F^{2}MC FAMILY

PARALLEL COMMUNICATIONS ADAPTER

MB2142-03
HARDWARE MANUAL

FUJITSU

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FUJITSU LIMITED

PREFACE

■ **Objectives and Intended Readers**

The MB2142-03 support tool (parallel communications adapter) is designed to enable the development and evaluation of products based on the F^2MC* famiy.

The MB2142-03 is connected to the main unit (MB2141A).

This enables the main unit to perform parallel communication with the host machine (such as a personal computer).

This manual describes the handling and connection of the MB2142-03. It is aimed at engineers responsible for the development of products based on the F^2MC, using the MB2142-03.

Refer to the following related manual as necessary:

- Related manual

    F^2MC FAMILY MB2140series MAIN UNIT (MB2141A) HARDWARE MANUAL

*: F^2MC stands for FUJITSU Flexible Microcontroller.

■ **Structure of This Manual**

This manual consists of the following two chapters. Familiarize yourself with the contents of this manual before attempting to use the adapter.

CHAPTER 1 "HANDLING AND SPECIFICATIONS OF THE PRODUCT"

Describes the handling and specifications of the parallel communications adapter.

CHAPTER 2 "CONNECTIONS"

Describes the connections and the power-on and power-off sequences of the parallel communications adapter.

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ii

CONTENTS

iv

CHAPTER 1   HANDLING AND SPECIFICATIONS OF THE PRODUCT

This chapter explains the handling and specifications of the parallel communications adapter. Read this chapter and check the contents of the package before attempting to use the parallel communications adapter.

1.1   Packing List

Before first using the parallel communications adapter, check that the package contains the following components:

- **Parallel communications adapter x 1**
- **IF cable x 1**

■ **Appearance and Names of Parts**

Figure 1.1-1 "Parallel Communications Adapter" illustrates the parallel communications adapter. For details of the connections, see CHAPTER 2 "CONNECTIONS."

The function of each part is described below:

IF connector: Used to connect the IF cable.

Parallel communications connector: Used to connect the printer cable.

Obtain a printer cable that is suitable for the host machine (such as a personal computer).

Figure 1.1-1 Parallel Communications Adapter

Parallel communications connector

PARALLEL

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ADAPTOR

COM PORT

IF connector
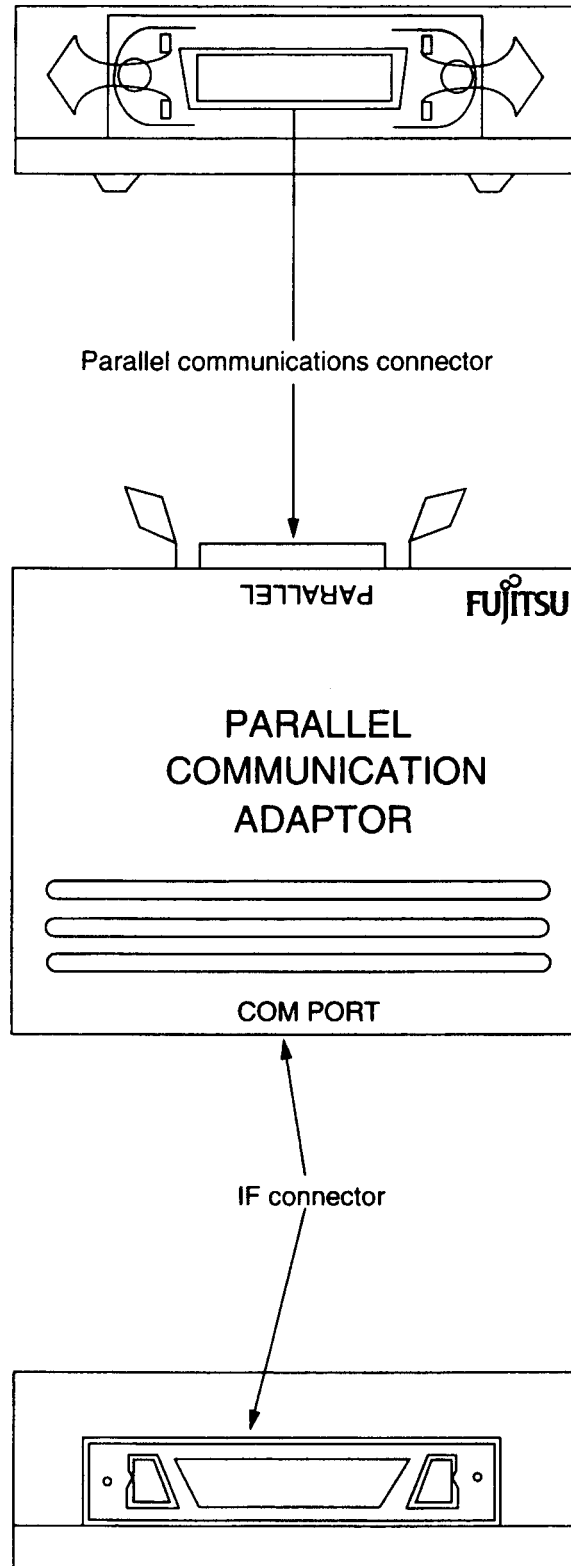
1.2   Parallel Communications Adapter Specifications

Table 1.2-1 "Parallel Communications Adapter Specifications" lists the specifications of the parallel communications adapter.

■ **Parallel Communications Adapter Specifications**

Table 1.2-1 "Parallel Communications Adapter Specifications" lists the specifications of the parallel communications adapter.

Table 1.2-1 Parallel Communications Adapter Specifications

Item	Contents
Name	Parallel communications adaptor
Model	MB2142-03
Power supply	Voltage: +5 V plus or minus 5% Current: 1A (max.) [1]
Operating temperature	0 to +55 degrees Celsius
Operating humidity	30% to 80% (non-condensing)
Dimensions	120mm (W) x 90mm (D) x 26mm (H) [2]
Weight	200g approx.

*1: Power is supplied from the main unit.
*2: Not including projections.

■ **Parallel Communications Specifications**

The parallel communications format conforms to the Centronics interface.

An Amphenol 36P connector is used as the parallel communications connector.

The electrical characteristics of the I/O signal lines are described in Section 1.2.1 "Electrical Characteristics of I/O Signal Lines"

1.2.1 Electrical Characteristics of I/O Signal Lines

Figure 1.2-1 "Electrical Characteristics of I/O Signal Lines" shows the electrical characteristics of the I/O signal lines.

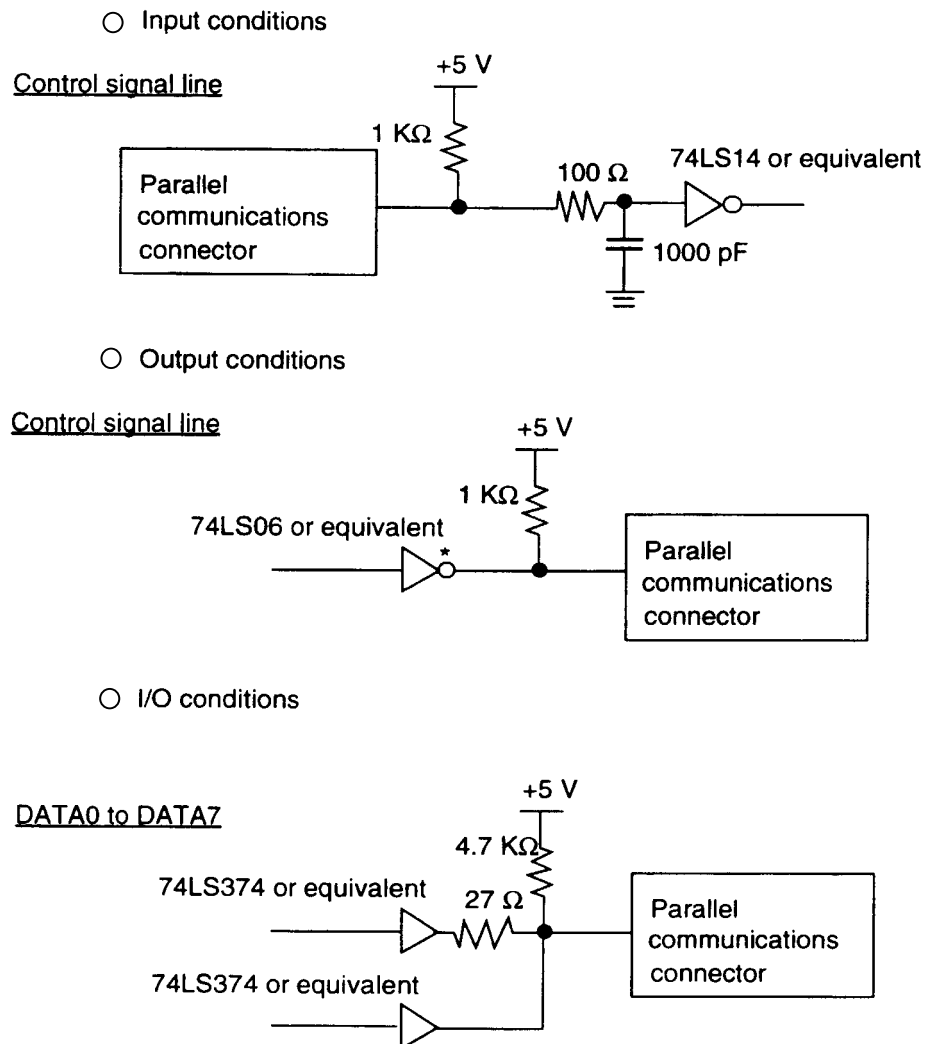■ **Electrical Characteristics of I/O Signal Lines**

The signal levels of the I/O signal lines are indicated below. Figure 1.2-1 "Electrical Characteristics of I/O Signal Lines" shows the electrical characteristics.

"L": 0 to +0.4 V

"H": +2.4 to +5.0 V

The power supply signal is directly connected to +5 V.

Figure 1.2-1 Electrical Characteristics of I/O Signal Lines

○ Input conditions

Control signal line

Parallel communications connector

+5 V
1 KΩ
100 Ω
74LS14 or equivalent
1000 pF

○ Output conditions

Control signal line

74LS06 or equivalent

+5 V
1 KΩ

Parallel communications connector

○ I/O conditions

DATA0 to DATA7

74LS374 or equivalent

74LS374 or equivalent

+5 V
4.7 KΩ
27 Ω

Parallel communications connector

5

1.2.2   Connector Pin Assignment

An Amphenol 36P connector is used as the parallel communications connector. Table 1.2-2 "Parallel Communications Connector Signal Line Names" lists the connector signal line names.

■ **Connector Pin Assignment**

The model and pin assignment of the connector are described below.

- Connector model

  57LE-40360-7700 (D12) Manufactured by DDK, or equivalent

  (Generally referred to as Amphenol 36P)

- Connector pin assignment <viewed from the cable insertion side>

  Figure 1.2-2 "Parallel Communications Connector Pin Assignment" shows the pin assignment. Table 1.2-2 "Parallel Communications Connector Signal Line Names" lists the signal line names.

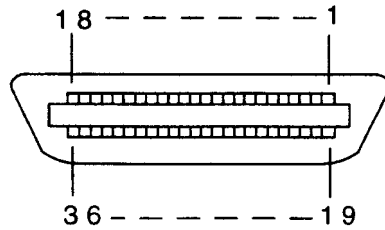**Figure 1.2-2 Parallel Communications Connector Pin Assignment**

Table 1.2-2 Parallel Communications Connector Signal Line Names

No.	Signal line	I/O	Function	No.	Signal line	I/O	Function
1	$\overline{\text{DSTB}}$	I	Data strobe signal	19	GND	-	Signal grounding
2	DATA 0	I/O	Data	20	GND	-	Signal grounding
3	DATA 1	I/O	Data	21	GND	-	Signal grounding
4	DATA 2	I/O	Data	22	GND	-	Signal grounding
5	DATA 3	I/O	Data	23	GND	-	Signal grounding
6	DATA 4	I/O	Data	24	GND	-	Signal grounding
7	DATA 5	I/O	Data	25	GND	-	Signal grounding
8	DATA 6	I/O	Data	26	GND	-	Signal grounding
9	DATA 7	I/O	Data	27	GND	-	Signal grounding
10	$\overline{\text{ACK}}$	O	Acknowledge signal	28	GND	-	Signal grounding
11	BUSY	O	Busy signal	29	GND	-	Signal grounding
12	PE	O	No paper	30	GND	-	Signal grounding
13	SLCT	O	Select signal, output	31	$\overline{\text{INIT}}$	I	Reset signal
14	NC	-	Unused	32	$\overline{\text{ERR}}$	O	Error signal
15	NC	-	Unused	33	NC	-	Unused
16	GND	-	Signal grounding	34	NC	-	Unused
17	FG	-	Frame grounding	35	NC	-	Unused
18	+5 V	O	Power supply signal	36	$\overline{\text{SLCTIN}}$	I	Select signal, input

7

1.3   IF Cable Specifications

Table 1.3-1 "IF Cable Components" lists the IF cable components, Table 1.3-2 "IF Cable General Specifications" lists the general specifications of the IF cable, and Figure 1.3-1 "IF Cable Dimensions" shows the dimensions of the IF cable.

■ **IF Cable Specifications**

For details of the connection to the main unit, see Section 2.2 "Connection to Main Unit."

Table 1.3-1 IF Cable Components

Part Name	Remarks
FCN-237R068-G/E connector x 2	Fujitsu
FCN-230C068-C/E cover x 2	Fujitsu

Table 1.3-2 IF Cable General Specifications

Item		Contents
Rated current		DC1A
Temperature	Operating	-10 to +60 degrees
	Storage	-10 to +60 degrees

8

Figure 1.3-1 IF Cable Dimensions

Connector (FCN-237R068-G/E)

Cover (FCN-230C068-C/E)

300±10 mm

9
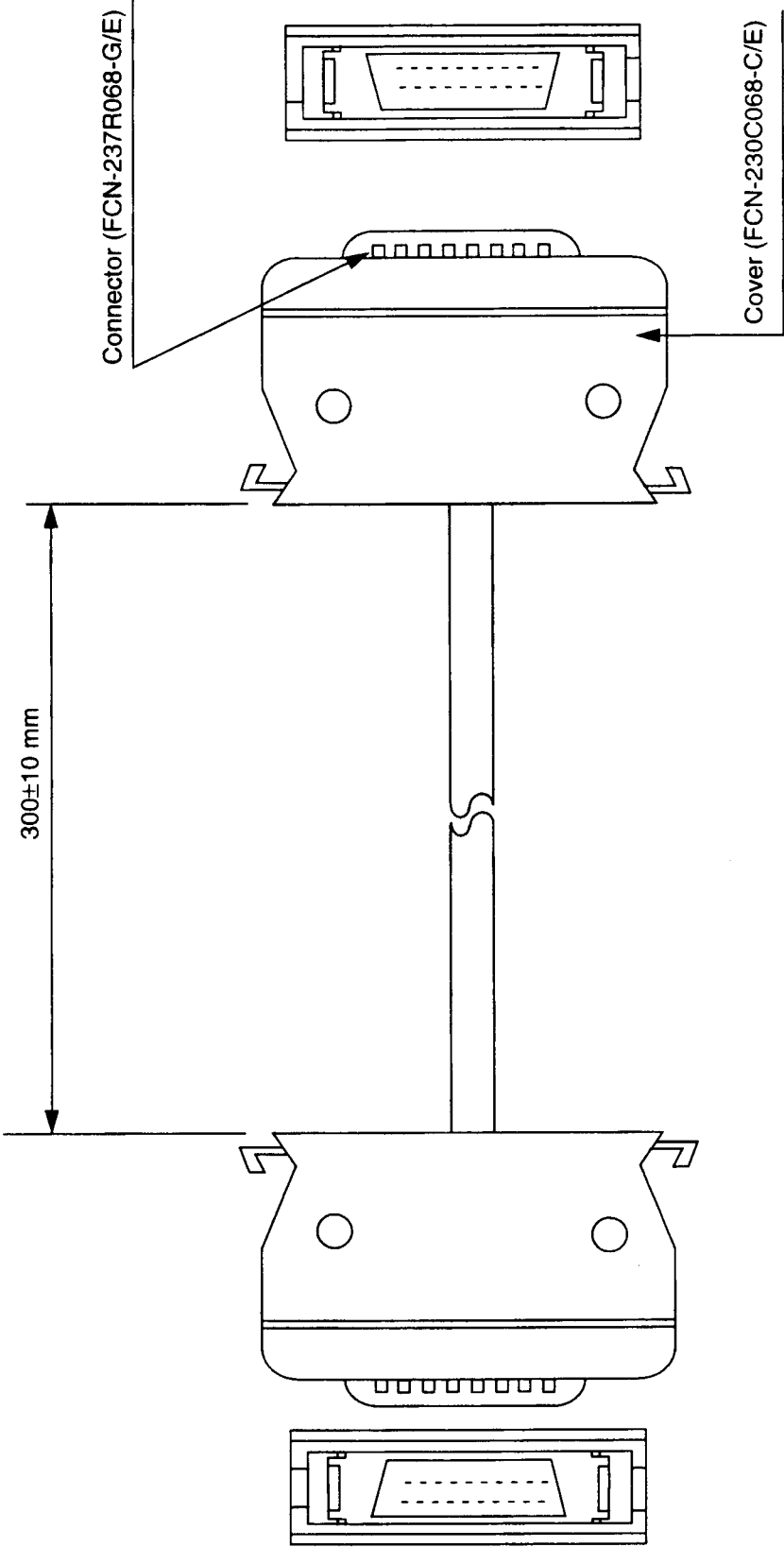
1.4   Notes on Use

When using the parallel communications adapter, keep the following notes in mind.

■ **Notes on Use**

When using the parallel communications adapter, keep the following notes in mind:

• Turn off the power before connecting or removing a cable.

• To remove a cable, do not pull the cable itself; grasp and pull the connector.

• To prevent electrostatic destruction, be careful not to touch the connector pins, and prevent the connector pins from touching any objects.

• Refer to this manual for details of setting and usage.

■ **Storage**

When storing the parallel communications adapter, keep the following notes in mind:

• Take whatever measures are necessary to prevent the parallel communications adapter from being jolted or jarred in storage.

• Do not expose the parallel communications adapter to direct sunlight, high temperatures, high humidity, or condensation.

• Do not keep the parallel communications adapter in an intense electrical or magnetic field for an extended period.

Table 1.4-1 "Storage Environment" lists the storage temperature and humidity.

Table 1.4-1 Storage Environment

Storage temperature	Storage humidity
-20 to +70 degrees	20% to 90% (non-condensing)

CHAPTER 2   CONNECTIONS

This chapter describes how to connect, turn on, and turn off the parallel communications adapter. Familiarize yourself with the contents of this chapter before turning on the adapter.

2.1   System Configuration

Connecting the parallel communications adapter to the host machine enables parallel communication with the host machine.

■ **System Configuration**

Connecting the parallel communications adapter to the host machine enables parallel communication with the host machine.

Figure 2.1-1 "System Configuration" shows the hardware system configuration when using the parallel communications adapter.

Figure 2.1-1 System Configuration
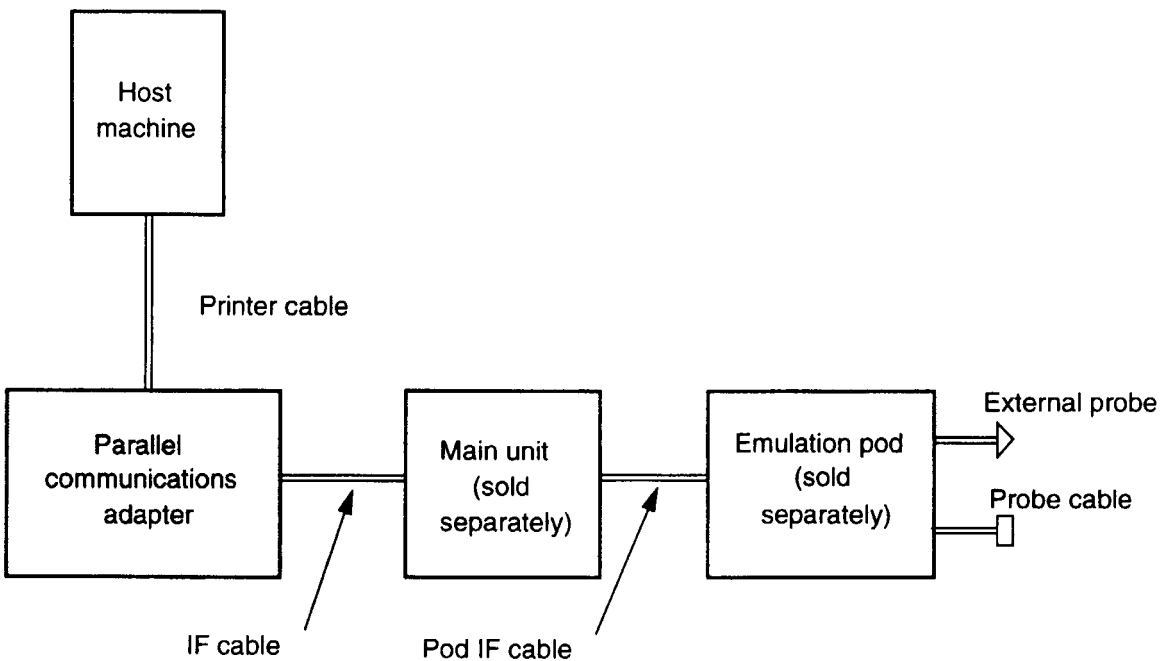
2.2 Connection to Main Unit

As shown in Figure 2.2-1 "IF Cable Connection", use an IF cable to connect the parallel communications adapter to the main unit (sold separately).

■ **Connection to Main Unit**

As shown in Figure 2.2-1 "IF Cable Connection", use an IF cable to connect the parallel communications adapter to the main unit (sold separately).

For details of connecting the IF cable to the main unit, refer to the 2140 Main Unit MB2141 Emulator User's Manual.
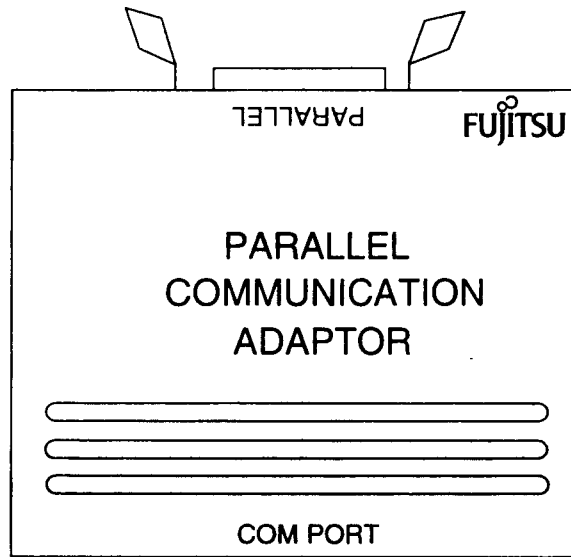
■ **Notes**

When connecting the parallel communications adapter to the main unit (sold separately), keep the following points in mind:

• Turn off the power before connecting or removing a cable. Attempting to connect or remove a cable while the power is turned on may cause a malfunction.

• To remove a cable, do not pull the cable itself; grasp and pull the connector. Pulling the cable itself may cause a conductor inside the cable to break.

Figure 2.2-1 IF Cable Connection

Parallel communications adapter
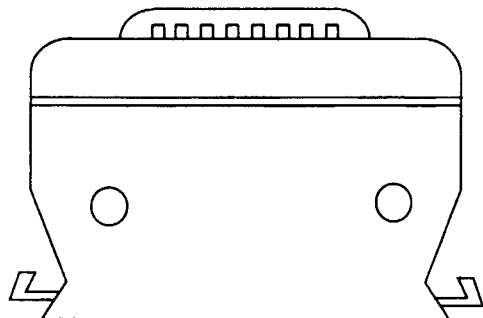
IF cable

Main unit

2.3   Connection to Host Machine

As shown in Figure 2.3-1 "Printer Cable Connection", use the printer cable (sold separately) to connect the parallel communications adapter to the host machine.

■ **Connection to Host Machine**

As shown in Figure 2.3-1 "Printer Cable Connection", use the printer cable (sold separately) to connect the parallel communications adapter to the host machine.

For details of how to connect the printer cable (sold separately) to the host machine, refer to the manual for the host machine.

■ **Notes**

When connecting the parallel communications adapter to the host machine, keep the following notes in mind:

- Turn off the power before connecting or removing a cable. Attempting to connect or remove a cable while the power is turned on may cause a malfunction.

- To remove a cable, do not pull the cable itself; grasp and pull the connector. Pulling the cable itself may cause a conductor inside the cable to break.

Figure 2.3-1 Printer Cable Connection

Parallel communications adapter

16
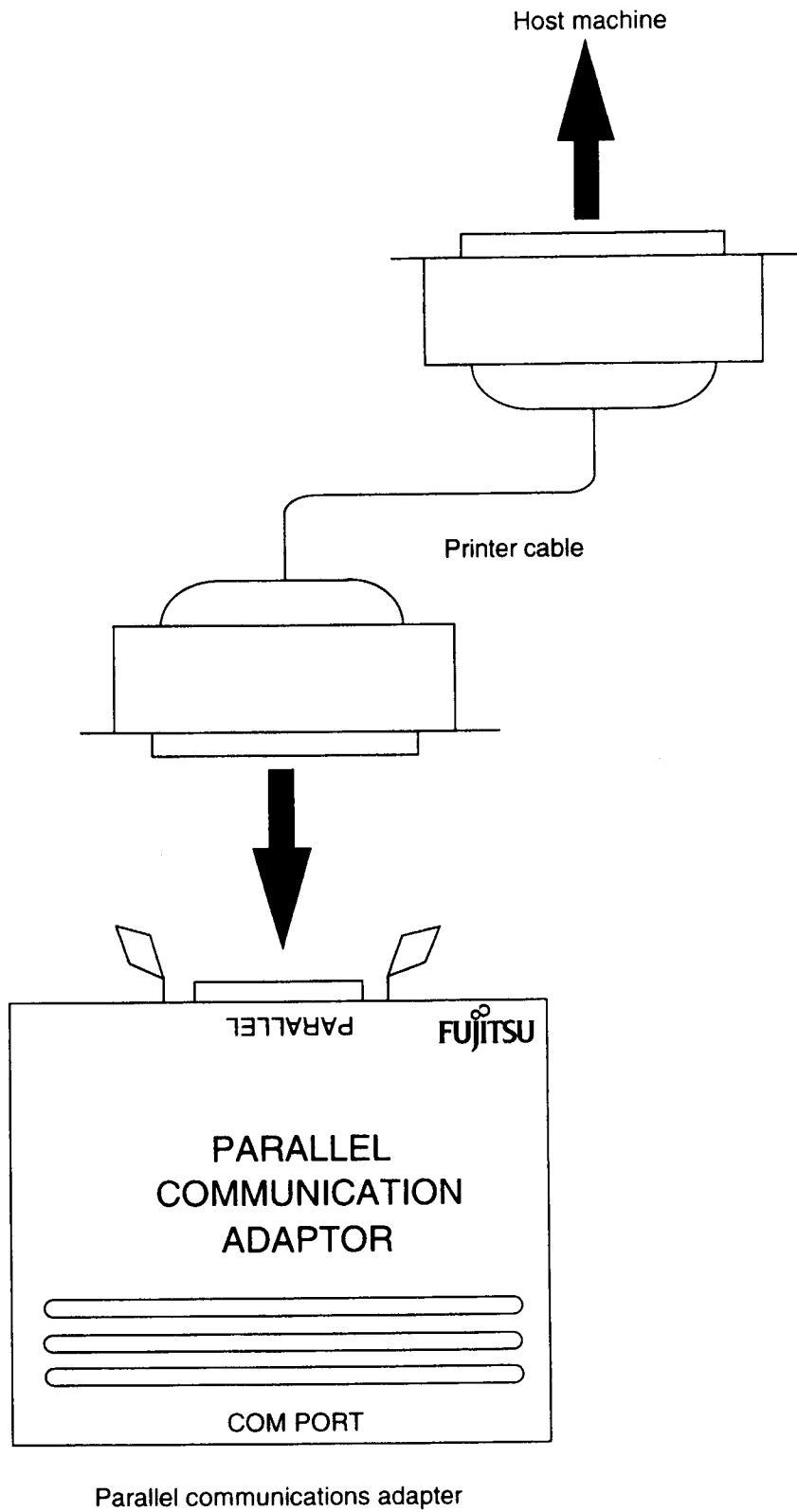
2.4   Power-on Sequence

17

Before turning on the power, ensure that all connections are complete. Then, turn on the power in the order of the host machine, the main unit, then the target (user system).

■ **Power-on Sequence**

Before turning on the power, ensure that all connections are complete. Then, turn on the power in the order of the host machine, the main unit, then the target (user system).

To turn on the power, set the power switch on the rear panel of the main unit to "1". Turning on the main unit also turns on the parallel communications adapter.

2.5   Power-off Sequence

Turn off the power in the order of the target (user system), the main unit, then the host machine.

■ **Power-off Sequence**

Turn off the power in the order of the target (user system), the main unit, then the host machine.

To turn off the power, set the power switch on the rear panel of the main unit to "0". Turning off the main unit also turns off the parallel communications adapter.

INDEX

19

The index follows on the next page.
This is listed in alphabetic order.

Index

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