

Service Manual

Canon BW

USB Application Interface Board-D1

Canon

Feb 21 2005

Application

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Printed in Japan

Caution

Use of this manual should be strictly supervised to avoid disclosure of confidential information.



Symbols Used

This documentation uses the following symbols to indicate special information:

Symbol	Description
	Indicates an item of a non-specific nature, possibly classified as Note, Caution, or Warning.
	Indicates an item requiring care to avoid electric shocks.
	Indicates an item requiring care to avoid combustion (fire).
	Indicates an item prohibiting disassembly to avoid electric shocks or problems.
	Indicates an item requiring disconnection of the power plug from the electric outlet.
 Memo	Indicates an item intended to provide notes assisting the understanding of the topic in question.
 REF.	Indicates an item of reference assisting the understanding of the topic in question.
	Provides a description of a service mode.
	Provides a description of the nature of an error indication.

The following rules apply throughout this Service Manual:

1. Each chapter contains sections explaining the purpose of specific functions and the relationship between electrical and mechanical systems with reference to the timing of operation.

In the diagrams,  represents the path of mechanical drive; where a signal name accompanies the symbol, the arrow  indicates the direction of the electric signal.

The expression "turn on the power" means flipping on the power switch, closing the front door, and closing the delivery unit door, which results in supplying the machine with power.

2. In the digital circuits, '1' is used to indicate that the voltage level of a given signal is "High", while '0' is used to indicate "Low". (The voltage value, however, differs from circuit to circuit.) In addition, the asterisk (*) as in "DRMD*" indicates that the DRMD signal goes on when '0'.

In practically all cases, the internal mechanisms of a microprocessor cannot be checked in the field. Therefore, the operations of the microprocessors used in the machines are not discussed: they are explained in terms of from sensors to the input of the DC controller PCB and from the output of the DC controller PCB to the loads.

The descriptions in this Service Manual are subject to change without notice for product improvement or other purposes, and major changes will be communicated in the form of Service Information bulletins.

All service persons are expected to have a good understanding of the contents of this Service Manual and all relevant Service Information bulletins and be able to identify and isolate faults in the machine."

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Chapter 1 Specifications

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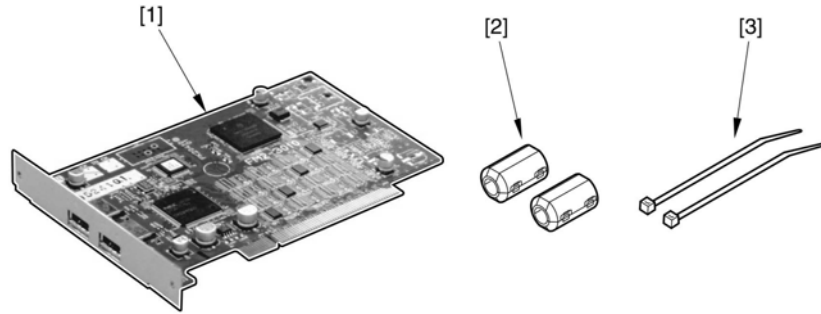
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1.1 Product composition

1.1.1 Product Configuration

0008-5313

This kit consists of the following items.



F-1-1

T-1-1

[1]	Security Expansion Board (USB) - D1	1
[2]	Ferrite Core	2
[3]	Tie-wrap	2

1.2 Specifications

1.2.1 Specifications

0008-5316

The Security Expansion Board (USB)-D1, an optional board connected with PCI, has 2 functions. One is to add 2 USB host terminals required when the IC card reader or the like is connected to the host machine with USB in MEAP environment.

The other is to add the encryption accelerator chip required when HDD encryption processing is speeded up during installation of the security kit.

The USB host interface function becomes enabled by combination with an USB-supported MEAP application. The encryption accelerator function can be used only while the security kit is enabled.

The PCI Bus Extension Kit is necessary to install the Security Expansion Board (USB)-D1.

Main specifications of the Security Expansion Board (USB)-D1 are as follows:

USB Host Interface Function

- USB full speed (equivalent to USB1.1)
- **USB host terminal:** 2 pcs.
- **Max. power supply at the host terminal:** 500mA per port

Encryption Accelerator Function

- Encryption processing accelerator IC Motorola-made MPC190
- Supported encryption system

Public key cryptogram system: RSA Diffie-Hellman,
Elliptic curve cryptogram system

Common key encryption system: DES, 3DES, RC4

Chapter 2 Installation

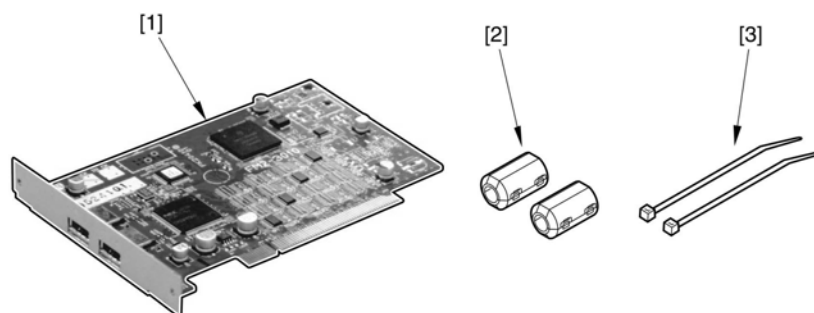
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2.1 Checking components

2.1.1 Checking the Contents

0007-7638



F-2-1

T-2-1

[1]	USB Application Interface Board-D1	1 pc.
[2]	Ferrite core	2 pc.
[3]	Tie-wrap	2 pc.



1. You will need the ferrite core and tie-wrap if you will be connecting a USB cable for connection of a USB device. (outside North America only)
 2. If the site of installation is in the US, you will not need the ferrite core or tie-wrap.
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2.2 Installation procedure

2.2.1 Installation Procedure (iR4570/3570, 2870/2270 Series)

0007-7643

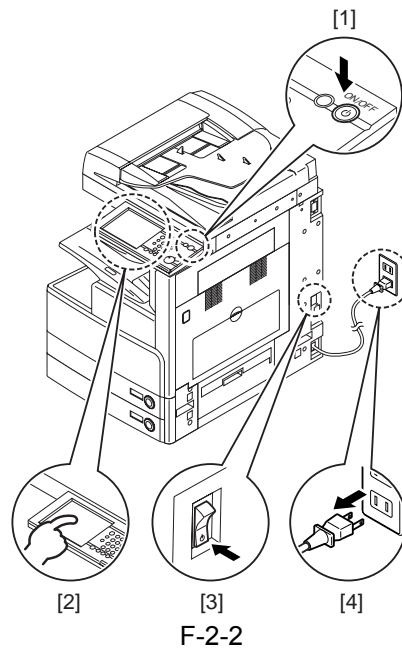
1. Turning Off the Host Machine



How to turn off the main power (Models with the hard disk, Products with the iR System Expansion Kit-A1 (option) installed)

To protect the hard disk of the machine, take the following steps when turning off the main power.

1. Hold down the control panel power switch for 3 sec or more.
2. Go through the instructions shown on the control panel touch display (for shutdown sequence) so that the host machine's main power switch may be turned off.
3. Turn off the host machine's margin power switch.
4. Disconnect the power cable (from the power outlet).



How to Turn OFF the Main Power (Models without the hard disk)

1. Press the power switch on the control panel unit.
2. Turn OFF the main power switch.
3. Disconnect the power cable (for a receptacle).

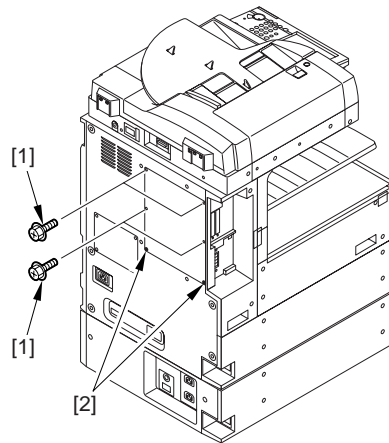
2. Checks to Make Before Starting the Installation Work



If you are installing a USB Application Interface Board-D1 be sure that the Expansion Bus-B1 already exists.

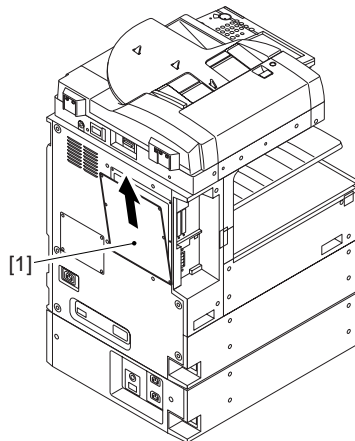
3. Installation

- 1) Remove the 4 screws [1].
- 2) Loosen the 2 screws [2].



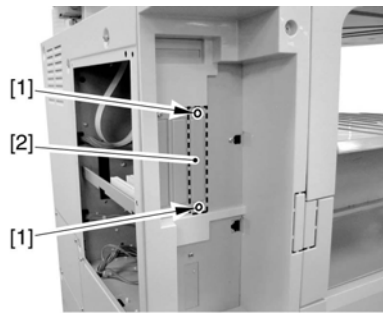
F-2-3

- 3) Pull the face cover [1] in upward direction.



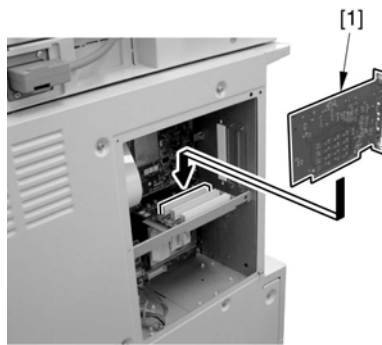
F-2-4

- 4) Remove the 2 screws [1], and detach the face plate [2].
The detached face plate will no longer be used.



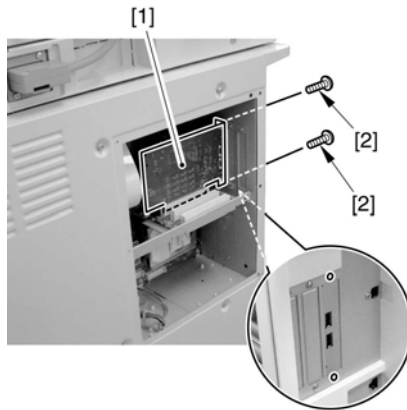
F-2-5

5) Install the USB application interface board [1] as shown. (Move the board as indicated by the arrow.)



F-2-6

6) Fix the USB application interface board [1] in place using 2 screws [2].



F-2-7

- 7) Mount the face cover using 4 screws.
- 8) Tighten the 2 screws loosened in step (2).
- 9) Connect the host machine's power cable (to the power outlet).
- 10) Turn on the main power switch.

4. Checking the installation

Make the following selections in service mode: COPIER>ACC-STS>PCIx. (x: number of the slot to which the

board has been installed; 1, 2, or 3)

Check to see that '3DES+USB-HOST' is indicated for the slot identified by the appropriate number. (hyphen (-) indicates that the machine does not recognize the presence of hardware)

2.2.2 Installation Procedure (iR105i/iR105+/iR9070/iR8570N/ iR7270N/iR85+/iR8070)

0008-2008

1. Turning Off the Host Machine



Before starting the work, be sure to perform the following on the host machine in strict sequence:

1. Hold down the control panel power switch for 3 sec or more.
2. Go through the instructions shown on the control panel touch display (for shutdown sequence) so that the host machine's main power switch may be turned off.
3. Turn off the host machine's margin power switch.
4. Disconnect the power cable (from the power outlet).

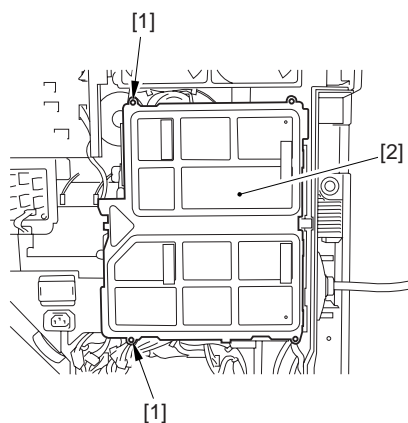
2. Checks to Make Before Starting the Installation Work



If you are installing a USB Application Interface Board-D1 be sure that the Expansion Bus-A1 already exists.

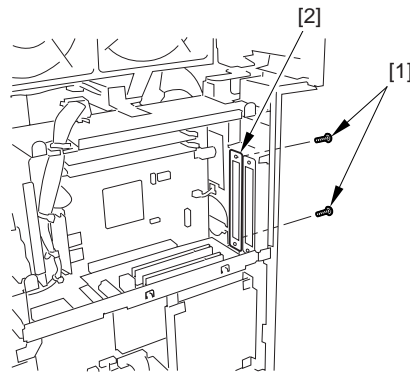
3. Installation Procedure

- 1) Remove the rear cover.
- 2) Remove the 2 screws [1], and detach the main controller box cover [2].



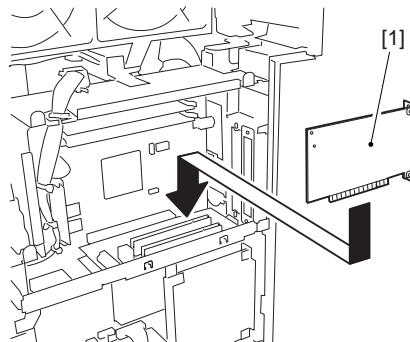
F-2-8

- 3) Remove the 2 screws [1], and detach the face cover [2].



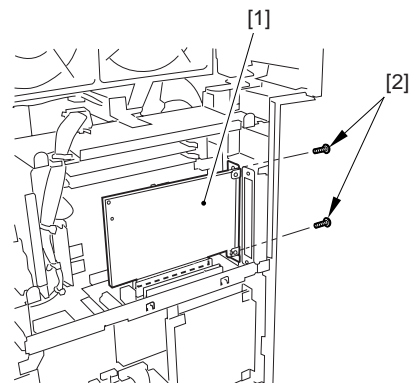
F-2-9

4) Fit the USB board [1] in the direction of the arrow.



F-2-10

5) Fix the USB board [1] in place using 2 screws [2].



F-2-11

- 6) Attach the main controller box cover.
- 7) Attach the rear cover.
- 8) Connect the host machine's power cable (to the power outlet).
- 9) Turn on the main power switch.

4. Checking the installation

Make the following selections in service mode: COPIER>ACC-STS>PCIx. (x: number of the slot to which the board has been installed; 1, 2, or 3)

Check to see that '3DES+USB-HOST' is indicated for the slot identified by the appropriate number. (hyphen (-) indicates that the machine does not recognize the presence of hardware)

2.2.3 Installation procedure (iR6570/5570 Series)

0009-4773

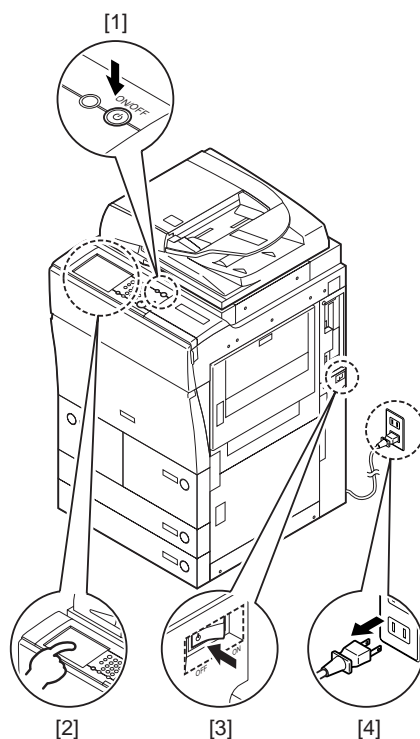
1. Turn off the power of the host machine



How to turn off the main power:

When turning off the main power, follow the procedure below in order to protect the hard disk of the machine.

1. Press the power switch on the control panel for 3 sec or more.
2. Operate the touch panel following the instruction display for the shut down sequence so that the main power can be ready for turning off.
3. Turn off the main power.
4. Unplug the power cable (for outlet) from the wall outlet.



F-2-12

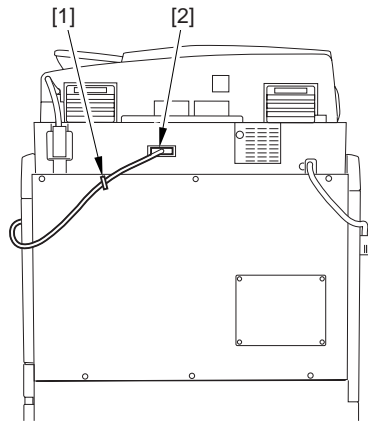
2. Precautions when performing installation



Check if the Expansion BUS-C1 has been mounted when mounting the USB Application Interface Board-D1.

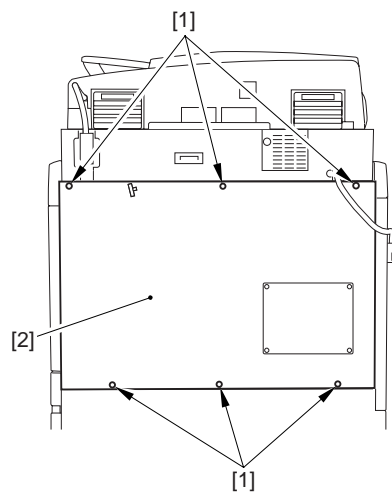
3. Installation procedure

1) Open the cable clamp [1] and release the reader communication cable [2].



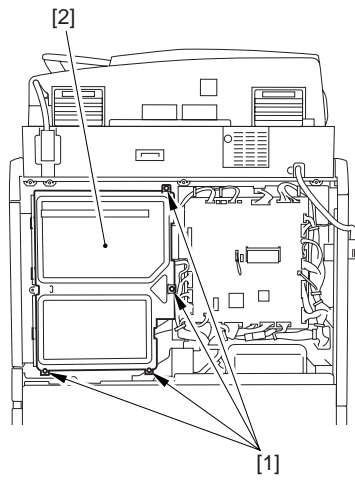
F-2-13

2) Unscrew 6 screws [1] and detach the upper rear cover [2].



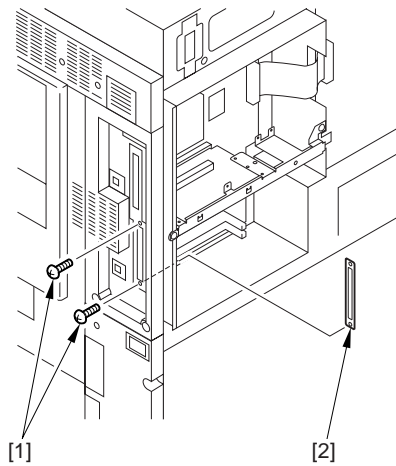
F-2-14

3) Unscrew 4 screws [1] and detach the main controller box cover [2].



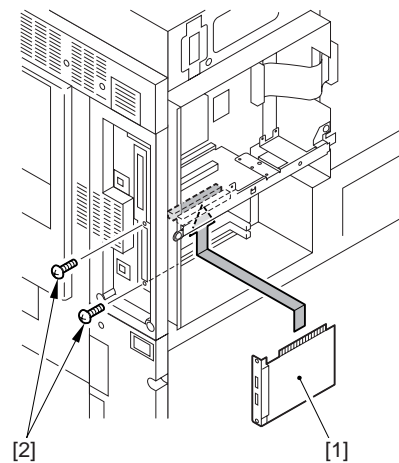
F-2-15

4) Unscrew 2 screws [1] and detach the blanking cover [2].



F-2-16

5) Mount the USB Application Interface Board in the direction of the arrow and fix it using 2 screws [2].



F-2-17

- 6) Attach the main controller box cover using 4 screws.
- 7) Attach the upper rear cover using 6 screws.
- 8) Plug the reader communication cable into the outlet of the host machine.
- 9) Run the reader communication cable through the cable clamp and then clamp the cable.
- 10) Plug the power cable (for outlet) of the host machine into the wall outlet.
- 11) Turn on the main power.

4. Checking the installation

Make the following selections in service mode: COPIER>ACC-ST5>PCIx. (x: number of the slot to which the board has been installed; 1, 2, or 3)

Check to see that '3DES+USB-HOST' is indicated for the slot identified by the appropriate number. (hyphen (-) indicates that the machine does not recognize the presence of hardware)

2.2.4 Mounting the Ferrite Core (outside North America)

0007-8168



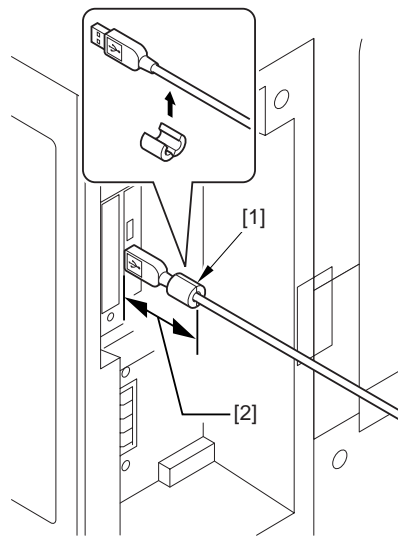
Be sure to perform the following if you are using a USB cable for connection of a USB device. (The figure shows the iR4570/3570,2870/2270 Series.)

- 1) Connect the USB cable to the USB APP I/F Board-D1, which has been mounted already in the last step, and then attach the ferrite core [1] to the USB cable. The distance [2] should be within 100mm.



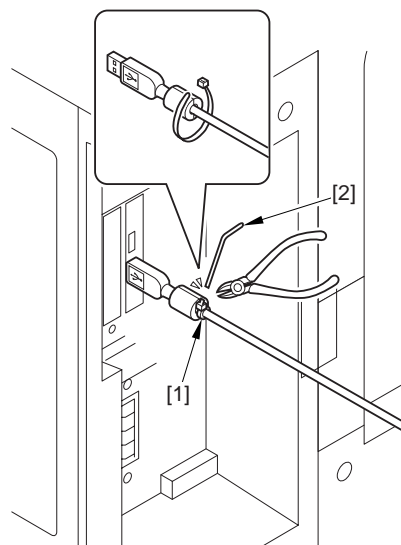
To prevent noise, fit the ferrite core as shown.

- Take care so that the harness is not trapped by the ferrite core.



F-2-18

- 2) To prevent displacement of the ferrite core, fit the USB cable with a tie-wrap [1].
- 3) Cut the excess of the tie-wrap [2] using nippers.



F-2-19



If you are using 2 USB cables, be sure to fit the other cable with another ferrite core and tie-wrap in the same way.

Chapter 3 Maintenance

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3.1.1 Service Mode List	3-1

3.1 Related Service Mode

3.1.1 Service Mode List

0008-5321

The following is an overview of service mode related to USB Application Interface Board-D1.

T-3-1

Item	Settings	Detail
Board name connected to PCI 1/2/3	Copier>Displ ay>ACC- STS>PCI1/2/ 3	Not connected: [-] hyphen is displayed. Connected: Board name is displayed.

Note:

[3DES + USB - HOST] is displayed when this board is connected.

When a hyphen [-] is displayed, however, it means that the board is not recognized. Check to see if the board is properly connected in such cases.

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