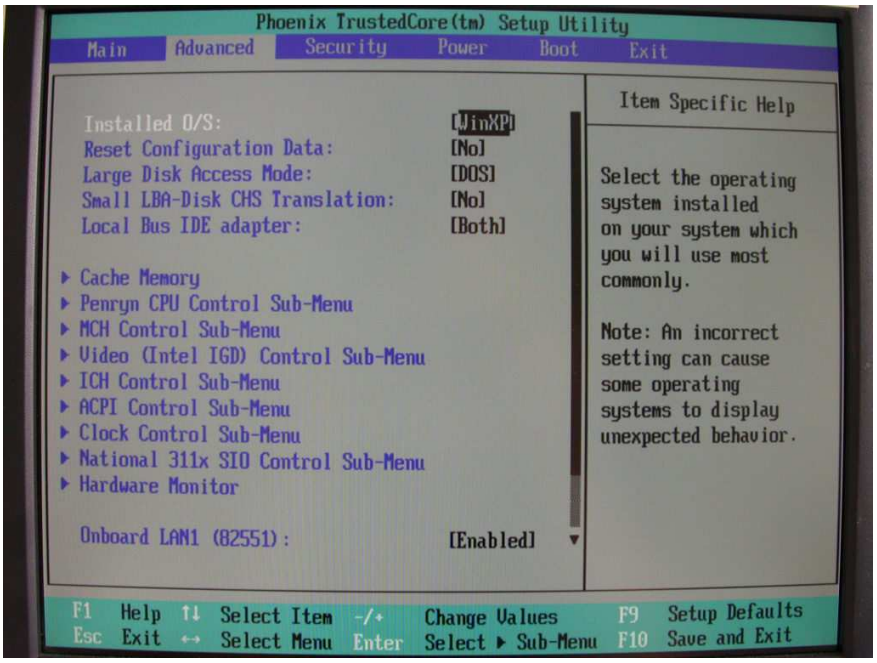
Note: The settings were recorded from a Core2Duo system, XX.C6-A?1-D???, for systems based on a Celeron CPU (XX.C6.A?1-C???) the settings will slightly differ!

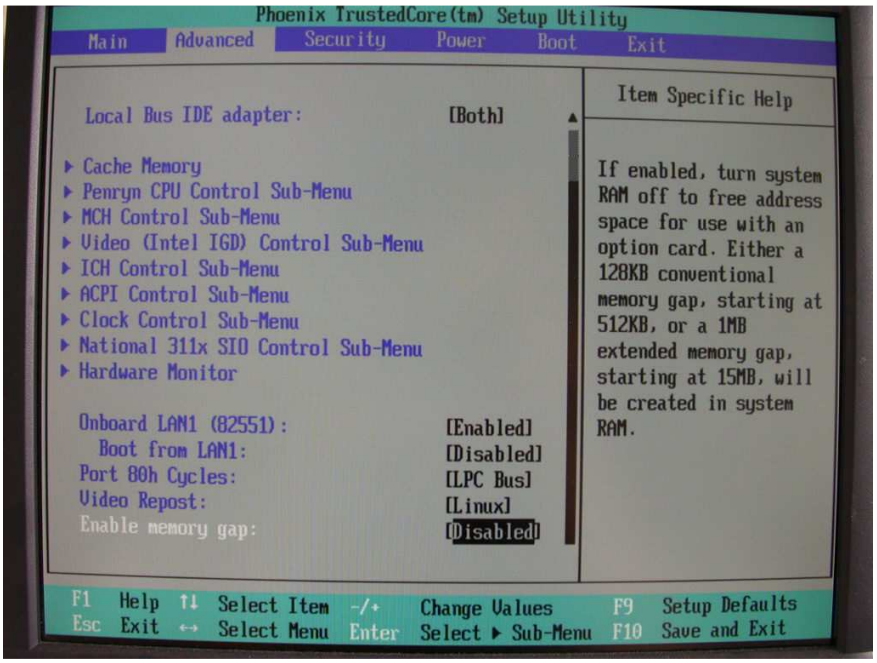
## Area ‘Main’

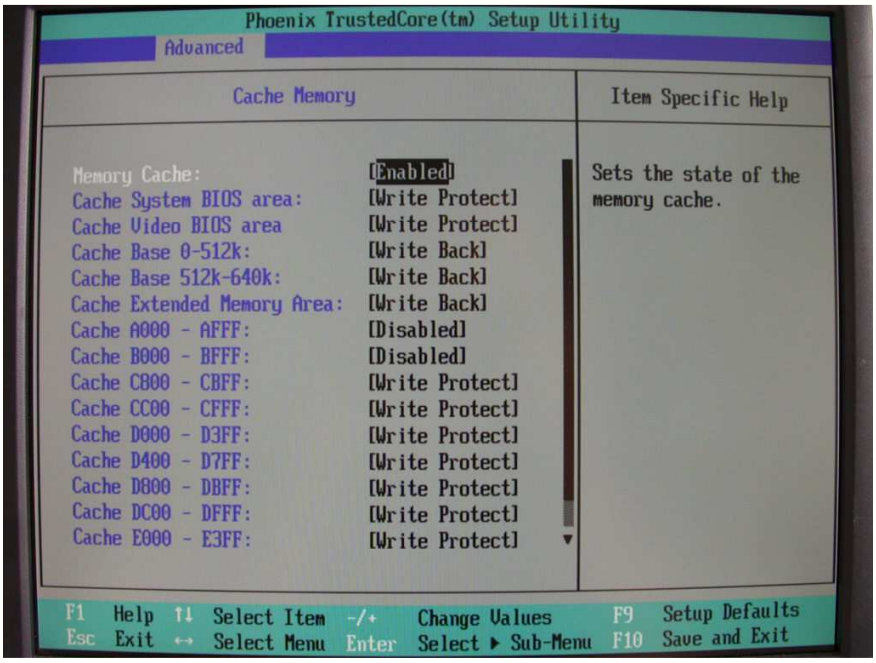


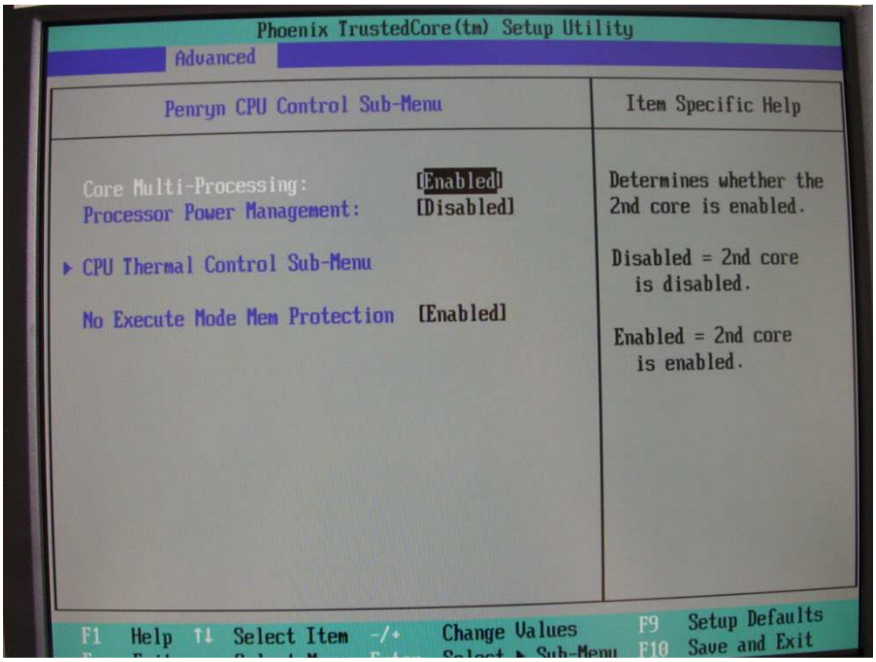
## Area ‘Advanced’



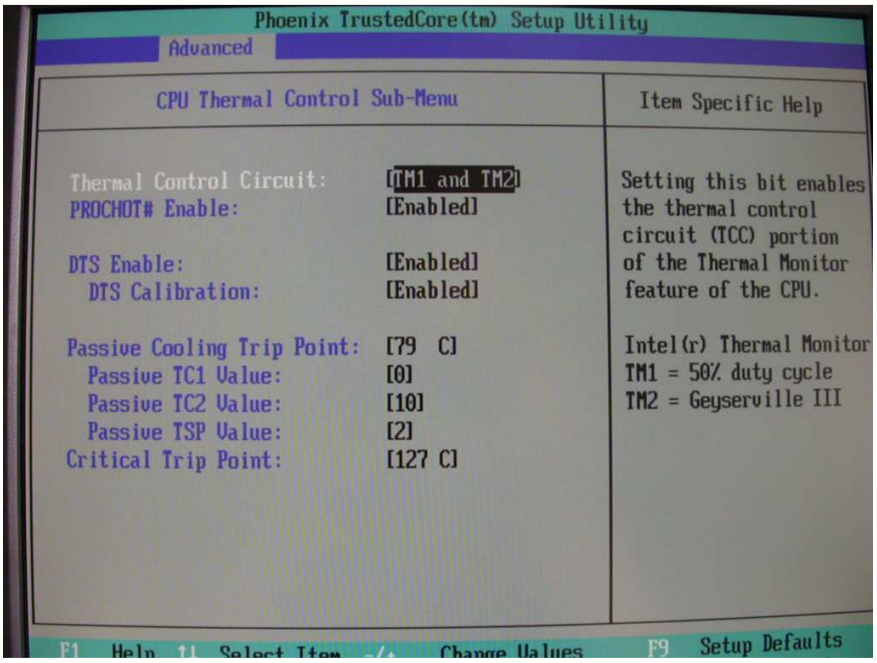



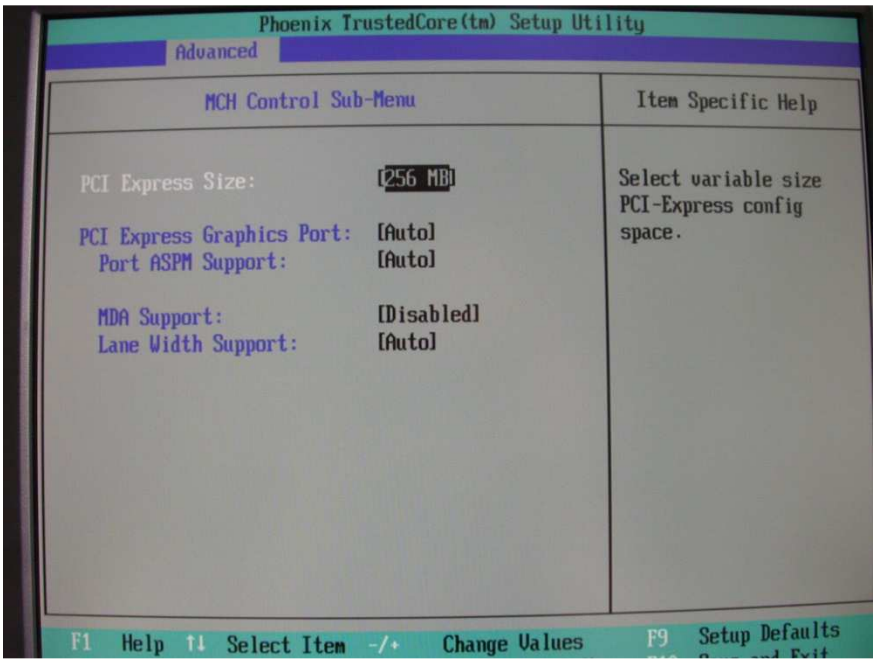



## CPU Control

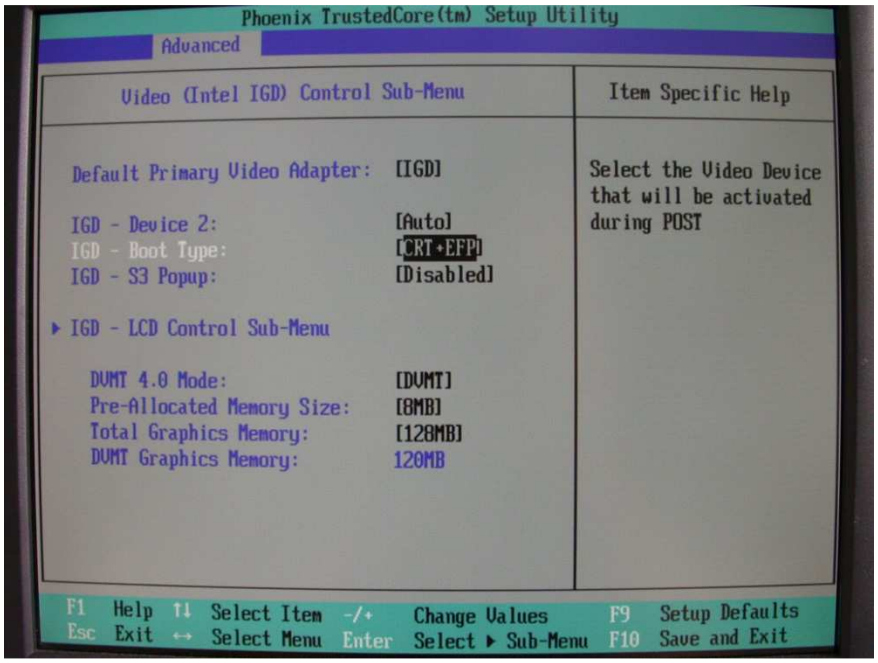



It is essential, that the CPU's power management remains disabled. The second CPU core may remain enabled, however.

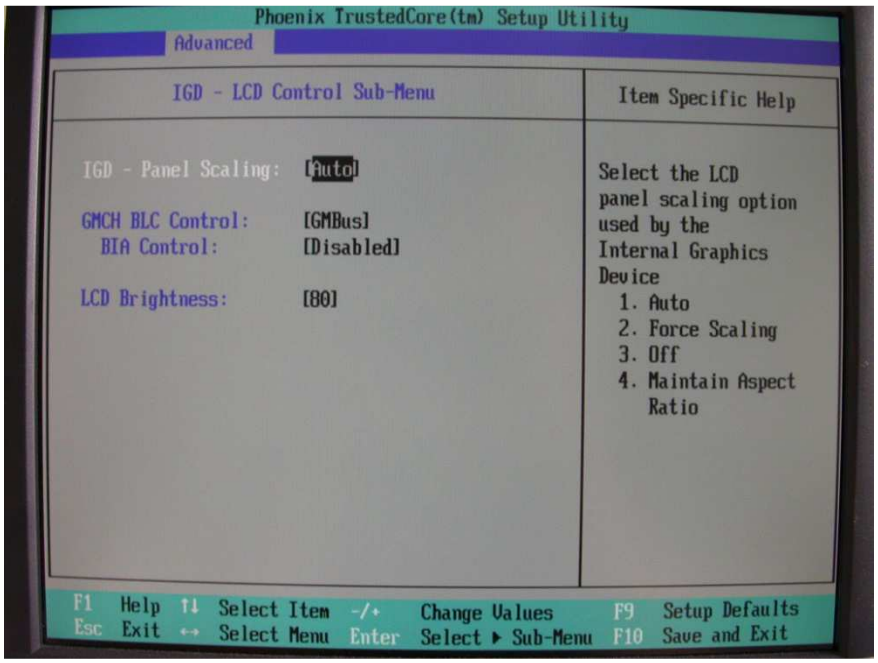

Phoenix TrustedCore(tm) Setup Utility
Advanced
CPU Thermal Control Sub-Menu
Item Specific Help
Thermal Control Circuit: [TM1 and TM2]
PROCHOT# Enable: [Enabled]
DTS Enable: [Enabled]
DTS Calibration: [Enabled]
Passive Cooling Trip Point: [79 C]
Passive TC1 Value: [0]
Passive TC2 Value: [10]
Passive TSP Value: [2]
Critical Trip Point: [127 C]
Setting this bit enables the thermal control circuit (TCC) portion of the Thermal Monitor feature of the CPU.
Intel(r) Thermal Monitor
TM1 = 50% duty cycle
TM2 = Geyserville III
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults

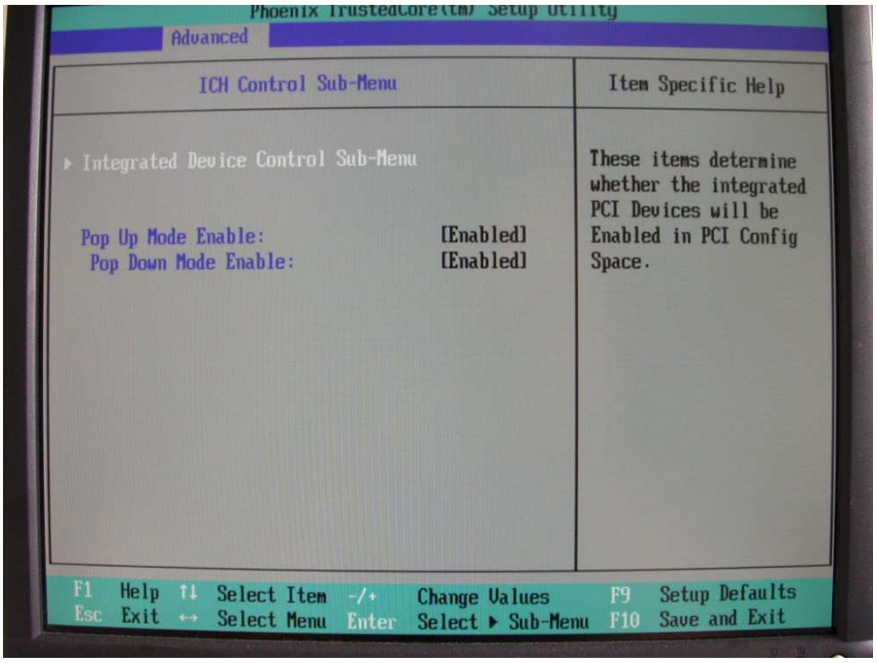

Phoenix TrustedCore(tm) Setup Utility
Advanced
MCH Control Sub-Menu
Item Specific Help
PCI Express Size: [256 MB]
PCI Express Graphics Port: [Auto]
Port ASPM Support: [Auto]
MDA Support: [Disabled]
Lane Width Support: [Auto]
Select variable size PCI-Express config space.
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults

## Video settings

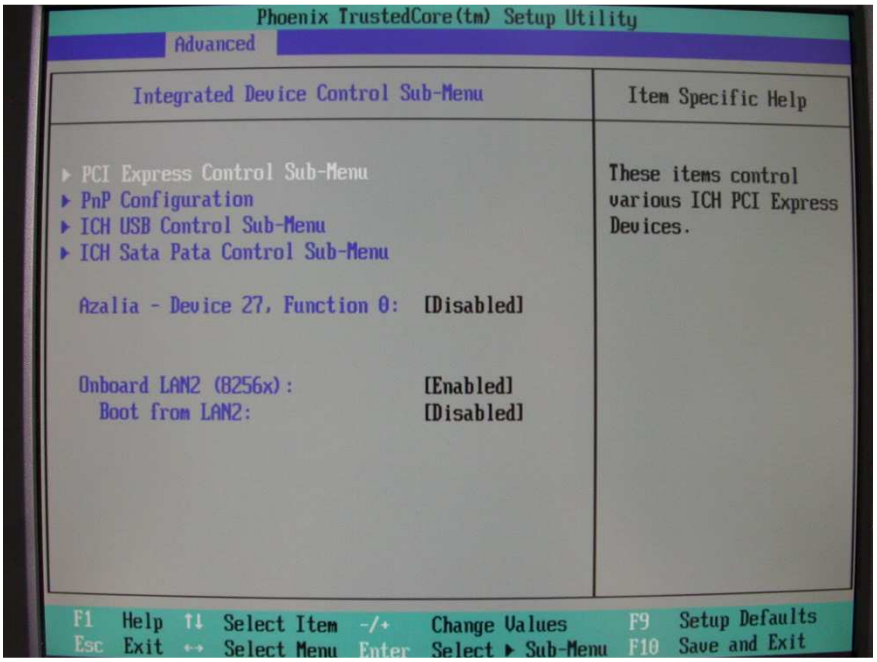



For the use of the three different display types, choose the correct combination here.
The VGA output is referred to as ‘CRT’, the DVI output is referred to as ‘EFP’ and the optional, build-in touchpanel is referred to as ‘LFP’. Choose a combination of up to two active hardware outputs.

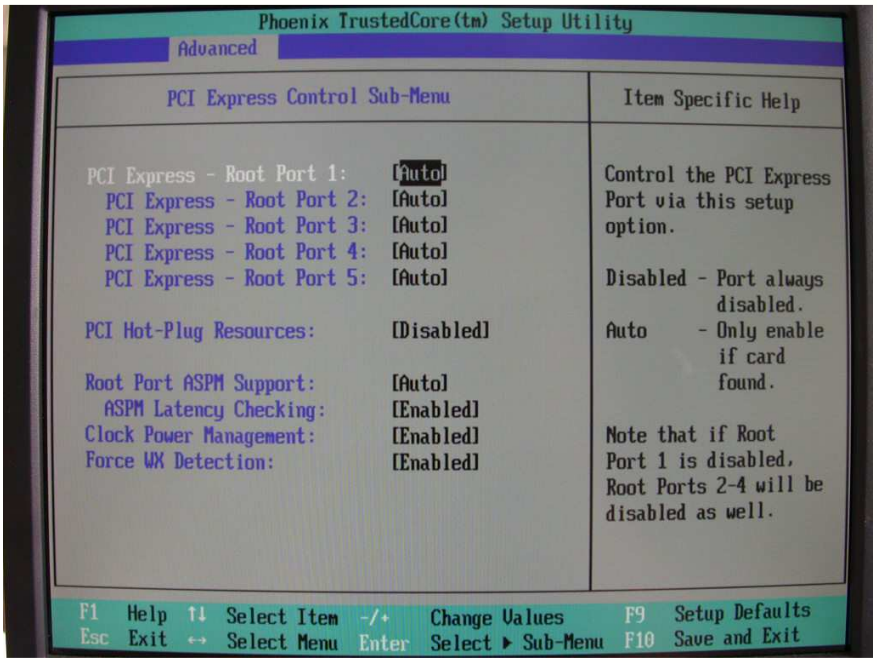


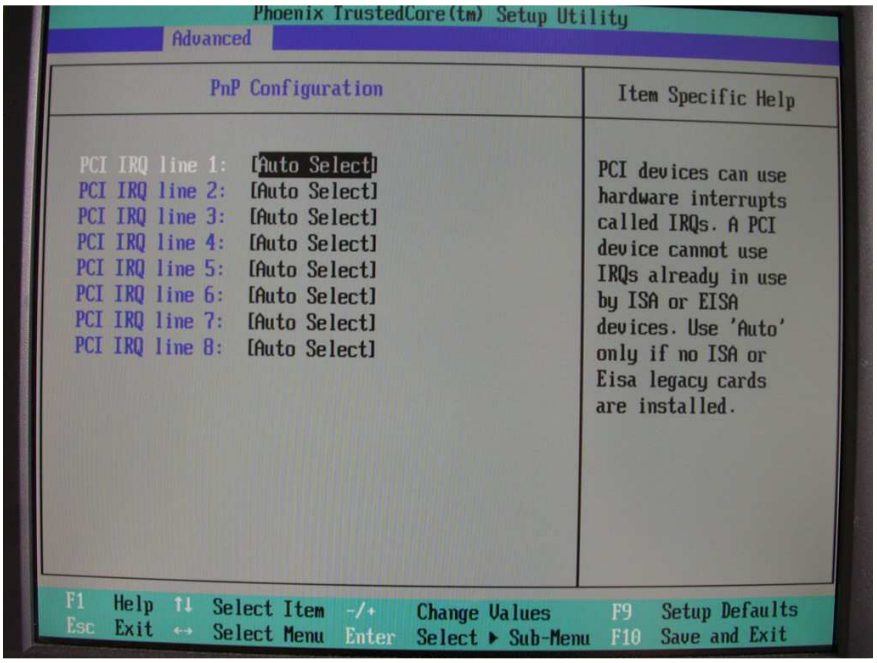



## Integrated devices

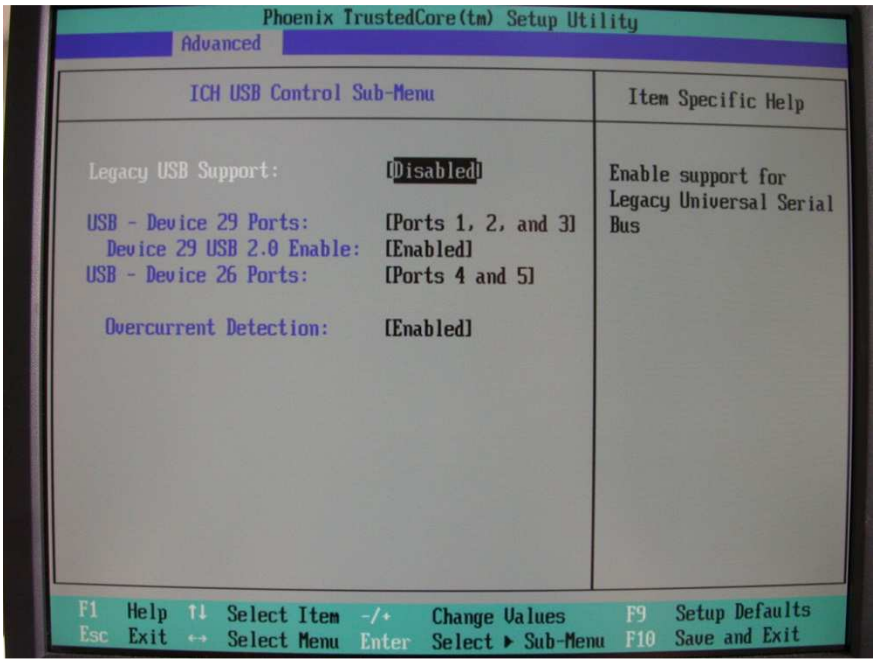



Here, all additional devices are configured. LAN 2, which is the default Ethernet port of the system, is activated here.

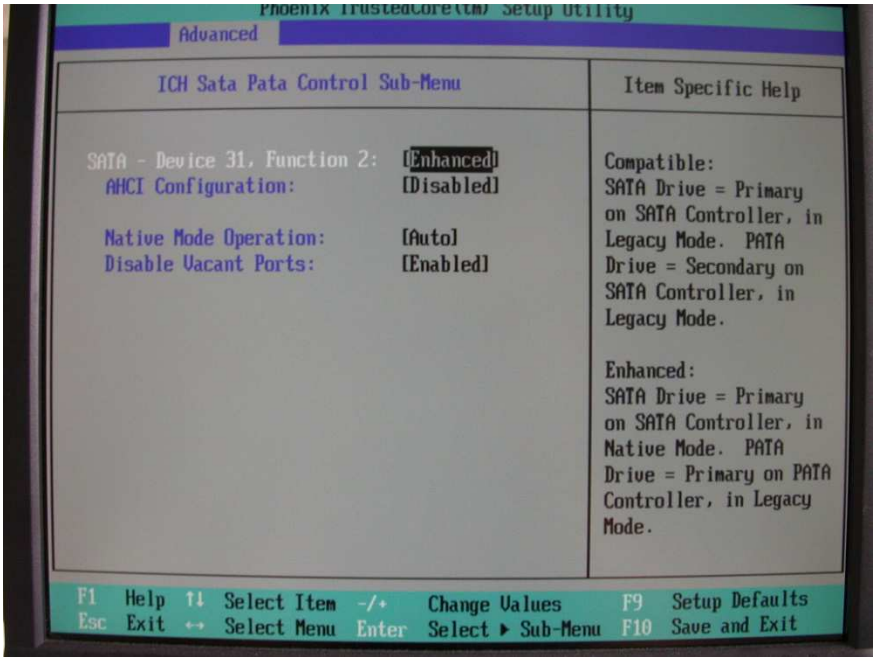

Phoenix TrustedCore(tm) Setup Utility
Advanced
PCI Express Control Sub-Menu
Item Specific Help
PCI Express - Root Port 1: [Auto]
PCI Express - Root Port 2: [Auto]
PCI Express - Root Port 3: [Auto]
PCI Express - Root Port 4: [Auto]
PCI Express - Root Port 5: [Auto]
PCI Hot-Plug Resources: [Disabled]
Root Port ASPM Support: [Auto]
ASPM Latency Checking: [Enabled]
Clock Power Management: [Enabled]
Force WX Detection: [Enabled]
Control the PCI Express Port via this setup option.
Disabled - Port always disabled.
Auto - Only enable if card found.
Note that if Root Port 1 is disabled, Root Ports 2-4 will be disabled as well.
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults
Esc Exit ↔ Select Menu Enter Select ▸ Sub-Menu F10 Save and Exit

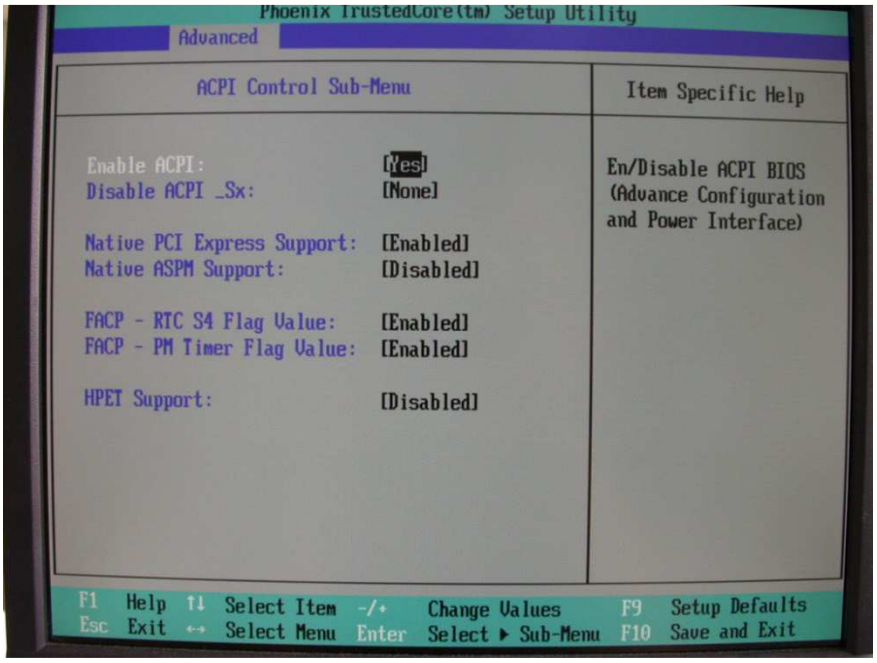

Phoenix TrustedCore(tm) Setup Utility
Advanced
PnP Configuration
Item Specific Help
PCI IRQ line 1: [Auto Select]
PCI IRQ line 2: [Auto Select]
PCI IRQ line 3: [Auto Select]
PCI IRQ line 4: [Auto Select]
PCI IRQ line 5: [Auto Select]
PCI IRQ line 6: [Auto Select]
PCI IRQ line 7: [Auto Select]
PCI IRQ line 8: [Auto Select]
PCI devices can use hardware interrupts called IRQs. A PCI device cannot use IRQs already in use by ISA or EISA devices. Use 'Auto' only if no ISA or Eisa legacy cards are installed.
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults
Esc Exit ↔ Select Menu Enter Select ▸ Sub-Menu F10 Save and Exit

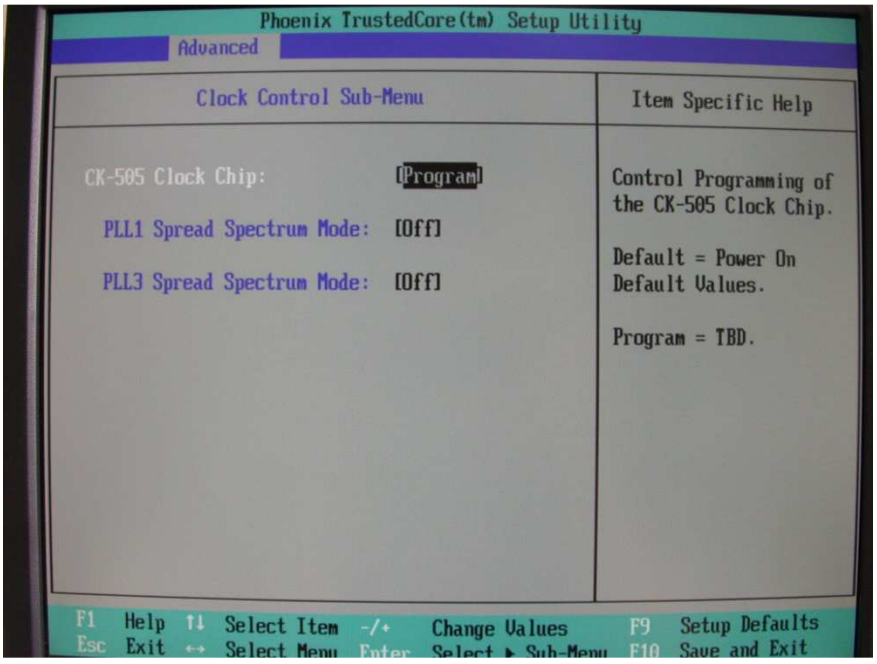
## USB support

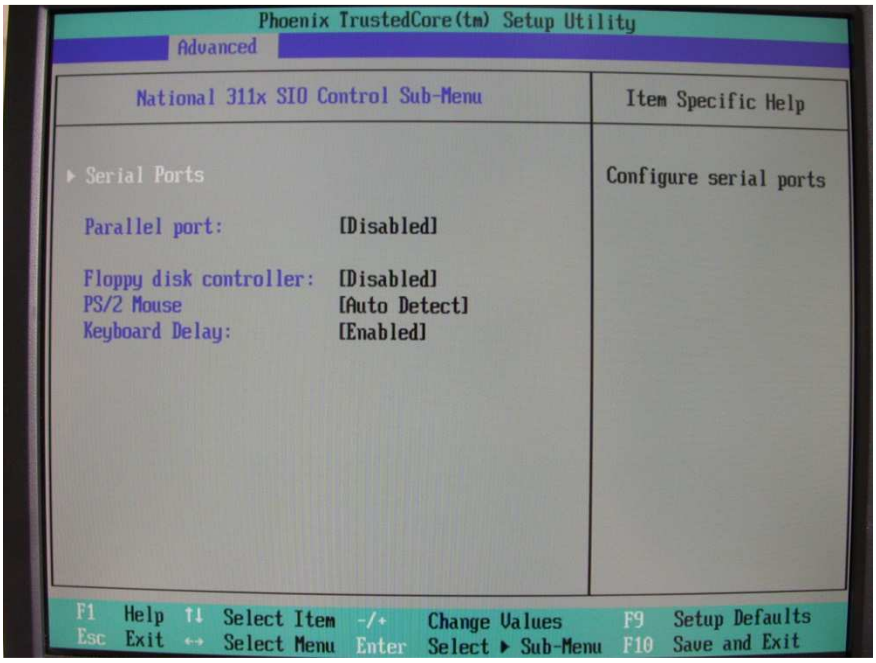


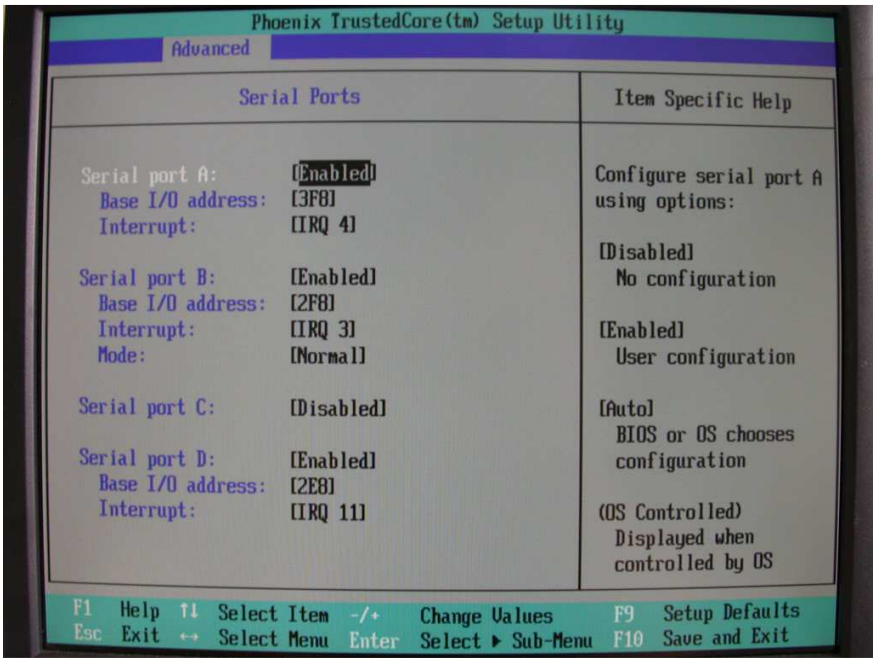

The internal USB root hub is configured here. Legacy USB support is recommended to remain disabled, but the feature has to be enabled whenever the system is supposed to boot from a USB key.

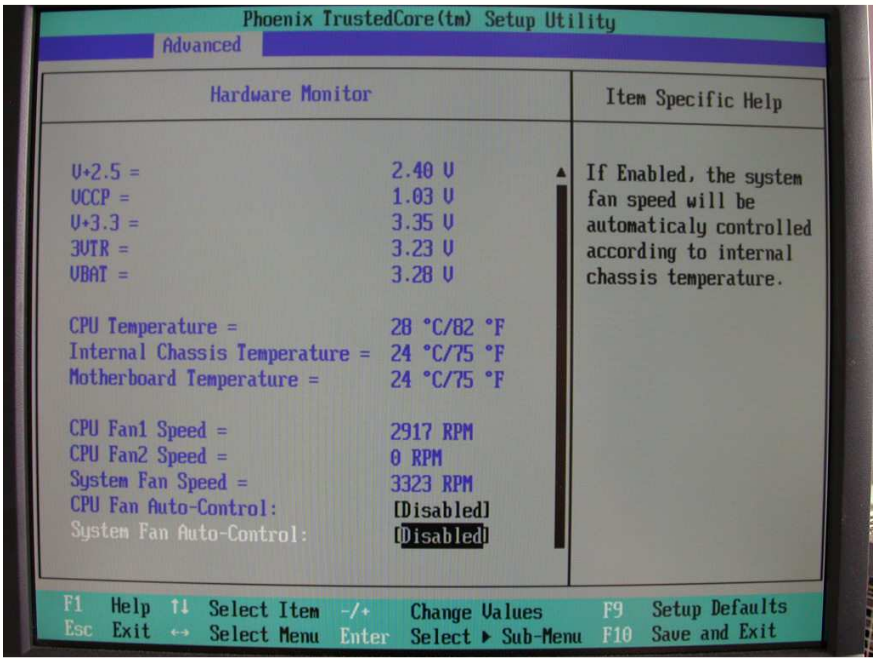



Phoenix TrustedCore(tm) Setup Utility
Advanced
ACPI Control Sub-Menu
Item Specific Help
Enable ACPI: [Yes]
Disable ACPI _Sx: [None]
Native PCI Express Support: [Enabled]
Native ASPM Support: [Disabled]
FACP - RTC S4 Flag Value: [Enabled]
FACP - PM Timer Flag Value: [Enabled]
HPET Support: [Disabled]
En/Disable ACPI BIOS (Advance Configuration and Power Interface)
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults
Esc Exit ↔ Select Menu Enter Select ▸ Sub-Menu F10 Save and Exit


Phoenix TrustedCore(tm) Setup Utility
Advanced
Clock Control Sub-Menu
Item Specific Help
CK-505 Clock Chip: [Program]
PLL1 Spread Spectrum Mode: [Off]
PLL3 Spread Spectrum Mode: [Off]
Control Programming of the CK-505 Clock Chip.
Default = Power On Default Values.
Program = TBD.
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults
Esc Exit ↔ Select Menu Enter Select ▸ Sub-Menu F10 Save and Exit

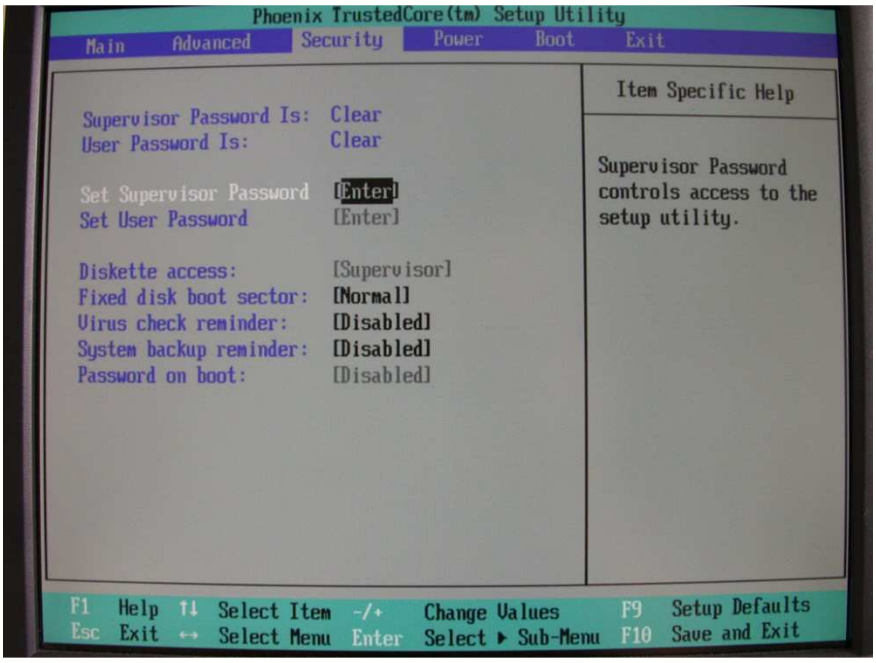

Phoenix TrustedCore(tm) Setup Utility
Advanced
National 311x SIO Control Sub-Menu
Item Specific Help
Serial Ports
Configure serial ports
Parallel port: [Disabled]
Floppy disk controller: [Disabled]
PS/2 Mouse [Auto Detect]
Keyboard Delay: [Enabled]
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults
Esc Exit ↔ Select Menu Enter Select ▸ Sub-Menu F10 Save and Exit

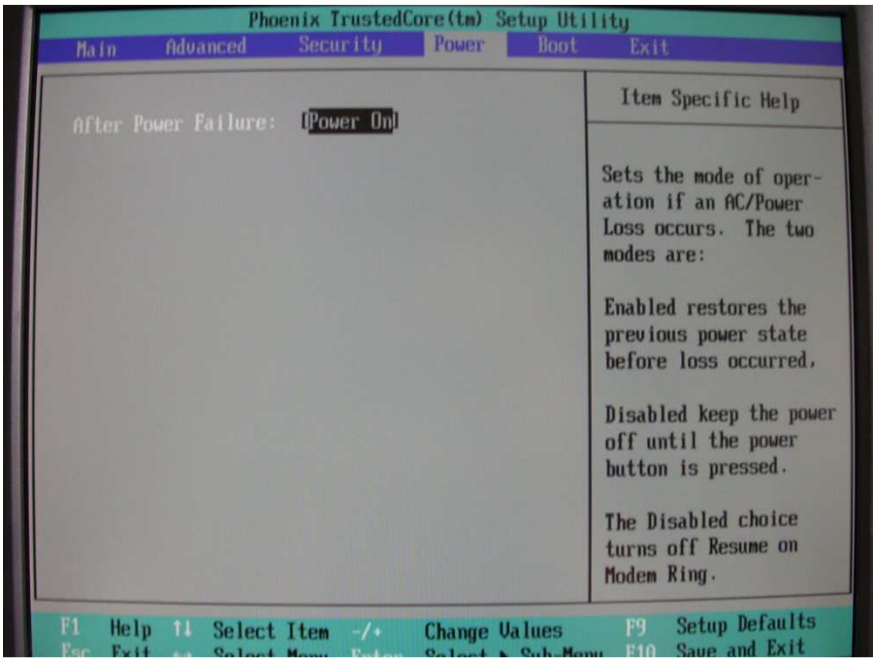

Phoenix TrustedCore(tm) Setup Utility
Advanced
Serial Ports
Item Specific Help
Serial port A: [Enabled]
Base I/O address: [3F8]
Interrupt: [IRQ 4]
Serial port B: [Enabled]
Base I/O address: [2F8]
Interrupt: [IRQ 3]
Mode: [Normal]
Serial port C: [Disabled]
Serial port D: [Enabled]
Base I/O address: [2E8]
Interrupt: [IRQ 11]
Configure serial port A using options:
[Disabled] No configuration
[Enabled] User configuration
[Auto] BIOS or OS chooses configuration
(OS Controlled) Displayed when controlled by OS
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults
Esc Exit ↔ Select Menu Enter Select ▸ Sub-Menu F10 Save and Exit

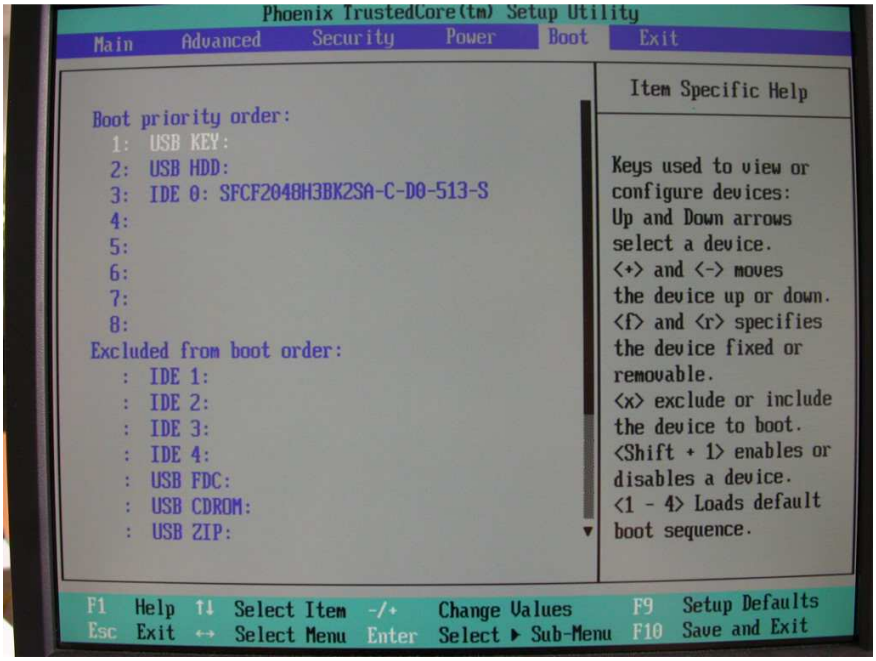



The automatic fan regulation may be enabled here. If this is done, the user may configure temperature limits of the regulation, e.g. a limit below which fans operate at 33% of their speeds and a band in which the fan speed linearly increases up to the maximum.

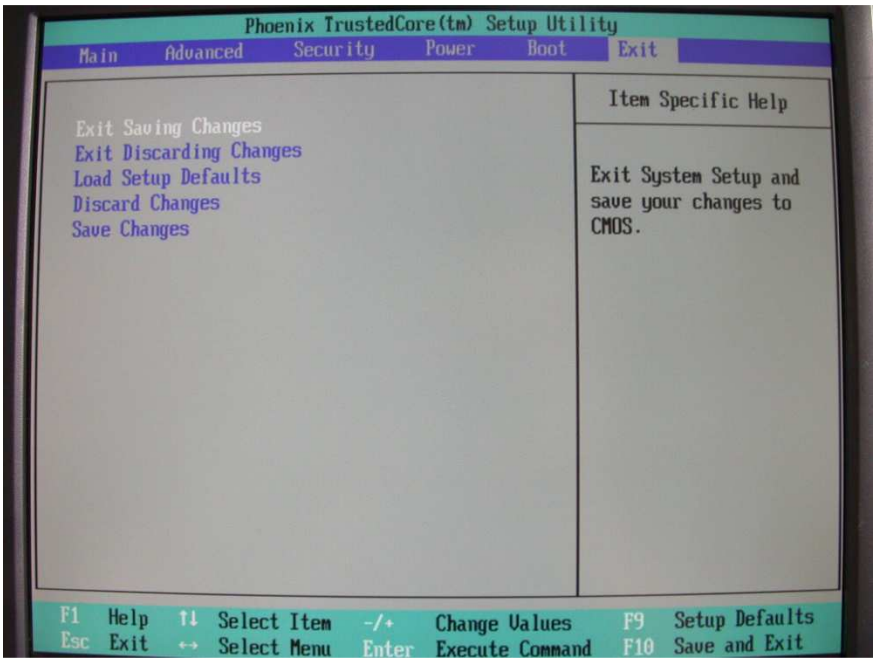
## Additional Areas




Phoenix TrustedCore(tm) Setup Utility
Main Advanced Security Power Boot Exit
After Power Failure: [Power On]
Item Specific Help
Sets the mode of operation if an AC/Power Loss occurs. The two modes are:
Enabled restores the previous power state before loss occurred.
Disabled keep the power off until the power button is pressed.
The Disabled choice turns off Resume on Modem Ring.
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults
Esc Exit ↔ Select Menu Enter Select ▸ Sub-Menu F10 Save and Exit


Phoenix TrustedCore(tm) Setup Utility
Main Advanced Security Power Boot Exit
Boot priority order:
1: USB KEY:
2: USB HDD:
3: IDE 0: SFCF2048H3BK2SA-C-D0-513-S
4:
5:
6:
7:
8:
Excluded from boot order:
: IDE 1:
: IDE 2:
: IDE 3:
: IDE 4:
: USB FDC:
: USB CDROM:
: USB ZIP:
Item Specific Help
Keys used to view or configure devices:
Up and Down arrows select a device.
<+> and <-> moves the device up or down.
<f> and <r> specifies the device fixed or removable.
<x> exclude or include the device to boot.
<Shift + 1> enables or disables a device.
<1 - 4> Loads default boot sequence.
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults
Esc Exit ↔ Select Menu Enter Select ▸ Sub-Menu F10 Save and Exit

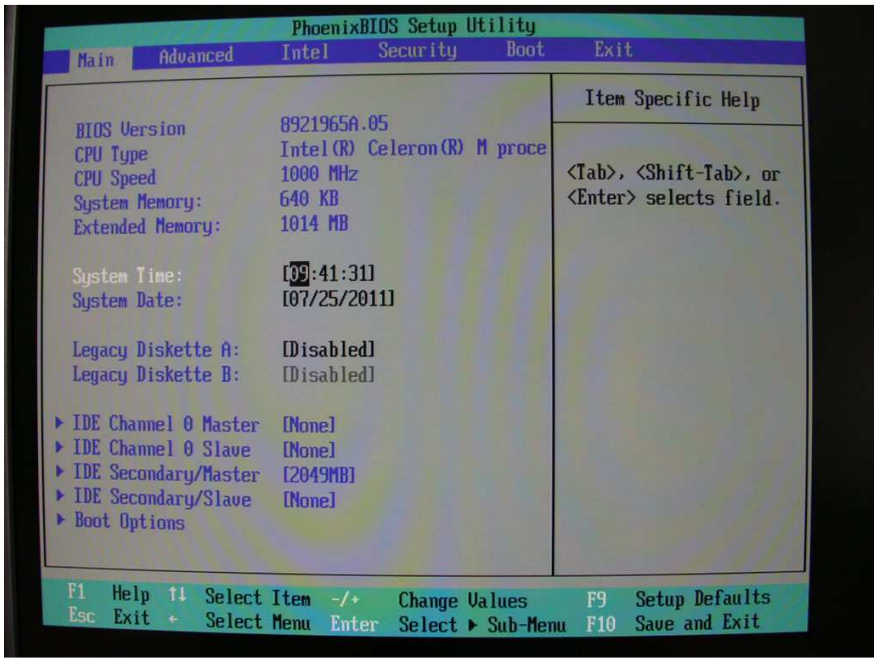
## Area ‘Exit’

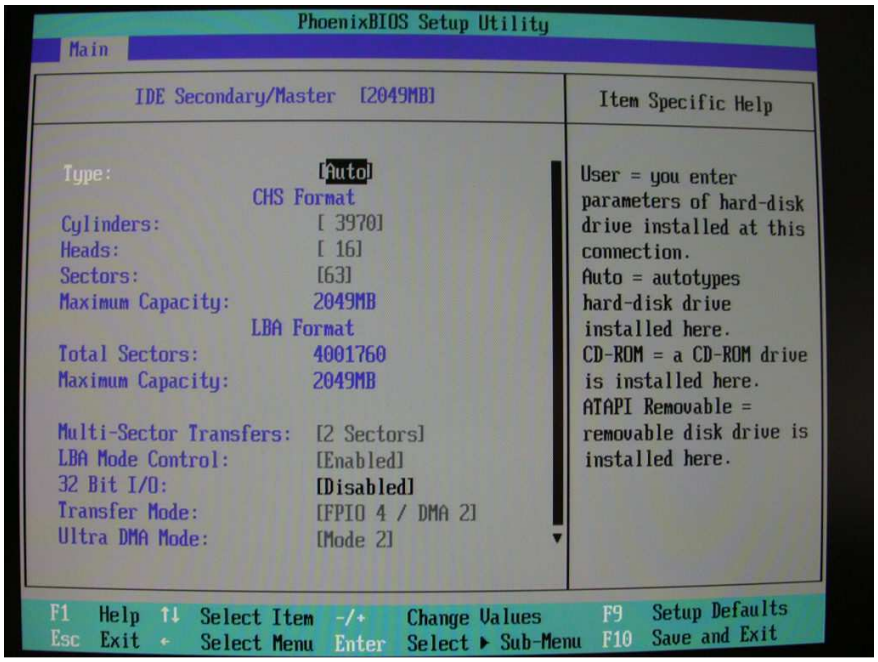


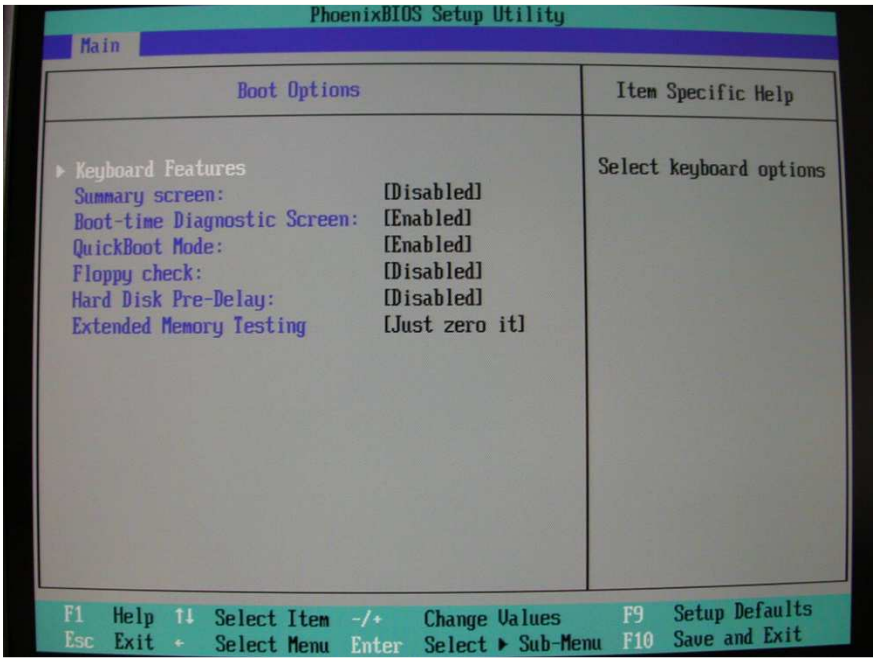

After any changes made in the BIOS, remember to quit the exit dialog using ‘Exit saving changes’. In contrast, if you are not sure, what you have changed or what the changes may affect, be sure to select ‘Exit discarding changes’!

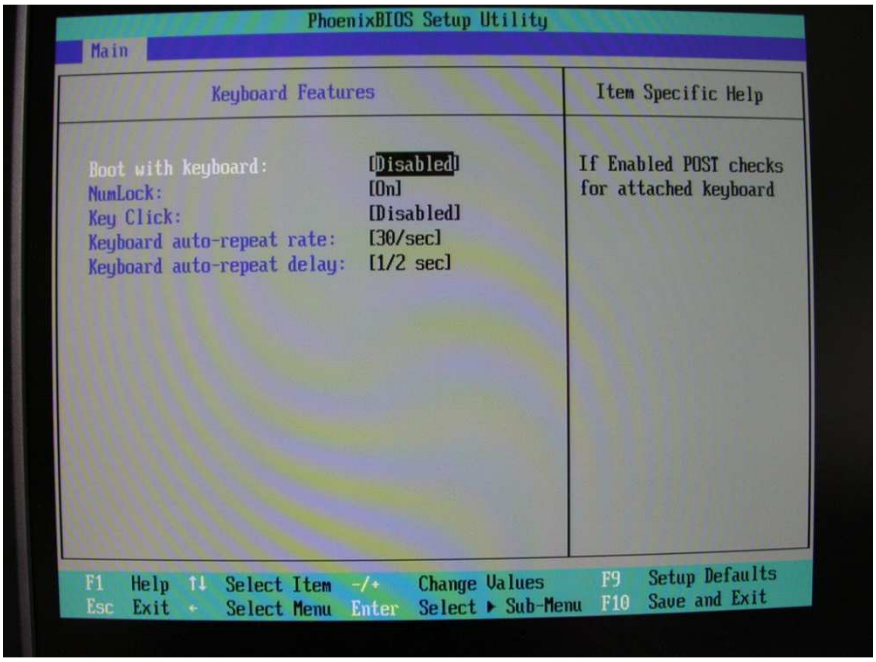
# BIOS settings for IPC C6 Econ

## Area ‘Main’

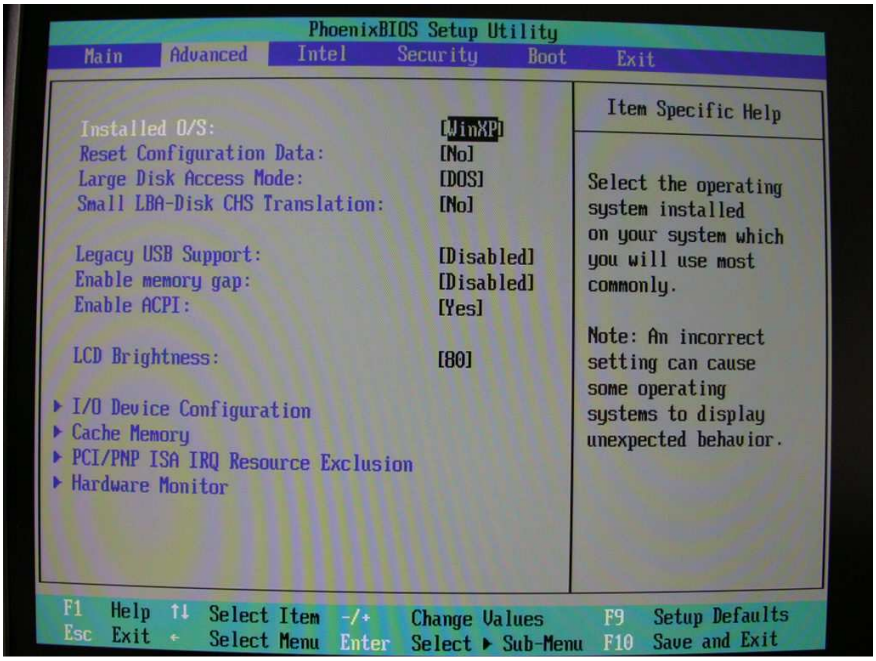


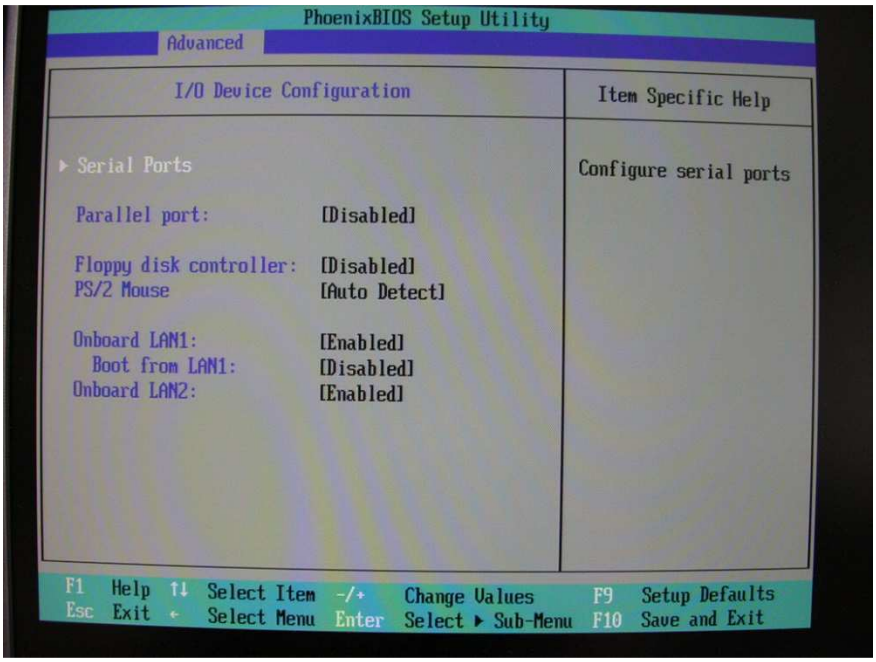

PhoenixBIOS Setup Utility
Main
Boot Options
Item Specific Help
Keyboard Features
Summary screen: [Disabled]
Boot-time Diagnostic Screen: [Enabled]
QuickBoot Mode: [Enabled]
Floppy check: [Disabled]
Hard Disk Pre-Delay: [Disabled]
Extended Memory Testing [Just zero it]
Select keyboard options
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults
Esc Exit ← Select Menu Enter Select ▶ Sub-Menu F10 Save and Exit

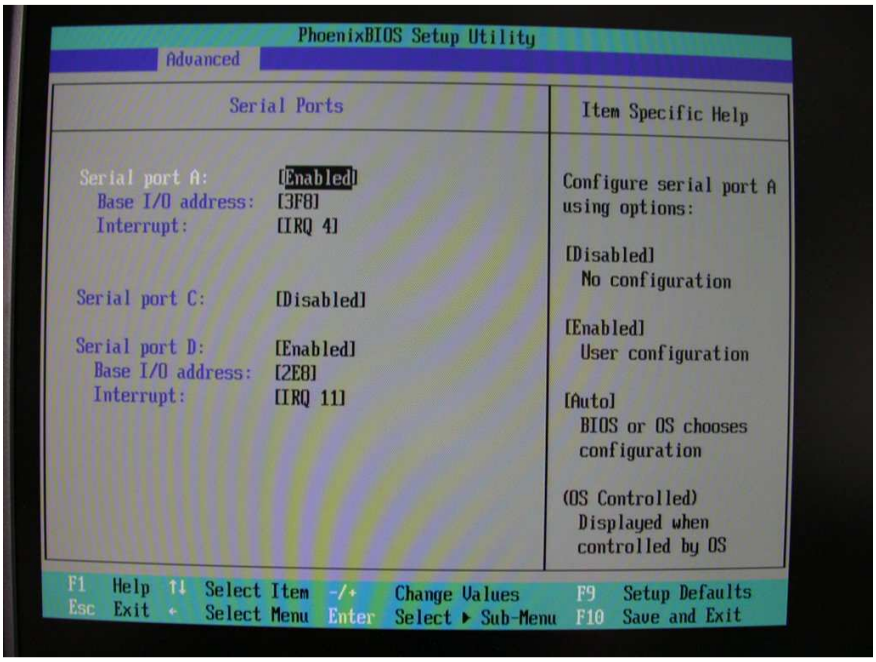

PhoenixBIOS Setup Utility
Main
Keyboard Features
Item Specific Help
Boot with keyboard: [Disabled]
NumLock: [On]
Key Click: [Disabled]
Keyboard auto-repeat rate: [30/sec]
Keyboard auto-repeat delay: [1/2 sec]
If Enabled POST checks for attached keyboard
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults
Esc Exit ← Select Menu Enter Select ▶ Sub-Menu F10 Save and Exit

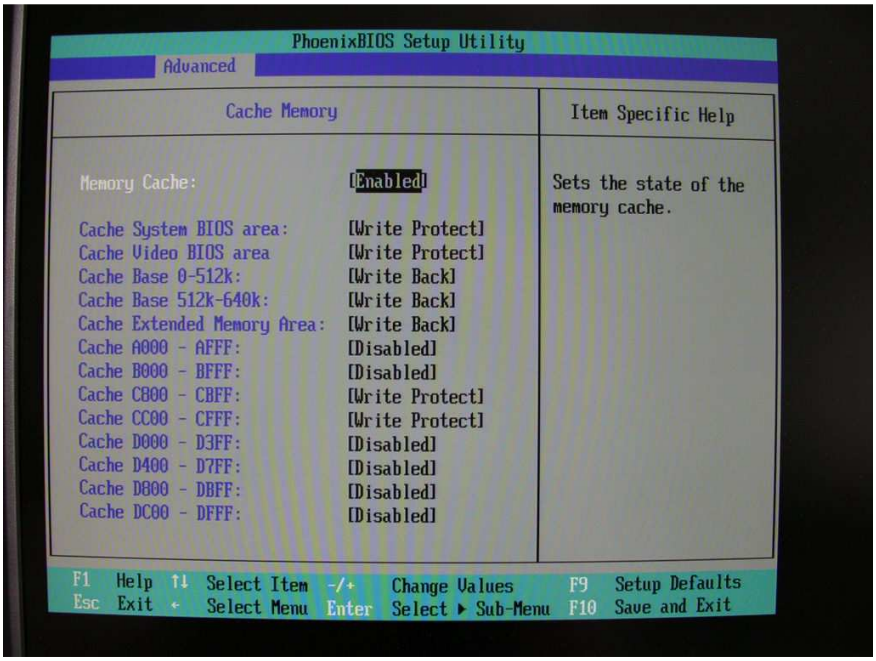
## Area ‘Advanced’

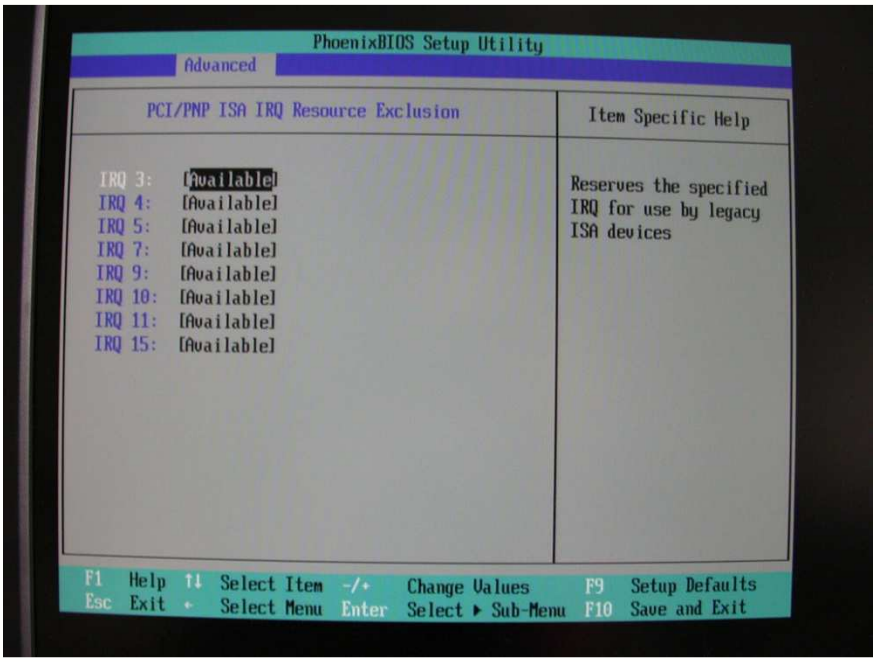


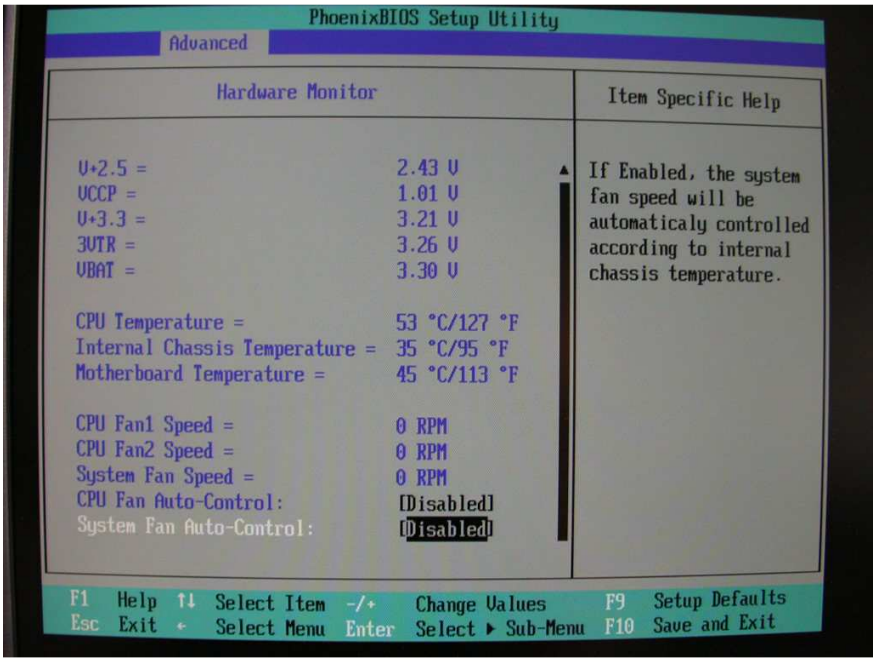

Legacy USB support is recommended to remain disabled, but the feature has to be enabled whenever the system is supposed to boot from a USB key.




PhoenixBIOS Setup Utility
Advanced
Serial Ports
Item Specific Help
Serial port A: [Enabled]
Base I/O address: [3F8]
Interrupt: [IRQ 4]
Serial port C: [Disabled]
Serial port D: [Enabled]
Base I/O address: [2E8]
Interrupt: [IRQ 11]
Configure serial port A using options:
[Disabled] No configuration
[Enabled] User configuration
[Auto] BIOS or OS chooses configuration
(OS Controlled) Displayed when controlled by OS
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults
Esc Exit ← Select Menu Enter Select ▸ Sub-Menu F10 Save and Exit

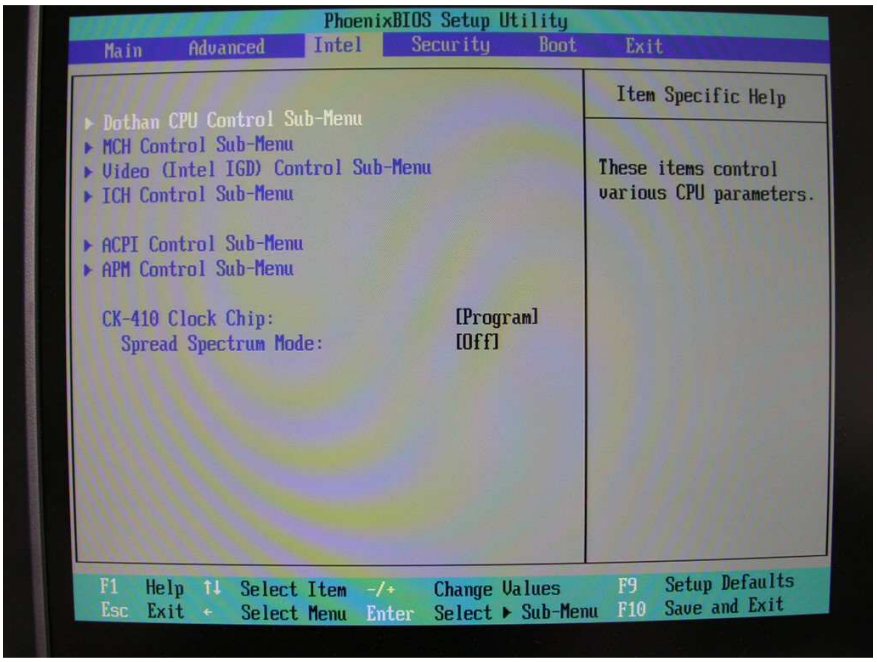

PhoenixBIOS Setup Utility
Advanced
Cache Memory
Item Specific Help
Memory Cache: [Enabled]
Cache System BIOS area: [Write Protect]
Cache Video BIOS area [Write Protect]
Cache Base 0-512k: [Write Back]
Cache Base 512k-640k: [Write Back]
Cache Extended Memory Area: [Write Back]
Cache A000 - AFFF: [Disabled]
Cache B000 - BFFF: [Disabled]
Cache C800 - CBFF: [Write Protect]
Cache CC00 - CFFF: [Write Protect]
Cache D000 - D3FF: [Disabled]
Cache D400 - D7FF: [Disabled]
Cache D800 - DBFF: [Disabled]
Cache DC00 - DFFF: [Disabled]
Sets the state of the memory cache.
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults
Esc Exit ← Select Menu Enter Select ▸ Sub-Menu F10 Save and Exit



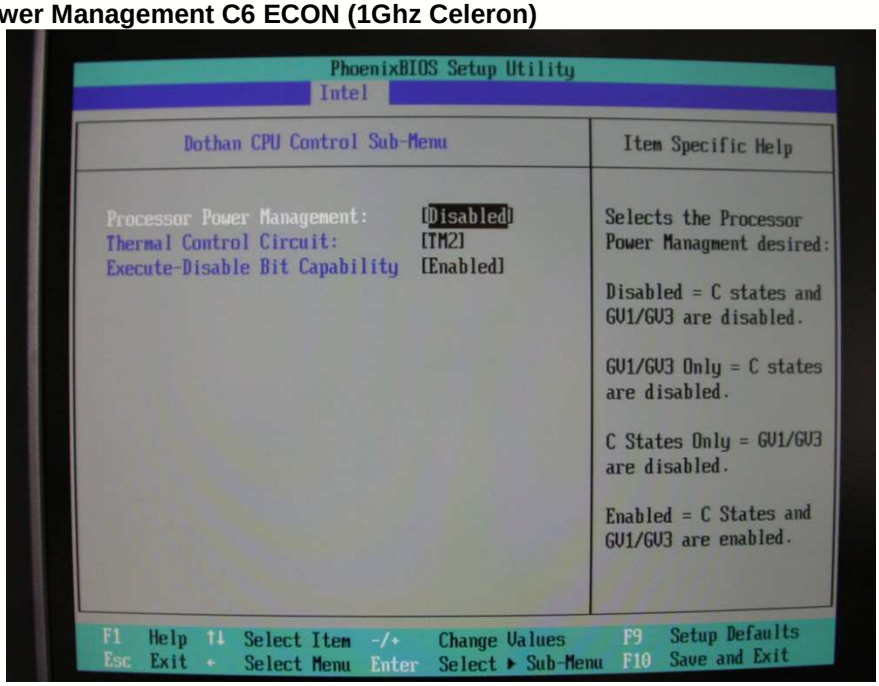




As the C6 Econ system is generally fanless, changing these setting will not have any effect at all.

## Dothan CPU Control Sub-Menu

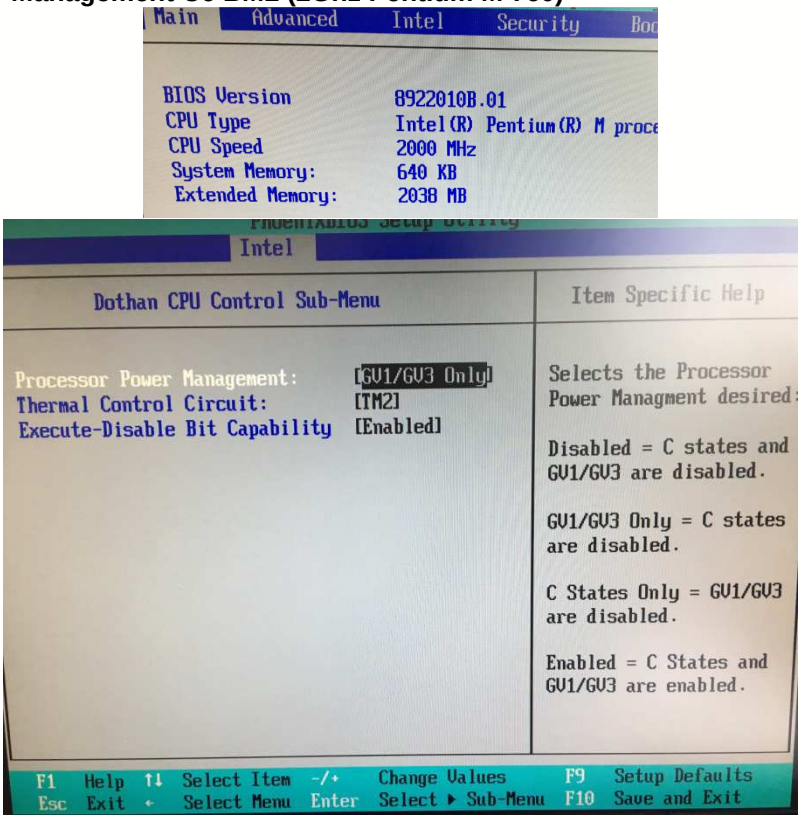


**Processor Power Management C6 ECON (1Ghz Celeron)**

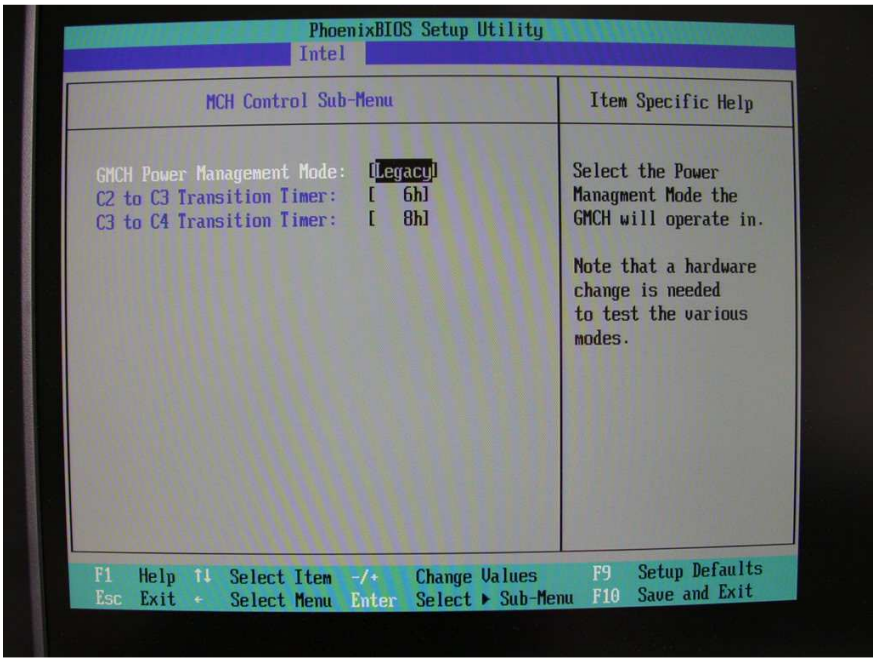



It is essential, that the CPU's power management remains disabled.

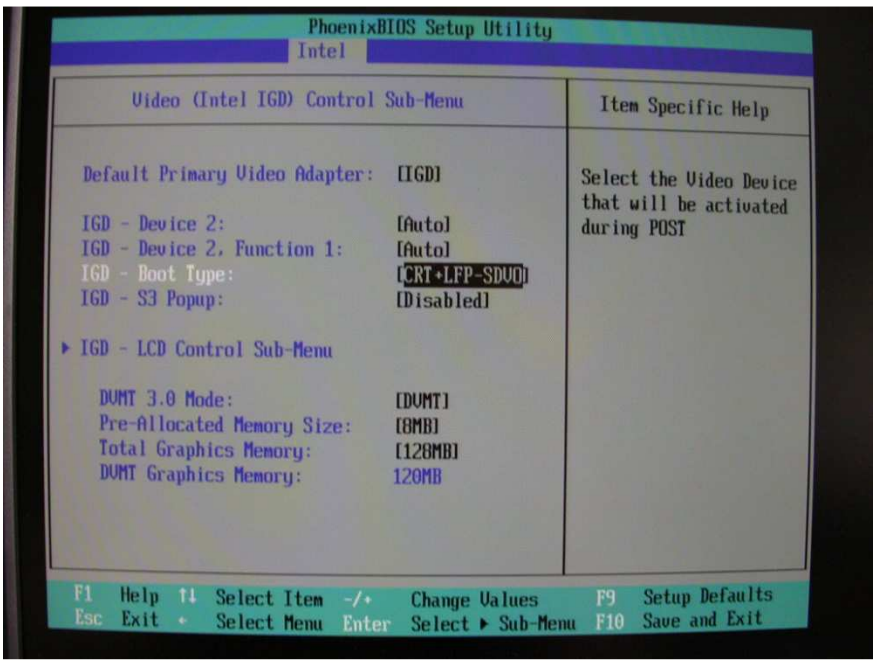
**Processor Power Management C6 BM2 (2Ghz Pentium M 760)**



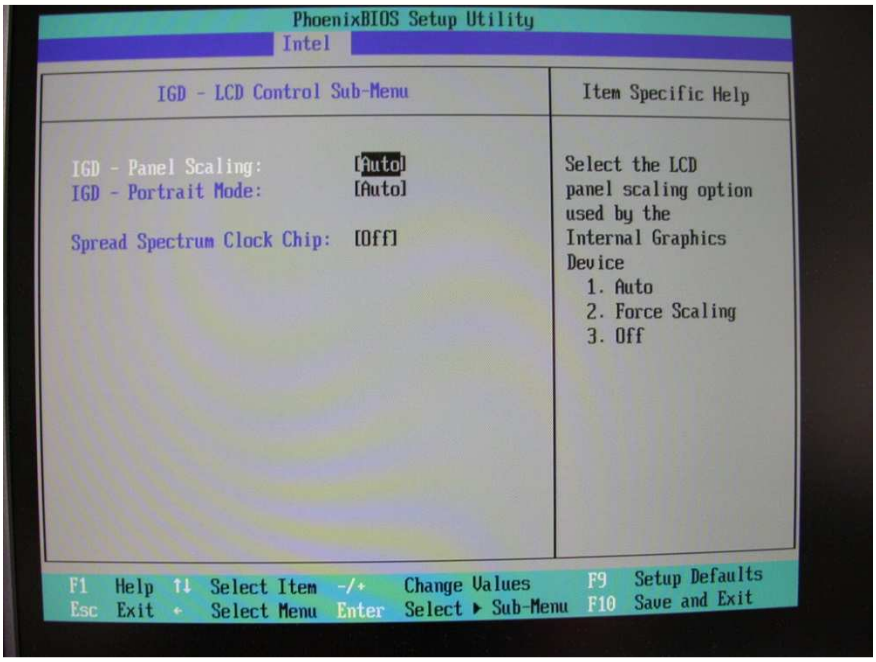
It is essential, that the CPU's power management is set to "GV1/GV3 Only"
For the device C6 BM2 (2Ghz Pentium M 760).

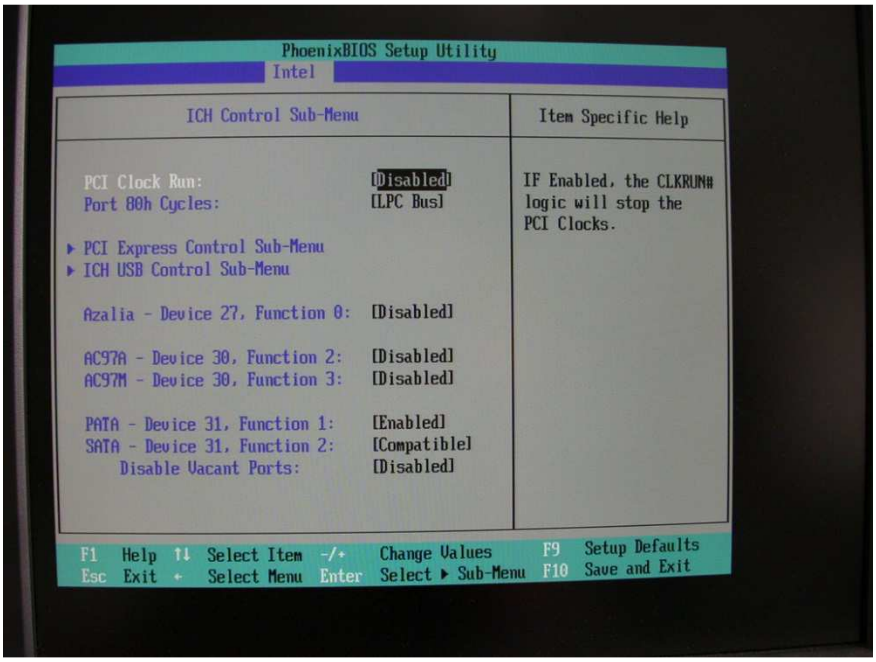


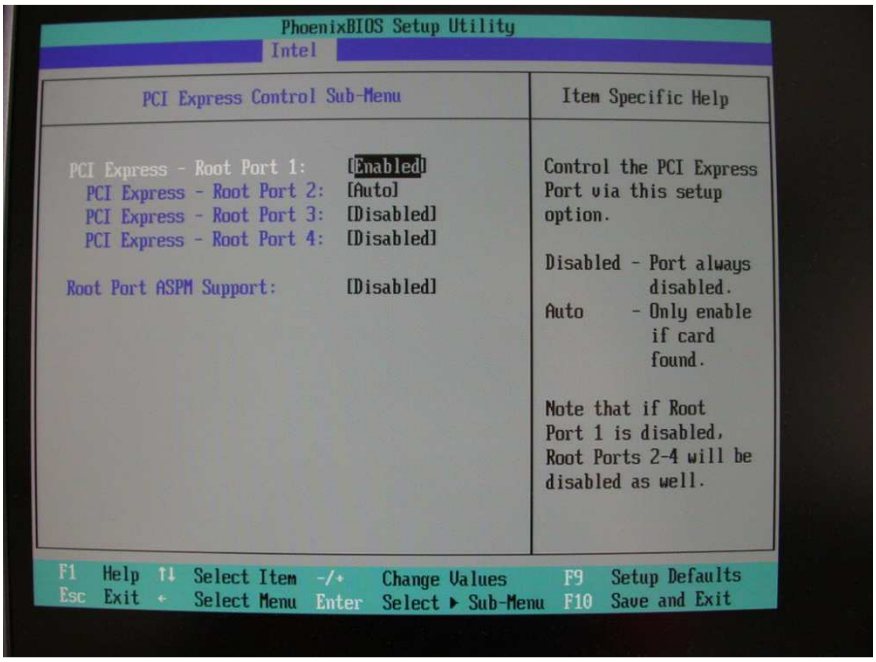

## Video settings

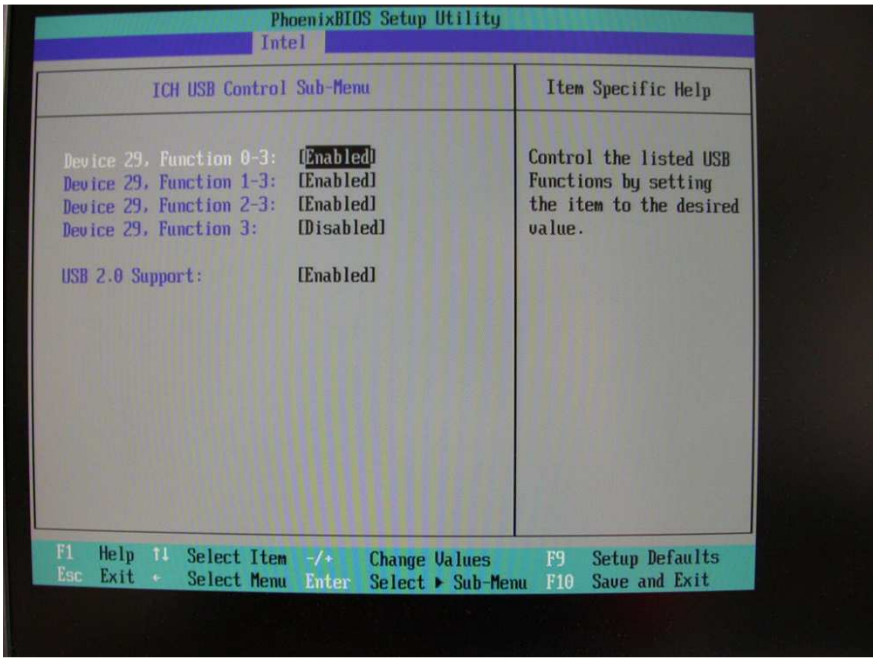


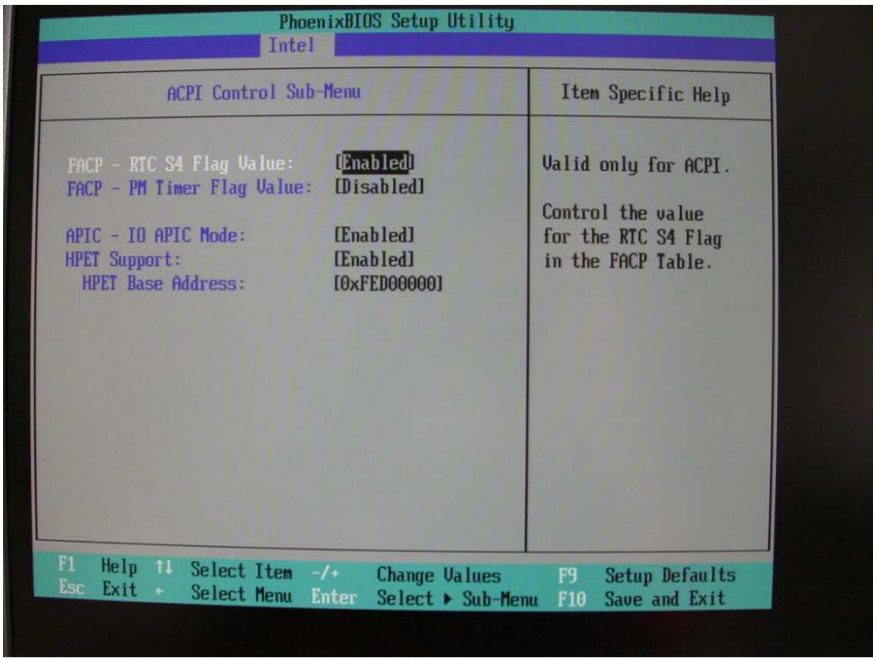

The only valid combination for a C6 ECON is here 'CRT + LFP-SDVO':
The VGA output is referred to as 'CRT', and the optional, build-in touchpanel is referred to as 'LFP'

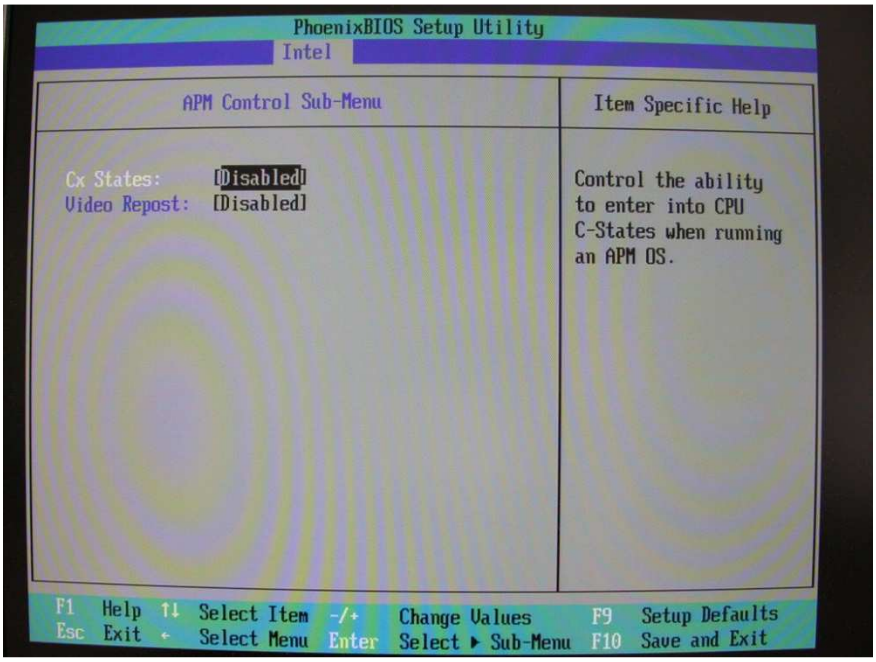

PhoenixBIOS Setup Utility
Intel
IGD - LCD Control Sub-Menu
Item Specific Help
IGD - Panel Scaling: [Auto]
IGD - Portrait Mode: [Auto]
Spread Spectrum Clock Chip: [Off]
Select the LCD panel scaling option used by the Internal Graphics Device
1. Auto
2. Force Scaling
3. Off
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults
Esc Exit ← Select Menu Enter Select ▸ Sub-Menu F10 Save and Exit


PhoenixBIOS Setup Utility
Intel
ICH Control Sub-Menu
Item Specific Help
PCI Clock Run: [Disabled]
Port 80h Cycles: [LPC Bus]
▸ PCI Express Control Sub-Menu
▸ ICH USB Control Sub-Menu
Azalia - Device 27, Function 0: [Disabled]
AC97A - Device 30, Function 2: [Disabled]
AC97M - Device 30, Function 3: [Disabled]
PATA - Device 31, Function 1: [Enabled]
SATA - Device 31, Function 2: [Compatible]
Disable Vacant Ports: [Disabled]
IF Enabled, the CLKRUN# logic will stop the PCI Clocks.
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults
Esc Exit ← Select Menu Enter Select ▸ Sub-Menu F10 Save and Exit

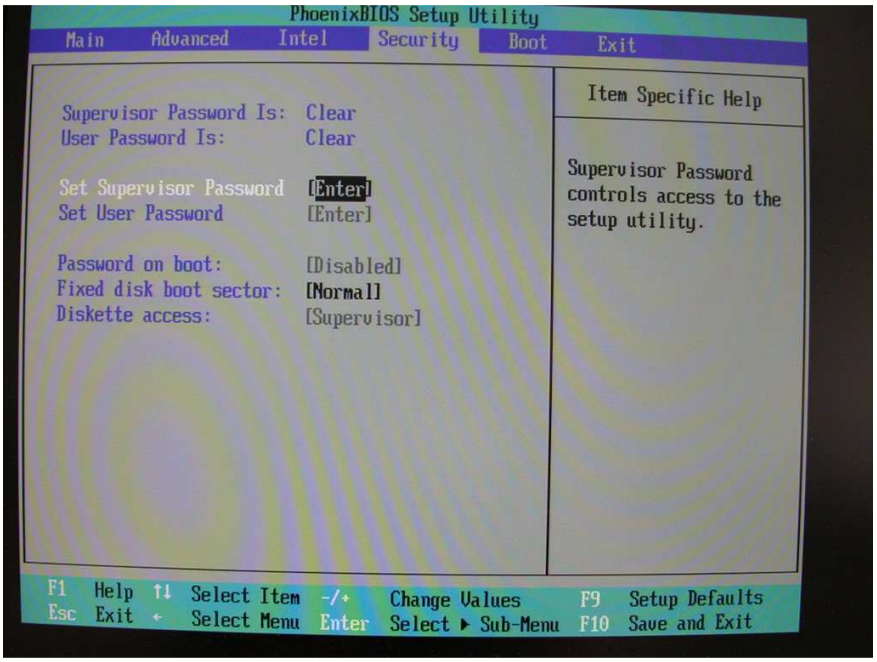

PhoenixBIOS Setup Utility
Intel
PCI Express Control Sub-Menu
Item Specific Help
PCI Express - Root Port 1: [Enabled]
PCI Express - Root Port 2: [Auto]
PCI Express - Root Port 3: [Disabled]
PCI Express - Root Port 4: [Disabled]
Root Port ASPM Support: [Disabled]
Control the PCI Express Port via this setup option.
Disabled - Port always disabled.
Auto - Only enable if card found.
Note that if Root Port 1 is disabled, Root Ports 2-4 will be disabled as well.
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults
Esc Exit ← Select Menu Enter Select ▸ Sub-Menu F10 Save and Exit

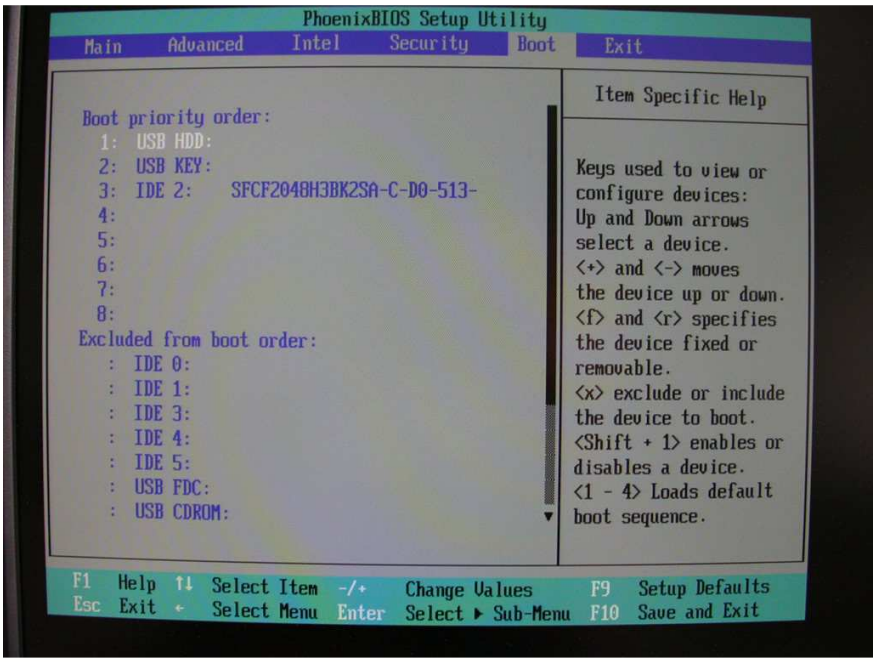

PhoenixBIOS Setup Utility
Intel
ICH USB Control Sub-Menu
Item Specific Help
Device 29, Function 0-3: [Enabled]
Device 29, Function 1-3: [Enabled]
Device 29, Function 2-3: [Enabled]
Device 29, Function 3: [Disabled]
USB 2.0 Support: [Enabled]
Control the listed USB Functions by setting the item to the desired value.
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults
Esc Exit ← Select Menu Enter Select ▸ Sub-Menu F10 Save and Exit


PhoenixBIOS Setup Utility
Intel
ACPI Control Sub-Menu
Item Specific Help
FACP - RTC S4 Flag Value: [Enabled]
FACP - PM Timer Flag Value: [Disabled]
APIC - IO APIC Mode: [Enabled]
HPET Support: [Enabled]
HPET Base Address: [0xFED00000]
Valid only for ACPI.
Control the value for the RTC S4 Flag in the FACP Table.
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults
Esc Exit ← Select Menu Enter Select ▸ Sub-Menu F10 Save and Exit

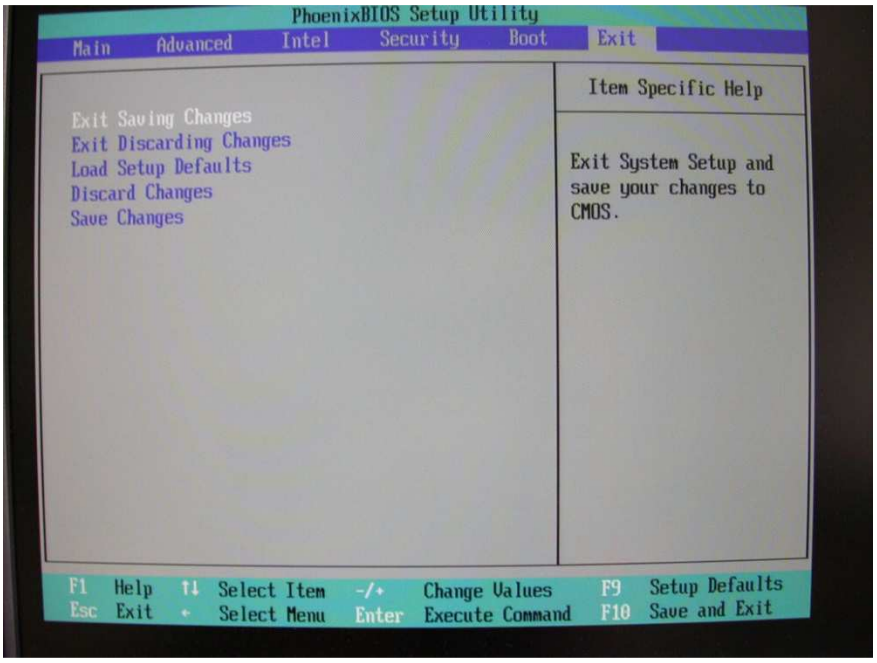

PhoenixBIOS Setup Utility
Intel
APM Control Sub-Menu
Item Specific Help
Cx States: [Disabled]
Video Repost: [Disabled]
Control the ability to enter into CPU C-States when running an APM OS.
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults
Esc Exit ← Select Menu Enter Select ▸ Sub-Menu F10 Save and Exit

## Additional areas



## Area ‘Exit’




After any changes made in the BIOS, remember to quit the exit dialog using ‘Exit saving changes’. In contrast, if you are not sure, what you have changed or what the changes may affect, be sure to select ‘Exit discarding changes’!

## Disclaimer

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Inspection of our units in view of their suitability for the intended use must be done generally by the user. Inspections are particular necessary, if changes are executed, which serve for the further development or adaption of our products to the applications (hardware, software or download lists). Inspections must be repeated completely, even if only parts of hardware, software or download lists are modified.

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