

XPAC Migration

- Performance Comparison

Written by Sean Hsu

Last Modified Date: May. 2017

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.	
Integer	1353 ops	3189 ops	2783 Ops
Floating point	798 ops	2427 ops	1312 ops
Memory	2139 ops	4167 ops	4318 ops
I/O	260KHz	300KHz	442KHz

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

Note: The shorter time, the better performance

I/O Module Items	A	B	C
8017HW	78.5 S/s	70 K S/s	60 KS/s
8024W	131 KHz	188 KHz	100 KHz
8K DI	1085 KHz	2000 KHz	Testing
8K DO	400 KHz	574 KHz	Testing
87K AO	350 Hz	477 Hz	Testing
87K DI	390 Hz	645 Hz	Testing
87K DO	500 Hz	755 Hz	Testing

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