

MERGING TECHNOLOGIES

ASROCK Z890 PRO-A Install guide

First assemble the computer parts.

For ease of use during Windows installation, Merging recommends that you install security dongles, additional cards, Pyramix-Ovation keyboard, after the Windows Installation and activation.

MassCore users: MassCore (IntervalZero RTX)not compatible with any Intel Core Ultra CPU.

Compatible with Pyramix / Ovation Native ONLY

Merging highly recommends you "defer feature updates" in Windows.

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1.BIOS

Validated BIOS version : **3.04**

First update BIOS if required.

Download BIOS from <https://www.asrock.com/mb/Intel/Z890%20Pro-A/index.asp#BIOS> unzip on a USB Flash Drive and use the Instant Flash utility.

⚠ When updating the BIOS, all settings are lost or not set correctly, you have to enter all the parameters again manually.

Merging recommends you unplug all drives before updating BIOS.

Merging Technologies will not be hold responsible for any trouble or error during a BIOS update.

!Merging Technologies does not guarantee any issue or instability if any overclocking is enabled!

BIOS first opens in the Easy mode page, a summary of the system information.

You may adjust date and time.

Please switch to Advance Mode (F6)

Note: Depending on the CPU installed, some options might not be displayed.

1.1. OC Tweaker

Base Frequency Boost: Auto

Intel 200S Boost: Disabled

Power Delivery Profile: Intel Default Mode

Gaming OC Preset: Disabled

CPU Indicator: Information only

CPU Configuration

CPU Turbo Ratio Information: Information only

CPU P-Core Ratio: Auto

AVX2 Ratio Offset: Auto

CPU E-Core Ratio: Auto

Granular Ratio: Disabled

CPU Cache Ratio: Auto

Min Cache Ratio: Auto

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MemSS Max OC Ratio: Auto

NGU Max OC Ratio: Auto

GT Frequency: Auto

CPU D2D Ratio: Auto

D2D Ratio Cold Boot Workaround: Auto

PVD Ratio Threshold for CPU: Auto

PVD Mode Select for CPU: DIV-1

PVD Ratio Threshold for SOC: Auto

PVD Mode Select for SOC: DIV-1

Internal SOC BCLK Frequency: Auto

Internal SOC-Die SSC: Enabled

SOC BCLK Source: Auto

Compute BCLK Frequency: Auto

Compute BCLK SSC: Disabled

Compute BCLK Source: Auto

BCLK Aware Adaptive Voltage: Disabled

Boot Max Frequency: Enabled

Boot Performance Mode: Max Non-Turbo Performance

CPU BGREF Mode: Normal

VCCIA Boot Voltage: Nominal

VCCSA Boot Voltage: Nominal

Ring to Core Ratio Offset: Enabled

FLL Overclock Mode: 0

SA PLL Frequency: Auto

BCLK TSC HW Fixup: Enabled

UnderVolt Protection: Enabled

Overclocking Lock: Disabled

Intel SpeedStep Technology: Disabled

Intel Turbo Boost Technology: Disabled

Intel Speed Shift Technology: Disabled

Intel Turbo Boost Max Technology 3.0: Not accessible as the previous setting is disabled

Intel Dynamic Tuning Technology: Disabled

Intel Thermal Velocity Boost Ratio Clipping: Auto

OC TVB: Disabled

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Intel Thermal Velocity Boost Voltage Optimizations: Auto

Enhanced Thermal Velocity Boost: Auto

CPU Tj Max: Auto

Long Duration Power Limit: Auto

Long Duration Maintained: Auto

Short Duration Power Limit: Auto

CPU Core Unlimited Current Limit: Auto

CPU Core Current Limit: Auto

CCF AutoGV: Disabled

Power Floor Management: Enabled

IA CEP Enable: Auto

GT CEP Enable: Auto

SA CEP Enable: Auto

Force Pcore Residency: Disabled

VR Limit Bypass: Disabled

Process Vmax Limit: Enabled

P-core Power Density Throttle: Enabled

DRAM Configuration

Memory Information: Information only

DRAM Preset: Default

DRAM Timing Information

Unfortunately using XMP Profile may cause instabilities to the system. Merging recommends to not use XMP Profiles.

Load XMP Settings: Auto

Dynamic Memory Boost: Disabled

Realtime Memory Frequency: Disabled

DRAM Frequency: Auto

DRAM Gear Ratio: Auto

SAGV: Disabled

Timing turbo Mode: Auto

Timings: No setting to modify

Realtime Memory Timing: Disabled

Voltage Configuration

No setting to modify

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CPU DLVR Configuration

No setting to modify

1.2. Advanced

CPU Configuration

Processor P-Core / E-Core Information: Information only

Per Core Disable Configuration: Disabled

Active P-Cores: All

Active Processor E-Cores: All

CPU C States Support: Disabled

CPU Thermal Throttling: Disabled

Intel AVX/AVX2: Enabled

Intel Virtualization Technology: Enabled

X2APIC Enable: Enabled

Legacy Game Compatibility Mode: Disabled

Chipset Configuration

Primary Graphics Adapter: PCI Express(*as Merging recommends a dedicated graphic card*)

Re-Size BAR Support: Disabled

VT-d: Setting not accessible in the current configuration

SR-IOV Support: Disabled

DMI Link Speed: Auto

PCIE1-4 Link Speed: All Auto

PCI Express Native Control: Disabled

PCIE ASPM Support: Disabled

PCH PCIE ASPM Support: Disabled

PCH DMI ASPM Support: Disabled

DMI ASPM Support: Disabled

PCIE Bifurcation: X16

IGPU Multi-Monitor: Disabled

Onboard HD Audio: Enabled

Front Panel: Adjust according to your needs - See [ASROCK Z890 BIOS Setup Guide for details](#).

Realtek 2.5G Ethernet Controller: Enabled

Onboard WAN Device: Poor quality WAN network may trigger DPC issues (drops), use with

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caution.

Deep Sleep: Disabled

Restore on AC/Power Loss: Adjust according to your needs - See [ASROCK Z890 BIOS Setup Guide for details](#).

Turn On Onboard LED in S5: Adjust according to your needs - See [ASROCK Z890 BIOS Setup Guide for details](#).

Restore Onboard LED Default: Adjust according to your needs - See [ASROCK Z890 BIOS Setup Guide for details](#).

RGB LED: Adjust according to your needs - See [ASROCK Z890 BIOS Setup Guide for details](#).

NPU Device: Enabled

Storage Configuration

SATA Controller(s): Enabled

SATA Aggressive Link Power Management: Disabled

VMD Configuration

Enable VMD Controller: Enabled

Enable VMD Global Mapping: Disabled

Map RP BDF 0/1/0 under VMD: Disabled

Map PCH SATA Controller Under VMD: Disabled

RAID0-10: Adjust according to your needs.

For the other settings and further details to configure a RAID array, [please follow ASROCK RAID Setup Guide](#).

ZPODD: Disabled

NVMe Configuration

Information only

Intel(R) Thunderbolt

PCIe Tunneling over USB4: Enabled

Integrated Thunderbolt(TM) Enable: Enabled

Discrete Thunderbolt(TM) Enable: Disabled

ACPI Configuration

Suspend to RAM: Disabled

PCIe Devices Power On: Disabled

RTC Alarm Power On: Disabled

USB Keyboard/Remote Power On: Disabled

USB Mouse Power On: Disabled

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USB Configuration

XHCI Hand-off: Disabled

Trusted Computing

Security Device Support: Enabled

Other settings can be left to default - See [ASROCK Z890 BIOS Setup Guide for details](#).

Network Stack Configuration

Network Stack: Disabled

Intel(R) Rapid Storage Technology

Follow the instructions in the [ASROCK Z890 RAID Installation Guide / Intel Rapid Storage Guide](#).

UEFI Configuration

Configure according to your needs. See [ASROCK Z890 BIOS Setup Guide for details](#).

1.3. Tool

LED Firmware Recovery - ASRock Polychrome RGB: See [ASROCK Z890 BIOS Setup Guide for details](#).

Media Sanitization: Tool to securely erase SSD - See [ASROCK Z890 BIOS Setup Guide for details](#).

Auto Driver Installer: Disabled - Some utilities may interfere with the system, **do not install**. Until you disable this setting, you will be prompted to install the utilities each time you start Windows.

UEFI Update Utility

Instant Flash / Intel MEI Flash: Flash Update Utility - See [ASROCK Z890 BIOS Setup Guide for details](#).

1.4. HW Monitor

Monitor the status of your system, including the parameters of the CPU temperature, motherboard temperature, fan speed and voltage.

CPU and Chassis fans can also be configured in this page.

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1.5. Security

Supervisor / User Password: Set according to your needs. See [ASROCK Z890 BIOS Setup Guide for details](#).

Secure Boot

Secure Boot: Enabled

Secure Boot Mode: Standard

Intel(R) Platform Trust Technology: Enabled (mandatory for Windows 11)

1.6. Boot

Boot Options: Windows Boot Manager (available once Windows is installed)

Fast Boot : Disabled

Boot From Onboard LAN: Disabled

Setup Prompt Timeout: 1

Bootup NumLock: On

Boot Beep / Full Screen LOGO Show: Adjust according to your needs.

Boot Failure Guard Message: Enabled

Boot Failure Guard Count: 4

1.7 Saving your BIOS/UEFI settings

You can save your BIOS settings in the OC Tweaker page, into the motherboard ROM or on a USB drive (must be formatted as FAT32)

After a BIOS update, those settings might be lost or incompatible with the updated BIOS version.

2.WINDOWS INSTALLATION

Windows 11 users may install from Windows 11 USB bootable drive.

3.WINDOWS CONFIGURATION

Merging recommends to download the latest drivers from

<https://www.asrock.com/mb/Intel/Z890%20Pro-A/index.asp#Download>

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Merging recommends to install WHQL (Driver certified by Microsoft) .

Install the drivers ONLY, do not install the utilities it can cause much trouble.

ASRock Motherboard Utility, APP Shop, Norton 360 for Gamers, Dragon 2.5G LAN Utility should not be installed.

If you have installed a PCIe graphic card, you should now install its driver.

See the [Graphic cards recommendations](#)

[Now you can follow our Windows configuration guide](#)

4.SOFTWARE INSTALLATION

4.1 INSTALL PYRAMIX / OVATION / MERGING AUDIO DEVICE

After the installation plug Security dongles, additional cards and other Merging hardware.

See dedicated install guide / user manual for further details.

4.2 THIRD PARY SOFTWARE

Install Google Chrome

 [Google Chrome - The Fast & Secure Web Browser Built to be Yours](#) _

If there are several users on the computer, you need to use the alternate Chrome installer for all users :  [Google Chrome - The Fast & Secure Web Browser Built to be Yours](#)

You may also install additional VST Plugins now.

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