



Magnum N270
3.5 inch MiniBoard
User Guide

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Regulatory Statements

CE

This product meets the essential protection requirements of the European EMC Directive (89/336/EEC) and its amending Directives, and the Low Voltage Directive 73/23/EEC, and is eligible to bear the CE mark.

Warning

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

FCC

NOTE:

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

WARNING:

Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

Safety Warning for North America

If the power lead (cord) is not supplied with the computer, select a power lead according to your local electrical regulations. In the USA use a 'UL listed' lead. In Canada use a CSA approved or 'cUL listed' lead.

Si le cordon secteur n'est pas livré avec l'ordinateur, utiliser un cordon secteur en accord avec votre code électrique nationale. En l'Etat Unis utiliser un cordon secteur 'UL listed'. En Canada utiliser un cordon secteur certifié CSA, ou 'cUL listed'.

Manual Organisation

This manual describes in detail the Magnum N270 3.5 inch Miniboard.

We have tried to include as much information as possible but we have not duplicated information that is provided in the standard IBM Technical References, unless it proved to be necessary to aid in the understanding of the product.

The manual is sectioned as follows:

- Introduction;
- Overview, listing the unit's features and specification;
- Installation, including what software to install
- Layout, showing where the various connectors are located, and their pin-out details;
- How to upgrade the system;
- Bios Setup
- Maintenance details

We strongly recommend that you study this manual carefully before attempting to interface with the Magnum N270 or change the standard configurations. Whilst all the necessary information is available in this manual we would recommend that unless you are confident, you contact your supplier for guidance. ***IT IS PARTICULARLY IMPORTANT THAT YOU READ THE SECTION 'PRECAUTIONS' BEFORE HANDLING ANY COMPONENTS INSIDE THE UNIT.***

If you have any suggestions or find any errors concerning this manual and want to inform us of these, please contact our Technical Services department with the relevant details.

Introduction



The MAGNUM N270 is a powerful Intel ATOM based motherboard ideal for multimedia applications. Based on the Intel® Graphics Media Accelerator 950, the Magnum N270 provides high performance onboard graphics, 18-bit Dual channel LVDS interface, DVI and HDTV and 5.1 channels AC97 Audio

All this functionality in a 146.5 x 101 mm footprint, makes the Magnum N270 an excellent candidate for rugged and compact applications including digital signage, kiosks/POI, thin clients, digital surveillance and industrial control.

The Magnum N270 3.5 inch single board computer uses the ultra low-power Intel® Atom™ N270 1.6GHz CPU and the latest Intel® 945GSE+ICH7M chipset. It's built on 45nm process technology with Hyper-Threading and Enhanced Intel SpeedStep® support to reduce average system power consumption without compromising on performance.

This 3.5-inch embedded platform comes with advanced connectivity and expansion interfaces including two COM ports (RS-232), four Hi-speed USB 2.0 ports, Gigabit LAN port, Compact Flash™, GPIO and Mini PCI expansion.

Memory options allow up to 2GB of ultra fast 1066/800/667 MHz unbuffered ECC/ non-ECC DDR2 SDRAM. The on-board GMA950 graphics supports Microsoft® DirectX 10.0, dual VGA out (RGB and DVI) and TV-Out.

Specification

CPU:	Intel Atom N270
Chipset:	Intel 945GSE and ICH7M
Graphics Controller:	Integrated GMA950 RGB, DVI and TV-Out Maximum resolution of 2048x1536 for VGA output Picture rotation 0, 90, 180, 270 degrees
BIOS:	8Mb Flash EEPROM with LAN Boot, PnP, ACPI, DMI
Memory:	Dual Channel memory Architecture 1 x 200-pin SODIMM socket supporting up to 2GB of unbuffered non-ECC 1066/800/667 MHz DDR2 memory modules
LAN	Intel 82574L, supporting 10/100/1Gb rates
Audio:	Realtek ALC655
Expansion:	Mini PCI
Storage:	Two SATA II Ports One Compact Flash Type II socket One 44-pin IDE port
External I/O:	Single PS/2 Connector. Keyboard and Mouse via splitter cable DB15 Female VGA connector Digital DVI-D connector 40 Pin LVDS Connector 10 Pin TV-Out One RS-232/422/495 serial port and One RS232 RJ-45 10/100/1Gb Base-T Ethernet LAN connector One 12-pin Digital I/O connector with 8-bit programmable I/O interface 4 x USB 2.0 connectors 5.1 channel surround audio with Line-In, Line-Out and MIC-in
Watchdog:	Programmable timer, 1 second to 255 minutes
System Management:	CPU & System temperature monitoring Voltage monitoring of CPU Core, DRAM, NB, +3.3V, 12.0V
Power:	DC 9-24V input with onboard 4 pin header Typical Power Consumption: 22W based on 320Gb HDD, 1Gb RAM with XP professional running High CPU loading

Environmental Conditions: Operating temperature range +0°C¹ to +60°C in free air
Storage temperature range -20°C to +85°C

Dimensions: 146.5 x 101 mm

General Precautions

Your Single Board Computer is susceptible to damage by electrostatic discharges. In order to avoid damage, you should work at an anti-static bench and observe normal anti-static precautions. Wear an anti-static wrist strap connected to an earth point *before* opening any packaging.

Where a wrist strap is not available, discharge any static charge you may have built-up by touching an earth point. Avoid any further movement that could build up another static charge. Touch an earth point from time to time to avoid further build-up, and remove the items from their anti-static bags only when required

PS/2 Devices

It is important that PS/2 devices (mouse and keyboard) are not connected or disconnected with the unit powered on. Damage or data corruption may occur if this precaution is not observed.

Electro-Static Discharges

If you are going to handle the unit, it is important to realise that the devices on the cards within this unit can be damaged by static electricity, so take anti-static precautions. Bear in mind that the damage caused by static electricity may vary from total destruction to partial damage, which may not be immediately obvious. This could have an effect on the product's reliability and warranty. Ideally you should work at an anti-static bench and wear an approved wrist strap or if that is not possible, touch a suitable ground to discharge any static build up before touching the electronics. This should be repeated if the handling continues for any length of time. If it is necessary to remove a board or electronic assembly, place it into an anti-static bag. This will prevent any static electricity build up damaging the board. Metallised bags are preferred. Do not use black anti-static bags for any item containing a battery because these tend to be conductive and will discharge the battery.

On-Board Battery

The processor board is fitted with a Lithium battery. Great care should be taken with this type of battery. If the battery is mistreated in any way there is a very real possibility of fire, explosion, and personal harm. Under NO circumstances should it be short-circuited, exposed to temperatures in excess of 100 °C or burnt, immersed in water, recharged or disassembled.

Expired batteries remain hazardous and must be disposed of in a safe manner, according to local regulations.

Le panneau de processeur est équipé d'une batterie de lithium. Le grand soin devrait être pris avec ce type de batterie. Si la batterie est mistreated il y a de dans de toute façon un possibility très vrai du feu, d'explosion et de mal personnel. Dans au cunes circonstances il est sous peu circuité, exposé aux températures au dessus de 100 degrés de centigrade ou brûlé, immergé dans l'eau, rechargée ou dissassembled.

Les batteries expirées restent dazaedous et doivent être reejetées d'une façon sûre, selon des règlements locaux.

BIOS & CMOS Memory

Please be aware that with personal computer products, it is possible to create configurations within the CMOS memory that make booting impossible. If this should happen, clear the CMOS settings; (see the description of the Jumper Settings for details).

Electromagnetic Compatibility

This product meets the requirements of the European EMC Directive (2004/108/EC) and is eligible to bear the CE mark.

It has been assessed operating in a Blue Chip Technology Industrial PC. However, because the board can be installed in a variety of computers, certain conditions have to be applied to ensure that the compatibility is maintained. Subject to those conditions, it meets the requirements for an industrial environment (Class A product).

- The board must be installed in a computer system chassis that provides screening suitable for an industrial environment.
- Any recommendations made by the computer system manufacturer/supplier must be complied with regarding earthing and the installation of boards.
- Connector bodies on the computer board and associated cables must be securely connected to the enclosure.
- The external cabling to boards causes most EMC problems. It is recommended that screened cable is used as much as possible and that the screen of the cable connects to the metal end bracket of the board or the enclosure and hence to earth. It is recommended that round, screened cables with a braided wire screen are used in preference to those with a foil screen and drain wire. Use metal connector shells that connect around the full circumference of the cable screen: they are far superior to those that earth the screen by a simple “pig-tail”.
- The keyboard and mouse will play an important part in the compatibility of the processor card since they are ports into the board. Similarly, they will affect the compatibility of the complete system. Fully compatible peripherals must be used otherwise the complete system could be degraded. PS/2 keyboards and mice in particular can prove susceptible in high noise environments; under these circumstances it may be beneficial to add a ferrite clamp on the leads as close as possible to the connector. A suitable type is the Chomerics type H8FE-1004-AS.
- USB cables should be high quality screened types.
- Ensure that the screens of any external cables are bonded to a good RF earth at the remote end of the cable.

Failure to observe these recommendations may invalidate the EMC compliance.

Quick Start

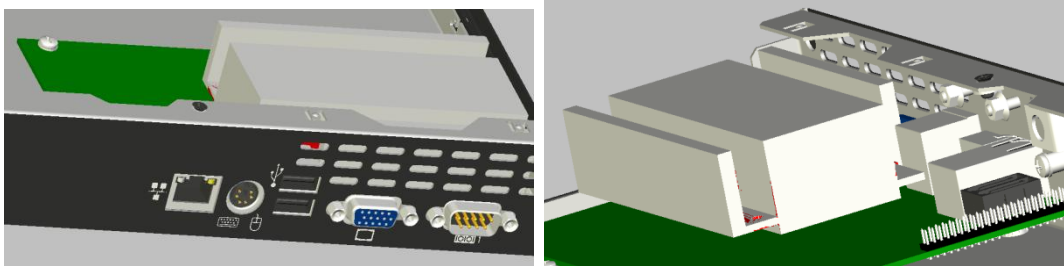
The following sections explain how to install your Magnum N270 computer board.

First ensure that you are familiar with the contents of the section "Precautions". It contains important information to avoid damage to the board.

Mount the computer board in a suitable chassis.

Note: it is important to ensure that the on-board connectors are attached to a suitable plate before attaching external cables to prevent damage to the connectors

The following pictures show the Magnum N270 mounted in the Blue Chip technology Vario A1 chassis



Connect the display to the VGA connector, and connect any other signals, e.g. LAN. Connect a PS/2 mouse and keyboard to the unit. Connect the power lead to a suitable AC power source.

Press the 'Power On' button and check that the unit boots up.

The section "Software Configuration" contains details for the common operating systems.

Set up the required video display parameters.

If PS/2 mouse and keyboard are to be used and removed for normal operation, shut down the computer and switch off the power before removing them.

External Connections



Figure 1: External Connections

Internal Connections

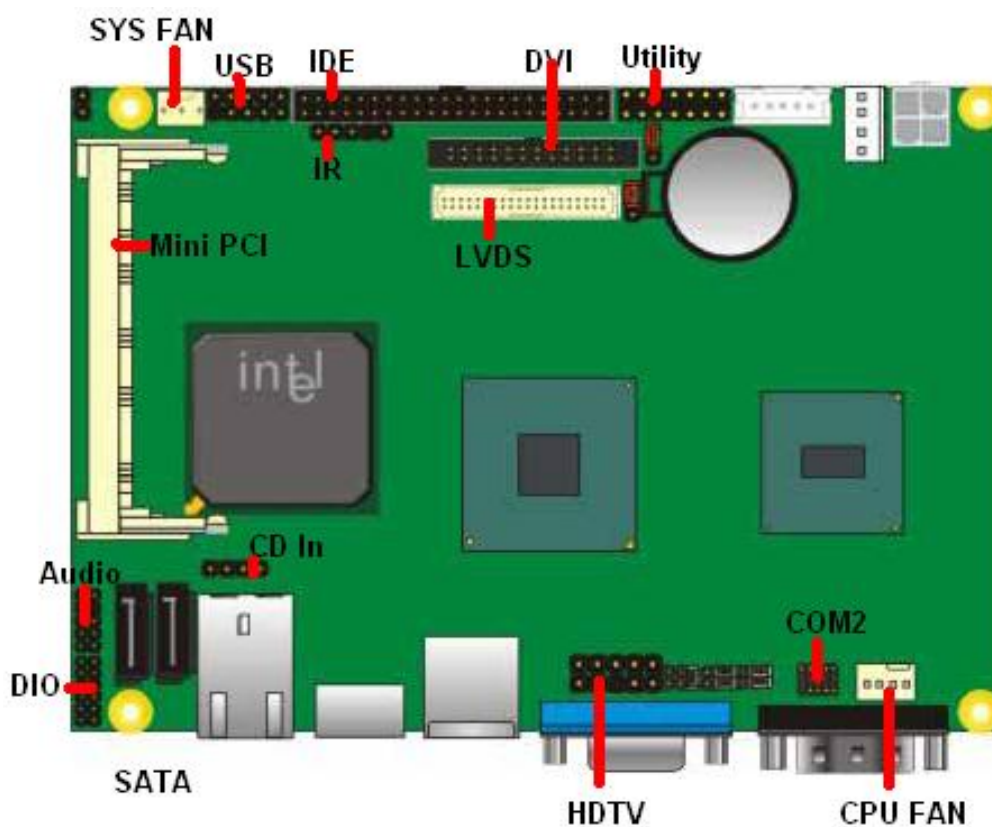


Figure 2: Internal Connectors

Jumpers

The processor board used in the MAGNUM N270 PC is largely free of selection jumpers. Most settings are controlled from the BIOS, and stored in the CMOS memory.

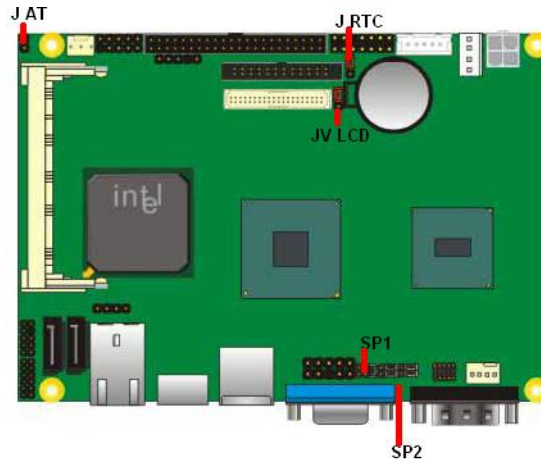


Figure 3: Jumper Locations

Only the following jumpers are significant.

CMOS Clear

To clear the CMOS memory, first switch off the PC power, then locate the 3-pin header labelled ‘**CLRTC**’ on the processor board which is beside the battery connector. Remove the link shorting pins 1 and 2, and place it on pins 2 and 3 for about 5 - 10 seconds. Remove the link and replace it in its original position. The CMOS has now been cleared and the BIOS will be reset to the default settings. Having no link fitted is an invalid option.

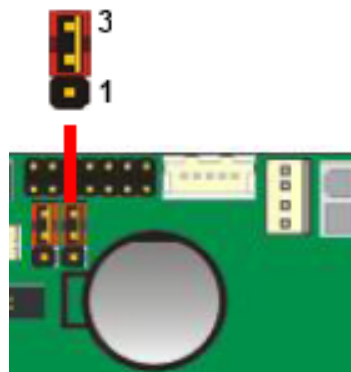


Figure 4: CMOS Jumper

JAT Power

The JAT jumper determines AT (automatic power ON when power applied) or ATX (power on by front panel switch) operation

JAT	Mode
Open	ATX Mode
Short	AT mode

2nd Serial Port

The second serial port can be configured as RS232, RS422 or RS485 via jumpers SP1 and SP2.

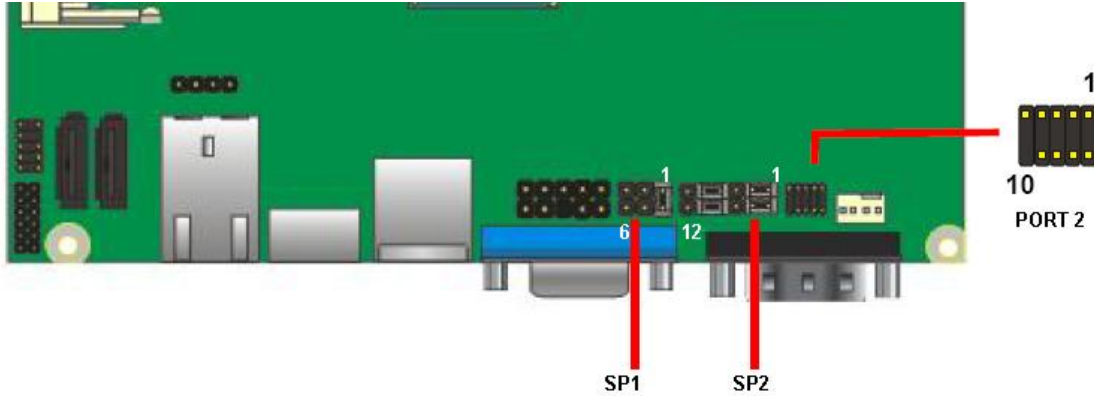


Figure 5: Serial Port 2

SP1 and SP2 can be configured by connected the pins as follows

	SP1	SP2
RS232	Pins 1-2	Pins1-3 Pins 2-4 Pins 7-9 Pins 8-10
RS422	Pins 5-6	Pins3-5 Pins 4-6 Pins 9-11 Pins 10-12
RS485	Pins 3-4	Pins3-5 Pins 4-6 Pins 9-11 Pins 10-12

VLCD

If used, the LVDS panel Voltage can be set here.

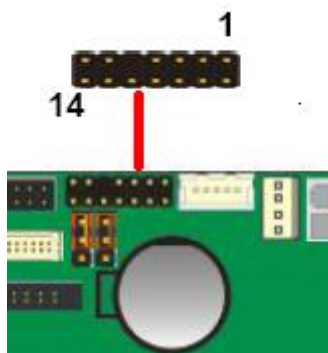
JVLCD	Pin	Description
	1	VCC (5V)
	2	LCDVCC
	3	VCC3(3.3)

For example, for 5V panel operation, short PINs 1 and 2

Connectors

Front Panel (Utility) Connector

The front panel connector is wired as follows



Pin	Signal	Pin	Signal
IDE LED		Power LED	
1	HDLED+	2	PWRLED+
3	HDLED-	4	n/c
Reset		6	PWRLED-
5	Reset+	Speaker	
7	Reset-	8	SPK+
9	n/c	10	n/c
Power Button		12	n/c
11	PWRBT+	14	SPK-
13	PWRBT-		

Figure 6: Front Panel

Power Connector



Figure 7: Power Connector

Power to the Magnum N270 is via the 4 way plug shown as DC_IN above.

Pin	DC_IN Pin Description
1	Ground
2	Ground
3	+DC IN
4	+DC IN

Note: DC Input Range is 9V~24V

The Magnum N270 provides on-board voltage regulation to provide +12V and +5V for items such as System Fans and power to IDE/SATA HDD's. This is via the DC_OUT Connector.

Pin	DC_OUT Pin Description
1	+12V (max current 3A)
2	Ground
3	Ground
4	+5V (max current 3A)

Please note the current limitation on these lines. If greater current is required, then an additional source of +5V and +12V should be used

Serial Port COM2

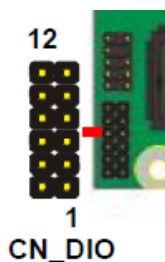


Pin	Description	Pin	Description
1	DCD / 422TX- / 485-	2	RXD / 422TX+ / 485+
3	TXD / 422RX+	4	DTR / 422RX-
5	GND	6	DSR
7	RTS	8	CTS
9	RI	10	N/C

Figure 8: COM2

Note: Connector Type: 10-pin (5 x 2) 1.27mm x 2.54mm-pitch header

GPIO Interface

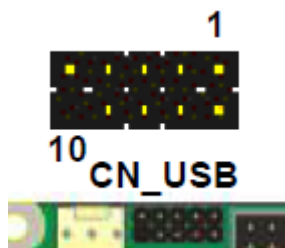


Pin	Description	Pin	Description
1	Ground	2	Ground
3	GP0	4	GP4
5	GP1	6	GP5
7	GP2	8	GP6
9	GP3	10	GP7
11	VCC	12	+12V

Figure 9: DIO

Note Connector Type: 12-pin (6 x 2) 2.0mm-pitch header

USB



Pin	Description	Pin	Description
1	VCC	2	VCC
3	Data0-	4	Data1-
5	Data0+	6	Data1+
7	Ground	8	Ground
9	Ground	10	N/C

Figure 10: USB

Note Connector Type: 10-pin (5 x 2) 2.54mm-pitch header

Infra Red (IR)



Pin	Description
1	VCC
2	N/C
3	IRRX
4	Ground
5	IRTX

Figure 11: IR

Note Connector type: 5-pin (5 x 1) 2.54mm-pitch header

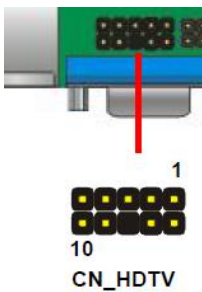
Audio



Pin	Description	Pin	Description
1	LIN_L	2	Ground
3	LIN_R	4	MIC 2
5	MIC 2	6	Ground
7	N/C	8	FRONTL
9	FRONR	10	Ground

Figure 12: Audio
Note Connector Type: 10-pin (5 x 2) 2.0mm-pitch header

TV-Out Interface



Pin	Description	Pin	Description
1	GND	2	DACB1
3	DACB2	4	N/C
5	GND	6	GND
7	DACB3	8	N/C
9	N/C	10	N/C

Figure 13: HDTV
Note Connector Type: 10-pin (5 x 2) 2.54mm-pitch header

DVI Connector

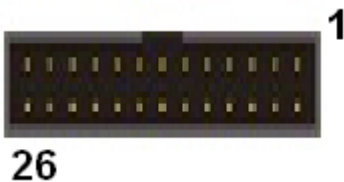


Figure 14: DVI

Pin	Description	Pin	Description
1	TX1+	2	TX1-
3	Ground	4	Ground
5	TXC+	6	TXC_
7	Ground	8	PVDD
9	N/C	10	N/C
11	TX2+	12	TX2-
13	Ground	14	Ground
15	TX0+	16	TX0-
17	N/C	18	HPDET
19	DDCDATA	20	DDCCLK
21	GND	22	N/C
23	N/C	24	N/C
25	N/C	26	N/C

Note Connector Type: 26-pin (13 x 2) 2.00mm-pitch header

LVDS Connector

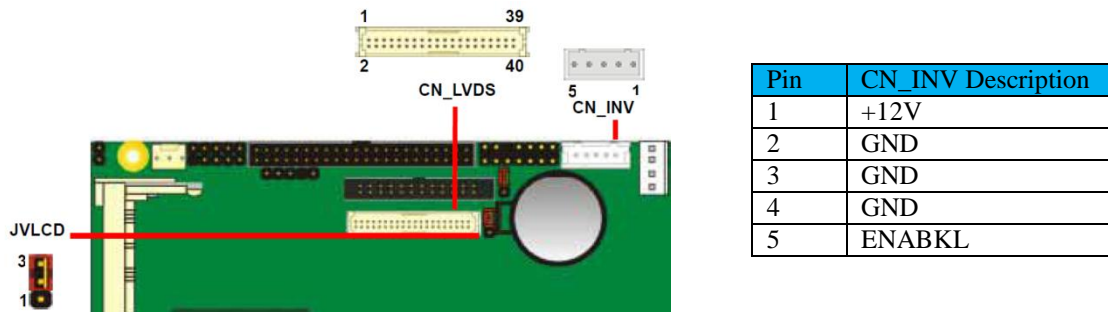


Figure 16: LVDS

Pin	Description	Pin	Description
1	LCDVCC	2	LCDVCC
3	GND	4	GND
5	BTX0-	6	ATX0-
7	BTX0+	8	ATX0+
9	GND	10	GND
11	BTX1-	12	ATX1-
13	BTX1+	14	ATX1+
15	GND	16	GND
17	BTX2-	18	ATX2-
19	BTX2+	20	ATX2+
21	GND	22	GND
23	N/C	24	ACLK-
25	N/C	26	ACLK+
27	GND	28	GND
29	BCLK-	30	N/C
31	BCLK+	32	N/C
33	GND	34	GND
35	N/C	36	N/C
37	N/C	38	N/C
39	N/C	40	N/C

To use the LVDS connector you need the following components:

1. A panel with LVDS interface
2. An inverter for the panel's backlight power
3. A LCD cable and Inverter cable
4. The BIOS setup correctly to support your Panel Type

Because every panel has its own pin assignment and connector type, a standard cable is not available, however, check with Blue Chip technology Sales who may be able to supply a suitable Panel with pre-assembled cable.

The Magnum N270 can support a TTL type display via a custom interface module. Please contact Blue Chip technology Sales for further details.

To support the chosen Panel, the correct LCD Type must be set in BIOS, as below

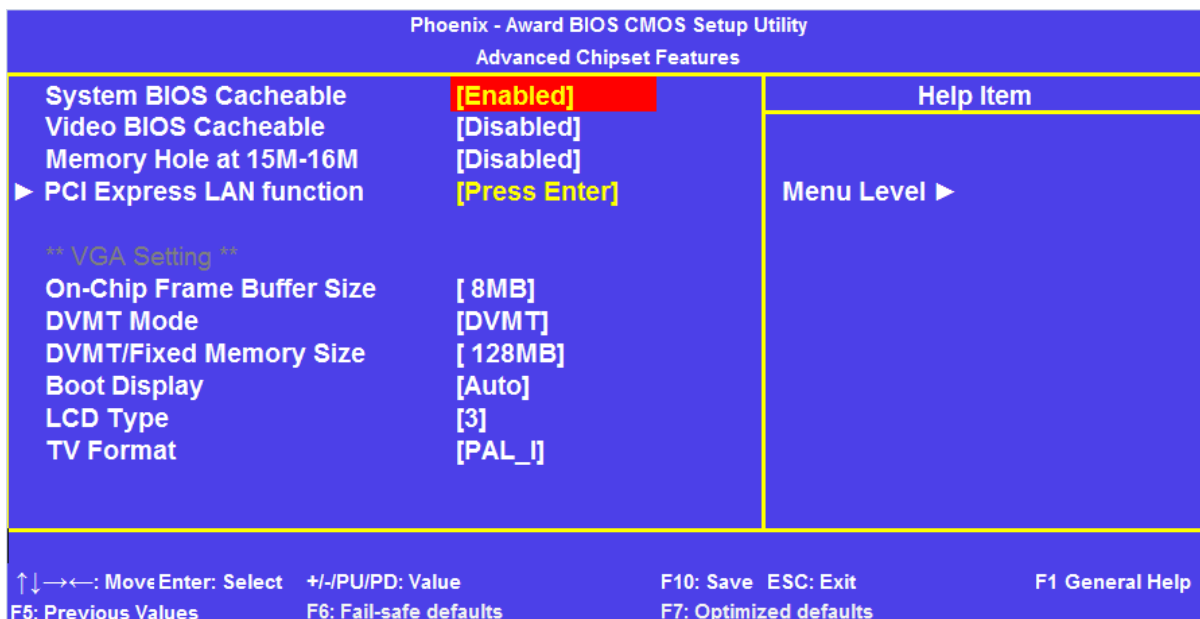
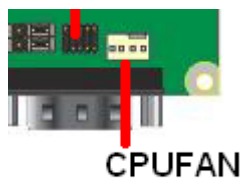


Figure 18: LCD Type

The LCD type can be set according to the table below

Single Channel		Dual Channel	
Type	Format	Type	Format
1	640 x 480	9	1280 x 768
2	800 x 480		
3	800 x 600		
4	1024 x 600		
5	1024 x 768		
6	1280 x 600		
7	1280 x 768		
8	1280 x 800		

Fan Connectors



Pin	Description
1	Ground
2	+12V
3	Fan Speed Detect
4	Fan Control

Figure 19: CPU FAN



Pin	Description
1	Ground
2	+12V
3	Fan Speed Detect

Outline Drawing

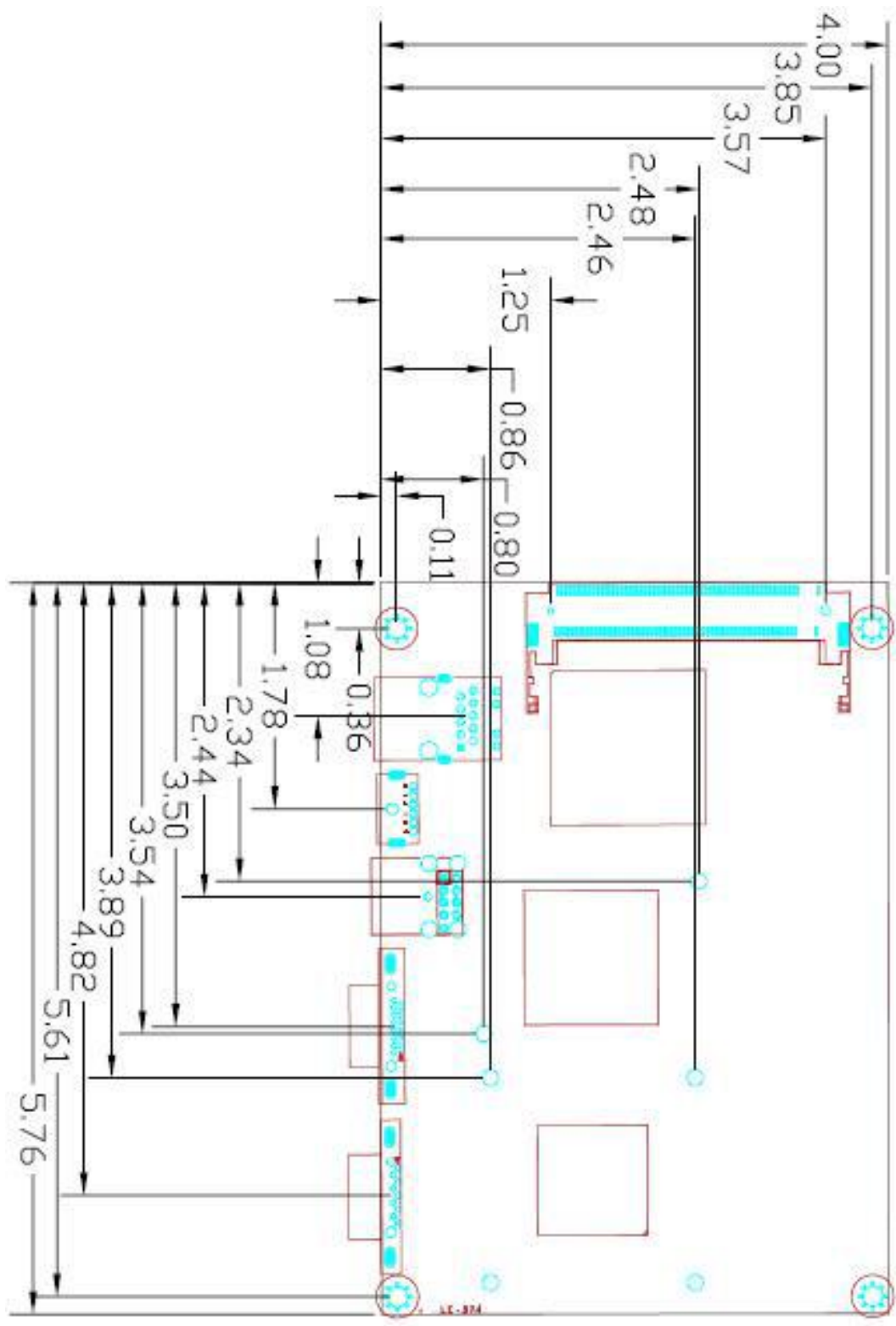


Figure 7: outline dimensions

Installing Operating Systems

Your MAGNUM N270 Small Form-Factor PC may have been supplied complete with a software operating system, in which case the appropriate drivers will have been loaded.

If it has been supplied without an operating system, one must be loaded following the instructions supplied with the software. It is then necessary to add driver programs for the specific hardware of the motherboard and any additional expansion cards. The manner in which the drivers are loaded will vary depending upon the actual operating system used. Details follow for Microsoft XP.

Note: The Magnum N270 is used in the Blue Chip Technology Vario A1 product, so the drivers can be found in the directory structure for this product

Microsoft XP

To install the drivers for Windows XP, you can either follow the guided install from the Blue Chip Technology Support CD or manually install in order as follows.

To install, go to the following directory on the Support CD

Drivers\Signage\Vario A1

Chipset

This update must be applied before installing any other drivers

Run 1_infinst.exe

Video

Run 2_video.exe

LAN

Run 3_lan.exe

Audio Drivers

Run 4_audio.exe

Software Watchdog

The Magnum N270 has a built in Watchdog Timer. The Watchdog Timer (WDT) is a special hardware device that monitors the computer system during normal operation. The WDT has a clock circuit that counts down from a set number to zero. If a monitored item occurs before that timer reaches zero, the WDT resets and counts down again. If for some reason the monitored item doesn't occur before the timer reaches zero, the WDT performs an action, such as a diagnostic operation (rebooting the computer) or generate an NMI. which can reset the computer in cases where the System hangs or it stops working.

The timer can be initiated in BIOS or by software when the system boots. To initiate the Timer in BIOS navigate to the [Integrated Peripherals](#) page

The Watchdog can be controlled by software program in the following manner

Watchdog Configuration		
Address Port: 2Eh	Data Port: 2Fh	Description
87h		Unlock WDT
87h		“
07h	08h	Select Logic Device
30h	01h	Activate WDT
F5h	N	Set Second or minute: N=00h (second) N=08h (minute)
F6h	M	Set base timer as below
Watchdog counts down		
F6h	M	Reset Timer
If Timer not reset, then WDT Timeout		
30	00	Disable WDT

M=	N=00h	M=08h
00h	Time out Disable	Time out Disable
01h	Time out occurs after 1 second	Time out occurs after 1 minute
02h	Time out occurs after 2 seconds	Time out occurs after 2 minutes
.....
FFh	Time out occurs after 255 seconds	Time out occurs after 255 minutes

Example (C):

The following example sets up the watchdog time to 5 minutes.

1. outportb(0x2e,0x87);
2. outportb(0x2e,0x87);
3. outportb(0x2e,0x07);
4. outportb(0x2f,0x08);
5. outportb(0x2e,0x30);
6. outportb(0x2f,0x01);
7. outportb(0x2e,0xF5);
8. outportb(0x2f,0x08);
9. outportb(0x2e,0xF6);
10. outportb(0x2f,0x05);
- ...
- xx. outportb(0x2e,0xF6);
- yy. outportb(0x2f,0x05);
- ...

Power Management Setup

All the items related with power saving function features can be set up through this menu.

PnP/PCI Configurations

This menu offers options to assign resources.

PC Health Status

This setup enables you to read temperatures and voltages of your CPU/System.

Frequency/Voltage Control

This menu is used for enabling Spread Specturm.

Load Fail-Safe/Optimal Defaults

These settings can be loaded through these two menu options.

Save & Exit Setup

Save setting values to CMOS and exit.

Exit Without Saving

Do not change anything and exit the setup.

CMOS Features

Standard CMOS Features		Help Item
Date(mm:dd:yy)	[Apr, 28 2009]	Menu Level ► Change the day, month, year and century
Time (hh:mm:ss)	[14 : 15 : 45]	
▶ IDE Primary Master	[ST3160310CS]	
▶ IDE Primary Slave	[None]	
▶ IDE Secondary Master	[None]	
▶ IDE Secondary Slave	[None]	
Video	[EGA/VGA]	
Halt On	[No Errors]	
Base Memory	640K	
Extended Memory	514048K	
Total Memory	515072K	

↑↓→←: Move Enter: Select +/-PU/PD: Value F10: Save ESC: Exit F1 General Help
F5: Previous Values F6: Fail-safe defaults F7: Optimized defaults

This sub-menu is used to set up the standard BIOS features, such as the date, time, drive and so on. Use the arrow up/down keys to select an item, then use the <+> or <-> keys to change the setting.

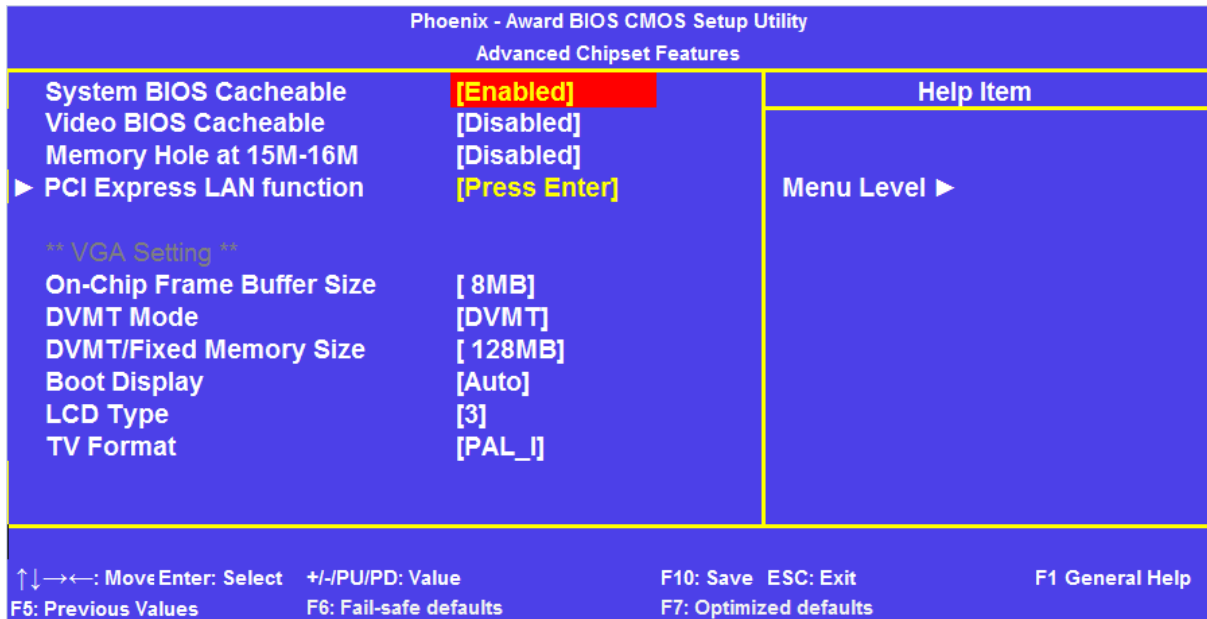
Advanced BIOS Features

Phoenix - Award BIOS CMOS Setup Utility		
Advanced BIOS Features		
		Help Item
▶ CPU Feature	[Press Enter]	
▶ Hard Disk Boot Priority	[Press Enter]	
Virus Warning	[Disabled]	Menu Level ▶
CPU L1 & L2 Cache	[Enabled]	
CPU L3 Cache	[Enabled]	
Hyper-Threading Technology	[Enabled]	
Quick Power On Self test	[Enabled]	
First Boot Device	[HDD-0]	
Second Boot Device	[Floppy]	
Third Boot Device	[[CD-0]	
Boot Other Devices	[Enabled]	
Boot up NumLock Status	[On]	
Gate A20 Option	[Fast]	
Typematic Rate Setting	[Disabled]	
Typematic Rate (Char/Sec)	[6]	
Typematic Delay (Msec)	[250]	
Security Option	[Setup]	
APIC Mode	[Enabled]	
MPS version Control for OS	[1.4]	
OS Select For DRAM > 64MB	[Non-OS2]	
Console Redirection	[Disabled]	
Baud Rate	[19200]	
Agent wait time(min)	[1]	
Agent after boot	[Disabled]	

↑↓→←: Move Enter: Select +/-: Value F10: Save ESC: Exit F1 General Help
 F9: Optimized Settings

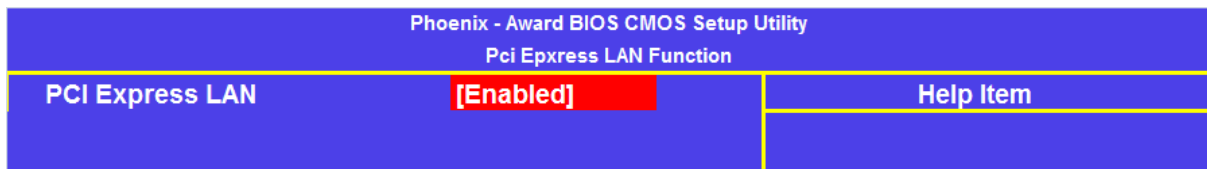
The important settings in this page are quick and quiet boot, as well as the Boot Order. When Enabled, Quick Power On Self Test allows BIOS to skip certain tests during POST to speed boot time.

Advanced Chipset Features



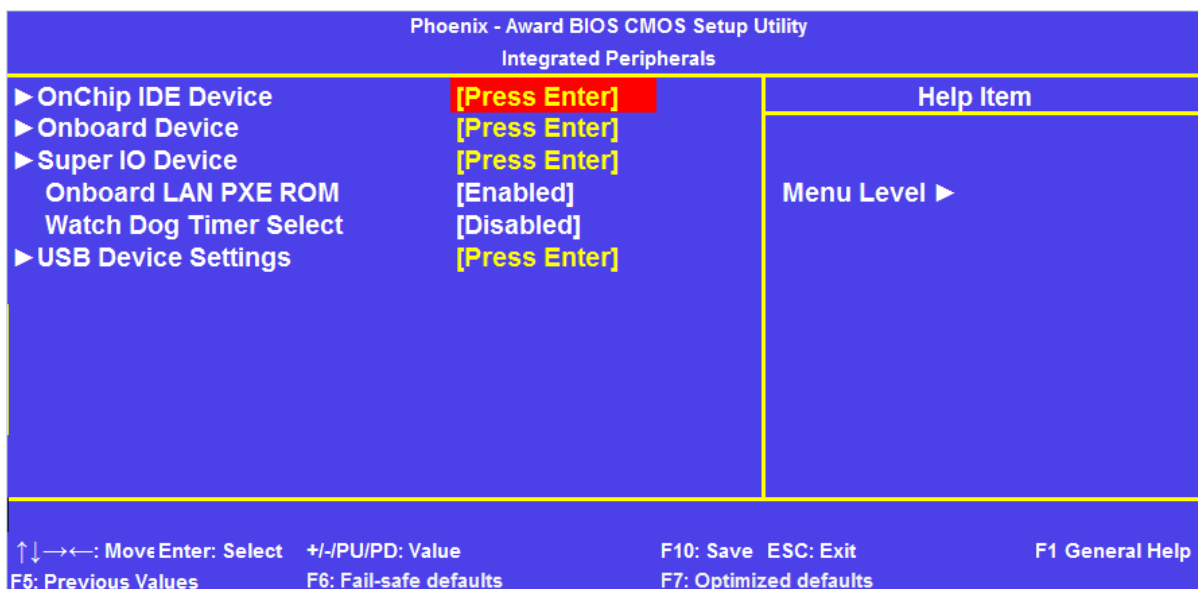
Options include being able to set the video memory size (the portion of Physical memory reserved for Video) For instance, if the unit has 512MB of Physical RAM fitted, and the DVMT memory size is set to 224MB, then this will leave only 288MB of Physical memory left for use by the operating system

The only Sub-menu is

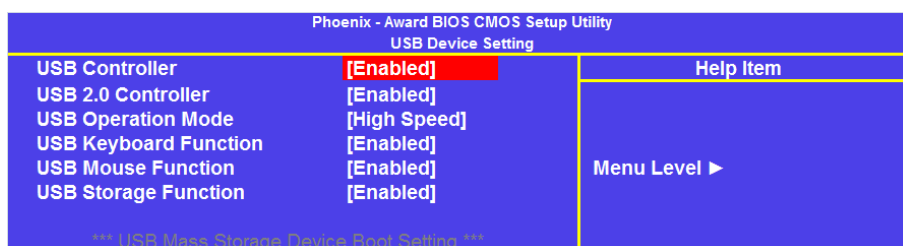


This menu allows the on –board Ethernet port to be enabled or disabled

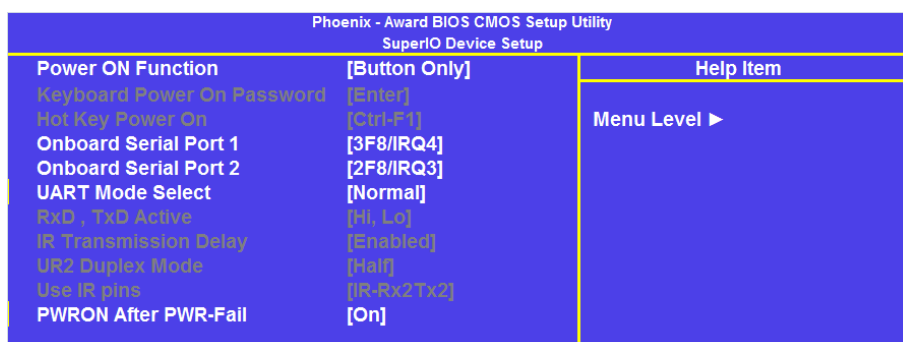
Integrated Peripherals



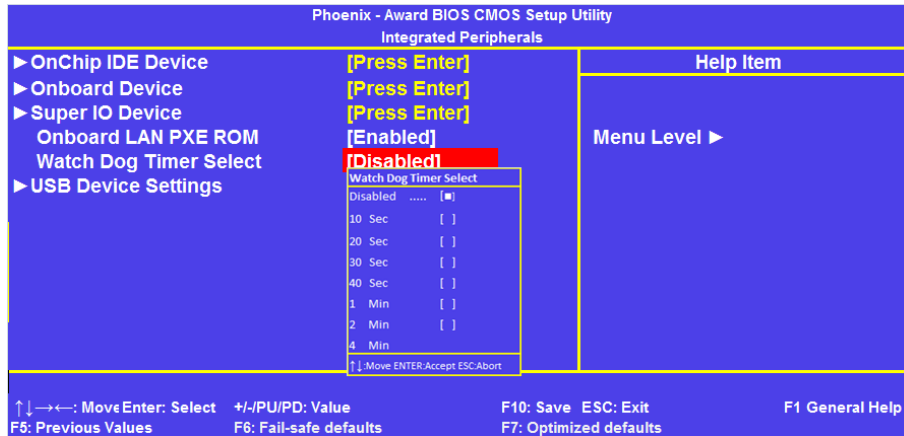
This Menu allows access to sub-menus to setup Drive options, control USB settings, Serial Port addressing. The menu also provides the ability to enable/disable PXE boot and the on-board Watchdog timer.



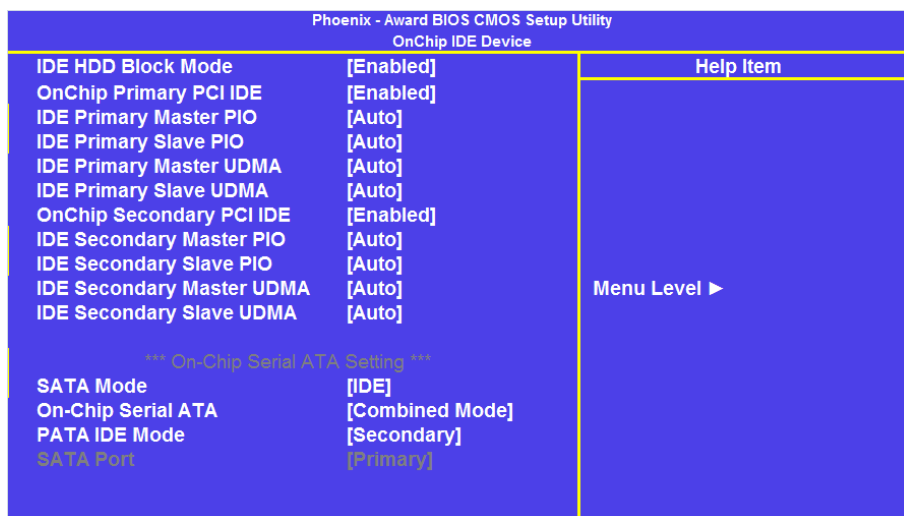
The USB Device settings page provides configuration options for USB2 as well as legacy USB devices.



The Important setting in the Super IO page is Power On After power Fail. When set to ON, the unit will always turn on when power is applied to the unit.



The Watch Dog Timer Select option allows setting a time out period



The Onchip IDE Page provides options for how the IDE ports are configured. These will be configured at time of manufacture and the user should not need to change any of these settings

Power Management Setup

Phoenix - Award BIOS CMOS Setup Utility		Help Item
Power Management Setup		
ACPI Function	[Enabled]	
ACPI Suspend type	[S1(POS)]	
Run VGABIOS if S3 resume	[Auto]	
Power Management	[User Define]	
Video Off Method	[DPMS]	
Video Off In Suspend	[Yes]	
Suspend type	[Stop Grant]	
MODEM Use IRQ	[3]	
Suspend Mode	[Disabled]	
HDD Power Down	[Disabled]	
Soft-Off by PWR-BTTN	[Instant-Off]	
CPU Therm-Throttling	[50.0%]	
Wake-Up by PCI Card	[Disabled]	
Power On by Ring	[Disabled]	
USB KB Wake-Up from S3	[Disabled]	
Resume by Alarm	[Disabled]	
Date(of Month) Alarm	[0]	
Time(hh:mm:ss) Alarm	[0 : 0 : 0]	
** Reload Global Timer Events **		
Primary IDE 0	[Disabled]	
Primary IDE 1	[Disabled]	
Secondary IDE 0	[Disabled]	
Secondary IDE 1	[Disabled]	
FDD,COM,LPT port	[Disabled]	
PCI PIRQ[A-D]#	[Disabled]	

↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1 General Help
F5: Previous Values F6: Fail-safe defaults F7: Optimized defaults

This menu allows various options for controlling the power conditions of the Magnum N270. Wake On LAN functionality can be turned on by Enabling the Wake-up By PCI Card setting

PnP/PCI Configurations

Phoenix - Award BIOS CMOS Setup Utility		
PnP/PCI Configurations		
		Help Item
Init Display First	[On Board]	Menu Level ►
Reset Configuration Data	[Enabled]	
Resources Controlled By	[Auto (ESCD)]	
x IRQ Resources	[Press Enter]	
PCI/VGA Palette Snoop	[Disabled]	
INT Pin 1 Assignment	[Auto]	
INT Pin 2 Assignment	[Auto]	
INT Pin 3 Assignment	[Auto]	
INT Pin 4 Assignment	[Auto]	
INT Pin 5 Assignment	[Auto]	
INT Pin 6 Assignment	[Auto]	
INT Pin 7 Assignment	[Auto]	
INT Pin 8 Assignment	[Auto]	

↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1 General Help
 F5: Previous Values F6: Fail-safe defaults F7: Optimized defaults

As there are no expansion options on the Magnum N270, there is no need to change of these settings

PC Health Status

Phoenix - Award BIOS CMOS Setup Utility		
PC Health Status		
		Help Item
Shutdown Temperature	[Disabled]	Menu Level ►
CPU Warning temperature	[Disabled]	
Current System temperature	[59°C/ 138°F]	
Current CPU temperature	[52°C/ 125°F]	
SYAFAN	0 RPM	
CPUFAN	0 RPM	
Vcore	0.86V	
+12V	11.85V	
3.3V	3.36V	
VCC (V)	5.04V	
VBAT (V)	3.12V	
5VSB	5.04V	
Smart CPUFAN Temp	[Disabled]	
CPU Temp Toleran	5	

↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1 General Help
 F5: Previous Values F6: Fail-safe defaults F7: Optimized defaults

This menu displays temperature and voltage details which can be used to identify if the unit is operating out of specification.

The Warning Temperature can be set to provide warning information if the CPU temperature exceeds the set value. The Shut Down temperature, in conjunction with an ACPI OS, can be used to automatically shut down the system if the CPU temperature is exceeded.

Maintenance

After a period of several years, it may be necessary to replace the battery on the processor board, if it cannot maintain the CMOS memory whilst the AC power is disconnected.

Replacing the Battery

The processor board includes a small 3V lithium battery (type CR-2032) to retain the BIOS settings in the CMOS memory. Before attempting to replace the battery, please read the precautions detailed in the introductory section. Remember that even discharged batteries can present a real personnel hazard if mistreated.

Do NOT under any circumstances try to remove the battery with metallic tools (pliers, tweezers etc.). They will short out the battery with possible disastrous results.

Replace the battery by one of the same type, and that the clip is fully engaged. When the battery has been replaced, the BIOS settings will revert to their default settings. Reset them as necessary to suit your application.

Fuses

There are no user-serviceable or replaceable fuses within the unit.

Amendment History

Issue Level	Issue Date	Author	Amendment Details
1.0	11/06/2010	LW	First Release
1.1	07/09/2010	TMCK	New common BCT layout and Updated Reference to ensuring connectors are suitably supported
1.2	20/09/2010	TMCK	Corrected Rev B LVDS layout

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