

Version 1.1

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- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

CALIFORNIA, USA ONLY

The Lithium battery adopted on this motherboard contains Perchlorate, a toxic substance controlled in Perchlorate Best Management Practices (BMP) regulations passed by the California Legislature. When you discard the Lithium battery in California, USA, please follow the related regulations in advance.

“Perchlorate Material-special handling may apply, see www.dtsc.ca.gov/hazardouswaste/perchlorate”

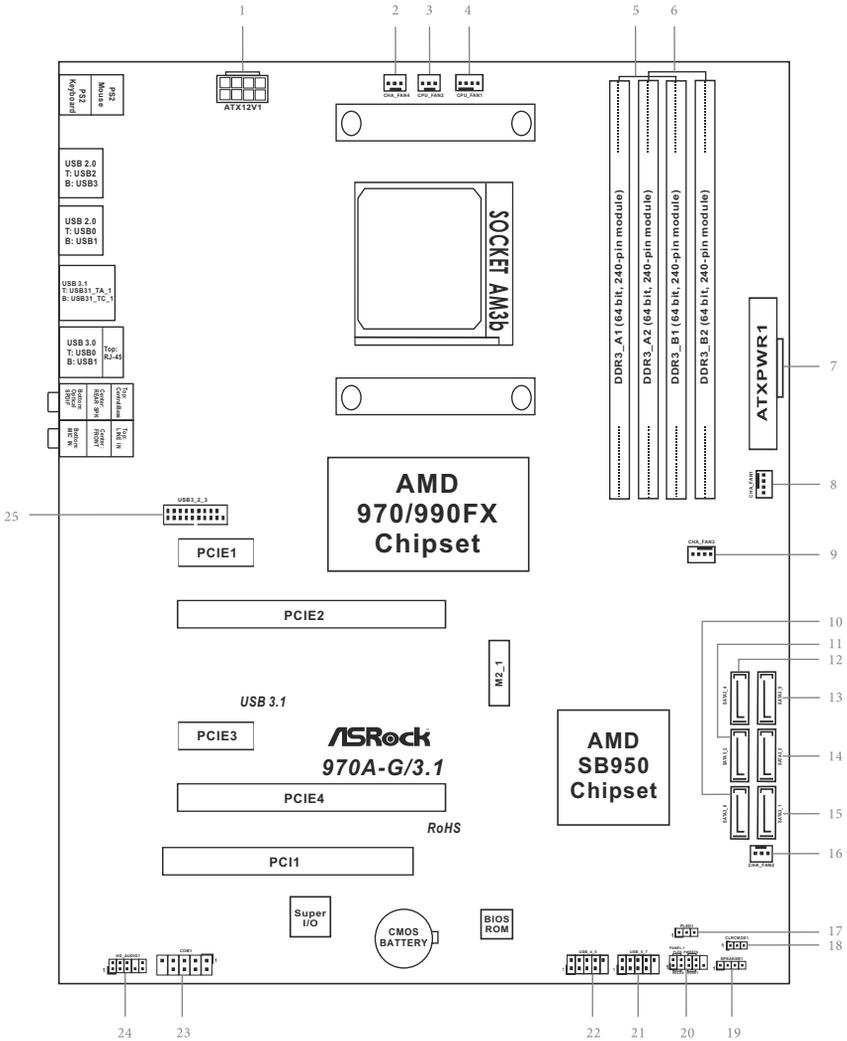
ASRock Website: <http://www.asrock.com>

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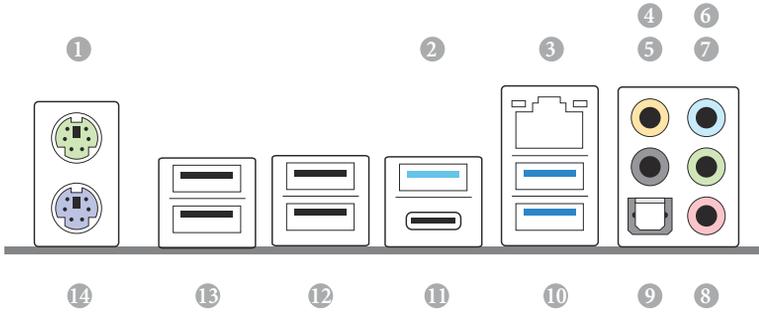
Motherboard Layout



English

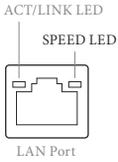
| No. | Description |
|-----|--|
| 1 | ATX 12V Power Connector (ATX12V1) |
| 2 | Chassis Fan Connector (CHA_FAN4) |
| 3 | CPU Fan Connector (CPU_FAN2) |
| 4 | CPU Fan Connector (CPU_FAN1) |
| 5 | 2 x 240-pin DDR3 DIMM Slots (DDR3_A1, DDR3_B1) |
| 6 | 2 x 240-pin DDR3 DIMM Slots (DDR3_A2, DDR3_B2) |
| 7 | ATX Power Connector (ATXPWR1) |
| 8 | Chassis Fan Connector (CHA_FAN1) |
| 9 | Chassis Fan Connector (CHA_FAN3) |
| 10 | SATA3 Connector (SATA3_0) |
| 11 | SATA3 Connector (SATA3_2) |
| 12 | SATA3 Connector (SATA3_4) |
| 13 | SATA3 Connector (SATA3_5) |
| 14 | SATA3 Connector (SATA3_3) |
| 15 | SATA3 Connector (SATA3_1) |
| 16 | Chassis Fan Connector (CHA_FAN2) |
| 17 | Power LED Header (PLED1) |
| 18 | Clear CMOS Jumper (CLRCMOS1) |
| 19 | Chassis Speaker Header (SPEAKER1) |
| 20 | System Panel Header (PANEL1) |
| 21 | USB 2.0 Header (USB_6_7) |
| 22 | USB 2.0 Header (USB_4_5) |
| 23 | COM Port Header (COM1) |
| 24 | Front Panel Audio Header (HD_AUDIO1) |
| 25 | USB 3.0 Header (USB3_2_3) |

I/O Panel



| No. | Description | No. | Description |
|-----|----------------------------------|-----|----------------------------------|
| 1 | PS/2 Mouse Port | 8 | Microphone (Pink) |
| 2 | USB 3.1 Type-A Port (USB31_TA_1) | 9 | Optical SPDIF Out Port |
| 3 | LAN RJ-45 Port* | 10 | USB 3.0 Ports (USB3_0_1) |
| 4 | Central / Bass (Orange) | 11 | USB 3.1 Type-C Port (USB31_TC_1) |
| 5 | Rear Speaker (Black) | 12 | USB 2.0 Ports (USB_0_1) |
| 6 | Line In (Light Blue) | 13 | USB 2.0 Ports (USB_2_3) |
| 7 | Front Speaker (Lime)** | 14 | PS/2 Keyboard Port |

* There are two LEDs on each LAN port. Please refer to the table below for the LAN port LED indications.



| Activity / Link LED | | Speed LED | |
|---------------------|---------------|-----------|--------------------|
| Status | Description | Status | Description |
| Off | No Link | Off | 10Mbps connection |
| Blinking | Data Activity | Orange | 100Mbps connection |
| On | Link | Green | 1Gbps connection |

** If you use a 2-channel speaker, please connect the speaker's plug into "Front Speaker Jack". See the table below for connection details in accordance with the type of speaker you use.

| Audio Output Channels | Front Speaker (No. 7) | Rear Speaker (No. 5) | Central / Bass (No. 4) | Line In (No. 6) |
|-----------------------|-----------------------|----------------------|------------------------|-----------------|
| 2 | V | -- | -- | -- |
| 4 | V | V | -- | -- |
| 6 | V | V | V | -- |
| 8 | V | V | V | V |



To enable Multi-Streaming, you need to connect a front panel audio cable to the front panel audio header. After restarting your computer, you will find the "Mixer" tool on your system. Please select "Mixer Toolbox" , click "Enable playback multi-streaming", and click "ok". Choose "2CH", "4CH", "6CH", or "8CH" and then you are allowed to select "Realtek HDA Primary output" to use the Rear Speaker, Central/Bass, and Front Speaker, or select "Realtek HDA Audio 2nd output" to use the front panel audio.

Chapter 1 Introduction

Thank you for purchasing ASRock 970A-G/3.1 motherboard, a reliable motherboard produced under ASRock's consistently stringent quality control. It delivers excellent performance with robust design conforming to ASRock's commitment to quality and endurance.



Because the motherboard specifications and the BIOS software might be updated, the content of this manual will be subject to change without notice. In case any modifications of this manual occur, the updated version will be available on ASRock's website without further notice. If you require technical support related to this motherboard, please visit our website for specific information about the model you are using. You may find the latest VGA cards and CPU support list on ASRock's website as well. ASRock website <http://www.asrock.com>.

1.1 Package Contents

- ASRock 970A-G/3.1 Motherboard (ATX Form Factor)
- ASRock 970A-G/3.1 Quick Installation Guide
- ASRock 970A-G/3.1 Support CD
- 2 x Serial ATA (SATA) Data Cables (Optional)
- 1 x I/O Panel Shield
- 1 x Screw for M.2 Socket

1.2 Specifications

- Platform**
- ATX Form Factor
 - Solid Capacitor design

- CPU**
- Supports Socket AM3+ processors
 - Supports Socket AM3 processors: AMD Phenom™ II X6 / X4 / X3 / X2 (except 920 / 940) / Athlon II X4 / X3 / X2 / Sempron processors
 - Supports 8-Core CPU
 - Supports UCC feature (Unlock CPU Core)
 - Digi Power design
 - 8 + 2 Power Phase design
 - Supports CPU up to 220W
 - Supports AMD's Cool 'n' Quiet Technology
 - FSB 2400 MHz (4.8 GT/s)
 - Supports Untied Overclocking Technology
 - Supports Hyper-Transport 3.0 (HT 3.0) Technology

- Chipset**
- Northbridge: AMD 970/990FX
 - Southbridge: AMD SB950

- Memory**
- Dual Channel DDR3 Memory Technology
 - 4 x DDR3 DIMM Slots
 - Supports DDR3 2400+(OC)/2100(OC)/1866(OC)/1800(OC)/1600(OC)/1333/1066 non-ECC, un-buffered memory (see CAUTION1)
 - Max. capacity of system memory: 64GB (see CAUTION2)
 - Supports Intel® Extreme Memory Profile (XMP) 1.3 / 1.2
 - Supports AMD Memory Profile Technology (AMP) up to AMP 2400

- Expansion Slot**
- 1 x PCI Express 2.0 x16 Slot (PCIe2: x16 mode)
 - 1 x PCI Express 2.0 x16 Slot (PCIe4: x4 mode)
 - 2 x PCI Express 2.0 x1 Slots
 - 1 x PCI Slot
 - Supports AMD Quad CrossFireX™ and CrossFireX™

Audio

- 7.1 CH HD Audio with Content Protection (Realtek ALC1150 Audio Codec)
- Premium Blu-ray Audio Support
- Supports Surge Protection (ASRock Full Spike Protection)
- ELNA Audio Caps
- Supports DTS Connect

LAN

- PCIE x1 Gigabit LAN 10/100/1000 Mb/s
- Realtek RTL8111GR
- Supports Wake-On-WAN
- Supports Wake-On-LAN
- Supports Lightning/ESD Protection (ASRock Full Spike Protection)
- Supports LAN Cable Detection
- Supports Energy Efficient Ethernet 802.3az
- Supports PXE

Rear Panel I/O

- 1 x PS/2 Mouse Port
- 1 x PS/2 Keyboard Port
- 1 x Optical SPDIF Out Port
- 4 x USB 2.0 Ports (Supports ESD Protection (ASRock Full Spike Protection))
- 1 x USB 3.1 Type-A Port (10 Gb/s) (ASMedia ASM1143) (Supports ESD Protection (ASRock Full Spike Protection))
- 1 x USB 3.1 Type-C Port (10 Gb/s) (ASMedia ASM1143) (Supports ESD Protection (ASRock Full Spike Protection))
- 2 x USB 3.0 Ports (Etron EJ188H) (Supports ESD Protection (ASRock Full Spike Protection))
- 1 x RJ-45 LAN Port with LED (ACT/LINK LED and SPEED LED)
- HD Audio Jacks: Rear Speaker / Central / Bass / Line in / Front Speaker / Microphone

Storage

- 6 x SATA3 6.0 Gb/s Connectors, support RAID (RAID 0, RAID 1, RAID 5 and RAID 10), NCQ, AHCI and Hot Plug
- 1 x M.2_SSD (NGFF) Socket 3, supports type 2230/2242/2260/2280/22110 M.2 PCI Express module up to Gen2 x4 (20 Gb/s)

- * If PCIE4 is occupied, M2_1 will be disabled.
- * Supports ASRock U.2 Kit

Connector

- 1 x COM Port Header
- 1 x Power LED Header
- 2 x CPU Fan Connectors (1 x 4-pin, 1 x 3-pin)
- 4 x Chassis Fan Connectors (2 x 4-pin, 2 x 3-pin)
- 1 x 24 pin ATX Power Connector
- 1 x 8 pin 12V Power Connector
- 1 x Front Panel Audio Connector
- 2 x USB 2.0 Headers (Support 4 USB 2.0 ports) (Supports ESD Protection (ASRock Full Spike Protection))
- 1 x USB 3.0 Header by Etron EJ188H (Supports 2 USB 3.0 ports) (Supports ESD Protection (ASRock Full Spike Protection))

**BIOS
Feature**

- AMI UEFI Legal BIOS with GUI support
- Supports "Plug and Play"
- ACPI 1.1 Compliant wake up events
- Supports jumperfree
- SMBIOS 2.3.1 support
- CPU, VCCM, NB, SB Voltage multi-adjustment

**Hardware
Monitor**

- CPU/Chassis temperature sensing
- CPU/Chassis Fan Tachometer
- CPU/Chassis Quiet Fan (Auto adjust fan speed by CPU temperature)
- CPU/Chassis Fan multi-speed control
- Voltage monitoring: +12V, +5V, +3.3V, CPU Vcore Voltage

OS

- Microsoft® Windows® 10 32-bit / 10 64-bit / 8.1 32-bit / 8.1 64-bit / 8 32-bit / 8 64-bit / 7 32-bit / 7 64-bit / Vista™ 32-bit / Vista™ 64-bit / XP 32-bit / XP 64-bit
- * For the updated Windows® 10 driver, please visit ASRock's website for details: <http://www.asrock.com>

Certifications

- FCC, CE, WHQL
- ErP/EuP ready (ErP/EuP ready power supply is required)

* For detailed product information, please visit our website: <http://www.asrock.com>



Please realize that there is a certain risk involved with overclocking, including adjusting the setting in the BIOS, applying Untied Overclocking Technology, or using third-party overclocking tools. Overclocking may affect your system's stability, or even cause damage to the components and devices of your system. It should be done at your own risk and expense. We are not responsible for possible damage caused by overclocking.



1. Whether 2400/2100MHz memory speed is supported depends on the AM3/AM3+ CPU you adopt. If you want to adopt DDR3 2400/2100 memory module on this motherboard, please refer to the memory support list on our website for the compatible memory modules. ASRock website: <http://www.asrock.com>
2. Due to the operating system limitation, the actual memory size may be less than 4GB for the reservation for system usage under Windows* 32-bit OS. For Windows* 64-bit OS with 64-bit CPU, there is no such limitation. You can use ASRock XFast RAM to utilize the memory that Windows* cannot use.

Chapter 2 Installation

This is an ATX form factor motherboard. Before you install the motherboard, study the configuration of your chassis to ensure that the motherboard fits into it.

Pre-installation Precautions

Take note of the following precautions before you install motherboard components or change any motherboard settings.

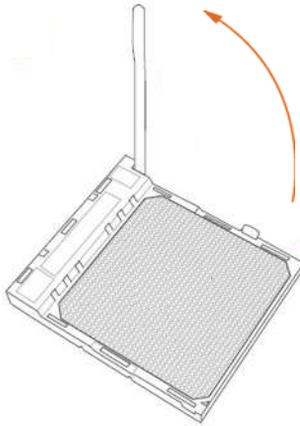
- Make sure to unplug the power cord before installing or removing the motherboard. Failure to do so may cause physical injuries to you and damages to motherboard components.
- In order to avoid damage from static electricity to the motherboard's components, NEVER place your motherboard directly on a carpet. Also remember to use a grounded wrist strap or touch a safety grounded object before you handle the components.
- Hold components by the edges and do not touch the ICs.
- Whenever you uninstall any components, place them on a grounded anti-static pad or in the bag that comes with the components.
- When placing screws to secure the motherboard to the chassis, please do not over-tighten the screws! Doing so may damage the motherboard.

2.1 Installing the CPU

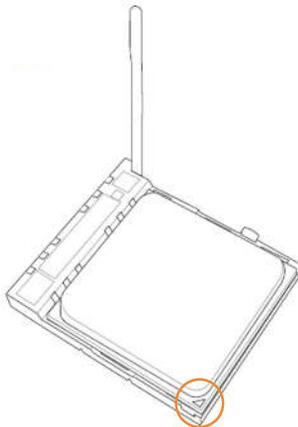


Unplug all power cables before installing the CPU.

1



2



3



2.2 Installing the CPU Fan and Heatsink

After you install the CPU into this motherboard, it is necessary to install a larger heatsink and cooling fan to dissipate heat. You also need to spray thermal grease between the CPU and the heatsink to improve heat dissipation. Make sure that the CPU and the heatsink are securely fastened and in good contact with each other. Then connect the CPU fan to the CPU FAN connector. For proper installation, please kindly refer to the instruction manuals of the CPU fan and the heatsink.

2.3 Installing Memory Modules (DIMM)

This motherboard provides four 240-pin DDR3 (Double Data Rate 3) DIMM slots, and supports Dual Channel Memory Technology.



1. For dual channel configuration, you always need to install identical (the same brand, speed, size and chip-type) DDR3 DIMM pairs.
2. It is unable to activate Dual Channel Memory Technology with only one or three memory module installed.
3. It is not allowed to install a DDR or DDR2 memory module into a DDR3 slot; otherwise, this motherboard and DIMM may be damaged.
4. Please install the memory module into DDR3_A2 and DDR3_B2 slots for the first priority.
5. If you adopt DDR3 2400/2100 memory modules on this motherboard, it is recommended to install them on DDR3_A2 and DDR3_B2 slots.

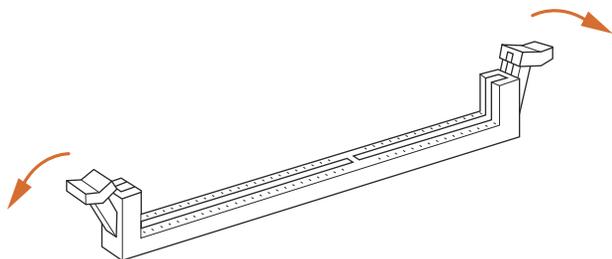
Dual Channel Memory Configuration

| Priority | DDR3_A1 | DDR3_A2 | DDR3_B1 | DDR3_B2 |
|----------|-----------|-----------|-----------|-----------|
| 1 | | Populated | | Populated |
| 2 | Populated | | Populated | |
| 3 | Populated | Populated | Populated | Populated |

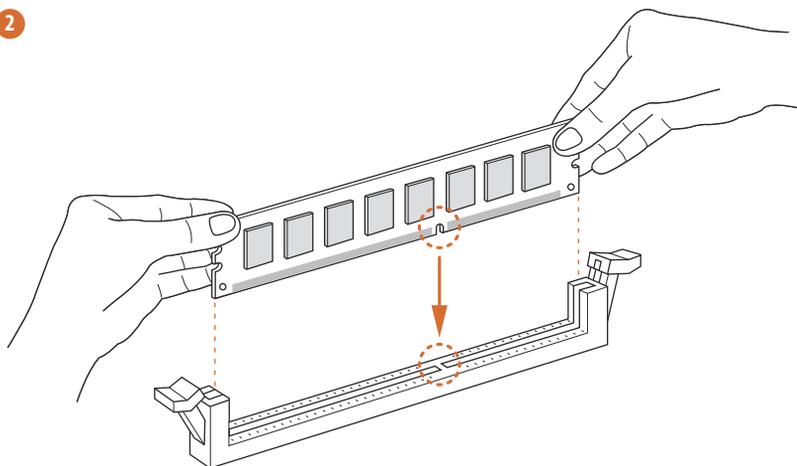


The DIMM only fits in one correct orientation. It will cause permanent damage to the motherboard and the DIMM if you force the DIMM into the slot at incorrect orientation.

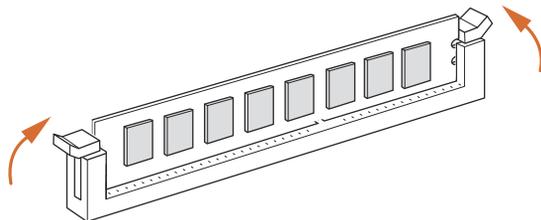
1



2



3



2.4 Expansion Slots (PCI and PCI Express Slots)

There is 1 PCI slot and 4 PCI Express slots on the motherboard.



Before installing an expansion card, please make sure that the power supply is switched off or the power cord is unplugged. Please read the documentation of the expansion card and make necessary hardware settings for the card before you start the installation.

PCI slot:

The PCI slot is used to install expansion cards that have 32-bit PCI interface.

PCIe slots:

PCIe1 (PCIe 2.0 x1 slot) is used for PCI Express x1 lane width cards.

PCIe2 (PCIe 2.0 x16 slot) is used for PCI Express x16 lane width graphics cards.

PCIe3 (PCIe 2.0 x1 slot) is used for PCI Express x1 lane width cards.

PCIe4 (PCIe 2.0 x16 slot) is used for PCI Express x4 lane width graphics cards.

PCIe Slot Configurations

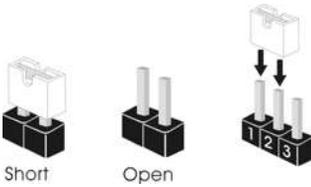
| | PCIe2 | PCIe4 |
|---|-------|-------|
| Single Graphics Card | x16 | N/A |
| Two Graphics Cards in CrossFireX™ Mode | x16 | x4 |



For a better thermal environment, please connect a chassis fan to the motherboard's chassis fan connector (CHA_FAN1, CHA_FAN2, CHA_FAN3 or CHA_FAN4) when using multiple graphics cards.

2.5 Jumpers Setup

The illustration shows how jumpers are setup. When the jumper cap is placed on the pins, the jumper is “Short”. If no jumper cap is placed on the pins, the jumper is “Open”. The illustration shows a 3-pin jumper whose pin1 and pin2 are “Short” when a jumper cap is placed on these 2 pins.



Clear CMOS Jumper
(CLR CMOS1)
(see p.1, No. 18)



Default



Clear CMOS

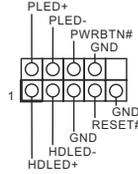
CLR CMOS1 allows you to clear the data in CMOS. To clear and reset the system parameters to default setup, please turn off the computer and unplug the power cord from the power supply. After waiting for 15 seconds, use a jumper cap to short pin2 and pin3 on CLR CMOS1 for 5 seconds. However, please do not clear the CMOS right after you update the BIOS. If you need to clear the CMOS when you just finish updating the BIOS, you must boot up the system first, and then shut it down before you do the clear-CMOS action. Please be noted that the password, date, time, and user default profile will be cleared only if the CMOS battery is removed.

2.6 Onboard Headers and Connectors



Onboard headers and connectors are NOT jumpers. Do NOT place jumper caps over these headers and connectors. Placing jumper caps over the headers and connectors will cause permanent damage to the motherboard.

System Panel Header
(9-pin PANEL1)
(see p.1, No. 20)



Connect the power switch, reset switch and system status indicator on the chassis to this header according to the pin assignments below. Note the positive and negative pins before connecting the cables.



PWRBTN (Power Switch):

Connect to the power switch on the chassis front panel. You may configure the way to turn off your system using the power switch.

RESET (Reset Switch):

Connect to the reset switch on the chassis front panel. Press the reset switch to restart the computer if the computer freezes and fails to perform a normal restart.

PLED (System Power LED):

Connect to the power status indicator on the chassis front panel. The LED is on when the system is operating. The LED keeps blinking when the system is in S1/S3 sleep state. The LED is off when the system is in S4 sleep state or powered off (S5).

HDLED (Hard Drive Activity LED):

Connect to the hard drive activity LED on the chassis front panel. The LED is on when the hard drive is reading or writing data.

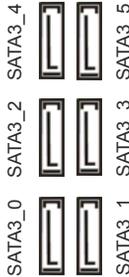
The front panel design may differ by chassis. A front panel module mainly consists of power switch, reset switch, power LED, hard drive activity LED, speaker and etc. When connecting your chassis front panel module to this header, make sure the wire assignments and the pin assignments are matched correctly.

Power LED Header
(3-pin PLED1)
(see p.1, No. 17)



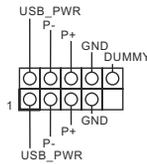
Please connect the chassis power LED to this header to indicate the system's power status.

Serial ATA3 Connectors
(SATA3_0:
see p.1, No. 10)
(SATA3_1:
see p.1, No. 15)
(SATA3_2:
see p.1, No. 11)
(SATA3_3:
see p.1, No. 14)
(SATA3_4:
see p.1, No. 12)
(SATA3_5:
see p.1, No. 13)



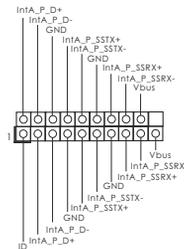
These six SATA3 connectors support SATA data cables for internal storage devices with up to 6.0 Gb/s data transfer rate.

USB 2.0 Headers
(9-pin USB_4_5)
(see p.1, No. 22)
(9-pin USB_6_7)
(see p.1, No. 21)



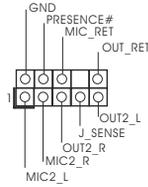
Besides four USB 2.0 ports on the I/O panel, there are two headers on this motherboard. Each USB 2.0 header can support two ports.

USB 3.0 Headers
(19-pin USB3_2_3)
(see p.1, No. 25)



Besides two USB 3.0 ports on the I/O panel, there is one header and one port on this motherboard. Each USB 3.0 header can support two ports.

Front Panel Audio Header
(9-pin HD_AUDIO1)
(see p.1, No. 24)

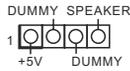


This header is for connecting audio devices to the front audio panel.



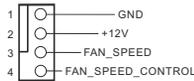
1. High Definition Audio supports Jack Sensing, but the panel wire on the chassis must support HDA to function correctly. Please follow the instructions in our manual and chassis manual to install your system.
2. If you use an AC'97 audio panel, please install it to the front panel audio header by the steps below:
 - A. Connect Mic_IN (MIC) to MIC2_L.
 - B. Connect Audio_R (RIN) to OUT2_R and Audio_L (LIN) to OUT2_L.
 - C. Connect Ground (GND) to Ground (GND).
 - D. MIC_RET and OUT_RET are for the HD audio panel only. You don't need to connect them for the AC'97 audio panel.
 - E. To activate the front mic, go to the "FrontMic" Tab in the Realtek Control panel and adjust "Recording Volume".

Chassis Speaker Header
(4-pin SPEAKER1)
(see p.1, No. 19)



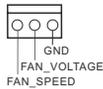
Please connect the chassis speaker to this header.

Chassis Fan Connectors
(4-pin CHA_FAN1)
(see p.1, No. 8)



Please connect fan cables to the fan connectors and match the black wire to the ground pin.

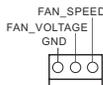
(3-pin CHA_FAN2)
(see p.1, No. 16)



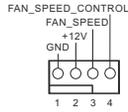
(4-pin CHA_FAN3)
(see p.1, No. 9)



(3-pin CHA_FAN4)
(see p.1, No. 2)

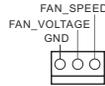


CPU Fan Connectors
(4-pin CPU_FAN1)
(see p.1, No. 4)

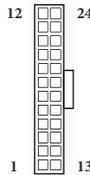


This motherboard provides a 4-Pin CPU fan (Quiet Fan) connector. If you plan to connect a 3-Pin CPU fan, please connect it to Pin 1-3.

(3-pin CPU_FAN2)
(see p.1, No. 3)

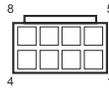


ATX Power Connector
(24-pin ATXPWR1)
(see p.1, No. 7)



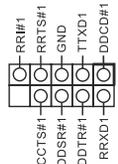
This motherboard provides a 24-pin ATX power connector. To use a 20-pin ATX power supply, please plug it along Pin 1 and Pin 13.

ATX 12V Power Connector
(8-pin ATX12V1)
(see p.1, No. 1)



This motherboard provides an 8-pin ATX 12V power connector. To use a 4-pin ATX power supply, please plug it along Pin 1 and Pin 5.

Serial Port Header
(9-pin COM1)
(see p.1, No. 23)

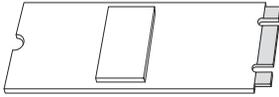


This COM1 header supports a serial port module.

2.7 M.2_SSD (NGFF) Module Installation Guide

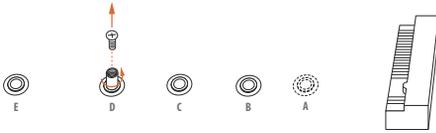
The M.2, also known as the Next Generation Form Factor (NGFF), is a small size and versatile card edge connector that aims to replace mPCIe. The M.2_SSD (NGFF) Socket 3 can accommodate a M.2 PCI Express module up to Gen 2 x4 (20 Gb/s).

Installing the M.2_SSD (NGFF) Module



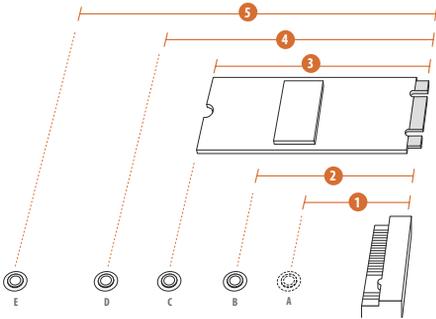
Step 1

Prepare a M.2_SSD (NGFF) module.



Step 2

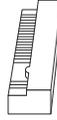
Uninstall the screw knob and the standoff counterclockwise for later use.



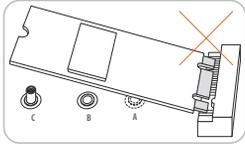
Step 3

Depending on the PCB length of your M.2_SSD (NGFF) module, find the corresponding NUT location to be used.

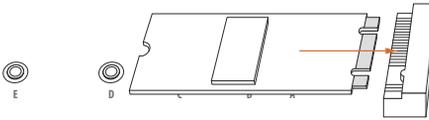
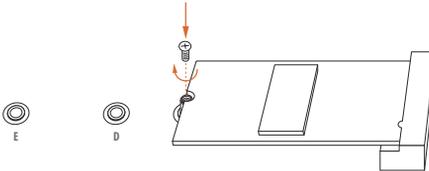
| No. | 1 | 2 | 3 | 4 | 5 |
|--------------|----------|-----------|----------|-----------|------------|
| Nut Location | A | B | C | D | E |
| PCB Length | 3cm | 4.2cm | 6cm | 8cm | 11cm |
| Module Type | Type2230 | Type 2242 | Type2260 | Type 2280 | Type 22110 |

Step 4

Hand tighten the standoff into the desired NUT on the motherboard.

**Step 5**

Align and gently insert the M.2 (NGFF) SSD module into the M.2 slot. Please be aware that the M.2 (NGFF) SSD module only fits in one orientation.

**Step 6**

Tighten the screw knob to secure the module into place.

M.2_SSD (NGFF) Module Support List

PCIe Interface

SanDisk SD6PP4M-128G

SanDisk SD6PP4M-256G

For the latest updates of M.2_SSD (NFGG) module support list, please visit our website for details: <http://www.asrock.com>

1 Einleitung

Vielen Dank, dass Sie sich für die 970A-G/3.1 von ASRock entschieden haben – ein zuverlässiges Motherboard, das konsequent unter der strengen Qualitätskontrolle von ASRock hergestellt wurde. Es liefert ausgezeichnete Leistung mit robustem Design, das ASRocks Streben nach Qualität und Beständigkeit erfüllt.



Da die technischen Daten des Motherboards sowie die BIOS-Software aktualisiert werden können, kann der Inhalt dieser Anleitung ohne Ankündigung geändert werden. Falls diese Anleitung irgendwelchen Änderungen unterliegt, wird die aktualisierte Version ohne weitere Hinweise auf der ASRock-Webseite zur Verfügung gestellt. Sollten Sie technische Hilfe in Bezug auf dieses Motherboard benötigen, erhalten Sie auf unserer Webseite spezifischen Informationen über das von Ihnen verwendete Modell. Auch finden Sie eine aktuelle Liste unterstützter VGA-Karten und Prozessoren auf der ASRock-Webseite: ASRock-Webseite <http://www.asrock.com>.

1.1 Lieferumfang

- ASRock 970A-G/3.1-Motherboard (ATX-Formfaktor)
- ASRock 970A-G/3.1-Schnellinstallationsanleitung
- ASRock 970A-G/3.1-Support-CD
- 2 x Serial-ATA- (SATA) Datenkabel (optional)
- 1 x E/A-Blendenabschirmung
- 1 x M.2-Schraube

1.2 Technische Daten

- | | |
|-------------------------------|--|
| Plattform | <ul style="list-style-type: none"> • ATX-Formfaktor • Solides Kondensatordesign |
| Prozessor | <ul style="list-style-type: none"> • Unterstützung von Socket AM3+-Prozessoren • Unterstützung von Socket AM3-Prozessoren: AMD Phenom™ II X6 / X4 / X3 / X2 (außer 920 / 940) / Athlon X4 / X3 / X2 / Sempron-Prozessor • Acht-Kern-CPU-bereit • Unterstützt UCC (Unlock CPU Core) • Digipower-Design • Erweitertes 8 + 2-Stromphasendesign • Unterstützt CPU bis 220W • Unterstützt Cool 'n' Quiet™-Technologie von AMD • FSB 2400 MHz (4.8 GT/s) • Unterstützt Untied-Übertaktungstechnologie • Unterstützt Hyper-Transport- 3.0 Technologie (HT 3.0) |
| Chipsatz | <ul style="list-style-type: none"> • Northbridge: AMD 970/990FX • Southbridge: AMD SB950 |
| Speicher | <ul style="list-style-type: none"> • Dualkanal-DDR3-Speichertechnologie • 4 x DDR3-DIMM-Steckplätze • Unterstützt DDR3 2400+(OC)/2100(OC)/1866(OC)/1800(OC) /1600(OC)/1333/1066 non-ECC, ungepufferter Speicher (siehe ACHTUNG1) • Systemspeicher, max. Kapazität: 64 GB (siehe ACHTUNG2) • Unterstützt Intel® Extreme Memory Profile (XMP)1.3/1.2 • Unterstützt AMDs Memory Profile Technology (AMP) bis AMP 2400 |
| Erweiterungssteckplatz | <ul style="list-style-type: none"> • 1 x PCI Express 2.0 x16-Steckplätze (PCIe2: x16-Modus) • 1 x PCI Express 2.0 x16-Steckplätze (PCIe4: x4-Modus) • 2 x PCI Express 2.0 x1-Steckplätze • 1 x PCI-Steckplätze • Unterstützt AMD Quad CrossFireX™ und CrossFireX™ |

Audio

- 7.1-Kanal-HD-Audio mit Inhaltsschutz (Realtek ALC1150-Audiocodec)
- Erstklassige Blu-ray-Audiounterstützung
- Unterstützt Überspannungsschutz (ASRock Full Spike Protection)
- ELNA-Audiokondensatoren
- Unterstützt DTS Connect

LAN

- PCIE x1 Gigabit LAN 10/100/1000 Mb/s
- Realtek RTL811GR
- Unterstützt Wake-On-WAN
- Unterstützt Wake-On-LAN
- Unterstützt Blitzschutz/Schutz gegen elektrostatische Entladung (ASRock Full Spike Protection)
- Unterstützt LAN-Kabelerkennung
- Unterstützt energieeffizientes Ethernet 802.3az
- Unterstützt PXE

Rückblende, E/A

- 1 x PS/2-Mausanschluss
- 1 x PS/2-Tastaturanschluss
- 1 x Optischer SPDIF-Ausgang
- 4 x USB 2.0-Ports (unterstützt Schutz gegen elektrostatische Entladung (ASRock Full Spike Protection))
- 1 x USB 3.1-Typ-A-Port (10 Gb/s) (ASMedia ASM1143) (unterstützt Schutz gegen elektrostatische Entladung (ASRock Full Spike Protection))
- 1 x USB 3.1-Typ-C-Port (10 Gb/s) (ASMedia ASM1143) (unterstützt Schutz gegen elektrostatische Entladung (ASRock Full Spike Protection))
- 2 x USB 3.0-Ports (Etron EJ188H) (unterstützt Schutz gegen elektrostatische Entladung (ASRock Full Spike Protection))
- 1 x RJ-45-LAN-Port mit LED (Aktivität/Verbindung-LED und Geschwindigkeit-LED)
- HD-Audioanschluss: Hintere Lautsprecher / Zentral / Bass / Line-in / Vorderer Lautsprecher /Mikrofon

Speicher

- 6 x SATA-III-6,0-Gb/s-Anschlüsse, unterstützt RAID (RAID 0, RAID 1, RAID 5 und RAID 10), NCQ, AHCI und „Hot-Plugging“
 - 1 x M.2_SSD- (NGFF) Sockel 3, unterstützt 2230/2242/2260/2280/22110 M.2-PCI-Express-Modul bis Gen2 x4 (20- Gb/s)
- * Wenn PCIe4 durch ein PCI-Express-Typ-M.2-Gerät belegt ist, wird M2_1 deaktiviert.
- * Unterstützt ASRock U.2-Kit

Anschluss

- 1 x COM-Anschluss-Stiftleiste
- 1 x Betrieb-LED-Stiftleiste
- 2 x CPU-Lüfteranschlüsse (1 x 4-polig, 1 x 3-polig)
- 4 x Gehäuselüfteranschlüsse (2 x 4-polig, 2 x 3-polig)
- 1 x 24-poliger ATX-Netzanschluss
- 1 x 8-poliger 12-V-Netzanschluss
- 1 x Audioanschluss an Frontblende
- 2 x USB 2.0-Stiftleisten (unterstützt vier USB 2.0-Ports) (unterstützt Schutz gegen elektrostatische Entladung (ASRock Full Spike Protection))
- 1 x Etron EJ188H USB 3.0-Stiftleiste (unterstützt zwei USB 3.0-Ports) (unterstützt Schutz gegen elektrostatische Entladung (ASRock Full Spike Protection))

BIOS-Funktion

- AMI-UEFI-Legal-BIOS mit Unterstützung grafischer Benutzerschnittstellen
- Unterstützung für „Plug and Play“
- ACPI 1.1-konforme Aufweckereignisse
- JumperFree-Modus
- SMBIOS 2.3.1-Unterstützung
- CPU, VCCM, NB, SB / Mehrfachspannungsanpassung

Hardwareüberwachung

- CPU-/Gehäusetemperaturerkennung
- CPU/Gehäuse-Lüftertachometer
- Lautloser CPU-/Gehäuselüfter (ermöglicht automatische Anpassung der Geschwindigkeit des Gehäuselüfters über die CPU-Temperatur)
- CPU/Gehäuselüfter-Mehrfachgeschwindigkeitssteuerung
- Spannungsüberwachung: +12 V, +5 V, +3,3 V, CPU Vcore

Betriebssystem

- Konform mit Microsoft® Windows® 10, 32 Bit / 10, 64 Bit / 8.1, 32 Bit / 8.1, 64 Bit / 8, 32 Bit / 8, 64 Bit / 7, 32 Bit / 7, 64 Bit / Vista™, 32 Bit / Vista™, 64 Bit / XP, 32 Bit / XP, 64 Bit
- * Einzelheiten zum aktualisierten Windows® 10-Treiber entnehmen Sie bitte der ASRock-Webseite: <http://www.asrock.com>

Zertifizierungen

- FCC, CE, WHQL
- ErP/EuP ready (ErP/EuP ready-Netzteil erforderlich)

* Detaillierte Produktinformationen finden Sie auf unserer Webseite: <http://www.asrock.com>



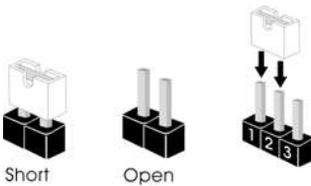
Bitte beachten Sie, dass mit einer Übertaktung, zu der die Anpassung von BIOS-Einstellungen, die Anwendung der Untied Overclocking Technology oder die Nutzung von Übertaktungswerkzeugen von Drittanbietern zählen, bestimmte Risiken verbunden sind. Eine Übertaktung kann sich auf die Stabilität Ihres Systems auswirken und sogar Komponenten und Geräte Ihres Systems beschädigen. Sie sollte auf eigene Gefahr und eigene Kosten durchgeführt werden. Wir übernehmen keine Verantwortung für mögliche Schäden, die durch eine Übertaktung verursacht wurden.



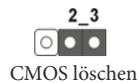
1. Ob die Speichergeschwindigkeit 2400/2100 MHz unterstützt wird, hängt von der von Ihnen eingesetzten AM3/AM3+-CPU ab. Schauen Sie bitte auf unseren Internetseiten in der Liste mit unterstützten Speichermodulen nach, wenn Sie DDR3 2400/2100-Speichermodule einsetzen möchten.
ASRock-Internetseite: <http://www.asrock.com>
2. Durch Betriebssystem-Einschränkungen kann die tatsächliche Speichergröße weniger als 4 GB betragen, da unter Windows® 32-Bit OS etwas Speicher zur Nutzung durch das System reserviert wird. Unter Windows® OS mit 64-Bit-CPU besteht diese Einschränkung nicht. Mit ASRock XFast RAM können Sie den Speicher einsetzen, den Windows® nicht nutzen kann.

1.3 Jumpereinstellung

Die Abbildung zeigt, wie die Jumper eingestellt werden. Wenn die Jumper-Kappe auf den Kontakten angebracht ist, ist der Jumper „kurzgeschlossen“. Wenn keine Jumper-Kappe auf den Kontakten angebracht ist, ist der Jumper „offen“. Die Abbildung zeigt einen 3-poligen Jumper, dessen Kontakt 1 und Kontakt 2 „kurzgeschlossen“ sind, wenn eine Jumper-Kappe auf diesen 2 Kontakten angebracht ist.



CMOS-löschen-Jumper
(CLRCMOS1)
(siehe S. 1, Nr. 18)



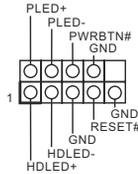
CLRCMOS1 ermöglicht Ihnen die Löschung der Daten im CMOS. Zum Löschen und Rücksetzen der Systemparameter auf die Standardeinrichtung schalten Sie den Computer bitte ab und ziehen das Netzkabel aus der Steckdose. Warten Sie 15 Sekunde, schließen Sie dann Kontakt 2 und Kontakt 3 an CLRCMOS1 5 Sekunden lang mit einer Jumper-Kappe kurz. Löschen Sie den CMOS jedoch nicht direkt nach der BIOS-Aktualisierung. Falls Sie den CMOS direkt nach Abschluss der BIOS-Aktualisierung löschen müssen, starten Sie das System zunächst; fahren Sie es dann vor der CMOS-Löschung herunter. Bitte beachten Sie, dass Kennwort, Datum, Zeit und Benutzerstandardprofil nur gelöscht werden, wenn die CMOS-Batterie entfernt wird.

1.4 Integrierte Stiftleisten und Anschlüsse



Integrierte Stiftleisten und Anschlüsse sind KEINE Jumper. Bringen Sie KEINE Jumper-Kappen an diesen Stiftleisten und Anschlüssen an. Durch Anbringen von Jumper-Kappen an diesen Stiftleisten und Anschlüssen können Sie das Motherboard dauerhaft beschädigen.

Systemblende-Stiftleiste
(9-polig, PANEL1)
(siehe S. 1, Nr. 20)



Verbinden Sie Netzschalter, Reset-Taste und Systemstatusanzeige am Gehäuse entsprechend der nachstehenden Pinbelegung mit dieser Stiftleiste. Beachten Sie vor Anschließen der Kabel die positiven und negativen Kontakte.



PWRBTN (Ein-/Austaste):

Mit der Ein-/Austaste an der Frontblende des Gehäuses verbinden. Sie können die Abschaltung Ihres Systems über die Ein-/Austaste konfigurieren.

RESET (Reset-Taste):

Mit der Reset-Taste an der Frontblende des Gehäuses verbinden. Starten Sie den Computer über die Reset-Taste neu, wenn er abstürzt oder sich nicht normal neu starten lässt.

PLED (Systembetrieb-LED):

Mit der Betriebsstatusanzeige an der Frontblende des Gehäuses verbinden. Die LED leuchtet, wenn das System läuft. Die LED blinkt, wenn sich das System im S1/S3-Ruhezustand befindet. Die LED ist aus, wenn sich das System im S4-Ruhezustand befindet oder ausgeschaltet ist (S5).

HDLED (Festplattenaktivität-LED):

Mit der Festplattenaktivität-LED an der Frontblende des Gehäuses verbinden. Die LED leuchtet, wenn die Festplatte Daten liest oder schreibt.

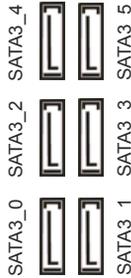
Das Design der Frontblende kann je nach Gehäuse variieren. Ein Frontblendenmodul besteht hauptsächlich aus Ein-/Austaste, Reset-Taste, Betrieb-LED, Festplattenaktivität-LED, Lautsprecher etc. Stellen Sie beim Anschließen Ihres Frontblendenmoduls an diese Stiftleiste sicher, dass Kabel- und Pinbelegung richtig abgestimmt sind.

Betrieb-LED-Stiftleiste
(3-polig, PLED1)
(siehe S. 1, Nr. 17)



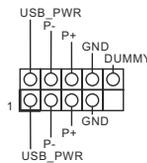
Bitte verbinden Sie die Betrieb-LED des Gehäuses zur Anzeige des Systembetriebsstatus mit dieser Stiftleiste.

Serial-ATA-III-Anschlüsse
(SATA3_0:
siehe S. 1, Nr. 10)
(SATA3_1:
siehe S. 1, Nr. 15)
(SATA3_2:
siehe S. 1, Nr. 11)
(SATA3_3:
siehe S. 1, Nr. 14)
(SATA3_4:
siehe S. 1, Nr. 12)
(SATA3_5:
siehe S. 1, Nr. 13)



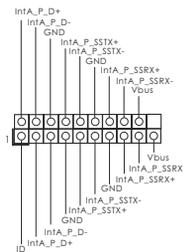
Diese sechs SATA-III-Anschlüsse unterstützen SATA-Datenkabel für interne Speichergeräte mit einer Datenübertragungsgeschwindigkeit bis 6,0 Gb/s.

USB 2.0-Stiftleisten
(9-polig, USB_4_5)
(siehe S. 1, Nr. 22)
(9-polig, USB_6_7)
(siehe S. 1, Nr. 21)



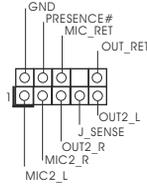
Neben vier USB 2.0-Ports an der E/A-Blende befinden sich zwei Stiftleisten an diesem Motherboard. Jede USB 2.0-Stiftleiste kann zwei Ports unterstützen.

USB 3,0-Stiftleisten
(19-polig, USB3_2_3)
(siehe S. 1, Nr. 25)



Neben zwei USB 3.0-Ports an der E/A-Blende befinden sich eine Steckleiste und ein Port an diesem Motherboard. Jede USB 3.0-Stiftleiste kann zwei Ports unterstützen.

Audiostiftleiste
(Frontblende)
(9-polig, HD_AUDIO1)
(siehe S. 1, Nr. 24)

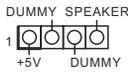


Diese Stiftleiste dient dem Anschließen von Audiogeräten an der Frontblende.



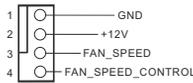
1. High Definition Audio unterstützt Anschlusserkennung, der Draht am Gehäuse muss dazu jedoch HDA unterstützen. Bitte befolgen Sie zum Installieren Ihres Systems die Anweisungen in unserer Anleitung und der Anleitung zum Gehäuse.
2. Wenn Sie ein AC'97-Audiopanel nutzen, installieren Sie es bitte anhand der nachstehenden Schritte an der Audiostiftleiste (Frontblende):
 - A. Verbinden Sie Mic_IN (MIC) mit MIC2_L.
 - B. Verbinden Sie Audio_R (RIN) mit OUT2_R und Audio_L (LIN) mit OUT2_L.
 - C. Verbinden Sie Erde (GND) mit Erde (GND).
 - D. MIC_RET und OUT_RET sind nur für das HD-Audio-Panel vorgesehen. Sie müssen Sie nicht mit dem AC'97-Audiopanel verbinden.
 - E. Rufen Sie zur Aktivierung des vorderen Mikrofons das „FrontMic (Frontmikrofon)“-Register in der Realtek-Systemsteuerung auf und passen „Recording Volume (Aufnahmelautstärke)“ an.

Gehäuselautsprecherstiftleiste
(4-polig, SPEAKER1)
(siehe S. 1, Nr. 19)



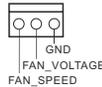
Bitte verbinden Sie den Gehäuselautsprecher mit dieser Stiftleiste.

Gehäuse-Lüfteranschlüsse
(4-polig, CHA_FAN1)
(siehe S. 1, Nr. 8)

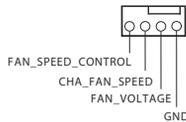


Bitte verbinden Sie die Lüfterkabel mit den Lüfteranschlüssen; der schwarze Draht gehört zum Erdungskontakt.

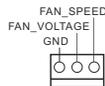
(3-polig, CHA_FAN2)
(siehe S. 1, Nr. 16)



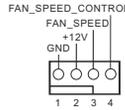
(4-polig, CHA_FAN3)
(siehe S. 1, Nr. 9)



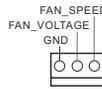
(3-polig, CHA_FAN4)
(siehe S. 1, Nr. 2)



CPU-Lüfteranschlüsse
(4-polig, CPU_FAN1)
(siehe S. 1, Nr. 4)

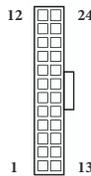


(3-polig, CPU_FAN2)
(siehe S. 1, Nr. 3)



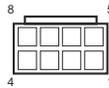
Dieses Motherboard bietet einen 4-poligen CPU-Lüfteranschluss (lautloser Lüfter). Falls Sie einen 3-poligen CPU-Lüfter anschließen möchten, verbinden Sie ihn bitte mit Kontakt 1 bis 3.

ATX-Netzanschluss
(24-polig, ATXPWR1)
(siehe S. 1, Nr. 7)



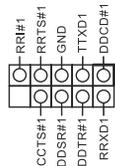
Dieses Motherboard bietet einen 24-poligen ATX-Netzanschluss. Bitte schließen Sie es zur Nutzung eines 20-poligen ATX-Netzteils entlang Kontakt 1 und Kontakt 13 an.

ATX-12-V-Netzanschluss
(8-polig, ATX12V1)
(siehe S. 1, Nr. 1)



Dieses Motherboard bietet einen 8-poligen ATX-12-V-Netzanschluss. Bitte schließen Sie es zur Nutzung eines 4-poligen ATX-Netzteils entlang Kontakt 1 und Kontakt 5 an.

Serieller-Port-Stiftleiste
(9-polig, COM1)
(siehe S. 1, Nr. 23)



Diese COM1-Stiftleiste unterstützt ein Modul für serielle Ports.

1 Introduction

Nous vous remercions d'avoir acheté cette carte mère ASRock de 970A-G/3.1, une carte mère fiable fabriquée conformément au contrôle de qualité rigoureux et constant appliqué par ASRock. Elle vous offre de performances élevées associées à une conception robuste, dignes de l'engagement de qualité et de durabilité qui font la réputation de ASRock.



Les spécifications de la carte mère et du logiciel BIOS pouvant être mises à jour, le contenu de ce document est soumis à modification sans préavis. En cas de modifications du présent document, la version mise à jour sera disponible sur le site Internet ASRock sans notification préalable. Si vous avez besoin d'une assistance technique pour votre carte mère, veuillez visiter notre site Internet pour plus de détails sur le modèle que vous utilisez. La liste la plus récente des cartes VGA et des processeurs pris en charge est également disponible sur le site Internet de ASRock. Site Internet ASRock <http://www.asrock.com>.

1.1 Contenu de l'emballage

- Carte mère ASRock 970A-G/3.1 (facteur de forme ATX)
- Guide d'installation rapide ASRock 970A-G/3.1
- CD d'assistance ASRock 970A-G/3.1
- 2 x câbles de données Serial ATA (SATA) (Optionnel)
- 1 x panneau de protection E/S
- 1 x M.2 Socket Vis

1.2 Spécifications

| | |
|--------------------------|---|
| Plateforme | <ul style="list-style-type: none"> • Facteur de forme ATX • Conception à condensateurs solides |
| Processeur | <ul style="list-style-type: none"> • Prise en charge des processeurs sur socket AM3+ • Prise en charge des processeurs sur socket AM3: Processeur Phenom™ II X6 / X4 / X3 / X2 (sauf 920 / 940) / Athlon II X4 / X3 / X2 / Sempron d'AMD • Prêt pour processeurs Huit-Core • Supporte UCC (Unlock CPU Core) • Conception Digi Power • Conception 8 + 2 Power Phase • Supporte les processeurs jusqu'à 220W • Supporte la technologie Cool 'n' Quiet™ d'AMD • FSB 2400 MHz (4.8 GT/s) • Prend en charge la technologie Untied Overclocking • Prise en charge de la technologie Hyper Transport 3.0 (HT 3.0) |
| Chipset | <ul style="list-style-type: none"> • Northbridge: AMD 970/990FX • Southbridge: AMD SB950 |
| Mémoire | <ul style="list-style-type: none"> • Technologie mémoire double canal DDR3 • 4 x fentes DIMM DDR3 • Prend en charge les mémoires sans tampon non ECC DDR3 2400+(OC)/2100(OC)/1866(OC)/1800(OC)/1600(OC)/1333/1066 (voir AVERTISSEMENT1) • Capacité max. de la mémoire système : 64Go (voir AVERTISSEMENT2) • Prend en charge Intel® Extreme Memory Profile (XMP)1.3/1.2 • Prend en charge la technologie AMD Memory Profile (Profil de mémoire AMD - AMP) jusqu'à AMP 2400 |
| Fente d'expansion | <ul style="list-style-type: none"> • 1 x fente PCI Express 2.0 x16 (PCIE2: mode x16) • 1 x fente PCI Express 2.0 x16 (PCIE4: mode x4) • 2 x fentes PCI Express 2.0 x1 • 1 x fente PCI • Prend en charge AMD Quad CrossFireX™ et CrossFireX™ |

Audio

- Audio 7.1 CH HD avec protection du contenu (codec audio Realtek ALC1150)
- Compatible audio Blu-ray Premium
- Protection contre les surtensions (Protection complète contre les pics ASRock)
- Capuchons ELNA Audio
- Prend en charge DTS Connect

Réseau

- PCIE x1 Gigabit LAN 10/100/1000 Mb/s
- Realtek RTL8111GR
- Supporte du Wake-On-WAN
- Prend en charge la fonction Wake-On-LAN
- Protection contre les orages/décharges électrostatiques (Protection complète contre les pics ASRock)
- Prise en charge de la détection de câble LAN
- Prend en charge la fonction d'économie d'énergie Ethernet 802,3az
- Prend en charge PXE

Connectique du panneau arrière

- 1 x port souris PS/2
- 1 x port clavier PS/2
- 1 x port sortie optique SPDIF
- 4 x ports USB 2.0 (Protection contre les décharges électrostatiques (Protection complète contre les pics ASRock))
- 1 x port USB 3.1 type A (10 Gb/s) (ASMedia ASM1143) (Protection contre les décharges électrostatiques (Protection complète contre les pics ASRock))
- 1 x port USB 3.1 type C (10 Gb/s) (ASMedia ASM1143) (Protection contre les décharges électrostatiques (Protection complète contre les pics ASRock))
- 2 x ports USB 3.0 (concentrateur Etron EJ188H) (Protection contre les décharges électrostatiques (Protection complète contre les pics ASRock))
- 1 x port RJ-45 LAN avec LED (LED ACT/LIEN et LED VITESSE)
- Connecteurs jack audio HD : Haut-parleur arrière / central / basses / entrée ligne / haut-parleur avant / microphone

Stockage

- 6 x connecteurs SATA3 6,0 Go/s, compatibles RAID (RAID 0, RAID 1, RAID 5 et RAID 10), NCQ, AHCI et « Hot Plug »
 - 1 x M.2_SSD (NGFF) Socket 3, prend en charge le module 2230/2242/2260/2280/22110 M.2 PCI Express jusqu'à Gen2 x4 (20 Go/s)
- * Si PCIE4 est occupé par un périphérique M.2 type PCI Express, M2_1 est désactivé.
- * Prend en charge le kit ASRock U.2

**Connec-
tique**

- 1 x embase pour port COM
- 1 x embase LED d'alimentation
- 2 x connecteurs pour ventilateur de processeur (1 x 4 broches, 1 x 3 broches)
- 4 x connecteurs pour ventilateur de châssis (2 x 4 broches, 2 x 3 broches)
- 1 x connecteur d'alimentation ATX 24 broches
- 1 x connecteur d'alimentation 12V 8 broches
- 1 x connecteur audio panneau frontal
- 2 x embases USB 2.0 (pour 4 ports USB 2.0) (Protection contre les décharges électrostatiques (Protection complète contre les pics ASRock))
- 1 x embase Etron EJ188H USB 3.0 (pour 2 ports USB 3.0) (Protection contre les décharges électrostatiques (Protection complète contre les pics ASRock))

**Caractéris-
tiques du
BIOS**

- BIOS UEFI AMI avec prise en charge interface graphique
- Support du "Plug and Play"
- Compatible ACPI 1.1 Wake Up Events
- Gestion jumperless
- Prend en charge SMBIOS 2.3.1
- Réglage de la tension CPU, VCCM, NB, SB

**Surveillance
du matériel**

- Détection de la température du processeur/châssis
- Tachéomètre processeur/châssis d'alimentation
- Fonction ventilateur silencieux processeur/châssis Quiet Fan (permet au ventilateur du châssis d'adapter sa vitesse de rotation automatiquement en fonction de la température du processeur)
- Contrôle simultané des vitesse du ventilateur processeur/châssis

- Surveillance de la tension d'alimentation : +12V, +5V, +3,3V, CPU Vcore

Système d'exploitation

- Compatible Microsoft® Windows® 10 32-bit / 10 64-bit / 8.1 32-bit / 8.1 64-bit / 8 32-bit / 8 64-bit / 7 32-bit / 7 64-bits / Vista™ 32-bit / Vista™ 64-bits / XP 32-bit / XP 64-bits

* Pour le pilote mis à jour pour Windows® 10, veuillez visiter le site Web d'ASRock pour plus de détails : <http://www.asrock.com>

Certifications

- FCC, CE, WHQL
- ErP/EuP Ready (alimentation ErP/EuP ready requise)

* pour des informations détaillées de nos produits, veuillez visiter notre site : <http://www.asrock.com>



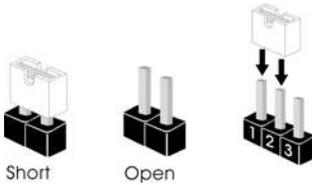
Il est important de signaler que l'overclocking présente certains risques, incluant des modifications du BIOS, l'application d'une technologie d'overclocking déliée et l'utilisation d'outils d'overclocking développés par des tiers. La stabilité de votre système peut être affectée par ces pratiques, voire provoquer des dommages aux composants et aux périphériques du système. L'overclocking se fait à vos risques et périls. Nous ne pourrions en aucun cas être tenus pour responsables des dommages éventuels provoqués par l'overclocking.



1. La prise en charge de fréquences de mémoire de 2400/2100MHz dépend du CPU AM3/AM3+ que vous choisissez. Si vous choisissez des barrettes de mémoire DDR3 2400/2100 sur cette carte mère, veuillez vous référer à la liste des mémoires prises en charge sur notre site Web pour connaître barrettes de mémoire compatibles. Site Web ASRock : <http://www.asrock.com>
2. Du fait des limites du système d'exploitation, la taille mémoire réelle réservée au système pourra être inférieure à 4 Go sous Windows® 32-bit OS. Avec Windows® OS avec CPU 64 bits, il n'y a pas ce genre de limitation. Vous pouvez utiliser ASRock XFast RAM pour utiliser la mémoire dont Windows® ne peut se servir.

1.3 Configuration des cavaliers (jumpers)

L'illustration ci-dessous vous renseigne sur la configuration des cavaliers (jumpers). Lorsque le capuchon du cavalier est installé sur les broches, le cavalier est 'court-circuité'. Si le capuchon du cavalier n'est pas installé sur les broches, le cavalier est 'ouvert'. L'illustration représente un cavalier à 3 broches dont les broches 1 et 2 sont « court-circuitées » si un capuchon de cavalier est posé sur ces 2 broches.



Cavalier Clear CMOS
(CLRCMOS1)
(voir p.1, No. 18)



Par défaut



Fonction Clear CMOS

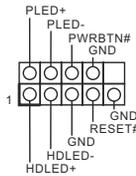
CLRCMOS1 vous permet d'effacer les données de la CMOS. Pour effacer les paramètres du système et rétablir les valeurs par défaut, veuillez éteindre votre ordinateur et débrancher son cordon d'alimentation. Patientez 15 secondes, puis utilisez un capuchon de cavalier pour court-circuiter la broche 2 et la broche 3 sur CLRCMOS1 pendant 5 secondes. Toutefois, n'effacez pas la CMOS immédiatement après avoir mis à jour le BIOS. Si vous avez besoin d'effacer les données CMOS après une mise à jour du BIOS, vous devez tout d'abord redémarrer le système, puis l'éteindre avant de procéder à l'effacement de la CMOS. Veuillez noter que les paramètres mot de passe, date, heure et profil par défaut de l'utilisateur seront uniquement effacés en cas de retrait de la pile de la CMOS.

1.4 Embases et connecteurs de la carte mère



Les embases et connecteurs situés sur la carte NE SONT PAS des cavaliers. Ne placez JAMAIS de capuchons de cavaliers sur ces embases ou connecteurs. Placer un capuchon de cavalier sur ces embases ou connecteurs endommagera irrémédiablement votre carte mère.

Embase du panneau système
(PANNEAU1 à 9 broches)
(voir p.1, No. 20)



Branchez le bouton de mise en marche/arrêt, le bouton de réinitialisation et le témoin d'état du système présents sur le châssis sur cette embase en respectant la configuration des broches illustrée ci-dessous. Repérez les broches positive et négative avant de brancher les câbles.



PWRBTN (Bouton de mise en marche) :

pour brancher le bouton de mise en marche au panneau frontal du châssis. Vous pouvez configurer la façon dont votre système doit s'arrêter à l'aide du bouton de mise en marche.

RESET (Bouton de réinitialisation) :

pour brancher le bouton de réinitialisation au panneau frontal du châssis. Appuyez sur le bouton de réinitialisation pour redémarrer l'ordinateur en cas de plantage ou de dysfonctionnement au démarrage.

PLED (LED d'alimentation du système) :

pour brancher le témoin d'état de l'alimentation au panneau frontal du châssis. Le LED est allumé lorsque le système fonctionne. Le LED clignote lorsque le système se trouve en mode veille S1/S3. Le LED est éteint lorsque le système se trouve en mode veille S4 ou hors tension (S5).

HDLED (LED d'activité du disque dur) :

pour brancher le témoin LED d'activité du disque dur au panneau frontal du châssis. Le LED est allumé lorsque le disque dur lit ou écrit des données.

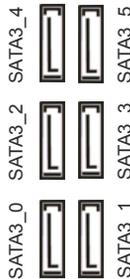
La conception du panneau frontal peut varier en fonction du châssis. Un module de panneau frontal est principalement composé d'un bouton de mise en marche, bouton de réinitialisation, LED d'alimentation, LED d'activité du disque dur, haut-parleur etc. Lorsque vous reliez le module du panneau frontal de votre châssis sur cette embase, veuillez à parfaitement faire correspondre les fils et les broches.

Embase LED
d'alimentation
(PLED1 à 3 broches)
(voir p.1, No. 17)



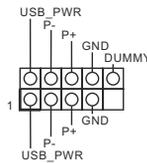
Veillez brancher le LED d'alimentation du châssis sur cette embase pour indiquer l'état d'alimentation du système.

Connecteurs Serial ATA3
(SATA3_0:
(voir p.1, No. 10)
(SATA3_1:
(voir p.1, No. 15)
(SATA3_2:
(voir p.1, No. 11)
(SATA3_3:
(voir p.1, No. 14)
(SATA3_4:
(voir p.1, No. 12)
(SATA3_5:
(voir p.1, No. 13)



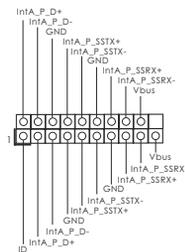
Ces six connecteurs SATA3 sont compatibles avec les câbles de données SATA pour les appareils de stockage internes avec un taux de transfert maximal de 6,0 Go/s.

Embases USB 2.0
(USB_4_5 à 9 broches)
(voir p.1, No. 22)
(USB_6_7 à 9 broches)
(voir p.1, No. 21)



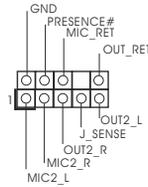
En plus des quatre ports USB 2.0 sur le panneau E/S, cette carte mère est dotée de deux embases. Chaque embase USB 2.0 peut prendre en charge deux ports.

Embases USB 3.0
(USB3_2_3 à 19 broches)
(voir p.1, No. 25)



En plus des deux ports USB 3.0 sur le panneau E/S, cette carte mère est dotée d'une embase et d'un port. Chaque embase USB 3.0 peut prendre en charge deux ports.

Embase audio du panneau frontal
(HD_AUDIO1 à 9 broches)
(voir p.1, No. 24)

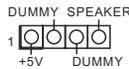


Cette embase sert au branchement des appareils audio au panneau audio frontal.



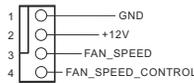
1. L'audio haute définition prend en charge la technologie Jack Sensing (détection de la fiche), mais le panneau grillagé du châssis doit être compatible avec la HDA pour fonctionner correctement. Veuillez suivre les instructions figurant dans notre manuel et dans le manuel du châssis pour installer votre système.
2. Si vous utilisez un panneau audio AC'97, veuillez le brancher sur l'embase audio du panneau frontal en procédant comme suit :
 - A. branchez Mic_IN (MIC) sur MIC2_L.
 - B. branchez Audio_R (RIN) sur OUT2_R et Audio_L (LIN) sur OUT2_L.
 - C. branchez la mise à terre (GND) sur mise à terre (GND).
 - D. MIC_RET et OUT_RET sont exclusivement réservés au panneau audio HD. Il est inutile de les brancher avec le panneau audio AC'97.
 - E. Pour activer le micro frontal, sélectionnez l'onglet « FrontMic » du panneau de contrôle Realtek et réglez le paramètre « Volume d'enregistrement ».

Embase du haut-parleur du châssis
(SPEAKER1 à 4 broches)
(voir p.1, No. 19)



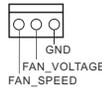
Veuillez brancher le haut-parleur du châssis sur cette embase.

Connecteurs du ventilateur du châssis
(CHA_FAN1 à 4 broches)
(voir p.1, No. 8)

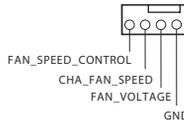


Veuillez brancher les câbles du ventilateur sur les connecteurs du ventilateur, puis reliez le fil noir à la broche de mise à terre.

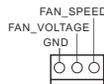
(CHA_FAN2 à 3 broches)
(voir p.1, No. 16)



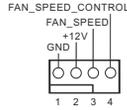
(CHA_FAN3 à 4 broches)
(voir p.1, No. 9)



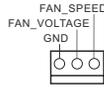
(CHA_FAN4 à 3 broches)
(voir p.1, No. 2)



Connecteurs du ventilateur du processeur (CPU_FAN1 à 4 broches)
(voir p.1, No. 4)

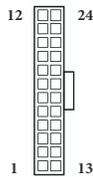


(CPU_FAN2 à 3 broches)
(voir p.1, No. 3)



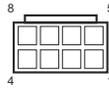
Cette carte mère est dotée d'un connecteur à 4 broches pour ventilateur de processeur (Quiet Fan). Si vous envisagez de connecter un ventilateur de processeur à 3 broches, veuillez le brancher sur la Broche 1-3.

Connecteur d'alimentation ATX (ATXPWR1 à 24 broches)
(voir p.1, No. 7)



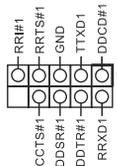
Cette carte mère est dotée d'un connecteur d'alimentation ATX à 24 broches. Pour utiliser une alimentation ATX à 20 broches, veuillez effectuer les branchements sur la Broche 1 et la Broche 13.

Connecteur d'alimentation ATX 12V (ATX12V1 à 8 broches)
(voir p.1, No. 1)



Cette carte mère est dotée d'un connecteur d'alimentation ATX 12V à 8 broches. Pour utiliser une alimentation ATX à 4 broches, veuillez effectuer les branchements sur la Broche 1 et la Broche 5.

Embase pour port série (COM1 à 9 broches)
(voir p.1, No. 23)



Cette embase COM1 prend en charge un module de port série.

1 Introduzione

Grazie per aver acquistato la scheda madre 970A-G/3.1 ASRock, una scheda madre affidabile prodotta secondo i costanti e rigorosi controlli di qualità di ASRock. La scheda madre offre eccellenti prestazioni con un design robusto che si adatta all'impegno di ASRock di offrire sempre qualità e durata.



Dato che le specifiche della scheda madre e del software BIOS possono essere aggiornate, il contenuto di questo manuale sarà soggetto a variazioni senza preavviso. Nel caso di eventuali modifiche del presente manuale, la versione aggiornata sarà disponibile sul sito Web di ASRock senza ulteriore preavviso. Per il supporto tecnico correlato a questa scheda madre, visitare il nostro sito Web per informazioni specifiche relative al modello attualmente in uso. È possibile trovare l'elenco di schede VGA più recenti e di supporto di CPU anche sul sito Web di ASRock. Sito Web di ASRock <http://www.asrock.com>.

1.1 Contenuto della confezione

- Scheda madre 970A-G/3.1 ASRock (fattore di forma ATX)
- Guida rapida di installazione 970A-G/3.1 ASRock
- CD di supporto 970A-G/3.1 ASRock
- 2 x cavi dati Serial ATA (SATA) (opzionali)
- 1 x mascherina metallica posteriore I/O
- 1 x vite M.2 Socket

1.2 Specifiche

Piattaforma

- Fattore di forma ATX
- Design di condensatore solido

CPU

- Supporto di processori Socket AM3+
- Supporto di processori Socket AM3: AMD Phenom™ II X6 / X4 / X3 / X2 (fatta eccezione per 920 / 940) / Athlon II X4 / X3 / X2 / Sempron
- CPU Otto-Core Ready
- Supporto UCC (Unlock CPU Core)
- Design Digi Power
- Struttura di fase con alimentazione 8 + 2 avanzata
- Supporta CPU fino a 220 W
- Supporto tecnologia AMD Cool 'n' Quiet™
- FSB 2400 MHz (4.8 GT/s)
- Supporta la tecnologia overclocking "slegata"
- Supporta la tecnologia Hyper-Transport 3.0 (HT 3.0)

Chipset

- Northbridge: AMD 970/990FX
- Southbridge: AMD SB950

Memoria

- Tecnologia con memoria DDR3 a doppio canale
- 4 x slot DIMM DDR3
- Supporta la memoria DDR3 2400+(OC)/2100(OC)/1866(OC)/1800(OC)/1600(OC)/1333/1066 non ECC, senza buffer (si veda la sezione ATTENZIONE1)
- Capacità max. della memoria di sistema: 64 GB (si veda la sezione ATTENZIONE2)
- Supporta Intel® Extreme Memory Profile (XMP)1.3/1.2
- Supporta tecnologia AMD Memory Profile (AMP) fino ad AMP 2400

Slot di espansione

- 1 alloggiamento PCI Express 2.0 x16 (PCIE2: Modalità x16)
- 1 alloggiamento PCI Express 2.0 x16 (PCIE4: Modalità x4)
- 2 alloggiamenti PCI Express 2.0 x1
- 1 alloggiamento PCI
- Supporto di AMD Quad CrossFireX™ and CrossFireX™

Audio

- Audio HD a 7.1 canali con Content Protection (codec audio Realtek ALC1150)
- Supporto audio Blu-ray Premium
- Supporto protezione da sovratensione (protezione completa ASRock dai picchi di corrente)
- Cappucci audio ELNA
- Supporta DTS Connect

LAN

- PCIE x1 LAN Gigabit 10/100/1000 Mb/s
- Realtek RTL8111GR
- Supporta Wake-On-WAN
- Supporta Wake-On-LAN
- Supporto la protezione da fulmini/scariche elettrostatiche (ESD) (protezione completa ASRock dai picchi di corrente)
- Supporta il rilevamento cavo LAN
- Supporta Energy Efficient Ethernet 802.3az
- Supporta PXE

I/O pannello posteriore

- 1 x porta mouse PS/2
- 1 x porta tastiera PS/2
- 1 x porta uscita SPDIF ottico
- 4 x porte USB 2.0 (**supporto protezione da scariche elettrostatiche (ESD)** (protezione completa ASRock dai picchi di corrente))
- 1 x Porta USB 3.1 di tipo A (10 Gb/s) (ASMedia ASM1143) (Supporto protezione ESD (protezione ASRock Full Spike))
- 1 x Porta USB 3.1 di tipo C (10 Gb/s) (ASMedia ASM1143) (Supporto protezione ESD (protezione ASRock Full Spike))
- 2 x porte USB 3.0 (Etron EJ188H) (supporto protezione da scariche elettrostatiche (ESD) (protezione completa ASRock dai picchi di corrente))
- 1 x porta LAN RJ-45 con LED (ACT/LINK LED e SPEED LED)
- Jack audio HD: altoparlante posteriore/centrale/basso/ingresso linea/altoparlante anteriore/microfono

Archiviazione

- 6 x connettori SATA3 6,0 Gb/s, supporto RAID (RAID 0, RAID 1, RAID 5 e RAID 10), NCQ, AHCI e “Hot Plug”
- 1 x vite M.2_SSD (NGFF) Socket 3, supporta moduli 2230/2242/2260/2280/22110 M.2 PCI Express fino a Gen2 x4 (20 Gb/s)

* Se PCIE4 è occupato da un dispositivo M.2 di tipo PCI Express, M2_1 sarà disabilitato.

* Supporta kit ASRock U.2

Connettore

- 1 x header porta COM
- 1 x header LED di alimentazione
- 2 x connettori ventola CPU (1 x 4 pin, 1 x 3 pin)
- 4 x connettori ventola chassis (2 x 4 pin, 2 x 3 pin)
- 1 x connettore alimentazione ATX a 24 pin
- 1 x connettore alimentazione da 12 V a 8 pin
- 1 x connettore audio pannello anteriore
- 2 x header USB 2.0 (supporto 4 porte USB 2.0) (supporto protezione da scariche elettrostatiche (ESD) (protezione completa ASRock dai picchi di corrente))
- 1 x header Etron EJ188H USB 3.0 (supporta 2 porte USB 3.0) (supporto protezione da scariche elettrostatiche (ESD) (protezione completa ASRock dai picchi di corrente))

Caratteristiche del BIOS

- BIOS legale AMI UEFI con supporto GUI
- Supporta “Plug and Play”
- Eventi di wake up conformi ad ACPI 1.1
- Supporta jumperfree
- Supporto SMBIOS 2.3.1
- Multiregolazione tensione CPU, VCCM, NB, SB

Hardware Monitor

- Sensore temperatura CPU/chassis
- Tachimetro CPU/chassis alimentazione
- Ventola silenziosa CPU/chassis (consente l'autoregolazione della velocità della ventola dello chassis mediante la temperatura della CPU)
- Controllo multivelocità della ventola di CPU/chassis
- Monitoraggio tensione: +12 V, +5 V, +3,3 V, CPU Vcore

SO

- Microsoft® Windows® 10 a 32-bit/10 a 64-bit/8.1 a 32-bit/8.1 a 64-bit/8 a 32-bit/8 a 64-bit/7 a 32-bit/7 a 64-bit/Vista™ a 32-bit/Vista™ a 64-bit/XP a 32-bit/XP a 64-bit

* Per il driver aggiornato di Windows® 10, visitare il sito ASRock all'indirizzo:<http://www.asrock.com>

Certificazioni

- FCC, CE, WHQL
- ErP/EuP Ready (è necessaria alimentazione ErP/EuP ready)

* Per informazioni dettagliate sul prodotto, visitare il nostro sito Web: <http://www.asrock.com>



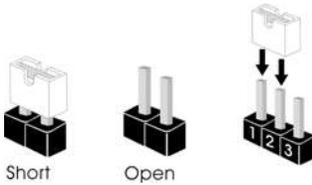
Prestare attenzione al potenziale rischio previsto nella pratica di overlocking, inclusa la regolazione delle impostazioni nel BIOS, l'applicazione di tecnologia di Untied Overclocking o l'utilizzo di strumenti di overlocking di terze parti. L'overlocking può influenzare la stabilità del sistema o perfino provocare danni ai componenti e ai dispositivi del sistema. Occorre eseguirlo a proprio rischio e spese. Non ci riterremo responsabili per possibili danni provocati da overlocking.



1. Il fatto che la velocità della memoria da 2400/2100MHz sia supportata o meno, dipende dagli AM3/AM3+ CPU utilizzati. Se si desidera adottare il modulo di memoria DDR3 2400/2100 su questa scheda madre, fare riferimento all'elenco delle memorie supportate nel nostro sito web per scoprire quali sono i moduli compatibili. Sito web ASRock <http://www.asrock.com>
2. A causa delle limitazioni del sistema operativo, le dimensioni effettive della memoria possono essere inferiori a 4GB per l'accantonamento riservato all'uso del sistema sotto Windows® 32-bit OS. Per Windows® OS con CPU 64-bit, non c'è tale limitazione. È possibile utilizzare la RAM XFast di ASRock per utilizzare la memoria che Windows® non può utilizzare.

1.3 Impostazione jumper

L'illustrazione mostra in che modo vengono impostati i jumper. Quando il cappuccio del jumper è posizionato sui pin, il jumper è "cortocircuitato". Se sui pin non è posizionato alcun cappuccio del jumper, il jumper è "aperto". L'illustrazione mostra un jumper a 3 pin i cui pin1 e pin2 sono "cortocircuitati" quando un cappuccio del jumper è posizionato su questi 2 pin.



Jumper per azzerare la
CMOS
(CLRCMOS1)
(vedere pag. 1, n. 18)



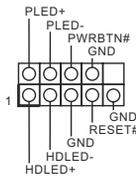
CLRCMOS1 consente di azzerare i dati presenti nella CMOS. Per azzerare e reimpostare i parametri del sistema alla configurazione predefinita, spegnere il computer e scollegare il cavo di alimentazione dalla rete. Dopo aver atteso 15 secondi, utilizzare un cappuccio del jumper per cortocircuitare il pin2 e il pin3 su CLRCMOS1 per 5 secondi. Tuttavia, non azzerare la CMOS subito dopo aver aggiornato il BIOS. Se è necessario azzerare la CMOS dopo l'aggiornamento del BIOS, è necessario riavviare prima il sistema e in seguito spegnerlo prima di eseguire l'operazione di azzeramento della CMOS. La password, la data, l'ora e il profilo predefinito dell'utente saranno azzerati solo se viene rimossa la batteria della CMOS.

1.4 Header e connettori sulla scheda



Gli header e i connettori sulla scheda NON sono jumper. NON posizionare cappucci del jumper su questi header e connettori. Il posizionamento di cappucci del jumper su header e connettori provocherà danni permanenti alla scheda madre.

Header sul pannello del sistema
(PANEL1 a 9 pin)
(vedere pag. 1, n. 20)



Collegare l'interruttore dell'alimentazione, l'interruttore di reset e l'indicatore dello stato del sistema sullo chassis su questo header secondo la seguente assegnazione dei pin. Annotare i pin positivi e negativi prima di collegare i cavi.



PWRBTN (interruttore alimentazione):

collegare all'interruttore dell'alimentazione sul pannello anteriore dello chassis. È possibile configurare il modo in cui spegnere il sistema utilizzando l'interruttore dell'alimentazione.

RESET (interruttore di reset):

collegare all'interruttore di reset sul pannello anteriore dello chassis. Premere l'interruttore di reset per riavviare il computer se il computer si blocca e non riesce ad eseguire un normale riavvio.

PLED (LED alimentazione del sistema):

collegare all'indicatore di stato dell'alimentazione sul pannello anteriore dello chassis. Il LED è acceso quando il sistema è in funzione. Il LED continua a lampeggiare quando il sistema si trova nello stato di sospensione S1/S3. Il LED è spento quando il sistema si trova nello stato di sospensione S4 o quando è spento (S5).

HDLED (LED di attività disco rigido):

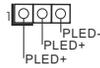
collegare al LED di attività disco rigido sul pannello anteriore dello chassis. Il LED è acceso quando il disco rigido sta leggendo o scrivendo dati.

Il design del pannello anteriore può cambiare a seconda dello chassis. Un modulo di pannello anteriore è composto principalmente da interruttore di alimentazione, interruttore di reset, LED di alimentazione, LED di attività disco rigido, altoparlante, ecc. Quando si collega il modulo del pannello anteriore dello chassis a questo header, accertarsi che le assegnazioni del filo e le assegnazioni del pin corrispondano correttamente.

Header LED di alimentazione

(PLED1 a 3 pin)

(vedere pag. 1, n. 17)



Collegare il LED di alimentazione chassis a questo header per indicare lo stato di alimentazione del sistema.

Connettori Serial ATA3

(SATA3_0:

vedere pag. 1, n. 10)

(SATA3_1:

vedere pag. 1, n. 15)

(SATA3_2:

vedere pag. 1, n. 11)

(SATA3_3:

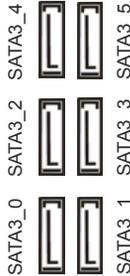
vedere pag.1, n. 14)

(SATA3_4:

vedere pag.1, n. 12)

(SATA3_5:

vedere pag.1, n. 13)



Questi sei connettori

SATA3 supportano cavi dati SATA per dispositivi di archiviazione interna, con una velocità di trasferimento dati fino a 6,0 Gb/s.

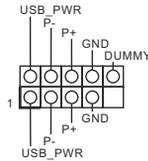
Header USB 2.0

(USB_4_5 a 9 pin)

(vedere pag. 1, n. 22)

(USB_6_7 a 9 pin)

(vedere pag. 1, n. 21)

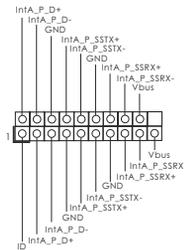


Oltre alle quattro porte USB 2.0 sul pannello I/O, su questa scheda madre vi sono due header. Ciascun header USB 2.0 può supportare due porte.

Header USB 3.0

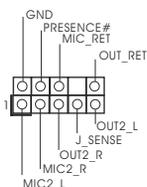
(USB3_2_3 a 19 pin)

(vedere pag. 1, n. 25)



Oltre alle due porte USB 3.0 sul pannello I/O, vi sono un connettore e una porta su questa scheda madre. Ciascun header USB 3.0 può supportare due porte.

Header audio pannello anteriore
(AUDIO1_HD a 9 pin)
(vedere pag. 1, n. 24)



Questo header serve a collegare i dispositivi audio al pannello audio anteriore.



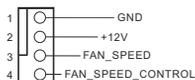
1. L'audio ad alta definizione supporta le funzioni Jack sensing, ma il filo del pannello sullo chassis deve supportare HDA per funzionare correttamente. Seguire le istruzioni presenti nel nostro manuale e nel manuale dello chassis per installare il sistema.
2. Se si utilizza un pannello audio AC'97, installarlo sull'header audio del pannello anteriore seguendo le fasi di seguito:
 - A. Collegare Mic_IN (MIC) a MIC2_L.
 - B. Collegare Audio_R (RIN) a OUT2_R e Audio_L (LIN) a OUT2_L.
 - C. Collegare Ground (GND) a Ground (GND).
 - D. MIC_RET e OUT_RET servono soltanto per il pannello audio HD. Non è necessario collegarli per il pannello audio AC'97.
 - E. Per attivare il microfono anteriore, andare alla scheda "MicAnt" nel pannello di controllo Realtek e regolare il "Volume di registrazione".

Header altoparlante chassis
(SPEAKER1 a 4 pin)
(vedere pag. 1, n. 19)



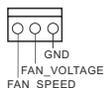
Collegare l'altoparlante dello chassis a questo header.

Connettori della ventola della chassis
(CHA_FAN1 a 4 pin)
(vedere pag. 1, n. 8)

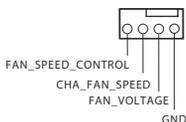


Collegare i cavi della ventola ai connettori della ventola e far corrispondere il filo nero al pin di terra.

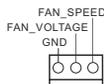
(CHA_FAN2 a 3 pin)
(vedere pag. 1, n. 16)



(CHA_FAN3 a 4 pin)
(vedere pag. 1, n. 9)

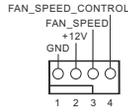


(CHA_FAN4 a 3 pin)
(vedere pag. 1, n. 2)

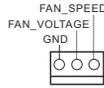


Connettori della ventola della CPU

(CPU_FAN1 a 4 pin)
(vedere pag. 1, n. 4)



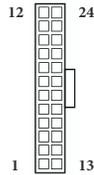
(CPU_FAN2 a 3 pin)
(vedere pag. 1, n. 3)



Questa scheda madre è dotata di un connettore per la ventola della CPU (Ventola silenziosa) a 4 pin. Se si decide di collegare una ventola della CPU a 3 pin, collegarla al pin 1-3.

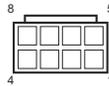
Connettore di alimentazione ATX

(ATXPWR1 a 24 pin)
(vedere pag. 1, n. 7)



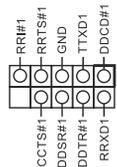
Questa scheda madre è dotata di un connettore di alimentazione ATX a 24 pin. Per utilizzare un'alimentazione ATX a 20 pin, collegarla lungo il pin1 e il pin 13.

Connettore di alimentazione ATX da 12 V
(ATX12V1 a 8 pin)
(vedere pag. 1, n. 1)



Questa scheda madre è dotata di un connettore di alimentazione ATX da 12 V a 8 pin. Per utilizzare un'alimentazione ATX a 4 pin, collegarla lungo il pin1 e il pin 5.

Header porta seriale
(COM1 a 9 pin)
(vedere pag. 1, n. 23)



Questo header COM1 supporta un modulo di porta seriale.

1 Introducción

Gracias por comprar la placa base ASRock 970A-G/3.1, una placa base fiable fabricada según el rigurosísimo control de calidad de ASRock. Ofrece un rendimiento excelente con un diseño resistente de acuerdo con el compromiso de calidad y resistencia de ASRock.



Ya que las especificaciones de la placa base y el software del BIOS podrán ser actualizados, el contenido que aparece en este manual estará sujeto a modificaciones sin previo aviso. Si este manual sufre alguna modificación, la versión actualizada estará disponible en el sitio web de ASRock sin previo aviso. Si necesita asistencia técnica relacionada con esta placa base, visite nuestro sitio web para obtener información específica sobre el modelo que esté utilizando. Podrá encontrar las últimas tarjetas VGA, así como la lista de compatibilidad de la CPU, en el sitio web de ASRock. Sitio web de ASRock <http://www.asrock.com>.

1.1 Contenido del paquete

- Placa base ASRock 970A-G/3.1 (Factor de forma ATX)
- Guía de instalación rápida de ASRock 970A-G/3.1
- CD de soporte de ASRock 970A-G/3.1
- 2 cables de datos Serie ATA (SATA) (Opcional)
- 1 escudo panel I/O
- 1 Tornillo para Zócalo M.2

1.2 Especificaciones

Plataforma

- Factor de forma ATX
- Diseño de los Condensadores: Solid

CPU

- Compatibilidad con procesadores con conector AM3+
- Compatibilidad con procesadores con conector AM3: procesador AMD Phenom™ II X6 / X4 / X3 / X2 (excepto 920/940) / Athlon II X4 / X3 / X2 / Sempron
- Compatible con CPU de ocho núcleo
- Con soporte UCC (Unlock CPU Core)
- Diseño Digi Power
- Avanzado diseño de fases de potencia 8 + 2
- Compatible con CPU de hasta 220W
- Con soporte para tecnología Cool 'n' Quiet™ de AMD
- FSB 2400 MHz (4.8 GT/s)
- Admite tecnología de aumento de velocidad liberada
- Soporta Tecnología de Hiper-Transporte 3.0 (HT 3.0)

Conjunto de chips

- North Bridge: AMD 970/990FX
- South Bridge: AMD SB950

Memoria

- Tecnología de memoria de Doble Canal DDR3
- 4 ranuras DDR3 DIMM
- Compatible con memoria no-ECC, sin búfer DDR3 2400+ (OC)/2100(OC)/1866(OC)/1800(OC)/1600(OC)/1333/1066 (consulte la ADVERTENCIA1)
- Capacidad máxima de la memoria del sistema: 64GB (consulte la ADVERTENCIA2)
- Compatible con Extreme Memory Profile (XMP)1.3/1.2 de Intel®
- Admite tecnología de perfil de memoria AMD (AMP, Memory Profile Technology) hasta AMP 2400

Ranura de expansión

- 1 ranura PCI Express 2.0 x16 (PCIE2: modo x16)
- 1 ranura PCI Express 2.0 x16 (PCIE4: modo x4)
- 2 ranuras PCI Express 2.0 x1
- 1 ranura PCI
- Compatible con AMD Quad CrossFireX™ y CrossFireX™

Audio

- 7.1 Audio CH HD con Protección de contenido (Realtek ALC1150 Audio Codec)
- Compatible con audio Blu-ray Premium
- Compatible con protección por sobretensión (protección ASRock Full Spike)
- Tapas de audio ELNA
- Compatible con DTS Connect

LAN

- PCIE x1 LAN Gigabit 10/100/1000 Mb/s
- Realtek RTL8111GR
- Soporta Wake-On-WAN
- Compatible con Wake-On-LAN
- Compatible con protección contra rayos y electricidad electrostática (protección ASRock Full Spike)
- Admite detección de conexión de cable LAN
- Compatible con Ethernet de consumo eficiente de energía 802.3az
- Compatible con PXE

Panel trasero I/O

- 1 puerto de ratón PS/2
- 1 puerto de teclado PS/2
- 1 puerto de salida SPDIF óptica
- 4 puertos USB 2.0 (compatible con protección contra electricidad estática (protección ASRock Full Spike))
- 1 Puerto USB 3.1 Tipo A Port (10 Gb/s) (ASMedia ASM1143) (admite protección ESD (protección total contra picos))
- 1 Puerto USB 3.1 Tipo C Port (10 Gb/s) (ASMedia ASM1143) (admite protección ESD (protección total contra picos))
- 2 puertos USB 3.0 (Concentrador Etron EJ188H) (compatible con protección contra electricidad estática (protección ASRock Full Spike))
- 1 puerto LAN RJ-45 con LED (ACT/LINK LED y SPEED LED)
- Conector de audio HD: Altavoz trasero / Central / Graves / Entrada de línea / Altavoz frontal / Micrófono

Almacenamiento

- Los 6 conectores SATA3 de 6,0 Gb/s, compatibles con RAID (RAID 0, RAID 1, RAID 5 y RAID 10), NCQ, AHCI y “Hot Plug”
- 1 Zócalo 3 M.2_SSD (NGFF); admite módulo 2230/2242/2260/2280/22110 M.2 PCI Express hasta Gen2 x4 (20 Gb/s)

* Si PCIE4 se ocupa con un dispositivo M.2 de tipo PCI Express, M2_1 se deshabilitará.

* Admiteel Kit U.2 de ASRock

Conectores

- 1 cabezal de puerto COM
- 1 cabezal de indicador LED de alimentación
- 2 conectores de ventilador de la CPU (1 de 4 pines y 1 de 3 pines)
- 4 conectores de ventilador del chasis (2 de 4 pines y 2 de 3 pines)
- 1 conector de alimentación ATX de 24 pines
- 1 conector de alimentación de 8 pines y 12V
- 1 conector de audio del panel frontal
- 2 cabezales USB 2.0 (compatibles con 4 puertos USB 2.0) (compatible con protección contra electricidad estática (protección ASRock Full Spike))
- 1 cabezal Etron EJ188H USB 3.0 (compatible con 2 puertos USB 3.0) (compatible con protección contra electricidad estática (protección ASRock Full Spike))

Características del BIOS

- BIOS Legal UEFI AMI de compatibles con interfaz gráfica de usuario
- Soporta “Plug and Play”
- Eventos de reactivación conformes con ACPI 1.1
- Soporta “jumper free setup”
- Compatible con SMBIOS 2.3.1
- Multiajuste de voltaje de CPU, VCCM, NB, SB

Monitor del hardware

- Método de sensor de temperatura de la CPU/Chasis
- Tacómetro del ventilador de CPU/Chasis
- Ventilador silencioso de la CPU/Chasis (permite ajustar automáticamente la velocidad del ventilador del chasis mediante la temperatura de la CPU)

- Control multivelocidad del ventilador de la CPU/Chasis
- Control del voltaje: +12V, +5V, +3,3V, CPU Vcore

SO

- Compatible con Microsoft® Windows® 10 de 32 bits / 10 de 64 bits / 8.1 de 32 bits / 8.1 de 64 bits / 8 de 32 bits / 8 de 64 bits / 7 de 32 bits / 7 de 64 bits / Vista™ de 32 bits / Vista™ de 64 bits / XP de 32 bits / XP de 64 bits

* Para obtener el controlador actualizado para Windows® 10, visite el sitio Web desde ASRock para obtener detalles:
<http://www.asrock.com>

Certificaciones

- FCC, CE, WHQL
- Compatible con ErP/EuP (requiere toma de alimentación compatible con ErP/EuP)

* Para obtener más información acerca del producto, visite nuestro sitio web: <http://www.asrock.com>



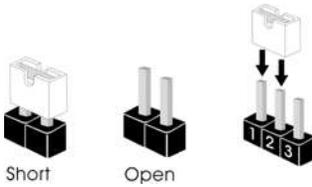
Tenga en cuenta que existen ciertos riesgos relacionados con el overlocking (sobreactivación), incluyendo el ajuste de la configuración del BIOS, aplicando la Tecnología overlocking no vinculada o utilizando las herramientas de overlocking de tercera parte. El overlocking podría afectar la estabilidad de su sistema o incluso dañar los componentes y dispositivos de su sistema. Si lo realiza, todos los riesgos y gastos derivados del overlocking serán de su entera responsabilidad. No nos hacemos responsables de posibles daños producidos por el overlocking.



1. Que la velocidad de memoria de 2400/2100 MHz se admita o no se admita, depende de la configuración AM3/AM3+ Procesador que adopte. Si desea adoptar el módulo de memoria DDR3 2400/2100 en esta placa base, consulte la lista de compatibilidad de memorias en nuestro sitio Web para obtener los módulos de memoria compatibles. Sitio Web de ASRock: <http://www.asrock.com>
2. Debido a las limitaciones del sistema, el tamaño real de la memoria debe ser inferior a 4GB para que el sistema pueda funcionar bajo Windows® de 32 bits OS. Para equipos con Windows® OS con CPU de 64-bit, no existe dicha limitación. Podrá utilizar XFast RAM de ASRock para usar la memoria que Windows® no puede utilizar.

1.3 Instalación de los puentes

La instalación muestra cómo deben instalarse los puentes. Cuando la tapa de puente se coloca en los pines, el puente queda “Corto”. Si no coloca la tapa de puente en los pines, el puente queda “Abierto”. La ilustración muestra un puente de 3 pines cuyo pin 1 y pin 2 son “Cortos” cuando se coloca una tapa de puente en estos 2 pines.



Puente de borrado de
CMOS
(CLRCMOS1)
(consulte la pág.1, N.º 18)



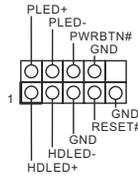
CLRCMOS1 le permite borrar los datos del CMOS. Para borrar y restablecer los parámetros del sistema a los valores predeterminados de instalación, apague el ordenador y desenchufe el cable de alimentación de la toma de alimentación. Después de esperar 15 segundos, utilice un tapa de puente para acortar el pin2 y el pin3 en el CLRCMOS1 durante 5 segundos. Sin embargo, no borre el CMOS justo después de que haya actualizado el BIOS. Si necesita borrar el CMOS cuando acabe de actualizar el BIOS, deberá arrancar el sistema primero y, a continuación, deberá apagarlo antes de que realice el borrado del CMOS. Tenga en cuenta que la contraseña, la fecha, la hora y el perfil de usuario predeterminado serán eliminados únicamente si se retira la pila del CMOS.

1.4 Conectores y cabezales incorporados



Los cabezales y conectores incorporados NO son puentes. NO coloque tapas de puente sobre estos cabezales y conectores. Si coloca tapas de puente sobre los cabezales y conectores dañará de forma permanente la placa base.

Cabezal del panel del sistema
(PANEL1 de 9 pines)
(consulte la pág.1, N.º 20)



Conecte el interruptor de alimentación, restablezca el interruptor y el indicador del estado del sistema del chasis a los valores de este cabezal, según los valores asignados a los pines como se indica a continuación. Cerciérese de cuáles son los pines positivos y los negativos antes de conectar los cables.



PWRBTN (Interruptor de alimentación):

conéctelo al interruptor de alimentación del panel frontal del chasis. Deberá configurar la forma en la que su sistema se apagará mediante el interruptor de alimentación.

RESET (Interruptor de reseteo):

conéctelo al interruptor de reseteo del panel frontal del chasis. Pulse el interruptor de reseteo para resetear el ordenador si éste está bloqueado y no se puede reiniciar de forma normal.

PLED (Indicador LED de alimentación del sistema):

conéctelo al indicador del estado de la alimentación del panel frontal del chasis. El indicador LED permanece encendido cuando el sistema está funcionando. El indicador LED parpadea cuando el sistema se encuentra en estado de suspensión S1/S3. El indicador LED se apaga cuando el sistema se encuentra en estado de suspensión S4 o está apagado (S5).

HDLED (Indicador LED de actividad en el disco duro):

conéctelo al indicador LED de actividad en el disco duro del panel frontal del chasis. El indicador LED permanece encendido cuando el disco duro está leyendo o escribiendo datos.

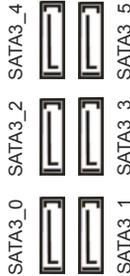
El diseño del panel frontal puede ser diferente dependiendo del chasis. Un módulo de panel frontal consta principalmente de: interruptor de alimentación, interruptor de reseteo, indicador LED de alimentación, indicador LED de actividad en el disco duro, altavoz, etc. Cuando conecte su módulo del panel frontal del chasis a este cabezal, asegúrese de que las asignaciones de los cables y los pines coinciden correctamente.

Cabezal de indicador LED
de alimentación
(PLED1 de 3 pines)
(consulte la pág.1, N.º 17)



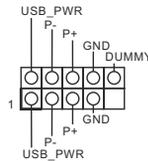
Conecte el indicador LED
de alimentación del chasis
a este cabezal para indicar
el estado de alimentación
del sistema.

Conectores Serie ATA3
(SATA3_0:
consulte la pág.1, N.º 10)
(SATA3_1:
consulte la pág.1, N.º 15)
(SATA3_2:
consulte la pág.1, N.º 11)
(SATA3_3:
consulte la pág.1, N.º 14)
(SATA3_4:
consulte la pág.1, N.º 12)
(SATA3_5:
consulte la pág.1, N.º 13)



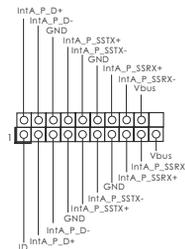
Estos seis conectores
SATA3 son compatibles
con cables de datos SATA
para dispositivos de
almacenamiento interno
con una velocidad de
transferencia de datos de
hasta 6,0 Gb/s.

Cabezales USB 2.0
(USB_4_5 de 9 pines)
(consulte la pág.1, N.º 22)
(USB_6_7 de 9 pines)
(consulte la pág.1, N.º 21)



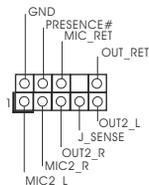
Además de cuatro puertos
USB 2.0 en el panel I/O,
esta placa base contiene
dos cabezales. Cada
cabezal USB 2.0 admite
dos puertos.

Cabezales USB 3.0
(USB3_2_3 de 19 pines)
(consulte la pág.1, N.º 25)



Además de dos puertos
USB 3.0 en el panel de E/S,
esta placa base cuenta con
una base de conexiones y
un puerto. Cada cabezal
USB 3.0 admite dos puer-
tos.

Cabezal de audio del panel frontal
(HD_AUDIO1 de 9 pines)
(consulte la pág.1, N.º 24)

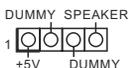


Este cabezal se utiliza para conectar dispositivos de audio al panel de audio frontal.



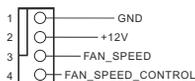
1. El Audio de Alta Definición (HDA, en inglés) es compatible con el método de sensor de conectores, sin embargo, el cable del panel del chasis deberá ser compatible con HDA para que pueda funcionar correctamente. Siga las instrucciones que se indican en nuestro manual y en el manual del chasis para instalar su sistema.
2. Si utiliza un panel de audio AC'97, instálelo en el cabezal de audio del panel frontal siguiendo los siguientes pasos:
 - A. Conecte Mic_IN (MIC) a MIC2_L.
 - B. Conecte Audio_R (RIN) a OUT2_R y Audio_L (LIN) a OUT2_L.
 - C. Conecte Ground (conexión a tierra) (GND) a Ground (GND).
 - D. MIC_RET y OUT_RET se utilizan únicamente para el panel de audio HD. No es necesario que los conecte en el panel de audio AC'97.
 - E. Para activar el micrófono frontal, vaya a la ficha "micrófono frontal" (FrontMic) en el panel de control de Realtek y ajuste el "Volumen de grabación" (Recording Volume).

Cabezal de altavoces del chasis
(SPEAKER1 de 4 pines)
(consulte la pág.1, N.º 19)



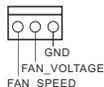
Conecte el altavoz del chasis a este cabezal.

Conectores del ventilador del chasis
(CHA_FAN1 de 4 pines)
(consulte la pág.1, N.º 8)



Conecte los cables del ventilador a los conectores del ventilador y haga coincidir el cable negro con el pin de conexión a tierra.

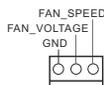
(CHA_FAN2 de 3 pines)
(consulte la pág.1, N.º 16)



(CHA_FAN3 de 4 pines)
(consulte la pág.1, N.º 9)

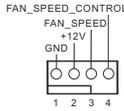


(CHA_FAN4 de 3 pines)
(consulte la pág.1, N.º 2)

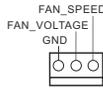


Conectores del ventilador de la CPU

(CPU_FAN1 de 4 pines)
(consulte la pág.1, N.º 4)



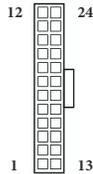
(CPU_FAN2 de 3 pines)
(consulte la pág.1, N.º 3)



Esta placa base contiene un conector de ventilador (ventilador silencioso) de CPU de 4 pines. Si tiene pensando conectar un ventilador de CPU de 3 pines, conéctelo al Pin 1-3.

Conector de alimentación ATX

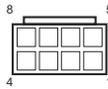
(ATXPWR1 de 24 pines)
(consulte la pág.1, N.º 7)



Esta placa base contiene un conector de alimentación ATX de 24 pines. Para utilizar una toma de alimentación ATX de 20 pines, conéctela en los Pines del 1 al 13.

Conector de alimentación ATX de 12V

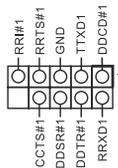
(ATX12V1 de 8 pines)
(consulte la pág.1, N.º 1)



Esta placa base contiene un conector de alimentación ATX de 12V y 8 pines. Para utilizar una toma de alimentación ATX de 4 pines, conéctela en los Pines del 1 al 5.

Cabezal de puerto serie

(COM1 de 9 pines)
(consulte la pág.1, N.º 23)



Este cabezal COM1 admite un módulo de puerto serie.

1 Введение

Благодарим вас за приобретение надежной материнской платы ASRock 970A-G/3.1, выпускаемой под постоянным строгим контролем компании ASRock. Эта материнская плата обеспечивает великолепную производительность и характеризуется прочной конструкцией в соответствии с требованиями компании ASRock в отношении качества и долговечности.



По причине обновления спецификации на материнскую платформу и программного обеспечения BIOS содержимое настоящего руководства может быть изменено без предварительного уведомления. При изменении содержимого настоящего руководства его обновленная версия будет доступна на веб-сайте ASRock без предварительного уведомления. При необходимости технической поддержки, связанной с материнской платой, посетите веб-сайт и найдите на нем информацию о модели используемой вами материнской платы. На веб-сайте ASRock также можно найти самый последний перечень поддерживаемых VGA-карт и ЦП. Веб-сайт ASRock <http://www.asrock.com>.

1.1 Комплект поставки

- Материнская плата ASRock 970A-G/3.1 (форм-фактор ATX)
- Краткое руководство по установке ASRock 970A-G/3.1
- Диск с ПО для ASRock 970A-G/3.1
- 2 х кабеля передачи данных Serial ATA (SATA) (приобретаются отдельно)
- 1 х экран панели с портами ввода-вывода
- 1 х M.2 - винт гнезда

1.2 Спецификация

- Платформа**
- Форм-фактор ATX
 - Использование твердотельных конденсаторов

- ЦП**
- Поддержка Socket AM3+ процессоров
 - Поддержка Socket AM3 процессоров: AMD Phenom™ II X6 / X4 / X3 / X2 (не поддерживаются 920 / 940) / Athlon II X4 / X3 / X2 / Sempron
 - Поддержка восьмиядерных процессоров
 - Поддержка UCC (Unlock CPU Core)
 - Дизайн системы питания DigiPower
 - Технология Advanced 8 + 2 Power Phase Design
 - Поддержка процессоров мощностью до 220 Вт
 - Поддержка технологии AMD Cool 'n' Quiet™
 - FSB 2400 MHz (4.8 GT/s)
 - Поддержка технологии Untied Overclocking
 - Поддержка технологии Hyper-Transport 3.0 (HT 3.0)

- Чипсет**
- Северный мост: AMD 970/990FX
 - Южный мост: AMD SB950

- Память**
- Двухканальная память DDR3
 - 4 х гнездо DDR3 DIMM
 - Поддержка модулей памяти DDR3 2400+(OC)/2100 (OC)/1866(OC)/1800(OC)/1600(OC)/1333/1066 Non-ECC Unbuffered (см. «ПРЕДОСТЕРЕЖЕНИЕ1»)
 - Максимальный объем системной памяти: 64 Гб (см. «ПРЕДОСТЕРЕЖЕНИЕ2»)
 - Поддержка Intel® Extreme Memory Profile (XMP)1.3/1.2
 - Поддержка технологии AMD Memory Profile (AMP) до AMP 2400

- Гнезда расширения**
- 1 х PCI Express 2.0 x16 гнезд (PCIЕ2: режим x16)
 - 1 х PCI Express 2.0 x16 гнезд (PCIЕ4: режим x4)
 - 2 х PCI Express 2.0 x1 гнезд
 - 1 х PCI гнезд
 - Поддержка AMD Quad CrossFireX™ и CrossFireX™

Аудио

- 7.1-канальный звук высокой четкости HD Audio с защитой данных (аудиокодек Realtek ALC1150)
- Поддержка Premium Blu-ray Audio
- Защита от перенапряжения (ASRock Full Spike Protection)
- Конденсаторы для аудиосистем ELNA
- Поддержка DTS-подключения

ЛВС

- PCIe x1 Gigabit LAN 10/100/1000 Мб/с
- Realtek RTL8111GR
- поддержка Wake-On-WAN
- Поддержка Wake-On-LAN
- Молниезащита и защита электростатического напряжения (ASRock Full Spike Protection)
- Поддержка определения кабеля ЛВС
- Поддержка Energy Efficient Ethernet 802.3az
- Поддержка PXE

Порты ввода-вывода на задней панели

- 1 x PS/2 для мыши
- 1 x PS/2 для клавиатуры
- 1 x оптический выходной SPDIF
- 4 x USB 2.0 с защитой от электростатического напряжения (ASRock Full Spike Protection)
- 1 x Порт USB 3.1 тип А (10 гбит/с) (ASMedia ASM1143) с защитой от электростатического напряжения (ASRock Full Spike Protection)
- 1 x Порт USB 3.1 тип С (10 гбит/с) (ASMedia ASM1143) с защитой от электростатического напряжения (ASRock Full Spike Protection)
- 2 x USB 3.0 (концентратор Etron EJ188H) с защитой от электростатического напряжения (ASRock Full Spike Protection)
- 1 x RJ-45 для ЛВС с СИД (СИД АСТ/LINK и МИД SPEED)
- Разъемы HD Audio: задние динамики / центральный динамик / сабвуфер / линейный вход / передние динамики / микрофон

Запоминающие устройства

- 6 x разъем SATA3 6,0 Гб/с, поддержка RAID (RAID 0, RAID 1, RAID 5 и RAID 10), NCQ, AHCI и «горячая» замена
- 1 x M.2_SSD (NGFF) - гнездо 3, поддерживает модуль 2230/2242/2260/2280/22110 M.2 PCI Express до Gen2 x4 (20 Гб/с)

* Если разъем PCIe4 занят устройством M.2 типа PCI Express, разъем M2_1 будет отключен.

* Поддержка комплекта ASRock U.2

Разъемы

- 1 х колодка COM-порта
- 1 х колодка светодиодного индикатора питания
- 2 х разъем для вентилятора ЦП (1 х 4-контактный, 1 х 3-контактный)
- 4 х разъема для вентилятора корпуса (2 х 4-контактный, 2 х 3-контактный)
- 1 х разъем питания ATX (24-контактный)
- 1 х 8-контактный разъем питания 12 В (8-контактный)
- 1 х аудиоразъем на передней панели
- 2 х колодки USB 2.0 (поддержка 4 портов USB 2.0) с защитой от электростатического напряжения (ASRock Full Spike Protection)
- 1 х колодка Etron EJ188H USB 3.0 (поддержка 2 портов USB 3.0) с защитой от электростатического напряжения (ASRock Full Spike Protection)

Особенности BIOS

- AMI UEFI Legal BIOS с поддержкой ГИП
- поддержка “Plug and Play”
- Совместимость с управлением энергопотреблением по ACPI 1.1
- поддержка режима настройки без перемычек
- Поддержка SMBIOS 2.3.1
- Регулировка напряжений ЦП, VCCM, NB, SB

Контроль оборудования

- Датчик температуры ЦП/корпуса
- Тахометр вентиляторов ЦП/корпуса питания
- Малошумящий вентилятор ЦП/корпуса (с автоматической регулировкой оборотов по температуре ЦП)
- Управление оборотами вентилятора ЦП/корпуса
- Контроль напряжения: +12 В, +5 В, +3,3 В, ЦП Vcore

ОС

- Microsoft® Windows® 10 32-разрядная / 10 64-разрядная / 8.1 32-разрядная / 8.1 64-разрядная / 8 32-разрядная / 8 64-разрядная / 7 32-разрядная / 7 64-разрядная / Vista™ 32-разрядная / Vista™ 64-разрядная / XP 32-разрядная / XP 64-разрядная

* Подробные сведения об обновлении драйвера Windows® 10 представлены на веб-сайте ASRock: <http://www.asrock.com>

Сертификация

- FCC, CE, WHQL
- Совместимость с ErP/EuP (необходим блок питания, соответствующий стандарту ErP/EuP)

* Для получения дополнительной информации об изделии посетите наш веб-сайт:
<http://www.asrock.com>



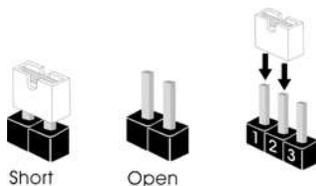
Следует учитывать, что разгон процессора, включая изменение настроек BIOS, применение технологии Untied Overclocking Technology и использование инструментов разгона независимых производителей, сопряжен с определенным риском. Разгон процессора может повлиять на стабильность системы или даже привести к повреждению ее компонентов и устройств. Вы выполняете разгон процессора на ваш собственный риск и за свой счет. Мы не несем ответственность за возможный ущерб, вызванный разгоном процессора.



1. Поддержка частоты памяти 2400/2100 МГц зависит от используемого процессора с разъемом AM3/AM3+. Для использования модуля памяти DDR3 2400/2100 на этой материнской плате ознакомьтесь со списком поддерживаемых модулей памяти на нашем веб-сайте, чтобы выбрать совместимые модули памяти.
Веб-сайт ASRock <http://www.asrock.com>
2. В силу ограничения операционной системы фактическая емкость памяти может быть меньше 4Гб для обеспечения резервного места для использования системой Windows® 32-разрядная ОС. Таких ограничений нет для Windows® OS с 64-bit центральным процессором. Для использования той памяти, которую ОС Windows® не может использовать, используйте ASRock XFast RAM.

1.3 Установка переключателя

Установка переключателя показана на рисунке. При установке колпачковой переключателя на контакты переключатель «замкнут». Если колпачковая переключатель на контакты не установлена, переключатель «разомкнут». На рисунке показана 3-контактная переключатель с замкнутыми контактами 1 и 2 при установке на них колпачковой переключателя.



Переключатель сброса
настроек CMOS
(CLRCMOS1)
(См. стр. 1, № 18)



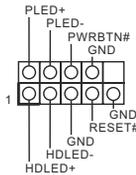
CLRCMOS1 используется для удаления данных CMOS. Чтобы сбросить и обнулить параметры системы на настройки по умолчанию, выключите компьютер и извлеките отключите кабель питания от источника питания. Подождите 15 секунд и переключатель замкните контакты 2 и 3 на CLRCMOS1 на 15 секунд. Не сбрасывайте настройки CMOS сразу после обновления BIOS. При необходимости сбросить настройки CMOS сразу после обновления BIOS сначала перезагрузите систему, а затем выключите компьютер перед сбросом настроек CMOS. Учтите, что пароль, дата, время и профиль пользователя по умолчанию сбрасываются только в том случае, если извлечь батарею CMOS.

1.4 Колодки и разъемы, расположенные на материнской плате



Расположенные на материнской плате колодки и разъемы перемычками НЕ являются. НЕ устанавливайте на эти колодки и разъемы колпачковые перемычки. Установка колпачковых перемычек на эти колодки и разъемы может вызвать неустранимое повреждение материнской платы.

Колодка системной панели
(9-контактная, PANEL1)
(См. стр. 1, № 20)



Подключите расположенные на корпусе выключатель питания, кнопку перезагрузки и индикатор состояния системы к этой колодке в соответствии с распределением контактов, приведенным ниже. Перед подключением кабелей определите положительный и отрицательный контакты.



PWRBTN (кнопка питания):

Подключение кнопки питания, расположенной на передней панели корпуса. Можно настроить порядок выключения системы с использованием кнопки питания.

RESET (кнопка перезагрузки):

Подключение кнопки перезагрузки системы, расположенной на передней панели корпуса. Нажмите кнопку перезагрузки, чтобы перезапустить компьютер, если он завис и нормальный запуск невозможен.

PLED (светодиодный индикатор питания системы):

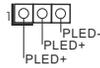
Подключение индикатора состояния, расположенного на передней панели корпуса. Светодиодный индикатор горит, когда система работает. Когда система находится в режиме ожидания S1/S3, светодиод мигает. Когда система находится в режиме ожидания S4 или выключена (S5), светодиод не горит.

HDLED (светодиодный индикатор работы жесткого диска):

Подключение светодиодного индикатора работы жесткого диска, расположенного на передней панели корпуса. Светодиодный индикатор горит, когда жесткий диск выполняет считывание или запись данных.

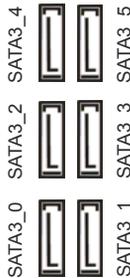
Передняя панель может быть разной на разных корпусах. В основном передняя панель включает в себя кнопку питания, кнопку перезагрузки, светодиодный индикатор питания, светодиодный индикатор работы жесткого диска, динамик и т. д. При подключении передней панели к этой колодке правильно подключайте провода к контактам.

Колодка светодиодного индикатора питания (3-контактная, PLED1) (См. стр. 1, № 17)



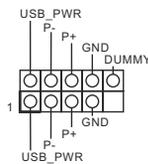
Подключите светодиодный индикатор питания корпуса к этой колодке, чтобы обеспечить индикацию состояния питания системы.

Разъемы Serial ATA3 (SATA3_0: (См. стр. 1, № 10) (SATA3_1: (См. стр. 1, № 15) (SATA3_2: (См. стр. 1, № 11) (SATA3_3: см. стр.1, № 14) (SATA3_4: см. стр.1, № 12) (SATA3_5: см. стр.1, № 13)



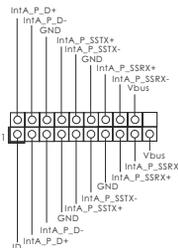
Эти шесть разъемов SATA3 предназначены для подключения кабелей SATA внутренних запоминающих устройств для передачи данных со скоростью до 6,0 Гб/с.

Колодки USB 2.0. (9-контактная, USB_4_5) (См. стр. 1, № 22) (9-контактная, USB_6_7) (См. стр. 1, № 21)



Кроме четырех портов USB 2.0 на панели ввода-вывода на материнской плате также есть два колодки. Каждая колодка USB 2.0 может поддерживать два порта.

Колодки USB 3.0. (19-контактная, USB3_2_3) (См. стр. 1, № 25)

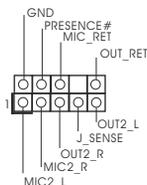


Кроме два портов USB 3.0 на панели ввода-вывода на материнской плате также есть одна колодка и один порт. Каждая колодка USB 3.0 может поддерживать два порта.

Аудиоколодка передней панели

(9-контактная, HD_AUDIO1)

(См. стр. 1, № 24)



Эта колодка предназначена для подключения аудиоустройств к передней аудиопанели.



1. Аудиосистема высокого разрешения поддерживает функцию распознавания разъема, но для ее правильной работы необходимо, чтобы провод панели корпуса поддерживал передачу сигналов HDA. Инструкции по установке системы см. в этом руководстве и руководстве на корпус.
2. При использовании аудиопанели AC'97 подключите ее к аудиоколодке передней панели, как указано далее:
 - A. Подключите Mic_IN (MIC) к MIC2_L.
 - B. Подключите Audio_R (RIN) к OUT2_R, Audio_L (LIN) к OUT2_L.
 - C. Подключите провод заземления (GND) к контакту заземления (GND).
 - D. Контакты MIC_RET и OUT_RET используются только для аудиопанели высокого разрешения. При использовании аудиопанели AC'97 их подключать не нужно.
 - E. Чтобы активировать передний микрофон, перейдите на вкладку FrontMic панели управления Realtek и отрегулируйте параметр Recording Volume (Громкость записи).

Колодка динамика корпуса

(4-контактная, SPEAKER1)

(См. стр. 1, № 19)

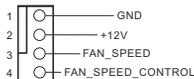


Предназначена для подключения динамика корпуса.

Разъемы для вентиляторов корпуса

(4-контактный, CHA_FAN1)

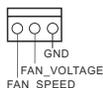
(См. стр. 1, № 8)



Предназначены для подключения кабелей разъемов вентиляторов и подключения черного провода к заземлению.

(3-контактный, CHA_FAN2)

(См. стр. 1, № 16)



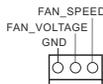
(4-контактный, CHA_FAN3)

(См. стр. 1, № 9)



(3-контактный, CHA_FAN4)

(См. стр. 1, № 2)

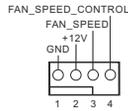


Разъемы вентиляторов

ЦП

(4-контактный, CPU_
FAN1)

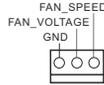
(См. стр. 1, № 4)



Эта материнская плата снабжена 4-контактным разъемом для малошумящего вентилятора ЦП. Если вы собираетесь подключить 3-контактный вентилятор охлаждения процессора, подключайте его к контактам 1-3.

(3-контактный, CPU_
FAN2)

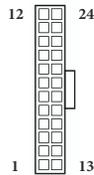
(См. стр. 1, № 3)



Разъем питания ATX

(24-контактный,
ATXPWR1)

(См. стр. 1, № 7)



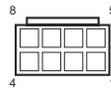
Эта материнская плата снабжена 24-контактным разъемом питания ATX. Чтобы использовать 20-контактный разъем питания ATX, подключите его вдоль контакта 1 и контакта 13.

Разъем питания ATX

12 В

(8-контактный,
ATX12V1)

(См. стр. 1, № 1)

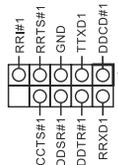


Эта материнская плата снабжена 8-контактным разъемом питания ATX 12 В. Чтобы использовать 4-контактный разъем питания ATX, подключите его вдоль контакта 1 и контакта 5.

Колодка последовательного порта

(9-контактная, COM1)

(См. стр. 1, № 23)



Колодка COM1 поддерживает подключение модуля последовательного порта.

1 Introdução

Obrigado por ter comprado a placa principal ASRock 970A-G/3.1, uma placa principal fiável produzida sob os rigorosos critérios de controlo de qualidade da ASRock. Esta placa principal oferece um excelente desempenho com um design robusto em conformidade com o compromisso da ASRock em fabricar produtos de qualidade e resistentes.



Dado que as especificações da placa principal e o software do BIOS poderão ser actualizados, o conteúdo deste manual estará sujeito a alterações sem aviso prévio. Caso ocorram modificações a este manual, a versão actualizada estará disponível no Web site da ASRock sem aviso prévio. Se necessitar de assistência técnica relacionada com esta placa principal, visite o nosso Web site para obter informações específicas acerca do modelo que está a utilizar. Também poderá encontrar a lista de placas VGA e CPU mais recentes suportadas no Web site da ASRock. Web site da ASRock <http://www.asrock.com>.

1.1 Conteúdo da embalagem

- Placa principal ASRock 970A-G/3.1 (Formato ATX)
- Guia de instalação rápida da ASRock 970A-G/3.1
- CD de suporte da ASRock 970A-G/3.1
- 2 x Cabos de dados Serial ATA (SATA) (Opcional)
- 1 x Painel de E/S
- 1 x Parafuso M.2 Socket

1.2 Especificações

- Plataforma**
- Formato ATX
 - Design de condensador sólido

- CPU**
- Suporte para processadores AM3+
 - Suporte para processadores AM3: Processador AMD Phenom™ II X6 / X4 / X3 / X2 (exceto 920 / 940) / Athlon II X4 / X3 / X2 / Sempron
 - Preparado para CPU de oito núcleos
 - Suporta UCC (Unlock CPU Core)
 - Design Digi Power
 - Alimentação de 8 + 2 fases
 - Suporta CPU até 220W
 - Suporta a tecnologia Cool 'n' Quiet da AMD
 - FSB de 2400 MHz (4,8 GT/s)
 - Suporta a tecnologia Untied Overclocking
 - Suporta a tecnologia Hyper-Transport 3.0 (HT 3.0)

- Chipset**
- North Bridge: AMD 970/990FX
 - South Bridge: AMD SB950

- Memória**
- Tecnologia de memória DDR3 de dois canais
 - 4 x ranhuras DIMM DDR3
 - Suporta memória DDR3 2400+(OC)/2100(OC)/1866(OC)/1800(OC)/1600(OC)/1333/1066, não ECC, sem memória intermédia (consultar AVISO1)
 - Capacidade máxima da memória do sistema: 64GB (consultar AVISO2)
 - Suporta Extreme Memory Profile (XMP)1.3/1.2 da Intel®
 - Suporta Tecnologia de Perfil de Memória AMD (AMP) até AMP 2400

- Ranhuras de expansão**
- 1 x ranhura PCI Express 2.0 x16 (PCIE2: modo x16)
 - 1 x ranhura PCI Express 2.0 x16 (PCIE4: modo x4)
 - 2 x ranhuras PCI Express 2.0 x1
 - 1 x ranhura PCI
 - Suporta AMD Quad CrossFireX™ e CrossFireX™

Áudio

- Áudio HD de 7.1 canais com proteção de conteúdo (Codec de áudio Realtek ALC1150)
- Suporte áudio Blu-ray superior
- Suporta proteção contra sobretensão (Proteção Total Contra Picos ASRock)
- Fones de Áudio ELNA
- Suporta a tecnologia DTS Connect

LAN

- PCIE x1 LAN Gigabit a 10/100/1000 Mb/s
- Realtek RTL8111GR
- Suporta Wake-On-WAN
- Suporta Wake-On-LAN
- Suporta Proteção contra Relâmpago/EDS (Proteção Total Contra Picos ASRock)
- Suporta Detecção de cabo LAN
- Suporta IEEE 802.3az
- Suporta PXE

E/S do painel traseiro

- 1 x Porta PS/2 para rato
- 1 x Porta PS/2 para teclado
- 1 x Porta de saída SPDIF óptica
- 4 x portas USB 2.0 (Suporta Proteção ESD (Proteção Total Contra Picos ASRock))
- 1 x Porta USB 3.1 Tipo A (10 Gb/s) (ASMedia ASM1143) (Suporta Proteção ESD (Proteção Total Contra Picos ASRock))
- 1 x Porta USB 3.1 Tipo C (10 Gb/s) (ASMedia ASM1143) (Suporta Proteção ESD (Proteção Total Contra Picos ASRock))
- 2 x Portas USB 3.0 (Etron EJ188H) (Suporta Proteção ESD (Proteção Total Contra Picos ASRock))
- 1 x Porta LAN RJ-45 com LED (LED ACT/LIGAÇÃO e LED DE VELOCIDADE)
- Ficha de áudio HD: Altifalante traseiro / Central / Graves / Entrada de linha / Altifalante frontal / Microfone

Armazenamento

- 6 x conectores SATA3 a 6,0 Gb/s, com suporte para RAID (RAID 0, RAID 1, RAID 5 e RAID 10), NCQ, AHCI e “Hot Plug”
- 1 x M.2_SSD (NGFF) Socket 3, suporta módulo 2230/2242/2260/2280/22110 M.2 PCI Express até Gen2 x4 (20 Gb/s)

* Se PCIe4 é ocupado por um dispositivo tipo M.2 PCI Express, M2_1 será desativado.

* Suporta Kit U.2 ASRock

Conector

- 1 x Terminal de porta COM
- 1 x Conector para LED de alimentação
- 2 x Conectores da ventoinha da CPU (1 x 4 pinos, 1 x 3 pinos)
- 4 x Conectores da ventoinha do chassis (2 x 4 pinos, 2 x 3 pinos)
- 1 x conector de alimentação de 24 pinos ATX
- 1 x conector de alimentação de 12V com 8 pinos
- 1 x conector de áudio do painel frontal
- 2 x terminais USB 2.0 (suporte para 4 portas USB 2.0) (Suporta Proteção ESD (Proteção Total Contra Picos ASRock))
- 1 x terminal Etron EJ188H USB 3.0 (suporte para 2 portas USB 3.0) (Suporta Proteção ESD (Proteção Total Contra Picos ASRock))

Funcionalidades da BIOS

- BIOS UEFI oficial da AMI com suporte de interface
- Suporta dispositivos “Plug and Play”
- Eventos de reactivação compatíveis com ACPI 1.1
- Suporta dispositivos sem jumper
- Suporta SMBIOS 2.3.1
- Multi-ajuste de tensão de CPU, VCCM, NB, SB

Monitor de hardware

- Sensor de temperatura de CPU/Chassis
- Taquímetro de ventoinha de CPU/Chassis
- Ventoinha de CPU/Chassis silenciosa (Permite o ajuste automático da velocidade da ventoinha do chassis através da temperatura da CPU)
- Controlo de velocidade da ventoinha de CPU/Chassis
- Monitorização da tensão: +12V, +5V, +3,3V, CPU Vcore

Sistema Operativo

- Compatível com Microsoft® Windows® 10 32-bits / 10 64-bits / 8.1 32-bits / 8.1 64-bits / 8 32-bits / 8 64-bits / 7 32-bits / 7 64-bits / Vista™ 32-bits / Vista™ 64-bits / XP 32-bits / XP 64-bits

* Para o driver atualizado do Windows® 10, por favor, visite o website da ASRock para mais detalhes:<http://www.asrock.com>

Certificações

- FCC, CE, WHQL
- Preparada para ErP/EuP (é necessária uma fonte de alimentação preparada para ErP/EuP)

* Para obter informações detalhadas acerca do produto, visite o nosso Web site: <http://www.asrock.com>



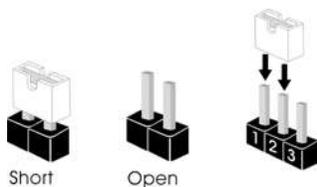
Tenha em atenção que o overlocking inclui um determinado grau de risco, incluindo o ajuste das definições na BIOS, a aplicação de tecnologia Untied Overlocking ou a utilização de ferramentas de overlocking de terceiros. O overlocking poderá afectar a estabilidade do sistema, ou mesmo causar danos aos componentes e dispositivos do seu sistema. Overlocking deverá ser efectuado por sua conta e risco. Não nos responsabilizamos por possíveis danos causados pelo overlocking.



1. O suporte às velocidades 2400/2100MHz de memória depende da CPU AM3/AM3+ adotada. Se você quiser adotar módulos de memória DDR3 2400/2100 nesta placa, por favor verifique a lista de suporte de memórias em nosso website para as memórias compatíveis. Website ASRock: <http://www.asrock.com>
2. Devido a limitações do sistema operacional, o tamanho da memória pode ser menor que 4GB para a reserva de uso do sistema no Windows® 32-bits OS. No Windows® 64-bit com CPU de 64-bit, não existe esta limitação. ode utilizar o ASRock XFast RAM para dar uso à memória que o Windows® não utiliza.

1.3 Configuração dos jumpers

A imagem abaixo ilustra como os jumpers são configurados. Quando a tampa do jumper é colocada nos pinos, o jumper é "Curto". Se não for colocada uma tampa de jumper nos pinos, o jumper é "Aberto". A imagem ilustra um jumper de 3 pinos cujos pino1 e pino2 estão "Curtos" quando a tampa do jumper é colocada nestes 2 pinos.



Jumper para limpar o
CMOS
(CLRCMOS1)
(consultar p.1, N.º 18)



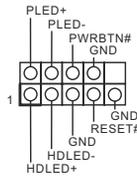
CLRCMOS1 permite-lhe limpar os dados no CMOS. Para limpar e repor os parâmetros do sistema para os valores predefinidos, encerre o computador e desligue a ficha da tomada. Depois de aguardar 15 segundos, utilize uma tampa de jumper para ligar o pino2 e o pino3 no CLRCMOS1 durante 5 segundos. No entanto, não limpe o CMOS logo após ter efectuado a actualização da BIOS. Se precisar de limpar o CMOS logo após ter terminado uma actualização da BIOS, deverá primeiro iniciar o sistema e voltar a encerrá-lo antes de efectuar a acção de limpeza do CMOS. Tenha em atenção que a palavra-passe, data, hora e perfil predefinido de utilizador apenas serão limpos se a pilha do CMOS for retirada.

1.4 Terminais e conectores integrados



Os terminais e conectores integrados NÃO são jumpers. NÃO coloque tampas de jumpers sobre estes terminais e conectores. Colocar tampas de jumpers sobre os terminais e conectores irá causar danos permanentes à placa principal.

Terminal do painel de sistema
(PAINEL1 de 9 pinos)
(consultar p.1, N.º 20)



Ligue o botão de alimentação, o botão de reposição e o indicador do estado do sistema no chassis a este terminal de acordo com a descrição abaixo. Tenha em atenção os pinos positivos e negativos antes de ligar os cabos.



PWRBTN (Botão de alimentação):

Ligue ao botão de alimentação no painel frontal do chassis. Pode configurar a forma para desligar o seu sistema através do botão de alimentação.

RESET (Botão de reposição):

Ligue ao botão de reposição no painel frontal do chassis. Prima o botão de reposição para reiniciar o computador caso este bloqueie e não seja possível reiniciar normalmente.

PLED (LED de alimentação do sistema):

Ligue ao indicador do estado da alimentação no painel frontal do chassis. O LED ficará acesso quando o sistema estiver em funcionamento. O LED ficará intermitente quando o sistema estiver nos estados de suspensão S1/S3. O LED ficará desligado quando o sistema estiver no estado de suspensão S4 ou desligado (S5).

HDLED (LED de actividade do disco rígido):

Ligue ao LED de actividade do disco rígido no painel frontal do chassis. O LED ficará acesso quando o disco rígido estiver a ler ou a escrever dados.

O design do painel frontal poderá variar dependendo do chassis. Um módulo de painel frontal consiste principalmente em um botão de alimentação, um botão de reposição, um LED de alimentação, um LED de actividade do disco rígido, um altifalante, etc.

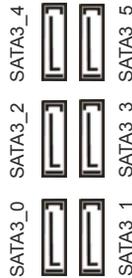
Ao ligar o seu módulo de painel frontal do chassis a este conector, certifique-se de que os fios e os pinos têm uma correspondência exacta.

Conector do LED de alimentação
(PLED1 de 3 pinos)
(consultar p.1, N.º 17)



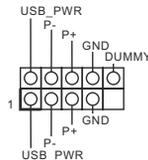
Ligue o LED de alimentação do chassis a este terminal para indicar o estado de alimentação do sistema.

Conectores ATA3 de série
(SATA3_0:
consultar p.1, N.º 10)
(SATA3_1:
consultar p.1, N.º 15)
(SATA3_2:
consultar p.1, N.º 11)
(SATA3_3:
consultar p.1, N.º 14)
(SATA3_4:
consultar p.1, N.º 12)
(SATA3_5:
consultar p.1, N.º 13)



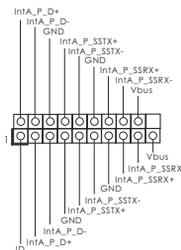
Estes seis conectores SATA3 suportam cabos de dados SATA para dispositivos de armazenamento interno com uma velocidade de transferência de dados de até 6,0 Gb/s.

Terminais USB 2.0
(USB_4_5 de 9 pinos)
(consultar p.1, N.º 22)
(USB_6_7 de 9 pinos)
(consultar p.1, N.º 21)



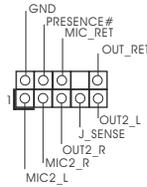
Para além das quatro portas USB 2.0 no painel de E/S, existem duas terminais nesta placa principal. Cada terminal USB 2.0 é capaz de suportar duas portas.

Terminais USB 3.0
(USB3_2_3 de 19 pinos)
(consultar p.1, N.º 25)



Para além de duas portas USB 3.0 no painel de entrada/saída, existe um conector e uma porta nesta placa principal. Cada terminal USB 3.0 é capaz de suportar duas portas.

Terminal de áudio do
painel frontal
(HD_AUDIO1 de 9 pinos)
(consultar p.1, N.º 24)

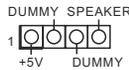


Este terminal destina-se à ligação de dispositivos áudio ao painel de áudio frontal.



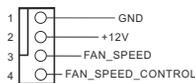
1. O áudio de alta definição suporta Detecção de ficha, mas o cabo de painel no chassis deverá suportar HDA para funcionar correctamente. Siga as instruções no nosso manual e no manual do chassis para instalar o seu sistema.
2. Se utilizar um painel de áudio AC'97, instale-o no terminal de áudio do painel frontal de acordo com os passos abaixo:
 - A. Ligue Mic_IN (MIC) a MIC2_L.
 - B. Ligue Audio_R (RIN) a OUT2_R e Audio_L (LIN) a OUT2_L.
 - C. Ligue Terra (GND) a Terra (GND).
 - D. MIC_RET e OUT_RET destinam-se apenas ao painel de áudio HD. Não precisa de os ligar para o painel de áudio AC'97.
 - E. Para activar o microfone frontal, aceda ao separador "Microfone Frontal" no painel de controlo Realtek e ajuste o "Volume de gravação".

Terminal do altifalante do
chassis
(SPEAKER1 de 4 pinos)
(consultar p.1, N.º 19)



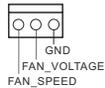
Ligue o altifalante do chassis a este terminal.

Conectores da ventoinha do chassis
(CHA_FAN1 de 4 pinos)
(consultar p.1, N.º 8)

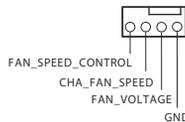


Ligue os cabos da ventoinha aos conectores da ventoinha colocando o cabo preto no pino de ligação à terra.

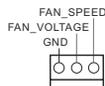
(CHA_FAN2 3 pinos)
(consultar p.1, N.º 16)



(CHA_FAN3 de 4 pinos)
(consultar p.1, N.º 9)

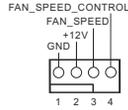


(CHA_FAN4 de 3 pinos)
(consultar p.1, N.º 2)

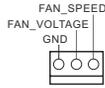


Conectores da ventoinha da CPU

(CPU_FAN1 de 4 pinos)
(consultar p.1, N.º 4)



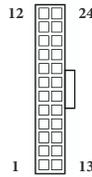
(CPU_FAN2 de 3 pinos)
(consultar p.1, N.º 3)



Esta placa principal inclui um conector de ventoinha de CPU (Ventoinha silenciosa) de 4 pinos. Se pretender ligar uma ventoinha de CPU de 3 pinos, ligue-a ao Pino 1-3.

Conector de alimentação ATX

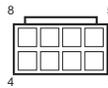
(ATXPWR1 de 24 pinos)
(consultar p.1, N.º 7)



Esta placa principal inclui um conector de alimentação de 12V ATX de 24 pinos. Para utilizar uma fonte de alimentação ATX de 20 pinos, introduza-a no Pino 1 e Pino 13.

Conector de alimentação de 12V ATX

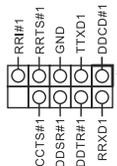
(ATX12V1 de 8 pinos)
(consultar p.1, N.º 1)



Esta placa principal inclui um conector de alimentação de 12V ATX de 8 pinos. Para utilizar uma fonte de alimentação ATX de 4 pinos, introduza-a no Pino 1 e Pino 5.

Terminal de porta de série

(COM1 de 9 pinos)
(consultar p.1, N.º 23)



Este terminal COM1 suporta um módulo de porta de série.

1 Giriş

Zorlu kalite kontrol süreçlerinden geçmiş olan ASRock 970A-G/3.1 anakartını satın aldığınız için teşekkür ederiz. Sağlam tasarımı ile ASRock'ın kalite ve dayanıklılık taahhüdüne uygun şekilde mükemmel performans sağlar.



Anakart özellikleri ve BIOS yazılımı güncellenebileceğinden, bu kılavuzun içeriği herhangi bir bildirimde bulunulmaksızın değiştirilebilir. Bu kılavuz üzerinde herhangi bir değişiklik yapılması halinde, güncellenmiş sürüm, herhangi bir bildirim yapılmaksızın ASRock'ın web sitesinde yer alacaktır. Bu anakart ile ilgili olarak teknik destek almak istiyorsanız, lütfen kullandığımız model hakkında özel bilgiler için web sitemizi ziyaret edin. En güncel VGA kartları ve CPU destek listelerini de ASRock'ın web sitesinden bulabilirsiniz. ASRock'ın web sitesi <http://www.asrock.com>.

1.1 Ambalaj İçeriği

- ASRock Fatal1ty 970A-G/3.1 Anakartı (ATX Form Faktörü)
- ASRock Fatal1ty 970A-G/3.1 Hızlı Kurulum Kılavuzu
- ASRock Fatal1ty 970A-G/3.1 Destek CD'si
- 2 x Seri ATA (SATA) Veri Kablosu (İsteğe Bağlı)
- 1 x I/O Panel Kalkanı
- 1 x adet M.2 Yuva Vida

1.2 Özellikler

Platform

- ATX Form Faktörü
- Katı Bağlayıcı tasarımı

CPU

- Soket AM3+ işlemcileri desteği
- Soket AM3 işlemcileri desteği: AMD Phenom™ II X6 / X4 / X3 / X2 (920 / 940 hariç) / Athlon II X4 / X3 / X2 / Sempron işlemcileri
- Sekiz Çekirdekli CPU Desteği
- UCC özelliğini destekler - CPU çekirdeği Kilidi Açma
- Dijital Güç Tasarımı
- Gelişmiş 8 + 2 Güç Fazı Tasarımı
- 220W'ye kadar CPU'yu destekler
- AMD'nin Cool 'n' Quiet™ Teknolojisini Destekler
- FSB 2400 MHz (4,8 GT/sn)
- Untied Overclocking Teknolojisini destekler
- Hyper-Transport 3.0 (HT 3.0) Teknolojisini Destekler

Yonga kümesi

- Kuzey Köprüsü: AMD 970/990FX
- Güney Köprüsü: AMD SB950

Bellek

- Çift Kanallı DDR3 Bellek Teknolojisi
- 4 x DDR3 DIMM yuvaları
- DDR3 2400+(OC)/2100(OC)/1866(OC)/1800(OC)/1600 (OC)/1333/1066 ECC olmayan, ara belleğe alınmamış belleği destekler (bkz. DİKKAT1)
- Maksimum sistem belleği kapasitesi: 64GB (bkz. DİKKAT2)
- Intel® Üstün Bellek Profili (XMP)1.3/1.2 özelliğini destekler
- AMP 2400'e kadar AMD Bellek Profili Teknolojisini (AMP) destekler

Genişletme Yuvası

- 1 x PCI Express 2,0 x16 yuva (PCIE2: x16 modu)
- 1 x PCI Express 2,0 x16 yuva (PCIE4: x4 modu)
- 2 x PCI Express 2,0 x1 yuva
- 1 x PCI yuva
- AMD Quad CrossFireX™ ve CrossFireX™ birimlerini destekler

Ses

- İçerik Koruma Özelliği ile 7.1 CH HD Ses (Realtek ALC1150 Ses Codec Bileşeni)
- Üstün Blu-ray Ses desteği
- Dalgalanma Koruması Destekler (ASRock Tam Ani Gerilim Koruması)
- ELNA Ses Kapakları
- DTS Connect işlevini destekler

LAN

- PCIE x1 Gigabit LAN 10/100/1000 Mb/s
- Realtek RTL8111GR
- WAN'da Uyan özelliğini destekler
- LAN Açılışını Destekler
- Yıldırım/ESD Koruması Destekler (ASRock Tam Ani Gerilim Koruması)
- LAN Kablo Algılama'yı destekler
- Enerji Verimliliğine Sahip Ethernet 802.3az işlevini destekler
- PXE özelliğini destekler

Arka Panel I/O

- 1 x PS/2 Fare Bağlantı Noktası
- 1 x PS/2 Klavye Bağlantı Noktası
- 1 x Optik SPDIF Çıkışı Bağlantı Noktası
- 4 x USB 2.0 Bağlantı noktası (ESD Koruması Destekler (ASRock Tam Ani Gerilim Koruması))
- 1 x USB 3.1 Tip A Bağlantı Noktası (10 Gb/sn.) (ASMedia ASM1143) (ESD Koruması Destekler (ASRock Tam Ani Gerilim Koruması))
- 1 x USB 3.1 Tip C Bağlantı Noktası (10 Gb/sn.) (ASMedia ASM1143) (ESD Koruması Destekler (ASRock Tam Ani Gerilim Koruması))
- 2 x USB 3.0 Bağlantı Noktası (Etron EJ188H) (ESD Koruması Destekler (ASRock Tam Ani Gerilim Koruması))
- LED'e sahip 1 x RJ-45 LAN Bağlantı Noktası (ACT/LINK LED ve SPEED LED)
- HD Ses Jakı: Arka Hoparlör / Merkezi / Bas / Hat Girişi / Ön Hoparlör / Mikrofon

Depolama

- 6 x SATA3 6,0 Gb/s bağlayıcıları, RAID (RAID 0, RAID 1, RAID 5 ve RAID 10), NCQ, AHCI ve “Hot Plug” işlevlerini destekler
- 1 x adet M.2_SSD (NGFF) Yuva 3, 2230/2242/2260/2280/22110 M.2 PCI Express modülü destekler. Gen2 x4 (20 Gb/s)’ye kadar

* PCIe4, bir PCI Express tipi M.2 aygıtı tarafından kullanılıyorsa, M2_1 devre dışı bırakılacaktır.

* ASRock U.2 Takımını destekler

Bağlayıcı

- 1 x COM Bağlantı noktası bağlantısı
- 1 x Güç LED bağlantısı
- 2 x CPU Fan bağlayıcıları (1 x 4-pin, 1 x 3-pin)
- 4 x Kasa Fanı konektörü (2 x 4-pin, 2 x 3-pin)
- 1 x 24 pin ATX güç bağlayıcısı
- 1 x 8 pin 12V güç bağlayıcısı
- 1 x Ön panel ses bağlayıcısı
- 2 x USB 2.0 bağlantısı (4 USB 2.0 bağlantı noktasını destekler) (ESD Koruması Destekler (ASRock Tam Ani Gerilim Koruması))
- 1 x Etron EJ188H USB 3.0 bağlantısı (2 USB 3.0 bağlantı noktasını destekler) (ESD Koruması Destekler (ASRock Tam Ani Gerilim Koruması))

BIOS Özellikli

- GUI Desteği ile AMI UEFI Legal BIOS
- “Tak Çalıştır”ı destekler
- ACPI 1.1 Uyumluluğu Uyandırma Olayları
- Jumpersiz ayarlamayı destekler
- SMBIOS 2.3.1 Desteği
- CPU, VCCM, NB, SB Voltaj Çoklu Ayarı

Donanım İzleyici

- CPU/Kasa Sıcaklığı Tespiti
- CPU/Kasa Fanı Devirölçer
- CPU/Kasa Sessiz Fan (Kasa Fan Hızının CPU Sıcaklığına Göre Otomatik olarak Ayarlanmasını Sağlar)
- CPU/Kasa Fanı Çoklu Hız Kontrolü
- Voltaj İzleme: +12V, +5V, +3,3V, CPU Vcore

OS

- Microsoft® Windows® 10 32-bit / 10 64-bit / 8.1 32-bit / 8.1 64-bit / 8 32-bit / 8 64-bit / 7 32-bit / 7 64-bit / Vista™ 32-bit / Vista™ 64-bit / XP 32-bit / XP 64-bit

* Güncellenmiş Windows® 10 sürücüsü konusunda ayrıntılar için lütfen ASRock web sitesini ziyaret edin: <http://www.asrock.com>

Belgeler

- FCC, CE, WHQL
- ErP/EuP için hazır (ErP/EuP için hazır güç beslemesi gereklidir)

* Detaylı ürün bilgisi için, lütfen web sitemizi ziyaret edin: <http://www.asrock.com>



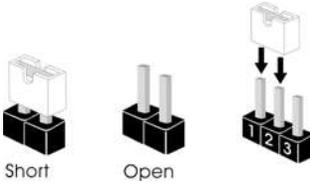
Lütfen, BIOS ayarlarını düzenleme, Bağımsız Hız Aşırtma Teknolojinin uygulanması ya da üçüncü kişilerin hız aşırma araçlarının kullanılması da dahil olmak üzere tüm hız aşırma işlemlerinin belirli bir risk taşıdığını unutmayın. Hız aşırma, sisteminizin dayanıklılığını etkileyebilir, hatta sisteminizde yer alan bileşen ve aygıtlara zarar verebilir. Bunu riski ve masrafları size ait olmak üzere gerçekleştirilmelidir. Hız aşırmadan doğabilecek zararlar konusunda sorumlu olmayacağız.



1. 2400/2100MHz bellek hızı çalıştırdığımız AM3/AM3+ CPU'ya göre desteklenir. DDR3 2400/2100 bellek modülünü bu anakartta çalıştırmak istiyorsanız, uyumlu bellek modülleri için lütfen web sitemizdeki bellek destek listesine bakın. ASRock web sitesi: <http://www.asrock.com>
2. İşletim sistemi kısıtlaması nedeniyle, Windows® 32-bit OS altında sistem kullanımı için ayırmak için gerçek bellek boyutu 4 GB'den az olabilir. 64-bit CPU'lu Windows® OS için bu tür bir sınırlama yoktur. Windows® tarafından kullanılmayan bellekten faydalanmak için ASRock XFast RAM'i kullanabilirsiniz.

1.3 Bağlantı Teli Kurulumu

Çizim, bağlantı tellerinin kurulumunu göstermektedir. Tel kapağı, pimlerin üzerine yerleştirildiğinde, tel "Kısa" olur. Pimlerin üzerinde tel kapağı bulunmadığında, tel "Kısa" olur. Çizim, pin1 ve pin2 alanları "Kısa" olan ve bu iki pim üzerinde bir bağlantı teli kapağı bulunan 3-pin bağlantı telini göstermektedir.



CMOS'u Temizle Bağlantı
Teli
(CLRCMOS1)
(bkz. sf.1, No. 18)



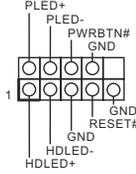
CLRCMOS1, CMOS verilerini temizlememizi sağlar. Sistem parametrelerini temizlemek ve varsayılan kurulum ayarlarına sıfırlamak için, lütfen bilgisayarı kapatın ve güç kablosunu güç beslemesinden çekin. 15 saniye bekledikten sonra, CLRCMOS1 üzerindeki pin2 ve pin3'ü 5 saniye boyunca kısaltmak için bir bağlantı teli kullanın. Ancak, CMOS'u lütfen BIOS'u güncelledikten hemen sonra temizlemeyin. BIOS'u güncelledikten hemen sonra CMOS'u temizlemeniz gerekirse, önce sistemi başlatın ve ardından CMOS temizleme işlemi öncesinde yeniden kapatın. Lütfen, parola, tarih, saat ve varsayılan kullanıcı profilinin yalnızca CMOS bataryası çıkarıldığında temizleneceğini unutmayın.

1.4 Ekli Bağlantılar ve Bağlayıcılar



Ekli bağlantılar ve bağlayıcılar bağlantı teli değildir. Bağlantı teli kapaklarını bu bağlantı ve bağlayıcılar üzerine yerleştirmeyin. Bağlantı teli kapaklarının bağlantılar ile bağlayıcılar üzerine yerleştirilmesi, anakarta kalıcı hasar verebilir.

Sistem Paneli Bağlantısı
(9-pin PANEL1)
(bkz sf.1, No. 20)



Güç anahtarını bağlayın, kasa üzerindeki anahtar ile sistem durumu belirtecini aşağıdaki pim düzeyine göre sıfırlayın. Kabloları bağlarken pozitif ve negatif pimleri not edin.



PWRBTN (Güç Anahtarı):

Güç anahtarını kasa ön paneline bağlayın. Güç anahtarını kullanarak sistemin hangi yöne hareketle kapanacağını seçebilirsiniz.

RESET (Sıfırlama Anahtarı):

Sıfırlama anahtarını kasa ön paneline bağlayın. Bilgisayarın kilitlemesi ve normal şekilde yeniden başlatılmaması halinde reset (sıfırla) düğmesine basın.

PLED (Sistem Gücü LED):

Güç durumu belirtecini kasa ön paneline bağlayın. Sistem çalışırken LED ışığı yanacaktır. Sistem S1/S3 uyku durumdayken LED ışığı yanıp söner. Sistem S4 uyku durumunda ya da kapalıyken (S5) LED ışık kapanır.

HDLED (Sabit Disk Aktivitesi LED):

Sabit Disk Aktivitesi LED'i kasanın ön paneline bağlayın. Sabit sürücü veri okur ya da yazarken LED ışığı yanar.

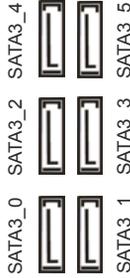
Ön panel tasarımı kasaya göre değişiklik gösterebilir. Bir ön panel modülü, temel olarak bir güç anahtarı, sıfırlama anahtarı, güç LED'i, sabit sürücü aktivitesi LED'i, hoparlör gibi birimlerden oluşur. Kasanızın ön panel modülünü bu bağlantıya takmadan önce, kablo düzenlemeleri ile pin düzenlemelerinin düzgün şekilde yapıldığından emin olun.

Güç LED Bağlantısı
(3-pin PLED1)
(bkz. sf.1, No. 17)



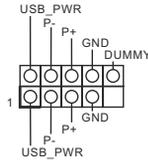
Sistemin güç durumunun belirtilmesi için lütfen güç LED'ini bu bağlantıya takın.

Seri ATA3 Bağlayıcıları
(SATA3_0:
bkz. sf.1, No. 10)
(SATA3_1:
bkz. sf.1, No. 15)
(SATA3_2:
bkz. sf.1, No. 11)
(SATA3_3:
bkz. sf.1, No. 14)
(SATA3_4:
bkz. sf.1, No. 12)
(SATA3_5:
bkz. sf.1, No. 13)



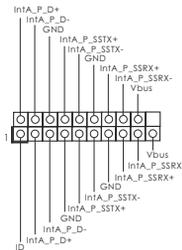
Bu altı SATA3 bağlayıcısı, veri aktarım hızı 6,0 Gb/sn'ye kadar olan dahili depolama aygıtları için tasarlanmış SATA veri kablolarını destekler.

USB 2.0 Bağlantıları
(9-pin USB_4_5)
(bkz. sf.1, No. 22)
(9-pin USB_6_7)
(bkz. sf.1, No. 21)



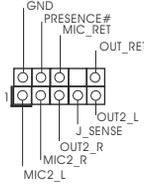
Bu anakart üzerinde, I/O paneli üzerindeki dört USB 2.0 bağlantı noktasının yanı sıra, iki adet bağlantı bulunmaktadır. Her USB 2.0 bağlantısı, iki adet bağlantı noktasını destekleyebilir.

USB 3.0 Bağlantıları
(19-pin USB3_2_3)
(bkz. sf.1, No. 25)



Bu anakart üzerinde, G/Ç panelindeki iki tane USB 3.0 bağlantı noktasının yanı sıra bir adet bağlantı ve bir bağlantı noktası bulunmaktadır. Her USB 3.0 bağlantısı, iki adet bağlantı noktasını destekleyebilir.

Ön Panel Ses Bağlantısı
(9-pin HD_AUDIO1)
(bkz. sf.1, No. 24)

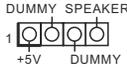


Bu bağlantı, ses aygıtının ön ses paneline bağlanması içindir.



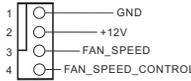
1. Yüksek Tanımlı Ses, Jak Algılama özelliğini destekler, ancak bu işlevin düzgün çalışabilmesi için kasa üzerindeki panel kablusunun HDA işlevini desteklemesi gerekmektedir. Sisteminizi kurarken, lütfen kılavuzumuzdaki talimatlar ile kasa kılavuzundaki talimatları izleyin.
2. Bir AC'97 ses paneli kullanıyorsanız, lütfen bu paneli aşağıdaki adımları izleyerek ön panel ses bağlantısına takın:
 - A. Mic_IN (MIC)'i MIC2_L'ye bağlayın.
 - B. Audio_R (RIN)'i OUT2_R'ye ve Audio_L (LIN)'yi OUT2_L'ye bağlayın.
 - C. Topraklamayı (GND) Topraklamaya (GND) bağlayın.
 - D. MIC_RET ve OUT_RET, yalnızca HD ses paneli içindir. Bunları AC'97 ses panelinden bağlamanıza gerek yoktur.
 - E. Ön mikrofonu etkinleştirmek için Realtek Denetim panelinde yer alan "FrontMic (Ön Mikrofon)" Sekmesine tıklayın ve "Recording Volume (Kayıt Sesi Düzeyi)" değerini ayarlayın.

Kasa Hoparlör Bağlantısı
(4-pin SPEAKER1)
(bkz sf.1, No. 19)



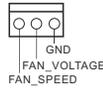
Lütfen kasa hoparlörünü bu bağlantıya takın.

Kasa Fanı Bağlayıcıları
(4-pin CHA_FAN1)
(bkz sf.1, No. 8)



Lütfen fan kablolarını fan bağlayıcılarına takın ve siyah tel topraklama pinine bağlayın.

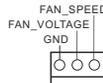
(3-pin CHA_FAN2)
(bkz sf.1, No. 16)



(4-pin CHA_FAN3)
(bkz sf.1, No. 9)



(3-pin CHA_FAN4)
(bkz sf.1, No. 2)



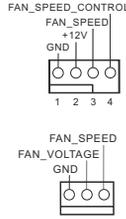
CPU Fan Bağlayıcıları

(4-pin CPU_FAN1)

(bkz sf.1, No. 4)

(3-pin CPU_FAN2)

(bkz sf.1, No. 3)

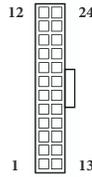


Bu anakart, 4-Pin CPU fan (Sessiz Fan) bağlayıcısı sağlamaktadır. 3-Pin CPU fan bağlamak istiyorsanız, lütfen Pin 1-3'ü kullanın.

ATX Güç Bağlayıcısı

(24-pin ATXPWR1)

(bkz. sf.1, No. 7)

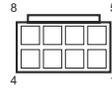


Bu anakart, 24-pin ATX güç bağlayıcısı sağlamaktadır. 20-pin ATX güç beslemesi kullanmak için, lütfen Pin 1 ve Pin13'e bağlayın.

ATX 12V Güç Bağlayıcısı

(8-pin ATX12V1)

(bkz. sf.1, No. 1)

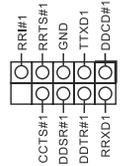


Bu anakart, 8-pin ATX 12V güç bağlayıcısı sağlamaktadır. 4-pin ATX güç beslemesi kullanmak için, lütfen Pin 1 ve Pin5'e bağlayın.

Seri Bağlantı Noktası
Bağlantısı

(9-pin COM1)

(bkz. sf.1, No. 23)



Bu COM1 bağlantısı seri bağlantı yuvası modülünü destekler.

1 개요

ASRock 970A-G/3.1 마더보드를 구입해 주셔서 감사합니다. 이 마더보드는 ASRock의 일관되고 엄격한 품질관리 하에 생산되어 신뢰성이 우수합니다. 품질과 내구성에 대한 ASRock의 기준에 부합하는 우수한 성능과 견고한 설계를 제공합니다.



마더보드 규격과 BIOS 소프트웨어를 업데이트할 수도 있기 때문에, 이 설명서의 내용은 예고 없이 변경될 수 있습니다. 이 설명서가 변경될 경우, 업데이트된 버전은 ASRock의 웹사이트에서 추가 통지 없이 제공됩니다. 이 마더보드와 관련하여 기술적 지원이 필요한 경우, 당사의 웹사이트를 방문하여 사용 중인 모델에 대한 구체적인 정보를 구하십시오. ASRock의 웹사이트에서는 최신 VGA 카드와 CPU 지원 목록도 찾을 수 있습니다. ASRock 웹사이트 <http://www.asrock.com>.

1.1 포장 내용물

- ASRock 970A-G/3.1 마더보드 (ATX 폼 팩터)
- ASRock 970A-G/3.1 간편 설치 안내서
- ASRock 970A-G/3.1 지원 CD
- 시리얼 ATA (SATA) 데이터 케이블 2 개 (선택 품목)
- I/O 패널 실드 1 개
- M.2 소켓 나사 1 개

1.2 규격

플랫폼

- ATX 폼 팩터
- 솔리드 콘덴서 구조

CPU

- Socket AM3+ 프로세서에 대한 지원
- Socket AM3 프로세서에 대한 지원 : AMD Phenom™ II X6 / X4 / X3 / X2 (920/940 제외) / Athlon II X4 / X3 / X2 / Sempron 프로세서
- 8- 코어 CPU 지원
- UCC (Unlock CPU Core) 지원
- Digi 전원 구조
- 고급 8 + 2 전원 위상 디자인
- 최대 220W 까지 CPU 지원
- AMD의 Cool 'n' Quiet™ 기술 지원
- FSB 2400 MHz (4.8 GT/s)
- 언타이드 오버클러킹 (Untied Overclocking) 기술 지원
- 하이퍼 트랜스포트 3.0 (HT 3.0) 기술 지원

칩세트

- 노스브릿지 : AMD 970/990FX
- 사우스 브릿지 : AMD SB950

메모리

- 듀얼 채널 DDR3 메모리 기술
- DDR3 DIMM 슬롯 4 개
- DDR3 2400+(OC)/2100(OC)/1866(OC)/1800(OC)/1600(OC)/1333/1066 비-ECC, 비버퍼링 메모리 지원 (주의 1 참조)
- 시스템 메모리 최대 용량 : 64GB (주의 2 참조)
- Intel® Extreme Memory Profile (XMP) 1.3/1.2 지원
- 최대 AMP 2400의 AMD 메모리 프로파일 기술 (AMP) 지원

확장 슬롯

- PCI Express 2.0 x16 슬롯 1 개 (PCIe2: x16 모드)
- PCI Express 2.0 x16 슬롯 1 개 (PCIe4: x4 모드)
- PCI Express 2.0 x1 슬롯 2 개
- PCI 슬롯 1 개
- AMD Quad CrossFireX™ 및 CrossFireX™ 지원

오디오

- 콘텐츠 보호를 이용한 7.1 CH HD 오디오 지원 (Realtek ALC1150 오디오 코덱)
- 프리미엄 Blu-ray 오디오 지원
- 서지 보호 지원 (ASRock 풀 스파이크 보호)
- ELNA 오디오 캡
- DTS 연결 지원

LAN

- PCIE x1 Gigabit LAN 10/100/1000 Mb/s
- Realtek RTL8111GR
- Wake-On-WAN 지원
- Wake-On-LAN 지원
- 번개 /ESD 보호 지원 (ASRock 풀 스파이크 보호)
- LAN 케이블 감지 지원
- 절전형 이더넷 802.3az 지원
- PXE 지원

후면 패널 I/O

- PS/2 마우스 포트 1 개
- PS/2 키보드 포트 1 개
- 광학 SPDIF 출력 포트 1 개
- USB 2.0 포트 4 개 (ESD 보호 지원 (ASRock 풀 스파이크 보호))
- USB 3.1 타입 A 포트 1 개 (10 Gb/s) (ASMedia ASM1143) (ESD 보호 지원 (ASRock 풀 스파이크 보호))
- USB 3.1 타입 C 포트 1 개 (10 Gb/s) (ASMedia ASM1143) (ESD 보호 지원 (ASRock 풀 스파이크 보호))
- USB 3.0 포트 2 개 (Etron EH188H)(ESD 보호 지원 (ASRock 풀 스파이크 보호))
- LED 장착 RJ-45 LAN 포트 1 개 (ACT/LINK LED 및 SPEED LED)
- HD 오디오 잭 : 후면 스피커 / 중앙 / 베이스 / 라인 입력 / 전면 스피커 / 마이크

저장 장치

- SATA3 6.0 Gb/s 커넥터 6 개가 RAID (RAID 0, RAID 1, RAID 5 및 RAID 10), NCQ, AHCI 및 “핫 플러그”를 지원
- M.2_SSD (NGFF) 소켓 3 1 개 , Gen2 최대 4 (20 Gb/s) 개까지 2230/2242/2260/2280/22110 M.2 PCI Express 모듈 지원
- * PCI Express- 타입 M.2 장치에서 PCIE4 을 사용 중이면 , M2_1 이 비활성화됩니다 .
- * ASRock U.2 키트 지원

커넥터

- COM 포트 헤더 1 개
- 전원 LED 헤더 1 개
- CPU 팬 커넥터 2 개 (1 x 4 핀, 1 x 3 핀)
- 새시 팬 커넥터 4 개 (2 x 4 핀, 2 x 3 핀)
- 24 핀 ATX 전원 커넥터 1 개
- 8 핀 12V 전원 커넥터 1 개
- 전면 패널 오디오 커넥터 1 개
- USB 2.0 헤더 2 개 (USB 2.0 포트 4 개 지원)(ESD 보호 지원 (ASRock 풀 스파이크 보호))
- Etron EH188H USB 3.0 헤더 1 개 (USB 3.0 포트 2 개 지원)(ESD 보호 지원 (ASRock 풀 스파이크 보호))

**BIOS
기능**

- GUI 지원 AMI UEFI Legal BIOS
- “플러그 앤 플레이” 지원
- ACPI 1.1 준수 웨이크 업 이벤트
- 점퍼 프리 지원
- SMBIOS 2.3.1 지원
- CPU, VCCM, NB, SB 전압 다중 조정

**하드웨어
모니터**

- CPU/ 새시 온도 감지
- CPU/ 새시 팬 타코미터
- CPU/ 새시 저소음 팬 (CPU 온도에 의한 새시 팬 속도 자동 조정)
- CPU/ 새시 팬 다중 속도 조절
- 전압 모니터링 : +12V, +5V, +3.3V, CPU Vcore

OS

- Microsoft® Windows® 10 32 비트 / 10 64 비트 / 8.1 32 비트 / 8.1 64 비트 / 8 32 비트 / 8 64 비트 / 7 32 비트 / 7 64 비트 / Vista™ 32 비트 / Vista™ 64 비트 / XP 32 비트 / XP 64 비트
- * 업데이트된 Windows® 10 드라이브의 자세한 내용은 다음의 ASRock 웹사이트를 참조하십시오 . <http://www.asrock.com>

인증

- FCC, CE, WHQL
- ErP/EuP 사용 가능 (ErP/EuP 사용 가능 전원공급장치 필요)

* 자세한 제품 정보에 대해서는 당사 웹사이트를 참조하십시오 : <http://www.asrock.com>



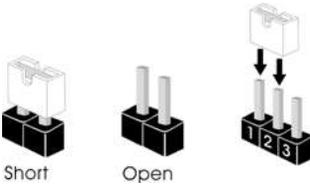
BIOS 설정을 조정하거나 *Untied Overclocking Technology* 를 적용하거나 타업체의 오버클로킹 도구를 사용하는 것을 포함하는 오버클로킹에는 어느 정도의 위험이 따른다는 것을 유념하십시오. 오버클로킹은 시스템 안정성에 영향을 주거나 심지어 시스템의 구성 요소와 장치에 손상을 입힐 수도 있습니다. 오버클로킹은 사용자 스스로 위험과 비용을 감수하고 해야 합니다. 당사는 오버클로킹에 의해 발생할 수 있는 손상에 대해서 책임이 없습니다.



1. 2400/2100MHz 메모리 속도의 지원 여부는 채택된 AM3/AM3+ CPU 에 따라 결정됩니다. 이 마더보드에 DDR3 2400/2100 메모리 모듈을 채택하려는 경우 당사 웹사이트의 메모리 지원 목록에서 호환 가능한 메모리 모듈을 검색하십시오. ASRock 웹사이트 : <http://www.asrock.com>
2. 운영 체제 한계 때문에 Windows® 32 비트 OS 에서 시스템 용도로 예약된 실제 메모리 크기는 4 GB 이하일 수 있습니다. 64 비트 CPU 와 Windows® OS 의 경우 그런 한계가 없습니다. ASRock XFast RAM 을 사용하여 Windows® 가 사용할 수 없는 메모리를 이용할 수 있습니다.

1.3 점퍼 설정

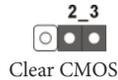
그림은 점퍼를 어떻게 설정하는지 보여줍니다. 점퍼 캡을 핀에 씌우면 점퍼가 “단락”됩니다. 점퍼 캡을 핀에 씌우지 않으면 점퍼가 “단선”됩니다. 그림은 3 핀 점퍼를 보여주며 핀 1 과 핀 2 는 점퍼 캡을 씌울 때 “단락”됩니다 .



Clear CMOS 점퍼
(CLRCMOS1)
(1 페이지 , 18 번 항목 참조)



기본값



Clear CMOS

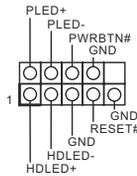
CLRCMOS1 을 사용하여 CMOS 에 저장된 데이터를 지울 수 있습니다. 시스템 파라미터를 지우고 기본 설정으로 초기화하려면 컴퓨터를 끄고 전원 코드를 전원 공급장치에서 빼십시오. 15 초 동안 기다린 후 점퍼 캡을 사용하여 CLRCMOS1 의 핀 2 와 핀 3 을 5 초 동안 단락시키십시오 . 그러나 BIOS 업데이트 직후에는 CMOS 를 삭제하지 마십시오 . BIOS 업데이트를 완료한 직후 CMOS 를 지워야 할 경우, 우선 시스템을 부팅한 후 바이오스 업데이트를 종료한 다음 CMOS 지우기 작업을 해야 합니다. CMOS 배터리를 제거할 경우에만 암호, 날짜, 시간, 사용자 기본 프로파일이 지워집니다 .

1.4 온보드 헤더 및 커넥터



온보드 헤더와 커넥터는 정퍼가 아닙니다. 정퍼 캡을 온보드 헤더와 커넥터에 씌우지 마십시오. 정퍼 캡을 온보드 헤더와 커넥터에 씌우면 마더보드가 영구적으로 손상됩니다.

시스템 패널 헤더
(9 핀 PANEL1)
(1 페이지, 20 번
항목 참조)



새시의 전원 스위치, 리셋 스위치, 시스템 상태 표시등을 아래의 핀 할당에 따라 이 헤더에 연결합니다. 케이블을 연결하기 전에 양극 핀과 음극 핀을 기록합니다.



PWRBTN(전원 스위치):

새시 전면 패널의 전원 스위치에 연결합니다. 전원 스위치를 이용해 시스템을 끄는 방법을 구성할 수 있습니다.

RESET(리셋 스위치):

새시 전면 패널의 전원 스위치에 연결합니다. 컴퓨터가 정지하고 정상적 재시작을 수행하지 못할 경우 리셋 스위치를 눌러 컴퓨터를 재시작합니다.

PLED(시스템 전원 LED):

새시 전면 패널의 전원 상태 표시등에 연결합니다. 시스템이 작동하고 있을 때는 LED가 켜져 있습니다. 시스템이 S1/S3 대기 상태에 있을 때는 LED가 계속 깜박입니다. 시스템이 S4 대기 상태 또는 전원 꺼짐(S5) 상태에 있을 때는 LED가 꺼져 있습니다.

HDLED(하드 드라이브 동작 LED):

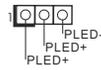
새시 전면 패널의 하드 드라이브 동작 LED에 연결합니다. 하드 드라이브가 데이터를 읽거나 쓰고 있을 때 LED가 켜져 있습니다.

전면 패널 디자인은 새시별로 다를 수 있습니다. 전면 패널 모듈은 주로 전원 스위치, 리셋 스위치, 전원 LED, 하드 드라이브 동작 LED, 스피커 등으로 구성되어 있습니다. 새시 전면 패널 모듈을 이 헤더에 연결할 때 와이어 할당과 핀 할당이 정확히 일치하는지 확인합니다.

전원 LED 헤더

(3 핀 PLED1)

(1 페이지, 17 번 항목 참조)



시스템 전원 상태를 나타내려면 새시 전원 LED를 이 헤더에 연결하십시오.

시리얼 ATA3 커넥터

(SATA3_0:

1 페이지, 10 번 항목 참조)

(SATA3_1:

1 페이지, 15 번 항목 참조)

(SATA3_2:

1 페이지, 11 번 항목 참조)

(SATA3_3:

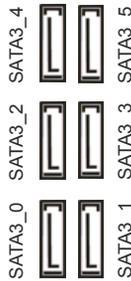
1 페이지, 14 번 항목 참조)

(SATA3_4:

1 페이지, 12 번 항목 참조)

(SATA3_5:

1 페이지, 13 번 항목 참조)



이들 6 개의 SATA3 커넥터는 최대 6.0 Gb/s 데이터 전송 속도를 제공하는 내부 저장 장치용 SATA 데이터 케이블을 지원합니다.

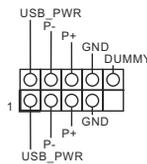
USB 2.0 헤더

(9 핀 USB_4_5)

(1 페이지, 22 번 항목 참조)

(9 핀 USB_6_7)

(1 페이지, 21 번 항목 참조)

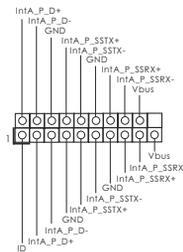


I/O 패널에 USB 2.0 포트 4 개가 탑재되어 있을 뿐 아니라 마더보드에 헤더 2 개가 탑재되어 있습니다. 각 USB 2.0 헤더는 포트 두 개를 지원할 수 있습니다.

USB 3.0 헤더

(19 핀 USB3_2_3)

(1 페이지, 25 번 항목 참조)

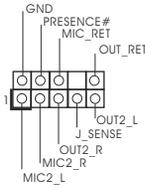


I/O 패널에 탑재된 2 개의 USB 3.0 포트 이외에도 이 마더보드에는 헤더 한 개와 포트 한 개가 탑재되어 있습니다.

각 USB 3.0 헤더는 포트 두 개를 지원할 수 있습니다.

고
성
하

전면 패널 오디오 헤더
(9 핀 HD_AUDIO1)
(1 페이지, 24 번 항목 참조)

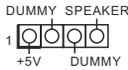


이 헤더는 오디오 장치를 전면 오디오 패널에 연결하는 데 사용됩니다.



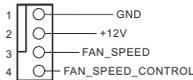
1. 고품질 오디오는 잭 감지를 지원하지만 올바르게 작동하려면 새시의 패널 와이어가 HDA를 지원해야 합니다. 설명서 및 새시 설명서에 나와 있는 지침을 따라 시스템을 설치하십시오.
2. AC'97 오디오 패널을 사용할 경우 아래와 같은 절차를 따라 전면 패널 오디오 헤더에 설치하십시오:
 - A. Mic_IN (MIC)을 MIC2_L에 연결합니다.
 - B. Audio_R (RIN)을 OUT2_R에 연결하고 Audio_L (LIN)을 OUT2_L에 연결합니다.
 - C. 접지 (GND)를 접지 (GND)에 연결합니다.
 - D. MIC_RET 및 OUT_RET는 HD 오디오 패널에만 사용됩니다. AC'97 오디오 패널용으로 연결할 필요가 없습니다.
 - E. 전면 마이크를 활성화하려면 Realtek 제어판에서 "FrontMic" 탭으로 가서 "Recording Volume(녹음 볼륨)"을 조정합니다.

새시 스피커 헤더
(4 핀 SPEAKER1)
(1 페이지, 19 번 항목 참조)



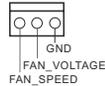
새시 스피커를 이 헤더에 연결하십시오.

새시 팬 커넥터
(4 핀 CHA_FAN1)
(1 페이지, 8 번 항목 참조)

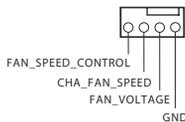


팬 케이블을 팬 커넥터에 연결하고 검은색 와이어를 접지핀에 연결하십시오.

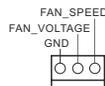
(3 핀 CHA_FAN2)
(1 페이지, 16 번 항목 참조)



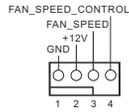
(4 핀 CHA_FAN3)
(1 페이지, 9 번 항목 참조)



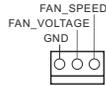
(3 핀 CHA_FAN4)
(1 페이지, 2 번 항목 참조)



CPU 팬 커넥터
(4 핀 CPU_FAN1)
(1 페이지, 4 번 항목 참조)

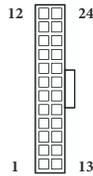


(3 핀 CPU_FAN2)
(1 페이지, 3 번 항목 참조)



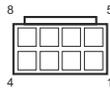
이 마더보드에는 4 핀 CPU 팬 (저소음 팬) 커넥터가 탑재되어 있습니다. 3 핀 CPU 팬을 연결하려는 경우 핀 1-3 에 연결하십시오.

ATX 전원 커넥터
(24 핀 ATXPWR1)
(1 페이지, 7 번 항목 참조)



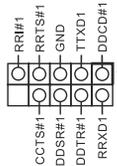
이 마더보드에는 24 핀 ATX 전원 커넥터가 탑재되어 있습니다. 20 핀 ATX 전원공급장치를 사용하려면 핀 1 과 핀 13 을 따라 연결하십시오.

ATX 12V 전원 커넥터
(8 핀 ATX12V1)
(1 페이지, 1 번 항목 참조)



이 마더보드에는 8 핀 ATX 12V 전원 커넥터가 탑재되어 있습니다. 4 핀 ATX 전원공급장치를 사용하려면 핀 1 과 핀 5 을 따라 연결하십시오.

시리얼 포트 헤더
(9 핀 COM1)
(1 페이지, 23 번 항목 참조)



이 COM1 헤더는 시리얼 포트 모듈을 지원합니다.

1 はじめに

アスロックの一貫した厳格な品質管理の下で製造された信頼性の高いマザーボードであるアスロック 970A-G/3.1 マザーボードをお買い上げいただきありがとうございます。アスロックの品質と耐久性の取り組みに準拠した堅牢な設計を持つ、優れたパフォーマンスを提供します。



マザーボードの仕様と BIOS ソフトウェアは更新されることがあるため、このマニュアルの内容は予告なしに変更することがあります。このマニュアルの内容に変更があった場合には、更新されたバージョンは、予告なくアスロックのウェブサイトから入手できるようになります。このマザーボードに関する技術的なサポートが必要な場合には、ご使用のモデルについての詳細情報を、当社のウェブサイトで参照ください。アスロックのウェブサイトでは、最新の VGA カードおよび CPU サポート一覧もご覧になれます。アスロックウェブサイト <http://www.asrock.com>

1.1 パッケージの内容

- アスロック 970A-G/3.1 マザーボード (ATX フォームファクター)
- アスロック 970A-G/3.1 クイックインストールガイド
- アスロック 970A-G/3.1 サポート CD
- 2 x シリアル ATA (SATA) データケーブル (オプション)
- 1 x I/O パネルシールド
- 1 x M.2 ソケット用ねじ

1.2 仕様

プラットフォーム

- ATX フォームファクター
- 固体コンデンサー設計

CPU

- Socket AM3+ プロセッサのサポート
- Socket AM3 プロセッサのサポート :AMD Phenom™ II X6 / X4 / X3 / X2(920 / 940 を除く) / Athlon II X4 / X3 / X2 / Sempron プロセッサ
- 8-Core CPU 搭載
- UCC (Unlock CPU Core) をサポート
- デジタル電源設計
- 高度な 8 + 2 電源位相設計
- 220W まで CPU をサポート
- AMD 社 Cool ‘n’ Quiet™ をサポート
- FSB 2400 MHz (4.8 GT/s)
- Untied Overclocking をサポート
- Hyper-Transport 3.0 (HT 3.0) をサポート

チップセット

- ノースブリッジ : AMD 970/990FX
- サウスブリッジ : AMD SB950

メモリ

- デュアルチャンネル DDR3 メモリテクノロジー
- 4 x DDR3 DIMM スロット
- DDR3 2400+(OC)/2100(OC)/1866(OC)/1800(OC)/1600(OC)/1333/1066 ECC なし、アンバッファードメモリをサポート (注意 1 を参照)
- システムメモリの最大容量: 64GB (注意 2 を参照)
- Intel® エクストリームメモリプロファイル (XMP) 1.3/1.2 をサポート
- 最大 AMP 2400 までの AMD メモリプロファイルテクノロジー (AMP) に対応

拡張スロット

- 1 x PCI Express 2.0 x16 スロット (PCIe2: x16 モード)
- 1 x PCI Express 2.0 x16 スロット (PCIe4: x4 モード)
- 2 x PCI Express 2.0 x1 スロット
- 1 x PCI スロット
- AMD Quad CrossFireX™、CrossFireX™ をサポート

音声

- 7.1 CH HD オーディオ、コンテンツプロテクション付き (Realtek ALC1150 オーディオコーデック)
- プレミアム・ブルーレイ・オーディオ・サポート
- サージ保護に対応 (ASRock 完全スパイク保護)
- ELNA 製オーディオコンデンサ
- DTS 接続をサポート

LAN

- PCIE x1 ギガビット LAN 10/100/1000 Mb/ 秒
- Realtek RTL8111GR
- ウェイクオン WAN をサポートします
- ウェイクオンランをサポート
- 雷 / 静電気放電 (ESD) 保護に対応 (ASRock 完全スパイク保護)
- LAN ケーブル検出をサポート
- エネルギー効率のよいイーサネット 802.3az をサポート
- PXE をサポート

**リアパネル
I/O**

- 1 x PS/2 マウスポート
- 1 x PS/2 キーボードポート
- 1 x 光 SPDIF 出力ポート
- 4 x USB 2.0 ポート (静電気放電 (ESD) 保護に対応 (ASRock 完全スパイク保護)
- 1 x USB 3.1 Type-A ポート (10 Gb/s) (ASMedia ASM1143) (静電気放電 (ESD) 保護に対応 (ASRock 完全スパイク保護)
- 1 x USB 3.1 Type-C ポート (10 Gb/s) (ASMedia ASM1143) (静電気放電 (ESD) 保護に対応 (ASRock 完全スパイク保護)
- 2 x USB 3.0 ポート (Etron EJ188H) (静電気放電 (ESD) 保護に対応 (ASRock 完全スパイク保護)
- LED 付き 1 x RJ-45 LAN ポート (ACT/LINK LED と SPEED LED)
- HD オーディオジャック: リアスピーカー / センター / バス / ラインイン / フロントスピーカー / マイク

ストレージ

- 6 x SATA3 6.0 Gb/ 秒コネクタ、RAID (RAID 0、RAID 1、RAID 5、RAID 10)、NCQ、AHCI、「ホットプラグ」をサポート
- 1 x M.2_SSD (NGFF) ソケット 3、2230/2242/2260/2280/22110 M.2 PCI Express モジュール (最大 Gen2 x4、20 Gb/s) をサポート

* PCI Express タイプ M.2 デバイスで PCIE4 を使用している場合は、M2_1 は無効になります。

* ASRock U.2 キットに対応

コネクタ

- 1 x COM ポートヘッダー
- 1 x 電源 LED ヘッダー
- 2 x CPU ファインコネクタ (1 x 4 ピン, 1 x 3 ピン)
- 4 x シャーシファンコネクタ (2 x 4 ピン, 2 x 3 ピン)
- 1 x 24 ピン ATX 電源コネクタ
- 1 x 8 ピン 12V 電源コネクタ
- 1 x 前面パネルオーディオコネクタ
- 2 x USB 2.0 ヘッダー (4 つの USB 2.0 ポートをサポート) (静電気放電 (ESD) 保護に対応 (ASRock 完全スパイク保護))
- 1 x Etron EJ188H USB 3.0 ヘッダー (2 つの USB 3.0 ポートをサポート) (静電気放電 (ESD) 保護に対応 (ASRock 完全スパイク保護))

**BIOS
機能**

- AMI UEFI Legal BIOS、GUI 対応
- プラグ&プレイをサポート
- ACPI 1.1 準拠のウェイクアップイベント
- jumperfree モードサポート
- SMBIOS 2.3.1 をサポート
- CPU、VCCM、NB、SB 複数電圧設定

**ハードウェア
アモニ
ター**

- CPU/ シャーシ温度センサー
- CPU/ シャーシファンタコメーター
- CPU/ シャーシ静音ファン (CPU 温度によるシャーシファン速度の自動調整可能)
- CPU/ シャーシファンマルチ速度制御
- 電圧監視: +12V、+5V、+3.3V、CPU Vcore

OS

- Microsoft® Windows® 10 32 ビット / 10 64 ビット / 8.1 32 ビット / 8.1 64 ビット / 8 32 ビット / 8 64 ビット / 7 32 ビット / 7 64 ビット / Vista™ 32 ビット / Vista™ 64 ビット / XP 32 ビット / XP 64 ビット

* 更新された Windows® 10 ドライバについては、ASRock のウェブサイトの詳細をご確認ください: <http://www.asrock.com>

認証

- FCC、CE、WHQL
- ErP/EuP Ready (ErP/EuP ready 電源が必要です)

* 商品詳細については、当社ウェブサイトをご覧ください。 <http://www.asrock.com>



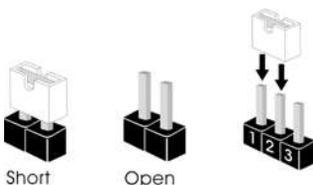
BIOS 設定の調整、アンタイドオーバークロックテクノロジーの適用、サードパーティのオーバークロックツールの使用などを含む、オーバークロックには、一定のリスクを伴いますのでご注意ください。オーバークロックするとシステムが不安定になったり、システムのコンポーネントやデバイスが破損することがあります。ご自分の責任で行ってください。弊社では、オーバークロックによる破損の責任は負いかねますのでご了承ください。



1. 2400/2100MHz メモリ速度がサポートされているかどうかは、採用している AM3/AM3+ CPU によって異なります。このマザーボードに DDR3 2400/2100 メモリモジュールを採用する場合、WEB サイトのメモリサポートリストを参照して互換可能なメモリモジュールを見つけてください。
ASRock Web サイト <http://www.asrock.com>
2. オペレーティングシステム制限のため、Windows® 32 ビット OS 使用下において、システム使用のリザーブに対する実際の記憶容量は 4GB 未満である可能性があります。64 ビット CPU の Windows® OS に対しては、そのような制限はありません。Windows® では使えないメモリを使用するために、アスロック XFast RAM を使用することができます。

1.3 ジャンパー設定

このイラストは、ジャンパーの設定方法を示しています。ジャンパーキャップがピンに被さっていると、ジャンパーは「ショート」です。ジャンパーキャップがピンに被さっていない場合には、ジャンパーは「オープン」です。この図は 3 ピンのジャンパーを表し、ジャンパーキャップがピン 1 とピン 2 に被さっているとき、これらのピンは「ショート」です。



CMOS クリアジャンパー
(CLRCMOS1)
(p.1、No. 18 参照)



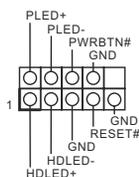
CLRCMOS1 は、CMOS のデータをクリアすることができます。クリアして、デフォルト設定にシステムパラメーターをリセットするには、コンピューターの電源を切り、電源から電源コードを抜いてください。15 秒待ってから、CLRCMOS1 のピン 2 とピン 3 をジャンパーキャップを使って 5 秒間ショートします。ただし、BIOS をアップデートした直後に、CMOS をクリアしないでください。BIOS をアップデート後、CMOS をクリアする必要がある場合は、最初にシステムを起動し、それから CMOS クリアアクションを行う前にシャットダウンしてください。パスワード、日付、時間、ユーザーのデフォルトプロファイルは、CMOS の電池を取り外した場合にのみ、消去されることにご注意ください。

1.4 オンボードのヘッダーとコネクタ



オンボードヘッダーとコネクタはジャンパーではありません。これらヘッダーとコネクタにはジャンパーキャップを被せないでください。ヘッダーおよびコネクタにジャンパーキャップを被せると、マザーボードに永久損傷が起こることがあります。

システムパネルヘッダー
(9ピンパネル1)
(p.1, No. 20 参照)



電源スイッチを接続し、スイッチをリセットし、下記のピン割り当てに従って、シャーシのシステムステータス表示ランプをこのヘッダーにセットします。ケーブルを接続するときには、ピンの十と一に気をつけてください。



PWRBTN (電源スイッチ) :

シャーシ前面パネルの電源スイッチに接続してください。電源スイッチを使用して、システムをオフにする方法を設定できます。

RESET (リセットスイッチ) :

シャーシ前面パネルのリセットスイッチに接続してください。コンピューターがフリーズしたり、通常の再起動を実行できない場合には、リセットスイッチを押して、コンピューターを再起動します。

PLED (システム電源 LED) :

シャーシ前面パネルの電源ステータス表示ランプに接続してください。システム稼働中は、LED が点灯します。システムが S1/S3 スリープ状態の場合には、LED は点滅を続けます。システムが S4 スリープ状態または電源オフ (S5) のときには、LED はオフです。

HDLED (ハードドライブアクティビティ LED) :

シャーシ前面パネルのハードドライブアクティビティ LED に接続してください。ハードドライブのデータを読み取りまたは書き込み中に、LED はオンになります。

前面パネルデザインは、シャーシによって異なることがあります。前面パネルモジュールは、主に電源スイッチ、リセットスイッチ、電源LED、ハードドライブアクティビティLED、スピーカーなどから構成されます。シャーシの前面パネルモジュールとこのヘッダーを接続する場合には、配線の割り当てと、ピンの割り当てが正しく合致していることを確かめてください。

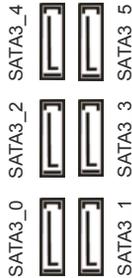
電源 LED ヘッダー
(3 ピン PLED1)
(p.1、No. 17 参照)



システムの電源ステータスを表示するために、シャーシ電源 LED をこのヘッダーに接続してください。

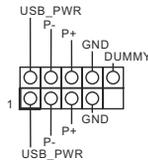
シリアル ATA3 コネクタ
—

- (SATA3_0:
p.1、No. 10 参照)
(SATA3_1:
p.1、No. 15 参照)
(SATA3_2:
p.1、No. 11 参照)
(SATA3_3:
p.1、No. 14 参照)
(SATA3_4:
p.1、No. 12 参照)
(SATA3_5:
p.1、No. 13 参照)



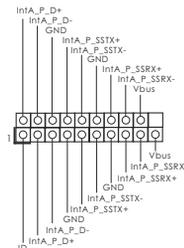
これら 6 つの SATA3 コネクタは、最高 6.0 Gb/秒のデータ転送速度で内部ストレージデバイス用の SATA データケーブルをサポートします。

USB 2.0 ヘッダー
(9 ピン USB_4_5)
(p.1、No. 22 参照)
(9 ピン USB_6_7)
(p.1、No. 21 参照)



I/O パネルの 4 つの USB 2.0 ポートに加えて、このマザーボードには 2 つのヘッダーがあります。各 USB 2.0 ヘッダーは、2 つのポートをサポートできます。

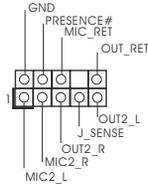
USB 3.0 ヘッダー
(19 ピン USB3_2_3)
(p.1、No. 25 参照)



I/O パネルの 2 つの USB 3.0 ポートに加えて、このマザーボードには 1 つのヘッダーと 1 つのポートが装備されています。各 USB 3.0 ヘッダーは、2 つのポートをサポートできます。

フロントパネルオーディオヘッダー

(9ピン HD_AUDIO1)
(p.1, No. 24 参照)



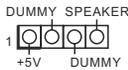
このヘッダーは、フロントオーディオパネルにオーディオデバイスを接続するためのものです。



- ハイディフィニションオーディオはジャックセンシングをサポートしていますが、正しく機能するためには、シャーシのパネルワイヤーがHDAをサポートしている必要があります。お使いのシステムを取り付けるには、当社のマニュアルおよびシャーシのマニュアルの指示に従ってください。
- AC' 97 オーディオパネルを使用する場合には、次のステップで、前面パネルオーディオヘッダーに取り付けてください。
 - Mic_IN (MIC) を MIC2_L に接続。
 - Audio_R (RIN) を OUT2_R に、Audio_L (LIN) を OUT2_L に接続。
 - アース (GND) をアース (GND) に接続。
 - MIC_RET と OUT_RET は、HD オーディオパネル専用です。AC' 97 オーディオパネルではこれらを接続する必要はありません。
 - フロントマイクを有効にするには、Realtek コントロールパネルの「FrontMic」タブで、「録音音量」を調整してください。

シャーシスピーカーヘッダー

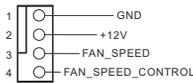
(4ピン SPEAKER1)
(p.1, No. 19 参照)



シャーシスピーカーはこのヘッダーに接続してください。

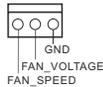
シャーシファンコネクタ

(4ピン CHA_FAN1)
(p.1, No. 8 参照)

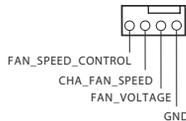


ファンケーブルはファンコネクタに接続し、黒線とアースピンを合わせてください。

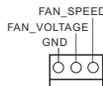
(3ピン CHA_FAN2)
(p.1, No. 16 参照)



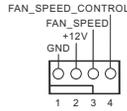
(4ピン CHA_FAN3)
(p.1, No. 9 参照)



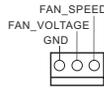
(3ピン CHA_FAN4)
(p.1, No. 2 参照)



CPU ファンコネクタ
(4 ピン CPU_FAN1)
(p.1、No. 4 参照)

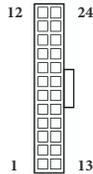


(3 ピン CPU_FAN2)
(p.1、No. 3 参照)



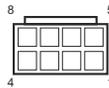
このマザーボードは 4 ピン CPU ファン (静音ファン) コネクタを提供します。3 ピンの CPU ファンを接続する場合には、ピン 1-3 に接続してください。

ATX 電源コネクタ
(24 ピン ATXPWR1)
(p.1、No. 7 参照)



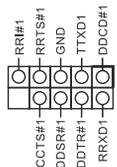
このマザーボードは 24 ピン ATX 電源コネクタを提供します。20 ピンの ATX 電源を使用するには、ピン 1 と 13 番に合わせて接続してください。

ATX12V 電源コネクタ
(8 ピン ATX12V1)
(p.1、No. 1 参照)



このマザーボードは 8 ピン ATX12V 電源コネクタを提供します。4 ピンの ATX 電源を使用するには、ピン 1 と 5 番に合わせて接続してください。

シリアルポートヘッダー
(9 ピン COM1)
(p.1、No. 23 参照)



この COM1 ヘッダーはシリアルポートモジュールをサポートします。

1 简介

感谢您购买 ASRock 970A-G/3.1 主板，这是按照 ASRock 一贯严格质量控制标准生产的性能可靠的主板。它提供符合 ASRock 质量和耐久性承诺的精良设计和卓越性能。



由于主板规格和 BIOS 软件可能已更新，因此，本手册的内容可能会随时更改，恕不另行通知。如果本手册有任何修改，则更新的版本将发布在 ASRock 网站上，我们不会另外进行通知。如果您需要与此主板相关的技术支持，请访问我们的网站以具体了解所用型号的信息。您也可以在 ASRock 网站上找到最新 VGA 卡和 CPU 支持列表。ASRock 网站 <http://www.asrock.com>。

1.1 包装清单

- ASRock 970A-G/3.1 主板 (ATX 规格尺寸)
- ASRock 970A-G/3.1 主板快速安装指南
- ASRock 970A-G/3.1 主板支持光盘
- 2 x 串行 ATA (SATA) 数据线 (选购)
- 1 x I/O 面板
- 1 x M.2 Socket 螺丝

1.2 规格

平台

- ATX 规格尺寸
- 固态电容器设计

CPU

- 支持 Socket AM3+ 處理器
- 支持 Socket AM3 處理器：AMD Phenom™ II X6 / X4 / X3 / X2(920/940 除外) / Athlon II X4 / X3 / X2 / Sempron 處理器
- 八核心 CPU 就緒
- 支持 UCC (Unlock CPU Core)
- Digi Power 设计
- 高級 8 + 2 電源相位設計
- 支持高達 220W 的 CPU
- 支持 AMD Cool ‘n’ Quiet™ 冷靜技術
- 支持 FSB 2400 MHz (4.8 GT/s)
- 支持異步超頻技術
- 支持 Hyper-Transport 3.0 (HT 3.0) 技術

芯片集

- 北橋：AMD 970/990FX
- 南橋：AMD SB950

内存

- 双通道 DDR3 内存技术
- 4 x DDR3 DIMM 槽
- 支持 DDR3 2400+(超頻)/2100(超頻)/1866(超頻)/1800(超頻)/1600(超頻)/1333/1066 非 ECC 非缓冲内存(见“注意 1”)
- 支持系统内存容量：64GB (见“注意 2”)
- 支持 Intel® Extreme Memory Profile (XMP)1.3/1.2
- 支持最高 AMP 2400 的 AMD Memory Profile(AMP) 技術

扩充槽

- 1 x PCI Express 2.0 x16 槽 (PCIe2: x16 模式)
- 1 x PCI Express 2.0 x16 槽 (PCIe4: x4 模式)
- 2 x PCI Express 2.0 x1 槽
- 1 x PCI 槽
- 支持 AMD Quad CrossFireX™ 和 CrossFireX™

音频

- 具有内容保护功能的 7.1 CH 高清音频 (Realtek ALC1150 音频编解码器)
- 优质 Blu-ray 音频支持
- 支持防突波 (华擎全防护)
- ELNA 音频电容
- 支持 DTS 连接

LAN

- PCIE x1 Gigabit LAN 10/100/1000 Mb/s
- Realtek RTL8111GR
- 支持 Wake-On-WAN (广域网唤醒)
- 支持 Wake-On-LAN (网上唤醒)
- 支持防雷击 / 防 ESD 静电 (华擎全防护)
- 支持網路線偵測功能
- 支持高能效以太网 802.3az
- 支持 PXE

后面板 I/O

- 1 x PS/2 鼠标端口
- 1 x PS/2 键盘端口
- 1 x 光学 SPDIF 输出端口
- 4 x USB 2.0 端口 (支持防 ESD 静电 (华擎全防护))
- 1 x USB 3.1 A 类型端口 (10 Gb/s)(ASMedia ASM1143) (支持 ESD 保护, 即华擎全防护)
- 1 x USB 3.1 C 类型端口 (10 Gb/s)(ASMedia ASM1143) (支持 ESD 保护, 即华擎全防护)
- 2 x USB 3.0 端口 (Etron EJ188H) (支持防 ESD 静电 (华擎全防护))
- 1 x RJ-45 LAN 端口, 带 LED (ACT/LINK LED 和 SPEED LED)
- 高清音频插孔: 后扬声器 / 中央 / 低音 / 线路输入 / 前扬声器 / 麦克风

存储

- 6 x SATA3 6.0 Gb/s 接口, 支持 RAID (RAID 0、RAID 1、RAID 5 和 RAID 10)、NCQ、AHCI 和“热插拔”
- 1 x M.2_SSD (NGFF) Socket 3, 支持 2230/2242/2260/2280/22110 M.2 PCI Express 模块, 最高 Gen2 x4 (20 Gb/s)
- * 如果 PCIE4 被占用, M2_1 将被禁用。
- * 支持华擎 U.2 套件

接口

- 1 x COM 端口接口
- 1 x 电源 LED 接口
- 2 x CPU 风扇接口 (1 x 4 针, 1 x 3 针)
- 4 x 机箱风扇接口 (2 x 4 针, 2 x 3 针)
- 1 x 24 针 ATX 电源接口
- 1 x 8 针 12V 电源接口
- 1 x 前面板音频接口
- 2 x USB 2.0 接口 (支持 4 个 USB 2.0 端口) (支持防 ESD 静电 (华擎全防护))
- 1 x Etron EJ188H USB 3.0 接口 (支持 2 个 USB 3.0 端口) (支持防 ESD 静电 (华擎全防护))

BIOS 功能特点

- AMI UEFI Legal BIOS, 具有 GUI 支持
- 支持即插即用 (Plug and Play, PnP)
- ACPI 1.1 兼容唤醒事件
- 支持 jumperfree 免跳线模式
- SMBIOS 2.3.1 支持
- CPU、VCCM、NB、SB 电压多次调整 (Voltage Multi-adjustment)

硬件监控

- CPU/ 机箱温度感测
- CPU/ 机箱风扇转速计
- CPU/ 机箱静音风扇 (可以按照 CPU 温度自动调整机箱风扇速度)
- CPU/ 机箱风扇多种速度控制
- 电压监控: +12V、+5V、+3.3V、CPU Vcore

操作系统

- Microsoft® Windows® 10 32-bit / 10 64-bit / 8.1 32-bit / 8.1 64-bit / 8 32-bit / 8 64-bit / 7 32-bit / 7 64-bit / Vista™ 32-bit / Vista™ 64-bit / XP 32-bit / XP 64-bit

* 有关已更新的 Windows® 10 驱动程序, 请访问 ASRock 网站了解详情: <http://www.asrock.com>

认证

- FCC、CE、WHQL
- ErP/EuP 支持 (需要支持 ErP/EuP 的电源)

* 有关详细产品信息, 请访问我们的网站: <http://www.asrock.com>



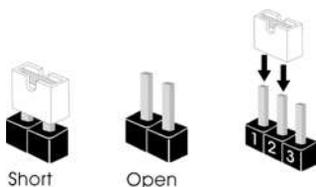
须认识到超频会有一定风险，包括调整 BIOS 设置，应用“自由超频技术”，或使用第三方超频工具。超频可能会影响到系统的稳定性，甚至对系统的组件和设备造成损坏。执行这项工作您应自担风险和自己承担费用。我们对由于超频而造成的损坏概不负责。



1. 2400/2100MHz 内存频率是否支持在于您使用的 AM3 CPU。如果您想在这款主板上使用 DDR3 2400/2100 内存条，请查阅我们网站的内存支持列表了解兼容的内存。
華擎網站：<http://www.asrock.com>
2. 由于操作系统的限制，在 Windows® 32 位元操作系统下，供系统使用的实际内存容量可能小于 4GB。对于 Windows® 操作系统搭配 64 位元 CPU 来说，不会存在这样的限制。您可以使用 ASRock XFast RAM 来利用 Windows® 不能使用的内存。

1.3 跳线设置

此图显示如何设置跳线。将跳线帽装到这些针脚上时，跳线“短接”。如果这些针脚上没有装跳线帽，跳线“开路”。此图显示 3 针跳线，当跳线帽装在针脚 1 和针脚 2 上，它们“短接”。



清除 CMOS 跳线

(CLR_CMOS1)

(见第 1 页, 第 18 个)



默认



清除 CMOS

CLR_CMOS1 允许您清除 CMOS 中的数据。要清除和重置系统参数到默认设置，请关闭计算机，从电源上拔下电源线插头。等候 15 秒后，使用跳线帽将 CLR_CMOS1 上的针脚 2 和针脚 3 短接 5 秒。但是，请勿在更新 BIOS 后立即清除 CMOS。如果您需要在刚完成 BIOS 更新后清除 CMOS，则必须先启动系统，并在关闭后再执行清除 CMOS 操作。请注意，密码、日期、时间和用户默认配置文件只在卸下 CMOS 电池后才会被清除。

1.4 板载接脚和接口

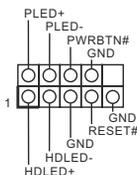


板载接脚和接口不是跳线。不要将跳线帽装到这些接脚和接口上。将跳线帽装到这些接脚和接口上将会对主板造成永久性损坏。

系统面板接脚

(9 针 PANEL1)

(见第 1 页，第 20 个)



按照下面的针脚分配，将机箱上的电源开关、重置开关和系统状态指示灯连接到此接脚。在连接线缆前请记下正负针脚。



PWRBTN (电源开关):

连接到机箱前面板上的电源开关。您可以配置使用电源开关关闭系统的方式。

RESET (重置开关):

连接到机箱前面板上的重置开关。如果计算机死机，无法执行正常重新启动，按重置开关重新启动计算机。

PLED (系统电源 LED):

连接到机箱前面板上的状态指示灯。系统操作操作时，此 LED 亮起。系统处在 S1/S3 睡眠状态时，此 LED 闪烁。系统处在 S4 睡眠状态或关机 (S5) 时，此 LED 熄灭。

HDLED (硬盘活动指示灯):

连接到机箱前面板上的硬盘活动 LED 指示灯。硬盘正在读取或写入数据时，此 LED 亮起。

前面板设计根据机箱不同而有所差异。前面板模块主要包括电源开关、重置开关、电源 LED、硬盘活动 LED 指示灯、扬声器等。将机箱前面板模块连接到此接脚时，确保连线分配和针脚分配正确匹配。

电源 LED 接脚

(3 针 PLED1)

(见第 1 页, 第 17 个)



请将机箱电源 LED 连接到此接脚以指示系统电源状态。

串行 ATA3 接口

(SATA3_0:

见第 1 页, 第 10 个)

(SATA3_1:

见第 1 页, 第 15 个)

(SATA3_2:

见第 1 页, 第 11 个)

(SATA3_3:

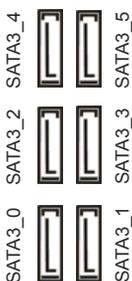
见第 1 页, 第 14 个)

(SATA3_4:

见第 1 页, 第 12 个)

(SATA3_5:

见第 1 页, 第 13 个)



这六个 SATA3 接口支持最高 6.0 Gb/s 数据传输速率的内部存储设备的 SATA 数据线。

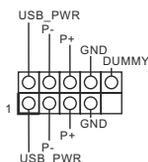
USB 2.0 接脚

(5 针 USB_4_5)

(见第 1 页, 第 22 个)

(5 针 USB_6_7)

(见第 1 页, 第 21 个)

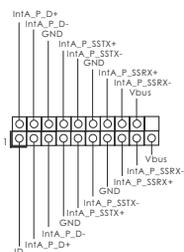


除 I/O 面板上的四个 USB 2.0 端口外, 此主板上还有两个接脚。每个 USB 2.0 接脚可以支持两个端口。

USB 3.0 接脚

(19 针 USB3_2_3)

(见第 1 页, 第 25 个)

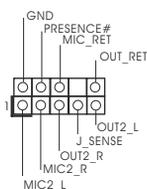


除 I/O 面板上的两个 USB 3.0 端口外, 此主板上还有 1 个接脚和一个端口。每个 USB 3.0 接脚可以支持两个端口。

前面板音频接脚

(9 针 HD_AUDIO1)

(见第 1 页, 第 24 个)



此接脚用于将音频设备连接到前面板。



1. 高清音频支持插孔感测, 但机箱上的面板连线必须支持 HDA 才能正常工作。请按照我们的手册和机箱手册的说明安装系统。
2. 如果您使用 AC'97 音频面板, 请按照以下步骤安装到前面板音频接脚:
 - A. 将 Mic_IN (MIC) 连接到 MIC2_L.
 - B. 将 Audio_R (RIN) 连接到 OUT2_R, 将 Audio_L (LIN) 连接到 OUT2_L.
 - C. 将接地端 (GND) 连接到接地端 (GND)。
 - D. MIC_RET 和 OUT_RET 只用于高清音频面板。您不需要针对 AC'97 音频面板连接它们。
 - E. 要启用前麦克风, 请转到 Realtek 控制面板上的“FrontMic” (前麦克风) 选项卡, 调整“Recording Volume” (录音音量)。

机箱扬声器接脚

(4 针 SPEAKER1)

(见第 1 页, 第 19 个)

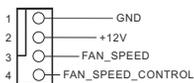


请将机箱扬声器连接到此接脚。

机箱风扇接口

(4 针 CHA_FAN1)

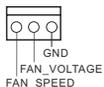
(见第 1 页, 第 8 个)



请将风扇线连接到风扇接口并使黑线匹配接地针脚。

(3 针 CHA_FAN2)

(见第 1 页, 第 16 个)



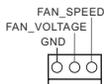
(4 针 CHA_FAN3)

(见第 1 页, 第 9 个)



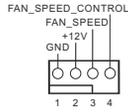
(3 针 CHA_FAN4)

(见第 1 页, 第 2 个)



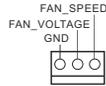
CPU 风扇接口

(4 针 CPU_FAN1)
(见第 1 页, 第 4 个)



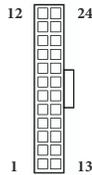
此主板提供 4 针 CPU 风扇 (静音风扇) 接口。如果您打算连接 3 针 CPU 风扇, 请将它连接到针脚 1-3°

(3 针 CPU_FAN2)
(见第 1 页, 第 3 个)



ATX 电源接口

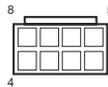
(24 针 ATXPWR1)
(见第 1 页, 第 7 个)



此主板提供 24 针 ATX 电源接口。要使用 20 针 ATX 电源, 请沿针脚 1 和针脚 13 插接它。

ATX 12V 电源接口

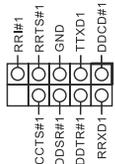
(8 针 ATX12V1)
(见第 1 页, 第 1 个)



此主板提供 8 针 ATX 12V 电源接口。要使用 4 针 ATX 电源, 请沿针脚 1 和针脚 5 插接它。

串行端口接脚

(9 针 COM1)
(见第 1 页, 第 23 个)



此 COM1 接脚支持串行端口模块。

電子信息產品污染控制標示

依据中国发布的「电子信息产品污染控制管理办法」及 SJ/T 11364-2006「电子信息产品污染控制标示要求」，电子信息产品应进行标示，藉以向消费者揭露产品中含有的有毒有害物质或元素不致发生外泄或突变从而对环境造成污染或对人体、财产造成严重损害的期限。依上述规定，您可于本产品之印刷电路板上看见图一之标示。图一中之数字为产品之环保使用期限。由此可知此主板之环保使用期限为 10 年。



图一

有毒有害物質或元素的名稱及含量說明

若您欲了解此产品的有毒有害物质或元素的名称及含量说明，请参照以下表格及说明。

| 部件名称 | 有害物质或元素 | | | | | |
|------------|---------|--------|--------|---------------|------------|--------------|
| | 铅 (Pb) | 镉 (Cd) | 汞 (Hg) | 六价铬 (Cr (VI)) | 多溴联苯 (PBB) | 多溴二苯醚 (PBDE) |
| 印刷电路板及电子组件 | X | O | O | O | O | O |
| 外部信号连接头及线材 | X | O | O | O | O | O |

O: 表示该有毒有害物质在该部件所有均质材料中的含量均在 SJ/T 11363-2006 标准规定的限量要求以下。

X: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 SJ/T 11363-2006 标准规定的限量要求，然该部件仍符合欧盟指令 2002/95/EC 的规范。

备注：此产品所标示之环保使用年限，系指在一般正常使用状况下。

1 簡介

感謝您購買 970A-G/3.1 主機板，本主機板經 ASRock 嚴格品質製作，是一套讓人信賴的可靠產品。本產品採耐用設計所展現的優異效能，完全符合 ASRock 對品質及耐用度的承諾。



由於主機板規格及 BIOS 軟體可能會更新，所以本手冊內容如有變更恕不另行通知。如本手冊有任何修改，可至 ASRock 網站逕行取得更新版本，不另外通知。若您需要與本主機板相關的技術支援，請上我們的網站瞭解有關您使用機型的特定資訊。您也可以到 ASRock 網站找到最新的 VGA 卡及 CPU 支援清單。ASRock 網站 <http://www.asrock.com>。

1.1 包裝內容

- ASRock 970A-G/3.1 主機板 (ATX 尺寸)
- ASRock 970A-G/3.1 快速安裝指南
- ASRock 970A-G/3.1 支援光碟
- 2 x Serial ATA (SATA) 資料纜線 (選用)
- 1 x I/O 面板外罩
- 1 x M.2 Socket 插槽螺絲

1.2 規格

平台

- ATX 尺寸
- 固態電容設計

CPU

- 支援 Socket AM3+ 處理器
- 支援 Socket AM3 處理器：AMD Phenom™ II X6 / X4 / X3 / X2(920 / 940 除外) / Athlon II X4 / X3 / X2 / Sempron 處理器
- 八核心 CPU 就緒
- 支援 UCC (Unlock CPU Core)
- 數位電源設計
- 高級 8 + 2 電源相位設計
- 支援高達 220W 的 CPU
- 支援 AMD Cool 'n' Quiet 冷靜技術
- 支援 FSB 2400 MHz (4.8 GT/s)
- 支援非同步超頻技術
- 支援 Hyper-Transport 3.0 (HT 3.0) 技術

晶片組

- 北橋：AMD 970/990FX
- 南橋：AMD SB950

記憶體

- 雙通道 DDR3 記憶體技術
- 4 x DDR3 DIMM 插槽
- 支援 DDR3 2400+(超頻)/2100(超頻)/1866(超頻)/1800(超頻)/1600(超頻)/1333/1066 非 ECC 無緩衝記憶體 (請參閱「注意 1」)
- 最大系統記憶體容量：64GB (請參閱「注意 2」)
- 支援 Intel® Extreme Memory Profile (XMP)1.3/1.2
- 支援 AMD Memory Profile(AMP) 記憶體模組技術，可高達 AMP 2400

擴充插槽

- 1 x PCI Express 2.0 x16 插槽 (PCIe2：x16 模式)
- 1 x PCI Express 2.0 x16 插槽 (PCIe4：x4 模式)
- 2 x PCI Express 2.0 x1 插槽
- 1 x PCI 插槽
- 支援 AMD Quad CrossFireX™ 及 CrossFireX™

音訊

- 7.1 CH HD 音訊含內容保護 (Realtek ALC1150 音訊轉碼器) 功能
- 高階藍光音訊支援
- 支援防突波 (華擎全防護)
- ELNA 音響級電容
- 支援 DTS Connect

LAN

- PCIE x1 Gigabit LAN 10/100/1000 Mb/s
- Realtek RTL8111GR
- 支援遠端開機
- 支援網路喚醒
- 支援防雷擊 / 防 ESD 靜電 (華擎全防護)
- 支援網線偵測功能
- 支援 Energy Efficient Ethernet 802.3az
- 支援 PXE

後面板 I/O

- 1 x PS/2 滑鼠連接埠
- 1 x PS/2 鍵盤連接埠
- 1 x 光纖 SPDIF 輸出連接埠
- 4 x USB 2.0 連接埠 (支援防 ESD 靜電 (華擎全防護))
- 1 x USB 3.1 A 類型連接埠 (10 Gb/s) (ASMedia ASM1143) (支援靜電保護 (華擎全防護))
- 1 x USB 3.1 C 類型連接埠 (10 Gb/s) (ASMedia ASM1143) (支援靜電保護 (華擎全防護))
- 2 x USB 3.0 連接埠 (Etron EJ188H) (支援防 ESD 靜電 (華擎全防護))
- 1 x RJ-45 LAN 連接埠, 含 LED (ACT/LINK LED 及 SPEED LED)
- HD 音訊插孔: 後置喇叭 / 中置 / 低音 / 線路輸入 / 前置喇叭 / 麥克風

儲存裝置

- 6 x SATA3 6.0 Gb/s 接頭支援 RAID (RAID 0、RAID 1、RAID 5 及 RAID 10)、NCQ、AHCI 及「熱插拔」
- 1 x M.2_SSD (NGFF) Socket 3 插槽, 支援 2230/2242/2260/2280/22110 M.2 PCI Express 模組, 最高可達 Gen2 x4 (20 Gb/s)
- * 若 PCIE4 被佔用, M2_1 將會停用。
- * 支援華擎 U.2 套件

接頭

- 1 x COM 連接埠排針
- 1 x 電源 LED 排針
- 2 x CPU 風扇接頭 (1 x 4-pin、1 x 3-pin)
- 4 x 機殼風扇接頭 (2 x 4-pin、2 x 3-pin)
- 1 x 24 pin ATX 電源接頭
- 1 x 8 pin 12V 電源接頭
- 1 x 前面板音訊接頭
- 2 x USB 2.0 排針 (支援 4 USB 2.0 連接埠) (支援防 ESD 靜電 (華擎全防護))
- 1 x Etron EJ188H USB 3.0 排針 (支援 2 USB 3.0 連接埠) (支援防 ESD 靜電 (華擎全防護))

BIOS 功能

- AMI UEFI Legal BIOS，具備 GUI 支援
- 支援即插即用 (Plug and Play, PnP)
- ACPI 1.1 符合喚醒自動開機
- 支援 jumperfree 免跳線模式
- 支援 SMBIOS 2.3.1
- CPU、VCCM、NB、SB 電壓多重調整

硬體監視器

- CPU / 機殼溫度感應
- CPU / 機殼風扇轉速計
- CPU / 機殼靜音風扇 (允許按照 CPU 溫度自動調整機殼風扇速度)
- CPU / 機殼風扇多重速度控制
- 電壓監控: +12V、+5V、+3.3V、CPU Vcore

作業系統

- Microsoft® Windows® 10 32 位元 / 10 64 位元 / 8.1 32 位元 / 8.1 64 位元 / 8 32 位元 / 8 64 位元 / 7 32 位元 / 7 64 位元 / Vista™ 32 位元 / Vista™ 64 位元 / XP 32 位元 / XP 64 位元
- * 關於最新 Windows® 10 驅動程式的詳細資訊，請瀏覽 ASRock 網站：<http://www.asrock.com>

認證

- FCC、CE、WHQL
- ErP/EuP Ready (需具備 ErP/EuP ready 電源供應器)

* 如需產品詳細資訊，請造訪我們的網站：<http://www.asrock.com>



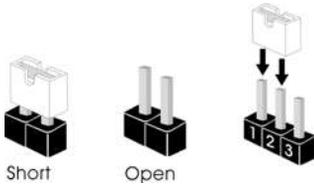
請務必理解，超頻可能產生某種程度的風險，其中包括調整 BIOS 中的設定、採用自由超頻技術或使用協力廠商的超頻工具。超頻可能會影響您系統的穩定性，或者甚至會對您系統的元件及裝置造成傷害。您應自行負擔超頻風險及成本。我們對於因超頻所造成的可能損害概不負責。



1. 2400/2100MHz 記憶體頻率是否支援在於您使用的 AM3/AM3+ CPU。如果您想在這款主板上使用 DDR3 2400/2100 記憶體，請查閱我們網站的記憶體支援列表了解相容的記憶體。
華擎網站：<http://www.asrock.com>
2. 由於作業系統的限制，在 Windows® 32 位元作業系統，供系統使用的實際記憶體容量可能小於 4GB。對於 Windows® 作業系統搭配 64 位元 CPU 來說，不會存在這樣的限制。您可使用 ASRock XFast RAM 運用 Windows® 無法使用的記憶體。

1.3 跳線設定

圖例顯示設定跳線的方式。當跳線帽套在針腳上時，該跳線為「短路」。若沒有跳線帽套在針腳上，該跳線為「開啟」。圖例顯示當 3-pin 跳線的跳線帽套在 pin1 及 pin2 時，這兩個針腳皆為「短路」。



清除 CMOS 跳線

(CLRCMOS1)

(請參閱第 1 頁，編號 18)



預設



清除 CMOS

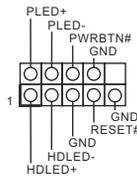
您可利用 CLRCMOS1 清除 CMOS 中的資料。若要清除及重設系統參數為預設設定，請先關閉電腦電源，再拔下電源供應器的電源線。在等待 15 秒後，請使用跳線帽讓 CLRCMOS1 上的 pin2 及 pin3 短路約 5 秒。不過，請不要在更新 BIOS 後立即清除 CMOS。若您需在更新 BIOS 後立即清除 CMOS，則必須先重新啟動系統，然後於進行清除 CMOS 動作前關機。請注意，只有在取出 CMOS 電池時才會清除密碼、日期、時間及使用者預設設定檔。

1.4 板載排針及接頭



板載排針及接頭都不是跳線。請勿將跳線帽套在這些排針及接頭上。將跳線帽套在排針及接頭上，將造成主機板永久性的受損。

系統面板排針
(9-pin PANEL1)
(請參閱第 1 頁，編號 20)



請依照以下的針腳排列將機殼上的電源開關、重設開關及系統狀態指示燈連接至此排針。在連接纜線之前請注意正負針腳。



PWRBTN (電源開關) :

連接至機殼前面板上的電源開關。您可設定使用電源開關關閉系統電源的方式。

RESET (重設開關) :

連接至機殼前面板上的重設開關。若電腦凍結且無法執行正常重新啟動，按下重設開關即可重新啟動電腦。

PLED (系統電源 LED) :

連接至機殼前面板上的電源狀態指示燈。系統正在運作時，此 LED 會亮起。系統進入 S1/S3 睡眠狀態時，LED 會持續閃爍。系統進入 S4 睡眠狀態或關機 (S5) 時，LED 會熄滅。

HDLED (硬碟活動 LED) :

連接至機殼前面板上的硬碟活動 LED。硬碟正在讀取或寫入資料時，LED 會亮起。

各機殼的前面板設計各有不同。前面板模組主要是由電源開關、重設開關、電源 LED、硬碟活動 LED、喇叭及其他裝置組成。將機殼前面板模組連接至此排針時，請確定佈線及針腳指派皆正確相符。

電源 LED 排針

(3-pin PLED1)

(請參閱第 1 頁, 編號 17)



請將機殼電源 LED 連接至此排針, 以指示系統的電源狀態。

Serial ATA3 接頭

(SATA3_0:

請參閱第 1 頁, 編號 10)

(SATA3_1:

請參閱第 1 頁, 編號 15)

(SATA3_2:

請參閱第 1 頁, 編號 11)

(SATA3_3:

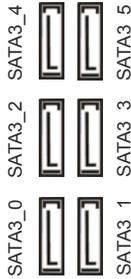
請參閱第 1 頁, 編號 14)

(SATA3_4:

請參閱第 1 頁, 編號 12)

(SATA3_5:

請參閱第 1 頁, 編號 13)



這六組 SATA3 接頭皆支援內部儲存裝置的 SATA 資料纜線, 最高可達 6.0 Gb/s 資料傳輸率。

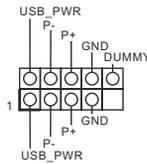
USB 2.0 排針

(9-pin USB_4_5)

(請參閱第 1 頁, 編號 22)

(9-pin USB_6_7)

(請參閱第 1 頁, 編號 21)

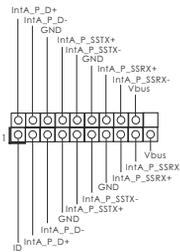


除了 I/O 面板上的四個 USB 2.0 連接埠外, 在本主機板上還有另外兩組排針。各 USB 2.0 排針皆可支援兩個連接埠。

USB 3.0 排針

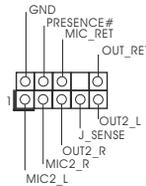
(19-pin USB3_2_3)

(請參閱第 1 頁, 編號 25)



除了 I/O 面板上的兩個 USB 3.0 連接埠外, 在本主機板上還有另外一組排針及一個連接埠。各 USB 3.0 排針皆可支援兩個連接埠。

前面板音訊排針
(9-pin HD_AUDIO1)
(請參閱第 1 頁, 編號 24)

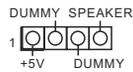


本排針適用於連接音訊裝置至前面板音訊。



1. 高解析度音訊支援智慧型音效介面偵測 (Jack Sensing), 但機殼上的面板線必須支援 HDA 才能正確運作。請依本手冊及機殼手冊說明安裝系統。
2. 若您使用 AC'97 音訊面板, 請按照以下步驟安裝至前面板音訊排針:
 - A. 將 Mic_IN (MIC) 連接至 MIC2_L。
 - B. 將 Audio_R (RIN) 連接至 OUT2_R 且將 Audio_L (LIN) 連接至 OUT2_L。
 - C. 將接地 (GND) 連接至接地 (GND)。
 - D. MIC_RET 及 OUT_RET 僅供 HD 音訊面板使用。您不需要在 AC'97 音訊面板上連接。
 - E. 若要啟動前側麥克風, 請前往 Realtek 控制面板中的「FrontMic」標籤調整「錄音音量」。

機殼喇叭排針
(4-pin SPEAKER1)
(請參閱第 1 頁, 編號 19)



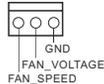
請將機殼喇叭連接至此排針。

機殼風扇接頭
(4-pin CHA_FAN1)
(請參閱第 1 頁, 編號 8)



請將風扇纜線連接至風扇接頭, 並比對黑線及接地針腳。

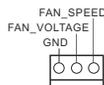
(3-pin CHA_FAN2)
(請參閱第 1 頁, 編號 16)



(4-pin CHA_FAN3)
(請參閱第 1 頁, 編號 9)



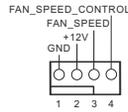
(3-pin CHA_FAN4)
(請參閱第 1 頁, 編號 2)



CPU 風扇接頭

(4-pin CPU_FAN1)

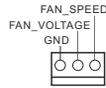
(請參閱第 1 頁, 編號 4)



本主機板配備 4-Pin CPU 風扇 (靜音風扇) 接頭。若您計畫連接 3-Pin CPU 風扇, 請接至 Pin 1-3。

(3-pin CPU_FAN2)

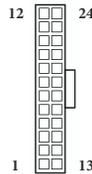
(請參閱第 1 頁, 編號 3)



ATX 電源接頭

(24-pin ATXPWR1)

(請參閱第 1 頁, 編號 7)

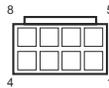


本主機板配備一組 24-pin ATX 電源接頭。若要使用 20-pin ATX 電源供應器, 請插入 Pin 1 及 Pin 13。

ATX 12V 電源接頭

(8-pin ATX12V1)

(請參閱第 1 頁, 編號 1)

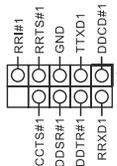


本主機板配備一組 8-pin ATX 12V 電源接頭。若要使用 4-pin ATX 電源供應器, 請插入 Pin 1 及 Pin 5。

序列連接埠排針

(9-pin COM1)

(請參閱第 1 頁, 編號 23)



此 COM1 排針支援序列連接埠模組。

Spesifikasi

Platform

- Bentuk dan Ukuran ATX
- Desain Kapasitor Solid

CPU

- Stopkontak AM3+
- Stopkontak AM3 untuk AMD Phenom™ II X6 / X4 / X3 / X2 (kecuali 920 / 940) / Athlon II X4 / X3 / X2 / Sempron processor
- Dukungan CPUT Delapan Inti
- Mendukung fitur UCC (Unlock CPU Core)
- Desain Digi Power
- Desain Daya 8 + 2 Fase
- Mendukung CPU hingga 220 W
- Dapat digunakan AM's Cool 'n' Quiet™ Technology
- FSB 2400 MHz (4.8 GT/s)
- Menggunakan Teknologi Untied Overclocking
- Dapat digunakan Hyper-Transport 3.0 (HT 3.0) Technology

Chipset

- Jembatanutara: AMD 970/990FX
- Jembatanselatan: AMD SB950

Memori

- Teknologi Memori DDR3 Kanal Ganda
- 4 x Slot DDR3 DIMM
- Mendukung DDR3 2400+(OC)/2100(OC)/1866(OC)/1800(OC)/1600(OC)/1333/1066 non-ECC, memori tanpa buffer
- Kapasitas maksimum memori sistem: 64GB
- Mendukung Intel® Extreme Memory Profile (XMP)1.3/1.2
- Mendukung Teknologi AMD Memory Profile (AMP) hingga AMP 2400

Slot Ekspansi

- 1 slot PCI Express 2.0 x16 (PCIe2: x16 mode)
- 1 slot PCI Express 2.0 x16 (PCIe4: x4 mode)
- 2 slot PCI Express 2.0 x1
- 1 slot PCI x1
- Mendukung AMD Quad CrossFireX™ dan CrossFireX™

Audio

- Audio HD 7.1 CH dengan Perlindungan Konten (Realtek ALC1150 Audio Codec)
- Mendukung Audio Blu-ray Premium
- Mendukung Perlindungan Lonjakan Arus (ASRock Full Spike Protection)
- ELNA Audio Caps
- Mendukung DTS Connect

LAN

- PCIE x1 Gigabit LAN 10/100/1000 Mb/s
- Realtek RTL8111G
- Mendukung Wake-On-LAN
- Mendukung Wake-On-LAN
- Mendukung Perlindungan Petir/ESD (ASRock Full Spike Protection)
- Mendukung Deteksi Kabel LAN
- Mendukung Energy Efficient Ethernet 802.3az
- Mendukung PXE

**Panel I/O
Belakang**

- 1 x Port Mouse PS/2
- 1 x Port Keyboard PS/2
- 1 x Port SPDIF Out Optik
- 4 x Port USB 2.0 (Mendukung Perlindungan ESD (ASRock Full Spike Protection))
- 1 x USB 3.1 Port Tipe A (10 Gb/s) (ASMedia ASM1143) (Mendukung Perlindungan ESD (Perlindungan ASRock Full Spike))
- 1 x USB 3.1 Port Tipe C (10 Gb/s) (ASMedia ASM1143) (Mendukung Perlindungan ESD (Perlindungan ASRock Full Spike))
- 2 x Port USB 3.0 (Etron EJ188H) (Mendukung Perlindungan ESD (ASRock Full Spike Protection))
- 1 x Port LAN RJ-45 dengan LED (ACT/LINK LED dan SPEED LED)
- Soket Audio HD: Speaker Belakang/Tengah/Bas/Saluran masuk/Speaker Depan/Mikrofon

Penyimpanan

- 6 x Konektor SATA3 6,0 Gb/s, mendukung RAID (RAID 0, RAID 1, RAID 5 dan RAID 10), NCQ, AHCI, dan “Hot Plug”
 - 1 x Soket 3 M.2_SSD (NGFF), mendukung 2230/2242/2260/2280/22110 modul M.2 PCI Express hingga Soket 3 Gen2 x4 (20 Gb/s)
- * Jika PCIE4 digunakan oleh perangkat PCI Express tipe M.2, maka M2_1 akan dinonaktifkan.
- * Mendukung Kit U.2 ASRock

Konektor

- 1 x Header port COM
- 1 x Kepala LED daya
- 2 x Konektor kipas CPU (1 x 4-pin, 1 x 3-pin)
- 4 x Konektor kipas chassis (2 x 4-pin, 2 x 3-pin)
- 1 x Konektor daya ATX 24 pin
- 1 x Konektor daya 12V 8 pin
- 1 x Konektor audio panel depan
- 2 x Header USB 2.0 (mendukung 4 port USB 2.0) (Mendukung Perlindungan ESD (ASRock Full Spike Protection))
- 1 x Header Etron EJ188H USB 3.0 (mendukung 2 port USB 3.0) (Mendukung Perlindungan ESD (ASRock Full Spike Protection))

Fitur BIOS

- AMI UEFI Legal BIOS dengan dukungan GUI
- Menggunakan “Plug and Play”
- ACPI 1.1 Kompatibel dengan Aktivitas Pengaktifan
- Menggunakan jumperfree
- Dukungan SMBIOS 2.3.1
- Multipengatur Tegangan CPU, VCCM, NB, SB

Perangkat Keras Monitor

- Sensor Suhu CPU/Chassis
- Takometer CPU/Chassis Daya
- Kipas Hening CPU/Chassis (Memungkinkan Penyesuaian Otomatis Kecepatan Kipas Chassis Berdasarkan Suhu CPU)
- Kontrol Multikecepatan Kipas CPU/Chassis
- Pemantauan Tegangan: +12V, +5V, +3,3V, CPU Vcore

OS

- Microsoft® Windows® 10 32-bit / 10 64-bit / 8.1 32-bit / 8.1 64-bit / 8 32-bit / 8 64-bit / 7 32-bit / 7 64-bit / Vista™ 32-bit / Vista™ 64-bit / XP 32-bit / XP 64-bit

* Untuk driver Windows® 10 terbaru, kunjungi situs web ASRock untuk mendapatkan info rinci: <http://www.asrock.com>

Sertifikasi

- FCC, CE, WHQL
- Siap untuk ErP/EuP (memerlukan catu daya untuk ErP/EuP)

* Untuk informasi rinci tentang produk, kunjungi situs web kami: <http://www.asrock.com>

Contact Information

If you need to contact ASRock or want to know more about ASRock, you're welcome to visit ASRock's website at <http://www.asrock.com>; or you may contact your dealer for further information. For technical questions, please submit a support request form at <http://www.asrock.com/support/tsd.asp>

ASRock Incorporation

2F., No.37, Sec. 2, Jhongyang S. Rd., Beitou District,

Taipei City 112, Taiwan (R.O.C.)

ASRock EUROPE B.V.

Bijsterhuizen 11-11

6546 AR Nijmegen

The Netherlands

Phone: +31-24-345-44-33

Fax: +31-24-345-44-38

ASRock America, Inc.

13848 Magnolia Ave, Chino, CA91710

U.S.A.

Phone: +1-909-590-8308

Fax: +1-909-590-1026



EC-Declaration of Conformity

For the following equipment:

Motherboard

(Product Name)

970A-G/3.1 / ASRock

(Model Designation / Trade Name)

ASRock Incorporation

(Manufacturer Name)

2F, No.37, Sec. 2, Zhongyang S. Rd., Beitou District, Taipei City 112, Taiwan (R.O.C.)

(Manufacturer Address)

is herewith confirmed to comply with the requirements set out in the Council Directive on the Approximation of the Laws of the Member States relating to Electromagnetic Compatibility Directive (2004/108/EC) and Safety Directive (2006/95/EC), the following standards are applied:

- EN 55022: 2006+A1:2007
- EN 61000-3-2: 2009
- EN 61000-3-3: 2008
- EN 55024: 1998 + A1:2001 + A2:2003
 - IEC 61000-4-2: 2008;
 - IEC 61000-4-3: 2010; IEC 61000-4-4: 2010;
 - IEC 61000-4-5: 2005; IEC 61000-4-6: 2008;
 - IEC 61000-4-8: 2009; IEC 61000-4-11: 2004;
- EN 60950-1: 2005 + A1:2009
 - IEC 60950-1: 2006 + A11:2009 + A1:2010 + A12:2011

The following manufacturer / importer or authorized representative established within the EUT is responsible for this declaration:

ASRock EUROPE B.V.

(Company Name)

Bijsterhuizen 11-11 6546 AR Nijmegen The Netherlands

(Company Address)

Person responsible for making this declaration:

(Name, Surname)

A.V.P

(Position / Title)

Dec. 18, 2015

(Date)