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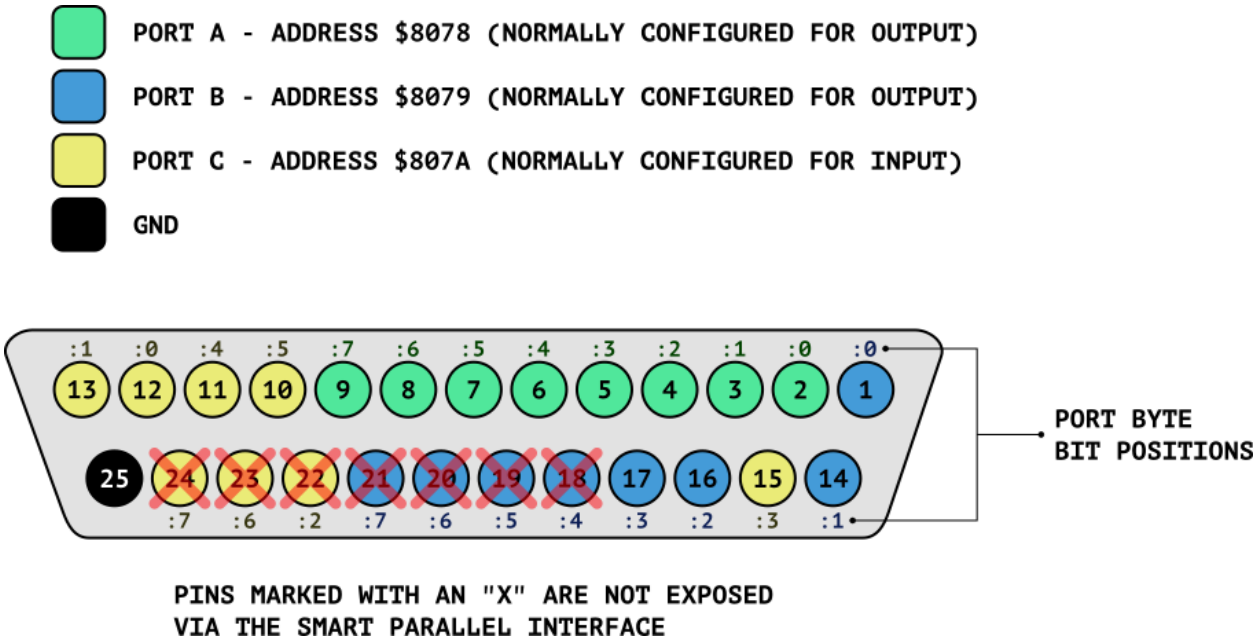
Hardware programming info for the Atari Portfolio Smart Parallel Interface (HPC-101)

Hardware ports

Four ports are used to communicate with the 82C55 UART used in Portfolio's smart parallel interface. There is a control register (port/memory address $807B) and 3 I/O ports (Port A - address $8078, Port B - address $8079 and Port C - address $807A), which can be individually configured as inputs or outputs (Port C even individually for the higher and lower nibble). The ports are exposed to the DB-25 connector as shown in the following diagram



Not all ports are fully exposed to the DB-25. Ports B and C have various signals which are not available. These appear to be connected to ground at the DB-25 port. The following table shows the available signals arranged by ports/bits

	Port A		Port B		Port C	
Bit	**Pin #**	**Signal**	**Pin #**	**Signal**	**Pin #**	**Signal**
0	2	D0	1	Strobe	12	Paper
1	3	D1	14	Autofeed	13	Select
2	4	D2	16	Init/Reset	-	-
3	5	D3	17	Select In	15	Errors
4	6	D4	-	-	11	Busy
5	7	D5	-	-	10	Ack
6	8	D6	-	-	-	-
7	9	D7	-	-	-	-

Port control

The control register (807B) determines how the individual ports are switched (inputs vs outputs). The following table outlines the configuration options for each port and the associated value to be written to the control register for each option

By default (printer control mode), the control register contains the value **138 (089h)** - Ports A and B set to output (data and control) and port C set to input (acknowledge, busy, error etc)

Control register port ($807B)					
Value		**Port directions**			
Hex	**Decimal**	**Port A**	**Port B**	**Port C (lo)**	**Port C (hi)**
0080	128	OUT	OUT	OUT	OUT
0081	129	OUT	OUT	IN	OUT
0082	130	OUT	IN	OUT	OUT
0083	131	OUT	IN	IN	OUT
0088	137	OUT	OUT	OUT	IN
0089	138	OUT	OUT	IN	IN
008A	139	OUT	IN	OUT	IN
008B	140	OUT	IN	IN	IN
0090	144	IN	OUT	OUT	OUT
0091	145	IN	OUT	IN	OUT
0092	146	IN	IN	OUT	OUT
0093	147	IN	IN	IN	OUT
0098	152	IN	OUT	OUT	IN
0099	153	IN	OUT	IN	IN

009A	154	IN	IN	OUT	IN
009B	155	IN	IN	IN	IN