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CHAPTER 1: INTRODUCTION

1.1 BEFORE YOU START

Thank you for choosing our product. Before you start installing the motherboard, please make sure you follow the instructions below:

- Prepare a dry and stable working environment with sufficient lighting.
- Always disconnect the computer from power outlet before operation.
- Before you take the motherboard out from anti-static bag, ground yourself properly by touching any safely grounded appliance, or use grounded wrist strap to remove the static charge.
- Avoid touching the components on motherboard or the rear side of the board unless necessary. Hold the board on the edge, do not try to bend or flex the board.
- Do not leave any unfastened small parts inside the case after installation. Loose parts will cause short circuits which may damage the equipment.
- Keep the computer from dangerous area, such as heat source, humid air and water.

1.2 PACKAGE CHECKLIST

- ✚ HDD Cable X 1
- ✚ Rear I/O Panel for ATX Case X 1
- ✚ Installation Guide X 1
- ✚ Fully Setup Driver CD X 1 (full version manual files inside)
- ✚ Serial ATA Cable X 1
- ✚ Serial ATA Power Cable X 1 (optional)
- ✚ USB 2.0 Cable X1 (optional)

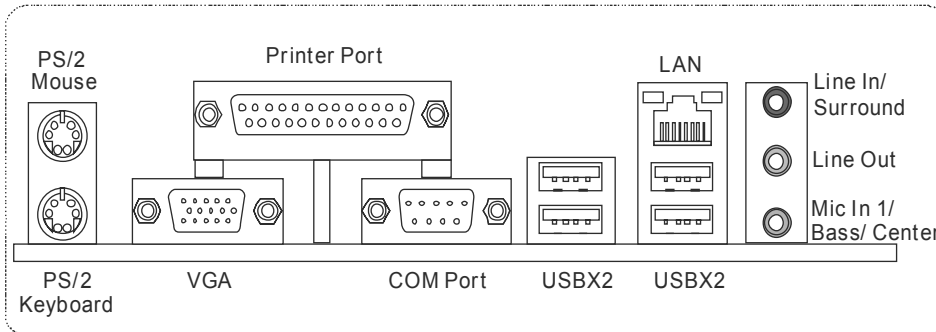
Note: The package contents may be different due to area or your motherboard version.

1.3 MOTHERBOARD FEATURES

SPEC		
CPU	BGA 437 Intel CPU On-board Intel Atom N230 CPU (945GC-230) Intel Atom N330 CPU (945GC-330)	Supports Hyper-Threading Execute Disable Bit Extended Memory 64 Technology
FSB	533 MHz	
Chipset	Intel 945GC Intel ICH7	
Graphics	Intel GMA 950	Max Shared Video Memory is 224MB
Super I/O	ITE 8718F Provides the most commonly used legacy Super I/O functionality. Low Pin Count Interface	Environment Control initiatives, H/W Monitor Fan Speed Controller ITE's "Smart Guardian" function
Main Memory	DIMM Slots x 1 Each DIMM supports 256/512MB & 1/2 GB DDR2 Max Memory Capacity 2GB Supports DDR2 400 / 533	Singal Channel Mode DDR2 memory module Registered DIMM and ECC DIMM is not supported
IDE	Integrated IDE Controller	Ultra DMA 33 / 66 / 100 Bus Master Mode supports PIO Mode 0~4,
SATA	Integrated Serial ATA Controller	Data transfer rates up to 3.0 Gb/s. SATA Version 2.0 specification compliant.
LAN	Realtek RTL8102EL	10 / 100 Mb/s auto negotiation Half / Full duplex capability
Sound Codec	ALC662	5.1 channels audio out High-Definition Audio support
Slot	PCI slot	x1 Supports PCI expansion card
On Board Connector	IDE Connector	x1 Each connector supports 2 IDE device
	SATA Connector	x2 Each connector supports 1 SATA devices
	Front Panel Connector	x1 Supports front panel facilities
	Front Audio Connector	x1 Supports front panel audio function
	CD-in Connector	x1 Supports CD audio-in function
	System Fan header	x2 System Fan Power supply
	Clear CMOS header	x1 Restore CMOS data to factory default

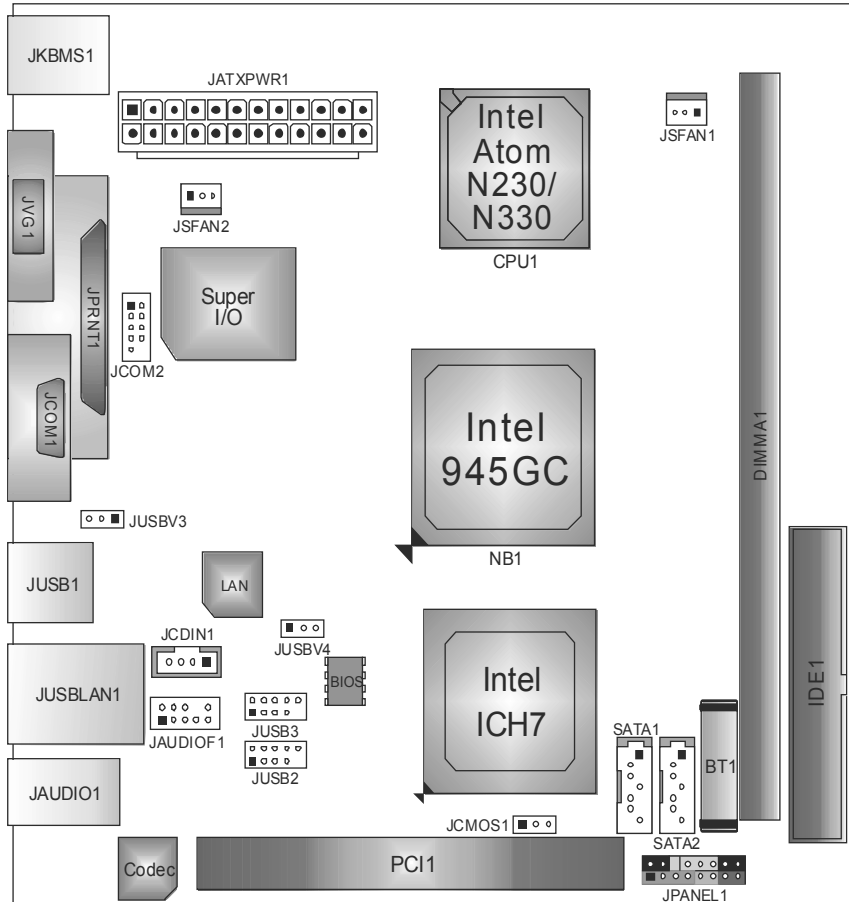
SPEC			
	USB connector	x2	Each connector supports 2 front panel USB ports
	Power Connector (24pin)	x1	Connects to Power supply
	Serial port Connector	x1	Connects to RS-232 Port
Back Panel I/O	PS/2 Keyboard	x1	Connects to PS/2 Keyboard
	PS/2 Mouse	x1	Connects to PS/2 Mouse
	Serial Port	x1	Provide RS-232 Serial connection
	Printer Port	x1	Provide 1 connection for printer
	VGA port	x1	Connects to monitor.
	LAN port	x1	Connects to RJ-45 ethernet cable
	USB Port	x4	Connects to USB devices
	Audio Jack	x3	Provide Audio-In/Out and microphone connection
Board Size	170 (W) x 170 (L) mm		Mini ITX
OS Support	Windows XP / Vista 32/ Vista 64		Biostar reserves the right to add or remove support for any OS with or without notice.

1.4 REAR PANEL CONNECTORS



Since the audio chip supports High Definition Audio Specification, the function of each audio jack can be defined by software. The input / output function of each audio jack listed above represents the default setting. However, when connecting external microphone to the audio port, please use the Line In (Blue) and Mic In (Pink) audio jack.

1.5 MOTHERBOARD LAYOUT



Note: ■ represents the 1st pin.

CHAPTER 2: HARDWARE INSTALLATION

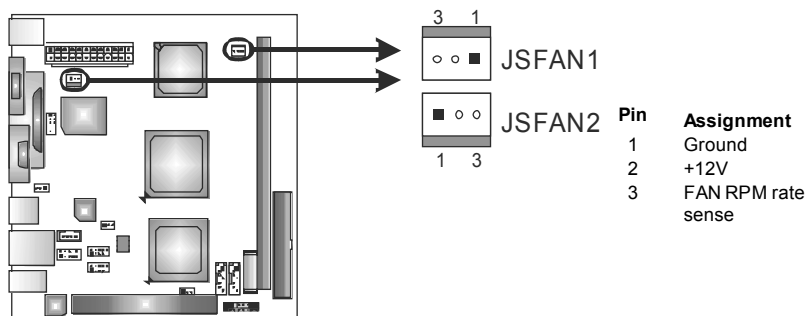
2.1 INSTALLING CENTRAL PROCESSING UNIT (CPU)

The motherboard includes an embedded Intel Atom N230 / N330 processor, and a heatsink has been installed to provide sufficient cooling.

2.2 FAN HEADERS

These fan headers support cooling-fans built in the computer. The fan cable and connector may be different according to the fan manufacturer. Connect the fan cable to the connector while matching the black wire to pin#1.

JSFAN1/JSFAN2: System Fan Header

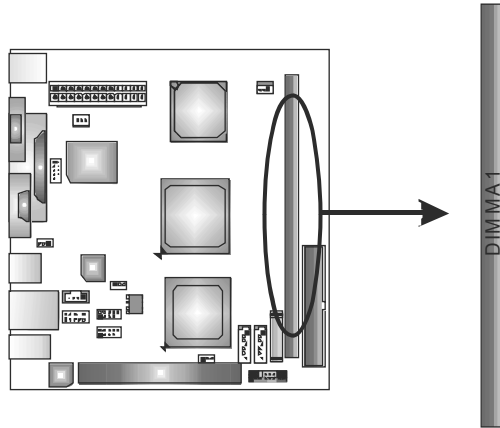


Note:

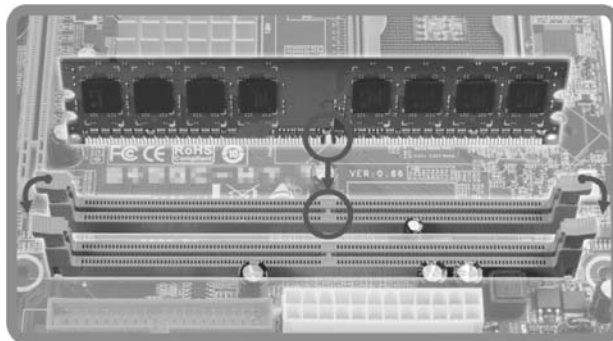
JSFAN1/2 support 3-pin head connector. When connecting with wires onto connectors, please note that the red wire is the positive and should be connected to pin#2, and the black wire is Ground and should be connected to GND.

2.3 INSTALLING SYSTEM MEMORY

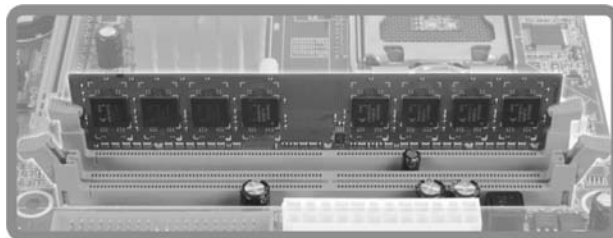
A. DDR2 Module



1. Unlock a DIMM slot by pressing the retaining clips outward. Align a DIMM on the slot such that the notch on the DIMM matches the break on the Slot.



2. Insert the DIMM vertically and firmly into the slot until the retaining chip snap back in place and the DIMM is properly seated.



B. Memory Capacity

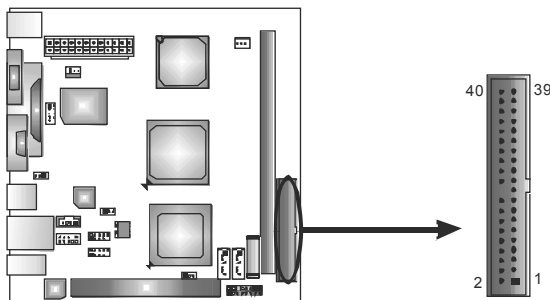
DIMM Socket Location	DDR2 Module	Total Memory Size
DIMMA1	256MB/512MB/1GB/2GB	Max memory 2GB.

2.4 CONNECTORS AND SLOTS

IDE1: Hard Disk Connector

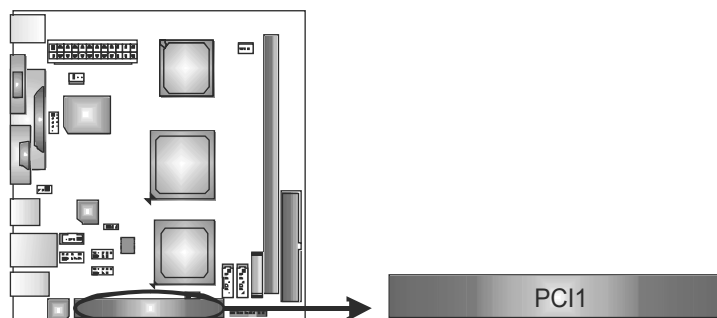
The motherboard has a 32-bit Enhanced PCI IDE Controller that provides PIO Mode 0~4, Bus Master, and Ultra DMA 33/66/100 functionality.

The IDE connector can connect a master and a slave drive, so you can connect up to two hard disk drives.



PCI1: Peripheral Component Interconnect Slot

The motherboard is equipped with 1 standard PCI slot. PCI stands for Peripheral Component Interconnect, and it is a bus standard for expansion cards. This PCI slot is designated as 32 bits.



CHAPTER 3: HEADERS & JUMPERS SETUP

3.1 HOW TO SETUP JUMPERS

The illustration shows how to set up jumpers. When the jumper cap is placed on pins, the jumper is “close”, if not, that means the jumper is “open”.



Pin opened



Pin closed

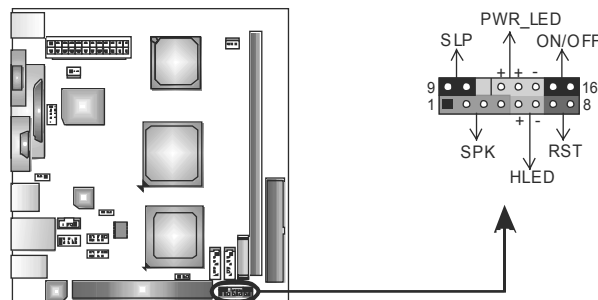


Pin1-2 closed

3.2 DETAIL SETTINGS

JPANEL1: Front Panel Header

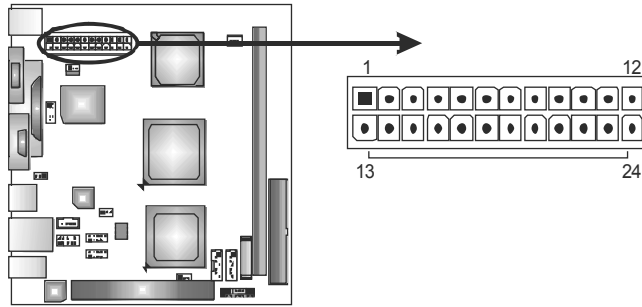
This 16-pin connector includes Power-on, Reset, HDD LED, Power LED, Sleep button, and speaker connections. It allows user to connect the PC case's front panel switch functions.



Pin	Assignment	Function	Pin	Assignment	Function
1	+5V	Speaker Connector	9	Sleep control	Sleep button
2	N/A		10	Ground	
3	N/A		11	N/A	N/A
4	Speaker	Hard drive LED	12	Power LED (+)	Power LED
5	HDD LED (+)		13	Power LED (+)	
6	HDD LED (-)	Reset button	14	Power LED (-)	Power-on button
7	Ground		15	Power button	
8	Reset control		16	Ground	

JATXPWR1: ATX Power Source Connector

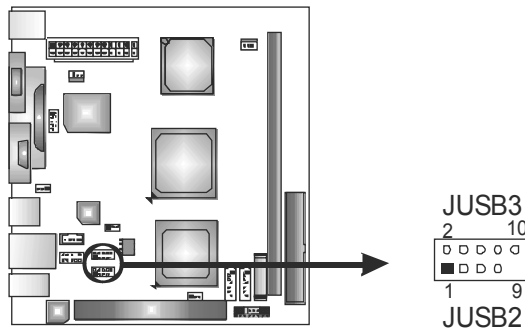
This connector allows user to connect 24-pin power connector on the ATX power supply.



Pin	Assignment	Pin	Assignment
13	+3.3V	1	+3.3V
14	-12V	2	+3.3V
15	Ground	3	Ground
16	PS_ON	4	+5V
17	Ground	5	Ground
18	Ground	6	+5V
19	Ground	7	Ground
20	NC	8	PW_OK
21	+5V	9	Standby Voltage+5V
22	+5V	10	+12V
23	+5V	11	+12V
24	Ground	12	+3.3V

JUSB2/JUSB3: Headers for USB 2.0 Ports at Front Panel

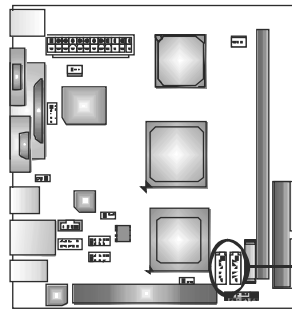
This motherboard provides 2 USB 2.0 headers, providing user to connect additional USB cable on the PC front panel, and also can be connected with internal USB devices, like USB card reader.



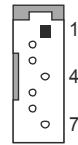
Pin	Assignment
1	+5V (fused)
2	+5V (fused)
3	USB-
4	USB-
5	USB+
6	USB+
7	Ground
8	Ground
9	Key
10	NC

SATA1/SATA2: Serial ATA Connectors

The motherboard has a PCI to SATA Controller with 2 channels SATA interface, it satisfies the SATA 2.0 spec and with transfer rate of 3Gb/s.



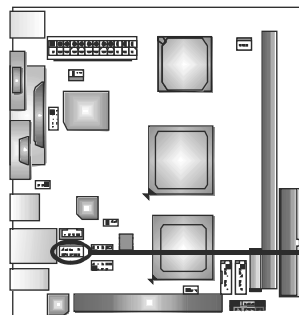
SATA1 SATA2



Pin	Assignment
1	Ground
2	TX+
3	TX-
4	Ground
5	RX-
6	RX+
7	Ground

JAUDIOF1: Front Panel Audio Header

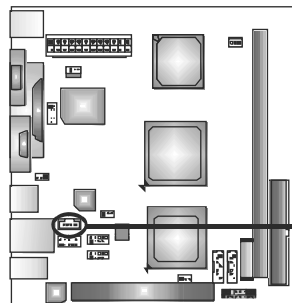
This header allows user to connect the front audio output cable with the PC front panel. It will disable the output on back panel audio connectors.



Pin	Assignment
1	Mic Left in
2	Ground
3	Mic Right in
4	GPIO
5	Right line in
6	Jack Sense
7	Front Sense
8	Key
9	Left line in
10	Jack Sense

JCDIN1: CD-ROM Audio-in Connector

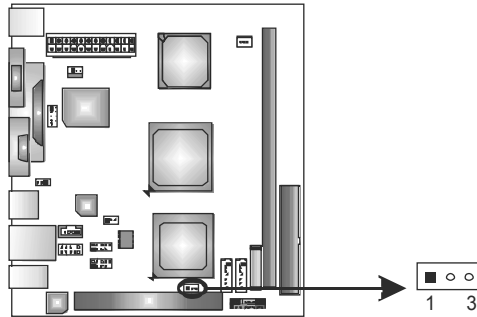
This connector allows user to connect the audio source from the variety devices, like CD-ROM, DVD-ROM, PCI sound card, PCI TV turner card etc..



Pin	Assignment
1	Left Channel Input
2	Ground
3	Ground
4	Right Channel Input

JCMOS1: Clear CMOS Header

Placing the jumper on pin2-3 allows user to restore the BIOS safe setting and the CMOS data. Please carefully follow the procedures to avoid damaging the motherboard.



Pin 1-2 Close:
Normal Operation (Default).



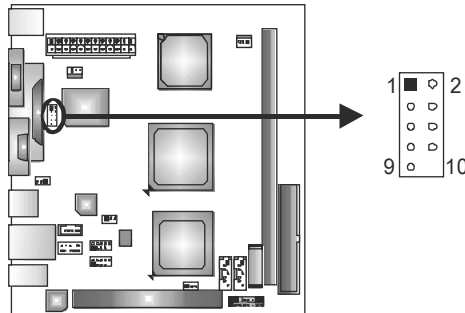
Pin 2-3 Close:
Clear CMOS data.

※ Clear CMOS Procedures:

1. Remove AC power line.
2. Set the jumper to "Pin 2-3 close".
3. Wait for five seconds.
4. Set the jumper to "Pin 1-2 close".
5. Power on the AC.
6. Reset your desired password or clear the CMOS data.

JCOM2: Serial port Connector

The motherboard has a Serial Port Connector for connecting RS-232 Port.



Pin	Assignment
1	Carrier detect
2	Received data
3	Transmitted data
4	Data terminal ready
5	Signal ground
6	Data set ready
7	Request to send
8	Clear to send
9	Ring indicator
10	NC

JUSBV3/JUSBV4: Power Source Headers for USB Ports

Pin 1-2 Close:

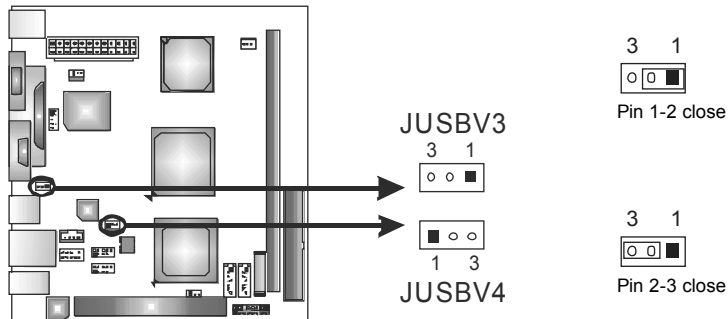
JUSBV3: +5V for USB ports at JUSB1/JUSBLAN1.

JUSBV4: +5V for USB ports at front panel (JUSB2/JUSB3).

Pin 2-3 Close:

JUSBV3: USB ports at JUSB1/JUSBLAN1 are powered by +5V standby voltage.

JUSBV4: USB ports at front panel (JUSB2/JUSB3) are powered by +5V standby voltage.



Note:

In order to support this function "Power-On system via USB device," "JUSBV3/ JUSBV4" jumper cap should be placed on Pin 2-3 individually.

CHAPTER 4: USEFUL HELP

4.1 DRIVER INSTALLATION NOTE

After you installed your operating system, please insert the Fully Setup Driver CD into your optical drive and install the driver for better system performance.

You will see the following window after you insert the CD



The setup guide will auto detect your motherboard and operating system.

Note:

If this window didn't show up after you insert the Driver CD, please use file browser to locate and execute the file **SETUP.EXE** under your optical drive.

A. Driver Installation

To install the driver, please click on the Driver icon. The setup guide will list the compatible driver for your motherboard and operating system. Click on each device driver to launch the installation program.

B. Software Installation

To install the software, please click on the Software icon. The setup guide will list the software available for your system, click on each software title to launch the installation program.

C. Manual

Aside from the paperback manual, we also provide manual in the Driver CD. Click on the Manual icon to browse for available manual.

Note:

You will need Acrobat Reader to open the manual file. Please download the latest version of Acrobat Reader software from <http://www.adobe.com/products/acrobat/readstep2.html>

4.2 AMI BIOS BEEP CODE

Boot Block Beep Codes

Number of Beeps	Description
1	No media present. (Insert diskette in floppy drive A:)
2	"AMIBOOT.ROM" file not found in root directory of diskette in A:
3	Insert next diskette if multiple diskettes are used for recovery
4	Flash Programming successful
5	File read error
7	No Flash EPROM detected
10	Flash Erase error
11	Flash Program error
12	"AMIBOOT.ROM" file size error
13	BIOS ROM image mismatch (file layout does not match image present in flash device)

POST BIOS Beep Codes

Number of Beeps	Description
1	Memory refresh timer error
3	Base memory read/write test error
6	Keyboard controller BAT command failed
7	General exception error (processor exception interrupt error)
8	Display memory error (system video adapter)

Troubleshooting POST BIOS Beep Codes

Number of Beeps	Troubleshooting Action
1, 3	Reseat the memory, or replace with known good modules.
6, 7	<p>Fatal error indicating a serious problem with the system. Consult your system manufacturer. Before declaring the motherboard beyond all hope, eliminate the possibility of interference by a malfunctioning add-in card. Remove all expansion cards except the video adapter.</p> <ul style="list-style-type: none"> ● If beep codes are generated when all other expansion cards are absent, consult your system manufacturer's technical support. ● If beep codes are not generated when all other expansion cards are absent, one of the add-in cards is causing the malfunction. Insert the cards back into the system one at a time until the problem happens again. This will reveal the malfunctioning card.
8	If the system video adapter is an add-in card, replace or reseat the video adapter. If the video adapter is an integrated part of the system board, the board may be faulty.

4.3 EXTRA INFORMATION

CPU Overheated

If the system shutdown automatically after power on system for seconds, that means the CPU protection function has been activated.

When the CPU is over heated, the motherboard will shutdown automatically to avoid a damage of the CPU, and the system may not power on again.

In this case, please double check:

1. The CPU cooler surface is placed evenly with the CPU surface.
2. CPU fan is rotated normally.
3. CPU fan speed is fulfilling with the CPU speed.

After confirmed, please follow steps below to relief the CPU protection function.

1. Remove the power cord from power supply for seconds.
2. Wait for seconds.
3. Plug in the power cord and boot up the system.

Or you can:

1. Clear the CMOS data.
(See "Close CMOS Header: JCMOS1" section)
2. Wait for seconds.
3. Power on the system again.

4.4 TROUBLESHOOTING

Probable	Solution
<ol style="list-style-type: none"> 1. No power to the system at all. Power light don't illuminate, fan inside power supply does not turn on. 2. Indicator light on keyboard does not turn on. 	<ol style="list-style-type: none"> 1. Make sure power cable is securely plugged in. 2. Replace cable. 3. Contact technical support.
<p>System inoperative. Keyboard lights are on, power indicator lights are lit, and hard drive is spinning.</p>	<p>Using even pressure on both ends of the DIMM, press down firmly until the module snaps into place.</p>
<p>System does not boot from a hard disk drive, but can be booted from optical drive.</p>	<ol style="list-style-type: none"> 1. Check cable running from disk to disk controller board. Make sure both ends are securely plugged in; check the drive type in the standard CMOS setup. 2. Backing up the hard drive is extremely important. All hard disks are capable of breaking down at any time.
<p>System only boots from an optical drive. Hard disks can be read, applications can be used, but system fails to boot from a hard disk.</p>	<ol style="list-style-type: none"> 1. Back up data and applications files. 2. Reformat the hard drive. Re-install applications and data using backup disks.
<p>Screen message shows "Invalid Configuration" or "CMOS Failure."</p>	<p>Review system's equipment. Make sure correct information is in setup.</p>
<p>System cannot boot after user installs a second hard drive.</p>	<ol style="list-style-type: none"> 1. Set master/slave jumpers correctly. 2. Run SETUP program and select correct drive types. Call the drive manufacturers for compatibility with other drives.

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APPENDIX: SPEC IN OTHER LANGUAGES

GERMAN

<i>Spezifikationen</i>			
CPU	BGA 437 Intel CPU On-board Intel Atom N230 CPU (945GC-230) Intel Atom N330 CPU (945GC-330)	Unterstützt Hyper-Threading Execute Disable Bit Extended Memory 64 Technology	
FSB	533 MHz		
Chipsatz	Intel 945GC Intel ICH7		
Grafik	Intel GMA 950	Max. 224MB gemeinsam benutzter Videospeicher	
Super E/A	ITE 8718F Bietet die häufig verwendeten alten Super E/A-Funktionen. Low Pin Count-Schnittstelle	Umgebungskontrolle, Hardware-Überwachung Lüfterdrehzahl-Controller "Smart Guardian"-Funktion von ITE	
Arbeitsspeicher	DDR2 DIMM-Steckplätze x 1 Jeder DIMM unterstützt 256/512 MB & 1/2 GB DDR2 Max. 2GB Arbeitsspeicher Unterstützt DDR2 400 / 533	Einzel-Kanal DDR2 Speichermodul registrierte DIMMs. ECC DIMMs werden nicht unterstützt.	
IDE	Integrierter IDE-Controller	Ultra DMA 33 / 66 / 100 Bus Master-Modus Unterstützt PIO-Modus 0~4	
SATA	Integrierter Serial ATA-Controller	Datentransferrate bis zu 3Gb/s Konform mit der SATA-Spezifikation Version 2.0	
LAN	Realtek RTL8102EL	10 / 100 Mb/s Auto-Negotiation Halb-/ Vollduplex-Funktion	
Audio-Codec	ALC662	5.1-Kanal-Audioausgabe Unterstützt High-Definition Audio	
Steckplätze	PCI-Steckplatz	x1	
Onboard-Anschluss	IDE-Anschluss	x1	Jeder Anschluss unterstützt 2 IDE-Laufwerke
	SATA-Anschluss	x2	Jeder Anschluss unterstützt 1 SATA-Laufwerk
	Fronttafelanschluss	x1	Unterstützt die Fronttafel-funktionen
	Front-Audioanschluss	x1	Unterstützt die Fronttafel-Audioanschlussfunktion

Spezifikationen			
	CD-IN-Anschluss	x1	Unterstützt die CD Audio-In-Funktion
	System-Lüfter-Sockel	x2	System-Lüfter-Stromversorgungsanschluss
	"CMOS löschen"-Sockel	x1	
	USB-Anschluss	x2	Jeder Anschluss unterstützt 2 Fronttafel-USB-Anschlüsse
	Stromanschluss (24-polig)	x1	
	Serieller Anschluss	x1	
Rückseiten-E/A	PS/2-Tastatur	x1	
	PS/2-Maus	x1	
	Serieller Anschluss	x1	
	Druckeranschluss	x1	
	VGA-Anschluss	x1	
	LAN-Anschluss	x1	
	USB-Anschluss	x4	
	Audioanschluss	x3	
Platinengröße	170 mm (B) X 170 mm (L)		
OS-Unterstützung	Windows XP / Vista 32/ Vista 64		Biostar behält sich das Recht vor, ohne Ankündigung die Unterstützung für ein Betriebssystem hinzuzufügen oder zu entfernen.

FRENCH

SPEC			
UC	BGA 437 Intel CPU On-board Intel Atom N230 CPU (945GC-230) Intel Atom N330 CPU (945GC-330)	Prend en charge les technologies Hyper-Threading d'exécution de bit de désactivation de mémoire étendue 64	
Bus frontal	533 MHz		
Chipset	Intel 945GC Intel ICH7		
Graphiques	Intel GMA 950	Mémoire vidéo partagée maximale de 224 Mo	
Super E/S	ITE 8718F Fournit la fonctionnalité de Super E/S patrimoniales la plus utilisée. Interface à faible compte de broches	Initiatives de contrôle environnementales, Moniteur de matériel Contrôleur de vitesse de ventilateur Fonction "Gardien intelligent" de l'ITE	
Mémoire principale	Fentes DDR2 DIMM x 1 Chaque DIMM prend en charge des DDR2 de 256/512 Mo et 1/2 Go Capacité mémoire maximale de 2 Go Prend en charge la DDR2 400 / 533	Module de mémoire DDR2 à mode à simple voie Les DIMM à registres et DIMM avec code correcteurs d'erreurs ne sont pas prises en charge	
IDE	Contrôleur IDE intégré	Mode principale de Bus Ultra DMA 33 / 66 / 100 Prend en charge le mode PIO 0~4,	
SATA	Contrôleur Serial ATA intégré :	Taux de transfert jusqu'à 3 Go/s. Conforme à la spécification SATA Version 2.0	
LAN	Realtek RTL8102EL	10 / 100 Mb/s négociation automatique Half / Full duplex capability	
Codec audio	ALC662	Sortie audio à 5.1 voies Prise en charge de l'audio haute définition	
Fentes	Fente PCI	x1	
Connecteur embarqué	Connecteur IDE	x1	Chaque connecteur prend en charge 2 périphériques IDE
	Connecteur SATA	x2	Chaque connecteur prend en charge 1 périphérique SATA
	Connecteur du panneau avant	x1	Prend en charge les équipements du panneau avant
	Connecteur Audio du panneau avant	x1	Prend en charge la fonction audio du panneau avant

945GC-230/945GC-330

SPEC			
	Connecteur d'entrée CD	x1	Prend en charge la fonction d'entrée audio de CD
	Embase de ventilateur système	x2	Alimentation électrique du ventilateur système
	Embase d'effacement CMOS	x1	
	Connecteur USB	x2	Chaque connecteur prend en charge 2 ports USB de panneau avant
	Connecteur d'alimentation (24 broches)	x1	
	Connecteur de Port série	x1	
E/S du panneau arrière	Clavier PS/2	x1	
	Souris PS/2	x1	
	Port série	x1	
	Port d'imprimante	x1	
	Port VGA	x1	
	Port LAN	x1	
	Port USB	x4	
	Fiche audio	x3	
Dimensions de la carte	170mm (L) X 170 mm (H)		
Support SE	Windows XP / Vista 32 / Vista 64		Biostar se réserve le droit d'ajouter ou de supprimer le support de SE avec ou sans préavis.

ITALIAN

SPECIFICA			
CPU	BGA 437 Intel CPU On-board Intel Atom N230 CPU (945GC-230) Intel Atom N330 CPU (945GC-330)	Supporto di Hyper-Threading Execute Disable Bit Tecnologia Extended Memory 64	
FSB	533 MHz		
Chipset	Intel 945GC Intel ICH7		
Grafica	Intel GMA 950	La memoria video condivisa massima è di 224MB	
Super I/O	ITE 8718F Fornisce le funzionalità legacy Super I/O usate più comunemente. Interfaccia LPC (Low Pin Count)	Funzioni di controllo dell'ambiente: Monitoraggio hardware Controller velocità ventolina Funzione "Smart Guardian" di ITE	
Memoria principale	Alloggi DIMM DDR2 x 1 Ciascun DIMM supporta DDR2 256/512MB e 1/2 GB Capacità massima della memoria 2GB Supporto di DDR2 400 / 533	Modulo di memoria DDR2 a canale singolo DIMM registrati e DIMM ECC non sono supportati	
IDE	Controller IDE integrato	Modalità Bus Master Ultra DMA 33 / 66 / 100 Supporto modalità PIO Mode 0-4	
SATA	Controller Serial ATA integrato	Velocità di trasferimento dei dati fino a 3 Gb/s. Compatibile specifiche SATA Versione 2.0.	
LAN	Realtek RTL8102EL	Negoziatura automatica 10 / 100 Mb/s Capacità Half / Full Duplex	
Codec audio	ALC662	Uscita audio 5.1 canali Supporto audio High-Definition (HD)	
Alloggi	Alloggio PCI	x1	
Connettori su scheda	Connettore IDE	x1	Ciascun connettore supporta 2 unità IDE
	Connettore SATA	x2	Ciascun connettore supporta 1 unità SATA
	Connettore pannello frontale	x1	Supporta i servizi del pannello frontale
	Connettore audio frontale	x1	Supporta la funzione audio pannello frontale

SPECIFICA			
	Connettore CD-in	x1	Supporta la funzione input audio CD
	Collettore ventolina sistema	x2	Alimentazione ventolina di sistema
	Collettore cancellazione CMOS	x1	
	Connettore USB	x2	Ciascun connettore supporta 2 porte USB
	Connettore alimentazione (24 pin)	x1	pannello frontale
	Connettore Porta seriale	x1	
I/O pannello posteriore	Tastiera PS/2	x1	
	Mouse PS/2	x1	
	Porta seriale	x1	
	Porta stampante	x1	
	Porta VGA	x1	
	Porta LAN	x1	
	Porta USB	x4	
	Connettore audio	x3	
Dimensioni scheda	170 mm (larghezza) x 170 mm (altezza)		
Sistemi operativi supportati	Windows XP / Vista 32/ Vista 64		Biostar si riserva il diritto di aggiungere o rimuovere il supporto di qualsiasi sistema operativo senza preavviso.

SPANISH

<i>Especificación</i>		
CPU	BGA 437 Intel CPU On-board Intel Atom N230 CPU (945GC-230) Intel Atom N330 CPU (945GC-330)	Admite Hyper-Threading Bit de deshabilitación de ejecución Tecnología Extended Memory 64
FSB	533 MHz	
Conjunto de chips	Intel 945GC Intel ICH7	
Gráficos	Intel GMA 950	Memoria máxima de vídeo compartida de 224MB
Súper E/S	ITE 8718F Le ofrece las funcionalidades heredadas de uso más común Súper E/S. Interfaz de cuenta Low Pin	Iniciativas de control de entorno, Monitor hardware Controlador de velocidad de ventilador Función "Guardia inteligente" de ITE
Memoria principal	Ranuras DIMM DDR2 x 1 Cada DIMM admite DDR2 de 256/512 MB y 1/2 GB Capacidad máxima de memoria de 2GB Admite DDR2 de 400 / 533	Módulo de memoria DDR2 de canal solo No admite DIMM registrados o DIMM compatibles con ECC
IDE	Controlador IDE integrado	Modo bus maestro Ultra DMA 33 / 66 / 100 Soporte los Modos PIO 0~4.
SATA	Controlador ATA Serie Integrado	Tasas de transferencia de hasta 3 Gb/s. Compatible con la versión SATA 2.0.
Red Local	Realtek RTL8102EL	Negociación de 10 / 100 Mb/s Funciones Half / Full dúplex
Códecs de sonido	ALC662	Salida de sonido de 5.1 canales Soporte de sonido Alta Definición
Ranuras	Ranura PCI X1	
Conectores en placa	Conector IDE X1 Conector SATA X2 Conector de panel frontal X1 Conector de sonido frontal X1	Cada conector soporta 2 dispositivos IDE Cada conector soporta 1 dispositivos SATA Soporta instalaciones en el panel frontal Soporta funciones de sonido en el panel frontal

Especificación			
	Conector de entrada de CD	X1	Soporta función de entrada de sonido de CD
	Cabecera de ventilador de sistema	X2	Fuente de alimentación de ventilador de sistema
	Cabecera de borrado de CMOS	X1	
	Conector USB	X2	Cada conector soporta 2 puertos USB frontales
	Conector de alimentación (24 patillas)	X1	
	Conector Puerto serie	X1	
Panel trasero de E/S	Teclado PS/2	X1	
	Ratón PS/2	X1	
	Puerto serie	X1	
	Puerto de impresora	X1	
	Puerto VGA	X1	
	Puerto de red local	X1	
	Puerto USB	X4	
	Conector de sonido	X3	
Tamaño de la placa	170 mm. (A) X 170 mm. (H)		
Soporte de sistema operativo	Windows XP / Vista 32/ Vista 64		Biostar se reserva el derecho de añadir o retirar el soporte de cualquier SO con o sin aviso previo.

PORTUGUESE

ESPECIFICAÇÕES			
CPU	BGA 437 Intel CPU On-board Intel Atom N230 CPU (945GC-230) Intel Atom N330 CPU (945GC-330)	Suporta as tecnologias Hyper-Threading Execute Disable Bit Extended Memory 64	
FSB	533 MHz		
Chipset	Intel 945GC Intel ICH7		
Placa gráfica	Intel GMA 950	Memória de vídeo máxima partilhada: 224 MB	
Especificação do Super I/O	ITE 8718F Proporciona as funcionalidades mais utilizadas em termos da especificação Super I/O. Interface LPC (Low Pin Count).	Iniciativas para controlo do ambiente Monitorização do hardware Controlador da velocidade da ventoinha Função "Smart Guardian" da ITE	
Memória principal	Ranuras DIMM DDR2 x1 Cada módulo DIMM suporta uma memória DDR2 de 256/512 MB & 1/2 GB Capacidade máxima de memória: 2 GB Suporta módulos DDR2 400 / 533	Módulo de memória DDR2 de canal único Os módulos DIMM registados e os DIMM ECC não são suportados	
IDE	Controlador IDE integrado	Modo Bus master Ultra DMA 33 / 66 / 100 Suporta o modo PIO 0~4.	
SATA	Controlador Serial ATA integrado	Velocidades de transmissão de dados até 3 Gb/s. Compatibilidade com a especificação SATA versão 2.0.	
LAN	Realtek RTL8102EL	Auto negociação de 10 / 100 Mb/s Capacidade semi/full-duplex	
Codec de som	ALC662	Saída de áudio de 5.1 canais Suporta a especificação High-Definition Audio	
Ranuras	Ranhura PCI	x1	
Conectores na placa	Conector IDE	x1	Cada conector suporta 2 dispositivos IDE
	Conector SATA	x2	Cada conector suporta 1 dispositivo SATA
	Conector do painel frontal	x1	Para suporte de várias funções no painel frontal

ESPECIFICAÇÕES			
	Conector de áudio frontal	x1	Suporta a função de áudio no painel frontal
	Conector para entrada de CDs	x1	Suporta a entrada de áudio a partir de CDs
	Conector da ventoinha do sistema	x2	Alimentação da ventoinha do sistema
	Conector para limpeza do CMOS	x1	
	Conector USB	x2	Cada conector suporta 2 portas USB no painel frontal
	Conector de alimentação (24 pinos)	x1	
	Conector da Porta série	x1	
Entradas/S aídas no painel traseiro	Teclado PS/2	x1	
	Rato PS/2	x1	
	Porta série	x1	
	Porta para impressora	x1	
	Porta VGA	x1	
	Porta LAN	x1	
	Porta USB	x4	
	Tomada de áudio	x3	
Tamanho da placa	170 mm (L) X 170 mm (A)		
Sistemas operativos suportados	Windows XP / Vista 32/ Vista 64		A Biostar reserva-se o direito de adicionar ou remover suporte para qualquer sistema operativo com ou sem aviso prévio.

POLISH

<i>SPEC</i>			
Procesor	BGA 437 Intel CPU On-board Intel Atom N230 CPU (945GC-230) Intel Atom N330 CPU (945GC-330)		Obsługa Hyper-Threading Execute Disable Bit Extended Memory 64 Technology
FSB	533 MHz		
Chipset	Intel 945GC Intel ICH7		
Grafika	Intel GMA 950		Maks. wielkość współdzielonej pamięci video wynosi 224MB
Pamięć główna	Gniazda DDR2 DIMM x 1 Każde gniazdo DIMM obsługuje moduły 256/512 MB oraz 1/2 GB DDR2 Maks. wielkość pamięci 2GB Obsługa DDR2 400 / 533		Moduł pamięci DDR2 z trybem pojedynczy kanału Brak obsługi Registered DIMM oraz ECC DIMM
Super I/O	ITE 8718F Zapewnia najbardziej powszechne funkcje Super I/O. Interfejs Low Pin Count		Funkcje kontroli warunków pracy, Monitor H/W Kontroler prędkości wentylatora Funkcja ITE "Smart Guardian"
IDE	Zintegrowany kontroler IDE		Ultra DMA 33 / 66 / 100 Tryb Bus Master obsługa PIO tryb 0~4
SATA	Zintegrowany kontroler Serial ATA		Transfer danych do 3 Gb/s. Zgodność ze specyfikacją SATA w wersji 2.0.
LAN	Realtek RTL8102EL		10 / 100 Mb/s z automatyczną negocjacją szybkości Działanie w trybie połowicznego / pełnego duplexu
Kodek dźwiękowy	ALC662		5.1 kanałowe wyjście audio Obsługa High-Definition Audio
Gniazda	Gniazdo PCI	x1	
Złącza wbudowane	Złącze IDE	x1	Każde złącze obsługuje 2 urządzenia IDE
	Złącze SATA	x2	Każde złącze obsługuje 1 urządzenie SATA
	Złącze panela przedniego	x1	Obsługa elementów panela przedniego

SPEC			
	Przednie złącze audio	x1	Obsługa funkcji audio na panelu przednim
	Złącze wejścia CD	x1	Obsługa funkcji wejścia audio CD
	Złącze główkowe wentylatora systemowego	x2	Zasilanie wentylatora systemowego
	Złącze główkowe kasowania CMOS	x1	
	Złącze USB	x2	Każde złącze obsługuje 2 porty USB na panelu przednim
	Złącze zasilania (24 pinowe)	x1	
	Złącze Port szeregowy	x1	
Back Panel I/O	Klawiatura PS/2	x1	
	Mysz PS/2	x1	
	Port szeregowy	x1	
	Port drukarki	x1	
	Port VGA	x1	
	Port LAN	x1	
	Port USB	x4	
	Gniazdo audio	x3	
Wymiary płyty	170 mm (S) X 170 mm (W)		
Obsługa systemu operacyjnego	Windows XP / Vista 32/ Vista 64		Biostar zastrzega sobie prawo dodawania lub odwoływania obsługi dowolnego systemu operacyjnego bez powiadomienia.

RUSSIAN

СПЕЦ		
CPU (центральный процессор)	BGA 437 Intel CPU On-board Intel Atom N230 CPU (945GC-230) Intel Atom N330 CPU (945GC-330)	Поддержка технологий Hyper-Threading Execute Disable Bit Extended Memory 64 Technology
FSB	533 МГц	
Набор микросхем	Intel 945GC Intel ICH7	
Графика	Intel GMA 950	Максимальная совместно используемая видео память составляет 224 МБ
Основная память	Слоты DDR2 DIMM x 1 Каждый модуль DIMM поддерживает 256/512 МБ & 1/2 ГБ DDR2 Максимальная ёмкость памяти 2 ГБ Поддержка DDR2 400 / 533	Модуль памяти с одноканально режимом DDR2 Не поддерживает зарегистрированные модули DIMM and ECC DIMM
Super I/O	ITE 8718F Обеспечивает наиболее используемые действующие функциональные возможности Super I/O. Интерфейс с низким количеством выводов	Инициативы по охране окружающей среды, Аппаратный монитор Регулятор скорости Функция ITE "Smart Guardian" (Интеллектуальная защита)
IDE	Встроенное устройство управления встроенными интерфейсами устройств	Режим "хозяина" шины Ultra DMA 33 / 66 / 100 Поддержка режима PIO 0~4,
SATA	Встроенное последовательное устройство управления ATA	скорость передачи данных до 3 гигабит/с. Соответствие спецификации SATA версия 2.0.
Локальная сеть	Realtek RTL8102EL	Автоматическое согласование 10 / 100 Мб/с Частичная / полная дуплексная способность
Звуковой кодек	ALC662	5.1канальный звуковой выход Звуковая поддержка High-Definition
Слоты	Слот PCI	x1
Встроенный разъём	Разъём IDE	x1 Каждый разъём поддерживает 2 встроенных интерфейса накопителей
	Разъём SATA	x2 Каждый разъём поддерживает 1 устройство SATA
	Разъём на лицевой панели	x1 Поддержка устройств на лицевой панели
	Входной звуковой разъём	x1 Поддержка звуковых функций на лицевой панели

СПЕЦ			
	Разъём ввода для CD	x1	Поддержка функции ввода для CD
	Контактирующее приспособление вентилятора системы	x2	Источник питания для вентилятора системы
	Открытое контактирующее приспособление CMOS	x1	
	USB-разъём	x2	Каждый разъём поддерживает 2 USB-порта на лицевой панели
	Разъём питания (24 вывод)	x1	
	Разъём Последовательный порт	x1	
Задняя панель средств ввода-вывода	Клавиатура PS/2	x1	
	Мышь PS/2	x1	
	Последовательный порт	x1	
	Порт подключения принтера	x1	
	Порт VGA	x1	
	Порт LAN	x1	
	USB-порт	x4	
	Гнездо для подключения наушников	x3	
Размер панели	170 мм (Ш) X 170 мм (В)		
Поддержка OS	Windows XP / Vista 32/ Vista 64		Biostar сохраняет за собой право добавлять или удалять средства обеспечения для OS с или без предварительного уведомления.

ARABIC

المواصفات		
Hyper-Threading تدعم تعييت Execute Disable Bit Extended Memory 64 Technology	BGA 437 Intel CPU On-board Intel Atom N230 CPU (945GC-230) Intel Atom N330 CPU (945GC-330)	وحدة المعالجة المركزية
	ميغا هرتز 533 تردد	النقل الأمامي الجليبي
	Intel 945GC Intel ICH7	مجموعة الشرائح
ميغا بايت 224 أقصى سعة لذاكرة الفيديو المشتركة	Intel GMA 950	بطاقة الرسومات
وحيدة مزودة/أحادية DDR2 ذاكرة وحدة ECC وتلك التي لا تتوافق مع DIMM لا تدعم رقائق الذاكرة	1 عدد DDR2 DIMM قحة ميغا 256/512 سعة DDR2 تدعم ذاكرة من نوع DIMM كل قحة بايت 1/2 و بايت سعة ذاكرة قصوى 2 جيغا بايت ميغا بايت 400 / 533 سعت DDR2 تدعم الذاكرة من نوع	الذاكرة الرئيسية
وسائل التحكم في البيئة: مراقب لمعرفة حالة الأجهزة مراقب في سرعة المروحة ITE من "Smart Guardian" وظيفة	ITE 8718F الأكثر استخداماً. Super I/O توفر وظيفة Low Pin Count Interface تدعم تقنية	Super I/O
Ultra DMA 33 / 66 / 100 النقل بتقنية وضع رئيسي PIO Mode 0~4 دعم وضع	متكامل IDE متحكم	منفذ IDE
نقل البيانات بسرعة تصل إلى 3 جيجابت/ثانية. الإصدار SATA مطابقة لمواصفات 2.0.	متكامل Serial ATA متحكم	SATA
تفاوض تلقائي 100/10 ميغا بايت / ثانية إمكانية النقل المزدوج الكامل/النصفي	Realtek RTL8102EL	شبكة داخلية 100/10
قوات لخرج الصوت 5.1 تدعم تقنية الصوت عالي التعريف من	ALC662	كوديك الصوت
	عدد 1 قحة PCI	التحات
IDE يدعم كل منفذ اثنين من أجهزة SATA يدعم كل منفذ واحد من أجهزة يدعم تجهيزات اللوحة الأمامية	عدد 1 منفذ IDE عدد 2 منفذ SATA عدد 1 منفذ اللوحة الأمامية	المنافذ على سطح اللوحة

945GC-230/945GC-330

المواصفات		
يدعم وظيفة الصوت باللوحة الأمامية	عدد 1	منفذ الصوت الأمامي
يدعم وظيفة دخل صوت القرص المدمج	عدد 1	منفذ CD-IN
توصيل الطاقة لمروحة النظام	عدد 2	وصلة مروحة النظام
	عدد 1	وصلة مسح CMOS
باللوحة الأمامية USB يدعم كل منفذ قحطي	عدد 2	منفذ USB
	عدد 1	منفذ توصيل الطاقة (24 بيوس)
	عدد 1	منفذ تسلسلي
	عدد 1	لوحة مفاتيح PS/2
	عدد 1	ملوس PS/2
	عدد	منفذ تسلسلي
	عدد 1	منفذ طباعة
	عدد 1	منفذ VGA
	عدد 1	منفذ شبكة اتصال محلية
	عدد 4	منافذ USB
	عدد 3	مقيس صوت
		حجم اللوحة 170 مم (عرض) X 170 مم (ارتفاع)
بحقها في اإضافة لو إزالة الدعم لأي نظام تشغيل بإخطار أو Biostar يحتفظ بدون إخطار .		دعم أنظمة التشغيل Windows XP / Vista 32 / Vista 64

JAPANESE

仕様		
CPU	BGA 437 Intel CPU On-board Intel Atom N230 CPU (945GC-230) Intel Atom N330 CPU (945GC-330)	Hyper-Threading Execute Disable Bit Extended Memory 64 Technology
FSB	533 MHz	
チップセット	Intel 945GC Intel ICH7	
グラフィックス	Intel GMA 950	最大の共有ビデオメモリは224MBです
メインメモリ	DDR2 DIMMスロット x 1 各DIMMは256/512 MB & 1/2 GB DDR2をサポート 最大メモリ容量2GB DDR2 400 / 533 をサポート	単一チャンネルモードDDR2メモリモジュール 登録済みDIMMとECC DIMMはサポートされません
Super I/O	ITE 8718F もっとも一般に使用されるレガシーSuper I/O機能を採用しています。 低ピンカウントインターフェイス	環境コントロールイニシアチブ、 H/Wモニター ファン速度コントローラ/ モニター ITEの「スマートガーディアン」機能
IDE	統合IDEコントローラ	Ultra DMA 33 / 66 / 100バスマスタモード PIO Mode 0~4のサポート
SATA	統合シリアルATAコントローラ	最高3 Gb/秒のデータ転送速度 SATAバージョン2.0仕様に準拠。
10/100 LAN	Realtek RTL8102EL	10 / 100 Mb/秒のオートネゴシエーション 半/全二重機能
サウンド Codec	ALC662	5.1チャンネルオーディオアウト ハイデフィニションオーディオのサポート
スロット	PCIスロット	x1
オンボードコネクタ	IDEコネクタ	x1 各コネクタは2つのIDEデバイスをサポートします
	SATAコネクタ	x2 各コネクタは1つのSATAデバイスをサポートします
	フロントパネルコネクタ	x1 フロントパネル機能をサポートします
	フロントオーディオコネクタ	x1 フロントパネルオーディオ機能をサポートします

945GC-230/945GC-330

仕様			
	CDインコネクタ	x1	CDオーディオイン機能をサポートします
	システムファンヘッダ	x2	システムファン電源装置
	CMOSクリアヘッダ	x1	
	USBコネクタ	x2	各コネクタは2つのフロントパネルUSBポートをサポートします
	電源コネクタ(24ピン)	x1	
	シリアルポートコネクタ	x1	
背面パネル I/O	PS/2キーボード	x1	
	PS/2マウス	x1	
	シリアルポート	x1	
	プリンタポート	x1	
	VGAポート	x1	
	LANポート	x1	
	USBポート	x4	
	オーディオジャック	x3	
ボードサイズ	170 mm (幅) X 170 mm (高さ)		
OSサポート	Windows XP / Vista 32 / Vista 64		Biostarは事前のサポートなしにOSサポートを追加または削除する権利を留保します。

2008/12/30