

**F<sup>2</sup>MC FAMILY**  
**PARALLEL COMMUNICATIONS ADAPTER**  
**MB2142-03**  
**USER'S MANUAL**

# PREFACE

## ■ Objectives and intended readership

The MB2142-03 support tool (parallel communications adapter) is designed to enable the development and evaluation of products based on the F<sup>2</sup>MC\* family.

The MB2142-03 is connected to the main unit (MB2141).

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<sup>2</sup>MC, using the MB2142-03.

Refer to the following related manual as necessary:

- Related manual

*2140 Main Unit MB2141 Emulator User's Manual*

\*: F<sup>2</sup>MC stands for FUJITSU Flexible Microcontroller.

## ■ Configuration 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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# READING THIS MANUAL

## ■ Page layout

In this manual, an entire section or subsection is presented on a single page or spread whenever possible. The reader can thus view a section without having to flip pages. The contents of each section/subsection are summarized immediately below the title. You can obtain a rough overview of the parallel communications adapter (MB2142-03) by reading through these summaries. The spread layout of this manual is described below.

## ■ Spread layout

Section title
Subsection title
Section or subsection summary

**1.2 Parallel Communications Adapter Specifications**

**1.2.2 Connector pin assignment**

An Amphenol 36P connector is used as the parallel communications connector. Table 1.2.2 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 shows the pin assignment. Table 1.2.2 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	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	ACK	O	Acknowledge signal	28	GND	—	Signal grounding
11	BUSV	O	Busy signal	29	GND	—	Signal grounding
12	PE	O	No paper	30	GND	—	Signal grounding
13	SLCT	O	Select signal, output	31	INIT	I	Reset signal
14	NC	—	Unused	32	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	+5V	O	Power supply signal	36	SLCTIN	I	Select signal, input

Subheading
Figure and table titles

6
7

# CONTENTS

<b>CHAPTER 1</b>	<b>HANDLING AND SPECIFICATIONS OF THE PRODUCT</b>	<b>1</b>
1.1	Packing List	2
1.2	Parallel Communications Adapter Specifications	4
1.2.1	Electrical characteristics of I/O signal lines	5
1.2.2	Connector pin assignment	6
1.3	IF Cable Specifications	8
1.4	Notes on Use	10
<b>CHAPTER 2</b>	<b>CONNECTIONS</b>	<b>11</b>
2.1	System Configuration	12
2.2	Connection to Main Unit	14
2.3	Connection to Host Machine	16
2.4	Power-on Sequence	18
2.5	Power-off Sequence	19

# FIGURES

Figure 1.1	Parallel communications adapter .....	3
Figure 1.2.1	Electrical characteristics of I/O signal lines .....	5
Figure 1.2.2	Parallel communications connector pin assignment .....	6
Figure 1.3	IF cable dimensions .....	9
Figure 2.1	System configuration .....	12
Figure 2.2	IF cable connection .....	15
Figure 2.3	Printer cable connection .....	17

# TABLES

Table 1.2	Parallel communications adapter specifications.....	4
Table 1.2.2	Parallel communications connector signal line names .....	7
Table 1.3a	IF cable components .....	8
Table 1.3b	IF cable general specifications .....	8
Table 1.4	Storage environment .....	10

# CHAPTER 1    HANDLING AND SPECIFICATIONS OF THE PRODUCT

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**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.**

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- 1.1 Packing List
- 1.2 Parallel Communications Adapter Specifications
  - 1.2.1 Electrical characteristics of I/O signal lines
  - 1.2.2 Connector pin assignment
- 1.3 IF Cable Specifications
- 1.4 Notes on Use

## 1.1 Packing List

---

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

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

### ■ Appearance and names of parts

Figure 1.1 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).



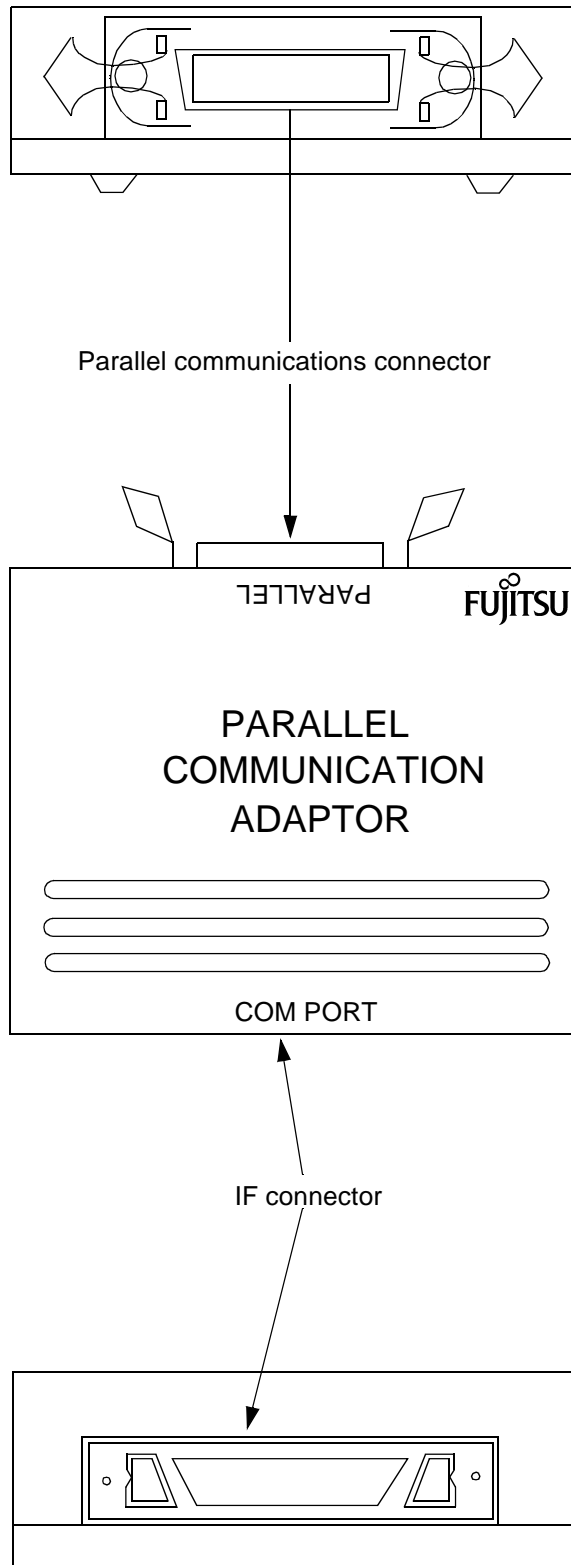


Figure 1.1 Parallel communications adapter

## 1.2 Parallel Communications Adapter Specifications

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Table 1.2 lists the specifications of the parallel communications adapter.

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### ■ Parallel communications adapter specifications

Table 1.2 lists the specifications of the parallel communications adapter.

**Table 1.2 Parallel communications adapter specifications**

Item	Contents
Name	Parallel communications adaptor
Model	MB2142-03
Power supply	Voltage: +5 V $\pm$ 5% Current: 1A (max.) *1
Operating temperature	0 to +55°C
Operating humidity	30% to 80% (non-condensing)
Dimensions	120mm (W)× 90mm (D) × 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.

## 1.2 Parallel Communication Adapter Specifications

### 1.2.1 Electrical characteristics of I/O signal lines

Figure 1.2.1 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 shows the electrical characteristics.

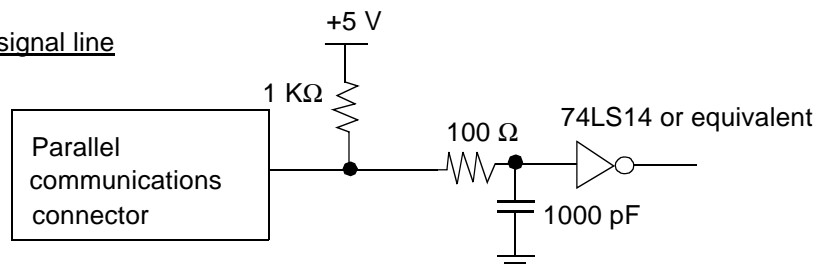
“L”: 0 to +0.4 V

“H”: +2.4 to +5.0 V

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

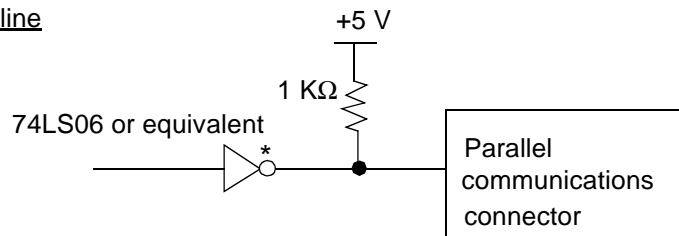
##### ○ Input conditions

###### Control signal line



##### ○ Output conditions

###### Control signal line



##### ○ I/O conditions

###### DATA0 to DATA7

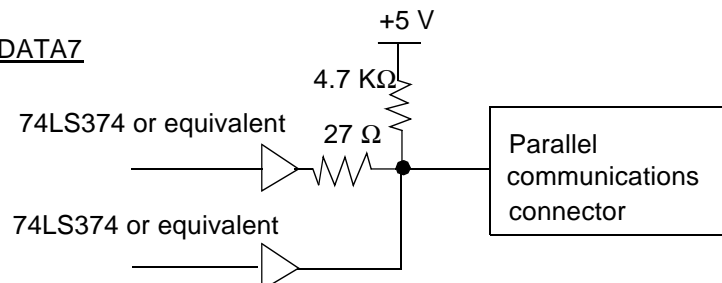


Figure 1.2.1 Electrical characteristics of I/O signal lines

## 1.2 Parallel Communications Adapter Specifications

### 1.2.2 Connector pin assignment

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

Table 1.2.2 lists the connector signal line names.

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#### ■ Connector pin assignment

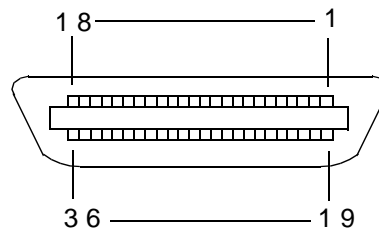
The model and pin assignment of the connector are described below.

○ 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 shows the pin assignment. Table 1.2.2 lists the signal line names.



**Figure 1.2.2 Parallel communications connector pin assignment**

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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	+5V	O	Power supply signal	36	$\overline{\text{SLCTIN}}$	I	Select signal, input

## 1.3 IF Cable Specifications

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Table 1.3a lists the IF cable components, Table 1.3b lists the general specifications of the IF cable, and Figure 1.3 shows the dimensions of the IF cable.

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### ■ IF cable specifications

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

**Table 1.3a IF cable components**

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

**Table 1.3b IF cable general specifications**

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

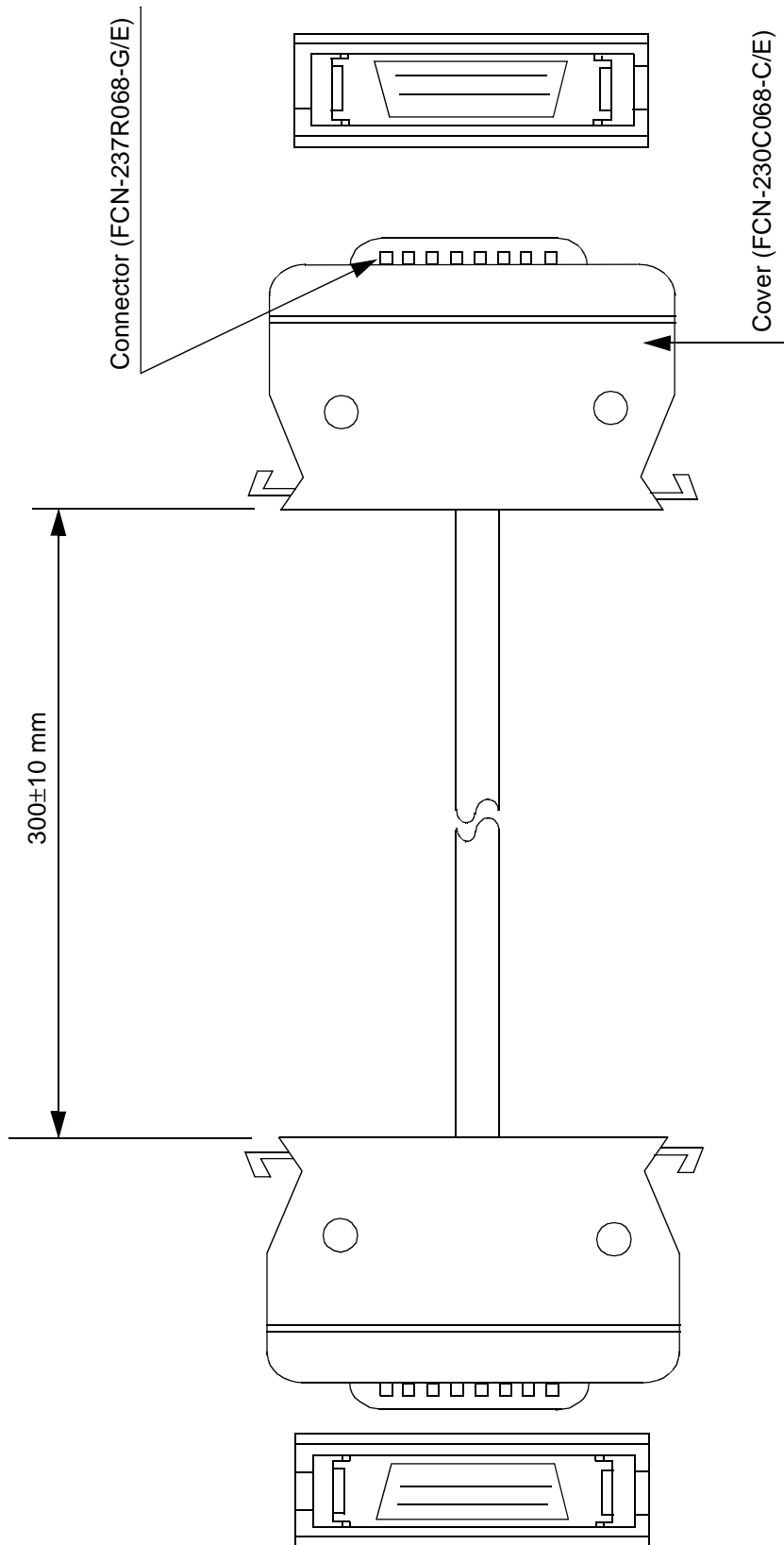


Figure 1.3 IF cable dimensions

## 1.4 Notes on Use

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

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### ■ 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 lists the storage temperature and humidity.

**Table 1.4 Storage environment**

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



## CHAPTER 2 CONNECTIONS

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**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.**

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- 2.1 System Configuration
- 2.2 Connection to Main Unit
- 2.3 Connection to Host Machine
- 2.4 Power-on Sequence
- 2.5 Power-off Sequence

## 2.1 System Configuration

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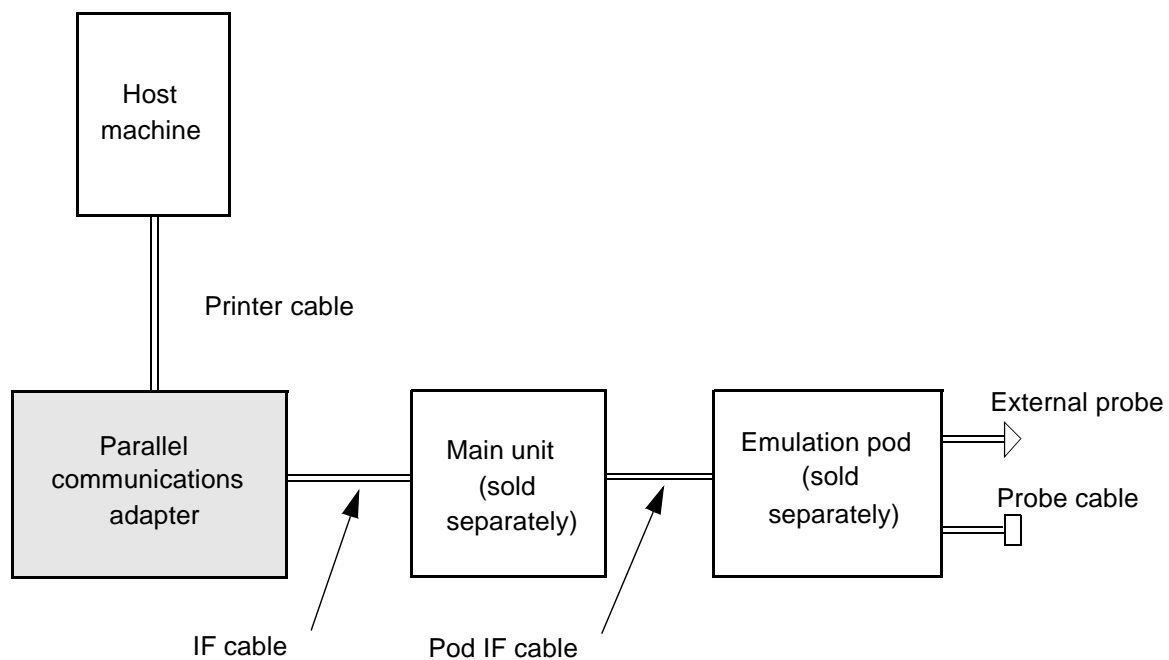
Connecting the parallel communications adapter to the host machine enables parallel communication with the host machine.

---

### ■ System configuration

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

Figure 2.1 shows the hardware system configuration when using the parallel communications adapter.



**Figure 2.1 System configuration**

# Memo

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## 2.2 Connection to Main Unit

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

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### ■ Connection to main unit

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

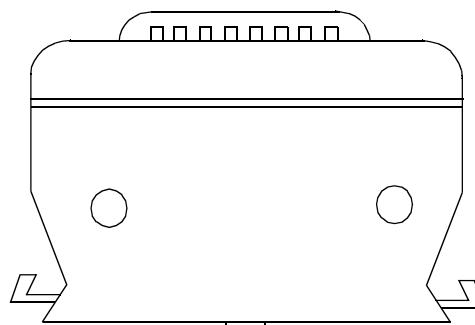
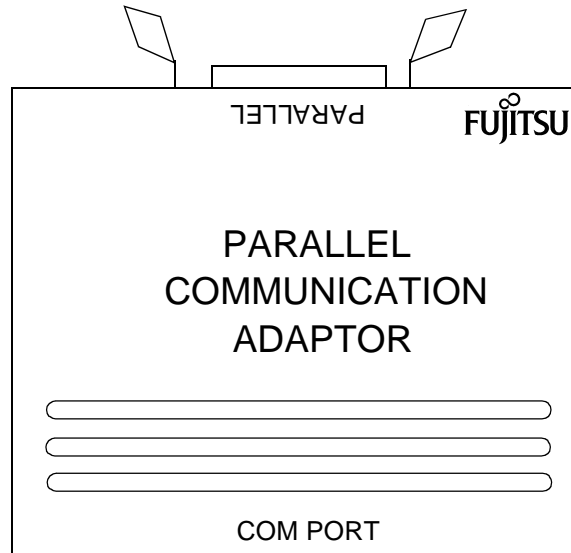
For details of connecting the IF cable to the main unit, refer to the *2140 Main Unit MB2141 Emulator User's Manual*.

### ■ 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.

Parallel communications adapter



IF cable



Main unit

Figure 2.2 IF cable connection

## 2.3 Connection to Host Machine

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**As shown in Figure 2.3, use the printer cable (sold separately) to connect the parallel communications adapter to the host machine.**

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### ■ Connection to host machine

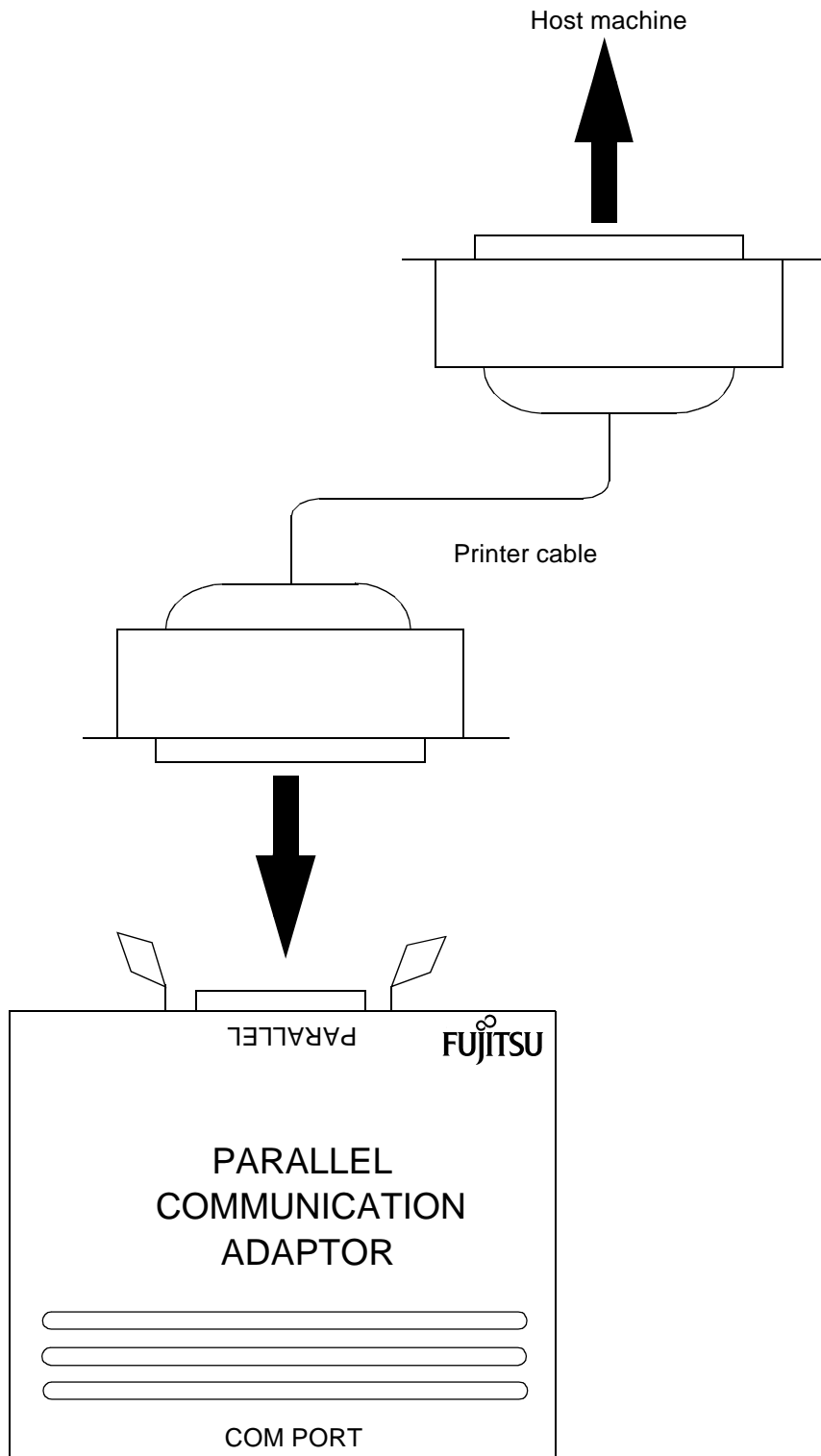
As shown in Figure 2.3, use the printer cable (sold separately) to connect the parallel communications adapter to the host machine.

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.



Parallel communications adapter

**Figure 2.3 Printer cable connection**

## 2.4 Power-on Sequence

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**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

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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.