华北工控
NORCO

BIS-6630

BOX PC System

Manual V1.1

用户手册
USER'Manual

Industrial & Communication Computer

做中国最可信赖的工控产品

Disclaimer

Norco BIS-6630 Box PC System User Manual Rev 1.1 (March 2012)

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Table of Contents

Preface

Checklist

Thanks for choosing BIS-6630 from an acknowledged leader in the industry. Norco systems are designed with the utmost attention to detail and to provide you with the highest standards in quality and performance.

Please check that the following items which have all been included with your system. If anything listed here is damaged or missing, contact your retailer.

●BIS-6630

●CD-ROM（Drivers and User Manual）

●Power Adapter and Power Cord

Copyright Notice

About this Manual

This manual provides information for installation and use of Norco BIS-6630 system. Norco highly recommends reading this Manual to familiarize yourself with the setup procedure before installing your system.

Chapter 1. Product Introduction

1.1 Overview

BIS-6630 is a type of embedded system developed around Intel® Cedar Trail with Intel® NM 10 chipset and Intel® Atom N2800/D2550 processor. It supports single slot DDRIII 1066 SO-DIMM RAM up to 4GB. The system provides 2 SATA ports, 2 Gigabit Ethernet ports and VGA, LVDS and DVI display ports. 6 USBs and 6 serial ports are used for data transfer. The system also supports Line-out, Line-in, Mic-in and 1 PCI, 2 Mini PCIe and SIM slot on board.

1.2 Specification

Motherboard Form Factor

●Standard Mini-ITX

Processor

●On board Intel ® Atom N2800/D2550 Processor

Chipset

●Intel®NM10

Display

●Video Controller：Processor Integrated

●VGA：1 standard DB15 port，resolution up to1920×1200@60Hz

●DVI：1 standard DVI-D, supports HDMI，resolution up to1920×1200@60Hz

Memory

●Single slot SO-DIMM DDR III 1066, up to 4GB

Storage

●2 standard 7 Pin SATA ports

LAN

●Ethernet Controller: 82574L network chip

●2 standard RJ45 port

●Wake on LAN

●PXE boot

●Speed：10/100/1000Mbps

Audio

●Audio Controller ALC887 7.1 HD chip

●Rear panel: Line-in(Blue), Speak-out(Green), Mic-in(Red)

●Front panel: Speak-out，Mic-in

USB

●Rear panel: 4 standard USB

●front panel: 2 standard USB

I/O

●Controller: ITE 8783F I/O Chip

●COM1-2: stand DB9 ports

●COM3-6: 2×20 internal Pin header

●COM1-COM6 supports RS232，COM2 also supports RS422\485

Expansion

●2 MINI PCIe, MINI PCIe 1: standard MINI PCIe; MINI PCIe 2: optional for WiFi，3G，SDD

Power Supply

●System power：DC +12V@5A

●RTC Battery：3V/220 mAh

WatchDog program

●Hardware reset function

BIOS

●2MB SPI BIOS

Environment & Mechanical

●Operating Temperature：0˚C～60˚C

●Storage Temperature：-40˚C～85˚C

●Relative Humidity：5%~95%，non-condensing

●Vibration：0.5g rms/5~500Hz/random operating

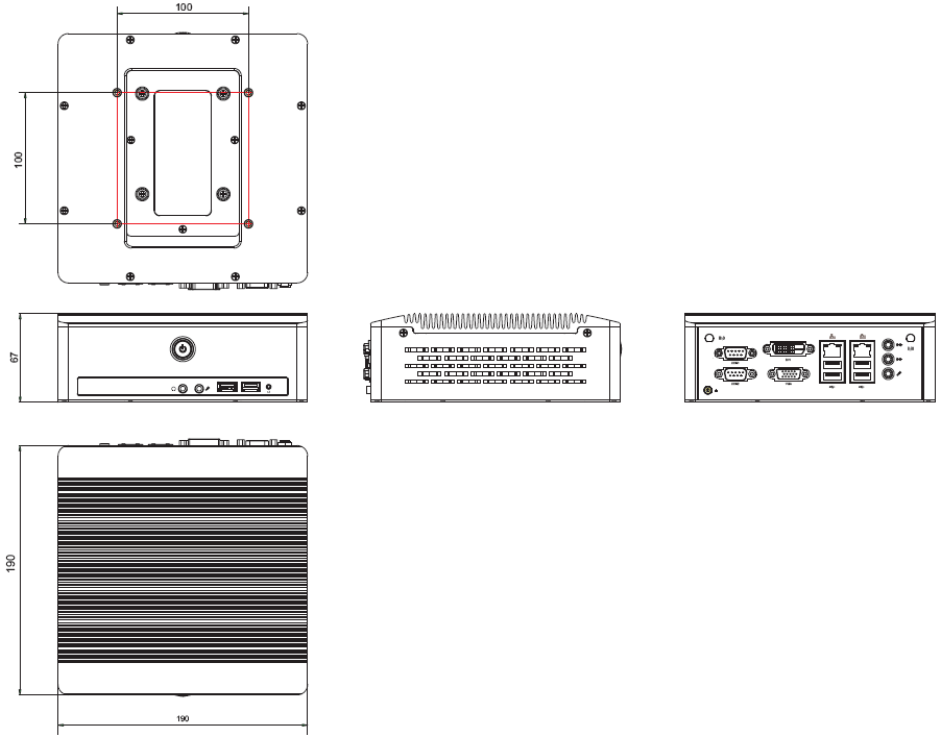
●Dimension：190mm×190mm×67mm（W×L×H）

●EMC：CE/FCC Class B

●Material：Aluminum Ally

●Color：Black

1.3 Product Dimension Diagram



Chapter 2. Hardware features

2.1 Jumper Setting

Please refer to the following jumper setting guide before installing your hardware devices installation.

Remark: How to identify jumper and PIN1 of interface: Please observe the word mark of plug socket, it will use "1" or bold line or triangular symbols; And please look at the back of PCB, each interface weld spot has a square point, which is PIN 1; and all jumper PIN1 has a white arrow on the side.

Jumper Reference	
JCC	COMS setting
JAT	Power mode setting
J5，J6，J8	COM2 jumper setting
JP1、JP2	LVDS voltage jumper setting
JP5	PCI VIO voltage jumper setting

2.1.1 CMOS Content Clearance/Hold Setting (JCC）

CMOS powered by onboard button battery. Cleaning CMOS leads to a permanent elimination of the previous system setting and back to the original (default setting) system settings.

Steps:(1) Turn off the computer, disconnect the power supply

(2) Use jumper cap short JCC Pin 1 and Pin 2 for 5~6 sec. Then restore the default setting with Pin2 and Pin 3 connected;

(3)Turn on the computer, then press "DEL" key to enter into BIOS setting and load optimized defaults.

(4)Save and exit.

JCC：

Jumper	JCC
1-2	Clear CMOS, BIOS renew to initialization (default setting)
2-3	Normal Status (default)

⚠ **Do not clear CMOS when computer is running, it will damage the motherboard**

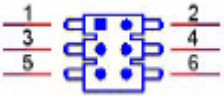
2.1.2 Start Upon Power-on Hardware Switch (JAT）

Jumper	JAT
Open	Non self-start upon power on (ATX)
Close	Self-start upon power on (AT)

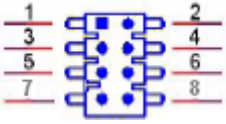
2.1.3 COM2 Jumper Setting（J5，J6，J8）

J5，J6，J8 are used to configure transmission mode for COM2，COM2 supports RS 232/RS 422/RS 485，default transmission mode is RS 232。

J5、J6



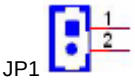
J8



COM2 RS232（default）		COM2 RS422		COM2 RS485	
J5	1-3 2-4	J5	3-5 4-6	J5	3-5 4-6
J6	1-3 2-4	J6	3-5 4-6	J6	3-5 4-6
J8	1-2	J8	3-4	J8	5-6 7-8

2.1.4 LVDS Voltage Jumper Setting（JP1、JP2）

⚠ : Wrong voltage selection may damage the LVDS panel. Please survey LVDS panel's voltage before setup this jumper setting.



JP1

JP2

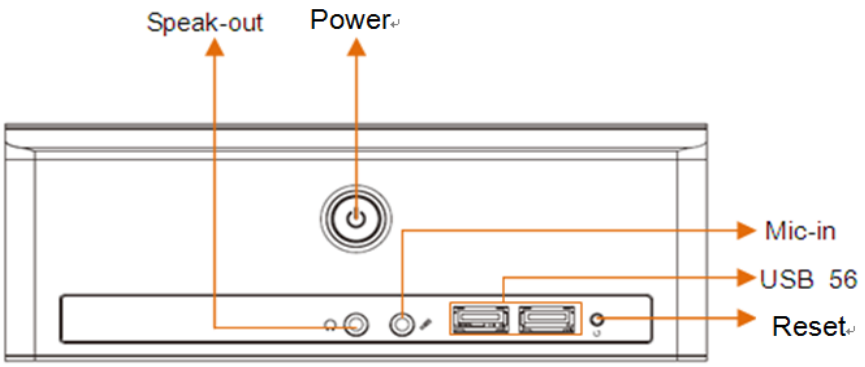
Jumper	3.3V	5V	12V
JP1	×	×	1-2
JP2	1-2	2-3	×

2.1.5 PCI VIO Voltage Jumper setting（JP5）

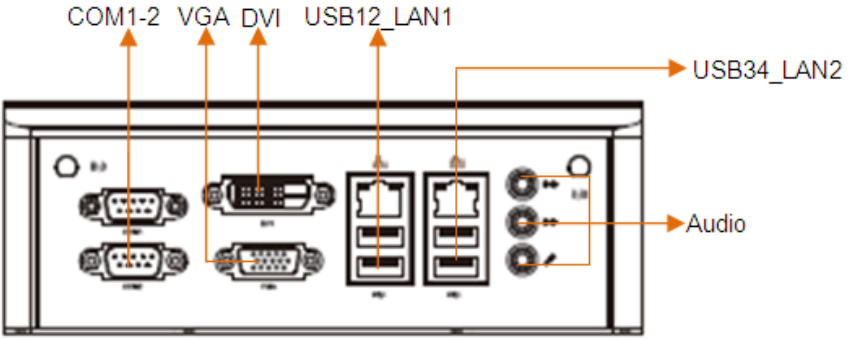
Jumper	JP5
1-2	5V
2-3	3.3V

2.2 BIS-6630 Interface

1）BIS-6630 Front Panel Interface



2）BIS-6630 Rear panel interface

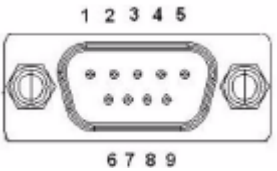


2.3 Interface specification

2.3.1 COM Port（COM1-COM6）

BIS-6630 provides 6 serial ports. COM1、COM2 are standard DB9 interface on rear panel. COM3-6 adopt 2×20 Pin interface，these serial ports can be converted to standard port via convert cable. The COM ports can be enable/disabled and set interrupt IRQ and I/O address in BIOS.

COM1-COM6 all support RS232 transmission mode and COM2 also supports RS422/485. The transmission mode can be chosen via jumper setting. Please refer to Chapter 2.1.3 “COM2 jumper setting”



COM1、COM2：

Pin	Signal Name
1	DCD
2	RXD
3	TXD
4	DTR
5	GND
6	DSR

7	RTS
8	CTS
9	RI

COM2 is on RS232/RS422/RS485 mode:

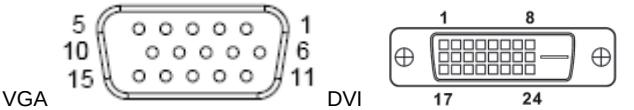
Pin	RS232（Default）	RS422	RS485
1	DCD	TX-	DATA-
2	DSR	NC	NC
3	RXD	TX+	DATA+
4	RTS	NC	NC
5	TXD	RX+	NC
6	CTS	NC	NC
7	DTR	RX-	NC
8	RI	NC	NC
9	GND	GND	GND
10	GND	GND	GND

COM3-6：

Signal	Pin		Signal Name
DCD3	1	2	DSR3
RXD3	3	4	RTS3
TXD3	5	6	CTS3
DTR3	7	8	RI3
GND	9	10	GND
DCD4	11	12	DSR4
RXD4	13	14	RTS4
TXD4	15	16	CTS4
DTR4	17	18	RI4
GND	19	20	GND
DCD5	21	22	DSR5
RXD5	23	24	RTS5
TXD5	25	26	CTS5

DTR5	27	28	RI5
GND	29	30	GND
DCD6	31	32	DSR3
RXD6	33	34	RTS6
TXD6	35	36	CTS6
DTR6	37	38	RI6
GND	39	40	GND

2.3.2 Display Interface（VGA、DVI）



VGA：

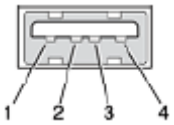
Pin	Signal Name	Pin	Signal Name	Pin	Signal Name
1	RED	6	GND	11	NC
2	GREEN	7	GND	12	SDA
3	BLUE	8	GND	13	HSYNC
4	NC	9	+5V	14	VSYNC
5	GND	10	GND	15	SLK

DVI

Signal Name	Pin		Signal Name
TDC2#	1	2	TDC2
GND	3	4	NC
NC	5	6	SC-DDC
SD-DDC	7	8	NC
TDC1#	9	10	TDC1
GND	11	12	NC
NC	13	14	VCC
GND	15	16	HP-DETECT
TDC0#	17	18	TDC0
GND	19	20	NC

NC	21	22	GND
TLC	23	24	TLC#
GND	25	26	GND
NC	27	28	NC

2.3.3 USB Ports（USB_12、USB_34、USB_56）

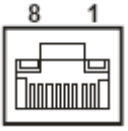


USB：

Pin	Signal name
1	+5V
2	USB DATA-
3	USB DATA+
4	GND

2.3.4 Network Interface（LAN1、LAN2）

System provides two RJ 45 standard Ethernet ports. The yellow LED indicates the status of data transmission and the green one indicates network connection status.

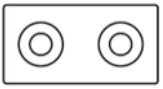


RJ45 PORT LED 状态描述：

LI LED（Green）	Function	ACT LED（Yellow）	Function
ON	Effective	ON	Data transmitting
OFF	Ineffective/Close	OFF	No Data

2.3.5 Audio Interface

System provides one Speak-out，one Mic-in on the front panel and provides one group triple-layer Audio interface: Line-in (Blue), Speak-out (Green), Mic-in(Pink).

Front Panel  Rear Panel 

2.3.6 Power Button

Power and HDD LED indicator are on the power button. Power LED is blue and HDD LEDis red. Power button keep blue light if no HDD movement. If HDD is running, the red HDD LED keep blinking

2.3.7 Reset

BIS-6630 system will be hardware reset when the power button is pushed

2.4 Internal Interface

2.4.1 SATA Interface

BIS-6630 provides two standard 7 pin SATA interface.

SATA：

Pin	Signal Name
1	GND
2	TX+
3	TX-
4	GND
5	RX-
6	RX+
7	GND

2.4.2 SO-DIMM Slot

204Pin DDRⅢ SO-DIMM Slot supports DDRⅢ 1066 which can support up to 4GB.

2.4.4 MINI PCIe slot（MINI PCIe1，MINI PCIe2，J3，J4）

The system provides two MINI PCIe slot，MINI PCIe 1 is standard Mini-PCIE, MINI PCIe 2 support WiFi、3G or SSD. When wifi is used for MINI PCIe 2 slot, J3 and J4 can be used for internet status indicator.

J3、J4：

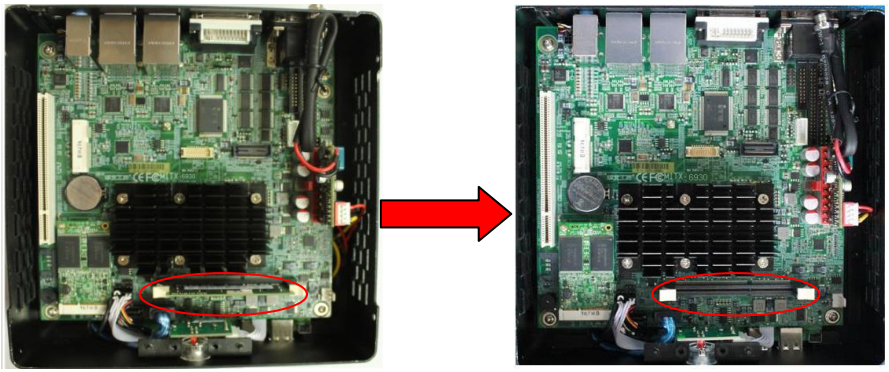
Pin	Signal Name
1	ACT-
2	ACT+

2.5 Hardware Installation

2.5.1 DDRIII SO-DIMM RAM Installation

BIS-6630 provides one SO-DIMM Socket，supports DDRIII 1066 up to 4GB RAM. Please follow these steps below carefully to install:

1. Twist off the screws and remove the top cover
2. Insert RAM into slot and make sure the gold finger of RAM aligning with the slot.
3. Press down the RAM slowly unit you hear “Click”.

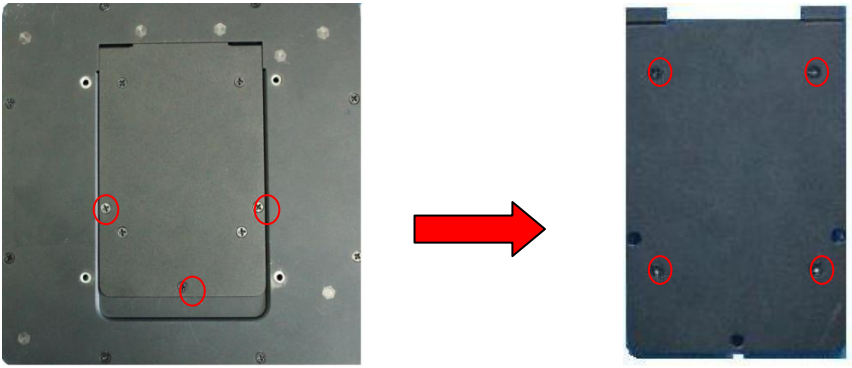


2.5.2 2.5” Hard Disk Drive (HDD) Installation

System provides one 2.5” HDD bay and two SATAII ports inside. (when MINI PCIe2 is used for SSD, only one STATII port can be used for HDD). lease follow these steps below carefully to install:

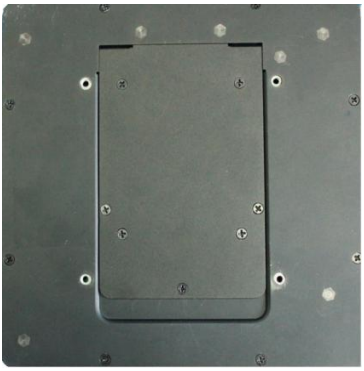
1: Turn off Power, remove the power line first.

2：Twist off the screws of the HDD Bay cover and remove it.



3：Choose the 2.5” HDD and mount it on the HDD Bay cover with screws.

4. Put the HDD Bay cover with HDD back to the computer.



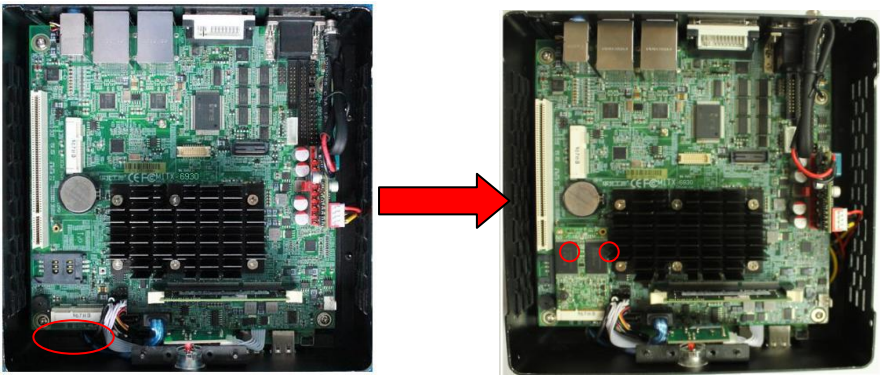
2.5.3 SSD Card Installation

The system supports mSATA standard SSD (3G expansion is not available once SSD is used).

1. Twist off the screws and remove the top cover.

2. Insert SDD into slot with lean angel and make sure the gold finger of SSD aligning with the slot.

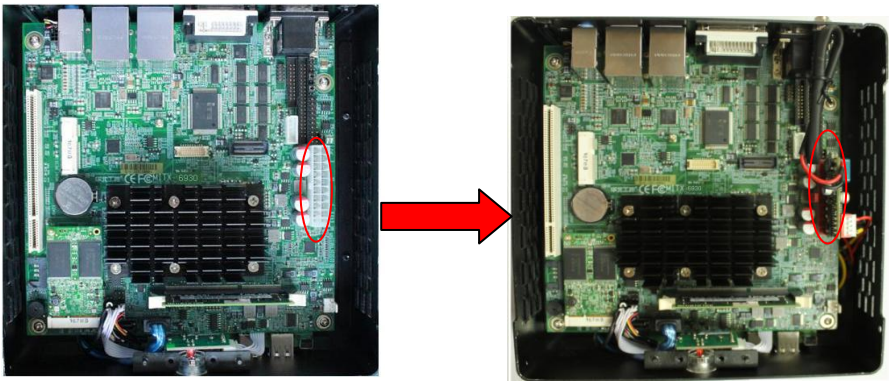
3. Slowly push SSD into the slot and secure two screws for SSD



2.5.4 Power module installation

⚠ **If internal power module need to be changed, please contact retailer for detail support**

1. Remove the top cover.
2. Choose the right ATX power module to install.
3. Insert the power connector to ATX power slot.



Chapter3. BIOS Setup

AMI BIOS Upgrading

BIOS functions as a bridge connecting hardware and operating system. Hardware and software are upgrading all the time, so when your system goes wrong, for example, your system can not support the newest CPU, you need to upgrade BIOS to keep up with the latest technology.

To make the BIOS upgrade successfully, please open the Jumper JAV. AFUDOS.EXE is the FLASH IC program for BIOS to upgrade, which needs to be run in DOS mode. Use a boot disk to load DOS, then run AFUDOS.EXE to upgrade BIOS.

Upgrade Command：

A:\ Afudos “ROM NAME”.rom

If you need to add other parameters, add “space” after the Command.

Example：Afudos 3870T101.rom /P /B /C /N /X

Remarks：

1. BIOS upgrading is only executed when your system goes wrong.
2. Please use the upgrade program in the CD-ROM provided by us or download the latest version on our website
3. Please do not power off or reboot the system when upgrading, otherwise, the BIOS will be damaged and system is not able to boot again.
4. Please backup your BIOS before upgrading

AMI BIOS Description

When the computer is power on, BIOS will conduct self-diagnosis to its hardware on motherboard and configure hardware parameter; finally the operating system will take control. BIOS is the communication bridge between hardware and O/S. Correct configuration of BIOS is critical for maintaining system stability.

BIOS Parameter Configuration：

1. Power on or reset the computer, self-detection information will show:

2. When message shows as "Press <Del> to enter setup"，Press <Del>, then enter into BIOS SETUP Program.

3. Use the "←↑→↓"to choose the option which your want to modify, press <Enter> and the sub-menu will show.

4. Use the "←↑→↓"and <Enter> to modify the value, or use Mouse do this Modification.

5. At any time, press<Esc> can go back to the main menu.

3.1 Main Menu

BIOS SETUP UTILITY	
BIOS Information	Set the Date. Use Tab to switch between Date elements.
BIOS Vendor American Megatrends Project Version 6930T109 Build Date and Time 11/15/2011 10:38:49 CPU Information Intel(R) Atom(TM) CPU N2800 @ 1.86GHz Memory Information Memory Frequency 1066 MHz（DDR3） Total Memory 2048 MB System Date [Mon 08/29/2011] System Time [11:08:24]	→←：Select Screen ↑↓：Select Item Enter：Select +/-：Change Opt. F1：General Help F2：Previous Values F9：Optimized Defaults F10：Save&Exit ESC：Exit
Version 2.10.1208. Copyright（C）2010 American Megatrends，Inc.	

System Time

Setup system time format: Hour/Minute/ Second

System Date

Setup system date format: Week/Month/Day/Year

3.2 Advanced Menu

BIOS SETUP UTILITY	
BIOS Information	Monitor hardware status.
Legacy OpROM Support Launch LAN1 (82574)PXE OpROM [Disabled] Launch LAN2 (82574)PXE OpROM [Disabled] ▶ ACPI Settings ▶ APM Configuration ▶ CPU Configuration ▶ IDE Configuration ▶ USB Configuration ▶ Super IO Configuration ▶ H/W Monitor	→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F9: Optimized Defaults F10: Save&Exit ESC: Exit
Version 2.10.1208. Copyright（C）2010 American Megatrends，Inc.	

3.2.1 ACPI Settings

BIOS SETUP UTILITY	
ACPI Settings	Enables or Disables System ability to Hibernate (OS/S4 Sleep State). This option may be not effective with some OS..
ACPI Sleep State [S1（CPU Stop Clock）]	→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F9: Optimized Defaults F10: Save&Exit ESC: Exit

ACPI Sleep State

Sleep mode selection: Different modes are defined with different power consumption.

S1 (POS): CPU stops working while other devices are still connected to power supply.

S3 (STR): Power is only supplied to system memory.

3.2.2 APM Configuration

BIOS SETUP UTILITY	
	Enable or disable System wake on alarm event. When enabled. System will wake on the hr::min::sec specified
RTC Power On Function [Disabled]	
	→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F9: Optimized Defaults F10: Save&Exit ESC: Exit
Version 2.10.1208. Copyright（C）2010 American Megatrends，Inc.	

RTC Power On Function

It is used for waking system on alarm event

3.2.3 CPU Configuration

BIOS SETUP UTILITY		
CPU Configuration		Enabled for Windows XP and Linux （ OS optimized for Hyper-Threading Technology）and Disabled for other OS（OS not optimized for Hyper-Threading Technology）.
Processor Type	Intel(R) Atom(TM) CPU	
EMT64	Supported	
Processor Speed	1865 MHz	
System Bus Speed	533MHz	
Ratio Status	14	
Actual Ratio	14	→←: Select Screen
System Bus Speed	533 MHz	↑↓: Select Item
Processor Stepping	30661	Enter：Select
Microcode Revision	262	+/-：Change Opt.
L1 Cache RAM	2×56 K	F1：General Help
L2 Cache RAM	2×512 K	F2：Previous Values
Processor Core	Dual	F9：Optimized Defaults
Hyper-Threading	Supported	F10：Save&Exit
		ESC：Exit
Hyper-Threading	[Enabled]	
Execute Disabled Bit	[Enabled]	
Limit CPUID Maximum	[Disabled]	
EIST	[Enabled]	
CPU C state Report	[Enabled]	
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This Read-Only option contains the detailed information of CPU, including CPU manufacturer, type, frequency, L1 cache and L2 cache, etc.

Hyper-Threading

[Enabled]: Activate and use this hyper threading technology.

Execute Disabled Bit

Execute Disable Bit (EDB) is an Intel hardware-based security feature that can help reduce system exposure to viruses. EDB allows the processor to classify areas in memory where

application code can or cannot execute. To use Execute Disable Bit you must have Windows XP SP2 operating system to support this function.

Limit CPU ID Maximum

[Enabled]: processor will limit the maximum CPUID input value to 03h when queried.

EIST

[Enable] Activate Enhanced Intel Speedstep function

CPU C state Report

[Enabled] Activate the CPU Deep Power Down Technology

3.2.4 IDE Configuration

BIOS SETUP UTILITY		
IDE Configuration		SATA Ports (0-3) Device Names if Present and Enabled.
SATA Porto	Hitachi HDS721(1000)	
SATA Port1	Not Present	
SATA Controller(s)	[Enabled]	→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F9: Optimized Defaults F10: Save&Exit ESC: Exit
Configure SATA as	[IDE]	
Version 2.10.1208. Copyright（C）2010 American Megatrends，Inc.		

SATA Controller（S）

[Enabled]: Activate SATA Controller.

Configure SATA as

SATA Configuration Model Selection. Two options available: [AHCI] and [IDE].

3.2.5 USB Configuration

BIOS SETUP UTILITY	
USB Configuration	Select USB mode to control USB ports.
USB Devices： 1 Keyboard ,1 Mouse USB function [Enabled] USB 2.0 (EHCI) Support [Enabled] Legacy USB Support [Enabled]	→←：Select Screen ↑↓：Select Item Enter：Select +/-：Change Opt. F1：General Help F2：Previous Values F9：Optimized Defaults F10：Save&Exit ESC：Exit
Version 2.10.1208. Copyright（C）2010 American Megatrends，Inc.	

USB function

This option is to set open or close the USB port. System defaults as[Enabled]

USB 2.0 (EHCI) Support

[Enabled]: Activate USB EHCI, max transmission rate up to 480Mpbs

Legacy USB Support

[Enabled]: Active the USB device in DOS mode: USB flash Disk, USB keyboard, etc.

3.2.6 Supper IO Configuration

BIOS SETUP UTILITY	
Super IO Information	Set Parameters of Serial Port 1（COMA）
Super IO Chip IT8783F ▶ Parallel Port Configuration	

▶ Serial Port 1 Configuration	→←：Select Screen
▶ Serial Port 2 Configuration	↑↓：Select Item
▶ Serial Port 3 Configuration	Enter：Select
▶ Serial Port 4 Configuration	+/-：Change Opt.
▶ Serial Port 5 Configuration	F1：General Help
▶ Serial Port 6 Configuration	F2：Previous Values
	F9：Optimized Defaults
	F10：Save&Exit
	ESC：Exit
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Parallel Port Configuration

1）Serial Port

[Enabled]: activate the parallel ports

2）Device Setting（Read Only）

Display the interrupt and address of the Parallel ports.

3）Change Setting

Change the specification of the parallel, like address and interrupt, defaults Auto.

4）Device Mode

Choose the device mode for the Parallel port including standard，EPP，ECP，ECP+EPP etc.

Serial Port 1 Configuration

1）Serial Port

[Enabled] Activate the serial ports.

2）Device Setting（Read Only）

Display the interrupt and address of the serial ports.

3）Change Setting

Change the setting for serial port, defaults Auto

Serial Port 2-6 Configurations refer to Serial Port 1.

3.2.7 H/W Monitor

BIOS SETUP UTILITY	
PC Health Status	
System temperature : + 46˚C	→←: Select Screen
CPU temperature : +53˚C	↑↓: Select Item
CPU Fan Speed : N/A	Enter: Select
	+/-: Change Opt.
VCore : +1.061V	F1: General Help
+3.3V : +3.316V	F2: Previous Values
+5V : +4.909V	F9: Optimized Defaults
	F10: Save&Exit
	ESC: Exit
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PC Health Status

Display the status of the system including system temperature, CPU temperature, CPU Fan Speed, Voltage etc.

3.3 Chipset

BIOS SETUP UTILITY	
	North Bridge Parameters
▶North Bridge ▶ South Bridge	→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F9: Optimized Defaults F10: Save&Exit ESC: Exit
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3.3.1 North Bridge

BIOS SETUP UTILITY		
Boot Display Device	[VBIOS Default]	Auto disable IGD upon external GFX detected.
Flat Panel Type	[VBIOS Default]	
Fixed Graphics Memory Size	[256MB]	→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F9: Optimized Defaults F10: Save&Exit ESC: Exit
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Boot Display Device

Set display device when system boots up, defaults CRT, LVDS, LVDS+ CRT is optional.

Flat Panel Type

Select the resolution under LVDS mode.

Fixed Graphics Memory Size

Fix shared memory; driver will distribute the system memory size according to BIOS setting

3.3.2 South Bridge

BIOS SETUP UTILITY		
South Bridge		Azalia Controller
Audio Controller	[Enabled]	
Onboard LAN 1	[Auto]	→←: Select Screen
Onboard LAN 2	[Auto]	↑↓: Select Item
		Enter: Select
Restore AC Power Loss	[Power Off]	+/-: Change Opt.
		F1: General Help
		F2: Previous Values
		F9: Optimized Defaults
		F10: Save&Exit
		ESC: Exit
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Audio Controller

[Enabled] Activate the Audio function on the board.

Onboard LAN 1/2

Control network controller, defaults auto

Restore AC Power Loss

This option is for setting the system status while connecting the power again after the AC Power Loss

[Power Off]: boot system after press power button while power supply connected

[Power On]: boot system straightway while power supply connected

[Last State]: according to the setting by last time.

3.4 Boot

BIOS SETUP UTILITY	
Boot Configuration	Number of seconds to wait for setup activation key. 65535(0 × FFFF) means indefinite waiting.
Setup Prompt Timeout 1 Bootup Numlock State [On] Show Full Logo [Disabled] Boot Option Priorities Boot Option #1 [SATA PM:WDC WD10…] Hard Drive BBS Priorities	→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F9: Optimized Defaults F10: Save&Exit ESC: Exit
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Setup Prompt Timeout

Waiting time to enter “Setup“ Key. Continous boot if no key is input

Bootup Numlock State

[ON] default value indicates the NumLock is on when system boots up

[OFF] indicates the NumLock is off when system boots up

Show Full Logo

[Enabled]：Display the manufacturer LOGO picture when system boots up

[Disabled]：Display self test screen when system boots up

Boot Option #1

Select the bootable device from the lists and boot by priority

Hard Drive BBS Priorities

Select the priority for all the bootable hard drives

3.5 Security

BIOS SETUP UTILITY	
Password Description	Set Administrator Password
The password length must be in the following range: Minimum length 3 Maximum length 20 Administrator Password User Password HDD Security Configuration	→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F9: Optimized Defaults F10: Save&Exit ESC: Exit
Version 2.10.1208. Copyright（C）2010 American Megatrends，Inc.	

Administrator Password

This option is to set the administrator's password

User Password

This option indicates if a user password is set for system. "Installed" indicates User Password is set; "Not Installed" indicates User Password is not set yet

HDD Security Configuration

This option is to set the security password for hard drive

3.6 Save & Exit

BIOS SETUP UTILITY	
Load Defaults Save Changes and Reset Discard Changes and Reset	Restore/Load Default values for all the setup options.
Boot Override	→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F9: Optimized Defaults F10: Save&Exit ESC: Exit
Version 2.10.1208. Copyright（C）2010 American Megatrends，Inc.	

Load Defaults

This option is set to restore the default value for BIOS parameters

Save Change and Reset

This option is set to ensure the values you made are saved to the BIOS. Press ENTER to select this option and select [OK] to save change and reset

Discard Change and Reset

This option is set to not save the changes you made to the BIOS. Press ENTER to select this option and select [OK] to confirm

Appendix

Appendix 1: Watchdog Programming Guide

Watchdog Reference Code（ASM）

---

et the port under DEBUG order to realize the various functions of Watchdog Timer

Port Instruction：

2EH： Address register

2FH： Data register

Example：Set Watchdog Timer for 30 seconds, DEBUG in DOS:

```
c:\>debug
-o 2e 87
-o 2e 01
-o 2e 55
-o 2e 55 ; unlock
-o 2e 07
-o 2f 07 ; select logical device
-o 2e 72
-o 2f C0 ; ( Bit7=1 for second, Bit7=0 for minute)
 -o 2e 73
-o 2f 1e ;(0x1E=30）
-q
```

Input the last line and press”enter” key, system will auto reboot within 30 seconds.

==========

Appendix 2: User Guide for Fedora 14

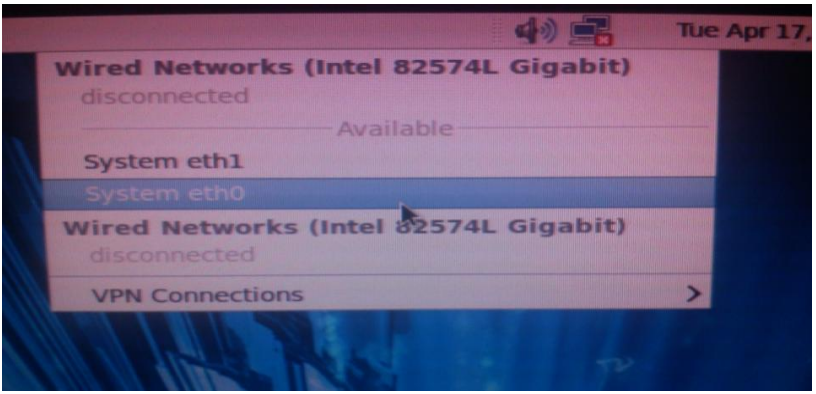
1. System Startup and Log in

Power on the computer and wait for the login interface. Then input user ID "a" and Password “111111" to login. (Notes: the root password is "111111")

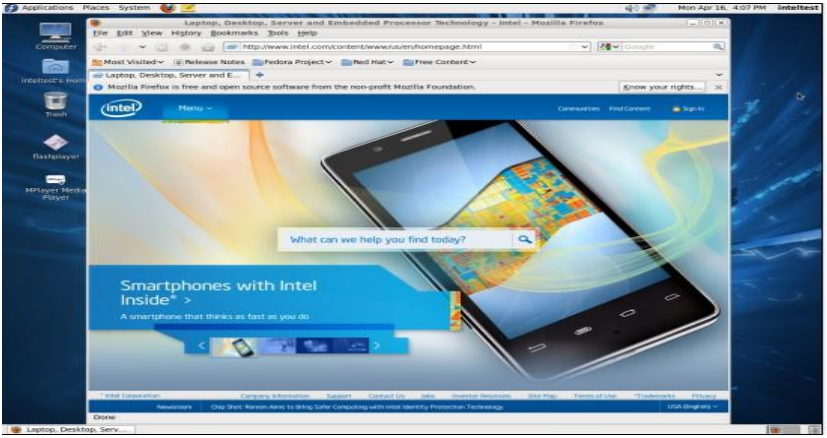
Following is the main interface after your successful login:

2. System Network Connections

This machine has 2x Gigabit LAN. Insert the reticle into the LAN port and click the LAN icon on the top right and select edit for "system eth0", Check Connect automatically and click Apply. System will dhcp the IP.



Then firefox can successfully open the web page.



3. System Display

Follow the path“System-->Preferences-->Monitors”and then the resolution settings window will pop out as the following screen:

4.Check System Device information

Two methods are recommended:

A. To check main devices information by the following path “Applications-->System

Tools-->System Monitor"

B. Open a shell and run commands to check the information of a specific device

[root@localhost ~]# lspci

00:00.0 Host bridge: Intel Corporation Atom Processor D2xxx/N2xxx DRAM Controller (rev 03)

00:02.0 VGA compatible controller: Intel Corporation Atom Processor D2xxx/N2xxx Integrated Graphics Controller (rev 09)

00:1b.0 Audio device: Intel Corporation N10/ICH 7 Family High Definition Audio Controller (rev 02)

00:1c.0 PCI bridge: Intel Corporation N10/ICH 7 Family PCI Express Port 1 (rev 02)

00:1c.2 PCI bridge: Intel Corporation N10/ICH 7 Family PCI Express Port 3 (rev 02)

00:1c.3 PCI bridge: Intel Corporation N10/ICH 7 Family PCI Express Port 4 (rev 02)

00:1d.0 USB controller: Intel Corporation N10/ICH 7 Family USB UHCI Controller #1 (rev 02)

00:1d.1 USB controller: Intel Corporation N10/ICH 7 Family USB UHCI Controller #2 (rev 02)

00:1d.2 USB controller: Intel Corporation N10/ICH 7 Family USB UHCI Controller #3 (rev 02)

00:1d.3 USB controller: Intel Corporation N10/ICH 7 Family USB UHCI Controller #4 (rev 02)

00:1d.7 USB controller: Intel Corporation N10/ICH 7 Family USB2 EHCI Controller (rev 02)

00:1e.0 PCI bridge: Intel Corporation 82801 Mobile PCI Bridge (rev e2)

00:1f.0 ISA bridge: Intel Corporation NM10 Family LPC Controller (rev 02)

00:1f.2 SATA controller: Intel Corporation N10/ICH7 Family SATA Controller [AHCI mode] (rev 02)

00:1f.3 SMBus: Intel Corporation N10/ICH 7 Family SMBus Controller (rev 02)

02:00.0 Ethernet controller: Intel Corporation 82574L Gigabit Network Connection

03:00.0 Ethernet controller: Intel Corporation 82574L Gigabit Network Connection

[root@localhost ~]# cat /proc/cpuinfo

processor : 0

vendor_id : GenuineIntel

cpu family : 6

model : 54

model name : Intel(R) Atom(TM) CPU N2800 @ 1.86GHz

stepping : 1

cpu MHz : 1064.000

cache size : 512 KB

physical id : 0

siblings : 4

core id : 0

cpu cores : 2

apicid : 0

initial apicid : 0

fdiv_bug : no

hlt_bug : no

f00f_bug : no

coma_bug : no

fpu : yes

fpu_exception : yes

cpuid level : 10

wp : yes

flags : fpu vme de pse tsc msr pae mce cx8 apic mtrr pge mca cmov pat pse36 clflush dts acpi mmx fxsr sse sse2 ss ht tm pbe nx lm constant_tsc arch_perfmon pebs bts nonstop_tsc aperfmperf pni dtes64 monitor ds_cpl est tm2 ssse3 cx16 xtpr pdcm movbe lahf_lm arat

bogomips : 3724.30

clflush size : 64

cache_alignment : 64

address sizes : 36 bits physical, 48 bits virtual

power management:

5. Other

Play Flash files

Click the flashplayer icon on the desktop

Or open a shell and run a “flashplayer” command

Find swf files under /home/inteltest/Videos/

Play Videos

Install a mplayer

Click Mplayer Media Player Icon on the desktop

Find video files under /home/inteltest/Videos


MPlayer - Video
MPLAYER


Applications Places System
Mon Apr 16, 4:13 PM Inteltest
Computer
Inteltest's Home
Trash
flashplayer
MPlayer Media Player
MPlayer - Video
MPLAYER
MPlayer
MPlayer - Video

Appendix 3: Glossary

ACPI

Advanced Configuration and Power Management. ACPI specifications allow O/S to control most power of the computer and its add-ons

Windows 98/98SE，Windows 2000 and Windows ME all support this function, which enable users to manage the system power flexibly.

BIOS

Basic input/output system. It's a kind of software including all in/out control code interface in PC. It will do hardware testing while system is booting, then system runs, it provides an interface between OS and hardware. BIOS is stored in a ROM chip.

BUS

In a computer system, it is the channel among different parts for exchanging data; it's also a group of hardware lines. BUS here refers to part lines inside CPU and main components of memory.

Chipset

Integrated chips for executing one or more functions. Here "Chipset" refers to system level chipset structured by Southbridge & Northbridge; it determines motherboard's structure and main functions.

CMOS

Complementary Metal-Oxide Semiconductor, a widely used semiconductor with the characteristic of high speed but low-power-consumption. CMOS here refers to part of reserved space in on-board CMOS RAM, for saving date, time, system information and system parameter etc.

COM

Computer-Output Microfilmer. A universal serial communication interface, usually adopts normative DB9 connector.

DIMM

Dual-Inline-Memory-Module. It's a small circuit board with memory chipset, providing 64bit RAM bus width.

DRAM

Dynamic Random Access Memorizer. It's a normal type of universal memory often with a transistor and a capacitance to store 1 bit. With the development of the technology, more and more types of ORAM with various specifications exist in computer application, such as SDRAM, DDR SDRAM and RDRAM

I2C

I2C（Inter—Integrated Circuit）, generically referred to as two-wire interface, is a multi-master serial single-ended computer bus invented by Philips that is used to attach low-speed peripherals to a motherboard, embedded system, cellphone, or other electronic device.

LAN

Network interface. Network grouped by correlative computers in a small area, generally in a company or a building. Local area network is generally buildup by sever, workstation, some communication links. Terminals can access data and devices anywhere through cables so that many users can share costly device and resource.

LED

Light-Emitting Diode. a semiconductor device that shines when power supply is connected, often used to denote info directly by light, for example, to denote power on or HDD work normally.

LPT

Line print terminal, the denomination reserved by DOS, is an universal parallel interface usually used to connect printer.

PnP

Plug-and-Play. It is a specification that allows PC to configure its external devices automatically and can work independently without the manual operation by its user . To achieve this function, its BIOS should be able to support PnP and a PnP expansion card.

POST

Self-test when power on. While booting, BIOS will do an uninterrupted testing to the system, including RAM, keyboard, hard disk driver etc. to check if all the components are in normal situation and work

well.

PS/2

A keyboard & mouse connective interface specification developed by IBM.PS/2 is a DIN interface with only 6PIN; it also can connect other devices, like modem.

USB

It's Universal Serial Bus for short. A hardware interface adapts to low speed external devices, and is always used to connect keyboard, mouse etc. One PC can connect maximum 127 USB devices, providing 12Mbit/s transmit bandwidth；USB supports hot swap and multi- data stream, namely, you can plug USB devices while system is running, system can auto-detect and makes it work

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