



Home
Products
App Notes
Sales
Contact
Links

Using a printer port to drive the RPC

Date: 22 - January 1998

Graham Sharples

Date: 27 May 1998 (updated)

Sabananthan Paramanathan

METHOD 1, BI-DIRECTIONAL PORT (PS/2)

Port requirement - 8 bit bi-directional
(PS/2 or ECP set to PS/2 Mode / Byte Mode)

Connections - RPC 25 WAY 'D' printer

[Radiometrix the OEM's first choice for low power radio.](#)

© Radiometrix Ltd.

RPC pins			PC (Printer Port) pins	
Pin Labels	Pin		PS/2 Pins	Pin Label
GND	1	—	18 to 25	Ground
D0	2	↔	2	Data 0
D1	3	↔	3	Data 1
D2	4	↔	4	Data 2
D3	5	↔	5	Data 3
TXR	6	←	1	-Strobe
TXA	7	→	12	+Paper Out
RXR	8	→	13	+Printer Selected
RXA	9	←	14	-Auto Linefeed
RES	10	←	16	-Initialise Printer
5 Volt	11	←	+5 Volt Supply	
GND	12	←	0 Volt Supply	
+ve interrupt		→	10	-Acknowledge

PC printer port registers
(addresses given for base address of 0378)

0378	data reg	b7	b6	b5	b4	b3	b2	b1	b0
		-	-	-	-	D3	D2	D1	D0

0379	status reg	b7	b6	b5	b4	b3	b2	b1	b0
		-	int	TXA	RXR	-	-	-	-

037A	control reg	b7	b6	b5	b4	b3	b2	b1	b0
		-	-	dir	Ien	-	RES	RXA	TXR

For Extended Capabilities Port (ECP) only

077A	Extended Control Register (ECR)	b7	b6	b5	b4	b3	b2	b1	b0
		0	0	1	-	-	-	-	-

Printer Port can be configured to operate in ECP mode by changing the Printer Port in BIOS from SPP or EPP to ECP. Press DEL key for AWARD BIOS or F1 for AM when booting the computer. Then go to Integrated Peripherals section to change the for Parallel Port.

However, it may be necessary to change it back to SPP or EPP mode for some printers to operate properly.

int - +ve transition interrupt bit, see "interrupt drive"

Ien - bit is internal interrupt enable, not used if polling used

1 = interrupt enable , 0 = disabled (polled operation)

dir - bit is internal, controls direction of data output / input

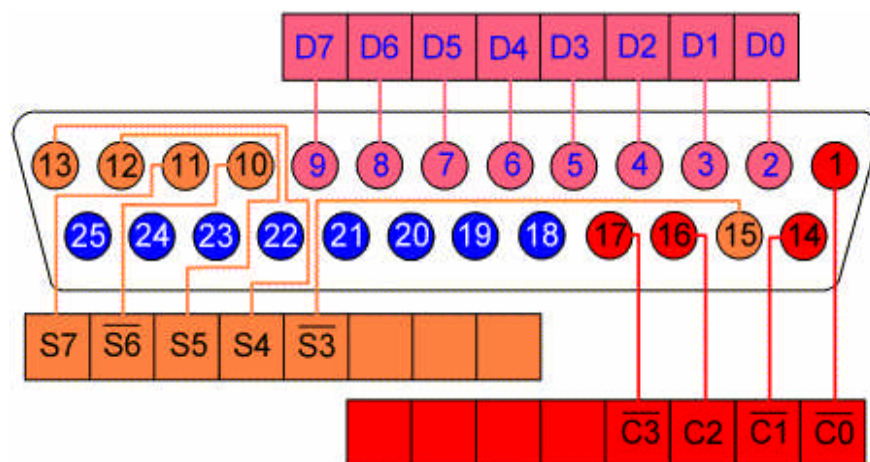
0 = data pins are O/P's, ie drive data to RPC

1 = data pins are I/P's, ie read data from RPC

note - RXA and TXR pins are inverted drives from the register

ie a 1 in the control register gives a 0 on the pin

all other registers / bits are true.



METHOD 2 , STANDARD PRINTER PORT (SPP)

Port requirement Standard Printer Port (SPP)
with Open Collector / Pull-up Control lines

Connections - RPC 25 WAY 'D' printer

RPC pins			PC (Printer Port) pins	
Pin Label	Pin		Pin	Pin Label
GND	1	—	18 to 25	Ground
D0	2	↔	1	-Strobe
D1	3	↔	14	-Auto Linefeed
D2	4	↔	16	-Initialise Printer
D3	5	↔	17	-Select Printer
TXR	6	←	2	Data 0
TXA	7	→	12	Paper Out
RXR	8	→	13	Printer Selected
RXA	9	←	3	Data 1
RES	10	←	4	Data 2
5 volt	11	←	+5 Volt supply	
GND	12	←	0 Volt supply	
+ve interrupt		→	10	-Acknowledge

PC printer port registers
(addresses given for base address of 0378)

0378	data reg	b7	b6	b5	b4	b3	b2	b1	b0
		-	-	-	-	-	RES	RXA	TXR

0379	status reg	b7	b6	b5	b4	b3	b2	b1	b0
		-	Int	TXA	RXR	-	-	-	-

037A	control reg	b7	b6	b5	b4	b3	b2	b1	b0
		-	-	dir	Ien	D3	D2	D1	D0

(B'00000100'= QUIECENT I/P)
(ie. 1111 on data lines)

int - +ve transition interrupt bit, see "interrupt drive"

Ien - bit is internal interrupt enable, not used if polling used

1 = interrupt enable , 0 = disabled (polled operation)

note - D0, D1 and D3 pins are inverted drives from the register

ie a 1 in the control register gives a 0 on the pin

all other registers / bits are true.

RPC Dev Kit comes with a DB25 Plug (Male Connector) for Standard Parallell Port with Open Collector / pull -up control lines. To use the Dev Kit in PS/2 Mode, a special pair of interface cables are also provic

SPP to PS/2 Interface Cable Radiometrix Part No: RPCPS2CAB



Internet sources of further information

Interfacing the IBM PC Parallel Printer Port.

Overview

This document is called an FAQ because it answers many commonly asked questions a IBM parallel port, but it is formatted more as a brief tutorial. Read it twice before askin more info; some stuff comes late.

- <ftp://ftp.rmii.com/pub2/hisys/parport>

- <http://www.rmii.com/~hisys/parport.html>

==== Version 0.96 9/1/94 Zhahai Stewart zstewart@hisys.com

Here are some useful links for detailed information on Paraller Port Interface.

- <ftp://ftp.armory.com/pub/user/rstevew/LPT>
- [Use of a PC Printer Port for Control and Data Acquisition](#)
- [Kris Heidenstrom's PC Parallel Port Mini-FAQ Release 10](#)
- [Interfacing to the IBM-PC Parallel Printer Port](#)
- [Interfacing the Parallel Port](#)
- [Craig Peacock's Interfacing the PC.](#)

Parallel.Exe, v1.34
Parallel Port Information Utility
(C) Copyright 1993 Jay Lowe

Parallel Technologies, Inc
PO Box 7
Redmond, WA 98073-0007
Lab 206-869-1136
Fax 206-869-9767
Compuserve 76640,203
Internet 76640.203@COMPUSERVE.CO

This program may be used free of charge subject to
the Restricted License Agreement as stated below

If you have any technical enquires please contact our technical support team a
tech_support@radiometrix.co.uk.

