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GREEN Less Heat, Less Power Consumption

STABLE Robust Design, Quality Parts

Stable and
Reliable Solution

Server/Workstation
Motherboard

B550D4ID-2L2T
B550D4ID-2T/CG
B550D4ID/CG
B550D4ID-2T/18N
B550D4ID/18N

User Manual

English



Version 1.0

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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.

CALIFORNIA, USA ONLY

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

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

ASRock Rack's Website: www.ASRockRack.com

Contact Information

If you need to contact ASRock Rack or want to know more about ASRock Rack, you're welcome to visit ASRock Rack's website at www.ASRockRack.com; or you may contact your dealer for further information.

ASRock Rack Incorporation

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Chapter 1 Introduction

Thank you for purchasing ASRock Rack **B550D4ID Series** motherboard, a reliable motherboard produced under ASRock Rack's consistently stringent quality control. It delivers excellent performance with robust design conforming to ASRock Rack's commitment to quality and endurance.

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



Because the motherboard specifications and the BIOS software might be updated, the content of this manual will be subject to change without notice. In case any modifications of this manual occur, the updated version will be available on ASRock Rack website without further notice. You may find the latest memory and CPU support lists on ASRock Rack website as well. ASRock Rack's Website: www.ASRockRack.com

*If you require technical support related to this motherboard, please visit our website for specific information about the model you are using.
<http://www.asrockrack.com/support/>*

1.1 Package Contents

B550D4ID-2L2T

- ASRock Rack Motherboard: B550D4ID-2L2T
(Deep mini-ITX Form Factor: 6.7-in x 8.2-in, 17.0 cm x 20.8 cm)
- Quick Installation Guide
- 1 x I/O Shield
- 1 x Oculink to 4 SATA Cable (60cm)
- 1 x ATX 4P to 24P Power Cable (8cm)
- 1 x SATA Power Cable (80cm)
- 1 x Screw for M.2 Socket

B550D4ID-2T/CG

- ASRock Rack Motherboard: B550D4ID-2T/CG
(Deep mini-ITX Form Factor: 6.7-in x 8.2-in, 17.0 cm x 20.8 cm)
- Quick Installation Guide
- 1 x I/O Shield
- 1 x ATX 4P to 24P Power Cable (8cm)
- 1 x Screw for M.2 Socket

B550D4ID/CG

- ASRock Rack Motherboard: B550D4ID/CG
(Deep mini-ITX Form Factor: 6.7-in x 8.2-in, 17.0 cm x 20.8 cm)
- Quick Installation Guide
- 1 x I/O Shield
- 1 x ATX 4P to 24P Power Cable (8cm)
- 1 x Screw for M.2 Socket

B550D4ID-2T/18N

- ASRock Rack Motherboard: B550D4ID-2T/18N
(Deep mini-ITX Form Factor: 6.7-in x 8.2-in, 17.0 cm x 20.8 cm)
- Quick Installation Guide
- 1 x I/O Shield
- 2 x Screws for M.2 Sockets

B550D4ID/18N

- ASRock Rack Motherboard: B550D4ID/18N
(Deep mini-ITX Form Factor: 6.7-in x 8.2-in, 17.0 cm x 20.8 cm)
- Quick Installation Guide
- 1 x I/O Shield
- 2 x Screws for M.2 Sockets



If any items are missing or appear damaged, contact your authorized dealer.



The illustrations shown in this manual are examples only, the actual system may differ slightly.

1.2 Specifications

B550D4ID-2L2T

B550D4ID-2L2T	
MB Physical Status	
Form Factor	Deep mini-ITX
Dimension	6.7" x 8.2" (17.0 cm x 20.8 cm)
Processor System	
CPU	AMD Ryzen™ 5000 Series Desktop Processors AMD Ryzen™ 4000 G-Series Desktop Processors with Radeon™ Graphics AMD Ryzen™ PRO 4000 and 3000 Series Desktop Processors 3 rd Gen AMD Ryzen™ Desktop Processors <i>*Not Compatible with AMD Ryzen™ 3000 series processors with Radeon™ Graphics</i>
Socket	AM4 PGA 1331
Chipset	AMD B550
Max. Thermal Design Power	TDP 105W
System Memory	
Capacity	- 4 x 288-pin DDR4 DIMM slots (2DPC) - Support up to 128GB DDR4 ECC/non-ECC UDIMM
Type	- Dual Channel DDR4 memory technology - Support DDR4 ECC/Non-ECC Unbuffered DIMM <i>*For AMD Ryzen™ Desktop Processors with Radeon™ Graphics, ECC support is only with Processors with PRO technologies.</i>
DIMM Size Per DIMM	ECC/UDIMM: 32GB, 16GB, 8GB
DIMM Frequency	ECC/UDIMM: up to 3200MHz
Voltage	1.2V
Expansion Slot	
PCIe 4.0 x 16	PCIe7: Gen4 x16 link
Storage	
SATA Controller	AMD B550 (4 SATA 6Gb/s; RAID 0/1/10); 1 OCuLink [FCH]
M.2 Slot	1 (M2_1: M-key (PCIe4.0 x4 or SATA 6Gb/s), supports type 2280 [CPU])
Ethernet	
Interface	10000/1000 /100 Mbps
LAN Controller	- 2 x RJ45 10G base-T by Intel® X710-AT2 - 2 x RJ45 1G RJ45 by Intel® i210 - 1 x RJ45 Dedicated IPMI LAN port by RTL8211E

	- Supports Wake-On-LAN - Supports Energy Efficient Ethernet 802.3az - Supports Dual LAN with Teaming function - Supports PXE - LAN3 supports NCSI
Management	
BMC Controller	ASPEED AST2500
IPMI Dedicated GLAN	1 x Realtek RTL8211E for dedicated management GLAN
Features	Watch Dog
Graphics	
Controller	ASPEED AST2500
VRAM	DDR4 16MB
Rear Panel I/O	
VGA Port	1 x D-Sub (DB15)
USB 3.2 (Gen1) Port	2
HDMI	1
LAN Port	- 2 x RJ45 10 Gigabit Ethernet LAN port - 2 x RJ45 1 Gigabit Ethernet LAN ports - 1 x RJ45 Dedicated IPMI LAN port - LAN Ports with LED (ACT/LINK LED and SPEED LED)
UID	1
UID LED	1
Internal Connector	
Auxiliary Panel Header	1 (includes chassis intrusion, location button & LED, front LAN LED, system fault, and BMC alert)
Panel Header	1
COM Header	1
TPM Header	1 (13-pin SPI TPM header, supports TPM 2.0)
TPM_BIOS_PH1	1
IPMB Header	1
Fan Header	3 (4-pin)
ATX Power	2 (8-pin) + 1 (4-pin)
SATA Power	1 (4-pin)
USB 3.2 Gen1 Header	1 (supports 2 USB 3.2 Gen1 ports)
NCSI	1
LED_LAN34	1
BMC SMBus	1
SPEAKER	1
TR1	1
OCulink	1 (SATA only)
PWM_CFG1	1
Clear CMOS	1 (short pad)
OH/FanFail LED	3

System BIOS	
BIOS Type	32MB AMI UEFI Legal BIOS
BIOS Features	- Plug and Play (PnP) - ACPI 2.0 Compliance Wake Up Events - SMBIOS 2.8 Support - ASRock Rack Instant Flash
Hardware Monitor	
Temperature	- CPU/DDR/FCH Temperature Sensing - MB/Card Side Temperature Sensing
Fan	- Fan Tachometer - Quiet Fan (Allow Chassis Fan Speed Auto-Adjust by CPU Temperature) - Fan Multi-Speed Control
Voltage	Voltage Monitoring: 3VSB, 5VSB, VCPU, VSOC, VCCM, APU VDDP, 1.05V_PROM_S5, 2.5V_PROM, 1.05V_PROM_RUN, BAT, 3V, 5V, 12V
Support OS	
OS	Microsoft® Windows*: - Windows 10 (64 bit) - Windows 11 (64 bit) Linux*: - RedHat Enterprise Linux Server 7.9 (64 bit) / 8.2 (64 bit) / 8.4 (64bit) - CentOS 7.9 (64 bit) / 8.2 (64 bit) / 8.4 (64 bit) - SUSE SLES 15.2 (64 bit) - Ubuntu 18.04.5 (64 bit) / 20.10 (64 bit) / 21.04 (64 bit) Hypervisor: - VMWare ESXi 7.0 U2 / 7.0 U3 - vSphere 7.0 U2 / 7.0 U3 * On the Windows system, Raid Mode supports UEFI Boot only. * The Linux system doesn't support Raid mode. * Please refer to our website for the latest OS support list.
Environment	
Temperature	Operation temperature: 10°C ~ 35°C / Non operation temperature: -40°C ~ 70°C

NOTE: Please refer to our website for the latest specifications.



This motherboard supports Wake from on Board LAN. To use this function, please make sure that the "Wake on Magic Packet from power off state" is enabled in Device Manager > Intel® Ethernet Connection > Power Management. And the "PCI Devices Power On" is enabled in UEFI SETUP UTILITY > Advanced > ACPI Configuration. After that, onboard LAN can wake up S5 under OS.



If you install Intel® LAN utility or Marvell SATA utility, this motherboard may fail Windows® Hardware Quality Lab (WHQL) certification tests. If you install the drivers only, it will pass the WHQL tests.

B550D4ID-2T/CG / B550D4ID/CG

B550D4ID-2T/CG / B550D4ID/CG	
MB Physical Status	
Form Factor	Deep mini-ITX
Dimension	6.7" x 8.2" (17.0 cm x 20.8 cm)
Processor System	
CPU	AMD Ryzen™ 5000 Series Desktop Processors AMD Ryzen™ 4000 G-Series Desktop Processors with Radeon™ Graphics AMD Ryzen™ PRO 4000 and 3000 Series Desktop Processors 3 rd Gen AMD Ryzen™ Desktop Processors <i>*Not Compatible with AMD Ryzen™ 3000 series processors with Radeon™ Graphics</i>
Socket	AM4 PGA 1331
Chipset	AMD B550
Max. Thermal Design Power	TDP 105W
System Memory	
Capacity	- 4 x 288-pin DDR4 DIMM slots (2DPC) - Support up to 128GB DDR4 ECC/non-ECC UDIMM
Type	- Dual Channel DDR4 memory technology - Support DDR4 ECC/Non-ECC Unbuffered DIMM <i>*For AMD Ryzen™ Desktop Processors with Radeon™ Graphics, ECC support is only with Processors with PRO technologies.</i>
DIMM Size Per DIMM	ECC/UDIMM: 32GB, 16GB, 8GB
DIMM Frequency	ECC/UDIMM: up to 3200MHz
Voltage	1.2V
Expansion Slot	
PCIe 4.0 x 16	PCIe7: Gen4 x16 link
Storage	
SATA Controller	N/A
M.2 Slot	1 (M2_1: M-key (PCIe4.0 x4 or SATA 6Gb/s), supports type 2280 [CPU])
Ethernet	
Interface	B550D4ID-2T/CG: 10000/1000 /100 Mbps B550D4ID/CG: 1000/100 /10 Mbps

LAN Controller	B550D4ID-2T/CG: - 2 x RJ45 10G base-T by Intel® X710-AT2 - 1 x RJ45 Dedicated IPMI LAN port by RTL8211E - Supports Wake-On-LAN - Supports Energy Efficient Ethernet 802.3az - Supports Dual LAN with Teaming function - Supports PXE - LAN1 supports NCSI B550D4ID/CG: - 2 x RJ45 1G RJ45 by Intel® i210 - 1 x RJ45 Dedicated IPMI LAN port by RTL8211E - Supports Wake-On-LAN - Supports Energy Efficient Ethernet 802.3az - Supports Dual LAN with Teaming function - Supports PXE - LAN3 supports NCSI
Management	
BMC Controller	ASPEED AST2500
IPMI Dedicated GLAN	1 x Realtek RTL8211E for dedicated management GLAN
Features	Watch Dog
Graphics	
Controller	ASPEED AST2500
VRAM	DDR4 16MB
Rear Panel I/O	
VGA Port	1 x D-Sub (DB15)
USB 3.2 (Gen1) Port	2
LAN Port	B550D4ID-2T/CG: - 2 x RJ45 10 Gigabit Ethernet LAN port - 1 x RJ45 Dedicated IPMI LAN port - LAN Ports with LED (ACT/LINK LED and SPEED LED) B550D4ID/CG: - 2 x RJ45 1 Gigabit Ethernet LAN ports - 1 x RJ45 Dedicated IPMI LAN port - LAN Ports with LED (ACT/LINK LED and SPEED LED)
UID	1
UID LED	1
Internal Connector	
Auxiliary Panel Header	1 (includes chassis intrusion, location button & LED, front LAN LED, system fault, and BMC alert)
Panel Header	1
TPM Header	1 (13-pin SPI TPM header, supports TPM 2.0)
TPM_BIOS_PH1	1

IPMB Header	1
Fan Header	3 (4-pin)
ATX Power	1 (8-pin) + 1 (4-pin)
USB 3.2 Gen1 Header	B550D4ID-2T/CG: N/A B550D4ID/CG: 1 (supports 2 USB 3.2 Gen1 ports)
BMC SMBus	1
Clear CMOS	1 (short pad)
OH/FanFail LED	3
System BIOS	
BIOS Type	32MB AMI UEFI Legal BIOS
BIOS Features	- Plug and Play (PnP) - ACPI 2.0 Compliance Wake Up Events - SMBIOS 2.8 Support - ASRock Rack Instant Flash
Hardware Monitor	
Temperature	- CPU/DDR/FCH Temperature Sensing - MB/Card Side Temperature Sensing
Fan	- Fan Tachometer - Quiet Fan (Allow Chassis Fan Speed Auto-Adjust by CPU Temperature) - Fan Multi-Speed Control
Voltage	Voltage Monitoring: 3VSB, 5VSB, VCPU, VSOC, VCCM, APU VDDP, 1.05V_PROM_S5, 2.5V_PROM, 1.05V_PROM_RUN, BAT, 3V, 5V, 12V
Support OS	
OS	Microsoft® Windows*: - Windows 10 (64 bit) - Windows 11 (64 bit) Linux*: - RedHat Enterprise Linux Server 7.9 (64 bit) / 8.2 (64 bit) / 8.4 (64bit) - CentOS 7.9 (64 bit) / 8.2 (64 bit) / 8.4 (64 bit) - SUSE SLES 15.2 (64 bit) - Ubuntu 18.04.5 (64 bit) / 20.10 (64 bit) / 21.04 (64 bit) Hypervisor: - VMWare ESXi 7.0 U2 / 7.0 U3 - vSphere 7.0 U2 / 7.0 U3 * On the Windows system, Raid Mode supports UEFI Boot only. * The Linux system doesn't support Raid mode. * Please refer to our website for the latest OS support list.

Environment	
Temperature	Operation temperature: 10°C ~ 35°C / Non operation temperature: -40°C ~ 70°C



This motherboard supports Wake from on Board LAN. To use this function, please make sure that the “Wake on Magic Packet from power off state” is enabled in Device Manager > Intel® Ethernet Connection > Power Management. And the “PCI Devices Power On” is enabled in UEFI SETUP UTILITY > Advanced > ACPI Configuration. After that, onboard LAN can wake up S5 under OS.



If you install Intel® LAN utility or Marvell SATA utility, this motherboard may fail Windows® Hardware Quality Lab (WHQL) certification tests. If you install the drivers only, it will pass the WHQL tests.

B550D4ID-2T/18N / B550D4ID/18N

B550D4ID-2T/18N / B550D4ID/18N	
MB Physical Status	
Form Factor	Deep mini-ITX
Dimension	6.7" x 8.2" (17.0 cm x 20.8 cm)
Processor System	
CPU	AMD Ryzen™ 5000 Series Desktop Processors AMD Ryzen™ 4000 G-Series Desktop Processors with Radeon™ Graphics AMD Ryzen™ PRO 4000 and 3000 Series Desktop Processors 3 rd Gen AMD Ryzen™ Desktop Processors <i>*Not Compatible with AMD Ryzen™ 3000 series processors with Radeon™ Graphics</i>
Socket	AM4 PGA 1331
Chipset	AMD B550
Max. Thermal Design Power	TDP 105W
System Memory	
Capacity	- 4 x 288-pin DDR4 DIMM slots (2DPC) - Support up to 128GB DDR4 ECC/non-ECC UDIMM
Type	- Dual Channel DDR4 memory technology - Support DDR4 ECC/Non-ECC Unbuffered DIMM <i>*For AMD Ryzen™ Desktop Processors with Radeon™ Graphics, ECC support is only with Processors with PRO technologies.</i>
DIMM Size Per DIMM	ECC/UDIMM: 32GB, 16GB, 8GB
DIMM Frequency	ECC/UDIMM: up to 3200MHz
Voltage	1.2V
Expansion Slot	
PCIe 4.0 x 16	PCIe7: Gen4 x16 link
Storage	
SATA Controller	AMD B550 (4 SATA 6Gb/s; RAID 0/1/10): 1 OCuLink [FCH]
M.2 Slot	2 (M2_1: M-key (PCIe4.0 x4 or SATA 6Gb/s), supports type 22110 [CPU]; M2_2: M-key (PCIe3.0 x2 or SATA 6Gb/s), supports type 2280 [FCH])
Ethernet	
Interface	B550D4ID-2T/18N: 10000/1000 /100 Mbps B550D4ID/18N: 1000/100 /10 Mbps

LAN Controller	B550D4ID-2T/18N: - 2 x RJ45 10G base-T by Intel® X710-AT2 - 1 x RJ45 Dedicated IPMI LAN port by RTL8211E - Supports Wake-On-LAN - Supports Energy Efficient Ethernet 802.3az - Supports Dual LAN with Teaming function - Supports PXE - LAN1 supports NCSI B550D4ID/18N: - 2 x RJ45 1G RJ45 by Intel® i210 - 1 x RJ45 Dedicated IPMI LAN port by RTL8211E - Supports Wake-On-LAN - Supports Energy Efficient Ethernet 802.3az - Supports Dual LAN with Teaming function - Supports PXE - LAN3 supports NCSI
Management	
BMC Controller	ASPEED AST2500
IPMI Dedicated GLAN	1 x Realtek RTL8211E for dedicated management GLAN
Features	Watch Dog
Graphics	
Controller	ASPEED AST2500
VRAM	DDR4 16MB
Rear Panel I/O	
VGA Port	1 x D-Sub (DB15)
USB 3.2 (Gen1) Port	2
LAN Port	B550D4ID-2T/18N: - 2 x RJ45 10 Gigabit Ethernet LAN port - 1 x RJ45 Dedicated IPMI LAN port - LAN Ports with LED (ACT/LINK LED and SPEED LED) B550D4ID/18N: - 2 x RJ45 1 Gigabit Ethernet LAN ports - 1 x RJ45 Dedicated IPMI LAN port - LAN Ports with LED (ACT/LINK LED and SPEED LED)
UID	1
UID LED	1
Internal Connector	
Auxiliary Panel Header	1 (includes chassis intrusion, location button & LED, front LAN LED, system fault, and BMC alert)
Panel Header	1
COM Header	1
TPM Header	1 (13-pin SPI TPM header, supports TPM 2.0)

TPM_BIOS_PH1	1
Fan Header	3 (4-pin)
ATX Power	1 (8-pin)
SATA Power	1 (4-pin)
NCSI1	1
LED_LAN34	1
SPEAKER	1
TR1	1
OCulink	1 (SATA only)
PWM_CFG1	1
Clear CMOS	1 (short pad)
OH/FanFail LED	3
System BIOS	
BIOS Type	32MB AMI UEFI Legal BIOS
BIOS Features	- Plug and Play (PnP) - ACPI 2.0 Compliance Wake Up Events - SMBIOS 2.8 Support - ASRock Rack Instant Flash
Hardware Monitor	
Temperature	- CPU/DDR/FCH Temperature Sensing - MB/Card Side Temperature Sensing
Fan	- Fan Tachometer - Quiet Fan (Allow Chassis Fan Speed Auto-Adjust by CPU Temperature) - Fan Multi-Speed Control
Voltage	Voltage Monitoring: 3VSB, 5VSB, VCPU, VSOC, VCCM, APU VDDP, 1.05V_PROM_S5, 2.5V_PROM, 1.05V_PROM_RUN, BAT, 3V, 5V, 12V
Support OS	
OS	Microsoft® Windows®: - Windows 10 (64 bit) - Windows 11 (64 bit) Linux®: - RedHat Enterprise Linux Server 7.9 (64 bit) / 8.2 (64 bit) / 8.4 (64bit) - CentOS 7.9 (64 bit) / 8.2 (64 bit) / 8.4 (64 bit) - SUSE SLES 15.2 (64 bit) - Ubuntu 18.04.5 (64 bit) / 20.10 (64 bit) / 21.04 (64 bit) Hypervisor: - VMWare ESXi 7.0 U2 / 7.0 U3 - vSphere 7.0 U2 / 7.0 U3 <i>* On the Windows system, Raid Mode supports UEFI Boot only.</i> <i>* The Linux system doesn't support Raid mode.</i> <i>* Please refer to our website for the latest OS support list.</i>

Environment	
Temperature	Operation temperature: 10°C ~ 35°C / Non operation temperature: -40°C ~ 70°C



This motherboard supports Wake from on Board LAN. To use this function, please make sure that the "Wake on Magic Packet from power off state" is enabled in Device Manager > Intel® Ethernet Connection > Power Management. And the "PCI Devices Power On" is enabled in UEFI SETUP UTILITY > Advanced > ACPI Configuration. After that, onboard LAN can wake up S5 under OS.



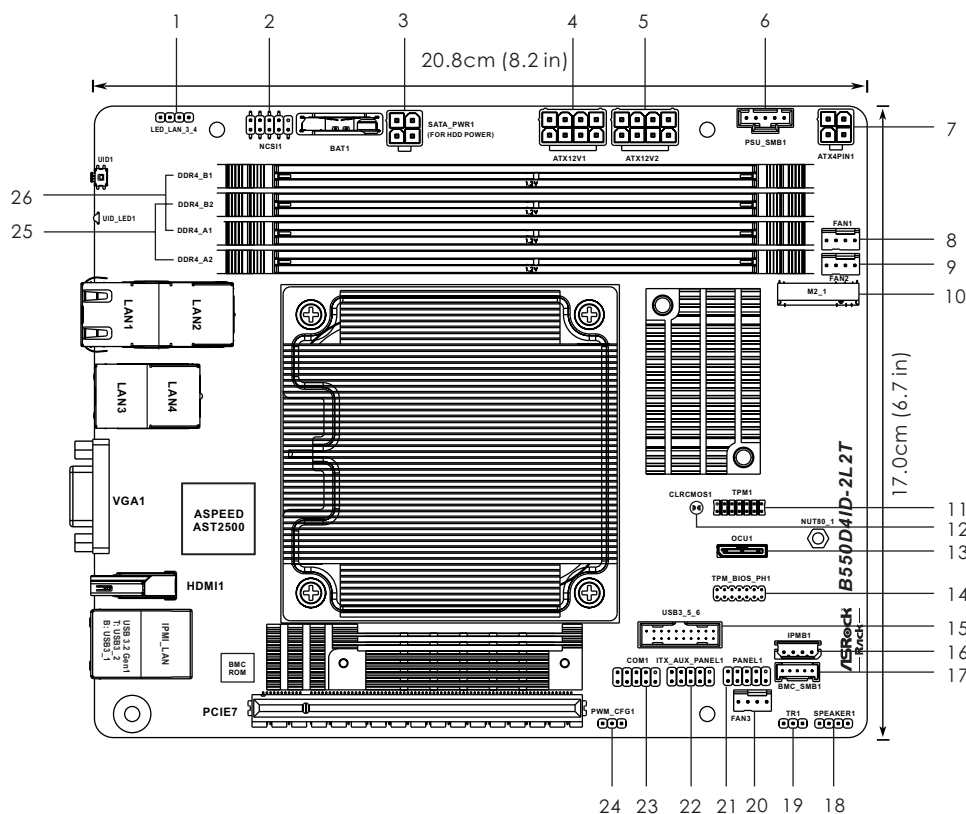
If you install Intel® LAN utility or Marvell SATA utility, this motherboard may fail Windows® Hardware Quality Lab (WHQL) certification tests. If you install the drivers only, it will pass the WHQL tests.

1.3 Unique Features

ASRock Rack Instant Flash is a BIOS flash utility embedded in Flash ROM. This convenient BIOS update tool allows you to update system BIOS without entering operating systems first like MS-DOS or Windows®. With this utility, you can press the <F6> key during the POST or the <F2> key to enter into the BIOS setup menu to access ASRock Rack Instant Flash. Just launch this tool and save the new BIOS file to your USB flash drive, floppy disk or hard drive, then you can update your BIOS 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.

1.4 Motherboard Layout

B550D4ID-2L2T

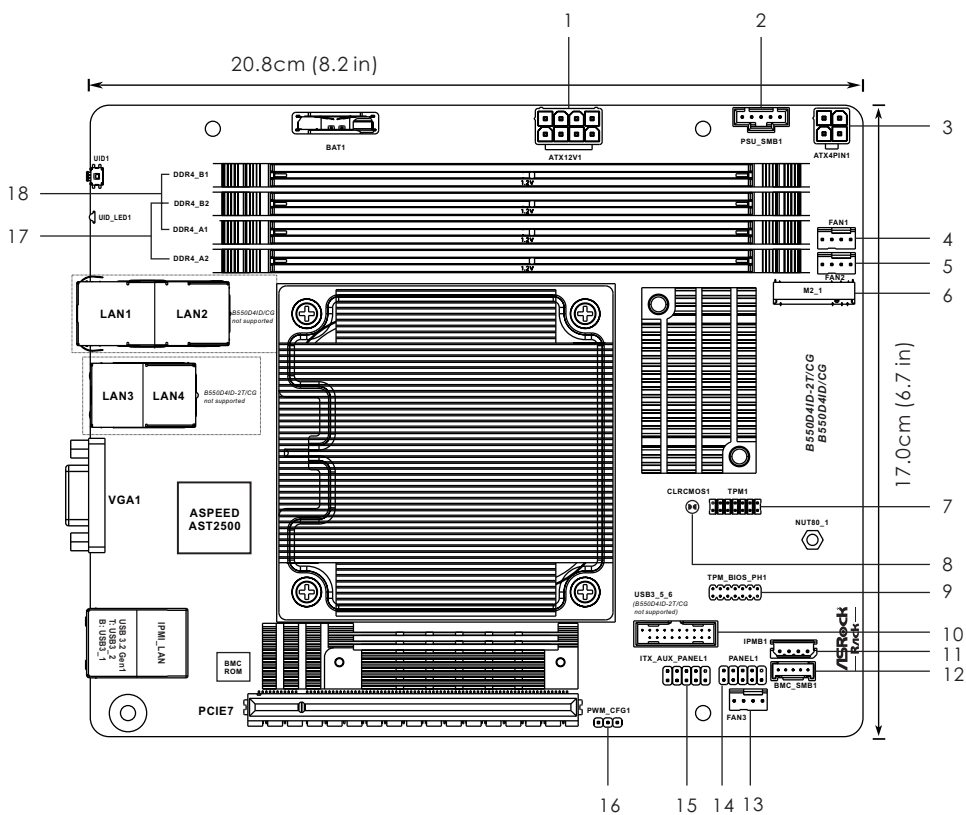


No.	Description
1	Front LAN LED Connector (LED_LAN_3_4)
2	NCSI Header (NCSI1)
3	SATA Power Connector (DC-IN Mode) (SATA_PWR1)**
4	ATX 12V Power Connector (ATX12V1)
5	ATX 12V Power Connector (ATX12V2)
6	PSU SMBus Header (PSU_SMB1)
7	ATX 12V Power Connector (ATX4PIN1)**
8	System Fan Connector (4-pin) (FAN1)
9	System Fan Connector (4-pin) (FAN2)
10	M.2 Socket (M2_1) (Type 2280)
11	TPM Header (TPM1)
12	Clear CMOS Pad (CLRCMOS1)
13	OCuLink x4 Connector (OCU1)
14	TPM-SPI Header (TPM_BIOS_PH1)
15	USB 3.2 Gen1 Header (USB3_5_6)
16	Intelligent Platform Management Bus Header (IPMB1)
17	BMC SMBus Header (BMC_SMB1)
18	Speaker Header (SPEAKER1)
19	Thermal Sensor Header (TR1)
20	System Fan Connector (4-pin) (FAN3)
21	System Panel Header (PANEL1)
22	Auxiliary Panel Header (ITX_AUX_PANEL1)
23	COM Port Header (COM1)
24	PWM Configuration Header (PWM_CFG1)
25	2 x 288-pin DDR4 DIMM Slots (DDR4_A2, DDR4_B2)*
26	2 x 288-pin DDR4 DIMM Slots (DDR4_A1, DDR4_B1)*

*For DIMM installation and configuration instructions, please see p.33 (Installation of Memory Modules (DIMM)) for more details.

**Caution: Misconnection between the SATA_PWR1 and the ATX4PIN1 connectors may permanently damage the motherboard.

B550D4ID-2T/CG / B550D4ID/CG



No.	Description
1	ATX 12V Power Connector (ATX12V1)
2	PSU SMBus Header (PSU_SMB1)
3	ATX 12V Power Connector (ATX4PIN1)**
4	System Fan Connector (4-pin) (FAN1)
5	System Fan Connector (4-pin) (FAN2)
6	M.2 Socket (M2_1) (Type 2280)
7	TPM Header (TPM1)
8	Clear CMOS Pad (CLRCMOS1)
9	TPM-SPI Header (TPM_BIOS_PH1)
10	USB 3.2 Gen1 Header (USB3_5_6) (B550D4ID-2T/CG not supported)
11	Intelligent Platform Management Bus Header (IPMB1)
12	BMC SMBus Header (BMC_SMB1)
13	System Fan Connector (4-pin) (FAN3)
14	System Panel Header (PANEL1)
15	Auxiliary Panel Header (ITX_AUX_PANEL1)
16	PWM Configuration Header (PWM_CFG1)
17	2 x 288-pin DDR4 DIMM Slots (DDR4_A2, DDR4_B2)*
18	2 x 288-pin DDR4 DIMM Slots (DDR4_A1, DDR4_B1)*

*For DIMM installation and configuration instructions, please see p.33 (Installation of Memory Modules (DIMM)) for more details.

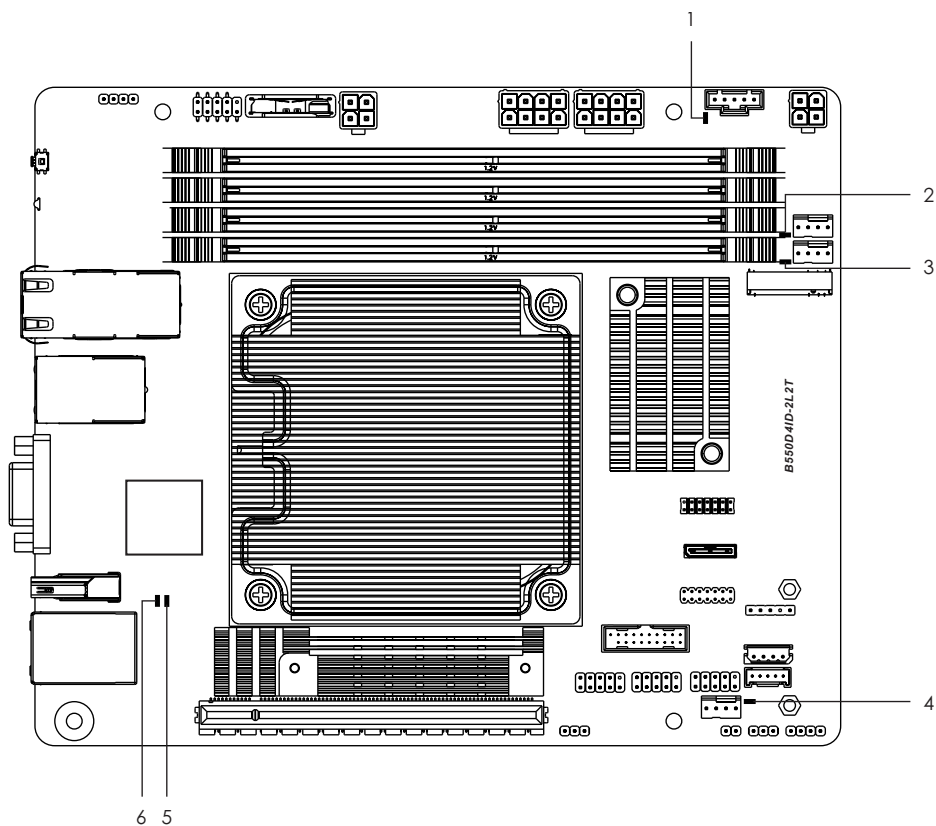
**Caution: Misconnection between the SATA_PWR1 and the ATX4PIN1 connectors may permanently damage the motherboard.

[illegible]

No.	Description
1	Front LAN LED Connector (LED_LAN_3_4)
2	NCSI Header (NCSI1)
3	SATA Power Connector (DC-IN Mode) (SATA_PWR1)**
4	ATX 12V Power Connector (ATX12V1)
5	PSU SMBus Header (PSU_SMB1)
6	System Fan Connector (4-pin) (FAN1)
7	System Fan Connector (4-pin) (FAN2)
8	M.2 Socket (M2_1) (Type 22110)
9	M.2 Socket (M2_2) (Type 2280)
10	TPM Header (TPM1)
11	OCuLink x4 Connector (OCU1)
12	Clear CMOS Pad (CLRCMOS1)
13	TPM-SPI Header (TPM_BIOS_PH1)
14	Speaker Header (SPEAKER1)
15	Thermal Sensor Header (TR1)
16	System Fan Connector (4-pin) (FAN3)
17	System Panel Header (PANEL1)
18	Auxiliary Panel Header (ITX_AUX_PANEL1)
19	COM Port Header (COM1)
20	PWM Configuration Header (PWM_CFG1)
21	2 x 288-pin DDR4 DIMM Slots (DDR4_A2, DDR4_B2)*
22	2 x 288-pin DDR4 DIMM Slots (DDR4_A1, DDR4_B1)*

**For DIMM installation and configuration instructions, please see p.33 (Installation of Memory Modules (DIMM)) for more details.*

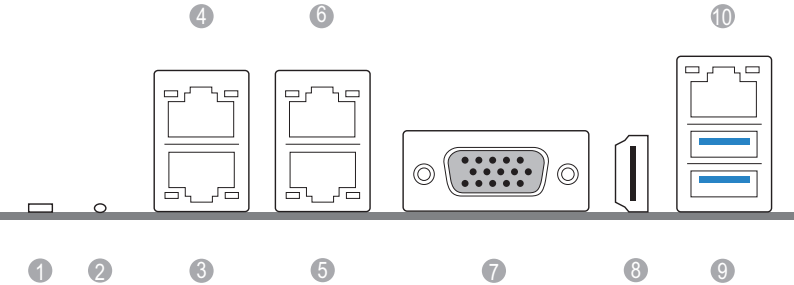
1.5 Onboard LED Indicators



No.	Item	Status	Description
1	SB_PWR1	Green	STB PWR ready
2	FAN_LED1	Amber	FAN1 failed
3	FAN_LED2	Amber	FAN2 failed
4	FAN_LED3	Amber	FAN3 failed
5	SYS_FAULT_LED1	Amber	System Fault LED
6	BMC_LED1	Green	BMC heartbeat LED

1.6 I/O Panel

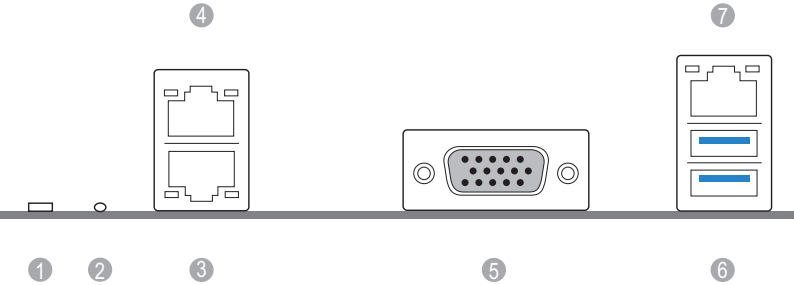
B550D4ID-2L2T



No.	Description	No.	Description
1	UID Switch (UID1)	6	1G LAN RJ-45 Port (LAN4)***
2	UID LED (UID_LED1)	7	VGA Port (VGA1)
3	10G LAN RJ-45 Port (LAN1)**	8	HDMI Port (HDMI1)
4	10G LAN RJ-45 Port (LAN2)**	9	USB 3.2 Gen1 Ports (USB3_1_2)
5	1G LAN RJ-45 Port (LAN3)***	10	LAN RJ-45 Port (IPMI_LAN1)*

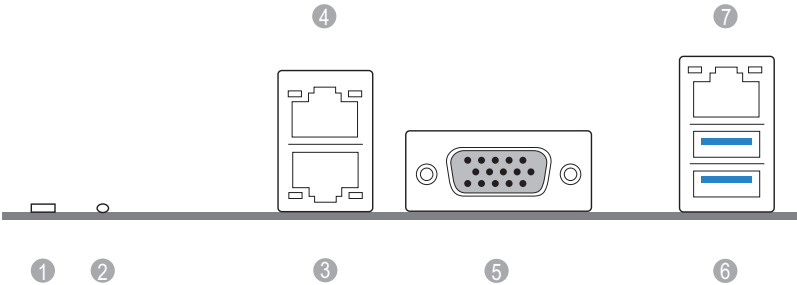
B550D4ID-2T/CG

B550D4ID-2T/18N



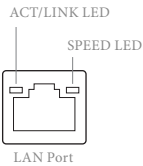
No.	Description	No.	Description
1	UID Switch (UID1)	5	VGA Port (VGA1)
2	UID LED (UID_LED1)	6	USB 3.2 Gen1 Ports (USB3_1_2)
3	10G LAN RJ-45 Port (LAN1)**	7	LAN RJ-45 Port (IPMI_LAN1)*
4	10G LAN RJ-45 Port (LAN2)**		

B550D4ID/CG
B550D4ID/18N



No.	Description	No.	Description
1	UID Switch (UID1)	5	VGA Port (VGA1)
2	UID LED (UID_LED1)	6	USB 3.2 Gen1 Ports (USB3_1_2)
3	1G LAN RJ-45 Port (LAN3)***	7	LAN RJ-45 Port (IPMI_LAN1)*
4	1G LAN RJ-45 Port (LAN4)***		

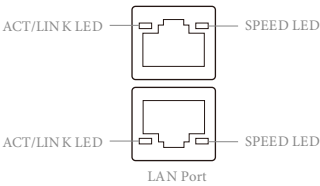
*There are two LED next to the LAN port. Please refer to the table below for the LAN port LED indications.



Dedicated IPMI LAN Port LED Indications

Activity / Link LED		Speed LED	
Status	Description	Status	Description
Off	No Link	Off	10M bps connection or no link
Blinking Yellow	Data Activity	Orange	100M bps connection
On	Link	Green	1Gbps connection

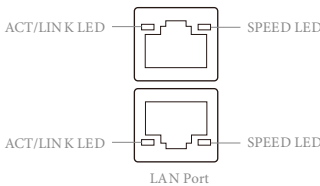
**There are two LEDs on each LAN port. Please refer to the table below for the LAN port LED indications.



10G LAN Port (LAN1, LAN2) LED Indications

Activity / Link LED		Speed LED	
Status	Description	Status	Description
Off	No Link	Off	100Mbps connection or no link
Blinking Yellow	Data Activity	Orange	1Gbps connection
On	Link	Green	10Gbps connection

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

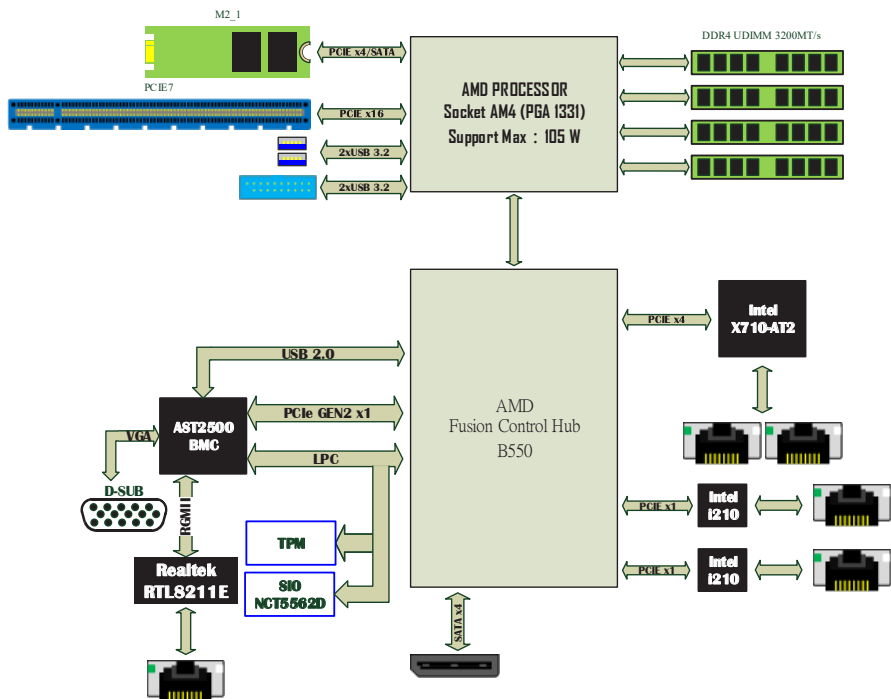


1G LAN Port (LAN3, LAN4) LED Indications

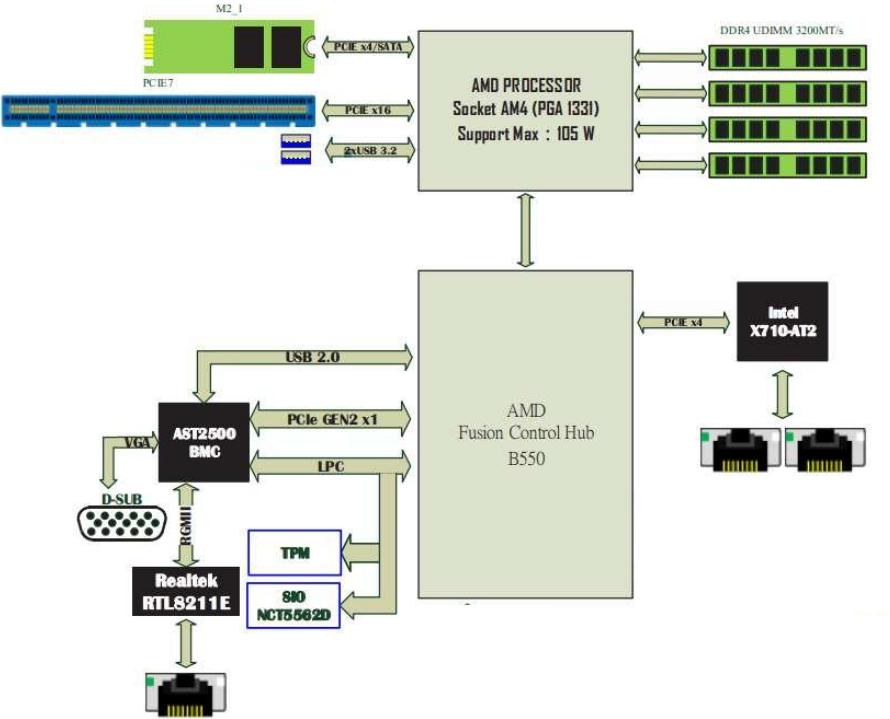
Activity / Link LED		Speed LED	
Status	Description	Status	Description
Off	No Link	Off	10Mbps connection or no link
Blinking Orange	Data Activity	Orange	100Mbps connection
On	Link	Green	1Gbps connection

1.7 Block Diagram

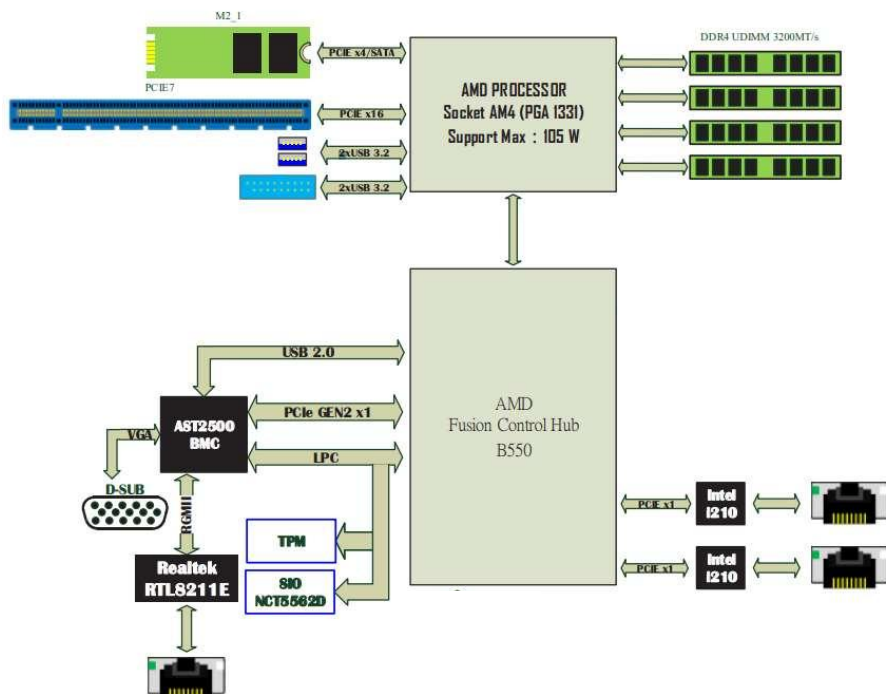
B550D4ID-2L2T



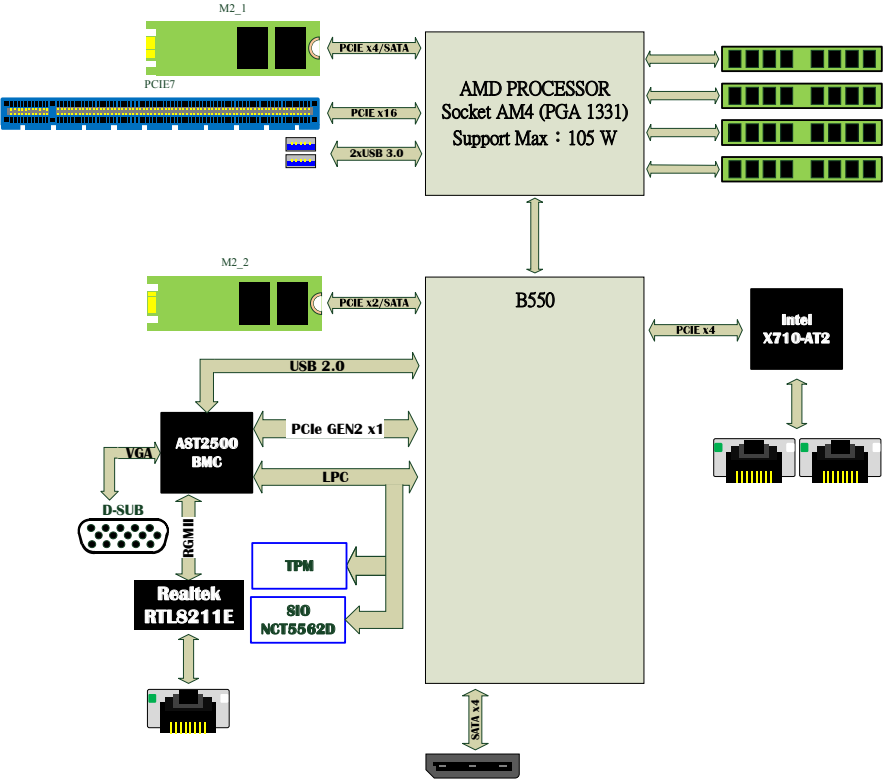
B550D4ID-2T/CG



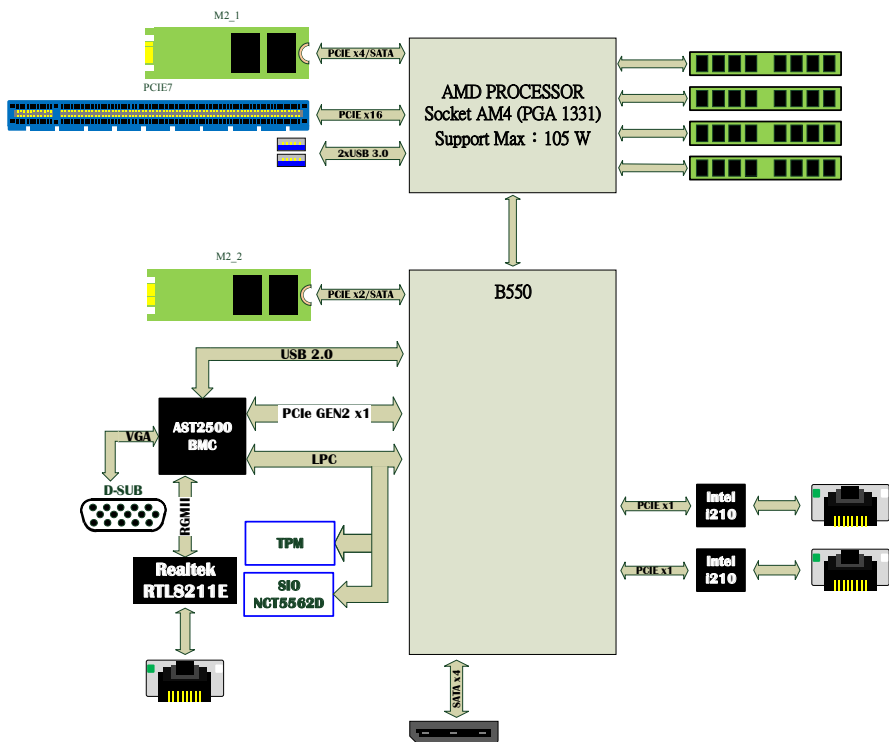
B550D4ID/CG



B550D4ID-2T/18N



B550D4ID/18N



Chapter 2 Installation

This is a deep mini-ITX form factor (6.7" x 8.2", 17.0 cm x 20.8 cm) motherboard. Before you install the motherboard, study the configuration of your chassis to ensure that the motherboard fits into it.



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.

2.1 Screw Holes

Place screws into the holes indicated by circles to secure the motherboard to the chassis.



Attention! Before installing this motherboard, be sure to unscrew and remove the standoffs at the marked location, under the motherboard, from the chassis, in order to avoid electrical short circuit and damage to your motherboard.



Do not over-tighten the screws! Doing so may damage the motherboard.

2.2 Pre-installation Precautions

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.



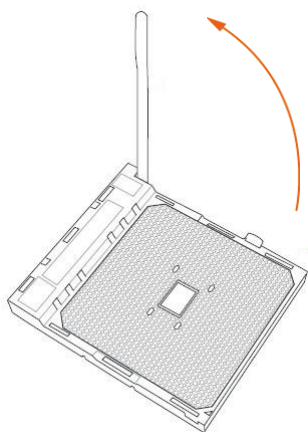
Before you install or remove any component, ensure that the power is switched off or the power cord is detached from the power supply. Failure to do so may cause severe damage to the motherboard, peripherals, and/or components.

2.3 Installing the CPU

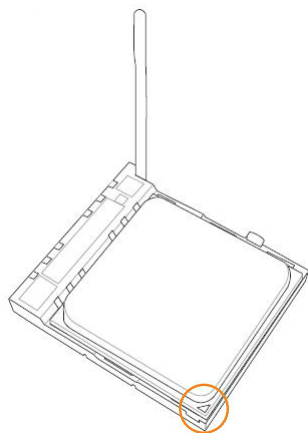


Unplug all power cables before installing the CPU.

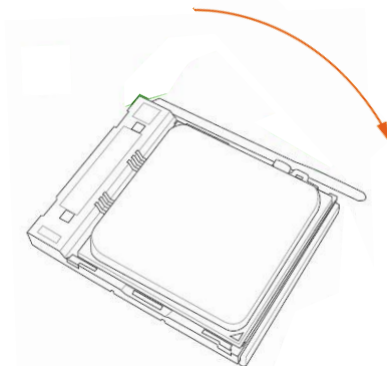
1



2



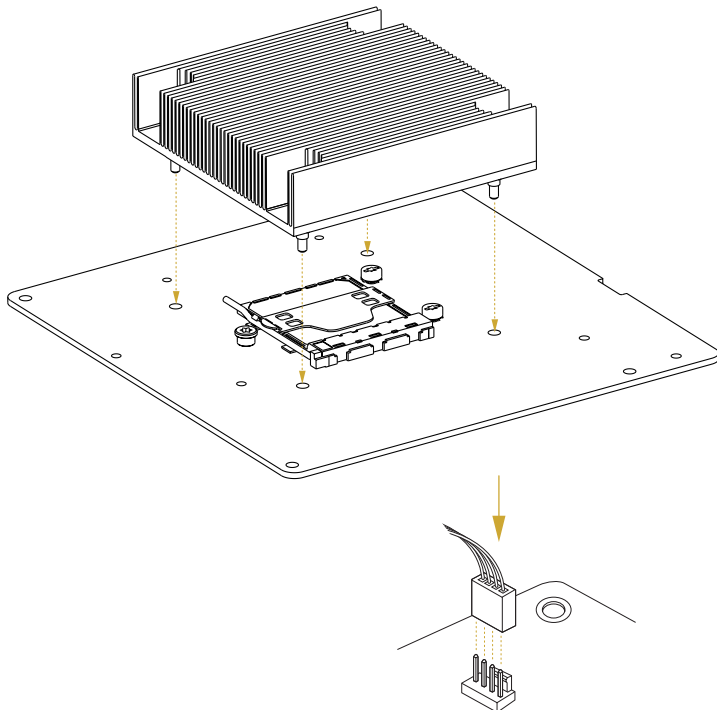
3



2.4 Installing the CPU Fan and Heatsink



Please be aware that this motherboard only supports LGA115x CPU heatsink



2.5 Installing Memory Modules (DIMM)

This motherboard provides four 288-pin DDR4 (Double Data Rate 4) DIMM slots, and supports Dual Channel Memory Technology.



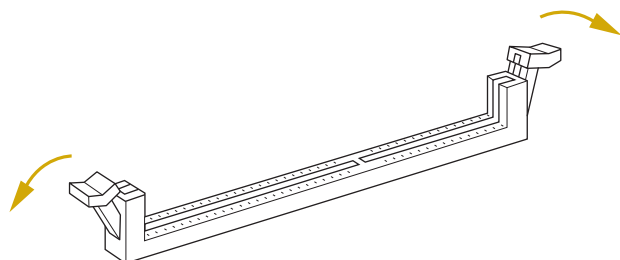
1. For dual channel configuration, you always need to install identical (the same brand, speed, size and chip-type) DDR4 DIMM pairs.
2. It is unable to activate Dual Channel Memory Technology with only one or three memory module installed.
3. It is not allowed to install a DDR, DDR2 or DDR3 memory module into a DDR4 slot; otherwise, this motherboard and DIMM may be damaged.

DDR4 UDIMM Maximum Frequency Support

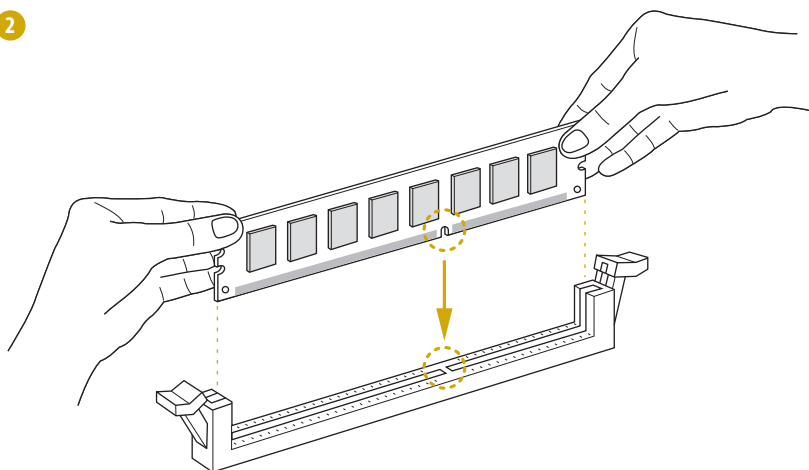
Ryzen Series CPUs

UDIMM Memory Slot				Matisse	Renoir	Vermeer
A2	A1	B2	B1	Freq (Mhz)	Freq (Mhz)	Freq (Mhz)
-	SR	-	-	3200	3200	3200
-	DR	-	-	3200	3200	3200
-	SR	-	SR	3200	3200	3200
-	DR	-	DR	3200	3200	3200
SR	SR	SR	SR	2933	2933	2933
DR	DR	DR	DR	2666	2666	2666

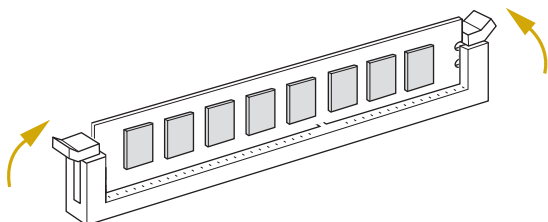
1



2



3



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.

2.6 Expansion Slot (PCI Express Slot)

There is 1 PCI Express slot on this motherboard.

PCIe slot:

PCIe7 (PCIe 4.0 x16 slot, from CPU) is used for PCI Express x16 lane width cards.

Slot	Generation	Mechanical	Electrical	Source
PCIe7	4.0	x16	x16	CPU

Installing an expansion card

- Step 1. Before installing an expansion card, please make sure that the power supply is switched off or the power cord is unplugged. Please read the documentation of the expansion card and make necessary hardware settings for the card before you start the installation.
- Step 2. Remove the system unit cover (if your motherboard is already installed in a chassis).
- Step 3. Remove the bracket facing the slot that you intend to use. Keep the screws for later use.
- Step 4. Align the card connector with the slot and press firmly until the card is completely seated on the slot.
- Step 5. Fasten the card to the chassis with screws.
- Step 6. Replace the system cover.

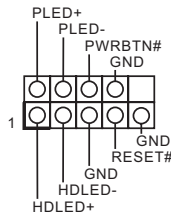
2.7 Onboard Headers and Connectors



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.

Please see Page 14, 16, and 18 for the connector placement of your motherboard.

System Panel Header
(9-pin PANEL1)



Connect the power switch, reset switch and system status indicator on the chassis to this header according to the pin assignments. Particularly 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.

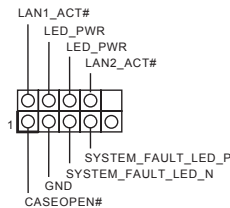
RESET (Reset Switch):
Connect to the reset switch on the chassis front panel. Press the reset switch to restart the computer if the computer freezes and fails to perform a normal restart.

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 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.

Auxiliary Panel Header
(9-pin
ITX_AUX_PANEL1)



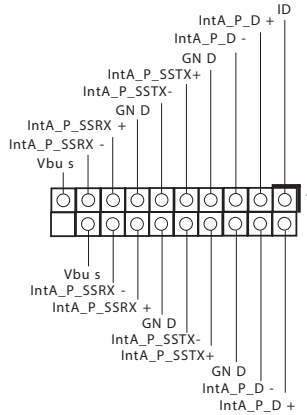
This header supports multiple functions on the front panel, including front panel SMB, internet status indicator.

OCuLink Connector (OCU1)



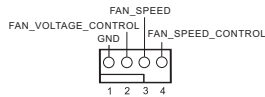
Please connect an OCuLink-to-SATA x4 cable to the connector.

USB 3.2 Gen1 Header (19-pin USB3_5_6)



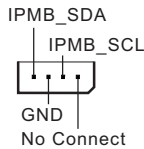
There is one USB 3.2 Gen1 header on this motherboard. This USB 3.2 Gen1 header can support two USB 3.2 Gen1 ports.

System Fan Connectors (4-pin FAN1) (4-pin FAN2) (4-pin FAN3)



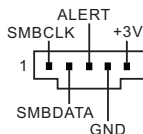
Please connect fan cables to the fan connector and match the black wire to the ground pin. All fans support Fan Control.

Intelligent Platform Management Bus Header (4-pin IPMB1)



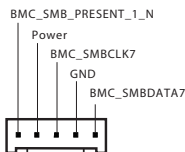
This 4-pin connector is used to provide a cabled base-board or front panel connection for value added features and 3rd-party add-in cards, such as Emergency Management cards, that provide management features using the IPMB.

PSU SMBus Header
(5-pin PSU_SMB1)



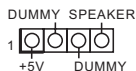
PSU SMBus monitors the status of the power supply, fan and system temperature.

Baseboard Management
Controller SMBus Header
(5-pin BMC_SMB1)



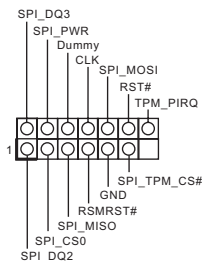
The header is used for the SMBUS devices.

Chassis Speaker Header
(4-pin SPEAKER1)



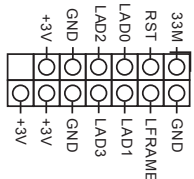
Please connect the chassis speaker to this header.

SPI TPM Header
(13-pin TPM_BIOS_PH1)



This connector supports SPI 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.

TPM Header
(13-pin TPM1)



This connector supports 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.

Thermal Sensor Header
(3-pin TR1)



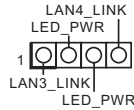
Please connect the thermal sensor cable to either pin 1-2 or pin 2-3 and the other end to the device which you wish to monitor its temperature.

Clear CMOS Pad
(CLR_CMOS1)



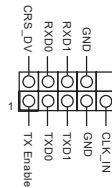
This allows you to clear the data in CMOS. To clear CMOS, take out the CMOS battery and short the Clear CMOS Pad.

Front LAN LED
Connector
(LED_LAN_3_4)



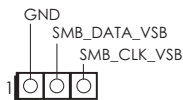
This 4-pin connector is used for the front LAN status indicator.

NCSI Header
(9-pin NCSI1)



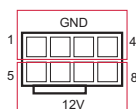
The onboard NCSI header is used for external connections.

PWM Configuration
Header
(3-pin PWM_CFG1)



This header is used for PWM configurations.

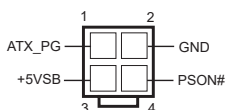
ATX 12V Power
Connectors
(8-pin ATX12V1)
(8-pin ATX12V2)



The motherboard provides one or two 8-pin 12V power connectors which are required inputs for either DC-IN 12V or ATX +12V power sources.

When using ATX power, it is necessary to use a 24pin-to-4pin power cable to connect between the 24pin power connector of PSU and the ATX4PIN1 connector on the motherboard for power supply and signal communication.

ATX 4-PIN Power
Connector
(4-pin ATX4PIN1)



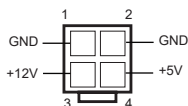
The motherboard provides one 4-pin power/signal connector which is a required input for ATX power source.

When using ATX power, it is necessary to use a 24pin-to-4pin power cable to connect between the 24pin power connector of PSU and the ATX4PIN1 connector on the motherboard for power supply and signal communication.

For DC-IN 12V application, it is not necessary to use this ATX 4-PIN power connector.

**Caution: Misconnection between the ATX4PIN1 and the SATA_PWRI connectors may permanently damage the motherboard.*

SATA Power Connector
(4-pin SATA_PWR1)
(see p.6, No. 3)
(FOR HDD POWER)



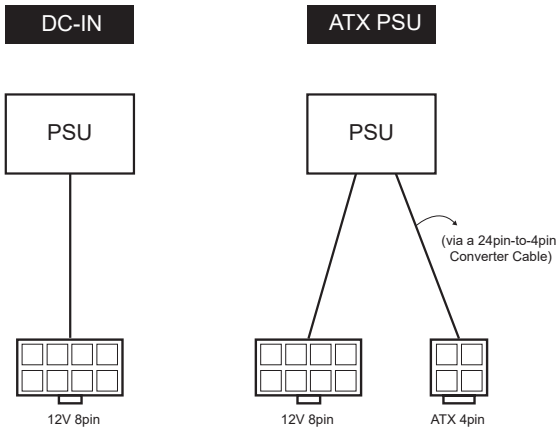
Please use a SATA power cable to connect this SATA Power Connector and your SATA HDD for supplying power from the motherboard, when using DC-IN mode without SATA power supply.

**Caution: Misconnection between the ATX4PIN1 and the SATA_PWR1 connectors may permanently damage the motherboard.*

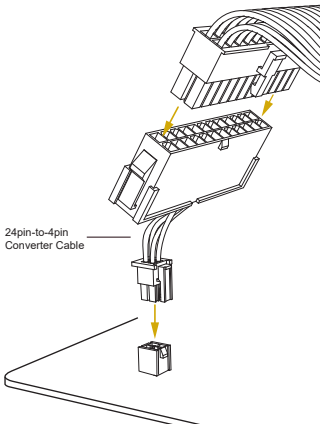
2.8 ATX PSU / DC-IN Power Connections

This motherboard (B550D4ID/CG / B550D4ID-2T/18N / B550D4ID/18N) supports both +12V DC and ATX power input. Please refer to the table below for the required connections between the motherboard and the power supply.

Connector	DC-IN	ATX PSU
12V 8pin	O	O
ATX 4pin	X	O (with the bundled ATX 24pin-to-4pin converter cable)



The following diagram illustrates how to connect the bundled ATX 24pin-to-4pin converter cable.



2.9 Unit Identification purpose LED/Switch

With the UID button, You are able to locate the server you're working on from behind a rack of servers.

Unit Identification
purpose LED (UID_
LED1)/Switch
(UID1)



When the UID button on the front or rear panel is pressed, the front/rear UID blue LED indicator will be turned on. Press the UID button again to turn off the indicator.

2.10 Driver Installation Guide

To install the drivers to your system, please insert the support CD to your optical drive first. Then, the drivers compatible to your system can be auto-detected and listed on the support CD driver page. Please follow the order from top to bottom to install those required drivers. Therefore, the drivers you install can work properly.

2.11 M.2 SSD Module Installation Guide

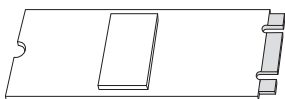
The Hyper M.2 Socket (M2_1, Key M) supports type 2280 (B550D4ID-2L2T / B550D4ID-2T/CG / B550D4ID/CG) or 22110 (B550D4ID-2T/18N / B550D4ID/18N) SATA3 6.0 Gb/s module or a M.2 PCI Express module up to Gen4 x4 (64Gb/s).

The M.2 Socket (M2_2, Key M) supports type 2280 (B550D4ID-2T/18N / B550D4ID/18N) SATA3 6.0 Gb/s module or a M.2 PCI Express module up to Gen3 x2 (32Gb/s).

Installing the M.2_SSD (NGFF) Module

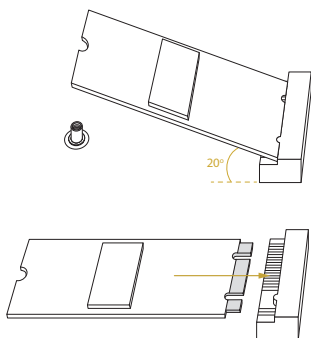
Step 1

Prepare a M.2_SSD (NGFF) module and the screw.



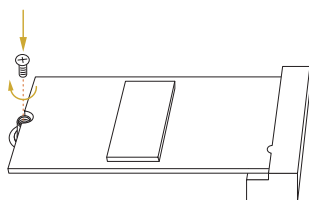
Step 2

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



Step 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.



M.2_SSD (NGFF) Module Support List

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

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 <Ctrl> + <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:

Item	Description
Main	To set up the system time/date information
Advanced	To set up the advanced UEFI features
Server Mgmt	To manage the server
Security	To set up the security features
Boot	To set up the default system device to locate and load the Operating System
Exit	To exit the current screen or the UEFI SETUP UTILITY

Use <←→> key or <→> key to choose among the selections on the menu bar, and then press <Enter> to get into the sub screen.

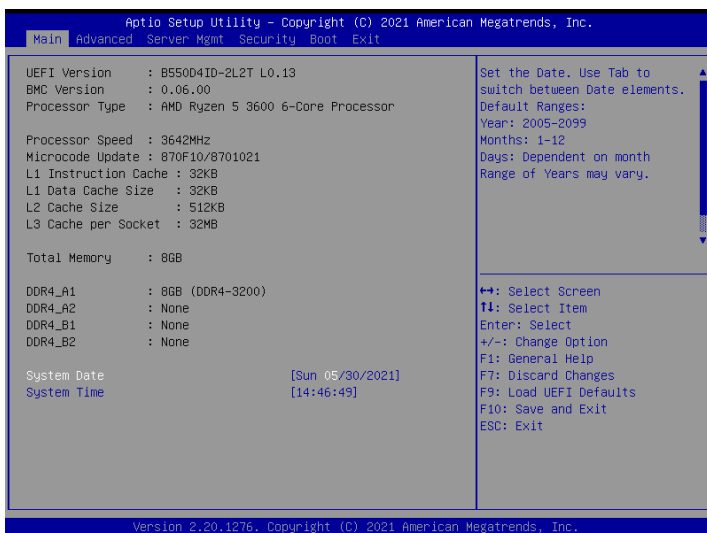
3.1.2 Navigation Keys

Please check the following table for the function description of each navigation key.

Navigation Key(s)	Function Description
← / →	Moves cursor left or right to select Screens
↑ / ↓	Moves cursor up or down to select items
+ / -	To change option for the selected items
<Tab>	Switch to next function
<Enter>	To bring up the selected screen
<PGUP>	Go to the previous page
<PGDN>	Go to the next page
<HOME>	Go to the top of the screen
<END>	Go to the bottom of the screen
<F1>	To display the General Help Screen
<F7>	Discard changes and exit the UEFI SETUP UTILITY
<F9>	Load optimal default values for all the settings
<F10>	Save changes and exit the UEFI SETUP UTILITY
<F12>	Print screen
<ESC>	Jump to the Exit Screen or exit the current screen

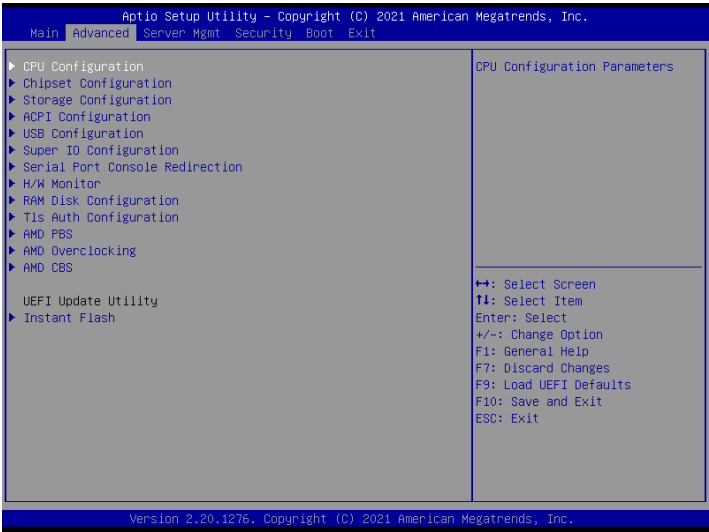
3.2 Main Screen

Once you enter the UEFI SETUP UTILITY, the Main screen will appear and display the system overview. The Main screen provides system overview information and allows you to set the system time and date.



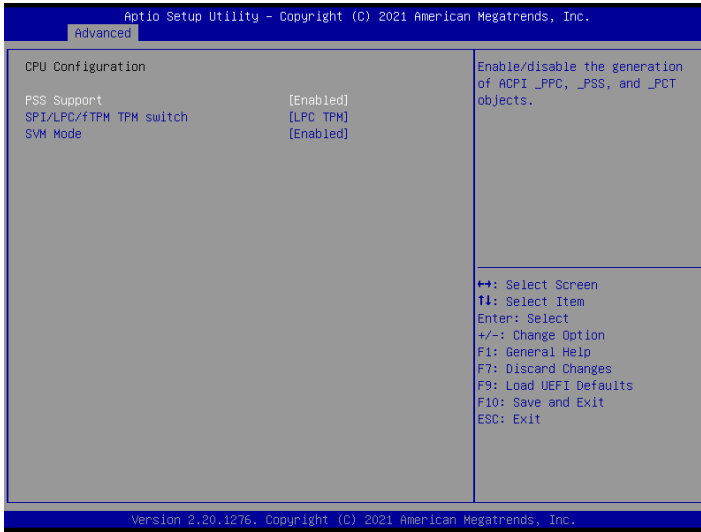
3.3 Advanced Screen

In this section, you may set the configurations for the following items: CPU Configuration, Chipset Configuration, Storage Configuration, ACPI Configuration, USB Configuration, Super IO Configuration, Serial Port Console Redirection, H/W Monitor, RAM Disk Configuration, Tls Auth Configuration, AMD PBS, AMD Overclocking, AMD CBS and Instant Flash.



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

3.3.1 CPU Configuration



PSS Support

Enable/disable the generation of ACPI _PPC, _PSS, and _PCT objects.

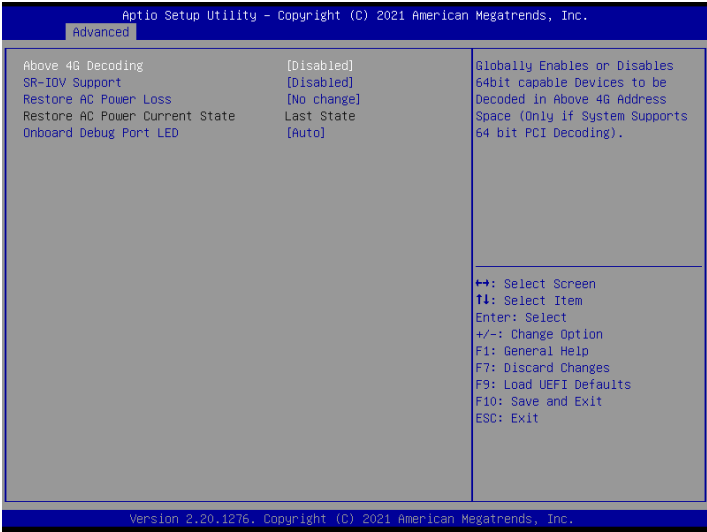
SPI/LPC/fTPM TPM switch

To select. 0: AMD CPU fTPM. 1 - LPC TPM. 2 - SPI TPM

SVM Mode

Enable/disable CPU Virtualization.

3.3.2 Chipset Configuration



Above 4G Decoding

Globally Enables or Disables 64bit capable Devices to be Decoded in Above 4G Address Space (Only if System Supports 64 bit PCI Decoding).

SR-IOV Support

If system has SR-IOV capable PCIe Devices, this option Enables or Disables Single Root IO Virtualization Support.

Restore AC Power Loss

Select the power state after a power failure. If [Power Off] is selected, the power will remain off when the power recovers. If [Power On] is selected, the system will start to boot up when the power recovers.

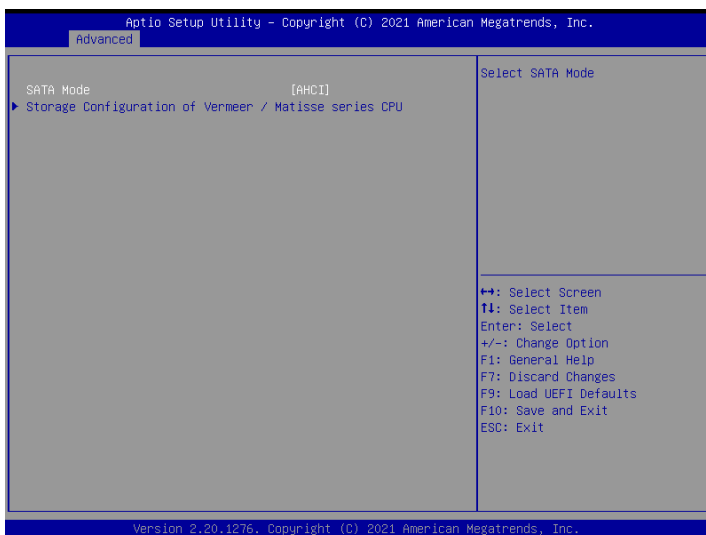
Restore AC Power Current State

This allows you to restore AC Power Current State.

Onboard Debug Port LED

Enable or disable the onboard Dr. Debug LED.

3.3.3 Storage Configuration



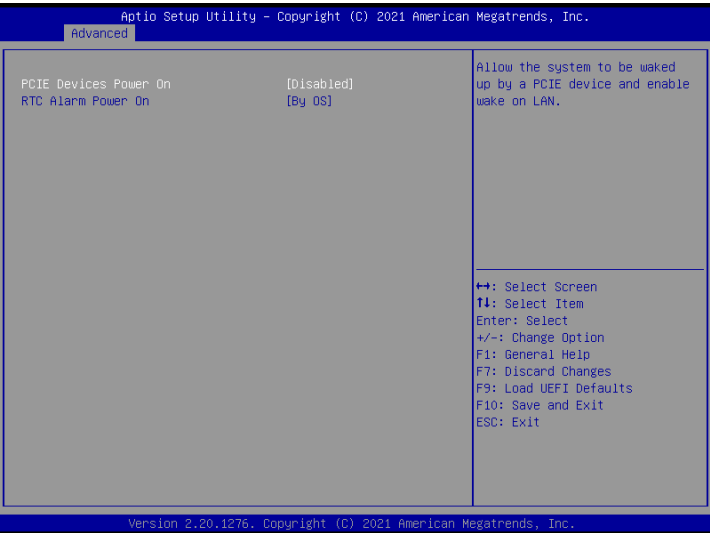
SATA Mode

Select SATA Mode.

Storage Configuration of Vermeer / Matisse series CPU

Configure storage devices of Vermeer / Matisse series CPU.

3.3.4 ACPI Configuration



PCIE Devices Power On

Allow the system to be waked up by a PCIE device and enable wake on LAN.

RTC Alarm Power On

Allow the system to be waked up by the real time clock alarm. Set it to By OS to let it be handled by your operating system.

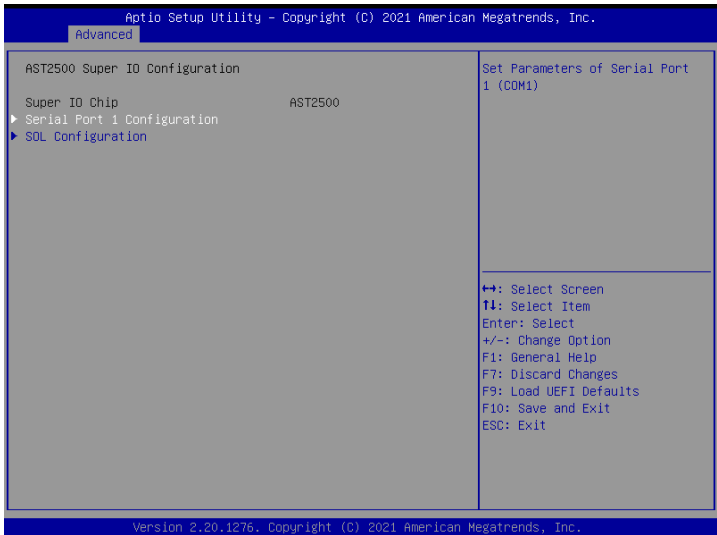
3.3.5 USB Configuration



Legacy USB Support

Enables Legacy USB support. AUTO option disables legacy support if no USB devices are connected. DISABLE option will keep USB devices available only for EFI applications.

3.3.6 Super IO Configuration



Serial Port 1 Configuration

Use this item to set parameters of Serial Port 1 (COM1).

Serial Port

Use this item to enable or disable the serial port.

Serial Port Address

Use this item to select an optimal setting for Super IO device.

SOL Configuration

Use this item to set parameters of SOL.

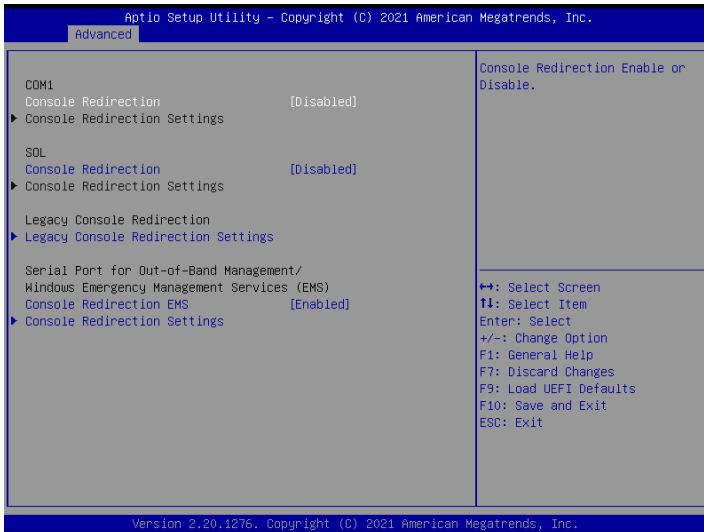
SOL Port

Use this item to enable or disable SOL Port.

Serial Port Address

Use this item to select an optimal setting for Super IO device.

3.3.7 Serial Port Console Redirection



COM1 / SOL

Console Redirection

Use this option to enable or disable Console Redirection. If this item is set to Enabled, you can select a COM Port to be used for Console Redirection.

Console Redirection Settings

Use this option to configure Console Redirection Settings, and specify how your computer and the host computer to which you are connected exchange information. Both computers should have the same or compatible settings.

Terminal Type

Use this item to select the preferred terminal emulation type for out-of-band management. It is recommended to select [VT-UTF8].

Option	Description
VT100	ASCII character set
VT100+	Extended VT100 that supports color and function keys
VT-UTF8	UTF8 encoding is used to map Unicode chars onto 1 or more bytes
ANSI	Extended ASCII character set

Bits Per Second

Use this item to select the serial port transmission speed. The speed used in the host computer and the client computer must be the same. Long or noisy lines may require lower transmission speed. The options include [9600], [19200], [38400], [57600] and [115200].

Data Bits

Use this item to set the data transmission size. The options include [7] and [8] (Bits).

Parity

Use this item to select the parity bit. The options include [None], [Even], [Odd], [Mark] and [Space].

Stop Bits

The item indicates the end of a serial data packet. The standard setting is [1] Stop Bit. Select [2] Stop Bits for slower devices.

Flow Control

Use this item to set the flow control to prevent data loss from buffer overflow. When sending data, if the receiving buffers are full, a "stop" signal can be sent to stop the data flow. Once the buffers are empty, a "start" signal can be sent to restart the flow. Hardware flow uses two wires to send start/stop signals. The options include [None] and [Hardware RTS/CTS].

VT-UTF8 Combo Key Support

Use this item to enable or disable the VT-UTF8 Combo Key Support for ANSI/VT100 terminals.

Recorder Mode

Use this item to enable or disable Recorder Mode to capture terminal data and send it as text messages.

Resolution 100x31

Use this item to enable or disable extended terminal resolution support.

Putty Keypad

Use this item to select Function Key and Keypad on Putty.

Legacy Console Redirection

Legacy Console Redirection Settings

Use this option to configure Legacy Console Redirection Settings, and specify how your computer and the host computer to which you are connected exchange information.

Redirection COM Port

Select a COM port to display redirection of Legacy OS and Legacy OPROM Messages.

Resolution

On Legacy OS, the Number of Rows and Columns supported redirection.

Redirect After POST

When Bootloader is selected, then Legacy Console Redirection is disabled before booting to legacy OS. When Always Enable is selected, then Legacy Console Redirection is enabled for legacy OS. Default setting for this option is set to Always Enable.

Serial Port for Out-of-Band Management/Windows Emergency Management Services (EMS)

Console Redirection

Use this option to enable or disable Console Redirection. If this item is set to Enabled, you can select a COM Port to be used for Console Redirection.

Console Redirection Settings

Use this option to configure Console Redirection Settings, and specify how your computer and the host computer to which you are connected exchange information.

Out-of-Band Mgmt Port

Microsoft Windows Emergency Management Services (EMS) allows for remote management of a Windows Server OS through a serial port.

Terminal Type EMS

Use this item to select the preferred terminal emulation type for out-of-band management. It is recommended to select [VT-UTF8].

Option	Description
VT100	ASCII character set
VT100+	Extended VT100 that supports color and function keys
VT-UTF8	UTF8 encoding is used to map Unicode chars onto 1 or more bytes
ANSI	Extended ASCII character set

Bits Per Second EMS

Use this item to select the serial port transmission speed. The speed used in the host computer and the client computer must be the same. Long or noisy lines may require lower transmission speed. The options include [9600], [19200], [57600] and [115200].

Flow Control EMS

Use this item to set the flow control to prevent data loss from buffer overflow. When sending data, if the receiving buffers are full, a "stop" signal can be sent to stop the data flow. Once the buffers are empty, a "start" signal can be sent to restart the flow. Hardware flow uses two wires to send start/stop signals. The options include [None], [Hardware RTS/CTS], and [Software Xon/Xoff].

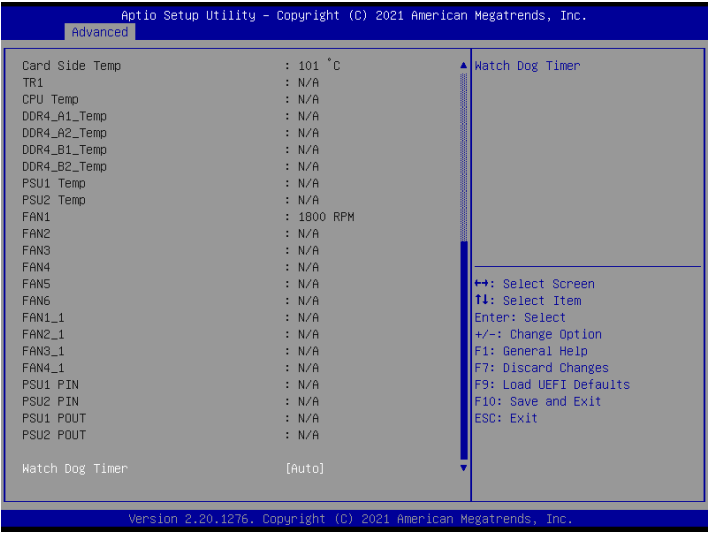
Data Bits

Parity

Stop Bits

3.3.8 H/W Monitor

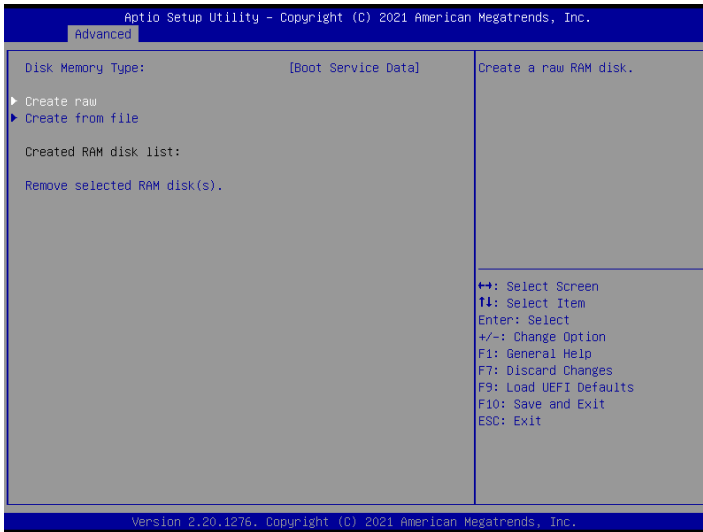
In this section, it allows you to monitor the status of the hardware on your system, including the parameters of the CPU temperature, motherboard temperature, CPU fan speed, chassis fan speed, and the critical voltage.



Watch Dog Timer

This allows you to enable or disable the Watch Dog Timer. The default value is [Auto].

3.3.9 RAM Disk Configuration



Disk Memory Type

Specifies type of memory to use from available memory pool in system to create a disk.

Create raw

Create a raw RAM disk.

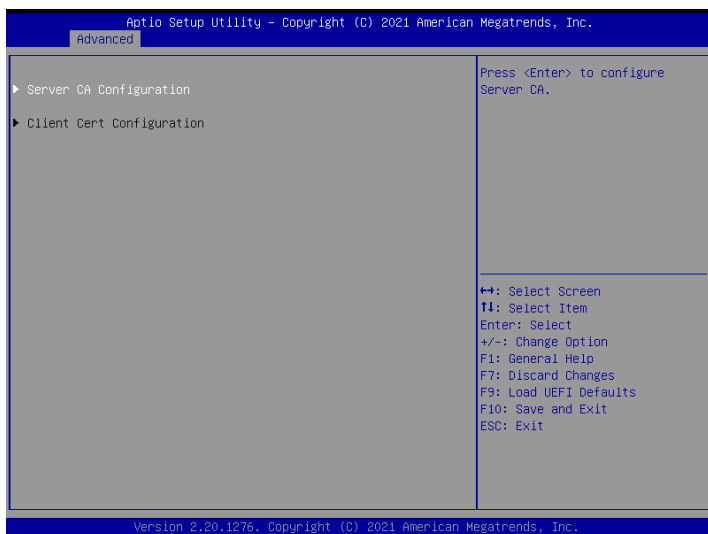
Create from file

Create a RAM disk from a given file.

Remove selected RAM disk(s)

Remove selected RAM disk(s).

3.3.10 Tls Auth Configuration



Server CA Configuration

Press <Enter> to configure Server CA.

Client Cert Configuration

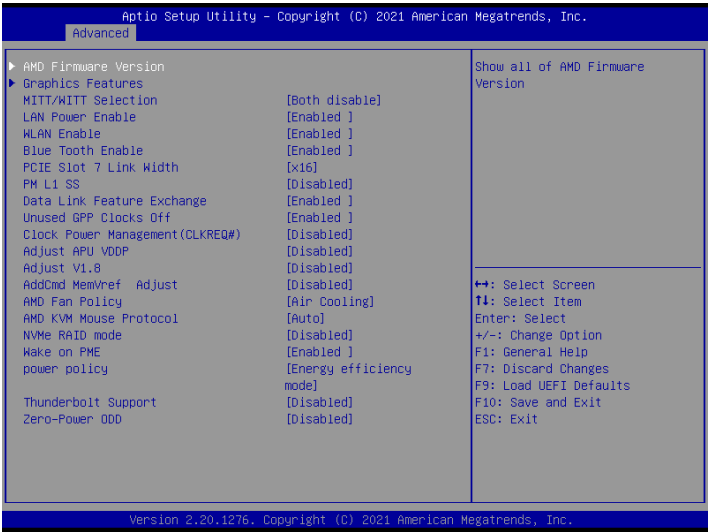
Enroll Cert

Press <Enter> to enroll cert.

Delete Cert

Press <Enter> to delete cert.

3.3.11 AMD PBS



AMD Firmware Version

Show all of AMD Firmware Version.

Graphics Features

Graphics Features - HG, DGPU Features, BOMAC0.

MITT/WITT Selection

Use this item to configure MITT/WITT Selection.

LAN Power Enable

Use this item to enable or disable LAN power.

WLAN Enable

Use this item to enable or disable WLAN.

Blue Tooth Enable

Use this item to enable or disable Blue Tooth.

PCIe Slot 7 Link Width

Configure Slot 7 Slot PCIe Lanes.

PM L1 SS

Enable for PM L1 SS and ASPM L1 SS.

Data Link Feature Exchange

Enable or Disable Data Link Feature Exchange, try to disable it if any Legacy Endpoint can not boot.

Unused GPP Clocks Off

Turn Unused GPP Clocks Off.

Clock Power Management (CLKREQ#)

Enable or disable CLKREQ#.

Adjust APU VDDP

Adjust APU VDDP, stepping is 2.5mV. $V_{ddp} = 1.05V \pm N * 2.5 \text{ mV}$, input rang is 0-127.

Adjust V1.8

Adjust V1.8, stepping is 1mV. $V_{1.8} = 1.8V \pm N * 1 \text{ mV}$, input rang is 0-127.

AddCmd MemVref Adjust

AddCmd MemVref Adjust, stepping is $VDDIO * (1/256)$. $MEM_VREF = VDDIO * (N / 256)$, input range is 1-255.

AMD Fan Policy

[Air Cooling] follow platform defined policy; [Water Cooling] force PWM 100%; Selecting [Fan control] to [Manual] in CBS will override this option.

AMD KVM Mouse Protocol

Switch KVM Mouse Protocol between Absolut/Simple.

NVMe RAID mode

Enable or disable NVMe RAID mode. Please setting the 'PCIe/GFX Lanes Configuration' item according to the RAID configuration.

Wake on PME

Determines the action taken when the system power is off and a PCI Power Management Enable wake up event occurs.

Power Policy

Select the Power Policy mode.

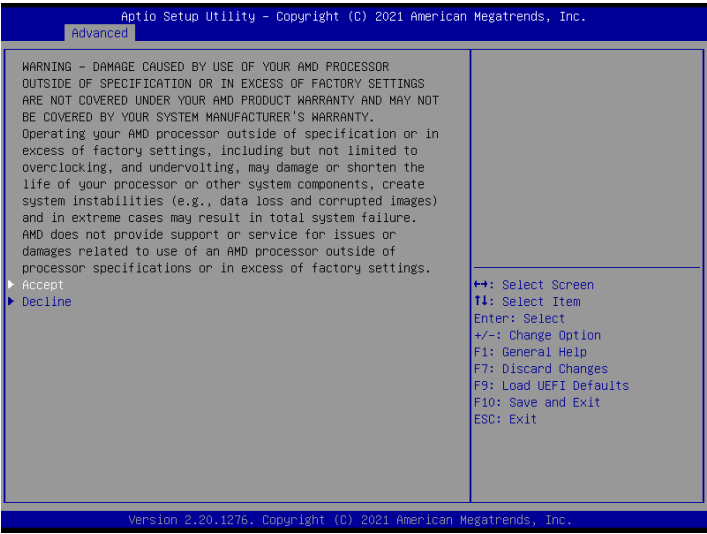
Thunderbolt Support

Enable Thunderbolt Support.

Zero-Power ODD

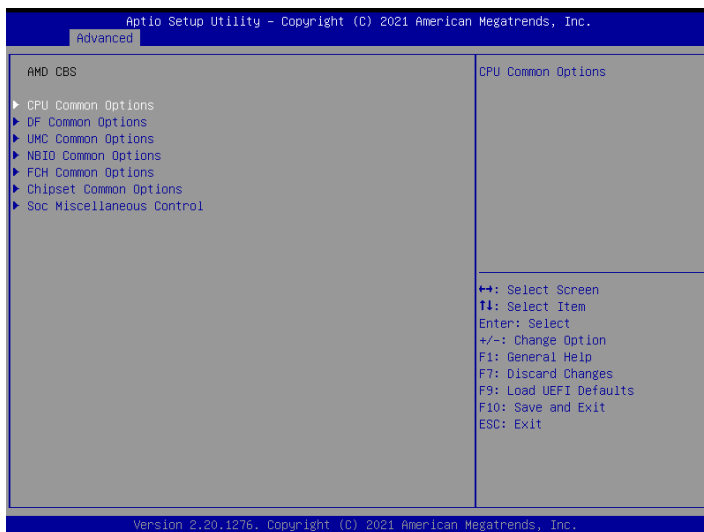
Enable/Disable Zero-Power ODD Feature.

3.3.12 AMD Overclocking



The AMD Overclocking menu accesses options for configuring CPU frequency and voltage.

3.3.13 AMD CBS



CPU Common Options

Use this item to configure CPU Common options.

DF Common Options

Use this item to configure DF Common options.

UMC Common Options

Use this item to configure UMC Common options.

NBIO Common Options

Use this item to configure NBIO Common options.

FCH Common Options

Use this item to configure FCH Common options.

Chipset Common Options

Use this item to configure Chipset Common options.

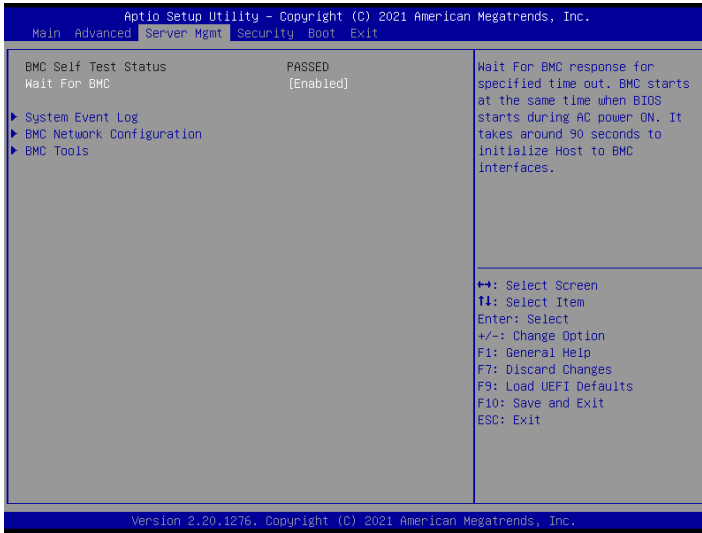
Soc Miscellaneous Control

Use this item to configure Soc Miscellaneous Control.

3.3.14 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 save the new UEFI file to your USB flash drive, floppy disk or hard drive and launch this tool, 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 the UEFI update process is completed.

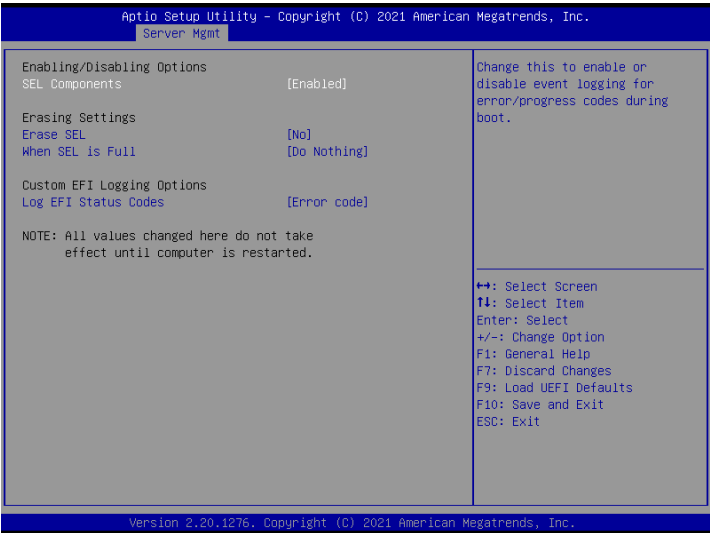
3.4 Server Mgmt



Wait For BMC

Wait For BMC response for specified time out. BMC starts at the same time when BIOS starts during AC power ON. It takes around 90 seconds to initialize Host to BMC interfaces.

3.4.1 System Event Log



SEL Components

Change this to enable or disable event logging for error/progress codes during boot.

Erase SEL

Use this to choose options for erasing SEL.

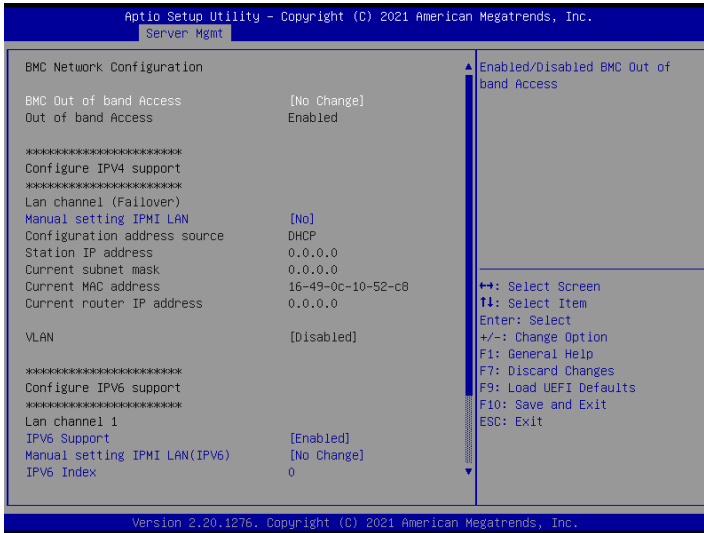
When SEL is Full

Use this to choose options for reactions to a full SEL.

Log EFI Status Codes

Use this item to disable the logging of EFI Status Codes or log only error code or only progress code or both.

3.4.2 BMC Network Configuration



BMC Out of Band Access

Enabled/Disabled BMC Out of band Access.

Lan channel (Failover)

Manual Setting IPMI LAN

If [No] is selected, the IP address is assigned by DHCP. If you prefer using a static IP address, toggle to [Yes], and the changes take effect after the system reboots. The default value is [No].

Configuration Address Source

Select to configure BMC network parameters statically or dynamically (by BIOS or BMC). Configuration options: [Static] and [DHCP].

Static: Manually enter the IP Address, Subnet Mask and Gateway Address in the BIOS for BMC LAN channel configuration.

DHCP: IP address, Subnet Mask and Gateway Address are automatically assigned by the network's DHCP server.



When [DHCP] or [Static] is selected, do NOT modify the BMC network settings on the IPMI web page.



The default login information for the IPMI web interface is:

Username: admin

Password: admin

For more instructions on how to set up remote control environment and use the IPMI management platform, please refer to the IPMI Configuration User Guide or go to the Support website at: <http://www.asrockrack.com/support/faq.asp>

VLAN

Enabled/Disabled Virtual Local Area Network.

If [Enabled] is selected, configure the items below.

IPv6 Support

Enabled/Disable LAN1 IPv6 Support.

Manual Setting IPMI LAN(IPV6)

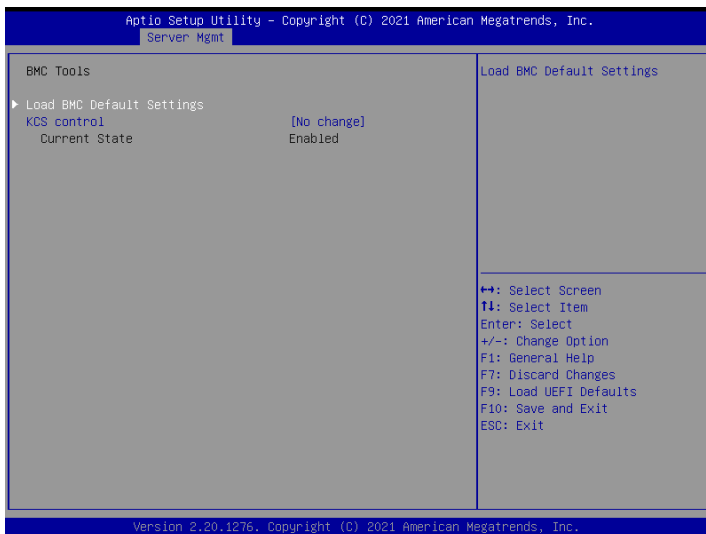
Select to configure LAN channel parameters statically or dynamically(by BIOS or BMC).

Unspecified option will not modify any BMC network parameters during BIOS phase.

IPv6 Index

IPv6 Index - Set Selector for Static IP, range 0 to 15.

3.4.3 BMC Tools



Load BMC Default Settings

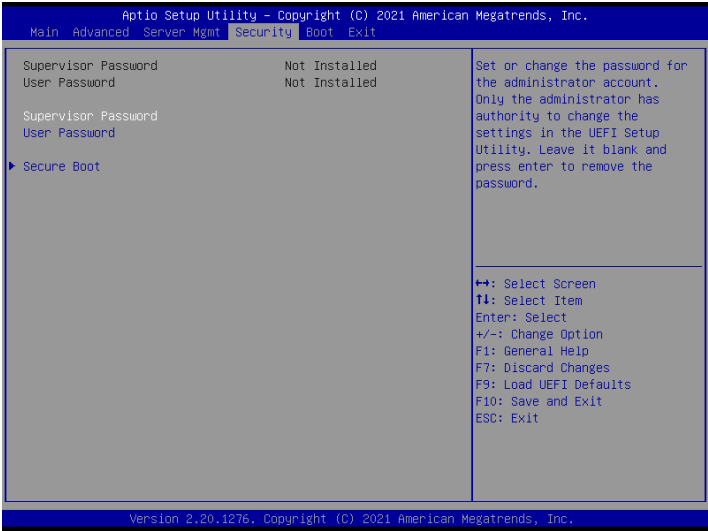
Use this item to Load BMC Default Settings

KCS Control

Select this KCS interface state after POST end. If [Enabled] is selected, the BMC will remain KCS interface after POST stage. If [Disabled] is selected, the BMC will disable KCS interface after POST stage

3.5 Security

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



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

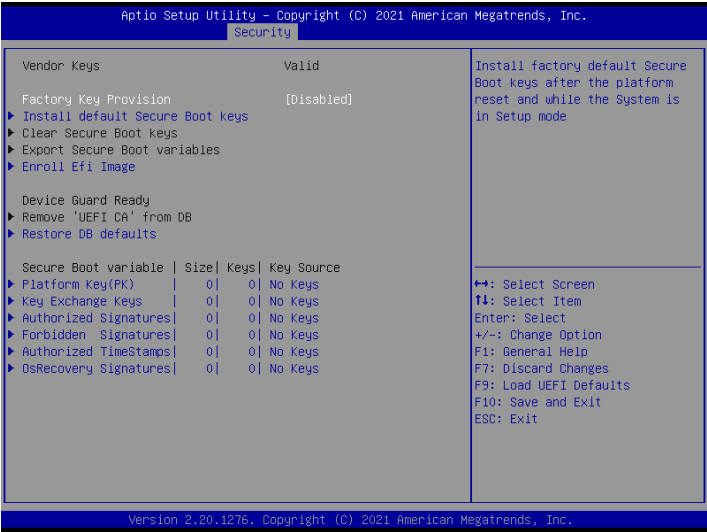
Use this to enable or disable Secure Boot Control. The default value is [Disabled]. Enable to support Windows 8 or later versions Secure Boot.

Secure Boot Mode

Secure Boot mode selector: Standard/Custom. In Custom mode Secure Boot Variables can be configured without authentication.

3.5.1 Key Management

In this section, expert users can modify Secure Boot Policy variables without full authentication.



Factory Key Provision

Allow to provision factory default Secure Boot keys when System is in Setup Mode.

Install Default Secure Boot Keys

Please install default secure boot keys if it's the first time you use secure boot.

Enroll Efi Image

Allow the image to run in Secure Boot mode. Enroll SHA256 hash of the binary into Authorized Signature Database (db).

Restore DB Defaults

Restore DB variable to factory defaults.

Platform Key(PK)

Enroll Factory Defaults or load certificates from a file:

1. Public Key Certificate:
 - a) EFI_SIGNATURE_LIST
 - b) EFI_CERT_X509 (DER)

c) EFI_CERT_RSA2048 (bin)

d) EFI_CERT_SHAXXX

2. Authenticated UEFI Variable

3. EFI PE/COFF Image(SHA256)

Key Source: Default, External, Mixed

Key Exchange Keys

Enroll Factory Defaults or load certificates from a file:

1. Public Key Certificate:

a) EFI_SIGNATURE_LIST

b) EFI_CERT_X509 (DER)

c) EFI_CERT_RSA2048 (bin)

d) EFI_CERT_SHAXXX

2. Authenticated UEFI Variable

3. EFI PE/COFF Image(SHA256)

Key Source: Default, External, Mixed

Authorized Signatures

Enroll Factory Defaults or load certificates from a file:

1. Public Key Certificate:

a) EFI_SIGNATURE_LIST

b) EFI_CERT_X509 (DER)

c) EFI_CERT_RSA2048 (bin)

d) EFI_CERT_SHAXXX

2. Authenticated UEFI Variable

3. EFI PE/COFF Image(SHA256)

Key Source: Default, External, Mixed

Forbidden Signatures

Enroll Factory Defaults or load certificates from a file:

1. Public Key Certificate:

- a) EFI_SIGNATURE_LIST
 - b) EFI_CERT_X509 (DER)
 - c) EFI_CERT_RSA2048 (bin)
 - d) EFI_CERT_SHAXXX
- 2. Authenticated UEFI Variable
 - 3. EFI PE/COFF Image(SHA256)

Key Source: Default, External, Mixed

Authorized TimeStamps

Enroll Factory Defaults or load certificates from a file:

- 1. Public Key Certificate:
 - a) EFI_SIGNATURE_LIST
 - b) EFI_CERT_X509 (DER)
 - c) EFI_CERT_RSA2048 (bin)
 - d) EFI_CERT_SHAXXX
- 2. Authenticated UEFI Variable
- 3. EFI PE/COFF Image(SHA256)

Key Source: Default, External, Mixed

OsRecovery Signatures

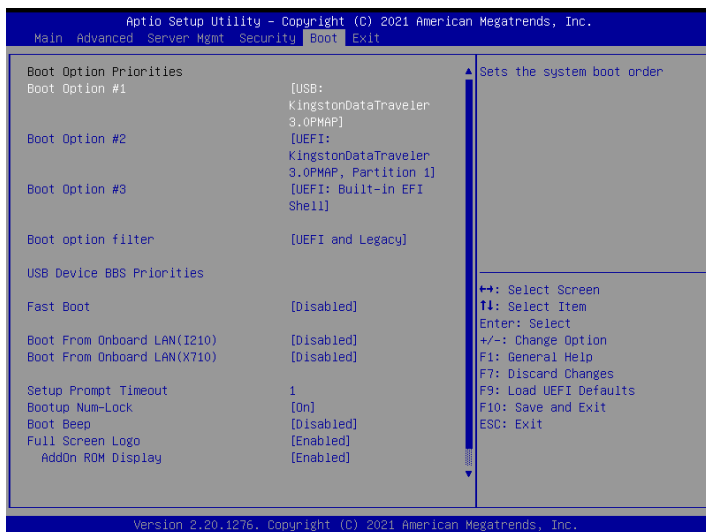
Enroll Factory Defaults or load certificates from a file:

- 1. Public Key Certificate:
 - a) EFI_SIGNATURE_LIST
 - b) EFI_CERT_X509 (DER)
 - c) EFI_CERT_RSA2048 (bin)
 - d) EFI_CERT_SHAXXX
- 2. Authenticated UEFI Variable
- 3. EFI PE/COFF Image(SHA256)

Key Source: Default, External, Mixed

3.6 Boot Screen

In this section, it will display the available devices on your system for you to configure the boot settings and the boot priority.



Boot Option #1

Use this item to set the system boot order.

Boot Option #2

Use this item to set the system boot order.

Boot Option #3

Use this item to set the system boot order.

Boot Option Filter

This option controls Legacy/UEFI ROMs priority.

USB Device BBS Priorities

Use this item to set the order of the legacy devices in the group.

Fast Boot

Enables/Disables fast boot which skips memory training and attempts to boot using last known good configuration.

Boot From Onboard LAN(I210) *(B550D4ID-2L2T / B550D4ID/CG / B550D4ID/18N only)*

Use this item to enable or disable the Boot From Onboard LAN feature.

Boot From Onboard LAN(X710) *(B550D4ID-2L2T / B550D4ID-2T/CG / B550D4ID-2T/18N only)*

Use this item to enable or disable the Boot From Onboard LAN feature.

Setup Prompt Timeout

Configure the number of seconds to wait for the UEFI setup utility.

Bootup Num-Lock

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

Boot Beep

Select whether the Boot Beep should be turned on or off when the system boots up. Please note that a buzzer is needed.

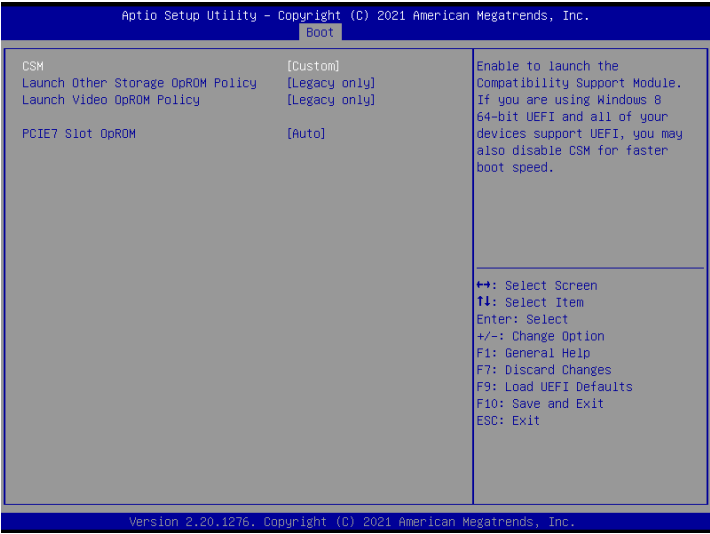
Full Screen Logo

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

AddOn ROM Display

Use this option to adjust AddOn ROM Display. If you enable the option “Full Screen Logo” but you want to see the AddOn ROM information when the system boots, please select [Enabled]. Configuration options: [Enabled] and [Disabled]. The default value is [Enabled].

3.6.1 CSM Parameters



CSM

Enable to launch the Compatibility Support Module. Please do not disable unless you're running a WHCK test. If you are using Windows 8 64-bit UEFI and all of your devices support UEFI, you may also disable CSM for faster boot speed.

Launch Other 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.

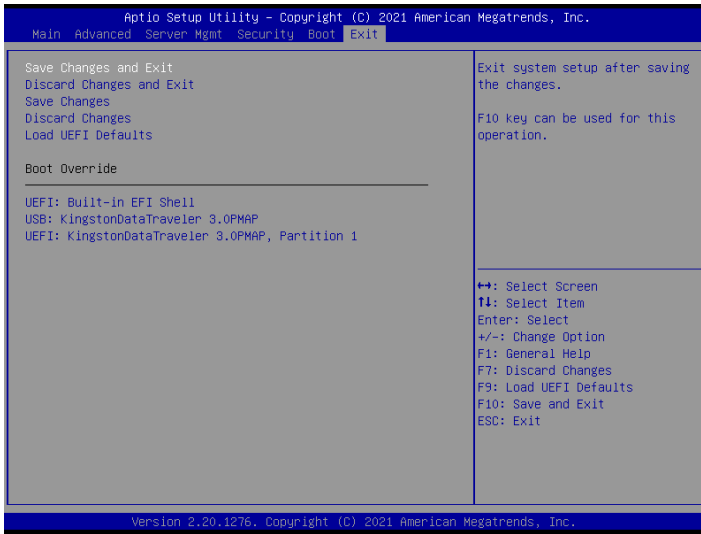
Launch Video OpROM Policy

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.

PCIE7 Slot OpROM

Use this item to select slot storage and Network Option ROM policy. In Auto option, the default is Disabled with NVMe device, but it is Legacy with other devices. (This item can't select Video Option ROM policy.)

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. Press <F10> key or select [Yes] to save the 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. Press <ESC> key or select [Yes] 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. Press <F7> key or select [Yes] to discard all changes.

Load UEFI Defaults

Load UEFI default values for all the setup questions. F9 key can be used for this operation.

Boot Override

These items displays the available devices. Select an item to start booting from the selected device.

Chapter 4 Software Support

After all the hardware has been installed, we suggest you go to our official website at <http://www.ASRockRack.com> and make sure if there are any new updates of the BIOS / BMC firmware for your motherboard.

4.1 Download and Install Operating System

This motherboard supports various Microsoft® Windows® Server / Linux compliant operating systems. Please download the operating system from your OS manufacturer. Please refer to your OS documentation for more instructions.

**Please download the Intel® SATA Floppy Image driver from the ASRock Rack's website (www.asrockrack.com) to your USB drive while installing OS in SATA RAID mode.*

4.2 Download and Install Software Drivers

This motherboard supports various Microsoft® Windows® compliant drivers. Please download the required drivers from our website at <http://www.ASRockRack.com>.

To download necessary drivers, go to the product page, click on the "Download" tab, choose the operating system you use, and select the driver you need to be downloaded.

4.3 Contact Information

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

Chapter 5 Troubleshooting

5.1 Troubleshooting Procedures

Follow the procedures below to troubleshoot your system.



Always unplug the power cord before adding, removing or changing any hardware components. Failure to do so may cause physical injuries to you and damages to motherboard components.

1. Disconnect the power cable and check whether the PWR LED is off.
2. Unplug all cables, connectors and remove all add-on cards from the motherboard.
Make sure that the jumpers are set to default settings.
3. Confirm that there are no short circuits between the motherboard and the chassis.
4. Install a CPU and fan on the motherboard, then connect the chassis speaker and power LED.

If there is no power...

1. Confirm that there are no short circuits between the motherboard and the chassis.
2. Make sure that the jumpers are set to default settings.
3. Check the settings of the 115V/230V switch on the power supply.
4. Verify if the battery on the motherboard provides ~3VDC. Install a new battery if it does not.

If there is no video...

1. Try replugging the monitor cables and power cord.
2. Check for memory errors.

If there are memory errors...

1. Verify that the DIMM modules are properly seated in the slots.
2. Use recommended DDR4 ECC/UDIMMs.
3. If you have installed more than one DIMM modules, they should be identical with the same brand, speed, size and chip-type.
4. Try inserting different DIMM modules into different slots to identify faulty ones.
5. Check the settings of the 115V/230V switch on the power supply.

Unable to save system setup configurations...

1. Verify if the battery on the motherboard provides ~3VDC. Install a new battery if it does not.
2. Confirm whether your power supply provides adequate and stable power.

Other problems...

1. Try searching keywords related to your problem on ASRock Rack's FAQ page:
<http://www.asrockrack.com/support>

5.2 Technical Support Procedures

If you have tried the troubleshooting procedures mentioned above and the problems are still unsolved, please contact ASRock Rack's technical support with the following information:

1. Your contact information
2. Model name, BIOS version and problem type.
3. System configuration.
4. Problem description.

You may contact ASRock Rack's technical support at:

<http://www.asrockrack.com/support/tsd.asp>

5.3 Returning Merchandise for Service

For warranty service, the receipt or a copy of your invoice marked with the date of purchase is required. By calling your vendor or going to our RMA website (<http://event.asrockrack.com/tsd.asp>) you may obtain a Returned Merchandise Authorization (RMA) number.

The RMA number should be displayed on the outside of the shipping carton which is mailed prepaid or hand-carried when you return the motherboard to the manufacturer. Shipping and handling charges will be applied for all orders that must be mailed when service is complete.

This warranty does not cover damages incurred in shipping or from failure due to alteration, misuse, abuse or improper maintenance of products.

Contact your distributor first for any product related problems during the warranty period.