

ASRockInd Technical Reference - Q&A

Question	What is the maximum DDR5 memory frequency supported by Intel 12 th , 13 th , and 14 th gen desktop processor?
Release date	2023/09/26
Product	Intel ADL-S Platform, Intel RPL-S Platform, Intel RPL-S Refresh Platform DDR5 models
FAQ type	<input checked="" type="checkbox"/> Specification <input type="checkbox"/> OS & Driver <input type="checkbox"/> Application <input type="checkbox"/> BIOS <input type="checkbox"/> Others

Answer:

According to Intel documentation, the supported memory frequency could vary depending on the CPU and memory configuration for Intel ADL-S, RPL-S, RPL-S Refresh Platform.

Please refer to the following table for the maximum supported memory frequency in different scenarios:

For 12th gen Alder Lake-S processors:

All Processors			
Connector	UDIMM		SODIMM
Speed	1DPC: 4800	2DPC: 4400 (1DIMM) 4000 (2DIMM 1R) 3600 (2DIMM 2R)	1DPC: 4800

For 13th gen Raptor Lake-S processors:

Core i9, i7 series				Core i5, i3 series		
Connector	UDIMM		SODIMM	UDIMM		SODIMM
Speed	1DPC: 5600	2DPC: 4400 (1DIMM) 4000 (2DIMM 1R) 3600 (2DIMM 2R)	1DPC: 5600	1DPC: 4800	2DPC: 4400 (1DIMM) 4000 (2DIMM 1R) 3600 (2DIMM 2R)	1DPC: 4800

For 14th gen Raptor Lake-S Refresh processors:

	Core i9, i7, i5K, i5-14600 series			Core i5-14500, i5-14400, i3 series		
Connector	UDIMM		SODIMM	UDIMM		SODIMM
Speed	1DPC: 5600	2DPC: 4400 (1DIMM) 4000 (2DIMM 1R) 3600 (2DIMM 2R)	1DPC: 5600	1DPC: 4800	2DPC: 4400 (1DIMM) 4000 (2DIMM 1R) 3600 (2DIMM 2R)	1DPC: 4800

*DPC = DIMM per channel

*1R = Single Rank Memory

*2R = Dual Rank Memory

Please refer to the following table for memory configuration of ASRock Industrial 600 series motherboards:

Model Name	Memory Platform Design
IMB-1315	UDIMM 1DPC
IMB-1713	
IMB-1316 / IMB-X1316 / IMB-X1316-10G	UDIMM 2DPC
IMB-1714 / IMB-X1714	
IMB-1237	SODIMM 1DPC
IMB-1238 / IMB-X1238	
IMB-1239-WV	
IMB-1240-WV / IMB-X1240-WV	

For example, if you use i7-14700T on IMB-X1714, the maximum supported DDR5 memory frequency would be:

DDR5-4400 when installing 2 sticks of memory on A2 & B2 slots

DDR5-4000 when installing 4 sticks of single rank memory

DDR5-3600 when installing 4 sticks of dual rank memory