



AMD EXPO™ Technology Memory Profile Self-Certification Report

[General Module Information]	
Module Manufacturer:	KINGSTON
Module Part Number:	HP60U40S8HA-16FRE
Serial Number:	N/A
Module Revision:	1
Module Size:	16 GBytes
Ranks per channel:	1
JEDEC Memory Speed:	DDR5-5600
Module Type:	Unbuffered DIMM (UDIMM)
SDRAM Manufacturer:	SK Hynix
DRAM Stepping:	A
Error Check/Correction:	None

[AMD EXPO Profile Support]	
AMD EXPO Version	1
Profile 0 Enabled	Yes
Profile 0 DIMMs per Channel	1
Profile 1 Enhanced Block Enabled	No
Profile 1 Enabled	Yes
Profile 1 DIMMs per Channel	1
Profile 1 Enhanced Block Enabled	No

[EXPO Profile 0 Voltage]	
SDRAM VDD (V)	1.25 V
SDRAM VDDQ (V)	1.25V
SDRAM VPP (V)	1.80 V



[EXPO Profile 0 Timing]		
DDR Data Rate MT/S	6000 MT/s	
tCK (ps / nCK)	333 ps	
tCAS (ps / nCK)	13333 ps	40 nCK
tRCD (ps / nCK)	13333 ps	40 nCK
tRP (ps / nCK)	13333 ps	40 nCK
tRAS (ps / nCK)	26666 ps	80 nCK
tRC (ps / nCK)	40000 ps	120 nCK
tRW (ps / nCK)	30000 ps	90 nCK
tRFC1 (ns)	295 ns	
tRFC2 (ns)	160 ns	
tRFCsb (ns)	130 ns	

[EXPO Profile 0 Enhanced Timing]		
tRRD_L (ps / nCK)	N/A	
tCCD_L (ps / nCK)	N/A	
tCCD_L_WR (ps / nCK)	N/A	
tCCD_L_WR2 (ps / nCK)	N/A	
tFAW (ps / nCK)	N/A	
tWTR_L (ps / nCK)	N/A	
tWTR_S (ps / nCK)	N/A	
tRTP (ps / nCK)	N/A	

[EXPO Profile 1 Voltage]	
SDRAM VDD (V)	1.25 V
SDRAM VDDQ (V)	1.25V
SDRAM VPP (V)	1.80 V



[EXPO Profile 1 Timing]		
DDR Data Rate MT/S	6000 MT/s	
tCK (ps / nCK)	333 ps	
tCAS (ps / nCK)	15333 ps	46 nCK
tRCD (ps / nCK)	15333 ps	46 nCK
tRP (ps / nCK)	15333 ps	46 nCK
tRAS (ps / nCK)	30666 ps	92 nCK
tRC (ps / nCK)	46000 ps	138 nCK
tRW (ps / nCK)	30000 ps	90 nCK
tRFC1 (ns)	295 ns	
tRFC2 (ns)	160 ns	
tRFCsb (ns)	130 ns	

[EXPO Profile 1 Enhanced Timing]		
tRRD_L (ps / nCK)	N/A	
tCCD_L (ps / nCK)	N/A	
tCCD_L_WR (ps / nCK)	N/A	
tCCD_L_WR2 (ps / nCK)	N/A	
tFAW (ps / nCK)	N/A	
tWTR_L (ps / nCK)	N/A	
tWTR_S (ps / nCK)	N/A	
tRTP (ps / nCK)	N/A	

[EXPO Tested Platforms]	[BIOS Version]	[Processor]	[ProcODT2]	[RTT2]	[DrvStr2]
HP - OMEN X670 ARCTIC	B.19T05	Ryzen™ 7 8700G	AUTO	AUTO	AUTO

Notes:

- 1. The list of tested platforms (which includes the Motherboard, BIOS, and Processor configurations) is not an exhaustive list of supported configurations. It is solely a set of tested configurations to demonstrate AMD EXPO™ profile viability on actual hardware.*
- 2. ProcODT, RTT, and DrvStr values per configuration, Auto, or selected value.*