ASRock

B860TM-ITX/TB4/DP/TPM

User Manual

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 https://event.asrock.com/tsd.asp

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Contents

Chapter 1 Introduction

Thank you for purchasing B860TM-ITX/TPM/TB4/DP motherboard. In this documentation, Chapter 1 and 2 contains the introduction of the motherboard and step-by-step installation guides. Chapter 3 contains the operation guide of the software and utilities. Chapter 4 contains the configuration guide of the BIOS setup.

Because the motherboard specifications and the BIOS software might be updated, the content of this documentation will be subject to change without notice.

1.1 Package Contents

- B860TM-ITX/TPM/TB4/DP Motherboard (Thin Mini-ITX Form Factor)
- B860TM-ITX/TPM/TB4/DP Quick Installation Guide
- 1 x I/O Panel Shield
- 2 x Serial ATA(SATA) Data with Power Cable (Optional)
- 2 x Screws for M.2 Sockets (M2*2) (Optional)
- 1 x Screw for WiFi Module (M2*2) (Optional)

1.2 Specifications

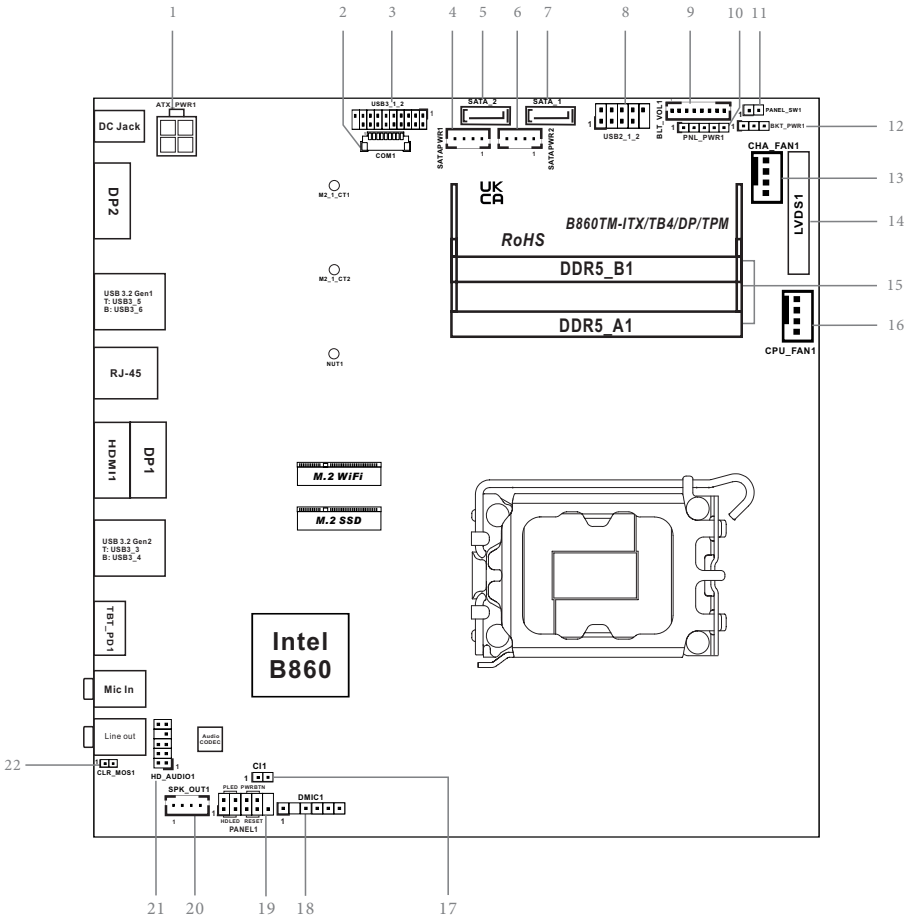
Platform	• Thin Mini-ITX Form Factor • 8 Layer PCB • Solid Capacitor design
CPU	• Supports Intel® Core™ Ultra Processors (Series 2) (LGA1851) • Supports Intel® Hybrid Technology • Supports Intel® Turbo Boost Max 3.0 Technology • Supports Intel® Thermal Velocity Boost (TVB) • Supports Intel® Adaptive Boost Technology (ABT) • Integrated NPU for dedicated AI acceleration
Chipset	• Intel® B860
Memory	• Dual Channel DDR5 Memory Technology • 2 x DDR5 SO-DIMM Slots • Supports DDR5 non-ECC, un-buffered memory up to 5600 • Supports DDR5 CSODIMM memory modules up to 6400 • Max. capacity of system memory: 128GB • Supports Intel® Extreme Memory Profile (XMP) 3.0x
Expansion Slot	• 1 x M.2 Socket (Key E), supports type 2230 WiFi/BT module and Intel® CNVi (Integrated WiFi/BT)
Graphics	• Intel® UHD Graphics Built-in Visuals and the VGA outputs can be supported only with processors which are GPU integrated. • Intel® Xᵉ LPG Graphics Architecture • Five graphics output options: 1 x Intel® Thunderbolt™ 4, 1 x HDMI, 2 x DisplayPort 1.4, 1 x LVDS • Supports Quad Display • 1 x HDMI 2.1 TMDS/FRL 8G Compatible, supports HDR, HDCP 2.3 and max. resolution up to 4K 120Hz • 2 x DisplayPort 1.4 with DSC (compressed), supports HDCP 2.3 and max. resolution up to 8K 60Hz / 5K 120Hz

	• 1 x Intel® Thunderbolt™ 4, support HDCP 2.3 and max. resolution up to 8K 60Hz / 5K 120Hz* * Only the CPU's embedded graphics can be displayed through Thunderbolt ports. If you want to display to a Thunderbolt monitor, please use CPU models with embedded graphics. • 1 x LVDS, supports max. resolution up to Full HD (1920x1080) 60Hz
Audio	• Realtek ALC269 Audio Codec • 1 x MIC IN • 1 x Line out
LAN	• 1 x 2.5 Gigabit LAN 10/100/1000/2500 Mb/s (Intel® I226V)
Panel I/O	• 1 x DC Jack (Compatible with the 19V power adapter)* * Please use 120W power adapter for 65W CPU and 90W power adapter for 35W CPU. • 1 x HDMI Port • 2 x DisplayPort 1.4 • 1 x Thunderbolt™ 4 Type-C Port (40 Gb/s for USB4 protocol; 40Gb/s for Thunderbolt protocol)* * Supports USB PD 3.0 up to 5V@3A (15W) charging • 2 x USB 3.2 Gen2 Type-A Port (10 Gb/s) (Supports ESD Protection) • 2 x USB 3.2 Gen1 Type-A Port (Supports ESD Protection) • 1 x RJ-45 LAN Port
Storage	• 2 x SATA3 6.0 Gb/s Connectors • 1 x M.2 Socket (M2_1, Key M), supports type 2280 PCIe Gen5x4 (128 Gb/s) mode* • 1 x M.2 Socket (M2_3, Key M), supports type 2280 PCIe Gen4x4 (64 Gb/s) mode* * Supports Intel® OptaneTM Technology ** Supports Intel® Volume Management Device (VMD) * Supports NVMe SSD as boot disks
RAID	• Supports RAID 0 and RAID 1 for SATA storage devices
TPM	• SPI TPM 2.0 IC

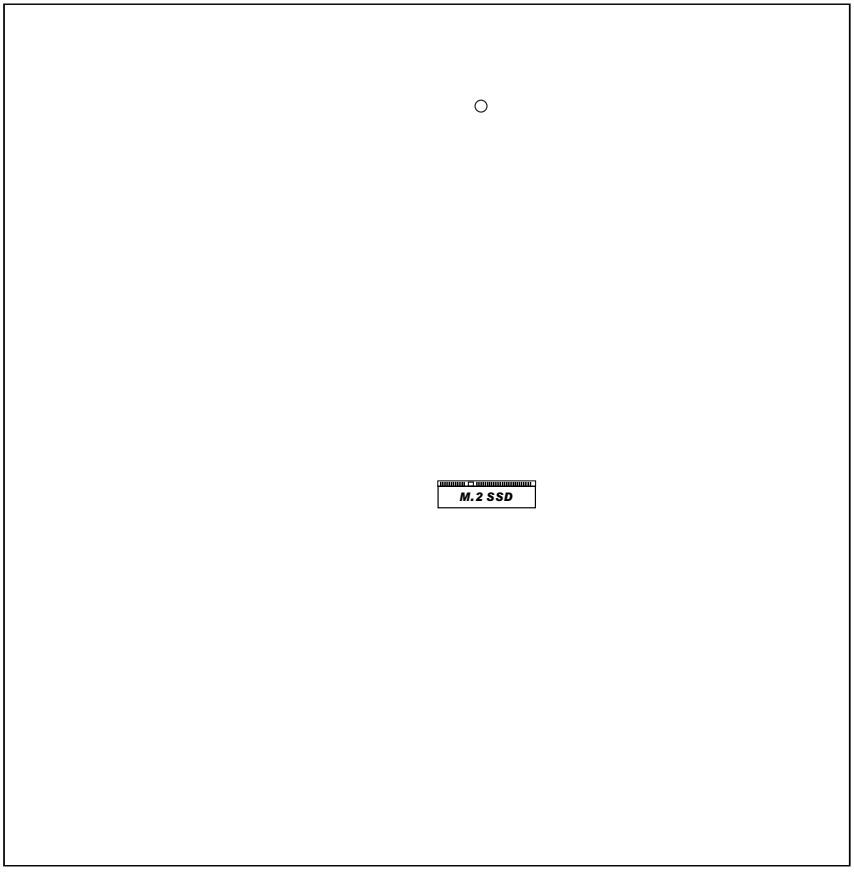
Connector	• 1 x COM Port Header • 1 x Chassis Intrusion Header • 1 x Panel Voltage Selection Header • 1 x Backlight Inverter Voltage Selection Header • 1 x FPD Brightness Header • 1 x Panel Off Header • 1 x LVDS Connector • 1 x CPU Fan Connector (4-pin) * The CPU Fan Connector supports the CPU fan of maximum 1A (12W) fan power. • 1 x Chassis Fan Connector (4-pin) * The Chassis Fan supports the Chassis fan of maximum 1A (12W) fan power. • 1 x 4 pin 19V Power Connector (2-Pin) • 1 x Front Panel Audio Connector • 1 x Internal Speaker Header (4-Pin) • 1 x Digital MIC Header • 2 x SATA Power Connectors • 1 x USB 2.0 Header (Supports 2 USB 2.0 ports) (Supports ESD Protection) • 1 x USB 3.2 Gen1 Header (Supports 2 USB 3.2 Gen1 ports) (Supports ESD Protection)
BIOS Feature	• AMI UEFI Legal BIOS with multilingual GUI support • ACPI 6.0 Compliant wake up events • SMBIOS 2.7 Support
Hardware Monitor	• CPU/Chassis Temperature Sensing • CPU/Chassis Fan Tachometer • CPU/Chassis Quiet Fan (Auto adjust chassis fan speed by CPU temperature) • CPU/Chassis Fan Multi-Speed Control • CASE OPEN detection • Voltage monitoring: +12V, +5V, +3.3V, CPU Vcore
OS	• Microsoft® Windows® 10 64-bit / 11 64-bit
Certifications	• FCC, CE • ErP/EuP ready (ErP/EuP ready power supply is required)

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.

1.3 Motherboard Layout

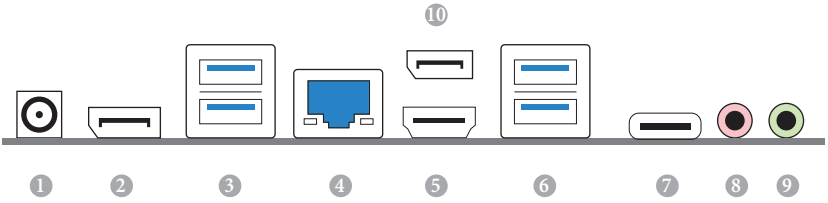


Back Side View



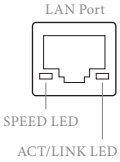
No.	Description
1	4 pin 19V Power Connector (ATX_PWR1)
2	COM Port Header (COM1)
3	USB 3.2 Gen1 Header (USB3_1_2)
4	SATA Power Connector (SATAPWR1)
5	SATA3 Connector (SATA_2)
6	SATA Power Connector (SATAPWR2)
7	SATA3 Connector (SATA_1)
8	USB 2.0 Header (USB2_1_2)
9	FPD Brightness Header (BLT_VOL1)
10	Panel Voltage Selection Header (PNL_PWR1)
11	Panel Off Header (PANEL_SW1)
12	Backlight Inverter Voltage Selection Header (BKT_PWR1)
13	Chassis Fan Connector (CHA_FAN1)
14	LVDS Connector (LVDS1)
15	2 x 260-pin DDR5 SO-DIMM Slots (DDR5_A1, DDR5_B1)
16	CPU Fan Connector (CPU_FAN1)
17	Chassis Intrusion Header (CI1)
18	Digital MIC Header (DMIC1)
19	System Panel Header (PANEL1)
20	Internal Speaker Header (SPK_OUT1)
21	Front Panel Audio Header (HD_AUDIO1)
22	Clear CMOS Jumper (CLR_MOS1)

1.4 I/O Panel



No.	Description	No.	Description
1	DC Jack**	6	USB 3.2 Gen2 Type-A Ports (USB3_3_4)
2	DisplayPort 1.4	7	Thunderbolt™ 4 Type-C Port
3	USB 3.2 Gen1 Type-A Ports (USB3_5_6)	8	Microphone (Pink)
4	2.5G LAN RJ-45 Port*	9	Line out (Lime)
5	HDMI 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/1Gbps connection
On	Link	Green	2.5Gbps connection

*** Please use a 19V power adapter for the DC jack. This jack accepts dual barrel plugs with an inner diameter of 2.5 mm and an outer diameter of 5.5 mm, where the inner contact is +19 (±10%) DC and the shell is (centre positive).*

DELTA	*DELTA-ADP-150TB-150W/19V*
HP	*HP-TBC-BA52-150W/19V*
FSP	*FSP-FSP150-ABAN1-150W/19V*
DELL	*FA130PE1-00-130W/19.5V*
DELL	*LA90PE0-01-90W/19.5V*
DELTA	*DELTA-ADP-180TB-180W/19V*
FSP	*FSP-FSP180-ABBN3-180W/19V*

This motherboard is available with support for either 4-pin ATX 19V power or DC-in power supplies. Please do not use two kinds of power supplies at the same time! Doing so may damage the motherboard components and devices. When you use the DC-in power adapter, please use the onboard SATA power connector to get the power for HDDs.

Chapter 2 Installation

This is a Thin Mini-ITX form factor motherboard. Before you install the motherboard, study the configuration of your chassis to ensure that the motherboard fits into it.

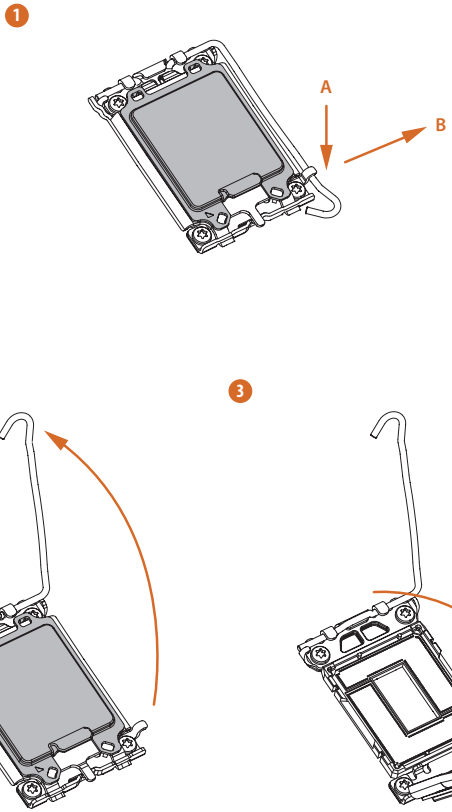
Pre-installation Precautions

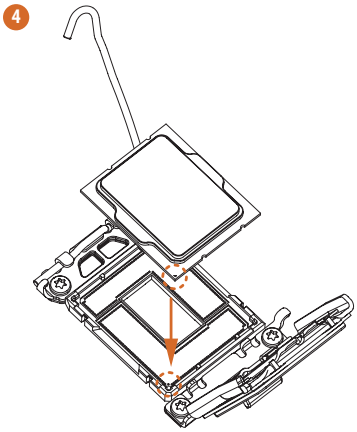
Take note of the following precautions before you install motherboard components or change any motherboard settings.

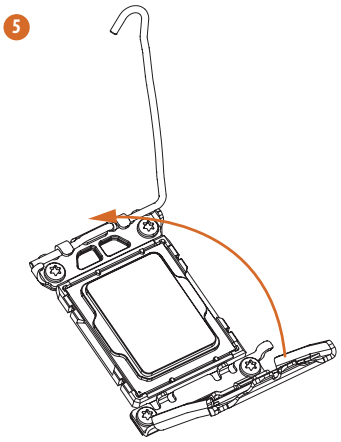
- Make sure to unplug the power cord before installing or removing the motherboard components. Failure to do so may cause physical injuries and damages to motherboard components.
- In order to avoid damage from static electricity to the motherboard's components, NEVER place your motherboard directly 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.

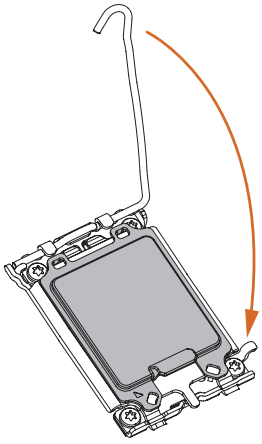
2.1 Installing the CPU

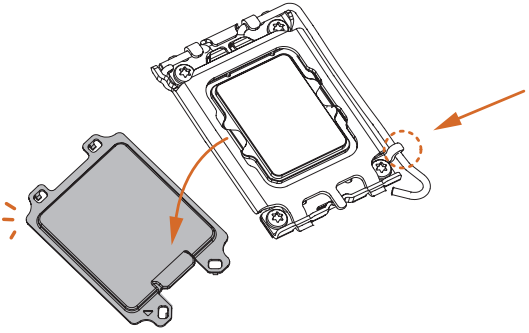
1. *Before you insert the 1700-Pin CPU into the socket, please check if the **PnP cap** is on the socket, if the CPU surface is unclean, or if there are any **bent pins** in the socket. Do not force to insert the CPU into the socket if above situation is found. Otherwise, the CPU will be seriously damaged.*
2. *Unplug all power cables before installing the CPU.*





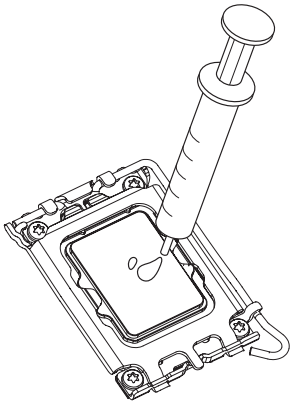




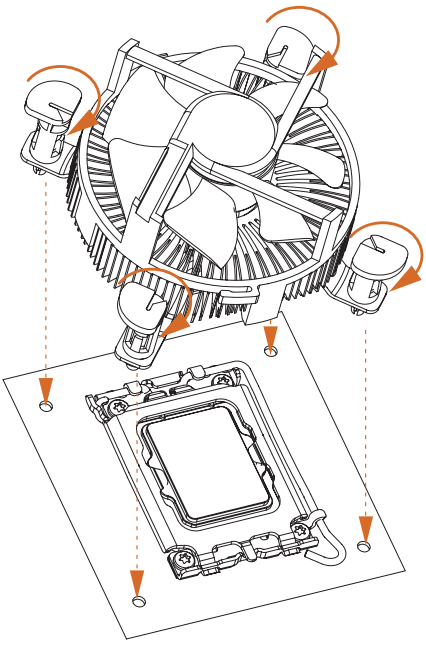


Please save and replace the cover if the processor is removed. The cover must be placed if you wish to return the motherboard for after service.

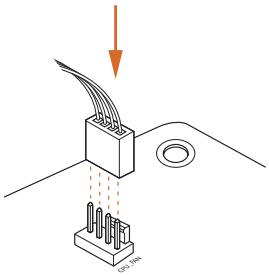
2.2 Installing the CPU Fan and Heatsink



1



2



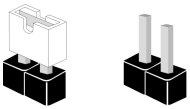
2.3 Installing Memory Modules (SO-DIMM)

This motherboard provides two 260-pin DDR5 (Double Data Rate 5) SO-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) DDR5 SO-DIMM pairs.*
2. *It is unable to activate Dual Channel Memory Technology with only one memory module installed.*
3. *It is not allowed to install a DDR, DDR2 , DDR3 or DDR4 memory module into a DDR5 slot; otherwise, this motherboard and SO-DIMM may be damaged.*
4. *The SO-DIMM only fits in one correct orientation. It will cause permanent damage to the motherboard and the SO-DIMM if you force the SO-DIMM into the slot at incorrect orientation.*

2.4 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".



Clear CMOS Jumper (CLRCMOS1) (see p.6, No. 22)	2-pin Jumper	Short: Clear CMOS Open: Default

CLRCMOS1 allows you to clear the data in CMOS. The data in CMOS includes system setup information such as system password, date, time, and system setup parameters. To clear and reset the system parameters to default setup, please turn off the computer and unplug the power cord, then use a jumper cap to short the pins on CLRCMOS1 for 3 seconds. Please remember to remove the jumper cap after clearing the CMOS. 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.

If you clear the CMOS, the case open may be detected. Please adjust the BIOS option "Clear Status" to clear the record of previous chassis intrusion status.

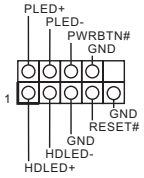
Backlight Inverter Voltage Selection Header (3-pin BKT_PWR1) (see p.6, No. 12)		1-2 : +19V 2-3 : +12V
Panel Voltage Selection Header (5-pin PNL_PWR1) (see p.6, No. 10)		1-2 : +3V 2-3 : +5V 4-5 : +12V

Warning:
If selected Backlight Power or Panel Power is higher than panel's spec, it may damage the panel.

2.5 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.6, No. 19)



Connect the power button, reset button 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 Button):
Connect to the power button on the chassis front panel. You may configure the way to turn off your system using the power button.

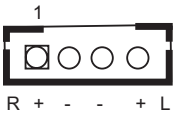
RESET (Reset Button):
Connect to the reset button on the chassis front panel. Press the reset button to restart the computer if the computer freezes and fails to perform a normal restart.

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 button, reset button, 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.

Internal Speaker Header
(4-pin SPK_OUT1)
(see p.6, No. 20)

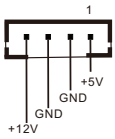


Please connect the chassis speaker to this header.

Serial ATA3 Connectors
(SATA_1:
see p.6, No. 7)
(SATA_2:
see p.6, No. 5)

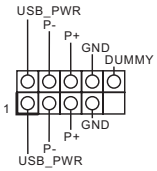
These two SATA3 connectors support SATA data cable for internal storage devices with up to 6.0 Gb/s data transfer rate.

SATA Power Connectors
(SATAPWR1:
see p.6, No. 4)
(SATAPWR2:
see p.6, No. 6)



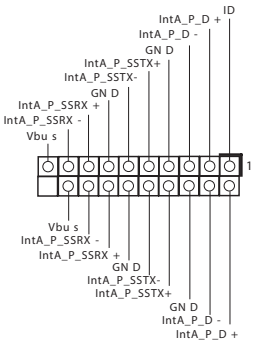
Please connect SATA power cables.

USB 2.0 Header
(9-pin USB2_1_2)
(see p.6, No. 8)



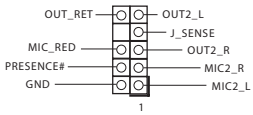
There is one USB 2.0 header on this motherboard. Each USB 2.0 header can support two ports.

USB 3.2 Gen1 Header
(19-pin USB3_1_2)
(see p.6, No. 3)



There is one USB 3.2 Gen1 header on this motherboard. This USB 3.2 Gen1 header can support two ports.

Front Panel Audio Header
(9-pin HD_AUDIO1)
(see p.6, No. 21)

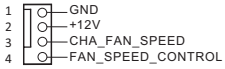


This header is for connecting audio devices to the front audio panel.

English

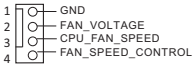
1. *High Definition Audio supports Jack Sensing, but the panel wire on the chassis must support HDA to function correctly. Please follow the instructions in our manual and chassis manual to install your system.*
2. *If you use an AC'97 audio panel, please install it to the front panel audio header by 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 Fan Connector
(4-pin CHA_FAN1)
(see p.6, No. 13)



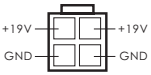
Please connect fan cable to the fan connector and match the black wire to the ground pin.

CPU Fan Connector
(4-pin CPU_FAN1)
(see p.6, No. 16)



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.

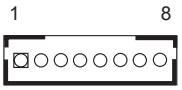
ATX 19V Power Connector
(4-pin ATX_PWR1
(see p.6, No. 1)



Please connect an ATX 19V power supply to this connector.
*The power supply plug fits into this connector in only one orientation.

English

FPD Brightness Header
(8-pin BLT_VOL1)
(see p.6, No. 9)

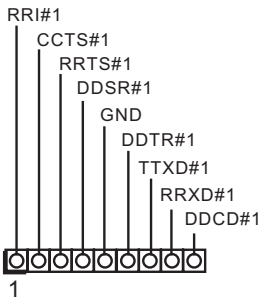


1: BKLT_PWR
2: BKLT_PWR
3: BKLT_EN
4: BKLT_PWM
5: GND
6: GND
7: Brightness_Up
8: Brightness_Down

LVDS Panel Connector
(30-pin LVDS1)
(see p.6, No. 14)

PIN	Signal Name	PIN	Signal Name
1	LCD_VDD	**16**	CLK1P
2	LCD_VDD	**17**	A3N
3	LCD_VDD	**18**	A3P
4	GND	**19**	A4N
5	N/A	**20**	A4P
6	GND	**21**	A5N
7	A0N	**22**	A5P
8	A0P	**23**	A6N
9	A1N	**24**	A6P
10	A1P	**25**	GND
11	A2N	**26**	GND
12	A2P	**27**	CLK2N
13	GND	**28**	CLK2P
14	GND	**29**	A7N
15	CLK1N	**30**	A7P

Serial Port Header
(9-pin COM1)
(see p.6, No. 2)



This COM1 header supports a serial port module.

English

Chassis Intrusion Header (2-pin CI1) (see p.6, No. 17)		This motherboard supports CASE OPEN detection feature that detects if the chassis cove has been removed. This feature requires a chassis with chassis intrusion detection design.
Panel Off Header (2-pin PANEL_SW1) (see p.6, No. 11)		This header can be used to connect a switch that turns on/ off the LVDS panel display's backlight.
Digital MIC Header (5-pin DMIC1) (see p.6, No. 18)		1: +5V 2: No pin 3: DMIC_CLK 4: GND 5: DMIC_DATA 6: +3.3V

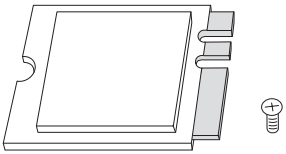
2.6 M.2 WiFi/BT Module and Intel® CNVi (Integrated WiFi/BT) Installation Guide

The M.2 is a small size and versatile card edge connector that aims to replace mPCIe and mSATA. The M.2 Socket (Key E) supports type 2230 WiFi/BT module and Intel® CNVi (Integrated WiFi/BT).

* The M.2 socket does not support SATA M.2 SSDs.

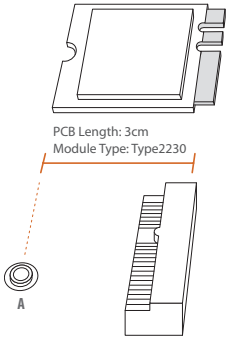
Before you install Intel® Integrated Connectivity (CNVi) module, be sure to turn off the AC power.

Installing the WiFi/BT module or Intel® CNVi (Integrated WiFi/BT)



Step 1

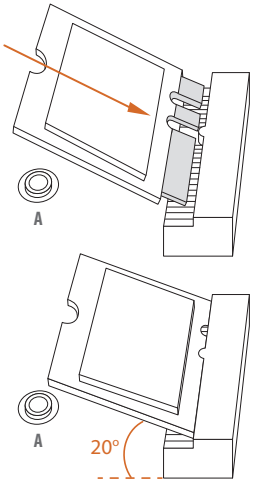
Prepare a type 2230 WiFi/BT module or Intel® CNVi (Integrated WiFi/BT) and the screw.



Step 2

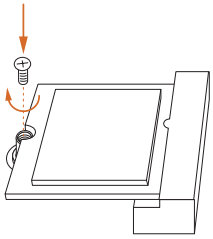
Find the nut location to be used.

English



Step 3

Gently insert the WiFi/BT module or Intel® CNVi (Integrated WiFi/BT) into the M.2 slot. Please be aware that the module only fits in one orientation.



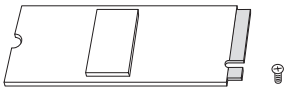
Step 4

Tighten the screw with a screwdriver to secure the module into place. Please do not overtighten the screw as this might damage the module.

2.7 M.2 SSD Module Installation Guide (M2_1)

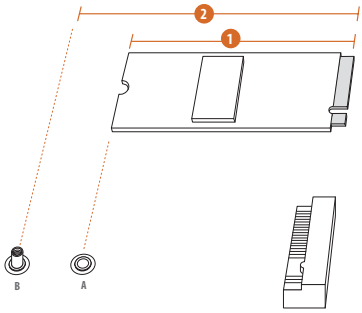
The M.2 is a small size and versatile card edge connector that aims to replace mPCIe and mSATA. The M.2 Socket (M2_1, Key M) supports type 2260/2280 PCIe Gen5x4 (128 Gb/s) mode.

Installing the M.2 SSD Module



Step 1

Prepare a M.2 SSD module and the screw.



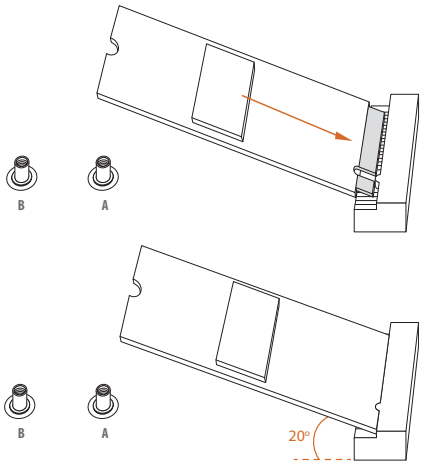
Step 2

Depending on the PCB type and length of your M.2 SSD module, find the corresponding nut location to be used.

No.	1	2
Nut Location	A	B
PCB Length	6cm	8cm
Module Type	Type 2260	Type 2280

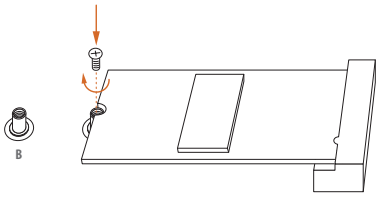
Step 3

Peel off the yellow protective film on the nut A. Prepare the M.2 standoff that comes with the package, and hand tighten it into the nut A. Skip Step 3 if your M.2 SSD module is Type 2280.



Step 4

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



Step 5

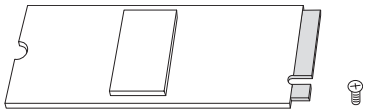
Tighten the screw with a screwdriver to secure the module into place. Please do not overtighten the screw as this might damage the module.

For the latest updates of M.2 SSD support list, please visit our website for details: http://www.asrock.com

2.8 M.2 SSD Module Installation Guide (M2_3)

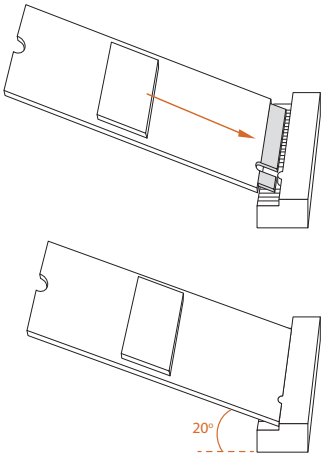
The M.2 is a small size and versatile card edge connector that aims to replace mPCIe and mSATA. The M.2 Socket (M2_3, Key M) supports type 2280 PCIe Gen4x4 (64 Gb/s) mode.

Installing the M.2 SSD Module



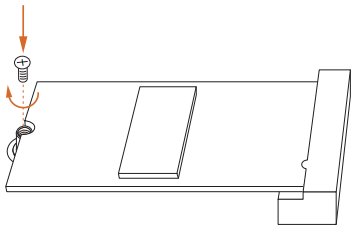
Step 1

Prepare a M.2 SSD module and the screw.



Step 2

Gently insert the M.2 SSD module into the M.2 slot. Please be aware that the M.2 SSD module only fits in one orientation.



Step 3

Tighten the screw with a screwdriver to secure the module into place. Please do not overtighten the screw as this might damage the module.

For the latest updates of M.2 SSD support list, please visit our website for details: http://www.asrock.com

M.2 SSD Support List

Vendor	Interface	P/N
ADATA	PCIe	ASX6000PNP
ADATA	PCIe	ALEG-850
ADATA	PCIe	ALEG-710-1TCS
ADATA	PCIe	ALEG-750-1TCS
ADATA	PCIe	ALEG-850-1TCS
ADATA	PCIe	ALEG-960-1TCS
ADATA	PCIe	SLEG-700G-512GCS-S48
ADATA	PCIe	SLEG-800G-1000GCS-S38
ADATA	PCIe	ALEG-850L-500GCS
ADATA	PCIe	ALEG-700-512GCS
AGI	PCIe	AGI1T0G44AI828
AGI	PCIe	AGI1T0GIMAI298
AGI	PCIe	AGI1T0G43AI818
Apacer	PCIe	AP512GPB4480
CFD	PCIe	M2O512GBE1NTQ
CFD	PCIe	M2O1000GBG2NEQ
CFD	PCIe	M2O1000GBG2NEQ
CFD	PCIe	CFE27TE802000G
CORSAIR	PCIe	CSSD-F2000GBMP700PHX
CRUCIAL	PCIe	CT1000P3SSD8
CRUCIAL	PCIe	CT1000P3PSSD8
CRUCIAL	PCIe	CT2000P310SSD8
Gen4 x4	PCIe	MICRON
Kingston	PCIe	SNV2S/1000G
KIOXIA	PCIe	KWG10ZNV1T00
KIOXIA	PCIe	LSD10Z002TG8
KIOXIA	PCIe	KWG60ZNV2T00
KLEVV	PCIe	K01TBM2SP0-C91
KLEVV	PCIe	K01TBM2SP0-C93
Lexar	PCIe	LNM760X002T-RNNNG
Lexar	PCIe	LNM790X001T-RNNNG
Lexar	PCIe	LNM790X002T-RNNNC
Lexar	PCIe	LNQ700X002R-HNNNG
Lexar	PCIe	LNM109P002T-RNNNG
Lexar	PCIe	LNQ780X002T-RNNNG
Lexar	PCIe	LNM990X002T-RNNNG
MICRON	PCIe	MTFDKBA2T0TFH
MICRON	PCIe	MTFDKBA1T0TFK-1BC1AABYY
MICRON	PCIe	MTFDKBA2T0QFM
Nextorage	PCIe	NE1N2TB/GHNEL
Nextorage	PCIe	NN4LE-2TB2CN/GNE SYM
PNY	PCIe	M280CS2340-2TB-TB

PNY	PCIe	M280CS2150-2TB-TB
Predator	PCIe	GM7000-1TB
Samsung	PCIe	MZ-V9P1T0
Samsung	PCIe	MZVL22T0HBLB-00B00
Samsung	PCIe	MZ-V9E1T0
Samsung	PCIe	MZ-VAP1T0
Seagate	PCIe	ZP2000GV30012
Seagate	PCIe	ZP1000GM30004
Seagate	PCIe	ZP4000GM30063
SK hynix	PCIe	SHPP41-1000GM-2
SK Hynix	PCIe	HFS256GEJ9X101N
SOLIDIGM	PCIe	SSDPFKNU020TZ
SOLIDIGM	PCIe	SSDPFKKW020X7
SOLIDIGM	PCIe	SBDPFKBP020T
TEAM	PCIe	TM8FP7001T0C311
TEAM	PCIe	TM8FPD002T0C101
TEAM	PCIe	TM8FPK001T0C101
TEAM	PCIe	TM8FF1001T0C129
TEAM	PCIe	TM8FPW008T0C101
TEAM	PCIe	TM8FFD004T0C101
TEAM	PCIe	TM8FFE004T0C129
TEAM	PCIe	M8FFH004T0C129
WD	PCIe	WDS100T1X0E-00AFY0
WD	PCIe	SDBPNPZ-1T00
WD	PCIe	SDDPNPF-2T00
WD	PCIe	SDDPNQE-2T00
WD	PCIe	WDS200T3B0E
WD	PCIe	WDS400T4B0E-00BKY0
WD	PCIe	WDS200T4X0E-00CJA0
WD	PCIe	WDS200T1X0M-00CMT0
ZHITAI	PCIe	ZTSSCB0D32MC

For the latest updates of M.2_SSD (NFGG) module support list, please visit our website for details.

Chapter 3 Auto Driver Installer

After you install the Windows OS and boot into the system, a notification will pop up to help you to install and update required drivers.

Version 1.0
Published September 2025

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This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) this device may not cause harmful interference, and

(2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Button Battery Safety Notice

⚠WARNING

- **INGESTION HAZARD:** This product contains a button cell or coin battery.
- **DEATH** or serious injury can occur if ingested.
- A swallowed button cell or coin battery can cause **Internal Chemical Burns** in as little as **2 hours**.
- **KEEP** new and used batteries **OUT OF REACH of CHILDREN**
- **Seek immediate medical attention** if a battery is suspected to be swallowed or inserted inside any part of the body.

- Remove and immediately recycle or dispose of used batteries according to local regulations and keep away from children. Do NOT dispose of batteries in household trash or incinerate.
- Even used batteries may cause severe injury or death.
- Call a local poison control center for treatment information.
- Battery type: CR2032
- Battery voltage: 3V
- Non-rechargeable batteries are not to be recharged.
- Do not force discharge, recharge, disassemble, heat above (manufacturer's specified temperature rating) or incinerate. Doing so may result in injury due to venting, leakage or explosion resulting in chemical burns.
- This product contains an irreplaceable battery.
- This icon indicates that a swallowed button battery can cause serious injury or death. Please keep batteries out of sight or reach of children.

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"

CALIFORNIA, USA ONLY

WARNING: Risk of cancer and reproductive harm from exposure to Lead. See www.P65Warnings.ca.gov

CE Conformity

CE

ASRock INC. hereby declares that this device is in compliance with the essential requirements and other relevant provisions of related Directives. Full text of EU declaration of conformity is available at: http://www.asrock.com

ASRock follows the green design concept to design and manufacture our products, and makes sure that each stage of the product life cycle of ASRock product is in line with global environmental regulations. In addition, ASRock disclose the relevant information based on regulation requirements.

Please refer to https://www.asrock.com/general/about.asp?cat=Responsibility for information disclosure based on regulation requirements ASRock is complied with.

UKCA Conformity

UK
CA

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Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage caused by our goods. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure. If you require assistance please call ASRock Tel : +886-2-28965588 ext.123 (Standard International call charges apply)

WARNING

THIS PRODUCT CONTAINS A BUTTON BATTERY
If swallowed, a button battery can cause serious injury or death.
Please keep batteries out of sight or reach of children.

Proper Disposal

DO NOT throw the motherboard in municipal waste. This product has been designed to enable proper reuse of parts and recycling. This symbol of the crossed out wheeled bin indicates that the product (electrical and electronic equipment) should not be placed in municipal waste. Check local regulations for disposal of electronic products.

Class B ITE

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Per FCC Part 2 Section 2.1077(a)

Product Name : Motherboard

Model Number : B860TM-ITX/TPM/TB4/DP

Conforms to the following specifications:

☒ FCC Part 15, Subpart B, Unintentional Radiators

Supplementary Information:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

EU Declaration of Conformity

For the following equipment:

Motherboard

(Product Name)

B860TM-ITX/TPM/TB4/DP

(Model Designation / Trade Name)

EMC Directive – 2014/30/EU

EN 55032: 2015 / A11: 2020, EN 55035: 2017 / A11: 2020

EN IEC 61000-3-2: 2019, EN 61000-3-3: 2013

RoHS directive - 2011/65/EU, and (EU) 2015/863

EN IEC63000:2018

CE (EU conformity marking)

UK
CA

EU Declaration of Conformity

Product:

Product	Motherboard
Model	B860TM-ITX/TPM/TB4/DP

Authorized Representative (UK-GB):

Name:	Gary Tsui
Address:	Bijsterhuizen 11-11, 6546 AR Nijmegen,The Netherlands
Contact person:	Gary Tsui

This declaration is issued under the sole responsibility of the mentioned Manufacturer. The subject equipment under declaration is in conformity with the UK-GB Regulation(s) below:

The Electromagnetic Compatibility Regulations 2016 (S.I. 2016/1091)

EN 55032: 2015 / A11: 2020, EN 55035: 2017 / A11: 2020, EN IEC 61000-3-2: 2019, EN 61000-3-3: 2013

The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012

2015/863/EU, EN IEC 63000:2018

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