

ACC CONTROLLER-A1

SERVICE MANUAL

REVISION 0

Canon

JAN. 1999

FY8-13FL-000

IMPORTANT

THE INFORMATION CONTAINED HEREIN IS PUBLISHED BY CANON INC., JAPAN. SPECIFICATIONS AND OTHER INFORMATION CONTAINED HEREIN MAY VARY SLIGHTLY FROM ACTUAL MACHINE VALUES OR THOSE FOUND IN ADVERTISING AND OTHER PRINTED MATTER.

ANY QUESTIONS REGARDING INFORMATION CONTAINED HEREIN SHOULD BE DIRECTED TO THE COPIER SERVICE DEPARTMENT OF THE SALES COMPANY.

COPYRIGHT © 1999 CANON INC.

***Printed in Japan
Imprimé au Japon***

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

Prepared by

OFFICE IMAGING PRODUCTS TECHNICAL SUPPORT DEPARTMENT 1
OFFICE IMAGING PRODUCTS TECHNICAL SUPPORT DIVISION

CANON INC.

7-5-1, Hakusan, Toride, Ibaraki 302-8501 Japan

INTRODUCTION

This service manual provides basic information required in performing field service to maintain the product quality and functions of the ACC Controller-A1.

Each chapter consists of the following sections:

Chapter 1 Introduction: Features, specifications, names of parts

Chapter 2 Troubleshooting: Operation failure countermeasures, List of PCB switches and check pins

Chapter 3 Parts Catalogue: Parts catalogue

Appendix: Circuit diagrams

Changes of the contents made for the sake of product improvements will be notified in service information (technical information) whenever such changes are made.

Gaining a sound and thorough understanding of the copier through careful reading of this service manual and the subsequently issued Service Information (Technical Information) bulletins is the only way to develop the technical skill necessary to prolong product quality and functionality and the practical ability to be able to determine the cause of breakdowns.

CONTENTS

CHAPTER 1 INTRODUCTION

I. FEATURES	1-1	D. Interface connectors	1-4
II. SPECIFICATIONS.....	1-2	III. BASIC OPERATION.....	1-6
A. ACC Controller-A1	1-2	A. Overview	1-6
B. Interface connector layout.....	1-2	B. Description of major ICs	1-7
C. System block diagram.....	1-3	C. Description of operation.....	1-8

CHAPTER 2 TROUBLESHOOTING

I. TROUBLESHOOTING	2-1	II. SWITCHES AND CHECK PINS LISTED	
A. Initial inspection	2-1	BY PCB.....	2-2
B. Troubleshooting.....	2-1	A. ACC controller PCB	2-2

CHAPTER 3 PARTS CATALOGUE

PARTS CATALOGUE	3-1
-----------------------	-----

APPENDIX

A. ACC CONTROLLER PCB	
CIRCUIT DIAGRAM	A-1

CHAPTER 1

INTRODUCTION

I. FEATURES	1-1	D. Interface connectors	1-4
II. SPECIFICATIONS.....	1-2	III. BASIC OPERATION.....	1-6
A. ACC Controller-A1	1-2	A. Overview	1-6
B. Interface connector layout.....	1-2	B. Description of major ICs	1-7
C. System block diagram.....	1-3	C. Description of operation.....	1-8

I. FEATURES

1. An option I/O device can be connected

The installation of this board to the printer main unit makes it possible to connect optional input devices (paper decks, etc.) and optional output devices (sorter).

II. SPECIFICATIONS

A. ACC Controller-A1

- | | |
|-----------|----------------------------------|
| 1) CPU | NEC UPD784020GC-3B9 |
| RAM | 512 bytes |
| Frequency | 25 MHz |
| 2) EP-ROM | Texas Instruments TMS27C512-12JL |
| | 64 Kbytes |
| 3) S-RAM | Toshiba TC55257DFL-70L |
| | 32 Kbytes |

B. Interface connector layout

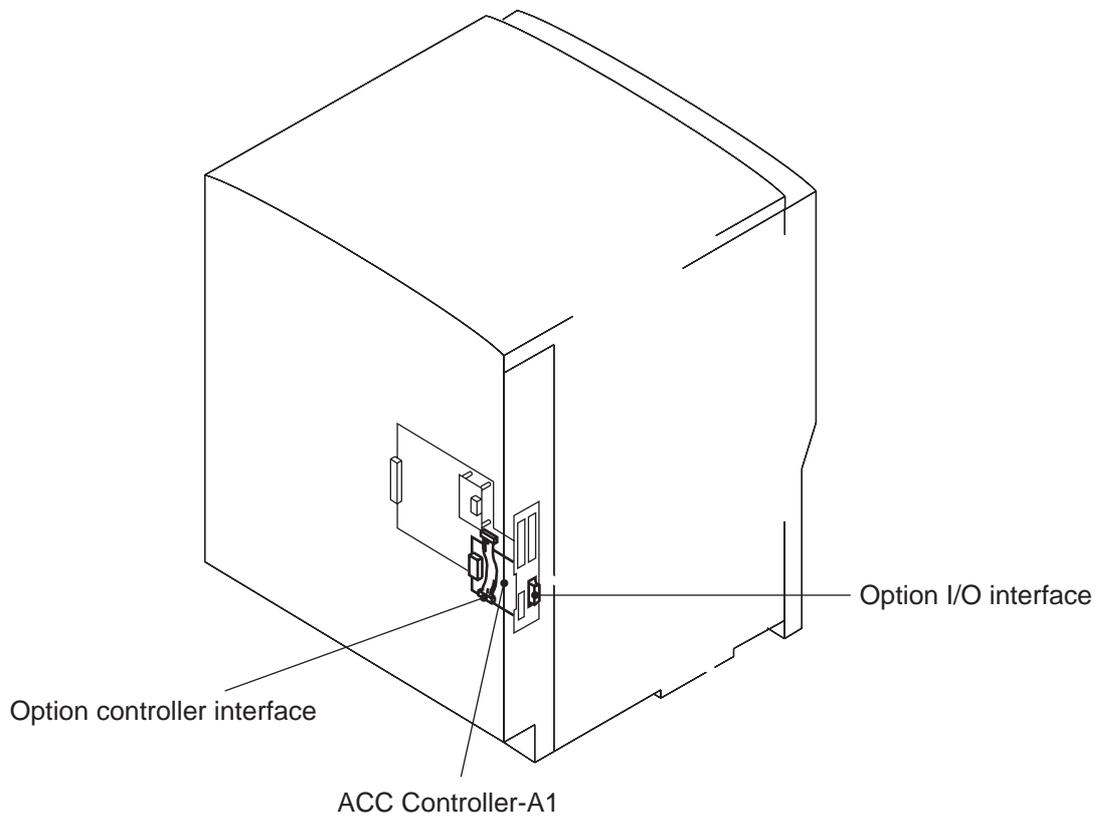


Figure 1-201

C. System block diagram

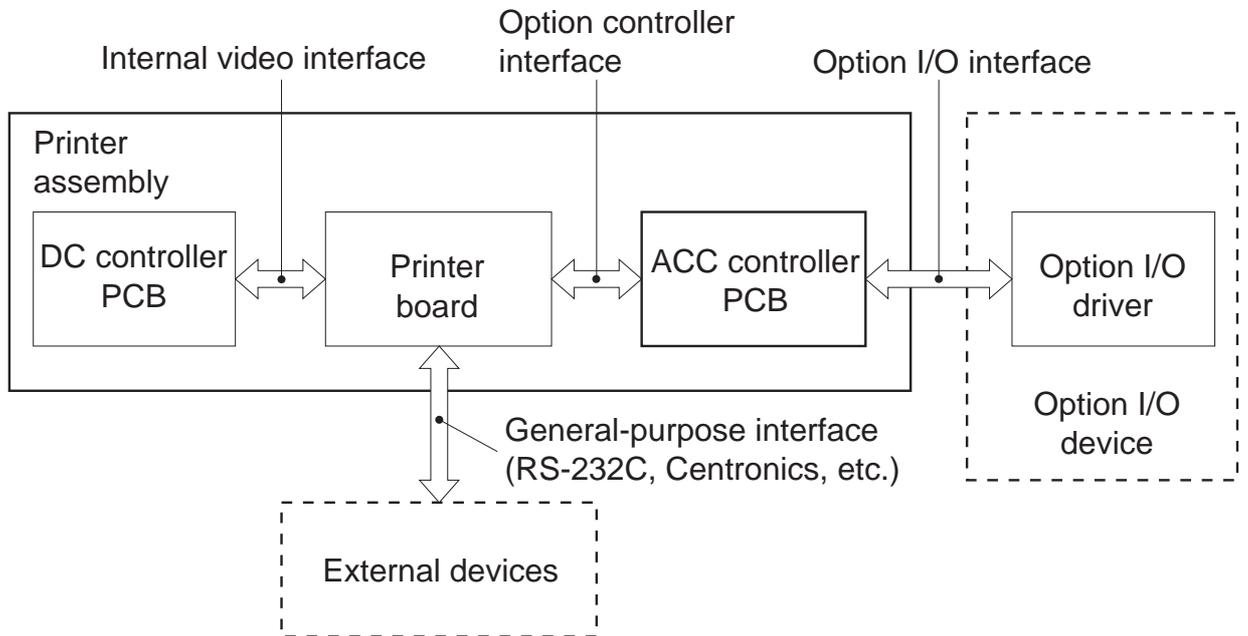
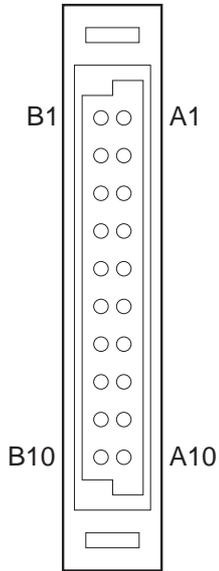


Figure 1-202

D. Interface connectors

1. Option controller interface

The ACC controller, printer board, connectors and signal names are listed below.

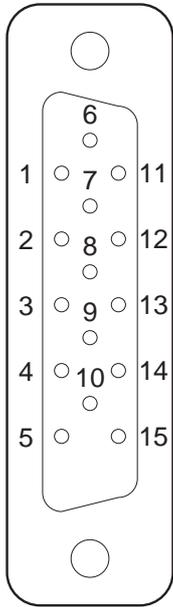


Pin	Abbreviation	I/O	Signal name
A1	+5V		
A2	RESET	Input	Reset signal (reserved)
A3	PRINT*	Input	Print signal (reserved)
A4	SPCHG*	Input	Speed change signal (reserved)
A5	PDLV*	Input	Paper delivery signal
A6	undetermined 1*	Input	for expansion
A7	N.C.		
A8	CKEN*	Input	Communications ready signal
A9	TX*	Input	Transmission data line
A10	GND		
B1	+5V		
B2	N.C.		
B3	TOPR* or VSYNC*	Input	Refeed signal or vertical sync request signal
B4	PFED*	Input	Paper feed signal
B5	RETURN-BACK (GND)		Connection check signal
B6	undetermined 2*	Input	for expansion
B7	STROBE*	Input	Strobe signal
B8	RX*	Output	Reception data line
B9	CLK*	Output	Sync clock signal
B10	GND		

Table 1-201

2. Option I/O device interface

The ACC controller, option I/O device, connectors and signal names are listed below.



Pin	Abbreviation	I/O	Signal name
1	TX*	Output	Transmission data line
2	GND		
3	RX*	Input	Reception data line
4	TERMINATE*	Input	Communication ready signal
5	N.C.		
6	CLOCK*	Output	Sync clock signal
7	GND		
8	GND		
9	GND (KEY)		To prevent incorrect insertion
10	N.C.		
11	GND		
12	STROBE*	Output	Strobe signal
13	PWRON	Output	Power on signal
14	GND		
15	N.C.		

Table 1-202

III. BASIC OPERATION

A. Overview

The ACC controller must be installed in the printer assembly to allow the connection of optional I/O devices to the printer assembly.

Equipped with a 16-bit microprocessor (IC2), the ACC controller controls serial communications to the printer board and optional I/O devices.

The ACC controller can simultaneously control up to five option I/O devices in response to commands and signals transferred from the printer board as well as signals transferred from the DC controller.

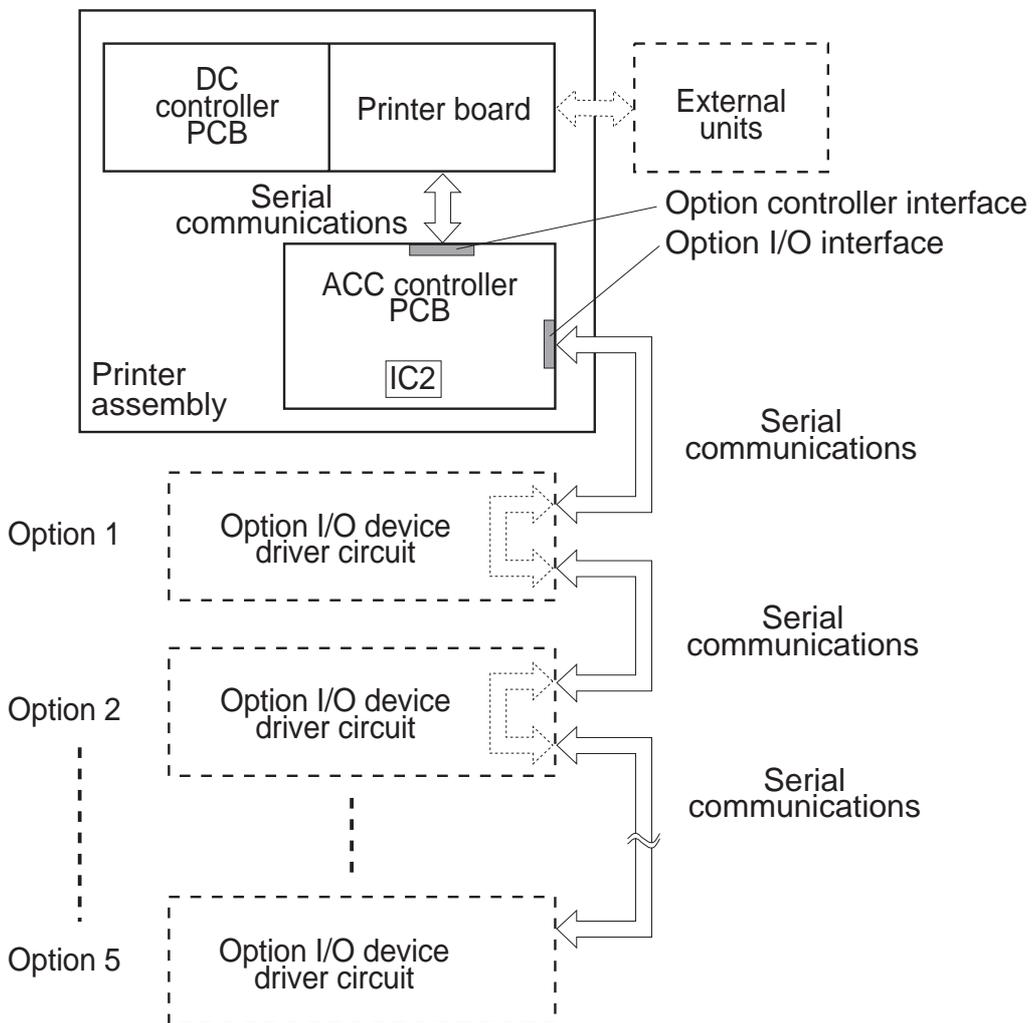


Figure 1-301

B. Description of major ICs

1. CPU (IC2)

The CPU consists of an NEC single chip microprocessor (UPD784020GC-3B9). The CPU communicates with the printer board and option I/O devices and controls option I/O devices.

2. EP-ROM (IC1)

The EP-ROM has a memory capacity of 64 Kbytes and stores programs used to control option I/O device operation.

3. S-RAM (IC3)

The S-RAM has a memory capacity of 32 Kbytes.

The S-RAM stores communications data between the printer board and option I/O devices (up to 40 pages).

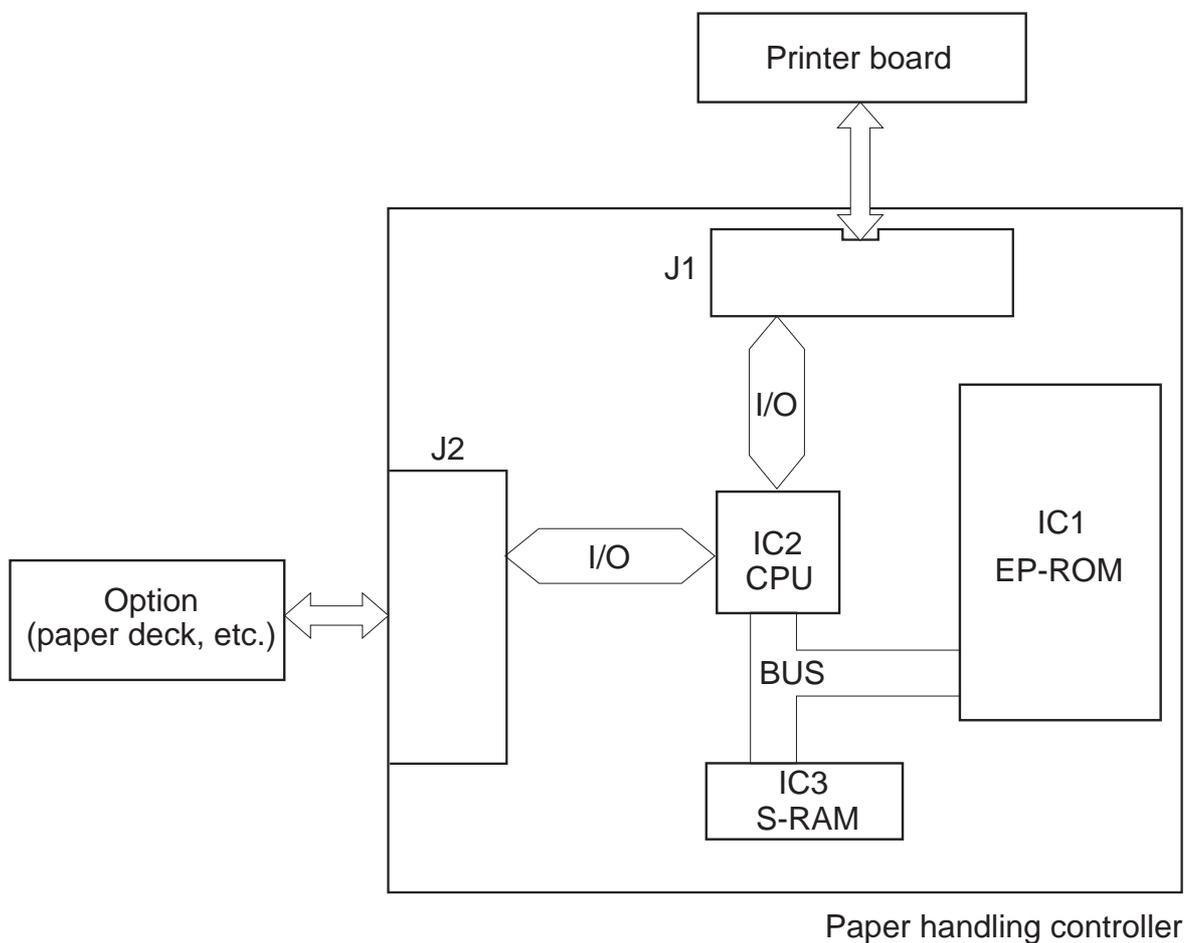


Figure 1-302

C. Description of operations

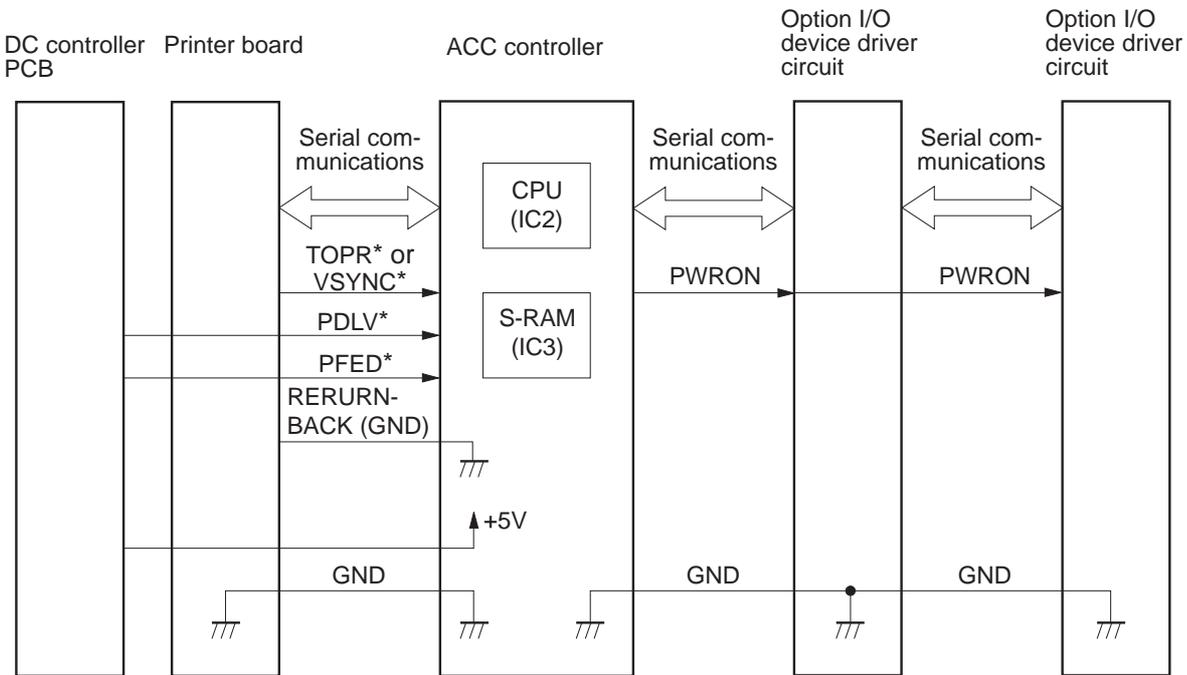


Figure 1-303

When the printer assembly is turned on, power (+5 V) is supplied to the ACC controller by the printer board; serial communications between the printer board and the ACC controller start after a predetermined time.

When power (+5 V) is supplied, the ACC controller microprocessor (CPU) sends a power-on signal (PWRON) to the option I/O devices to turn them on. This starts serial communications between the ACC controller and the option I/O device.

The ACC controller transmits paper feed and paper delivery instructions for one printed page based on communications data and refeed signals (TOPR*) from the printer board as well as paper feed (PFED*) and paper delivery signals (PDLV*) from the DC controller board. The option I/O device returns the paper feed status of the option I/O devices to the ACC controller.

The S-RAM (IC3) stores the communications data for the 40 most recent pages, which is used by the CPU to perform real-time paper feed control of the option I/O devices, for each printed page. The printer board monitors paper feed status of each option I/O device on a real-time basis, using S-RAM data obtained via the ACC controller interface.

CHAPTER 2

TROUBLESHOOTING

I.	TROUBLESHOOTING	2-1	II.	SWITCHES AND CHECK PINS LISTED	
	A. Initial inspection	2-1		BY PCB	2-2
	B. Troubleshooting.....	2-1		A. ACC controller PCB	2-2

I. TROUBLESHOOTING

A. Initial inspection

- 1) Make sure that the wall outlet provides the prescribed voltage.
- 2) Check that power plugs from the printer and option I/O devices are connected to a wall outlet.
- 3) Make sure that the interface connectors are properly connected.

B. Troubleshooting

Countermeasures to deal with operation failures occurring when the ACC controller is installed in the printer assembly are described below. Note it is assumed that the printer assembly operated normally prior to installing the ACC controller.

- 1) Turn off the printer assembly and reinstall the paper handling controller. If this fails to solve the problem, take the measures described in the service manual supplied with each option I/O device.

Note:

1. Refer to the printer assembly service manual for information regarding how to cope with general printer assembly operation failure countermeasures.
2. The printer assembly must be turned off whenever the ACC controller is installed or removed.

II. SWITCHES AND CHECK PINS LISTED BY PCB

Only the jumpers and switches on the ACC controller that have to be inspected during field service are listed below.

A. ACC controller PCB

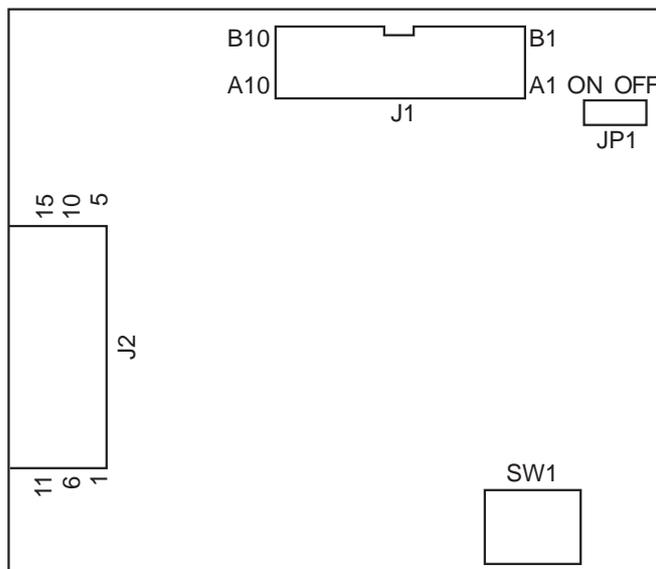


Figure 2-201

Switch No.	Role
SW 1	Factory use only

Table 2-201

JP No.	Role
JP 1	Factory use only

Table 2-202

CHAPTER 3

PARTS CATALOGUE

PARTS CATALOGUE3-1

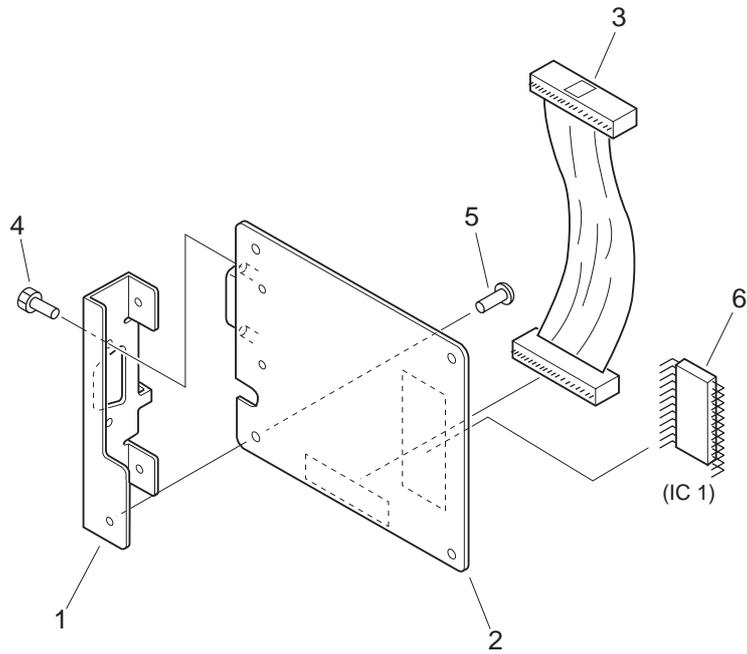


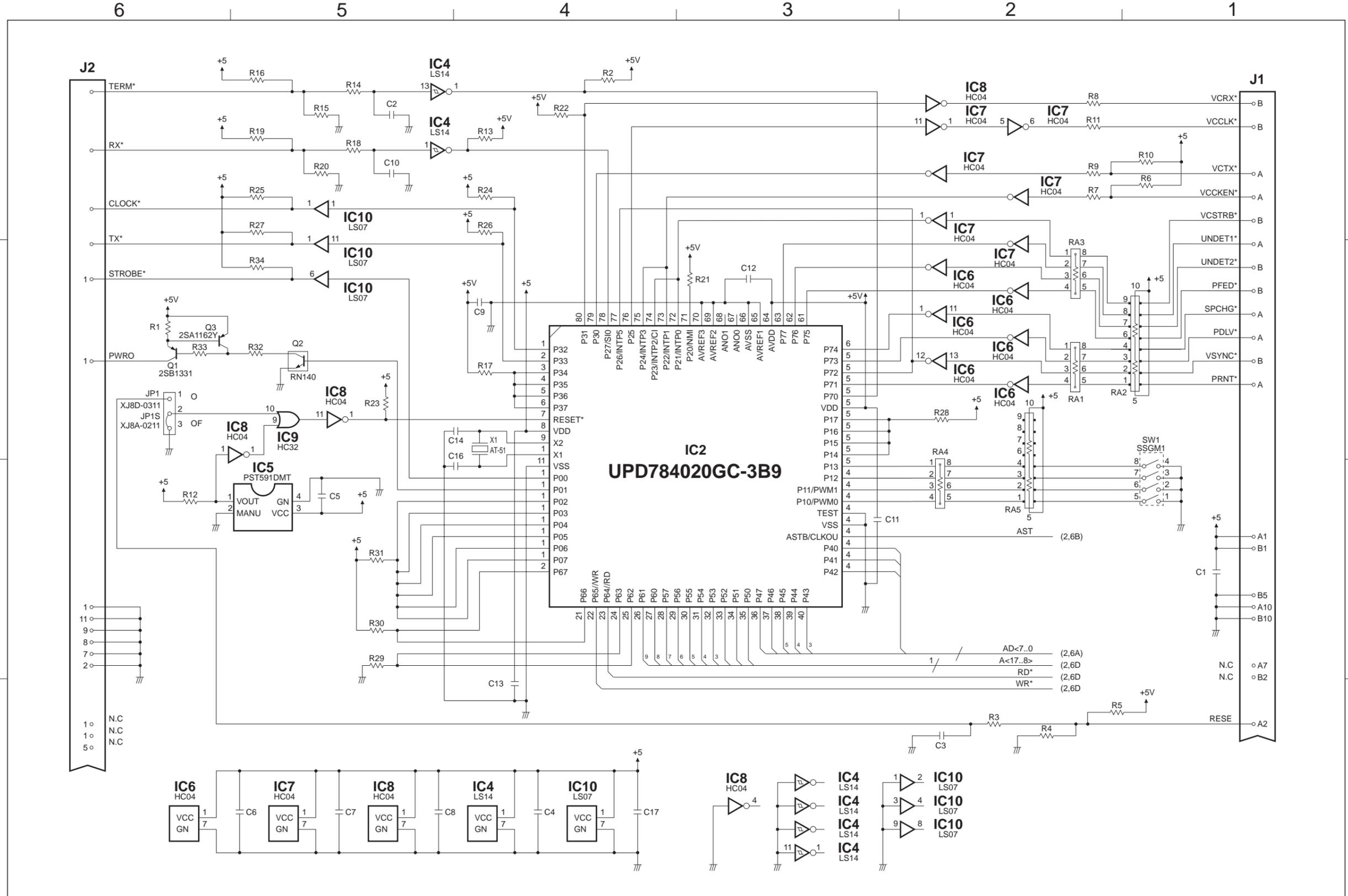
FIGURE & KEY NO.	PART NUMBER	RANK	QTY	DESCRIPTION	SERIAL NUMBER /REMARKS
1 -	NPN		RF	OPTION CONTROLLER	
1	RB2-0003-000		1	PLATE, COVER	
2	RG5-3106-000		1	OPTION CONTROLLER PCB ASS'Y	
3	RG5-3109-000		1	CABLE OPTION CONTROLLER	
4	WT2-5526-000		2	SCREW, CONNECTOR LOCK, M4	
5	XA9-0836-000		3	SCREW, TP, M3X6	
6	RF1-3989-000		1	IC, TMS27C512-12JL, EP-ROM	

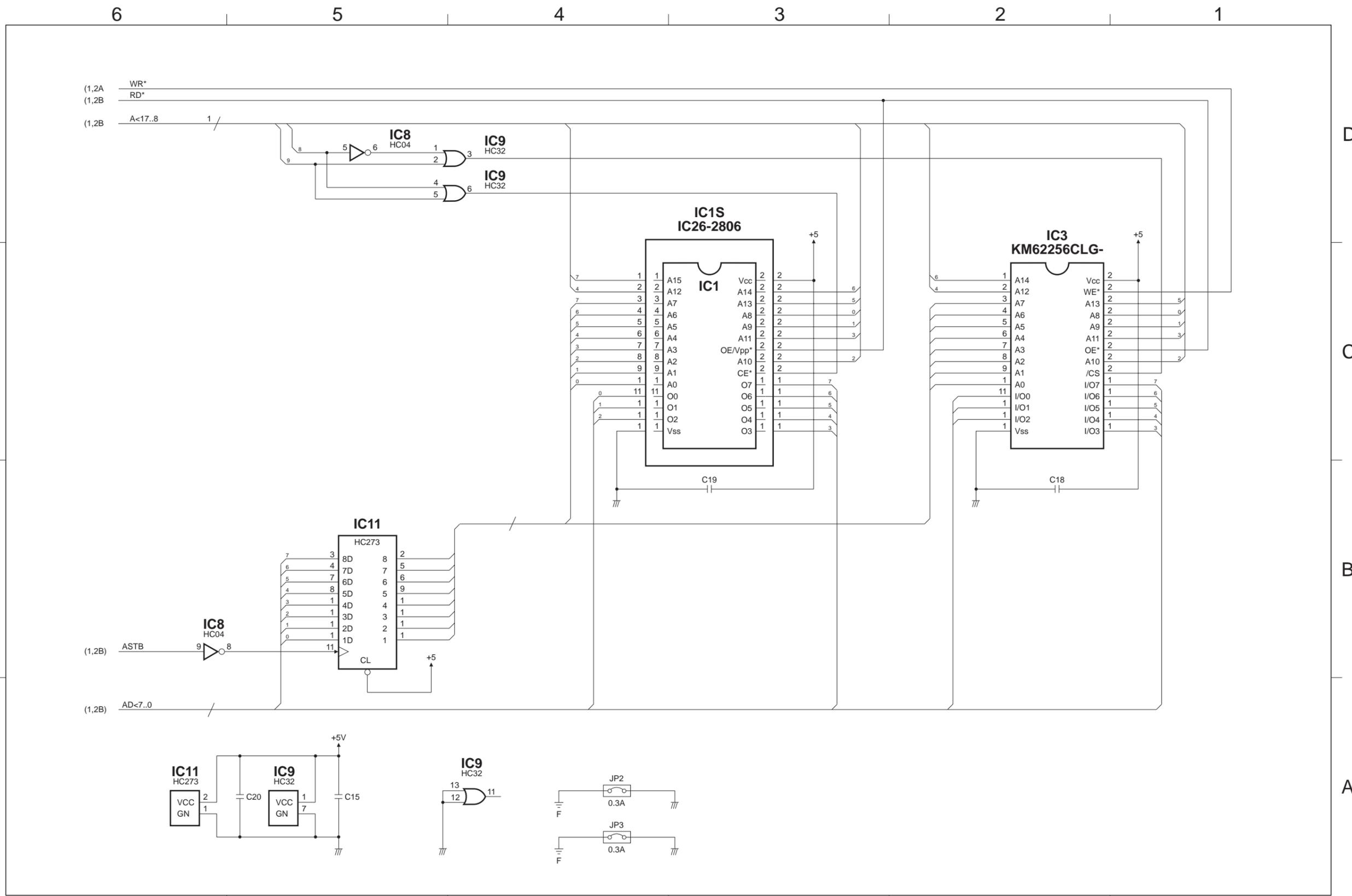
APPENDIX

I	ACC CONTROLLER PCB CIRCUIT DIAGRAM	A-1
---	---	-----

A. ACC CONTROLLER PCB CIRCUIT DIAGRAM

(1/2)





Prepared by
Office Imaging Products Technical Support Department
Office Imaging Products Technical Support Division
Office Imaging Products Quality Assurance Center
CANON INC
Printed in Japan

REVISION 0 (JAN. 1999) (33130)

5-7, Hakusan 7-chome, Toride, Ibaraki 302-8501 Japan

Canon



This publication is printed on
70% reprocessed paper.