☆ Quick XMP Overclocking Settings

Intel XMP (Extreme Memory Profile) allows users to easily overclock XPG memory by modifying settings in the BIOS, by that achieving even better performance than factory defaults without complex and often risky changes to memory voltages or frequencies. However, to use easy XMP settings, PCs need to have the following:

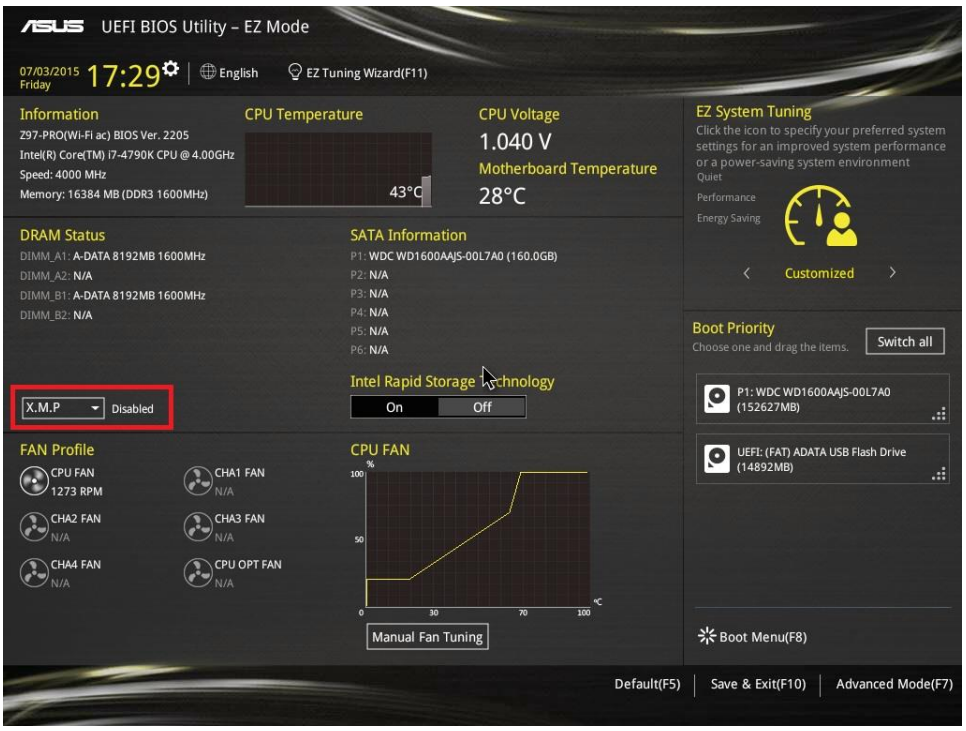
1. Intel CPU
2. XMP-supporting chipset and motherboard
3. XMP-compatible memory – we recommend high performance XPG modules

Every motherboard manufacturer employs their own way of accessing XMP, though these are generally similar and consistent across brands. We're using an ASUS Z97 PRO in our example.

Enter the BIOS (usually by holding or repeatedly tapping DEL after powering on your PC). Prior to loading XMP the default frequency for our 16GB of installed DDR3 memory is 1600MHz, as shown in the red box.

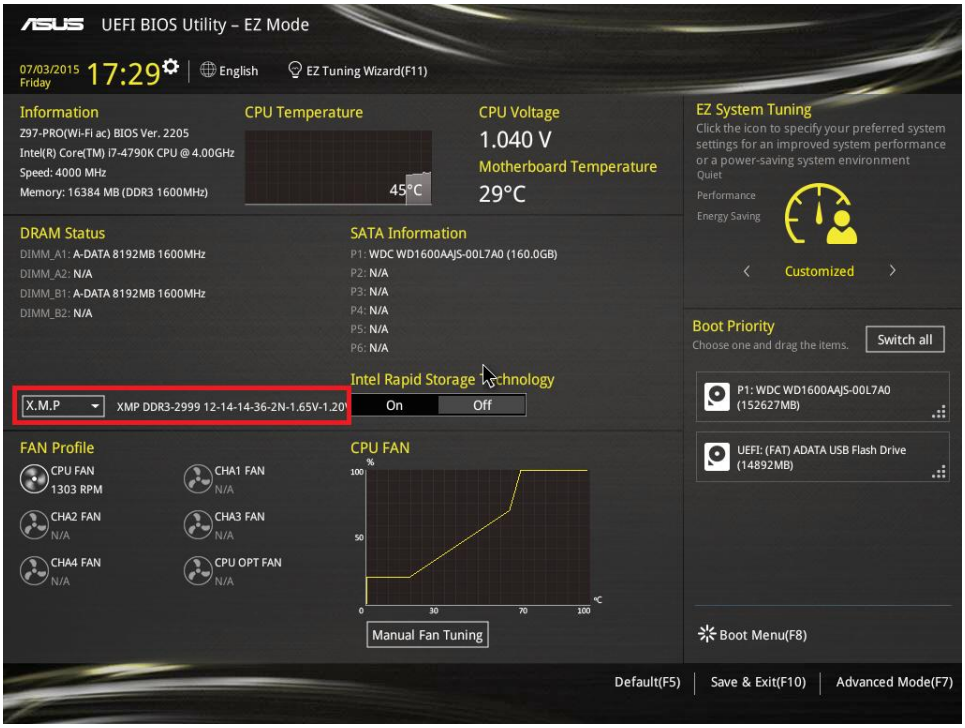
Loading XMP: Method A

The red box in the screenshot below shows the XMP enable/disable drop menu. This will only show or be active on XMP compatible motherboards coupled with XMP-supporting memory.



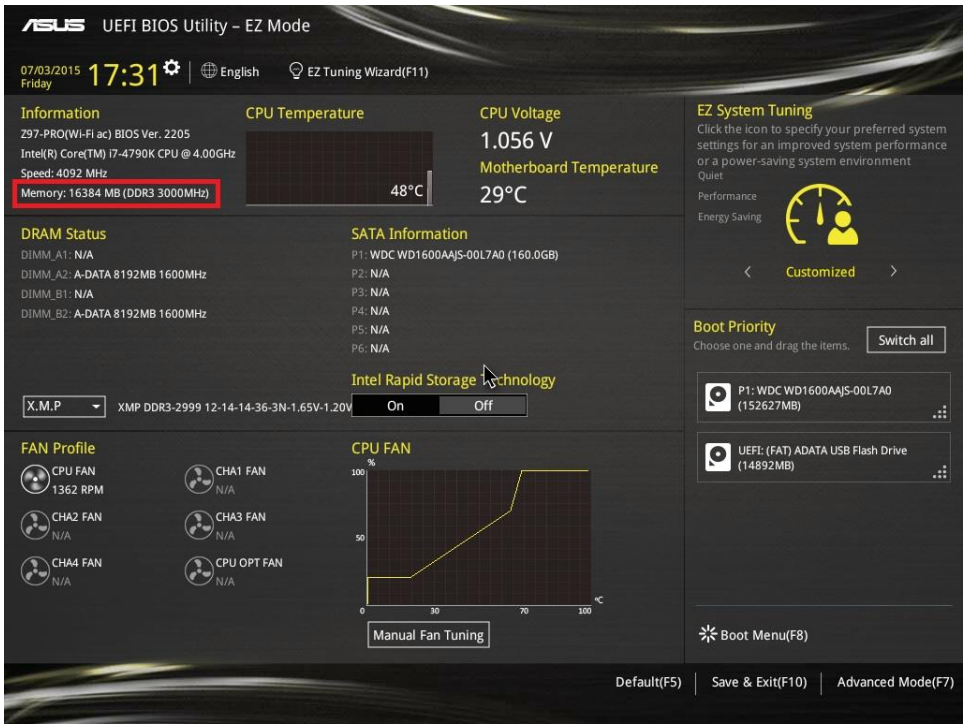
Based on the XMP parameters supported by the installed memory, you can load available XMP pre-sets such as Profile 1 as shown, using the drop menu.

After choosing Profile 1, you will see its specifics: in our example those are 2999MHz frequency, 12-14-14-36 timings, and so on.



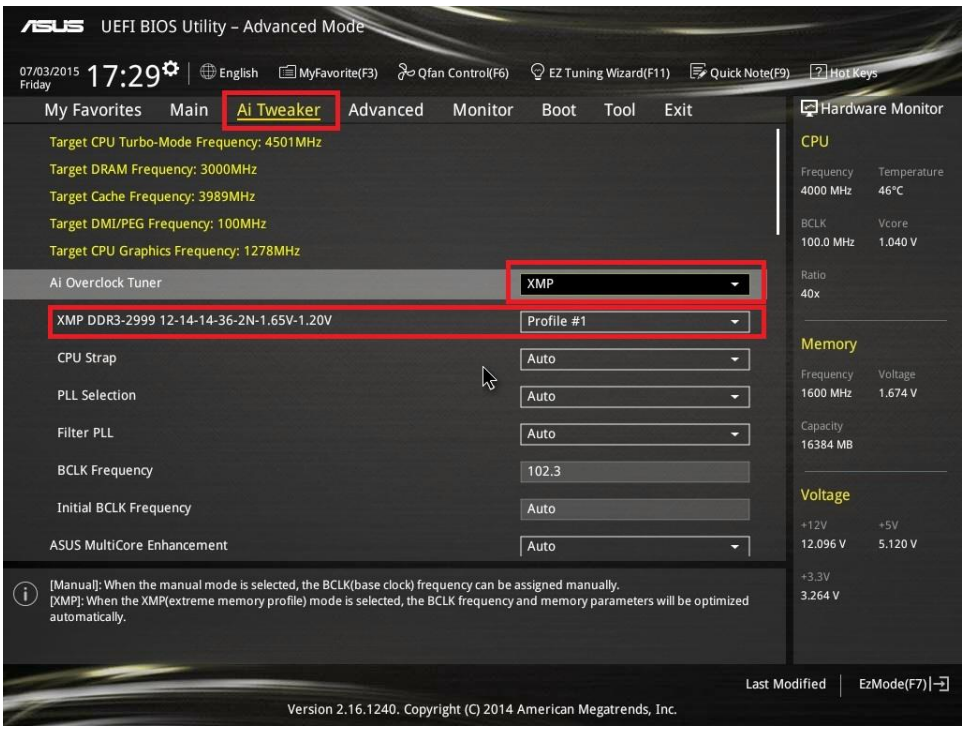
If you are satisfied with these specifications and settings and want to apply them, press F10 to save and restart your PC for XMP settings to take effect.

Enter the BIOS again to double check whether the changes have been applied, primarily the frequency overclock from 1600MHz to 3000MHz (or 2999MHz).

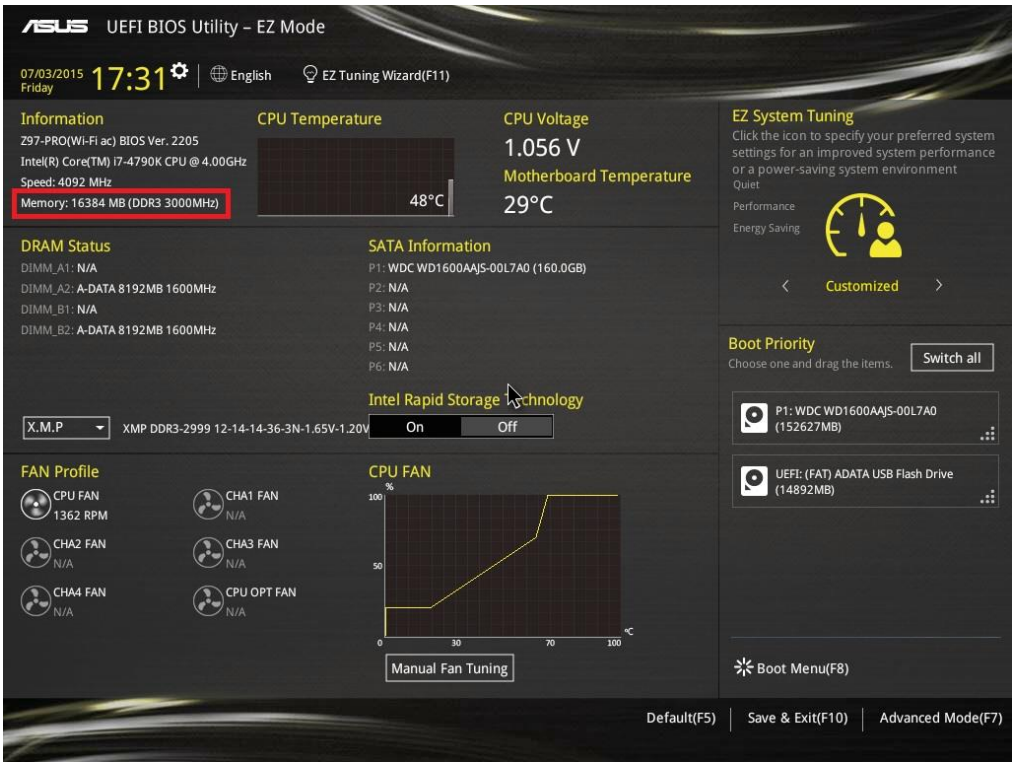


Loading XMP: Method B

On our example motherboard, we can use the ASUS Ai Tweaker utility to enable XMP. Enter the BIOS and navigate to the Ai Tweaker section (or press F7 for a shortcut). Under Ai Overclock Tuner, find the XMP option and choose a profile to enable.



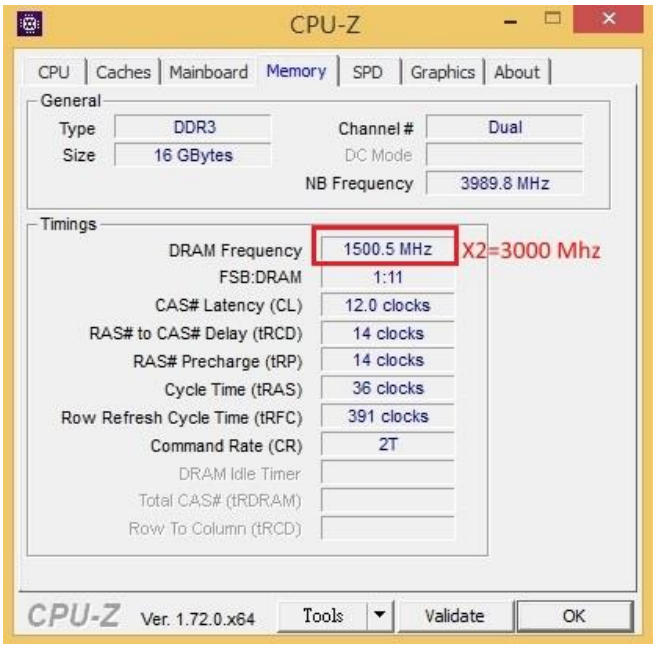
After confirming that these are the settings you want, press F7 to exit Ai Tweaker and F10 to save and restart your PC for XMP settings to take effect. As before, on restarting re-enter the BIOS to make sure overclocking has been applied.



☆ CPU-Z Memory Spec Verification

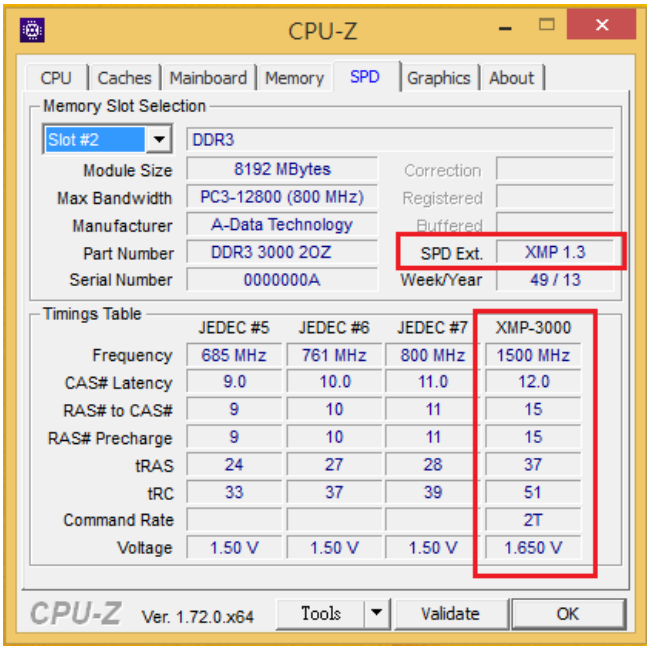
You can use the free CPU-Z utility to check on numerous PC parameters, including memory frequency. This will show you what memory speed is actually being detected by your operating system outside of the BIOS. Keep in mind the number reported by CPU-Z needs to be multiplied by two in the case of DDR3 to calculate actual speed (1500MHz x 2 = 3000MHz in our example).

CPU-Z can be downloaded from www.cpuid.com/softwares/cpu-z.html



☆ Verify XMP Version and Memory SPD (Serial Presence Detect)

The SPD tab in CPU-Z shows whether installed memory supports XMP and SPD, and which version of these is supported: for example XMP 1.3, XMP 2.0, and so on. Depending on the supported XMP version, different overclocking options will become available in the BIOS.



☆ XMP Overview

Intel Extreme Memory Profile (Intel XMP) allows compatible DDR3/DDR4 memory to operate in overclocked mode, unlocking operating frequencies that exceed default settings. This caters to the needs of performance enthusiasts and gamers who want to enhance their Intel-based PCs. For power users who enjoy overclocking whether competitively or for better performance in games, Intel XMP compatibility is highly recommended, and therefore users are advised to install XMP-compatible memory and motherboards to easily modify XMP settings and overclock with minimal effort and optimal stability. Making sure your memory and motherboard are XMP-compatible is the only way to access the advantages of this technology.

☆ Additional Thoughts

Intel XMP settings that are pre-defined and pre-tested by hardware makers can be loaded through the BIOS or special tuning programs via your PC's operating system. Usually, the easiest method to load Intel XMP settings is to use a tuning utility, which may be provided by the motherboard producer – as with Ai Tweaker in our example. For additional information on your specific motherboard, please consult the manufacturer website.