

EPSON

32KB

Parallel Interface

C82303*

English
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01/00

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1989 July

FCC COMPLIANCE STATEMENT FOR AMERICAN 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 communications. However there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or 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.

FOR CANADIAN USERS

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de Class B prescrites dans le règlement sur le brouillage radioélectrique édicté par le Ministère des Communications du Canada.

WARNING

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

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32KB Parallel Interface
C82303*

English

32-KB-Schnittstellenkarte
C82303*

Deutsch

Interface parallèle 32Ko
C82303*

Français

Interface en paralelo de 32KB
C82303*

Español

Interfaccia parallela da 32 KB
C82303*

Italiano

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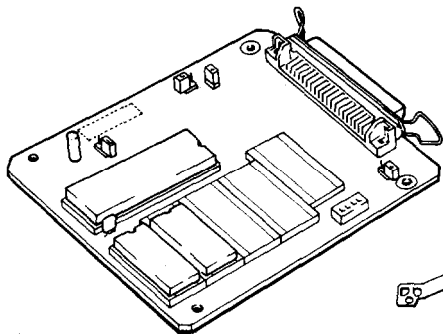
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About this guide

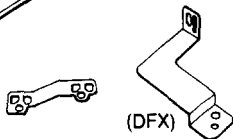
This guide is designed to give you detailed information on how to install your C82303* interface board in a variety of Epson printers. **Installation** procedures vary slightly depending upon the printer model that you have.

Also included, are instructions on how to adjust the settings of the C82303* interface board, as well as a general description of parallel data communication.

The C82303* option package contains the following items:



C82303* parallel I/F board (1)



FG plate

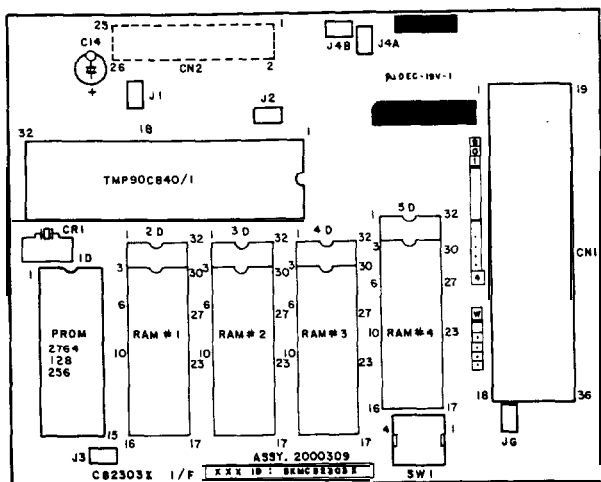
SETTING THE CONDITIONS

The C82303* interface board has a set of DIP (Dual In-line Package) switches, and 6 jumpers. This switch and jumpers are used for selecting various interface operations.

Board layout

The diagram below shows the layout of the C82303* board, and the locations of the DIP switch and jumpers.

Figure 1. Board layout



DIP switch settings

Before you install the C82303* interface, you may need to adjust some of the settings. When making DIP switch setting changes, it is best to use a pointed device, such as a ball-point **pen** or small screwdriver.

Caution

All changes of DIP switch and jumper settings should be made with the printer power turned off. The printer checks and recognizes new settings only at the time the power is turned

About DIP switches

A set of DIP switches on the C82303* is labelled SW1. SW1 contains a number of individual toggle type switches that can be set either on or off. The individual switches are referred to by set (SW1) and number. Therefore, the switch in set SW1 marked by the small number 3 is called DIP switch 1-3.

DIP switch 1

The table below contains information on switch functions, and the factory setting of each switch. The switches on DIP switch 1 allow you to change interface functions.

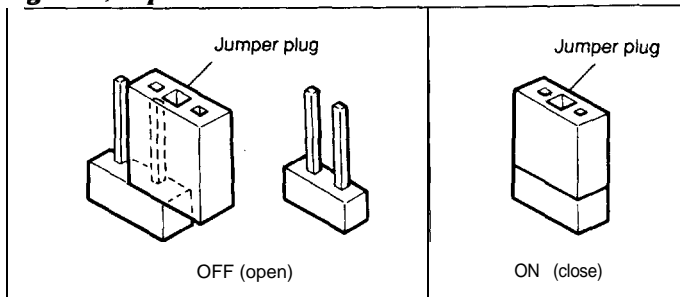
Table 1. DIP **switch 1**

SW pin No.]	Function	ON	Off	Factory setting
1-1	I/F board enable/disable	Enable	Disable	ON
1-2	Buffer enable/disable	Enable	Disable	ON
1-3	Self test enable/disable	Enable	Disable	OFF
1-4	Not used.	-	-	OFF

Jumpers

The jumper is a small terminal used for connecting or disconnecting a circuit. The jumper is on when the jumper plug covers both wires of the terminal. Jumper settings can be changed by either attaching or removing the rectangular jumper plug. If the jumper is to be turned off, connect it to just one of the two terminal pins as shown in the figure below. By doing this, you can avoid losing the unused jumper plug.

Figure 2. Jumpers



Jumper settings

The tables below give you information about the interface conditions that can be selected using jumpers. In all cases, ON denotes the connection of the jumper (covering both terminals), while OFF denotes the disconnection of the jumper.

Table 2. Jumper settings

Jumper	Function	Factory Setting
J1	ON: $\overline{\text{SLCT IN}}$ signal is enable. (See Note 1.)	OFF
J2	Fixed (See Note 2.)	-
J3	Fixed (See Note 2.)	-
J4	Data latch liming selection. See Table 3.	A ON
		B OFF
JG	ON: Connect Chassis Ground to Signal Ground.	OFF

Note

1. $\overline{\text{SLCT IN}}$ signal can be fixed LOW by setting the printer DIP switch, jumper or SelecType function. If this signal is fixed Low, you should not connect J1. When J1 is ON, $\overline{\text{SLCT IN}}$ signal (pin No. 36 of I/F connector on the I/F board) is connected to the printer through the I/F board to enable it to be controlled by a Host computer. Sampling this signal is always carried out by the printer, therefore this function depends on the printer specification.
 2. J2 and J3 jumpers are connected at the factory, and you should not change these setting.
-

Table 3. Data latch timing selection

Jumper		Function				Factory Setting
J4	A	ON	Falling edge of	OFF	Rising edge of	ON
	B	OFF	$\overline{\text{STROBE}}$	ON	$\overline{\text{STROBE}}$	OFF

Note

Either J4A or J4B jumper must be connected.

DATA ENTRY

About data entry

To accommodate data entry, the C82303* interface board is equipped with a buffer that temporarily stores data before transferring it to the printer. When this buffer becomes full, any additional transmitted data cannot be accepted **and** is discarded.

The buffered data is transferred transparently to the printer main board every time the printer enters the READY state. A maximum of 512K bytes of data can be buffered with this board depending on its setting.

SELF TEST

The self test mode can be set by the DIP switch 1-3. To set, first turn off the power to the printer and then change the DIP switch setting. When the power is turned back on, the new setting automatically comes into effect. To exit from the self test, turn off the power and reset the DIP switch.

The interface board first checks the RAM condition. After checking the RAM, data in the range between <30>H to <39>H is sent to the printer and printed. The print out is only 80 columns wide.

Table 4. Self test mode

SW 1-3	
ON	Self test enable
OFF	Self test disable

Note

It takes some time to check the RAM before test printing.

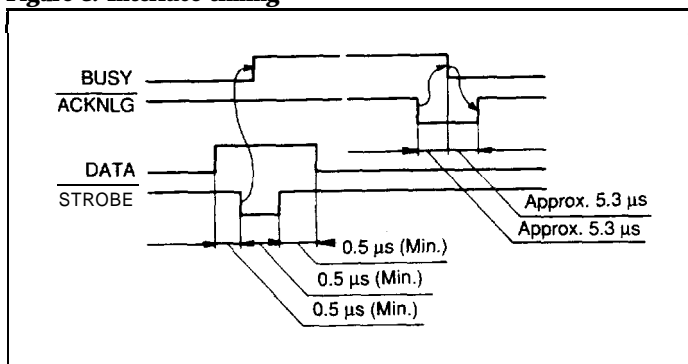
SPECIFICATIONS

1. Data transmission: S-bit parallel
2. Synchronization: External supplied $\overline{\text{STROBE}}$ pulse
3. Handshaking: Via $\overline{\text{ACKNLG}}$ or BUSY signals
4. Logic level: TTL level
5. RAM capacity: 32K bytes
6. Connector: 57-30360 (Amphenol), 36 pin or its equivalents .

Interface timing

The figure below shows the timing for the parallel interface.

Figure 3. Interface timing



HARDWARE DESCRIPTION

For signal description and pin assignment, refer to the table below:

Table 5. Signal description and pin assignment

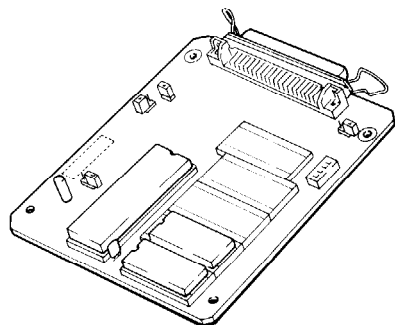
Signal Pin	Return Pin	Signal	Direction	Description
1	19	STROBE	IN	STROBE pulse to read data. Pulse width must be more than 0.5 microseconds at the receiving terminal.
2	20	DATA 1	IN	These signals represent information of the 1st to 8th bits of parallel data, respectively. Each signal is at HIGH level 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	ACKNLG	OUT	About a IO-microsecond pulse. LOW indicates that data has been received and that the interface board is ready to accept more data. This signal is output as a pair together with BUSY.
11	29	BUSY	OUT	A HIGH signal indicates that the interface board cannot receive data. The signal goes HIGH in the following cases: 1) During data entry (ea. car. time) 2) When off line 3) During printer-error state
12	30	PE	OUT	A HIGH signal indicates that the printer is out of paper.
13	-	SLCT	OUT	Pulled up to +5 V through 3.3k ohm resistance.

Signal Pin	Return Pin	Signal	Direction	Description
14	—	$\overline{\text{AUTO FEED XT}}$	IN	Not used.
15	—	NC	—	Not used.
16	—	GND	—	Logic ground level.
17	—	CHASSIS GND	—	Printer's chassis ground, which is isolated from the logic ground.
18	—	NC	—	Not used.
19-30	—	GND	—	Twisted-pair return signal ground level.
31	—	INIT	IN	When this level becomes LOW, the printer controller and interface board are reset. This level is usually HIGH; its pulse width must be more than 50 microseconds at the receiving terminal.
32	—	ERROR	OUT	This level becomes LOW when the printer is: 1) in paper out state. 2) in error state.
33	—	GND	—	Signal ground level.
34	—	NC	—	Not used.
35	—	—	OUT	Pulled up to +5V through 3.3K ohm resistance.
36	—	$\overline{\text{SLCT IN}}$	IN	The DC1/DC3 code is valid only when this signal is HIGH. ($\overline{\text{SLCT IN}}$ set to OFF). Sampling is carried out only when the power is on. See also the section on jumper settings.

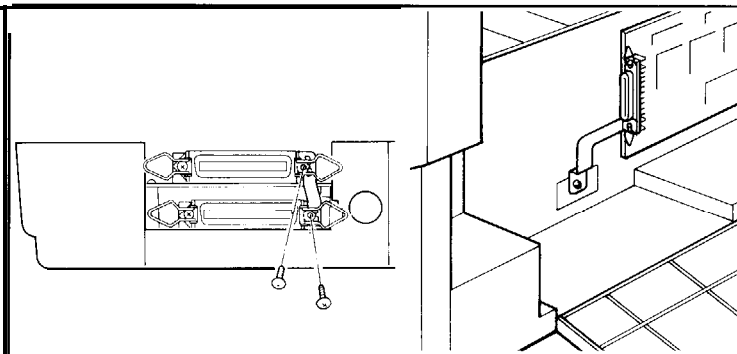
Note

1. The column heading “Direction” refers to the direction of signal flow as viewed from the printer.
 2. All interface conditions are based on TTL level. Both the rise and fall of each signal must be less than 0.2 μs .
-

INSTALLATION



(DFX)



DFX



English

You can install this interface board with just a cross-head screwdriver. See installation information below:

For FX, FX+, LX-80/86, and LQ-800/1000 printers, skip to the following section.

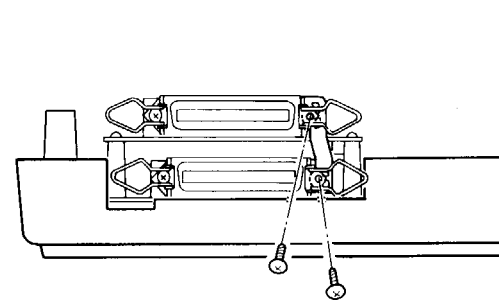
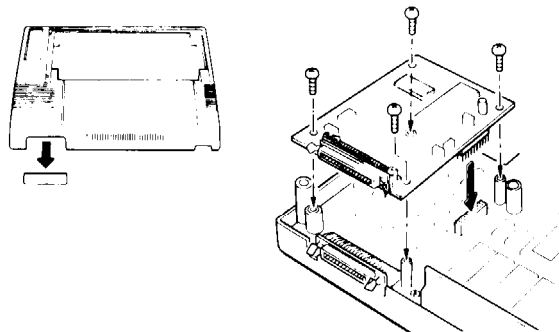
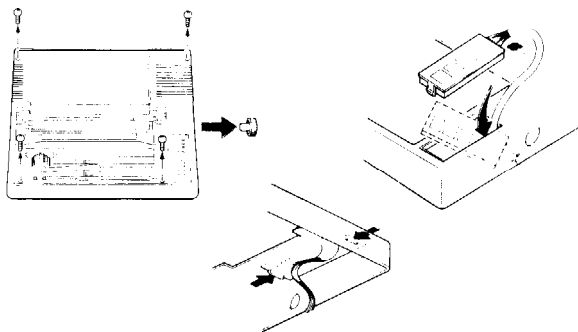
For other printers, install this interface board (except for the FG wire installation step) according to the instructions in your printer user's guide; then attach the FG plate according to the instructions to the right.

CAUTION:

1. Turn off the power to the printer and computer before installing the interface. Make sure that all power and interface cables are removed.
2. Avoid touching the circuit board components, since many are sensitive to static electric charges.

1. Install the interface board in the printer (except for the FG wire installation step).
2. Remove the right side screws from both the printer's original and optional interface connectors (for the DFX, remove the option interface connector's screw only).
3. Attach the FG plate to the interfaces with the screws you just removed (for the DFX printer, attach one side of the FG plate to the option interface and the other side to the CG connector). If the screws don't fit your interface cable, use the optional connector lock nuts included.

FX, FX+



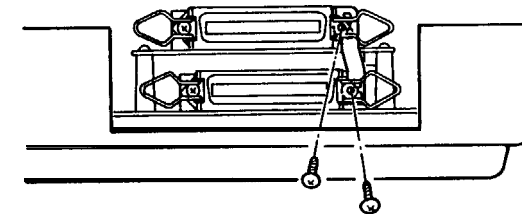
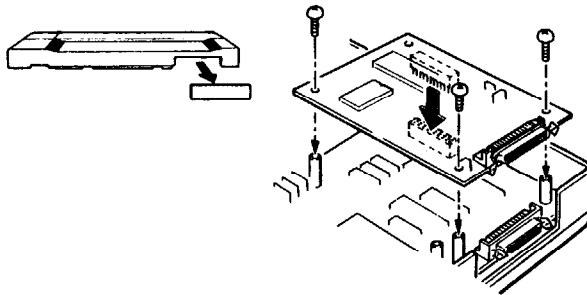
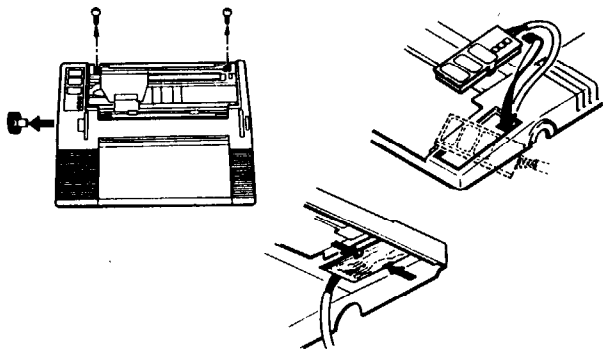
E

1. Remove any options, such as a tractor unit or cut-sheet feeder and take off the paper feed knob.
2. Remove the upper case retaining screws using a crosshead screwdriver.
3. Partially raise the upper case. Reach under and detach the control panel by squeezing the two retaining clips together. Next, slip the panel back through the upper case.

4. Remove the upper case and detach the shield plate.
5. Remove the screw and washer from the pole to the left of the parallel connector. (They will not be needed again.)
6. Holding the interface board level, carefully insert the connector pins into the mating connector on the main board.

7. Remove the right side screws from both the printer's original and optional interface connectors.
8. Attach the FG plate to the interfaces with the screws you just removed. If the screws don't fit your interface cable, use the optional connector lock nuts included.
9. Reassemble the printer.

LX-80/86

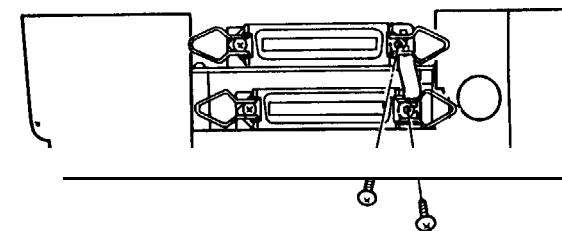
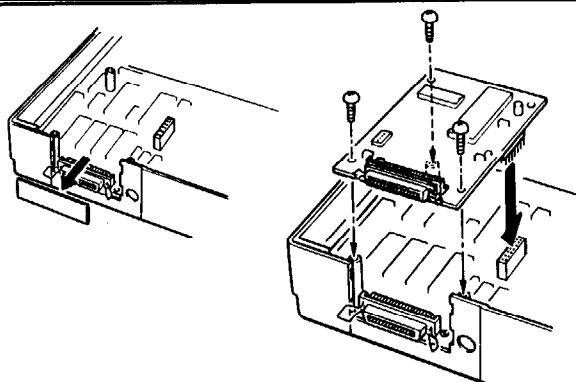
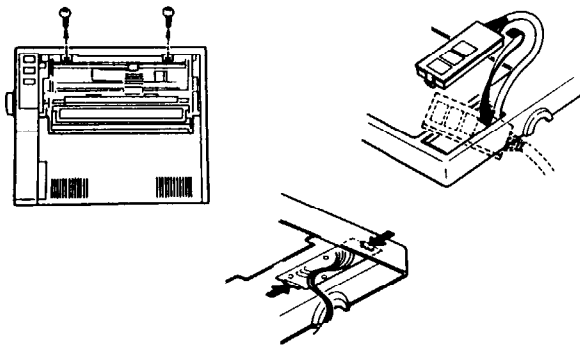


- E**
1. Remove the two upper case retaining screws located at the front of the printer.
 2. Remove the paper feed knob.
 3. Partially raise the upper case of the printer. Reach under the case and detach the control panel by squeezing the retaining clips together.
 4. Slip the control panel back through the upper case.

5. Remove the cover and detach the shield plate from the rear of the upper case.
6. Holding the interface board level, carefully insert the connector pins into the mating connector on the main board.

7. Remove the right side screws from both the printer's original and optional interface connectors.
8. Attach the FG plate to the interfaces with the screws you just removed. If the screws don't fit your interface cable, use the optional connector lock nuts included.
9. Reassemble the printer.

LQ-800/1000



- E**
1. Remove the dust cover and ribbon cartridge.
 2. Remove the two upper case retaining screws using a crosshead type screwdriver.
 3. Partially raise the upper case being careful not to strain the cable connected to the control panel. Reach under the case and detach the control panel by squeezing together the two retaining clips.
 4. Slip the control panel back through the upper case.

5. Remove the upper case.
6. Detach the shield plate from the back of the lower case.
7. Holding the interface board level, carefully insert the connector pins into the mating connector on the main board.

8. Remove the right side screws from both the printer's original and optional interface connectors.
9. Attach the FG plate to the interfaces with the screws you just removed. If the screws don't fit your interface cable, use the optional connector lock nuts included.
10. Reassemble the printer.