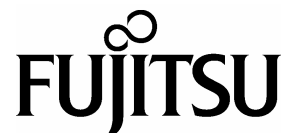# FUJITSU TWAIN 32 Scanner Driver

Scanner Utility for
Microsoft® Windows®
Version 9.10

User's Guide

For Use with Microsoft® Windows® 98, Windows® Me, Windows® 2000 and Windows® XP

FUJITSU

Introduction

Thank you for purchasing the "Scanner Utility for Microsoft® Windows® V9.10".

This software contains a TWAIN-compliant image scanner driver (simply called "driver" in this guide) and utilities.

This guide provides a description summary of the driver, as well as a description of the installation method and procedures for appropriate use. Please read this guide before starting to use the software.

In addition, read the README.TXT file on the CD-ROM for the latest information not included in this manual.

In this guide, product names are abbreviated as follows:

- "Microsoft® Windows® 95 operating system": "Windows® 95"

- "Microsoft® Windows NT® Workstation operating system Version 4.0" and "Microsoft® Windows NT® Server operating system Version 4.0": "Windows NT® 4.0"

- "Microsoft® Windows®98 operating system": "Windows®98"

- "Microsoft® Windows® 2000 Professional ": "Windows® 2000"

- "Microsoft® Windows® Millennium Edition": "Windows® Me"

- "Microsoft® Windows® XP": "Windows® XP"

When "Windows® 95" "Windows® 98" "Windows NT® 4.0" "Windows® Me" "Windows® 2000" and "Windows® XP" are referred to collectively, they are simply referred to as "Windows®". Unless otherwise indicated, explanations refer to "Windows® 95," "Windows® 98," "Windows NT® 4.0," "Windows® Me", "Windows® 2000" and "Windows® XP" collectively.

[High Risk Activity]
  The Customer acknowledges and agrees that the Product is designed, developed and manufactured as contemplated for general use, including without limitation, general office use, personal use, household use, and ordinary industrial use, but is not designed, developed and manufactured as contemplated for use accompanying fatal risks or dangers that, unless extremely high safety is secured, could lead directly to death, personal injury, severe physical damage or other loss (hereinafter "High Safety Required Use"), including without limitation, nuclear reaction control in nuclear facility, aircraft flight control, air traffic control, mass transport control, medical life support system, missile launch control in weapon system. The Customer, shall not use the Product without securing the sufficient safety required for the High Safety Required Use. In addition, PFU shall not be liable against the Customer and/or any third party for any claims or damages arising in connection with the High Safety Required Use of the Product.

Trademarks

MS-DOS, Microsoft, Windows, and Windows NT are registered trademarks of Microsoft Corporation.

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Organization

This manual explains how to install and use this driver, and how to use the TWAIN scanning utility.

- Installation

This section explains the procedure for installing the environments in which this driver may operate.

- Using the Driver

This section explains how to use the driver.

- Using the Utilities

Use of the following utilities is explained:

- – Using the Gamma Pattern Editor

- Troubleshooting

This section explains the possible causes of error messages and operation errors and the corresponding recommended actions.

- Appendix

The appendix contains the specifications of image scanners.

Contents

1. Outline

1.1 Characteristics of this Driver

- This driver complies with TWAIN regulations V1.9 (the latest version as of March 2002), which are global standards for image scanners. The driver can be used in all TWAIN-compliant applications.

- This driver also supports an image scanner that has the "double-sided scan" function. If the application supports continuous scan, a double-sided document can be scanned.

1.2 Operating Environment

This driver can be used in the following systems:

[SCSI connection]

- An IBM PC/AT compatible machine (recommended: Intel Pentium 100MHz or higher) on which one of the following operating systems are installed

  - Microsoft® Windows® Millennium Edition

  - Microsoft® Windows® 98

  - Microsoft® Windows® 2000

  - Microsoft® Windows® XP

- Adaptec® SCSI adapter or Fujitsu FMV SCSI adapter

  - In some cases, the driver may not operate with the above systems. Please check in advance with your place of purchase.

  - Notes are provided on the accepted SCSI adapters in README.TXT, which is included in the installation media. Please read these notes before use.

- This driver has the following hardware requirements:

  - RAM: 32 MB or more (a minimum of 64 MB is recommended)

  - Available hard disk space: 10 MB or more (excluding the area for storing images)

  - CD-ROM drive (required for installation)

- Mouse (recommended)

[USB connection]

- An IBM PC/AT compatible machine (recommended: Intel Pentium 100MHz or higher) on which one of the following operating systems are installed

  - Microsoft® Windows® Millennium Edition

  - Microsoft® Windows® 98

  - Microsoft® Windows® 2000

  - Microsoft® Windows® XP

- USB port

- RAM: 32 MB or more (a minimum of 64 MB is recommended)

- Available hard disk space: 10 MB or more (excluding the area for storing images)
- CD-ROM drive (required for installation)
- Mouse (recommended)

1.3 Explanatory Notes

The descriptions in this manual are prepared based on the following rules:

◊ Menus and buttons

The menus and buttons used in the program description are enclosed in [].

Example: [File] menu
[OK] button

◊ Keyboard

The keytop indications comply with the standard keyboard of the Fujitsu FMV series.

Major differences between the Fujitsu FMV keyboard and other keyboards are shown below.

FMV keytops	Other possible keytops
Alt	Previous screen, GRPH
Ctrl	CTRL
Esc	ESC
Enter	Return, ⏎
Shift	SHIFT
Back space	Backspace, BS
F1	PF1, f-1

◊ Terms related to mouse operation

Terms related to major mouse operations are explained below.

Click:	To press and release the mouse button
Double click:	To quickly press the mouse button twice
Drag:	Move the mouse while keeping the mouse button pressed

◊ Notes on operation procedures

If some menus need to be operated in a certain order, the procedural order is described as follows:

[A] - [B] - [C]

In accordance with this description, operation [A] is executed first, followed by [B] and [C] in that order.

◊ Figures

Figures and screen operations in this guide refer to Microsoft® Windows® 2000. They are also followed when using other operating systems.

Note that the expressions may vary with the type of scanner connected.

1.4 Explanation of terms

◊ IPC option board

IPC-2/2D in this guide refers to the IPC-2 and IPC-2D image processing circuit.

IPC-3/3D in this guide refers to the IPC-3 and IPC-3D option board.

IPC-4D in this guide refers to the IPC-4D option board.

2. TWAIN

2.1 TWAIN

TWAIN is the specification that defines the standard software protocol and application programming interface (API) for data exchange between a software application program and an image input device such as the image scanner.

[TWAIN development background]

In the past, development of a new scanner inevitably required the development of a compatible driver and a sample (demonstration) program exclusively designed for the new scanner. As the scanner is upgraded, the driver may need to be upgraded as well to maintain its compatibility with the upgraded scanner. Therefore, the use is most likely to be restricted to one specific scanner model to avoid the complication of learning new operation methods and replacing the peripheral driver, etc., involved in scanner replacement.

In view of the incompatibility among different scanners and peripheral equipment and the accompanying inconvenience, there was a demand for standardization of the related hardware and software, and TWAIN was established as a result.

The user may now choose among all the input devices and software (driver or application programs) conforming to the TWAIN standard, and configure a most suitable system for himself, without being restricted to the products of a certain series or a certain manufacturer.

2.2 TWAIN Application

TWAIN mainly applies to the following three software components:

① Application software

② Source manager

③ Source

The components are related to each other as shown below.

```
┌─────────────────────────────────────────────┐
│  ┌───────────────────────────────────────┐  │
│  │        ①Application software          │  │
│  │    (photo retouching software, etc)   │  │
│  └───────────────────────────────────────┘  │
│              │        ↑                      │
│  ┌───────────────────────────────────────┐  │
│  │          ②Source manager              │  │
│  │    (TWAIN.DLL/TWAIN_32.DLL, etc)      │  │
│  └───────────────────────────────────────┘  │
│              │        ↑                      │
│  ┌───────────────────────────────────────┐  │
│  │            ③Source                     │  │
│  │ (Image scanner control of the  driver, etc) │
│  └───────────────────────────────────────┘  │
│              │        ↑                      │
│           Image scanner, etc.                │
└─────────────────────────────────────────────┘
```
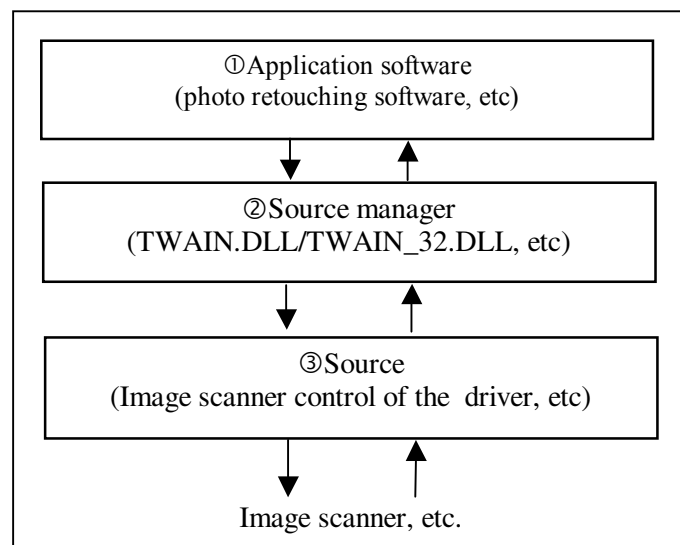
Figure TWAIN Application

3. Installation

3.1 Preparation

1. Make sure that the operating system is installed correctly.

2. In case of the SCSI connection, confirm that the SCSI adapter is connected to the computer mainframe and operating correctly.

   In case of the USB connection, confirm that the USB port is installed in the computer.

3. Confirm that the hard disk that is the installation destination has enough free space.

4. Turn off the personal computer.

Note: This driver must be installed by taking two steps in the following sequence.

      1. Installation of Mini Driver (Section 3.2)
      2. Installation of Data Source (Section 3.3)

Be sure to install in this sequence. If either of these two installations is not completed, the scanner does not operate correctly.

There are two methods for installation of the Mini driver; "Installing for the first time" and "Updating the driver".

When connecting the scanner to the PC for the first time.

Follow the procedure given in the section 3.2.1 to 4 and perform "Installing for the first time"

When updating the version of the scanner driver in use.

Follow the procedure given in the section 3.2.5 to 8 and perform "Updating the driver"

<u>Other instructions</u>

<For Windows®98>
Once a scanner is installed to <u>Windows®98</u>, the information is remain in [Control Panel]-[Scanner and Camera] regardless of with or without connection. When unconnected scanner is chosen by mistake, it may cause error. (This error dose not happen when the scanner is selected correctly.)

To prevent errors, please delete disused scanner information from [Control Panel]-[Scanner and Camera] in following cases, before install the driver.

(1) Options, such as IPC board or JPEG board, are added to the scanner which is already connected to PC.

    → Please delete the previous scanner from [Control Panel]-[Scanner and Camera] before installing the driver.

(2) Scanner replacement

    → Please delete the previous scanner from "Control Panel" and "Scanner and Camera" before installing the driver.

<Using fi-4110C (M3091DC), fi-4210C (M3092DC) with Windows®XP>

The device driver for fi-4110C (M3091DC) and fi-4210C (M3092DC) that is included in this CD or can be downloaded from our web site cannot be installed on Windows®XP as a bundled WIA-compliant device driver is automatically installed.

If you wish to install the device driver in this CD on Windows®XP, you need to delete the WIA-compliant device driver mentioned above.

Note 1: The following procedure is not necessary when you use any other OS than Windows®XP.

Note 2: You need to log on with a user name having an administrator authorization.

How to delete inf file:
1. Connect the scanner and activate Windows®XP.
2. Windows®XP automatically recognizes the scanner and installs the WIA-compliant device driver.
3. Delete "Fujitsu M3091DCd" or "Fujitsu M3092DCd" listed in [imaging device] of [device manager].
4. Insert "Scanner Utility for Microsoft® Windows®" CD-ROM into the CD drive. Double click on "**FtDelInf.exe**" file in [\Driver2\infTool] folder to execute.

FtDelInf.exe

5. The following message appears. Select [Yes].
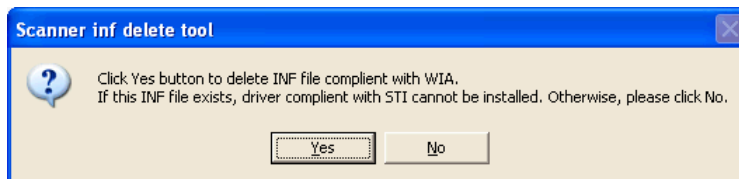
6. The following message appears indicating that the procedure has completed. Select [OK] to terminate the procedure.
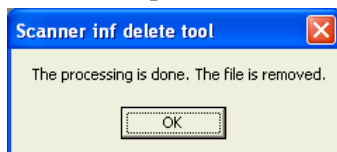
7. Restart Windows®XP.
8. Now you can install the fi-4110C (M3091DC) or fi-4210C (M3092DC) scanner driver by following the procedure described in section 3.2 "Installation".

Once you deleted the inf file, the WIA-compliant device driver cannot be used until you restore the inf file by following the procedure below.

How to restore inf file:
1. Connect the scanner and activate Windows®XP.
2. Delete "Fujitsu M3091DCd", "Fujitsu M3092DCd", "M3091DCd" or "M3092DCd" listed in [imaging devices] or [Other devices] of [device manager].

3. Insert "Scanner Utility for Microsoft® Windows®" CD-ROM into the CD drive. Double click on "**FtRstInf.exe**" file in [\Driver2\infTool] folder to execute.
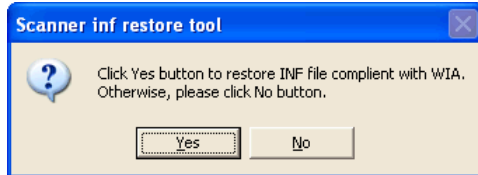
FtRstInf.exe

4. The following message appears. Select [Yes].

Scanner inf restore tool

Click Yes button to restore INF file complient with WIA.
Otherwise, please click No button.

Yes   No

5. The following message indicating that the procedure has completed appears. Select [OK] to terminate the procedure.

Scanner inf restore tool

The processing is done. The file is restored.

OK
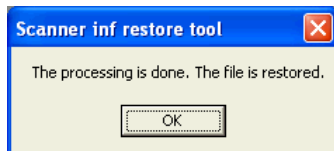
6. Restart Windows®XP. It automatically recognizes the scanner and installs the WIA-compliant device driver.

<For Windows®2000>

For some models, a driver included as part of the operating system may be automatically installed during the power-on sequence. Consequently, the newest driver for the system can not be installed. If this occurs, update the driver, referring to Chapter 3.2.7 "Updating the driver."

Type of scanner:
fi-4320S(M3093GX), fi-4320(M3093DG), fi-4620S(M3096GX), M3097G, M3097DG, M3099G/GH

3.2 Installing the Mini Driver

3.2.1 Installing for the first time (For Windows®98)

1. Connect the scanner to be used to the computer. Then, turn on the scanner. Lastly, turn on the personal computer.

   Note

   In case of the SCSI connection, be sure to turn on the power in this sequence. Otherwise, the scanner may not be detected. (In case of the USB connection, the scanner can be detected, if it is connected after activating the OS.)

   If multiple scanners are to be connected, connect and turn on scanners one at a time. Then, turn on the personal computer. Repeat the remainder of this installation procedure for each scanner.

2. Log in to Windows®.

3. If the scanner has been detected normally, the following dialog box appears. Click the [Next] button.

4. The following dialogue opens. Confirm that [Search for the best driver for your device (Recommended)] has been selected, and click the [Next] button.

5. Insert the setup disk titled "FUJITSU Scanner Utility for Microsoft® Windows®" into the disk drive. Here, the CD-ROM drive is temporarily labeled "D:". (If the current operating environment uses a different label, replace the drive label specifications below accordingly.) If automatic start is defined, the start screen of setup is displayed. To stop the setup operation, click the [Exit] button on this screen.

6. The following screen is displayed. Deselect the [Floppy disk drives] and [CD-ROM drive] check boxes and, instead, select the [Specify a location] check box. Then, click the [Browse…] button.

7. In the dialog box that is displayed, select the following directory destination on the CD-ROM, and click the [OK] button.

   D:\Driver2 (When the CD drive is setting in "D:")

8. Click the [Next] button, and confirm that the following screen is displayed. Click the [Next] button again.

In some cases, the message "Please insert the disk labeled 'Windows®98 CD-ROM', and then click OK." is displayed. If this [OK] button is clicked, the message "The file 'usbscan.sys' (or scsimap.sys) on the Windows®98 CD-ROM cannot be found." may be displayed. In this case, insert your Windows®98 CD-ROM into the CD-ROM drive, click [OK] button. A necessary file is installed.

9. When installation is completed, the following screen is displayed. Click the [Finish] button.

10. Restart the system by following the instructions on the screen.

11. Do the following to check whether the driver has been properly installed.

    <Device Manager>

    Right-click the [My Computer] icon and select the properties menu item, or double-click the [System] icon on the [Control] panel. Then, select the [Device Manager] tab folder in the system properties dialog box. The device to be used is displayed under imaging devices.

    As the model name, a number following the letter M may be displayed in case of connecting some scanner models. Refer to the Appendix and confirm that the displayed model is the device to be used.

    <Scanner and camera>
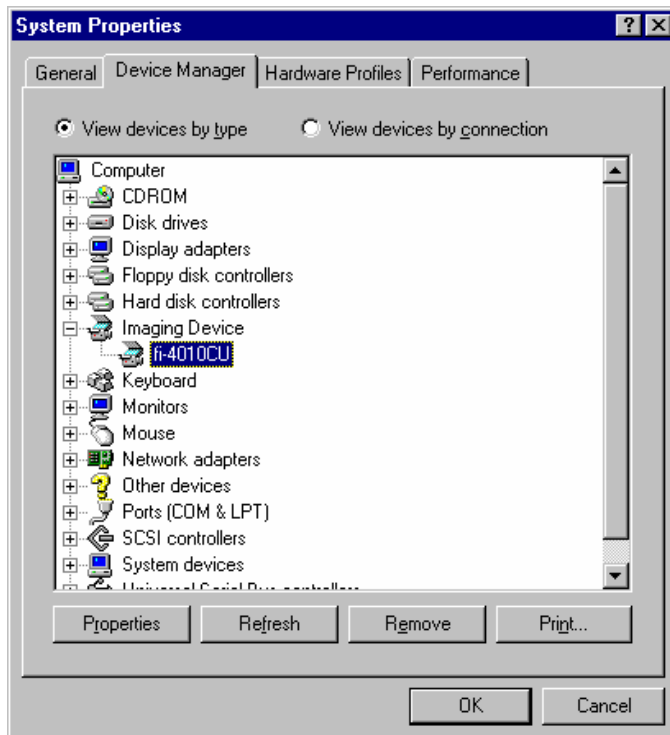
    The [Scanners and Cameras] icon is registered in the [Control] panel.

    The scanner driver to be used appears in the [Scanners and Cameras Properties] dialog box. To display the dialog box, double-click this icon.

    For information, see the section that explains the settings of the control panel.

12. Go to the section 3.3 "Installing TWAIN Data Source" and follow the procedure.

### 3.2.2 Installing for the first time (For Windows®Me)

1. Connect the scanner to be used to the computer. Then, turn on the scanner. Lastly, turn on the personal computer.

Note

> In case of the SCSI connection, be sure to turn on the power in this sequence. Otherwise, the scanner may not be detected. (In case of the USB connection, the scanner can be detected, if it is connected after activating the OS.)

> If multiple scanners are to be connected, connect and turn on scanners one at a time. Then, turn on the personal computer. Repeat the remainder of this installation procedure for each scanner.

2. Log in to Windows®.

3. If the scanner has been detected normally, the following dialog box appears.
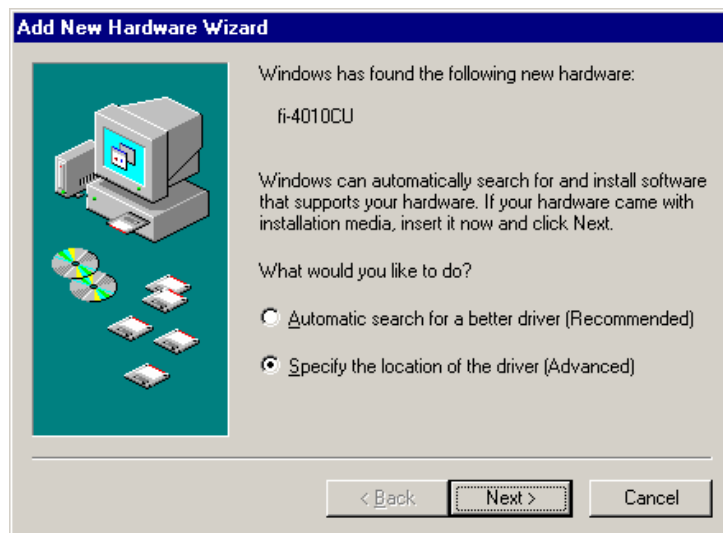
4. Confirm that [Specify the location of the driver (Advanced)] has been selected, and click the [Next] button.

5. Insert the setup disk titled "FUJITSU Scanner Utility for Microsoft® Windows®" into the disk drive. Here, the CD-ROM drive is temporarily labeled "D:". (If the current operating environment uses a different label, replace the drive label specifications below accordingly.)
If automatic start is defined, the start screen of setup is displayed. To stop the setup operation, click the [Exit] button on this screen.

6. The following screen is displayed. Select the [Search for the best driver for your device.] and, select the [Specify a location] check box. Then, click the [Browse…] button.
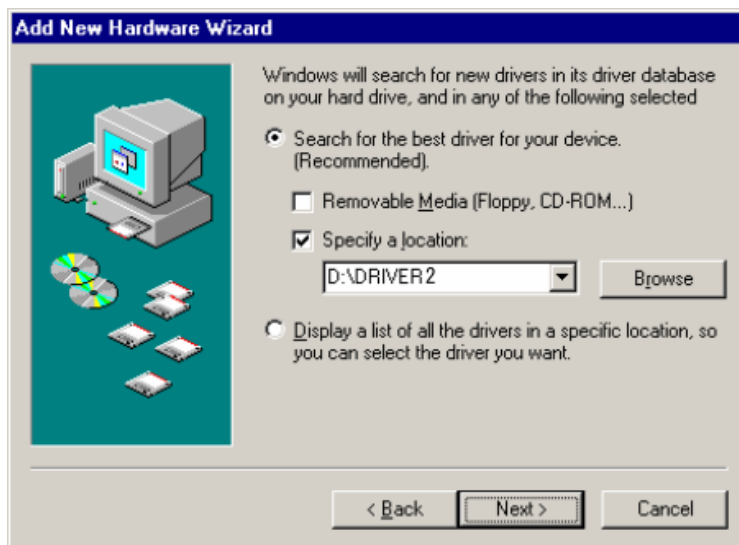
7. In the dialog box that is displayed, select the following directory destination on the CD-ROM, and click the [OK] button.

   D:\Driver2 (When the CD drive is setting in "D:")

8. Click the [Next] button, and confirm that the following screen is displayed. Click the [Next] button again.

9. When installation is completed, the following screen is displayed. Click the [Finish] button.

10. Restart the system by following the instructions on the screen.

11. Do the following to check whether the driver has been properly installed.

    <Device Manager>

    Right-click the [My Computer] icon and select the properties menu item, or double-click the [System] icon on the [Control] panel. Then, select the [Device Manager] tab folder in the system properties dialog box. The device to be used is displayed under imaging devices.

    As the model name, a number following the letter M is displayed in case of connecting some scanner models. Refer to the Appendix and confirm that the displayed model is the device to be used.

    <Scanner and camera>

    The [Scanners and Cameras] icon is registered in the [Control] panel.

    The scanner driver to be used appears in the [Scanners and Cameras Properties] dialog box. To display the dialog box, double-click this icon.

    For information, see the section that explains the settings of the control panel.

12. Go to the section 3.3 "Installing TWAIN Data Source" and follow the procedure.

3.2.3 Installing for the first time (For Windows®2000)

1. Connect the scanner to be used to the computer. Then, turn on the scanner. Lastly, turn on the personal computer.

Note

> In case of the SCSI connection, be sure to turn on the power in this sequence. Otherwise, the scanner may not be detected. (In case of the USB connection, the scanner can be detected, if it is connected after activating the OS.)

> If multiple scanners are to be connected, connect and turn on scanners one at a time. Then, turn on the personal computer. Repeat the remainder of this installation procedure for each scanner.

2. Log in to Windows®.

Note

> The user must log in with administrator authority.

> For information on logging in with the proper authority, contact the system administrator.

3. If the scanner has been detected normally, the following dialog box appears.

> For some models, the above dialog box may not be displayed because an appropriate driver has been automatically installed as part of the operating system. If this happens, update the driver. For more information, see Section 3.2.7, "Updating the driver."

4. Confirm that [Search for a suitable driver for my device (recommended)] has been selected, and click the [Next] button.

5. Insert the setup disk titled "FUJITSU Scanner Utility for Microsoft® Windows®" into the disk drive. Here, the CD-ROM drive is temporarily labeled "D:". (If the current operating environment uses a different label, replace the drive label specifications below accordingly.)

   If automatic start is defined, the start screen of setup is displayed. To stop the setup operation, click the [Exit] button on this screen.

6. The following screen is displayed. Deselect the [Floppy disk drives] and [CD-ROM drive] check boxes and, instead, select the [Specify a location] check box. Then, click the [Next] button.
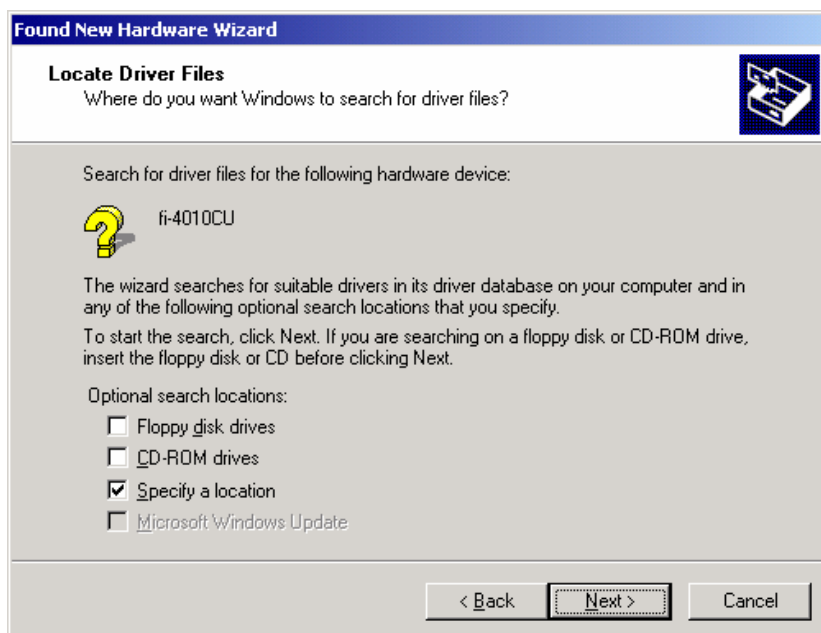
7. The following dialog box is displayed.
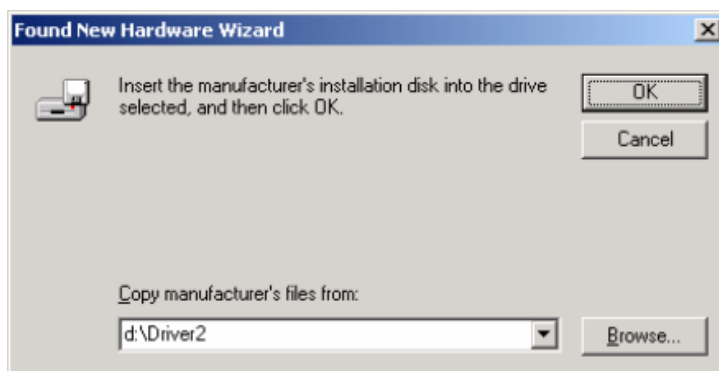
From the screen displayed by the [Browse] button, select the following directory destination on the CD-ROM, and click the [OK] button.

D:\Driver2 (When the CD drive is setting in "D:")

8. Click the [Next] button, and confirm that the following screen is displayed. Click the [Next] button again.
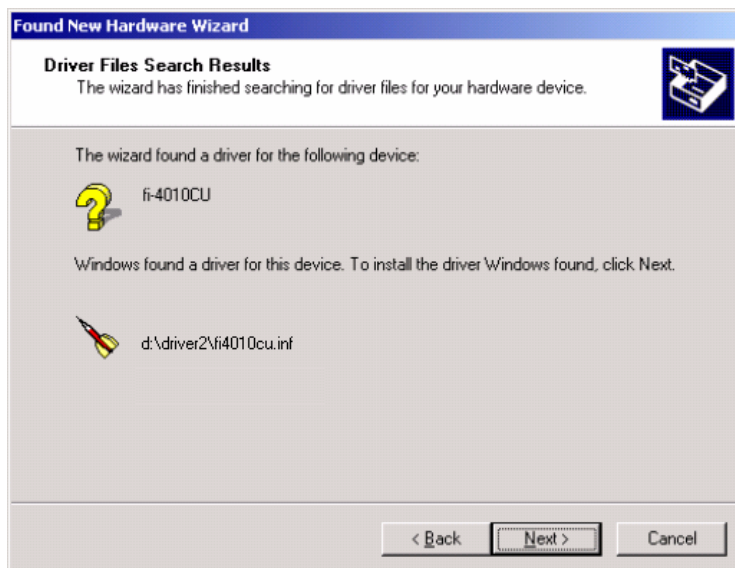
9. The following screen is displayed. Click the [Yes] button.
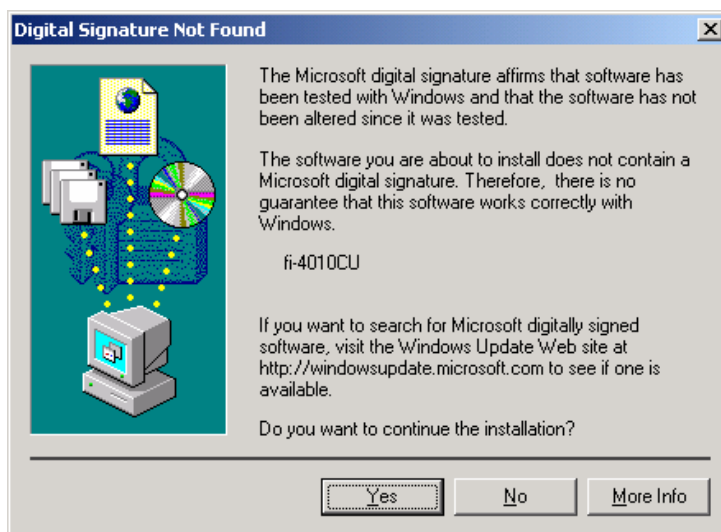
Note

Please ignore the message "there is no guarantee that this software works correctly with Windows." which appears on the screen and continue the installation, as PFU LIMITED have already confirmed that this software works correctly.

10. When the file has been copied and the installation is completed, the following screen is displayed.

   Click the [Finish] button.
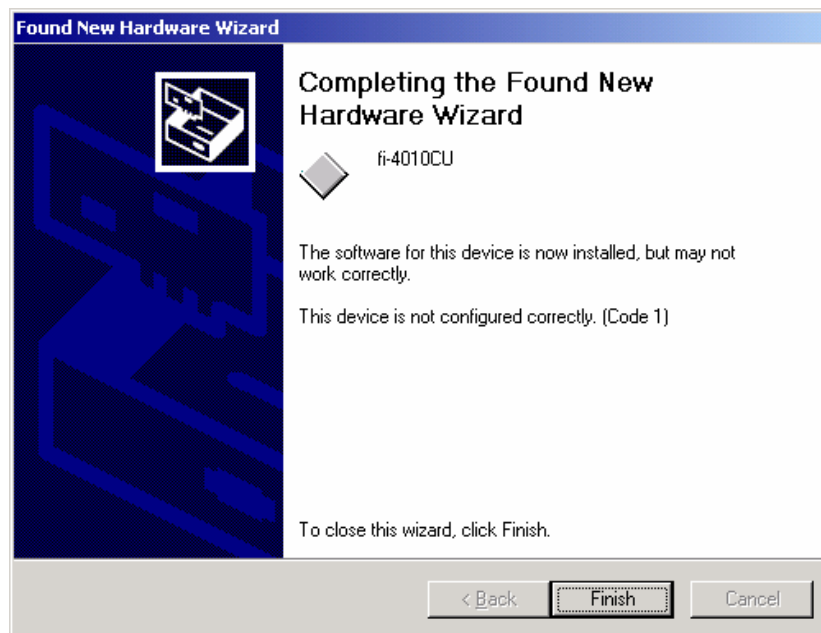
11. Restart the system by following the instructions on the screen.

12. Do the following to check whether the driver has been properly installed.

    <Device Manager>

    Right-click the [My Computer] icon and select the properties menu item, or double-click the [System] icon on the [Control] panel. Then, select the [Device Manager] tab folder in the system properties dialog box. The device to be used is displayed under imaging devices.

    As the model name, a number following the letter M is displayed, in case of connecting some scanner models. Refer to the Appendix and confirm that the displayed model is the device to be used.

    <Scanner and Camera>

    The [Scanners and Cameras] icon is registered in the [Control Panel].

    The scanner driver to be used appears in the [Scanners and Cameras Properties] dialog box. To display the dialog box, double-click this icon.

    For information, see the section that explains the settings of the control panel.

13. Go to the section 3.3 "Installing TWAIN Data Source" and follow the procedure.

3.2.4 Installing for the first time (For Windows®XP)

1. Connect the scanner to be used to the computer. Then, turn on the scanner. Lastly, turn on the personal computer.

Note

> In case of the SCSI connection, be sure to turn on the power in this sequence. Otherwise, the scanner may not be detected. (In case of the USB connection, the scanner can be detected, if it is connected after activating the OS.)

> If multiple scanners are to be connected, connect and turn on scanners one at a time. Then, turn on the personal computer. Repeat the remainder of this installation procedure for each scanner.

2. Log in to Windows®.

Note

> The user must log in with administrator authority.

> For information on logging in with the proper authority, contact the system administrator.

3. If the scanner has been detected normally, the following dialog box appears.

4. Confirm that [Install from a list or specific location (Advanced)] has been selected, and click the [Next] button.

5. The following screen is displayed. Insert the setup disk titled "FUJITSU Scanner Utility for Microsoft® Windows®" into the disk drive. Here, the CD-ROM drive is temporarily labeled "D:". (If the current operating environment uses a different label, replace the drive label specifications below accordingly.)

   If automatic start is defined, the start screen of setup is displayed. To stop the setup operation, click the [Exit] button on this screen.

   Found New Hardware Wizard

   Please choose your search and installation options.

   ⦿ Search for the best driver in these locations.

   Use the check boxes below to limit or expand the default search, which includes local paths and removable media. The best driver found will be installed.

   ☐ Search removable media (floppy, CD-ROM...)

   ☑ Include this location in the search:

   D:\Driver2 [v] [Browse]

   ○ Don't search. I will choose the driver to install.

   Choose this option to select the device driver from a list. Windows does not guarantee that the driver you choose will be the best match for your hardware.

   [< Back] [Next >] [Cancel]
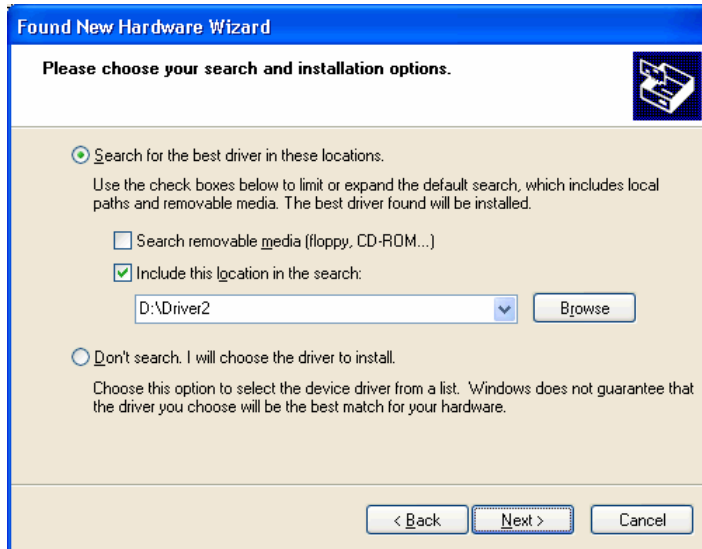
6. Select the [Include this location in the search] check box.

7. From the screen displayed by the [Browse] button, select the following directory destination on the CD-ROM, and click the [OK] button.

   D:\Driver2 (When the CD drive is setting in "D:")

8. Click the [Next] button, and the following screen is displayed. Click the [Continue Anyway] button.

Note

> Please ignore the message "Microsoft strongly recommends that you stop this installation now and..." which appears on the screen and continue the installation, as PFU LIMITED has already confirmed that this software works correctly.

9. When the file has been copied and the installation is completed, the following screen is displayed. Click the [Finish] button.
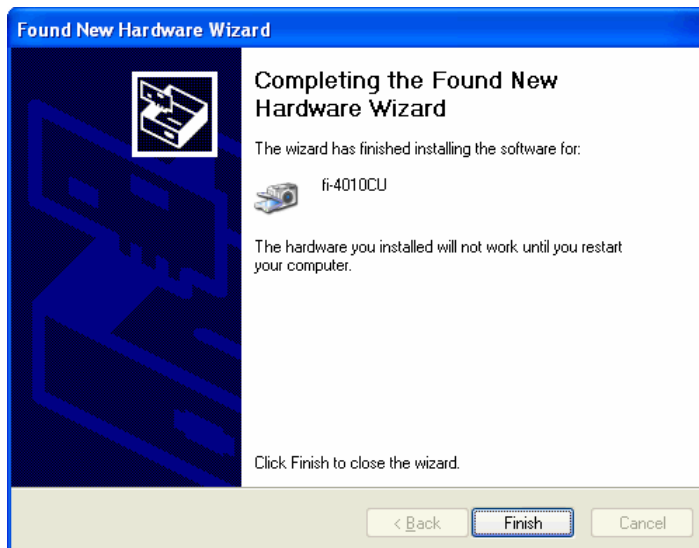
10. Restart the system by following the instructions on the screen.

11. Go to the section 3.3 "Installing TWAIN Data Source" and follow the procedure.

3.2.5 Updating the driver (for Windows®98)

If a driver of previous version has been installed, the latest driver for the system may not be installed by the procedure given in Section 3.2.1. If this occurs, update the driver by following the procedure below.

1. Connect the scanner to be used to the computer. Then, turn on the scanner. Lastly, turn on the personal computer.

Note

> In case of the SCSI connection, be sure to turn on the power in this sequence. Otherwise, the scanner may not be detected. (In case of the USB connection, the scanner can be detected, if it is connected after activating the OS.)
>
> If multiple scanners are to be connected, connect and turn on scanners one at a time. Then, turn on the personal computer. Repeat the remainder of this installation procedure for each scanner.

2. Log in to Windows®.

3. Right-click the [My Computer] icon and select the properties menu item, or double-click the [System] icon on the [Control] panel.

4. The [System Properties] dialog box is displayed. Click the [Device Manager] tab.

5. The following device manager window opens, and the device name is displayed under [Imaging devices]. (In some cases, it is displayed under [Other devices].)

6. Select the device name, right-click the device icon, and select the [Properties] menu item from the pop-up menu.

7. The [Properties] dialog box is displayed. Select the [Driver] tab folder, and then click the lower right [Update Driver] button.

8. The [Update Device Driver Wizard] dialog box is displayed. Click the [Next] button.

9. Select [Display a list of all the drivers in a specific location, so you can select the driver you want], and click the [Next] button.

10. Insert the setup disk titled "FUJITSU Scanner Utility for Microsoft® Windows®" into the disk drive. Here, the CD-ROM drive is temporarily labeled "D:" (If the current operating environment uses a different label, replace the drive label specifications below accordingly.)

   If automatic start is defined, the start screen of setup is displayed. To stop the setup operation, click the [Exit] button on this screen.

11. The following dialog box is displayed. Click the [Have Disk] button, and then click the [Browse (R)]...] button.

12. In the dialog box that is displayed, select the following directory destination on the CD-ROM, and click the [OK] button.

    D:\Driver2 (When the CD drive is setting in "D:")

13. A list of different models is displayed. Select the appropriate device name, and click the [Next] button.

    Select the same device name as the name selected in procedure 6.

14. The following dialog box is displayed. Click the [Next] button. Installation starts.

In some cases, the message "Please insert the disk labeled 'Windows®98 CD-ROM', and then click OK." is displayed. If this [OK] button is clicked, the message "The file 'usbscan.sys' (or scsimap.sys) on the Windows®98 CD-ROM cannot be found." may be displayed. In this case, insert your Windows®98 CD-ROM into the CD-ROM drive, click [OK] button. A necessary file is installed.

15. When the file has copied and installation is completed, the following dialog box is displayed. Click the [Finish] button.

16. Restart the system by following the instructions on the screen.

17. Go to section 3.3 "Installing TWAIN Data Source" and follow the procedure.

3.2.6 Updating the driver (for Windows®Me)

If a driver of previous version has been installed, the latest driver for the system may not be installed by the procedure given in Section 3.2.2. If this occurs, update the driver by following the procedure below.

1. Connect the scanner to be used to the computer. Then, turn on the scanner. Lastly, turn on the personal computer.

Note

> In case of the SCSI connection, be sure to turn on the power in this sequence. Otherwise, the scanner may not be detected. (In case of the USB connection, the scanner can be detected, if it is connected after activating the OS.)

> If multiple scanners are to be connected, connect and turn on scanners one at a time. Then, turn on the personal computer. Repeat the remainder of this installation procedure for each scanner.

2. Log in to Windows®.

3. Right-click the [My Computer] icon and select the properties menu item, or double-click the [System] icon on the [Control] panel.

4. The [System Properties] dialog box is displayed. Click the [Device Manager] tab.

5. The following device manager window opens, and the device name is displayed under [Imaging devices]. (In some cases, it is displayed under [Other devices].)

6. Select the device name, right-click the device icon, and select the [Properties] menu item from the pop-up menu.

7. The [Properties] dialog box is displayed. Select the [Driver] tab folder, and then click the lower right [Update Driver] button.

8. The [Update Device Driver Wizard] dialog box is displayed. Select [Specify the location of the driver (Advanced)] and click the [Next] button.

9. The following dialog box is displayed. Select [Display a list of all the drivers in a specific location, so you can select the driver you want], and click the [Next] button.

10. Insert the setup disk titled "FUJITSU Scanner Utility for Microsoft® Windows®" into the disk drive. Here, the CD-ROM drive is temporarily labeled "D:" (If the current operating environment uses a different label, replace the drive label specifications below accordingly.)

   If automatic start is defined, the start screen of setup is displayed. To stop the setup operation, click the [Exit] button on this screen.

11. The following dialog box is displayed. Click the [Have Disk] button, and then click the [Browse (R)]...] button.

12. In the dialog box that is displayed, select the following directory destination on the CD-ROM, and click the [OK] button.

   D:\Driver2 (When the CD drive is setting in "D:")

13. A list of different models is displayed. Select the appropriate device name, and click the [Next] button.

    Select the same device name as the name selected in procedure 6.

14. The following dialog box is displayed. Click the [Next] button. Installation starts.

15. When the file has copied and installation is completed, the following dialog box is displayed. Click the [Finish] button.

16. Restart the system by following the instructions on the screen.

17. Go to section 3.3 "Installing TWAIN Data Source" and follow the procedure.

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3.2.7 Updating the driver (for Windows®2000)

For some models, an appropriate driver included as part of the operating system may be automatically installed during the power-on sequence. Consequently, the newest driver for the system may not be installed by following the procedure given in Section 3.2.3. If this occurs, update the driver by following the procedure below.

1. Connect the scanner to be used to the computer. Then, turn on the scanner. Lastly, turn on the personal computer.

Note

> In case of the SCSI connection, be sure to turn on the power in this sequence. Otherwise, the scanner may not be detected. (In case of the USB connection, the scanner can be detected, if it is connected after activating the OS.)

> If multiple scanners are to be connected, connect and turn on scanners one at a time. Then, turn on the personal computer. Repeat the remainder of this installation procedure for each scanner.

2. Log in to Windows®.

Note

> The user must log in with administrator authority.

> For information on logging in with the proper authority, contact the system administrator.

3. Right-click the [My Computer] icon and select the properties menu item, or double-click the [System] icon on the [Control] panel.

4. The [System Properties] dialog box is displayed. Click the [Device Manager] button of the [Hardware] tab.

5. The following device manager window opens, and the device name is displayed under [Imaging devices].

6. Select the device name, right-click the device icon, and select the [Properties] menu item from the pop-up menu.

7. The [Properties] dialog box is displayed. Select the [Driver] tab folder, and then click the lower right [Update Driver] button.

8. The [Update Device Driver Wizard] dialog box is displayed. Click the [Next] button.

9. Select [Display a list of the known drivers for this device so that I can choose a specific driver], and click the [Next] button.

10. Insert the setup disk titled "FUJITSU Scanner Utility for Microsoft® Windows®" into the disk drive. Here, the CD-ROM drive is temporarily labeled "D:". (If the current operating environment uses a different label, replace the drive label specifications below accordingly.)

    If automatic start is defined, the start screen of setup is displayed. To stop the setup operation, click the [Exit] button on this screen.

11. The following dialog box is displayed. Click the [Have Disk] button, and then click the [Browse (R)]...] button.

12. In the dialog box that is displayed, select the following directory destination on the CD-ROM, and click the [OK] button.

    D:\Driver2 (When the CD drive is setting in "D:")

13. A list of different models is displayed. Select the appropriate device name, and click the [Next] button.

  Select the same device name as the name selected in procedure 6.

14. The following dialog box is displayed. Click the [Next] button. Installation starts.

15. The following screen is displayed. Click the [Yes] button.
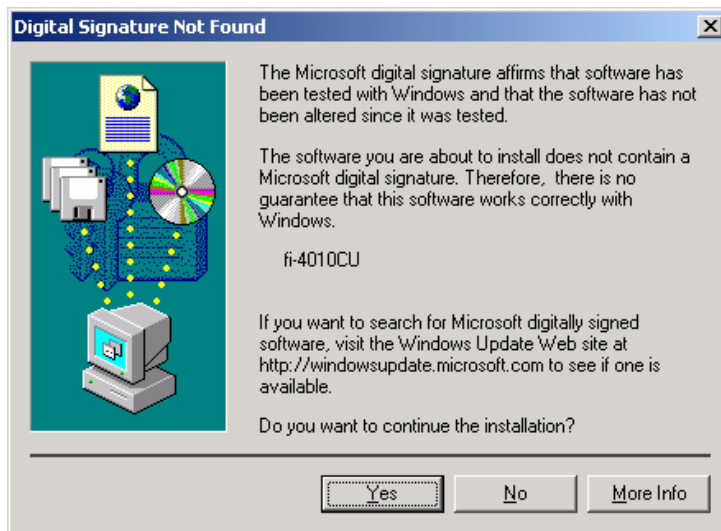
Note

Please ignore the message "there is no guarantee that this software works correctly with Windows." which appears on the screen and continue the installation, as PFU LIMITED have already confirmed that this software works correctly.

16. When the file has copied and installation is completed, the following dialog box is displayed. Click the [Finish] button.

17. Restart the system by following the instructions on the screen.

18. Go to the section 3.3 "Installing TWAIN Data Source" and follow the procedure.

3.2.8 Updating the driver (for Windows®XP)

If a driver of previous version has been installed, the latest driver for the system may not be installed by following the procedure given in Section 3.2.4. If this occurs, update the driver by following the procedure below.

1. Connect the scanner to be used to the computer. Then, turn on the scanner. Lastly, turn on the personal computer.

Note

> In case of the SCSI connection, be sure to turn on the power in this sequence. Otherwise, the scanner may not be detected. (In case of the USB connection, the scanner can be detected, if it is connected after activating the OS.)

> If multiple scanners are to be connected, connect and turn on scanners one at a time. Then, turn on the personal computer. Repeat the remainder of this installation procedure for each scanner.

2. Log in to Windows®.

Note

> The user must log in with administrator authority.

> For information on logging in with the proper authority, contact the system administrator.

3. Right-click the [My Computer] icon and select the properties menu item, or double-click the [System] icon on the [Control] panel.

4. The [System Properties] dialog box is displayed. Click the [Device Manager] button of the [Hardware] tab.

5. The following device manager window opens, and the device name is displayed under [Imaging devices].

6. Select the device name, right-click the device icon, and select the [Properties] menu item from the pop-up menu.

7. The [Properties] dialog box is displayed. Select the [Driver] tab folder, and then click the [Update Driver] button.

8. The [Update Device Driver Wizard] dialog box is displayed. Select [Install from a list or specific location (Advanced)], and click the [Next] button.

9. Insert the setup disk titled "FUJITSU Scanner Utility for Microsoft® Windows®" into the disk drive. Here, the CD-ROM drive is temporarily labeled "D:". (If the current operating environment uses a different label, replace the drive label specifications below accordingly.)

    If automatic start is defined, the start screen of setup is displayed. To stop the setup operation, click the [Exit] button on this screen.

10. The following dialog box is displayed. Select the [Don't search. I will choose the driver to install.], and then click the [Next] button.
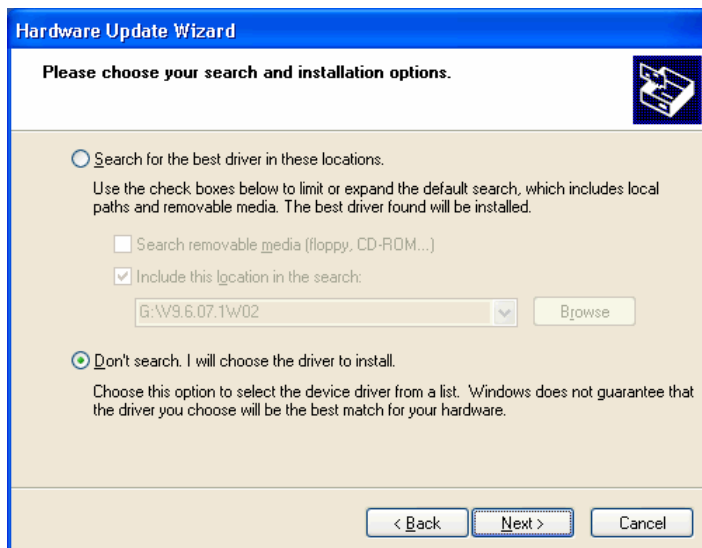
11. The following dialog box is displayed. Click the [Have Disk...], and then click the [Browse...] button.
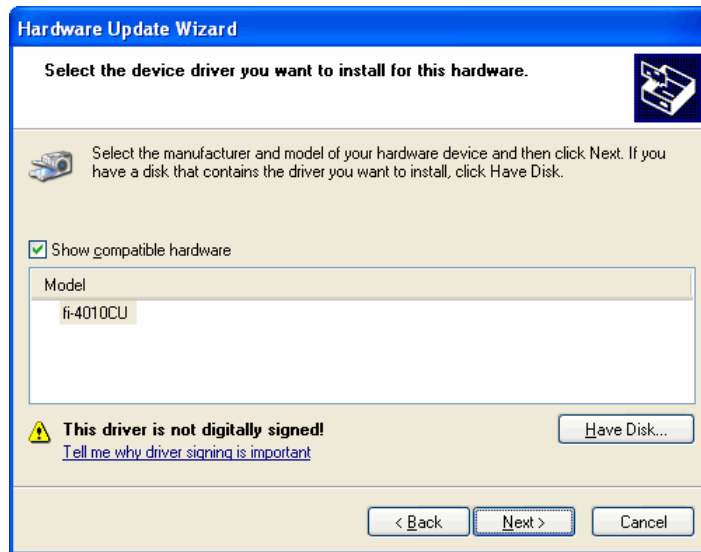
12. In the dialog box that is displayed, select the following directory destination on the CD-ROM, and click the [OK] button.

D:\Driver2 (When the CD drive is setting in "D:")

13. A list of different models is displayed. Select the appropriate device name, and click the [Next] button.

Select the same device name as the name selected in procedure 6.

14. The following dialog box is displayed. Click the [Continue Anyway] button. Installation starts.
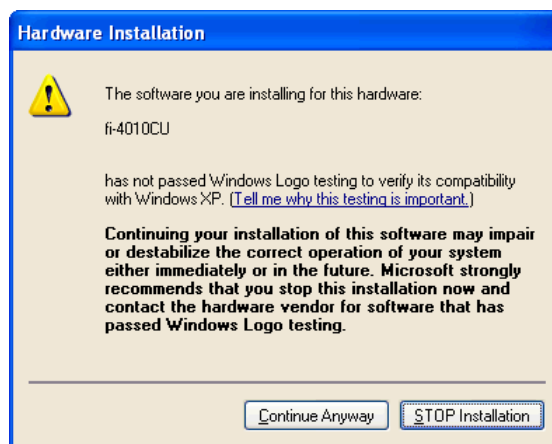
Note

> Please ignore the message "there is no guarantee that this software works correctly with Windows." which appears on the screen and continue the installation, as PFU LIMITED have already confirmed that this software works correctly.

15. When the file has copied and installation is completed, the following dialog box is displayed. Click the [Finish] button.

16. Restart the system by following the instructions on the screen.

17. Go to the section 3.3 "Installing TWAIN Data Source" and follow the procedure.

3.3 Installing TWAIN Data Source

1. Confirm that the mini-port driver has been installed by following the procedure given in Section 3.2.

2. Insert the setup disk into the disk drive. Here, the CD-ROM drive is temporarily labeled "D:". (If the current operating environment uses a different label, replace the drive label specifications below accordingly.)

3. Using Explorer, locate the "**install.exe**" file in the "**D:\Driver2\Setup**" folder of the CD-ROM drive. Then, to start installation, either double-click the file icon, or click the icon and press the [Enter] key.

    If automatic start has been defined, the start screen of the setup is displayed. Installation can also be started from this screen.

4. The installation screen is displayed. To continue the installation process, follow the instructions on the screen.

5. Confirm that the following group has been created when the setup is complete. The icons displayed in the window depend on the components selected in [Select Components] during installation.

Figure: Fujitsu TWAIN group

* For the gamma pattern editing, refer to the section 5.

3.4 Uninstall

The uninstall process removes the software and returns the hard disk to its pre-installation state.

1. Click on [Start], followed by [Settings], and then [Control Panel]. The Control Panel is then displayed.

2. Double-click on "Add/Remove Programs" from the icon list of the Control Panel. The panel of properties of [Add/Remove Programs] is displayed.

3. Select "Scanner Utility for Microsoft® Windows®" from the "Install/Uninstall" list.

4. Click on the [Add/Remove] button. When the confirmation dialog is displayed, click on [OK] if you are ready to uninstall.

5. When uninstallation is completed, click on [OK.]

Note

Image files that have been scanned and saved will not be deleted.

If other TWAIN-compliant applications and drivers have been installed and you are asked whether or not to delete files shared with them such as the TWAIN Manager, select [NO] to avoid deleting them.

3.5 When the scanner is not detected automatically (Supplementation)

During the procedures given in the section 3.2.1 to 3.2.4, if the scanner is not detected automatically immediately after turning the power on, open the property of the [System] in the [Control Panel] to display the list of [Device Manager] and confirm the registration condition of the scanner.

- If the scanner is registered under [Other devices].

  The scanner is registered with the driver installed improperly.
  Select the scanner and click the [Delete] button to once delete the registration (or right-click and select the [Delete]). When restarting the system, the scanner is detected automatically.
  Install Mini Driver following the procedure of each OS given in the section 3.2.1 to 3.2.4.

- If the scanner is registered under [Imaging devices]

  A driver of previous version may be installed.
  Update the driver following the procedures of each OS given in 3.2.5 to 3.2.8.

- The scanner is not registered anywhere.

  The scanner may not be installed correctly.
  Reconfirm whether the power of the scanner is turned on, the scanner has been activated correctly or the scanner is connected to the personal computer correctly.

- **NOTE**

  If the EZ-SCSI of Adaptec has been installed, the "new hardware wizard" may not be displayed on startup and it may cause install failure.
  In this case, please uninstall the EZ-SCSI and restart the PC before install the driver.

4. Using the Driver

4.1 Selecting the Driver

To use this driver from the TWAIN application, select "FUJITSU <Product ID>" from the TWAIN data source (driver) selection screen. For general application, the data source selection screen is displayed by selecting the [Select Scanner] or [Acquire ...] menu. Refer to the instruction manual for the application used for details.

4.2 Screen Configuration
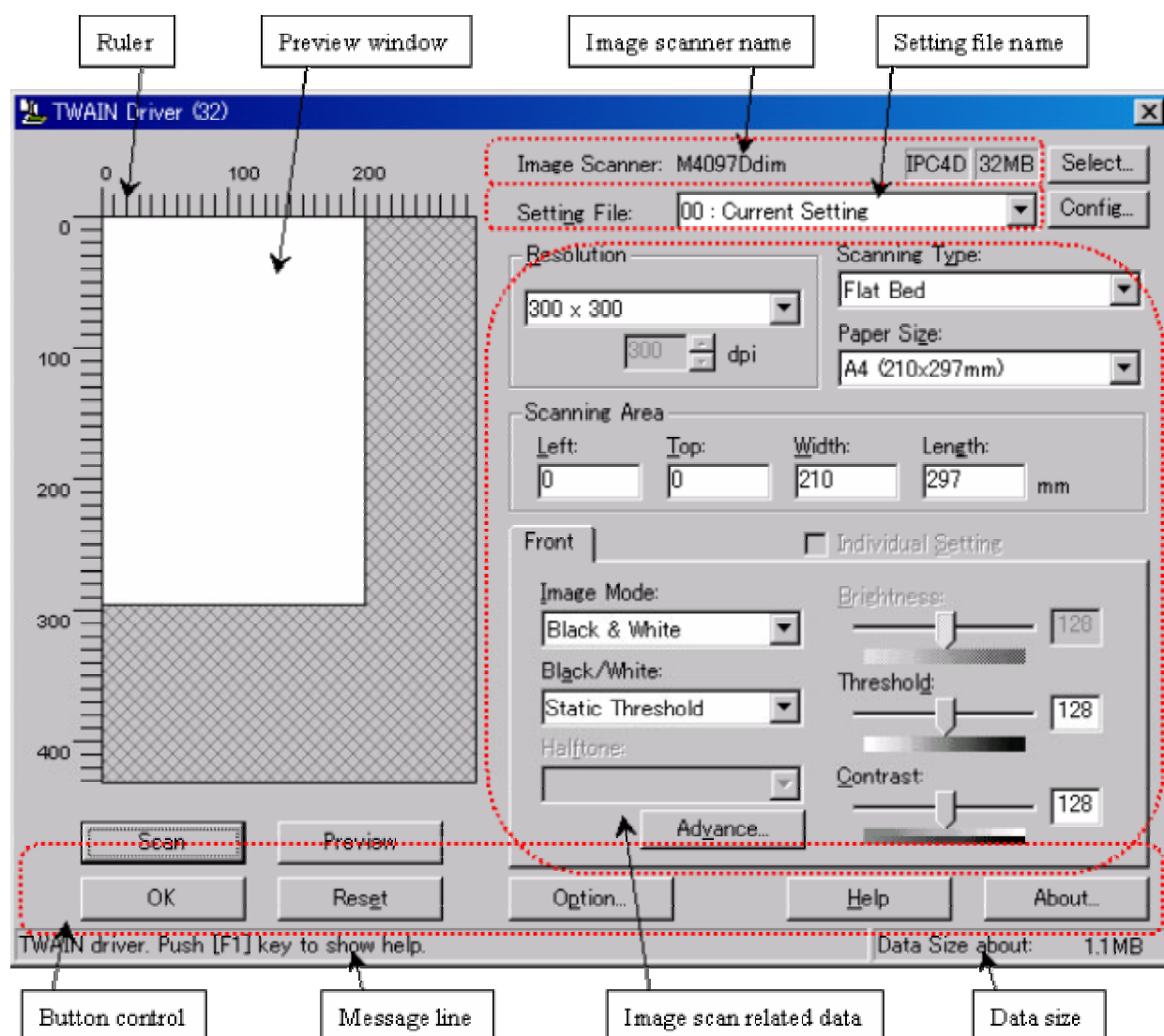
Figure Main Dialog

The following pages contain the explanation and operation description for each part.

4.3 Displaying Driver Information

♦ Image scanner name

Image Scanner: fi-4340Cdij [IPC4D] [32MB] [Browse...]

The model name, option port name, and capacity of internal scanner memory (in units of megabytes) of the connected image scanner are displayed.

If no image scanner is connected, this field is blank.

The type of IPC option board is displayed if an image-processing option board is installed in the scanner.

IPC-3/3D may not be detected normally, as it is affected by the version number of the machine type and device. In this case, "IPC2" is displayed.

♦ Preview window
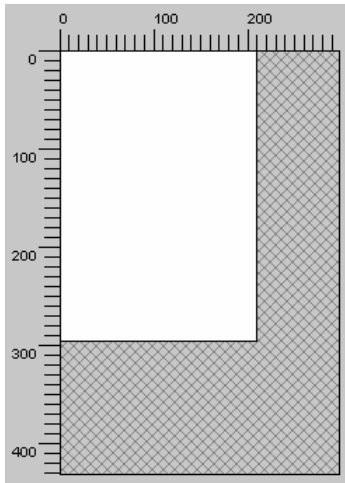
The preview window is used to display the temporary image of read data and for setting the "Scanning Area."

For settings, see "Scanning Area" later in this manual. Also see the description of the [Preview] button later in this manual.

♦ Ruler

The large divisions are labeled as "Unit". The scale also varies with the selected scanner.

♦ Message line

The message line is the bottom line of the dialog in which a brief explanation of an input item or a setting item is displayed when the mouse cursor is moved over the item.

♦ Data size

The approximate amount of data per image when data is scanned in the present option.

Note

This value is the amount of uncompressed data. The size of the stored file will differ from this value and is usually smaller if image compression is chosen and the image is compressed.

4.4 Setting Information on Image Scanning

♦ Current side

| Duplex | | ☐ Individual Setting |

| Front | Back | ☑ Individual Setting |
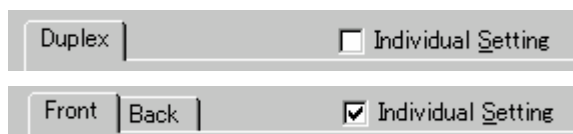
When a scanner that allows duplex scanning is used, specifies the page which sets the image scanning information.

To scan using the same settings as those for "Front side" and "Back side," clear the checks in the "Individual Setting" checkbox on the "Front" and "Back" tabs. A single "Duplex" tab will be displayed at the left so that the same image scanning information can be set for "Front side" and "Back side."

To scan using different settings for "Front side" and "Back side," check the "Individual Setting" checkbox on the "Front" and "Back" tabs. Two tabs, "Front" and "Back," will be displayed at the left. Select each tab and enter the desired settings.

This is only effective when ADF (Duplex) is selected for the method of paper feed. For scanner types which permit duplex scanning, see "Relevant Image Scanner Specification" in the Appendix.

♦ Resolution

Resolution

300 x 300 ▼

300 ⬍ dpi
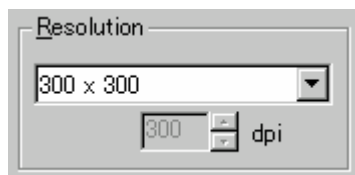
Specifies the number of pixels (dots) per inch.

Select a fixed resolution from the list or [Custom].

High resolution requires more memory.

The supported resolution depends on the type of scanner and the options installed. See "Relevant Image Scanner Specification" in the Appendix.

♦ Paper Size

Paper Size:
A4 (210x297mm)

Selects a paper size corresponding to the size of the document to be scanned.

Select a standard paper size from the list or [Custom]. If [Custom] is selected, the "Custom Paper Size Setting" dialog appears. Enter the size of the document to be scanned. (In this case, specify the paper size by width x length against the scanning direction.)

Some paper sizes may not be accepted by your device. See "Relevant Image Scanner Specification" in Appendix.
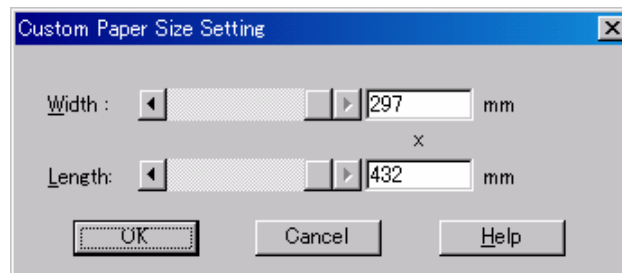
Figure Custom paper size setting dialog

To specify a custom paper size, use the scroll bar or enter the paper size directly. The applicable unit here is the unit specified under [Option]-[Generic]-[Unit/Scaling].

♦ Scanning Area

Scanning Area
Left: Top: Width: Length:
0   0   210   297   mm
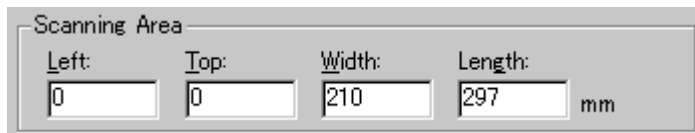
Specifies the start position, width and length for the image scan. The maximum allowable size is the paper size selected previously.

In addition, the minimum size is 1.000 inch, 26 millimeters, or pixels (number of dots per inch) according to the unit that has been set.

"Left":   The left end of the scan area on the scanned document (X coordinate)

"Top":   The top end of the scan area or the scanned document (Y coordinate)

"Width":   The width of the scan area

"Length": The length of the scan area

These values are related to one another in the following way:

$0 \leq$ left end coordinate $<$ (paper width - minimum scan area size)

$0 \leq$ top end coordinate $<$ (paper length - minimum scan area size)

Minimum value $\leq$ width $\leq$ (paper width - left end coordinate)

Minimum value $\leq$ length $\leq$ (paper length - top end coordinate)

♦ Scan Type

Scan Type:
ADF (Front Side)

Selects the feeding device.

The image scanner uses a document bed called the flat bed as well as an automatic document feeder (ADF) for feeding scanned document. The ADF usually enables the documents to be scanned only once. The flat bed allows scanning the same documents repeatedly.

Flat bed

Scans a document placed on the flat bed of the device.

ADF (Front Side)

Scans the documents on the device's automatic document feeder (ADF). Here, only the front sides are scanned.

ADF (Duplex)

To scan both the front and the back of a page, select this option.

If this option is selected, the documents are scanned in the "front to back to front to back ..." order.

This option can be used only for scanner models that support duplex scanning.

The "Duplex Function" requires that the calling application supports "continuous scan." If the application does not support "continuous scan," only the data for the front side of the page is passed to the application.

Some scanner models do not support this option. See "Relevant Image Scanner Specification" in the Appendix.

Long page (Front Side)

Scans a document longer than the paper size which can be specified by [Paper Size].

In this case, only the front sides of documents are scanned.

When this option is selected, the "Paper Size Setting" dialog box opens. Specify the size of the document to be scanned.

* While the "Long page" is specified, the preview window cannot be displayed and the scanning area cannot be specified.

* In case of some scanner models, while the "Long page" is specified, color and grayscale settings can not be selected in [Image mode].
  (Refer to "Relevant Image Scanner Specification" in the Appendix.)

* [Resolution] setting should be set to less than 400 dpi.

* The "Long page" is not displayed in the [Scan Type] dropdown list if not supported by the device. See "Relevant Image Scanner Specification" in the Appendix.

Long page (Duplex)

Scans a document longer than the paper size which can be specified by [Paper Size].

If this option is selected, the documents are scanned in the "front to back to front to back…" order.

ADF (Back Side)

Scans the documents on the device's automatic document feeder (ADF).
Here, only back sides are scanned.

Note

To specify duplex scanning, the number of copies designated should be based on the number of pages, not the number of paper sheets. In other words, one original with a front and back is regarded as two pages.

♦ Image Mode

Image Mode:
Black & White ▼
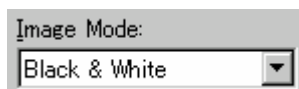
Selects an image mode for scanning the image.

Select a corresponding image mode from the list.

Black & White

Scans data by using the fixed threshold binary, black-and-white. Distinguishes black from white by the setting in the "Threshold" of "Scanning Parameter". This scanning mode is suitable for scanning line drawings and text documents.

Halftone (Dither)

Scans data using the halftone processing, with dithering or error diffusion. Uses the patterns set in "Halftone" to simulate data in black-and-white. Selection of built-in dithered patterns or error diffusion (not supported by some device models) is allowed. This scanning mode is suitable for scanning images containing light and shadow such as a photograph.

Gray scale

Scans data using 256-level monochrome gray scale. Light and shade in photographs can be represented with greater fidelity. This scanning mode employs far more memory than the Black & White mode.

Some versions of the scanner do not support this scanning mode. For details contact the retail store where the device was purchased.

Automatic separation

Scans data distinguishing line drawing from photograph image.

If this option is selected, the line drawing part is scanned using "Black & White," and the photograph part is scanned using "Halftone". This information is most suitable for documents containing both photographs, and line drawings or text.

Some scanner models do not support this option. See "Relevant Image Scanner Specification" in the Appendix.

SEE (Selectable edge enhancement)

Scans data using the halftone processing and emphasizes line drawings and text. This option is most suitable for emphasizing only text of documents containing both photographs and text.

Some scanner models do not support this option. See "Relevant Image Scanner Specification" in the Appendix.

24bit Color

Scans data using 24 bits color. This mode is suitable for scanning color photograph and employs far more memory that Gray scale mode.

Only color scanner models support this option. See "Relevant Image Scanner Specification" in the Appendix.

256 Color

Scans data using 256 colors.

Data size is smaller than "24 bit Color" selected.

Please note that the image quality of "256 Color (8 bit)" is inferior to the case of "24 bit Color ". Choose "24 bit Color" for higher quality.

Only color scanner models support this option. See "Relevant Image Scanner Specification" in the Appendix.

8 Color

Scans data using 8 colors.

Data size is smaller than "256 Color" selected.

Please note that the image quality of "8 Color" is inferior to the case of "24 bit Color" and "256 Color (8 bit)". Choose "24 bit Color" for higher quality.

Only color scanner models support this option. See "Relevant Image Scanner Specification" in the Appendix.

♦ Black & White

Black/White:

Static Threshold ▾

Specifies the processing method when "Black & White" is specified in "Image Mode".

Static Threshold

Executes simple binary processing based on the "Threshold" setting.

SDTC, DTC mode

To enable the auto binary function of the image scanner, specify this option.

If this option is selected, the "Threshold" setting will be disabled.

In addition, auto binary has two modes: " SDTC Mode" and "DTC Mode". These modes can be set using the "Advance" dialog box.

"DTC Mode", however, is limited to the image processing options. Therefore, only scanner models that have image processing options support "DTC Mode". See "Relevant Image Scanner Specification" in the Appendix.

SDTC mode (Floating Slice)

This option enables scanning and fine binary processing for documents whose backgrounds are other than white such as newspapers.

Some scanner models do not support this option. See "Image Scanner Specification" in Appendix.

♦ Halftone

Halftone:

Dither Pattern 0 ▾

Select the halftone pattern for halftone scanning from the built- in pattern list.

Select the desired halftone pattern for displaying the obtained image. This setting is effective when "Halftone" or "Automatic Separation" is selected in "Image Mode".

Some scanner models do not support this function. See "Relevant Image Scanner Specification" in Appendix.

Dither Pattern 0

Executes pattern processing that is suitable for scanning a dark photograph.

Dither Pattern 1

Executes pattern processing that is suitable for scanning a dark-colored document containing both text and photographs.

Dither Pattern 2

Executes pattern processing that is suitable for scanning a light photograph.

Dither Pattern 3

Executes pattern processing that is suitable for scanning a light-colored document containing both text and photographs.

Download Pattern

Executes processing using the dithered download pattern specified in the dithered download file (described later). Some scanner models do not support this function. See "Image Scanner Specification" in Appendix.

Error Diffusion

Error Diffusion minimizes the difference between the pixel density of the scanned image and the pixel density of the printed image to create better reproduction of a scanned photograph.

Some scanner models do not support this function. See "Relevant Image Scanner Specification" in Appendix.

◆ Scanning Parameters

For fine scan adjustments.

Since there is no fixed set of values, set by trial and error.

♦ Brightness:
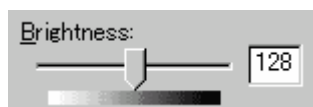
Sets the brightness of the overall image.

Specify the brightness with a number in the range of 1 (bright) to 255 (dark).

To brighten the overall image, decrease the value of the setting. To darken the overall image, increase the value.

This parameter can be set if "Halftone" or "Automatic Separation" is selected for "Image Mode."

♦ Threshold:

Sets the threshold value by which the black and the white of black-and-white images are distinguished. Specify a number in the range of 1 (bright) to 255 (dark). This parameter can be set only if "Black & White" is specified for "Image Mode."

In addition, if "Auto Binary" is selected, the scanner will automatically use the appropriate threshold value. As a result, the set value cannot be changed.

In addition, if "Auto Binary" is selected, the scanner will automatically use the appropriate threshold value. As a result, the set value cannot be changed.

If the light color in the scanned document is read as white, increase the threshold value. To eliminate light- colored areas in the scanned document, decrease this value.

♦ Contrast:

Threshold: [128]

Sets the contrast of light and shadow in a scanned image.

Specify the contrast with a number in the range of 1 (low [soft]) to 255 (high [sharp]).

The contrast can be set if "Gray Scale" is selected in "Image Mode."

If this value is increased, the dark part of the image is shown darker and the light part is shown lighter.

Some scanner models do not support this function. See "Relevant Image Scanner Specification" in Appendix.

4.5 Specifying Driver Operation

♦ [Preview]

Preview

Reads in a preliminary image based on set values, and displays the image in the preview window.

Before actual scanning, the preview function can be used to display the entire document for specifying the desired scan area.

This function is available only on devices that support the use of a flat bed. Some models do not support this function. See "Relevant Image Scanner Specification".

♦ [Scan]
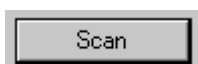
Scan

Scans the specified scan range based on set values.

The following "progress indicator" is displayed during scanning to show the progress of the scan operation. To stop scanning, click the [Cancel] button.

The character string indicates the data transfer mode used between the driver and the application.

TWAIN Driver (32)

Xfer Mode: Native

Information: N/A

Scanning...

35%

Cancel
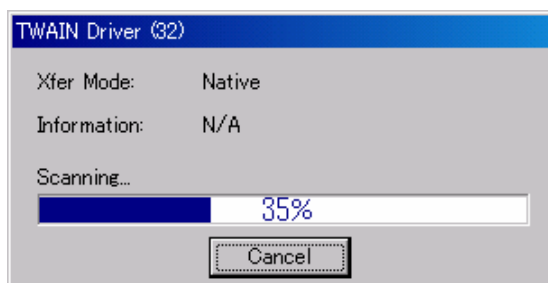
Progress indicator

♦ [Close] / [OK]

Close   OK
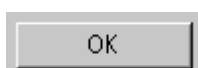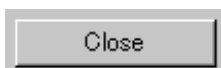
Closes the dialog box without scanning.

If a setting is changed, the changed setting is saved in the initial value file.

♦ [Reset]

Reset

Restores the current setting values to the status immediately after the window is opened.

♦ [Help]
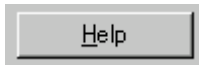
Displays online help. When the [F1] key is pressed, help information regarding the item on which the cursor is placed is displayed.

Note

Depending on the application used help information may not be displayable with the [F1] key. This is because the driver operation is controlled through the application and the [F1] key may be used differently in each application program.
Help information can be displayed by pressing the [F1] key while holding down the [Ctrl] or [Shift] key.

♦ [Option]
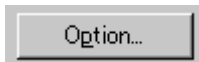
Displays the "option dialog" for setting device-specific functions. See Section 4.7, "Setting Option" described later.

♦ [Advance]
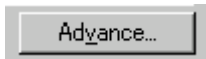
Displays the "advance dialog " for settings related to color variance and image processing.

♦ [Config]

Displays the "basic scan dialog" for managing the settings file and for setting simple scan dialog switching.

♦ [About]

Express the version of this driver by clicking this button.

4.6 Setting "Scanning Area"

Specify the scanning area in the preview window as follows:

Setting:

1. Press the left mouse button to specify the origin (top left corner) of the scanning area. (The cursor appears as a "+".)

2. Drag the mouse to show the outline of the scanning area. (As the cursor moves, a range frame is shown.)

3. Release the left mouse button again to set the range (bottom right corner) of the scanning area.

Movement:

1. Move the cursor into the range frame. (The cursor appears as a hand.)

2. Press the left mouse button. (The cursor changes to a fist.)

3. Drag the mouse to move the range frame.

4. Release the left mouse button to set the current range.

Cancellation:

The range frame can be canceled by either of the following ways:

Click the left mouse button outside the range frame (inside the scan document).

Select other paper types.

4.7 Setting Options

The "option dialog" is used to set device-specific functions and the items that differ depending on whether the scanner used supports them.

The option specification is divided into "Rotation", "Job/Cache", "Generic", "Imprinter (Endorser)" , "Start Up" and "Filter".

The supported options depend on the scanner. See "Relevant Image Scanner Specification" in the Appendix. (is displayed for options that cannot be used.)

The option dialog in this driver is explained below.

The commonly used buttons are explained first.

♦   [OK]

        OK

Enables the new setting, and terminates the option dialog box.

♦   [Cancel]

        Cancel
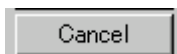
Disables the new setting, returns the setting to the previous value, and terminates the processing.

♦   [Help]
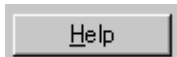
        Help

Displays online help.

The options are described below:

4.7.1 Rotation
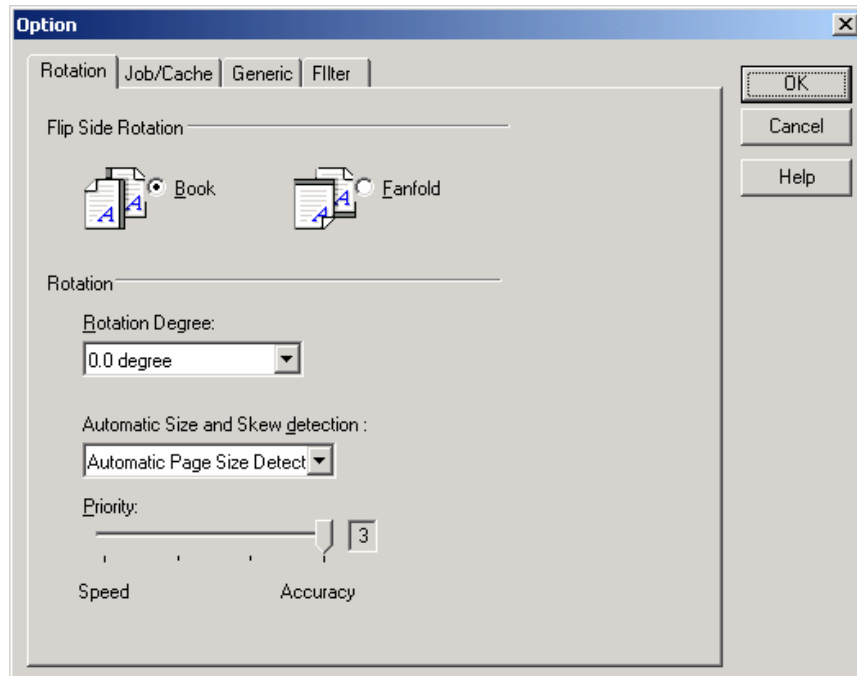
Figure Option dialog (Rotation)

♦ Flip Side Rotation

Specifies the binding of the document when both sides are scanned using ADF.

Book

   Outputs the scanned image for both sides as is.

   Select this option to scan documents bound on the left or right side

Fanfold

   Outputs the scanned image of the backside rotated 180 degrees.

   Select this option to scan documents bound on the top or bottom (Front side and backside are printed conversely.)

    * When scanning from the top to bottom for the printing direction of the document, this setting outputs the image with the front and backsides printed in the same direction.

♦ Rotation Degree

Rotation Degree:
0.0 degree ▼
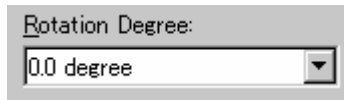
Outputs the scanned image rotated to the right or left 90 degrees.

0.0 degree

Outputs the scanned image as is.

90.0 degree

Outputs the scanned image rotated 90 degrees to the right (clockwise).

-90.0 degree

Outputs the scanned image rotated 90 degrees to the left (counterclockwise).

180.0 degree

Outputs the scanned image rotated 180 degrees (top and bottom reversed).

♦ Automatic Size and Skew detection

Automatic Size and Skew detection :
Disable ▼
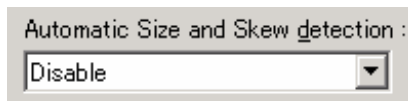
Disable

This option outputs the image as it was scanned.

End of Page Detection

Scanning with the ADF and page length detection selected will output data for the page size detected.

The image data output will adjust to the page length detected for each page including smaller size pages.

Data cannot be output for page sizes greater than the length setup in [Page Size].

This function does not work properly for some applications.

Automatic Deskew

When scanning with the ADF, this option detects skew of the document being fed and automatically corrects the skew.

Automatic Page Size Detection

Scanning with the ADF and Automatic Page Size Detection selected, the output will adjust to the page size detected.

Document skew can be detected and can be corrected for the output image.

Output data size will be equal to each document scanned in a multi page scan. When page size is detected incorrectly, set up the [Page size] to the largest size page in the set.

For example, With Automatic Page Size Detection is selected, it also need to select a Paper Size (example: Double Letter 11"x17") in the set. If any paper size within the

selected (Double Letter) paper size range is used for scanning, the output will adjust to the page size detected.

However, some detection cannot be corrected for example, an unfixed long image, folded corner, document has uneven width for the length of the page.

This function becomes effective only when scanning with the ADF.

(It may detect incorrectly when this function is chosen with flat bed scanning.)

This function does not work properly for some applications.

Black Background

If it is selected, the outside of document paper becomes black by using black background during scanning.

This option may not be supported for some scanners. See "Relevant Image Scanner Specification" in the Appendix.

♦ Priority
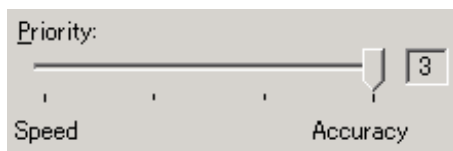
Setup for speed versus automatic document size detection.

Select a small value when scanning speed is the higher priority.

Select a large value when document detection accuracy is the higher priority.

Priority can only be setup when [Automatic Page Size Detection] is selected at [Automatic Size and Skew Detection].

4.7.2 Job/Cache
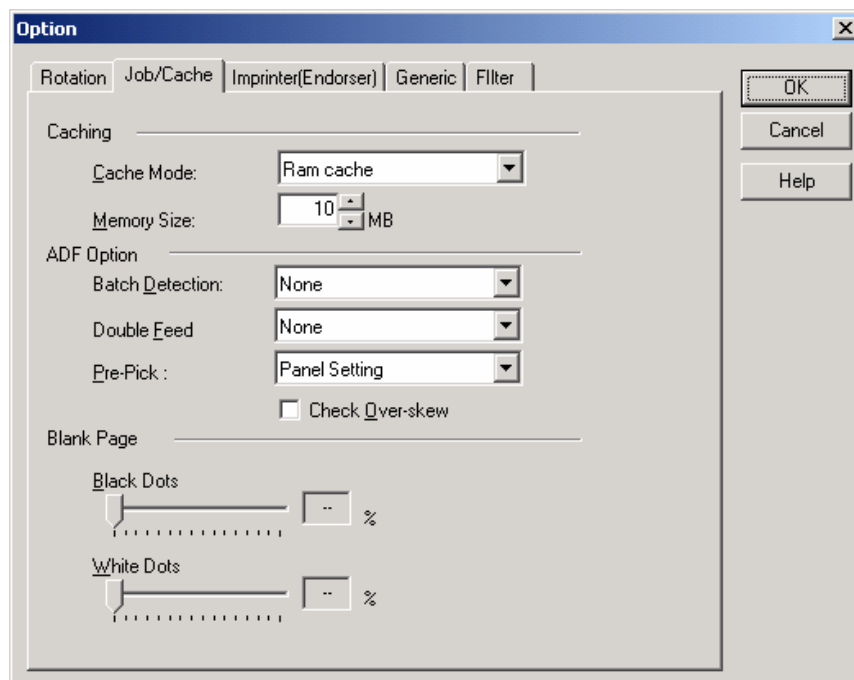
Figure Option dialog (Job/Cache)

♦ Caching
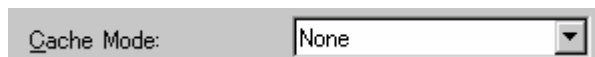
Specifies whether to pre-read (cache) when a document is scanned. This option enables faster scanning.

If processing of the application being used slows down and scanning stops, this option can be used to prevent degradation of the scanning speed. (The effect, however, depends on the environment being used.)

None

Caching is not performed.

Read ahead

One document page is scanned, and the data is pre-read and stored in PC memory (main memory of the personal computer).

Ram cache

Prereads the allowable amount based on the allocated memory size and stores the data in PC memory.

A memory size between 1 and 200 MB can be set.

65
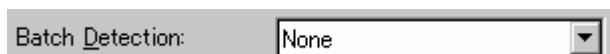
Use Memory on Scanner

Pre-reads using the memory installed in the scanner (displayed only if supported by the scanner).

Use Both Memory

Pre-reads using memory of both Scanner and PC (displayed only if supported by the scanner).

♦ Batch Detection

Batch Detection:	None ▾

The application can detect documents on a specific type of form (special paper). The application must support this function.

None

No detection. Scanning is done without change.

Include and Continue

After the special paper is detected, scanning continues. The data on the special paper is also valid.

Include and Stop

After the special paper is detected, scanning stops. The data on the special paper is also valid.

Exclude and Continue

After the special paper is detected, scanning continues. The data on the special paper is excluded and will not be transferred to the application.

Exclude and Stop

After the special paper is detected, scanning stops. The data on the special paper is excluded and will not be transferred to the application.

*Batch Detection can not be used with following Caching, "Use Memory on Scanner" or "Use Both Memory".

♦ Double Feed Detection

Double Feed Detection:	None ▾

This option detects a double feed (occurs when two or more documents are sent) based on the set condition.

If a double feed is detected when this setting has been turned on, the device will stop and an error message output.

None

Double feed detection is not performed.

Hardware Setting

A double feed is detected based on the device setting.

Check thickness

The thickness of the transmitted document is checked by the sensor in the device.
A double feed is detected by detecting changes in the thickness when more than one document is sent.

Check length

The length of the transmitted document is checked by the sensor in the device.
A double feed is detected by detecting changes in the length when more than one document is sent.

Check thickness and length

The thickness and length of the transmitted document are checked.

The detection accuracy can be improved by using [Check thickness] for continuous scanning of forms that have different lengths and [Check length] for scanning of forms that have different thicknesses.

♦ Pre-Pick

Pre-Pick :   Panel Setting

It specifies whether a document is picked and carried in front of the scanning position before starting scanning operation at the ADF scanning.

Disable

Pre-Pick is not performed.
A document is picked and carried in front of the scanning position, after starting scanning operation.

Enable

Pre-Pick is performed.
A document is picked and carried in front of the scanning position, before starting scanning operation.

Panel setting

The setting of device is followed.

* When selecting "Enable," you can scan faster than when selecting "Disable," because of Pre-Pick process.

   When selecting "Enable," if you cancel during the ADF scanning, a document remains in the scanner in the Pre-Pick status.

♦ Check Over-skew

☐ Check Over-skew
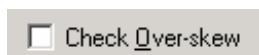
The skew of the transmitted document is supervised during the ADF scanning.

When an over-skew is detected, the scanner is stopped and an error message is displayed.

* This functions, only when "Double Feed Detection" is enabled.

♦ Blank page skip
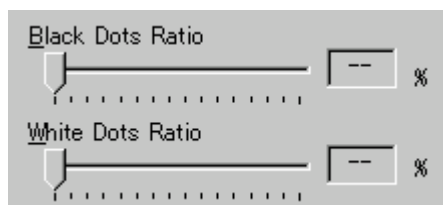
This option skips blank pages (blank pages or completely black pages) during ADF continuous scanning.

For blank pages, use the [White Dots Ratio] scroll bar to set the skip condition. For black pages, use the [Black Dots Ratio] scroll bar to set the skip condition.

The value displayed to the right of the scroll bar displays the garbage ratio(*1). If a scanned document is below this value, it is recognized as a blank page. The setting range is OFF(- -) and 0.2% to 3.0% (in increments of 0.2%).

<If blank page skip does not operate properly>

- If a blank page is scanned, increase the value set.
- If scanning is skipped up to the required document, decrease the value set.

This function can be used if "Ram cache" or "Use Both Memory" is selected.

*1: Ratio of black dots included in the scanning area (for blank pages)

* When "Black Background" is selected in [Automatic Size and Skew detection], the Blank page skip may not operate properly.

When Scanned image has many background noises, the Blank page skip may not operate properly.

4.7.3 Generic
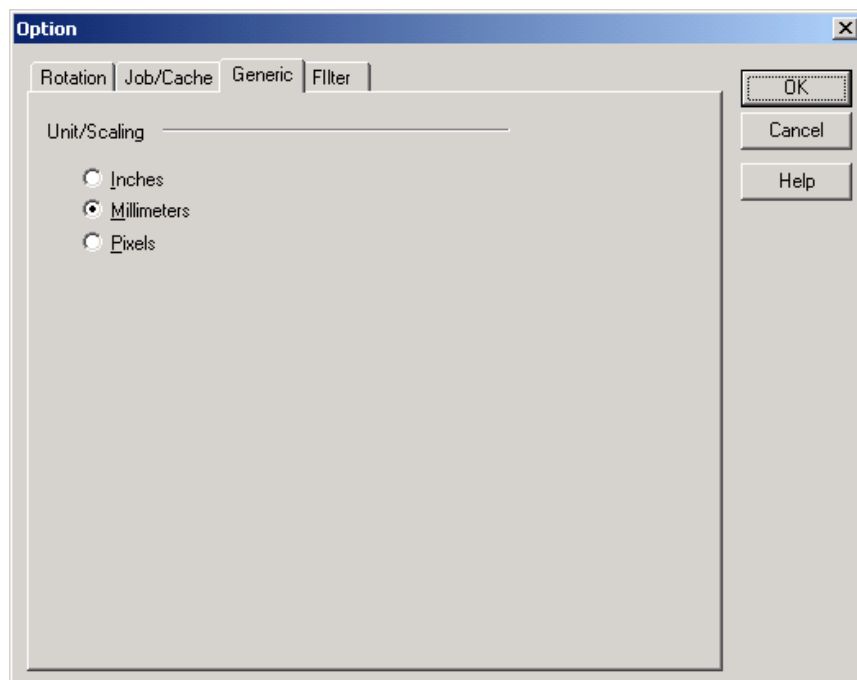
Figure Option dialog (Generic)

♦ Unit/Scaling
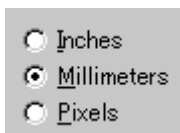
This option selects the unit for the scanning area and preview window. One inch is calculated as 25.4 millimeters. When inches are converted to millimeters, values are rounded off.

Note

The TWAIN specifications require that the data width be arranged in units of 32 bits. As a result, a difference of up to 31 dots can be included, depending on the value set.

4.7.4 Imprinter (Endorser)
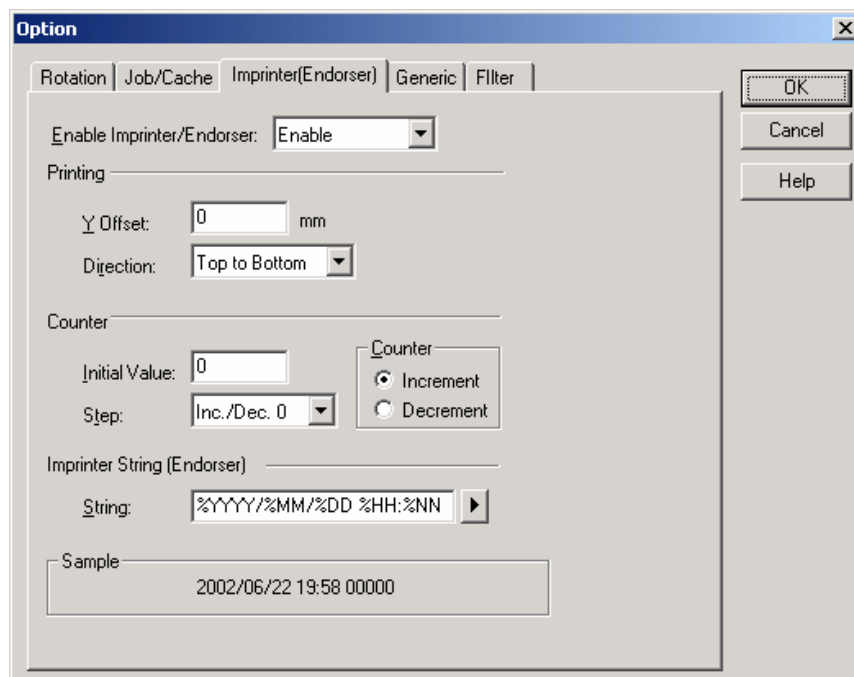
Figure Option dialog (Imprinter)

♦ Enable Imprinter (Endorser)
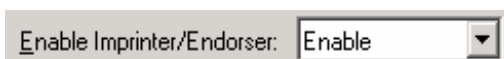
Specifies enabling or disabling the imprinter function of the device.

When the option is selected, the scanned documents are imprinted according to the instructions below. This applies only to the imprinter option. Therefore, the function is supported only with the scanner which supports imprinter option(s). See "Relevant Image Scanner Specification" described in the Appendix.

Disable

   Imprinting is not performed.

Enable

   Prints on documents using imprinter by the settings below.

   In this case, it prints on the back side of documents after scanning.
   Therefore, the printing is not included in a scanning result.

Depending on scanners, two imprinters can be installed and one of them can be selected to use.
In this case, "**Enable**" is displayed as follows.

Pre-Imprinter (Printing before scanning, and on the front side of documents)

   Prints on documents using the imprinter installed in front part of the scanner.

In this case, it prints on the front side of documents before scanning.
Therefore, the printing can be included in a scanning result.
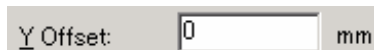
Post-Imprinter (Printing after scanning, and on the back side of documents)

Prints on documents using the imprinter installed in rear part of the scanner.

In this case, it prints on the back side of documents after scanning.
Therefore, the printing is not included in a scanning result.
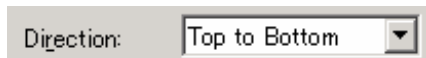
  * [Pre-Imprinter] and [Post-imprinter] cannot be used at the same time.

♦ Y Offset (Printing)

Y Offset:	0	mm
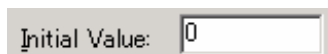
Specifies Y Offset from the edge of the original for the placement of printing. See
"Relevant Image Scanner Specification" in the Appendix because the standard value
specified here depends on the device.

♦ Direction (Printing)

Direction:	Top to Bottom ▼

Specifies the printing direction of endorsement strings. When printing from the head of
strings against to the direction of scanning, designate "Top to Bottom". And when printing
from the tail of strings against to the direction of scanning, designate "Bottom to Top"
However, see the "Relevant Image Scanner Specification" described in the Appendix since
the available settings depend on the device.

♦ Initial Value (Counter)

Initial Value:	0

Designates the initial count when the Imprinter String is set, including a counter value. See
the "Relevant Image Scanner Specification" described in the Appendix since the
programmable values range depends on the device.

♦ Counter Step (Counter)

Step:	Inc./Dec. 0 ▼

Designates the counter increment of the set counter values. In other words, this value is
added to or subtracted from the counter each time one original is scanned.
An increment of 0, 1, or 2 may be specified. Usually, 1 is designated for a single-sided
original, and 2 for a double- sided original.

♦ Counter (Counter)
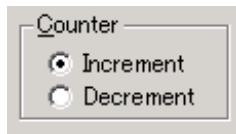
Designates whether to increase or decrease the specified step value.

♦ Imprinter String (Endorser)

Specifies the imprinter string.

The following characters can be outputted by the Imprinter.

Alphabet Letters	: A-Z, a-z
Numeric Characters	: 0, 1-9
Symbols	: !"#$%&'()*+,-./:;<=>?@[\]^_`{|}~
Other	: (Space)

(*The space is ignored when it is entered at the head of [String:].)

The following definitions can be used. They may also be selected from the menu, which is displayed by clicking on " ".

%YYYY: The year is printed in four digits using the Western calendar.

%YYY: The year is printed using the two digits of the Japanese calendar (current, or Heisei era).

%YY: The year is printed in the last two digits of the Western calendar.

%MMM: An English abbreviation of the month is printed; for example, JAN for January and FEB for February.

%MM: The month is printed in two digits; for example, 01 for January and 12 for December.

%M: The month is printed using one or two digits; for example, 1 for January and 12 for December.

%DD: The day is printed using two digits; for example, 03 for the 3rd day of the month and 26 for the 26th day of the month.

%D: The day is printed using one or two digits; for example, 3 for the 3rd day of the month and 26 for the 26th day of the month.

%HH: The hour is printed using two digits of the 24-hour clock; for example, 08 for 8:00 a.m. and 14 for 2:00 p.m.

%H: The hour is printed using one or two digits of the 24-hour clock; for example, 8 for 8:00 a.m. and 14 for 2:00 p.m.

%NN: The minute is printed using two digits; for example, 02 for 8:02 a.m. and 48 for 2:48 p.m.

%N: The minute is printed using one or two digits; for example, 2 for 8:02 a.m. and 48 for 2:48 p.m.

%Nud: A counter value is printed by N digits which increases or decreases with each page.

Programmable digits of the counter is 5 and 8 and described as "%05ud" and "%08ud" respectively. (See the "Relevant Image Scanner Specification" described in the Appendix since the programmable digits depend on the device.)

The initial counter and the methods of increasing and decreasing values can be specified as explained above under the heading "Counter."

This specification is only permitted at the end of an Imprinter String (Endorser).

♦ Sample
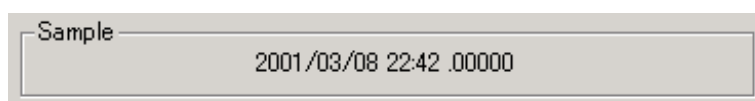
Displays printed examples of the Imprinter String (Endorser) designated above.

Note

The printed counter, date, and time do not always look like the sample because the scanning option takes precedence.

4.7.5 Start Up

Set up the Power Mode, Low-Speed Feeding and Scanner Operation Panel.
In some scanner models, displayed dialog box or setup item may be different or even [Startup] dialog box may not be displayed.
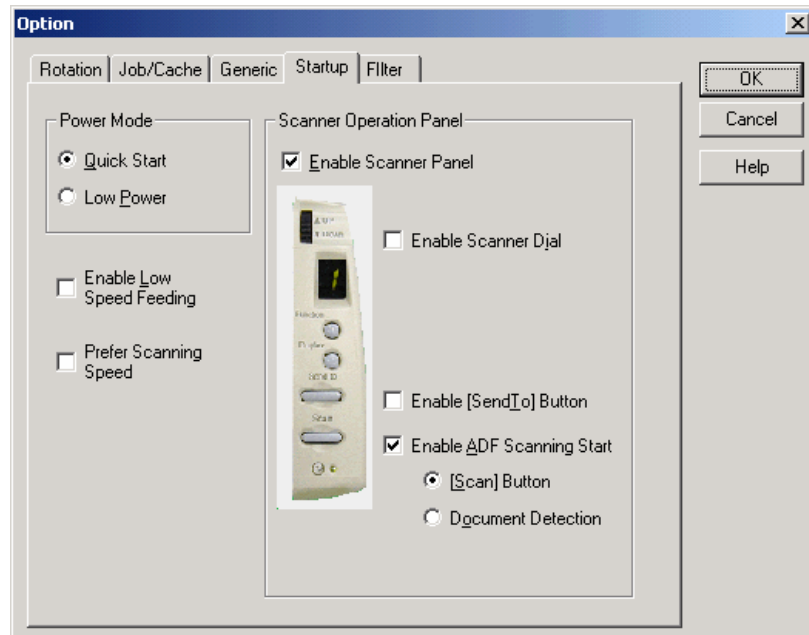
In case of model fi-4110CU / fi-4110C(M3091DC) / fi-4210C(M3092DC)
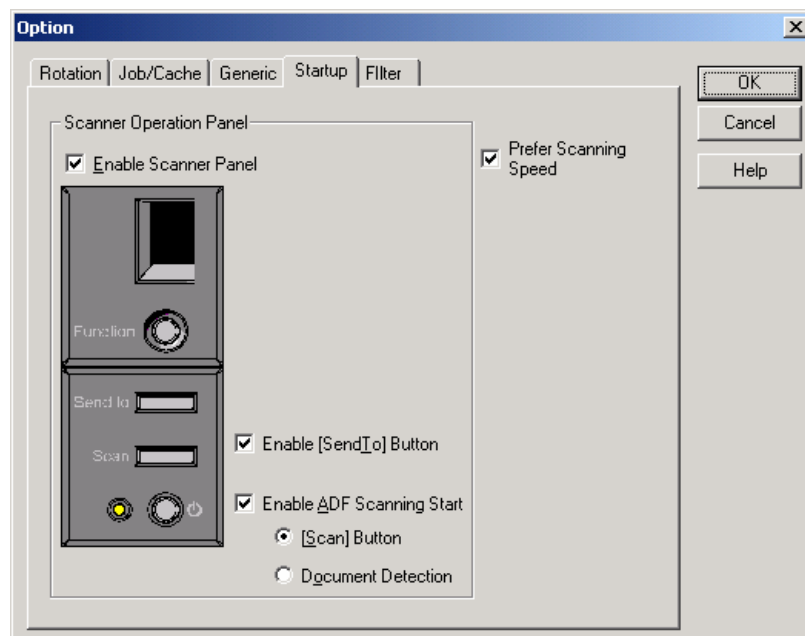
In case of model fi-4120C / fi-4220C

Figure Option dialog (Start Up)

♦ Power Mode
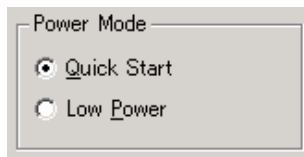
- **Quick Start Mode**

    This mode keeps the lamp on regardless the scanner's operating condition, which saves times for lamp to become steady.

- **Low Power Mode**

    To save the power consumption, this mode turns the lamp off, if the scanner is not operated for 14minutes.

♦ Enable Low Speed Feeding
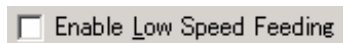
This is to specify to obtain a high quality image.
This function reduces times of start/stop during the scanning to obtain a smooth and high quality image.

Prefer Scanning Sped
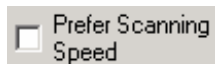
This mode makes scanning speed becomes faster in color/grayscale scanning.

When checking this check box, scanning speed becomes faster, but image quality is slightly deteriorated.

Check this check box, when giving priority to scanning speed over image quality.

♦ Scanner Operation Panel

- Enable Scanner Panel
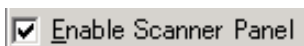
    This is to specify whether the operator panel is enabled or not. If this is checked, button operation on the operator panel becomes effective. (Note that the operator panel is enabled only during the driver is activating.)

- Enable Scanner Dial
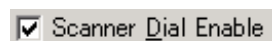
    Specifies whether the value indicated by the density dial on the scanner is reflected on scanning or not.

    This setting is valid when both "Enable Scanner Panel" and this checkbox are checked.

With this density dial, the density can be set by five levels.

If moving the density dial to the UP direction, the density changes [Normal] >>[Darker scanning]>>[Dark scanning]. If moving the density dial to the Down direction, the density changes [Normal]>>[Lighter scanning]>>[Light scanning]. If the dial is in the center, the scanning density is [Normal].

- Enable [Duplex] button

☑ Enable [Duplex] button

This specifies whether the [Duplex] button (to switch simplex and duplex) on the scanner operator panel is enabled.
And, it distinguishes whether to scan from the ADF, or from the Flat Bed (FB), and changes automatically.

If this box is checked,
when a document is on the ADF, scanning is started from the ADF.
And when no document is on the ADF, scanning is started from the FB.

Scanning changes [Simplex] >> [Duplex]>> [Simplex] each time the [Duplex] button is pressed.

- ADF/FB Automatic change

☑ ADF/FB Automatic change

It distinguishes whether to scan from the ADF, or from the Flat Bed (FB), and changes automatically.

When a document is on the ADF, scanning is started from the ADF.
And when no document is on the ADF, scanning is started from the FB.

- Enable [Send to] button

☑ Enable [SendTo] button

Specifies whether the preview is started by pressing the [Send to] button on the device.

- Enable ADF Scanning Start

☑ Enable ADF Scanning Start
  ⦿ [Scan] Button
  ◯ Document Detection

Specifies whether scanning is started by a scanner event.

◊ [Scan] button

Pressing the [Scan] button on the scanner starts scanning.

◊ Document Detection

When a document is detected on the ADF, scanning automatically starts.

4.7.6 Filter

Set the filter processing in this dialog.

The filter name is displayed in the list box.

While checking the checkbox in the left of the filter name, the filter processing is applied to scanned image.

When selecting a filter name and clicking [Property] button, the setting dialog of the filter is displayed.
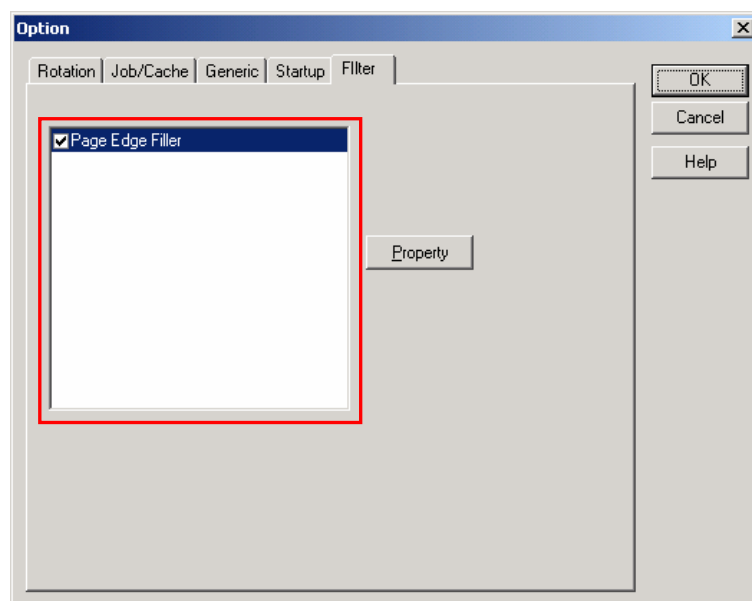
Figure Option dialog (Filter)

The type of filter and the setting details are explained below.

♦ Page Edge Filler

Eliminates the blemish around the paper edges by covering the area in (Black or White) color.
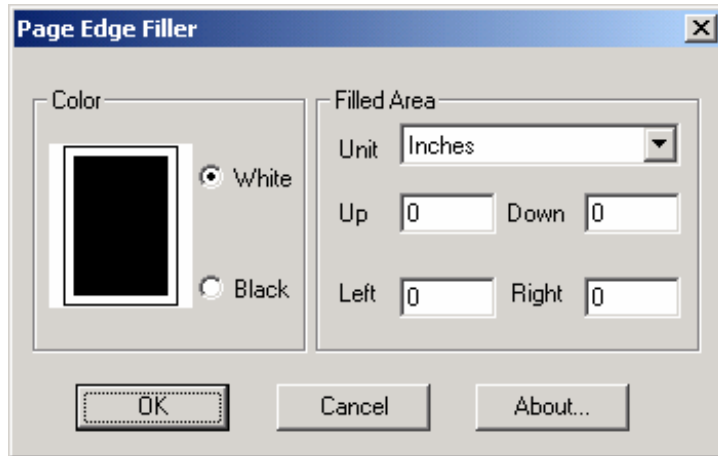
– **Color**

Select a color to paint over the image frame.

Can select "White" or "Black".

Please specify either white or black to match the background color of the document.

– **Filled Area**

· **[Unit]**

Select a unit from "Inches", "Millimeters", and "Pixels"

· **[Up], [Down], [Left], [Right]**

Specify the paint area from each side of the scanned image in numbers.

[Up]   : Input width from the top edge of the image.

[Down] : Input width from the bottom edge of the image.

[Left]   : Input width from the left edge of the image.

[Right] : Input width from the right edge of the image.

Each value should be set in the following ranges.

0 < [Up] + [Down] < [Image Length]

0 < [Left] + [Right] < [Image Width]

If any values are out of these ranges, this function may not work.

4.8 Setting Advance Options

The "advance dialog" is used to set items related to image processing. The settings apply to device-specific functions and items that differ according to whether the scanner used supports them.

The advance option specification is divided into "Color Variance", "Image Processing", and "Auto Binary".

The supported options depend on the scanner. See "Relevant Image Scanner Specification" in the Appendix. (is displayed for options that cannot be used.)

The option dialog for this driver is explained below.

The commonly used buttons are explained first.

♦ [OK]

Makes the new setting valid and closes the option dialog box.

♦ [Cancel]
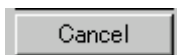
Makes the new setting invalid, returns the setting to the previous value, and terminates processing.

♦ [Help]
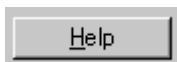
Displays online help.

The options are described below:

4.8.1 Gray
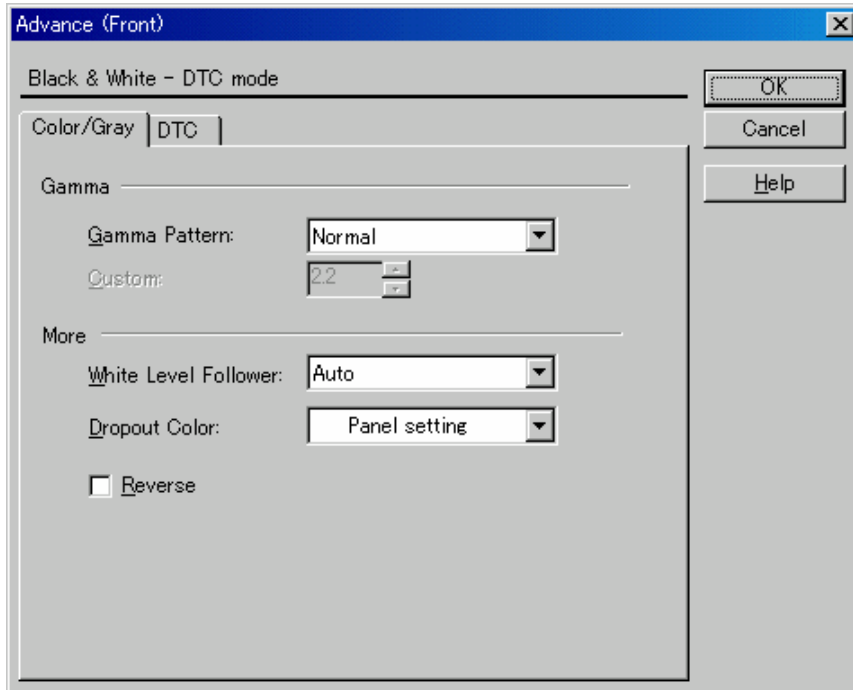
Figure Advance dialog (density correction)

♦ Gamma Pattern

This option corrects distortions from nonlinear image representation. Scanner sensors are generally designed to generate output linear to the density of the light reflected from the document. However, most output terminals do not produce output that has the desired linear relation to the input, and the resulting distortion must be corrected.

One of the following can be selected as a correction pattern: "Normal", "Soft", "Sharp", "Download Pattern", or "Custom".

Some scanner models do not support this function. See "Relevant Image Scanner Specification" in Appendix.

Download Gamma Pattern Selection

File Name:
`D:¥WINNT¥twain 32¥Fjscan32¥Sample.GMA`

[OK] [Cancel] [Add...] [Delete]
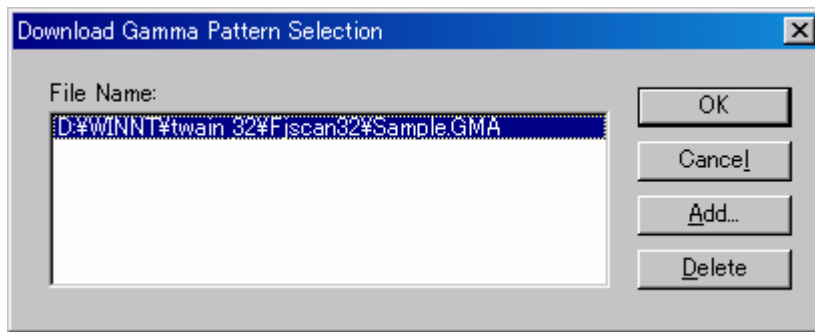
When "Download Pattern" is selected, the above dialog box opens.

Select the gamma pattern download file to be used from the list of file names. Then, press the [OK] button. Correction will then be executed using the selected gamma pattern.

If the gamma pattern download file has not been registered in the list of file names, use the [Add] button to register the file.

See "Download Pattern File" for information about how to specify the file.

Custom: `2.2`

When "Custom" is selected, a custom specification can be entered.

Entering an arbitrary value between 0.1 and 10.0 enables a gamma pattern corresponding to the entered value to be specified.

♦ White Level Follower

White Level Follower: `Auto`

Select this option to scan a document whose background color is not white, such as a newspaper.

Select "Auto", "Enable", or "Disable".

When "Enable" is selected, the document is scanned using background follow-up (for line drawings). When "Disable" is selected, the document is scanned using the standard basic white background (for photographs). When "Auto" is selected, the option automatically switches to the optimal setting based on the specified "Image Mode".

"White Level Follower" is used to adjust the density of the white background of a document and correct variations in the background color by compensating the pixels of scanned images individually.

For ordinary use, set "White Level Follower" to off. Use of "White Level Follower" often increases the background noise because IPC-3/3D is very sensitive.

This option is not available if "Gray Scale" is selected for "Image Mode".

In addition, some scanner models do not support this option. See "Relevant Image Scanner Specification" in the Appendix.

♦ Dropout Color

Dropout Color: | Panel setting ▼ |

This option enables scanning excluding the selected color information of green, red, or blue (the three primary colors of light). For example, to scan black characters framed in red, selecting red for scanning will scan only the black characters.

Some scanner models do not support this function. See "Relevant Image Scanner Specification" in Appendix.

♦ Reverse

☐ Reverse

This option specifies whether to reverse the black and white of a scanned image.

If this option is selected, black and white are reversed by reversing the black and white pixels. If this option is not selected, the black and white values of the reproduced image correspond to the original image.

Some applications do not permit normal operation. If this occurs, contact the manufacturer of the application.

4.8.2 Image Filter
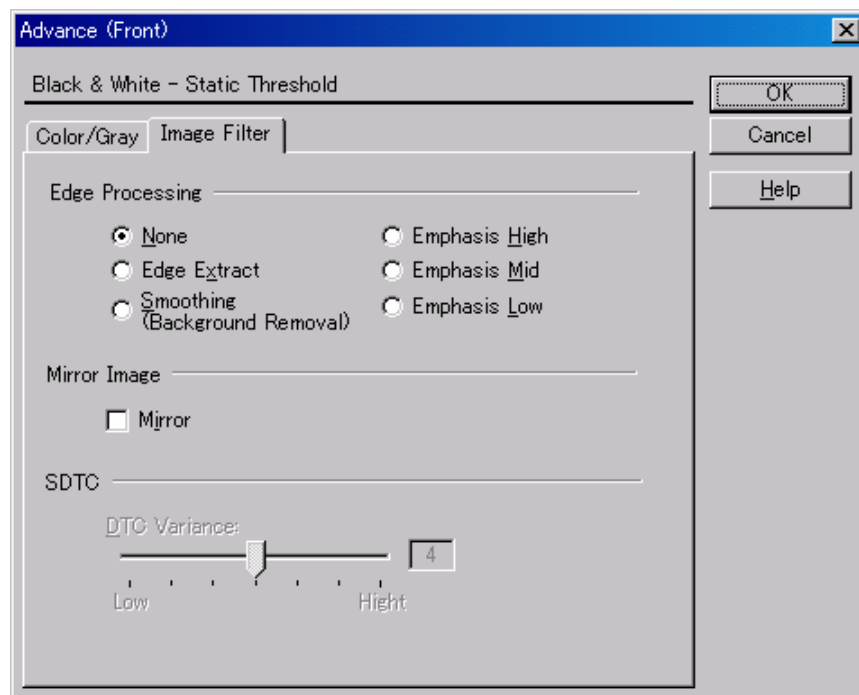
Figure Advance dialog (image processing)

♦ Edge Processing
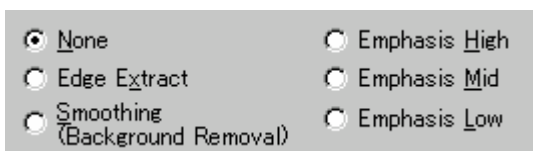
This option specifies the sharpness of a scanned image.

Select "None", "Edge Extract", or "Smoothing (Background Removal)".

None

> Edge processing is not performed.

Edge Extract

> This option outputs an image with the edge extracted.

> If this option is selected, the boundary between the black part and white part in a closed area is traced and the edge extracted.

> "DTC Variance" and "Edge Extract" are mutually exclusive.

Smoothing (Background Removal)

This option specifies whether to smooth the curves in an image by removing zigzag lines. "Smoothing" or "Emphasis" can be selected. In addition, "Edge Extract" and "Emphasis" are mutually exclusive.

Emphasis

This option outputs an image with the edge emphasized.

"Emphasis High", "Emphasis Mid", or "Emphasis Low" can be selected.

If "Emphasis High" is selected, the image becomes sharper. If "Emphasis Low" is selected, the image appears less distinct.

♦ Mirror

This option specifies whether to flip the scanned image over the scanning axis.

If this option is selected, a mirror image of the original image is obtained.

♦ Variance (DTC Variance)
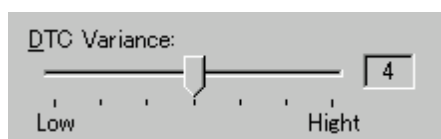
This option specifies the value for adjusting the dynamic threshold of an image based on the brightness of the image.

A value is specified using the slider. The smaller the value, the lower the variance becomes. The higher the value, the higher the variance becomes. To specify the value, drag the tab of the slider to the desired setting position. The current setting is displayed on the right. This option is mainly used for optical character recognition (OCR). It enables dark and bright images in a document to be scanned effectively.

♦ Floating Slice Level (SDTC)
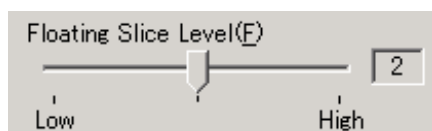
Specifies the level of the binary processing done by the floating slice.

Set the level to higher when scanning documents with dark colored background.

* This is displayed only when the SDTC mode (Floating Slice) is specified.

4.8.3 DTC

This option is valid only when "DTC Variance" is set.
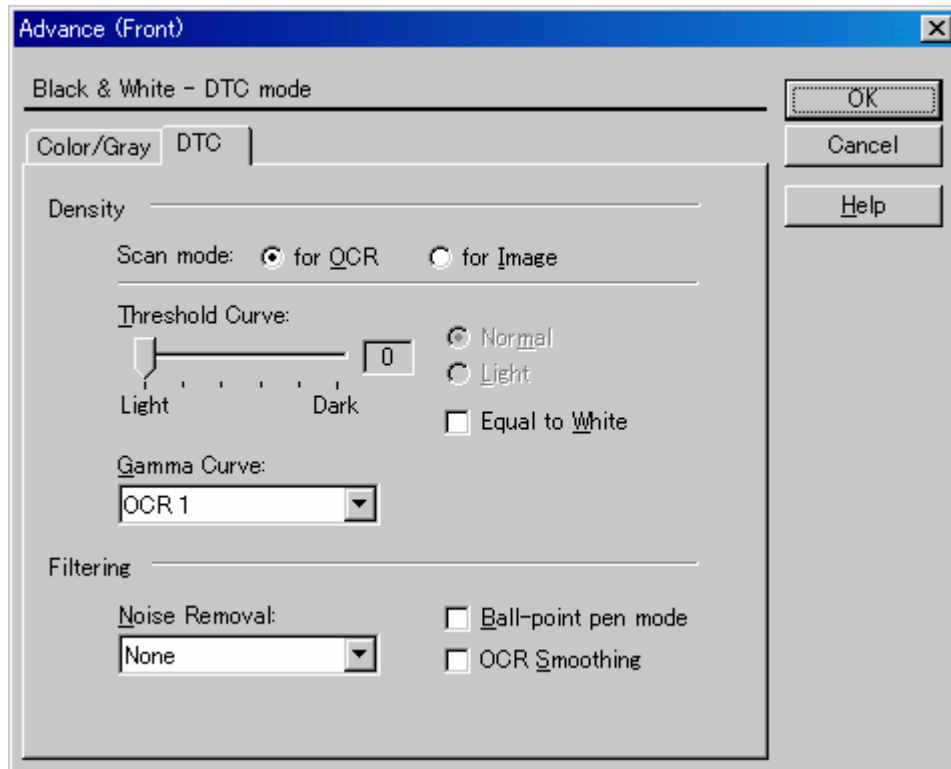
Figure Advance dialog (DTC Mode)

♦ Scan mode
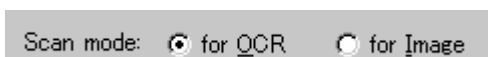
This option selects one of the following two scan modes:

[for OCR]:   This mode is for text recognition applications where irregularity in the image
                    is undesirable.

[for Image]: This mode is for image scanning applications that scan images without prior
                    smoothing.

The specification changes the specifiable items and members for "Threshold Curve" and
"Gamma Curve".

The selection screens for "for OCR" and "for Image" are not displayed if IPC-3/3D and
IPC-4D are installed.

♦ Threshold Curve

Threshold Curve:

| | 0 |

Light   Dark

⊙ Normal
○ Light
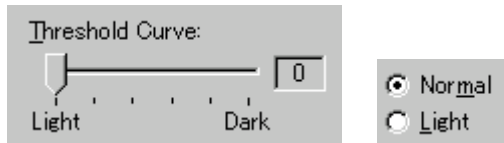
This option specifies the relationship between the threshold value and the maximum density.

The specification method depends on the [Scan mode] setting.

In [for OCR] mode, use the scroll bar to set the inclination and density level between 0 and 5. Click the arrow of the scroll bar or drag the scroll marker to the desired setting position. The current setting is displayed in the center (figure on the left).

In [for Image] mode, select [Normal] or [Light] (figure on the right).

If IPC-3/3D and IPC-4D have been installed, there is no difference between [for OCR] and [for Image]. The scroll bar is used to set the inclination and density level between 0 and 7. (The figure on the right is not displayed.)

♦ Gamma Curve
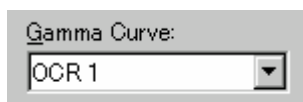
Gamma Curve:

OCR 1 ▼

This option specifies the gamma correction curve pattern.

The available choices depend on the [Scan mode] setting.

In [for OCR] mode, select [OCR1] or [OCR2].

In [for Image] mode, select [Dark Image] or [Even].

For IPC-3/3D and IPC-4D, the gamma curve need not be specified because the contrast is adjusted automatically. ([Gamma Curve] is not displayed.)

♦ Equal to White

☐ Equal to White
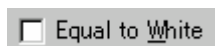
At conversion to binary, this option specifies whether to set the data to black or white when the threshold value and the value of the scanned data are equal.

This option is not available for IPC-4D.

♦ Ball-Point Pen Mode
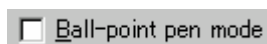
☐ Ball-point pen mode

When an image made with a pencil or ball-point pen is scanned, the light reflected from the pencil lead or ink is not uniform. As a result, part of the image may be missing. If the [Ball-Point Pen] checkbox is checked, filtering is applied to offset the bright area in the document and compensate for disconnected or faint lines.

♦ OCR Smoothing/ Background Removal

☐ OCR Smoothing/Background Removal

The OCR smoothing is the function to make smooth the notched part of line-drawing, and the Background Removal is the function to remove the uneven background.

These functions are enabled when it is selected.

For further information, please refer to the User's guide attached to the IPC board since the function to be operated is different by the type of IPC.

At IPC-3/3D, [Noise Removal] and [OCR smoothing/ Background removal] is enabled exclusively.

♦ Noise Removal

Noise Removal:
None ▼
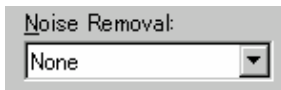
This option automatically removes spots that appear as black stains in a white area and spots that appear as white stains in a black area.

This option uses an algorithm that removes particles from 2 x 2 to 5 x 5 dot matrixes. The size of one dot depends on the resolution setting, and is equivalent to 1/400 inch for 400 dpi. Particles are distinguished from the text by whether they are connected to other dots within the specified number of pixels.

At IPC-3/3D, [Noise Removal] and [OCR smoothing/ Background removal] is enabled exclusively.
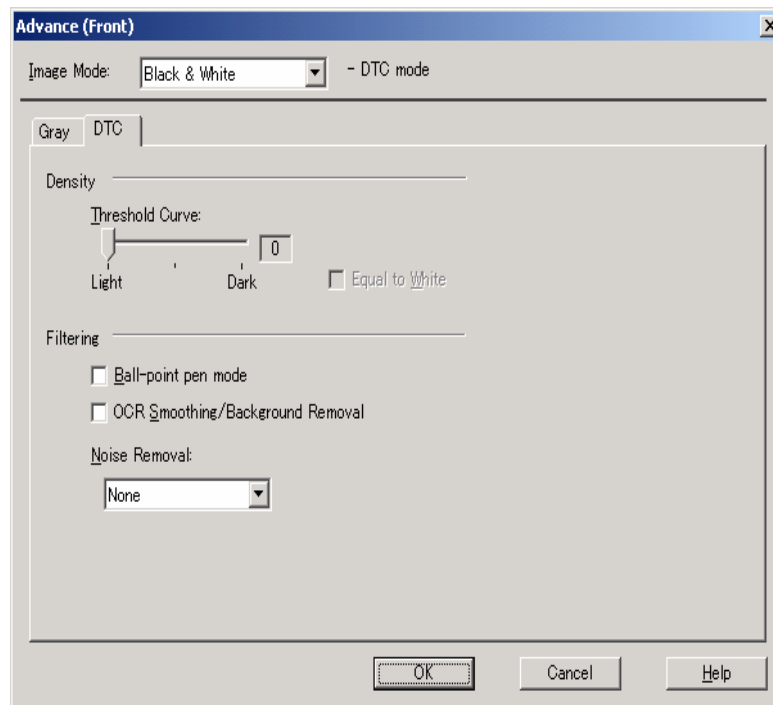
Figure Advance dialog (DTC Mode) <IPC-3/3D and IPC-4D installed>

4.8.4 When Color is specified

For color devices, if Color is selected in the image type, dialog display changes as follows.
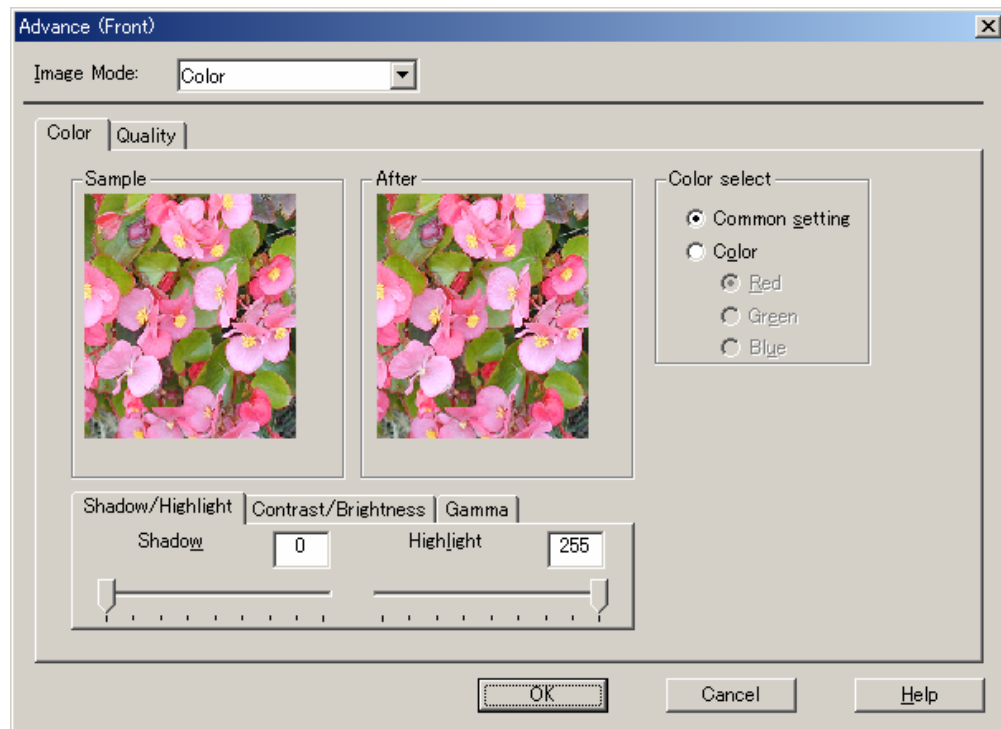
Figure Advance dialog (Color) <Image Mode : Color selected>

♦ Shadow/Highlight

Shadow : The highlight allows the darkest part of the document to be controlled. The higher the shadow value, the darker the image.

Highlight : The highlight allows the brightest part of the document to be controlled. The higher the highlight value, the lighter the image.

Any levels on the document outside these settings are flooded (all 0 or 255), while the interval between the shadow and highlight settings are equally divided into 255 levels, which are used to create the output images. This means that if the shadow and highlight settings are close to each other, the contrast for that interval in the scanned document will be very strong (but with all other areas maximizing high or low).

♦ Contrast/Brightness

| Contrast | 1 | Brightness | 255 |
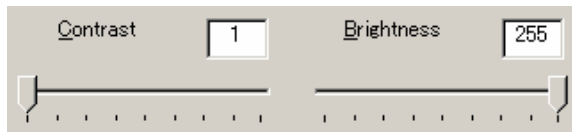
Contrast : Sets the contrast of light and shadow in a scanned image. Specify the contrast with a number in the range of 1 (low [soft]) to 255 (high [sharp]). If this value is increased, the dark part of the image is shown darker and the light part is shown lighter.

Some scanner models do not support this function. See "Relevant Image Scanner Specification" in Appendix.

Brightness : Sets the brightness of the overall image. Specify the brightness with a number in the range of 1 (bright) to 255 (dark). To brighten the overall image, decrease the value of the setting. To darken the overall image, increase the value.

♦ Gamma
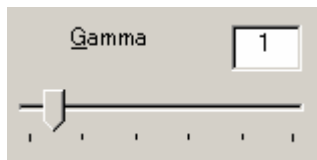
| Gamma | 1 |

This option corrects distortions from nonlinear image representation. Scanner sensors are generally designed to generate output linear to the density of the light reflected from the document. However, most output terminals do not produce output that has the desired linear relation to the input, and the resulting distortion must be corrected.

An arbitrary range is between 0.1 and 10.0.

♦ Color select

Color select
  ● Common setting
  ○ Color
    ● Red
    ○ Green
    ○ Blue

It is possible to select independent value on each color
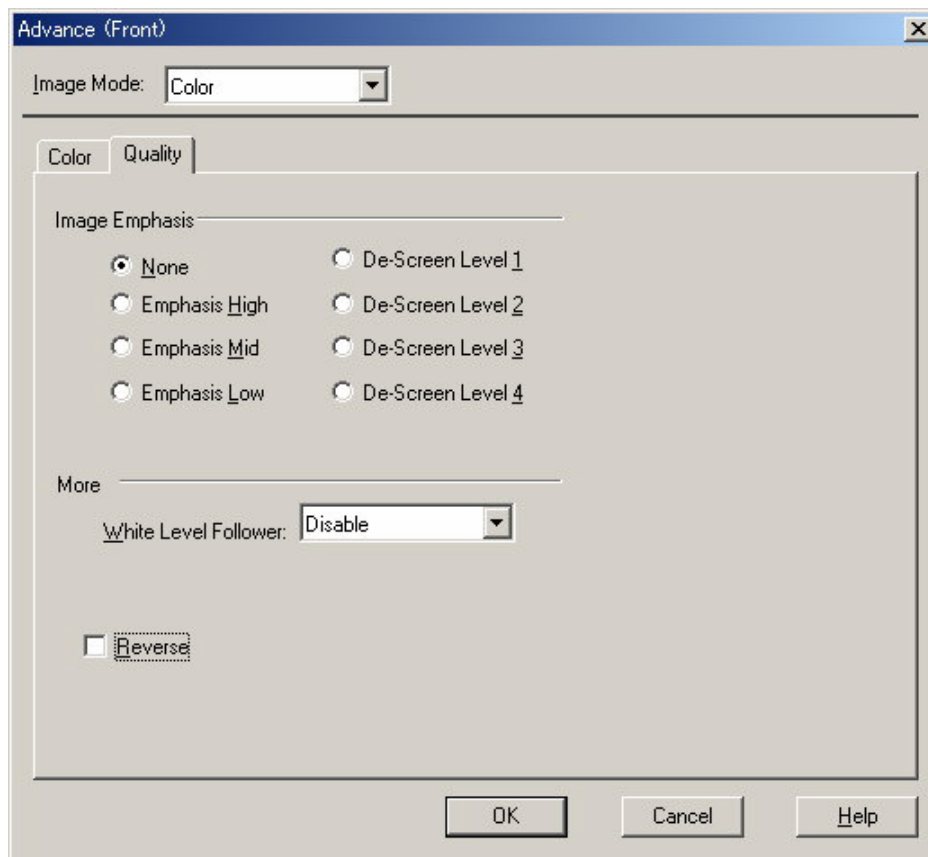
Figure Advance dialog (Quality) <Image Mode : Color selected>

♦ Image Emphasis

This option specifies the sharpness of a scanned image.

Select "None", "De-Screen" or "Emphasis".

None

Edge processing is not performed.

Emphasis

This option outputs an image with the edge emphasized.

"Emphasis High", "Emphasis Mid", or "Emphasis Low" can be selected.

If "Emphasis High" is selected, the image becomes sharper. If "Emphasis Low" is selected, the image appears less distinct.

De-Screen

> "De-Screen Level 1", "De-Screen Level 2", "De-Screen Level 3", or "De-Screen Level 4" can be selected.
>
> This option eliminates moirés patterns. To eliminate more effectively, higher level is selected.

♦ White Level Follower

White Level Follower: | Auto | ▼ |

Select this option to scan a document whose background color is not white, such as a newspaper.

Select "Auto", "Enable", or "Disable".

When "Enable" is selected, the document is scanned using background follow-up (for line drawings). When "Disable" is selected, the document is scanned using the standard basic white background (for photographs). When "Auto" is selected, the option automatically switches to the optimal setting based on the specified "Image Mode".

"White Level Follower" is used to adjust the density of the white background of a document and correct variations in the background color by compensating the pixels of scanned images individually.

♦ Reverse
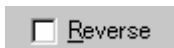
☐ Reverse

This option specifies whether to reverse the black and white of a scanned image.

If this option is selected, color data is reversed. If this option is not selected, the color values of the reproduced image correspond to the original image.

Some applications do not permit normal operation. If this occurs, contact the manufacturer of the application.

4.9 Setting the Setting Manager Options

These options are used to manage the setting files, and switch the basic scan dialog display.
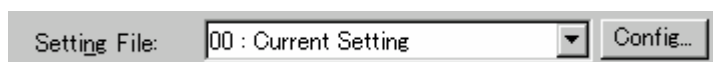
Press the [Config] button of the main dialog to open the [Setting Manager] dialog box shown below.
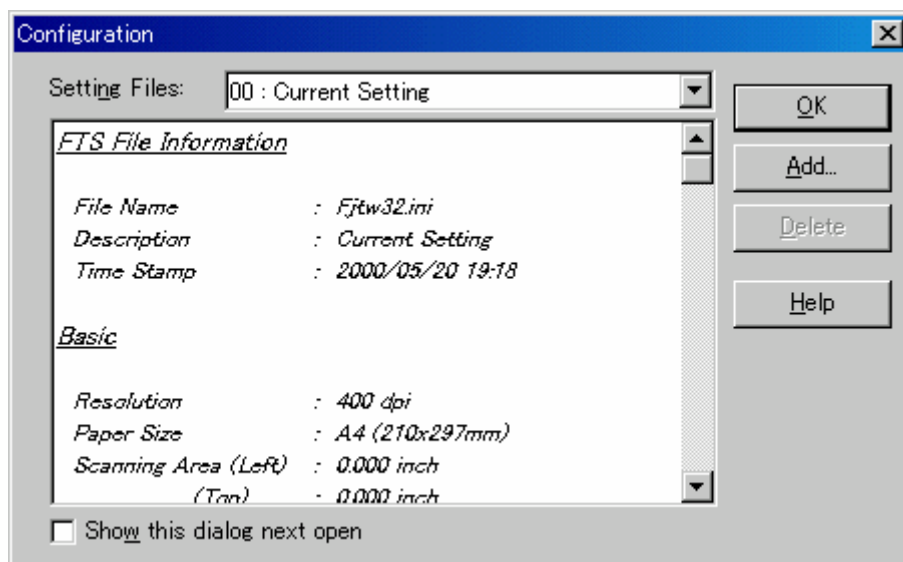
Figure Option dialog box (simplified DTC)

♦   Setting Files
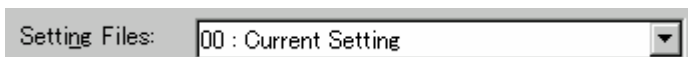
The setting information of the scan conditions can be saved in a "Setting file."

Scan condition settings that have been set in advance in this dialog can be selected from the list of setting files. This enables selection of all settings at the same time without having to enter the scan conditions one at a time. Press the ▼ button to open the list of setting files.

Subsequent scanning operations can be performed effectively by registering several types of scan conditions that are frequently used.

♦ FTS File Information
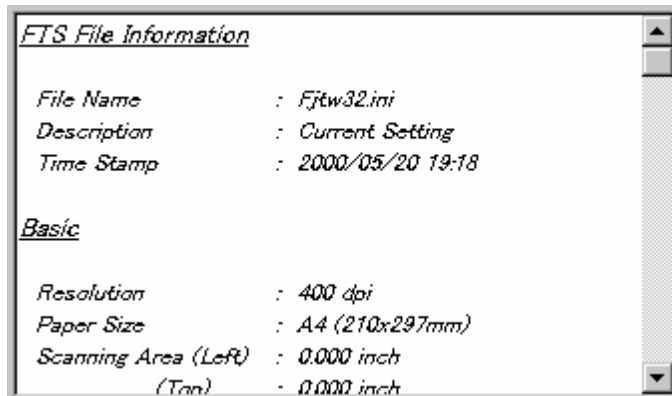
The information of the setting file selected in [Setting Files] is displayed.

♦ [Show this dialog next open] checkbox
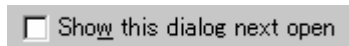
If this checkbox is checked, [Basic Scan Dialog] will be activated the next time the driver is activated.

♦ [OK] button
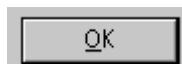
Makes the new setting valid, closes this dialog box, and returns to the main dialog.

♦ [Add] button
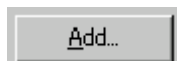
Adds the setting of the current driver to a setting file.
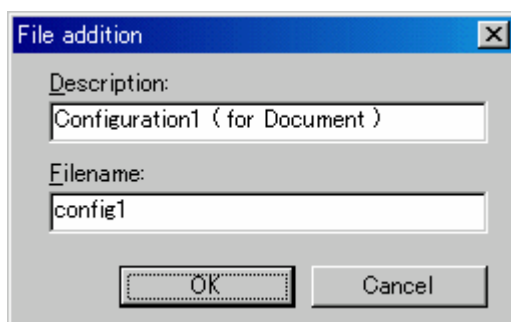
Pressing the [Add] button opens the [File addition] dialog.

Enter the [Description] and [Filename] as shown in the example above. Then, press the [OK] button to add the new setting file. To cancel, press the [Cancel] button.

Description: Enter a character string to be displayed in the selection frame of the [Setting Files].

Filename: Specify the name of the file used to save the settings.

♦   [Delete] button

[Delete]

Deletes unnecessary setting files.

Select the setting file to be deleted and then press the [Delete] button. A confirmation
dialog will be displayed. Press the [OK] button to delete the setting file. To cancel, press
the [Cancel] button.

♦   [Help] button
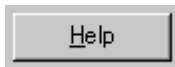
[Help]

Displays online help.

4.10   Basic Scan Dialog

The basic scan dialog contains only the minimum functions required for scanning. The detailed setting functions of the main dialog have been omitted.

Scanning can be easily performed by selecting a registered setting file.

The basic scan dialog is also useful for avoiding incorrect operations when standard work is performed.

By checking the [Show this dialog next open] checkbox of the [Setting Manager] dialog, the basic scan dialog box will be opened instead of the main dialog box at the next activation.

<Scan Procedure>
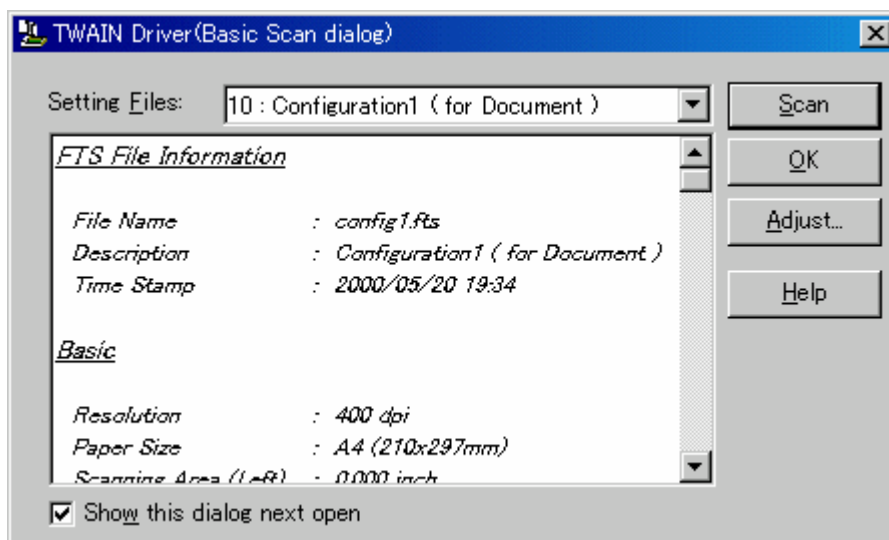
1.   Select the file to be used from the list of setting files.

2.   Press the [Scan] button.

Scanning is performed based on the settings of the setting file information.

<Configuration>

♦   Setting Files
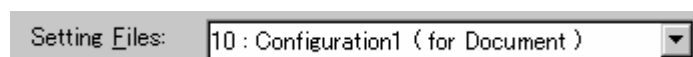
A list of setting files is displayed. When the desired file is selected, the setting information saved in the file will be read and reflected during scanning.

♦ FTS File Information

```
FTS File Information                                    ▲

    File Name          :  config1.fts
    Description        :  Configuration1 ( for Document )
    Time Stamp         :  2000/05/20 19:34

Basic

    Resolution         :  400 dpi
    Paper Size         :  A4 (210x297mm)
    Scanning Area (Left) :  0.000 inch               ▼
```
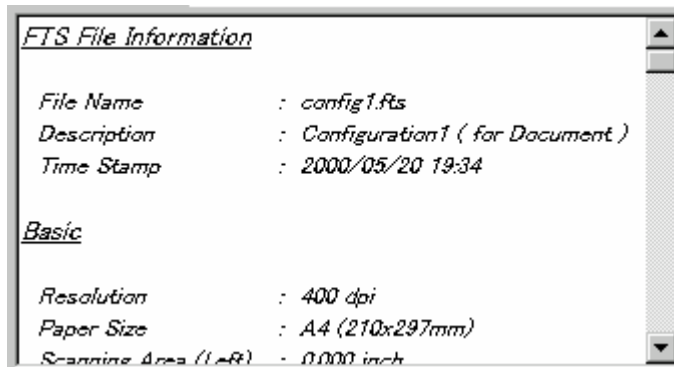
The contents of the selected file are displayed.

♦ [Scan] button

```
    Scan
```
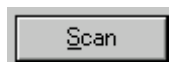
Executes scanning based on the contents of the setting file.

♦ [OK] button

```
    OK
```
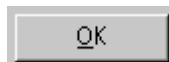
Terminates without performing the scan operation.

♦ [Adjust] button

```
    Adjust...
```

Switches from the basic scan dialog to the main dialog.

♦ [Help] button

```
    Help
```
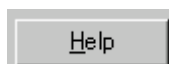
Displays online help.

♦ [Show this dialog next open] checkbox

```
☑ Show this dialog next open
```
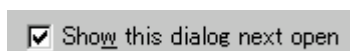
If this checkbox is checked, the [Basic Scan Dialog] will be opened at the next startup. If this checkbox is not checked, the main dialog will be opened at the next startup.

4.11   Download Pattern File

The "download pattern file" of this driver is a file that defines the patterns to be used by the scanner to execute various image processing. This file is available in the following two versions. Each version can be selected using the [Download Selection Dialog] that opens when [Download] is selected.

The file is a text file that conforms to the following rules. Use an appropriate text editing program (for example, "Note Pad" in the operating system) to edit the file.

♦   Dithered download pattern file

Any user defined dithered pattern can be used to scan an image by downloading the pattern from the dithered download file to the scanner. The defined pattern becomes effective when [Download Pattern] is selected for [Halftone].

Some models do not support this file. See "Relevant Image Scanner Specification" in Appendix.

Although the standard extension of the file name is ".DTH," there may be exceptions.

Coding configuration:

(n, size in the X direction),(m, size in the Y direction),

(pattern value for the X1/Y1 coordinates),

(pattern value for the X1/Y2 coordinates),

(pattern value for the X1/Y2 coordinates),........

(pattern value for the Xn/Ym-2 coordinates),

(pattern value for the Xn/Ym-1 coordinates),

(pattern value for the Xn/Ym coordinates)

Meaning of each element:

(n, size in the X direction) indicates the size of the matrix in the X direction. Specify 8 for the scanner supported by this driver.

(m, size in the Y direction) indicates the size of the matrix in the Y direction. Specify 8 for the scanner supported by this driver.

(Pattern value for the Xx/Yy coordinates) contains a values in the range of 0 (bright) to 255 (dark) that specifies the brightness of the X coordinate, x, and the Y coordinate, y.

Note

 Use a delimiter other than a number to delimit elements. For most cases, use a comma (,).

Example

8, 8,

128, 128, 128, 128, 128, 128, 128, 128,

255, 128, 128, 128, 128, 128, 128, 128,

255, 255, 128, 128, 128, 128, 128, 128,

255, 255, 255, 128, 128, 128, 128, 128,

255, 255, 255, 255, 128, 128, 128, 128,

255, 255, 255, 255, 255, 128, 128, 128,

255, 255, 255, 255, 255, 255, 128, 128,

255, 255, 255, 255, 255, 255, 255, 128,

♦ Gamma download pattern file

Any user defined gamma correction processing can be performed by downloading the pattern from the gamma download file to the scanner. The defined pattern becomes effective when [Download Pattern] is selected for [Gamma Pattern].

Some models do not support this file. See "Relevant Image Scanner Specification" in Appendix.

Although the standard extension of the file name is ".GMA," there may be exceptions

Creation of a gamma download pattern file can be facilitated using the following utilities for editing the gamma correction pattern:

Coding configuration:

(gray-scale in the X direction),(gray-scale in the Y direction),

(X0 output value),(X1 output value),(X2 output value),........

(X253 output value),(X254 output value),(X255 output value)

Meaning of each element:

(gray-scale in the X direction) indicates the size and the gray scale of the input value. (In this driver, this value is fixed at 256.)

(gray-scale in the Y direction) indicates the size and the gray scale of the output value. (In this driver, this value is fixed at 256.)

(Xx output value) indicates the output value, in the range of 0 (bright) to 255 (dark), for an input value x.

Note

Use a delimiter other than a number to delimit elements. For most cases, use a comma (,).

Example

256, 256,

255, 254, 253, 252, 251, 250, 249, 248, 247, 246, 245, 244, 243,

242, 241, 240, 239, 238, 237, 236, 235, 234, 233, 232, 231, 230,

229, 228, 227, 226, 225, 224, 223, 222, 221, 220, 219, 218, 217,

216, 215, 214, 213, 212, 211, 210, 209, 208, 207, 206, 205, 204,

203, 202, 201, 200, 199, 198, 197, 196, 195, 194, 193, 192, 191,

190, 189, 188, 187, 186, 185, 184, 183, 182, 181, 180, 179, 178,

177, 176, 175, 174, 173, 172, 171, 170, 169, 168, 167, 166, 165,

164, 163, 162, 161, 160, 159, 158, 157, 156, 155, 154, 153, 152,

151, 150, 149, 148, 147, 146, 145, 144, 143, 142, 141, 140, 139,

138, 137, 136, 135, 134, 133, 132, 131, 130, 129, 128, 127, 126,

125, 124, 123, 122, 121, 120, 119, 118, 117, 116, 115, 114, 113,

112, 111, 110, 109, 108, 107, 106, 105, 104, 103, 102, 101, 100,

99, 98, 97, 96, 95, 94, 93, 92, 91, 90, 89, 88, 87, 86, 85, 84,

83, 82, 81, 80, 79, 78, 77, 76, 75, 74, 73, 72, 71, 70, 69, 68,

67, 66, 65, 64, 63, 62, 61, 60, 59, 58, 57, 56, 55, 54, 53, 52,

51, 50, 49, 48, 47, 46, 45, 44, 43, 42, 41, 40, 39, 38, 37, 36,

35, 34, 33, 32, 31, 30, 29, 28, 27, 26, 25, 24, 23, 22, 21, 20,

19, 18, 17,   16, 15, 14, 13, 12, 11, 10, 9, 8, 7, 6, 5, 4, 3, 2, 1, 0

5. Using the Gamma Pattern Editor

5.1 Start-up

Click on "Start" and select "Download Pattern Editor" from "Scanner Utility for Microsoft Windows" under "Programs." The following menu is displayed:
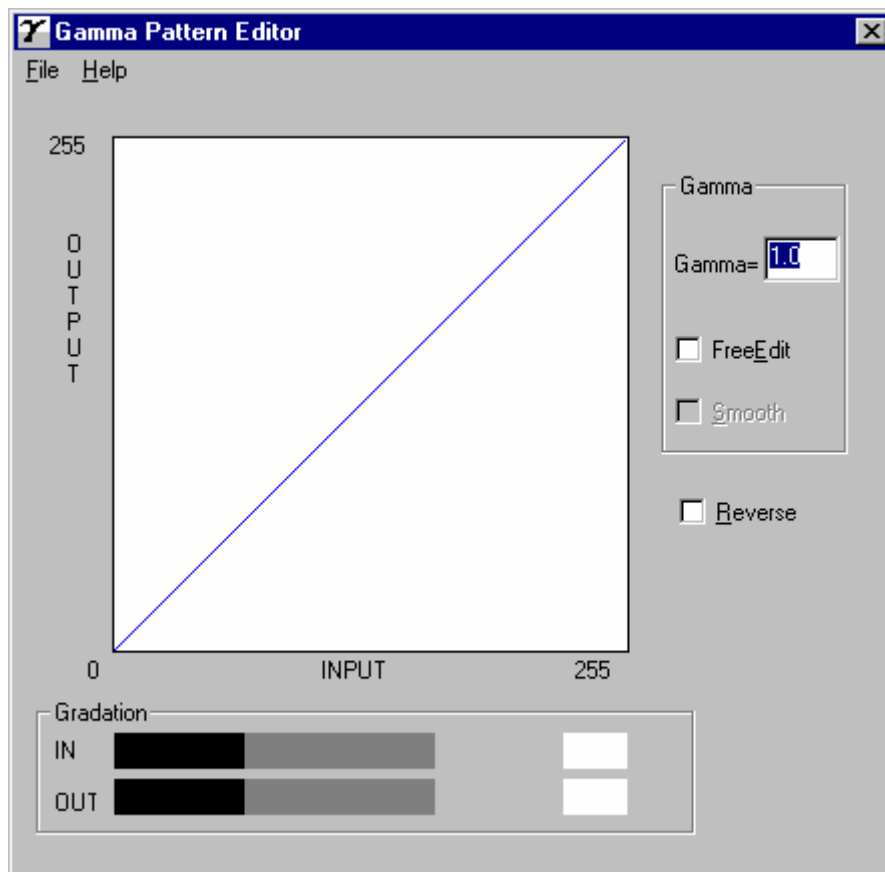
Figure Gamma Pattern Editor Tool start-up menu

5.2 [File] menu
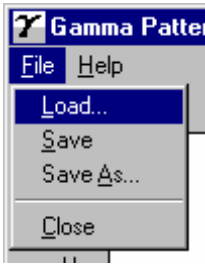
♦ [Load]

This menu is used to read the Gamma Download file and display the graph and gradations. The name of the open file is displayed above the graph area.

♦ [Save]

The gamma pattern currently being edited is saved in the file whose name is displayed above the graph area. If no filename is displayed, the pattern is named and saved in that file.

♦ [Save As]

The gamma pattern currently being edited is named and saved in that file. The saved filename is then displayed above the graph area.

♦ [Close]

Select this to exit the editing program.

5.3 [Help] menu
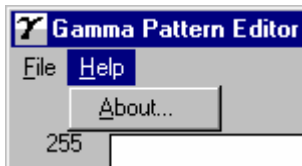
- ♦ [About]

  Information related to this editor and its version number is displayed.

5.4 Gamma Pattern Editing

♦ Graph Area

The graph area is a 256-dot x 256-dot white square area bordered by black lines, where the relationship between the input values of 0 to 255 (x axis) and output values of 0 to 255 (y axis) is indicated in blue lines. Each graph dot represents one division (unit).

♦ Gradation

The input is displayed in black and white in 256 single-dot steps from 0 at the left border to 255 at the right border. The gamma function of the scanner is displayed. After saving it, the displayed (gray scale) gamma function is fixed and constant. The output values are displayed in single dots in relation to the input values and the brightness of the output equipment is displayed. To ensure accurate display, the display must be set for "True-Color" or greater.

♦ Gamma

Calculation of the output values is based on the value γ entered in the edit box; the graph and the gradation are then displayed. The values that can be input are integers greater than 0 or fractions.

<<Formula>>   Output = (input $\div$ 255)$^{\gamma}$ x 255 (Input = 0 - 255)

♦ Free Edit

Designates whether to enable editing of the graph area directly using the mouse cursor.

If this box is checked, the gamma pattern input edit box cannot be used and only editing using the mouse cursor is supported.

♦ Smooth

Designates whether to smooth edited curves. This setting is only valid when Free Edit is selected. In this setting, the curved lines drawn by the mouse are automatically smoothed. This is reflected in the graph and gradation display.

♦ Reverse

Designates whether to reverse black and white. When this box is checked, the current output values are converted to (255 - output values).

6. Definition of Scanner and Camera Properties

6.1 Displaying Scanner and Camera Properties

Double-click the [Scanner and Camera] icon on the [Control Panel] to display the corresponding properties dialog box shown below.

If the mini-port driver has been properly installed, the scanner driver to be used is displayed. Select the model name and click the [Properties...] button. The dialog box shown below is displayed.

In this dialog box, the scanner driver can be checked and information related to different kinds of related devices can be confirmed. An explanation of each tab folder and its use is below.

*Depending on scanners, [Events] and [Device Set] tab may not be displayed.

6.2 General Tab

General information on the driver for a connected scanner can be displayed, and the connection can be tested from this folder.
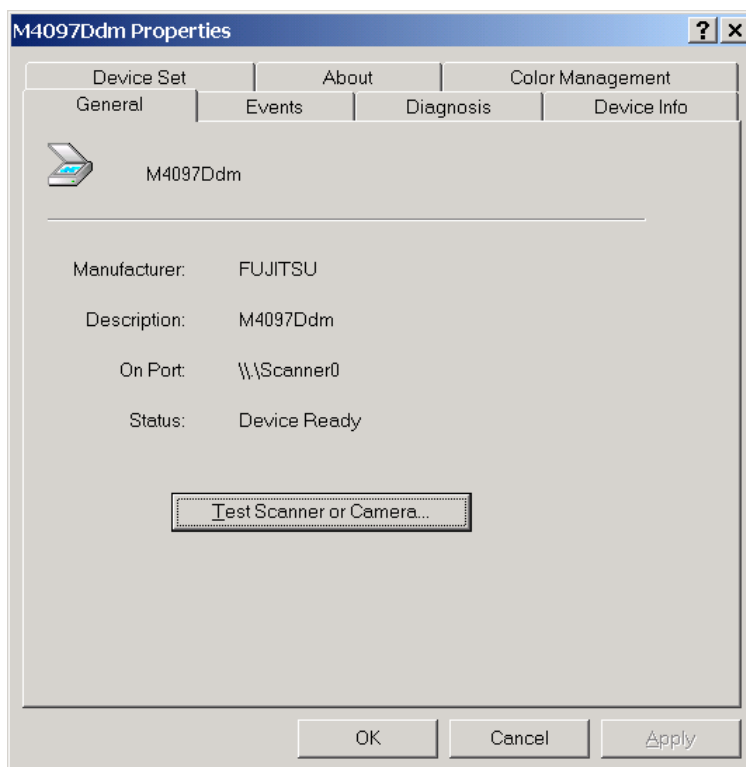
6.3 Events Tab

On the Events tab, an application can be specified to be started automatically by "Scanner events" such as "pushing buttons on the scanner" or "placing documents to the scanner".

(The Events tab is not displayed if the device does not support this function.)
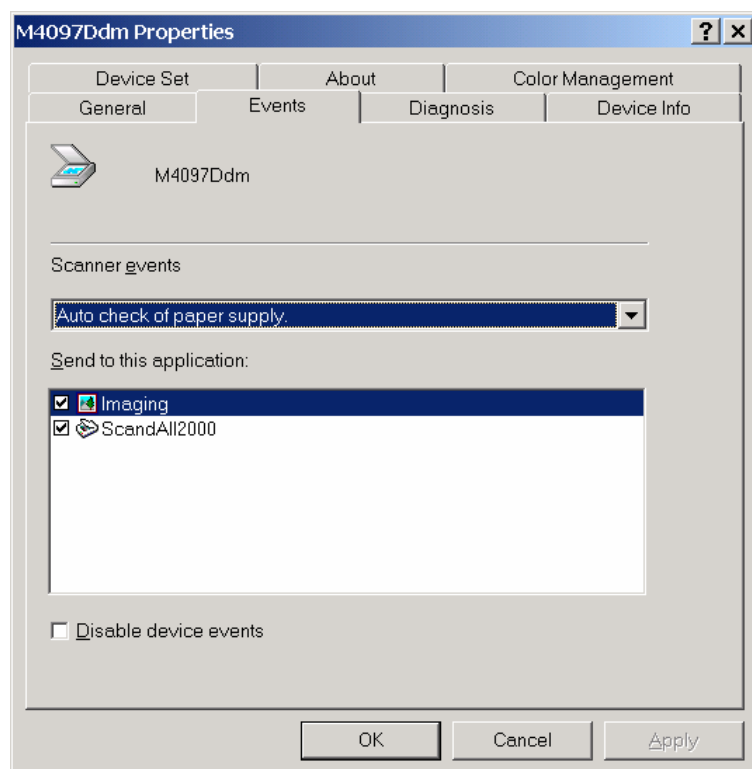
♦ **Scanner events**

Select a "scanner event" from the list box to start an application. Please select the item to set up from the following events.

"Auto check of paper supply":   When placing paper to the ADF.

"Start button" or "Scan button": When pushing the "Start" or the "Scan" button of the scanner.

"Send to1-9":   When pushing the "SendTo" button of the scanner.

("Scanner events" may not be displayed depending on scanners.)

♦ **Send to this application**

Mark on the check box of an application to be started by the operation specified in the above [Scanner events]. Multiple applications can be specified. When two or more applications are specified, a dialog box appears to select one to be started by the operation.

♦ **Disable device events**

If these functions are not used, mark on this check box.

* If the above settings are not activated by clicking [OK] or [Apply], please reboot the PC.

6.4 Diagnostic Tab

To perform more detailed diagnostic tests than those provided in the general tab folder, click the [Diagnose] button.

In Windows®2000 or Windows®XP, only a user who has administrator authority can run these tests.
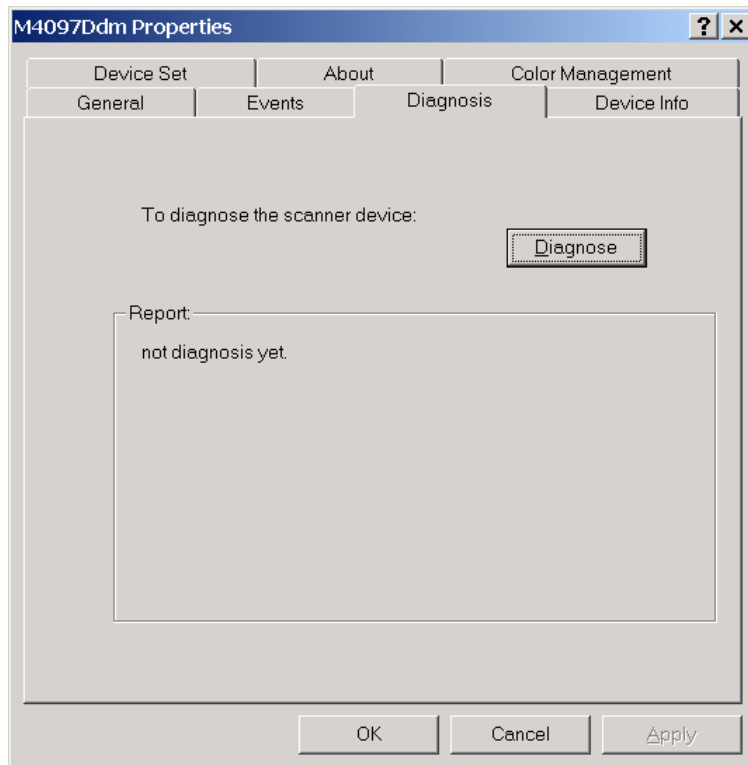
6.5 Device Information Tab

A list of the functions compatible with the selected scanner driver is displayed. The items displayed depend on the selected model of scanner. Only hardware functions are displayed. The functions realized by software are not displayed in this tab folder. Therefore, the displayed content may not match the content specified during reading. The contents of this tab folder are not displayed if the scanner driver is either currently in use or not connected to the computer. If they are not displayed, stop the application being used by the scanner driver or check the connection. Then, select this tab folder again to display the contents.

M4097Ddm Properties	? X

Device Set	About	Color Management
General	Events	Diagnosis	Device Info

Device infomation:

Function	Support	
⊟ Standart Information		
├ Vendor Identification	FUJITSU	
├ Product Identification	M4097Ddm	
└ Product Revision	0E08	
⊞ Scanning Area		
⊞ Video Output		
⊞ Physical Function		
⊞ Imaging		
⊞ On Board IPC	No	
⊞ Compression Function	Yes	
Endorser	No	
⊞ Miscellaneous		
Interface	SCSI	

OK	Cancel	Apply

6.6 Device Setup Tab

Information related to the operation and maintenance of the scanner driver can be displayed and set up. For some scanner models, this tab may not be displayed, or some items cannot be set up (grayed out). Changing the setup activates the Apply button. The changed setup is reflected on the device only if the Apply button or OK button is clicked. The contents of this tab folder are not displayed if the scanner driver is either currently in use or not connected to the computer. If they are not displayed, stop the application being used by the scanner driver or check the connection. Then, select this tab folder again to display the data.

In Windows®2000 or Windows®XP, only a user who has administrator authority can change the setup from this tab folder.
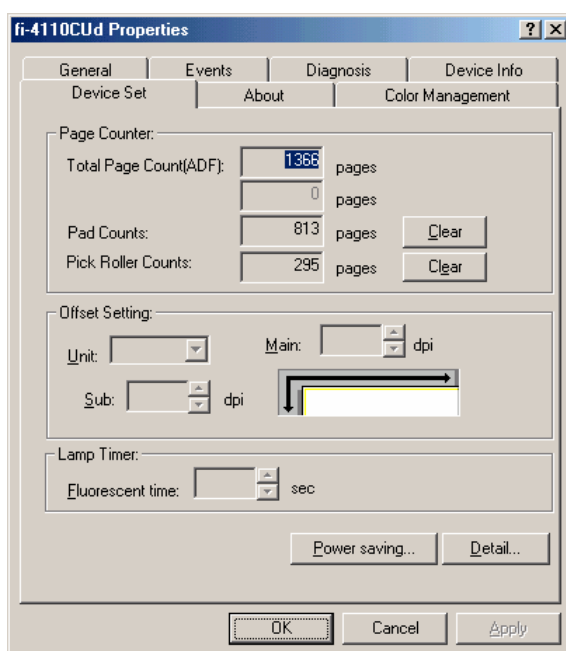
♦   Page counter

An approximate total of the numbers of pages that the ADF and flat bed (FB) have read are displayed. An equivalent count of the pages read after consumables are replaced is also displayed. To set the consumables counter to zero after replacing consumables, click the [Clear] button. Depending on the device, this operation can be executed using the operation panel of the device. Displayed consumables names or item numbers also vary depending on the device. For information, see the operator's guide of the device.

Note
Depend on some scanner models, once the [Device Set] tab appears, the operation panel is unable to be handled. In this case, close this dialog and turn the power ON/OFF of the scanner. After the scanner setup, the operation panel is able to be handled.

When using a scanner, the following message may be displayed.
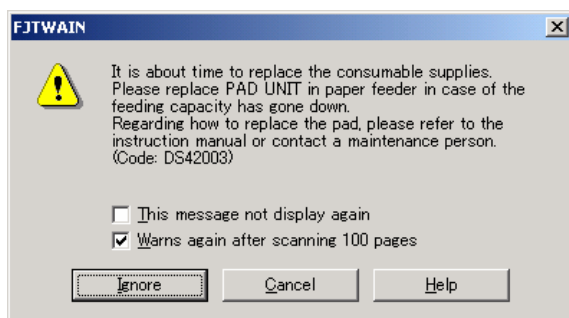
If this message appears, replace consumables following the instructions below.

< If replacing consumables immediately >

1. Check [This message not display again.]

2. In cases where consumables are replaced after completing all documents being scanned, click [Ignore]. In cases where scanning is stopped for an immediate replacement, click [Cancel].

3. Following the operator's guide of the device, replace the consumables.

4. Select [Page counter] from [Device setup], click [Clear] button to reset the consumables counter.

< If replacing later (immediate replacement is impossible) >

1. If it is not necessary to display this message again, check [This message not display again]*. If it is necessary to display this message again after scanning xxx pages, check [Warns again after scanning xxx pages].

2. If the scanning is continued, click [Ignore] and close the message. If the scanning is stopped, click [Cancel] and close the message.

3. Replace consumables as soon as possible or when this message appears next time.

4. After the replacement, click [Clear] of [Device Setup] under [Page Counter] to reset the consumables counter.

(* If [This message not display again] is checked, this message will not appear before the consumables counter is reset.)

◆ Offset adjustment

If the written document and the desired read position for scanning are different, fine adjustment is possible. At shipment, the offset has been adjusted to an optimum value within a certain range. Therefore, adjustment is not generally required. The maximum size of changes depends on the device.

◆ Lamp timer

Specify when the lamp turns off. This is the elapsed time after a scan is complete.

◆ Reset

The settings in the tab folder are restored to their initial settings before the dialog box was displayed.

◆ [Power saving mode] button

This specifies the power saving mode.

If this button is clicked, the following dialog box is displayed.

Quick Start Mode

This mode keeps the lamp on regardless the scanner's operating condition, which saves times for lamp to become steady.

Low Power Mode

To save the power consumption, this mode turns the lamp off, if the scanner is not operated for 14minutes.

* This button may not be displayed for some scanner models.

◆ [Detail] button

If this button is clicked, the following dialog box is displayed.

Using this dialog box, magnification for the sub-scanning direction and the offset of the leading edge can be changed.
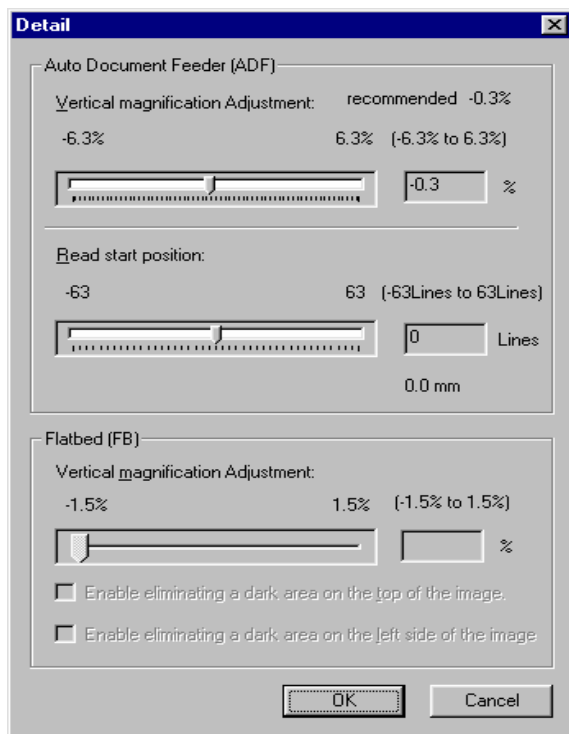
Vertical Magnification correction

The Vertical magnification correction value of sub-scanning direction can be changed.

For ADF scanning, the image is expanded or shrunk in the paper feeding direction based on the setting value at shipment.

For FB scanning, the image is expanded or shrunk in the direction to which the scan head moves based on the setting value at shipment.

This function is used to adjust the image whose ratio of length and width seems different from the original document.

*The settable value varies depending upon the device used.

Read start position

This function is used to adjust the offset for ADF sub scanning.

(That is, adjusting the image in the paper feeding direction at ADF scanning.)

*The settable value varies depending upon the device used.

Enable eliminating a dark area on the top of the image.

Enable eliminating a dark area on the left side of the image.

These modes can be selected to eliminate the dark area on the leading edge and the left side appeared when using the flat bed

[OK] button

The adjusted value is written to the EEPROM.

* This button may not be displayed depending on the scanner model.

  The available settings also vary depending on the scanner model.
  (e.g. For fi-4110CU, only the setting of the ADF part can be changed)

  Changing this setting affects scanning operation of the scanner device greatly.

  Care must be taken when changing.

6.7 Version Information Tab

The version of this driver and a link to the Fujitsu home page are displayed.

6.8 Color Management Tab

Color profiles assigned to the device can be added or deleted from this folder.

"sRGB Color Space Profile.icm" is the default driver assigned to this driver.

7. Troubleshooting

7.1 Error Messages

7.1.1 Messages from the TWAIN Driver

• The input value is outside the range.

Cause:	A value exceeding the range allowed for an input item was input.
User response:	Input a value inside the allowed range. Refer to the input item or the image scanner specification for the range.

• The input value is not acceptable.

Cause:	A value exceeding the range allowed for an input item was input.
User response:	Input a value inside the allowed range. Refer to [Help] of the item or the User's Guide for the correct range.

• This file cannot be removed because it is specified in other side.

Cause:	An attempt was made to remove a file using the dither pattern or gamma download pattern file setting dialog. However, the file is being used for the other side (front side if back side or back side if front side).
User response:	Before removing the file, change the setting of the other side and then remove.

• The initial value contains an invalid value. The default value is set.

Cause:	A value outside the specified range, or invalid text was found in the initial-value data file (the specific item involved is indicated by Entry=XXXXX). If the file has been modified, the setting value for the item may be wrong. If the file has not been rewritten, the file may have been damaged.
User response:	The value is set to a standard value. Be sure to check the hard disk (chkdsk/scandsk) and check for computer viruses regularly.

• The value is higher than the maximum scanning size. Either the resolution value or the scanning area has to be reduced.

Cause:	A value exceeding the data capacity of the scanner was specified. As the resolution is increased, the amount of data to be scanned also increases.
User response:	Decrease the resolution or reduce the size of the scan area.

- The value for custom paper is higher than the maximum scan size. Width needs to equal 279 mm or less and length needs to equal 420 mm or less.
- The value for custom paper is higher than the maximum scan size. Width needs to equal 11 inch or less and length needs to equal 16.53 inch or less.
- The value for custom paper is higher than the maximum scan size. Width needs to equal xxx pixel or less and length needs to equal xxx pixel or less.

Cause:	A value exceeding the limit applicable to the scan area of the scanner was specified.
User response:	To specify a custom paper size, specify the value that is smaller than the value applicable to the device.

- The value for custom paper is greater than the maximum scan size. Width need to less equal 259mm.
- The value for custom paper is greater than the maximum scan size. Width need to less equal 10.24inch.
- The value for custom paper is greater than the maximum scan size. Width need to less equal 2048pixel.

Cause:	A value exceeding the limit applicable to the scan area of the scanner was specified.
User response:	To specify a custom paper size, specify the value that is smaller than 260mm (10.24inch, 2048pixcel)

- The resolution must be less or equal to xxx dpi when scanning in Gray Scale.
- The resolution must be less or equal to xxx dpi when scanning in Color.
- Cannot specify Long Page Scan. Width need to less equal 400dpi.

Cause:	There is a limit on the resolution when gray-scale scanning, long page scanning or color scanning is used.
User response:	Specify a resolution value that is below the indicated xxx dpi.

- Cannot specify Gray Scale with Custom resolution.
- Cannot specify Color with Custom resolution.

Cause:	Custom resolution was designated when Gray Scale or Color was designated.
User response:	Designate a resolution value other than Custom.

- Cannot specify Gray Scale with duplex document.

Cause:	Duplex scanning is specified with Gray Scale specified.
User response:	At duplex scanning, select Black/white binary or Half tone for the [Image type].

• Cannot specify Individual Setting with Gray Scale.

• Cannot specify Long Page Scan with Gray Scale.

Cause:	Gray Scale and Individual Setting are specified at the same time.
	Gray Scale and Long Page Scanning are specified at the same time.
User response:	Uncheck Individual Setting when specifying Gray Scale.
	At Long Page scanning, select Black/white binary or Half tone for the [Image type].

• Your application using may not support page end detection, or undefined image size function.

Cause:	Scanned image may not be displayed correctly when scanning by using the "page end detection" or "undefined image size" function with the application which is not supporting these functions.
User response:	When scanned image is not displayed correctly, please select "disable" for the [Option]-[Rotation]-[Automatic Size and Skew detection].

• Dither pattern file not found.

Cause:	File download has been specified, but a file has not been selected.
User response:	Use the [File…] button to specify a file.

• Gamma pattern file not found.

Cause:	File download has been specified, but a file has not been selected.
User response:	Use the [File…] button to specify a file.

• Selected file can not be deleted.

Cause:	If the selected setting file is write-protected, it cannot be deleted.
User response:	Use Explorer to delete the file later.

• Description not specified.

Cause:	The description of the setting file has not been specified.
User response:	Enter the description of the setting file in the description field. Then, try scanning again.

• Filename not specified.

Cause:	The filename of the setting file has not been specified.
User response:	Enter the filename of the setting file. Then, try scanning again.

• Specified string is too long.

Cause:	The specified string is too long. Up to 128 en-size characters and up to 64 em-size characters can be specified.
User response:	User response: Reduce the number of characters in the string so that they do not exceed 128 en-size characters. Then, try scanning again.

• Cannot specify next words for filename. \:;?"<> .

Cause:	The specified filename contains one or more of the following characters: \:;?"<> .
User response:	Enter a file name that does not contain the above characters. Then, make the settings again.

• The image scanner not found.

Cause:	Possible causes include the following: an image scanner that is not supported by this driver has been connected, no image scanner has been connected, or the cable is not connected.
	The scanner is used by other application. (This Driver can't be used at the same time with more than one application.)
User response:	Check the connection of the image scanner.
	Check that the scanner is not used by other application. (In the case of Windows®XP, [Switch User] lets another user log on while your programs and files remain open. Therefore, when you log on with [Switch User], it has the possibility that another user have already used the driver.

• The specified image scanner is being used.

Cause:	The image scanner may be already in use by another application, or the TWAIN driver may have been started twice.
User response:	After all applications are terminated, restart the image scanner for scanning.

• Selected scanner is used by other application or not connected.

Cause:	1. The scanner may be OFF or not connected. 2. The scanner may be already in use by other application or the "Scanner and Camera" in [Control Panel].
User response:	1. Check the power supply of the scanner or connection with PC. 2. Close other application or "Scanner and Camera" in [Control Panel]

• An input-output error occurred in the image scanner.

Cause:	A fault occurred during the scan operation of the image scanner.

There may be a fault in the image scanner itself.

User response: Turn off the power of all devices, then turn on the power of the computer before turning on the scanner and retry scanning. If the error still occurs, contact the retail store where the image scanner was purchased, or the nearest service center.

• Scanner is turned OFF. Data source processing is closed. Turn ON the scanner and re-scan.

Cause: Scanner may be turned OFF during scanner use.

User response: Turn ON the scanner and re-scan. If the error persists, reboot the PC.

• Paper jammed in the ADF.

Cause: A paper jam occurred in the device.

User response: Turn off the power of the device, then remove the paper from inside the device. Removing the paper by using excessive force will result in device failure, so be careful.

• The ADF is open. Close the ADF and set the document on ADF paper chute or Hopper.

Cause: The ADF cover is open.

User response: Close the ADF cover, and set the document on ADF paper chute or Hopper.

• No paper on ADF paper chute or Hopper.

Cause: Although ADF was selected as the paper feeding method, no paper is found on ADF paper chute or Hopper.

User response: Select another paper feeding method or set the document on ADF paper chute or Hopper.

• The ADF is open, or No paper on ADF paper chute or Hopper.

Cause: The ADF cover is open, or there is no paper on ADF paper chute or Hopper.

User response: Close the ADF cover, or load paper.

• Insufficient buffer memory size of scanner device for current scanning parameters. Please reduce the scanning area or the resolution, or install additional memory in the scanner.

Cause: A memory option has not been installed in the image scanner. Otherwise, a large area or resolution that is not supported by the image scanner has been specified. The memory inside the scanner may be insufficient due to the excessive data size of the scanning image.

User response: Reduce the scanning area or resolution. Otherwise, install the

memory option. Refer to the User's Guide of the image scanner for more information.
In color scanning, try to increase the data compression ratio.

• The current parameter(s) is (are) not allowed. Please use (an)other parameter(s) and try scanning again.

Cause:	An incorrect value has been specified for the image scanner. The problem may be due to an illegal combination with the specification value from the application.
User response:	Change the specification values. Then, try scanning again.

• Irregular status is detected in scanner.

Cause:	A scanner fault such as a blown fuse or foreign matter in the scanning section has occurred.
User response:	Check the scanner status. If a fuse has blown, replace the fuse. If there is foreign matter in the scanning section, remove the foreign matter. If the error persists, contact the retail store where the image scanner was purchased or the nearest maintenance and service center.

• Hardware Error was detected. Carrier motor/sensor was broken or Shipping Lock is set in "Lock" position. Please refer to the user's manual for your scanner.

Cause:	The Shipping Lock may not be set in "Unlock" position.
User response:	Check the Shipping Lock. If the Shipping Lock is set in "Lock" position, set the Shipping Lock in "Unlock" position referring to the user's manual for your scanner.

• Ink cartridge is not installed in the imprinter properly. Please check the installation and try again.

Cause:	The imprinter (Endorser) has no ink cartridge or the ink cartridge may be mounted improperly.
User response:	Check that the ink cartridge of the imprinter is mounted properly and scan again.

• Imprinting position is set out of paper. Please check the imprinting position and try again.

Cause:	Printing is not available because the printing part is outside the paper width.
User response:	Adjust the imprinter so that the printing part is settled within the paper width.

• A Hardware Alarm is detected in the Imprinter or Endorser option.

Cause:	Failure on Imprinter or Endorser.

User response: Please check if the Imprinter or the Endorser is installed completely.

If the error occurs after checking the Imprinter or the Endorser, please contact the retail store where the product was purchased or the nearest service center.

• The double feed is detected.

Cause: The papers are scanned with double feeding. (One paper stuck to another)

User response: Remove the papers stopped by double feeding, and reset them.

• Not enough memory in PC.

Cause: Insufficient memory for scanning. The memory available may be insufficient because an application consuming much GDI memory is operating, too many other programs operate at the same time, or there are too many registered device drivers. The user may mistakenly think that adding more memory will solve this problem. However, in most cases, memory shortage is due to insufficient conventional memory (called the main memory within 640 kilobytes). Checking CONFIG.SYS and AUTOEXEC.BAT may be a better solution.

User response: Cancel the registration of device drivers that are irrelevant and make sure that only the absolutely necessary programs are operating. Use the memory optimization tool to allocate as much conventional memory as possible.

• An error occurred in the temporary file.

Cause: Accessing the internal temporary file of the scanned image is causing the error. The disk space may be insufficient, the temporary file may be damaged, or other programs may be affecting disk access.

User response: Increase the free space of the disk. Check the hard disk (chkdsk and scandsk). Make sure that no other program is accessing the disk. If the error message persists, contact the retail store where the product was purchased or the nearest service center.

• Download file not found.

Cause: A file specified as a dither pattern or gamma pattern cannot be found.

User response: Check that the download file is in the specified directory. Otherwise, use the file selection dialog to specify an available file.

• Illegal format or data in download file.

Cause: The format of the specified download file is illegal or the data is incorrect.

User response: User response: Use an editor to check file format and data.

• ASPI manager not found.

Cause: The ASPI manager may not have been installed, or may have been deleted.

User response: Reinstall the products, including the ASPI manager attached to the SCSI board. Then reboot the PC.

• Mini Driver not found.

Cause: The Mini driver may not have been installed, or may have been deleted.

User response: Install the mini-port driver following the instructions mentioned in "3.2 Installation of the mini driver".

• Scanner DLL file not found.

Cause: An image scanner was selected, but the DLL file of the selected image scanner has not been installed in the directory in which this driver is installed.

User response: Perform the setup again.

• A parameter error has occurred (internally)

• The calling procedure is invalid (internally).

• The area is specified incorrectly (internally).

• The calculation result exceeded the value that can be expressed (internally).

• User definition is not registered (internally).

• Illegal value is received during communication with scanner. (internally).

Cause: This is a program error that occurs during command exchange between the driver and the image scanner.

User response: Try again by rebooting the machine. If the error persists, contact the retail store where the product was purchased or the nearest service center.

• A general fault of the MSG_XXXXX response (internally).

Cause: This is a program error that usually occurs during internal message transfer. This message involves the sub-messages described later.

User response: Contact the retail store where the product was purchased or the nearest service center.

• A general fault of the DAT_XXXXX response (internally).

Cause: This is a program error that usually occurs during internal data transfer. This message involves the sub-messages described later.

User response: Contact the retail store where the product was purchased or the nearest maintenance service center.

• A general fault of the DAT_XXXXX, MSG_SET, and unsupported type response. (Internally)

Cause: This is a program error that usually occurs while making the internal data settings.

User response: Contact the place of purchase or your nearest maintenance and service center.

• An undefined error occurred

• Processing cannot be continued because of insufficient memory.

• The data source cannot be found.

• The driver is connected to a maximum number of applications supported.

• An operation error occurred.

• An invalid function is specified.

• Unpermitted combination of MSG DG DAT.

• An invalid value is specified.

• An invalid procedure of DG DAT MSG is specified.

Cause: These sub-messages are added to the error messages "General MSG_XXXXX response violation (internal)" and "General DAT_XXXXX violation (internal)." These sub- messages indicate details about the programming errors that occur during message and data processing.

User response: Contact the retail store where the product was purchased or the nearest service center.

• It is about time to replace the consumable. Please replace XXXXX in paper feeder if the feeding capability is deteriorated.

Cause: The consumable displayed in "XXXXX" needs to replace.

User response: Replace the consumable displayed in "XXXXX" as soon as possible.

7.1.2 Error messages relating to gamma correction pattern editing

• Enter a positive decimal value.

Cause:	A value other than a number has been entered as the gamma correction value. Alternatively, 0 or a negative value has been entered.
User response:	Reenter a valid value.

• The file could not be created.

Cause:	The file for saving could not be created. There is insufficient space to save the file or the disk to which the file was to be saved is corrupted. Alternatively, writing to the directory in which the file was to be saved may not be allowed or other programs relating to disk access may be affecting performance.
User response:	Increase the amount of available space on the disk. Use a utility such as chkdsk or scandisk to check the hard disk. Ensure that any background programs that access the disk are not operating If this error message continues to be displayed, contact the place of purchase or your nearest maintenance and service center.

• The file cannot be opened.

Cause:	The file could not be opened. The specified file name may be incorrect or the disk from which it is being read may be corrupted. Alternatively, the specified file may be a write-only file or other programs relating to disk access may be affecting performance.
User response:	If the specified filename is correct, use a utility such as chkdsk or scandisk to check the hard disk. Ensure that no background programs that access the disk are operating. If this error message continues to be displayed, contact the place of purchase or your nearest maintenance and service center.

• There is a file formatting error.

Cause:	There is an error in the format of the specified file. Either an incorrect file has been specified or the content of the specified file is incorrect.
User response:	After checking the users' manual, check that the content of the specified file is correct.

7.2 Device Trouble Related to Operation

• The [Scan] button is pressed, but scanning is not performed.

Cause: Has the scanner power been turned on? Has the SCSI cable been connected correctly? Has the correct device type been selected using [Select TWAIN Input Device]?

• The scanner appears to be operating, but no image is displayed.

Cause: Has the SCSI cable between the scanner and the main unit been connected correctly?

Is the [Brightness] value or [Threshold] value too small?

When the [Minimize] button is pressed, is the [Restore] button displayed?

Is the application set to perform only file output?

User response: If the [Restore] button is displayed after the [Minimize] button is pressed, the problem could be the display driver that is being used. Contact the manufacturer of the display driver.

If a file has been selected as output destination with the environment settings by the image scanner operation confirmation utility, try to change to screen output.

• When you don't know how to replace consumables.

User response: Refer to section 6.6 "Device Setup Tab Folder"- [Page counter] for replacement procedure of consumables.
Also see the Operator's guide of the scanner for how to replace consumables.

• An application is started automatically or a window appears to choose an application.

Cause: Device event is activated.

User response: See Chapter 6.3 "Events Tab" and select "Disable device events" or define the proper setting.

7.3 Device Trouble Related to Installation

• Though the PC is activated after connecting the scanner device, the scanner device is not detected automatically.

Cause:	Check the followings

    1. Is the power of the scanner device turned on?
       Is the cable connected correctly?
       Has an error occurred?

    2. Has the driver of old version already been installed?

    3. Was the installation terminated incompletely at the previous time?

    4. Isn't the EZ-SCSI of Adaptec installed?

User response: Refer to the section 3.5 "When the scanner is not detected automatically" to check the current state and perform the installation by the method appropriate for that state.

• The scanner does not scan, though the driver has been installed.

Cause: Check the followings.

    1. Have the Mini driver and the data source been installed in the right order? (If either of them has not been installed, the scanner does not operate normally)

    2. Is the scanner selected correctly in the application software being used?

User response:
    1. Follow the procedure given in the chapter 3 "Installation" and perform the installation correctly.

    2. Refer to the application software manual and select the scanner to use correctly to perform scanning.

• Cannot install the driver on Windows®XP.

Cause: When you use fi-4110CU (M3091DC) or fi-4210C (M3092DC) scanner, a driver bundled to Windows®XP might have been automatically installed.

User response: Refer to "<Using fi-4110C (M3091DC), fi-4210C (M3092DC) with Windows®XP>" of "Other instructions" in section 3.1.

• Cannot install the driver on Windows®2000.

Cause: For some models, a driver included as part of the operating system might have been automatically installed during the power-on sequence.

User response: Update the driver, referring to Chapter 3.2.7 "Updating the driver."

8. Appendix

8.1 Relevant Image Scanner Specification

Product:	fi-4010CU
Type:	Desktop
Image sensor:	Reduced optical system
Operating method:	Document fixed Flat bed, Automatic Document Feed (ADF), Single-sided reading
Light source:	Fluorescent tube (White)
Basic resolution:	600 dpi
Output resolution[1]:	50 dpi to 600 dpi (at steps of 1dpi)
Grayscale levels (internal):	8 bit 256 levels
Grayscale output:	Enabled (8 bits)
Halftone Patterns:	Dither matrix (1 pattern)
Color (24bit) output:	Enabled
Flat bed scanning speed:	Monochrome 8 sec or less (A4, 200 dpi)
	Color 10sec or less (A4, 150dpi)
ADF scanning speed [2]:	Monochrome, Single sided: 10 pages per minute (200 dpi, A4, 80g/m^2)
	Color, Single sided: 3.3 pages per minute (150 dpi, A4, 80g/m^2)
ADF paper chute capacity:	Maximum 25 sheets (A4, 80g/m^2, High quality paper, normal temperature and humidity)
Document size:	Flat bed Maximum 210 mm x 297 mm
	ADF Minimum 114mm x 140 mm
	Maximum 216 mm x 355 mm
Supported regular paper [3]:	A4, A5/A5 Landscape, A6/A6 Landscape, B5, B6/B6 Landscape, Letter, Legal, US Executive, Name card
Scanning area specification:	Specified (one location)
White level follower:	Disabled
Contrast setting:	256 steps
Gamma pattern:	Internal types are not available. (cannot be downloaded)
	At custom specification, entering a value enables to set a pattern.
Image processing function:	Reverse image, De-Screen
Interface:	USB 1.1

---

[1]. Change processing is done inside the driver.

[2]. This speed is only specified for the scanner itself. The actual reading speed may vary depending on the system configuration.

[3]. Not all paper sizes can be used in all devices. For details, refer to the users' manual for the device. For other paper sizes, the customer settings can be used.

Job control: Disabled

Double feed detection: Disabled

Scanner and Camera Properties: Event functions - Disabled

Device Setup - Only Clear function of Page counter is enabled.

Product:	fi-4110CU
Type:	Desktop
Image sensor:	Reduced optical system
Operating method:	Automatic Document Feed (ADF), Simultaneous double-sided scanning
Light source:	Fluorescent tube (White)
Basic resolution:	600 dpi
Output resolution[1]:	50 dpi to 600 dpi (at steps of 1dpi)
Grayscale levels (internal):	8 bit 256 levels
Grayscale output:	Enabled (8 bits)
Halftone Patterns:	Dither matrix (can be downloaded), Error diffusion
Color (24bit) output:	Enabled
ADF scanning speed [2]:	B/W
	Single sided: 15 pages per minute (200 dpi, A4, 55 kg)
	Double sided: 7.5 pages per minute (200 dpi, A4, 55kg)
	(=15 screens per minute)
	Color
	Single sided: 5 pages per minute (150 dpi, A4, 55 kg)
	Double sided: 2.5 pages per minute (150 dpi, A4, 55kg)
	(=5 screens per minute)
ADF paper chute capacity:	Maximum 50 sheets (A4, ream weight: 55 kg, High quality paper, normal temperature and humidity)
Document size:	Minimum 52mm x 74 mm
	Maximum 216 mm x 356 mm
Supported regular paper [3]:	A4, A5/A5 Landscape, A6/A6 Landscape, B5, B6/B6 Landscape, Letter, Legal, US Executive, Name card
Scanning area specification:	Specified (one location)
White level follower:	Enabled
Contrast setting:	256 steps
Gamma pattern:	Internal types are not available. (Cannot be downloaded)
	At custom specification, entering a value enables to set a pattern.
Image processing function:	Simplified Dynamic Threshold (floating slice), De-Screen, Edge emphasis, Reverse image
Interface:	USB 1.1
Job control:	Disabled

---

[1]   Change processing is done inside the driver.

[2]   This speed is only specified for the scanner itself. The actual reading speed may vary depending on the system configuration.

[3] . Not all paper sizes can be used in all devices. For details, refer to the users' manual for the device. For other paper sizes, the customer settings can be used.

Double feed detection: Disabled
Drop out color: Enabled

<Other functions>
Power saving setting: Enabled   Low speed feeding setting: Enabled
Scanner panel setting: Enabled   Page counter clear: Enabled (2 types)
Detail setting: Enabled (Only for the ADF Magnification adjustment and the Offset adjustment)

Product:	M3091DC (fi-4110C)
Type:	Desktop
Image sensor:	Reduced optical system
Operating method:	Automatic Document Feed (ADF), Simultaneous double-sided scanning
Light source:	Fluorescent tube (White)
Basic resolution:	300 dpi
Output resolution[1]:	50 dpi to 600 dpi (at steps of 1dpi)
Grayscale levels (internal):	8 bit 256 levels
Grayscale output:	Enabled (8 bits)
Halftone Patterns:	Dither matrix (can be downloaded), Error diffusion
Color (24bit) output:	Enabled
ADF scanning speed [2]:	B/W
	Single sided: 15 pages per minute (200 dpi, A4, 55 kg)
	Double sided: 7.5 pages per minute (200 dpi, A4, 55kg)
	(=15 screens per minute)
	Color
	Single sided: 5 pages per minute (150 dpi, A4, 55 kg)
	Double sided: 2.5 pages per minute (150 dpi, A4, 55kg)
	(=5 screens per minute)
ADF paper chute capacity:	Maximum 50 sheets (A4, ream weight: 55 kg, High quality paper, normal temperature and humidity)
Document size:	Minimum 52mm x 74 mm
	Maximum 216 mm x 356 mm
Supported regular paper [3]:	A4, A5/A5 Landscape, A6/A6 Landscape, B5, B6/B6 Landscape, Letter, Legal, US Executive, Name card
Scanning area specification:	Specified (one location)
White level follower:	Enabled
Contrast setting:	256 steps
Gamma pattern:	Internal types are not available. (Cannot be downloaded)
	At custom specification, entering a value enables to set a pattern.
Image processing function:	Simplified Dynamic Threshold (floating slice), De-Screen, Edge emphasis, Reverse image
Interface:	SCSI-II
Batch Detection:	Disabled

---

[1] Change processing is done inside the driver.

[2] This speed is only specified for the scanner itself. The actual reading speed may vary depending on the system configuration.

[3] . Not all paper sizes can be used in all devices. For details, refer to the users' manual for the device. For other paper sizes, the customer settings can be used.

Double feed detection: Disabled

Blank page skip: Enabled (only when ram cache is used)

Drop out color: Enabled

Product:	fi-4120C
Type:	Desktop
Image sensor:	Color CCD (Reduced optical system)
Operating method:	Automatic Document Feed (ADF), Simultaneous double-sided scanning[1], Long page scanning
	Black&White : Max 216mm x 711mm
	Grayscale, Color [2] : Max 216mm x 610mm
Light source:	Fluorescent tube (White)
Basic resolution:	600 dpi
Output resolution:	50 dpi to 600 dpi (at steps of 1dpi)
Grayscale levels (internal):	10 bit 1024 levels
Grayscale output:	Enabled (8 bits)
Halftone Patterns:	Dither matrix (can be downloaded), Error diffusion
Color (24bit) output:	Enabled
ADF scanning speed [3]:	B/W
	Single sided: 25 pages per minute (200 dpi, A4, 80g/m^2)
	Double sided: 12.5 pages per minute (200 dpi, A4, 80g/m^2)
	(=25 screens per minute)
	Color
	Single sided: 25 pages per minute (150 dpi, A4, 80g/m^2)
	Double sided: 12.5 pages per minute (150 dpi, A4, 80g/m^2)
	(=25 screens per minute)
ADF paper chute capacity:	Maximum 50 sheets (A4, 80g/m^2, High quality paper, normal temperature and humidity)
Document size:	Minimum 53mm x 74 mm
	Maximum 216mm x 355.6mm
Supported regular paper [4]:	A4, A5/A5 Landscape, A6/A6 Landscape, B5, B6/B6 Landscape, Letter, Legal, US Executive, Name card
Scanning area specification:	Specified (one location)
White level follower:	Enabled
Contrast setting:	256 steps
Gamma pattern:	Internal types are not available. (Cannot be downloaded)
	At custom specification, entering a value enables to set a pattern.

---

[1]   Individual setting : Disabled

[2]   In case of color or grayscale, the firmware version of scanner has to be "D00" or latter.

[3]   This speed is only specified for the scanner itself. The actual reading speed may vary depending on the system configuration.

[4]   Not all paper sizes can be used in all devices. For details, refer to the users' manual for the device. For other paper sizes, the customer settings can be used.

Image processing function: Simplified Dynamic Threshold (SDTC), De-Screen,
                             Edge emphasis, 256 Color, 8 Color

Interface: SCSI-II, USB1.1

Batch Detection: Disabled

Double feed detection: Enabled

Blank page skip: Enabled (only when ram cache is used)

Drop out color: Enabled

Automatic Size and Skew detection: End of Page Detection

<Other functions>

Scanner panel setting: Enabled   Page counter clear: Enabled (2 types)

Detail setting: Enabled (Magnification adjustment and the Offset adjustment)

Product:	M3092DC (fi-4210C)
Type:	Desktop
Image sensor:	Reduced optical system
Operating method:	Document fixed Flat bed (FB), Automatic Document Feed (ADF), Simultaneous double-sided scanning
Light source:	Fluorescent tube (White)
Basic resolution:	600dpi (FB), 300 dpi (ADF)
Output resolution[1]:	50 dpi to 600 dpi (at steps of 1dpi)
Grayscale levels (internal):	10 bit 1024 levels
Grayscale output:	Enabled (8 bits)
Halftone Patterns:	Dither matrix (can be downloaded), Error diffusion
Color (24bit) output:	Enabled
ADF scanning speed [2]:	B/W
	Single sided: 15 pages per minute (200 dpi, A4, 55 kg)
	Double sided: 7.5 pages per minute (200 dpi, A4, 55kg)
	(=15 screens per minute)
	Color
	Single sided: 5 pages per minute (150 dpi, A4, 55 kg)
	Double sided: 2.5 pages per minute (150 dpi, A4, 55kg)
	(=5 screens per minute)
ADF paper chute capacity:	Maximum 50 sheets (A4, ream weight: 55 kg, High quality paper, normal temperature and humidity)
Document size:	Minimum 52mm x 74 mm
	Maximum 216 mm x 356 mm
Supported regular paper [3]:	A4, A5/A5 Landscape, A6/A6 Landscape, B5, B6/B6 Landscape, Letter, Legal, US Executive, Name card
Scanning area specification:	Specified (one location)
White level follower:	Enabled
Contrast setting:	256 steps
Gamma pattern:	Internal types are not available. (Cannot be downloaded)
	At custom specification, entering a value enables to set a pattern.
Image processing function:	Simplified Dynamic Threshold (floating slice), De-Screen, Edge emphasis, Reverse image
Interface:	SCSI-II
Batch Detection:	Disabled

---

[1] Change processing is done inside the driver.

[2] This speed is only specified for the scanner itself. The actual reading speed may vary depending on the system configuration.

[3] . Not all paper sizes can be used in all devices. For details, refer to the users' manual for the device. For other paper sizes, the customer settings can be used.

Double feed detection: Disabled

Blank page skip: Enabled (only when ram cache is used)

Drop out color: Enabled

Product:	fi-4220C
Type:	Desktop
Image sensor:	Color CCD (Reduced optical system)
Operating method:	Document fixed Flat bed (FB), Automatic Document Feed (ADF), Simultaneous double-sided scanning[1], Long page scanning
	Black&White : Max 216mm x 711mm
	Grayscale, Color [2] : Max 216mm x 610mm
Light source:	Fluorescent tube (White)
Basic resolution:	600dpi
Output resolution:	50 dpi to 600 dpi (at steps of 1dpi)
Grayscale levels (internal):	10 bit 1024 levels
Grayscale output:	Enabled (8 bits)
Halftone Patterns:	Dither matrix (can be downloaded), Error diffusion
Color (24bit) output:	Enabled
Flat bed scanning speed:	B/W : 2.2 sec or less (200 dpi, A4)
	Color : 2.1 sec or less (150 dpi, A4)
ADF scanning speed [3]:	B/W
	Single sided: 25 pages per minute (200 dpi, A4, $80g/m^2$)
	Double sided: 12.5 pages per minute (200 dpi, A4, $80g/m^2$)
	(=25 screens per minute)
	Color
	Single sided: 25 pages per minute (150 dpi, A4, $80g/m^2$)
	Double sided: 12.5 pages per minute (150 dpi, A4, $80g/m^2$)
	(=25 screens per minute)
ADF paper chute capacity:	Maximum 50 sheets (A4, $80g/m^2$, High quality paper, normal temperature and humidity)
Document size:	Minimum 53mm x 74 mm
	Maximum 216mm x 355.6mm <ADF>
	Maximum 216 mm x 297 mm <Flat Bed>
Supported regular paper [4]:	A4, A5/A5 Landscape, A6/A6 Landscape, B5, B6/B6 Landscape, Letter, Legal, US Executive, Name card
Scanning area specification:	Specified (one location)
White level follower:	Enabled
Contrast setting:	256 steps

---

[1] Individual setting : Disabled

[2] In case of color or grayscale, the firmware version of scanner has to be "D00" or latter.

[3] This speed is only specified for the scanner itself. The actual reading speed may vary depending on the system configuration.

[4] Not all paper sizes can be used in all devices. For details, refer to the users' manual for the device. For other paper sizes, the customer settings can be used.

Gamma pattern:	Internal types are not available. (Cannot be downloaded)
	At custom specification, entering a value enables to set a pattern.
Image processing function:	Simplified Dynamic Threshold (SDTC), De-Screen, Edge emphasis, 256 Color, 8 Color
Interface:	SCSI-II, USB1.1
Batch Detection:	Disabled
Double feed detection:	Enabled
Blank page skip:	Enabled (only when ram cache is used)
Drop out color:	Enabled
Automatic Size and Skew detection:	End of Page Detection

<Other functions>

Scanner panel setting: Enabled   Page counter clear: Enabled (2 types)

Detail setting: Enabled (Magnification adjustment and the Offset adjustment)

Product:	M3093GX [1] (device name: fi-4320S, VSP210)
Type:	Desktop
Image sensor:	Reduced optical system
Operating method:	Document fixed, scanner unit moving (flat bed), Automatic Document Feeder (ADF)
Light source:	Xe discharge tube (Green)
Basic resolution:	400 dpi
Output resolution:	Standard: 400, 300, 240, 200 dpi With image processing option: 50 dpi to 800 dpi (at steps of 1 dpi)
Grayscale levels (internal):	8 bit 256 levels
Grayscale output:	Enabled (8 bits)
Halftone Patterns:	Dither matrix (can be downloaded), Error diffusion
Flat bed scanning speed:	1.6 sec or less (A4, 200 dpi)
ADF scanning speed [2]	27 pages/minute (200 dpi, A4, 55 kg)
ADF paper chute capacity:	Maximum 50 sheets, ream weight: 55kg, A4
Document size [3]	Maximum 216 mm x 356 mm Legal size paper
Supported regular paper:	A4, A5/A5 Landscape, A6/A6 Landscape, B5, B6/B6 Landscape, Letter, Legal, US Executive
Isolation specification:	Specified (one location)
Background compensation:	Enabled
Contrast setting:	256 steps
Gamma pattern:	3 internal types (can be downloaded)
Image processing function:	Simplified Dynamic Threshold(SDTC)
	Image processing circuit II required, Edge emphasis, Edge extraction, Automatic separation, Mirror image, Reverse image, Dynamic Threshold(DTC), Smoothing, Filtering, Noise removal
Interface:	SCSI-II
Batch Detection:	Enabled
Blank page skip:	Enabled (only when ram cache is used)

---

1. Use of this scanner requires that the image compression option board (CMP-2) be installed in the scanner.

2. This speed is only specified for the scanner itself. The actual reading speed may vary depending on the system configuration.

3. Not all sizes of paper can be used in all devices. For details, refer to the users' manual for the device. For other paper sizes, the customer settings can be used.

Product:	M3093DG (fi-4320, VSP220)
Type:	Desktop
Image sensor:	Reduced optical system
Operating method:	Document fixed, scanner unit moving (flat bed)
	Automatic Document Feeder (ADF)
	Simultaneous double-sided scanning
Light source:	Xe discharge tube (Green)
Basic resolution:	400 dpi
Output resolution:	Standard: 600[1], 400, 300, 240, 200, 150, 100 dpi
	With image processing option: 50 dpi to 800 dpi (at steps of 1 dpi)
Grayscale levels (internal):	8 bit 256 levels
Grayscale output:	Enabled (8 bits)
Halftone Patterns:	Dither matrix (can be downloaded), Error diffusion
Flat bed scanning speed[2]:	1.6 sec or less (A4, 200 dpi)
ADF scanning speed:	Single-sided: 27 pages per minute (200 dpi, A4, 55 kg)
Double-sided:	22.5 pages per minute (200 dpi, A4, 55 kg)
	(= 45 screens per minute)
ADF paper chute capacity:	Maximum 50 sheets, (ream weight: 55kg, A4 [High quality paper, normal temperature and humidity])
Document size:	Maximum 216 mm x 356 mm
Supported regular paper [3]:	A4, A5/A5 landscape, A6/A6 landscape, B5, B6/B6 landscape, Letter, Legal, US Executive
Scanning area specification:	Specified (one location)
White level follower:	Enabled
Contrast setting:	256 steps
Gamma pattern:	3 internal types (can be downloaded)
Image processing function:	Simplified Dynamic Threshold (SDTC)
	With image processing option
	Edge emphasis, Edge extraction, Automatic separation, Mirror image, Reverse image, Dynamic Threshold (DTC), Smoothing, Filtering, Noise removal
Interface:	SCSI-II
Batch Detection:	Enabled
Blank page skip:	Enabled (only when ram cache is used)
Automatic Size and Skew detection:	End of Page Detection

---

1. An eight-megabyte expanded memory option can be loaded in some models.

2. This speed is only specified in the scanner itself. The actual reading speed may vary depending on the system configuration.

3. Not all sizes of paper can be used in all devices. For details, refer to the users' manual for the device. For other paper sizes, the customer settings can be used.

Product:	fi-4340C
Type:	Desktop
Image sensor:	Color CCD, Reduced optical system
Operating method:	Document fixed Flat bed, Automatic Document Feed(ADF), Simultaneous double-sided scanning
	Long page scanning (216mm x 1541mm, Black&White only)
Light source:	Fluorescent tube (White)
Basic resolution:	400 dpi
Output resolution:	Standard: 50 dpi to 800 dpi (at steps of 1dpi)
Grayscale levels (internal):	10 bit 1024 levels
Grayscale output:	Enabled (8 bits)
Halftone Patterns:	Dither matrix (can be downloaded), Error diffusion
Color	24bit
Scanning speed:	B/W : 1.2 sec or less (200 dpi, A4)
	Color : 2.8 sec or less (200 dpi, A4)
ADF scanning speed [1]:	B/W
	Single sided: 40 pages per minute (200 dpi, A4, 55 kg)
	Double sided: 40 pages per minute (200 dpi, A4, 55kg)
	(=80 screens per minute)
	Color
	Single sided: 16 pages per minute (200 dpi, A4, 55 kg)
	Double sided: 24.5 pages per minute (200 dpi, A4, 55kg)
	(=29 screens per minute)
ADF paper chute capacity:	Maximum 100 sheets, ream weight: 55 kg, A4 [High quality paper, normal temperature and humidity])
Document size:	Maximum 216 mm x 297 mm
	or Maximum 216mm x 1541 mm with Long Page Scanning Mode
Supported regular paper [2]:	A4, A5/A5 Landscape, A6/A6 Landscape, B5, B6/B6 Landscape, Letter,, Legal
Isolation specification:	Specified (one location)
Background compensation:	Enabled
Contrast setting:	256 steps
Gamma pattern:	3 internal types (can be downloaded)

---

[1] This speed is only specified for the scanner itself. The actual reading speed may vary depending on the system configuration.

[2] Not all paper sizes can be used in all devices. For details, refer to the users' manual for the device. For other paper sizes, the customer settings can be used.

Image processing function:	Simplified Dynamic Threshold (SDTC), Edge emphasis, Edge extraction, De-Screen, SEE(Selectable Edge Enhancement), Reverse image, 256 Color, 8 Color
	With image processing option Dynamic Threshold (DTC), Smoothing, Filtering, Noise removal, Automatic Separation
Imprinter (Endorser):	With imprinter option (Reverse side, minimum left margin printing position of 7 mm)[1]
	Maximum number of characters to be printed: 40 characters
	Counter display range: 0 to 65535 (at 5 digits display)
	0 to 16777215 (at 8 digits display)
	Direction(Printing): Top to Bottom, Bottom to Top
Interface:	SCSI-II
Batch Detection:	Enabled
Double feed detection:	Enabled
Long page scanning:	Enabled (front side and both sides)
Automatic Size and Skew detection :	
	Page End Detect, Automatic Page Size Detect, Black Background
Blank page skip:	Enabled (only when ram cache is used)
Drop out color:	Enabled

---

[1]   If 0 mm is specified as the endorser print position, printing will begin 7 mm from the edge of the page.

<u>Product:</u>	<u>M3096GX[1] (fi-4620S, VSP310)</u>
Type:	Desktop
Image sensor:	Reduced optical system
Operating method:	Document fixed, scanner unit moving (flat bed), Automatic Document Feed (ADF)
Light source:	Xe discharge tube (Green)
Basic resolution:	400 dpi
Output resolution:	Standard: 400, 300, 240, 200 dpi With image processing option: 50 dpi to 800 dpi (at steps of 1)
Grayscale levels (internal):	8 bit 256 levels
Grayscale output:	Enabled (8 bits)
Halftone Patterns:	Dither matrix (can be downloaded), Error diffusion
Flat bed scanning speed:	2.0 sec or less (A4, 200 dpi)
ADF scanning speed [2]:	21 pages/minute (200 dpi, A4, 55 kg)
ADF paper chute capacity:	Maximum 50 sheets, (ream weight: 55 kg, A4 [High quality paper, Normal temperature and humidity])
Document size:	Maximum 297 mm x 432 mm A3 or Double letter sized paper
Supported regular paper [3]:	A3, A4/A4 Landscape, A5/A5 Landscape, A6/A6 Landscape,B4, B5/B5 Landscape, B6/B6 Landscape, Letter, Letter Landscape, Legal, Double letter, US Executive/US Executive Landscape
Scanning area specification:	Specified (one location)
White level follower:	Enabled
Contrast setting:	256 steps
Gamma patterns:	3 internal types (can be downloaded)
Image processing function:	Simplified Dynamic Threshold (SDTC) Image processing option installed Edge emphasis, Edge extraction, Automatic separation, Mirror image, Reverse image, Dynamic Threshold (DTC), Smoothing, Filtering, Noise removal
Interface:	SCSI-II
Batch Detection:	Enabled
Blank page skip:	Enabled (only when ram cache is used)

---

1. Use of this scanner may require installation of the optional image compression option board (CMP-2) in the scanner device.

2. This speed is only specified for the scanner itself. The actual reading speed may vary depending on the system
configuration.

3. Not all sizes of paper can be used in all devices. For details, refer to the users' manual for the device. For other paper sizes, the customer settings can be used.

Product:	fi-4640S
Type:	Desktop
Image sensor:	Reduced optical system
Operating method:	Document fixed Flat bed, Automatic Document Feed(ADF)
	Long page scanning (297mm x 1387mm, Black&White only)
Light source:	Xe discharge tube(Green)
Basic resolution:	400 dpi
Output resolution:	Standard: 50 dpi to 800 dpi (at steps of 1dpi)
Grayscale levels (internal):	10 bit 1024 levels
Grayscale output:	Enabled (8 bits)
Halftone Patterns:	Dither matrix (can be downloaded), Error diffusion
Flat bed scanning speed:	0.9 sec or less (200 dpi, A4)
ADF scanning speed [1]:	Single sided: 45 pages per minute (200 dpi, A4, 55 kg)
ADF paper chute capacity:	Maximum 100 sheets, ream weight: 55 kg, A4 [High quality paper, normal temperature and humidity])
Document size:	Maximum 297 mm x 432 mm
	or Maximum 297mm x 1387 mm with Long Page Scanning Mode
Supported regular paper [2]:	A3, A4/A4 Landscape, A5/A5 Landscape, A6/A6 Landscape, B4, B5/B5 Landscape, B6/B6 Landscape, Letter/Letter Landscape, Double Letter, Legal, US Executive/US Executive Landscape
Isolation specification:	Specified (one location)
Background compensation:	Enabled
Contrast setting:	256 steps
Gamma pattern:	3 internal types (can be downloaded)
Image processing function:	Simplified Dynamic Threshold (SDTC), Edge emphasis, Edge extraction, SEE(Selectable Edge Enhancement), Reverse image
	With image processing option Dynamic Threshold (DTC), Smoothing, Filtering, Noise removal, Automatic Separation

---

[1] This speed is only specified for the scanner itself. The actual reading speed may vary depending on the system configuration.

[2] Not all paper sizes can be used in all devices. For details, refer to the users' manual for the device. For other paper sizes, the customer settings can be used.

Imprinter (Endorser):	With imprinter option
	(Reverse side, minimum left margin printing position of 42 mm)[1]
	Maximum number of characters to be printed: 40 characters
	Counter display range: 0 to 65535 (at 5 digits display)
	0 to 16777215 (at 8 digits display)
	Direction (Printing): Top to Bottom, Bottom to Top
Interface:	SCSI-II
Batch Detection:	Enabled
Double feed detection:	Enabled
Long page scanning:	Enabled
Automatic Size and Skew detection:	End of Page Detection, Automatic Page Size Detection
Blank page skip:	Enabled (only when ram cache is used)

---

[1] If 0 mm is specified as the endorser print position, printing will begin 42 mm from the edge of the page.

Product:	M4097D (fi-4750, VSP330)
Type:	Desktop
Image sensor:	Reduced optical system
Operating method:	Document fixed Flat bed, Automatic Document Feed(ADF), Simultaneous double-sided scanning
	Long page scanning (297mm x 1387mm, Black&White only)
Light source:	Xe discharge tube(Green)
Basic resolution:	400 dpi
Output resolution:	Standard: 50 dpi to 800 dpi (at steps of 1dpi)
Grayscale levels (internal):	10 bit 1024 levels
Grayscale output:	Enabled (8 bits)
Halftone Patterns:	Dither matrix (can be downloaded), Error diffusion
Flat bed scanning speed:	0.9 sec or less (200 dpi, A4)
ADF scanning speed [1]:	Single sided: 50 pages per minute (200 dpi, A4, 55 kg)
	Double sided: 45 pages per minute (200 dpi, A4, 55kg)
	(=90 screens per minute)
ADF paper chute capacity:	Maximum 100 sheets, ream weight: 55 kg, A4 [High quality paper, normal temperature and humidity])
Document size:	Maximum 297 mm x 432 mm
Supported regular paper [2]:	A3, A4/A4 Landscape, A5/A5 Landscape, A6/A6 Landscape, B4, B5/B5 Landscape, B6/B6 Landscape, Letter/Letter Landscape, Double Letter, Legal, US Executive/US Executive Landscape
Isolation specification:	Specified (one location)
Background compensation:	Enabled
Contrast setting:	256 steps
Gamma pattern:	3 internal types (can be downloaded)
Image processing function:	Simplified Dynamic Threshold (SDTC), Edge emphasis, Edge extraction, SEE(Selectable Edge Enhancement), Reverse image
	With image processing option Dynamic Threshold (DTC), Smoothing, Filtering, Noise removal, Automatic Separation

---

[1] This speed is only specified for the scanner itself. The actual reading speed may vary depending on the system configuration.

[2] Not all paper sizes can be used in all devices. For details, refer to the users' manual for the device. For other paper sizes, the customer settings can be used.

Imprinter (Endorser):	With imprinter option
	(Reverse side, minimum left margin printing position of 42 mm)[1]
	Maximum number of characters to be printed: 40 characters
	Counter display range: 0 to 65535 (at 5 digits display)
	0 to 16777215 (at 8 digits display)
	Direction (Printing): Top to Bottom, Bottom to Top
Interface:	SCSI-II
Batch Detection:	Enabled
Double feed detection:	Enabled
Long page scanning:	Enabled (front side and both sides)
Automatic Size and Skew detection:	End of Page Detection, Automatic Page Size Detection
Blank page skip:	Enabled (only when ram cache is used)

---

[1] If 0 mm is specified as the endorser print position, printing will begin 42 mm from the edge of the page.

Product:	fi-4750L
Type:	Desktop
Image sensor:	Reduced optical system
Operating method:	Document fixed Flat bed, Automatic Document Feed(ADF), Simultaneous double-sided scanning
	Long page scanning (297mm x 1387mm, Black&White only)
Light source:	Xe discharge tube(Green)
Basic resolution:	400 dpi
Output resolution:	Standard: 50 dpi to 800 dpi (at steps of 1dpi)
Grayscale levels (internal):	10 bit 1024 levels
Grayscale output:	Enabled (8 bits)
Halftone Patterns:	Dither matrix (can be downloaded), Error diffusion
Flat bed scanning speed:	0.9 sec or less (200 dpi, A4)
ADF scanning speed [1]:	Single sided: 55 pages per minute (200 dpi, A4, 55 kg)
	Double sided: 50 pages per minute (200 dpi, A4, 55kg)
	(=100 screens per minute)
ADF paper chute capacity:	Maximum 250 sheets, ream weight: 55 kg, A4 [High quality paper, normal temperature and humidity])
Document size:	Maximum 297 mm x 432 mm
Supported regular paper [2]:	A3, A4/A4 Landscape, A5/A5 Landscape, A6/A6 Landscape, B4, B5/B5 Landscape, B6/B6 Landscape, Letter/Letter Landscape, Double Letter, Legal, US Executive/US Executive Landscape
Isolation specification:	Specified (one location)
Background compensation:	Enabled
Contrast setting:	256 steps
Gamma pattern:	3 internal types (can be downloaded)
Image processing function:	Simplified Dynamic Threshold (SDTC), Edge emphasis, Edge extraction, SEE(Selectable Edge Enhancement), Reverse image
	With image processing option Dynamic Threshold (DTC), Smoothing, Filtering, Noise removal, Automatic Separation

---

[1] This speed is only specified for the scanner itself. The actual reading speed may vary depending on the system configuration.

[2] Not all paper sizes can be used in all devices. For details, refer to the users' manual for the device. For other paper sizes, the customer settings can be used.

Imprinter (Endorser):   With imprinter option
(Reverse side, minimum left margin printing position of 42 mm)[1]

Maximum number of characters to be printed: 40 characters

Counter display range: 0 to 65535 (at 5 digits display)

                         0 to 16777215 (at 8 digits display)

Direction(Printing): Top to Bottom, Bottom to Top

Interface:	SCSI-II
Double feed detection:	Enabled
Double feed detection:	Enabled
Automatic Size and Skew detection:	End of Page Detection, Automatic Page Size Detection
Blank page skip:	Enabled (only when ram cache is used)

---

[1]   If 0 mm is specified as the endorser print position, printing will begin 42 mm from the edge of the page.

<u>Product:</u>	fi-4750C
Type:	Desktop
Image sensor:	LED(RGB) + Reduced optical system
Operating method:	Document fixed Flat bed, Automatic Document Feed(ADF), Simultaneous double-sided scanning
	Long page scanning (297mm x 1387mm, Black&White only)
Light source:	LED (R, G, B)
Basic resolution:	Horizontal scanning: 400 dpi
	Vertical scanning: 800,700,600,500, 400, 300, 240, 200, 150, 100 dpi
Output resolution:	Standard: 50 dpi to 800 dpi (at steps of 1dpi)
Grayscale levels (internal):	10 bit 1024 levels
Grayscale output:	Enabled (8 bits)
Halftone Patterns:	Dither matrix (can be downloaded), Error diffusion
Color	24bit
Flat bed scanning speed:	B/W : 0.9 sec or less (200 dpi, A4)
	Color : 3.6 sec or less (200 dpi, A4)
ADF scanning speed [1]:	B/W
	Single sided: 50 pages per minute (200 dpi, A4, 55 kg)
	Double sided: 45 pages per minute (200 dpi, A4, 55kg)
	(=90 screens per minute)
	Color
	Single sided: 12 pages per minute (200 dpi, A4, 55 kg)
	Double sided: 11.5 pages per minute (200 dpi, A4, 55kg)
	(=23 screens per minute)
ADF paper chute capacity:	Maximum 100 sheets, ream weight: 55 kg, A4 [High quality paper, normal temperature and humidity])
Document size:	Maximum 297 mm x 432 mm
Supported regular paper [2]:	A3, A4/A4 Landscape, A5/A5 Landscape, A6/A6 Landscape, B4, B5/B5 Landscape, B6/B6 Landscape, Letter/Letter Landscape, Double Letter, Legal, US Executive/US Executive Landscape
Isolation specification:	Specified (one location)
Background compensation:	Enabled
Contrast setting:	256 steps
Gamma pattern:	3 internal types (can be downloaded)

---

[1] This speed is only specified for the scanner itself. The actual reading speed may vary depending on the system configuration.

[2] Not all paper sizes can be used in all devices. For details, refer to the users' manual for the device. For other paper sizes, the customer settings can be used.

Image processing function:	Simplified Dynamic Threshold (SDTC), Edge emphasis, Edge extraction, De-Screen, SEE(Selectable Edge Enhancement), Reverse image
	With image processing option Dynamic Threshold (DTC), Smoothing, Filtering, Noise removal, Automatic Separation
Imprinter (Endorser):	With imprinter option (Reverse side, minimum left margin printing position of 42 mm)[1]
	Maximum number of characters to be printed: 40 characters
	Counter display range: 0 to 65535 (at 5 digits display)
	0 to 16777215 (at 8 digits display)
	Direction(Printing): Top to Bottom, Bottom to Top
Interface:	SCSI-II
Batch Detection:	Enabled
Double feed detection:	Enabled
Long page scanning:	Enabled (front side and both sides)
Automatic Size and Skew detection:	End of Page Detection, Automatic Page Size Detection, Black Background
Blank page skip:	Enabled (only when ram cache is used)
Drop out color:	Enabled

---

[1]   If 0 mm is specified as the endorser print position, printing will begin 42 mm from the edge of the page.

Product:	M3097G[1]
Type:	Desktop
Image sensor:	Reduced optical system
Operating method:	Document fixed, scanner unit moving (flat bed), Automatic Document Feed (ADF)
Light source:	Fluorescent tube (Green)
Basic resolution:	400 dpi
Output resolution:	Standard: 400, 300, 240, 200 dpi With image processing option: 50 dpi to 1,600 dpi (at steps of 1)
Grayscale levels (internal):	8 bit 256 levels
Grayscale output:	Enabled (8 bits) Some release version of scanner do not support gray-scale output format
Halftone Patterns:	Dither matrix (can be downloaded), Error diffusion
Flat bed scanning speed:	1.3 sec or less (A4, 200 dpi) 3.7 sec or less (A3, 400 dpi)
ADF scanning speed [2]:	36 pages/minute (200 dpi, A4, 55 kg)
ADF paper chute capacity:	Maximum 100 sheets, (ream weight: 55 kg, A4 [High quality paper, Normal temperature and humidity])
Document size:	Maximum 297 mm x 432 mm
Supported regular paper [3]:	A3, A4/A4 Landscape, A5/A5 Landscape, A6/A6 Landscape, B4, B5/B5 Landscape, B6/B6 Landscape, Letter/Letter Landscape, Double Letter, Legal, US Executive/US Executive Landscape
Scanning area specification:	Specified (one location)
White level follower:	Enabled
Contrast setting:	256 steps
Gamma pattern:	3 internal types (can be downloaded)
Image processing function:	Simplified Dynamic Threshold (SDTC) Image processing option installed Edge emphasis, Edge extraction, Automatic separation, Mirror image, Reverse image, Dynamic Threshold (DTC), Smoothing, Filtering, Noise removal
Batch Detection:	Enabled
Blank page skip:	Enabled (only when ram cache is used)

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1. Use of this scanner may require installation of the optional image compression board (CMP-2).

2. This speed is only specified for the scanner itself. The actual reading speed may vary depending on the system configuration.

3. Not all sizes of paper can be used in all devices. For details, refer to the users' manual for the device. For other paper sizes, the customer settings can be used.

Product:	M3097DG	
Type:	Desktop	
Image sensor:	Reduced optical system	
Operating method:	Document fixed, scanner unit moving (flat bed), Automatic Document Feed (ADF) Simultaneous double-sided scanning	
Light source:	Xe discharge tube (Green)	
Basic resolution:	400 dpi	
Output resolution:	Standard: 600, 400, 300, 240, 200, 150, 100 dpi With image processing option: 50 dpi to 800 dpi (at steps of 1 dpi)	
Grayscale levels (internal):	8 bit 256 levels	
Grayscale output:	Enabled (8 bits)	
Halftone Patterns:	Dither matrix (can be downloaded), Error diffusion	
Flat bed scanning speed:	1.3 seconds or less (A4, 200 dpi)	
ADF scanning speed [1]:	Single sided:	36 pages per minute (200 dpi, A4, 55 kg)
	Double sided:	30 pages per minute (200 dpi, A4, 55 kg) (= 60 screens per minute)
ADF paper chute capacity:	Maximum 100 sheets, (ream weight: 55 kg, A4 [High quality paper, Normal temperature and humidity])	
Document size:	Maximum 297 mm x 432 mm	
Supported regular paper [2]:	A3, A4/A4 Landscape, A5/A5 Landscape, A6/A6 Landscape, B4, B5/B5 Landscape, Double Letter, Letter/Letter landscape, Legal, US Executive/ US Executive Landscape	
Cutout specification:	Specified (one location)	
Background compensation:	Enabled	
Contrast setting:	256 steps	
Gamma pattern:	3 internal types (can be downloaded)	
Image processing function:	Simplified Dynamic Threshold (SDTC) With image processing option Edge emphasis, Edge extraction, Automatic separation, Mirror image, Reverse image, Dynamic Threshold (DTC), Smoothing, Filtering, Noise removal.	
Interface:	SCSI-II	
Batch Detection:	Enabled	
Automatic Size and Skew detection: End of Page Detection		
Blank page skip:	Enabled (only when ram cache is used)	

---

1. This speed is only specified for the scanner itself. The actual reading speed may vary depending on the system configuration.

2. Not all paper sizes can be used in all devices. For details, refer to the users' manual for the device. For other paper sizes, the customer settings can be used.

Product: fi-4860C

Type:	Desktop
Image sensor:	Reduced optical system
Operating method:	Automatic Document Feed (ADF), Simultaneous double-sided scanning, Long page scanning (297mm x 878mm, Black&White only)
Light source:	Fluorescent tube (White)
Basic resolution:	400 dpi
Output resolution:	Monochrome: 400, 300, 240, 200, 150, 100dpi Color: 400, 300, 200, 150, 100dpi
Grayscale levels (internal):	10 bit 1024 levels
Gray scale (8 bits) output:	Enabled
Halftone Patterns:	Dither matrix, Error diffusion

ADF scanning speed [1]:

<Monochrome Asynchronous Scanning>

Single sided: 60 pages per minute (200 dpi, A4, 80g/m^2)

Double sided: 60 pages per minute (200 dpi, A4, 80g/m^2)
(= 120 screens per minute)

<Color Asynchronous Scanning>

Single sided: 60 pages per minute (150,200 dpi, A4, 80g/m^2)

Double sided: 60 pages per minute (150,200 dpi, A4, 80g/m^2)
(= 120 screens per minute)

Hopper capacity:	Maximum 500 sheets, (80g/m^2, A4 [High quality paper, Normal temperature and humidity])
Document size:	Maximum 297 mm x 432 mm or 297mm x 878 mm with Long Page scanning mode.
Supported regular paper [2]:	A3, A4/A4 Landscape, A5/A5 Landscape, A6/A6 Landscape, B4, B5/B5 Landscape, B6/B6 Landscape, Double Letter, Letter/Letter Landscape, Legal, US Executive/US Executive Landscape
Cutout specification:	Specified (one location)
Background compensation:	Enabled
Contrast setting:	256 levels
Gamma pattern:	3 internal types (can be downloaded)
Image processing function:	Dynamic Threshold (SDTC, DTC) Edge emphasis, Edge extraction, Automatic separation, Mirror image(Black&White only), Reverse image

---

1. This speed is only specified for the scanner itself. The actual reading speed may vary depending on the system configuration. Color scanning speed is a value with JPEG enabled.

2   Not all paper sizes can be used in all devices. For details, refer to the users' manual for the device. For other paper sizes, the customer settings can be used.

Imprinter (Endorser):	With Imprinter option (Pre-Imprinter / Post-Imprinter) (Reverse side, minimum left margin printing position of 5 mm) [1]
	Maximum number of characters to be printed: 40 characters
	Counter display range: 0 to 65535 (at 5 digits display)
	0 to 16777215 (at 8 digits display)
	Direction(Printing): Top to Bottom
	Pre-Imprinter / Post-Imprinter switching: Enabled
Interface:	Ultra Wide SCSI
Automatic Size and Skew detection:	End of Page Detection, Automatic Deskew, Automatic Page Size Detection, Black Background
Buffer scan ([Use Memory on Scanner]) function:	Enabled
Use Both Memory ([Ram Cache]+[Use Memory on Scanner]) function:	Enable
Batch Detection:	Enabled
Double feed detection:	Enabled
Pre-Pick:	Enabled
Check Over-skew:	Enabled
Blank page skip:	Enabled (when [Ram cache] or [Use Both Memory] is used)
Drop out color:	Enabled

---

[1]   If 0 mm is specified as the endorser print position, printing will begin 5 mm from the edge of the page.

Product:	M4099D (fi-4990)
Type:	Desktop
Image sensor:	Reduced optical system
Operating method:	Automatic Document Feed (ADF), Simultaneous double-sided scanning, Long page scanning (297mm x 878mm, Black&White only)
Light source:	Fluorescent tube (White)
Basic resolution:	400 dpi
Output resolution:	Standard: 400, 300, 240, 200, dpi With image processing option: 50 dpi to 400 dpi (at steps of 1 dpi)
Grayscale levels (internal):	10 bit 1024 levels
Gray scale (8 bits) output:	Enabled (200 dpi only)
Halftone Patterns:	Dither matrix (can be downloaded), Error diffusion
ADF scanning speed [1]:	<Asynchronous Scanning>
	Single sided: 90 pages per minute (200 dpi, A4, 55 kg)
	Double sided: 90 pages per minute (200 dpi, A4, 55 kg) (= 180 screens per minute)
	< Synchronous Scanning >
	Single sided: 80 pages per minute (200 dpi, A4, 55 kg)
	Double sided: 60 pages per minute (200 dpi, A4, 55 kg) (= 120 screens per minute)
Hopper capacity:	Maximum 1,000 sheets, (ream weight: 55 kg, A4 [High quality paper, Normal temperature and humidity])
Document size:	Maximum 297 mm x 432 mm
Supported regular paper [2]:	A3, A4/A4 Landscape, A5/A5 Landscape, A6/A6 Landscape, B4, B5/B5 Landscape, B6/B6 Landscape, Double Letter, Letter/Letter Landscape, Legal, US Executive/US Executive Landscape
Cutout specification:	Specified (one location)
Background compensation:	Enabled
Contrast setting:	256 levels
Gamma pattern:	3 internal types (can be downloaded)
Image processing function:	Simplified Dynamic Threshold (SDTC) With image processing option Edge emphasis, Edge extraction, Automatic separation, Reverse image, Dynamic Threshold (DTC), Smoothing, Filtering, Noise removal

---

1. This speed is only specified for the scanner itself. The actual reading speed may vary depending on the system configuration.

2. Not all paper sizes can be used in all devices. For details, refer to the users' manual for the device. For other paper sizes, the customer settings can be used.

Imprinter (Endorser):	With endorser option
	(Reverse side, minimum left margin printing position of 20 mm) [1]
	Maximum number of characters to be printed: 30 characters
	Counter display range: 0 to 65535 (at 5 digits display)
	0 to 16777215 (at 8 digits display)
	(There are partly limitations by the revision of the scanner device.)
	Direction(Printing): Top to Bottom
Interface:	SCSI-II
Online offset adjustment:	Enabled
Batch Detection:	Enabled
Automatic skew compensation:	Enabled
Drop out color:	Enabled
Double feed detection:	Enabled
Buffer scan (cache using scanner memory) function:	Enabled
Blank page skip:	Enabled (only when ram cache is used)

---

[1]   If 0 mm is specified as the endorser print position, printing will begin 20 mm from the edge of the page.

Product:	fi-4990C
Type:	Desktop
Image sensor:	Reduced optical system
Operating method:	Automatic Document Feed (ADF), Simultaneous double-sided scanning, Long page scanning (297mm x 878mm, Black&White only)
Light source:	Fluorescent tube (White)
Basic resolution:	400 dpi
Output resolution:	Monochrome: 400, 300, 240, 200, 150, 100dpi Color: 400, 300, 200, 150, 100dpi
Grayscale levels (internal):	10 bit 1024 levels
Gray scale (8 bits) output:	Enabled
Halftone Patterns:	Dither matrix, Error diffusion
ADF scanning speed [1]:	<Monochrome, Asynchronous Scanning>

	Single sided:	90 pages per minute (200 dpi, A4, 55 kg)
	Double sided:	90 pages per minute (200 dpi, A4, 55 kg) (= 180 screens per minute)

Hopper capacity:	Maximum 1,000 sheets, (ream weight: 55 kg, A4 [High quality paper, Normal temperature and humidity])
Document size:	Maximum 297 mm x 432 mm or 297mm x 878 mm with Long Page scanning mode.
Supported regular paper [2]:	A3, A4/A4 Landscape, A5/A5 Landscape, A6/A6 Landscape, B4, B5/B5 Landscape, B6/B6 Landscape, Double Letter, Letter/Letter Landscape, Legal, US Executive/US Executive Landscape
Cutout specification:	Specified (one location)
Background compensation:	Enabled
Contrast setting:	256 levels
Gamma pattern:	3 internal types (can be downloaded)
Image processing function:	Dynamic Threshold (SDTC, DTC) Edge emphasis, Edge extraction, Automatic separation, Mirror image(Black&White only), Reverse image
Imprinter (Endorser):	With endorser option (Reverse side, minimum left margin printing position of 20 mm)[3]
	Maximum number of characters to be printed: 30 characters
	Counter display range: 0 to 65535 (at 5 digits display)
	0 to 16777215 (at 8 digits display)

---

1. This speed is only specified for the scanner itself. The actual reading speed may vary depending on the system configuration.

2. Not all paper sizes can be used in all devices. For details, refer to the users' manual for the device. For other paper sizes, the customer settings can be used.

3. If 0 mm is specified as the endorser print position, printing will begin 20 mm from the edge of the page.

(There are partly limitations by the revision of the scanner device.)

Direction(Printing): Top to Bottom

Interface: Ultra Wide SCSI

Automatic Size and Skew detection: End of Page Detection, Automatic Deskew, Automatic Page Size Detection, Black Background

Buffer scan ([Use Memory on Scanner]) function: Enabled

Use Both Memory ([Ram Cache]+[Use Memory on Scanner]) function: Enable

Batch Detection: Enabled

Double feed detection: Enabled

Pre-Pick: Enabled

Check Over-skew: Enabled

Blank page skip: Enabled (when [Ram cache] or [Use Both Memory] is used)

Drop out color: Enabled

Product:	M3099G, M3099GX
Type:	Desktop
Image sensor:	Reduced optical system
Operating method:	Automatic Document Feed (ADF), Simultaneous double-sided scanning
Light source:	Fluorescent tube (Green)
Basic resolution:	Horizontal scanning: 200 dpi
Output resolution:	Standard: 400, 300, 240, 200, dpi With image processing option: 50 dpi to 400 dpi (at steps of 1 dpi)
Grayscale levels (internal):	8 bit 256 levels
Grayscale output:	Disabled
Halftone Patterns:	Dither matrix (can be downloaded), Error diffusion
ADF scanning speed [1]:	<M3099G>
	Single sided: 55 pages per minute (200 dpi, A4, 55 kg)
	Double sided: 50 pages per minute (200 dpi, A4, 55 kg) (= 100 screens per minute)
	<M3099GX>
	Single sided: 60 pages per minute (200 dpi, A4, 55 kg)
	Double sided: 50 pages per minute (200 dpi, A4, 55 kg) (= 100 screens per minute)
Hopper capacity:	<M3099G>
	Maximum 500 sheets, ream weight: 55 kg, A4
	<M3099GX>
	Maximum 1,000 sheets, ream weight: 55 kg, A4
Document size:	Maximum 297 mm x 432 mm
Supported regular paper [2]:	A3, A4/A4 Landscape, A5/A5 Landscape, A6/A6 Landscape, B4, B5/B5 Landscape, B6/B6 Landscape, Double Letter, Letter/Letter Landscape, Legal, US Executive/US Executive Landscape
Cutout specification:	Specified (one location)
Background compensation:	Enabled
Contrast setting:	256 levels
Gamma pattern:	3 internal types (can be downloaded)
Image processing function:	Simplified Dynamic Threshold (SDTC) With image processing option Edge emphasis, Edge extraction, Automatic separation, Mirror

---

1. This speed is only specified for the scanner itself. The actual reading speed may vary depending on the system configuration.

2. Not all paper sizes can be used in all devices. For details, refer to the users' manual for the device. For other paper sizes, the customer settings can be used.

	image, Reverse image, Dynamic Threshold (DTC), Smoothing, Filtering, Noise removal
Imprinter (Endorser):	With imprinter (endorser) option (Reverse side, minimum left margin printing position of 20 mm)[1]
	Maximum number of characters to be printed: 20 characters
	Counter display range: 0 to 65535 (5 digits display)
	Direction (Printing): Top to Bottom
Interface:	SCSI-II
Batch Detection:	Enabled
Blank page skip:	Enabled (only when ram cache is used)

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[1] .   If 0 mm is specified as the endorser print position, printing will begin 20 mm from the edge of the page.

<u>Product:</u>	<u>M3099GH</u>
Type:	Desktop
Image sensor:	Reduced optical system
Operating method:	Automatic Document Feed (ADF), Simultaneous double-sided scanning
Light source:	Fluorescent tube (Green)
Basic resolution:	200 dpi
Output resolution:	Standard: 400, 300, 240, 200, dpi with image processing option: 50 dpi to 400 dpi (at steps of 1 dpi)
Grayscale levels (internal):	8 bit 256 levels
Grayscale output:	Disabled
Halftone Patterns:	Dither matrix (can be downloaded), Error diffusion
ADF scanning speed [1]:	Single sided: 80 pages per minute (200 dpi, A4, 55 kg)
Double sided:	60 pages per minute (200 dpi, A4, 55 kg) (= 120 screens per minute)
Hopper capacity:	Maximum 1,000 sheets, (ream weight: 55 kg, A4 [High quality paper, Normal temperature and humidity])
Document size:	Maximum 216 mm x 356 mm
Supported regular paper [2]:	A4/A4 Landscape, A5/A5 Landscape, B5, B6/B6 Landscape, Letter, Legal, US Executive
Cutout specification:	Specified (one location)
White level follower:	Enabled
Contrast setting:	256 steps
Gamma pattern:	3 internal types (can be downloaded)
Image processing function:	Simplified Dynamic Threshold (SDTC) With image processing option Edge emphasis, Edge extraction, Automatic separation, Mirror image, Reverse image, Dynamic Threshold (DTC), Smoothing, Filtering, Noise removal

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1. This speed is only specified for the scanner itself. The actual reading speed may vary depending on the system configuration.

2. Not all paper sizes can be used in all devices. For details, refer to the users' manual for the device. For other paper sizes, the customer settings can be used.

Imprinter (Endorser):	With imprinter (endorser) option
	(Reverse side, minimum left margin printing position of 20 mm)[1]
	Maximum number of characters to be printed: 20 characters
	Counter display range: 0 to 65535 (5 digits display)
	Direction(Printing): Top to Bottom
Interface:	SCSI-II
Batch Detection:	Enabled
Blank page skip:	Enabled (only when ram cache is used)

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[1] If 0 mm is specified as the endorser print position, printing will begin 20 mm from the edge of the page.

8.2 Maintenance Service

This section explains briefly how you can help us to provide you with high-quality maintenance service.

Since it is practically impossible for the Fujitsu service staff to be aware of every detail of your daily scanning operation, please understand that our staff may sometimes be unable to answer your question immediately. To help us in our effort to provide you with the best maintenance service possible, we ask you to kindly write down the following items (as many as possible):

- Serial number, version, and date, etc., of this product
- Name and product number of the image scanner being used
- The options installed on the image scanner being used
- Manufacturer, product name, and type number of the computer being used
- Manufacturer and version of the Windows® OS (whether Windows® has been updated)
- Name and version of the display driver
- Name and version of the printer driver
- Resolution (1024 x 768), number of colors, and number of dots (or points) of the screen
- Product name of the SCSI adapter, and name and version of the SCSI driver (in case of the SCSI connection)
- Error occurrence processing (the simpler the processing, the easier it is to determine the cause.)

Also, we would appreciate it very much if you could kindly verify the following items prior to receiving our maintenance service;

- Is the power turned on?
- Is the cable connected correctly?
- Is the correct image scanner driver selected?

FUJITSU TWAIN32 Scanner Driver / Utility

"Scanner Utility for Microsoft® Windows®"

Users Guide

32 bit version

First Edition August 2002

2nd Edition September 2002