



IMB-A1000

User Manual

Version 1.0

Published September 2019

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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.

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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”

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1. Introduction

Thank you for purchasing ASRockInd **IMB-A1000** motherboard, a reliable motherboard produced under ASRockInd's consistently stringent quality control. It delivers excellent performance with robust design conforming to ASRockInd's commitment to quality and endurance.

In this manual, chapter 1 and 2 contains the introduction of the motherboard and step-by-step hardware installation guide. Chapter 3 and 4 contains the configuration guide of UEFI setup and information of the Support CD.



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 ASRockInd website without further notice. You may find the latest CPU support lists on ASRockInd website as well.

ASRockInd website <https://www.asrockind.com/>

If you require technical support related to this motherboard, please visit our website for specific information about the model you are using.

<https://www.asrockind.com/support/index.asp>

1.1 Package Contents

ASRockInd **IMB-A1000** Motherboard

(Mini-ITX Form Factor: 6.7-in x 6.7-in, 17.0 cm x 17.0 cm)

ASRockInd **IMB-A1000** Quick Installation Guide

ASRockInd **IMB-A1000** Support CD

1 x I/O Panel Shield

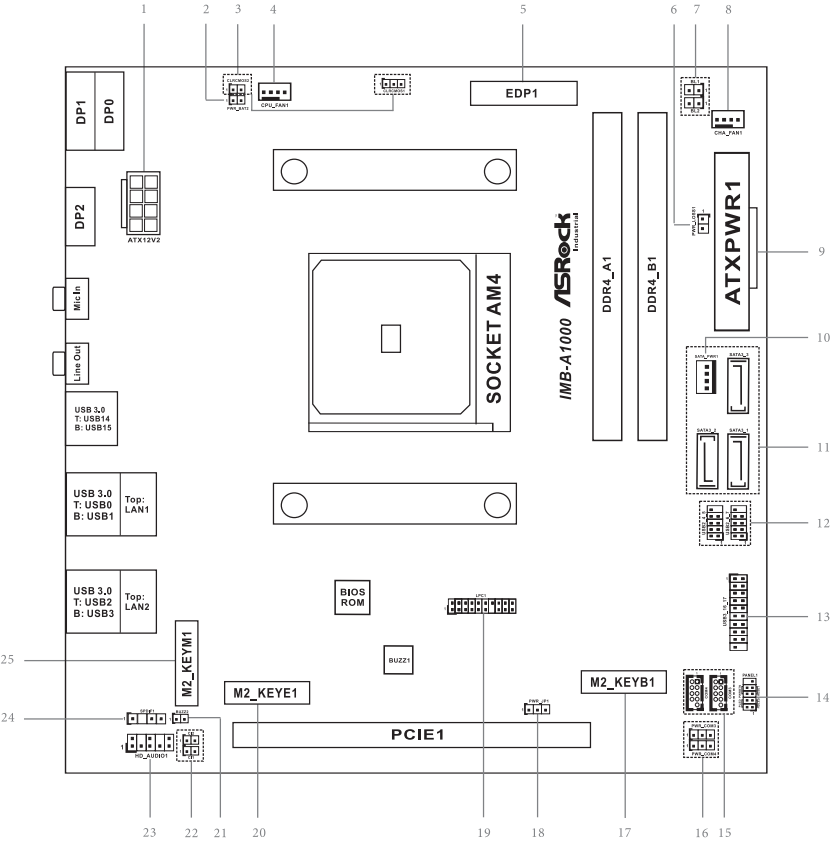
1.2 Specifications

Form Factor	Dimensions	Mini-ITX (6.7-in x 6.7-in)
Processor System	CPU	AMD Ryzen Series-Raven Ridge (2200G, QC, 3.5GHz, 65W) (2400G, QC, 3.6GHz, 65W) AMD Ryzen 3000-Matisse CPU, sku TBD, up to TDP 95W
	Chipset	AMD Promontory B450
Expansion Slot	PCIe	1 x PCIe x16 (PCIe GEN III x8 for Raven Ridge CPU) (PCIe GEN IV x16 for Matisse CPU)
	M.2	1 x Key M (2242/2260/2280) with PCIe x4 and SATA3 for SSD 1 x Key M (2242/2280) with PCIe x1 for SSD 1 x Key B (3042) with PCIe x1, USB 2.0 and SIM Socket for 4G 1 x Key E (2230) with PCIe x1 and USB2.0 for Wireless
Memory	Technology	Raven Ridge: Dual Channel DDR4 2933 MHz Matisse: Dual Channel DDR4 3200 MHz
	Max.	32 GB
	Socket	2 x SO-DIMM
	ECC Support	N/A
Graphics	Controller	AMD Radeon™ Vega Series Graphics in Ryzen Series APU (For Raven Ridge CPU)
	VGA	N/A
	DVI	N/A
	LVDS	N/A
	HDMI	N/A
	DisplayPort	DisplayPort 1.2 with max resolution up to 4096x2160@60Hz
	MultiDisplay	Triple Display
	eDP	eDP 1.4 (share with DP2) with max resolution up to 4096x2160@60Hz
Ethernet	Ethernet	10/100/1000 Mbps
	Controller	2 x Intel® I210-AT

Rear I/O	VGA	N/A
	DVI	N/A
	HDMI	N/A
	DisplayPort	3
	Ethernet	2
	USB	Matisse/Renoir/Vermeer/Cezanne: 6 x USB 3.1 Gen2 Raven Ridge: 2 x USB 3.1 Gen2, 4 x USB 3.1 Gen1
	Audio	1 (Mic-in, Line-out)
	Serial	N/A
	PS2	N/A
Internal Connector	USB	2 x USB 3.1 Gen1 (1 x USB 3.1 header) 4 x USB 2.0 (2 x 2.54 pitch header)
	LVDS/inverter	N/A
	eDP	1 (share with DP2) * Only supports 3V LCD_VCC and 12V Backlight power to eDP panel
	VGA	N/A
	Serial	2 x COM(RS-232/422/485)
	SATA	3 x SATA3
	Parallel	N/A
	GPIO	N/A
	SATA PWR Output	1
	Speaker Header	1
Watchdog Timer	TPM	1 x Onboard TPM 2.0 IC
	Output	From Super I/O to drag RESETCON#
Power Requirements	Interval	256 Segments, 0, 1, 2, ...255sec
	Input PWR	ATX PWR 24+8-pin
Environment	Power On	AT/ATX Supported AT: Directly PWR on as Power input ready Environment ATX: Press Button to PWR on after Power input ready
	Operating Temperature	0°C – 60°C
	Storage Temperature	-40°C – 85°C

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

1.3 Motherboard Layout

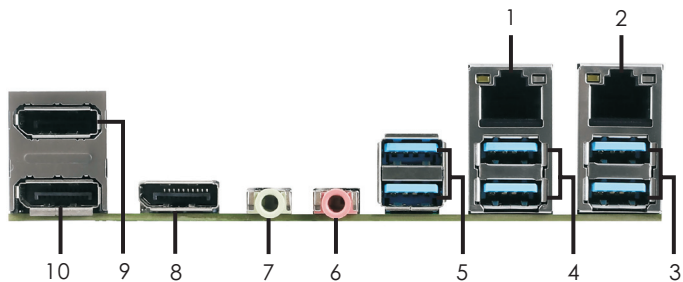


-
- 1 : ATX 12V Power Connector
 - 2 : PWR_BAT2
 - 3 : Clear CMOS Headers (CLRMOS1, CLRMOS2)
 - 4 : CPU FAN Connector (+12V)
 - 5 : eDP Connector
 - 6 : PWR LOSS Header (PWR_LOSS1)
 - 7 : BL1, BL2
 - 8 : Chassis FAN Connector (+12V)
 - 9 : 24-pin ATX Power Input Connector
 - 10 : SATA Power Output Connector
 - 11 : SATA3 Connectors (SATA3_1~3)
 - 12 : USB 2.0 Headers (USB2_4_5, USB2_6_7)
 - 13 : USB 3.0 Header (USB3_16_17)
 - 14 : System Panel Header
 - 15 : COM Port Headers (COM3, 4) (RS232)
 - 16 : COM Port PWR Setting Jumpers
 - PWR_COM3 (For COM Port3)
 - PWR_COM4 (For COM Port4)
 - 17 : M.2 Key-B Socket (M2_KEYB1)
 - 18 : ATX/AT Mode Select (PWR_JP1)
 - 19 : LPC Header
 - 20 : M.2 Key-E Socket (M2_KEYE1)
 - 21 : Buzzer (BUZZ2)
 - 22 : Chassis Intrusion Headers (CI1, CI2)
 - 23 : Front Panel Audio Header
 - 24 : SPDIF Header
 - 25 : M.2 Key-M Socket (M2_KEYM1)

Back Side :

- M.2 Key-M Socket (M2_KEYM2)
- SIM Card Socket (SIM1)

1.4 I/O Panel



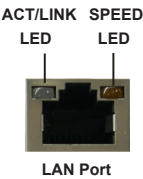
- | | | | |
|---|----------------------------|----|----------------------|
| 1 | LAN RJ-45 Port (LAN1)* | 6 | Microphone (Pink) |
| 2 | LAN RJ-45 Port (LAN2)* | 7 | Front Speaker (Lime) |
| 3 | USB 3.0 Ports (USB3_2_3) | 8 | DisplayPort (DP2) |
| 4 | USB 3.0 Ports (USB3_0_1) | 9 | DisplayPort (DP0) |
| 5 | USB 3.0 Ports (USB3_14_15) | 10 | DisplayPort (DP1) |

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

LAN Port LED Indications

Activity/Link LED	
Status	Description
Off	No Link
Blinking	Data Activity
On	Link

SPEED LED	
Status	Description
Off	10Mbps connection
Orange	100Mbps connection
Green	1Gbps connection



Chapter 2: Installation

This is a 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.

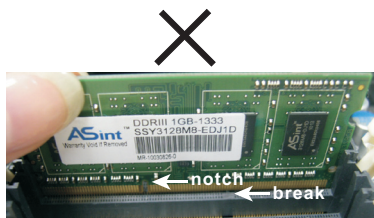
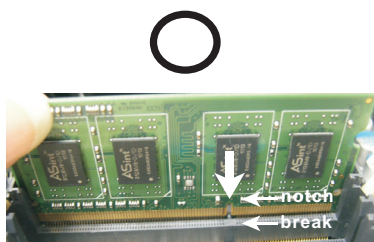
1. Make sure to unplug the power cord before installing or removing the motherboard. Failure to do so may cause physical injuries to you and damages to motherboard components.
2. In order to avoid damage from static electricity to the motherboard's components, **NEVER** place your motherboard directly on a carpet. Also remember to use a grounded wrist strap or touch a safety grounded object before you handle the components.
3. Hold components by the edges and do not touch the ICs.
4. Whenever you uninstall any components, place them on a grounded anti-static pad or in the bag that comes with the components.
5. 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 Memory Modules (DIMM)

This motherboard provides two DDR4 (Double Data Rate 4) SO-DIMM slots.

Step 1. Unlock a DIMM slot by pressing the retaining clips outward.

Step 2. Align a DIMM on the slot such that the notch on the DIMM matches the break on the slot.



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.

Step 3. Firmly insert the DIMM into the slot until the retaining clips at both ends fully snap back in place and the DIMM is properly seated.

2.2 Expansion Slots (PCI Express and M.2 Slots)

There is 1 PCI Express slot and 4 M.2 sockets on this motherboard.

PCIe Slot: 1 x PCIe x16 slot (PCIe GEN III x8 for Raven Ridge CPU) (PCIe GEN IV x16 for Matisse CPU).

M.2 Sockets:

1 x Key M (2242/2260/2280) with PCIe x4 and SATA3 for SSD.

1 x Key M (2242/2280) with PCIe x1 for SSD.

1 x Key B (3042) with PCIe x1, USB 2.0 and SIM Socket for 4G.

1 x Key E (2230) with PCIe x1 and USB2.0 for Wireless.

M.2 Socket Pin Definition:

M.2 Key-B Socket (M2_KEYB1)

Pin	Signal	Signal	Pin
1	NA	+3.3V	2
3	GND	+3.3V	4
5	GND	Full_Card_Power_off	6
7	USB_D+	W_DISABLE	8
9	USB_D-	WWAN_LED#	10
11	GND		
21	GND	NA	20
23	NA	NA	22
25	NA	NA	24
27	GND	NA	26
29	USB3_RX+	NA	28
31	USB3_RX+	UIM_RESET	30
33	GND	UIM_CLK	32
35	USB3_TX+	UIM_DATA	34
37	USB3_TX+	UIM_PWR	36
39	GND	NA	38
41	PERIOD	NA	40
43	PERIOD	NA	42
45	GND	NA	44
47	PERIOD	NA	46
49	PERIOD	NA	48
51	GND	PERIOD	50
53	PERIOD	CLKREQ#	52
55	PERIOD	WAKE#	54
57	GND	NA	56
59	NA	NA	58
61	NA	NA	60
63	NA	NA	62
65	NA	NA	64
67	NA	NA	66
69	NA	NA	68
71	GND	+3.3V	70
73	GND	+3.3V	72
75	NA	+3.3V	74

M.2 Key-E Socket (M2_KEYE1)

Pin	Signal	Signal	Pin
1	GND	+3.3V	2
3	USB_D+	+3.3V	4
5	USB_D-	NA	6
7	GND	NA	8
9	CNV_WGR_D1+	CNV_R#_RESET	10
11	CNV_WGR_D1+	NA	12
13	GND	MODEM_CLKREQ	14
15	CNV_WGR_D0+	NA	16
17	CNV_WGR_D0+	GND	18
19	GND	NA	20
21	CNV_WGR_CLK	CNV_BRI_RSP	22
23	CNV_WGR_CLK		
33	GND	CNV_BGI_DT	32
35	PERIOD	CNV_RG_RSP	34
37	PERIOD	CNV_BRI_DT	36
39	GND	NA	38
41	PERIOD	NA	40
43	PERIOD	NA	42
45	GND	NA	44
47	PERIOD	NA	46
49	PERIOD	NA	48
51	GND	SUSCLK	50
53	CLKREQ#	PERIOD	52
55	WAKE#	W_DISABLE1#	54
57	GND	W_DISABLE2#	56
59	CNV_WT_D1-	SMB_DATA	58
61	CNV_WT_D1+	SMB_CLK	60
63	GND	NA	62
65	CNV_WT_D0-	CLKIN_XTAL_LCP	64
67	CNV_WT_D0+	NA	66
69	GND	NA	68
71	CNV_WT_CLK	NA	70
73	CNV_WT_CLK	+3.3V	72
75	GND	+3.3V	74

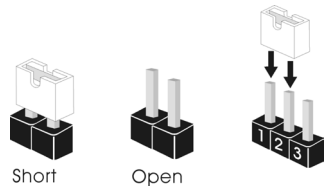
M.2 Key-M Socket (M2_KEYM1) M.2 Key-M Socket (M2_KEYM2)



Pin	Signal	Signal	Pin
1	GND	+3.3V	2
3	GND	+3.3V	4
5	PERn3	NA	6
7	PERp3	NA	8
9	GND	SATA_LED	10
11	PETn3	+3.3V	12
13	PETp3	+3.3V	14
15	GND	+3.3V	16
17	PERn2	+3.3V	18
19	PERp2	NA	20
21	GND	NA	22
23	PETn2	NA	24
25	PETp2	NA	26
27	GND	NA	28
29	PERn1	NA	30
31	PERp1	NA	32
33	GND	NA	34
35	PETn1	NA	36
37	PETp1	DEVSLP	38
39	GND	SMB_CLK	40
41	PERn0/SATA-B+	SMB_DATA	42
43	PERp0/SATA-B-	NA	44
45	GND	NA	46
47	PETn0/SATA-A-	NA	48
49	PETp0/SATA-A+	PERST#	50
51	GND	CLKREQ#	52
53	PEFCLKp	WAKE#	54
55	PEFCLKp	NA	56
57	GND	NA	58
67	NA	NA	68
69	PEDET	+3.3V	70
71	GND	+3.3V	72
73	GND	+3.3V	74
75	GND		

Pin	Signal	Signal	Pin
1	GND	+3.3V	2
3	GND	+3.3V	4
5	PERn3	NA	6
7	PERp3	NA	8
9	GND	SATA_LED	10
11	PETn3	+3.3V	12
13	PETp3	+3.3V	14
15	GND	+3.3V	16
17	PERn2	+3.3V	18
19	PERp2	NA	20
21	GND	NA	22
23	PETn2	NA	24
25	PETp2	NA	26
27	GND	NA	28
29	PERn1	NA	30
31	PERp1	NA	32
33	GND	NA	34
35	PETn1	NA	36
37	PETp1	DEVSLP	38
39	GND	SMB_CLK	40
41	PERn0/SATA-B+	SMB_DATA	42
43	PERp0/SATA-B-	NA	44
45	GND	NA	46
47	PETn0/SATA-A-	NA	48
49	PETp0/SATA-A+	PERST#	50
51	GND	CLKREQ#	52
53	PEFCLKp	WAKE#	54
55	PEFCLKp	NA	56
57	GND	NA	58
67	NA	NA	68
69	PEDET	+3.3V	70
71	GND	+3.3V	72
73	GND	+3.3V	74
75	GND		

2.3 Jumpers Setup


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



Jumper	Setting	Description
Clear CMOS Jumpers (3-pin CLRCMOS1) (see p.7, No. 3)	<div>1_2  Default</div> <div>2_3  Clear CMOS</div>	CLRCMOS1 : 1-2 : Normal 2-3 : Clear CMOS

Note: 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, user default profile and MAC address will be cleared only if the CMOS battery is removed.

(2-pin CLRCMOS2) (see p.7, No. 3)	<div>1</div>	CLRCMOS2 : Open : Normal Short : Auto Clear CMOS (Power Off)
--------------------------------------	---	--

BL1, BL2 (2-pin BL1) (see p.7 No. 7)	<div>1</div>	Open : Protect LCD_BLT_VCC (+12V) Short : No Protect LCD_BLT_VCC (+12V)
(2-pin BL2) (see p.7 No. 7)		Open : Protect LCD_VCC (+3V) Short : No Protect LCD_VCC (+3V)

PWR_BAT2 (2-pin PWR_BAT2) (see p.7, No. 2)	<div>1</div>	Open : Normal Close : Charge Battery
--	---	---

Chassis Intrusion Headers

(2-pin CI1: see p.7, No. 22)

(2-pin CI2: see p.7, No. 22)



This motherboard supports CASE OPEN detection feature that detects if the chassis cover has been removed. This feature requires a chassis with chassis intrusion detection design.

CI1 :

Close : Active Case Open

Open : Normal

CI2 :

Close : Normal

Open : Active Case Open

ATX/AT Mode Select

(3-pin PWR_JP1)

(see p.7, No. 18)



1-2 : AT Mode

2-3 : ATX Mode

COM Port PWR Setting Jumpers

(3-pin PWR_COM3 (For COM Port3))

(3-pin PWR_COM4 (For COM Port4))

(see p.7, No. 16)



1-2 : +5V

2-3 : +12V

PWR LOSS Header

(2-pin PWR_LOSS1)

(see p.7, No. 6)



Open : no Power Loss

Short : Power Loss

2.4 Onboard Headers and Connectors

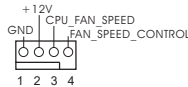


Onboard headers and connectors are NOT jumpers. Do NOT place jumper caps over these headers and connectors. Placing jumper caps over the headers and connectors will cause permanent damage of the motherboard!

CPU Fan Connector

(4-pin CPU_FAN1)

(see p.7 No. 4)



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

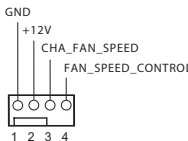


Though this motherboard provides 4-Pin CPU fan (Quiet Fan) support, the 3-Pin CPU fan still can work successfully even with the fan speed control function. If you plan to connect the 3-Pin CPU fan to the CPU fan connector on this motherboard, please connect it to Pin 1-3.

Chassis Fan Connector

(4-pin CHA_FAN1)

(see p.7 No. 8)



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

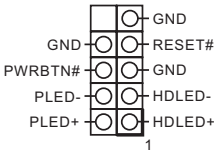


Though this motherboard provides 4-Pin chassis fan (Quiet Fan) support, the 3-Pin chassis fan still can work successfully even with the fan speed control function. If you plan to connect the 3-Pin chassis fan to the chassis fan connector on this motherboard, please connect it to Pin 1-3.

System Panel Header

(9-pin PANEL1)

(see p.7, No. 14)



This header accommodates several system front panel functions.



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).

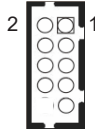
HDLED (Hard Drive Activity LED):

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.

COM Port Headers (RS232)

(9-pin COM3, 4: see p.7, No. 15)



PIN	Signal Name	PIN	Signal Name
2	RRXD	1	DDCD#
4	DDTR#	3	TTXD
6	DDSR#	5	GND
8	CCTS#	7	RRTS#
10	N/A	9	+5V

Buzzer

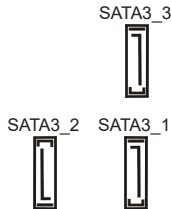
(2-pin BUZZ2)

(see p.7 No. 21)



SATA3 Connectors

(SATA3_1~3: see p.7, No. 11)

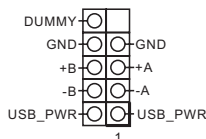


These three Serial ATA3 (SATA3) connectors support SATA data cables for internal storage devices. The current SATA3 interface allows up to 6.0 Gb/s data transfer rate.

USB 2.0 Headers

(9-pin USB2_4_5, USB2_6_7)

(see p.7, No. 12)

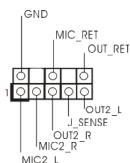


There are two headers on this motherboard.

Front Panel Audio Header

(9-pin HD_AUDIO1)

(see p.7 No. 23)



This is an interface for front panel audio cable that allows convenient connection and control of audio devices.



1. High Definition Audio supports Jack Sensing, but the panel wire on the chassis must support HDA to function correctly. Please follow the instruction in our manual and chassis manual to install your system.
2. If you use AC'97 audio panel, please install it to the front panel audio header as below:

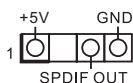
- A. Connect Mic_IN (MIC) to MIC2_L.
- B. Connect Audio_R (RIN) to OUT2_R and Audio_L (LIN) to OUT2_L.
- C. Connect Ground (GND) to Ground (GND).
- D. MIC_RET and OUT_RET are for HD audio panel only. You don't need to connect them for AC'97 audio panel.
- E. To activate the front mic.

Go to the "FrontMic" Tab in the Realtek Control panel. Adjust "Recording Volume".

SPDIF Header

(3-pin SPDIF1)

(see p.7, No. 24)

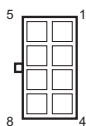


SPDIF header, providing SPDIF audio output to HDMI VGA card, allows the system to connect HDMI Digital TV/ projector/LCD devices. Please connect the SPDIF connector of HDMI VGA card to this header.

ATX 12V Power Connector

(8-pin ATX12V1)

(see p.7 No. 1)

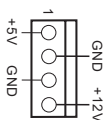


This motherboard provides an 8-pin ATX 12V power connector. To use a 4-pin ATX power supply, please plug it along Pin 1 and Pin 5.

SATA Power Connector

(SATA_PWR1)

(see p.7 No. 10)



Please connect a SATA power cable to this connector.

eDP Connector

(40-pin EDP1)

(see p.7 No. 5)



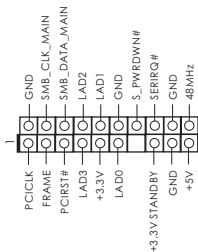
1

Pin	Signal Name
1	NA
2	GND
3	eDP_TX43_CON
4	eDP_TX3_CON
5	GND
6	eDP_TX2_CON
7	eDP_TX2_CON
8	GND
9	eDP_TX1_CON
10	eDP_TX1_CON
11	GND
12	eDP_TX0_CON
13	eDP_TX0_CON
14	GND
15	eDP_AUX_CON
16	eDP_AUX_CON
17	GND
18	LCD_VCC(+3V)
19	LCD_VCC(+3V)
20	LCD_VCC(+3V)
21	LCD_VCC(+3V)
22	GND
23	NA
24	GND
25	GND
26	GND
27	eDP_HPD_CON
28	GND
29	GND
30	GND
31	GND
32	CON_LBKLT_EN
33	CON_LBKLT_CTL
34	NA
35	NA
36	LCD_BLT_VCC(+12V)
37	LCD_BLT_VCC(+12V)
38	LCD_BLT_VCC(+12V)
39	LCD_BLT_VCC(+12V)
40	NA

LPC Header

(19-pin LPC1)

(see p.7, No. 19)

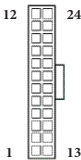


This connector supports a Trusted Platform Module (TPM) system, which can securely store keys, digital certificates, passwords, and data. A TPM system also helps enhance network security, protects digital identities, and ensures platform integrity.

ATX Power Input Connector

(24-pin ATXPWR1)

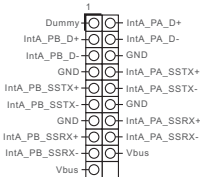
(see p.7 No. 9)



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.

USB 3.0 Header

(19-pin USB3_16_17: see p.7, No. 13)



There is one header on this motherboard. This USB 3.0 header can support two ports.

Chapter 3: UEFI SETUP UTILITY

3.1 Introduction

This section explains how to use the UEFI SETUP UTILITY to configure your system. The UEFI chip on the motherboard stores the UEFI SETUP UTILITY. You may run the UEFI SETUP UTILITY when you start up the computer. Please press <F2> or during the Power-On-Self-Test (POST) to enter the UEFI SETUP UTILITY, otherwise, 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.

3.1.1 UEFI Menu Bar

The top of the screen has a menu bar with the following selections:

Main	For setting system time/date information
Advanced	For advanced system configurations
H/W Monitor	Displays current hardware status
Security	For security settings
Boot	For configuring boot settings and boot priority
Exit	Exit the current screen or the UEFI Setup Utility

3.1.2 Navigation Keys

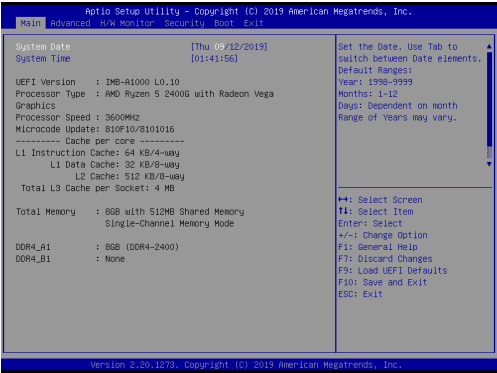
Use <←> key or <→> key to choose among the selections on the menu bar, and use <↑> key or <↓> key to move the cursor up or down to select items, then press <Enter> to get into the sub screen. You can also use the mouse to click your required item.

Please check the following table for the descriptions of each navigation key.

Navigation Key(s)	Description
+ / -	To change option for the selected items
<F1>	To display the General Help Screen
<F7>	Discard changes and exit the SETUP UTILITY
<F9>	Load optimal default values for all the settings
<F10>	Save changes and exit the SETUP UTILITY
<F12>	Print screen
<ESC>	Jump to the Exit Screen or exit the current screen

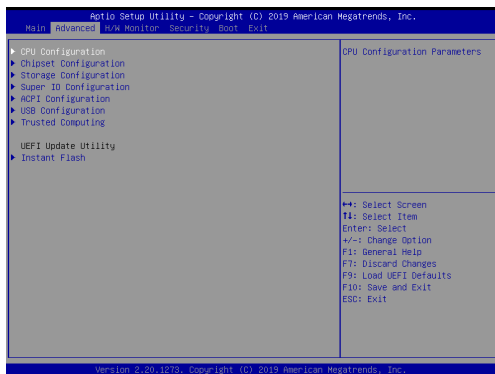
3.2 Main Screen

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



3.3 Advanced Screen

In this section, you may set the configurations for the following items: CPU Configuration, Chipset Configuration, Storage Configuration, Super IO Configuration, ACPI Configuration, USB Configuration and Trusted Computing.

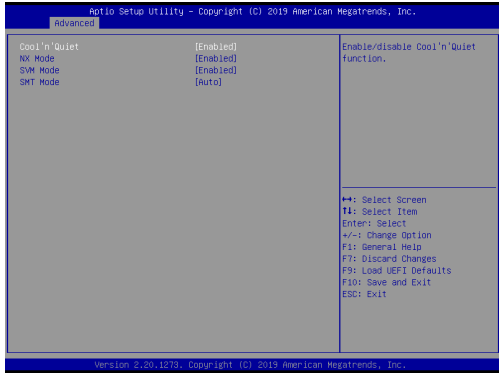


Setting wrong values in this section may cause the system to malfunction.

Instant Flash

Instant Flash is a UEFI flash utility embedded in Flash ROM. This convenient UEFI update tool allows you to update system UEFI without entering operating systems first like MS-DOS or Windows®. Just launch this tool and save the new UEFI file to your USB flash drive, floppy disk or hard drive, then you can update your UEFI only in a few clicks without preparing an additional floppy diskette or other complicated flash utility. Please be noted that the USB flash drive or hard drive must use FAT32/16/12 file system. If you execute Instant Flash utility, the utility will show the UEFI files and their respective information. Select the proper UEFI file to update your UEFI, and reboot your system after UEFI update process completes.

3.3.1 CPU Configuration



Cool 'n' Quiet

Use this item to enable or disable AMD's Cool 'n' Quiet™ technology. The default value is [Enabled]. Configuration options: [Enabled] and [Disabled]. If you install Windows® OS and want to enable this function, please set this item to [Enabled]. Please note that enabling this function may reduce CPU voltage and memory frequency, and lead to system stability or compatibility issue with some memory modules or power supplies. Please set this item to [Disable] if above issue occurs.

NX Mode

Use this to enable or disable NX mode.

SVM Mode

When this is set to [Enabled], a VMM (Virtual Machine Architecture) can utilize the additional hardware capabilities provided by AMD-V. The default value is [Enabled]. Configuration options: [Enabled] and [Disabled].

SMT Mode

This item can be used to disable symmetric multithreading. To re-enable SMT, a power cycle is needed after selecting [Auto].
Warning: S3 is not supported on systems where SMT is disabled.

3.3.2 Chipset Configuration



Primary Graphics Adapter

This item will switch the PCI Bus scanning order while searching for video card. It allows you to select the type of Primary VGA in case of multiple video controllers. The default value of this feature is [PCI Express].

Share Memory

Configure the size of memory that is allocated to the integrated graphics processor when the system boots up.

Onboard HD Audio

Select [Enabled] or [Disabled] for the onboard HD Audio feature.

Onboard LAN 1

This allows you to enable or disable the Onboard LAN 1.

Onboard LAN 2

This allows you to enable or disable the Onboard LAN 2.

PCIE1 Link Speed

Select the link speed for PCIE1.

DP Port3 Type

Select DP Port3 Type. The default value is [DP].

USB Power Control

Enable or disable USB Power Control.

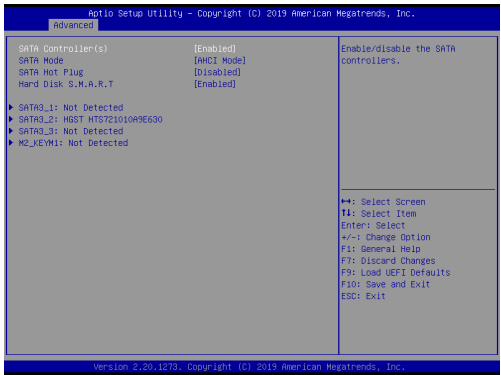
Deep S5

[Auto] will disable the deep S5 configuration if RTC/LAN/USB device power on settings are enabled. The default value is [Disabled].

Restore on AC/Power Loss

This allows you to set the power state after an unexpected AC/power loss. If [Power Off] is selected, the AC/power remains off when the power recovers. If [Power On] is selected, the AC/power resumes and the system starts to boot up when the power recovers.

3.3.3 Storage Configuration



SATA Controllers

Use this item to enable or disable the SATA Controller feature.

SATA Mode

Use this to select SATA mode. The default value is [AHCI Mode].



AHCI (Advanced Host Controller Interface) supports NCQ and other new features that will improve SATA disk performance but IDE mode does not have these advantages.

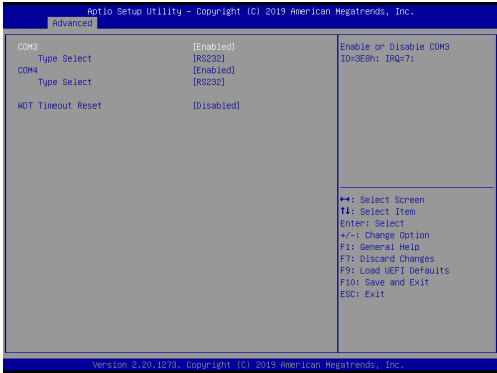
SATA Hot Plug

Use this item to enable or disable the SATA Hot Plug feature.

Hard Disk S.M.A.R.T.

Use this item to enable or disable the S.M.A.R.T. (Self-Monitoring, Analysis, and Reporting Technology) feature. Configuration options: [Disabled] and [Enabled].

3.3.4 Super IO Configuration



COM3

Use this to set the parameters of COM3.

Type Select

Use this to select COM3 port type: [RS232].

COM4

Use this to set the parameters of COM4.

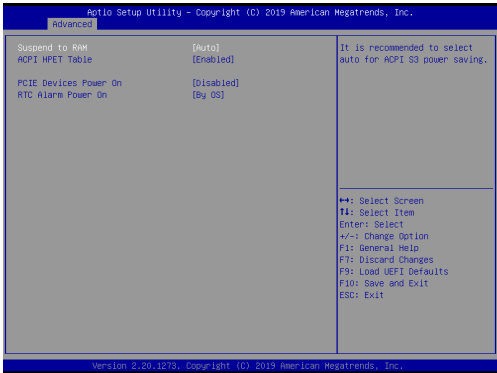
Type Select

Use this to select COM4 port type: [RS232].

WDT Timeout Reset

This allows users to enable/disable the Watch Dog Timer timeout to reset the system. The default value is [Disabled].

3.3.5 ACPI Configuration



Suspend to RAM

Select disable for ACPI suspend type S1. It is recommended to select auto for ACPI S3 power saving.

ACPI HPET Table

Enable the High Precision Event Timer for better performance and to pass WHQL tests.

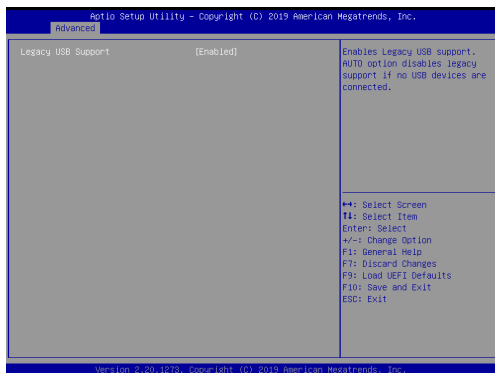
PCIE Devices Power On

Use this to enable or disable the PCIE devices to turn on the system from power-soft-off mode.

RTC Alarm Power On

Use this to enable or disable the RTC (Real Time Clock) to power on the system.

3.3.6 USB Configuration



Legacy USB Support

Use this option to select legacy support for USB devices. There are two configuration options: [Enabled] and [UEFI Setup Only]. The default value is [Enabled]. Please refer to below descriptions for the details of these two options:

[Enabled] - Enables support for legacy USB.

[UEFI Setup Only] - USB devices are allowed to use only under UEFI setup and Windows / Linux OS.

3.3.7 Trusted Computing

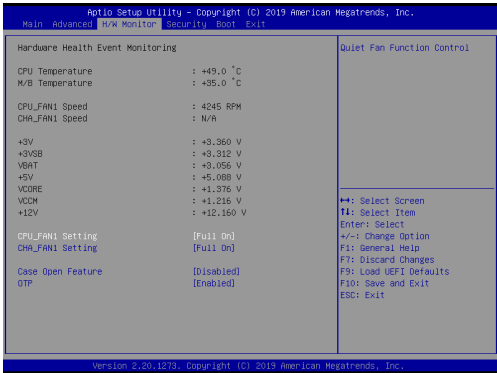


Security Device Support

Enable or disable BIOS support for security device.

3.4 Hardware Health Event Monitoring Screen

This section allows you to monitor the status of the hardware on your system, including the parameters of the CPU temperature, motherboard temperature, fan speed and voltage.



CPU FAN1 Setting

This allows you to set CPU FAN1's speed. The default value is [Full On].

Chassis FAN1 Setting

This allows you to set Chassis FAN1's speed. The default value is [Full On].

Case Open Feature

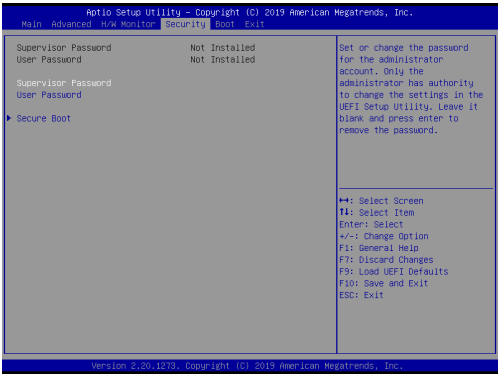
Enable or disable Case Open Feature to detect whether the chassis cover has been removed.

OTP

When Over Temperature Protection is enabled, the system automatically shuts down when the motherboard is overheated.

3.5 Security Screen

In this section you may set or change the supervisor/user password for the system. You may also clear the user password.



Supervisor Password

Set or change the password for the administrator account. Only the administrator has authority to change the settings in the UEFI Setup Utility. Leave it blank and press enter to remove the password.

User Password

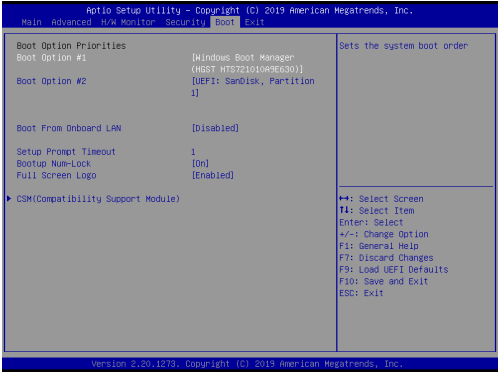
Set or change the password for the user account. Users are unable to change the settings in the UEFI Setup Utility. Leave it blank and press enter to remove the password.

Secure Boot

Use this to enable or disable support for Secure Boot.

3.6 Boot Screen

This section displays the available devices on your system for you to configure the boot settings and the boot priority.



Boot From Onboard LAN

Use this to enable or disable Boot From Onboard LAN.

Setup Prompt Timeout

This shows the number of seconds to wait for the setup activation key.

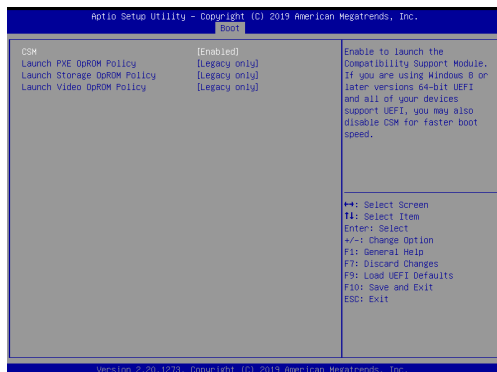
Bootup Num-Lock

If this is set to [On], it will automatically activate the Numeric Lock after boot-up.

Full Screen Logo

Use this item to enable or disable OEM Logo. The default value is [Enabled].

CSM (Compatibility Support Module)



CSM

Enable to launch the Compatibility Support Module. If you are using Windows 8.1 / 8 64-bit UEFI and all of your devices support UEFI, you may also disable CSM for faster boot speed.

Launch PXE OpROM Policy

Select UEFI only to run those that support UEFI option ROM only. Select Legacy only to run those that support legacy option ROM only. Select Do not launch to not execute both legacy and UEFI option ROM.

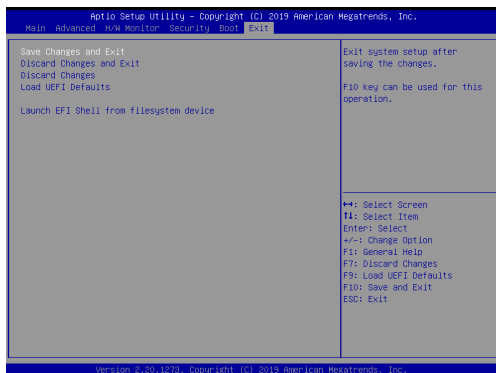
Launch Storage OpROM Policy

Select UEFI only to run those that support UEFI option ROM only. Select Legacy only to run those that support legacy option ROM only. Select Do not launch to not execute both legacy and UEFI option ROM.

Launch Video OpROM Policy

Select UEFI only to run those that support UEFI option ROM only. Select Legacy only to run those that support legacy option ROM only. Select Do not launch to not execute both legacy and UEFI option ROM.

3.7 Exit Screen



Save Changes and Exit

When you select this option the following message, "Save configuration changes and exit setup?" will pop out. Select [OK] to save changes and exit the UEFI SETUP UTILITY.

Discard Changes and Exit

When you select this option the following message, "Discard changes and exit setup?" will pop out. Select [OK] to exit the UEFI SETUP UTILITY without saving any changes.

Discard Changes

When you select this option the following message, "Discard changes?" will pop out. Select [OK] to discard all changes.

Load UEFI Defaults

Load UEFI default values for all options. The F9 key can be used for this operation.

Launch EFI Shell from filesystem device

Copy shellx64.efi to the root directory to launch EFI Shell.

Chapter 4: Software Support

4.1 Install Operating System

This motherboard supports various Microsoft® Windows® operating systems: 10 64-bit. Because motherboard settings and hardware options vary, use the setup procedures in this chapter for general reference only. Refer your OS documentation for more information.

4.2 Support CD Information

The Support CD that came with the motherboard contains necessary drivers and useful utilities that enhance the motherboard's features.

4.2.1 Running The Support CD

To begin using the support CD, insert the CD into your CD-ROM drive. The CD automatically displays the Main Menu if "AUTORUN" is enabled in your computer. If the Main Menu did not appear automatically, locate and double click on the file "ASRSETUP.EXE" from the BIN folder in the Support CD to display the menus.

4.2.2 Drivers Menu

The Drivers Menu shows the available device's drivers if the system detects installed devices. Please install the necessary drivers to activate the devices.

4.2.3 Utilities Menu

The Utilities Menu shows the application software that the motherboard supports. Click on a specific item then follow the installation wizard to install it.

4.2.4 Contact Information

If you need to contact ASRockInd or want to know more about ASRockInd, you're welcome to visit ASRockInd's website at <http://www.asrockind.com>; or you may contact your dealer for further information.

4.3 AMD Eyefinity Multidisplay Technology Setting

Arrange Eyefinity Display Group

1. Arrange the display in a 4x1 or 2x2 configuration under Windows 10 Display setting.
2. Set up AMD Eyefinity with Quick Setup.
3. Click Eyefinity once AMD Radeon Settings opens.
4. Click Quick Setup to automatically create an AMD Eyefinity display group based on the current (default) display configuration.