

Card Reader-C1 Card Reader-D1 SERVICE MANUAL

REVISION 0

Canon

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FY8-13H2-000

Application

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Caution

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

1 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.
	Refers to the Copier Basics Series for a better understanding of the contents.

2 Outline of the Manual

This Service Manual provides basic facts and figures need to service the Card Reader-C1/D1 in the field, and consists of the following:

Chapter 1	Introduction	outline, specifications, types of cards
Chapter 2	Electrical System	outline of card detection
Chapter 3	Installation	site requirements and installation procedure
Appendix	general circuit diagram	

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

INTRODUCTION

1 Outline

A card reader is designed to read data stored on a plastic card (coded group No.) by an optical or magnetic means to enable control of prints made by its host machine according to group.

The PDL output may be controlled by setting IDs and ID Nos. (Each card is given a unique ID, and ID Nos. are registered in user mode.)

A card reader may be either of the following two depending on how it may be installed:

- Card Reader-C1 (external installation type)
- Card Reader-D1 (built-in type)

Features

1. The output (number of prints) may be monitored in terms of individual groups and all groups. In addition, setting a unit price will enable monitoring of expenses on an individual or total basis.
2. A limit may be imposed on the number of prints that may be made by each group.
3. A specific group may be denied access.
4. A group whose output count is '0' is skipped when statistics are collected, reducing the work.

2 Specifications

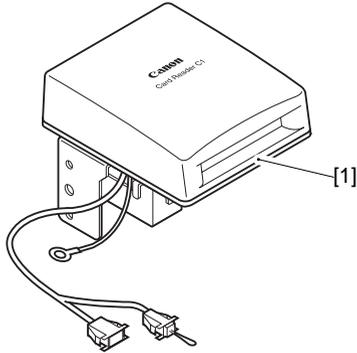
2.1 Card Reader Unit

Item	Description
Reading method	By moving optical or magnetic mechanism
Maximum number of groups	200 groups (optical), 300 groups (magnetic) The number of groups depends on the specifications of the host machine.
Upper limit by group	Depends on host machine.
Unit price range	0.01 to 60.0 <ul style="list-style-type: none"> • If between 0.01 and 9.99, in increments of 0.01. • If between 10.0 and 60.0, in increments of 0.1.
Minimum reading speed	3 cm/sec
Operating environment	Temperature: +15 to +30°C
Humidity:	5% to 80%
Power supply	5 VDC (supplied by host machine)
Power consumption	0.5 W max.
Dimensions	Card Reader-C1: 88 (W) × 100 (D) × 32 (H) mm Card Reader-D1: 77 (D) × 85 (D) × 22 (H) mm
Weight	Card Reader C1: 130 g Card Reader-D1: 70 g

3 Names of Parts

3.1 Card Reader

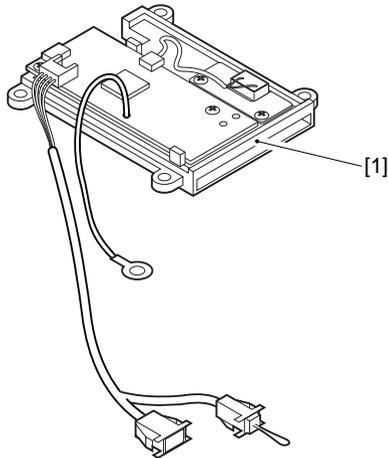
■ Card Reader-C1



[1] Card slot

F01-301-01

■ Card Reader-D1



[1] Card slot

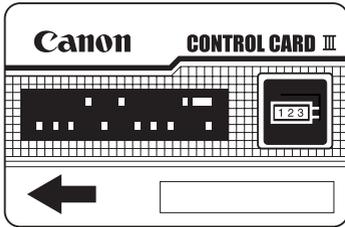
F01-301-02

4 Types of Cards

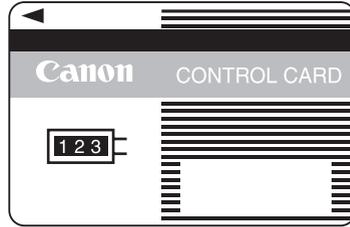
4.1 Group Card

A group number may be between 001 and 200, and as many as 200 groups may use cards (in the case of the magnetic type, between 0001 and 3000).

Each group is expected to own one of each.



Optical card

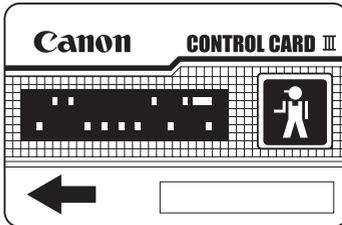


Magnetic card

F01-401-01

4.2 Maintenance Card

This card is used exclusively for maintenance work (as when servicing the card reader or the host machine; see Note 2).



Optical card



Magnetic card

F01-402-01



1. An administrator is an individual who manages the volume of output, setting of unit price, and the like.
2. The maintenance is included as part of the basic card set purchased by the user. As such, ask the user for the card when setting up the card reader unit.

CHAPTER 2

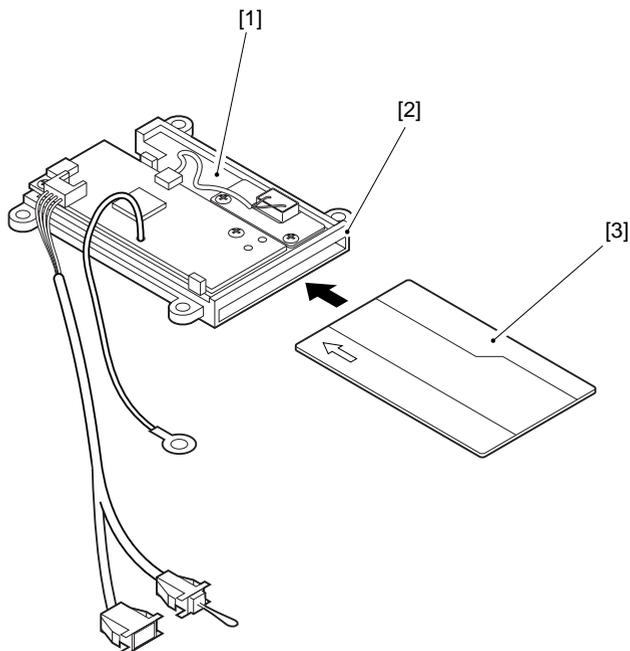
ELECTRICAL SYSTEM

1 Outline

The electrical mechanisms of the card reader is controlled by the CPU (IC6) found on the card reader PCB.



Do not disassemble the PCB in the field.



- [1] Card reader PCB
- [2] Card reader slot
- [3] Card

F02-100-01

2 Card Detention Circuit

When a card is inserted into the card reader, the data on the card is read and communicated to the host machine.

If the card is an optical type, the phototransistors (PHT1, PHT2) generate signals according to the arrangement of the holes made in the card. The data on the card is recognized when the signals reach the CPU (IC6).

If the card is a magnetic type, the data is read by the magnetic head. The data is recognized when the generated signals reach the CPU (IC6).

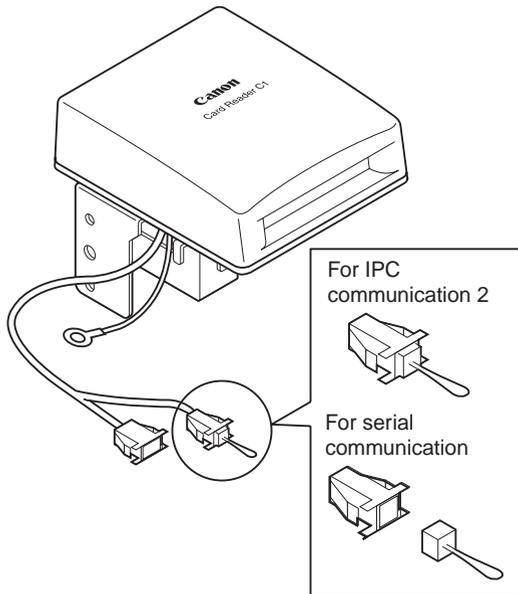
The data recognized by the CPU is then forwarded to the host machine.

Communication with the Host Machine

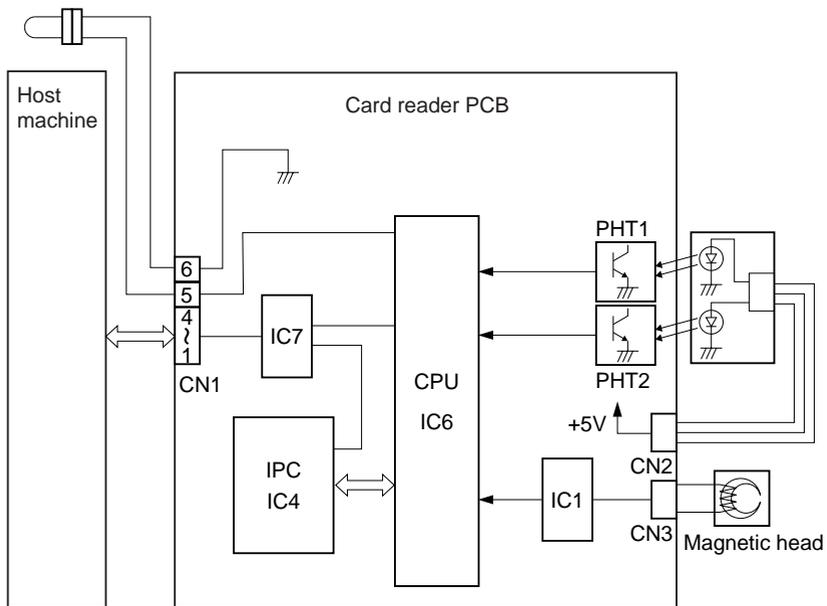
The card reader communicates with its host machine in either of the following two ways:

- IPC communication 2
- Serial communication

Either of the above is selected to suit the method of communication used by the host machine, and is identified by the presence/absence of a connector on the tip of the card reader cable.



F02-200-01



F02-200-02

CHAPTER 3

INSTALLATION

1 Installation Procedure

The card reader is installed in a way suited to its host machine. See the Service Manual of the respective host machine.

2 Product Composition

	Name	Product notation	Description		
Body	Card Reader-C1	F25-9401	Includes the card reader unit, spacer, User's Manual, and basic card.		
	Card Reader-D1	F25-9411			
Options	Optical type	Basic Card (Jpn)	F21-7531	Consists of an erasing card, unit price setting card, upper limit setting card, maintenance cards, and copy card 1. (Note 1)	
		Basic Card (Eng)	F21-7541		
		Basic Card (Frn)	F21-7551		
		Basic Card (Gmn)	F21-7561		
		Copy Card 1 (Jpn)	F21-7512		For 1 to 30 groups (30 cards)
		Copy Card 1 (Eng)	F21-7513		
		Copy Card 1 (Frn)	F21-7514		
		Copy Card 1 (Gmn)	F21-7515		
		Copy Card 2 (Jpn)	F21-7522		For 31 to 100 groups (70 cards)
	Copy Card 2 (Eng)	F21-7523			
	Copy Card 2 (Frn)	F21-7524			
	Copy Card 2 (Gmn)	F21-7525			
	Copy Card 3 (Jpn)	F21-7532	For 101 to 200 groups (100 cards)		
	Copy Card 3 (Eng)	F21-7533			
	Copy Card 3 (Frn)	F21-7534			
	Copy Card 3 (Gmn)	F21-7535			
	Magnetic type	Basic Card	F24-0412	Consists of an erasing card, unit price setting card, upper limit setting card, and maintenance cards. (Note 1)	
		Copy Card	F24-0422		For 1 to 30 groups (30 cards)
		Copy Card	F24-0432		For 31 to 100 groups (70 cards)
Copy Card		F24-0442	For 101 to 200 groups (100 cards)		
Copy Card		F24-0452	For 201 to 300 groups (100 cards)		
Copy Card		F24-0462	For 301- to 500 groups (200 cards)		
Copy Card		F24-0472	For 501 to 3000 groups (500 cards)		

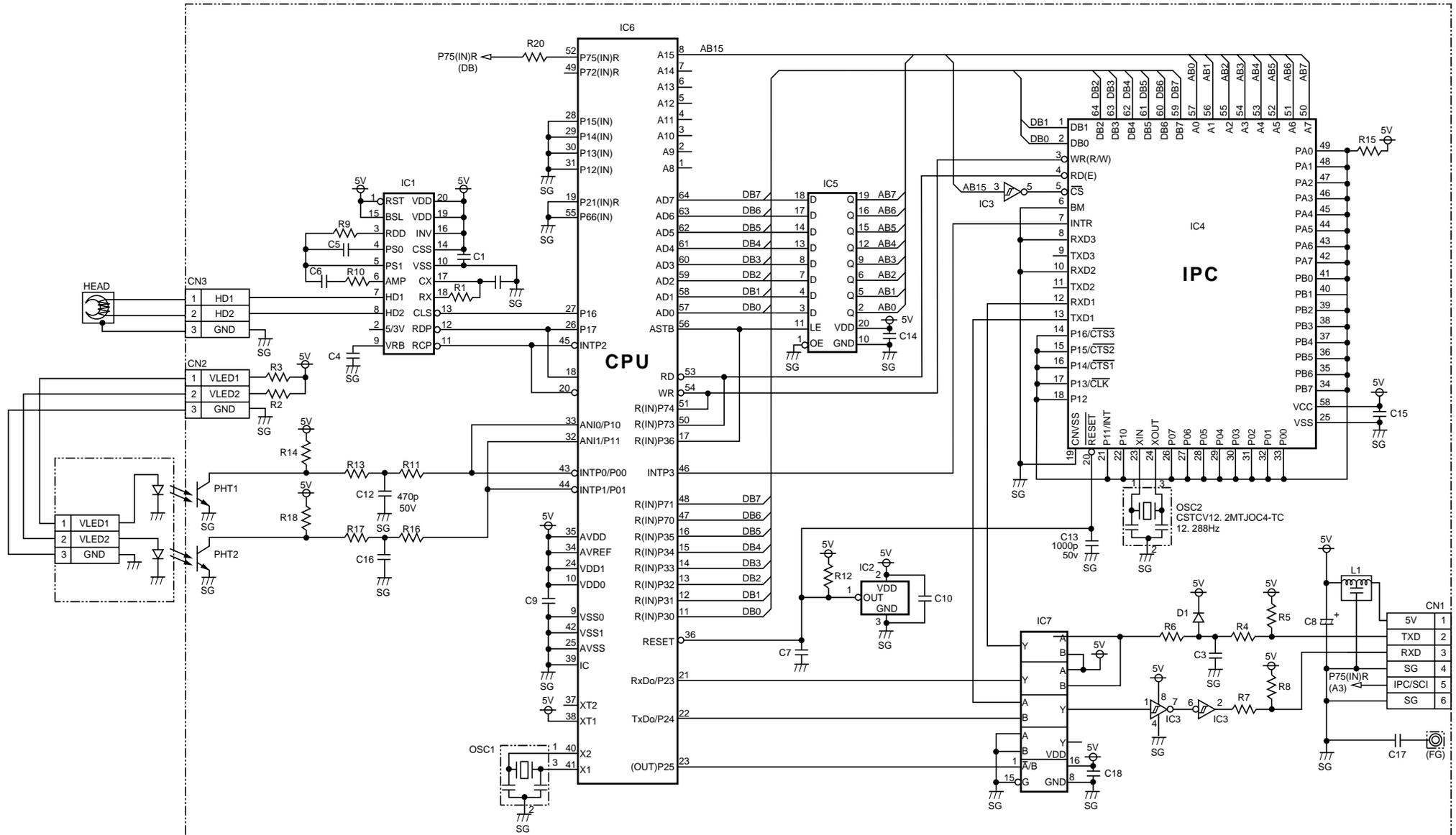
T03-200-01



This model does not use an erasing card, unit price setting card, or upper limit setting card.

APPENDIX

1 General Circuit Diagram



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