

Advantech AE Technical Share Document

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Category	<input checked="" type="checkbox"/> FAQ <input type="checkbox"/> SOP	Related OS	N/A
Abstract	Memory Support on Alder Lake Platforms		
Keyword	DDR5, Memory, DIMM, 4800MHz, 4400MHz		
Related Product	ASMB-788, ASMB-588, ASMB-610V3		

■ **Problem Description:**

We've met several customer who queried about the memory support for 4800MHz, 4400MHz on ASMB-788, ASMB-588, and ASMB-610V3 motherboards. This document indicates how to select compatible memory configuration with correct frequency support.

■ **Memory Configurations with Different Frequency:**

Below table from Intel datasheet indicates DDR support matrix table for Alder Lake platform. We uses 2DPC (2 DIMM Per Channel) design for ASMB-788, ASMB-588, and ASMB-610V3 motherboards.

5.1.1 Processor SKU Support Matrix

Table 28. DDR Support Matrix Table

Technology	DDR4		DDR5		LPDDR4x	LPDDR5
Processor	HX / S / H / P	HX / S	HX / S / H / P	HX / S	H/P/U	H/P/U
Configuration	1DPC	2DPC ¹¹	1DPC	2DPC ¹¹	1R/2R	1R/2R
Maximum Frequency [MT/s]	S UDIMM 3200 HX / S / H / P SoDIMM 3200	S UDIMM 3200 ¹² HX SoDIMM : 1 DIMM - 2933 ¹² 2 DIMMs - 3200	HX / S / P SoDIMM 4800 S : UDIMM 4800	S UDIMM : 1 DIMM - 4400, 2 DIMMs 1R - 4000, 2 DIMMs 2R - 3600 HX SoDIMM: 1 DIMM - 4000, 2 DIMMs 1R - 4000, 2 DIMMs 2R - 3600	4266	Type4 : 1R/2R :5200 P/H Type3: 1R/2R 4800
VDDQ [V] ⁶	1.2		5,1.1 ¹⁰		0.6	0.5

4800MHz

Only available for motherboard with 1DPC design, which is NOT supported.

4400MHz

Maximum frequency can be supported when installing 1 DIMM per channel, only support up to 2 DIMMs in total.

4000MHz

Maximum frequency can be supported when installing 2 x 1R DIMM per channel.

3600MHz

Maximum frequency can be supported when installing 2 x 2R DIMM per channel.