

EPSON

Type B Bi-directional Parallel Interface Card

C82345 *

English
Deutsch
Français
Español
Italiano

FCC Compliance Statement For United States Users

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio or television reception. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio and television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures.

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

WARNING

The connection of a non-shielded equipment interface cable to this equipment will invalidate the FCC Certification of this device and may cause interference levels which exceed the limits established by the FCC for this equipment. It is the responsibility of the user to obtain and use a shielded equipment interface cable with this device. If this equipment has more than one interface connector, do not leave cables connected to unused interfaces.

Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

For Canadian Users

This Class B digital apparatus meets all requirements of the Canadian Interference- Causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

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Declaration of Conformity

According to ISO/IEC Guide 22 and EN 45014

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Declares that the Product:

Product Name: Bi-directional Parallel
Interface Card
Type Name: C823453
Model: C82345

Conforms to the following Directive(s) and Norm(s):

Directive 89/336/EEC:
EN 55022 Class B
EN 50082-1
IEC 801-2
IEC 801-3
IEC 801-4

May 1996

M. Hamamoto
President of EPSON EUROPE B.V.

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Introduction

This guide describes how to adjust the settings of the C82345* interface card and gives specifications for parallel data communication. (The asterisk (*) represents a number that varies by country.)

Features

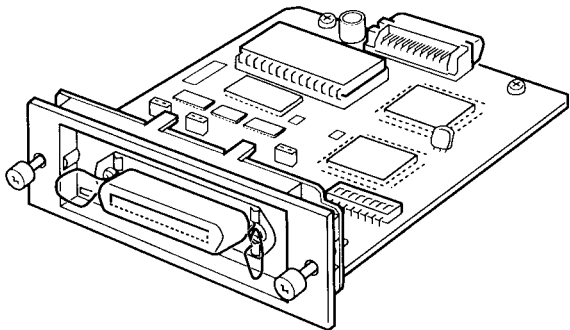
The C82345* interface card allows parallel data communication between a host computer and an EPSON printer. This card has the following features:

- ❑ Compatible with IEEE-1284 nibble mode.
- ❑ Allows bi-directional communication between your computer and a printer that has an optional interface slot.
- ❑ Supports Windows 95 plug-and-play technology.
- ❑ Provides a self test that can help solve interface problems.

Note:

Some printers support uni-directional communication only. See the optional interfaces section in your printer manual for more information.

The C82345* option package contains this user's guide and the C82345* parallel interface card.



Overview

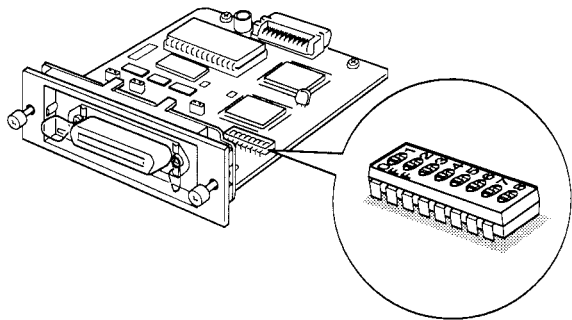
There are three steps to set up the C82345* interface card:

1. Set the DIP switches on the card.
2. Install the card in your printer.
3. If necessary, perform a self test.

This interface card has one set of DIP switches and one slide switch. Setting these switches allows you to change interface functions.

Preparing the Card

DIP switch



The DIP switch contains several individual toggle-type switches that can be set either on or off. The individual switches are referred to by number. When changing DIP-switch settings, use a pointed device such as a ball-point pen or small screwdriver to move the individual switches.



Caution:

Always turn the power off before changing DIP-switch settings. New settings take effect when the printer is turned back on.

The table below describes the functions and lists the factory setting of each switch.

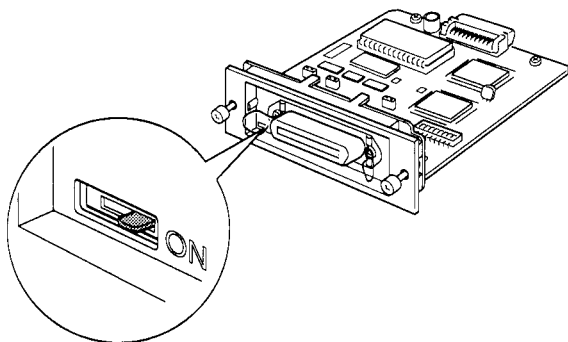
Table 1. DIP switch

SW pin No.	Function	ON	OFF	Factory setting
1	IEEE-1284 nibble mode	Compatibility mode fixed	Auto selection between compatibility mode and nibble mode	OFF
2	Self test	Self-test mode	Normal operation mode	OFF
3	Data latch timing	Rising edge of STROBE	Falling edge of $\overline{\text{STROBE}}$	OFF
4	SLCT signal	Not fixed	Fixed HIGH	OFF
5	Continuous self test	Continuous printing	Printing 2 sheets	OFF
6	Not used	-	-	OFF
7	Not used	-	-	OFF
8	Not used	-	-	OFF

Note:

Set DIP switch 1 to OFF (factory setting) for bi-directional communication between your computer and printer. When this switch is set to ON, you can also set DIP switch 4 to ON for SLCT signals.

Slide switch



The table below contains information on the slide switch.

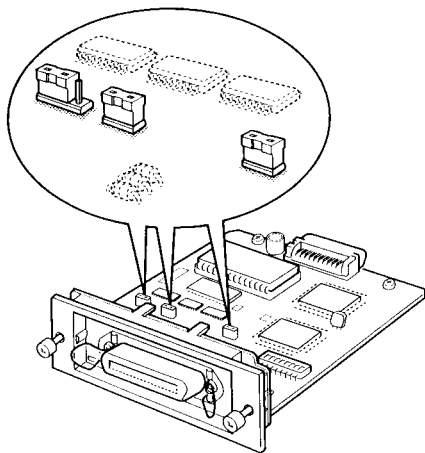
Table 2. Slide switch

Function	ON	OFF	Factory setting
Enables/disables the card	Enable	Disable	ON

Set the switch to ON (factory setting) to use the optional interface card.

Jumpers

This interface card has three jumpers, which are used for connecting or disconnecting a circuit. They have been correctly set as shown below at shipment. Never change these settings, because the card may malfunction if you do.



Installation

After you have set the DIP switches, install the interface card in your printer following the instructions in your printer manual. See the section on installing an optional interface.



Caution:

Turn off the power to the printer and the computer before installing. Make sure that all power and interface cables are removed.

Self Test

If you need to verify the switch settings, you can run the self test. When you run the self test, the printer prints the current card settings and the data from addresses <30>H to <39>H.

Follow the steps below to run the self test:

1. Turn off the printer.
2. If necessary, remove the card according to the directions in your printer user's guide.
3. Set DIP switch 2 to ON to print the 2-page test.

If you want to perform the continuous self test, set DIP switch 5 to ON, too.

4. Install the card in your printer according to the directions in your printer user's guide.
5. Make sure there is paper loaded in the printer, and then turn on the printer to begin the self test.
6. To end the self test, press the PAUSE button to stop printing; then turn off the printer.
7. Remove the card and set DIP switch 2 to OFF.
8. Reinstall the card.

Forward Channel Specifications

Data transmission:	8-bit parallel
Synchronization:	<u>External supplied</u> STROBE pulse
Handshaking:	Via <u>ACKNLG</u> or BUSY signals
Logic level:	TTL compatible
Connector:	57-30360 (Amphenol), 36 pin or its equivalent

The figure below shows the timing for the parallel interface.

Figure 1. Interface timing

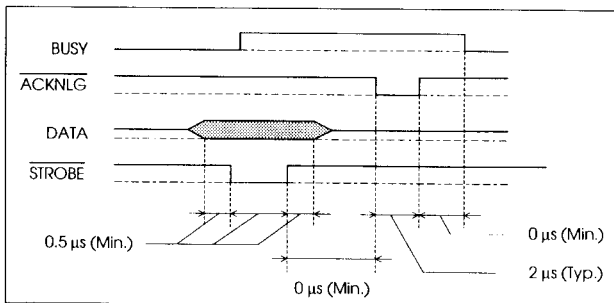


Table 3. Signal description and pin assignment

Signal Pin	Return Pin	Signal	Direction	Description
1	19	$\overline{\text{STROBE}}$	IN	$\overline{\text{STROBE}}$ pulse to read data. Pulse width must be more than 0.5 μ seconds at the receiving terminal.
2	20	DATA 1	IN	These signals represent information in bits 1 to 8 of parallel data respectively. Each signal is HIGH when data is logical 1 and LOW when it is logical 0.
3	21	DATA 2	IN	
4	22	DATA 3	IN	
5	23	DATA 4	IN	
6	24	DATA 5	IN	
7	25	DATA 6	IN	
8	26	DATA 7	IN	
9	27	DATA 8	IN	
10	28	$\overline{\text{ACKNLG}}$	OUT	About a 2- μ s pulse. LOW indicates data has been received and the interface card is ready to accept more data.
11	29	BUSY	OUT	HIGH indicates the interface card cannot receive data. The signal goes HIGH in the following cases: 1) During data entry (for each character) 2) When OFF LINE or paused 3) During printer-error state
12	28	PE	OUT	HIGH indicates the printer is out of paper.

Signal Pin	Return Pin	Signal	Direction	Description
13	28	SLCT	OUT	HIGH indicates the printer is in the selected state. The signal goes LOW in the following cases: 1) When the $\overline{\text{SLCT IN}}$ signal goes HIGH 2) During a printer-error state 3) When the interface card is disabled. This signal can be fixed to HIGH with DIP switch 4 set to OFF.
14	30	$\overline{\text{AUTO FEED XT}}$	IN	This function depends on the printer specifications.
15	-	NC	-	Not used
16	-	GND	-	Twisted-pair, return-signal ground
17	-	CHASSIS GND	-	Printer's chassis ground, which is isolated from the logical ground.
18	-	Logic H	-	This level is normally HIGH. Pulled up to +5 V through 3.9 k Ω resistance.
19-30	-	GND	-	Twisted-pair, return-signal ground

Signal Pin	Return Pin	Signal	Direction	Description
31	30	$\overline{\text{INIT}}$	IN	When this signal goes LOW, the printer controller and the interface card are reset. Pulse width must be more than 50 μs at the receiving terminal.
32	29	$\overline{\text{ERROR}}$	OUT	This signal level goes LOW when the printer is out of paper or in an error state.
33	-	GND	-	Twisted-pair, return-signal ground
34	-	NC	-	Not used
35	-	+5 V	-	This level is normally HIGH. Pulled up to +5 V through 1.0 K Ω resistance.
36	30	$\overline{\text{SLCT IN}}$	IN	The DC1/DC3 code is valid only when this signal goes HIGH.

Note:

- ❑ *The column heading "Direction" refers to the direction of signal flow as viewed from the printer.*
- ❑ *All interface conditions are based on TTL level. Both the rise and fall times of each signal must be less than 0.2 μ seconds.*

Reverse Channel Specifications

Data transmission: IEEE-1284 nibble mode

Synchronization: Based on IEEE-1284

Handshaking: Based on IEEE-1284

Logic level: TTL level (IEEE-1284 level 1, level 2)

Data transmission timing: Based on IEEE-1284

Table 4. Signal description and pin assignment

Signal Pin	Return Pin	Signal	Direction	Description
1	19	HostClk	IN	Clock signal on the computer
2	20	DATA 1	IN	These signals represent information in bits 1 to 8 of parallel data respectively. Each signal is HIGH when data is logical 1 and LOW when it is logical 0.
3	21	DATA 2	IN	
4	22	DATA 3	IN	
5	23	DATA 4	IN	
6	24	DATA 5	IN	
7	25	DATA 6	IN	
8	26	DATA 7	IN	
9	27	DATA 8	IN	
10	28	PtrClk	OUT	Clock signal on the printer
11	29	PtrBusy/Data Bit-3, 7	OUT	BUSY signal from the printer/Data in bits 3 or 7 of the reverse channel

Signal Pin	Return Pin	Signal	Direction	Description
12	28	Ack Data Req/Data Bit-2, 6	OUT	Demands Acknowledge data signal/Data in bits 2 or 6 of the reverse channel
13	28	xflag/Data Bit-1, 5	OUT	x-flag signal/Data in bits 1 or 5 of the reverse channel
14	30	HostBusy	IN	BUSY signal from the computer
15	-	NC	-	Not used
16	-	GND	-	Twisted-pair, return-signal ground
17	-	CHASSIS GND	-	Printer's chassis ground, which is isolated from the logical ground
18	-	Logic H	OUT	HIGH indicates all signals from the printer are available
19-30	-	GND	-	Twisted-pair, return-signal ground
31	30	$\overline{\text{INIT}}$	IN	Not used
32	29	Data Avail/Data Bit-0, 4	OUT	Data Available signal/Data in bits 0 or 4 of the reverse channel

Signal Pin	Return Pin	Signal	Direction	Description
33	-	GND	-	Twisted-pair, return-signal ground
34	-	NC	-	Not used
35	-	+5 V	OUT	This level is normally HIGH. Pulled up to +5 V through 1.0 K Ω resistance.
36	30	1284-Active	IN	1284-Active signal