IT-2000

I/O Box Installation

Manual

(Version 1.00)

April 1998

Casio Computer Co., Ltd.

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1. Overview

This system performs file transfer and other operations between the Casio Data Collection Terminal IT-2000 (hereinafter referred to as this terminal or IT-2000) and an AT architecture-based personal computer (hereinafter referred to as PC or Host PC) via the I/O Box.

Functions provided in this system ;

- File upload from IT-2000 to PC
- File download from PC to IT-2000
- Deletion of files in IT-2000
- Setup of system date on IT-2000
- Move and rename file within IT-2000
- Character string display on IT-2000
- Acquisition of IT-2000 drive information
- Acquisition and setup of IT-2000 file information

For data transfer between IT-2000 and PC, refer to the IT-2000 Upload/Download Utility Manual.

The great advantage of this system lies in its wide range of system configurations which can allow the combined connection of PC and two different kinds of I/O Boxes (Master I/O Box and Satellite I/O Box).

(1) The I/O Box is available in two types: the Master I/O Box and the Satellite I/O Box.

(2) The Master I/O Box can only be connected to a PC via SCSI interface.
Each Master I/O Box (seven Boxes max. in one system) connected to a PC can have maximum of seven Satellite I/O Boxes connected under daisy-chain.

(3) The following connection can be made with the Satellite I/O Box.
   - Direct connection with PC via the RS-232C interface.
   - The Satellite I/O Box connected directly to the PC can have a maximum of seven Satellite I/O Boxes connected under daisy-chain.
   - The Master I/O Box can have a maximum of seven Satellite I/O Boxes connected under daisy-chain.

2. System Configuration and Installation Method

2.1 Options and Software

Category	Name	Model	Remark
Hardware			
	Satellite I/O Box	IT-2060IOE	
	Master I/O Box	IT-2065IOE	
	RS-232C cable	DT-887AX	Connector shape: Cross-type 9-pin, female
	RS-422 cable	DT-888RSC	Connector shape: Modular cable for chaining
	SCSI cable	DT-751HF	Connector shape: Half to Full
		DT-752HH	Connector shape: Half to Half
		DT-753HP	Connector shape: Half to Pinhalf
	Data Collection Terminal	IT-2000	
	PC		Only for AT-compatible architecture (see note)
	SCSI Board		Only for models specified by Casio (see note)
Software			
PC side	Upload/Download Utility		Dedicated for Windows95
IT-2000 side	Windows3.1 ver. FLINK Utility		
	MS-DOS version FLINK Utility		

Table 2.1 Options and software

Note:

For information about recommended SCSI Boards and SCSI Cables refer to Chapter 7, "List of SCSI Boards and SCSI Cables".

2.2 System Configuration

This system can be configured in various ways. See typical examples of the hardware configuration as below.

2.2.1 With Single I/O Box

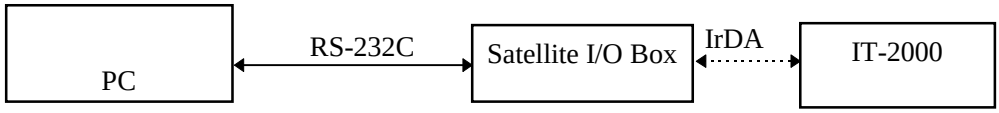
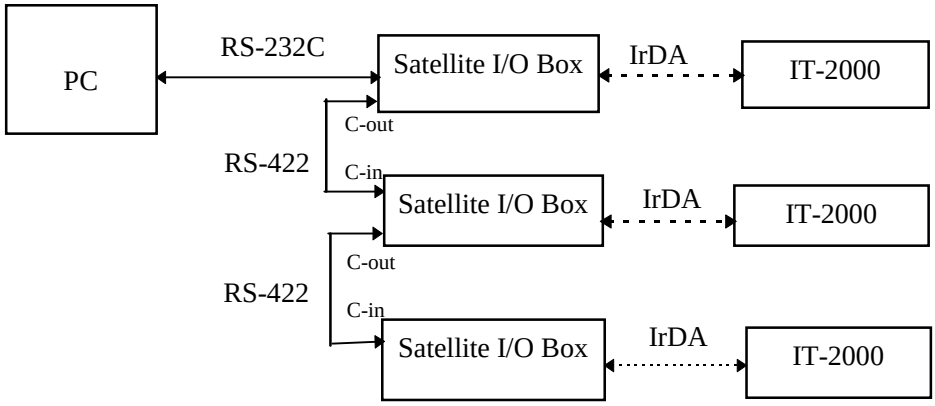


Fig.2.1 System configuration with single Satellite I/O Box

Hardware	Software	
	PC side	IT-2000 side
Satellite I/O Box RS-232C cable IT-2000 PC	Upload/Download Utility	FLINK of Windows 3.1 ver. or FLINK of MD-DOS ver.

Table 2.2 Hardware and software configuration with single Satellite I/O Box

2.2.2 With Multiple I/O Boxes



Maximum 8 Satellite I/O Boxes can be connected.

Fig. 2.2 System configuration with multiple Satellite I/O Boxes

Hardware	Software	
	PC side	IT-2000 side
Satellite I/O Box RS-232C cable RS-422 cable IT-2000 PC	Upload/Download Utility	FLINK of Windows3.1 version or FLINK of MS-DOS version

Table 2.3 Hardware and software configuration with multiple Satellite I/O Boxes

2.2.3 With Single Master I/O Box

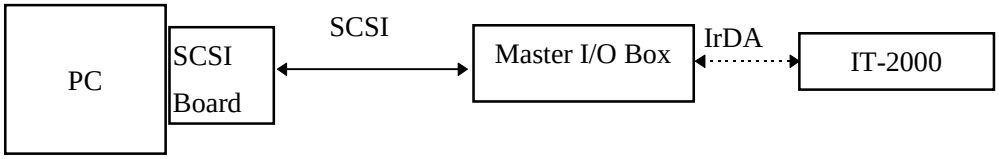
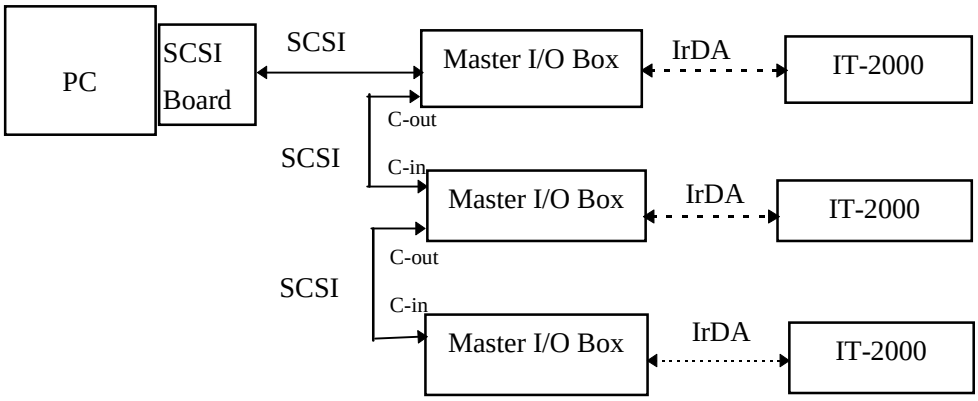


Fig.2.3 System configuration with single Master I/O Box

Hardware	Software	
	PC side	IT-2000 side
Master I/O Box SCSI cable SCSI Board IT-2000 PC	Upload/Download Utility	FLINK of Windows3.1 ver. or FLINK of MS-DOS ver.

Table 2.4 Hardware and software configuration with one Master I/O Box

2.2.4 With Multiple Master I/O Boxes



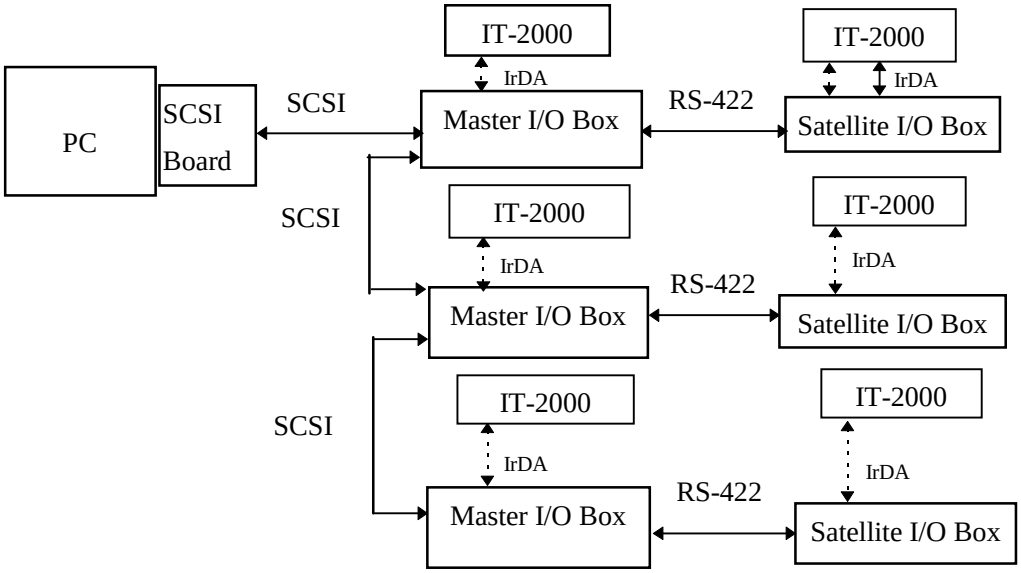
Maximum 7 Master I/O Boxes can be connected.

Fig. 2.4 System configuration with multiple Master I/O Boxes

Hardware	Software	
	PC side	IT-2000 side
Master I/O Box SCSI cable IT-2000 PC SCSI Board	Upload/Download Utility	FLINK of Windows3.1 ver. or FLINK of MS-DOS ver.

Table 2.5 Hardware and software configuration with multiple Master I/O Boxes

2.2.5 With Master and Satellite I/O Boxes



Maximum 7 Master I/O Boxes and 8 Satellite I/O Boxes can be connected.

Fig.2.5 System configuration with Master and Satellite I/O Boxes

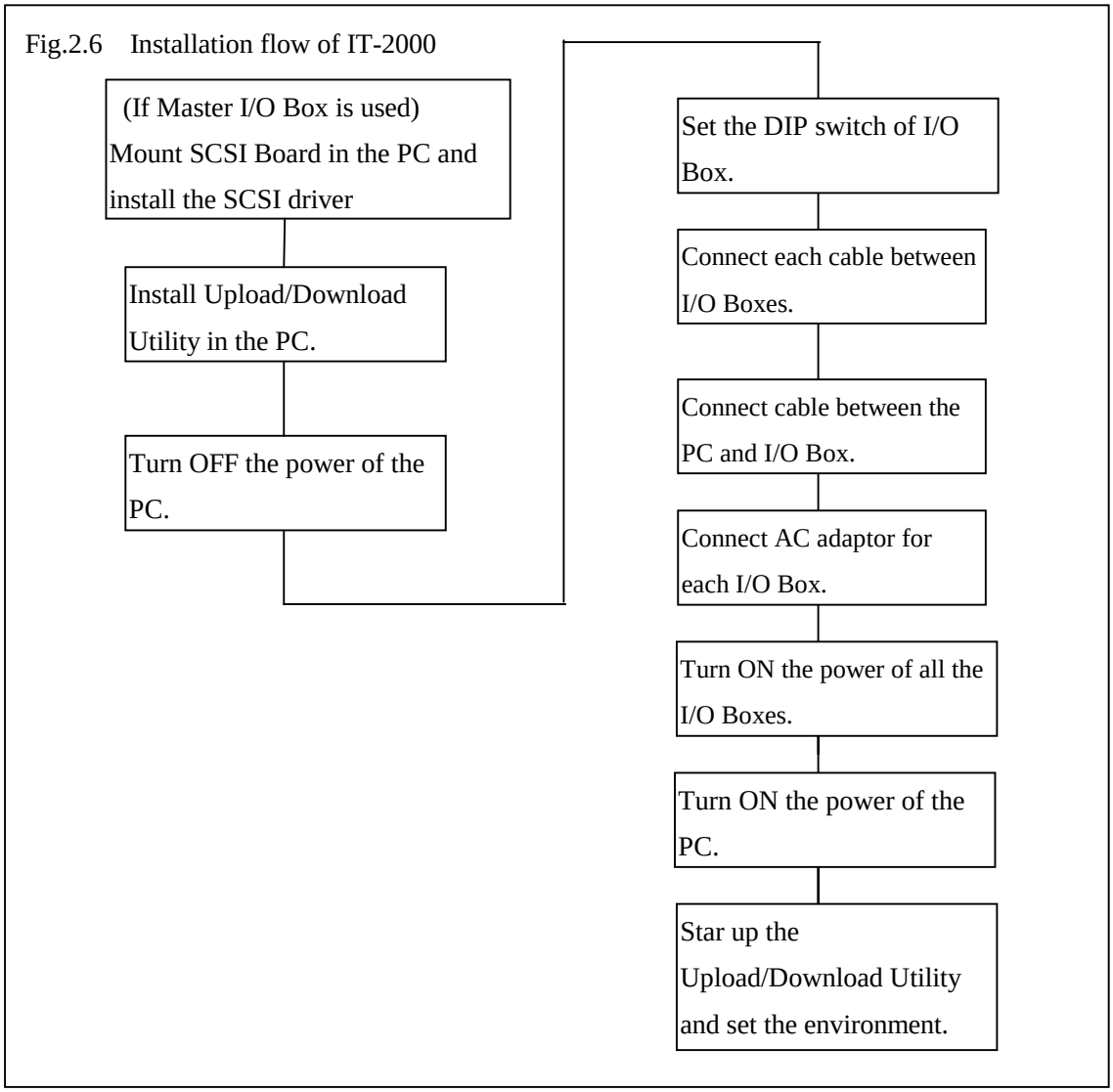
Hardware	Software	
	PC side	IT-2000 side
Satellite I/O Box Master I/O Box SCSI cable RS-422 cable IT-2000 PC SCSI Board	Upload/Download Utility	FLINK of Windows3.1 version or FLINK of MS-DOS version

Table 2.6 Hardware and software configuration with Master and Satellite I/O Boxes

2.3 Installation Method

This section describes the installation and setup procedures that must be performed before I/O Box and PC operations are started. The following diagram shows a flow of the setup procedure.

Fig.2.6 Installation flow of IT-2000



Note:

- For information about the installation procedure of the Upload/Download Utility refer to the Upload/Download Utility Manual.
- For information about the I/O Box setup refer to Chapter 2.3.1 “Setup of Satellite I/O Box”, Chapter 2.3.2 “Setup of Master I/O Box”, and Chapter 2.3.3 “Setup of Satellite I/O Box to Master I/O Box”.
- For information about the setup of Upload/Download Utility environment refer to Chapter 2.3.4 “Setup of PC”.

2.3.1 Setup of Satellite I/O Box

The following paragraphs explain how to set up the Satellite I/O Box and Master I/O Box to be connected to the PC.

Note that the DIP switch settings of the Satellite I/O Box differ depending on the connection with single Satellite I/O Box or multiple Satellite I/O Boxes.

With single Satellite I/O Box

- Make sure that the POWER switch of the I/O Box is set to OFF. Set the DIP switch at the rear of the unit as follows:

1	2	3	4	5	6	7	8	9	10
ON	OFF	OFF	OFF	ON	OFF	ON	ON	ON	ON

- Set the DIP switches nos. 1 to 5, 9, and 10 as shown above.
- DIP switches nos 6, 7, and 8 are used to define the RS-232C baud rate of the I/O Box. It must be consistent with the baud rate being set on the PC for RS-232C communication.
- The above DIP setup example assumes that the RS-232C baud rate is 115200 bps. If modifying this setup, use the following table as a reference.

Baud Rate	6	7	8
2400 bps	OFF	OFF	OFF
4800 bps	ON	OFF	OFF
9600 bps	OFF	ON	OFF
19200 bps	ON	ON	OFF
38400 bps	OFF	OFF	ON
57600 bps	ON	OFF	ON
115200 bps	OFF	ON	ON

- Connect the I/O Box and the PC with a cross-type RS-232C cable.

With Multiple Satellite I/O Boxes

Note that the DIP switch settings of the Satellite I/O Box differ depending on the connection, ex. Satellite I/O Box directly connected to the PC or Satellite I/O Box connected with other Satellite I/O Boxes under daisy-chain.

- Make sure that the POWER switch of the I/O Box is set to OFF. Set the DIP switch of the first I/O Box to be connected to the PC directly as follows.

1	2	3	4	5	6	7	8	9	10
ON	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON

- Set the DIP switch of other I/O Boxes to be connected under daisy-chain as follows.

1	2	3	4	5	6	7	8	9	10
ON	OFF	OFF	OFF	ON	OFF	ON	ON	ON	ON

- Set DIP switch no. 5 of the last I/O Box to ON if the C-OUT terminal does not connect another I/O Box (This is for the termination).

5
ON

- The above setup example assumes that the RS-232C baud rate is 115200 bps. If modifying this setup, refer to the “With Single Satellite I/O Box” in the previous page.

- Connect the first I/O Box and the PC with a cross-type RS-232C cable.
  Then connect the C-OUT terminal of the I/O Box connected to the PC to the C-IN terminal of the other I/O Box via the RS-422 cable. Connect the rest of I/O Boxes so that the one with the terminator setting is the last under daisy-chain.

2.3.2 Setup of Master I/O Box

Note that the DIP switch settings of the Master I/O Box differ depending on whether the system configuration is consisted of only single Master I/O Box or of multiple Master I/O Boxes that are followed by Satellite I/O Boxes.

- Make sure that the POWER switch of the I/O Box is set to OFF. Set the DIP switch at the rear of the unit as follows:

1	2	3	4	5	6	7	8	9	10
ON	OFF	OFF	OFF	ON	OFF	OFF	OFF	ON	ON

- Setup for the SCSI ID (DIP switches nos. 6, 7, and 8)
  This SCSI ID must be different from that of other I/O Boxes or the PC.
  Since generally the SCSI ID of the PC is set to 7, set the SCSI ID of the I/O Box to a number between 0 and 6.

SCSI-ID	6	7	8
ID0	OFF	OFF	OFF
ID1	ON	OFF	OFF
ID2	OFF	ON	OFF
ID3	ON	ON	OFF
ID4	OFF	OFF	ON
ID5	ON	OFF	ON
ID6	OFF	ON	ON
ID7	ON	ON	ON

- Setup termination for SCSI interface (no. 9)
  Set DIP switch no.9 of the I/O Box, which is the farthest from the PC, to ON.
  This setting is the same if only one I/O Box is connected.

SCSI termination setup	9
Termination	ON
Non-termination	OFF

- Power setup for termination of SCSI interface (no.10)
  If the SCSI board in the PC cannot supply power to the SCSI interface, set DIP switch no.10 of the I/O Box, which is the nearest to the PC, to ON. However, DIP switch no. 10 is usually set to OFF, since a general SCSI board can supply power to the SCSI interface.

Power SCSI termination	10
Supplies power	ON
Does not supply power	OFF

- Connect the first I/O Box and PC with the SCSI cable.
  Then connect the SCSI connector of the I/O Box connected to the PC to the SCSI connector of the other I/O Box via the SCSI cable. Connect the remaining I/O Boxes so that the one with the terminator setting becomes to the last under daisy-chain connection.
- Select a suitable cable that matches the shape of the connector on the PC side to connect the PC and the first I/O Box.

2.3.3 Setup of Satellite I/O Box to Master I/O Box

Note that the DIP switch settings on Master I/O Box and on Satellite I/O Box differ.

- DIP switch settings of the Master I/O Box
  These settings are the same as stated in Chapter 2.3.2, "Setup of Master I/O Box" except that the no.5 should be set to OFF.

1	2	3	4	5	6	7	8	9	10
ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF

- DIP switch settings of the Satellite I/O Box

1	2	3	4	5	6	7	8	9	10
ON	OFF	ON	OFF	OFF	OFF	ON	ON	ON	ON

- Set DIP switch no.5 to ON (i.e. setting as a terminator) if the C-OUT terminal is not connected to another Satellite I/O Box to be daisy-chained.

5
ON

  The above setup example assumes that the RS-232C baud rate is 115200 bps. If modifying this setup, refer to Chapter 2.3.1, "Setup of Satellite I/O Box".
- Connect the first Master I/O Box and PC with SCSI cable.
  Then connect the C-OUT terminal of the Master I/O Box connected to the PC to the C-IN terminal of the other Satellite I/O Box via the RS-422 cable. Connect the remaining I/O Boxes so that the one with the terminator setting becomes the last under daisy-chain connection.

2.3.4 Setup of PC

Connection

If using the Satellite I/O Box, plug the connection cable into the COM port of the PC.

If using the Master I/O Box, plug the connection cable into the SCSI board of the PC.

Startup

First turn ON the power to each I/O Box, then turn ON the PC power to start up Windows95 and start up the Upload/Download Utility.

Make sure that the Main Menu of the Upload/Download Utility appears.

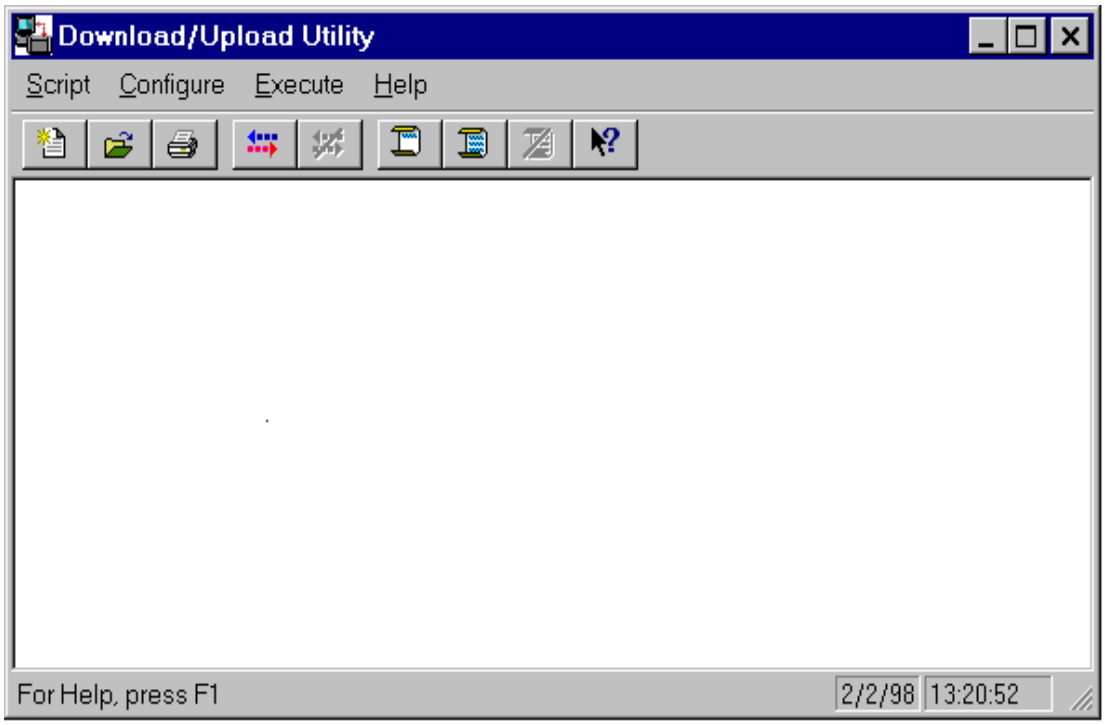


Fig. 2.7 Main Menu screen of Upload/Download Utility

Environment Setup

If the I/O Box to be connected to the PC is a Satellite I/O Box, select "RS-232C" from the "Configure" menu of the Upload/Download Utility, then select "Settings" from the same menu.

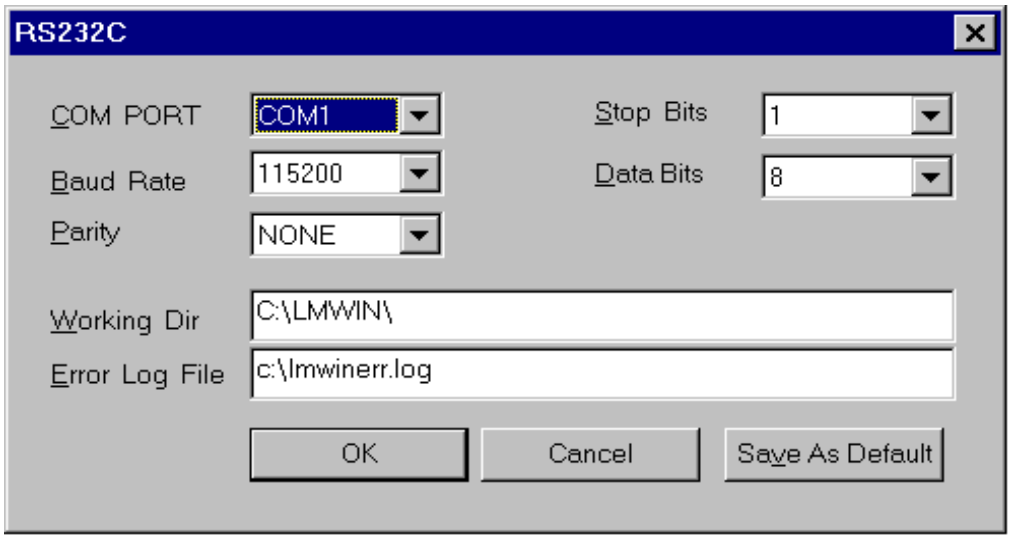


Fig. 2.8 RS-232C Main Menu screen

- In the COM PORT field select the COM port number in the PC to be used.
- In the Baud Rate field select the communication speed (baud rate) of the RS-232C.
- Parity, Stop bit, and Data bits values should be as shown in the above figure.
- Confirm these setup values and click on the [OK] button.

Note:

Depending on the PC to be used, a baud rate that is too fast may hamper the communication. If this is the case, employ a lower baud rate.

If the objective I/O Box to be connected to the PC is a Master I/O Box, select "SCSI" from the "Configure" menu of the Upload/Download Utility, then select "Settings" from the same menu.

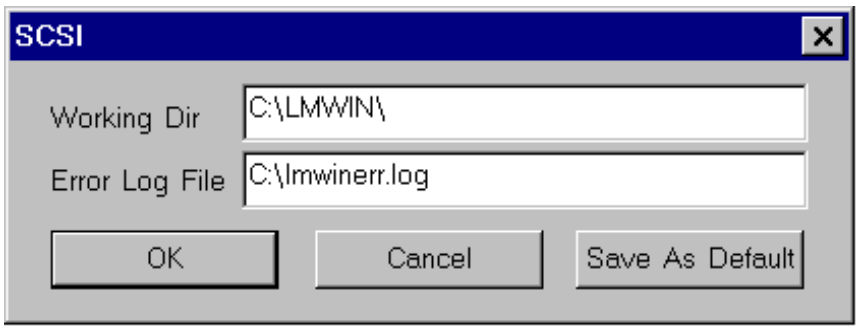


Fig. 2.9 SCSI Main Menu screen

3. Operation Method

After connecting the necessary system devices and installing the software on the PC, perform file upload/download with the following procedure. On this system each function will be executed if the IT-2000, which has started up the FLINK Utility, is mounted on the I/O Box after the PC-side utility was started up. Each function can also be executed by initiating the PC-side utility after mounting the IT-2000, which has started up the FLINK Utility, on the I/O Box.

3.1 File Upload

Transfer files from the IT-2000 to the PC. There are two methods for specifying the files to be uploaded: specifying files from the PC, and specifying files from the IT-2000.

3.1.1 Specifying Files from PC

Operation on PC

- Start up the Upload/Download Utility on the PC and select "Command" from the "Execute" menu to display the Command Screen.
- Set the Command field to "Receive".
- In the "File(s)" field specify the name of the objective file on the PC by its full path name.
- In the "Destination Dir" field specify the directory by its full path name on the PC in which the transmitted file is to be stored.

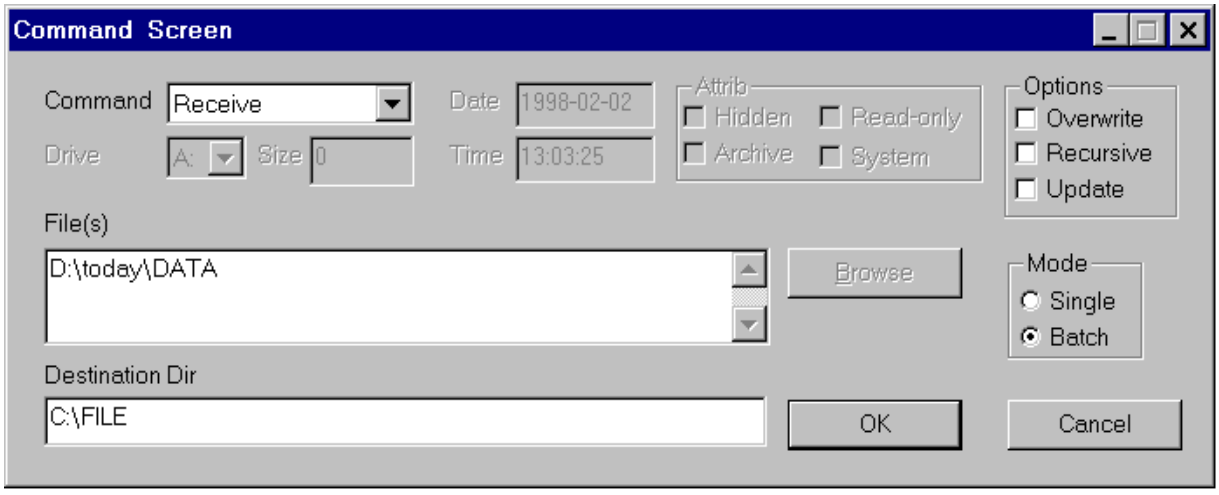


Fig. 3.1 Command Screen

- Set any "Options" item, if necessary.
- Set the "Mode" option, if necessary.
- Click on the [OK] button.

If preparation has been completed on the IT-2000 side, the progress bar will be displayed and file uploading will begin.
If a communication anomaly occurs, an error message will be displayed and communication will be terminated.

Operation on IT-2000

- Start up MS-DOS.
- Start up FLINK without adding parameters.
- "Wait..." is displayed on the IT-2000 screen and the idle mode is set.

FLINK.DLL of Windows 3.1 version

- Start up Windows3.1.
- Start up FLINK without adding parameters.

```
DoFLINK ( argc, argv)
argc  = 1;
argv[ ]= { "fl" }
```

- "Wait..." is displayed on the IT-2000 screen and the idle mode is set.

If preparation has been completed on the PC side, the progress bar will be displayed and file uploading will begin.
If a communication anomaly occurs, an error message will be displayed and communication will be terminated.

3.1.2 Specifying Files from IT-2000

Operation on PC

- Start up the Upload/Download Utility on the PC and select "Link Manager Start" from the "Execute" menu.

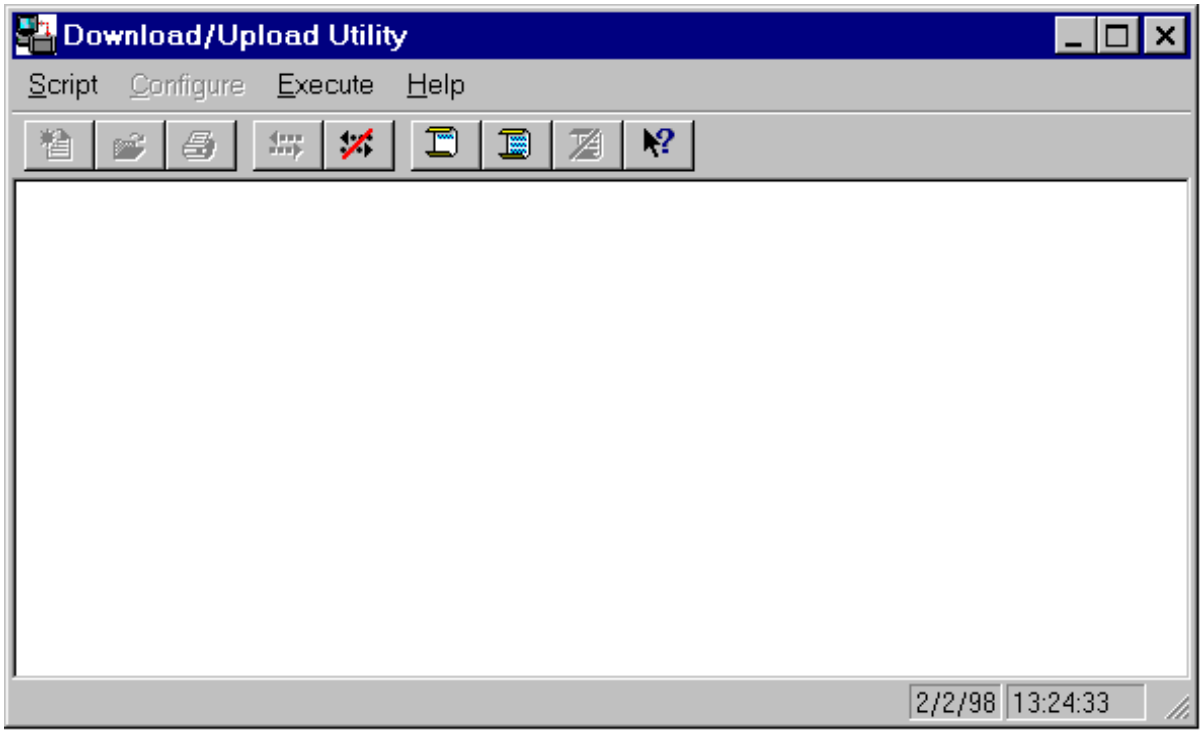


Fig. 3.2 Screen displayed after "Link Manager Start"

If the preparation has been completed on the IT-2000 side, the progress bar will be displayed and the file upload will begin. If a communication anomaly occurs, an error message will be displayed and communication will be terminated.

Operation on IT-2000

FLINK.EXE of MS-DOS version

- Start up MS-DOS.
- Start up FLINK with the send mode option.

```
FLINK /S D:\FILE C:\
```

This transfers D:\FILE from the IT-2000 to C:\ on the PC.

If preparation has been completed on the PC side, the progress bar will be displayed and file uploading will begin. If a communication anomaly occurs, an error message will be displayed and communication will be terminated.

FLINK.DLL of Windows 3.1 version

- Start up Windows 3.1.
- Start up FLINK with the appropriate parameters.

```
DoFLINK ( argc, argv )
argc  = 4;
argv[ ]= { "fl" , "/s", "D:\FILE", "C:\yy" }
```

This transfers D:\FILE from the IT-2000 to C:\yy on the PC.

If the preparation has been completed on the PC side, the progress bar will be displayed and file uploading will begin. If a communication anomaly occurs, an error message will be displayed and communication will be terminated.

3.2 File Download

Transfer files from the PC to the IT-2000.

There are two methods for specifying the files to be downloaded: specifying files from the PC, and specifying files from the IT-2000.

3.2.1 Specifying Files from PC

Operation on PC

- Start up the Upload/Download Utility on the PC and select "Command" from the "Execute" menu to display the Command Screen.
- Set the Command field to "Send".
- In the "File(s)" field specify the name of the objective file on the PC by its full path name.
- In the "Destination Dir" field specify the directory by its full path name on the IT-2000 in which the received file is to be stored.

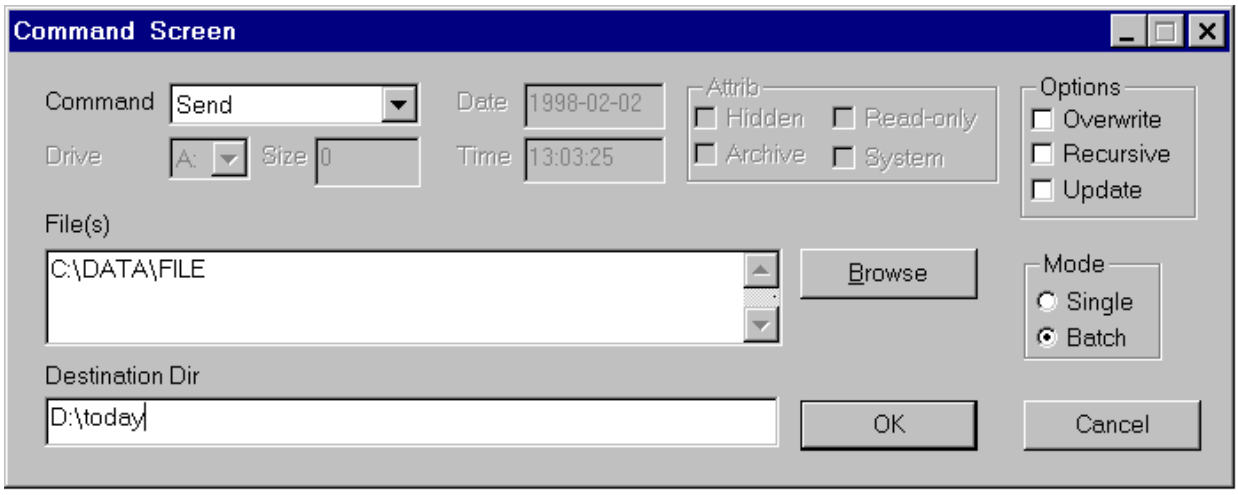


Fig. 3.3 Command Screen

- Set any "Options" item, if necessary.
- Set "Mode" option, if necessary.
- Click on the [OK] button.

If the preparation has been completed on the IT-2000 side, the progress bar will be displayed and file downloading will begin. If a communication anomaly occurs, an error message will be displayed and communication will be terminated.

Operation on IT-2000

FLINK.EXE of MS-DOS version

- Start up MS-DOS.
- Start up FLINK without adding any parameters.
- "Wait..." is displayed on the IT-2000 screen and the idle mode is set.

FLINK.DLL of Windows 3.1 version

- Start up Windows 3.1.
- Start up FLINK without adding any parameters.

```
DoFLINK ( argc, argv)
argc  = 1;
argv[ ]= { "fl" }
```

- "Wait..." is displayed on the IT-2000 screen and the idle mode is set.

If the preparation has been completed on the PC side, the progress bar will be displayed and file downloading will begin. If a communication anomaly occurs, an error message will be displayed and communication will be terminated.

3.2.2 Specifying Files from IT-2000

Operation on PC

- Start up the Upload/Download Utility on the PC and select "Link Manager Start" from the "Execute" menu.

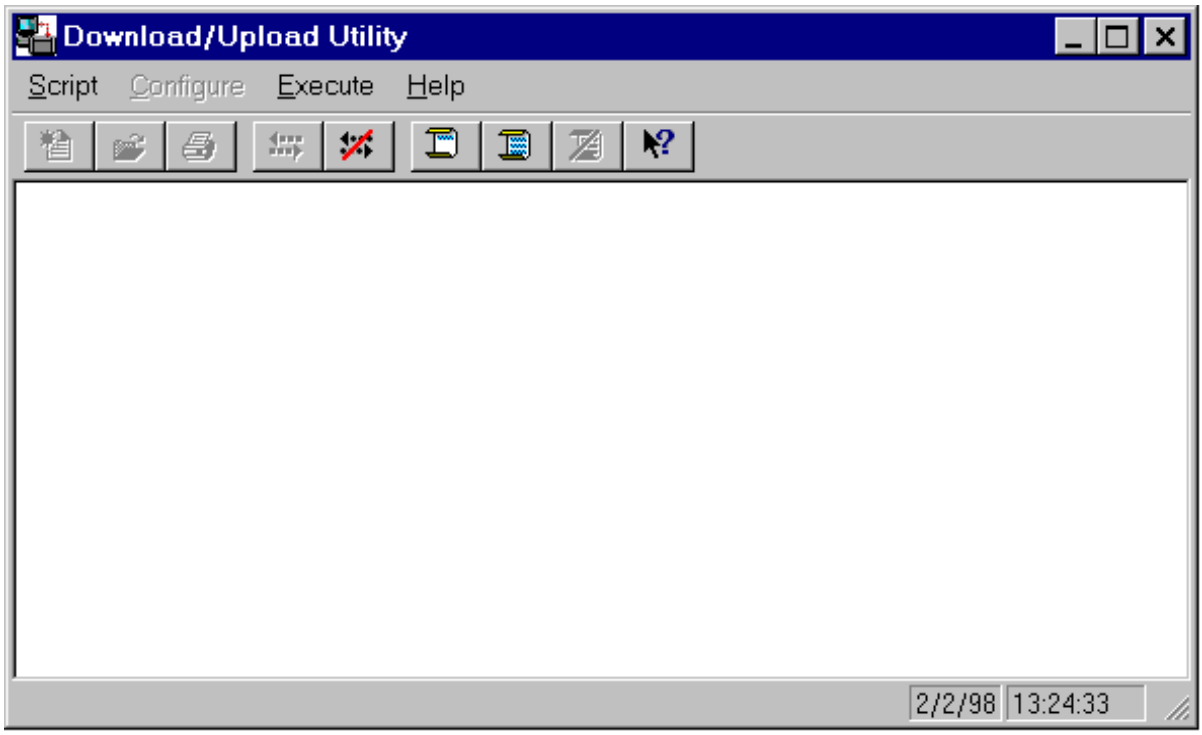


Fig. 3.4 Screen displayed after "Link Manager Start"

If the preparation has been completed on the IT-2000 side, the progress bar will be displayed and file downloading will begin. If a communication anomaly occurs, an error message will be displayed and communication will be terminated.

Operation on IT-2000

FLINK.EXE of MS-DOS version

- Start up MS-DOS.
- Start up FLINK with the receive mode option.

```
FLINK  /R  C:＼FILE  D:＼
```

This transfers C:＼FILE from the PC to D:＼ on the IT-2000.

FLINK.DLL of Windows 3.1 version

- Start up Windows3.1.
- Start up FLINK with the receive mode option.

```
DoFLINK ( argc, argv )
argc  = 4;
argv[ ]= { "fl" , "/r", "C:＼FILE", "D:＼yyy" }
```

This transfers C:＼FILE from the PC to D:＼yyy on the IT-2000.

If the preparation has been completed on the PC side, the progress bar will be displayed and file downloading will begin. If a communication anomaly occurs, an error message will be displayed and communication will be terminated.

4. Error Codes and Error Messages

Any termination codes and error information generated by the PC will be recorded in the error log file on the PC.
This error log file will be created according to the file name specified by the DEVICE.INI file (configuration file), and each new log entry will be appended to the file.
This error log file cannot be automatically deleted. Therefore, it is recommended to check the contents when required and delete the file.
If an error occurs on the PC side, the corresponding error message will appear on the PC's display. Since error messages are displayed for each I/O Box, a maximum of eight error messages can be displayed at one time. If an error occurs on the IT-2000 side, the corresponding error message will appear on the LCD of the IT-2000.

Session No.	Date	Time	Error Code		Error Message
			Detail	Category	
0	6- 9-1997	17-44-46	0	1	Undefined function code
0	6- 9-1997	18- 1-24	0	5	Communication error
0	8- 9-1997	11-53-29	4	5	Command timeout error

Table 4.1 Example error log file

For information about the error codes and error messages and their remedies, refer to Table 4.2 "Error Codes and Error Messages".
When confirming the contents of the error log file, use a commercial editor. No dedicated editor is supplied by Casio.

	Error Code		Error Message	Description	Remedy
	Categ.	Detai			
Normal	0x00	0x00	NormalEnding	Normal end.	-
	0xDC	0x00	ADriveFormatNotice	Format notification of drive A	-
	0xF5	0x00	ZDriveFormatNotice	Format notification of drive Z	-
	0xF8	0x00	BreakKeyInterruptEndingNotice	Notification of abortion by user.	-
Error	0x01	0x00	UndefineFunctionCode	Protocol error (function code)	See note 1.
	0x01	0x01	UndefineSubFunctionCode	Protocol error (sub-function code)	See note 1.
	0x01	0x02	NotExecuteCommand	Command cannot be executed.	See note 1.
	0x01	0x03	CheckSumError	Check-sum error	See note 1.
	0x01	0x04	CommandSequenceError	Command sequence error.	See note 1.
	0x01	0x05	SequenceNumberError	Sequence number error.	See note 1.
	0x01	0x06	OtherProtocolError	Protocol is illegal.	See note 1.
	0x01	0x07	ParameterError	Parameter error.	Check if the operation is correct.
	0x01	0x08	TimeoutError	Timeout error.	See note 1.
	0x01	0x10	DataLengthError	Protocol error (DATA LEN).	See note 1.
	0x01	0x12	ProtocolVersionDifferenceError	Protocol version does not match.	Use the latest version of Upload/Download Utility.
	0x01	0x13	MemoryAllocationError	Memory cannot be allocated.	Close other applications first.
	0x01	0x15	FileSizeError	Protocol error (file size).	See note 1.
	0x01	0x15	DateError	Protocol error (date).	See note 1.
	0x01	0x16	TimeError	Protocol error (time).	See note 1.
	0x01	0x17	FileAttributeError	Protocol error (attribution)	See note 1.
	0x01	0x18	OverwriteOptionError	Protocol error (Forced over write).	See note 1.
	0x01	0x19	EOFFlagError	Protocol error (EOF).	See note 1.
	0x02	0x02	FileNotFound	File cannot be found.	See note 2.
	0x02	0x03	PathNotFound	Path cannot be found.	See note 2.
	0x02	0x0B	InvalidFormat	Invalid formatting.	See note 2.
	0x02	0x0F	InvalidDiskDrive	Invalid disk.	See note 2.
	0x02	0x10	DeleteRequestisCurrentDirectory	Delete request is specified to current directory.	See note 2.
	0x02	0x11	NotSameDisk	Disk is not the same.	See note 2.
	0x02	0x12	FileNothing	File cannot be found.	See note 2.
	0x03	0x13	WriteProtectError	Write protect error.	See note 2.
	0x03	0x14	UnknownUnit	Undefined unit.	See note 2.
	0x03	0x15	DriveNotReady	Drive is not ready.	See note 2.
	0x03	0x17	DataError	Data error.	See note 2.
	0x03	0x19	SeekError	Seek error.	See note 2.
	0x03	0x1A	UnknownDiskFormat	Disk is not formatted.	See note 2.
	0x03	0x1B	SectorNotFound	Sector cannot be found.	See note 2.
	0x03	0x1D	WriteError	Write error.	See note 2.
	0x03	0x1E	ReadError	Read error.	See note 2.
	0x03	0x20	FileShareError	Specified file is already opened.	See note 2.
	0x03	0x21	FileLockError	File lock error.	See note 2.
	0x03	0x22	InvalidDiskChanged	Invalid disk exchange.	See note 2.
	0x03	0x23	FCBFull	FCB is full.	See note 2.
	0x03	0x53	FatalError	Fatal error.	See note 2.

	Error Code		Error Message	Description	Remedy
	categ	Detai			
Error	0x04	0x00	ReadOnlyFileAccessError	Write is specified to read-only-file.	Change the file attribution for write.
	0x05	0x00	CommunicationError	Communication error.	See note 1.
	0x05	0x03	SpawnError	Spawn error.	See note 1.
	0x05	0x04	CommandTimoutError	Command timeout error.	See note 1.
	0x05	0x05	ErrorOpeningErrorLogFile	Fail to open log file.	Check if the path name of log file is correct.
	0x05	0x06	OptionError	Option error.	Check if the selection of operation is correct.
	0x05	0x07	StartupError	Startup error.	Check if other application is using the COM port.
	0x05	0x08	OpenError	Open error.	See note 1.
	0x05	0x09	ListenError	Listen error.	See note 1.
	0x05	0x0A	AcceptError	Accept error.	See note 1.
	0x05	0x0B	NotEnoughMemoryToExecuteProcess	Memory is not enough.	Close other applications first.
	0x05	0x0C	ArgumentListTooLargeForTheProcess	Process is too long.	See note 1.
	0x05	0x0D	InvalidModeForTheProcess	Child-process ends illegally.	Check the operation method.
	0x05	0x0E	ProcessTerminatedNormally	Child-process ends normally.	Normal end.
	0x05	0x0F	NoiseError	Communication noise error.	See note 1.

Table 4.2 Error codes and error messages

Note:

1. First make sure the connection of each option is complete and each component is powered properly. Next, restart the system and execute the process again. If the same error occurs again, reduce the baud rate before retrying. If normal operation cannot be achieved even after making the above adjustments, contact your nearest support/technical center.
2. The file could not be properly accessed. Check if the file can be properly accessed or if the disk is full.

5. Q and A

Common to Satellite and Master I/O Boxes

Q1

It seems that it takes a rather long time for communication to start, doesn't it?

A1

Communication between the IT-2000 and Satellite/Master I/O Box is performed according to IrDA protocol. Generally, the IrDA protocol requires 2 to 3 seconds until communication between the PC and IT-2000 is established. This period of time is required for each IT-2000 terminal.
It may take more than 10 seconds for communication to start if multiple Satellite and Master I/O Boxes are connected under daisy-chain.

Q2

Which IrDA standard is used for communication between the IT-2000 and Satellite/Master I/O Box ?

A2

IrDA 1.0 is used for communication between the Satellite I/O Box and IT-2000, and IrDA 1.1 is used for communication between the Master I/O Box and IT-2000.

Q3

If multiple Satellite I/O Boxes and Master I/O Boxes are to be chain-connected, is there an order in which they must be connected?

A3

They do not have to be connected in any particular order, since, with the IrDA protocol, the next terminal to be connected is randomly selected each time communication has been completed up to the current terminal.

Satellite I/O Box

Q1

What happens if the power to a Satellite I/O Box connected in the middle of the daisy-chain is turned OFF ?

A1

Communication can only be performed between the PC and the Satellite I/O Boxes, which are located in the nearer positions to the PC delimited by the Satellite I/O Box having been powered off.

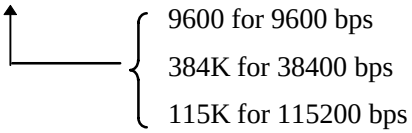
Q2

If the Windows3.1 version of FLINK is used, the baud rate setup cannot be modified by changing the DIP switch setting for the RS-232C communication speed on the Satellite I/O Box. Why?

A2

To modify the RS-232C communication speed with the Windows3.1 version of FLINK, it must be started up with the following option. Otherwise, the default value of 9600 bps is automatically used.

Option: `/L {baud rate parameter,2,,,,,,, }`



The communication speed can be determined according to the DIP switch setting of the Satellite I/O Box only if the MS-DOS version of FLINK is used.

Q3

If an attempt is made to execute the Upload/Download Utility, a startup error appeared. Why?

A3

This startup error occurs if the COM port is being used by another application.
In addition, if an application that uses the COM port is executed from the DOS window, the COM port is not accessible from other applications until the DOS window has been closed.

Q4

If multiple Satellite I/O Boxes are connected under daisy-chain, can each IT-2000 terminal independently use either the MS-DOS version of FLINK or the Windows3.1 version of FLINK ?

A4

This is not permitted. All IT-2000 terminals must use the same version.

Master I/O Box

Q1

If the Master I/O Box is connected, the SCSI check box in LMWIN cannot be selected. Why?

A1

First turn ON the power to the Master I/O Box, then turn ON the power to the PC. If this order is reversed, the I/O Box cannot be recognized by the system. Or, SCSI IDs may be duplicated. Check this.

Q2

What is the maximum baud rate if the Satellite I/O Boxes are connected under daisy-chain so they follow each Master I/O Box ?

A2

In this case the physical Master I/O Box-to-Satellite I/O Box speed is 115200 bps max.

Q3

Can I update the version of Master I/O Box firmware ?

A3

Yes, by using the dedicated download tool and a SCSI cable. Your nearest support/technical center will inform you if it is necessary.

Q4

What happens if the power to a middle Master I/O Box which is connected to the PC is turned OFF ?

A4

The Master I/O Box that is turned OFF and all Satellite I/O Boxes that are connected to that Master I/O Box are communication-disabled. Communication with Master I/O Boxes, other than with that which is turned OFF, is permitted. To make the Master I/O Box available again, turn ON that Master I/O Box first, then restart the PC.

Q5

If an attempt was made to execute the Upload/Download Utility, a startup error appeared. Why?

A5

A startup error occurs if the SCSI cable is not properly plugged in or if the power to all the Master I/O Boxes is not on.

Q6

If multiple Master I/O Boxes are connected, can each IT-2000 terminal independently use either the MS-DOS version of FLINK or the Windows3.1 version of FLINK ?

A6

This is not permitted. A timeout error will occur because of a timing lag between the MS-DOS version of FLINK and the Windows3.1 version of FLINK.

6. Reference Manuals

Besides this IT-2000 I/O Box Installation Manual, the following manuals are available for the IT-2000 system as application program development manual.

- IT-2000 Upload/Download Utility Manual
- IT-2000 Technical Reference Manual
- IT-2000 Hardware Manual

7. List of SCSI Boards and SCSI Cables

The listed SCSI Boards and Cables below have been assessed for the operability with the IT-2000. Thus, they are recommended for use with the IT-2000.

Manufacturer	Model
SCSI Board	
Adaptec	AHA1540CP
Adaptec	AHA2940AU
Adaptec	AHA1510B
Adaptec	AHA1542CF
SCSI Cable	
Casio	SB-751HF
Casio	SB-752HH
Casio	SB-753HP

Table 7.1 SCSI Boards and SCSI Cables

Appendix Installation Method of Upload/Download Utility

Installation

The Upload/Download Utility software consists of the following software components:

File name	Remark
LMWIN32.EXE	Execution module of the Upload/Download Utility (GUI mode)
driver32.dll	RS-232C driver
hfc32.dll	Command analysis driver
Iman32.dll	Connection monitor driver
scsidrv.dll	SCSI connection driver
tcpip.dll	Spare file for TCP IP connection
LMWIN.INI	Execution initial conditions setup file
DEVICE.INI	Configuration file
Other	Other files/Help file required for the Upload/Download Utility

The above software components are supplied as a complete package. All files and libraries necessary for installation can be generated from the " Setup.exe " program.

Syntax of the Installer Command

Start up " Setup.exe " from the setup directory in the supplied FD.

>**setup**