



P/N: 15G067051xxxAK V1.0

H810TM-ITX Quick Installation Guide

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

1. Unplug the power cord from the wall socket before touching any components.
2. To avoid damaging the motherboard's components due to static electricity, NEVER place your motherboard directly on the carpet or the like. Also remember to use a grounded wrist strap or touch a safety grounded object before you handle the components.
3. Hold components by the edges and do not touch the ICs.
4. Whenever you uninstall any component, place it on a grounded anti-static pad or in the bag that comes with the component.
5. When placing screws into the screw holes to secure the motherboard to the chassis, please do not over-tighten the screws! Doing so may damage the motherboard.

1 Package Contents

- H810TM-ITX Motherboard (Thin Mini-ITX Form Factor)
- H810TM-ITX 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)

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2 Specifications

Form Factor

- Thin Mini-ITX Form Factor

Dimension

- 6.7" x 6.7"

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® H810

Memory

- Supports 2 x DDR5 SO-DIMM Slots, Max. 128GB

Expansion Slot

- 1 x M.2 Socket (Key E), supports type 2230 WiFi/BT module and Intel® CNVi (Integrated WiFi/BT)

Audio

- Realtek ALC269

LAN

- Intel® I226V

Storage

- 1x M.2 (2280) PCIe Gen5 x4
- 1x M.2 (2280) PCIe Gen4 x4
- 2 x SATA 6Gb

Rear USB

- 2 x USB 3.2 Gen2 Type-A
- 2 x USB 2.0

Video Output

- Four graphics output options: 2 x HDMI, 1 x DisplayPort 1.4, 1 x LVDS

Onboard header

- 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)
- 1 x Chassis Fan Connector (4-pin)
- 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
- 1 x USB 3.2 Gen1 Header

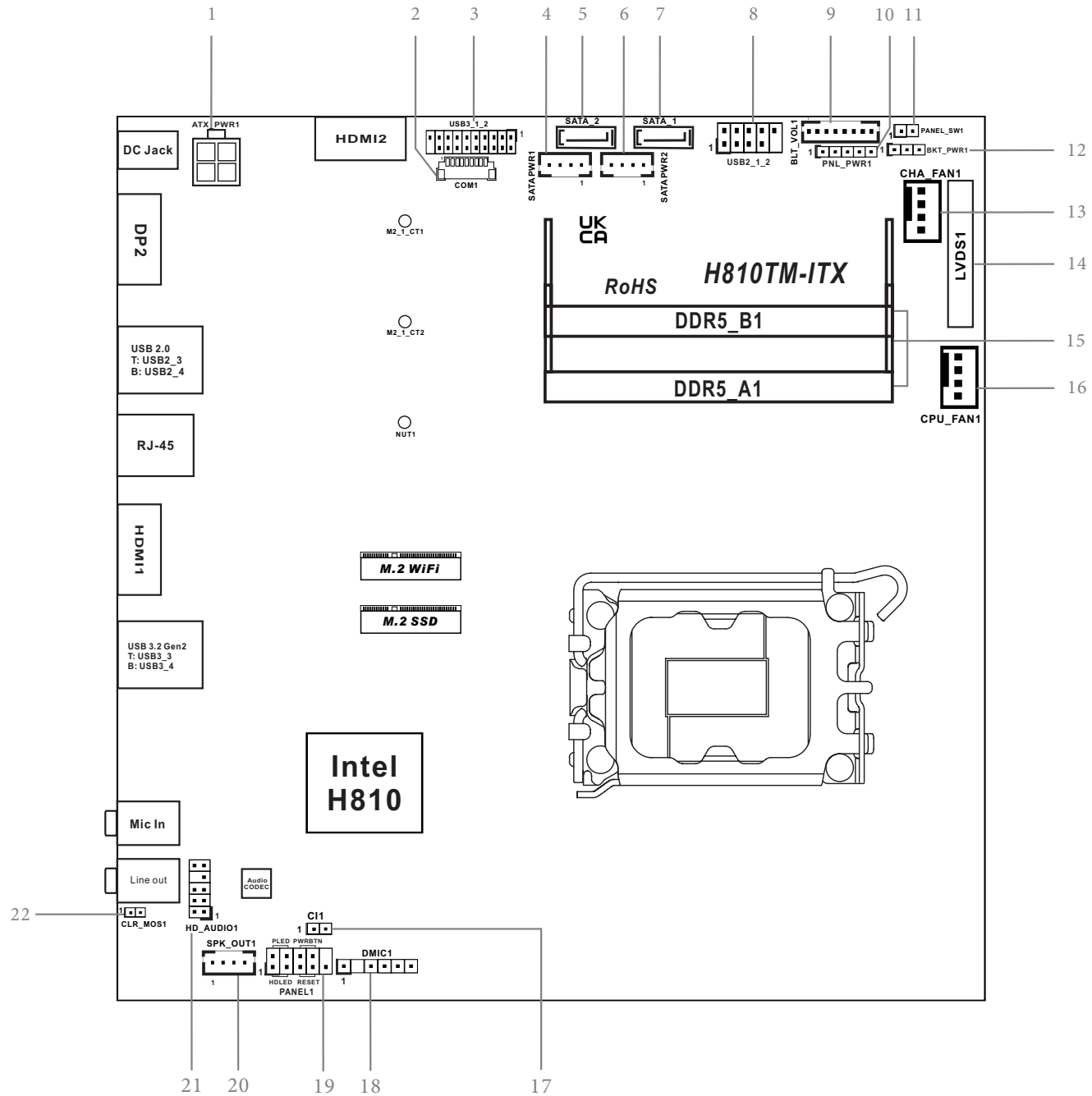
Power

- 1 x DC Jack (Supports 19V DC Power Adapters)

Certifications

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

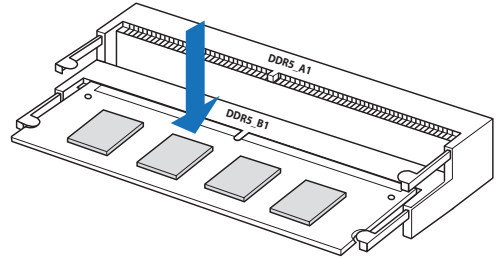
3 Motherboard Layout



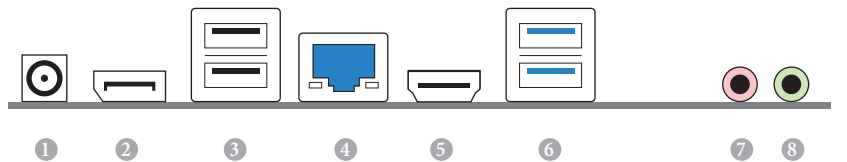
No. Description

- 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 (CII)
- 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)

4 SO-DIMM



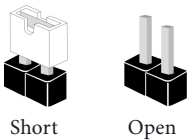
5 I/O Panel



No.	Description	No.	Description
1	DC Jack*	5	HDMI Port
2	DisplayPort 1.4	6	USB 3.2 Gen2 Type-A Ports (USB3_3_4)
3	USB 2.0 Ports (USB2_3_4)	7	Microphone (Pink)
4	2.5G LAN RJ-45 Port	8	Line out (Lime)

* 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).

6 Jumper Cap On/Off

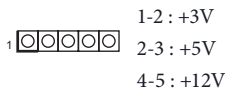


The illustration shows how jumpers are setup. When the jumper cap is placed on the pins, the jumper is “Short”. If no jumper cap is placed on the pins, the jumper is “Open”.

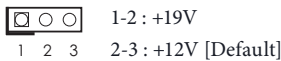
22 - Clear CMOS Jumper

CLRMOS1 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 the pins on CLRMOS1 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. Please remember to remove the jumper cap after clearing the CMOS.

10 - Panel Voltage Selection Header



12- Backlight Inverter Voltage Selection Header



Warning:

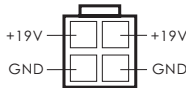
If selected Backlight Power or Panel Power is higher than panel's spec, it may damage the panel.

7 Onboard Headers and Connectors

1 - ATX 19V Power Connector

Please connect an ATX 19V power supply to this connector.

*The power supply plug fits into this connector in only one orientation.



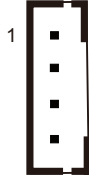
5 / 7 - Serial ATA3 Connectors

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

4 / 6 - SATA Power Connectors

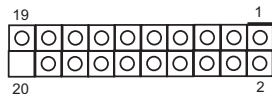
Please connect a SATA power cables.

PIN	Signal Name
1	+5V
2	GND
3	GND
4	+12V



3 - USB 3.2 Gen1 Header

There is one USB 3.2 Gen1 header on this motherboard.

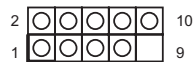


PIN	Signal Name	PIN	Signal Name	PIN	Signal Name	PIN	Signal Name
1	ID	6	GND	11	IntA_P_SSTX-	16	IntA_P_SSRX -
2	IntA_P_D +	7	GND	12	GND	17	IntA_P_SSRX -
3	IntA_P_D +	8	IntA_P_SSTX+	13	GND	18	Vbus
4	IntA_P_D -	9	IntA_P_SSTX+	14	IntA_P_SSRX +	19	Vbus
5	IntA_P_D -	10	IntA_P_SSTX-	15	IntA_P_SSRX +	20	N/A

8 - USB 2.0 Header

There is one USB 2.0 header on this motherboard.

PIN	Signal Name	PIN	Signal Name
1	USB_PWR	6	P+
2	USB_PWR	7	GND
3	P-	8	GND
4	P-	9	N/A
5	P+	10	DUMMY



9 - FPD Brightness Header

This is a header for backlight control interface.

PIN	Signal Name	PIN	Signal Name
1	BKLT_PWR	5	GND
2	BKLT_PWR	6	GND
3	BKLT_EN	7	Brightness_Up
4	BKLT_PWM	8	Brightness_Down



11 - Panel Off Header

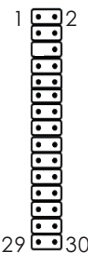
This header can be used to connect a switch that turns on/off the LVDS panel display's backlight.



14 - LVDS Panel Connector

This is a LVDS Panel Connector.

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



16 - CPU Fan Connector

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.

PIN	Signal Name
1	GND
2	FAN_VOLTAGE
3	CPU_FAN_SPEED
4	FAN_SPEED_CONTROL

13 - Chassis Fan Connector

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

PIN	Signal Name
1	GND
2	+12V
3	CPU_FAN_SPEED
4	FAN_SPEED_CONTROL

17 - Chassis Intrusion Header

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.

PIN	Signal Name
1	SIGNAL
2	GND

18 - Digital MIC Header

This header can be used to connect a digital MIC.



PIN	Signal Name
1	+5V
2	N/A
3	DMIC_CLK
4	GND
5	DMIC_DATA
6	+3.3V

19 - System Panel Header

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):

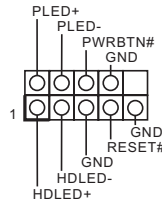
Connect to the reset button on the chassis front panel. Press the reset button to restart the computer if the computer freezes and fails to perform a normal restart.

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).

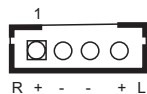
HDLED (Hard Drive Activity LED):

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.



20- Internal Speaker Header

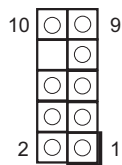
Please connect the chassis speaker to this header.



21 - Front Panel Audio Header

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

PIN	Signal Name	PIN	Signal Name
1	MIC2_L	6	MIC_RED
2	GND	7	J_SENSE
3	MIC2_R	8	N/A
4	PRESENCE#	9	OUT2_L
5	OUT2_R	10	OUT_RET



2 - Serial Port Header

This COM1 header supports a serial port module.

PIN	Signal Name	PIN	Signal Name
1	RRI#1	6	DDTR#1
2	CCTS#1	7	TTXD#1
3	RRTS#1	8	RRXD#1
4	DDSR#1	9	DDCD#1
5	GND		

8 UEFI Setup

You may run the UEFI SETUP UTILITY by pressing <F2> or right after you power on the computer, otherwise, the Power-On-Self-Test (POST) will continue with its test routines. If you wish to enter the UEFI SETUP UTILITY after POST, restart the system by pressing <Ctl> + <Alt> + <Delete>, or by pressing the reset button on the system chassis. You may also restart by turning the system off and then back on.

Main Screen

Processor Type : Intel(R) Core(TM) Ultra 5 245	CPU Temperature : 41.0°C	M/B Temperature : 29.5°C
Processor Speed : 4800MHz	CPU Voltage : 0.704V	CPU Input Voltage : 1.248V
Cache Size : 24MB	CPU P-Core Ratio : 51x (5080)	E-Core Ratio : 45x (4480)
Total Memory : 32GB with 128MB Shared Memory	Computer BIOS : 99.79MHz	Sec. BIOS : 99.79MHz
DDR5_A1 : Transcend 16GB (DDR5-6400)	Memory Frequency : 6400 Mhz	Capacity : 32 GB
DDR5_B1 : Transcend 16GB (DDR5-6400)		
VCCSP1 : 1.8V		

Advanced Screen

CPU Configuration	Temperature & Voltage	
Chipset Configuration	CPU Temperature	M/B Temperature
Storage Configuration	41.0°C	30.0°C
NVMe Configuration	CPU Voltage	CPU Input Voltage
Super IO Configuration	0.704V	1.244V
ACPI Configuration	CPU	
USB Configuration	P-Core Ratio	E-Core Ratio
Trusted Computing	51x (5080)	45x (4480)
Network Stack Configuration	Complete BIOS	Sec. BIOS
Intel(R) Rapid Storage Technology	99.79MHz	99.79MHz
	Memory	Capacity
	6400 MHz	32 GB