Tech Info Library

# High Speed Serial Interface Card: Settings (11/96)

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## TOPIC

The Apple II Serial Interface Card (A2B0008), also known as the High Speed Serial Interface Card, is primarily used with serial letter-quality printers like the Qume, Diablo, and NEC Spinwriter series.

The following explains the functions of the various DIP switches and PROMs on the High Speed Serial Interface Card. This card has been discontinued and is no longer available from Apple.

## DISCUSSION

### Baud Rate - Switches 1,2 and 3

| DIP Switch 1 | 2 | 3 | Baud Rate |
|---|---|---|---|
| ON | ON | ON | 110 |
| OFF | ON | ON | 134.5 |
| ON | OFF | ON | 300 |
| OFF | OFF | ON | 1200 |
| ON | ON | OFF | 2400 |
| OFF | ON | OFF | 4800 |
| ON | OFF | OFF | 9600 |
| OFF | OFF | OFF | 19200 |

The settings of DIP switch levers 1, 2, and 3 determine the rate at which bits may be transmitted to the external device: 300 baud is 300 bits per second.

### Carriage Return Delay - Switch 4

| DIP Switch 4 | Carriage Return Delay |
|---|---|
| ON | Enabled |
| OFF | Disabled |

If switch 4 if Off (Delay Enabled), the Serial Interface waits briefly (approximately 1/4 second) after transmitting a carriage return before resuming transmission of further characters, allowing the printer's carriage to return. If you are transmitting to an external TV screen, this delay is probably unnecessary, so lever 4 may be turned On (Delay Disabled).

## Line Width plus Apple Video - Switches 5 and 6

| DIP Switch 5 | DIP Switch 6 | Line Width (characters per Line) | Apple Video |
|---|---|---|---|
| ON | ON | 40 | Enabled |
| OFF | ON | 72 | Disabled |
| ON | OFF | 80 | Disabled |
| OFF | OFF | 132 | Disabled |

After a carriage return, the settings of switches 5 and 6 determine the maximum number of characters that can be transmitted before the Serial Interface forces another carriage return to be sent. Characters are displayed on the screen only if line width is set to 40 characters per line (levers 5 and 6 On). After initialization, the line width can be changed from 40 characters per line, but the display on the screen will not correspond to the display on the external device, since transmitted carriage returns are not accompanied on the screen by line feeds.

## Line Feed - Switch 7

| DIP Switch 7 | Line Feed |
|---|---|
| ON | Disabled |
| OFF | Enabled |

If switch 7 is Off (Line Feed Enabled), the Serial Interface transmits a line feed after each carriage return. If the external device automatically supplies its own line feed after each carriage return received, you can set lever seven to On (Line Feed Disabled) to avoid unwanted double-spacing.

# Important Information

## Permanent Defaults

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During each initialiation, five remaining operating parameters are set to permanent default values:

1. Parity defaults to diabled (no parity bit).

2. Checksum defaults to disabled (no checksum character).

3. Lower-Case defaults to disabled (converts all incoming lower-case characters to upper-case).

4. Number of Data Bits defaults to 9 (8 data bits plus one start bit).

5. Number of Stop Bits defaults to 2.

After initialization, these five parameters can only be changed by software commands.

## Hardware Handshaking Flow Control

This card does not have any hardware handshaking flow control. It can therefore only be used at slow baud rates. Additional information on flow control can be found in the Tech Info Library article titled "Flow Control Protocols (XOn/XOff or DTR)".

## P7-04 PROM

Early versions of the High Speed Serial Card would not work with certain cards in the next higher numbered peripheral slot. The P7-04 PROM solves this problem.

## P8A PROM

After a program sends output to a printer, and before the P8A PROM allows the Apple to continue executing the program, the P8A sends an ASCII ETX (CTRL-C) to the printer at the end of each line and waits for the printer to send back an ASCII ACK (CTRL-F). So the P8A can send the ASCII ETX, make sure pins 2 & 3 on the interface connector are connected straight across; also make sure the printer can send the ACK. If the pins and the printer do not meet these conditions, then the computer stops running the program after the first line sent to the printer. Neither the original PROM, called the P8 (Apple part# 341-0018), or the basic card provided handshaking capabilities.

The PROM P8A should be installed in place of the existing PROM P8 when using Qume compatible printers. Be aware that switch 4 has a different function with this setup and must be in the OFF position.

The P8A prom uses location $3C as a temporary memory register. Many of the monitor commands cannot be used with any printer because of this conflict.

## PROM 8A Printer Support

Printers that support the P8A are:

Anderson Jacobson 832 (send <ESC>!W to set the AJ's mode, page 3-30)
Qume Sprint 5
NEC Spinwriter

## DB-25 Connector Pinout

| DB-25 Connector | Signal Name |
|---|---|
| 2 | Receive Data (Rx) |
| 3 | Transmit Data (Tx) |
| 7 | Signal Ground |
| 12 | Current Loop Data In (Return) |
| 13 | Current Loop Data In |
| 23 | Current Loop Data Out |

## Current Loop

The High Speed Serial Interface has a 20ma current loop. It has an active send loop and a passive receive loop.

Page 8 of the card's manual tells how to connect to an 33ASR teletype. This may not work with other 20ma devices. It assumes that the device has a passive send and receive loop.

If the other device has its own active send loop then connect it as follows:

Connect pin 23 to Printer +
Connect pin 7 to Printer -
Connect pin 12 to Keyboard +
Connect pin 13 to Keyboard -

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