



P/N: 15G067029000AK V1.0

# A320TM-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

- A320TM-ITX Motherboard (Thin Mini-ITX Form Factor)
- A320TM-ITX Quick Installation Guide (Optional)
- 1 x Thin-Mini ITX I/O Shield (Optional)
- 1 x Mini ITX I/O Shield (Optional)
- 1 x Serial ATA (SATA) Data Cable (Optional)
- 1 x SATA Power Cable (Optional)
- 2 x Screws for M.2 Sockets (M2\*2) (Optional)

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## 2 Motherboard Layout

**Form Factor** • Thin Mini-ITX Form Factor

**Dimension** • 6.7" x 6.7"

**CPU**

- Supports AMD Socket AM4 A-Series APUs (Bristol Ridge) and Ryzen Series CPUs (Raven Ridge)
- Digi Power design
- 5 Power Phase design
- Supports CPU up to 65W
- Supports LGA115x CPU Cooler

**Chipset** • AMD Promontory A320

**Memory** • Supports 2 x DDR4 SO-DIMM Slots, Max. 64GB

**Expansion Slot** • 1 x M.2 Socket (Key E), supports type 2230 WiFi/BT module

**Audio** • Realtek ALC233

**LAN** • Realtek RTL8111GR / RTL8111H

**Storage**

- 1x Ultra M.2 (2260/2280) PCIe Gen3 x4 / SATA 6Gb
- 1 x SATA 6Gb

**Rear USB** • 4 x USB 3.1 Gen1

**Video Output**

- HDMI1 (Rear)
- HDMI2 (Side)
- 1 x LVDS

**Onboard header**

- 1 x Panel Power Jumper
- 1 x Backlight Power Jumper
- Panel (LVDS) Disable Jumper

	Short [Default]	Open
Panel (LVDS) as video output	X	O (Priority)
HDMI1 and HDMI2 as video output	O	O (After entering OS)

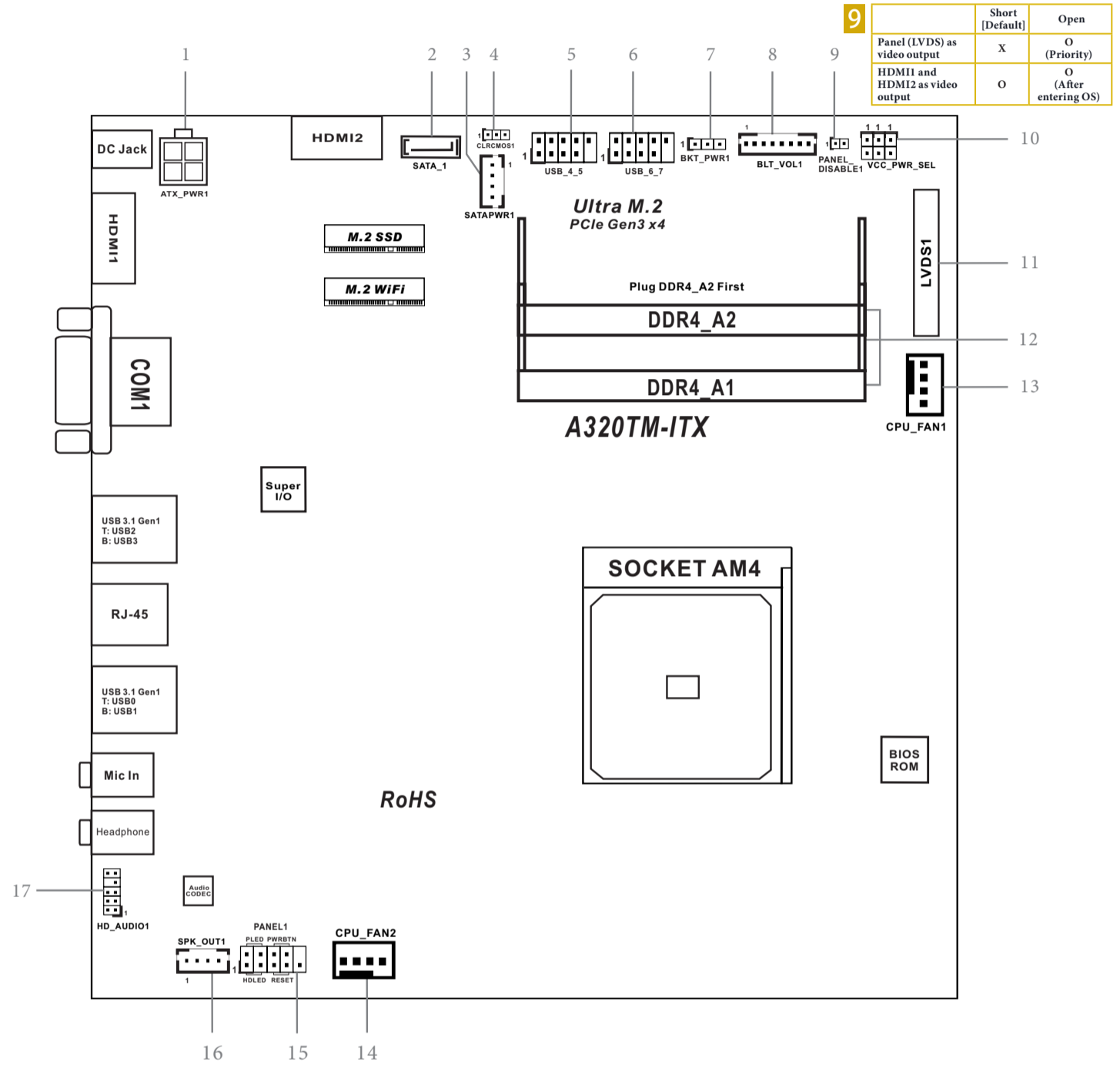
- 1 x Backlight Control Header
- 1 x LVDS Connector
- 2 x CPU Fan Connectors (4-pin)
  - \* The CPU Fan Connectors support the CPU fan of maximum 1A (12W) fan power.
- 1 x 4 pin 19V Power Connector
- 1 x Front Panel Audio Connector
- 1 x Internal Speaker Header (4-Pin)
- 1 x SATA Power Connector
- 2 x USB 2.0 Headers (Support 4 USB 2.0 ports) (Supports ESD Protection)

**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



1 4 pin 19V Power Connector (ATX\_PWR1)

2 SATA3 Connector (SATA\_1)

3 SATA Power Connector (SATAPWR1)

4 Clear CMOS Jumper (CLRCMOS1)

5 USB 3.0 Header (USB3\_4\_5)

6 USB 3.0 Header (USB3\_6\_7)

7 Backlight Power Jumper (BKT\_PWR1)

8 Backlight Control Header (BLT\_VOL1)

Panel (LVDS) Disable Jumper (PANEL\_DISABLE1)

	Short [Default]	Open
Panel (LVDS) as video output	X	O (Priority)
HDMI1 and HDMI2 as video output	O	O (After entering OS)

10 Panel Power Jumper (VCC\_PWR\_SEL)

11 LVDS Connector (LVDS1)

12 2 x 260-pin DDR4 SO-DIMM Slots (DDR4\_A1, DDR4\_A2)

13 CPU Fan Connector (CPU\_FAN1)

14 CPU Fan Connector (CPU\_FAN2)

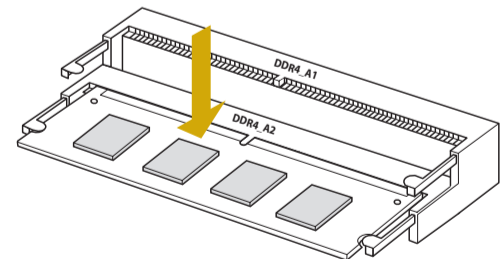
15 System Panel Header (PANEL1)

16 Internal Speaker Header (SPK\_OUT1)

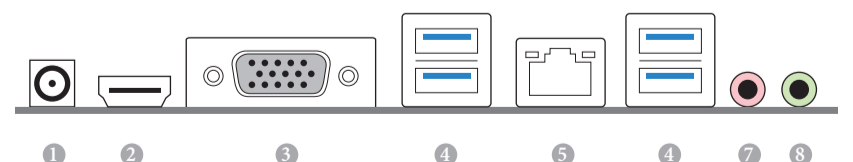
17 Front Panel Audio Header (HD\_AUDIO1)

## 4 SO-DIMM

Be sure to install the memory module into the **DDR4\_A2** slot as first priority; otherwise, the system may not boot up properly or may operate incorrectly.

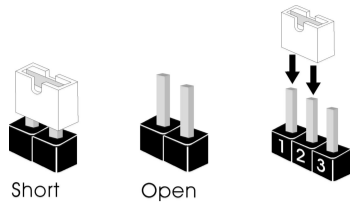


## 5 I/O Panel



No.	Description	No.	Description
1	DC Jack (19V)	5	LAN RJ-45 Port
2	HDMI Port (HDMI1)	6	USB 3.1 Gen1 Port (USB3_01)
3	COM Port	7	Microphone (Pink)
4	USB 3.1 Gen1 Port (USB3_23)	8	Front Speaker (Lime)

## 6 Jumper Cap On/Off



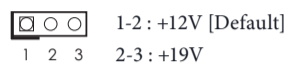
When the jumper cap is placed on the pins, the jumper is "Short". If no jumper cap is placed on the pins, the jumper is "Open".

The illustration shows a 3-pin jumper whose pin1 and pin2 are "Short" when a jumper cap is placed on these 2 pins.

### 4 - Clear CMOS Jumper

CLRCMOS1 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 CLRCMOS1 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.

### 7- Backlight Power Jumper



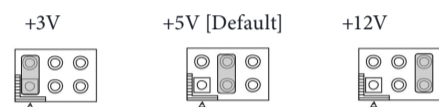
**Warning:**  
If selected Backlight Power or Panel Power is higher than panel's spec, it may damage the panel.

### 9 - Panel (LVDS) Disable Jumper



	Short [Default]	Open
Panel (LVDS) as video output	X	O (Priority)
HDMI1 and HDMI2 as video output	O	O (After entering OS)

### 10 - VCC Power Selection Jumper



## 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.



### 2 - Serial ATA3 Connector

This SATA3 connector supports SATA data cable for internal storage devices with up to 6.0 Gb/s data transfer rate.

### 3 - SATA Power Connector

Please connect a SATA power cable.

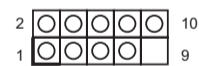
PIN	Signal Name
1	+5V
2	GND
3	GND
4	+12V



### 5 / 6 - USB 2.0 Headers

There are two USB 2.0 headers on this motherboard. Each USB 2.0 header can support two ports.

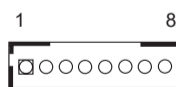
PIN	Signal Name	PIN	Signal Name
1	USB_PWR	6	P+
2	USB_PWR	7	GND
3	P-	8	GND
4	P-	9	N/A
5	P+	10	DUMMY



### 8 - Backlight Control Header

This is a header for backlight control interface.

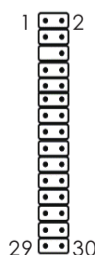
PIN	Signal Name	PIN	Signal Name
1	BKLT_PWR	5	GND
2	BKLT_PWR	6	GND
3	BKLT_EN	7	Brightness_Up
4	BKLT_PWM	8	Brightness_Down



### 11 - 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



### 13 / 14 - CPU Fan Connectors

This motherboard provides two 4-Pin CPU fan (Quiet Fan) connectors. 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

### 15 - 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):

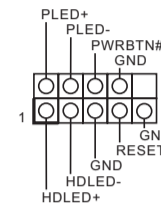
Connect to the reset button on the chassis front panel. Press the reset button to restart the computer if the computer freezes and fails to perform a normal restart.

#### 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).

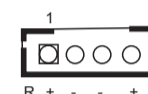
#### HDLED (Hard Drive Activity LED):

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.



### 16- Internal Speaker Header

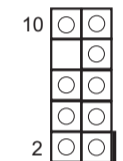
Please connect the chassis speaker to this header.



### 17 - 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



## 8 UEFI Setup

### UEFI SETUP UTILITY

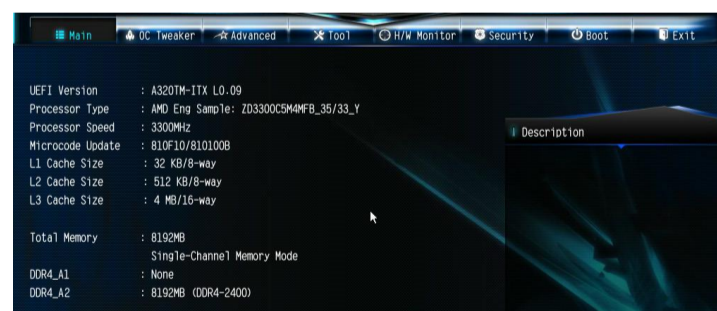
You may run the UEFI SETUP UTILITY by pressing <F2> or <Del> right after you power on the computer, otherwise, the Power-On-Self-Test (POST) will continue with its test routines. If you wish to enter the UEFI SETUP UTILITY after POST, restart the system by pressing <Ctl> + <Alt> + <Delete>, or by pressing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



Because the UEFI software is constantly being updated, the following UEFI setup screens and descriptions are for reference purpose only, and they may not exactly match what you see on your screen.

#### Main Screen

When you enter the UEFI SETUP UTILITY, the Main screen will appear and display the system overview.



#### Advanced Screen

In this section, you may set the configurations for the following items: CPU Configuration, North Bridge Configuration, South Bridge Configuration, Storage Configuration, Super IO Configuration, ACPI Configuration, Trusted Computing, AMD CBS and AMD PBS.

