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Avoidance of electrostatic operation rules

Electrostatic discharge can seriously damage your device, Take special care when handling motherboards and other system devices, Avoid unnecessary contact with system parts on the motherboard, Keep working in an antistatic environment, Avoid electrostatic discharge that may damage the motherboard, When inserting or removing devices in your chassis. Make sure the power is off. The manufacturer is not responsible for any damage to the motherboard caused by failure to comply with this operating rule or failure to comply with safety regulations.



Warning

Motherboards are easily damaged by electrostatic discharge.
Please follow the operating rules.



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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.
- The operating temperatures of the computer should be 0 to 45 degrees Celsius.
- To avoid injury, be careful of:
 - Sharp pins on headers and connectors
 - Rough edges and sharp corners on the chassis
 - Damage to wires that could cause a short circuit

1.2 Package Checklist

- Serial ATA Cable x2
- Rear I/O Panel for ATX Case x1
- Quick Installation Guide x1
- Fully Setup Driver DVD x1

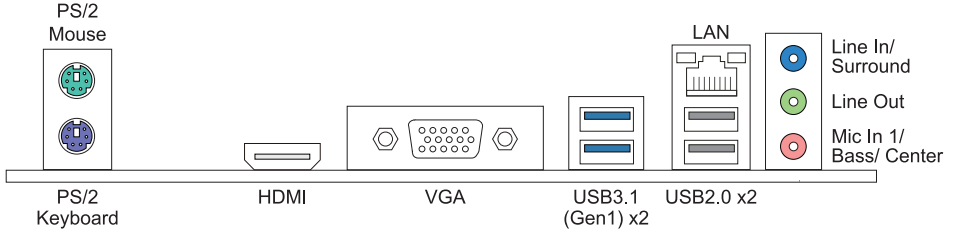
Note

» *The package contents may be different due to the sales region or models in which it was sold. For more information about the standard package in your region, please contact your dealer or sales representative.*

1.3 Specifications

Specifications	
CPU Support	A68N-2100E: AMD® E1-2150 (Dual core 1.05 GHz, 9W) A68N-2100K: AMD® E1-6010 (Dual core 1.35 GHz, 10W) A68N-2100K 2.0: AMD® E1-6010 (Dual core 1.35 GHz, 10W) A68N-2100X: AMD® PRO A4-3350B (Quad core 1.2 GHz, 10W) A68N-5600E: AMD® PRO A4-3350B (Quad core 2.0 GHz, Max Supports up to 2.4 GHz, 15W)
Memory	A68N-2100E: Supports Single Channel DDR3 & DDR3L 800/ 1066/ 1333 A68N-2100K: Supports Single Channel DDR3 & DDR3L 800/ 1066/ 1333 (1.25V) A68N-2100K 2.0: Supports Single Channel DDR3 & DDR3L 800/ 1066/ 1333 (1.25V) A68N-2100X: Supports Single Channel DDR3 & DDR3L 800/ 1066/ 1333 (1.25V)/ 1600 (1.35V) A68N-5600E: Supports Single Channel DDR3 800/ 1066/ 1333/ 1600 Supports Single Channel DDR3L 800/ 1066/ 1333 2 x DDR3 & DDR3L DIMM Memory Slot, Max. Supports up to 16 GB Memory Each DIMM supports non-ECC 512MB/ 1/ 2/ 4/ 8 GB DDR3 & DDR3L module * Please refer to www.biostar.com.tw for Memory support list.
Storage	2x SATA III Connector (6Gb/s) : Supports AHCI
LAN	Realtek RTL 8111H 10/ 100/ 1000 Mb/s auto negotiation, Half / Full duplex capability
Audio Codec	ALC887/ALC897 7.1 Channels, High Definition Audio
USB	2x USB 3.1(Gen1) port (2 on rear I/Os) 6x USB 2.0 port (2 on rear I/Os and 4 via internal headers)
Expansion Slots	1x PCIe 2.0 x16 Slot (x4)
Rear I/Os	1x PS/2 Mouse 1x PS/2 Keyboard 1x VGA Port 1x HDMI Port 1x LAN port 2x USB 3.1(Gen1) Port 2x USB 2.0 Port 3x Audio Jack
Internal I/Os	2x SATA III 6.0Gb/s Connector 2x USB 2.0 Header (each header supports 2 USB 2.0 ports) 1x 4-Pin Power Connector 1x 24-Pin Power Connector 1x CPU Fan Connector 1x System Fan Connector 1x Front Panel Header 1x Front Audio Header 1x Clear CMOS Header 1x COM Port Header 1x Printer Port Header 1x S/PDIF out Connector 1x TPM Header
Form Factor	Mini-ITX Form Factor, 170 mm x 170 mm
OS Support	Windows 7 / 10 Biostar reserves the right to add or remove support for any OS with or without notice.

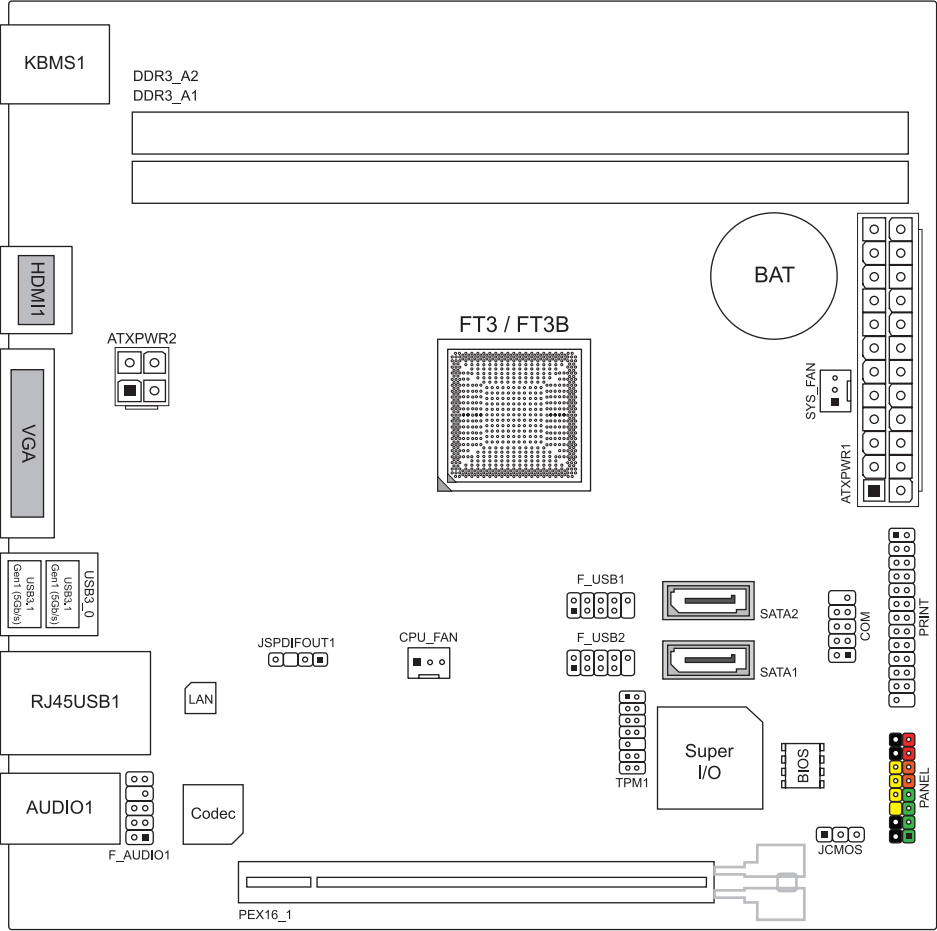
1.4 Rear Panel Connectors



Note

- » HDMI / VGA output require an AMD family processor with integrated graphics.
- » 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.
- » Maximum resolution
 - HDMI: 4096 x 2160 @24Hz, compliant with HDMI 1.4
 - VGA: 1920 x 1200 @60Hz
- » When using the front HD audio jack and plug in the headset, the rear sound will be automatically Disabled.

1.5 Motherboard Layout



Note

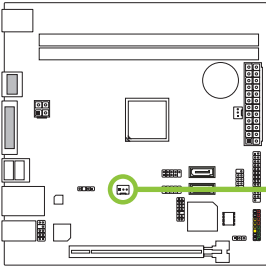
» ■ represents the 1st pin.

Chapter 2: Hardware installation

2.1 Connect Cooling Fans

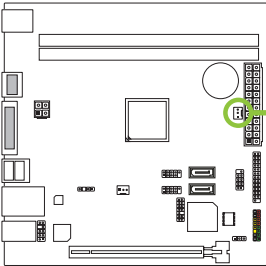
These fan headers support cooling-fans built in the computer. The fan cable and connector may be different according to the fan manufacturer.

CPU_FAN1: CPU Fan Header



Pin	Assignment
1	Ground
2	+12V
3	FAN RPM rate sense

SYS_FAN1: System Fan Header



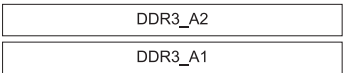
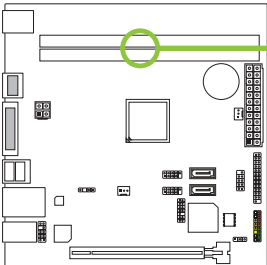
Pin	Assignment
1	Ground
2	Linear FAN Control
3	FAN RPM rate sense

Note

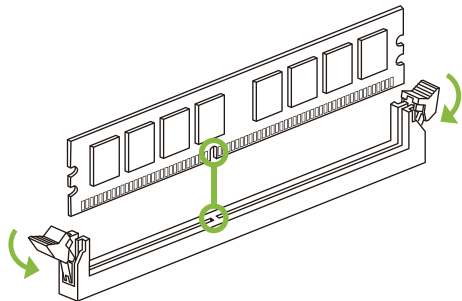
» CPU_FAN1, SYS_FAN1 support 3-pin head connectors. When connecting with wires onto connectors, please note that the red wire is the positive and should be connected to pin#2, and the black wire is Ground and should be connected to pin#1(GND).

2.2 Install System Memory

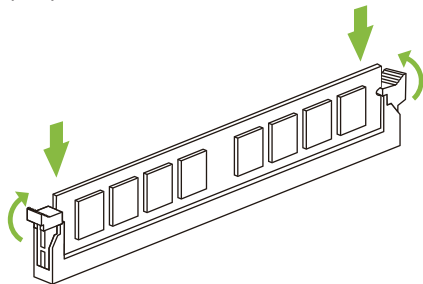
DDR3/ DDR3L Modules



Step 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.



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



Note

» If the DIMM does not go in smoothly, do not force it. Pull it all the way out and try again.

Memory Capacity

DIMM Socket Location	DDR3/ DDR3L Module	Total Memory Size
DDR3_A1	512MB/1GB/2GB/4GB/8GB	Max is 16GB.
DDR3_A2	512MB/1GB/2GB/4GB/8GB	

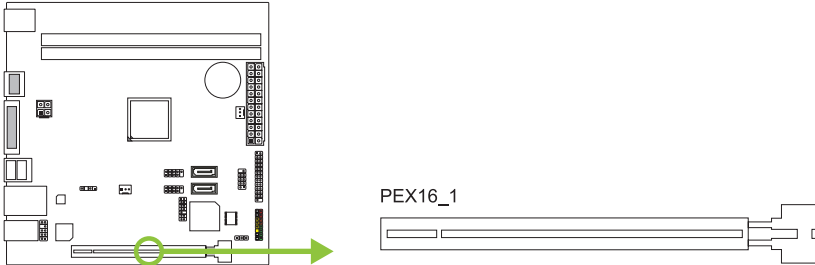
Note

» When installing more than one memory module, we recommend to use the same brand and capacity memory on this motherboard.

2.3 Expansion Slots

PEX16_1: PCI-Express Gen2 x16 Slot (x4 speed)

- PCI-Express 2.0 compliant.
- Theoretical maximum bandwidth using two slots simultaneously is 2GB/s for each slot, a total of 4GB/s.



Install an Expansion Card

You can install your expansion card by following steps:

- Read the related expansion card's instruction document before install the expansion card into the computer.
- Remove your computer's chassis cover, screws and slot bracket from the computer.
- Place a card in the expansion slot and press down on the card until it is completely seated in the slot.
- Secure the card's metal bracket to the chassis back panel with a screw.
- Replace your computer's chassis cover.
- Power on the computer, if necessary, change BIOS settings for the expansion card.
- Install related driver for the expansion card.

2.4 Jumper & Switch Setting

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

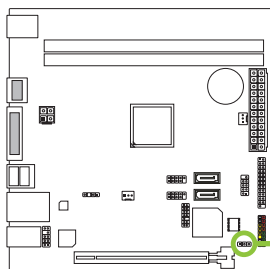


Pin 1-2 closed



JCMOS1: Clear CMOS Jumper

The jumper allows users to restore the BIOS safe setting and the CMOS data. Please carefully follow the procedures to avoid damaging the motherboard.



1 3
Pin 1-2 Close:

Normal Operation (default).



1 3
Pin 2-3 Close:

Clear CMOS data.

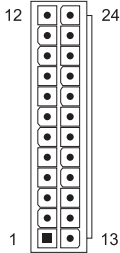
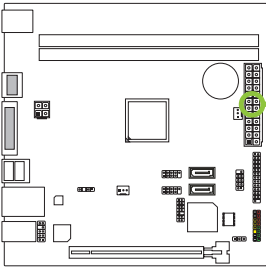
Clear CMOS Procedures:

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. Load Optimal Defaults and save settings in CMOS.

2.5 Headers & Connectors

ATXPWR1: ATX Power Source Connector

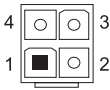
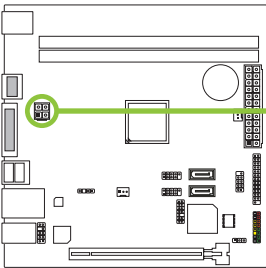
For better compatibility, we recommend to use a standard ATX 24-pin power supply for this connector. Make sure to find the correct orientation before plugging the connector.



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

ATXPWR2: ATX Power Source Connector

This connector will provide +12V to CPU power circuit.



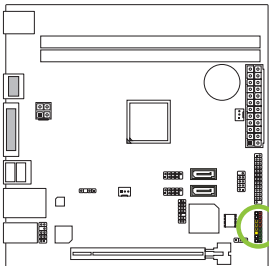
Pin	Assignment
1	+12V
2	+12V
3	Ground
4	Ground

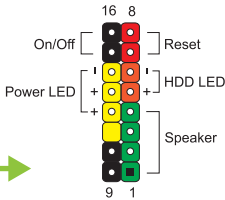
Note

- » Before you power on the system, please make sure that both ATXPWR1 and ATXPWR2 connectors have been plugged-in.
- » Insufficient power supplied to the system may result in instability or the peripherals not functioning properly. Use of a PSU with a higher power output is recommended when configuring a system with more power-consuming devices.

PANEL: Front Panel Header

This 16-pin header includes Power-on, Reset, HDD LED, Power LED, and speaker connection.

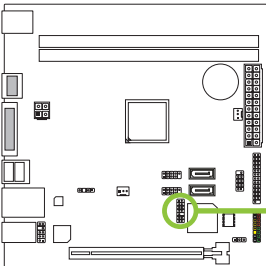


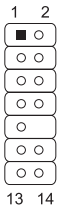


Pin	Assignment	Function	Pin	Assignment	Function
1	+5V	Speaker Connector	9	N/A	N/A
2	N/A		10	N/A	
3	N/A		11	N/A	
4	Speaker	Hard drive LED	12	Power LED (+)	Power LED
5	HDD LED (+)		13	Power LED (+)	
6	HDD LED (-)		14	Power LED (-)	
7	Ground	Reset button	15	Power button	Power-on button
8	Reset control	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

TPM1: Trusted Platform Module Header

This header allows you to store cryptographic keys that protect information.

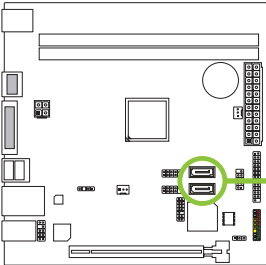


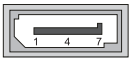


Pin	Assignment	Pin	Assignment
1	F_LAD0	2	+3V
3	F_LAD1	4	+3V
5	F_LAD2	6	C_PCLK_TPM
7	F_LAD3	8	GND
9	F_FRAME#	10	NC
11	F_SERIRQ	12	S_PCIRST#_TBD
13	F_CLKRUN	14	+3VSB

SATA1/ 2: Serial ATA 6.0 Gb/s Connectors

These connectors connect to SATA hard disk drives via SATA cables.





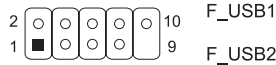
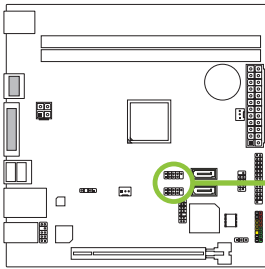
SATA2

SATA1

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

F_USB1/ 2: Header for USB 2.0 Ports at Front Panel

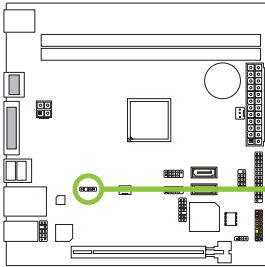
This header allows user to add additional USB ports on the PC front panel, and also can be connected with a wide range of external peripherals.



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

JSPDIFOUT1: Digital Audio-out Connector

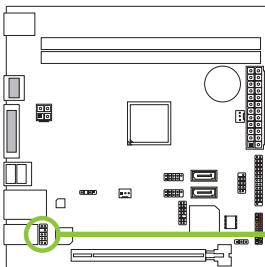
The connector is for connecting the S/PDIF output bracket.



Pin	Assignment
1	Ground
2	SPDIF_OUT
3	N/A
4	+5V

F_AUDIO1: Front Panel Audio Header

This header allows user to connect the chassis-mount front panel audio I/O which supports HD and AC'97 audio standards.



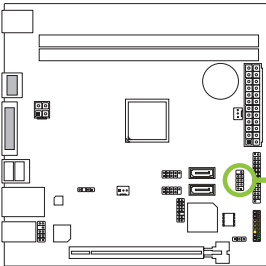
HD Audio		AC'97	
Pin	Assignment	Pin	Assignment
1	Mic Left in	1	Mic In
2	Ground	2	Ground
3	Mic Right in	3	Mic Power
4	GPIO	4	Audio Power
5	Right line in	5	RT Line Out
6	Jack Sense	6	RT Line Out
7	Ground	7	Reserved
8	Key	8	Key
9	Left line in	9	LFT Line Out
10	Jack Sense	10	LFT Line Out

Note

- » It is recommended that you connect a high-definition front panel audio module to this connector to avail of the motherboard's high definition audio capability.
- » Please try to disable the "Front Panel Jack Detection" if you want to use an AC'97 front audio output cable. The function can be found via O.S. Audio Utility.

COM: Serial Port Connector

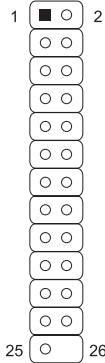
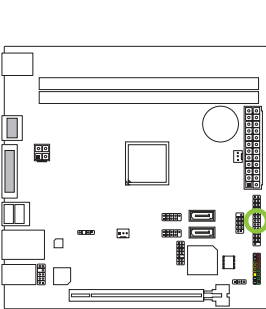
The motherboard has a serial port header for connecting RS-232 Port.



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	Key

PRINT: Printer Port Connector

This header allows you to connector printer on the PC.



Pin	Assignment	Pin	Assignment
1	-Strobe	14	Ground
2	-ALF	15	Data 6
3	Data 0	16	Ground
4	-Error	17	Data 7
5	Data 1	18	Ground
6	-Init	19	-ACK
7	Data 2	20	Ground
8	-Scltin	21	Busy
9	Data 3	22	Ground
10	Ground	23	PE
11	Data 4	24	Ground
12	Ground	25	SCLT
13	Data 5	26	Key

Chapter 3: UEFI BIOS & Software

3.1 UEFI BIOS Setup

- The BIOS Setup program can be used to view and change the BIOS settings for the computer. The BIOS Setup program is accessed by pressing the key after the Power-On Self-Test (POST) memory test begins and before the operating system boot begins.
- For further information of setting up the UEFI BIOS, please refer to the UEFI BIOS Manual on our website.

3.2 BIOS Update

The BIOS can be updated using either of the following utilities:

- **BIOSTAR BIO-Flasher:** Using this utility, the BIOS can be updated from a file on a hard disk, a USB drive (a flash drive or a USB hard drive), or a CD-ROM.
- **BIOSTAR BIOS Update Utility:** It enables automated updating while in the Windows environment. Using this utility, the BIOS can be updated from a file on a hard disk, a USB drive (a flash drive or a USB hard drive), or a CD-ROM, or from the file location on the Web.

BIOSTAR BIO-Flasher

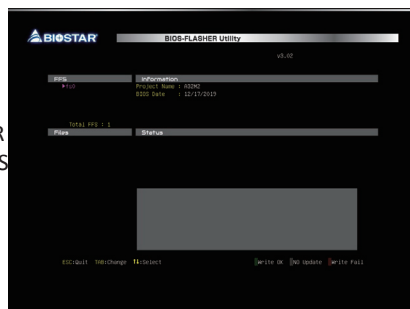
Note

- » This utility only allows storage device with FAT32/16 format and single partition.
- » Shutting down or resetting the system while updating the BIOS will lead to system boot failure.

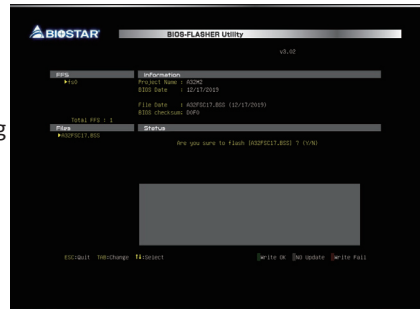
Updating BIOS with BIOSTAR BIO-Flasher

1. Go to the website to download the latest BIOS file for the motherboard.
2. Then, copy and save the BIOS file into a USB flash (pen) drive. (Only supported FAT/FAT32 format)
3. Insert the USB pen drive that contains the BIOS file to the USB port.
4. Power on or reset the computer and then press <F12> during the POST process.

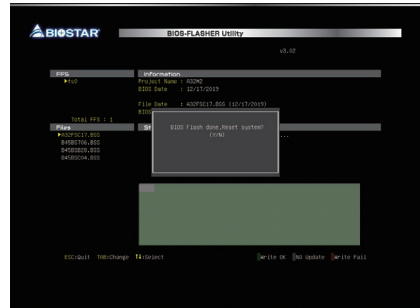
5. After entering the POST screen, the BIO-FLASHER utility pops out. Choose <fs0> to search for the BIOS file.



6. Select the proper BIOS file, and a message asking if you are sure to flash the BIOS file. Click “Yes” to start updating BIOS.



7. A dialog pops out after BIOS flash is completed, asking you to restart the system. Press the <Y> key to restart system.



8. While the system boots up and the full screen logo shows up, press key to enter BIOS setup.

After entering the BIOS Setup, please go to the <Save & Exit>, using the <Restore Defaults> function to load Optimized Defaults, and select <Save Changes and Reset> to restart the computer. Then the BIOS Update is completed.

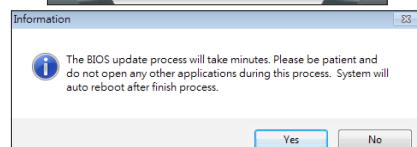
BIOS Update Utility (through the Internet)

1. Installing BIOS Update Utility from the DVD Driver.
2. Please make sure the system is connected to the internet before using this function.

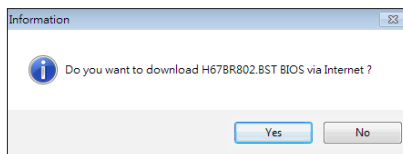
3. Launch BIOS Update Utility and click the “Online Update” button on the main screen.



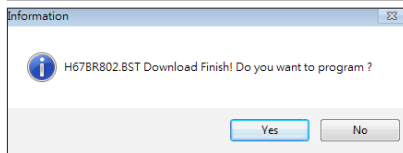
4. An open dialog will show up to request your agreement to start the BIOS update. Click “Yes” to start the online update procedure.



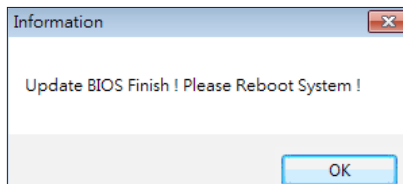
5. If there is a new BIOS version, the utility will ask you to download it. Click “Yes” to proceed.



6. After the download is completed, you will be asked to program (update) the BIOS or not. Click “Yes” to proceed.



7. After the updating process is finished, you will be asked you to reboot the system. Click “OK” to reboot.



8. While the system boots up and the full screen logo shows up, press key to enter BIOS setup.

After entering the BIOS setup, please go to the <Save & Exit>, using the <Restore Defaults> function to load Optimized Defaults, and select <Save Changes> and <Reset> to restart the computer. Then, the BIOS Update is completed.

BIOS Update Utility (through a BIOS file)

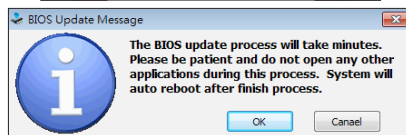
1. Installing BIOS Update Utility from the DVD Driver.

2. Download the proper BIOS from <http://www.biostar.com.tw/>

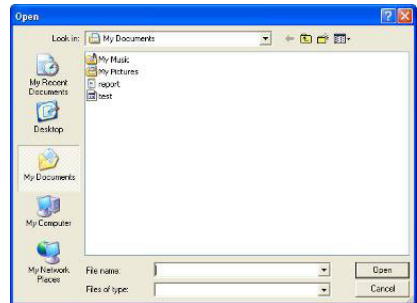
3. Launch BIOS Update Utility and click the “Update BIOS” button on the main screen.



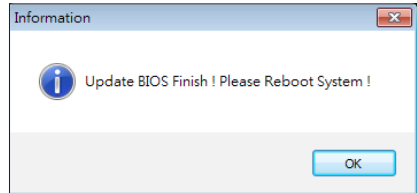
4. A warning message will show up to request your agreement to start the BIOS update. Click “OK” to start the update procedure.



5. Choose the location for your BIOS file in the system. Please select the proper BIOS file, and then click on “Open”. It will take several minutes, please be patient.



6. After the BIOS Update process is finished, click on “OK” to reboot the system.

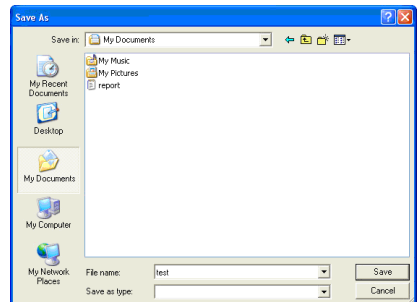


7. While the system boots up and the full screen logo shows up, press key to enter BIOS setup.

After entering the BIOS setup, please go to the <Save & Exit>, using the <Restore Defaults> function to load Optimized Defaults, and select <Save Changes and Reset> to restart the computer. Then, the BIOS Update is completed.

Backup BIOS

Click the Backup BIOS button on the main screen for the backup of BIOS, and select a proper location for your backup BIOS file in the system, and click “Save”.



3.3 Software

Installing Software

1. Insert the Setup DVD to the optical drive. The driver installation program would appear if the Auto-run function has been enabled.
2. Select Software Installation, and then click on the respective software title.
3. Follow the on-screen instructions to complete the installation.

Launching Software

After the installation process is completed, you will see the software icon showing on the desktop. Double-click the icon to launch it.

Note

- » All the information and content about following software are subject to be changed without notice. For better performance, the software is being continuously updated.
- » The information and pictures described below are for your reference only. The actual information and settings on board may be slightly different from this manual.

BIOScreen Utility

This utility allows you to personalize your boot logo easily. You can choose BMP as your boot logo so as to customize your computer.



Please follow the step-by-step instructions below to update boot logo:

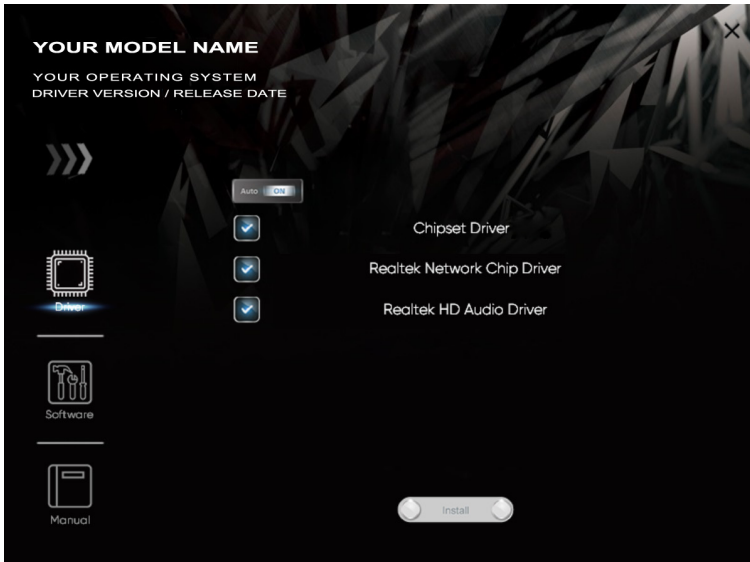
- Load Image: Choose the picture as the boot logo.
- Transform: Transform the picture for BIOS and preview the result.
- Update Bios: Write the picture to BIOS Memory to complete the update.

Chapter 4: Useful help

4.1 Driver Installation

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

You will see the following window after you insert the DVD



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

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 DVD. Click on the Manual icon to browse for available manual.

Note

- » If this window didn't show up after you insert the Driver DVD, please use file browser to locate and execute the file *SETUP.EXE* under your optical drive.
- » You will need Acrobat Reader to open the manual file. Please download the latest version of Acrobat Reader software from <http://get.adobe.com/reader/>
- » The motherboard used in the illustrations may not resemble the actual board. these illustrations are for reference only.

4.2 AMI BIOS Beep Code

Boot Block Beep Codes

Number of Beeps	Description
Continuing	Memory sizing error or Memory module not found

POST BIOS Beep Codes

Number of Beeps	Description
1	Success booting.
8	Display memory error (system video adapter)

4.3 Troubleshooting

Probable	Solution
1. There is no power in the system. Power LED does not shine; the fan of the power supply does not work. 2. Indicator light on keyboard does not shine.	1. Make sure power cable is securely plugged in. 2. Replace cable. 3. Contact technical support.
System is inoperative. Keyboard lights are on, power indicator lights are lit, and hard drives are running.	Using even pressure on both ends of the DIMM, press down firmly until the module snaps into place.
System does not boot from a hard disk drive, but can be booted from optical drive.	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.
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.	1. Back up data and applications files. 2. Reformat the hard drive. Re-install applications and data using backup disks.
Screen message shows "Invalid Configuration" or "CMOS Failure."	Review system's equipment. Make sure correct information is in setup.
System cannot boot after user installs a second hard drive.	1. Set master/slave jumpers correctly. 2. Run SETUP program and select correct drive types. Call the drive manufacturers for compatibility with other drives.

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.

APPENDIX I: Specifications in Other Languages

Arabic

المواصفات	
قاعدة وحدة المعالجة المركزية (Dual core 1.05 GHz 9W) AMD® E1-2150 : A68N-2100E (Dual core 1.35 GHz 10W) AMD® E1-6010 : A68N-2100K (Dual core 1.35 GHz 10W) AMD® E1-6010 : A68N-2100K 2.0 (Quad core 1.2 GHz 10W) AMD® PRO A4-3350B : A68N-2100X (Quad core 2.0 GHz يدعم 2.4 GHz 15W) AMD® PRO A4-3350B : A68N-5600E	
A68N-2100E : قناة واحدة وتدعم DDR3 & DDR3L 800/1066/1333 A68N-2100K : قناة واحدة وتدعم DDR3 & DDR3L 800/1066/1333 (1.25V) A68N-2100K 2.0 : قناة واحدة وتدعم DDR3 & DDR3L 800/1066/1333 (1.25V) A68N-2100X : قناة واحدة وتدعم DDR3 & DDR3L 800/1066/1333 (1.25V)/ 1600 (1.35V) A68N-5600E : قناة واحدة وتدعم DDR3 800/1066/1333/1600 قناة واحدة وتدعم DDR3L 800/1066/1333	الذاكرة
x2 دي. دي. آر. DDR3 و DDR3L فتحات الذاكرة المزدوجة DIMM. تتحمل كحد أقصى 16 جيجابايت ذاكرة DDR3L و DDR3 512 ECC دون 512 ميجا بايت 8/4/2/1 جيجابايت دي. دي. آر. * يرجى الرجوع إلى الموقع www.biostar.com.tw لقائمة دعم الذاكرة.	
وصلة 2x SATA III (6Gb/s) : تدعم AHCI	التخزين
ريالتيك رت ل RTL 8111H, REALTEK 1000 / 100 / 10 ميجابايت / الثنائية ، تحديد تلقائي ، النصف / الفترة القصوى المزدوجة	شبكة محلية LAN
ALC887/ALC897 7.1 قنوات عالية الدقة	الترميز الصوتي
منافذ 2 x ناقل متسلسل عام USB (Gen1)3.1 (2 في المداخل والمخارج الخلفية) منافذ 6 x ناقل متسلسل عام USB 2.0 (2 في المداخل والمخارج الخلفية و 4 من خلال الموزع الداخلي)	ناقل متسلسل عام USB
1 x فتحة منفذ الملحقات الإضافية PCIe 2.0 x16 (4x)	فتحات التوسع
1 x PS/2 الفأرة 1 x PS/2 لوحة المفاتيح للكمبيوتر 1 x واجهة مرئية رقمية VGA 1 x فتحة توصيل عدد 1 x منظومة العرض المرئي HDMI 1 x الشبكة المحلية LAN 2 x فتحة توصيل عدد عام USB (Gen1) 3.1 2 x ناقل متسلسل عام USB 2.0 3 x فتحة توصيل عدد جاك للصوت	المداخل والمخارج الخلفية
وصلة 2 SATA III 6 جيجابايت / الثنائية موزع 2 x ناقل متسلسل عام USB 2.0 (كل موزع يتحمل فتحتين ناقل متسلسل عام USB 2.0) موصلة للطاقة 4 x 1 دببوس وصلة للطاقة 24 x 1 دببوس وصلة 1 x مروحة تبريد وحدة المعالجة المركزية وصلة 1 x مراوح تبريد المنظومة موزع 1 x اللوحة الأمامية موزع 1 x الصوت الأمامي موزع 1 x سيموس مباشر موزع 1 x فتحة تسلسلية موزع 1 x فتحة للطابعة موزع 1X S / PDIF خارج الميناء موزع 1 x TPM	المداخل والمخارج الداخلية
عامل شكل مدد التكنولوجيا المتقدمة Mini-ITX ، 170 مم x 170 مم	عامل الشكل
ويندوز 7/ ويندوز 10 بيوستار BIOSTAR تحتفظ بحق إضافة أو إزالة الدعم لأي نظام تشغيل مع أو بدون أنظار.	أنظمة التشغيل المدعومة

German

Spezifikationen	
CPU-Unterstützung	A68N-2100E: AMD E1-2150 (Dual core 1.05 GHz, 9W) A68N-2100K: AMD E1-6010 (Dual core 1.35 GHz, 10W) A68N-2100K 2.0: AMD® E1-6010 (Dual core 1.35 GHz, 10W) A68N-2100X: AMD PRO A4-3350B (Quad Core 1.2 GHz, 10W) A68N-5600E: AMD PRO A4-3350B (Quad Core 2,0 GHz, max. Unterstützung bis 2,4 GHz, 15W)
Festplattenspeicher	A68N-2100E: Unterstützt single-channel DDR3 & DDR3L 800/1066/1333 A68N-2100K: Unterstützt single-channel DDR3 & DDR3L 800/1066/1333 (1.25V) A68N-2100K 2.0: Unterstützt single-channel DDR3 & DDR3L 800/1066/1333 (1.25V) A68N-2100X: Unterstützt single-channel DDR3 & DDR3L 800/1066/1333 (1.25V)/ 1600 (1.35V) A68N-5600E: Unterstützt single-channel DDR3 800/1066/1333/1600 Unterstützt single-channel DDR3L 800/1066/1333 2 x DDR3 & DDR3L DIMM-SpeicherSlot, Max. Unterstützung bis zu 16 GB-Speicher Jedes DIMM unterstützt nicht-ECC 512MB/ 1/ 2/ 4/ 8 GB DDR3 & DDR3L-Module * Bitte konsultieren Sie www.biostar.com.tw für Speicherunterstützung Liste.
Arbeitsspeicher	2x SATA III 6Gb-Verbindung : Unterstützt AHCI
LAN	Realtek RTL 8111H 10/ 100/ 1000 Mb Auto-Negotiation, Halb- / Voll-Duplex-fähig
Audio-Codec	ALC887/ALC897 7.1 Kanäle, HD-Audio
USB	2x USB 3.1(Gen1)-Port (2 hintere I/Os) 6x USB 2.0-Port (2 hintere I/Os und 4 via interne Header)
Erweiterungsanschlüsse	1x PCIe 2.0 x16-Slot (x4)
Hintere I/Os	1x PS/2-Maus 1x PS/2-Keybaord 1x VGA-Port 1x HDMI-Port 1x LAN-Port 2x USB 3.1(Gen1)-Port 2x USB 2.0-Port 3x Audio Jack
Interne I/Os	2x SATA III 6.0Gb/s-Verbinung 2x USB 2.0-Header (jeder Header unterstützt 2 USB 2.0-Ports) 1x 4-Pin-Stromverbindung 1x 24-Pin-Stromverbindung 1x CPU-Ventilatorverbindung 1x System-Ventilatorverbindung 1x Header für Frontpanel 1x Header für Frontaudio 1x Header für klares CMOS 1x Serieller Port-Header 1x Header für Druckerport 1x S/PDIF-Auswurfsverbindung 1x TPM-Header
Formfaktor	Mini-ITX Formfaktor, 170 mm x 170 mm
OS-Unterstützung	Windows 7/ 10 Biostar reserves the right to add or remove support for any OS with or without notice

Russian

Спецификации	
Поддержка центрального процессора	A68N-2100E: AMD® E1-2150 (Dual core 1.05 GHz, 9W) A68N-2100K: AMD® E1-6010 (Dual core 1.35 GHz, 10W) A68N-2100K 2.0: AMD® E1-6010 (Dual core 1.35 GHz, 10W) A68N-2100X: AMD® PRO A4-3350B (Quad core 1.2 GHz, 10W) A68N-5600E: AMD® PRO A4-3350B (Quad core 2.0 GHz, максимальная поддержка 2.4 GHz, 15W)
Память	A68N-2100E: Поддерживает Одноканальный DDR3 & DDR3L 800/1066/1333 A68N-2100K: Поддерживает Одноканальный DDR3 & DDR3L 800/1066/1333 (1.25V) A68N-2100K 2.0: Поддерживает Одноканальный DDR3 & DDR3L 800/1066/1333 (1.25V) A68N-2100X: Поддерживает Одноканальный DDR3 & DDR3L 800/1066/1333 (1.25V)/ 1600 (1.35V) A68N-5600E: Поддерживает Одноканальный DDR3 800/1066/1333/1600 Поддерживает Одноканальный DDR3L 800/1066/1333 2 гнезда платы памяти DDR3 и DDR3L DIMM, максимальная память до 16 Гб Каждый модуль DIMM поддерживает модуль не-ECC 512мб/ 1/ 2/ 4/ 8 Гб DDR3 и DDR3L * Перечень поддержки памяти смотрите на www.biostar.com.tw .
Накопитель	Соединитель 2x SATA III 6 Гб/с : Поддерживает AHCI
Локальная сеть	Realtek RTL 8111H Автосогласование 10/ 100/ 1000 Мб/с, работает в полно/полудуплексном режиме
Аудиокодек	ALC887/ALC897 Каналы 7.1, высококачественное аудио
USB	2 порта USB 3.1(Gen1) (2 сзади ввода-вывода) 6 портов USB 2.0 (2 сзади ввода-вывода и 4 через внутренние контакты)
Гнезда расшир.	1x PCIe 2.0 x16 гнездо (x4)
Задняя плата ввода-вывода	1 мышь PS/2 1 клавиатура PS/2 1 порт VGA 1 порт HDMI 1 порт локальной сети 2 порта USB 3.1(Gen1) 2 порта USB 2.0 3 гнезда для подключения наушников
Внутр. Плата ввода-вывода	Соединитель 2x SATA III 6Гб/с 2 контакта USB 2.0 (каждый контакт поддерживает 2 порта USB 2.0) 1 4-выводный разъем питания 1 24-выводный разъем питания 1 разъем вентилятора ЦП 1 разъема вентилятора системы 1 контакт передней панели 1 контакт передней аудиопанели 1 контакт микросхемы Clear CMOS 1 контакт последовательного порта 1 контакт порта принтера 1 соединитель S/PDIF-Out 1 контакт TPM
Конструктив	Форм-фактор Mini-ITX, 170 мм x 170 мм
Поддержка ОС	Windows 7/ 10 Biostar оставляет за собой право добавлять или удалять поддержку любой ОС, с уведомлением или без.

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