GIGABYTE Z890 UD WIFI6E Install guide

This guide applies to Gigabyte Z890UD Wifi6E Rev 1.2/1.3 (1.0 has not been tested)

For ease of use during Windows installation, it is recommended to install security dongles, additional cards, Pyramix-Ovation keyboard, ... after the Windows Installation and activation.

MassCore users: MassCore (IntervalZero RTX) compatible with Pyramix 16.0.7/Ovation 12.0.7 (RTX64 4.5.5) or above.
Previous Pyramix/Ovation versions are not compatible for MassCore, only Native.

It is highly recommended to "defer feature updates" in Windows.

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1.BIOS

Validated BIOS version: F21
First update BIOS if required.
Download BIOS from https://www.gigabyte.com/Motherboard/Z890-UD-WIFI6E-rev-12-13/support#Support-Bios then unzip on a USB Flash Drive and use the QFlash utility.

When updating the BIOS, all settings are reset, you have to enter all the parameters again manually.
It is recommended to unplug all drives before updating BIOS.
Neumann and Merging Technologies will not be hold responsible for any trouble or error during a BIOS update.
! Overclocking is not recommended or supported.

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

1.1. Tweaker

Gigabyte Perf Drive: Intel Default Settings – Performance
Ultra Turbo Mode: Disable
Recommend me profile: do not use.
Intel 200S Boost: Disabled
BCLK Output Source: Auto
Performance CPU Clock Ratio: Auto
Efficiency CPU Clock Ratio: Auto
Max Ring Ratio: Auto
Min Ring Ratio: Auto
NGU Ratio: Auto
CPU D2D Ratio: Auto
IGP Ratio: Auto

Advanced CPU Settings

SOC PVD Settings: Threshold
SOC PVD Ratio Threshold: Auto
CPU PVD Settings: Threshold
CPU PVD Ratio Threshold: Auto
CPU Over Temperature Protection: Auto
Tcc Activation Offset: Auto
Tcc Offset Time Window: Disabled
Intel Speed Shift Technology: Disabled
CPU Thermal Monitor: Auto
Ring to Core Offset (downbin): Disabled

CPU EIST Function: Disabled
Race to Halt (RTH): Disabled
Energy Efficient Turbo: Disabled
Intel Turbo Boost Technology: Disabled
CPU Flex Ratio Override: Disabled
Voltage Reduction Initiated TVB: Auto
Frequency Clipping TVB: Auto
CEP (Current Extension Protection): Auto
Fll OC Mode: Disabled
Core Ratio Extension Mode: Auto
Legacy Game Compatibility Mode: Disabled
Intel VMX Virtualization Technology: Disabled
VR IA Fast V Mode: Auto
VR GT Fast V Mode: Auto
VR SA Fast V Mode: Auto
Under Voltage Protection: Auto
VCCIA Boost Voltage: Auto
VCCSA Boost Voltage: Auto
CPU BGREF Mode: Auto
Unlock High Voltage Limit: Auto
Setting High Voltage Limit: Auto
Intel Innovation Platform Framework: Enabled
Core Minimum Ratio: Auto
IA AC Loadline: Auto
IA DC Loadline: Auto
IA VR Voltage Limit: Auto
Turbo Thermal Protection: Auto
AVX Settings: Auto
Active Turbo Ratio: Auto
CPU Cores Enabling Mode: Random Mode
No. Of CPU P-Cores Enabled: Auto
No. Of CPU E-Cores Enabled: *Native*: Auto ; *MassCore*: 0 (to ensure that MassCore is running on the Performance CPUs)
C-States Control: Disable
Turbo Per Core Limit Control: Auto
Granular Ratio Control: Auto

High Bandwidth: Auto
Low Latency: Auto
DDR5 XMP Booster: Disabled
Extreme Memory Profile (X.M.P.): Disabled
Unfortunately using XMP Profile may cause instabilities to the system. It is not recommended to use XMP Profiles unless fully tested.
System Memory Multiplier: Auto

Advanced Memory Settings

Gear Mode: Auto
Memory Boot Mode: Auto
Realtime Memory Timing: Disabled
Fine Granularity Refresh: Auto
Power Down Mode: Enabled
Memory Enhancement Settings: Auto
Memory Channel Detection Message: Enabled
Retry Loop Count: Auto
SPD Info: Information only
SPD Setup: No setting to modify
Memory Channels Timing: No setting to modify
Memory Training Settings: No setting to modify

CPU/PCH Voltage Control
No setting to modify (Auto)

DRAM Voltage Control
No setting to modify (Auto)

1.2. Settings

Platform Power

Platform Power Management: Disabled
Soft-Off by PWR-BTTN: Instant Off
Keyboard Wake Up from S3: Disabled
Mouse Wake Up from S3: Disabled
Power On By Keyboard: Disabled
Power On By Mouse: Disabled
ErP: Disabled
Resume by Alarm: Disabled
Native ASPM: Disabled
Power Loading: Auto
RC6 (Render Standby): Disabled
AC BACK: Adjust according to your needs.
See GIGABYTE Z890 UD BIOS Setup Guide for details.

IO Ports

Initial Display Output: PCIe 1 Slot
Internal Graphics: Disabled (as a dedicated graphic card is recommended)
SPD Write Disable: TRUE
PCIE Bifurcation Support: Auto

Onboard LAN Controller: Enabled
Audio Controller: Enabled
Above 4GB MMIO BIOS assignment: Enabled
Re-Size BAR Support: Disabled
SR-IOV Support: Disabled
Pre-boot DMA Protection: Auto
DMA Control Guarantee: Enabled
IOAPIC 24-119 Entries: Enabled
Resource Priority Feature: Disabled

PCIe Link Speed Configuration: All to Auto.

Gigabyte Utilities Downloader Configuration: 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 you start Windows.*

Super IO Configuration
Serial Port *:* Enabled

USB Configuration
XHCI Hand-off: Enabled
USB Mass Storage Driver Support: Enabled
USB Hardware delays and time-outs:
USB transfer time-out: 20 sec
Device reset time-out: 20 sec
Device power-up delay: Auto

Network Stack Configuration
Network Stack: Disabled

NVMe Configuration: Information only

SATA Configuration
SATA Controller(s): Enabled
Aggressive LPM Support: Disabled
Individual SATA ports settings: Please see the Gigabyte Z890 UD BIOS guide for details.
SATA Port DevSlp should be Disabled.

VMD Setup Menu
Enable VMD controller (= RAID) : Enabled only if you want to use the motherboard RAID capability.
Enable VMD Global Mapping: Disabled.
For the other settings and further details to configure a RAID array, please follow Gigabyte RAID Setup Guide.
Realtek PCIe 2.5GBE Family Controller: Information only

Miscellaneous

LEDs in System Power On State: On
RST (Multikey): Set this button to HW Reset
Intel Platform Trust Technology: Enabled for Windows 11 (mandatory)
3DMark01 Enhancement: Disabled
VT-d: Disabled
CPU VCore Sense: Direct Sense

Trusted Computing
Security Device Support: Enabled for Windows 11 (mandatory)
Other settings should not be modifed.

Acoustic Noise Settings
Acoustic Noise Mitigation: Disabled - this setting is only used when the CPU goes in deep sleep mode, which cannot happen with the other BIOS Settings.

PC Health Status: Please the Gigabyte Z890 UD BIOS guide for details.

1.3. System Info.

You may set the System Language, Date and Time on this page. The Plug in Devices Info shows the PCIe and M.2. devices detected by the system. Q-Flash allows you to update the motherboard BIOS.

1.4. Boot.

Boot Configuration
Bootup NumLock State: On
CFG Lock: Disabled
Security Option: Adjust according to your needs. Please the Gigabyte Z890 UD BIOS guide for details.
Full Screen LOGO Show: Adjust according to your needs. Please the Gigabyte Z890 UD BIOS guide for details.

Boot Options Priorities
Boot Options #1: Windows Boot Manager (will only show up after Windows has been installed)
Fast Boot: Disable
Mouse Speed: Adjust according to your needs. Please the Gigabyte Z890 UD BIOS guide for details.
Administrator / User Password: Adjust according to your needs. Please the Gigabyte Z890 UD BIOS guide for details.

Secure Boot
Secure Boot: *Native*: Enabled. *MassCore*: must be set to Disabled after Windows installation and before installing the MassCore Runtime.
Secure Boot Mode: Standard.

Preferred Operating Mode: Adjust according to your needs. Please the Gigabyte Z890 UD BIOS guide for details.

1.5 Saving your BIOS/UEFI settings

You can save your BIOS settings in the Save & Exit page, into the motherboard ROM or on a USB drive. 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

It is recommended to download the latest drivers from
https://www.gigabyte.com/Motherboard/Z890-UD-WIFI6E-rev-12-13/support#Support-Driver

The installation of WHQL drivers (Driver certified by Microsoft) is highly recommended.
Install the drivers ONLY, do not install the Gigabyte Control Center utilities it can cause much trouble.

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

Note on Wifi & Bluetooth:
Unstable/poor Wifi network and Bluetooth devices may trigger DPC Latency issues on the system, that can trigger audio drops. Please make sure your Wifi and/or Bluetooth devices are behaving properly. Wifi and Bluetooth can be disabled in Windows.

4.SOFTWARE INSTALLATION

Install Pyramix, Ovation, Merging Audio Device, MT 48 Toolkit,....

4.2 THIRD PARY SOFTWARE

Install Google Chrome (recommended web browser on Windows)
https://www.google.com/chrome

You may also install additional VST Plugins now.