

How to Overclock DDR5 Memory?

DDR5 SPIDER 5/X5 Overclock DDR5 Memory

Using XMP/EXPO

Manual overclocking

How to Overclock DDR5 Memory

There are two main methods to overclock DDR5 RAM: XMP/EXPO profiles or manual overclocking. XMP and EXPO profiles are pre-configured settings stored in the memory modules and can be enabled in the BIOS. Manual overclocking involves manually adjusting the memory frequency, timings, and voltages in the BIOS or using software tools.

Here is a summary of how to overclock DDR5 RAM using both methods:

1. Using XMP/EXPO profiles (One-Click Overclocking):

- Press Delete or F2, enter the BIOS and look for the XMP/EXPO option under the Advanced or OC settings depending on your motherboard.



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- Select the XMP/EXPO profile that matches your memory kit's rated speed and timings; for example, if your memory kit is rated for DDR5-6000 CL38-38-38-76, select the XMP/EXPO profile that has those values.



- Save and exit the BIOS and boot into Windows.

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2. Manual overclocking:

- Press Delete or F2 to enter the BIOS and disable XMP/EXMP if it is enabled. Look for the memory settings under the Advanced or OC settings depending on your motherboard.
- Increase the memory frequency by small increments (e.g., 100 MHz) and save and exit the BIOS. Boot into Windows and check your memory speed using CPU-Z or other software tools.
- Run a stability test using AIDA64, HCI MemTest, or other software tools to make sure your system is stable at the new frequency. If it is not stable, lower the frequency or increase the voltage.
- Repeat steps 2 and 3 until you reach your desired frequency or encounter instability.
- Tweak the memory timings by lowering them one by one (e.g., CL, tRCD, tRP, tRAS) and save and exit the BIOS. Boot into Windows and check your memory timings using CPU-Z or other software tools.
- Run a stability test using AIDA64, HCI MemTest, or other software tools to make sure your system is stable at the new timings. If it is not stable, raise the timings or increase the voltage.
- Repeat steps 5 and 6 until you reach your desired timings or encounter instability.
- Save your final overclock settings in a BIOS profile for future use.

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GIGABYTE SPD Setup

Hub	Gigabyte SPD								
	<input checked="" type="checkbox"/> Current	<input checked="" type="checkbox"/> JEDEC	<input checked="" type="checkbox"/> XMP1	<input checked="" type="checkbox"/> XMP2	<input checked="" type="checkbox"/> XMP3	<input type="checkbox"/> USER4	<input type="checkbox"/> USER5	<input type="checkbox"/> Micron 1	<input type="checkbox"/> Micron i
Frequency	4800	4800	6400	6000	5600			5200	5000
tCL	38	40	38	38	38			38	38
tRCD/tRP	38	40	38	38	38			38	38
tRAS	76	77	76	76	76			83	80
Vdd	1.10	1.10	1.30	1.30	1.20			1.25	1.25
Vddq	1.10	1.10	1.30	1.30	1.20			1.25	1.25
Vpp	1.80	1.80	1.90	1.90	1.80			1.80	1.80
Vimc	1.10	1.10	1.30	1.30	1.20			1.25	1.25
tRC	114	127	127	127	127			121	118
tWR	99	72	96	90	84			75	75
tRFC	510	706	940	884	824			766	736
tRFC2	510	393	510	480	447			419	399
tRFCsb	415	311	415	390	364			338	325
tRRD_L	15	12	15	15	14			15	15
tCCD_L	-	12	16	15	14			-	-
tCCD_L_WR	-	12	16	15	14			-	-
CCD_L_WR2	-	12	16	15	14			-	-
tRTP	23	18	24	23	21			23	23
CCD_L_WTR	-	12	16	15	14			-	-
CCD_S_WTR	-	12	16	15	14			-	-

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