

# XPAC Migration

## - Performance Comparison

Written by Sean Hsu

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# Performance Comparison

**A: XP-8000-CE6 / B: XP-8000-Atom-CE6 / C: XP-8x3x-CE6**

Operation Items	A	B	C
Booting time	About 60 sec.	About 45 sec.	About 41 sec.
Integer	1353 ops	<b>3189 ops</b>	2783 Ops
Floating point	798 ops	<b>2427 ops</b>	1312 ops
Memory	2139 ops	<b>4167 ops</b>	4318 ops
I/O	260KHz	<b>300KHz</b>	<b>442KHz</b>

1. Integer operations – Number of 1000 different integer operation function calls within 1 second.
2. Floating point operations – Number of 1000 different float operation function calls within 1 second.
3. Memory operations – Number of read/write in the memory made during about 1 second.
4. I/O – The average time of calling `_pac_outp` command for 1,000,000 times.

Disk	A	B	C
<b>System Disk Read (Data Size)</b>			
1 KB	162 $\mu$ s	143 $\mu$ s	<b>92<math>\mu</math>s</b>
2 KB	156 $\mu$ s	142 $\mu$ s	<b>98<math>\mu</math>s</b>
8 KB	177 $\mu$ s	154 $\mu$ s	<b>107<math>\mu</math>s</b>
64 KB	552 $\mu$ s	<b>233 <math>\mu</math>s</b>	1363 $\mu$ s
256 KB	85758 $\mu$ s	13552 $\mu$ s	<b>4475<math>\mu</math>s</b>
512 KB	173511 $\mu$ s	24697 $\mu$ s	<b>9086<math>\mu</math>s</b>
<b>System Disk Write (Data Size)</b>			
1 KB	10.3ms	3732 $\mu$ s	<b>2286<math>\mu</math>s</b>
2 KB	18.3ms	3538 $\mu$ s	<b>2703<math>\mu</math>s</b>
8 KB	39.9ms	6111 $\mu$ s	<b>2101<math>\mu</math>s</b>
64 KB	82ms	22474 $\mu$ s	<b>5086<math>\mu</math>s</b>
256 KB	147.1ms	124848 $\mu$ s	<b>13879<math>\mu</math>s</b>
512 KB	256.9ms	184892 $\mu$ s	<b>26822<math>\mu</math>s</b>

**Note: The shorter time, the better performance**

I/O Module Items	A	B	C
8017HW	78.5 S/s	70 K S/s	<b>76.3 KS/s</b>
8024W	131 KHz	<b>188 KHz</b>	125 KHz
8K DI	361 KHz	424 KHz	<b>595 KHz</b>
8K DO	232 KHz	238 KHz	<b>623 KHz</b>
87K AO	407 Hz	422 Hz	<b>433 Hz</b>
87K DI	466 Hz	500 Hz	<b>549 Hz</b>
87K DO	593 Hz	613 Hz	<b>649 Hz</b>

1. 8017HW 1 channels (without switching MUX) test: calls pac\_i8017HW\_ReadAIHex
2. 8024W Single AO channel tes: calls pac\_i8024W\_VoltageOut\_Hex
3. 8054W 8 DI channels test: calls [\\_pac\\_ReadDI](#)
4. 8054W 8 DO channels test: calls [\\_pac\\_WriteDO](#)
5. 87019RW Single AI channel test: calls pac\_ReadAIHex
6. 87024W Single AO channel test: calls pac\_WriteAO
7. 87055W 8 DI channels test: calls pac\_ReadDI
8. 87055W 8 DO channels test: calls pac\_WriteDO

VGA Items	A	B	C
FillRect	6 ms	115 ms	3 ms
Ellipse	280ms	411 ms	243 ms
Polyline	83 ms	64 ms	44 ms
Polygon	165 ms	319 ms	85 ms
Text out	63 ms	87 ms	74 ms

**Note: The shorter time, the better performance**

VGA Items	A	B	C
Circle draw	5843	3140	7444
Rectangle draw	13528	14461	19792
Text draw	15268	7168	15205
Scroll	161	248	327

**Note: The large number, the better performance**