



Asus Prime Z270-A Series Bios Manual

1
2
Table Of Contents
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17

18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67

68
69
70
71
72

c	
---	--

•

•

Bookmarks

--

Quick Links

[1 Table of Contents](#)

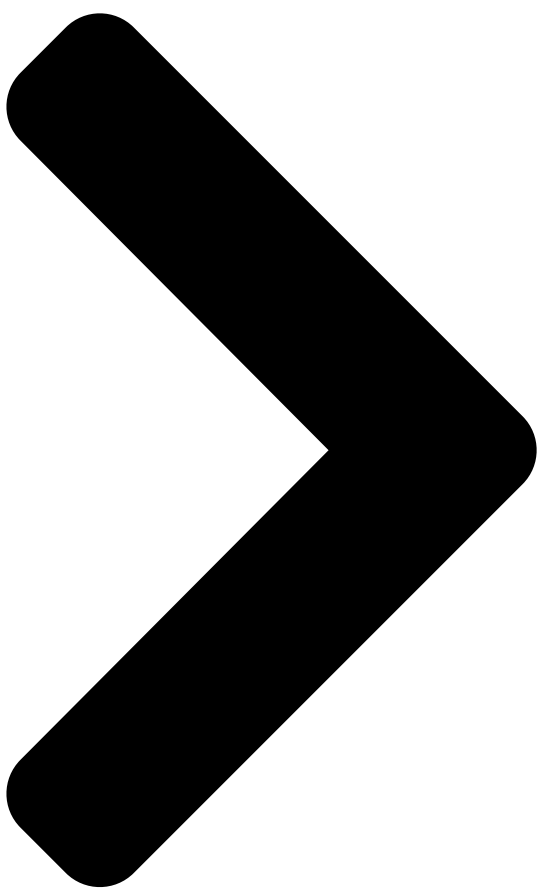
[2 Knowing Bios](#)

[3 Main Menu](#)

[4 Cpu Configuration](#)

[5 Onboard Devices Configuration](#)

[Download this manual](#)



PRIME Z270-A/AR Series BIOS Manual



[Table of Contents](#)

[Next Page](#)

1
2
3
4
5

Related Manuals for Asus Prime Z270-A Series

[Motherboard Asus TUF Z270 Mark 1 User Manual](#)

(104 pages)

[Motherboard Asus PRIME Z270-A Quick Start Manual](#)

(2 pages)

[Motherboard Asus PRIME Z270-AR Series Manual](#)

(102 pages)

[Motherboard Asus PRIME Z270-AR Quick Start Manual](#)

(2 pages)

Summary of Contents for Asus Prime Z270-A Series

[Page 1](#) PRIME Z270-A/AR Series BIOS Manual...

[Page 2](#) Product warranty or service will not be extended if: (1) the product is repaired, modified or altered, unless such repair, modification or alteration is authorized in writing by ASUS; or (2) the serial number of the product is defaced or missing.

[Page 3: Table Of Contents](#)

1.6.12 USB Configuration 49 Monitor menu50 Boot menu58
Tool menu63 1.9.1 ASUS EZ Flash 3 Utility 63 1.9.2 Secure Erase
.....64 1.9.3 ASUS Overclocking Profile65 1.9.4 ASUS SPD Information66
1.9.5...

[Page 4: Knowing Bios](#)

BIOS Setup Knowing BIOS The new ASUS UEFI BIOS is a Unified Extensible Interface that complies with UEFI architecture, offering a user-friendly interface that goes beyond the traditional keyboard- only BIOS controls to enable a more flexible and convenient mouse input. You can easily navigate the new UEFI BIOS with the same smoothness as your operating system.

[Page 5: Bios Setup Program](#)

BIOS menu screen The BIOS Setup program can be used under two modes: EZ Mode and Advanced Mode. You can change modes from Setup Mode in Boot menu or by pressing the <F7> hotkey. ASUS PRIME Z270-A/AR Series BIOS Manual...

[Page 6: Ez Mode](#)

Click to go to Advanced mode Loads optimized Search on the FAQ default settings Click to display boot devices Selects the boot device priority The boot device options vary depending on the devices you installed to the system. ASUS PRIME Z270-A/AR Series BIOS Manual...

[Page 7: Advanced Mode](#)

Language MyFavorite(F3) Qfan Control(F6) EZ Tuning Wizard(F11) Hot Keys Go back to EZ Mode Last modified settings Menu items General help Search on the FAQ Displays the CPU temperature, CPU, and memory voltage output ASUS PRIME Z270-A/AR Series BIOS Manual...

[Page 8](#) This button above the menu bar allows you to view and tweak the overclocking settings of your system. It also allows you to change the motherboard's SATA mode from AHCI to RAID mode. Refer to section 1.2.4 EZ Tuning Wizard for more information. ASUS PRIME Z270-A/AR Series BIOS Manual...

[Page 9](#) Move your mouse over this button to show a QR code, scan this QR code on your

mobile device to connect to the BIOS FAQ web page of the ASUS support website. You can also scan the following QR code: Hot keys This button above the menu bar contains the navigation keys for the BIOS setup program.

[Page 10: Qfan Control](#)

PWM Mode Select a profile to Click to apply the fan setting apply to your fans Click to undo the Click to go back to main menu changes Select to manually configure your fans ASUS PRIME Z270-A/AR Series BIOS Manual...

[Page 11](#) Select the fan that you want to configure and to view its current status. Click and drag the speed points to adjust the fans' operating speed. Click Apply to save the changes then click Exit (ESC). ASUS PRIME Z270-A/AR Series BIOS Manual...

[Page 12: Ez Tuning Wizard](#)

Press <F11> on your keyboard or click from the BIOS screen to open EZ Tuning Wizard screen. Click OC then click Next. Select a PC scenario Daily Computing or Gaming/Media Editing, then click Next. ASUS PRIME Z270-A/AR Series BIOS Manual...

[Page 13](#) Ensure that your HDDs have no existing RAID volumes. • Ensure to connect your HDDs to Intel SATA connectors. ® Select the port that you want to set to [RAID] mode, PCIE or SATA, then click Next. ASUS PRIME Z270-A/AR Series BIOS Manual...

[Page 14](#) Select the type of storage for your RAID, Easy Backup or Super Speed, then click Next. For Easy Backup, click Next then select from Easy Backup (RAID 1) or Easy Backup (RAID 10). You can only select Easy Backup (RAID 10) if you connect four (4) HDDs. ASUS PRIME Z270-A/AR Series BIOS Manual...

[Page 15: My Favorites](#)

My Favorites is your personal space where you can easily save and access your favorite BIOS items. My Favorites comes with several performance, power saving, and fast boot related items by default. You can personalize this screen by adding or removing items. ASUS PRIME Z270-A/AR Series BIOS Manual...

[Page 16](#) Configuration items such as Memory SPD Information, system time and date. Click Exit (ESC) or press <Esc> key to close Setup Tree Map screen. Go to My Favorites menu to view the saved BIOS items. ASUS PRIME Z270-A/AR Series BIOS Manual...

[Page 17: Main Menu](#)

RTC RAM. • The Administrator or User Password items on top of the screen show the default [Not Installed]. After you set a password, these items show [Installed]. ASUS PRIME Z270-A/AR Series BIOS Manual...

[Page 18](#) To clear the user password, follow the same steps as in changing a user password, but leave other fields blank then select OK to continue. After you clear the password, the User Password item on top of the screen shows [Not Installed]. ASUS PRIME Z270-A/AR Series BIOS Manual...

[Page 19: Ai Tweaker Menu](#)

(XMP) Technology, choose this item to set the profiles supported by your memory modules for optimizing the system performance. The [X.M.P.] configuration option appears only when you install memory modules supporting the eXtreme Memory Profile(X.M.P.) Technology. ASUS PRIME Z270-A/AR Series BIOS Manual...

[Page 20](#) 2-core ratio limit that must be higher than or equal to the 3-core ratio limit. If you assign a value for 2-Core Ratio Limit, do not set the 1-Core Ratio Limit to [Auto]. ASUS PRIME Z270-A/AR Series BIOS Manual...

[Page 21](#) [Keep Current Settings] Keep the current settings without changing anything. [TPU I] Applies air cooling overclocking conditions. [TPU II] Applies water cooling overclocking conditions. Ensure to use water cooling device before selecting [TPU II]. ASUS PRIME Z270-A/AR Series BIOS Manual...

[Page 22](#) EPU Power Saving Mode The ASUS EPU (Energy Processing Unit) sets the CPU in its minimum power consumption settings. Enabling this item will apply lower CPU Core/Cache Voltage and help save energy consumption. Set this item to disabled if you are over clocking the system.

[Page 23](#) CLOCK] [120 DRAM CLOCK] [240 DRAM CLOCK] ODT RTT NOM (CHB) Configuration options: [Auto] [0 DRAM CLOCK] [34 DRAM CLOCK] [40 DRAM CLOCK] [48 DRAM CLOCK] [60 DRAM CLOCK] [80 DRAM CLOCK] [120 DRAM CLOCK] [240 DRAM CLOCK] ASUS PRIME Z270-A/AR Series BIOS Manual...

[Page 24](#) Configuration options: [Auto] [0] - [15] Ctl Falling Slope Offset Configuration options: [Auto] [0] - [1] Clk Falling Slope Configuration options: [Auto] [0] - [15] Clk Falling Slope Offset Configuration options: [Auto] [0] - [1] ASUS PRIME Z270-A/AR Series BIOS Manual...

[Page 25](#) Configuration options: [Auto] [0] - [15] DRAM IOL (CHB DIMM1 Rank1) Configuration options: [Auto] [0] - [15] IO Latency offset CHA IO_Latency_offset Configuration options: [Auto] [0] - [127] CHB IO_Latency_offset Configuration options: [Auto] [0] - [127] ASUS PRIME Z270-A/AR Series BIOS Manual...

[Page 26](#) Configuration options: [Auto] [0] - [63] tRDWR_dd Configuration options: [Auto] [0] - [63] tWRWR_dr Configuration options: [Auto] [0] - [63] tWRWR_dd Configuration options: [Auto] [0] - [63] tWRRD_dr Configuration options: [Auto] [0] - [63] ASUS PRIME Z270-A/AR Series BIOS Manual...

[Page 27](#) Enable this item to enhance the stability of your system. Disable this item to enhance the DRAM overclocking capability. Configuration options: [Auto] [Enabled] [Disabled] DLLBwEn Configuration options: [Auto] [1] - [7] DRAM SPD Write Configuration options: [Enabled] [Disabled] ASUS PRIME Z270-A/AR Series BIOS Manual...

[Page 28](#) Use the <+> or <-> to adjust the value. The values range from 250 KHz to 500 KHz with an interval of 50 KHz. Do not remove the thermal module when the manual mode is selected. The thermal conditions should be monitored. ASUS PRIME Z270-A/AR Series BIOS Manual...

[Page 29](#) [Standard] The phase control will be based on the CPU command. [Optimized] Set to the ASUS optimized phase tuning profile. [Extreme] Set to the full phase mode. DO NOT remove the thermal module when setting this item to [Extreme]. The thermal conditions should be monitored.

[Page 30](#) Configuration options: [Auto] [Enabled] [Disabled] Turbo Mode Allows you to enable your processor cores to run faster than the base operating frequency when it is below power, current and specification limit. Configuration options: [Disabled] [Enabled] ASUS PRIME Z270-A/AR Series BIOS Manual...

[Page 31](#) 1. The default setting is 1.25 times the power limit 1. According to Intel, the platform must be capable of supporting the duration for up to 10 msec when the turbo ratio exceeds the power limit 2. The ASUS motherboards can support the duration for a longer time.

[Page 32](#) Enable this item to allow higher voltages for overclocking, but the CPU lifetime will not be guaranteed. Configuration options: [Disabled] [Enabled] This item can only be enabled when the onboard CPU_OV jumper is switched on. ASUS PRIME Z270-A/AR Series BIOS Manual...

[Page 33](#) This item allows you to configure the CPU core voltage offset value. Configuration options: [0.250] - [1.520] Offset Voltage This item allows you to configure the CPU core voltage offset value. Configuration options: [Auto] [0.001] - [0.999] DRAM Voltage Configuration options: [Auto] [1.0032] - [2.0064] ASUS PRIME Z270-A/AR Series BIOS Manual...

[Page 34](#) DRAM DATA REF Voltage on CHA DIMM0 Rank0 BL0-7 Configures the DRAM Data REF Voltage. Configuration options: [Auto] [0] - [63] DRAM DATA REF Voltage on CHA DIMM0 Rank1 BL0-7 Configures the DRAM Data REF Voltage. Configuration options: [Auto] [0] - [63] ASUS PRIME Z270-A/AR Series BIOS Manual...

[Page 35: Advanced Menu](#)

The Advanced menu items allow you to change the settings for the CPU and other system devices. Be cautious when changing the settings of the Advanced menu items. Incorrect field values can cause the system to malfunction. ASUS PRIME Z270-A/AR Series BIOS Manual...

[Page 36: Cpu Configuration](#)

This item allows you to select the number of CPU cores to activate in each processor package. Configuration options: [All] [1] [2] [3] Intel Virtualization Technology When set to [Enabled], a VMM can utilize the additional hardware capabilities provided by Vanderpool Technology. Configuration options: [Disabled] [Enabled] ASUS PRIME Z270-A/AR Series BIOS Manual...

[Page 37](#) This item allows you to automatically set the CPU cores to run faster than the base operating frequency when it is below the operating power, current and temperature specification limit. Configuration options: [Enabled] [Disabled] ASUS PRIME Z270-A/AR Series BIOS Manual...

[Page 38](#) Configuration options: [Enabled] [Disabled] Execute Disable Bit Execute Disable prevents certain classes of malicious buffer overflow attacks when combined with a supporting OS (SuSE Linux 9.2, RedHat Enterprise 3 Update 3). Configuration options: [Disabled] [Enabled] ASUS PRIME Z270-A/AR Series BIOS Manual...

[Page 39: Platform Misc Configuration](#)

(NorthBridge) side and SB (SouthBridge) side of the DMI Link. Configuration options: [Disabled] [Enabled] ASPM This item allows you to select the ASPM state for energy-saving conditions. Configuration options: [Disabled] [L0s] [L1] [L0sL1] [Auto] ASUS PRIME Z270-A/AR Series BIOS Manual...

[Page 40: System Agent \(Sa\) Configuration](#)

ASPM to take effect. Configuration options: [Disabled] [L1] PEG - ASPM This item allows you to select the ASPM state for energy-saving conditions, or use the ASUS optimized energy saving profile. Configuration options: [Disabled] [Auto] [ASPM L0s] [ASPM L1] [ASPM L0sL1] 1.6.3...

[Page 41: Pch Configuration](#)

PCI Express Configuration This item allows you to configure the PCI Express slots. PCIe Speed This item allows your system to automatically select the PCI Express port speed. Configuration options: [Auto] [Gen1] [Gen2] [Gen3] ASUS PRIME Z270-A/AR Series BIOS Manual...

[Page 42: Pch Storage Configuration](#)

SATA Port items show Empty if no SATA device is installed to the corresponding SATA port. Scroll down to display the other BIOS items. Hyper kit1 Mode Disable this option for M.2_1 devices. Enable this option for "ASUS Hyper kit" card. Configuration options: [Disabled] [Enabled] Hyper kit2 Mode Disable this option for M.2_2 devices.

[Page 43](#) Configuration options: [Disabled] [Enabled] Hot Plug These items appears only when the SATA Mode Selection is set to [AHCI] and allows you to enable or disable SATA Hot Plug Support. Configuration options: [Disabled] [Enabled] ASUS PRIME Z270-A/AR Series BIOS Manual...

[Page 44: Pch-Fw Configuration](#)

This item allows you to disable or enable the Intel Thunderbolt Technology. Configuration options: [Fully Disabled] [Disabled] [Enabled] ThunderBolt (TM) PCIe Support This item allows you to disable or enable the ThunderBolt PCIe Support. Configuration options: [Disabled] [Enabled] ASUS PRIME Z270-A/AR Series BIOS Manual...

[Page 45: Onboard Devices Configuration](#)

DVI Port Audio This item allows you to enable or disable DVI Port Audio. Configuration options: [Disabled] [Enabled] This item is only available on ASUS PRIME Z270-A Series. M.2_1 Configuration: [Auto][SATA mode][PCIe mode] [Auto] Auto-detects the M.2 device mode. If a SATA device is detected, SATA6G_1 will be disabled.

[Page 46](#) Allows you to enable or disable Serial Port. Configuration options: [On] [Off] Change

Settings Allows you to choose the setting for Super IO device. Configuration options: [IO=3F8h; IRQ=4;] [IO=2F8h; IRQ=3] [IO=3E8h; IRQ=4] [IO=2E8h; IRQ=3] ASUS PRIME Z270-A/AR Series BIOS Manual...

[Page 47: Apm Configuration](#)

This item allows you to enable or disable the RTC (Real-Time Clock) to generate a wake event and configure the RTC alarm date. When enabled, you can set the days, hours, minutes, or seconds to schedule an RTC alarm date. Configuration options: [Disabled] [Enabled] ASUS PRIME Z270-A/AR Series BIOS Manual...

[Page 48: Network Stack Configuration](#)

This item allows you to enable or disable the lpv4/lpv6 PXE wake event. Configuration options: [Disabled] [Enabled] 1.6.11 HDD/SSD SMART Information This menu displays the SMART information of the connected devices. NVMe Express devices do not support SMART information. ASUS PRIME Z270-A/AR Series BIOS Manual...

[Page 49: Usb Configuration](#)

Disables the XHCI Hand-off support. USB Single Port Control This item allows you to enable or disable the individual USB ports. Refer to section 1.1.2 Motherboard layout in your user manual for the location of the USB ports. ASUS PRIME Z270-A/AR Series BIOS Manual...

[Page 50: Monitor Menu](#)

CPU Core Voltage, 3.3V Voltage, 5V Voltage, 12V Voltage [x.xxxx V] The onboard hardware monitor automatically detects the voltage output through the onboard voltage regulators. Select [Ignore] if you do not want to detect this item. ASUS PRIME Z270-A/AR Series BIOS Manual...

[Page 51](#) Use the <+> and <-> keys to adjust the upper limit of the CPU temperature. The CPU fan will operate at the maximum duty cycle when the CPU temperature is higher than the limit. ASUS PRIME Z270-A/AR Series BIOS Manual...

[Page 52](#) This item allows you to set the value of the chassis fan step up. Configuration options: [0 sec] [12 sec] [25 sec] [51 sec] [76 sec] [102 sec] [127 sec] [153 sec] [178 sec] [204 sec] ASUS PRIME Z270-A/AR Series BIOS Manual...

[Page 53](#) Use the <+> or <-> keys to adjust the minimum Chassis Fan 1-2 duty cycle. When the temperature source is under the limit, the Chassis Fan 1-2 will operate at the minimum duty cycle. ASUS PRIME Z270-A/AR Series BIOS Manual...

[Page 54](#) Sets to [Silent] to minimize the fan speed for quiet chassis fan operation. [Turbo] Sets to [Turbo] to achieve maximum chassis fan speed. [Manual] Sets to [Manual] to assign detailed fan speed control parameters. ASUS PRIME Z270-A/AR Series BIOS Manual...

[Page 55](#) When the temperature source is under the limit, the HAMP Fan will operate at the minimum duty cycle. Ext. Fan(s) Configuration ASUS FAN EXTENSION CARD is required to configure these items Extension Fan 1-3 Q-Fan Control [Disabled] Disable the Extension Fan Q-Fan control feature.

[Page 56](#) Allow Fan Stop This item allows your fans to run at 0% duty cycle when the temperature of the source drops below the lower temperature. Configuration options: [Disabled] [Enabled] ASUS PRIME Z270-A/AR Series BIOS Manual...

[Page 57](#) When the CPU temperature is under the limit, the AIO PUMP will operate at the minimum duty cycle. Chassis Intrude Detection Support Enable this item for chassis intrude detection functions. Configuration options: [On] [Off] ASUS PRIME Z270-A/AR Series BIOS Manual...

[Page 58: Boot Menu](#)

Accelerates the boot speed on the next boot after an AC power loss. Boot Logo Display [Auto] Sets the boot logo to display during POST. [Full Screen] Sets the boot logo display in full screen during POST. [Disabled] Disables the boot logo display during POST. ASUS PRIME Z270-A/AR

[Page 59](#) Configuration options: [Disabled] [Enabled] Option ROM Messages [Enabled] The Option ROM Messages will be shown during the POST. [Disabled] Only the ASUS logo will be shown during the POST. Interrupt 19 Capture [Enabled] Execute the trap right away. [Disabled] Execute the trap during legacy boot.

[Page 60](#) UEFI mode or other ® Microsoft Secure Boot compliant OS. ® [Other OS] Get the optimized function when booting on Windows non- ® UEFI mode. Microsoft Secure Boot only supports Windows ® ® UEFI mode. ASUS PRIME Z270-A/AR Series BIOS Manual...

[Page 61](#) This item allows you to load the downloaded KEK from a USB storage device. Append Key This item allows you to load the additional KEK from a storage device for an additional db and dbx loaded management. ASUS PRIME Z270-A/AR Series BIOS Manual...

[Page 62](#) Delete key This item allows you to delete the dbx file from your system. Configuration options: [Yes] [No] The dbx file must be formatted as a UEFI variable structure with time-based authenticated variable. ASUS PRIME Z270-A/AR Series BIOS Manual...

[Page 63: Tool Menu](#)

1.9.1 ASUS EZ Flash 3 Utility This item allows you to run ASUS EZ Flash 3. When you press <Enter>, a confirmation message appears. Use the left/right arrow key to select between [Yes] or [No], then press <Enter> to confirm your choice.

[Page 64: Secure Erase](#)

To launch Secure Erase, click Tool > Secure Erase on the Advanced mode menu. Check the ASUS support site for a full list of SSDs tested with Secure Erase. The drive may become unstable if you run Secure Erase on an incompatible SSD.

[Page 65: Asus Overclocking Profile](#)

Key in a profile number from one to eight, press <Enter>, and then select Yes. Load/Save Profile from/to USB Drive This item allows you to load or save profile from your USB drive, load and save profile to your USB drive. ASUS PRIME Z270-A/AR Series BIOS Manual...

[Page 66: Asus Spd Information](#)

This item displays the information and recommended configuration for the PCIE slots that the graphics card is installed in your system. This feature is only supported on selected ASUS graphics cards. GPU Post This item displays the information and recommended configuration for the PCIE slots that the graphics card is installed in your system.

[Page 67: Exit Menu](#)

<Esc>, a confirmation window appears. Select Yes to discard changes and exit. Launch EFI Shell from USB drives This option allows you to attempt to launch the EFI Shell application (shellx64.efi) from one of the available filesystem devices. ASUS PRIME Z270-A/AR Series BIOS Manual...

[Page 68: Updating Bios](#)

® ASUS EZ Flash 3: Updates the BIOS using a USB flash drive. ASUS CrashFree BIOS 3: Restores the BIOS using the motherboard support DVD or a USB flash drive when the BIOS file fails or gets corrupted. 1.11.1...

[Page 69: Asus Ez Flash 3](#)

1.11.2 ASUS EZ Flash 3 ASUS EZ Flash 3 allows you to download and update to the latest BIOS through the Internet without having to use a bootable floppy disk or an OS-based utility. Updating through the Internet varies per region and Internet conditions. Check your local Internet connection before updating through the Internet.

[Page 70](#) To update the BIOS by Internet: Enter the Advanced Mode of the BIOS setup program. Go to the Tool menu to select ASUS EZ Flash 3 Utility and press <Enter>. Select via Internet. Press the Left/Right arrow keys to select an Internet connection method, and then

press <Enter>.

[Page 71: Asus Crashfree Bios 3](#)

The BIOS file in the motherboard support DVD may be older than the BIOS file published on the ASUS official website. If you want to use the newer BIOS file, download the file at <https://www.asus.com/support/> and save it to a USB flash drive.

[Page 72](#) ASUS PRIME Z270-A/AR Series BIOS Manual...

This manual is also suitable for:

[Prime z270-ar series](#)