AI Suite II User Manual

Z77 Series

AI Suite II

AI Suite II is an all-in-one interface that integrates several ASUS utilities and allows users to launch and operate these utilities simultaneously.
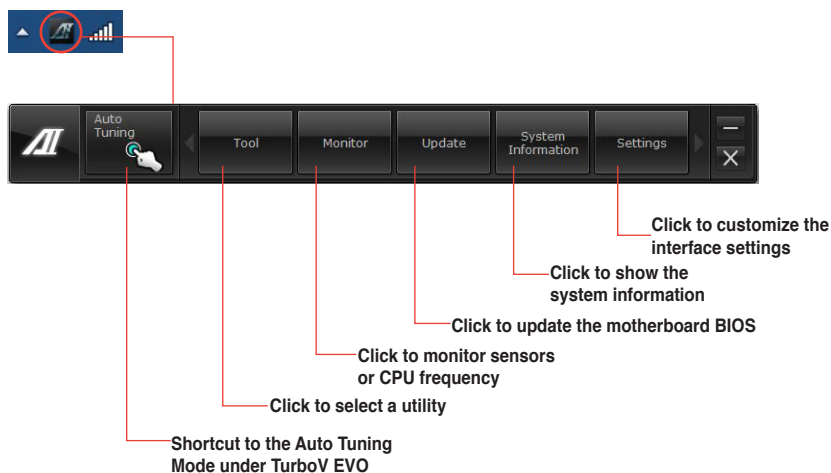
Installing AI Suite II

To install AI Suite II on your computer

1. Place the support DVD to the optical drive. The Drivers installation tab appears if your computer has enabled the Autorun feature.

2. Click on the Utilities tab, then click **AI Suite II**.

3. Follow the onscreen instructions to complete installation.

Using AI Suite II

AI Suite II automatically starts when you enter the Windows® operating system (OS). The AI Suite II icon appears in the Windows® notification area. Click on the icon to open the AI Suite II main menu bar.

Click on each button to select and launch a utility, to monitor the system, to update the motherboard BIOS, to display the system information, and to customize the settings of AI Suite II.

Click to customize the interface settings

Click to show the system information

Click to update the motherboard BIOS

Click to monitor sensors or CPU frequency

Click to select a utility

Shortcut to the Auto Tuning Mode under TurboV EVO

- The **Auto Tuning** button appears only on models with the TurboV EVO function.
- The applications in the Tool menu vary with models.
- The screenshots of AI Suite II in this user manual are for reference only. The actual screenshots vary with models.
- Refer to the software manual in the support DVD or visit the ASUS website at www.asus.com for detailed software configuration.

TurboV EVO

ASUS TurboV EVO introduces **TurboV** that allows you to manually adjust the CPU frequency and related voltages as well as **CPU Level Up** function that offers automatic and easy overclocking and system level up. After installing AI Suite II from the motherboard support DVD, launch TurboV EVO by clicking **Tool > TurboV EVO** on the AI Suite II main menu bar.

Refer to the software manual in the support DVD or visit the ASUS website at www.asus.com for detailed software configuration.

TurboV

TurboV allows you to overclock the BCLK frequency, CPU voltage, IMC voltage, and DRAM Bus voltage in Windows® environment and takes effect in real-time without exiting and rebooting the OS.

Refer to the CPU documentation before adjusting CPU voltage settings. Setting a high voltage may damage the CPU permanently, and setting a low voltage may make the system unstable.

For system stability, all changes made in TurboV will not be saved to BIOS settings and will not be kept on the next system boot. Use the **Save Profile** function to save your customized overclocking settings and manually load the profile after Windows starts.

Click to select mode

Load profile

Target values

Current values

Click to show settings

Click to restore all start-up settings

Save the current settings as a new profile

Voltage Adjustment bars

Undoes all changes without applying

Applies all changes immediately

Using Advanced Mode

Click on the **Advanced Mode** tab to adjust the advanced voltage settings.

Advanced mode
Target values

Voltage
Adjustment
bars

Current values

Undoes all changes
without applying

Click to restore
all start-up
settings

Applies all changes
immediately

CPU Ratio

Allows you to manually adjust the CPU ratio.

> The first time you use **CPU Ratio**, go to **AI Tweaker > CPU Power Management** in BIOS and set the **Turbo Ratio** item to **[Maximum Turbo Ratio setting in OS]**.

1.   Click on the **CPU Ratio** tab.
2.   Drag the adjustment bar upwards or downwards to the desired value.
3.   Click on **Apply** to make the change take effect.

CPU Ratio

Adjustment
bar

Click to restore
all start-up
settings

Undoes all changes
without applying

Applies all changes
immediately

> •   Set the **CPU Ratio Setting** item in BIOS to [Auto] before using the CPU Ratio function in TurboV. Refer to Chapter 3 of your motherboard user manual for details.
> •   The CPU Ratio bars show the status of the CPU cores, which vary with your CPU model.

GPU Boost

GPU Boost overclocks the integrated iGPU for the best graphics performance.

1.   Click **More Settings**, and then click the **GPU Boost** tab.
2.   Adjust the **iGPU Max Frequency** and **iGPU Voltage**.
3.   Click **Yes** to make the change takes effect.

GPU Boost

Target values

Current values

Click to restore all start-up settings

Adjustment bars

Undoes all changes without applying

Applies all changes

Auto Tuning

ASUS TurboV EVO includes two auto tuning modes, providing the most flexible auto-tuning options.

•   The overclocking result varies with the CPU model and the system configuration.
•   To prevent overheating from damaging the motherboard, a better thermal environment is strongly recommended.

•   **Fast Tuning**: fast CPU overclocking
•   **Extreme Tuning**: extreme overclocking for CPU and memory

Using Fast Tuning

1.   Click the **Auto Tuning** tab and then click **Fast**.

2.   Read through the warning messages and click **OK** to start auto-overclocking.
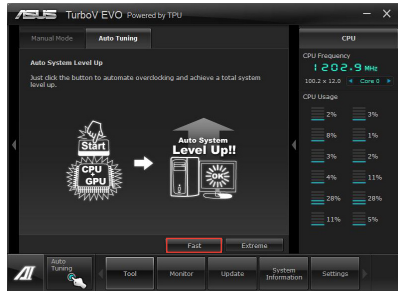
3. TurboV automatically overclocks the CPU, saves BIOS settings and restarts the system. After re-entering Windows, a message appears indicating auto tuning success. Click **OK** to exit.
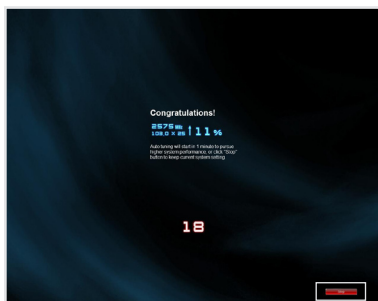

Using Extreme Tuning

1. Click the **Auto Tuning** tab and then click **Extreme**.

2. Read through the warning messages and click **OK** to start auto-overclocking.


3. TurboV automatically overclocks the CPU and memory and restarts the system. After re-entering Windows, a message appears indicating the current overclocking result. To keep the result, click **Stop**.

4. If you did not click **Stop** in the previous step, TurboV automatically starts further system overclocking and stability test. An animation appears indicating the overclocking process. Click **Stop** if you want to cancel the Overclocking process.

5. TurboV automatically adjusts and saves BIOS settings and restarts the system. After re-entering Windows, a message appears indicating auto tuning success. Click **OK** to exit.
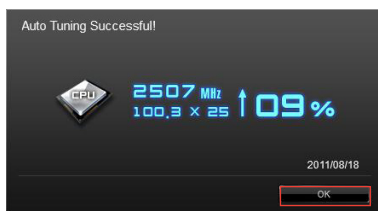
DIGI+ Power Control

DIGI+ PowerControl allows you to adjust the VRM voltage and frequency modulation to enhance reliability and stability. It also provides profile settings to achieve the highest power efficiency, generating less heat to prolong component lifespan, and minimize power loss. After installing AI Suite II from the motherboard support DVD, launch DIGI+ Power Control by clicking **Tool > DIGI+ Power Control** on the AI Suite II main menu bar.
Select **CPU Power** or **DRAM Power** to adjust the power control settings.

Smart DIGI+

Function no.	Function description
1	**Smart DIGI+ Key** Quickly delivers a higher VRM frequency, voltage, and current for superior CPU/iGPU/DRAM overclocking performance with one switch.
2	**Smart CPU Power Level - 45W** CPU power usage is limited to 45W to achieve the best digital power saving conditions.
3	**Smart CPU Power Level - 35W** CPU power usage is limited to 35W to achieve the best digital power saving mode.
4	**OC Now!** Adjusts the CPU ratio in TurboV EVO.
5	**Default (Smart DIGI+ Setting)** Sets your CPU/iGPU/DRAM power to default settings.
6	**Default (Smart CPU Power Level)** Sets your power consumption to CPU default setting.

- Enabling the Smart CPU Power Level may decrease the total power delivery to the CPU, and affect the CPU performance under a heavy system load. The system restores to its default settings on the next startup.

- Only Intel® 3rd generation processors support the Smart DIGI+ Technology feature.

CPU Power

Function no.	Function description
1	**CPU Load-line Calibration** It allows you to adjust the voltage settings and control the system temperature. Higher load-line calibration could get higher voltage and good overclocking performance but increases the CPU and VRM thermal.
2	**CPU Current Capability** CPU Current Capability provides wider total power range for overclocking. A higher value setting gets higher VRM power consumption delivery.
3	**CPU Voltage Frequency** Switching frequency will affect the VRM transient response and component thermal. Higher frequency gets quicker transient response.

Function no.	Function description
4	**iGPU Load-line Calibration** Load-line is defined by Intel VRM specifications, and affects the iGPU voltage. The iGPU working voltage decreases proportionally to integrated graphics loading. A higher value can get a higher iGPU voltage, and a good performance, but decreases the CPU and VRM thermal conditions.
5	**iGPU Current Capability** A higher value brings wider total iGPU power range, and extends the overclocking frequency range simultaneously to enhance the iGPU performance.
6	**CPU Power Phase Control** Increase phase number under heavy system loading to get more transient and better thermal performance. Reduce phase number under light system loading to increase VRM efficiency. *** The system automatically set the default to [Extreme] when using the Intel® iGPU.**
7	**CPU Power Thermal Control** A higher temperature brings a wider CPU power thermal range, and extends the overclocking tolerance to enlarge overclocking potential.
8	**CPU Power Response Control** The DIGI+ VRM controller provides a faster and precise power response rate for CPU. Apply a higher value for an extreme overclocking.
9	**CPU Power Duty Control** CPU Power Duty Control adjusts the current of every VRM phase and the thermal of every phase component.

DRAM Power

Application aids

Apply all changes immediately

Undo all changes without applying

Function no.	Function description
1	**DRAM Current Capability** A higher value brings a wider total power range and extends the overclocking frequency range simultaneously.
2	**DRAM Voltage Frequency** Allows you to adjust the DRAM switching frequency for system stability or to increase OC Range.
3	**DRAM Power Phase Control** Select **Extreme** for full phase mode to increase system performance or select **Optimized** for ASUS optimized phase tuning profile to increase DRAM power efficiency.
4	**DRAM Power Thermal Control** A higher temperature brings a wider DRAM power thermal range, and extends the overclocking tolerance to enlarge overclocking potential.

- The actual performance boost may vary depending on your CPU specification.
- Do not remove the thermal module. The thermal conditions must be monitored.

EPU

EPU is an energy-efficient tool that satisfies different computing needs. This utility provides several modes that you can select to save system power. Selecting Auto mode will have the system shift modes automatically according to current system status. You can also customize each mode by configuring settings like CPU frequency, GPU frequency, vCore Voltage, and Fan Control.

Launching EPU

After installing AI Suite II from the motherboard support DVD, launch EPU by clicking **Tool > EPU** on the AI Suite II main menu bar.

Displays the following message if no VGA power saving engine is detected.

Warning

No VGA detected. Please install a compatible VGA card or install and enable ASUS SmartDoctor. For the list of compatible VGA cards, refer to

http://event.asus.com/mb/oic_engine/

OK

Multiple system operating modes

The items lighting up means power saving engine is activated

Displays the amount of CO2 reduced

*Shifts between the display of Total and Current CO2 reduced

Displays the current CPU power

Advanced settings for each mode

Displays the system properties of each mode

- *• Select **From EPU Installation** to show the CO2 that has been reduced since you installed EPU.
- *• Select **From the Last Reset** to show the total CO2 that has been reduced since you click the Clear button [Clear].
- • Refer to the software manual in the support DVD or visit the ASUS website at www.asus.com for detailed software configuration.

USB 3.0 Boost

The ASUS exclusive USB 3.0 Boost provides speed boost for USB 3.0 devices and the up-to-date support of USB Attached SCSI Protocol (UASP). With USB 3.0 Boost, you can accelerate the transfer speed of your USB 3.0 devices with ease.

Launching USB 3.0 Boost

After installing AI Suite II from the motherboard support DVD, launch USB 3.0 Boost by clicking **Tool > USB 3.0 Boost** on the AI Suite II main menu bar.
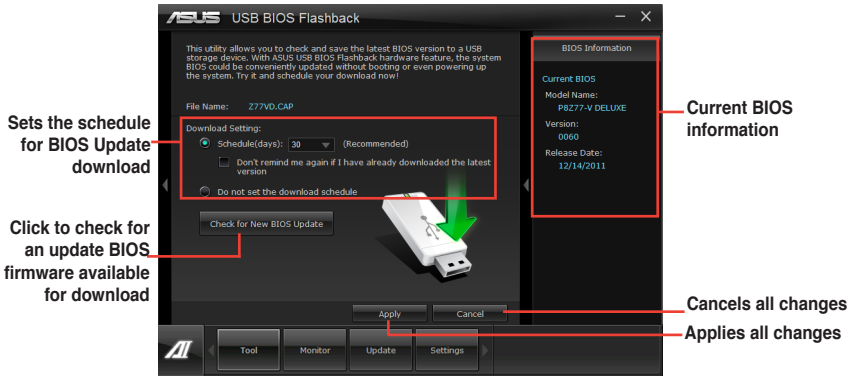
Configuring USB 3.0 Boost

1. Connect a USB 3.0 device to the USB 3.0 port.
2. USB 3.0 Boost automatically detects the property of the connected device and switches to **Turbo** mode or **UASP** mode (if UASP is supported by the connected device).
3. You can manually switch the USB 3.0 mode back to **Normal** mode at any time.

- • Refer to the software manual in the support DVD or visit the ASUS website at www.asus.com for detailed software configuration.
- • Due to Intel® chipset limitation, Intel® USB 3.0 ports do not support ASUS 3.0 Boost in Windows XP operating system.
- • Use the USB 3.0 devices for high performance. The data transfer speed varies with USB devices.

USB BIOS Flashback Wizard

This utility allows you to check and save the latest BIOS version to a USB storage device. With ASUS USB BIOS Flashback hardware feature, the system BIOS is conveniently updated without booting your system.

Sets the schedule for BIOS Update download

Click to check for an update BIOS firmware available for download

Current BIOS information

Cancels all changes

Applies all changes

Scheduling the latest BIOS download

1. In the **Download Setting** field, tick **Schedule (days)** and select the number of days for the next download update available.

2. Click **Apply** to save the BIOS download schedule. Click **Cancel** to cancel the changes made.

Downloading the updated BIOS

Plug the flash drive before you start downloading.

1. Click **Check for New BIOS Update** to look for an updated BIOS firmware.

2. Wait for the system to check the latest BIOS firmware.
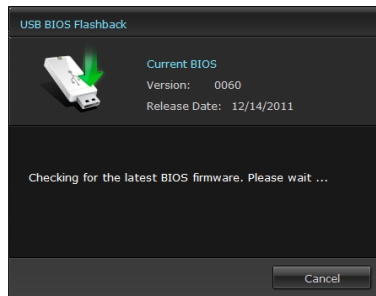
1. After the utility detects a new BIOS firmware, save the BIOS firmware by clicking ▼ from the **Save to** field, select the USB flashdrive, and click **Download**.
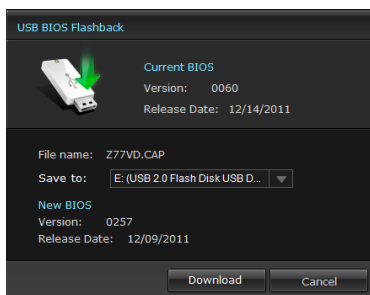
2. After the download is complete, click **OK**.
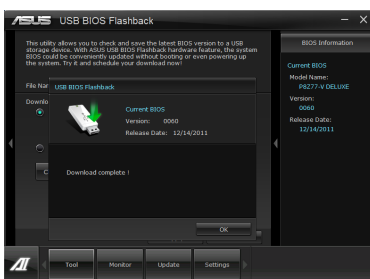
After you download the BIOS file to your flash drive, you can update the motherboard's BIOS. Refer to **2.3.11 USB BIOS Flashback** for details.

ASUS SSD Caching

This feature boosts system performance by using an installed SSD with no capacity limitations as a cache for frequently accessed data. Harness a combination of SSD-like performance and response and hard drive capacity with just one click. No rebooting is needed with instant activation for complete ease of use.

Launching ASUS SSD Caching

After installing AI Suite II from the motherboard support DVD, launch ASUS SSD Caching by clicking **Tool > ASUS SSD Caching** on the AI Suite II main menu bar.

Configuring ASUS SSD Caching

1. Connect one HDD and one SSD to the the Marvell® SATA ports (SATA6G_E1/ E2). ASUS SSD Caching automatically detects the HDD and SSD.

2. Click on **Caching Now!** to initialize the connected disks. Initialization status is shown on the program interface.

3. Caching function will be activated once initialization is complete.

4. Click on **Disable** when deactivating SSD caching.

• During initialization, you can proceed with doing any system operations. You can check the caching status later or wait for a pop-up message notifying that initialization is completed.

• For regular usage, the SATA6G_E1/E2 connectors are recommended for data drives.

• After disabling SSD Caching, the SSD will become a non-configurable disk in Windows OS. To use the SSD again for normal functions, go to Disk Management to reconfigure the SSD.
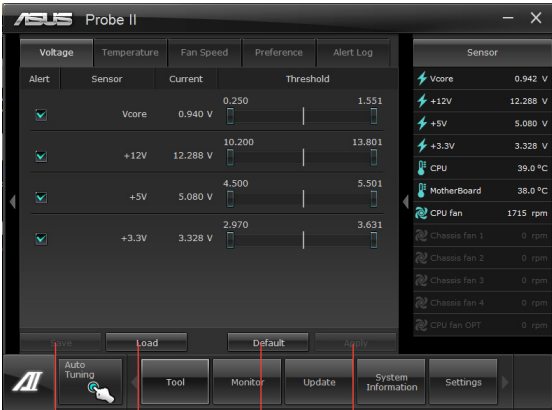

Probe II

Probe II is a utility that monitors the computer's vital components, and detects and alerts you of any problem with these components. Probe II senses fan rotations, CPU temperature, and system voltages, among others. With this utility, you are assured that your computer is always at a healthy operating condition.

Launching Probe II

After installing AI Suite II from the motherboard support DVD, launch Probe II by clicking **Tool > Probe II** on the AI Suite II main menu bar.

Configuring Probe II

Click the **Voltage/Temperature/Fan Speed** tabs to activate the sensors or to adjust the sensor threshold values. The **Preference** tab allows you to customize the time interval of sensor alerts, or change the temperature unit.

Saves your configuration

Loads your saved configuration

Loads the default threshold values for each sensor

Applies your changes

Refer to the software manual in the support DVD or visit the ASUS website at www.asus.com for detailed software configuration.

Click on **Monitor > Sensor** on the AI Suite II main menu bar and a highlight of the system statuses will appear on the right panel.
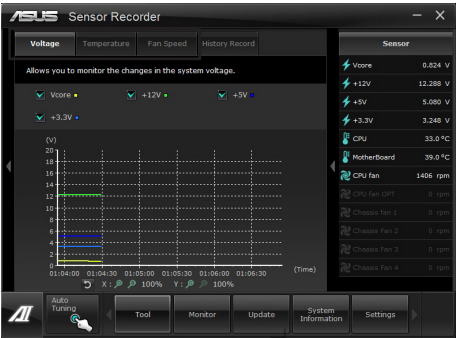

Sensor Recorder

Sensor Recorder monitors the changes in the system voltage, temperature, and fan speed on a timeline. The History Record function allows you to designate specific time spans on record to keep track of the three system statuses for certain purposes.

Launching Sensor Recorder

After installing AI Suite II from the motherboard support DVD, launch Sensor Recorder by clicking **Tool > Sensor Recorder** on the AI Suite II main menu bar.

Using Sensor Recorder

Click on **Voltage/ Temperature/ Fan Speed** tabs for the status you want to monitor. Colored lines will automatically appear on the diagram to indicate the immediate changes in the system status.

Using History Record

1. Click on the **History Record** tab and adjust the settings on the left for **Record Interval** and **Record Duration** according to need.
2. Click on **Start Recording** to start measurement and recording of each sensor.
3. To stop recording, click on **Recording** again.
4. To track the recorded contents, set **Type/ Date/ Select display items** to display the history details.

Click on **Monitor > Sensor** on the AI Suite II main menu bar and a highlight of the system statuses will appear on the right panel.

ASUS Update

ASUS Update lays out the options for updating BIOS on your system. Update BIOS utility on your system or simply save the utility for later use just by following the directions on this convenient updating feature.

Launching ASUS Update

After installing AI Suite II from the motherboard support DVD, launch ASUS Update by clicking **Update> ASUS Update** on the AI Suite II main menu bar.

Using ASUS Update

Select the way you would like to do with the BIOS utility. Click on **Next** and follow the instructions to complete your request.
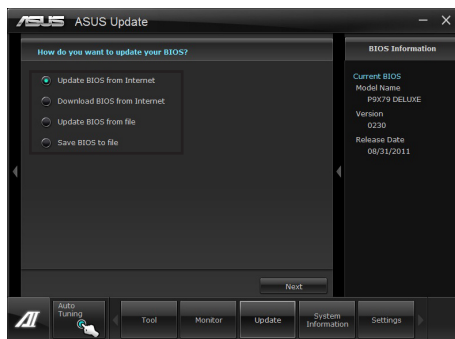
- **Update BIOS from Internet**
  Download the latest BIOS utility from the ASUS service website (www.asus.com) and follow the suggested procedures to update the BIOS version on your system.

- **Download BIOS from Internet**
  Download the latest BIOS utility from the ASUS service website (www.asus.com) and save for later use.

- **Update BIOS from file**
  Use the BIOS utility demanded from a source file to update the BIOS version on your system.

- **Save BIOS to file**
  Back up the current BIOS utility on your system to another file or USB disk to save for later use.

> There may be risks of system crash when updating BIOS. Backing up the original BIOS utility is recommended before updating.

MyLogo2

This This MyLogo utility lets you customize the boot logo. The boot logo is the image that appears on screen during the Power-On-Self-Tests (POST). Personalize your computer from the very beginning!

Launching ASUS Update

After installing AI Suite II from the motherboard support DVD, launch MyLogo by clicking **Update> MyLogo** on the AI Suite II main menu bar.
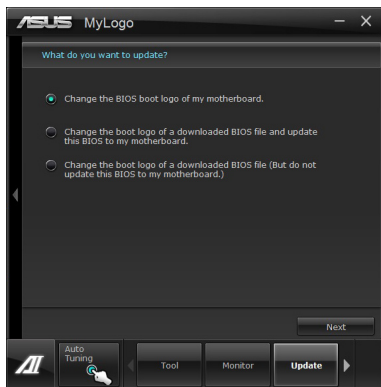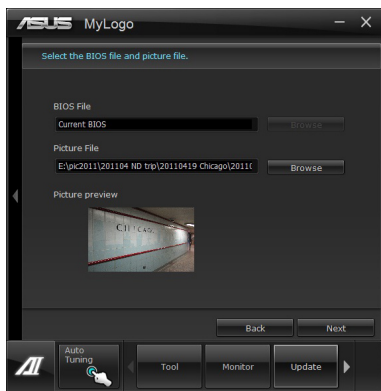

Using MyLogo

Select the way you would like to do update your boot logo. Then click Next and follow the given instructions.

Change the BIOS boot logo of my motherboard

1.   Under Current BIOS, click **Browse** and choose the desired image for your boot logo. Then click on Next.

2. Click on **Auto Tune** to adjust image size compatibility or adjust the resolution bar.

3. You can click on Booting Preview to preview the boot image. Then click Next.

4. Click on Flash to start updating the image to the boot logo.

5. Click on Yes to reboot or you can also see the new logo next time you restart your computer.
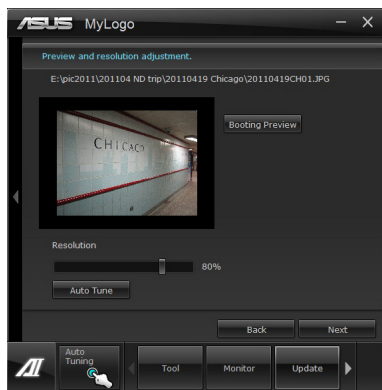
Change the boot logo of a downloaded BIOS file and update (or do not update) this BIOS to the motherboard

1. At BIOS File, **Browse** to download the requested BIOS file to your system. This utility will help you detect the compatibility of the BIOS version.

2. Then at Picture File, Browse to select the desired image for boot logo. Click Next.

3. Follow steps 2-5 in **Change the BIOS boot logo of my motherboard** to complete logo update.
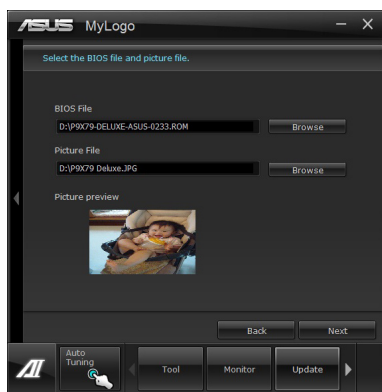
The fullscreen logo application in BIOS utility must be enabled for MyLogo to take effect.