

OKI

OKIPAGE 8c Color LED Page Printer

Troubleshooting Manual with Component Parts List

ODA/OEL/INT

1999. 2. 9 Rev.1

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1. OUTLINE

This manual has been written to provide guidance for troubleshooting of the OKIPAGE 8c Printer (primarily for its printed circuit boards), on an assumption that the reader is knowledgeable of the printer. Read the maintenance manual for this printer P/N 40029803TH if necessary.

Notes:

1. The power supply board containing a high voltage power supply is dangerous. From the viewpoint of the safety standards, the local repairing of a defective board is not allowed. Also, pay attention to the fact that a function can be rarely recovered by replacing a fuse when it is burnt.
2. Replacement of CPU(NR4700) and LSIs (IMEM & IIF) on the PCR PCB is not recommended. If these chips are founded to be defective, board replacement is suggested.

2. TOOLS

For troubleshooting the printer, the tools listed below may be needed in addition to general maintenance tools.

Tool	Remarks
Oscilloscope	Frequency response 100 MHz or higher
Soldering iron	A slender tip type, 15-20 Watt
Extension Cord	Used for drawing PCR PCB out for PX4 PCB evaluation

3. CIRCUIT DESCRIPTION

3.1 CU (controller unit : PCR)

3.1.1 Outline

The PCR PCB controls the reception of data transferred through a host I/F and processes command analysis, bit image development, raster buffer read. It also controls the operator panel. The block diagram of the entire OKIPAGE 8c including PCR PCB and details of PCR PCB are shown in Figure. 3-1 and 3-2.

(1) Reception control

The OKIPAGE 8c has one centronics parallel I/F.

The centronics parallel I/F port can specify the following item when set by the control panel:

PARALLEL SPEED: HIGH/MEDIUM
BI-DIRECTION : ENABLE/DISABLE
I-PRIME : OFF/ON

An interface task stores all data received from the host into a receive buffer first.

(2) Command analysis processing

The OKIPAGE 8c has the following emulation mode.

Color Laser Jet : Hewlett Packard
PostScript Level 3 : Adobe

An edit task fetches data from the receive buffer, analyzes commands, and reconstructs the data in such a way that print data are aligned from up to down and from right to left; then it writes the resultant data into a page buffer with such control data as print position coordinate, font type, etc. added.

(3) Font Processing

When one page editing is finished, a developing task makes an engine start and fetches data from the page buffer synchronizing with a printing operation; then it develops the fetched data to a bit map as referring to data from a character generator, and writes the resultant data into the raster buffer (of band buffer structure).

(4) Raster buffer read.

As controlling the engine operation, an engine task sends data from the raster buffer to the LED head.

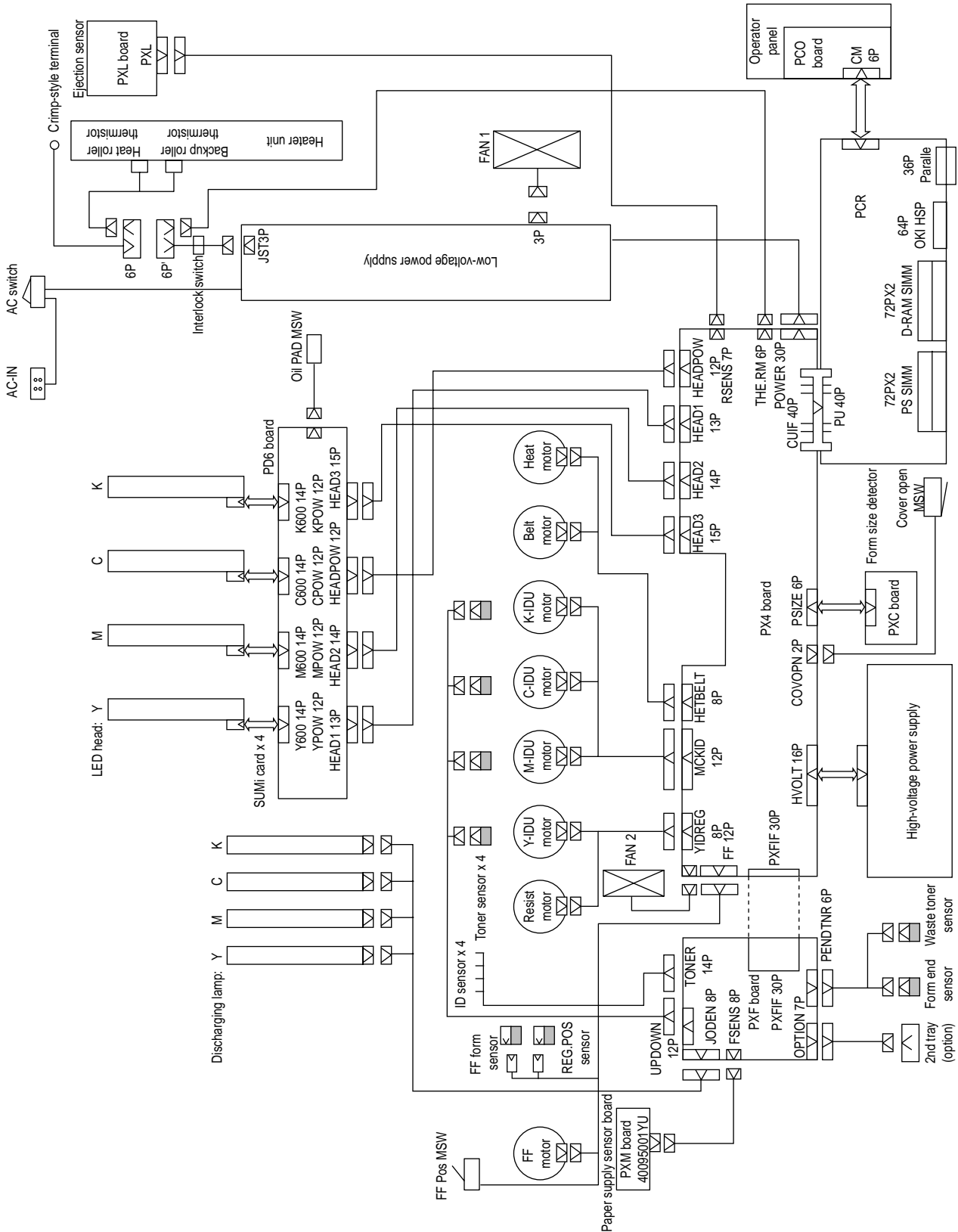
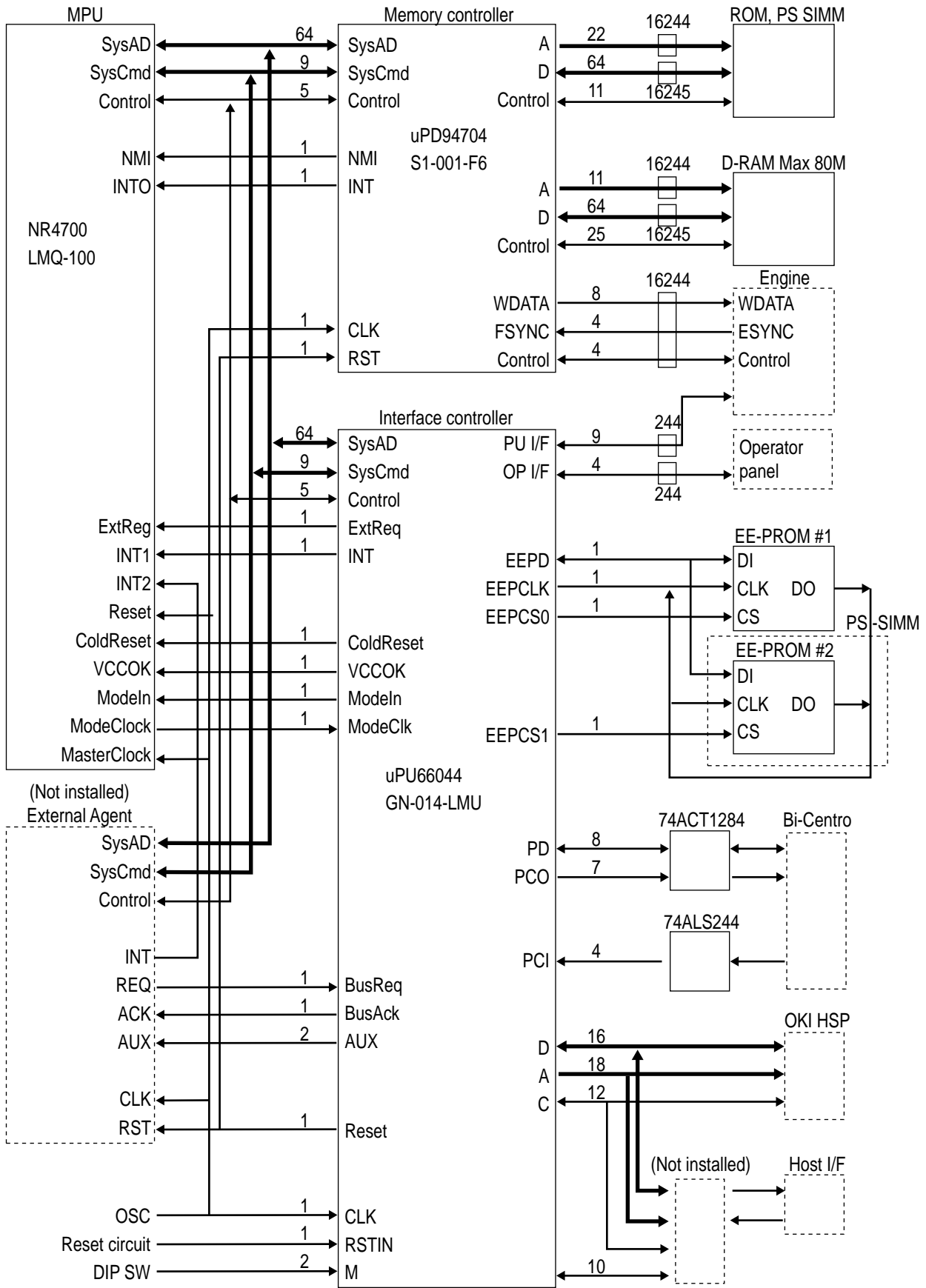


Figure 3-1 Block Diagram



(TE6135 (6137), 16550, 53C80)

Figure 3-2 Block Diagram

3.1.2 CPU and Memory

- (1) CPU (NR4700LMQ-100) (MIPS R4700)
 - CPU core : RISC CPU (MIPS R3000 compatible)
 - CPU clock : 100 MHz
 - Data bus clock : 50 MHz
 - Data bus width : Exterior 64 bits, Interior 64 bits

- (2) ROM (HP Color LaserJet emulation)
 - ROM capacity : 8 Mbytes (16-Mbit mask or OTP ROM four pieces)
 - ROM type : 16 Mbits (1M x 16 bits)
 - Access time : 100 ns

- (3) PostScript SIMM (Adobe PostScript emulation)
 - ROM capacity : 8 Mbytes [(16 Mbit ROM two pieces)x 2SIMMs]
 - ROM type : 16 Mbits (1M x 16 bits)
 - Access time : 100 ns

- (4) Resident RAM
 - RAM capacity : 16 Mbytes (16 Mbit D-RAM eight pieces)
 - RAM type : 16 Mbits (1 M x 16 bits)
 - Access time : 60 ns

- (5) Option RAM (SIMM: two slots)
 - RAM capacity : Max. 32 Mbytes (4 Mbytes, 8 Mbytes, 16 Mbytes, 32 Mbytes)
 - Access time : 60 ns, 70 ns, 80 ns
 - Note that only the product for ODA has been mounted with 16 Mbytes (8 Mbytes x 2) SIMM as a resident.

The block diagram of CPU and memory circuits is shown in Figure 3-3.

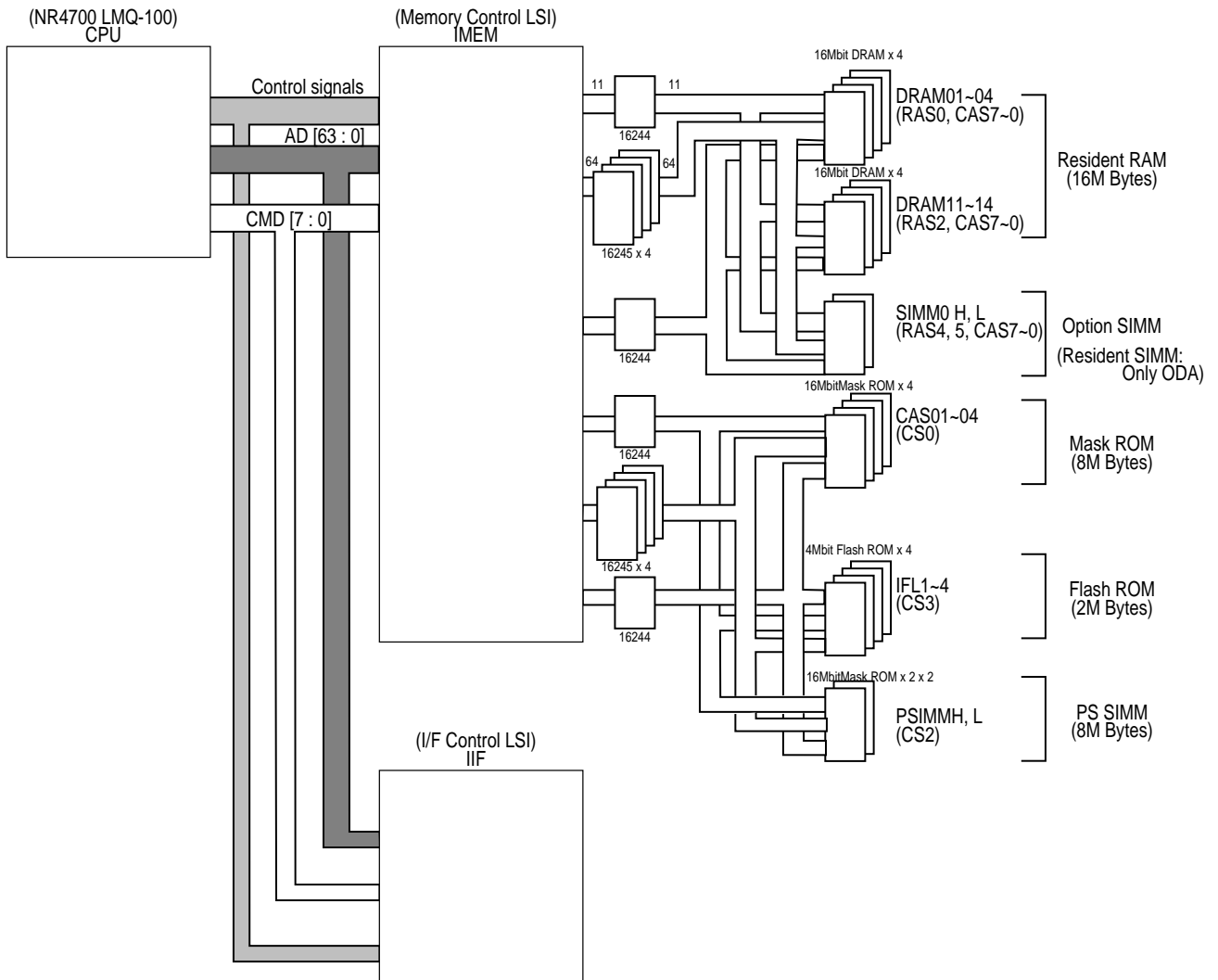
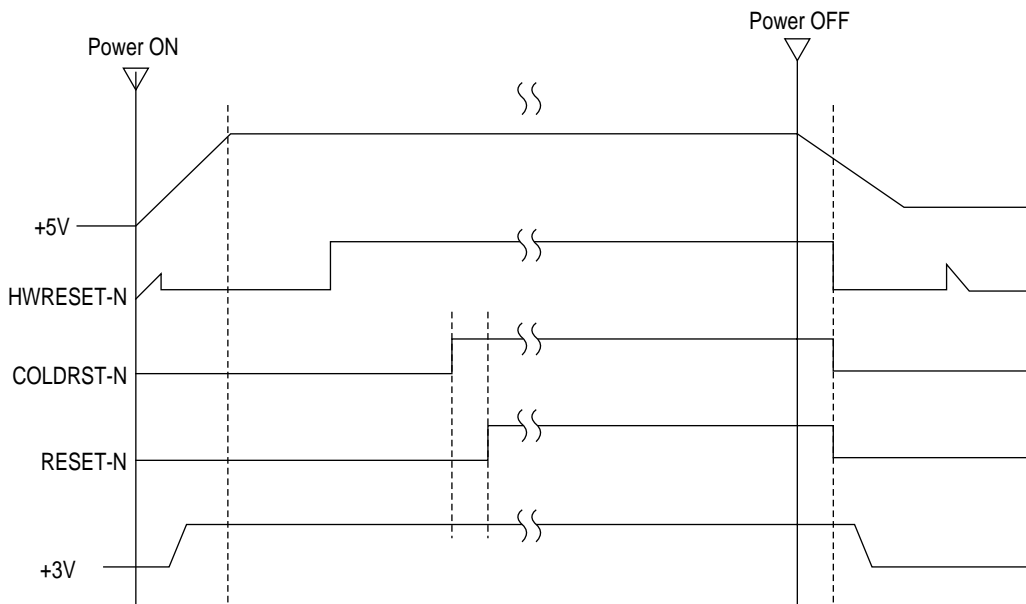
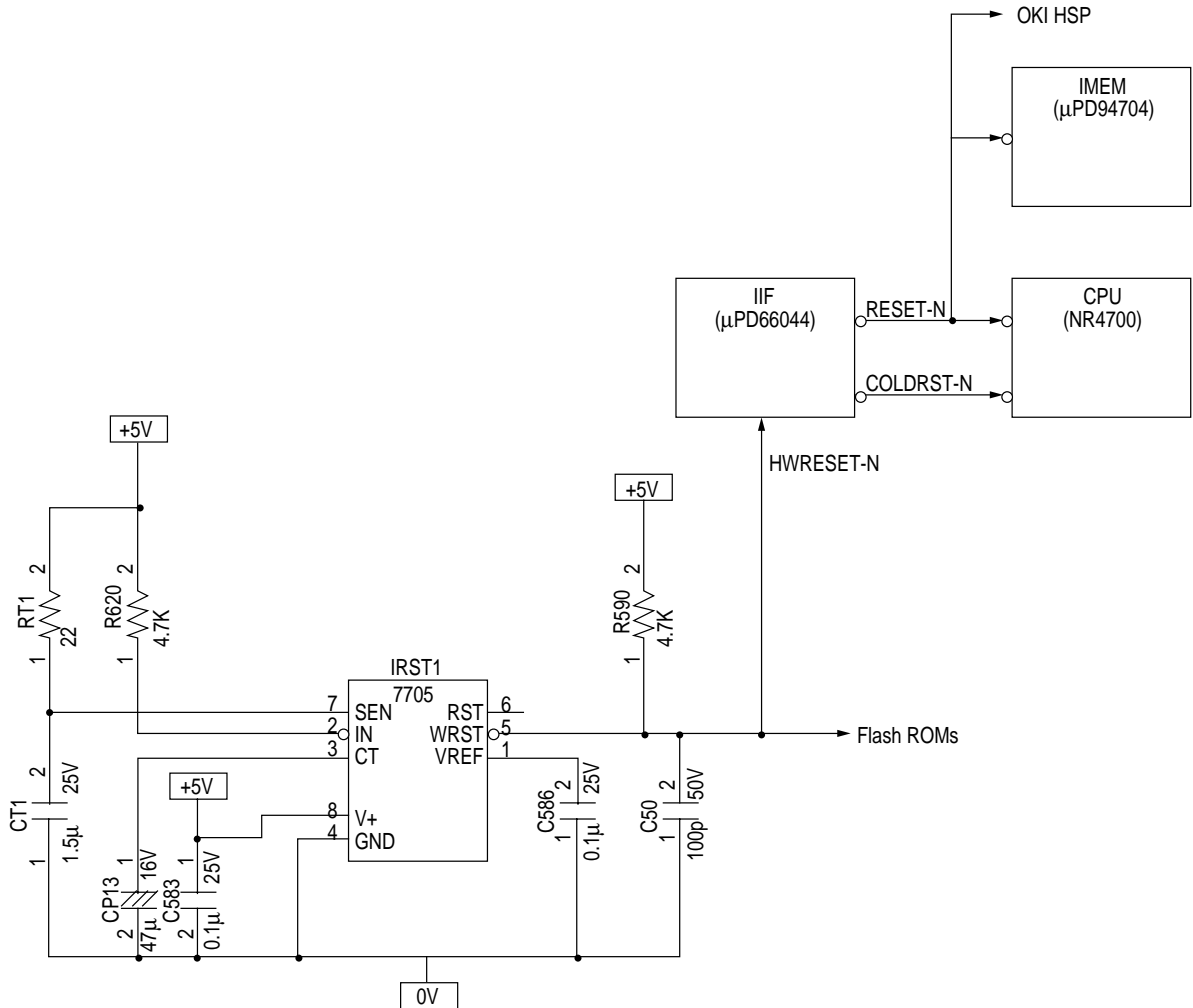


Figure 3-3 Block Diagram of CPU & Memory

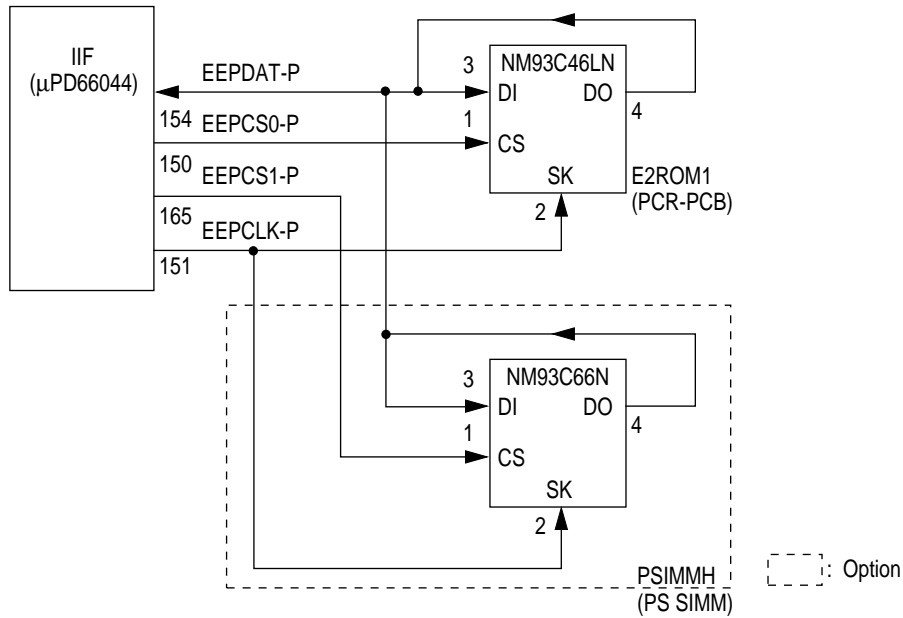
3.1.3 Reset Control

When power is turned on, a RESET-N signal is generated by the reset control IC (7705) which checks +5V power supply.



3.1.4 EEPROM Control

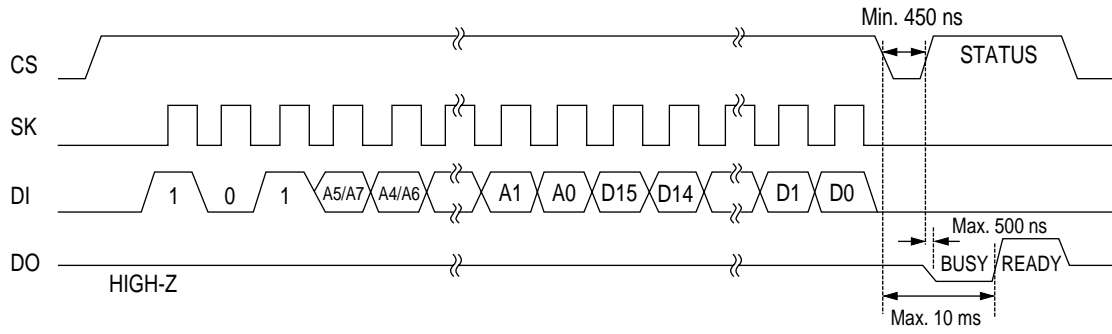
The NM93C46LN is an electrical erasable/programmable ROM of 64-bit x 16-bit configuration and the NM93C66N is an electrical erasable/programmable ROM of 256-bit x 16-bit configuration. Data input to and output from the ROM are bidirectionally transferred in units of 16 bits through a serial I/O port (EEPDAT-P) in serial transmission synchronized with a clock signal from the I/F control LSI(IIF).



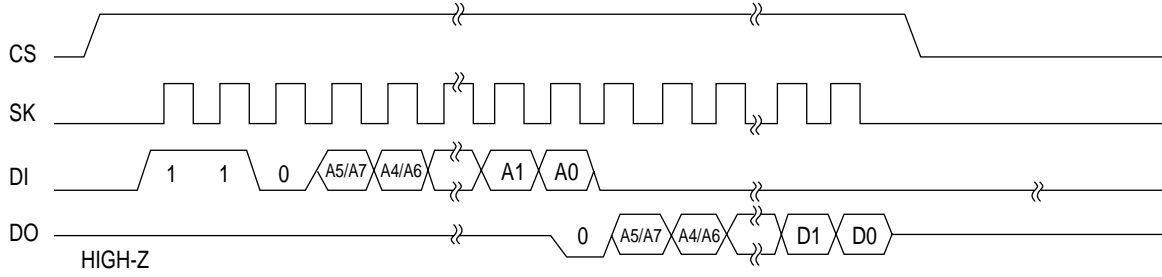
The EEPROM operates in the following instruction modes

Instruction	Start Bit	Operation Code	Address		Data
			NM93C46LN	NM93C66N	
Read (READ)	1	10	A5 to A0	A7 to A0	
Write Enabled (WEN)	1	00	11XXXX	11XXXXXX	
Write (WRITE)	1	01	A5 to A0	A7 to A0	D15 to D0
Write All Address (WRAL)	1	00	01XXXX	01XXXXXX	D15 to D0
Write Disabled (WDS)	1	00	00XXXX	00XXXXXX	
Erase	1	11	A5 to A0	A7 to A0	
Chip Erasable (ERAL)	1	00	10XXXX	10XXXXXX	

Write cycle timing (WRITE)

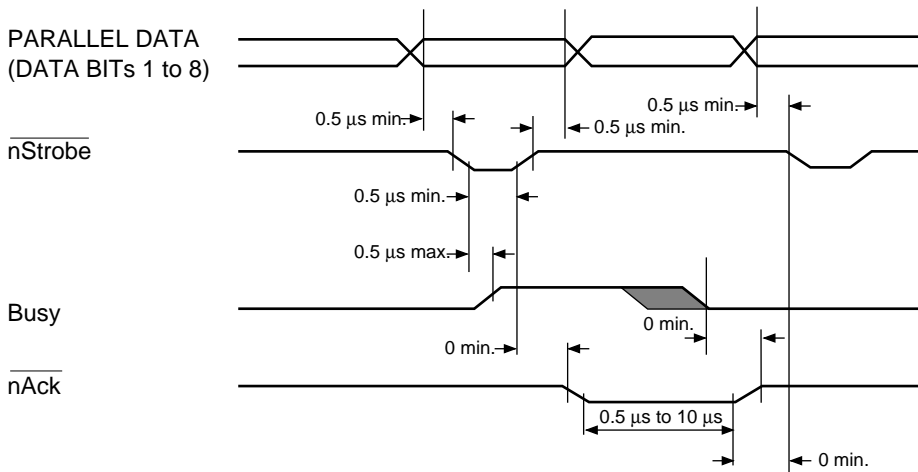
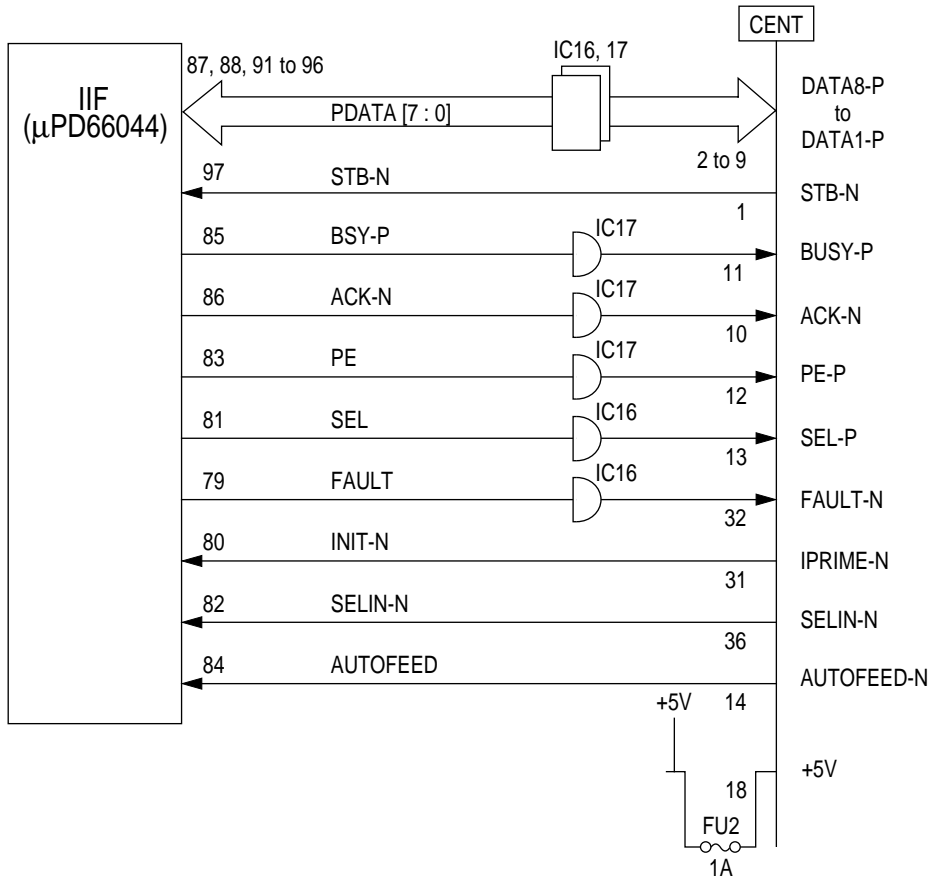


Read cycle timing (READ)



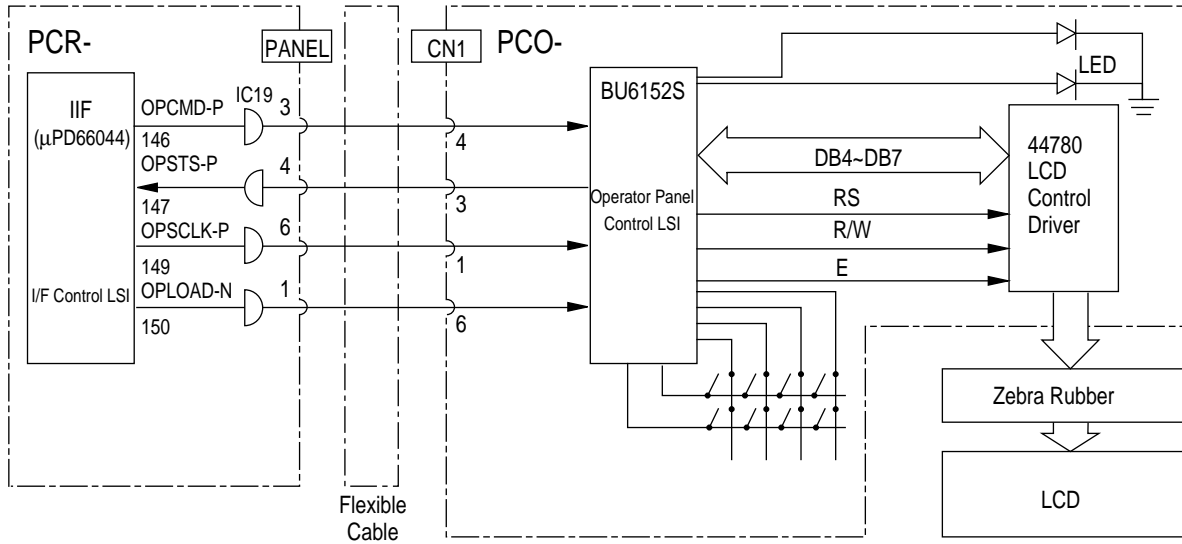
3.1.5 Centronics Parallel Interface

The CPU sets a BUSY-P signal to ON at the same time when it reads the parallel data (CENTDATA1-P to CENTDATA8-P) from the parallel port at the fall of STB-N signal. Furthermore, it makes the store processing of received data into a receive buffer terminate within a certain fixed time and outputs an ACK-N signal, setting the BUSY-P signal to OFF.



3.1.6 Operator Panel Control

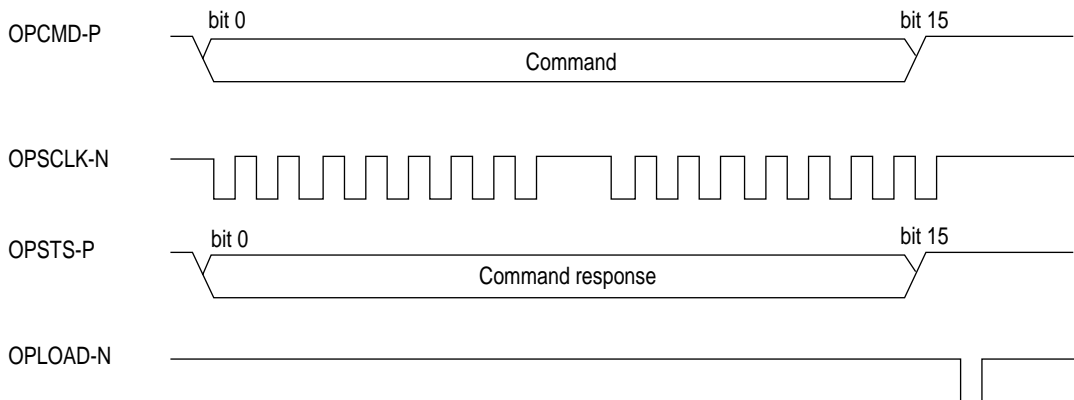
The operator panel consists of the following circuits.



(1) BU6152S (LSI)

This LSI is connected to a clock synchronous serial port of the I/F Control LSI (IIF). It controls switch data input, LED data output and LCD data input/output according to the commands given by the I/F Control LSI. The I/F Control LSI sends the 2-byte (16-bit) command (OPCMD-P) together with the shift clock signal (OPCLK-N) to the Operator Panel Control LSI and then makes a predetermined input/output control if the command decoded by the Operator Panel Control LSI is found to be a normal command.

On receiving a command sent from the I/F Control LSI, the Operator Panel Control LSI, synchronizing with the serial clock of the command, returns a 2-byte command response to the I/F Control LSI.



3.2 PU (Printer Unit : PX4)

3.2.1 Outline

PU section executes controls such as LED head control, stepping motor control, high-voltage control, video I/F control, command I/F control and fusing control, and performs color image printing. The block diagram is shown in Fig3-4.

- (1) The print data stored in the video memory is loaded to the LED head control and transferred through each line to the LED head to light LEDs. This causes a static latent image to form on the photoconductive drum I.
- (2) Stepping motor control: executes ID up/down control for the supply, carriage and ejection of print media
- (3) High-voltage power supply control: executes ON/OFF control for various kinds of power supply units through serial interface.
- (4) Fusing control: executes the control of fusing temperature according to the type of media.
- (5) Video I/F control: receives the print data from the controller section (CU) and stores it to the video memory.
- (6) Command I/F control: executes the receiving control of commands from the controller section (CU) and sending control of status signals.

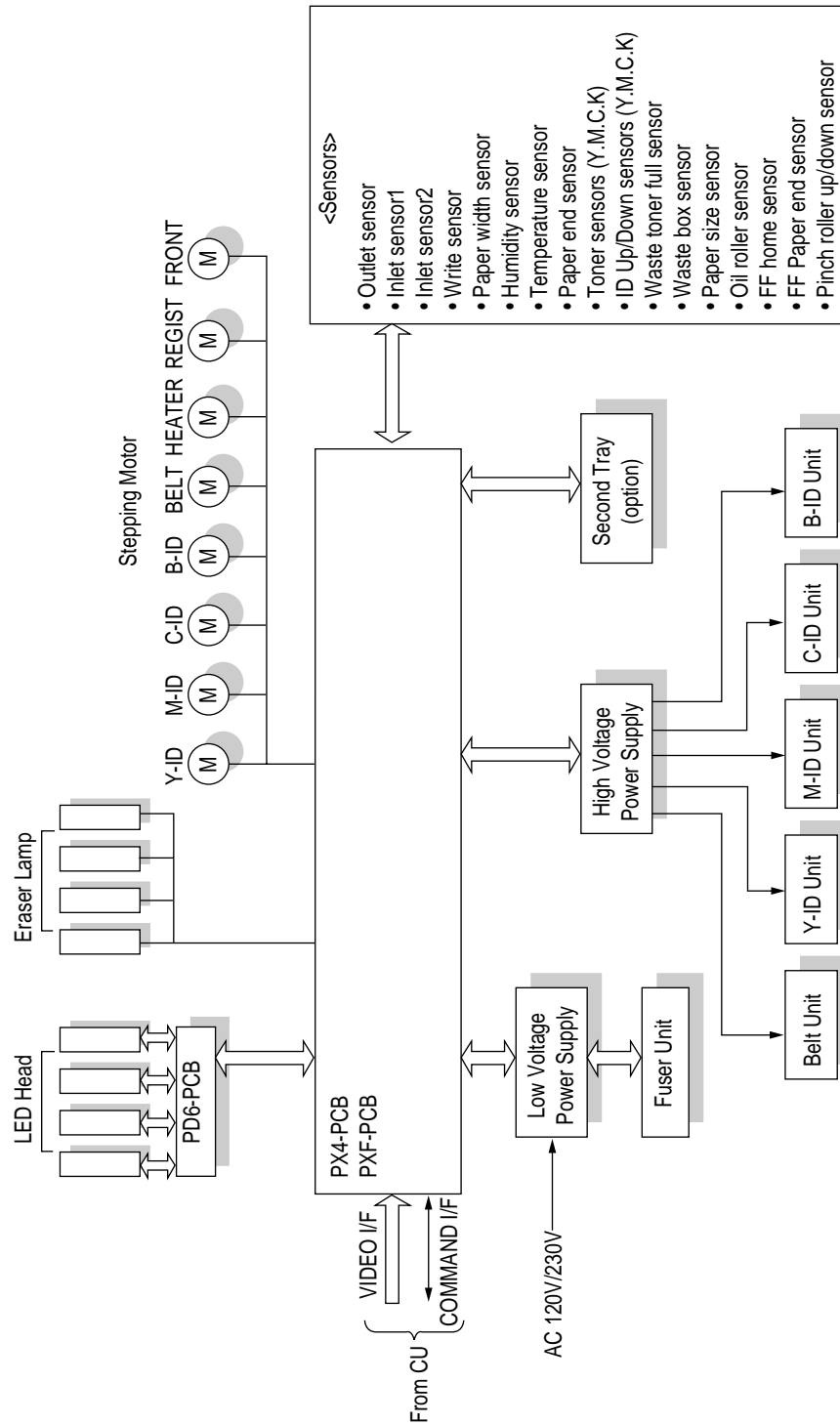


Figure 3-4 Block Diagram

3.2.2 CPU, Memory and LSI

- (1) CPU (MSM65524)
 - CPU core : nX8 (Oki original)
 - CPU clock : 10 MHz
 - Data bus clock : 50 MHz
 - Data bus width : 8 bits

- (2) ROM (27512)
 - ROM capacity : 64K bytes
 - ROM type : 512K bits, 8 bits
 - Access time : 150 ns

- (3) Resident RAM (62256)
 - RAM capacity : 32K bytes (Static RAM)
 - Access time : 70 ns

- (4) VIDEO RAM (658512)
 - RAM capacity : 512K bytes (Pseudo Static RAM)
 - Access time : 70 ns

The block diagram of CPU, memory and LSI circuits is shown in Figure 3-5.

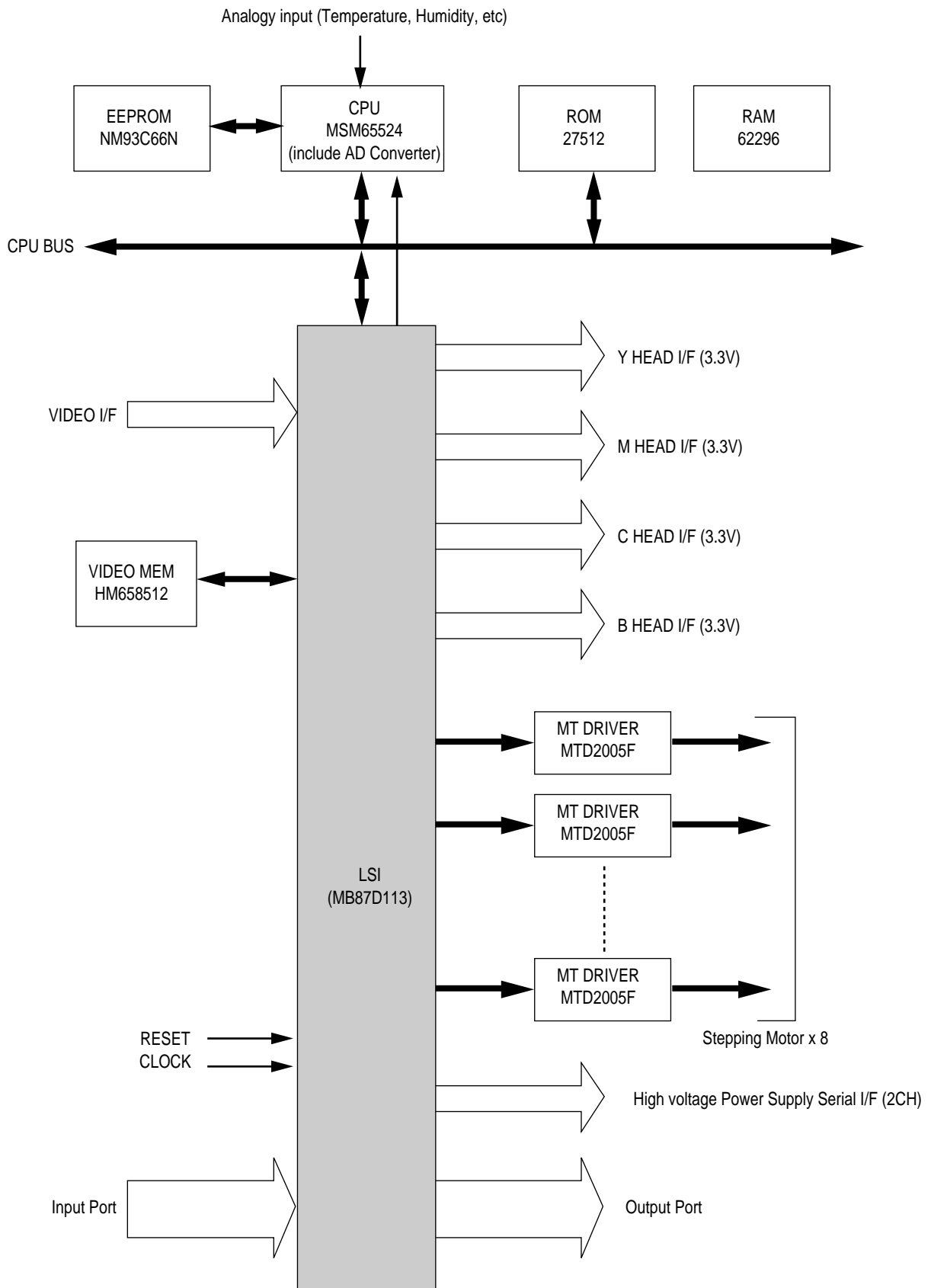
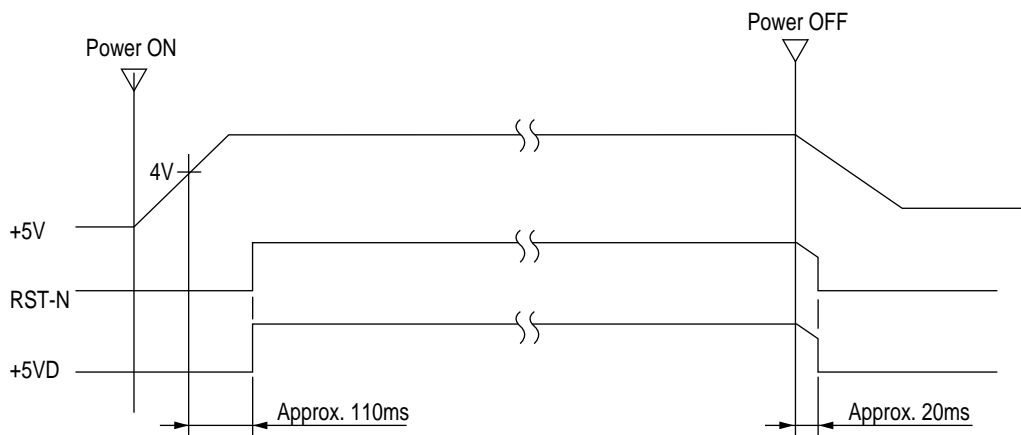
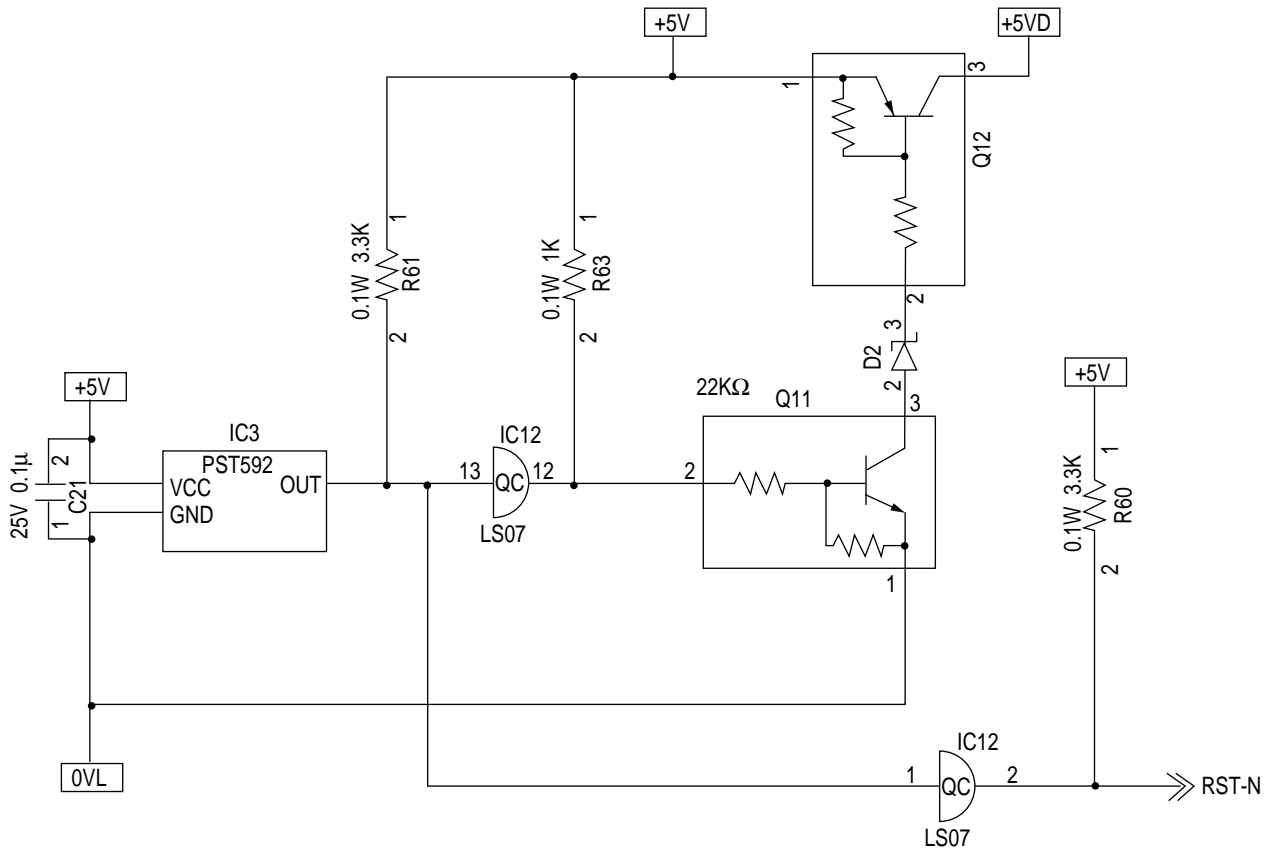


Figure 3-5 Block Diagram of CPU, Memory & LSI

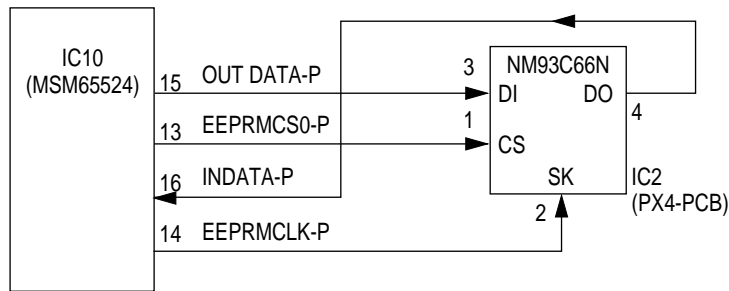
3.2.3 Reset Control

When power is turned on, a RST-N signal is generated by the rising sequence of +5V power supply.



3.2.4 EEPROM Control

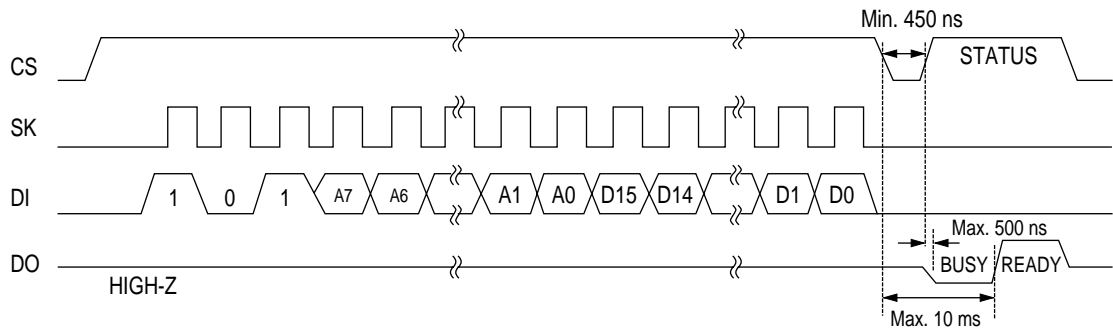
The NM93C66N is an electrical erasable/programmable ROM of 256-bit x 16-bit configuration. Data input to and output from the ROM are bidirectionally transferred in units of 16 bits through a serial I/O port (out DATA-P and IN DATA-P) in serial transmission synchronized with a clock signal from the CPU(IC10).



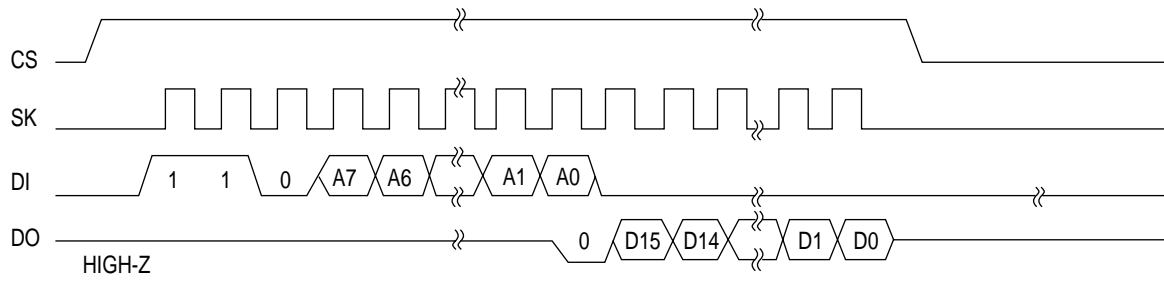
The EEPROM operates in the following instruction modes

Instruction	Start Bit	Operation Code	Address	Data
			NM93C66N	
Read (READ)	1	10	A7 to A0	
Write Enabled (WEN)	1	00	11XXXXXX	
Write (WRITE)	1	01	A7 to A0	D15 to D0
Write All Address (WRAL)	1	00	01XXXXXX	D15 to D0
Write Disabled (WDS)	1	00	00XXXXXX	
Erase	1	11	A7 to A0	
Chip Erasable (ERAL)	1	00	10XXXXXX	

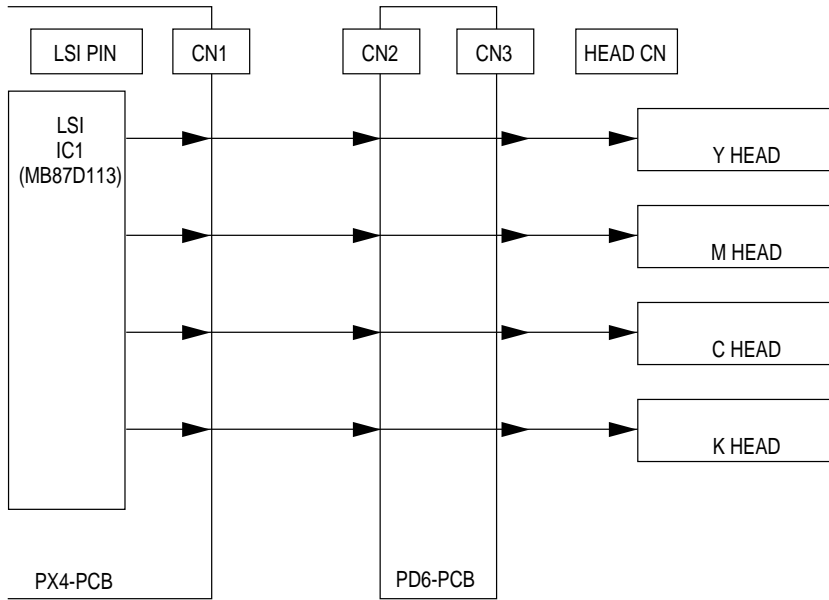
Write cycle timing (WRITE)



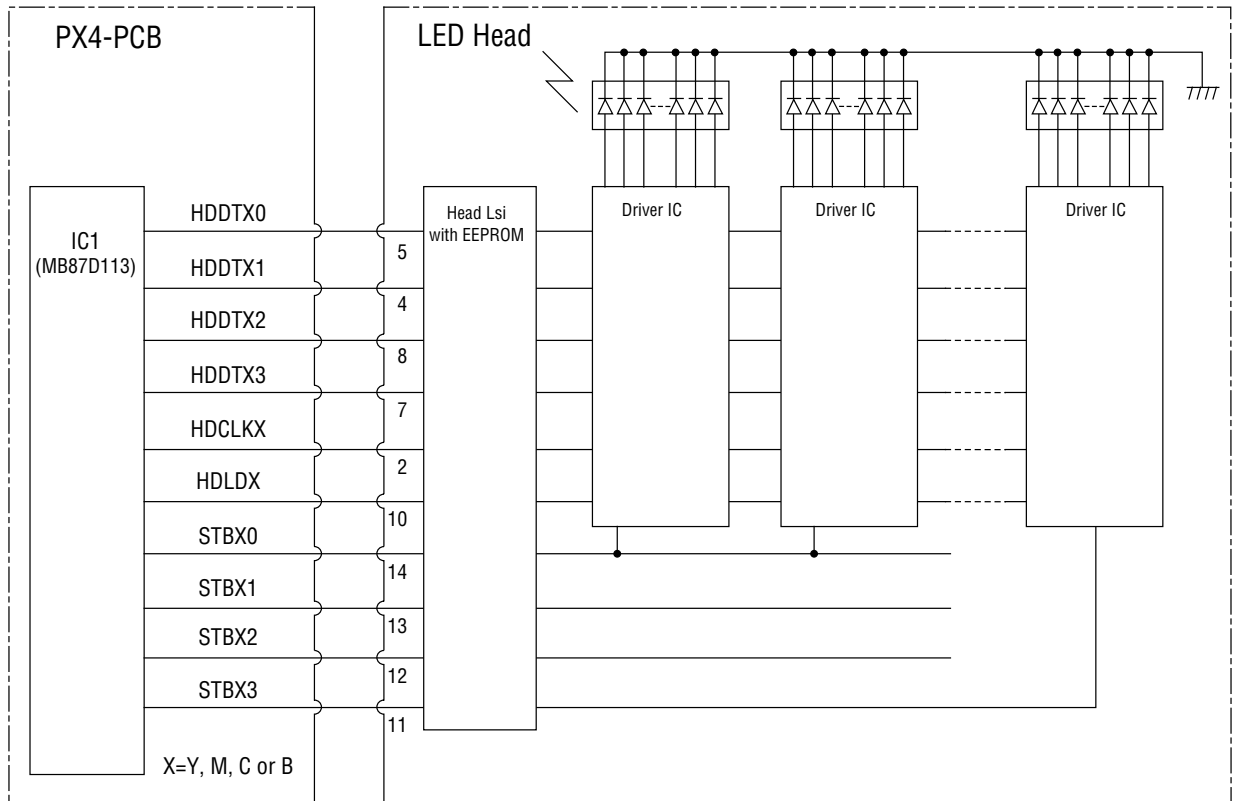
Read cycle timing (READ)



3.2.5 LED Head Control



	Signal	Lsi Pin	CN1	CN2	CN3	HEAD CN
Y	HDDTY3	IC1-136	HEAD1-4	HEAD1-4	Y600-5	Y-5
	HDDTY2	IC1-135	HEAD1-3	HEAD1-3	Y600-4	Y-4
	HDDTY1	IC1-134	HEAD1-2	HEAD1-2	Y600-8	Y-8
	HDDTY0	IC1-133	HEAD1-1	HEAD1-1	Y600-7	Y-7
	STBY3	IC1-144	HEAD1-10	HEAD1-10	Y600-14	Y-14
	STBY2	IC1-143	HEAD1-9	HEAD1-9	Y600-13	Y-13
	STBY1	IC1-142	HEAD1-8	HEAD1-8	Y600-12	Y-12
	STBY0	IC1-141	HEAD1-7	HEAD1-7	Y600-11	Y-11
	HDCK0	IC1-137	HEAD1-5	HEAD1-5	Y600-2	Y-2
HLDL0	IC1-140	HEAD1-6	HEAD1-6	Y600-10	Y-10	
M	HDDTM3	IC1-149	HEAD2-1	HEAD2-1	M600-5	M-5
	HDDTM2	IC1-148	HEAD1-13	HEAD1-13	M600-4	M-4
	HDDTM1	IC1-147	HEAD1-12	HEAD1-12	M600-8	M-8
	HDDTM0	IC1-146	HEAD1-11	HEAD1-11	M600-7	M-7
	STBM3	IC1-157	HEAD2-7	HEAD2-7	M600-14	M-14
	STBM2	IC1-155	HEAD2-6	HEAD2-6	M600-13	M-13
	STBM1	IC1-154	HEAD2-5	HEAD2-5	M600-12	M-12
	STBM0	IC1-153	HEAD2-4	HEAD2-4	M600-11	M-11
HDCK1	IC1-151	HEAD2-2	HEAD2-2	M600-2	M-2	
HLDL1	IC1-152	HEAD2-3	HEAD2-3	M600-10	M-10	
C	HDDTC3	IC1-161	HEAD2-11	HEAD2-11	C600-5	C-5
	HDDTC2	IC1-160	HEAD2-10	HEAD2-10	C600-4	C-4
	HDDTC1	IC1-159	HEAD2-9	HEAD2-9	C600-8	C-8
	HDDTC0	IC1-158	HEAD2-8	HEAD2-8	C600-7	C-7
	STBC3	IC1-169	HEAD3-3	HEAD3-3	C600-14	C-14
	STBC2	IC1-168	HEAD3-2	HEAD3-2	C600-13	C-13
	STBC1	IC1-167	HEAD3-1	HEAD3-1	C600-12	C-12
	STBC0	IC1-166	HEAD2-14	HEAD2-14	C600-11	C-11
HDCK2	IC1-164	HEAD2-12	HEAD2-12	C600-2	C-2	
HLDL2	IC1-165	HEAD2-13	HEAD2-13	C600-10	C-10	
K	HDDTK3	IC1-173	HEAD3-9	HEAD3-9	K600-5	K-5
	HDDTK2	IC1-172	HEAD3-8	HEAD3-8	K600-4	K-4
	HDDTK1	IC1-171	HEAD3-7	HEAD3-7	K600-8	K-8
	HDDTK0	IC1-170	HEAD3-6	HEAD3-6	K600-7	K-7
	STBK3	IC1-181	HEAD3-15	HEAD3-15	K600-14	K-14
	STBK2	IC1-180	HEAD3-14	HEAD3-14	K600-13	K-13
	STBK1	IC1-179	HEAD3-13	HEAD3-13	K600-12	K-12
	STBK0	IC1-178	HEAD3-12	HEAD3-12	K600-11	K-11
HDCK3	IC1-176	HEAD3-10	HEAD3-10	K600-2	K-2	
HLDL3	IC1-177	HEAD3-11	HEAD3-11	K600-10	K-10	

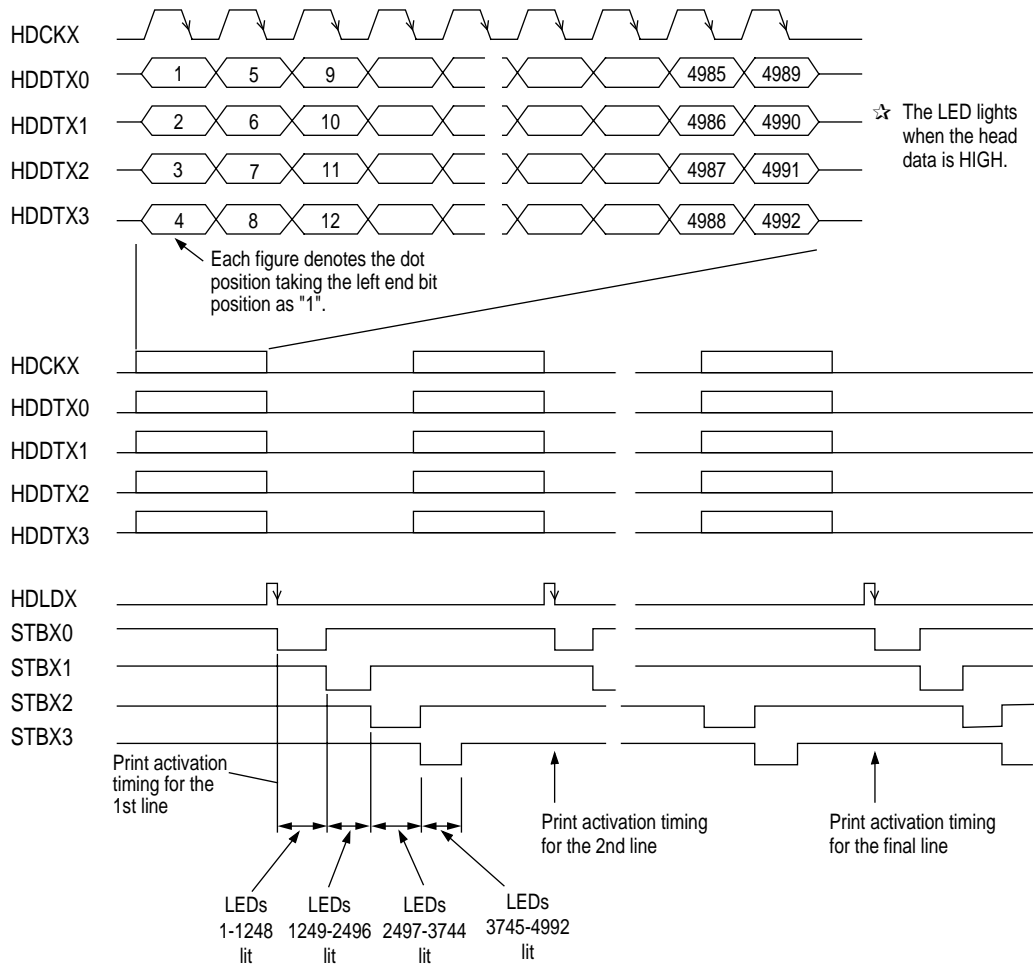


Data is transferred to the head unit starting with the data at the left end of the paper in the synchronous serial transfer mode using the HDCLKX signal as the sync signal.

The total number of LEDs in the head unit is 4992. The data for the driver latches causes the corresponding LEDs to light only during the time when the STBX_n signal is output. There are four STBX_n signals (STBX0, STBX1, STBX2 and STBX3), each of which controls the corresponding driver for 1248 LEDs (4992/4).

The four STBX_n signals must be output within the time when the LEDs for one line continue to emit light. After the data is moved to the latches by the STBX_n signal, the transfer of the data of the next line can be started.

The timing chart for the outline of this operation is shown below.



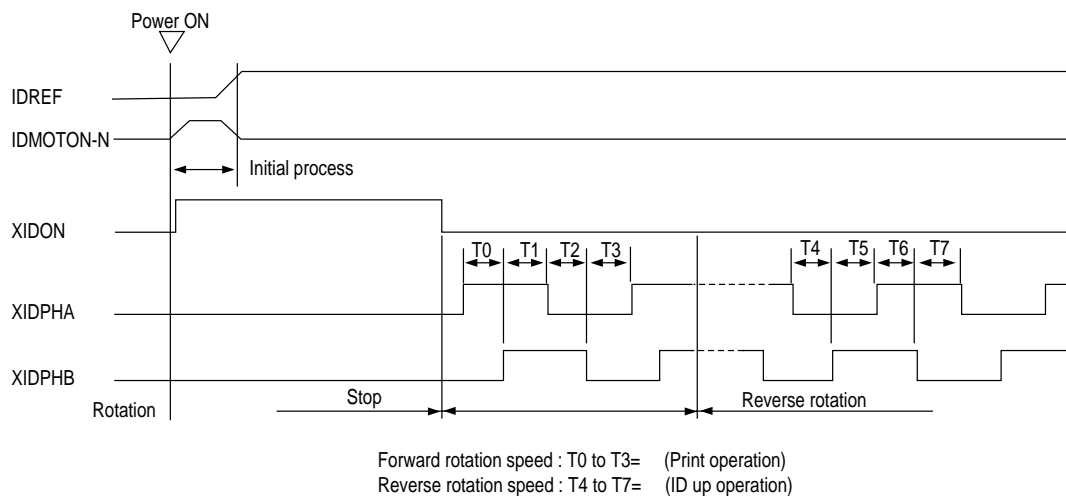
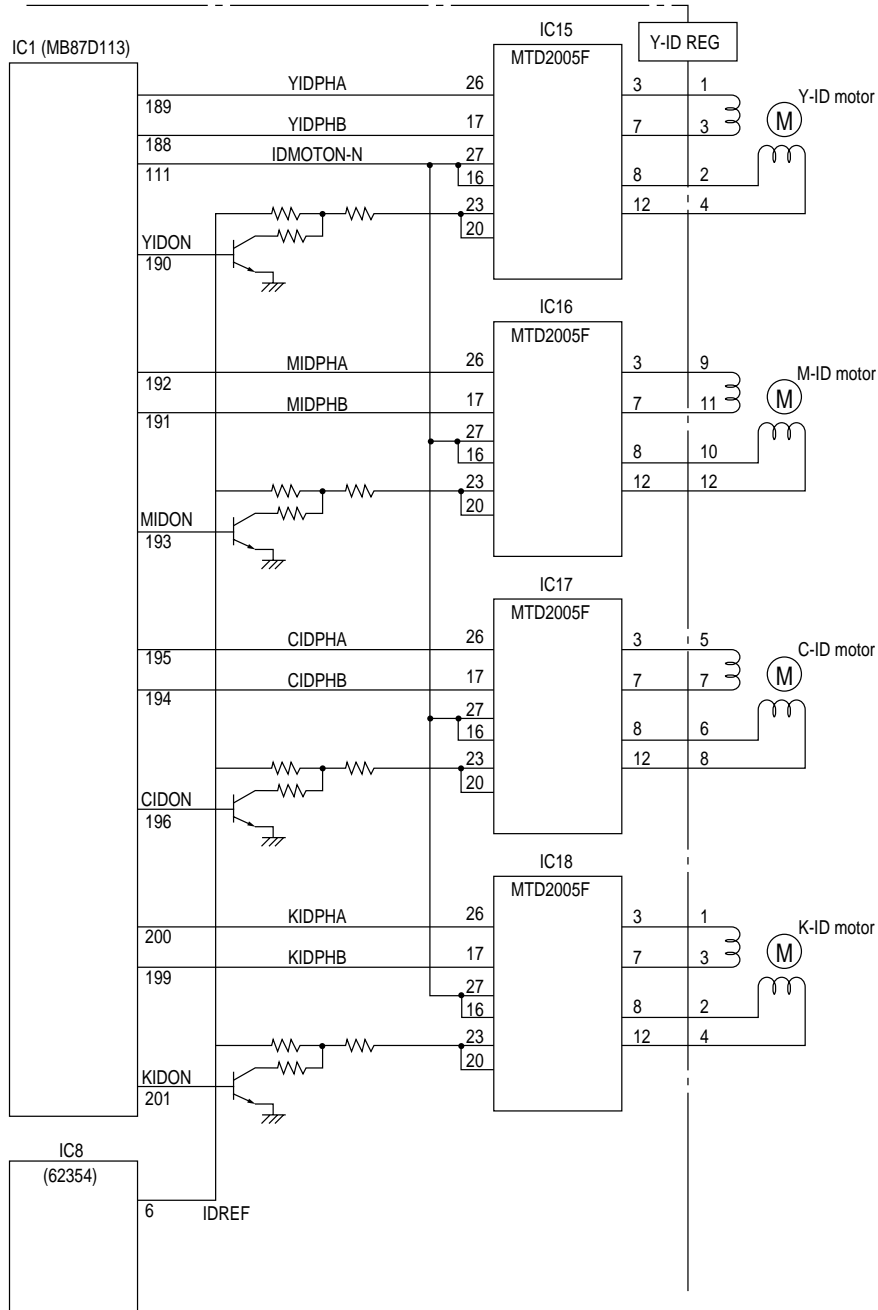
3.2.6 Motor Control

OKIPAGE 8c controls the paper flow by eight motors (Four ID Motors, Hopping Motor, Front feed Motor, Belt Motor).

(1) ID motor

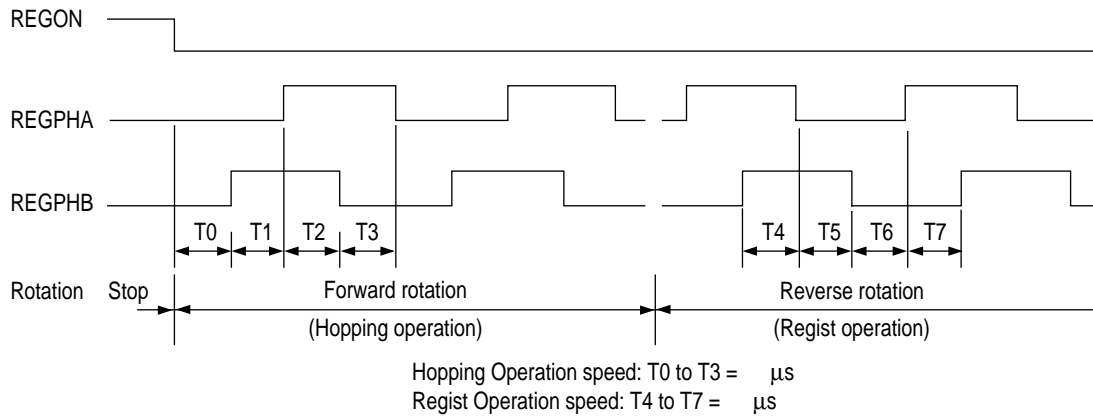
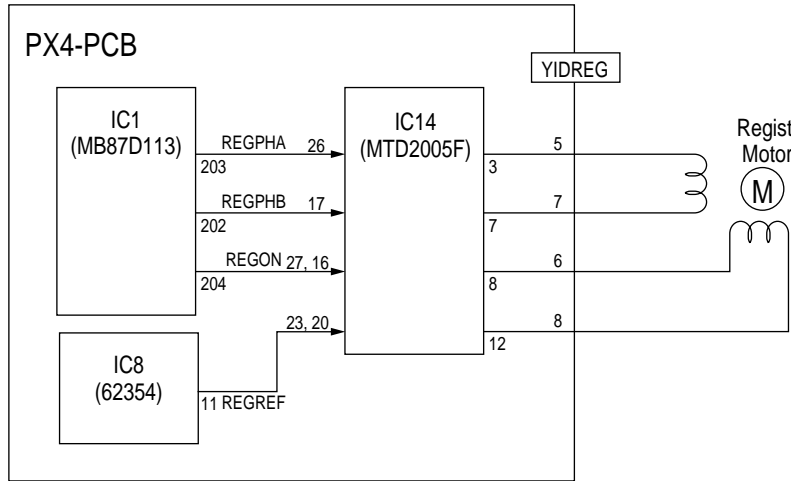
The four ID motors for rotate four color IDs are driven by the driver IC according to the control signal from the IC1 (MB87D113).

The IC8 (62354) is a Digital to Analogy Converter controlled by CPU (IC10 : MSM65524) and its output voltage controls several ID motor current.



(2) Regist motor

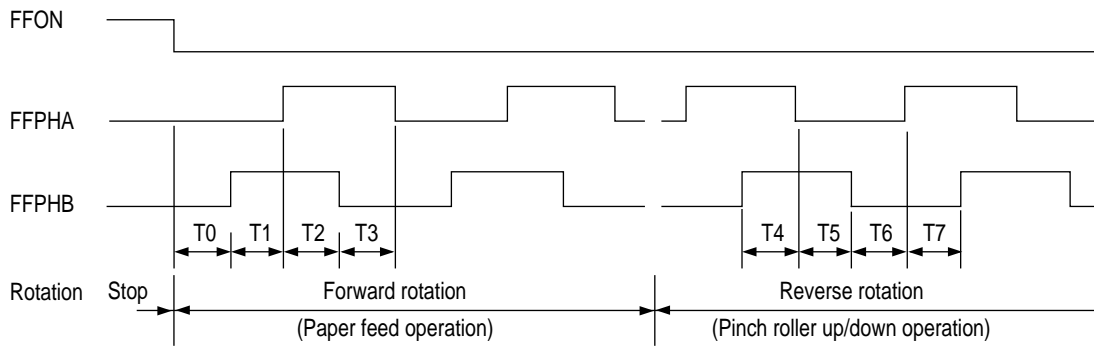
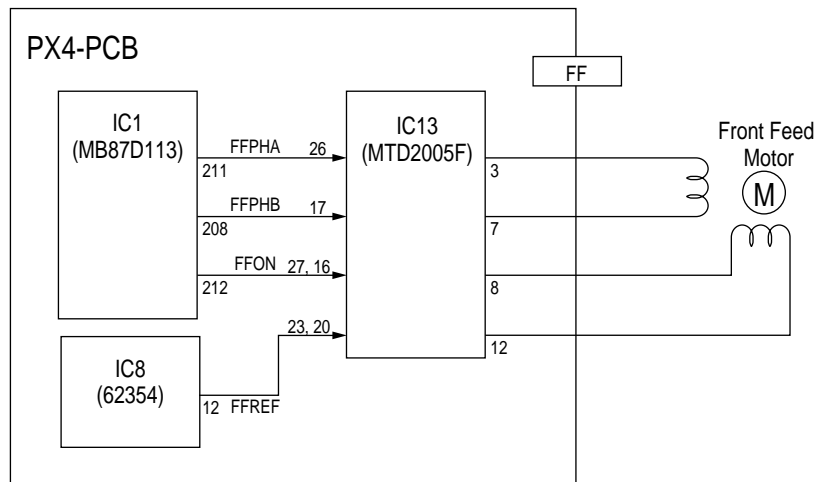
The Regist motor is driven by the driver IC14 according to the control signal from the LSI (IC1: MB87D113). The Regist motor current is controlled by the DAC (IC8 : 62354).



(3) Front feed motor

The Front feed motor is driven by the driver IC13 according to the controll signal from the LSI (IC1 : MB87D113).

The Regist motor current is controlled by the DAC (IC8 : 62354)



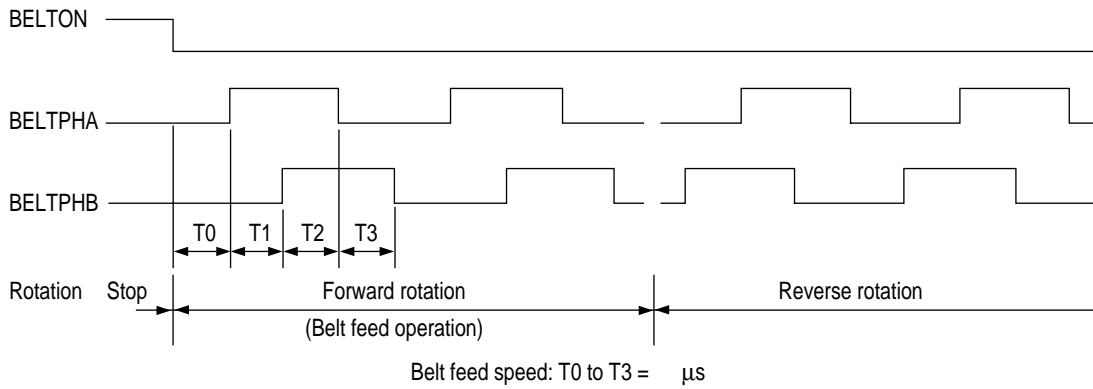
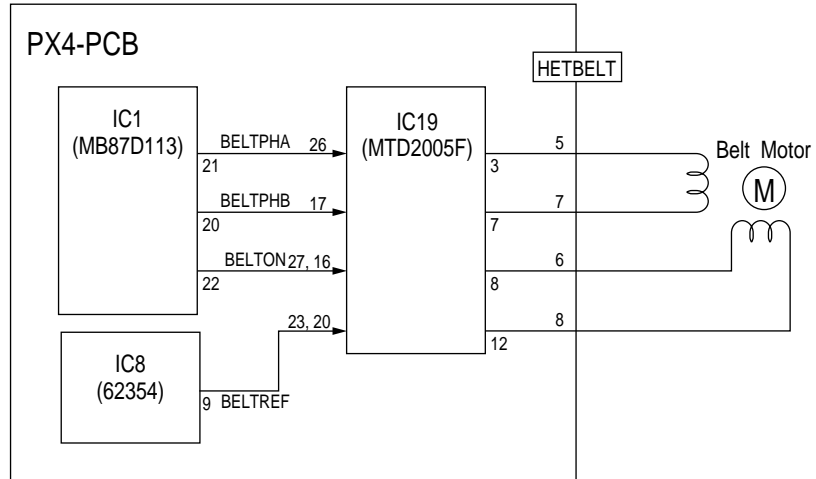
Paper feed operation speed: T0 to T3 = μs

Pinch roller up/down operation speed: T4 to T7 = μs

(4) Belt motor

The Belt motor is driven by the driver IC19 according to the control signal from the LSI (IC1 : MB87D113).

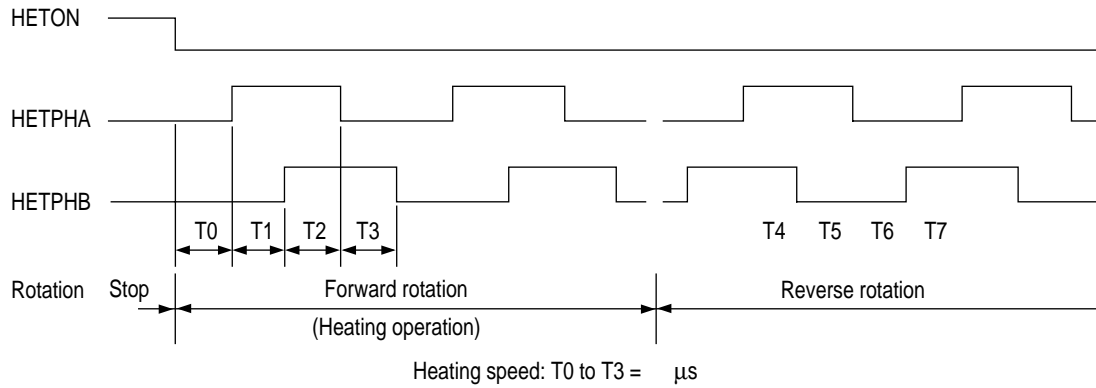
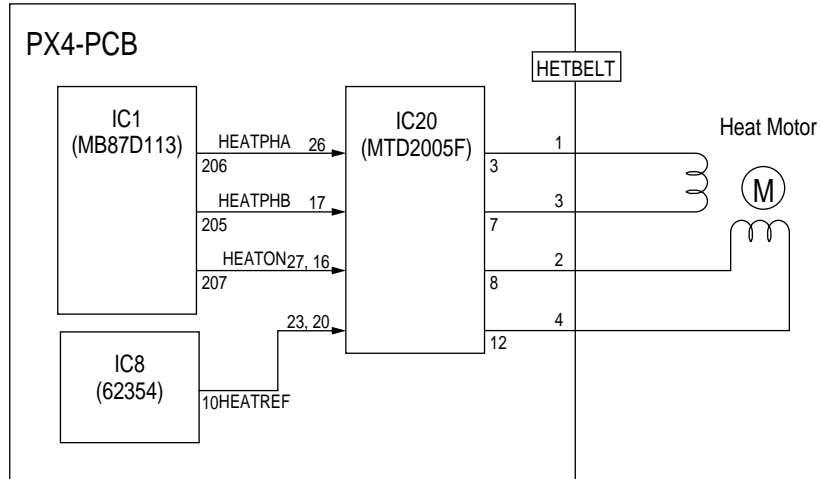
The Belt motor current is controlled by the DAC (IC8 : 62354).



(5) Heat motor

The Heat motor is driven by the driver IC20 according to the control signal from the LSI (IC1 : MB87D113).

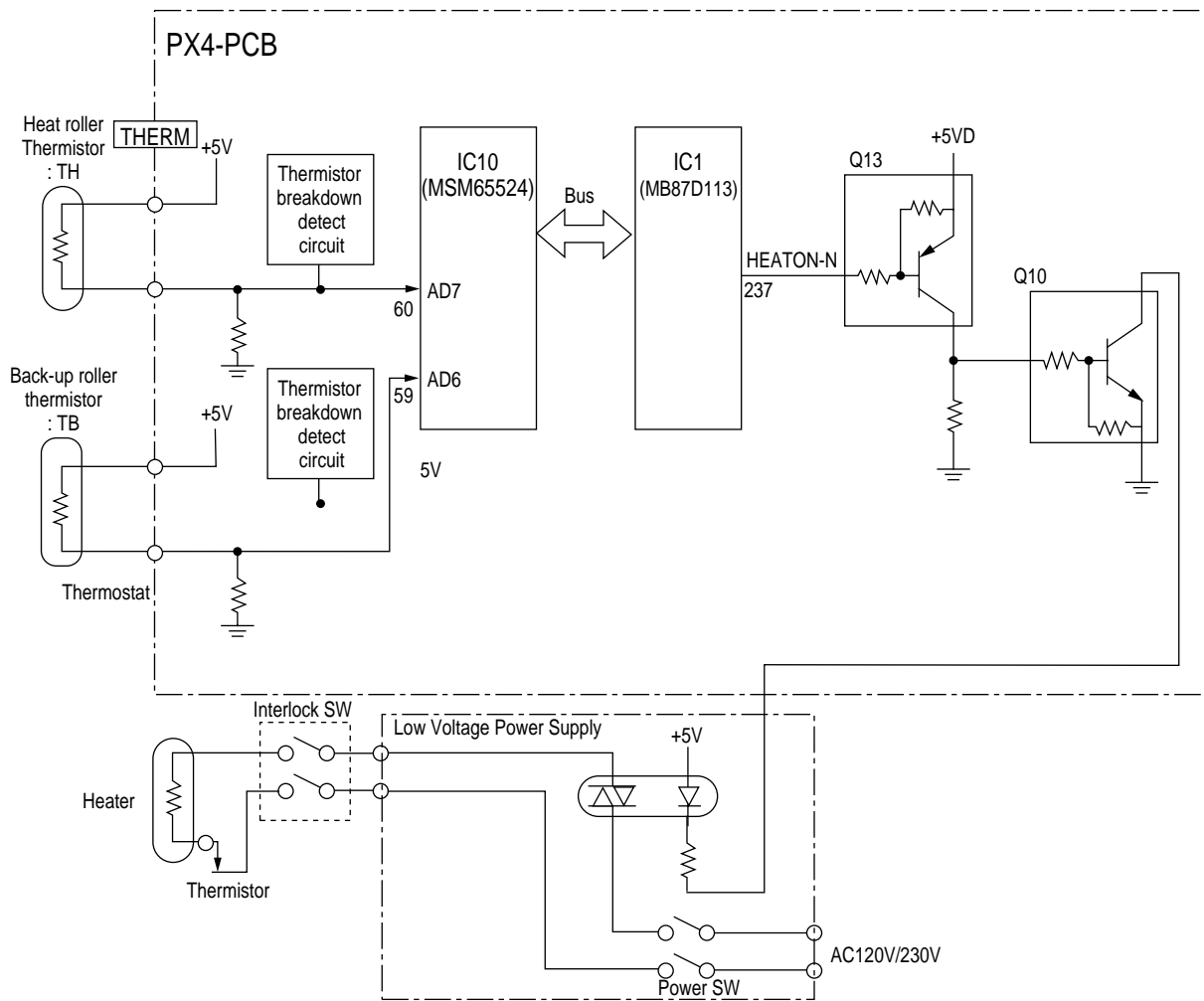
The Heat motor is controlled by the DAC (IC8 : 62354).



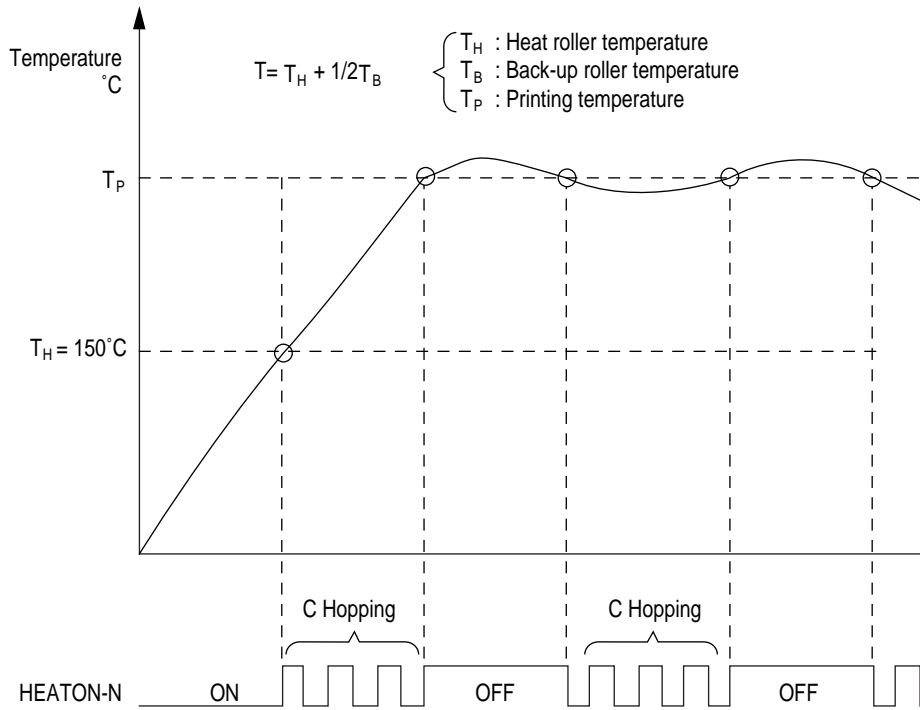
3.2.7 Fuser Temperature Control

For the temperature control by heater control, the variation in the resistance of the thermistor is A/D converted in and the resultant digital value is read and transferred to the CPU. The CPU turns on or off the HEATON-N signal according to the value of the signal received from to keep the temperature constant.

Immediately after the power is turned on, the thermistor is checked for shortcircuit and breakdown. If the thermistor is shorted, the A/D converted value shows an extremely high temperature, so that the shortcircuit can be detected. If the breakdown of the thermistor occurs, the A/D converted value shows the normal temperature. In this case, the thermistor breakdown can be detected by the sequence shown at the end of this section. If the heater is overheated, 5V supply is turned off by detecting that the resistance of the thermistor exceeds the predetermined value.



The temperature control is described below.



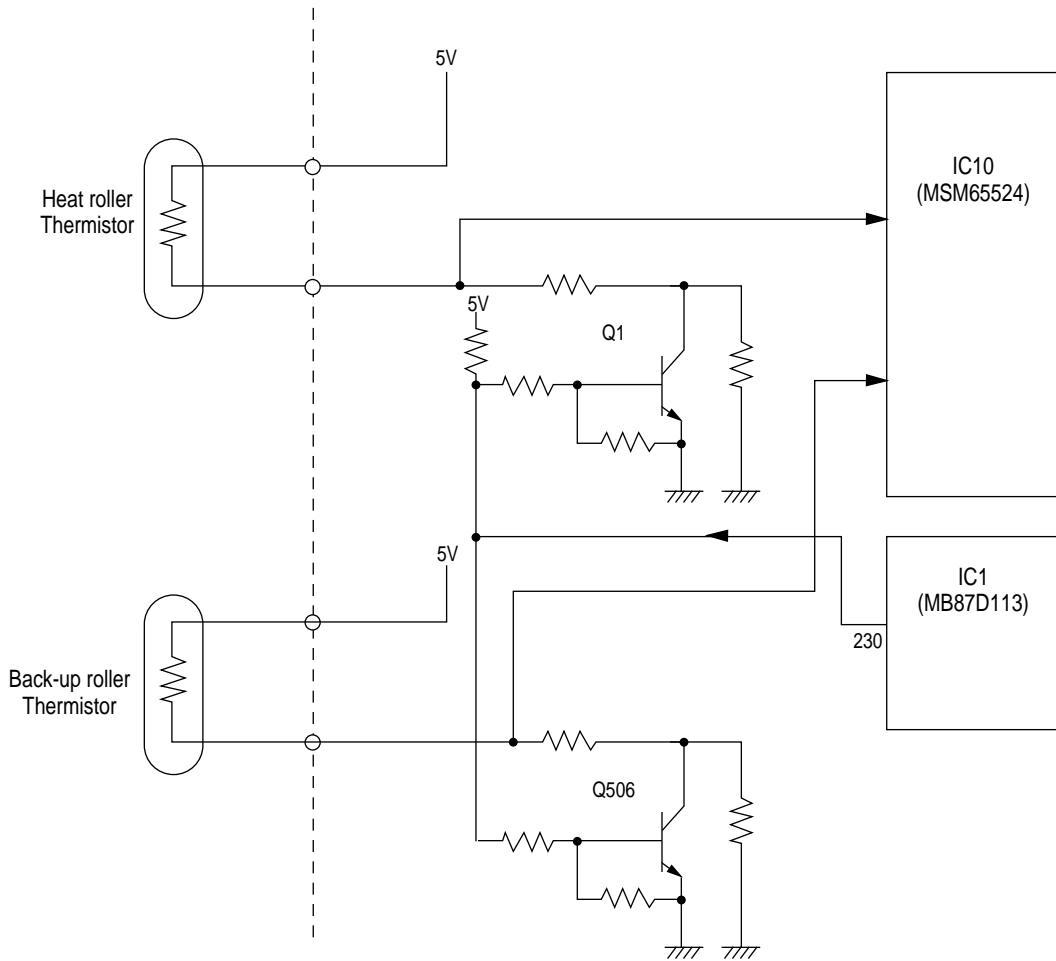
Heater is controlled by CPU (IC10 : MSM65524) as followings.

Temperature	HEATON-N
$T < 150^\circ\text{C}$	ON
$150^\circ\text{C} < T < T_P$	C Hopping
$T_P < T$	OFF

Relationship of the printing temperature (T_P) and speed against media type as follows.

Media type	T_P	Print Speed
Light	200°C	8ppm
Medium Light	200°C	8ppm
Medium	215°C	8ppm
Medium Heavy	215°C	8ppm
Heavy	220°C	8ppm
Special	225°C	6ppm
Transparency	220°C	6ppm

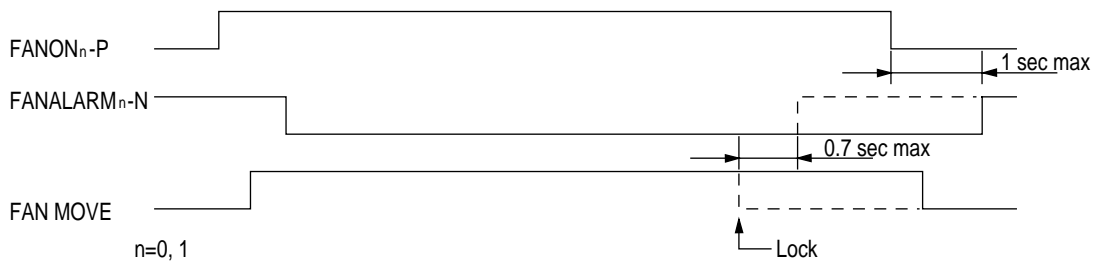
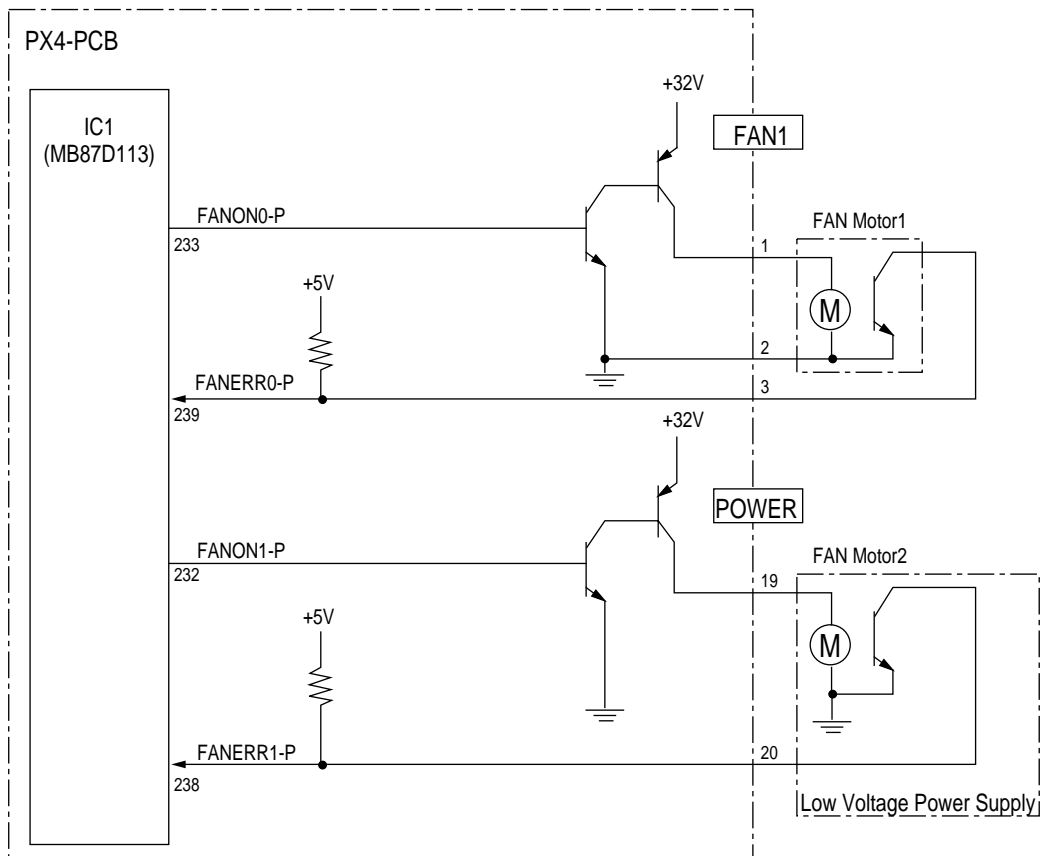
To detect the breakdown of the heater, the heater is turned on. If the corresponding temperature rise is not detected, it is judged that heater breakdown occurs. To shorten the breakdown detecting time, the following circuit is used. When the thermistor is checked for breakdown immediately after the power is turned on, the THCHK-N signal is turned on to turn transistors Q1 and Q506 off. As a result, the thermistor serial resistance is varied to increase the reading resolution.



3.2.8 Fan Motor Control

OKIPAGE 8c has two cooling fans.

The stop/rotation of the fan motor is controlled by a FANON0-P and FANON1-P signals. When the fan motor rotates normally, a FANERR0-P and FANERR1-P signals generated in the hole element built in the fan motor is input to the IC1 (MB87D113).



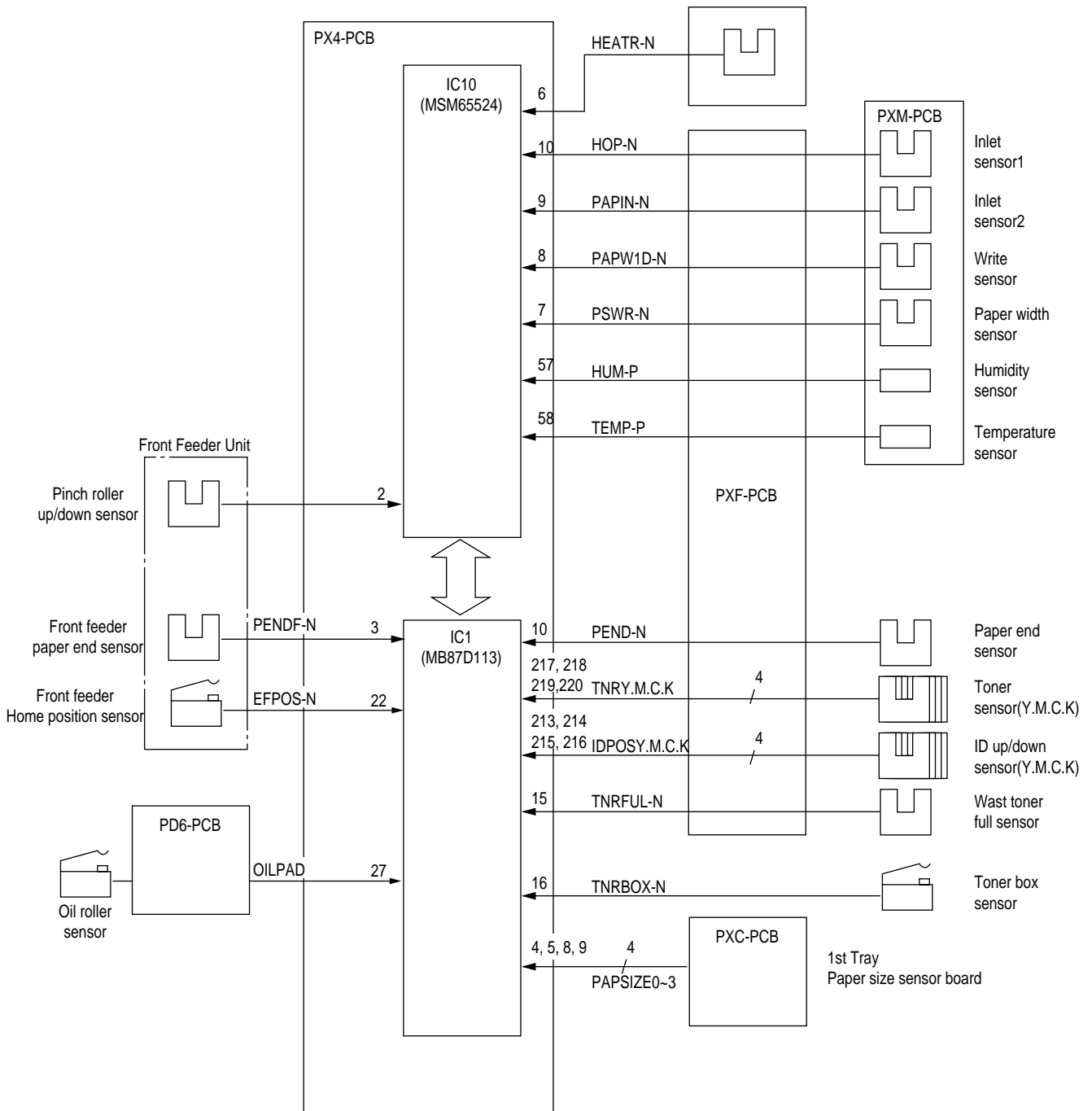
Fan motor start: Power on

- Fan motor stop:
- The motor immediately stops when a fan error occurs.
 - The motor stops in the cover open state (fan1 only).

3.2.9 Sensor Supervision

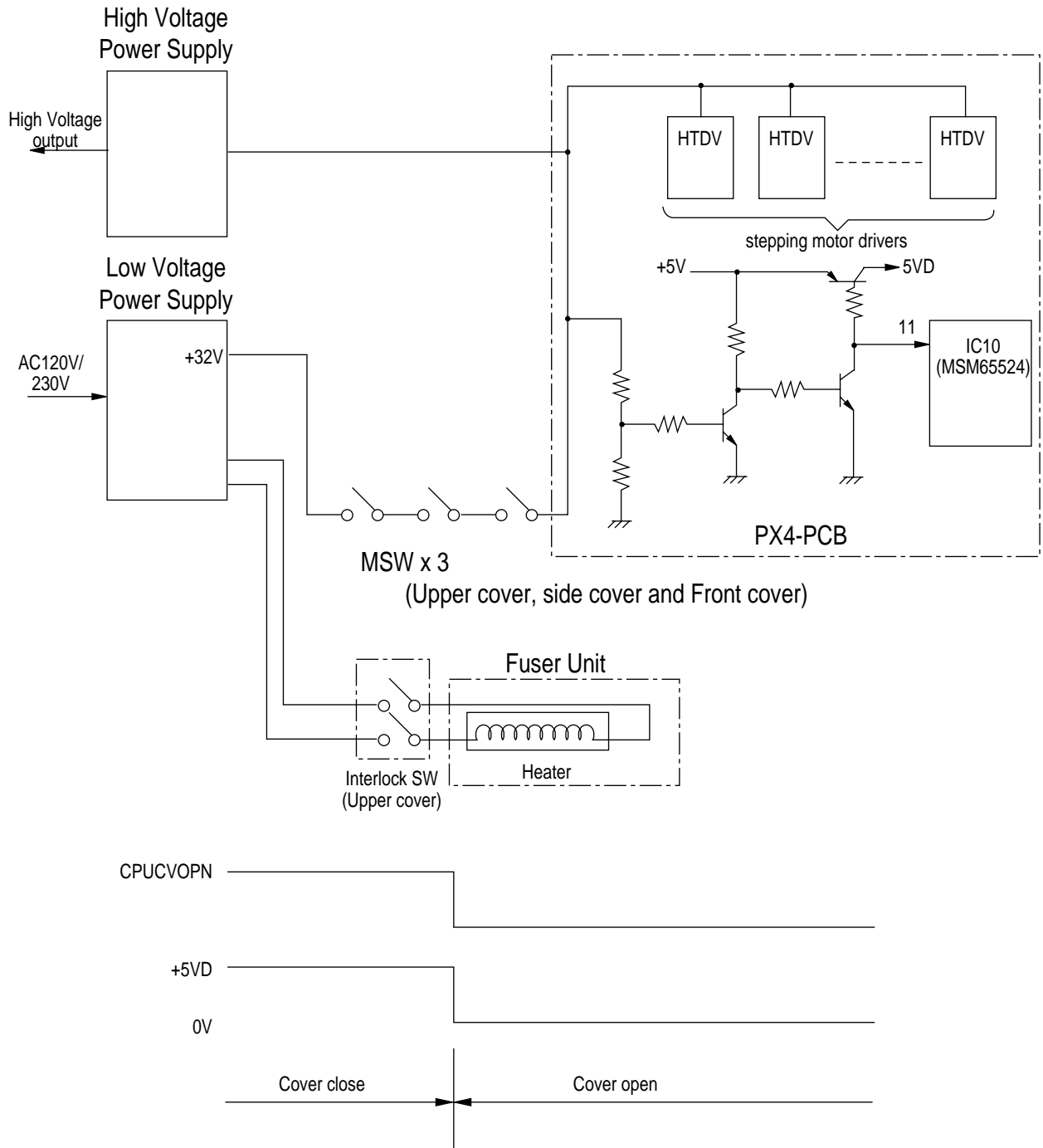
OKIPAGE8c unit is provided with 23 sensors.

The sensor signals are read directly from the input ports of CPU (IC10: MSM65524) and LSI (IC1: MB87D113).



3.2.10 Cover Open

When the cover (upper cover, side cover, front cover) is opened, a cover open microswitch opened. This makes a CPUCVOPN signal low, then off the +5VD, thereby the CPU detects the open state. Furthermore, opening the cover stops applying a +32V power to the high voltage power supply unit and stepping motor drivers, and stops applying a AC120V/230V power to the fuser unit, resulting in stopping all high voltage outputs, motor driver outputs and heater output.

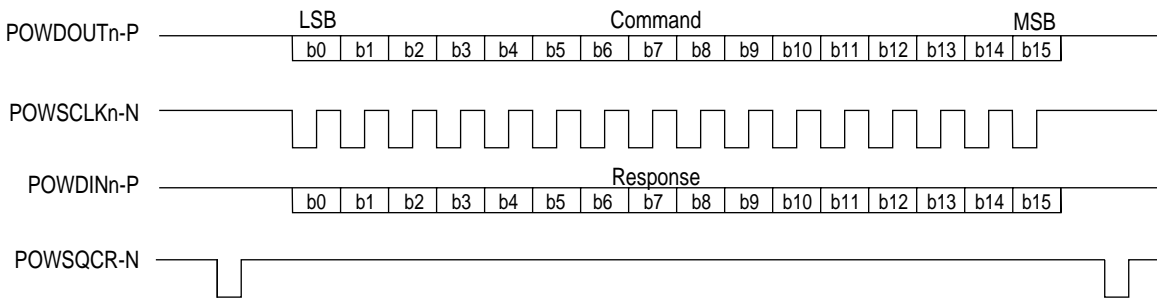
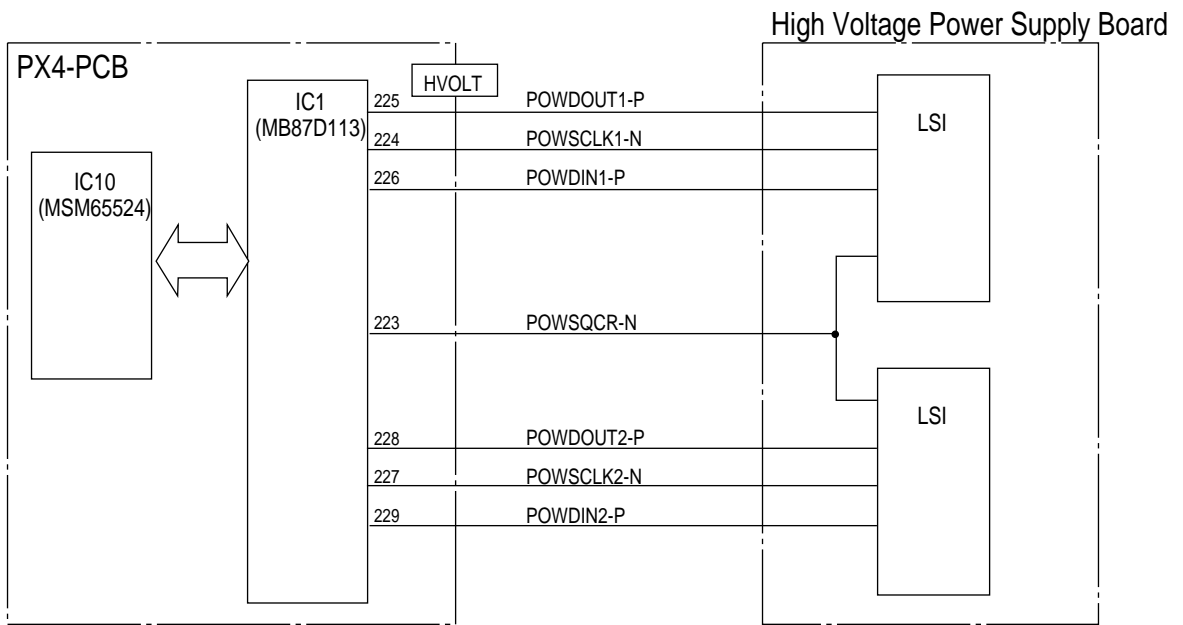


3.2.11 Power Supply Interface

The power supply interface is a 16 bit clock synchronous serial interface between the synchronous serial I/O ports of CPU (IC1: MB87D113) and the power control LSI in the power supply board (High voltage) under the control of the CPU (IC10: MSM65524).

When the control section transmits a command on POWDOUTn-P signal in synchronization with the clock (POWSCLKn-N) to the power supply board, this power supply board transmits a response on POWDINn-N signal in synchronization with the same clock to the control section.

The commands include the control data of the high-voltage power supply, etc.
The responses include high voltage output value, etc.



n=1, 2

3.2.12 Option (2nd paper feeder) Interface

The option interface is a 8 bit clock synchronous serial interface between the synchronous serial I/O ports of CPU (IC10: MSM65524) and 4 bit micro-controllers in the option control boards under the control of the CPU (IC10: MSM65524).

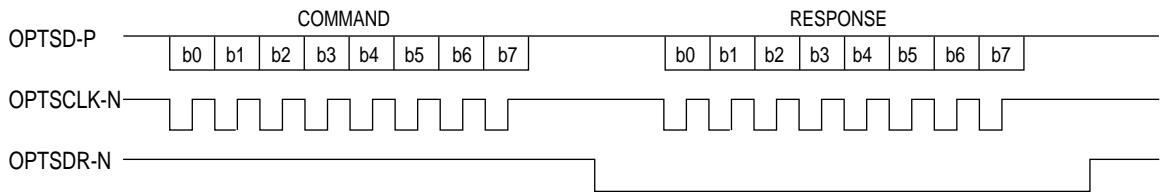
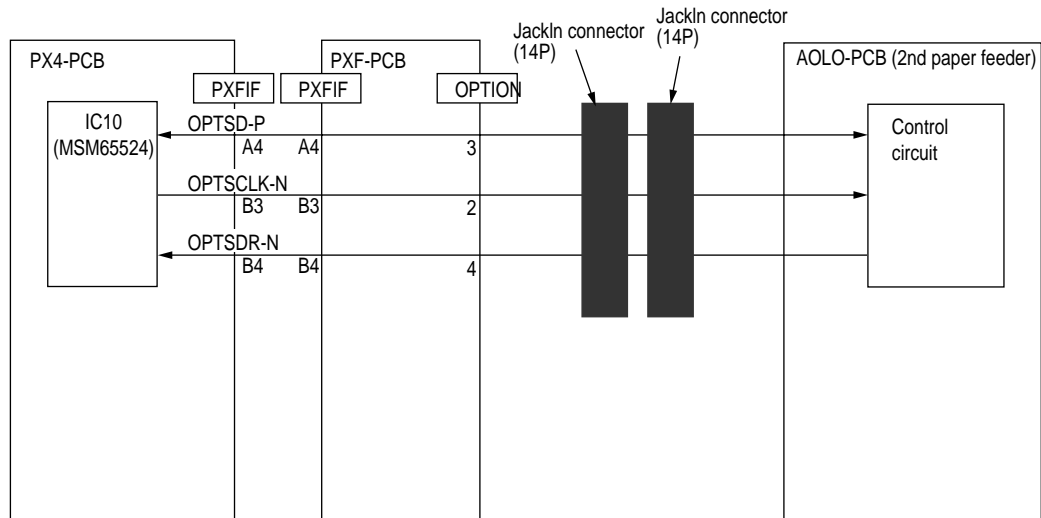
First the control section transmits a command on OPTSD-P signal in synchronization with the clock (OPTSCLK-N) to the option.

The option which receives the command will analyze it and assert OPTSDR-N signal after becoming a ready state for returning a response. When the control section recognizes the OPTSDR signal asserted, it will output a clock signal only at this time.

The option will output a response on the OPTSD-P signal line in synchronization with this clock signal (OPTSCLK-N).

The commands include the control data, etc.

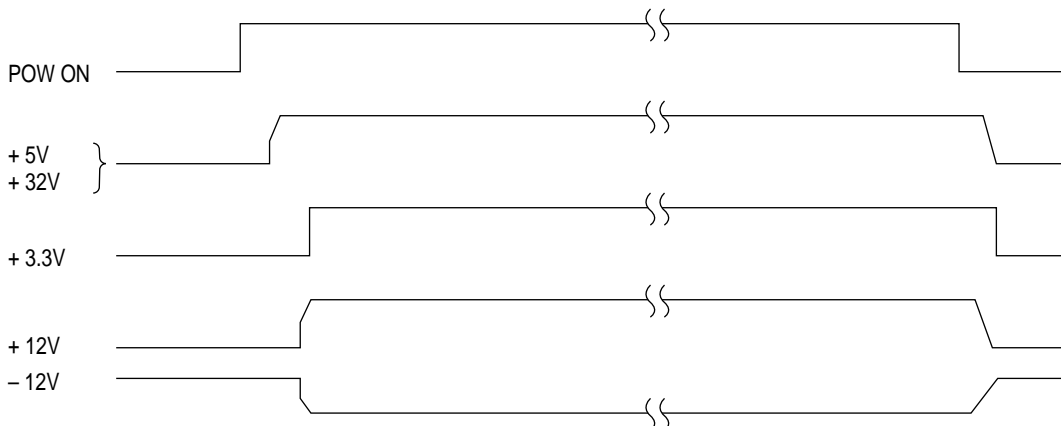
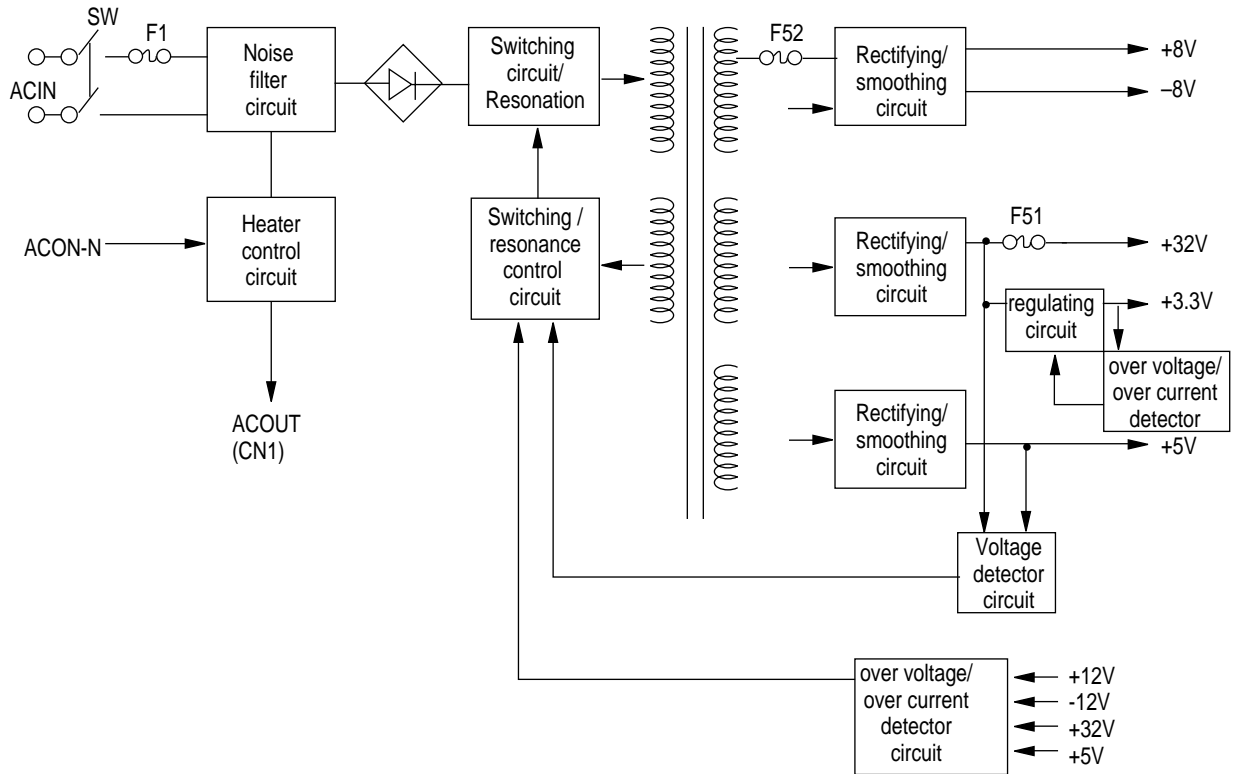
The responses include sensor information, etc.



3.2.13 Power Supply Board

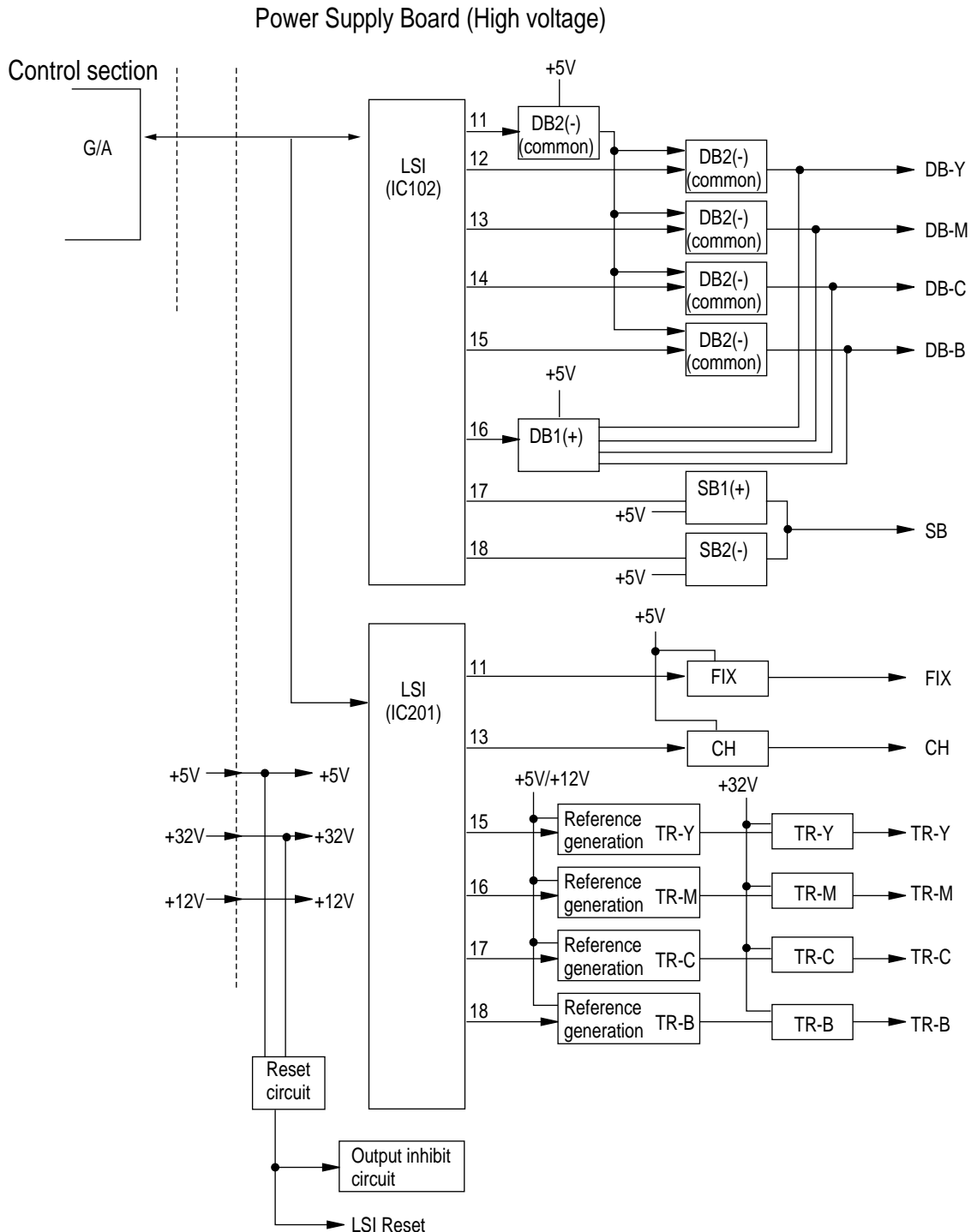
The power supply circuit consists of the low-voltage power supply circuit and the high-voltage power supply circuit. The low-voltage power supply circuit adopts a switching power supply system and provides DC voltages required for the control of the equipment. The high-voltage power supply circuit receives low-voltage power from the low-voltage power supply circuit and provides various high voltages required for the electrophotographic process according to the control signals from the control section.

(1) Low-voltage power supply circuit



(2) High-voltage power supply circuit

This high-voltage power supply circuit receives the high-voltage generation timing control command that is transmitted in serial through the power supply interface from the control section. It decodes this command by LSI (IC102, 201) and outputs high-frequency pulses (PWM) to the corresponding high-voltage generating circuits through pins 11, 12, 13, 14, 15, 16, 17 and 18 of LSI (IC102, 201). It supplies +38V to each high-voltage generating circuit as the source voltage. When the cover is open, the supply of +32V is interrupted to interrupt all the high-voltage outputs. The relationship between the PWM output pins and the high-voltage outputs is shown in the following table.



[IC102]

High-voltage PWM outputs output pins	DB-Y	DB-M	DB-C	DB-B	SB
11	—	—	—		
11, 12	-275V				
11, 13		-275V			
11, 14			-275V		
11, 15				-290V	
16	+300V	+300V	+300V	+300V	
17					+450V
18					-450V

Note 1) No output for 11 only. When DB2(-) is outputted, pulse is outputted simultaneously.
 Note 2) -255V only for the first page printing

[IC201]

High-voltage PWM outputs output pins	FIX	CH	TR-Y	TR-M	TR-C	TR-B
11	0.5~2.5KV					
13		1.35KV				
15			0.5~4KV			
16				0.5~4KV		
17					0.5~4KV	
18						0.5~4KV

Interface command
A. Output ON/OFF

	Lower 8 bits	Higher 8 bits							
	22	b15	b14	b13	b12	b11	b10	b9	b8
CHAN1	30H	SB2	SB1	DB1	DB2-Y, M, C, B				DB2 common
	10H	0	0	0	0	0	0	SB2	DB1/SB1 common
CHAN2	30H	TR-Y, M, C, B			0	CH	0	FIX	
		B	C	M	Y				

- Note 1)** With the bit corresponding to each output, if it is 0, OFF and 1, ON.
Note 2) The output which has plural bit control is outputted by AND condition (where both bits are 1(ON)). Also, the combination of bits such as reverses output polarity is prohibited.

B. Output voltage settings

	Lower 8 bits	Pertinent output	Higher 8 bits
CHAN1	34H	DB-Y	DB2 Output voltage setting value
	44H	DB-M	
	54H	DB-C	
	64H	DB-B	
	74H	DB1	DB1 Output voltage setting value
	84H	SB1	SB1 Output voltage setting value
	94H	SB2	SB2 Output voltage setting value
CHAN2	24H	FIX	FIX Output voltage setting value
	44H	CH	CH Output voltage setting value
	64H	TR-Y	TR Output voltage setting value
	74H	TR-M	
	84H	TR-C	
	94H	TR-B	

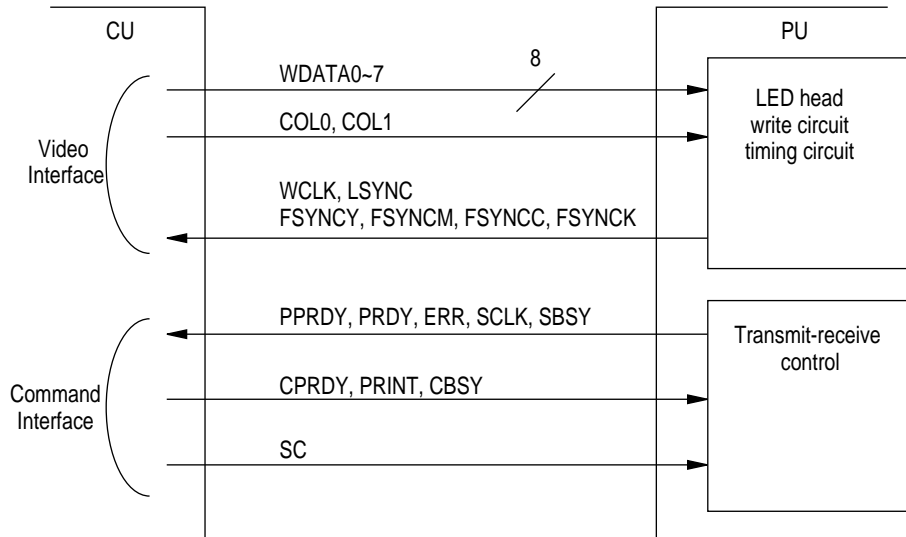
C. Output current measurement

	Read command (Lower 8 bits)	Read data (Higher 8 bits reply)
CHAN2	17H	Measured current value of FIX output Note 1)

3.3 PCR-PX4 I/F

3.3.1 Outline

PCR-PX4 I/F sends video data, which received, edited, extracted and produced, to PX4, the printer engine control section, and allows inter-transmission of commands and status. Also, the power for PCR is supplied through this I/F connector.



Division	Signal name	Polarity	CU•CP	Functions
Video interface	WDATA0~7	Neg.	→	Print data (8 bit parallel)
	COLO	Neg.	→	Color designating signal
	COL1	Neg.	→	Color designating signal
	WCLK	Neg.	←	Serial image signal clock
	LSYNC	Neg.	←	Synchronizing signal of line scan
	FSYNCY	Neg.	←	Yellow page synchronizing signal
	FSYNCM	Neg.	←	Magenta page synchronizing signal
	FSYNCC	Neg.	←	Cyan page synchronizing signal
Command interface	PPRDY	Pos.	←	Printer Power-on/ready
	PPDY	Neg.	←	Printer Ready
	ERR	Neg.	←	Changed status notifying signal
	SCLK	Neg.	←	Clock for SC
	SBSY	Neg.	←	PU occupies SC and SCLK
	CPRDY	Pos.	→	Controller Power-on/ready
	PRINT	Neg.	→	Print start
	CBSY	Neg.	→	CU occupies SC and SCLK
	SC	Neg.	↔	Status/command signal

3.3.2 Video I/F

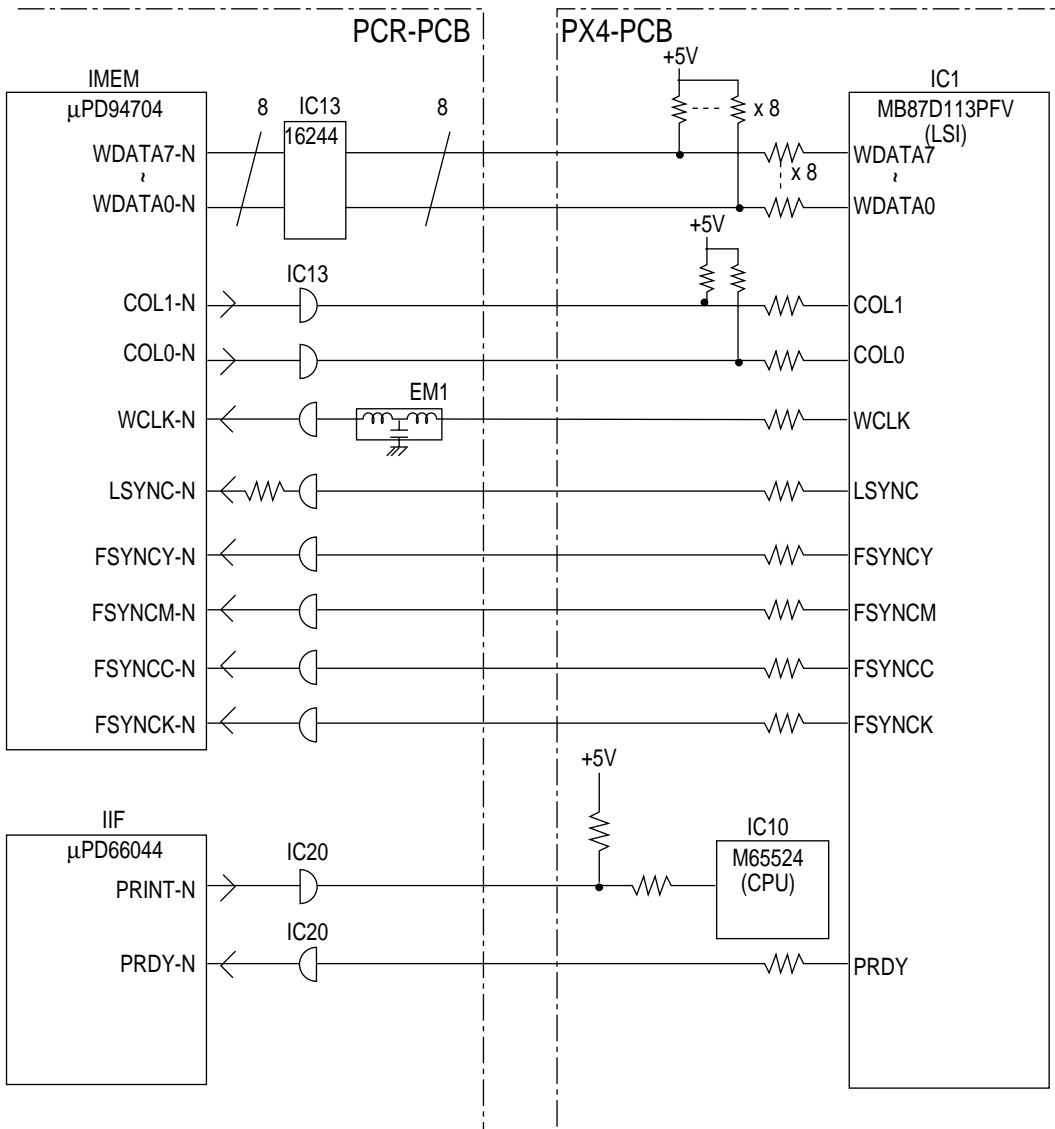
Video data is sent from PCR in synchronization with WCLK sent from PX 4

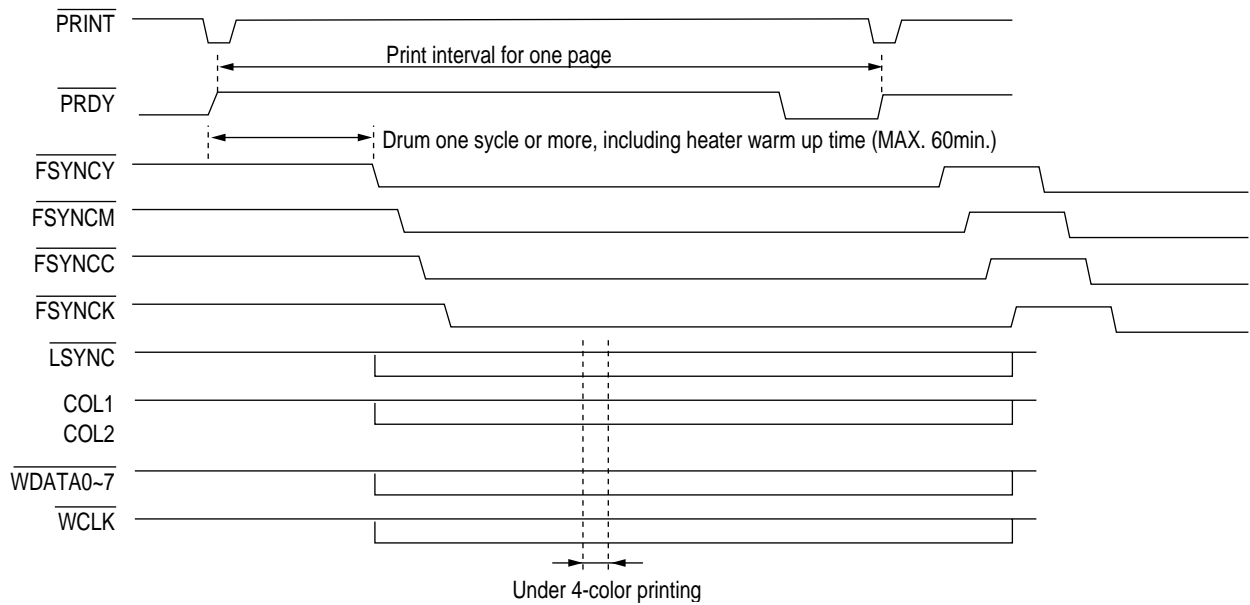
When PX4 is in ready status (PRDY = Low), PCR gives a printing start instruction to PX4 by PRINT Low Plus or command to send an extracted video data. When receiving the printing start instruction, PX4 becomes BUSY status (PRDY=High) and starts a paper hopping. After the paper reached the specified position, PX4 sends each FSYNC of WCLK, LSYNC and YMCK.

FSYNC becomes enabled due to its tandem structure, synchronizing with the pass of a paper through each ID.

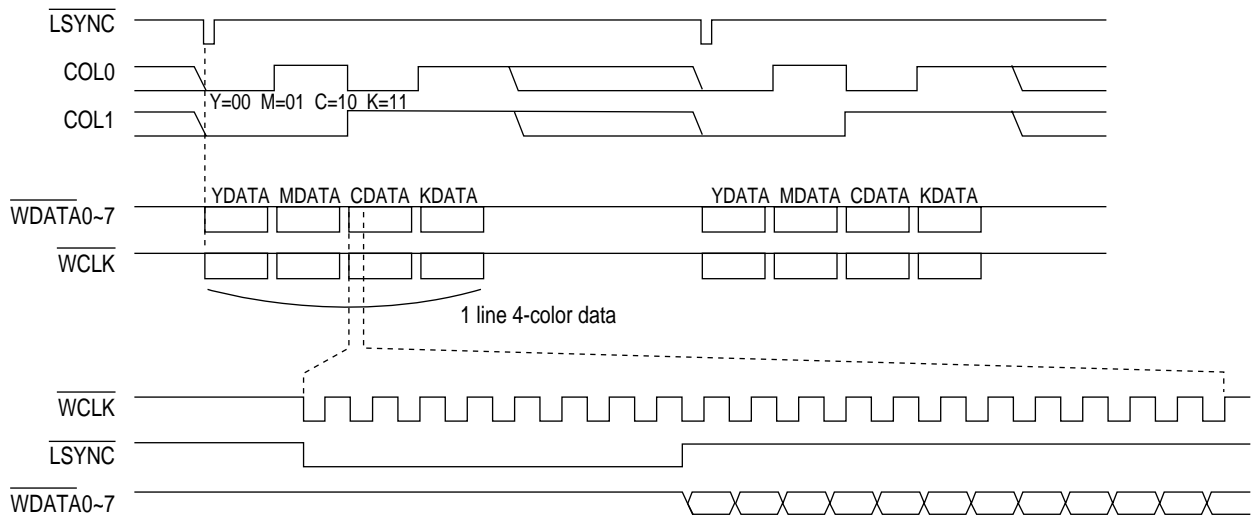
If PX 4 becomes enabled to receive next page video data during printing the first page, it sets PRDY to Low and returns to Ready status.

For 4-color video data, 4 colors are sent through 1 line in 8 bit width in synchronization with LSYNC. 4 patterns of status of COL1,_ indicate which YMCK the currently sent data is. The color data is sent in accordance with each status by changing COL1,_ 4 times at one LSYNC. Even when FSYNC is disabled, the sending mode of each color exists only for the specified WCLK, but the sending of video data won't be executed.



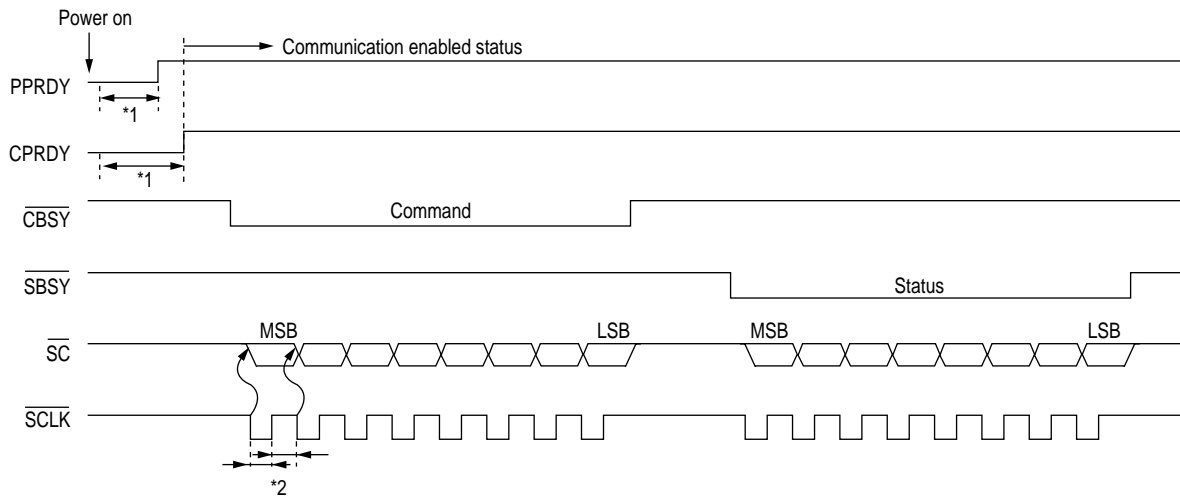


Enlarged chart for 4-color printing



3.3.3 Command Interface

(1) Command Interface Time Chart



*1 For timing to set PPRDY and CPRDY to on, which of them is earlier is not specified. After powering on, they are set to on when the initial process is completed and they are changed to the communication enabled status. Therefore, at the point when PPRDY and CPRDY are set to on, the communications are to become the enabled status.

*2 SCLK should be 50% DUTY.

(2) Controlling Command Interface

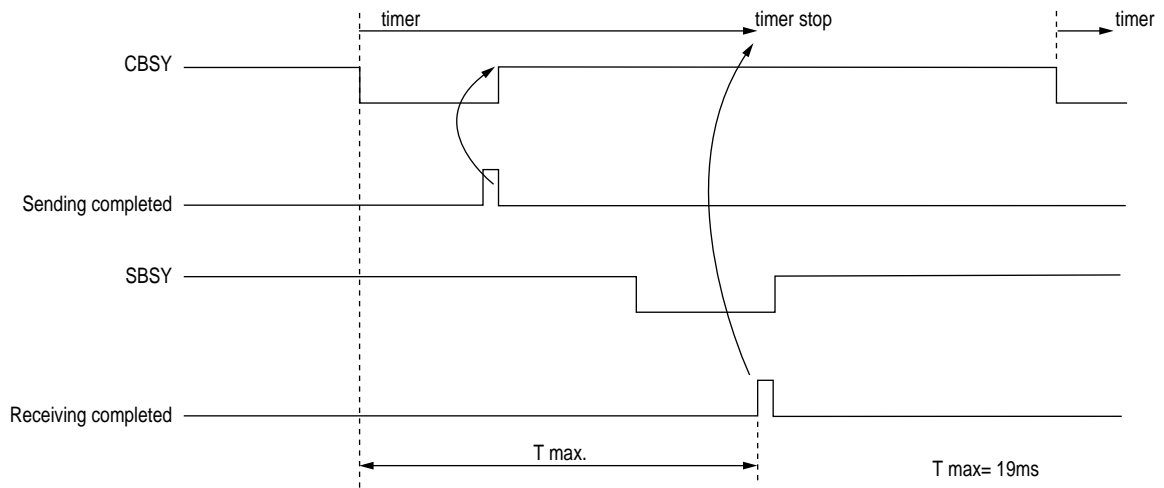
a) Under regular operation

CU sets CBSY to ON and sends a command to PU. At this time, PU section sends clock signals and CU recognizes the completion of command sending by receiving 8 clock signals. And CU returns CBSY to OFF.

Next, PU sets SBSY to ON and sends a reply for the command it receives. At this time, PU sends clock signals and returns SBSY to OFF in the same way. CU recognizes the completion of the reply receiving by receiving 8 clock signals.

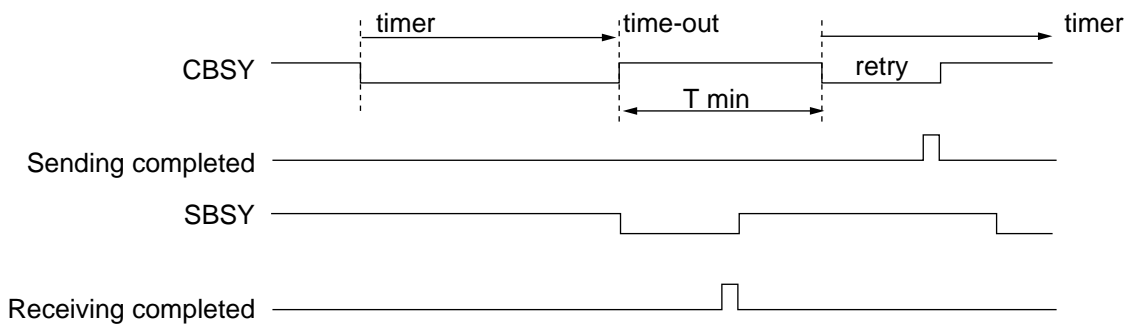
If the completion of sending or receiving cannot be recognized for a fixed time, a command is retransmitted. Therefore, a timer is provided for monitoring the completion of communication, and started when a command is sent and stopped when the receiving is completed.

The value for timer should be determined from higher values than T max. value in the following figure.

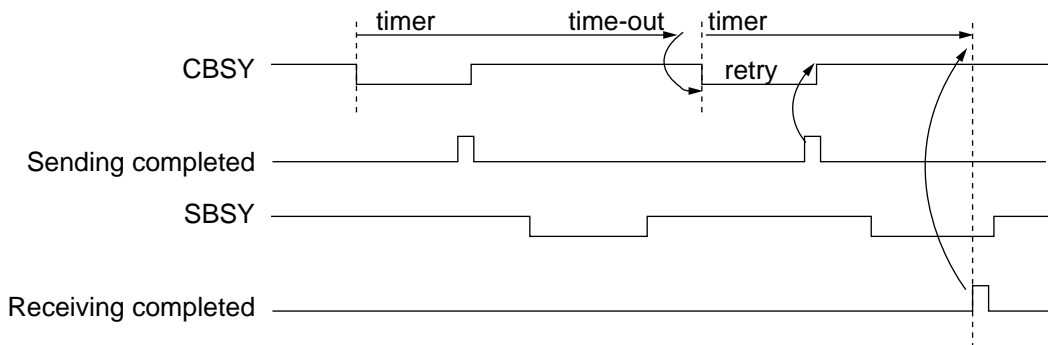


- b) Under irregular operation-1 (when a command sending is not normally performed)
 When CU sends a command to PU and a noise or hardware malfunction causes to skip clock sending, CU cannot recognize the completion of sending, so CBSY is left ON. Therefore, return CBSY to OFF once by the time-out of timer described in (1), and after time compensation for T min., retry the sending and receiving sequence by retransmitting the command.
 When the communication cannot be succeeded by the first retry, execute the second retry. When the second retry cannot succeed, some message is indicated to the operator and the system is to be shut down.

Note: *Since the PU section cannot recognize the skip of the clock, an irregular command from CU is processed as it is, and when CBSY is set to OFF, a reply for the command is returned. Thus, for CU section, a reply is returned even though the sending cannot be completed, so it must receive and flush the reply.*



- c) Under irregular operation -2 (When a reply receiving is not normally performed)
 When PU returns a reply to CU and a noise or hardware malfunction causes to skip clock sending, CU cannot recognize the completion of receiving. Therefore, retransmit the command by the time-out described in (1) and retry the sending and receiving sequence. When the communication cannot be succeeded by the first retry, execute the second retry. When the second retry cannot succeed, some message is indicated to the operator and the system is to be shut down.



Category	LCD Status Message	LED					ATTENTION	Trouble or Status	Remedy
		K	C	M	Y	READY			
Daily status	TNR SNS *****	ON	ON	ON	ON	Undefined	ON	Indicates that Toner sensor is abnormal when page counter is above thirty. (The LED of the color lights)	This message is cleared when the drum is properly positioned or sensor lever which is exchanged correspond to the LED color lights.
	POWER SAVING	Undefined	Undefined	Undefined	Undefined	Undefined	Undefined	Indicates that the page printer enters the Power Save mode (in which the heater is powered off).	Normal operation
	TNR LOW *****	ON	ON	ON	ON	Undefined	ON or Blink	Indicator that the toner of the specified color is running out. However, when "LOW TONER" is set to "OFF," the ATTENTION indicator blinks.	Normal operation This message is cleared when the toner cartridge is replaced.
	CNG DRUM *****	ON	ON	ON	ON	Undefined	ON	Indicates that the life of a specified color drum has come. (The LED of the color lights.)	Normal operation This message is cleared when the specified drum is replaced. After the drum is replaced, its drum counter must be reset. (See the user's manual.)
	FUSER LIFE	Undefined	Undefined	Undefined	Undefined	Undefined	ON	Indicates that the life of the Heat unit Assy has come.	Normal operation This message is cleared when the Heat unit Assy is replaced. After the Heat unit Assy is replaced, its counter must be reset. (See the user's manual.)
	BELT LIFE	Undefined	Undefined	Undefined	Undefined	Undefined	ON	Indicates that the life of the belt cassette Assy has come.	Normal operation This message is cleared when the belt cassette assembly is replaced. After the belt cassette assembly is replaced, its counter must be reset. (See the user's manual.)
	RESET	OFF	OFF	OFF	OFF	OFF	OFF	Cleans the data left unprinted in the buffer and initializes the printer to the user default status. The temporary DLL, macro, and user patterns are deleted.	Normal operation
	PRINT DEMO PAGE	Undefined	Undefined	Undefined	Undefined	Blink or ON	Undefined	Prints out a demo page. This operation is started by a command when the READY LED is on or by a switch when the READY LED is blinking.	Normal operation

Category	LCD Status Message	LED					ATTENTION	Trouble or Status	Remedy
		K	C	M	Y	READY			
Daily status	PRINT MENU	Undefined	Undefined	Undefined	Undefined	Blink or ON	Undefined	Prints out a menu setting. This operation is started by a command when the READY LED is on or by a switch when the READY LED is blinking.	Normal operation
	OIL ROLLER LIFE	Undefined	Undefined	Undefined	Undefined	Undefined	ON	Indicates that the life of the Oil roller assy has come. (Warning)	This message is cleared when the oil roller assy is replaced. After the oil roller assy is replaced, its counter must be reset. (See the user's manual)
	OIL ROLLER LIFE	Undefined	Undefined	Undefined	Undefined	OFF	Blink	Indicates that the life of the Oil roller assy has come. (Alarm)	
	PRINT FONTS	Undefined	Undefined	Undefined	Undefined	Blink or ON	Undefined	Prints out all character sets (fonts) that the page printer contains. This operation is started by a command when the READY LED is on or by a switch when the READY LED is blinking.	Normal operation
	***** TONER EMPTY	Blink	Blink	Blink	Blink	OFF	Blink	Displayed when 50 pages are printed after "Toner Low" was detected to prompt the user to replace the toner cartridge.	This message temporarily disappears when a cover of the page printer is opened but will be displayed every 20 pages unless the cartridge is replaced.
	WASTE TONER FULL	Undefined	Undefined	Undefined	Undefined	OFF	Blink	Displayed when 100 pages are printed after "Box toner Assy Full" was detected to prompt the user to replace the box toner Assy.	This error is reset when the box toner Assy is replaced. Printing is suppressed until it is replaced.
	FRONT TRAY ERROR PRESS RECOVERKEY	Undefined	Undefined	Undefined	Undefined	OFF	Blink	Indicates that the front feeder has caused a home position error.	The front feeder becomes not available when the RECOVER switch is pressed. The other tray is available. This message is cleared when the front feeder assembly is replaced.
	COVER OPEN	Undefined	Undefined	Undefined	Undefined	OFF	Blink	Indicates that the printer covers is open.	This error is reset when the cover is closed. If this error occurs frequently, go to 6.5.2.
	BELT NOT INSTALLED	Undefined	Undefined	Undefined	Undefined	OFF	Blink	Indicates that the belt cassette Assy has not been installed.	This error is recovered when the belt cassette Assy is installed. Printing is suppressed until the belt cassette assembly is installed.

Category	LCD Status Message	LED					ATTENTION	Trouble or Status	Remedy
		K	C	M	Y	READY			
Daily status	WASTE TONER BOX NOT INSTALLED	Undefined	Undefined	Undefined	Undefined	OFF	Blink	Indicates that the box toner Assy has not been installed.	This error is recovered when the box toner Assy is installed. Printing is suppressed until the box toner assembly is installed.
	WASTE TNR NRFULL	Undefined	Undefined	Undefined	Undefined	Undefined	ON	Indicates that the Box toner Assy is near full.	Nothing
	OIL PAD NOT INSTALLED	Undefined	Undefined	Undefined	Undefined	OFF	Blink	Indicates that the Oil pad Assy has not been installed.	Please install the Oil pad Assy.
Buffer Overflow	ERROR MEMORY OVERFLOW	Undefined	Undefined	Undefined	Undefined	OFF	Blink	Indicates that data overflowed the memory space. - Too much print data in one page - Too much macro data - Too much DLL data - Data overflow after compression of frame data	This error is recovered when the RECOVER switch is pressed. Expand RAM or reduce data.
	ERROR RECEIVE BUFFER OVERFLOW	Undefined	Undefined	Undefined	Undefined	OFF	Blink	Indicates that the receive buffer was overflowed.	This error is recovered when the RECOVER switch is pressed. Change the setting of Receive Buffer Size in the User Maintenance more bigger then send the data from the host or expand RAM.
Tray Paper Out	PAPER OUT mmmmmmmmmm ttttt	Undefined	Undefined	Undefined	Undefined	OFF	Blink	Indicates that the tray is empty or the cassette assembly has not been installed. mm...m: paper size (Letter, Executive, Legal 14, Legal 13, A4, A5, A6, or B5 size) ttttt: Tray type (Tray 1, Tray 2, or Front)	This message is cleared when paper is set in the tray or the cassette assembly is mounted.
	CANNOT USE A6 PAPER ON TRAY 2	Undefined	Undefined	Undefined	Undefined	OFF	Blink	Displayed when the second tray (optional) contains A6-size paper.	The second tray (optional) cannot use A6-size paper. The A6-size paper is available to the first tray or to the front feeder.
	TRAY 1 INSTALL	Undefined	Undefined	Undefined	Undefined	OFF	Blink	Indicates that the first tray is pulled out also when the second tray (optional) is used.	This message is cleared when the first tray is remounted correctly.
Paper Request	mmmmmm MANUAL PAPER REQUEST	Undefined	Undefined	Undefined	Undefined	ON	OFF	Requests the user to load the specified paper by message from manual feeder. mm...m: paper size (Letter, Executive, Legal 14, Legal 13, A4, A5, A6, or B5 size)	Normal operation This message is cleared when the specified paper is loaded from manual feeder.

Category	LCD Status Message	LED						ATTENTION	Trouble or Status	Remedy
		K	C	M	Y	READY	ATTENTION			
Paper Request	mmmmmmmmmm ttttt PAPER REQUEST	Undefined	Undefined	Undefined	Undefined	OFF	Blink	Requests the user to load the specified paper in the tray. mm...m: paper size (Letter, Executive, Legal 14, Legal 13, A4, A5, A6, or B5 size) ttttt: Tray type (Tray 1, Tray 2, or Front)	Normal operation This message is cleared when paper is set in the specified tray.	
Paper Size Error	ERROR PAPER SIZE CHECK ttttt	Undefined	Undefined	Undefined	Undefined	OFF	Blink	Indicates that paper of the illegal size was fed from the specified tray. ttttt: Tray type (Tray 1, Tray 2, or Front)	Check the size of paper in the tray or whether two or more paper sheets are fed at a time. When the cover is opened and closed, this error is reset and printing resumes. If this error occurs frequently, go to 6.5.2.	
Paper Jam Error	PAPER INPUT JAM CHECK ttttt	Undefined	Undefined	Undefined	Undefined	OFF	Blink	Indicates that a paper jam occurred on the paper feeding from the specified tray. ttttt: Tray type (Tray 1, Tray 2, or Front)	Check the size of paper in the tray or whether two or more paper sheets were fed at a time. When the cover is opened and closed, this error is reset and printing resumes. If this error occurs frequently, go to 6.5.2.	
	PAPER FEED JAM CHECK ttttt	Undefined	Undefined	Undefined	Undefined	OFF	Blink	Indicates that a paper coming out of the tray jammed on the paper traveling printer. ttttt: Tray type (Tray 1, Tray 2, or Front)	Check the size of paper in the tray or whether two or more paper sheets were fed at a time. When the cover is opened and closed, this error is reset and printing resumes. If this error occurs frequently, go to 6.5.2.	
	PAPER EXIT JAM REMOVE THE PAPER	Undefined	Undefined	Undefined	Undefined	OFF	Blink	Indicates that a paper jammed on the way to the exit.	Open the cover and remove a paper jam from the inside of the page printer. When the cover is opened and closed, this error is reset and printing resumes. If this error occurs frequently, go to 6.5.2.	
Interface Error	OKI HSP I/F CARD RESETTING	Undefined	Undefined	Undefined	Undefined	OFF	Blink	Indicates that the OKI HSP interface card is being reset.	The page printer recovers automatically when resetting is complete.	

Category	LCD Status Message	LED					Trouble or Status	Remedy
		K	C	M	Y	ATTENTION		
Interface Error	Jam 001 Error	Undefined	Undefined	Undefined	Undefined	Blink	Indicates that Process error occurred.	Notifies that the power supply LSI has been reset due to noise, etc. (process error) Open cover and remove the paper. Close cover to recover and proceed.
	ERROR HOST I/F OKI HSP xx	Undefined	Undefined	Undefined	Undefined	Blink	Indicates that a fatal OKI HSP interface error has occurred. xx=10: Interface timeout xx=20: Initialization failed 10 seconds after the page printer is powered on. xx=21: It takes 3 seconds or more before the RUN mode starts or the page printer received a Run Mode command in the power-on mode. xx=22: HSP-PC communication error	The page printer recovers from the error when the RECOVER switch is pressed. If this error occurs frequently, replace the OKI HSP interface card or the main board (PCR PCB).
Controller Error	EEPROM RESETTING	Undefined	Undefined	Undefined	Undefined	Blink	Indicates that the ID number of EEPROM is invalid.	Sets the default values in EEPROM and it'll be recovered automatically.
	ERROR POSTSCRIPT	Undefined	Undefined	Undefined	Undefined	OFF	Indicates that the interpreter detected one of the errors given below. The data coming after this error is recovered until the end of the command. When the reception of the command is completed, this message is reset automatically. - Invalid PostScript command - The page is complicated and the vertical memory is full.	Simplify the pages.

Category	LCD Status Message	LED						ATTENTION	Trouble or Status	Remedy
		K	C	M	Y	READY	Code (nn)			
Controller Error	ERROR nn	Undefined	Undefined	Undefined	Undefined	OFF	Blink	Details of error	Remedy	
		Undefined	Undefined	Undefined	Undefined	OFF	Blink	Indicates that an error was found in the program ROM by the program ROM check.	Turn on the power of the page printer again. If this error still occurs, replace the program ROM on the main board (PCR PCB) or the main board itself. When replacing the main board (PCR PCB), demount the EEPROM chip from the old main board and remount it on the new main board.	
		Undefined	Undefined	Undefined	Undefined	OFF	Blink	Indicates that an error was found in the resident RAM by the resident RAM check.	Turn on the power of the page printer again. If this error still occurs, replace the main board (PCR PCB). When replacing the main board (PCR PCB), demount the EEPROM chip from the old main board and remount it on the new main board.	
		Undefined	Undefined	Undefined	Undefined	OFF	Blink	Indicates that an error was found in the EEPROM by the EEPROM check.	Turn on the power of the page printer again. If this error still occurs, replace the program ROM on the main board (PCR PCB) or the main board itself. When replacing the main board (PCR PCB), demount the EEPROM chip from the old main board and remount it on the new main board.	
		Undefined	Undefined	Undefined	Undefined	OFF	Blink	Indicates that an error was found in the optional ROM by the optional ROM check.	Turn on the power of the page printer again. If this error still occurs, replace the optional ROM on the main board (PCR PCB) or the main board itself. When replacing the main board (PCR PCB), demount the EEPROM chip from the old main board and remount it on the new main board.	
		Undefined	Undefined	Undefined	Undefined	OFF	Blink	Indicates that an error was found in the optional RAM by the optional RAM check.	Check the connection of the option RAM. Turn on the power of the page printer again. If this error still occurs, replace the optional RAM by the optional RAM check.	
								Indicates that an error in the allocation to CAS and data bus, which is detected from the results of 1byte writer/8bytes read check on the optional RAM.	Do not use this SIMM because it is incompatible with the machine.	

Category	LCD Status Message	LED					READY	ATTENTION	Trouble or Status		Remedy
		K	C	M	Y	Code (nn)			Details of error		
Controller Error	ERROR nn	Blink	Blink	Blink	Blink	OFF	Blink	77	Indicates that Toner sensor is abnormal when page counter is below thirty.(alarm)	This message is cleared when the drum is properly positioned or sensor lever which is exchanged correspond to the LED color lights.	
		Undefined	Undefined	Undefined	Undefined	OFF	Blink	80	Indicates that a timeout occurred on interface between the page printer and the operator panel.	Check the connection between the main board and the operation panel. Turn on the power of the page printer again. If this error still occurs, replace the cable, the main board (PCR PCB) or the cover assembly operation panel.	
		Undefined	Undefined	Undefined	Undefined	OFF	Blink	82	Indicates that a timeout occurred on CU-PU interface.	When replacing the main board (PCR PCB), demount the EEPROM chip from the old main board and remount it on the new main board.	
		Undefined	Undefined	Undefined	Undefined	OFF	Blink	92	Indicates that a timeout occurred on CU-PU interface.	Check the connection between the main board and the engine board. Turn on the power of the page printer again. If this error still occurs, replace the program ROM of the main board (PCR PCB) or the engine board (PX4 PCB), or the board itself.	
		Blink	Blink	Blink	Blink	OFF	Blink	D6	Indicates that the printer overruns.	When replacing the main board (PCR PCB), demount the EEPROM chip from the old main board and remount it on the new main board.	
		Undefined	Undefined	Undefined	Undefined	OFF	Blink	D7	Yellow Image drum unit up/down error	See Chapter 6.5.2	
		Undefined	Undefined	Undefined	Undefined	OFF	Blink	D8	Magenta Image drum unit up/down error	See Chapter 6.5.2	
		Undefined	Undefined	Undefined	Undefined	OFF	Blink	D9	Cyan Image drum unit up/down error	See Chapter 6.5.2	
		Undefined	Undefined	Undefined	Undefined	OFF	Blink	DA	Black Image drum unit up/down error	See Chapter 6.5.2	
		Undefined	Undefined	Undefined	Undefined	OFF	Blink	DA	Environment temperature sensor error	Make sure that the surrounding temperature stays -10 < t < 50°C. If this condition is not satisfied, adjust the surrounding temperature, otherwise satisfied, replace the sensor board (RXM-PCB), junction board (PXF-PCB) or engine board (PX4-PCB).	

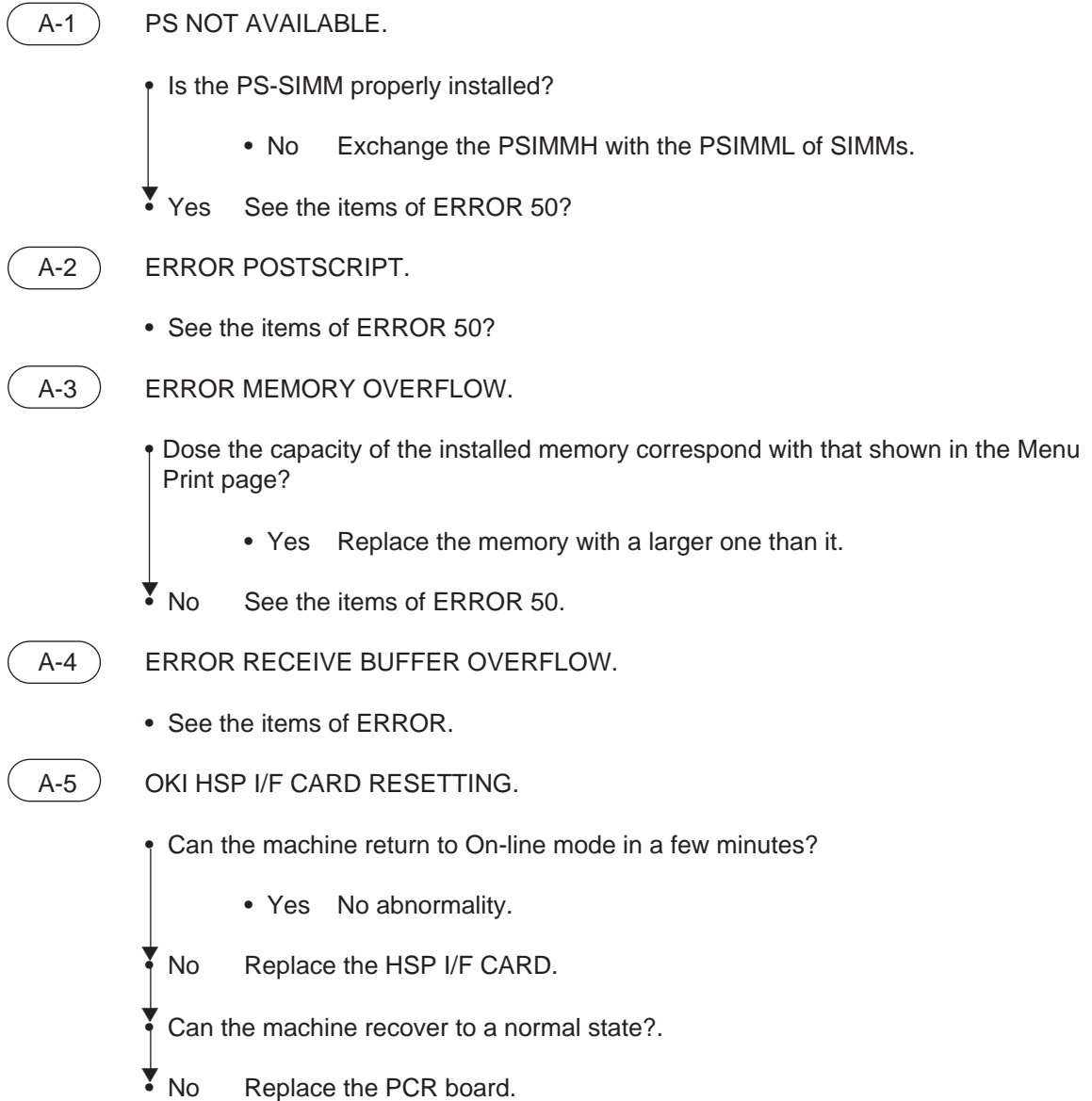
Category	LCD Status Message	LED					ATTENTION	Trouble or Status		Remedy
		K	C	M	Y	READY		Code (nn)	Details of error	
Controller Error	ERROR nn	Undefined	Undefined	Undefined	Undefined	OFF	Blink	Details of error	Remedy	
		Undefined	Undefined	Undefined	Undefined		DB	Humidity sensor error	Make sure that the relative humidity stays 0% < h < 95%. (the subsequent contents are the same as those of [DA])	
		Undefined	Undefined	Undefined	Undefined		DC	Waste-toner sensor error	Re-mount the waste toner box and re-power on to ensure whether the alarm goes off or not. If the alarm stays on, exchange waste toner sensor, or replace the junction board (PXF-PCB) or engine board (PX4-PCB).	
		Undefined	Undefined	Undefined	Undefined		DE	Pinch roller up/down error	Turn on the power of the page printer again. If this error still occurs, replace the engine board (PX4 PCB) or the front feed assembly.	
		Undefined	Undefined	Undefined	Undefined		E0	Fusing Unit Error	See Chapter 6.5.2	
		Undefined	Undefined	Undefined	Undefined		E1	Fan Motor Error	See Chapter 6.5.2	
		Undefined	Undefined	Undefined	Undefined		E8	Option status error 2 (Error on interface between the engine board and the second tray)	Check the connection between the engine board and the second tray board. Turn on the power of the page printer again. If this error still occurs, replace the program ROM of the engine board (PX4 PCB), the junction board (PXF PCB), the second tray board (AOLT PCB).	
		Undefined	Undefined	Undefined	Undefined		E9	SRAM error	When replacing the main board, demount the EEPROM chip from the old main board and remount it on the new main board.	
		Undefined	Undefined	Undefined	Undefined		EA	PW-LSI error	Turn on the power of the page printer again. If this error still occurs, replace the power supply board (power-supply PCB).	

Category	LCD Status Message	LED						ATTENTION		Remedy
		K	C	M	Y	READY	Blink	Code (nn)	Trouble or Status	
Controller Error	ERROR nn	Undefined	Undefined	Undefined	Undefined	OFF	Blink	EC	Engine firmware lost control	Turn on the power of the page printer again. If this error still occurs, replace the program ROM of the engine board (PX4 PCB) or the engine board. When replacing the main board, demount the EEPROM chip from the old main board and remount it on the new main board.
		Undefined	Undefined	Undefined	Undefined	OFF	Blink	ED	EEPROM error (Timeout)	Turn on the power of the page printer again. If this error still occurs, replace the EEPROM of the engine board (PX4 PCB) or the engine board. When replacing the main board, demount the EEPROM chip from the old main board and remount it on the new main board.
		Undefined	Undefined	Undefined	Undefined	OFF	Blink	EE	EEPROM error (Not Exist)	Turn on the power of the page printer again. If this error still occurs, replace the EEPROM of the engine board (PX4 PCB) or the engine board. When replacing the main board, demount the EEPROM chip from the old main board and remount it on the new main board.
		Undefined	Undefined	Undefined	Undefined	OFF	Blink	EF	Engine ROM/RAM error	Turn on the power of the page printer again. If this error still occurs, replace the program ROM of the engine board (PX4 PCB) or the engine board. When replacing the main board, demount the EEPROM chip from the old main board and remount it on the new main board.
		Undefined	Undefined	Undefined	Undefined	OFF	Blink	F0	Monitor error (Double wait)	Turn on the power of the page printer again. If this error still occurs, replace the program ROM of the main board (PCR PCB) or the main board. When replacing the main board, demount the EEPROM chip from the old main board and remount it on the new main board.

Category	LCD Status Message	LED						ATTENTION	Trouble or Status	Remedy
		K	C	M	Y	READY	Code (nn)			
Controller Error	ERROR nn	Undefined	Undefined	Undefined	Undefined	OFF	Blink	Details of error	Remedy	
		Undefined	Undefined	Undefined	Undefined	OFF	Blink	Monitor error (Argument error)	Turn on the power of the page printer again. If this error still occurs, replace the program ROM of the main board (PCR PCB) or the main board. When replacing the main board, demount the EEPROM chip from the old main board and remount it on the new main board.	
								F4 Engine background error	Turn on the power of the page printer again. If this error still occurs, replace the program ROM of the engine board (PX4-PCB) or the engine board.	

Category	LCD Status Message	LED					ATTENTION	Trouble or Status	Remedy
		K	C	M	Y	READY			
Controller Error	ERROR CONTROLLER nn-aaaaaaaa	Undefined	Undefined	Undefined	Undefined	OFF	Blink	Indicates that the controller error has occurred.	Turn on the power of the page printer again. The error will be reset. Remedy If the error still occurs, replace the main board (PCR PCB). When replacing the main board, demount the EEPROM chip from the old main board and remount it on the new main board.
		Code (nn)	Details of error					Remedy	
		01	TLB (Translation Lookaside Buffer) correction exception						
		02	TLB exception (Load or Instruction Fetch)						
		03	TLB exception (Store)						
		04	Address error exception (Load or Instruction Fetch)						
		05	Address error exception (Store)						
		06	Bus error exception (Instruction Fetch)						
		07	Bus error exception (Data Load or Store)						
		08	System call exception						
		09	Break point exception						
		0A	Reserved instruction exception						
		0B	Co-processor disabled exception						
0C	Operation overflow exception								
0D	Trap exception								
0F	Floating-point exception								
B0	NMI: Hardware breakpoint								
B1	NMI: Write protect								
C0	Cache error								

4.2 Troubleshooting Flowchart



A-6

ERROR HOST I/F OKI HSP xx.

- Is the FU1 burnt?
 - Yes Replace the FU1.
- No Replace the R550 to R555.
- Can the machine recover to a normal state?
 - No Replace the MUPIS connector.
- Can the machine recover to a normal state?
 - No Replace the IC21 to IC26.
- Can the machine recover to a normal state?
 - No Replace the IIF
- Can the machine recover to a normal state?
 - No Replace the PCR board.

B-1

ERROR 10

- Is the ROM inserted into its specified position?
 - No Reinstall the ROM in place.
- Yes Replace the ROM.
- Can the machine recover to a normal state?
 - No Replace the PCR board.

B-2

ERROR 30.

- Replace R501 and / or R502.
- Can the machine recover to a normal state?
 - No Replace DRAM01 to DRAM04 and DRRAM11 to DRAM14.
- Can the machine recover to a normal state?
 - No Replace the IC5 to IC8, IC11 and IC12.
- Can the machine recover to a normal state?
 - No Replace the PCR board.

B-3

ERROR 40.

- Replace the E2ROM1.
- ▼
- Can the machine recover to a normal state?
 - No Replace the R566.
- ▼
- Can the machine recover to a normal state?
 - No Replace the SIMM socket of the PSIMMH.
- ▼
- Can the machine recover to a normal state?
- ▼
- No Replace the PCR board.

B-4

ERROR 50.

- Is the PSIMM properly inserted in its specified position?
 - No Reinstall the SIMM accurately.
- ▼
- Yes Replace the SIMM.
- ▼
- Can the machine recover to a normal state?
 - No Replace the IC1 to IC4, IC9 and IC10.
- ▼
- Can the machine recover to a normal state?
- ▼
- No Replace the PCR board.

B-5

ERROR 60.

- Is the capacity/ access speed of the two SIMMs the same?
 - No Install a SIMM for one of the pair with the same capacity/ access speed as the othe one.
- ▼
- Yes Are the SIMMs installed properly?
 - No Reinstall the SIMM(s) in place.
- ▼
- Yes Replace the SIMM(s).
- ▼
- Can the machine recover to a normal state?
 - No Replace the IC5 to IC8, IC11 and IC12.
- ▼
- Can the machine recover to a normal state?
- ▼
- No Replace the PCR board.

B-6

ERROR 80.

- Replace the IC9.
- ▼
- Can the machine recover to a normal state?
 - No Replace the IIF.
- ▼
- Can the machine recover to a normal state?
 - No Replace the PANEL connector.
- ▼
- Can the machine recover to a normal state?
 - No Replace the PCR board.
- ▼
- Can the machine recover to a normal state?
 - No Replace the cable Assy of the Operator Panel.
- ▼
- Can the machine recover to a normal state?
 - No Replace the Operator Panel Assy.

B-7

ERROR 82.

- Replace the IC8 and/ or IC20.
- ▼
- Can the machine recover to a normal state?
 - No Replace the IIF.
- ▼
- Can the machine recover to a normal state?
 - No Replace the PU connector.
- ▼
- Can the machine recover to a normal state?
 - No Replace the PCR board.
- ▼
- Can the machine recover to a normal state?
 - No Replace the PX4.

B-8

ERROR 92.

- Replace the PCR board.

B-9

ERROR F4.

- See the items of ERROR 60.

B-10

ERROR COTROLLER xx.

- Replace the PCR board.

C-1

The Operator Panel displays nothing with the upper line blackened.

- Replace the IRST.
- ▼
- Can the machine recover to a normal state?
 - No Replace the PANEL connector.
- ▼
- Can the machine recover to a normal state?
 - No Replace the cable Assy of the Operator Panel.
- ▼
- Can the machine recover to a normal state?
 - No Replace the Operator Panel Assy.
- ▼
- Can the machine recover to a normal state?
 - No Replace the PCR board.
- ▼
- Can the machine recover to a normal state?
 - No Replace the PX4 board.
- ▼
- Can the machine recover to a normal state?
 - No Replace the power supply.

C-2

The Operator Panel displays an abnormal message.

- See the items of ERROR 80.

C-3

The machine refuses the operations to switching on the Operator Panel.

- Replace the R587.
- ▼
- Can the machine recover to a normal state?
- ▼
- See items of ERROR 80.

D-1

No receiving trough the centronics I/F.

- Replace the R595, R664, R594, R597, R663, R596, R648 and R55.

▼
• Can the machine recover to a normal state?

- No Replace the C3 and/ or C52.

▼
• Can the machine recover to a normal state?

- No Replace the IC16 and IC17.

▼
• Can the machine recover to a normal state?

- No Replace the CENT connector.

▼
• Can the machine recover to a normal state?

- No Replace the IIF.

▼
• Can the machine recover to a normal state?

- No Replace the PCR board.

5. CIRCUIT DIAGRAM

- Figure 5-1(1/15~15/15) Main Controller PCB (PCR-PCB, Rev.2, 3)
- Figure 5-2(1/3~3/3) Operation Panel PCB (PCO-PCB, Rev.2)
- Figure 5-3(1/1) PostScript SIMM PCB (Used Flash ROM) (FSL-PCB, Rev.1)
- Figure 5-4(1/1) PostScript SIMM PCB (Used OTP or Mask ROM) (MSM-PCB, Rev.1)
- Figure 5-5(1/9~9/9) Engine Controller-PCB (PX4-PCB, Rev.2)
- Figure 5-6(1/2~2/2) I/F-PCB (PXF-PCB, Rev.4)
- Figure 5-7(1/1) Head I/F-PCB (PD6-PCB, Rev.3)
- Figure 5-8(1/2~2/2) Front Sensor-PCB (PXM-PCB, Rev.3)
- Figure 5-9(1/2~2/2) Rear Sensor-PCB (PXL-PCB, Rev.3)
- Figure 5-10(1/1) Cassette Switch-PCB (PXC-PCB, Rev.3)

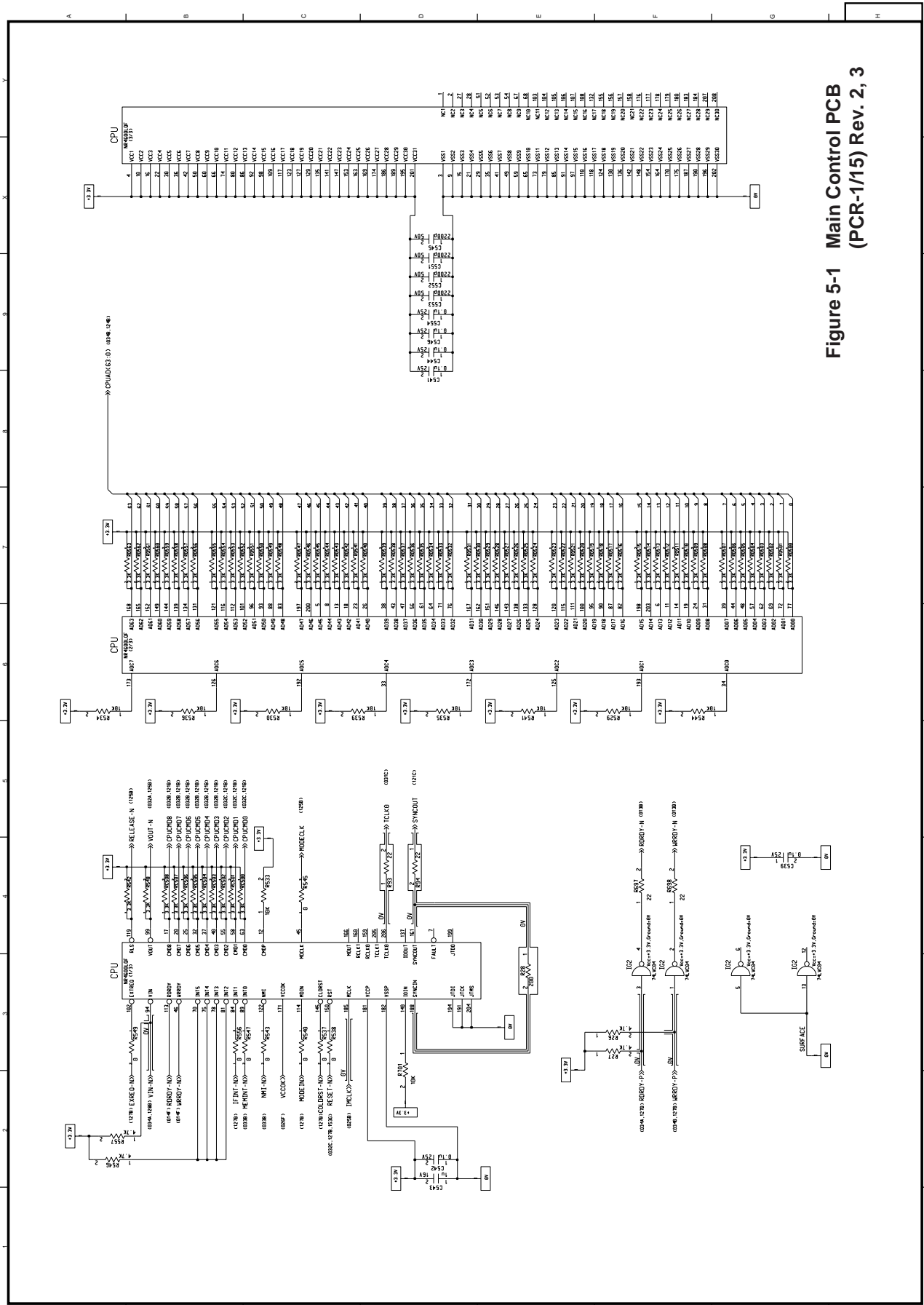


Figure 5-1 Main Control PCB (PCR-1/15) Rev. 2, 3

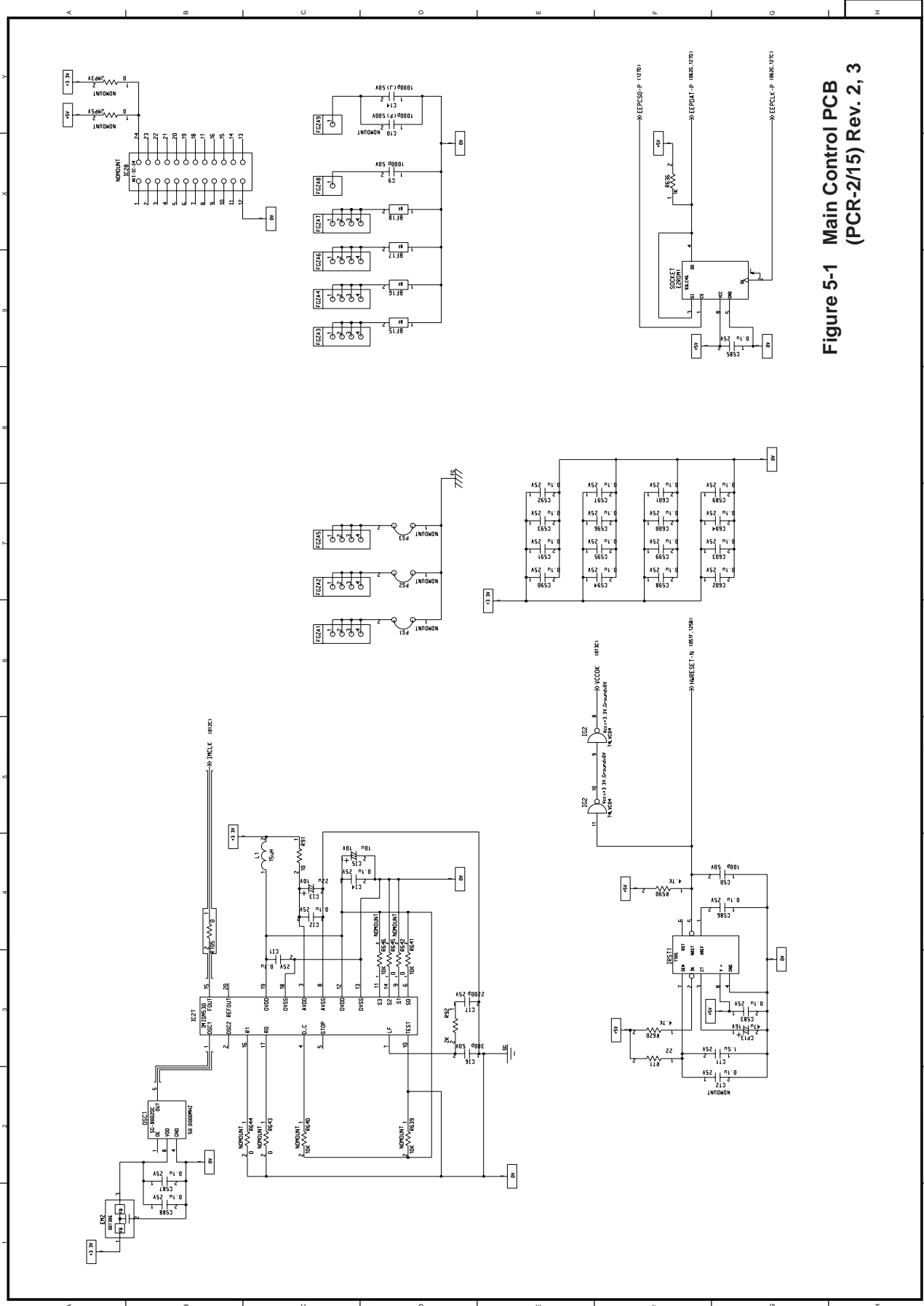


Figure 5-1 Main Control PCB (PCR-2/15) Rev. 2, 3

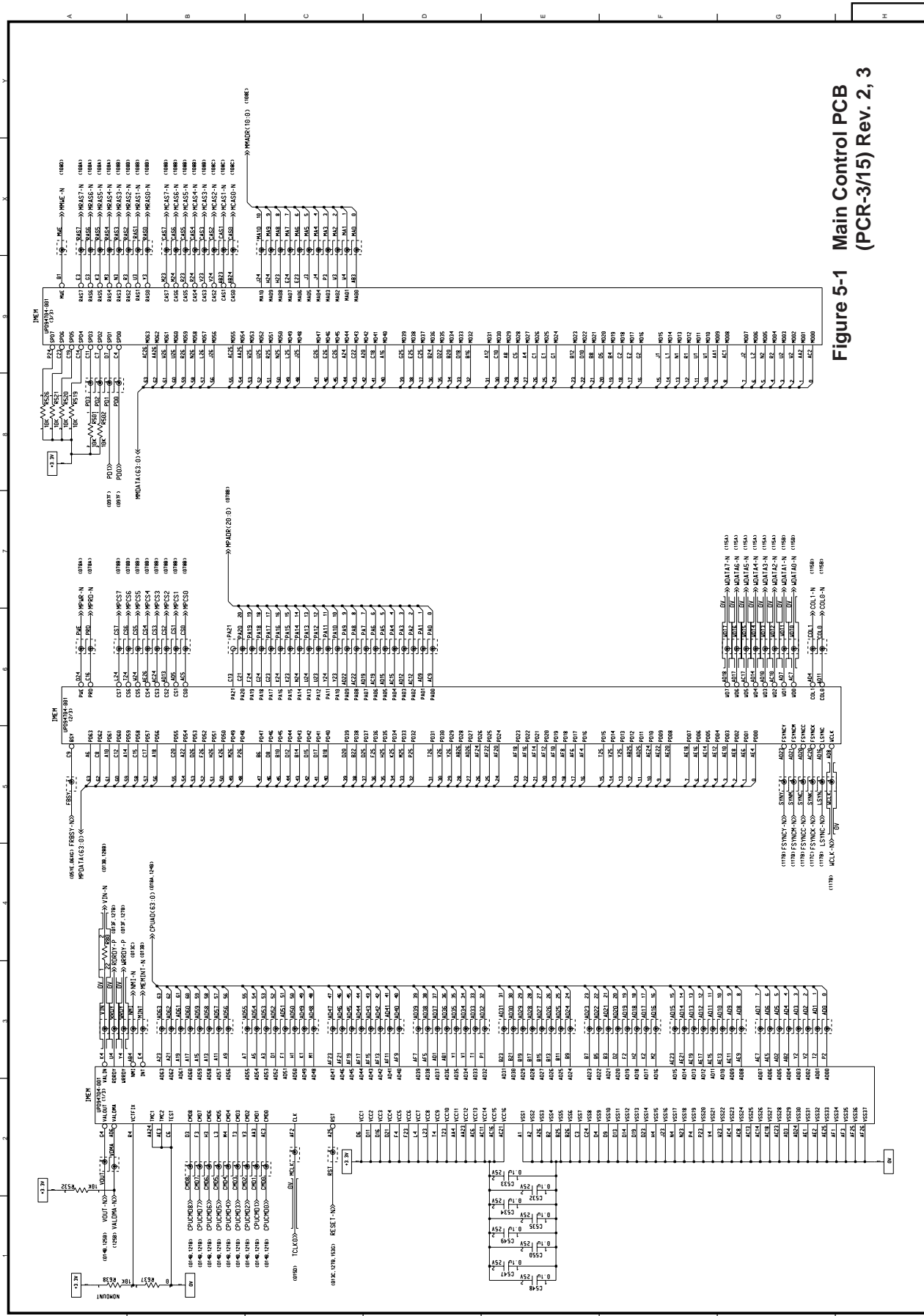
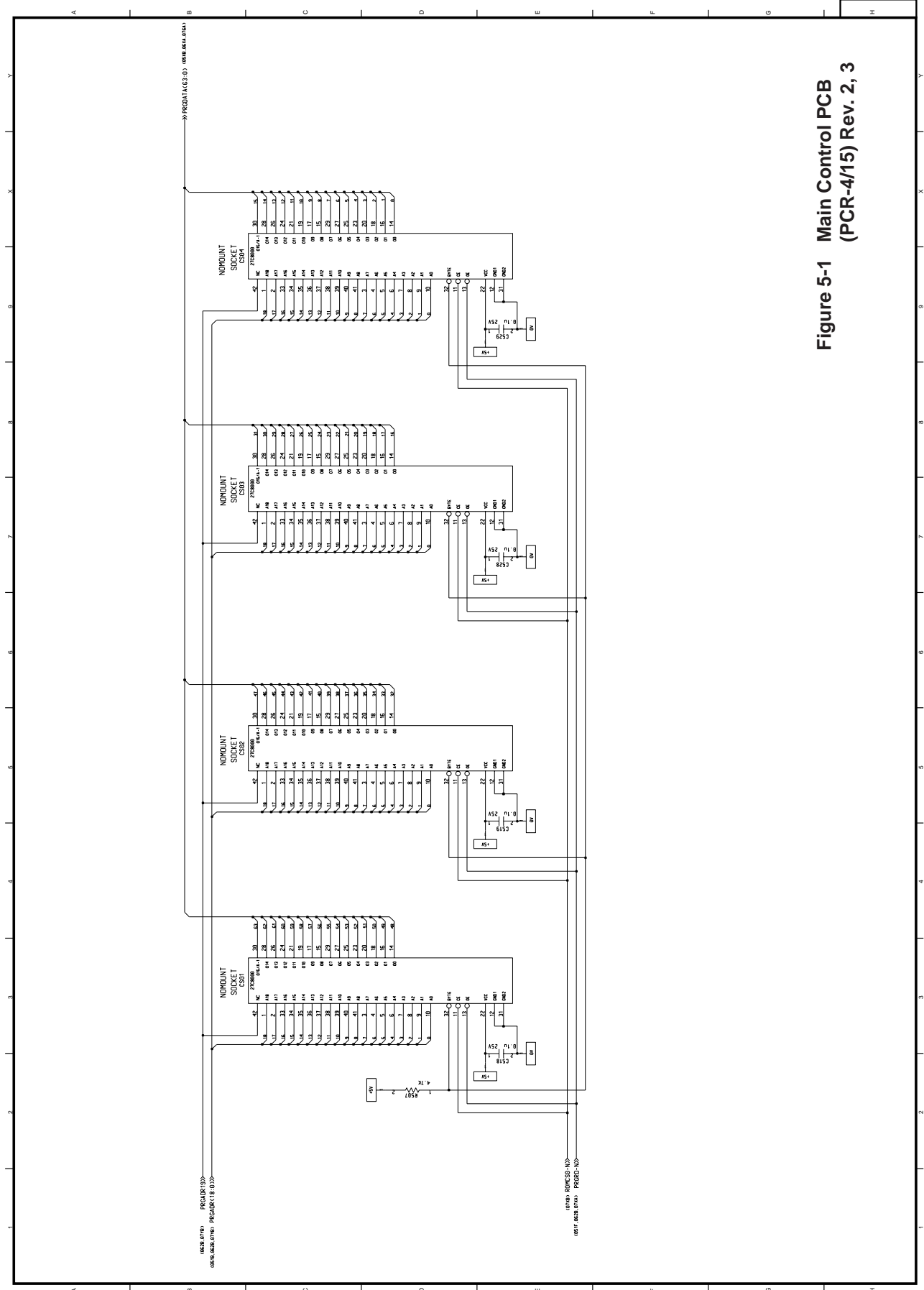
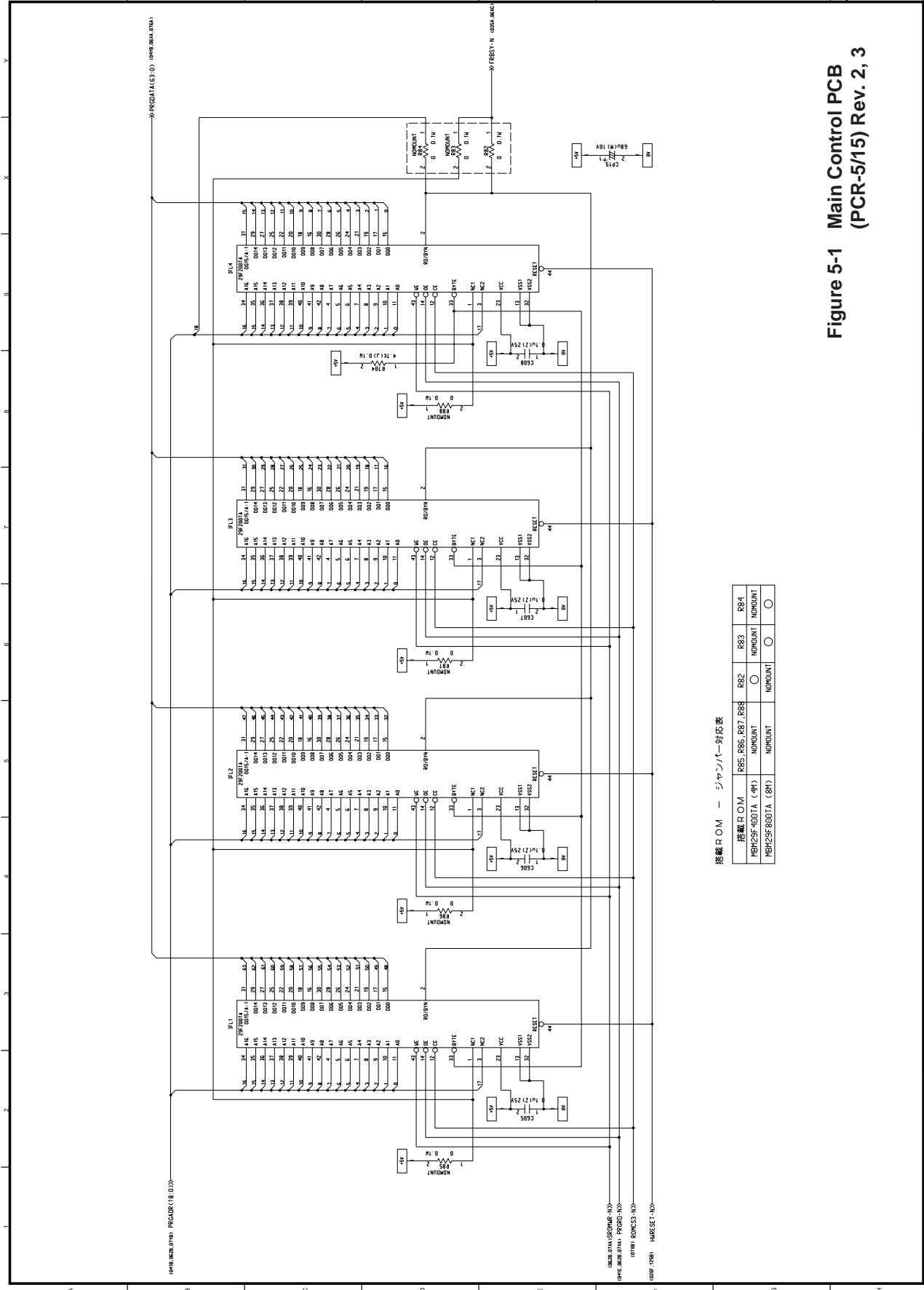


Figure 5-1 Main Control PCB (PCR-3/15) Rev. 2, 3



**Figure 5-1 Main Control PCB
(PCR-4/15) Rev. 2, 3**



搭載ROM - ジャンパー対応表

搭載ROM	R85, R86, R87, R88	R82	R83	R84
HEM2SF400TA (4M)	NO MOUNT	○	NO MOUNT	NO MOUNT
HEM2SF800TA (8M)	NO MOUNT	NO MOUNT	NO MOUNT	○

Figure 5-1 Main Control PCB (PCR-5/15) Rev. 2, 3

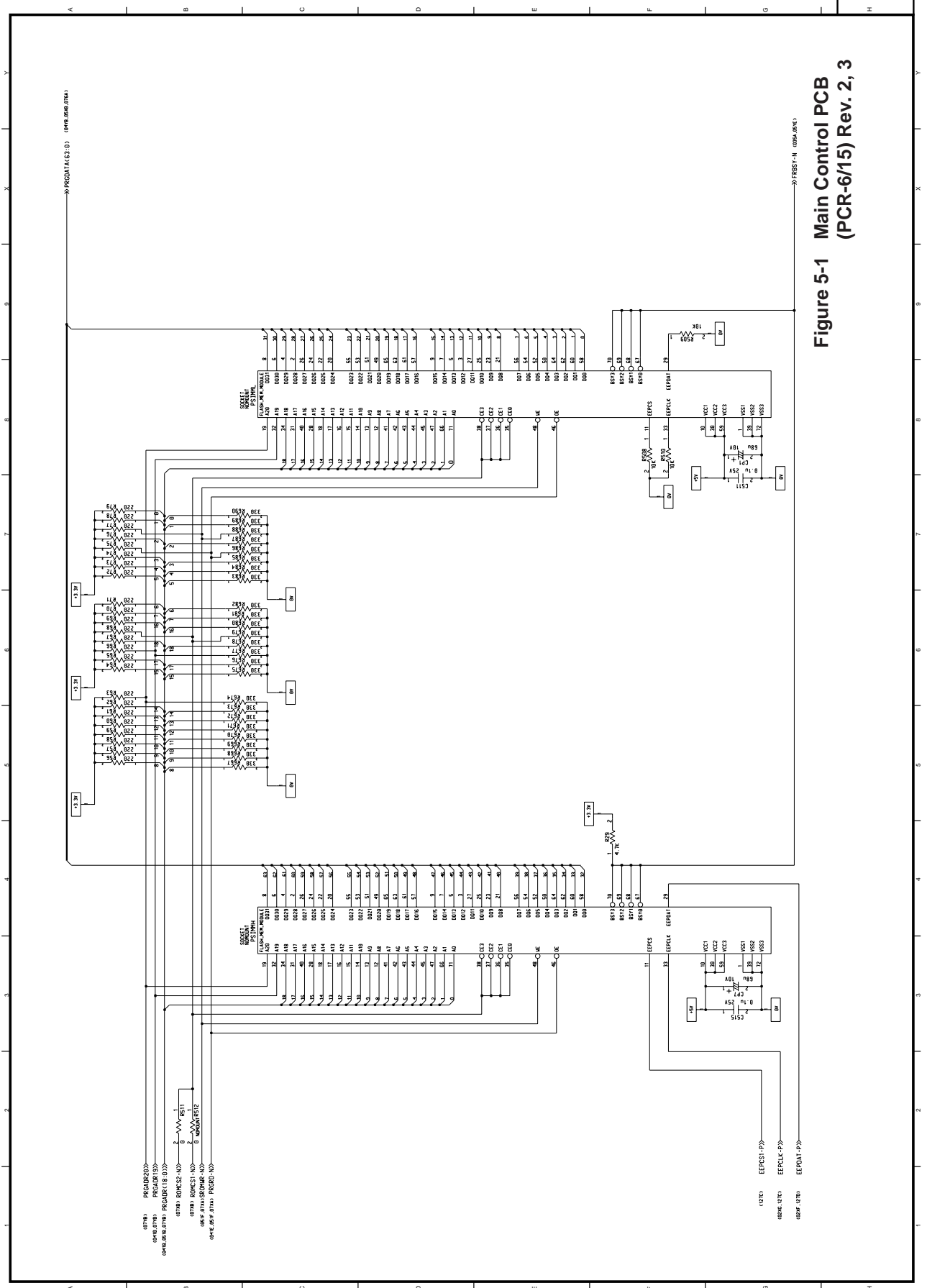


Figure 5-1 Main Control PCB (PCR-6/15) Rev. 2, 3

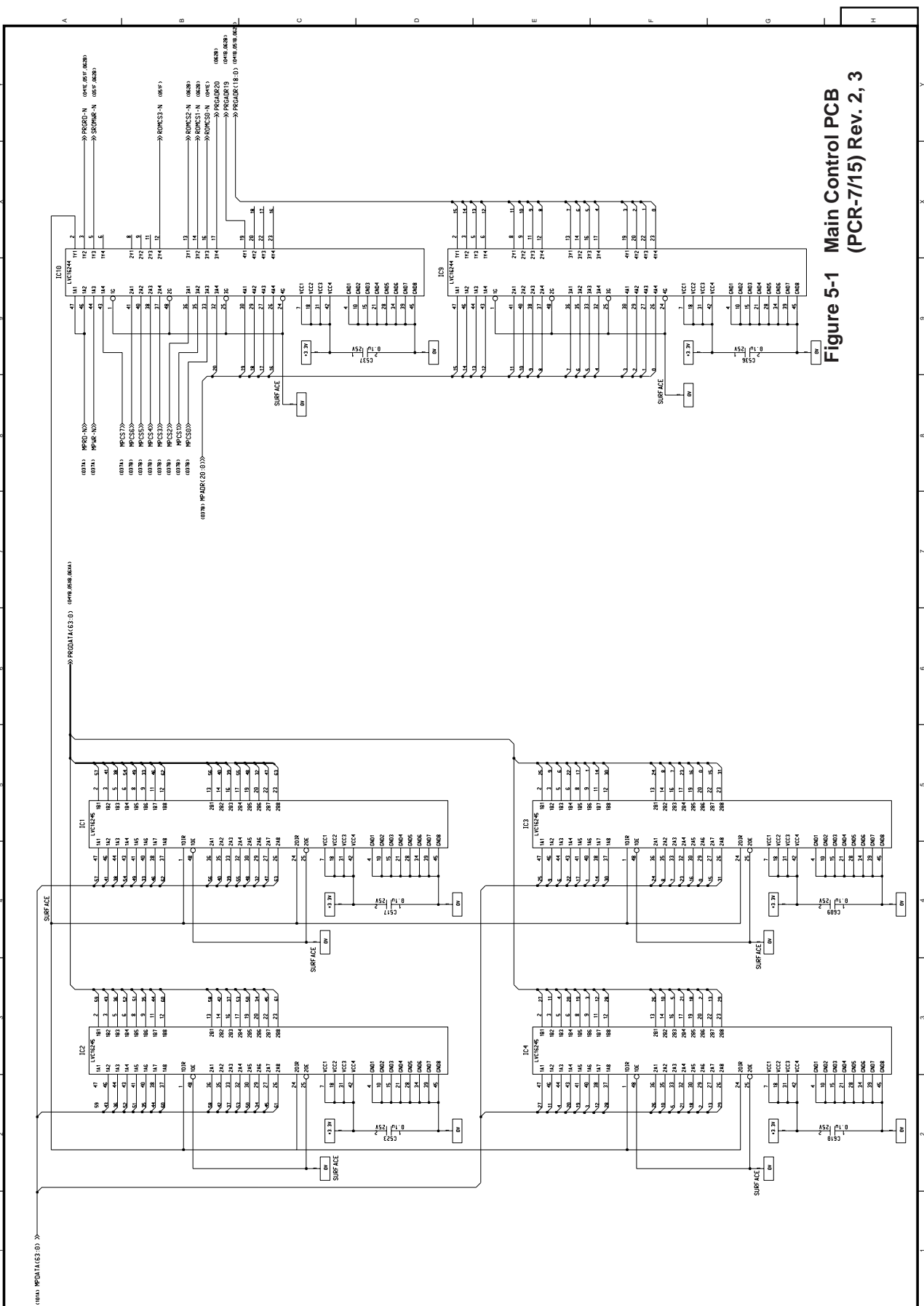
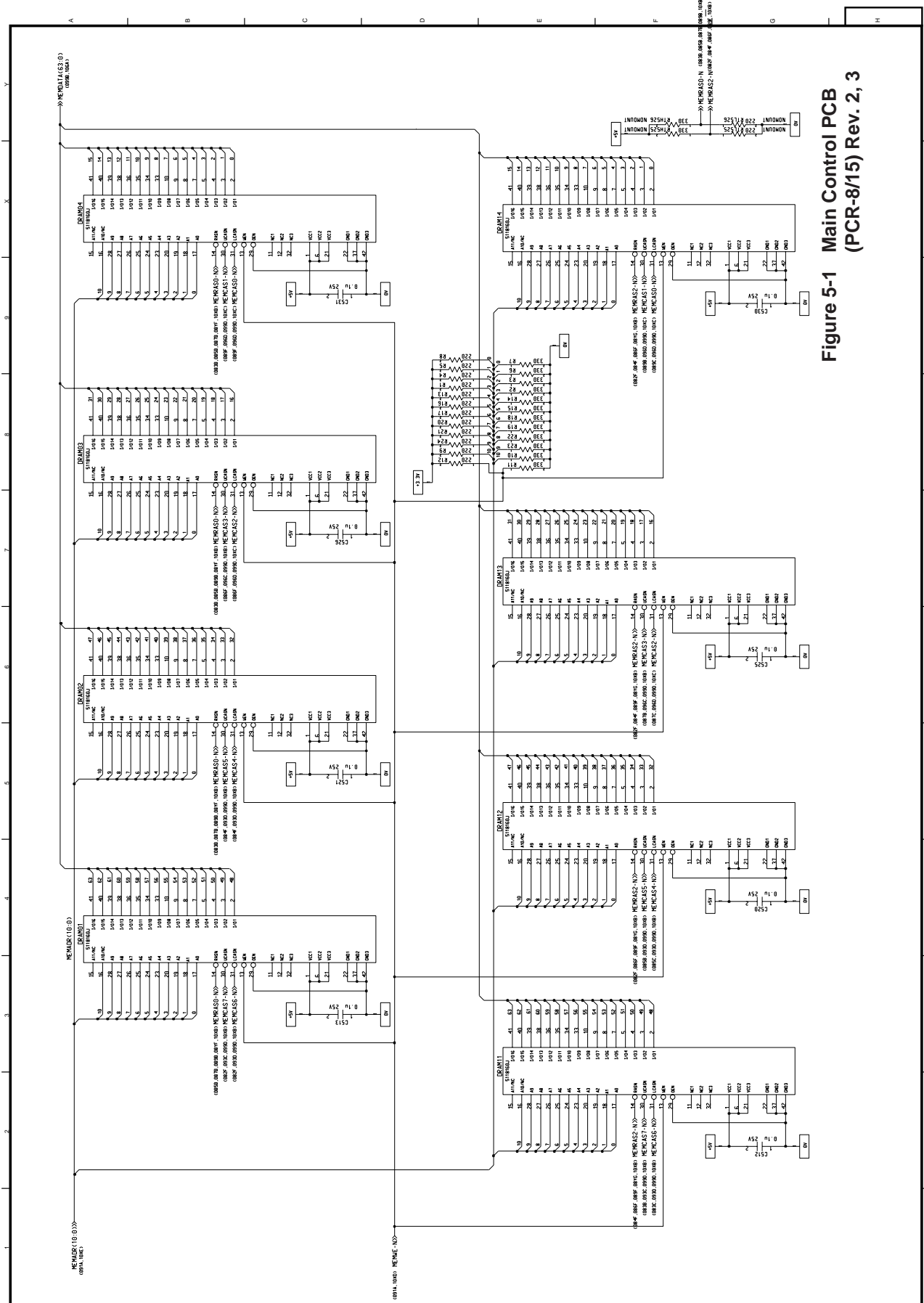


Figure 5-1 Main Control PCB (PCR-7/15) Rev. 2, 3



**Figure 5-1 Main Control PCB
(PCR-8/15) Rev. 2, 3**

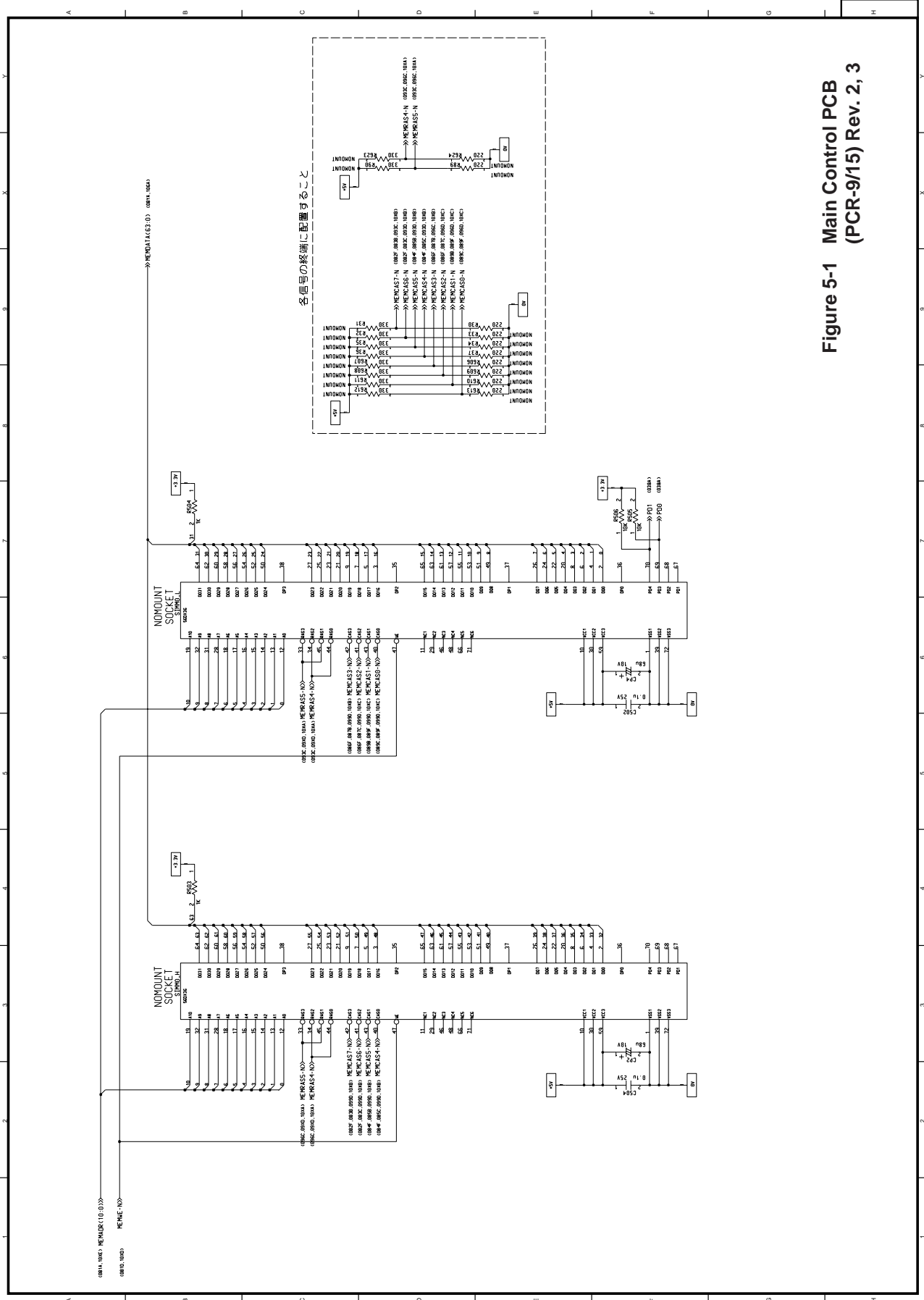


Figure 5-1 Main Control PCB (PCR-9/15) Rev. 2, 3

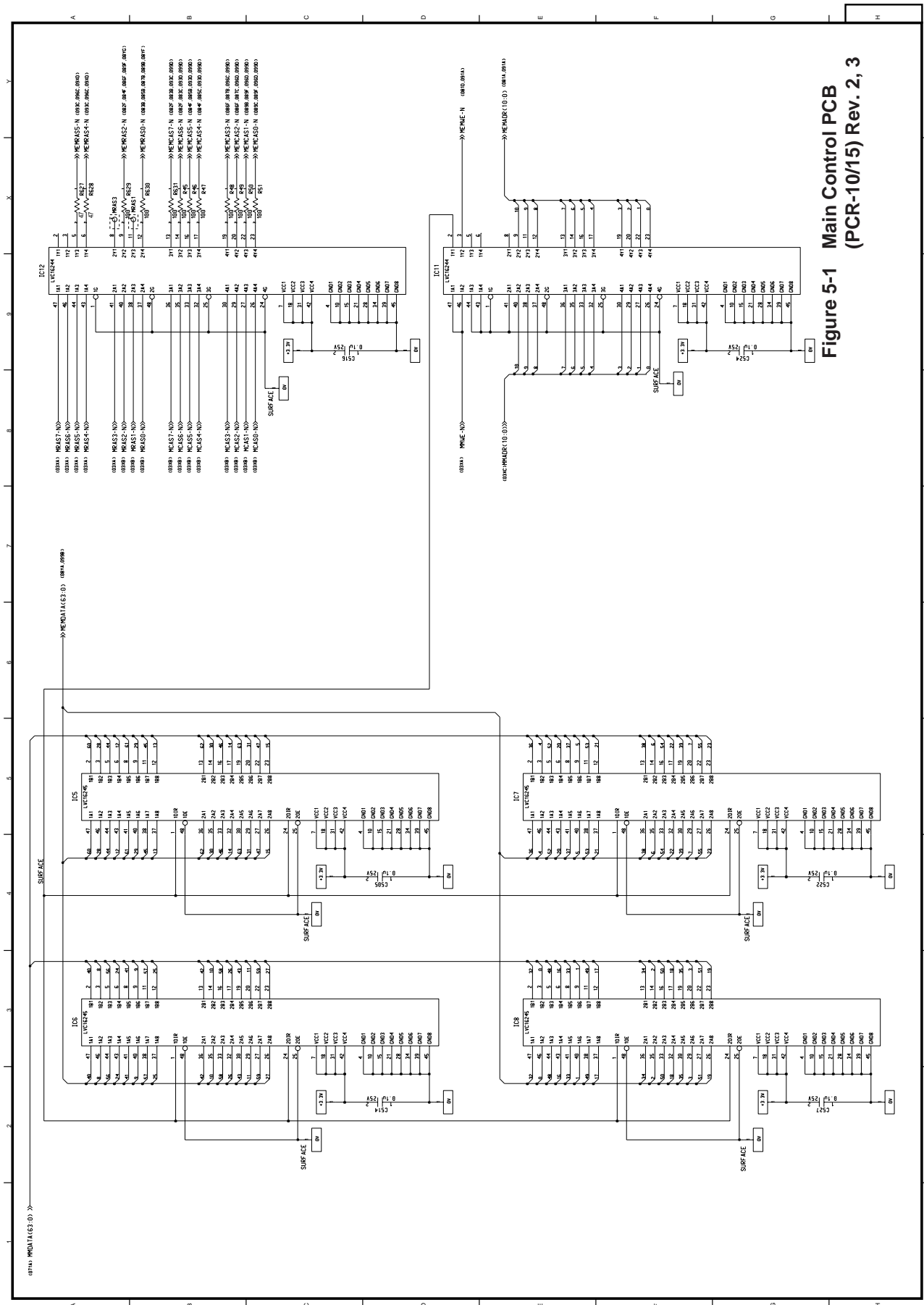
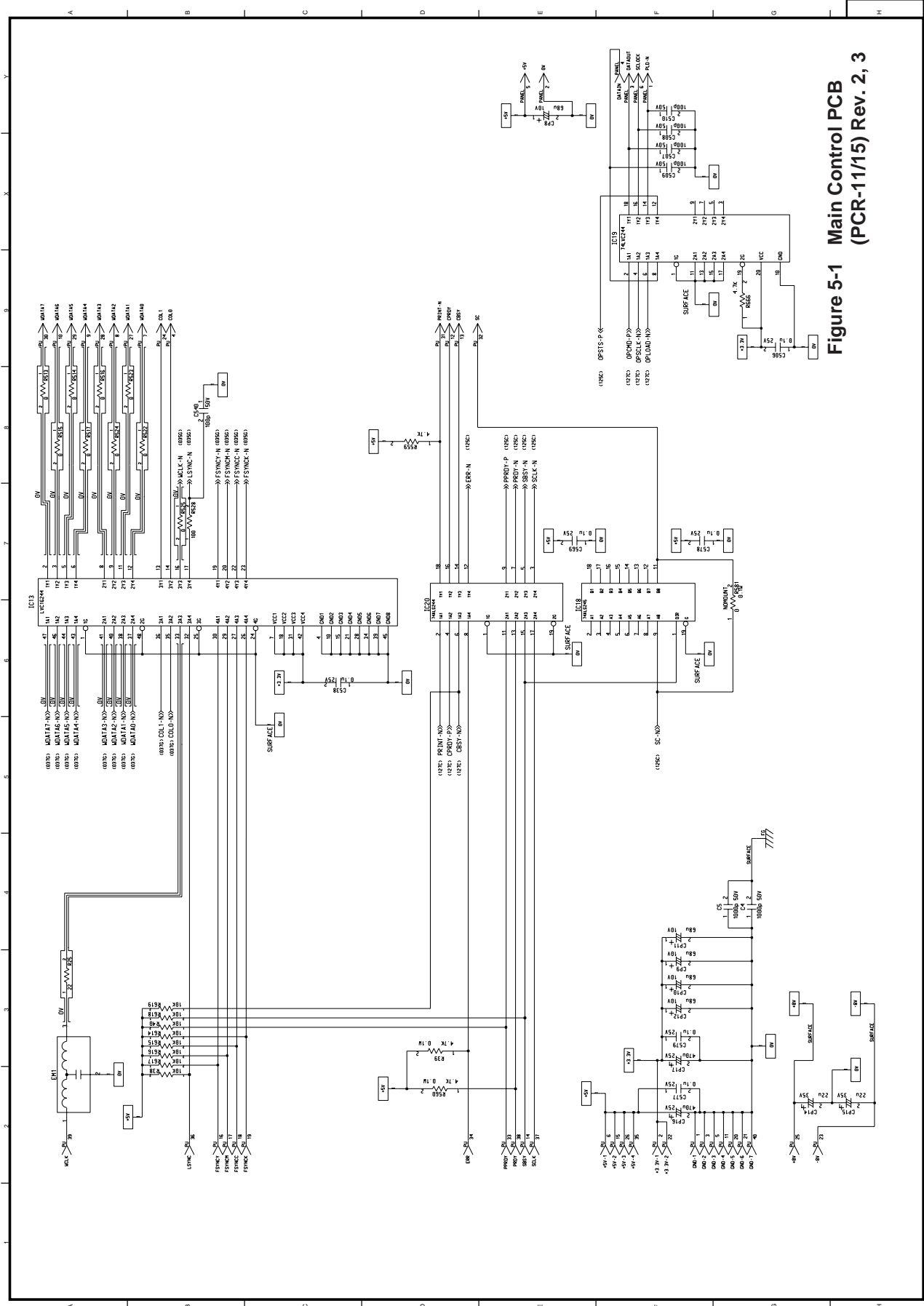


Figure 5-1 Main Control PCB (PCR-10/15) Rev. 2, 3



**Figure 5-1 Main Control PCB
(PCR-11/15) Rev. 2, 3**

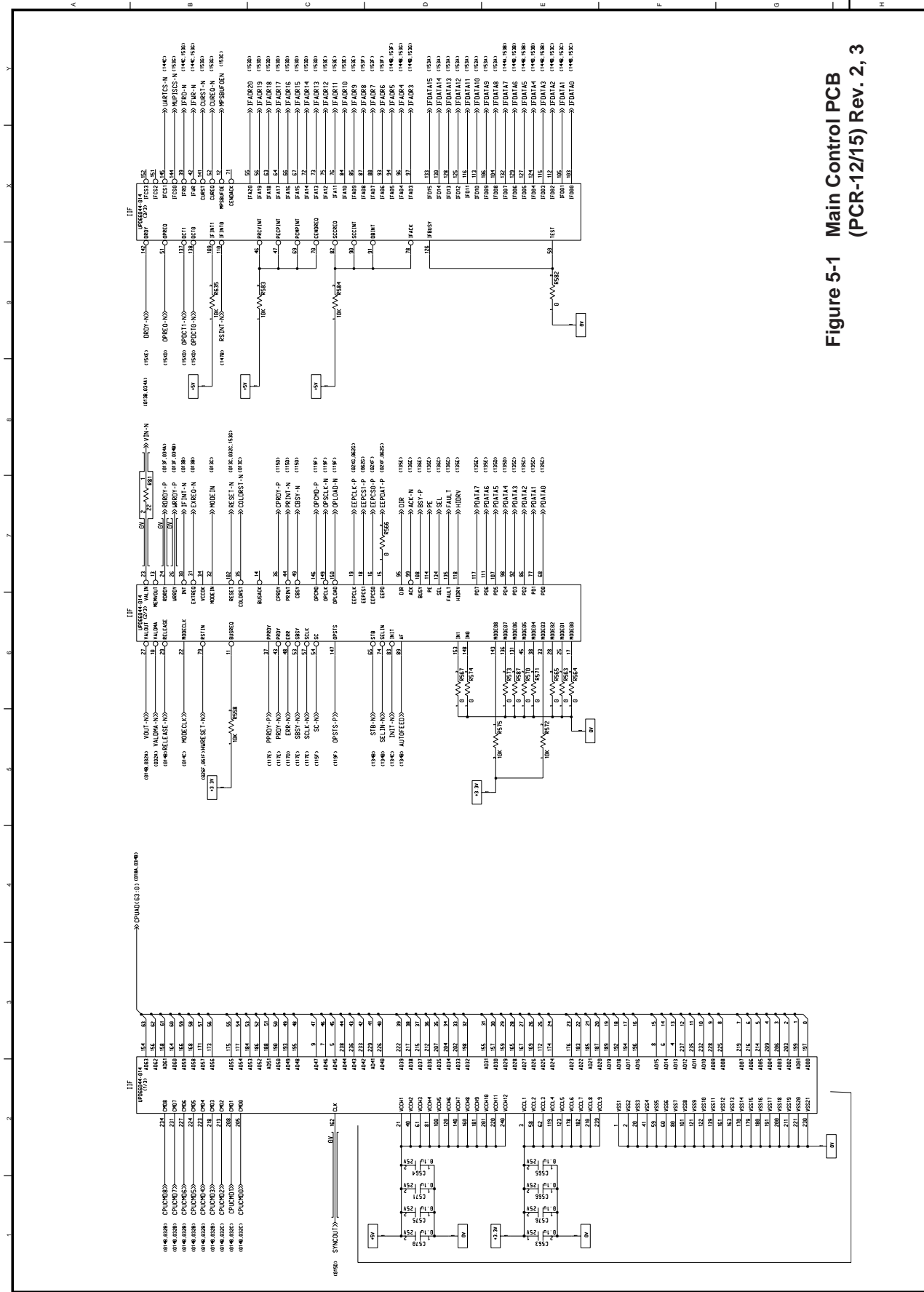


Figure 5-1 Main Control PCB (PCR-12/15) Rev. 2, 3

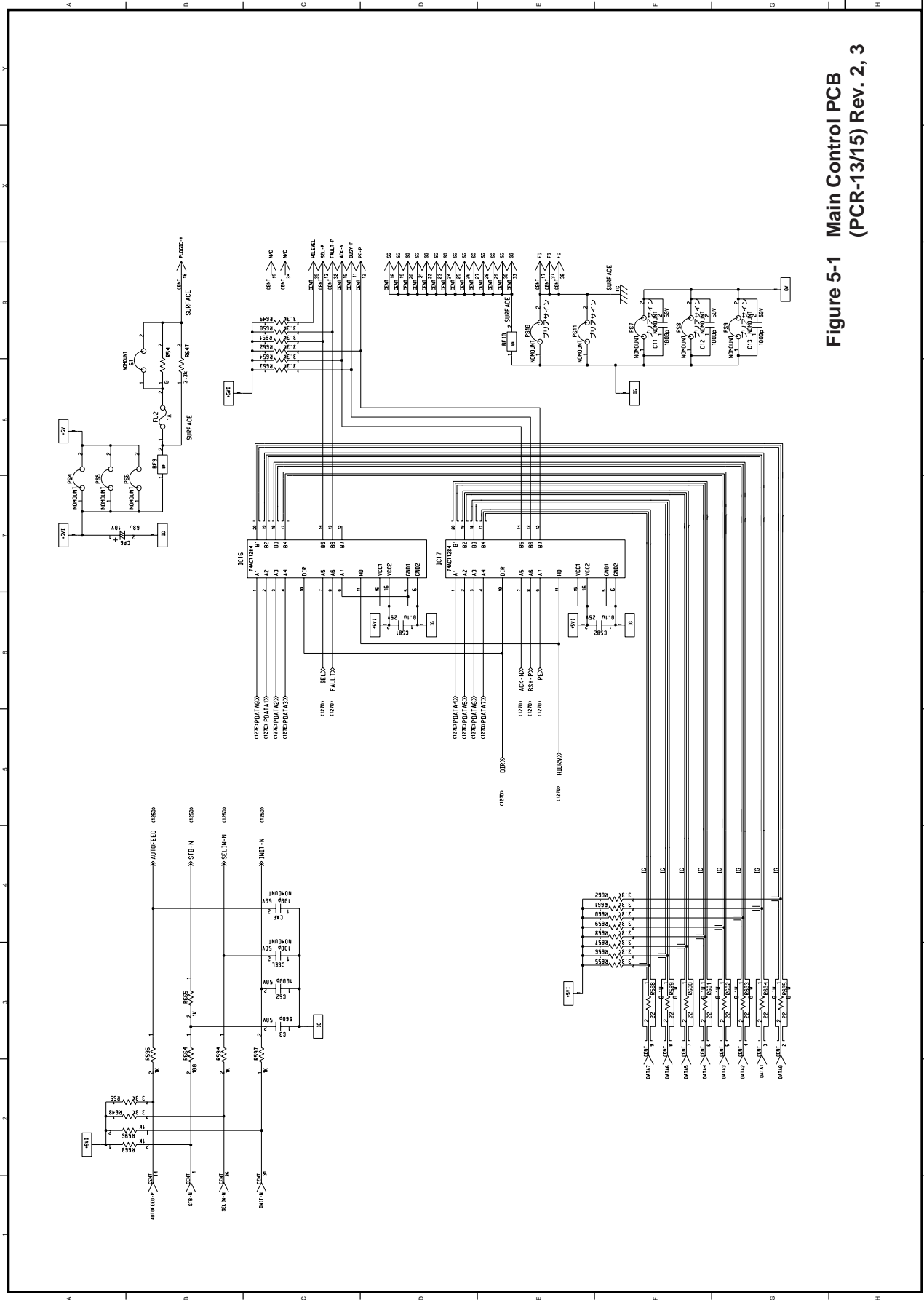


Figure 5-1 Main Control PCB (PCR-13/15) Rev. 2, 3

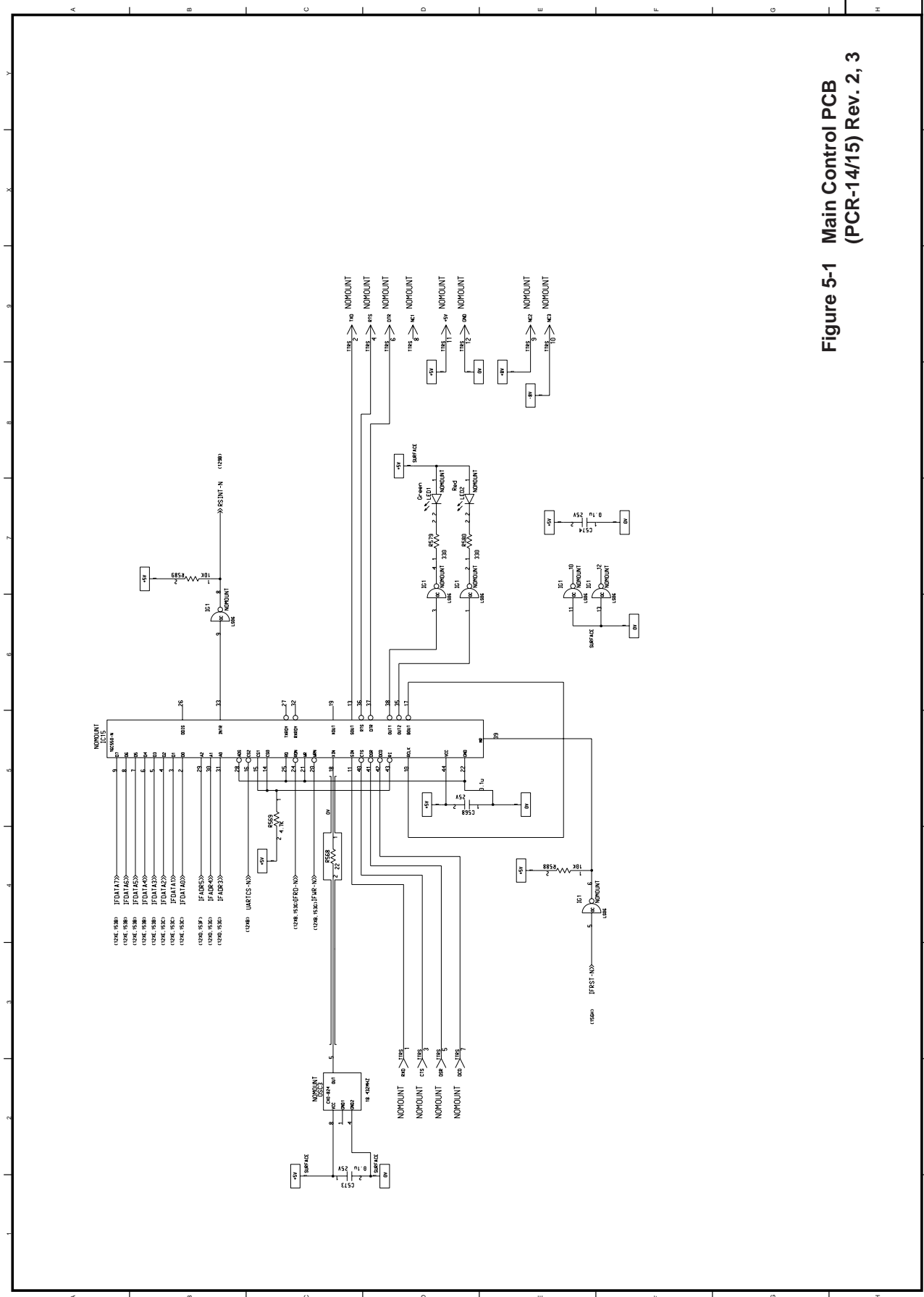


Figure 5-1 Main Control PCB
(PCR-14/15) Rev. 2, 3

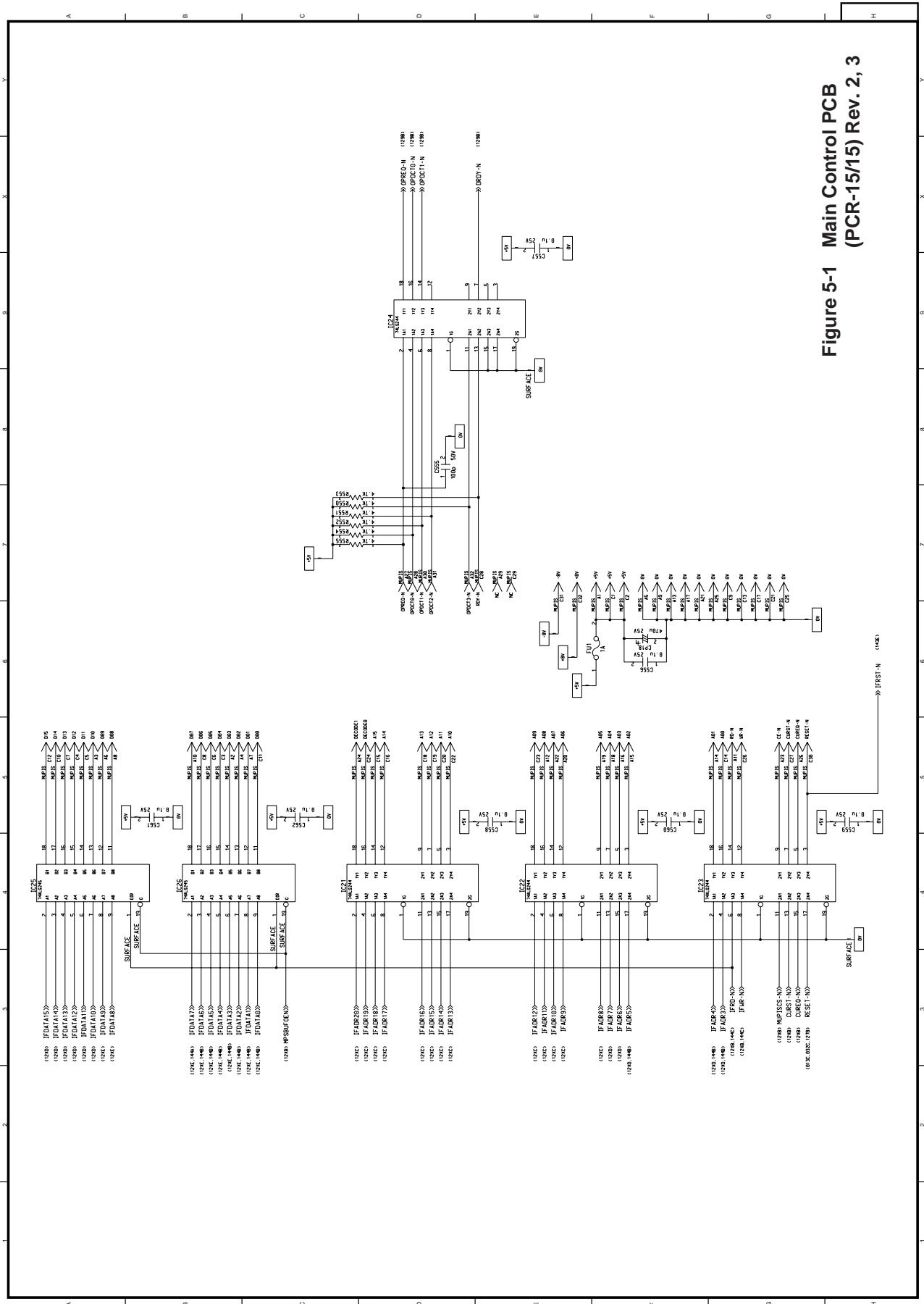


Figure 5-1 Main Control PCB (PCR-15/15) Rev. 2, 3

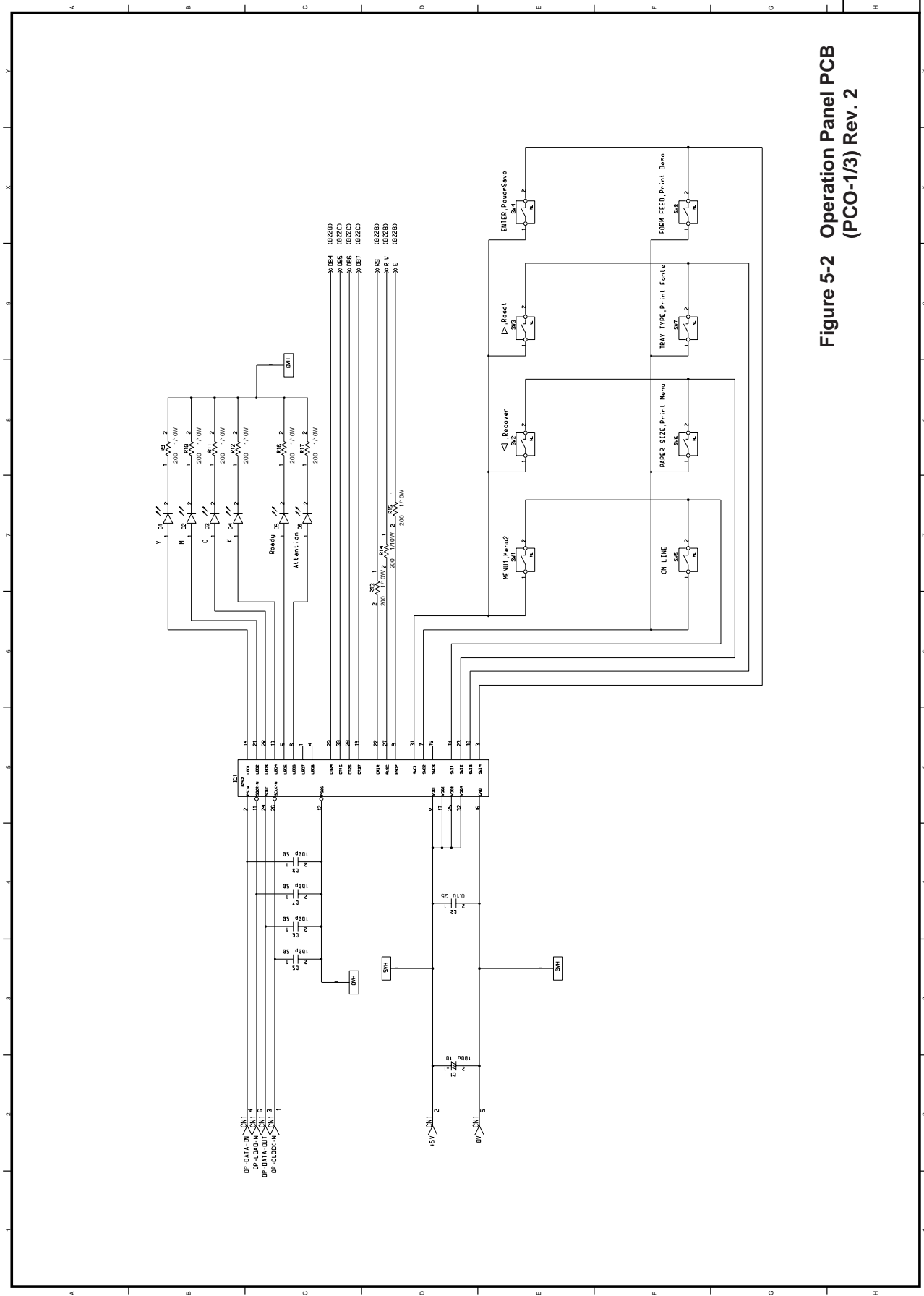


Figure 5-2 Operation Panel PCB
(PCO-1/3) Rev. 2

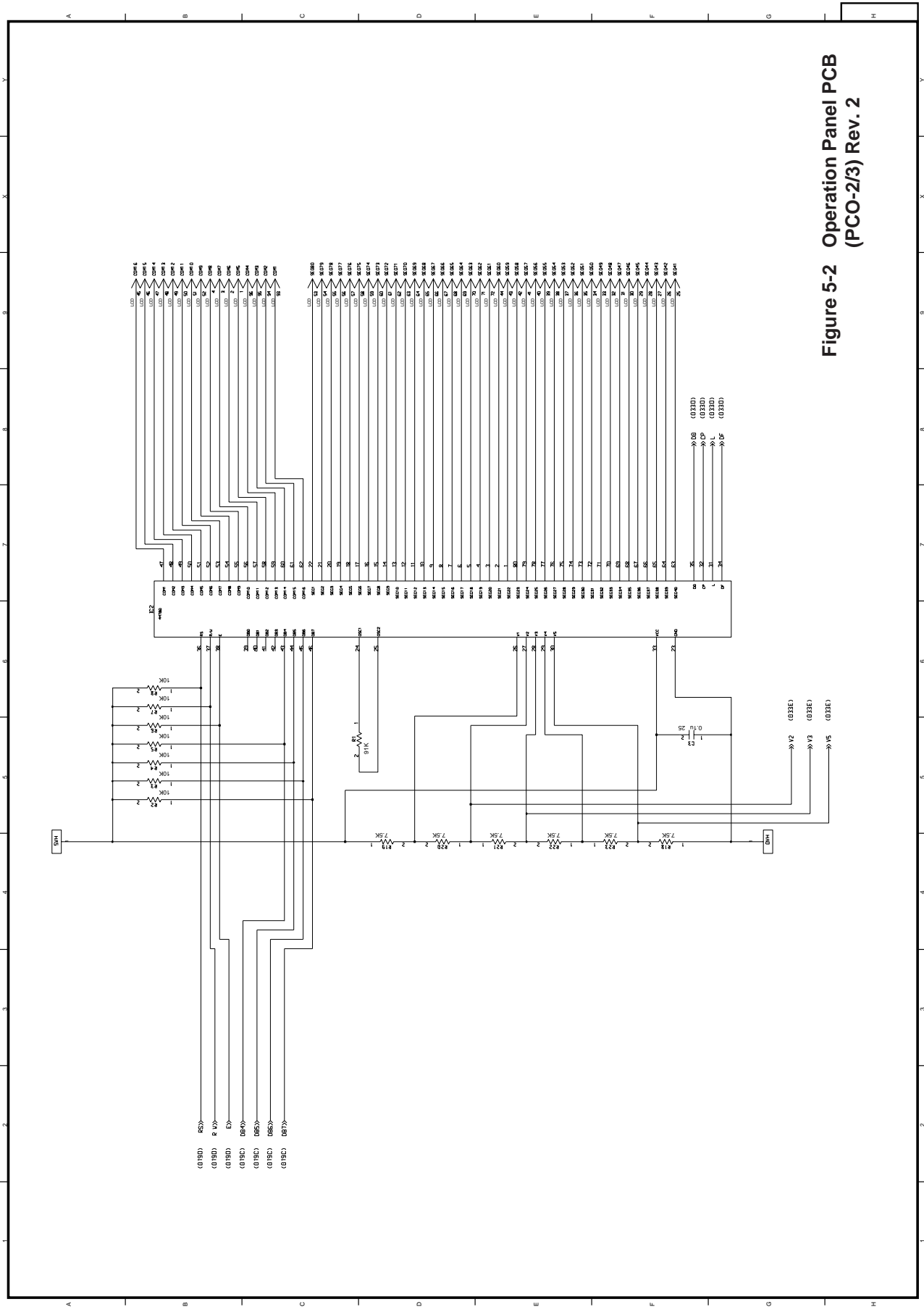


Figure 5-2 Operation Panel PCB (PCO-2/3) Rev. 2

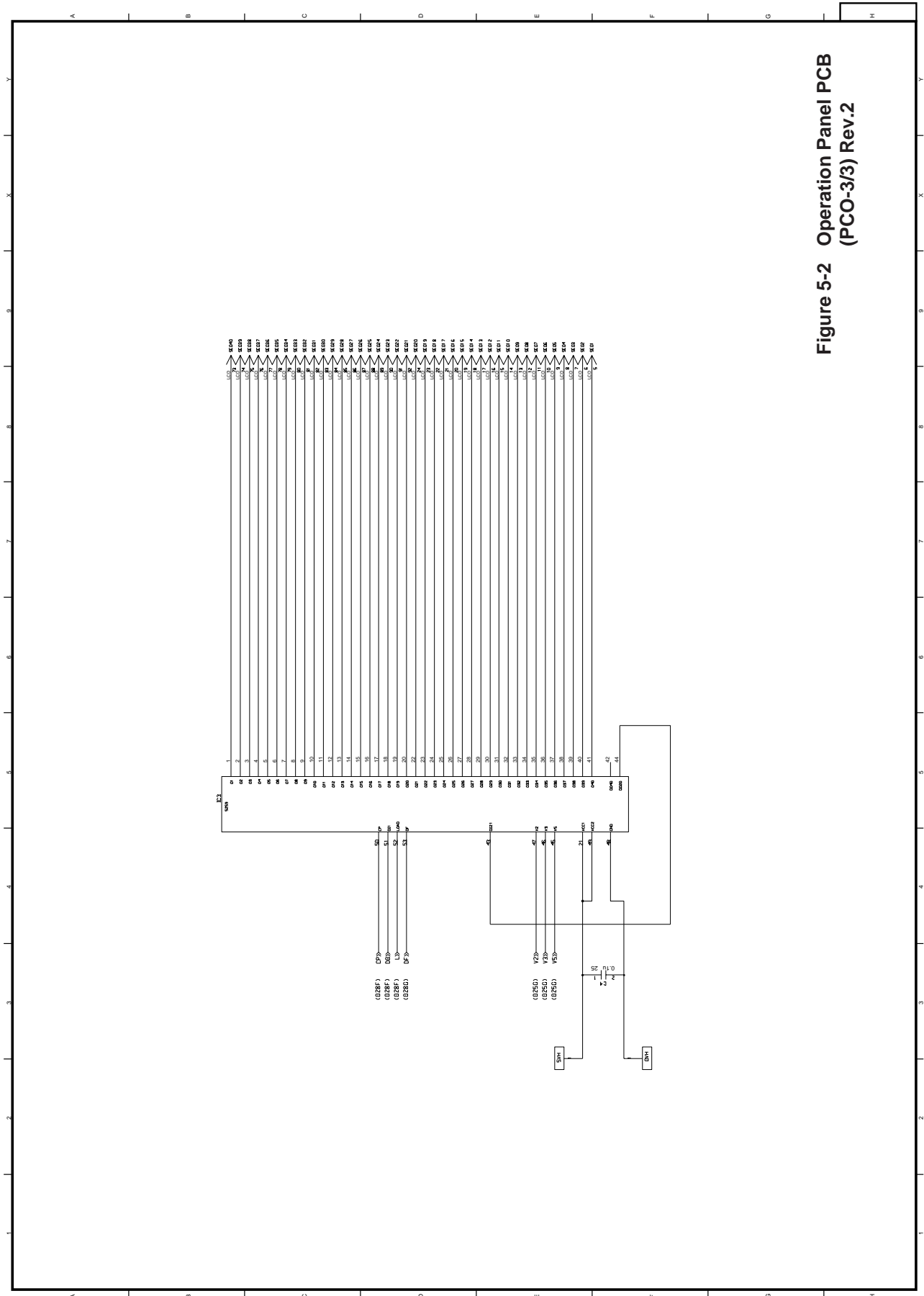


Figure 5-2 Operation Panel PCB
(PCO-3/3) Rev.2

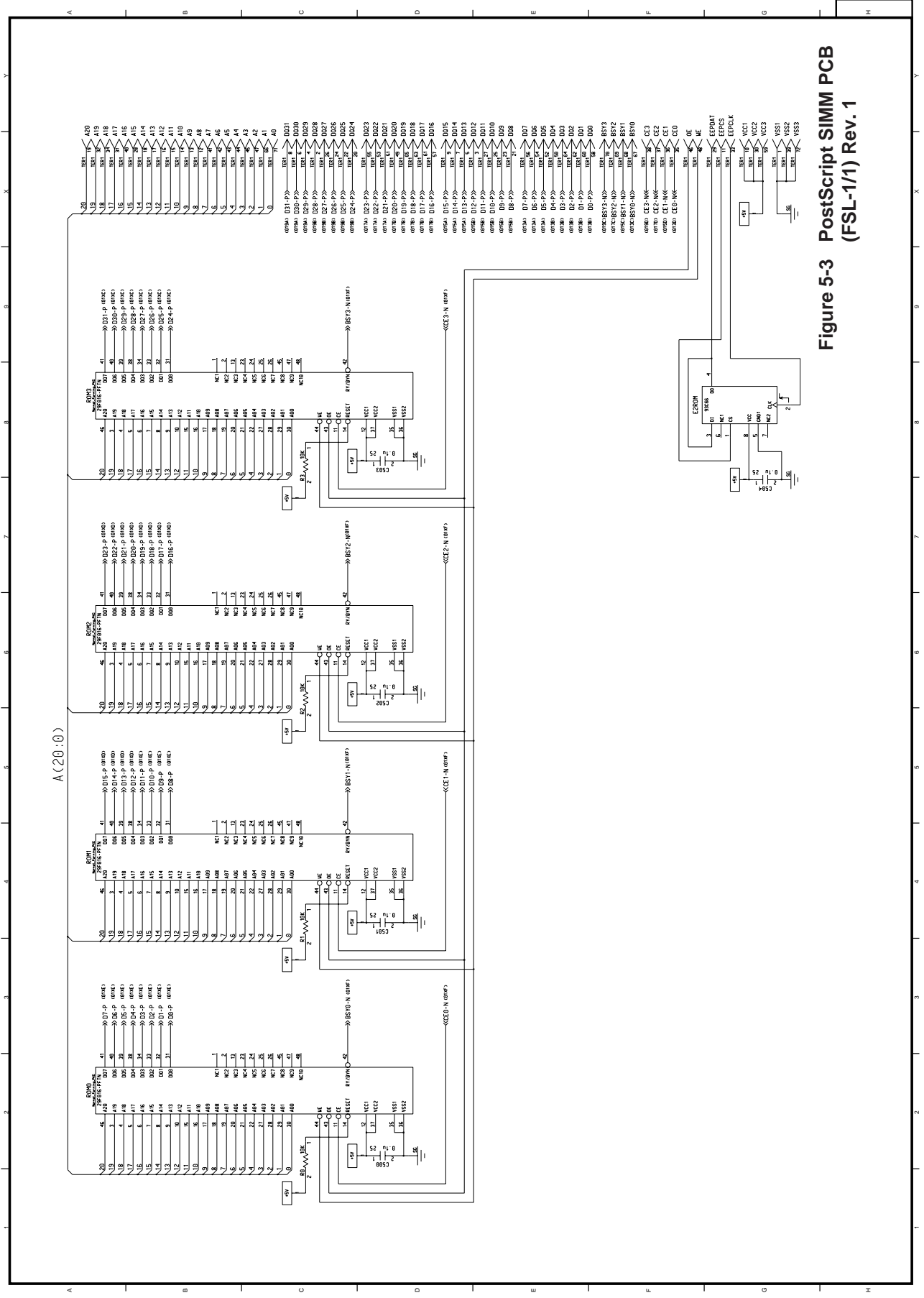


Figure 5-3 PostScript SIMM PCB (FSL-1/1) Rev. 1

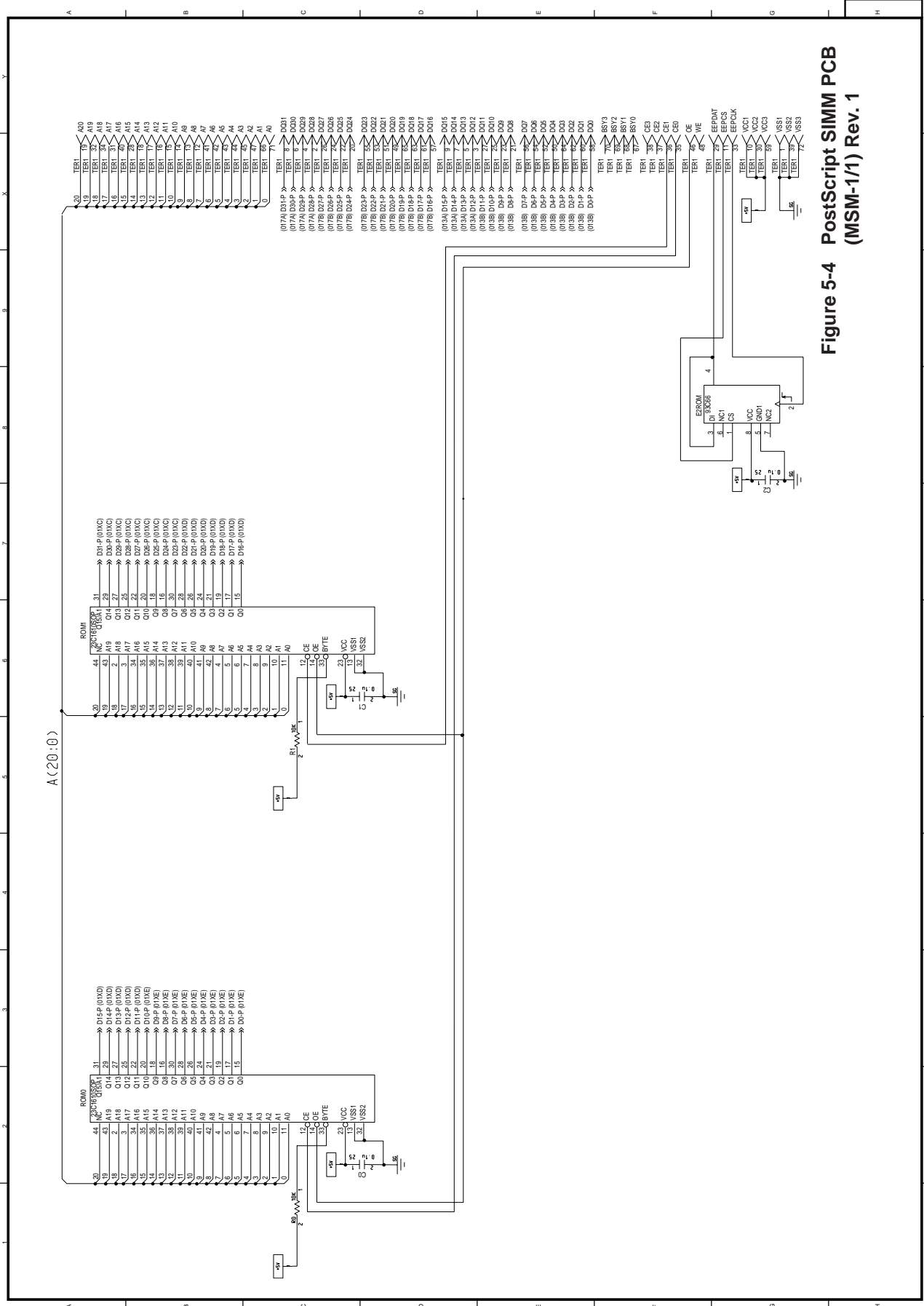


Figure 5-4 PostScript SIMM PCB (MSM-1/1) Rev. 1

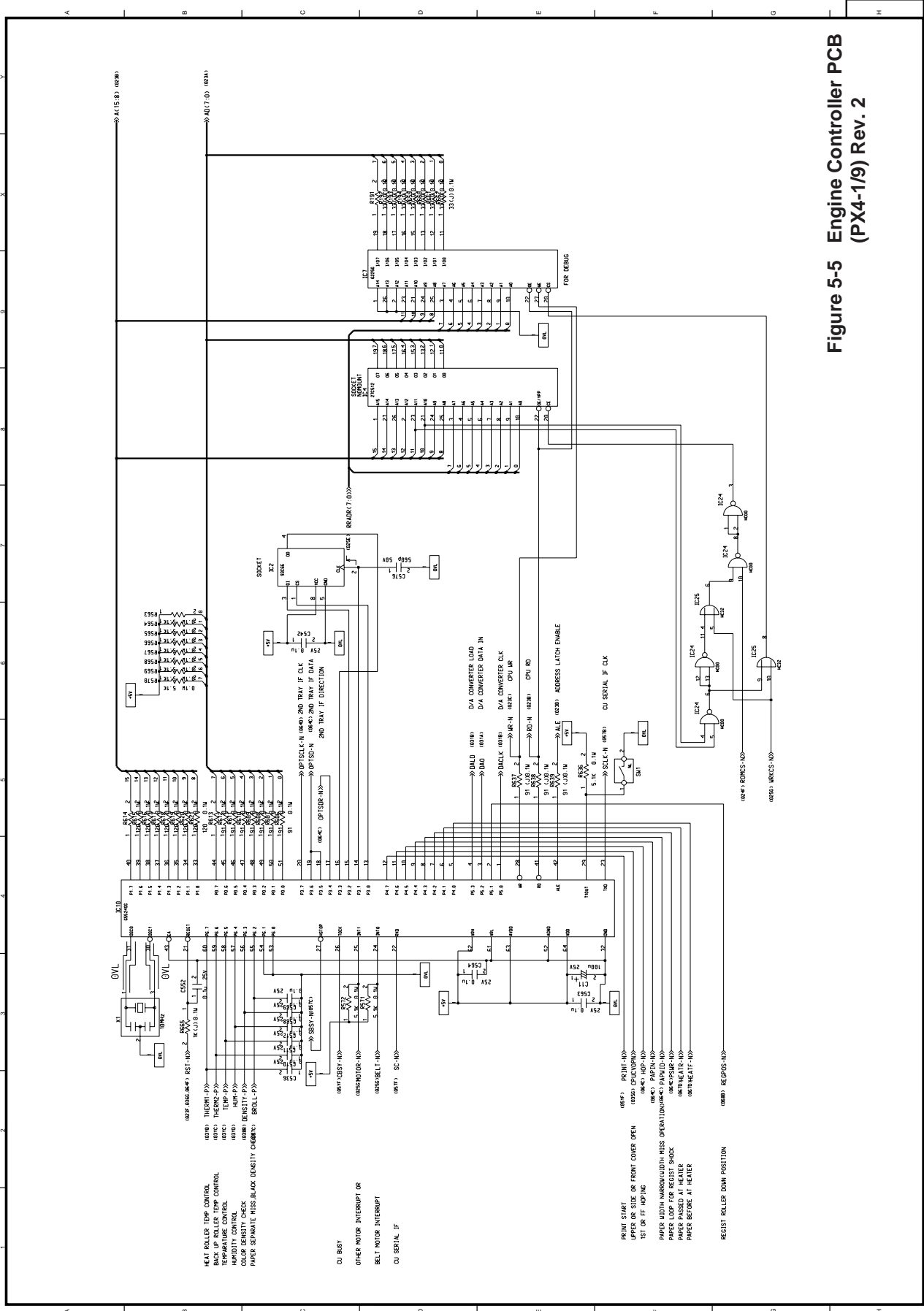


Figure 5-5 Engine Controller PCB (PX4-1/9) Rev. 2

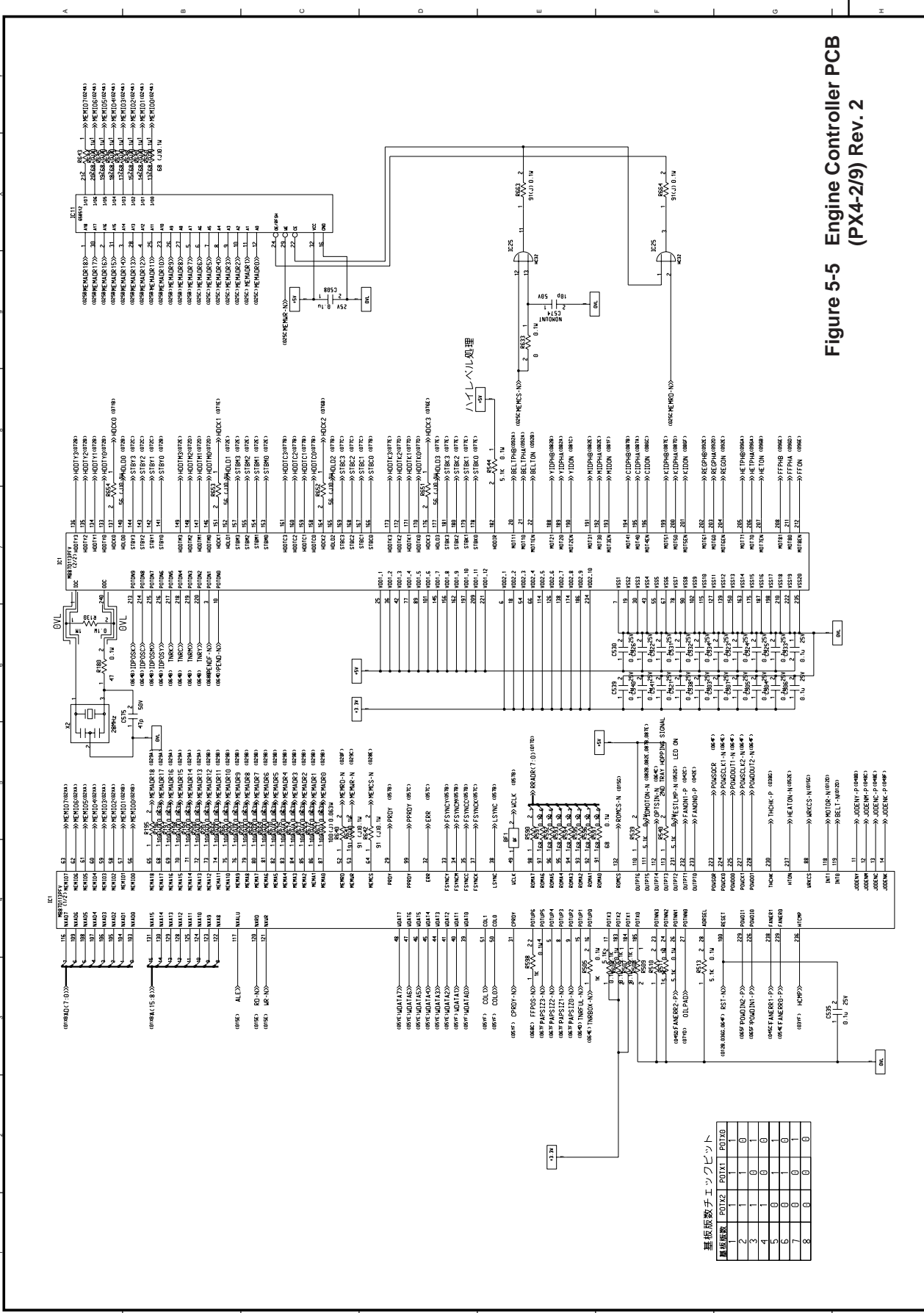


Figure 5-5 Engine Controller PCB (PX4-2/9) Rev. 2

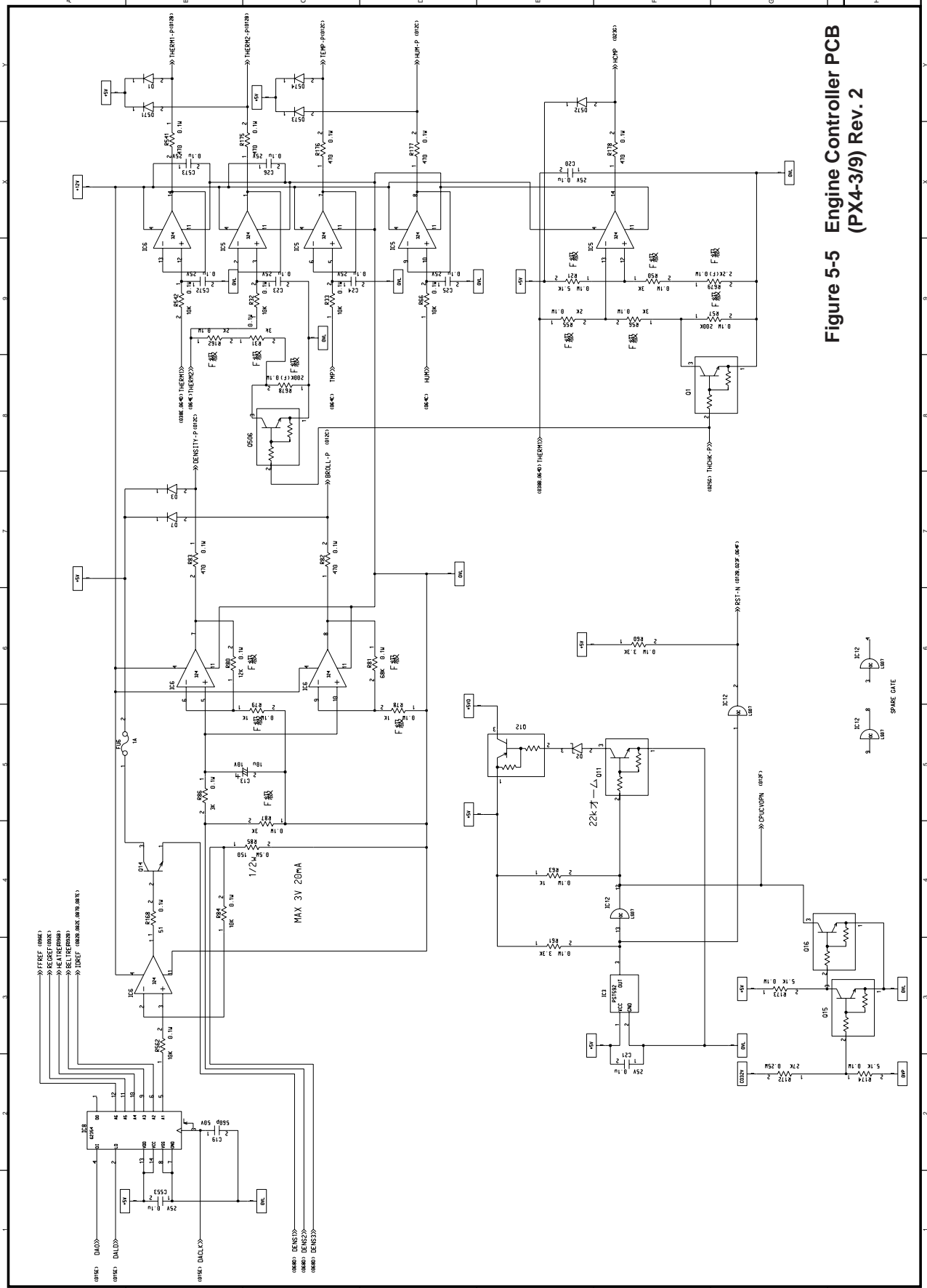
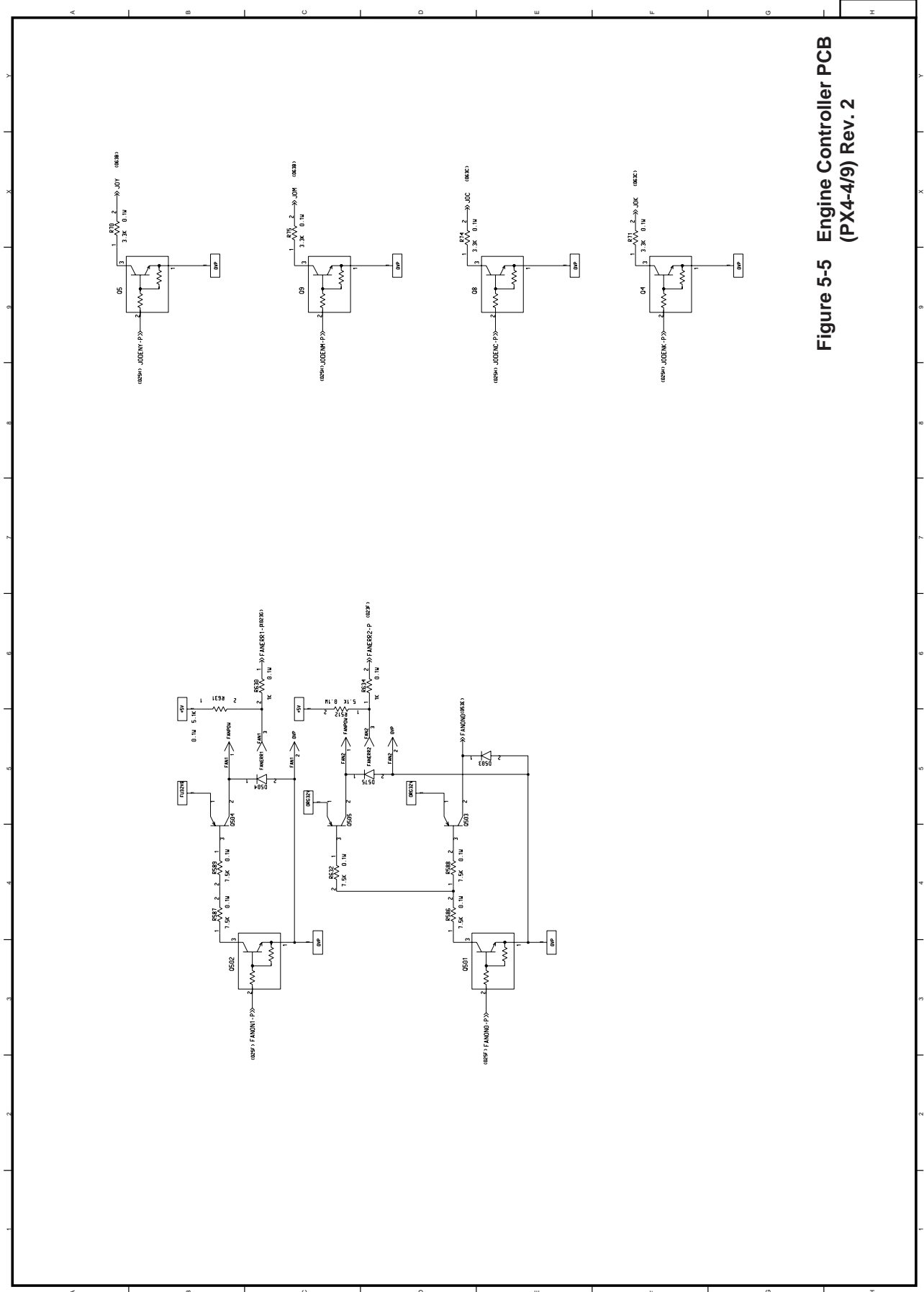


Figure 5-5 Engine Controller PCB (PX4-3/9) Rev. 2



**Figure 5-5 Engine Controller PCB
(PX4-4/9) Rev. 2**

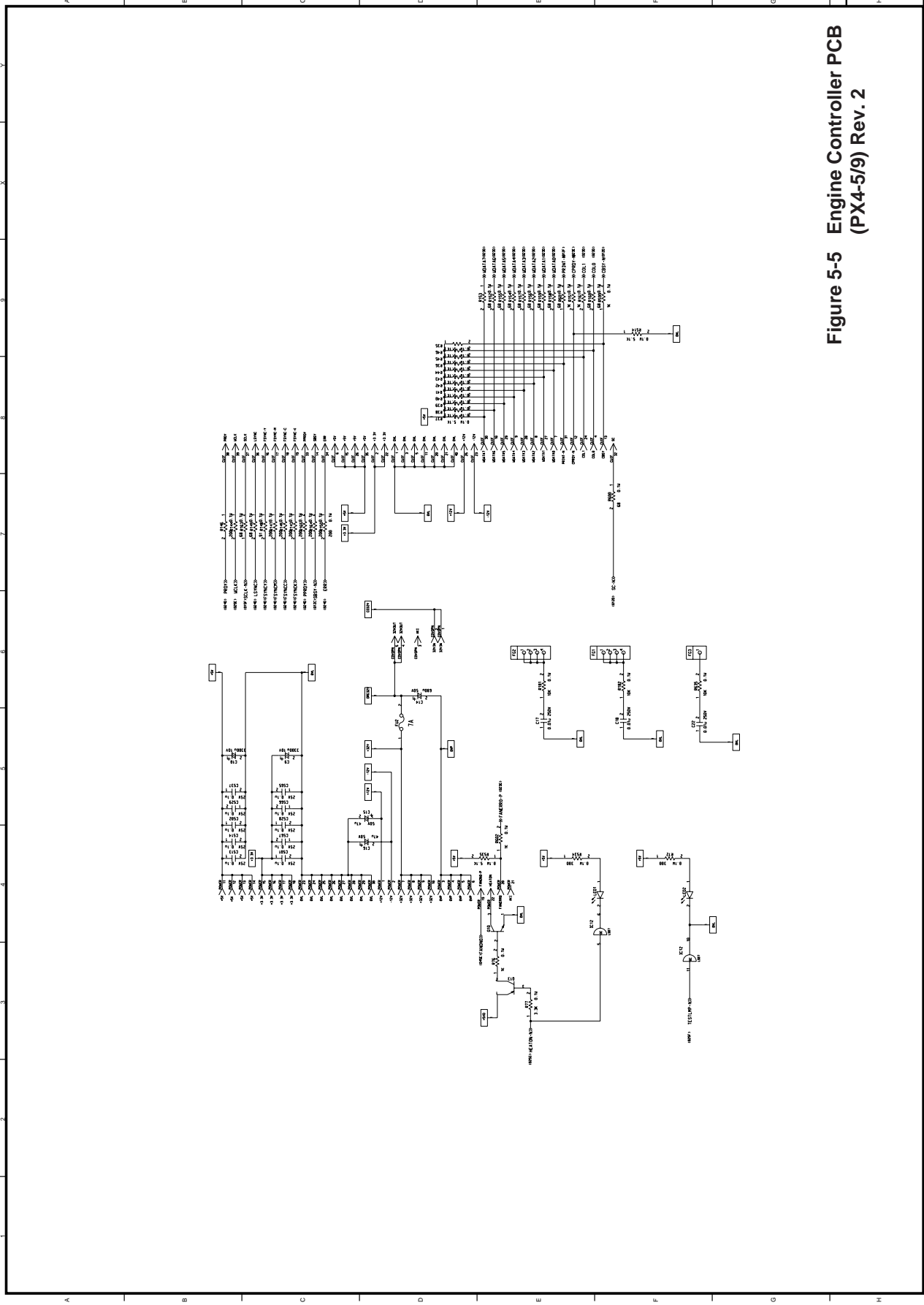


Figure 5-5 Engine Controller PCB
(PX4-5/9) Rev. 2

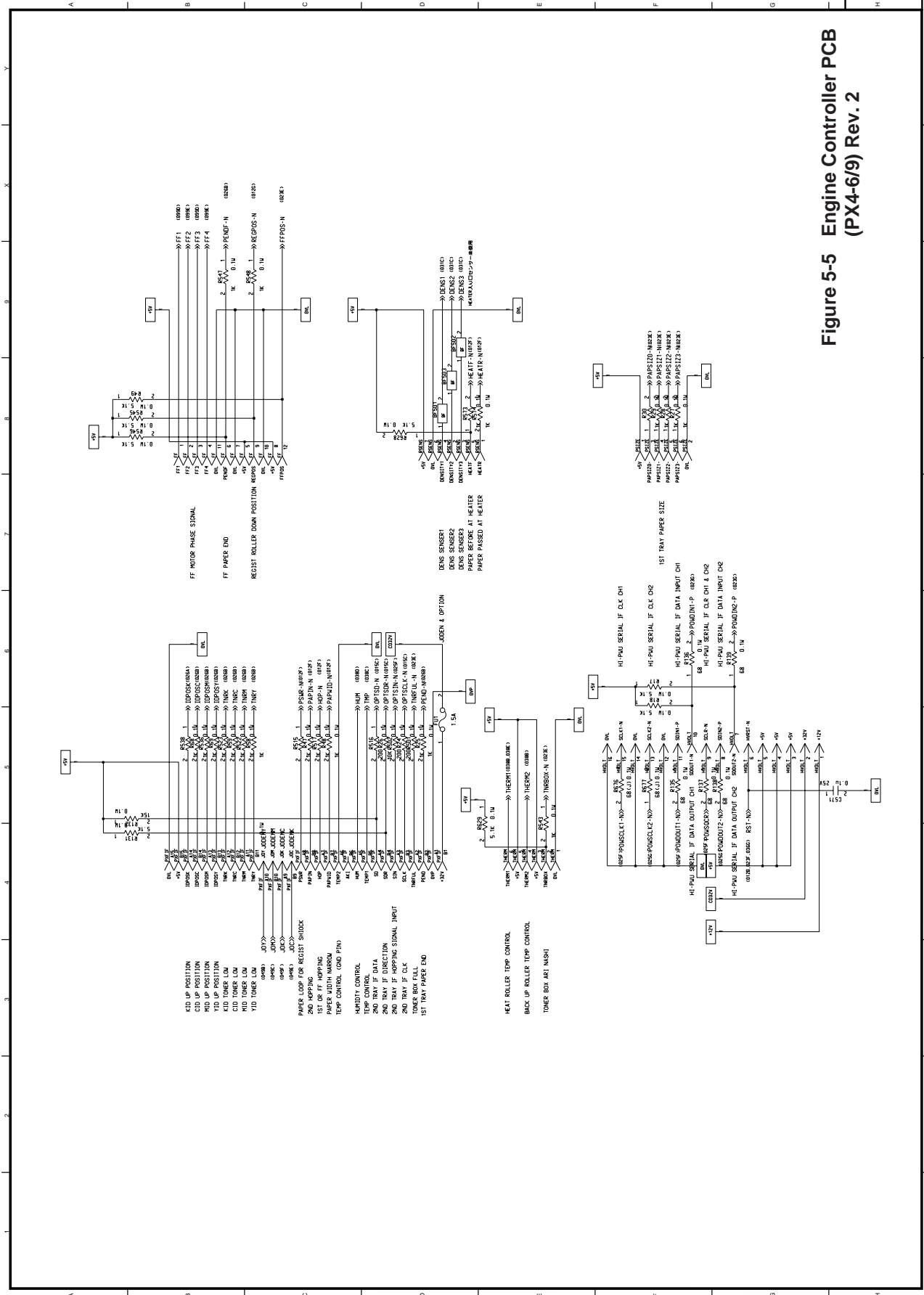


Figure 5-5 Engine Controller PCB (PX4-6/9) Rev. 2

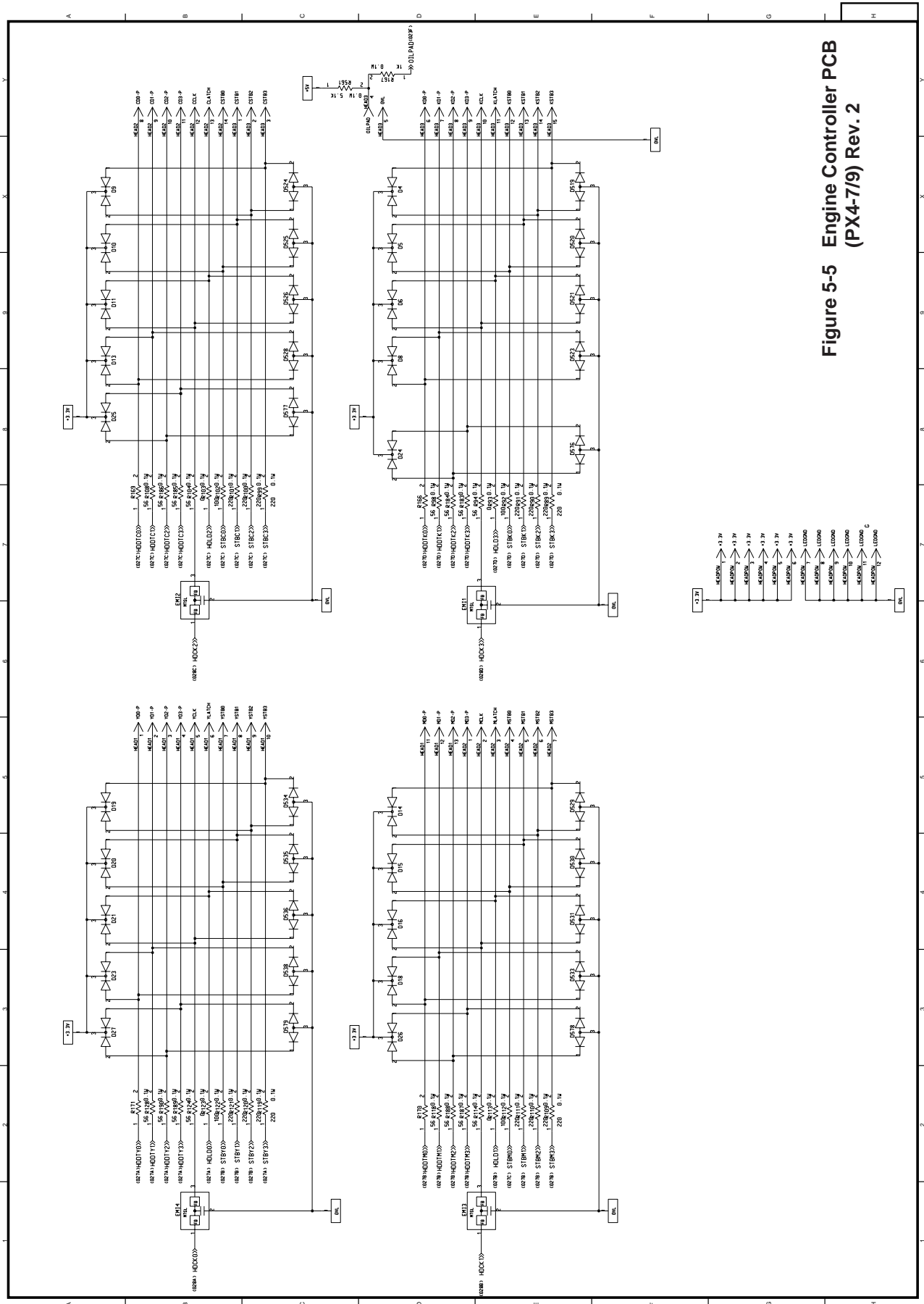


Figure 5-5 Engine Controller PCB (PX4-7/9) Rev. 2

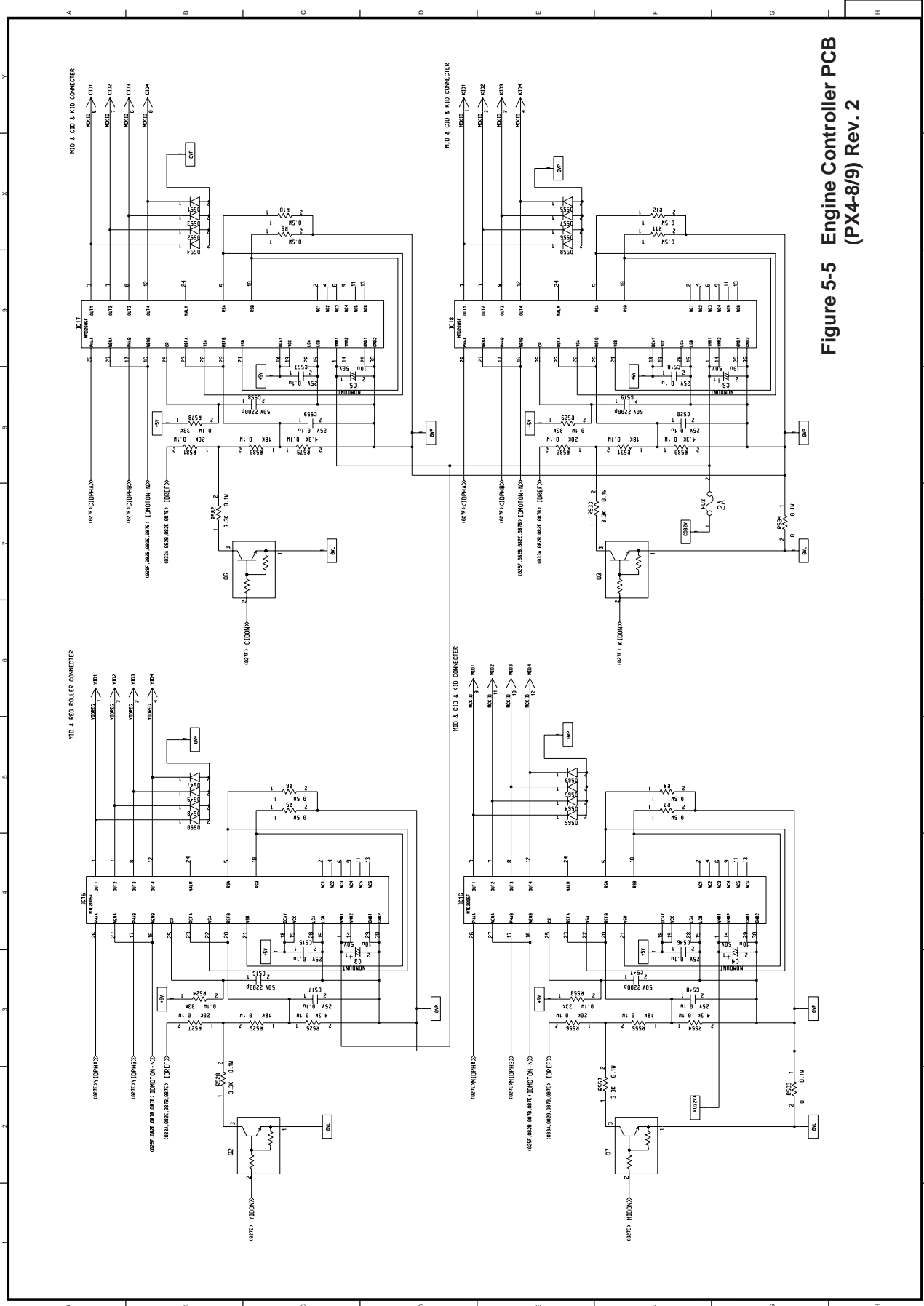


Figure 5-5 Engine Controller PCB (PX4-8/9) Rev. 2

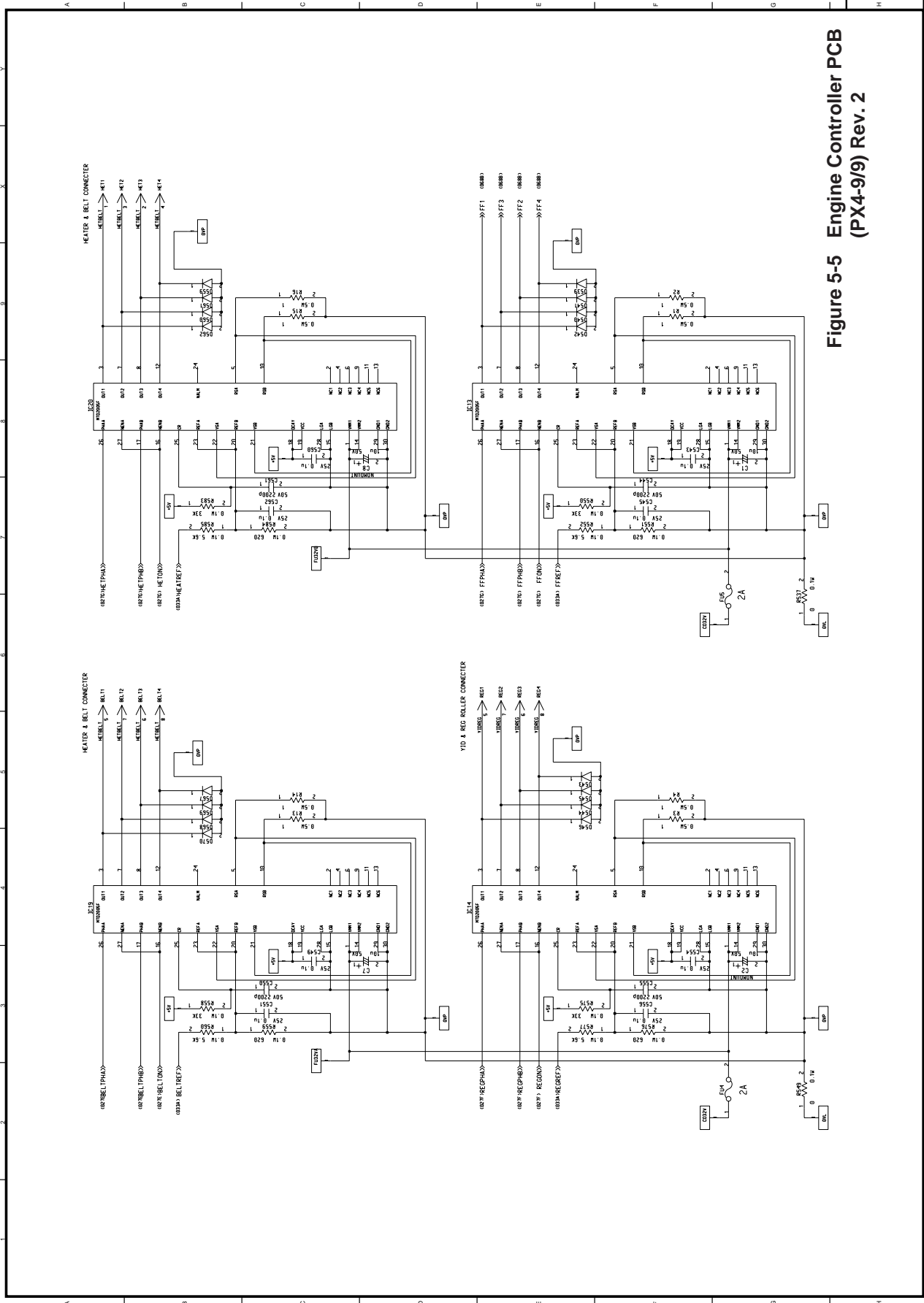


Figure 5-5 Engine Controller PCB (PX4-9/9) Rev. 2

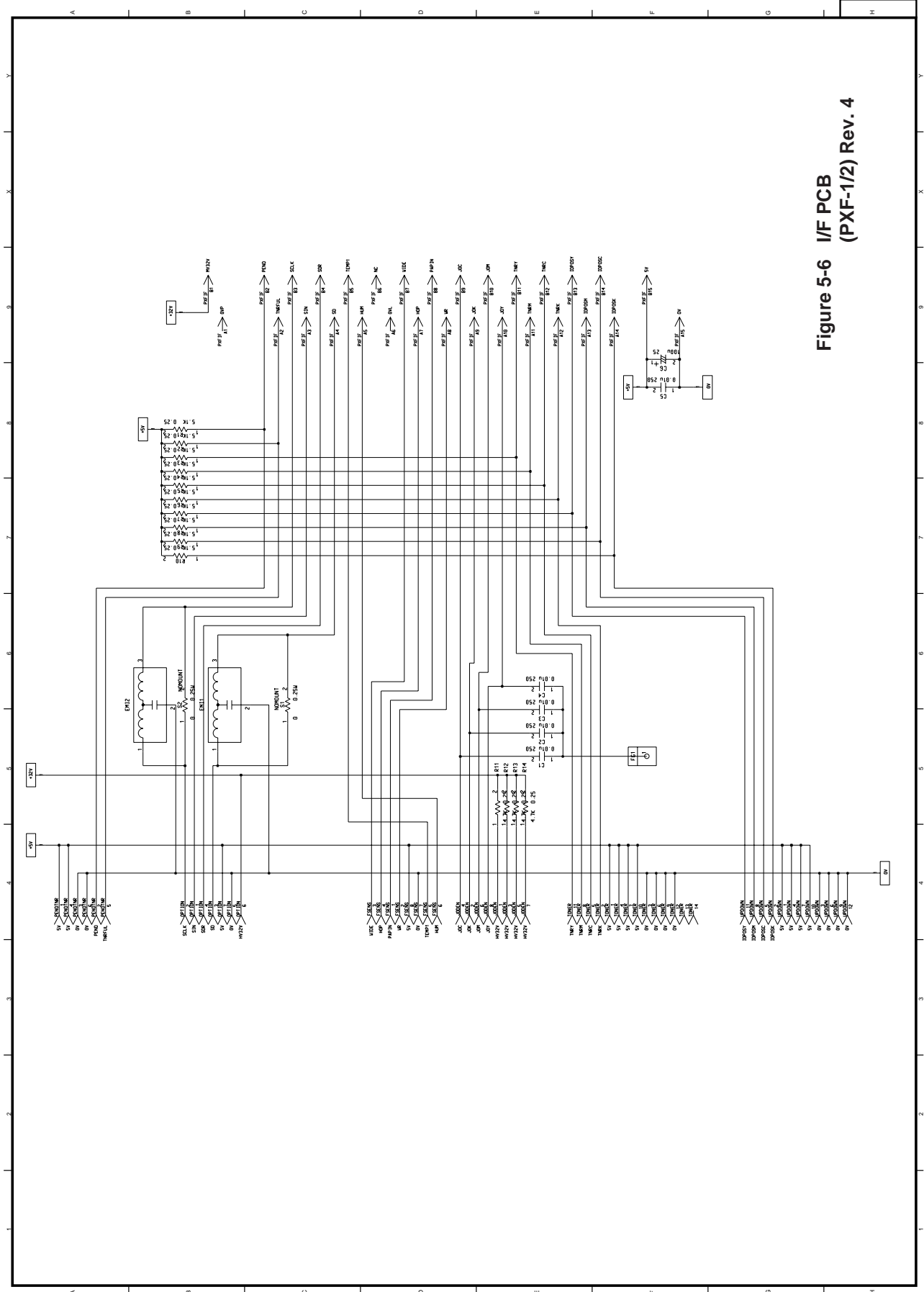
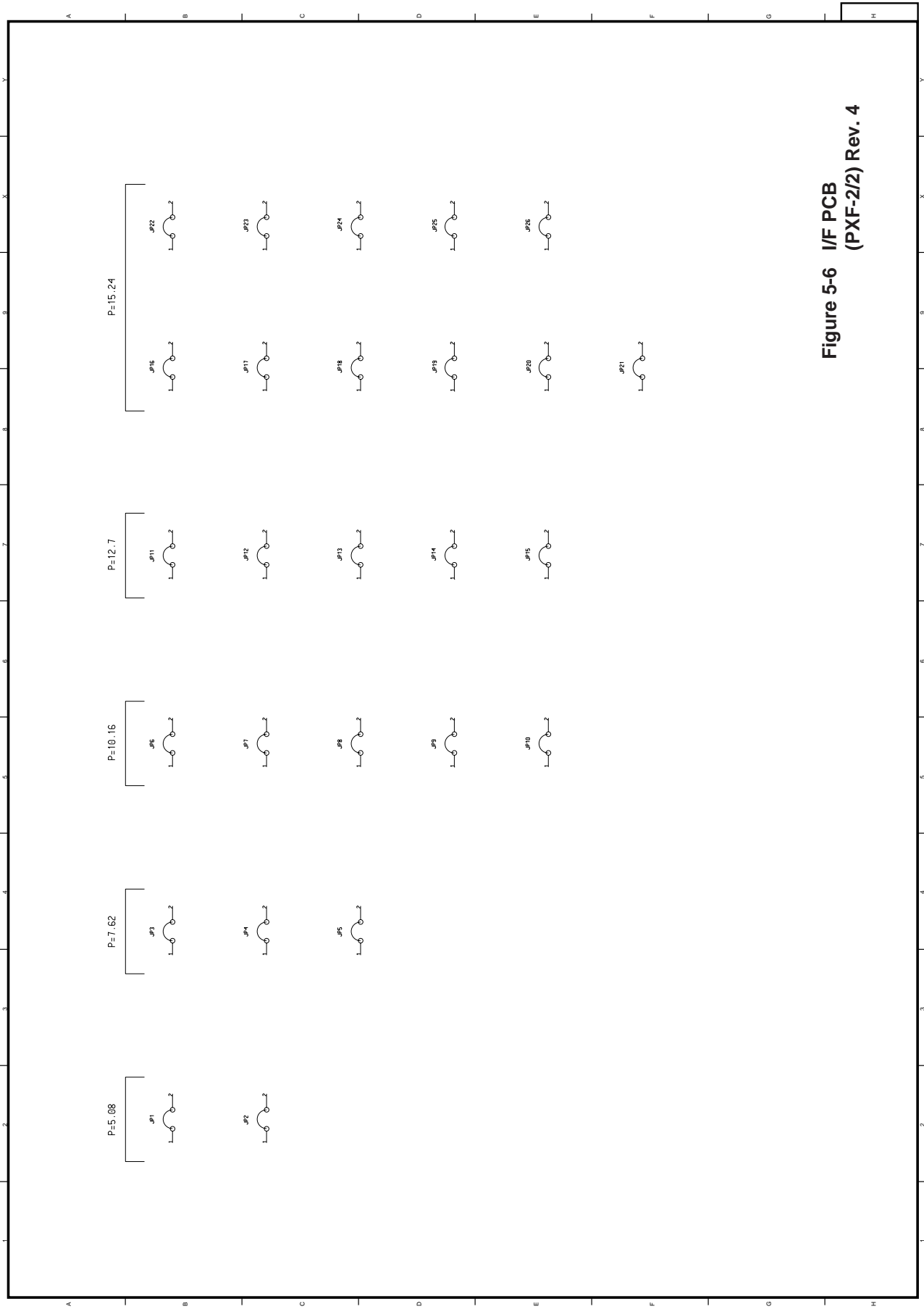


Figure 5-6 I/F PCB (PXF-1/2) Rev. 4



**Figure 5-6 I/F PCB
(PXF-2/2) Rev. 4**

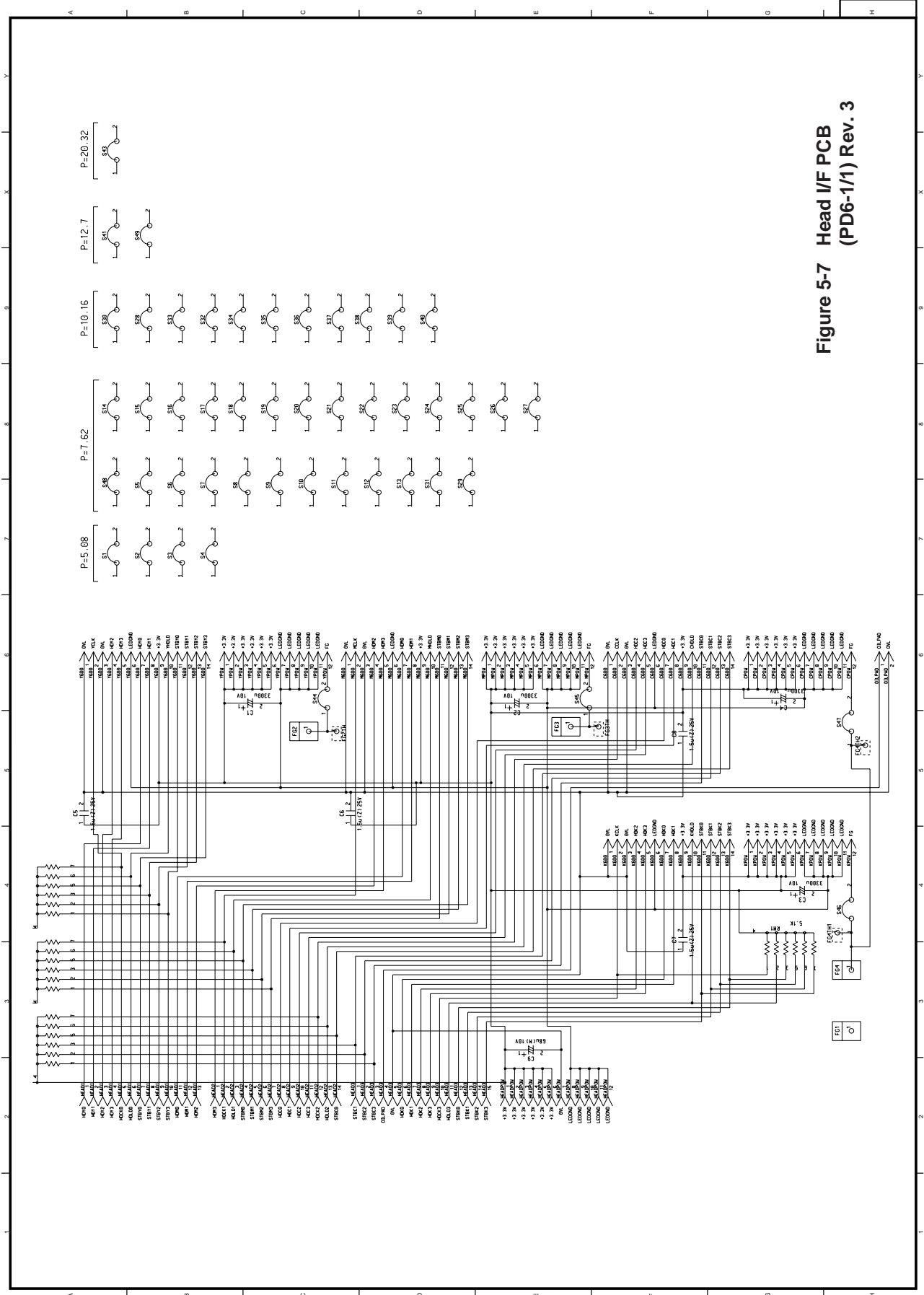
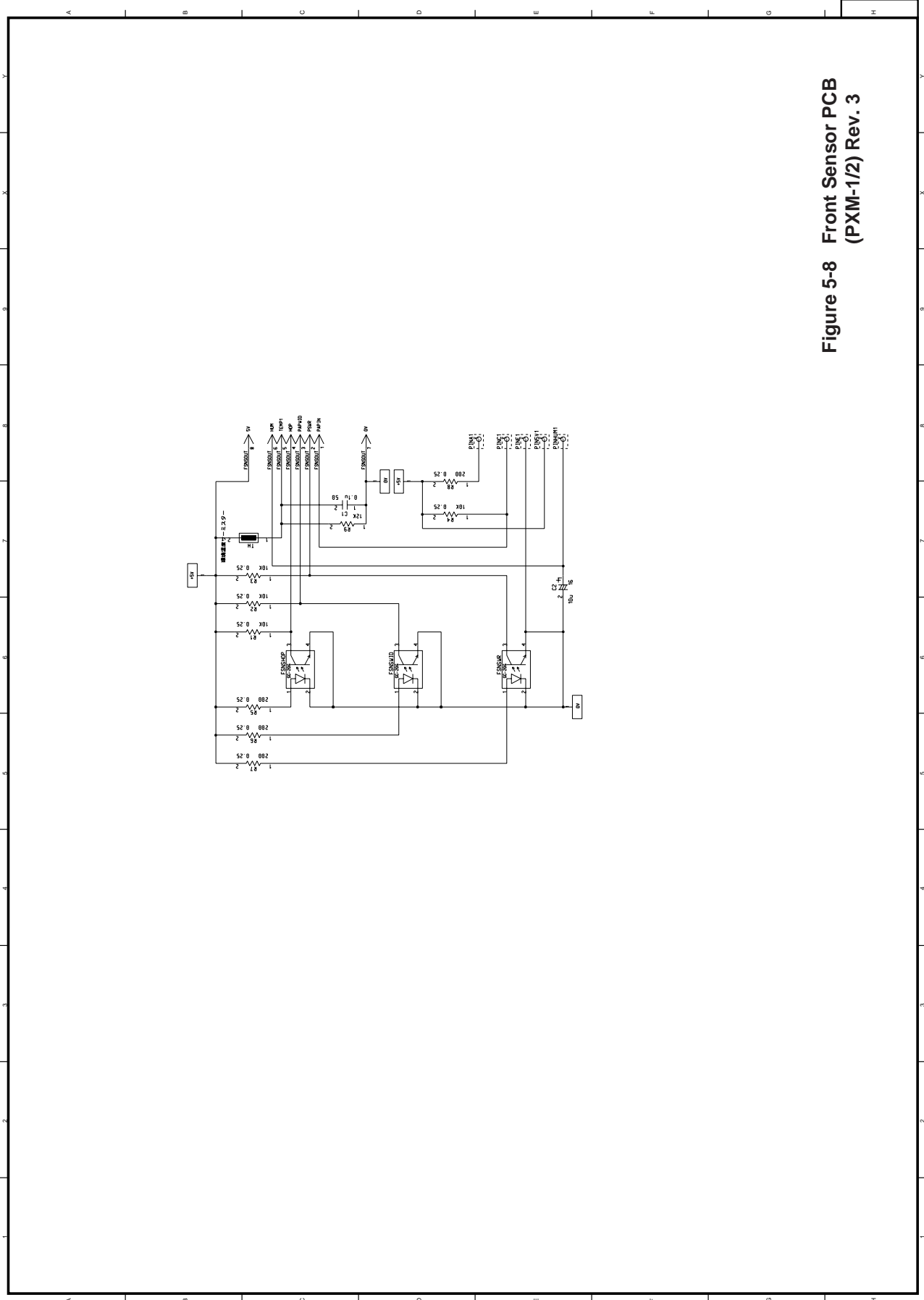
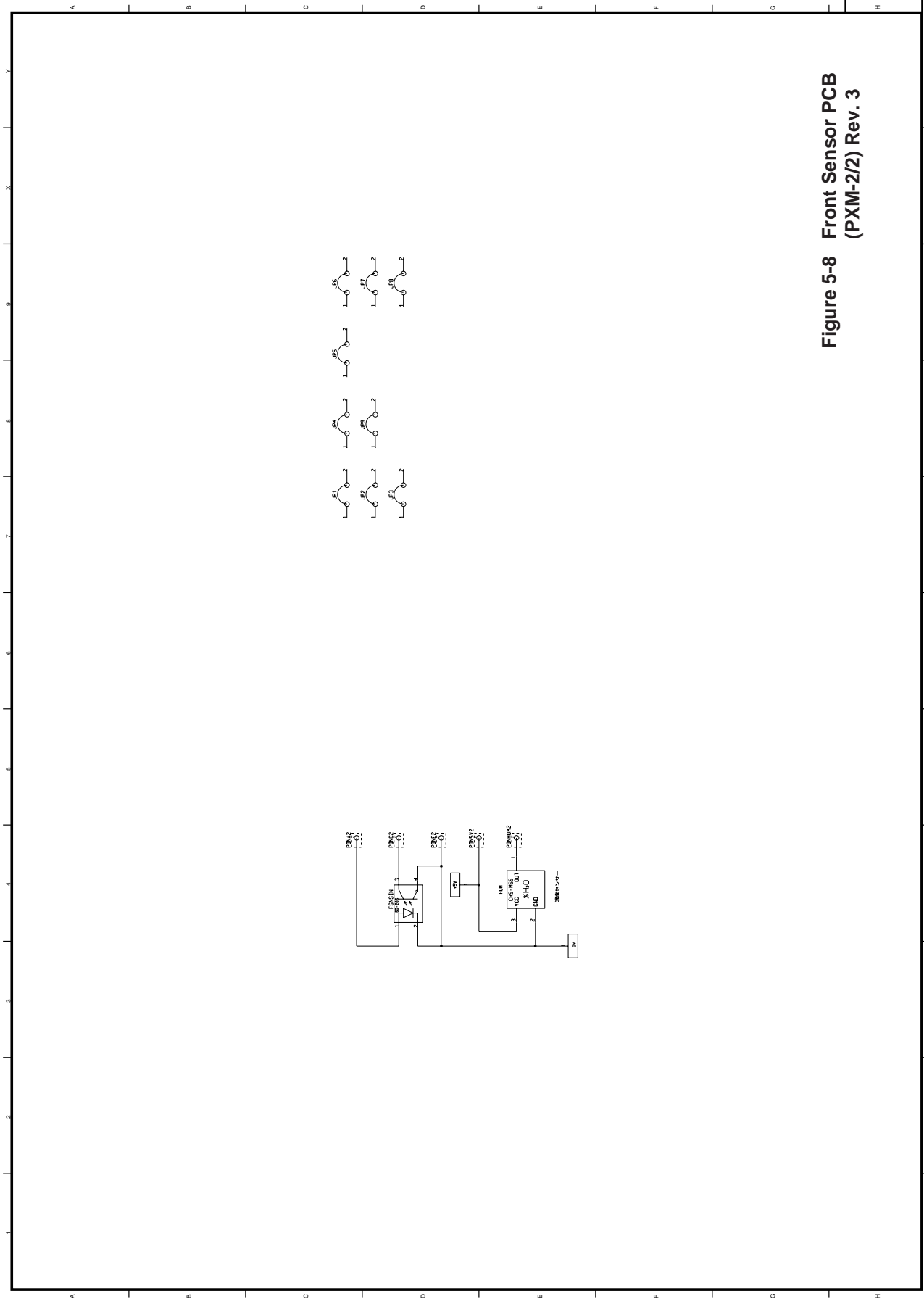


Figure 5-7 Head I/F PCB (PD6-1/1) Rev. 3



**Figure 5-8 Front Sensor PCB
(PXM-1/2) Rev. 3**



**Figure 5-8 Front Sensor PCB
(PXM-2/2) Rev. 3**

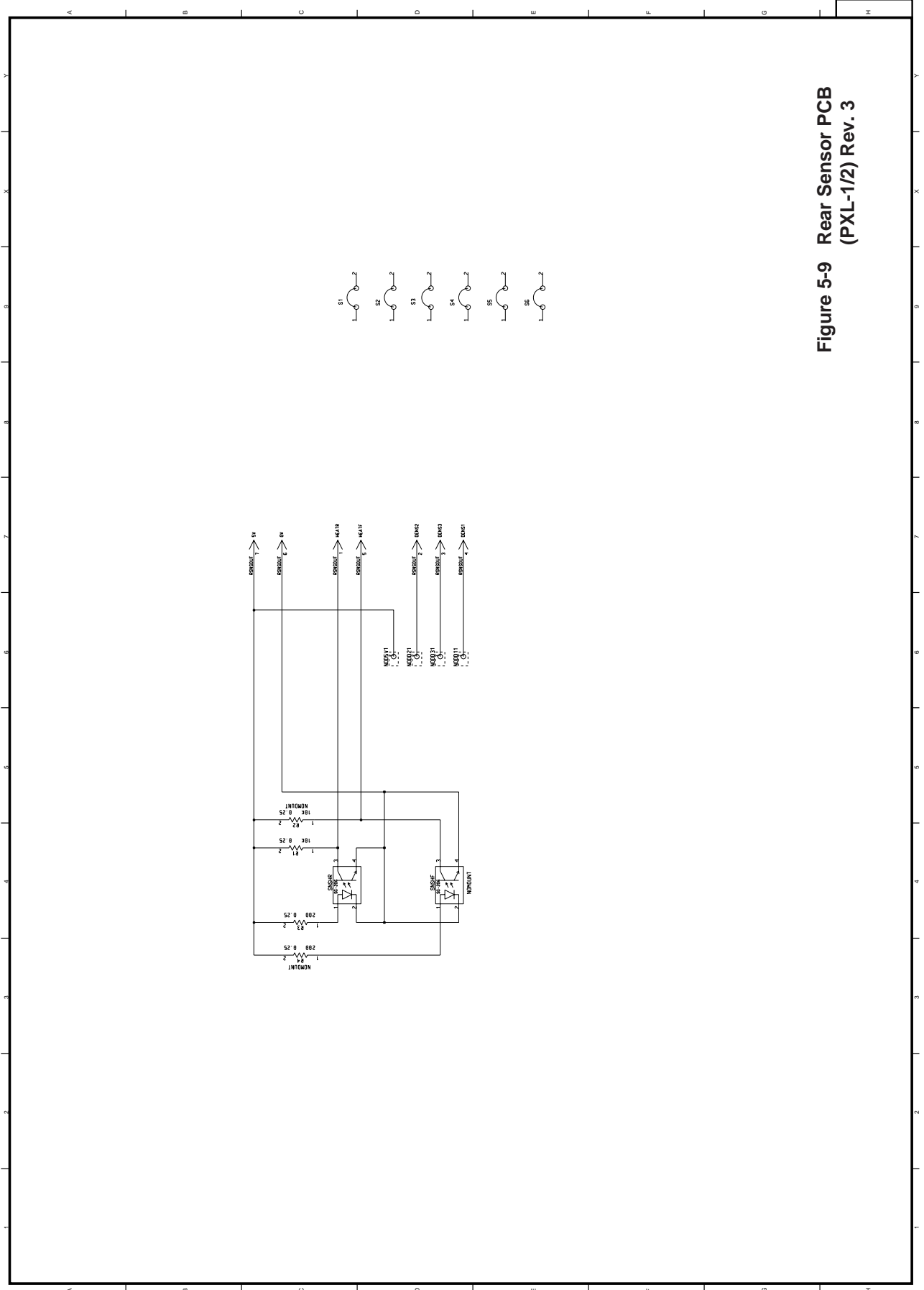
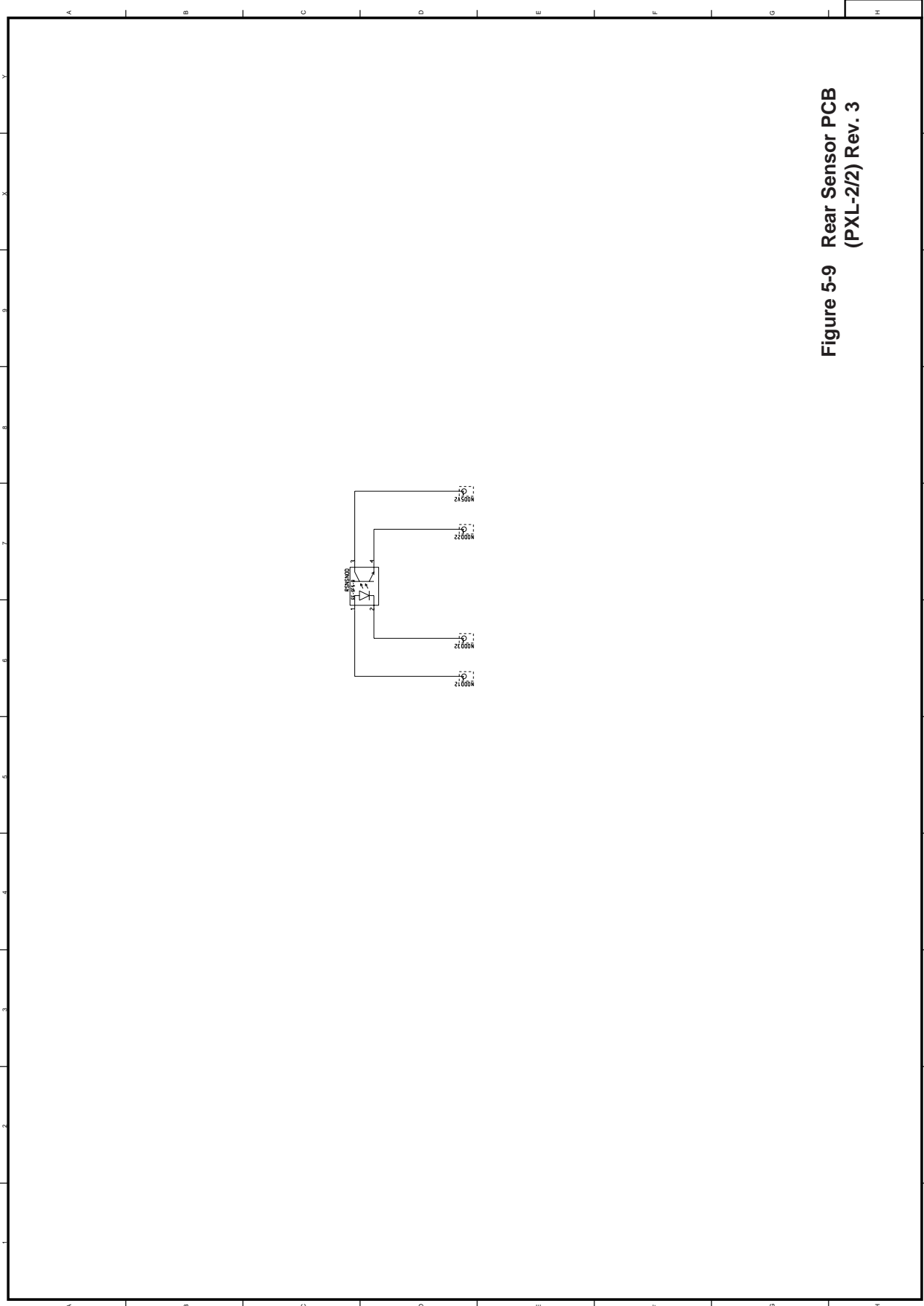
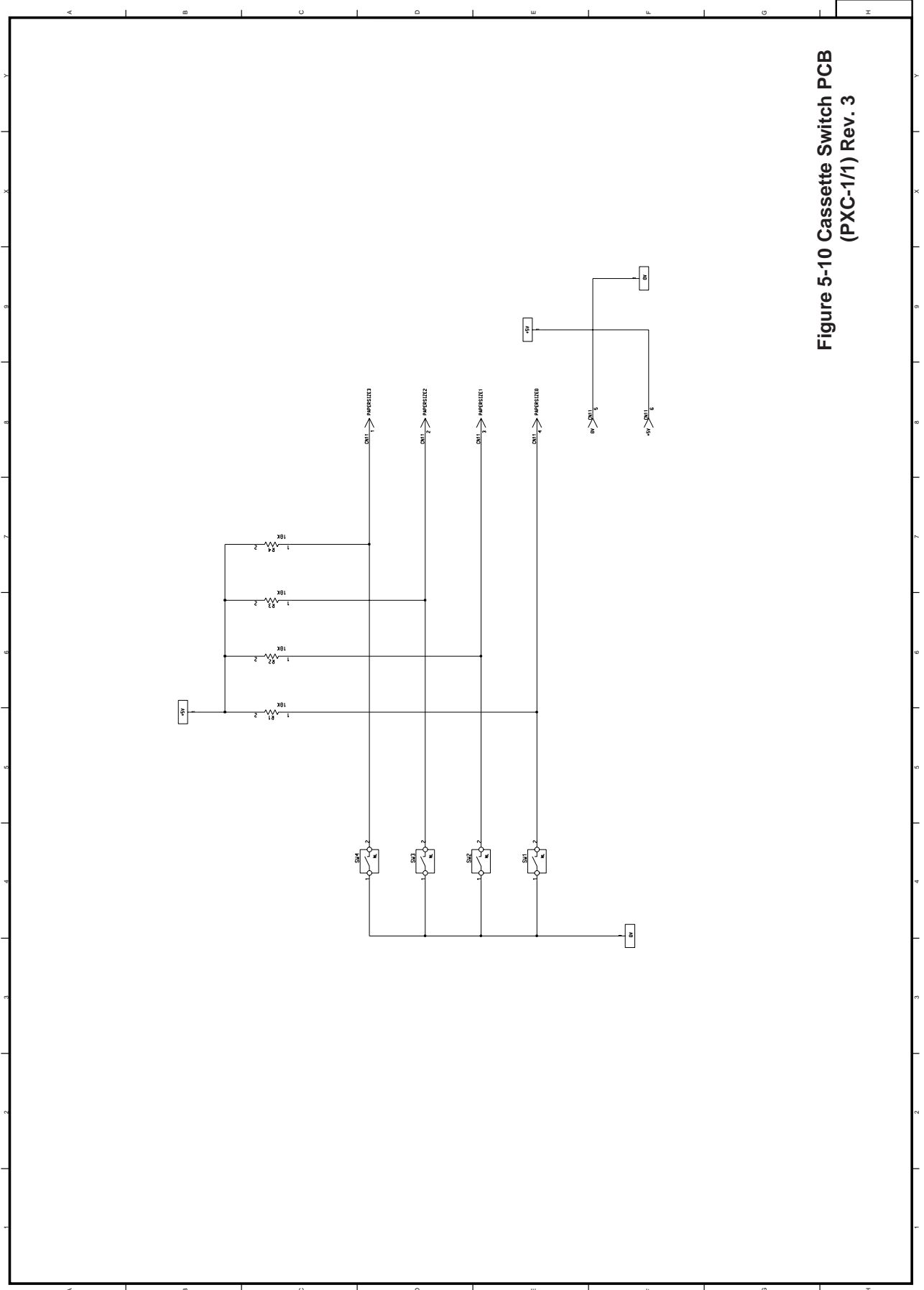


Figure 5-9 Rear Sensor PCB (PXL-1/2) Rev. 3



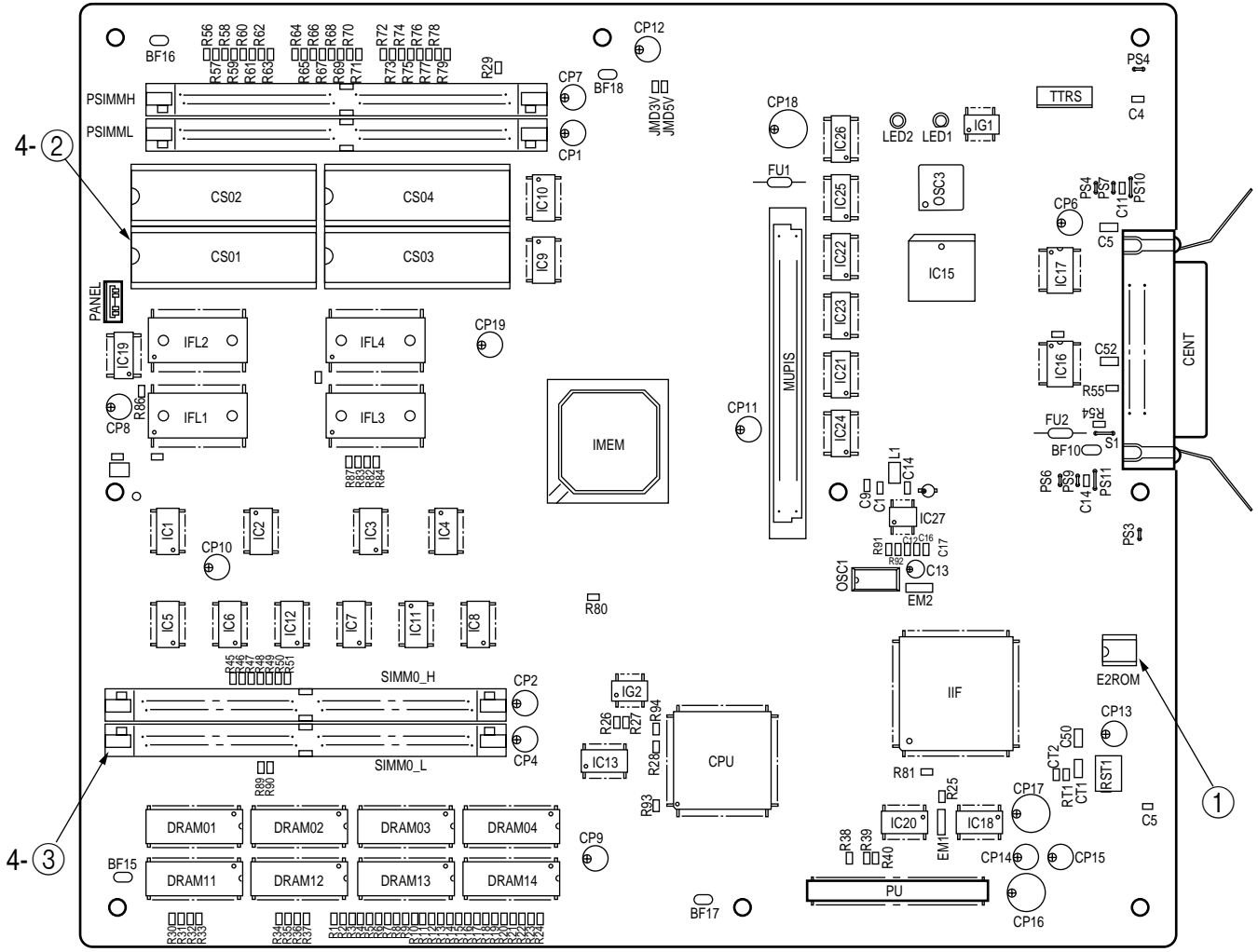
**Figure 5-9 Rear Sensor PCB
(PXL-2/2) Rev. 3**



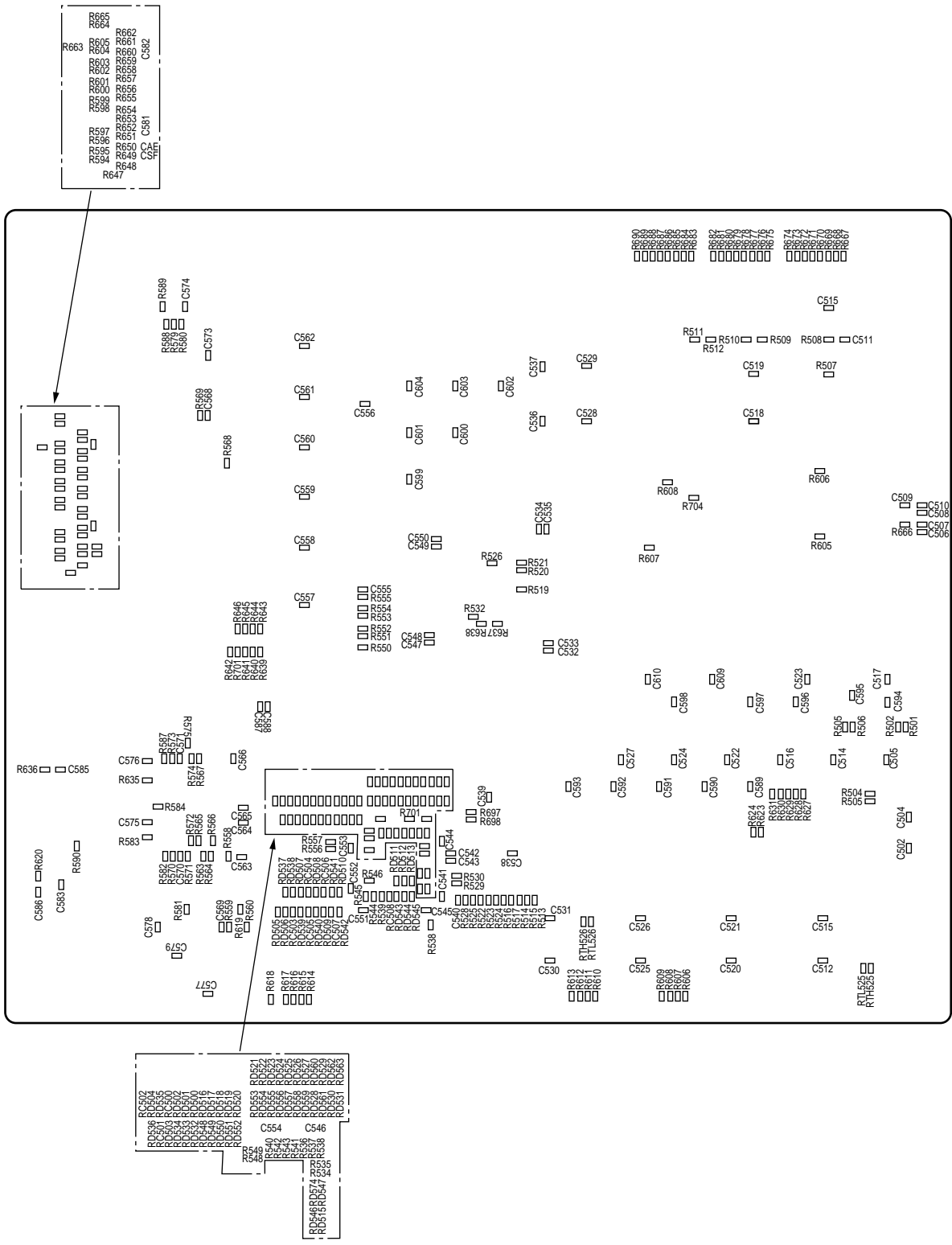
**Figure 5-10 Cassette Switch PCB
(PXC-1/1) Rev. 3**

6. COMPONENT PARTS LIST

Main Controller PCB	(PCR-PCB, Rev.2)	40595201
Operation Panel PCB	(PCO-PCB, Rev.2)	40195901
PostScript SIMM PCB	(Used Flash ROM) (FSL-PCB, Rev.1)	40402601
PostScript SIMM PCB (Used OTP or Mask ROM) (MSM-PCB, Rev.1)		40317803, 40317804
Engine Control-PCB	(PX4-PCB, Rev.2)	40613301
I/F-PCB	(PXF-PCB, Rev.4)	40094201
Head I/F-PCB	(PD6-PCB, Rev.3)	40518001
Front Sensor-PCB	(PXM-PCB, Rev.3)	40310501
Rear Sensor-PCB	(PXL-PCB, Rev.3)	40310401
Cassette Switch-PCB	(PXC-PCB, Rev.3)	40368601



**Main Controller PCB (PCR-PCB) Rev. 2, 3
(40595201 - 1/7)**



**Main Controller PCB (PCR-PCB) Rev. 2, 3
(40595201 - 2/7)**

**Main Controller PCB (PCR-PCB) Rev. 2, 3
(40595201 - 3/7)**

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
1		DICF-8CS-E IC Socket	245A1221P0080	1	
2		DICF-42CS-E IC Socket	245A1221P0420	4	
3		11088-1 IC Socket	2451002P0720	4	
4					
5	R91	RM73B2A100J RN Resistor (CP)	323A5003J0100	1	
6	R45~R51,R528,R629~ R631, R664	RM73B2A101J RN Resistor (CP)	323A5003J0101	12	
7	R503,R504,R594~ R597, R636,R663, R665	RM73B2A102J RN Resistor (CP)	323A5003J0102	9	
8	R38, R40, R501, R502, R505, R506, R508~R510,R519~ R521,R526,R529, R530, R532~R536, R539, R541, R544, R558, R572, R575, R583, R584, R588, R589, R614~R619, R635, R641, R701	RM73B2A103J RN Resistor (CP)	323A5003J0103	39	
9	R28	RM73B2A201J RN Resistor (CP)	323A5003J0201	1	
10	R92	RM73B2A202J RN Resistor (CP)	323A5003J0202	1	
11	R25, R80, R81, R93, R94, R568,R598~ R605, R697, R698, RT1	RM73B2A220J RN Resistor (CP)	323A5003J0220	17	
12	R1, R4, R5, R8, R9, R12, R13, R16, R17, R20, R21, R24, R56~R79	RM73B2A221J RN Resistor (CP)	323A5003J0221	36	
13	R2, R3, R6, R7, R10, R11, R14, R15, R18, R19, R22, R23, R579, R580, R667~R690	RM73B2A331J RN Resistor (CP)	323A5003J0331	38	

**Main Controller PCB (PCR-PCB) Rev. 2, 3
(40595201 - 4/7)**

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
14	R55, R542, R548, R647~R662, RC500~ RC508, RD500~RD563	RM73B2A332J RN Resistor (CP)	323A5003J0332	92	
15	R627, R628	RM73B2A470J RN Resistor (CP)	323A5003J0470	2	
16	R26, R27, R29, R39, R507, R546, R550~ R555, R557, R559, R560, R569, R590, R620, R666, R704	RM73B2A472J RN Resistor (CP)	323A5003J0472	20	
17	R54, R82, R511, R513~R517, R522~ R525, R537, R538, R540, R543, R545, R547, R549, R556, R563~R567, R570, R571, R573, R574, R582, R587, R637, R645, R705	2125JPW Tip Jumper (CP)	323A5003P0001	34	
18					
19	C50	FK16C0G1H101J CC Capacitor	50V 100pF	303A1014C3101	1
20	C52	FK16C0G1H102J CC Capacitor	50V 1000pF	303A1014C3102	1
21	C3	FK16C0G1H561J CC Capacitor	50V 560pF	303A1014C3561	1
22	C507~C510, C540, C555	CC2012SL1H101J CC Capacitor (CP)	50V	303A3007K0101	6
23	C9, C14	CC2012SL1H102J CC Capacitor (CP)	50V	303A3007K0102	2
24	CI6	CC2012SL1H301J CC Capacitor (CP)	50V	303A3007K0301	1
25	C4, C5	CC2012SL1H331J CC Capacitor (CP)	50V	303A3007K0331	2
26	CT1	CK92F1E155ZS CK Capacitor	25V 1.5μF	303A4117Z2155	1
27	C545, C551~C553, CI7	CK2012B1H222K CK Capacitor (CP)	50V	303A6008K3222	5

**Main Controller PCB (PCR-PCB) Rev. 2, 3
(40595201 - 5/7)**

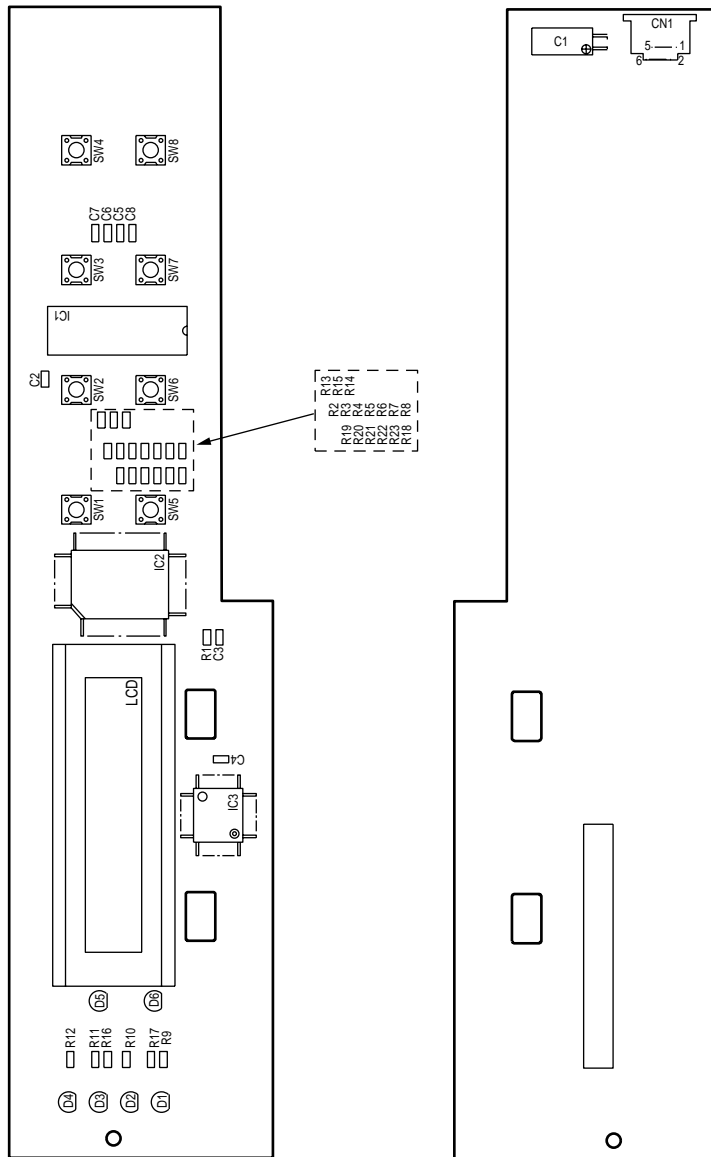
REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS	
28	C543	CK2012F1C105Z CK Capacitor (CP)	16V 1 μ F	303A6008Z1105	1	
29	C502, C504~C506, C511~C539, C541, C542, C544, C546~ C550, C554, C556~ C566, C568~C571, C573~C579, C581~ C583, C585~C610, C11, C12, C14	CK2012F1E104Z CK Capacitor (CP)	25V	303A6008Z2104	96	
30	C15	10MS5-10M CE Capacitor	10V 10 μ F	304A1046A1100	1	
31	C13	10MS5-22M CE Capacitor	10V 22 μ F	304A1046A1220	1	
32	CP1, CP2, CP4, CP6~CP12, CP19	10MS5-68M CE Capacitor	10V 68 μ F	304A1046A1680	11	
33	CP13	16MS5-47M CE Capacitor	16V 47 μ F	304A1046C1470	1	
34	CP14, CP15	35MS5-22M CE Capacitor	35V 22 μ F	304A1046V1220	2	
35	CP16~CP18	URS1E471MPA CE Capacitor	25V 470 μ F	304A1153E1471	3	
36						
37	IC24	74LS244FP BIP Digital IC (S0)		700A0503N0244	1	
38	IC20~IC23	74ALS244AFP BIP Digital IC (S0)		700A2503N0244	4	
39	IC18, IC25, IC26	74ALS245AFP BIP Digital IC (S0)		700A2503N0245	3	
40	IG2	74LVC04NST/FP Digital IC-MOS	-S	7022203N3004	1	
41	IC19	74LVC244ANS/AFP Digital IC-MOS	-S	7022203N3244	1	
42	IC9~IC13	LVC16244AT/ Digital IC-MOS	-S	7022303N3244	5	

**Main Controller PCB (PCR-PCB) Rev. 2, 3
(40595201 - 6/7)**

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
43	IC1~IC8	LVC16245AT/ Digital IC-MOS -S	7022303N3245	8	
44	IC16, IC17	74ACT1284SCX Digital IC-MOS -S	7022653N3001	2	
45	IMEM	UPD94704S1-001-F6 Digital IC-MOS -F	7024723N0005	1	
46	IIF	UPD66044GN-014-LMU Digital IC-MOS -F	7024923N1165	1	
47	IRST1	TL7705CP-B BIP Linear IC	720A0550M0002	1	
48	DRAM01~DRAM04, DRAM11~DRAM14	5118165JP-60 Memory IC-MOSDRAM -S	8020003N4604	8	
49	IFL1~IFL4	MBM29F400TC-90PF-NW MOS-EEPROM (SO)	8162634N0000	4	
50	E2ROM1	NM93C46LN-NW Memory IC-MOSEEPR -	8160339M0000	1	
51	CPU	NR4700LMQ-100B Mycom-MOS -F	8510540N0002	1	
52	IC27	IMISM530AYB Mycom-Interface -S	8550084N0001	1	
53					
54	EM2	DST306-55B101M EMI Filter	342A1004P1101	1	
55	EM1	ZJSC-R47-181 EMI Filter	342A1012P1181	1	
56	L1	NL453232-150J H Coil (CP)	353A4005K0150	1	
57					
58	CENT	57RE-40360-830B-D29 Connector-square-shaped -	2201001P0360	1	
59	PANEL	06FE-BT-VK-N Connector-PC board-	2244102P0060	1	

**Main Controller PCB (PCR-PCB) Rev. 2, 3
(40595201 - 7/7)**

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
60	PU	00-9072-240-901-883 PC Connector	224A3377P0400	1	
61	MUPIS	00-8345-396-949-014 PC Connector	224A3618P0640	1	
62					
63	OSC1	SG8002DC-50.0M-PC C Oscillator-crystal	3842141C0001	1	
64	BF9, BF10, BF15~ BF18	ZBF253D-01 Beads Filter	377A1115P1309	6	
65	FU1, FU2	251-001 Fuse	540A2208S1102	2	



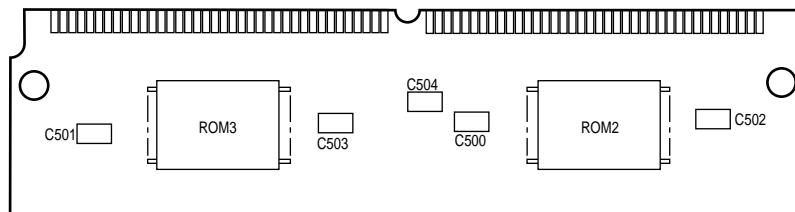
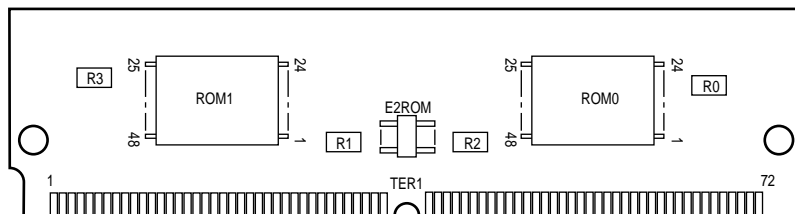
**Operation Panel PCB(PCO-PCB) Rev.2
(40195901- 1/3)**

**Operation Panel PCB(PCO-PCB) Rev.3
(40195901- 2/3)**

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
1	SW1~SW8	SOR-113HS Push Button Switch	205A1165P1000	8	
2	CN1	06FE-ST-VK-N Connector-PC Board	2244101P0060	1	
3					
4	C5~C8	CC2012CH1H101J 50V CC Capacitor (CP)	303A3007C0101	4	
5	C2~C4	CK2012F1E104Z 25V CK Capacitor (CP)	303A6008Z2104	3	
6	C1	KME10VB-100 10V CE Capacitor 100μF	304A1115A1101	1	
7					
8	R1	RM73B2A913F RN Resistor (CP)	323A5003F0913	1	
9	R2~R8	RM73B2A103J RN Resistor (CP)	323A5003J0103	7	
10	R9~R17	RM73B2A201J RN Resistor (CP)	323A5003J0201	9	
11	R18	RM73B2A512J RN Resistor (CP)	323A5003J0512	1	
12	R19~R23	RM73B2A752J RN Resistor (CP)	323A5003J0752	5	
13					
14	D6	SEL3210R-YZ LED	650A0129M0016	1	
15	D1~D5	SEL3910D-YZ LED	650A0229M0018	5	
16					
17	IC1	BU6152S MOS Digital IC	702A4733M0002	1	

**Operation Panel PCB(PCO-PCB) Rev.3
(40195901- 3/3)**

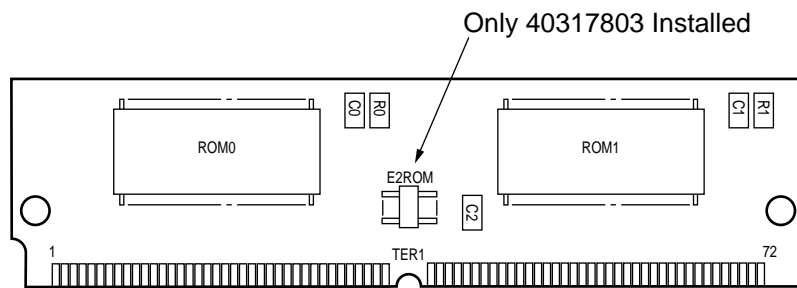
REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
18	IC2	HD44780UB01FS CPU-INF-IC (FP)	855A0421N0002	1	
19	IC3	MSM5259GS-2K CPU-INF-IC (FP)	855A0024N0001	1	



**PostScript SIMM PCB(F SL-PCB) Rev.1
(40402601- 1/2)**

**PostScript SIMM PCB(F SL-PCB) Rev.1
(40402601- 2/2)**

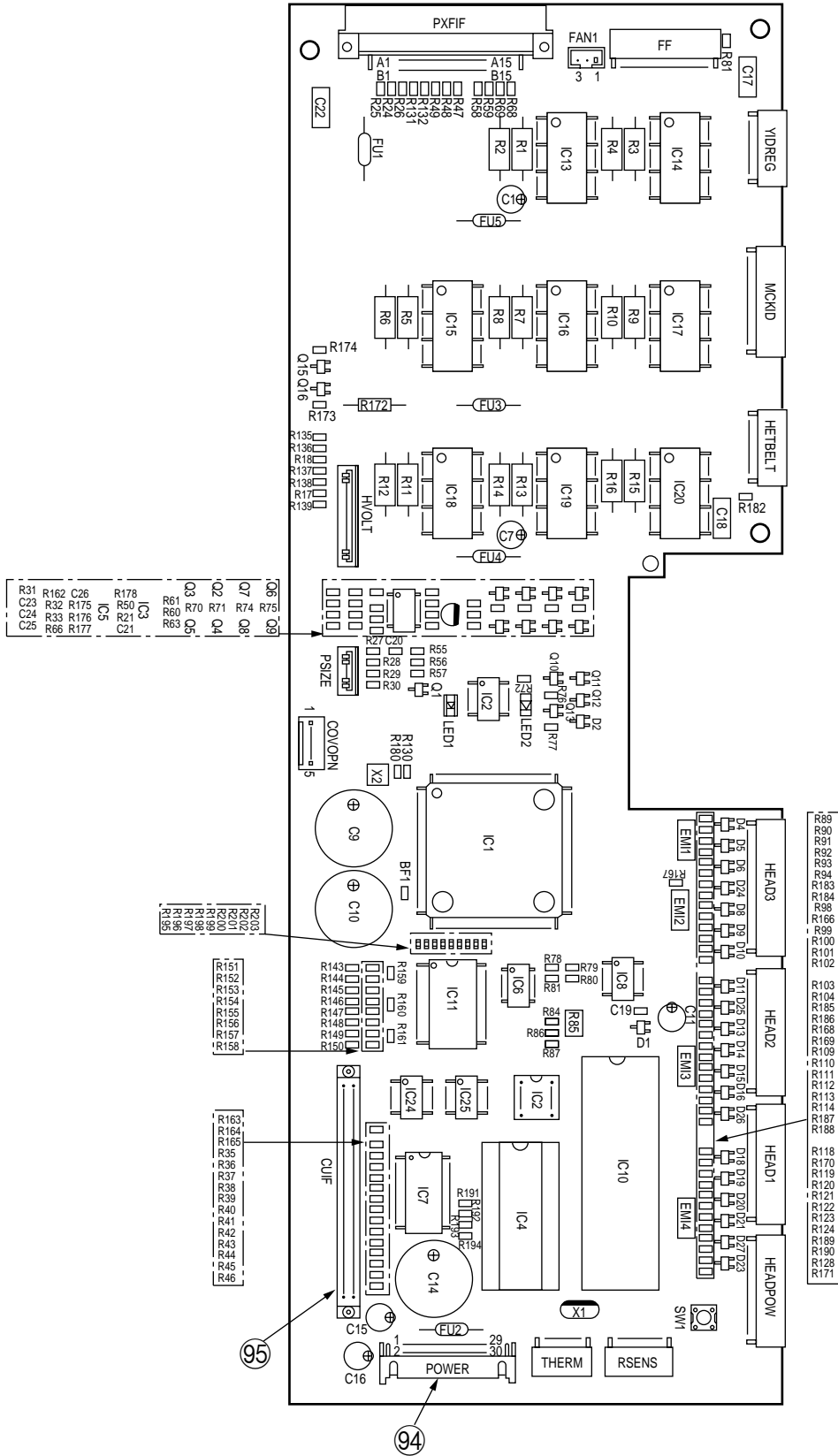
REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
1	R0~R3	RM73B2A103J RES-MET RN -C	323A5003J0103	4	
2	C500~C504	CK2012F1E104Z 25V CAP-Ceramic -C	303A6008Z2104	5	
3					
4	ROM0~ROM3	MBM29F080A-90PFTN Memory-MOSEEPR -S	8163623N0000	4	
5	E2ROM	NM93C66EM8X Memory-MOSEEPR -S	8162330N0000	1	



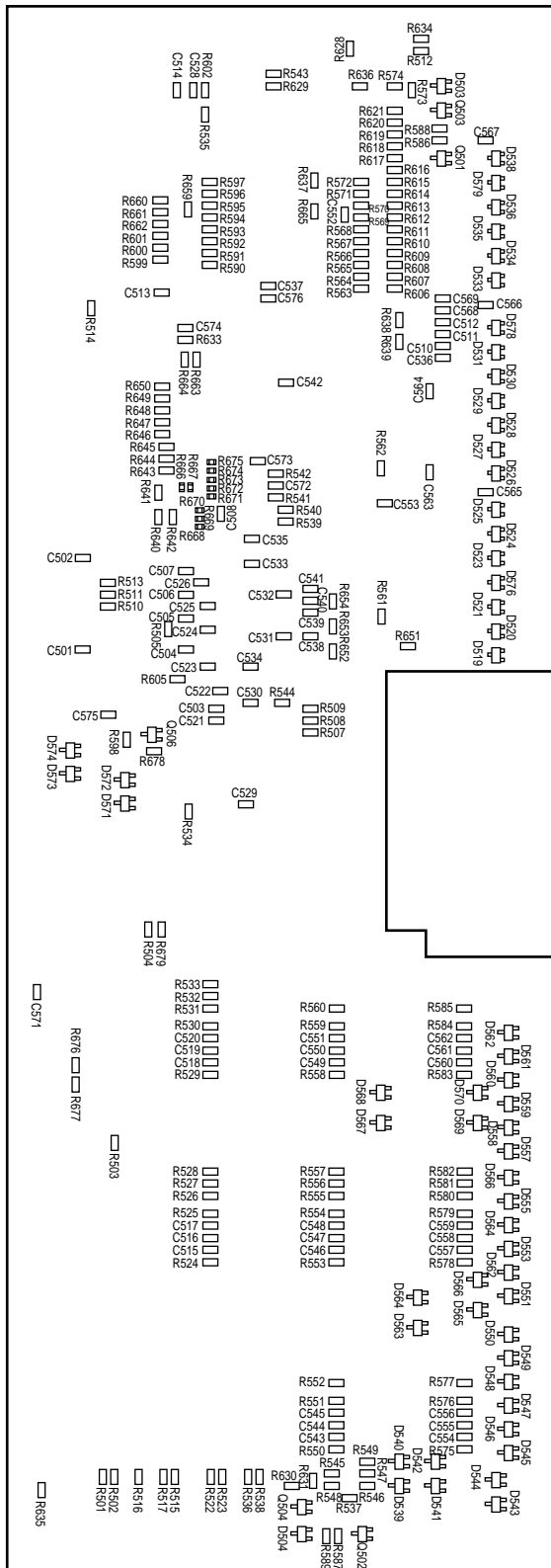
**PostScript SIMM PCB(MSM-PCB) Rev.1
(40317803, 40317804- 1/2)**

**PostScript SIMM PCB(MSM-PCB) Rev.1
(40317803, 40317804- 2/2)**

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
1	ROM0	PROM-Control or MSM531602E-N1GS-K	40743801 or 8174626N0004	1	Only 40317803 Installed
2	ROM1	PROM-Control or MSM531602E-N0GS-K	40743901 or 8174626N0003	1	Only 40317803 Installed
3	ROM0	PROM-Control or MSM531602E-N3GS-K	40744001 or 8174626N0006	1	Only 40317804 Installed
4	ROM1	PROM-Control or MSM531602E-N2GS-K	40744101 or 8174626N0005	1	Only 40317804 Installed
5					
6	E2ROM	NM93C66EM8X Memory IC-MOSEEPR -S	8162330N0000	1	Only 40317803 Installed
7					
8	R0-R1	RM73B2A103J RN Resistor (CP)	323A5003J0103	2	
9	C0-C2	CK2012F1E104Z CK Capacitor (CP)	303A6008Z2104	3	



**Engine Control PCB (PX4-PCB) Rev. 2
(40613301 - 1/10)**



**Engine Control PCB (PX4-PCB) Rev. 2
(40613301 - 2/10)**

**Control PCB(PX4-PCB) Rev.2
(40613301 - 3/10)**

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
1	PXFIF	00-8272-230-001-112 PC Connector	224A3368P0300	1	
2	CUIF	00-9072-240-101-883 PC Connector	224A3376P0400	1	
3	FAN1	B3B-PH-K-S PC Connector	224A3529P0030	1	
4	POWER	S30B-PHDSS Connector-PC board	2243005P0300	1	
5					
6	C575	CC2012CH1H470J CC Capacitor (CP)	50V 303A3007C0470	1	
7	C19, C576	CC2012B1H561K CC Capacitor (CP)	50V 303A6008K3561	2	
8	C17, C18, C22	HKZ5V4B/TCK45F2E103 Capacitor-magnetic	-P 3024003Z5103	3	
9	C516, C519, C544, C547, C550, C555, C558, C561	CK2012B1H222K CK Capacitor (CP)	50V 303A6008K3222	8	
10	C20, C21, C23~C26, C501~C508, C510~C515, C517, C518, C520~C526, C528~C543, C545, C546, C548, C549, C551~C554, C556, C557, C559, C560, C562,~C567, C571~C573	CK2012F1E104Z CK Capacitor (CP)	25V 303A6008Z2104	68	
11	C14	SRG50VB-680M Capacitor-aluminum -	50V 3041005H1681	1	
12	C15, C16	KME50VB-47 CE Capacitor	50V 47μF 304A1115H1470	2	
13	C9, C10	UVS1A332MHA CE Capacitor	10V 3300μF 304A1137A1332	2	

**Control PCB(PX4-PCB) Rev.2
(40613301 - 4/10)**

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS	
14	C11	KMG25VB-100M-FC CE Capacitor	25V 100μF	304A1180E1101	1	
15	C1, C7	50MS5-10M CE Capacitor	50V 10μF	304A1046H1100	2	
16						
17	R93, R103, R113, R123	RM73B2A101J RN Resistor	(CP)	323A5003J0101	4	
18	R63, R76, R538, R68, R536,R69, R523, R59, R522, R58, R515, R47, R517, R48, R501, R25, R573, R574, R27~R30, R547, R548, R543,R151, R167, R630, R598, R599, R601, R602, R505, R634, R665	RM73B2A102J RN Resistor	(CP)	323A5003J0102	35	
19	R26, R32, R33, R66, R84, R542, R562, R181, R182, R635	RM73B2A103J RN Resistor	(CP)	323A5003J0103	10	
20	R130	RM73B2A105J RN Resistor	(CP)	323A5003J0105	1	
21	R614~R621	RM73B2A121J RN Resistor	(CP)	323A5003J0121	8	
22	R132	RM73B2A153J RN Resistor	(CP)	323A5003J0153	1	
23	R526, R531, R555, R580	RM73B2A183J RN Resistor	(CP)	323A5003J0183	4	
24	R24, R143, R145~R148, R502, R516, R150, R164, R165	RM73B2A201J RN Resistor	(CP)	323A5003J0201	11	
25	R89, R90~R92, R99~R102, R109~R112, R119~R122	RM73B2A221J RN Resistor	(CP)	323A5003J0221	16	
26	R527, R532, R556, R581	RM73B2A203J RN Resistor	(CP)	323A5003J0203	4	

**Control PCB(PX4-PCB) Rev.2
(40613301 - 5/10)**

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
27	R72, R534	RM73B2A301J RN Resistor (CP)	323A5003J0301	2	
28	R86	RM73B2A302J RN Resistor (CP)	323A5003J0302	1	
29	R191~R194, R659~R662	RM73B2A330J RN Resistor (CP)	323A5003J0330	8	
30	R60, R61, R70, R71, R74, R75, R77, R528, R533, R557, R582	RM73B2A332J RN Resistor (CP)	323A5003J0332	11	
31	R524, R529, R550, R553, R558, R575, R578, R583	RM73B2A333J RN Resistor (CP)	323A5003J0333	8	
32	R525, R530, R554, R579	RM73B2A432J RN Resistor (CP)	323A5003J0432	4	
33	R180	RM73B2A470J RN Resistor (CP)	323A5003J0470	1	
34	R175~R178, R541	RM73B2A471J RN Resistor (CP)	323A5003J0471	5	
35	R17, R18, R35~R46, R49, R131, R173, R174, R507~R514, R535, R539, R540, R544~R546, R561, R563~R572, R605, R628, R629, R631, R636	RM73B2A512J RN Resistor (CP)	323A5003J0512	48	
36	R98, R108, R118, R128, R166, R169~R171, R183~R190, R651~R654	RM73B2A560J RN Resistor (CP)	323A5003J0560	20	
37	R552, R560, R577, R585	RM73B2A562J RN Resistor (CP)	323A5003J0562	4	
38	R551, R559, R576, R584	RM73B2A621J RN Resistor (CP)	323A5003J0621	4	
39	R135~R139, R144, R152~R161, R163, R590~R597, R600, R643~R650, R676, R677	RM73B2A680J RN Resistor (CP)	323A5003J0680	36	

**Control PCB(PX4-PCB) Rev.2
(40613301 - 6/10)**

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
40	R586~R589	RM73B2A752J RN Resistor (CP)	323A5003J0752	4	
41	R149, R606~R613, R637~R642, R663, R664	RM73B2A910J RN Resistor (CP)	323A5003J0910	17	
42	R503, R504, R537, R549, R633, C568, C569	2125JPW Tip-Jumper -(CP)	323A5003P0001	7	
43	R195~R203, R666~R675	CR/RK73K/ERJ/MCRJ101 Metallic coating resistance -C	3235003J0101	19	
44	R1~R16	MSF1/2B1ΩJ RS Resistor	324A1001J0109	16	
45	R78, R79	RM73B2A102F RN Resistor (CP)	323A5003F0102	2	
46	R80	RM73B2A123F RN Resistor (CP)	323A5003F0123	1	
47	R55, R162	RM73B2A202F RN Resistor (CP)	323A5003F0202	2	
48	R679	RM73B2A222F RN Resistor (CP)	323A5003F0222	1	
49	R57, R678	RM73B2A204F RN Resistor (CP)	323A5003F0204	2	
50	R31, R50, R56, R87	RM73B2A302F RN Resistor (CP)	323A5003F0302	4	
51	R21	RM73B2A512F RN Resistor (CP)	323A5003F0512	1	
52	R81	RM73B2A683F RN Resistor (CP)	323A5003F0683	1	
53	R85	ERJ-12YJ151 RN Resistor (CP)	323A5019J0151	1	
54	R172	RD1/4Y27KΩJ RD Resistor	321A1421J0273	1	
55					

**Control PCB(PX4-PCB) Rev.2
(40613301 - 7/10)**

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
56	EMI1~EMI4	MT-SL330KB EMI filter	342A1013K0330	4	
57	BF1, R94, R104, R114, R124	BLM21A121S Beads core (CP)	105A5010C1002	5	
58	CORE1	HF70MH2.5X2.5X20 Core-	1051000C0001	1	
59	CORE2	HF70MH2.5X2.5X16 Core-	1051000C0002	1	
60					
61	X1	CST10.0MTW Ceramic Oscillator	381A1045B0014	1	
62	X2	CSACS28.00MX040-TC Oscillator-ceramic -C	3811005B0001	1	
63					
64	FU1	251-01.5 Fuse	540A2208S1152	1	
65	FU3~FU5	251-002 Fuse	540A2208S1202	3	
66	FU2	251-007 Fuse	540A2208S1702	1	
67					
68	Q12	A1344/UN2111/DTA114K PNP-HF-TR (CP)	600A1003N0003	1	
69	Q13, Q503, Q504	2SA1338 PNP-HF-TR (CP)	600A1032N0010	3	
70	Q10	2SC3361/2SC2412KVL NPN-HF-TR (CP)	602A1003N0002	1	
71	Q11	DTC124EK NPN-HF-TR (CP)	602A1035N0004	1	

**Control PCB(PX4-PCB) Rev.2
(40613301 -8/10)**

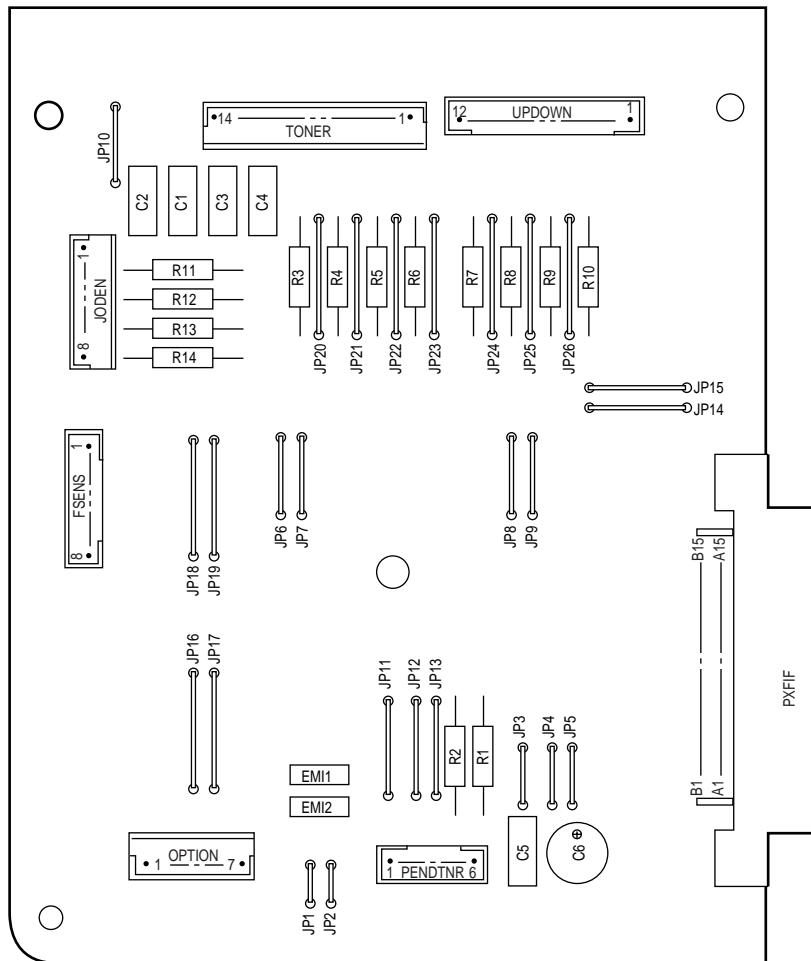
REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
72	Q1~Q9, Q15, Q16, Q501, Q502, Q506	DTC123YK NPN-HF-TR (CP)	602A1035N0019	14	
73					
74	D1, D503, D504, D539~D574	SB05-05CP Rectifying DI (CP)	610A0332N0001	39	
75	D519~D521, D523~D526, D528~D531, D533~D536, D538, D576~D579	SS100MA80VACP Signal DI (CP)	611A0000N0001	20	
76	D4~D6, D8~D11, D13~D16, D18~D21, D23, D24~D27	SS100MA80VKCP Signal DI (CP)	611A0000N0002	20	
77	D2	RD2.4M-B Zener-DI (CP)	613A0233M0032	1	
78	LED1	SEL1120R LED	650A0129M0004	1	
79	LED2	SLB-24MG3F LED	650A0337M0012	1	
80					
81	IC1	MB87D113PFV Digital IC-MOS -F	7024920N1123	1	
82	IC12	74LS07FP BIP Digital IC (SO)	700A0503N0007	1	
83	IC5, IC6	UPC324G2 BIP Linear IC (SO)	720A0023N0038	2	
84	IC13~IC20	MTD2005FB BIP Linear IC (SO)	720A1816N0001	8	
85	IC3	PST592D-2 BIP Linear IC	720A4037M0015	1	
86	IC8	M62354FP BIP data IC (SO)	722A0022N3001	1	

**Control PCB(PX4-PCB) Rev.2
(40613301 - 9/10)**

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
87	IC11	HM658512ALFP-7 Memory IC-MOSSRAM -S	8040021N2612	1	
88	IC7	62256LFP-7LL MOS-S-RAM (SO)	40965101	1	
89	IC2	NM93C66N-NW MOS-EEPROM	816A2323M0000	1	
90	IC10	MSM65524-020SS MOS-CPU (ROM)	853A0124M0002	1	
91	IC24	74HC00FP MOS Digital IC (SO)	702A1703N0000	1	
92	IC25	74HC32FP MOS Digital IC (SO)	702A1703N0032	1	
93					
94		DICF-28CS-E IC socket	245A1221P0280	1	
95		DICF-8CS-E IC socket	245A1221P0080	1	
96					
97	SW1	SOR-113HS Push-button switch	205A1165P1000	1	
98					
99	COVOPN	00-8263-0512-00-000 PC connector	224A3357P0050	1	
100	THERM	175489-6 Connector-PC board-	2244004P0060	1	
101	RSNS	175489-7 Connector-PC board	2244004P0070	1	
102	HETBELT, YIDREG	175489-8 Connector-PC board	2244004P0080	2	

**Control PCB(PX4-PCB) Rev.2
(40613301 - 10/10)**

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
103	MCKID, FF	1-175489-2 Connector-PC board	2244004P0120	2	
104	HEAD1	1-175489-3 Connector-PC board	2244004P0130	1	
105	HEAD2	1-175489-4 Connector-PC board	2244004P0140	1	
106	HEAD3	1-175489-5 Connector-PC board	2244004P0150	1	
107	HEADPOW	S12B-PH-K-S PC connector	224A3531P0120	1	
108	PSIZE	06FE-BT-VK-N Connector-PC board	2244102P0060	1	
109	HVOLT	16FE-BT-VK-N Connector-PC board	2244102P0160	1	



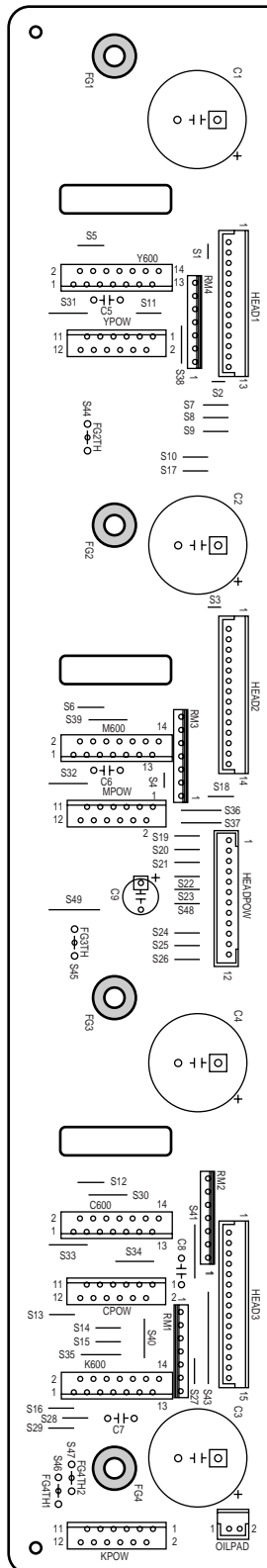
I/F PCB (PXF-PCB) Rev. 4
(40094201 - 1/3)

I/F PCB(PXF-PCB) Rev.4
(40094201 - 2/3)

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
1	PXFIF	00-8345-230-989-012 PC connector	224A3790P0300	1	
2	OPTION	175487-7 PC connector	224A4322P0070	1	
3					
4	R1~R10	RD1/4Y5.1KΩJ RD Resistor	321A1421J0512	10	
5	R11~R14	RD1/4Y4.7KΩJ RD Resistor	321A1421J0472	4	
6					
7	JP1, JP2	0.6Tinned, annealed copper wire	TA-0.6	2	
8	JP3~JP5	0.6Tinned, annealed copper wire	TA-0.6	3	
9	JP6~JP10	0.6Tinned, annealed copper wire	TA-0.6	5	
10	JP11~JP15	0.6Tinned, annealed copper wire	TA-0.6	5	
11	JP16~JP26	0.6Tinned, annealed copper wire	TA-0.6	11	
12					
13	C1~C5	HKZ5V4B/TCK45F2E103 Capacitor-Magnetic	3024003Z5103	5	-P
14	C6	KMG25VB-100M-FC CE Capacitor	304A1180E1101	1	25V 100μF
15					
16	EMI1, EMI2	ZJSC-R47-181 EMI filter	342A1012P1181	2	

**I/F PCB(PXF-PCB) Rev.4
(40094201 - 3/3)**

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
17	FSENS	B8B-PH-K-S PC connector	224A3529P0080	1	
18	JODEN	175487-8 Connector-PC board-	2244005P0080	1	
19	TONER	1-175487-4 Connector-PC board	2244005P0140	1	
20	PENDTNR	B6B-PH-K-S PC connector	224A3529P0060	1	
21	UPDOWN	B12B-PH-K-S PC connector	224A3529P0120	1	



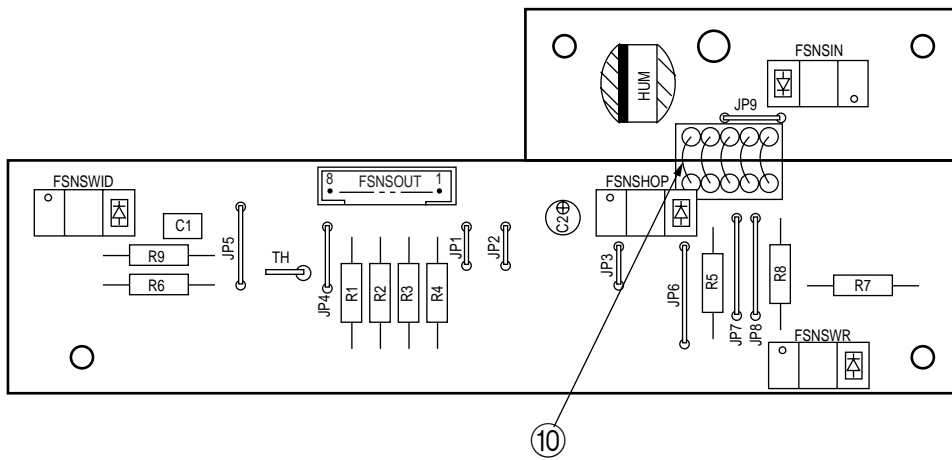
**Head I/F PCB (PD6-PCB) Rev. 3
(40518001 - 1/3)**

**Head I/F PCB(PD6-PCB) Rev.3
(40518001 - 2/3)**

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
1	HEAD1	1-175487-3 Connector-PC board-	2244005P0130	1	
2	HEAD2	1-175487-4 Connector-PC board-	2244005P0140	1	
3	HEAD3	1-175487-5 Connector-PC board-	2244005P0150	1	
4	HEADPOW	B12B-PH-K-S PC connector	224A3529P0120	1	
5	OILPAD	175487-2 Connector-PC board-	2244005P0020	1	
6	Y600, M600, C600, K600	14FE-BT-VK-N Connector-PC board-	2244102P0140	4	
7	YPOW, MPOW, CPOW, KPOW	12FE-BT-VK-N Connector-PC board	2244102P0120	4	
8					
9	C1~C4	UVS1A332MHA CE Capacitor	10V 3300 μ F	304A1137A1332	4
10	C5~C8	CK92F1E155ZS CK Capacitor	25V 1.5 μ F	303A4117Z2155	4
11	C9	10MS5-68M CE Capacitor	10V 68 μ F	304A1046A1680	1
12					
13	RM1~RM4	MRM-6-512JG Block Resistor		334A3267J0512	4
14					
15	S1~S4, S44~S47	0.6Tinned, annealed copper wire	TA-0.6		8
16	S5~S29, S48	0.6Tinned, annealed copper wire	TA-0.6		26

**Head I/F PCB(PD6-PCB) Rev.3
(40518001 - 3/3)**

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
17	S30~S40	0.6Tinned, annealed copper wire	TA-0.6	11	
18	S41, S49	0.6Tinned, annealed copper wire	TA-0.6	2	
19	S43	Z01/4W Resistor-0Ω-Q	3251503P0001	1	
20					
21					
22		Film-Guide (TN)	40309701	1	



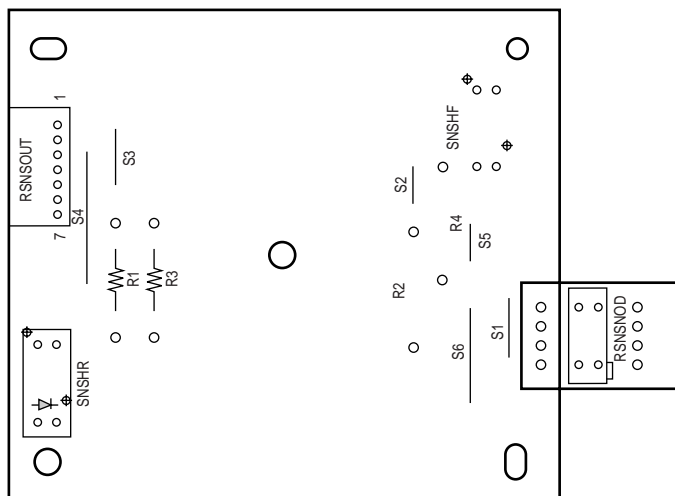
**Front Sensor PCB (PXM-PCB) Rev. 3
(40310501 - 1/3)**

**Front Sensor PCB(PXM-PCB) Rev.3
(40310501 - 2/3)**

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
1	R1~R4	RD1/4Y10KΩJ RD Resistor	321A1421J0103	4	
2	R5~R8	RD1/4Y200KΩJ RD Resistor	321A1421J0201	4	
3	R9	RNL1/4C3F12KΩJ RN Resistor	323A1222F0123	1	
4					
5	C1	CK92F1H104ZY CK Capacitor	50V 0.1μF 303A0420Z3104	1	
6	C2	16MS5-10M CE Capacitor	16V 10μF 304A1046C1100	1	
7					
8	FSNSHOP, FSNSIN, FSNSWID, FSNSWR	RPI-574/#9568 Photo coupler	652A0103M0002	4	
9					
10		V2RJ-D-0M-1SX5X60 Jumper	238A1043P0011	1	
11					
12					
13	FSNSOUT	B8B-PH-K-S PC connector	224A3529P0080	1	
14					
15	TH	PXN-42H-01# Resistor-Thermistor	-P 6300031M0001	1	
16	HUM	CHS-MSS Sensor-humidity	- 5612000P0001	1	

**Front Sensor PCB(PXM-PCB) Rev.3
(40310501 - 3/3)**

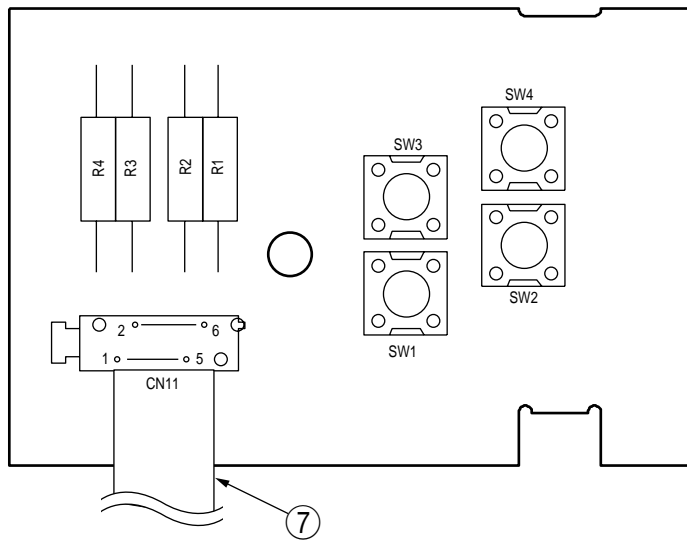
REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
17					
18	JP1~JP3	0.6 Tinned, annealed copper wire	TA-0.6	3	
19	JP4, JP9	0.6Tinned, annealed copper wire	TA-0.6	2	
20	JP5	0.6Tinned, annealed copper wire	TA-0.6	1	
21	JP6~JP8	0.6Tinned, annealed copper wire	TA-0.6	3	



**Rear Sensor PCB (PXL-PCB) Rev. 3
(40310401 - 1/2)**

**Rear Sensor PCB(PXL-PCB) Rev.3
(40310401 - 2/2)**

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
1	R1	RD1/4Y10KΩJ RD Resistor	321A1421J0103	1	
2	R3	RD1/4Y200KΩJ RD Resistor	321A1421J0201	1	
3					
4	RSNSNOD	EE-SF5-B (Rank B) Photo Sensor	563A1012P0001	1	
5	SNSHR	RPI-574/#9568 Photo coupler	652A0103M0002	1	
6					
7		V2RJ-D-0M-1SX4X40 Jumper	238A1043P0043	1	
8					
9	S2, S5	0.6Tinned, annealed copper wire	TA-0.6	2	
10	S1, S3	0.6Tinned, annealed copper wire	TA-0.6	2	
11	S4, S6	0.6Tinned, annealed copper wire	TA-0.6	2	
12					
13	RSNSOUT	175489-7 Connector-PC board	2244004P0070	1	



**Cassette Switch PCB(PXC-PCB) Rev.3
(40140501 - 1/2)**

**Cassette Switch PCB(PXC-PCB) Rev.3
(40140501 - 2/2)**

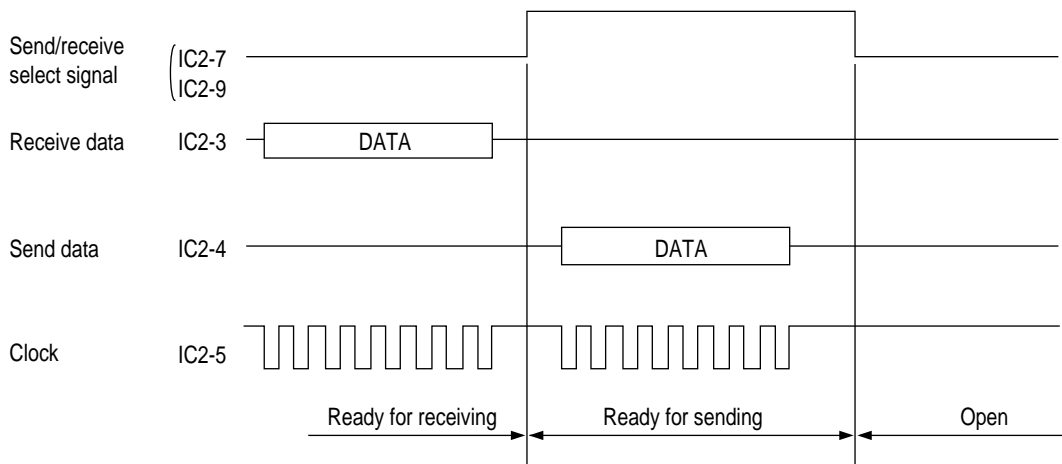
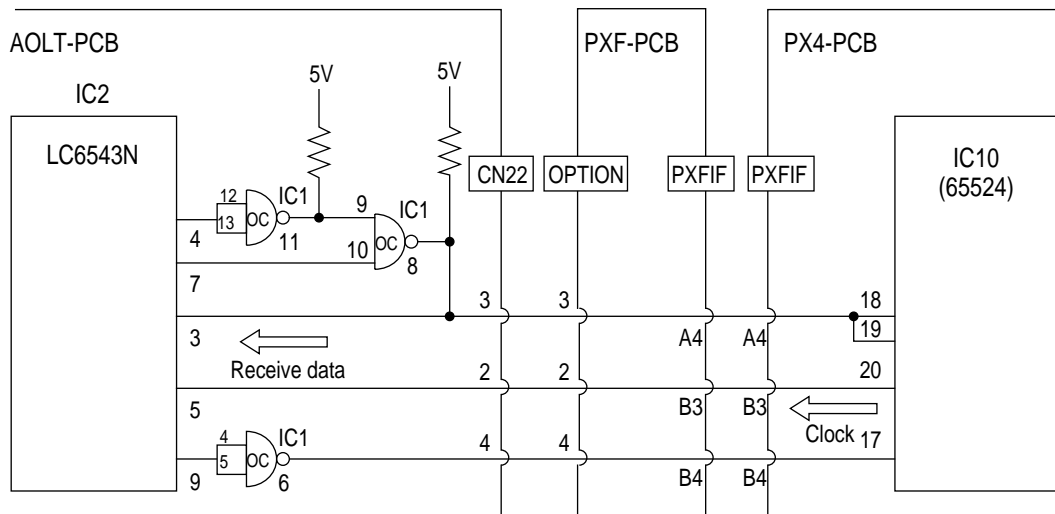
REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
1	SW1~SW4	SOR-113HS Push Button Switch	205A1165P1000	4	
2					
3	CN11	00-5062-301-006-000 PC Connector	224A5114P0060	1	
4					
5	R1~R4	RD1/4Y10KΩJ RD Resistor (CP)	321A1421J0103	4	
6					
7	SC1	HCUJ(1.25)-6H-250 Connecting parts-	2381006P0001	1	

APPENDIX A HIGH CAPACITY SECOND PAPER FEEDER (OPTION)

1. CIRCUIT DESCRIPTION

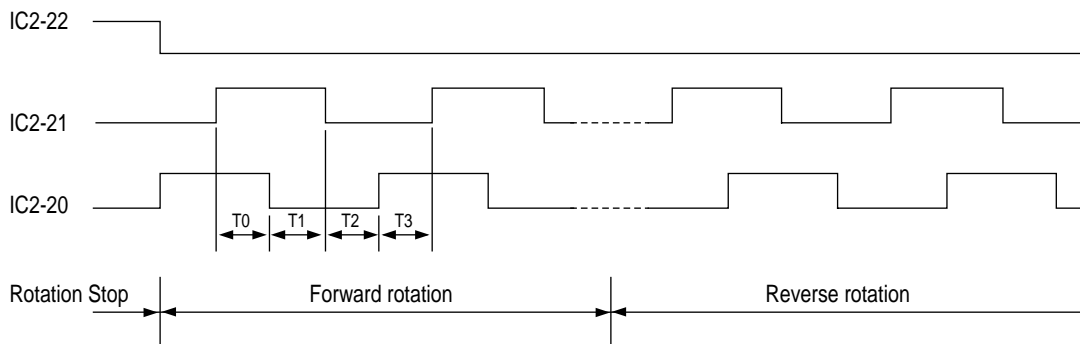
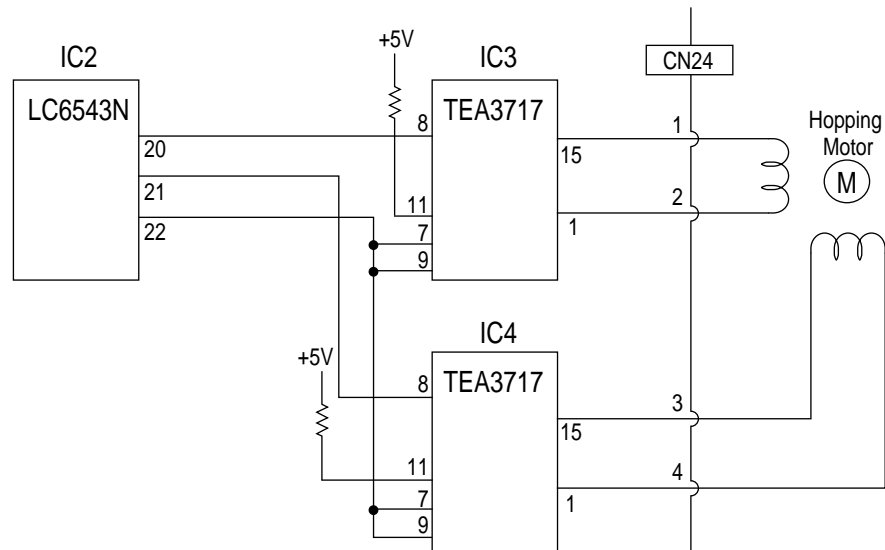
1.1 Interface

IC2 (LC6543N) uses a single line for transferring data to and from the CPU on the main unit side by performing the switchover between sending and receiving. To receive data from the CPU on the main unit side, IC2 (LC6543N) causes the send/receive select signal at pin 7 of IC2 to be LOW in order to drive the open collector output (pin 8 of IC1) to the high impedance state. As a result, the line in the send direction is open and the receive data ready state is established. To send data to the CPU on the main unit side, IC2 causes the send/receive select signal (pin 7 of IC2) to be HIGH, so that the send data ready state can be established. Under this condition, IC2 can send out data through pin 4. When finishing data transmission, IC2 causes the send/receive select signal (pin 7 of IC2) to be LOW to open the send direction of the line.



1.2 Motor Control

The hopping motor is driven by the driver IC according to the control signal from IC2 (LC6543N). The hopping motor will drive either the hopping roller or the feed roller depending on the rotation direction of the motor.



2. TROUBLESHOOTING

2.1 Troubleshooting Table

(A) Interface/motor control board (BBB)

Failure	LCD Message	Flowchart No.																												
Paper input JAM occurs.	<table border="1"> <tr> <td>P</td><td>A</td><td>P</td><td>E</td><td>R</td> <td>I</td><td>N</td><td>P</td><td>U</td><td>T</td> <td>J</td><td>A</td><td>M</td> </tr> <tr> <td>C</td><td>H</td><td>E</td><td>C</td><td>K</td> <td>T</td><td>R</td><td>A</td><td>Y</td><td>*</td> <td></td><td></td><td></td> </tr> </table>	P	A	P	E	R	I	N	P	U	T	J	A	M	C	H	E	C	K	T	R	A	Y	*				A - 1		
P	A	P	E	R	I	N	P	U	T	J	A	M																		
C	H	E	C	K	T	R	A	Y	*																					
Paper size ERROR occurs.	<table border="1"> <tr> <td>E</td><td>R</td><td>R</td><td>O</td><td>R</td> <td>P</td><td>A</td><td>P</td><td>E</td><td>R</td> <td>S</td><td>I</td><td>Z</td><td>E</td> </tr> <tr> <td>C</td><td>H</td><td>E</td><td>C</td><td>K</td> <td>T</td><td>R</td><td>A</td><td>Y</td><td>*</td> <td></td><td></td><td></td><td></td> </tr> </table>	E	R	R	O	R	P	A	P	E	R	S	I	Z	E	C	H	E	C	K	T	R	A	Y	*					A - 2
E	R	R	O	R	P	A	P	E	R	S	I	Z	E																	
C	H	E	C	K	T	R	A	Y	*																					
The message "PAPER OUT" remains displayed on the LCD.	<table border="1"> <tr> <td>P</td><td>A</td><td>P</td><td>E</td><td>R</td> <td>O</td><td>U</td><td>T</td> <td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>*</td><td>*</td><td>*</td><td>*</td><td>*</td> <td>*</td><td>*</td><td>*</td> <td>T</td><td>R</td><td>A</td><td>Y</td><td>*</td> </tr> </table>	P	A	P	E	R	O	U	T						*	*	*	*	*	*	*	*	T	R	A	Y	*	A - 3		
P	A	P	E	R	O	U	T																							
*	*	*	*	*	*	*	*	T	R	A	Y	*																		
The message "PAPER NEAREND T*" remains displayed on the LCD.	<table border="1"> <tr> <td></td><td></td><td></td><td></td><td></td> <td></td><td></td><td></td><td></td><td></td> <td></td><td></td><td></td><td></td> </tr> <tr> <td>P</td><td>A</td><td>P</td><td>E</td><td>R</td> <td>N</td><td>E</td><td>A</td><td>R</td><td>E</td><td>N</td><td>D</td> <td>T</td><td>*</td> </tr> </table>															P	A	P	E	R	N	E	A	R	E	N	D	T	*	A - 4
P	A	P	E	R	N	E	A	R	E	N	D	T	*																	
Option Tray I/F timeout error occurs.	<table border="1"> <tr> <td>E</td><td>R</td><td>R</td><td>O</td><td>R</td> <td></td><td></td><td></td><td></td><td></td> <td></td><td></td><td></td><td></td> </tr> <tr> <td>8</td><td>1</td> <td></td><td></td><td></td> <td></td><td></td><td></td><td></td><td></td> <td></td><td></td><td></td><td></td> </tr> </table>	E	R	R	O	R										8	1													A - 5
E	R	R	O	R																										
8	1																													

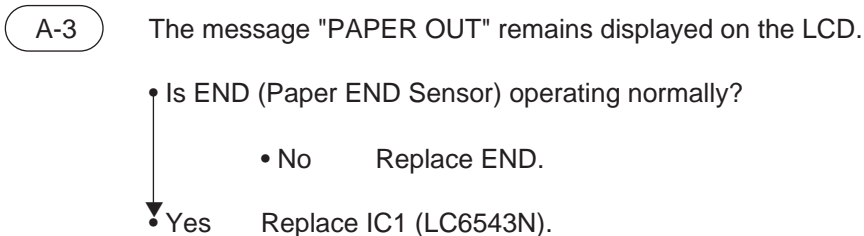
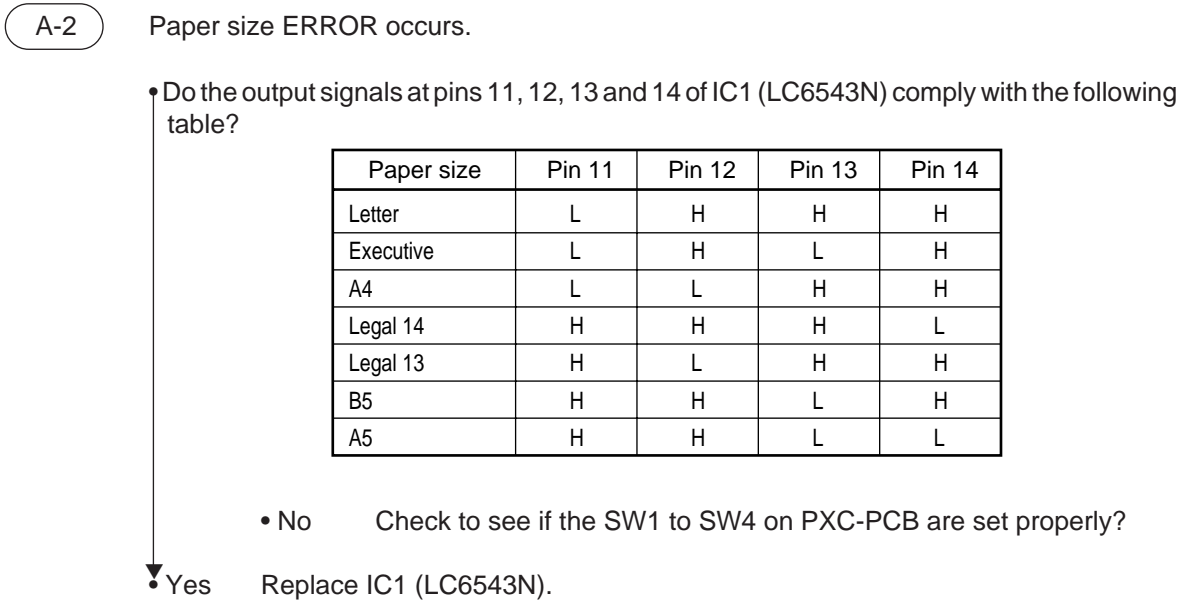
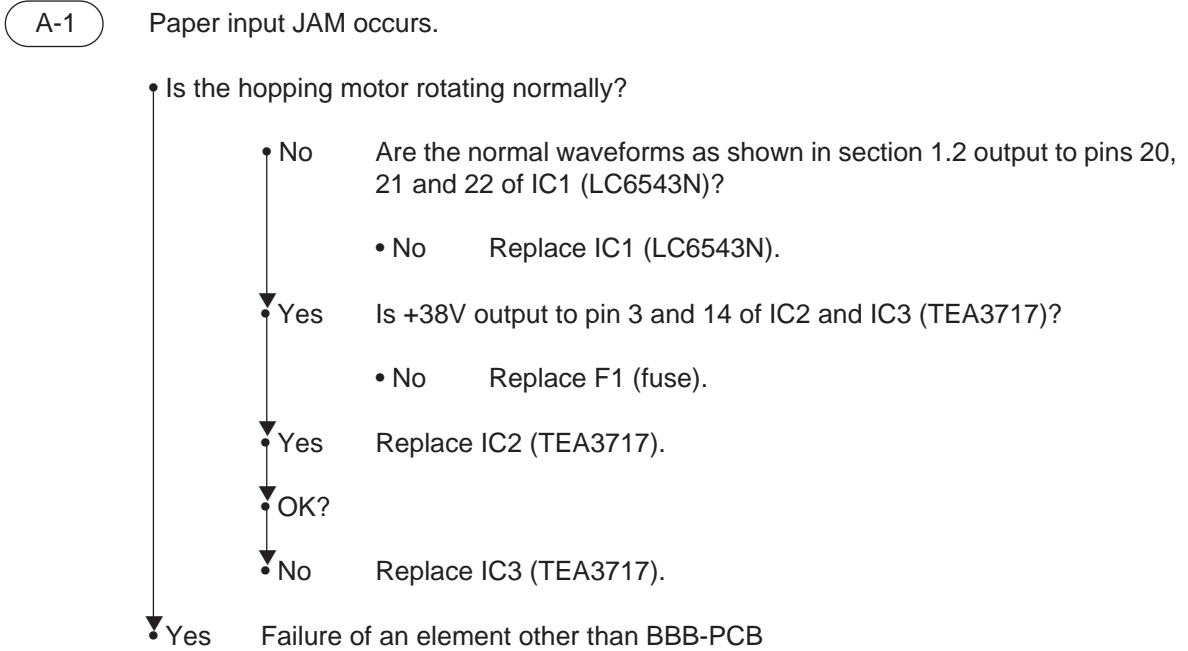
* : 2 or 3

(B) Cassette switch board (PXC)

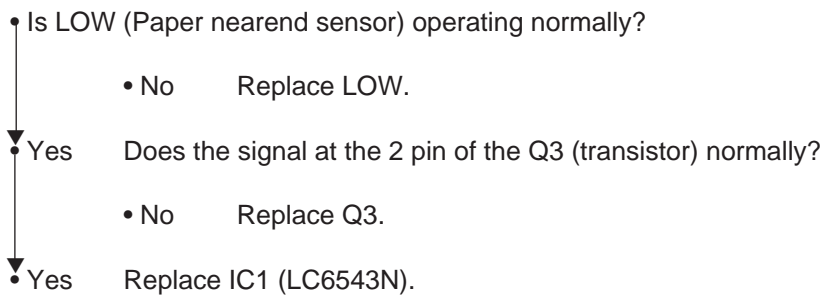
Failure	LCD Message	Flowchart No.																												
Paper size error occurs.	<table border="1"> <tr> <td>E</td><td>R</td><td>R</td><td>O</td><td>R</td> <td>P</td><td>A</td><td>P</td><td>E</td><td>R</td> <td>S</td><td>I</td><td>Z</td><td>E</td> </tr> <tr> <td>C</td><td>H</td><td>E</td><td>C</td><td>K</td> <td>T</td><td>R</td><td>A</td><td>Y</td><td>*</td> <td></td><td></td><td></td><td></td> </tr> </table>	E	R	R	O	R	P	A	P	E	R	S	I	Z	E	C	H	E	C	K	T	R	A	Y	*					B - 1
E	R	R	O	R	P	A	P	E	R	S	I	Z	E																	
C	H	E	C	K	T	R	A	Y	*																					

* : 2 or 3

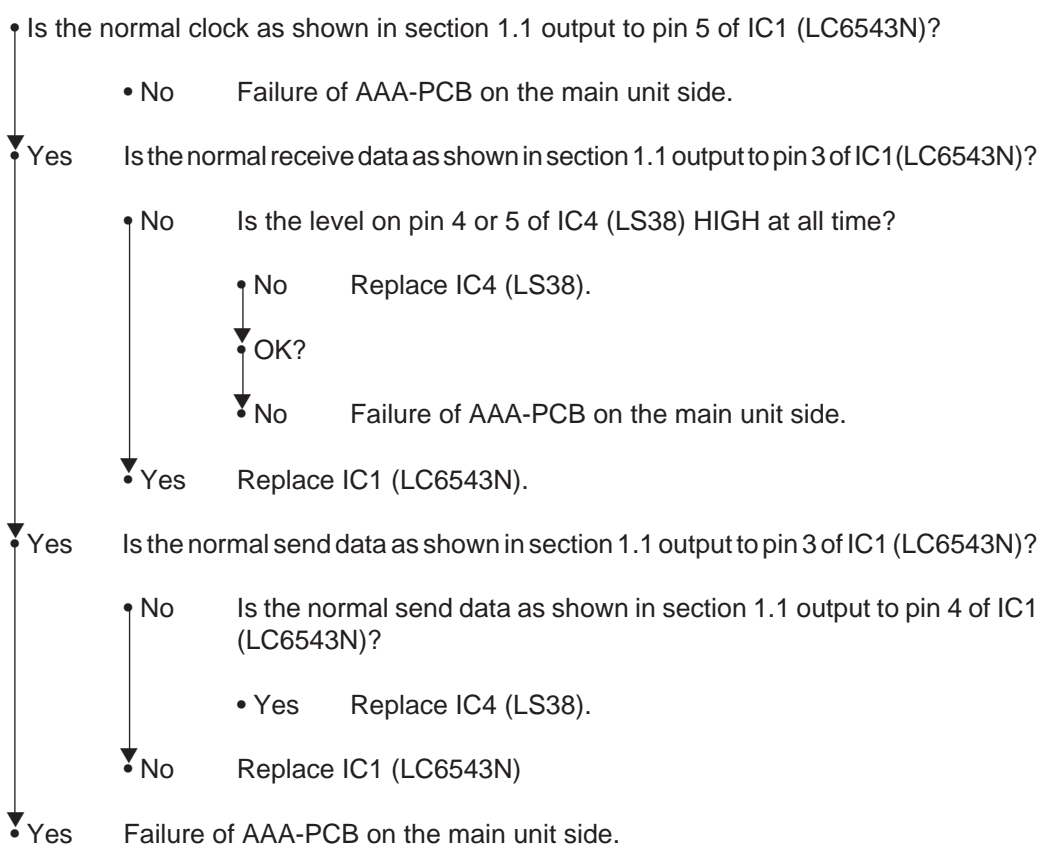
2.2 Troubleshooting Flowchart



A-4 The message "PAPER NEAREND T*" remains displayed on the LCD.



A-5 Option Tray I/F timeout error.



B-1

PAPER SIZE ERROR occurs.

- Does the PAPER SIZE 1 signal at pin 4 of CN11 go LOW when SW1 is depressed and does the same signal go HIGH when SW1 is not depressed?
 - No Replace SW1.
- Yes Does the PAPER SIZE 1 signal at pin 3 of CN11 go LOW when SW2 is depressed and does the same signal go HIGH when SW2 is not depressed?
 - No Replace SW2.
- Yes Does the PAPER SIZE 2 signal at pin 2 of CN11 go LOW when SW3 is depressed and does the same signal go HIGH when SW3 is not depressed?
 - No Replace SW3.
- Yes Does not PAPER SIZE 3 signal at pin 1 of CN11 go LOW when SW4 is depressed and does the same signal go HIGH when SW4 is not depressed?
 - No Replace SW4.
- Yes Replace flexible cable.

3. CIRCUIT DIAGRAM

Figure 3-1(1/1) 2nd Tray Control-PCB (AOLT-PCB, Rev. 4)

Figure 3-2(1/1) 2nd Tray Cassette Switch-PCB (AOLD-PCB, Rev. 4)

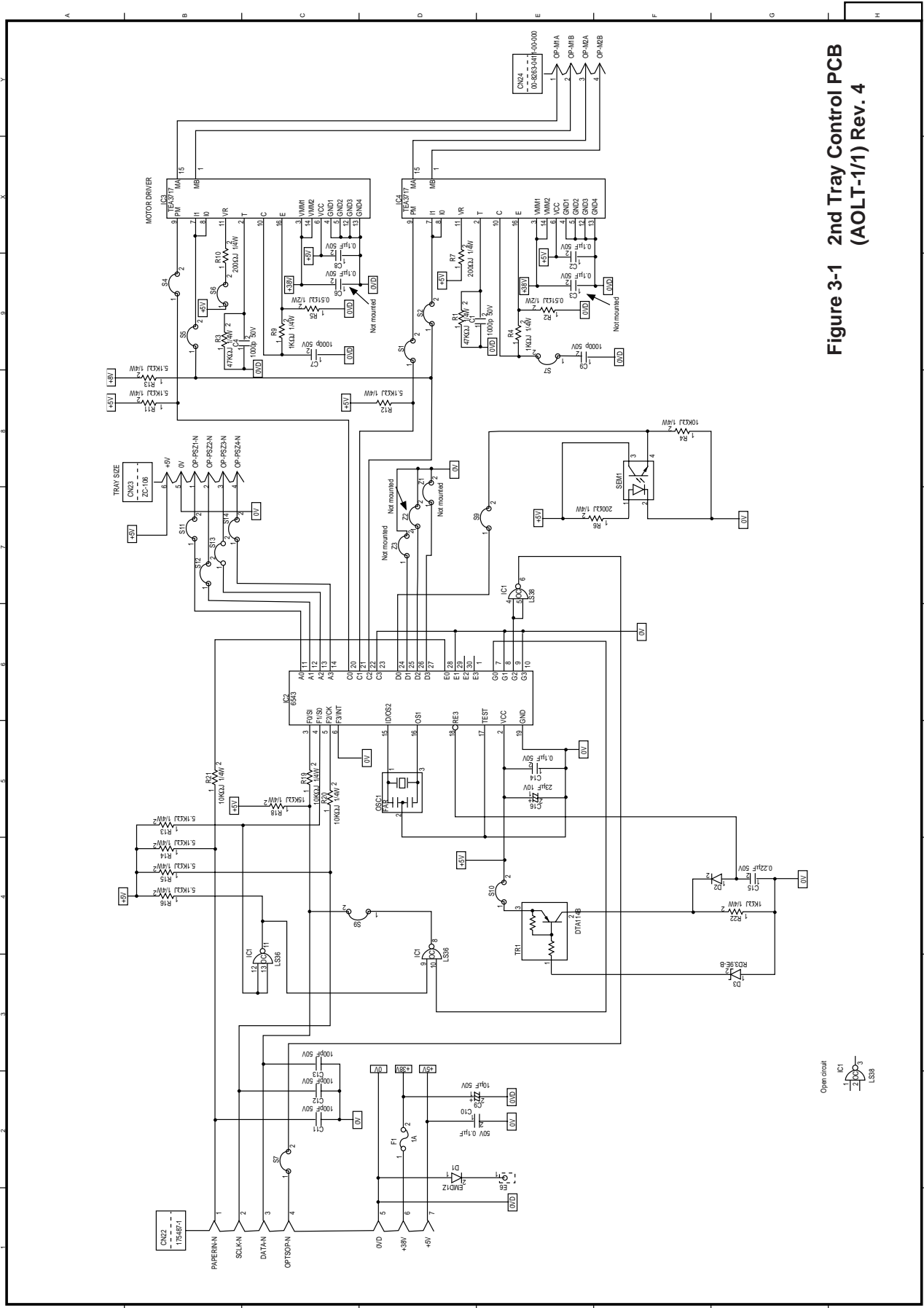
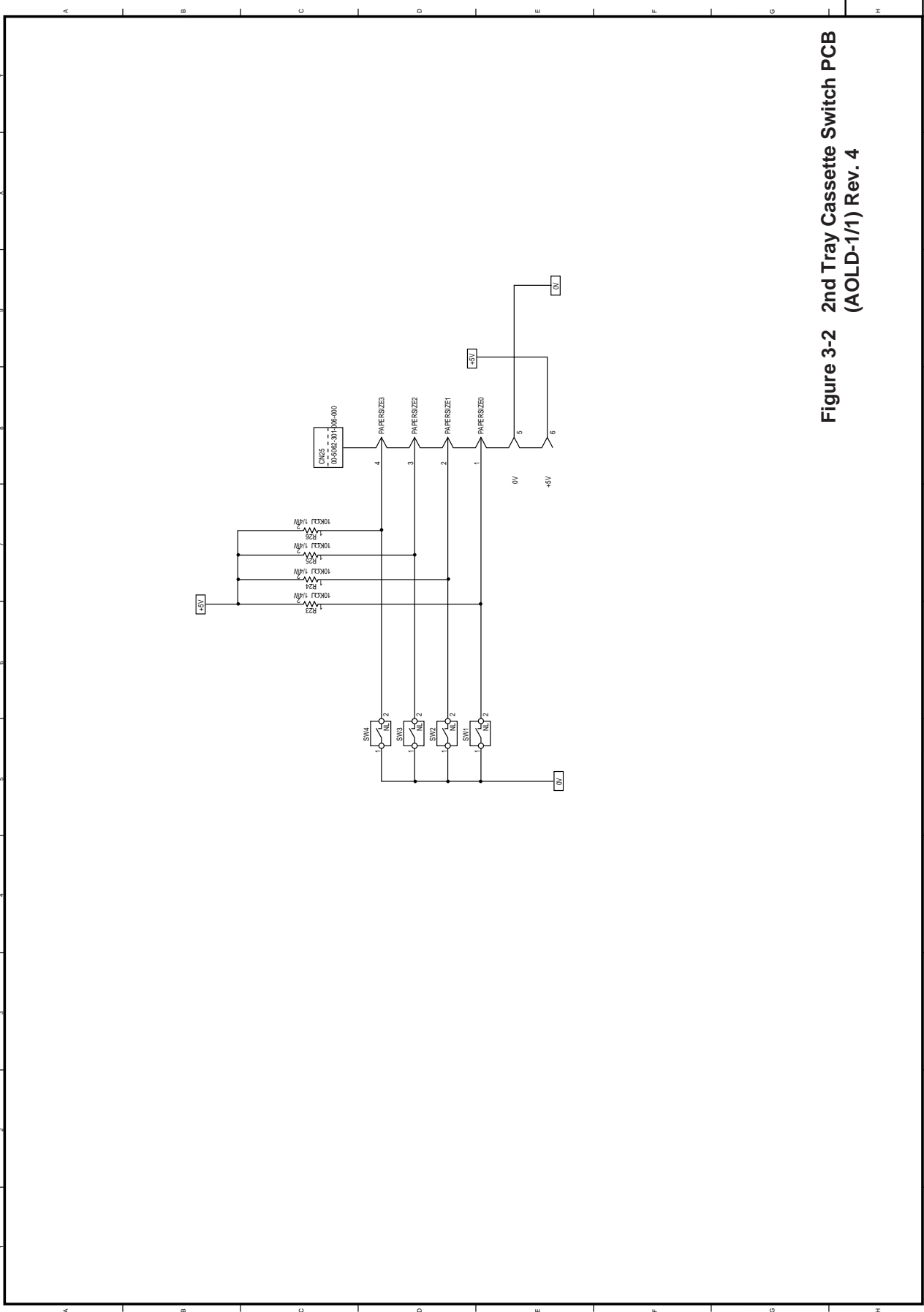


Figure 3-1 2nd Tray Control PCB (AOLT-1/1) Rev. 4

Open circuit
 IC1
 LS36

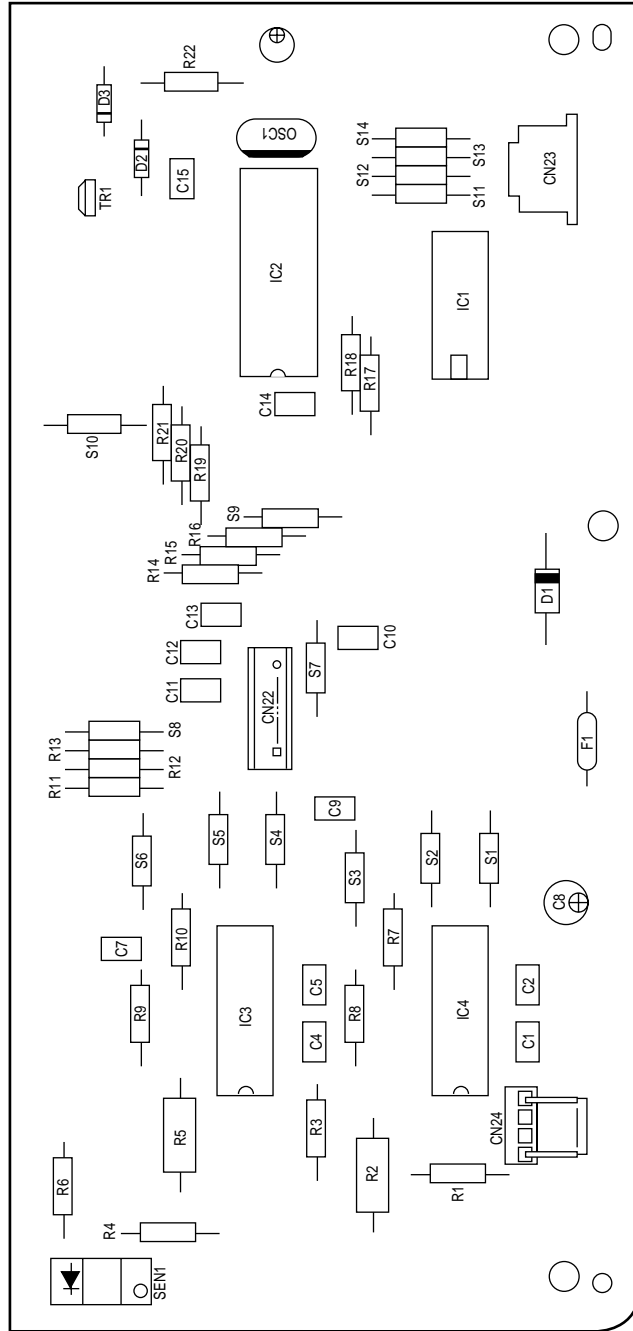


**Figure 3-2 2nd Tray Cassette Switch PCB
(AOLD-1/1) Rev. 4**

4. COMPONENT PARTS LIST

2nd Tray Control-PCB (AOLT-PCB, Rev.4)

2nd Tray Cassette Switch-PCB (AOLD-PCB, Rev.4)



**2nd Tray Control PCB(AOLT-PCB) Rev.4
(YU5003-6135G011 - 1/4)**

**2nd Tray Control PCB(AOLT-PCB) Rev.4
(YU5003-6135G011 - 2/4)**

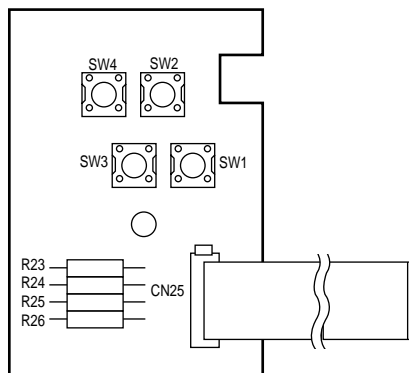
REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
1	D2	1S953/1S2075K/1S2473 Signal DI	611A0003L0001	1	
2	D3	RD3.9E-B Zener-DI	613A1231L0082	1	
3	D1	EM01Z/SM1XN02/DSM1D2 Rectifying DI	610A0003M0001	1	
4					
5	R1, R3	RD1/4Y47KΩJ RD Resistor	321A1421J0473	2	
6	R2, R5	MSF1/2B0.51ΩJ RS Resistor	324A1001J0518	2	
7	R8, R9, R22	RD1/4Y1KΩJ RD Resistor	321A1421J0102	3	
8	R4, R19~R21	RD1/4Y10KΩJ RD Resistor	321A1421J0103	4	
9	R16	RD1/4Y15KΩJ RD Resistor	321A1421J0153	1	
10	R11~R15, R17, R18	RD1/4Y5.1KΩJ RD Resistor	321A1421J0512	7	
11	R6, R7, R10	RD1/4Y200ΩJ RD Resistor	321A1421J0201	3	
12					
13					
14	C8	KMG50VB-10M 50V CE Capacitor 10μF	304A1164H1100	1	
15	C16	10MS5-33M 10V CE Capacitor 33μF	304A1046A1330	1	
16	C15	RPE122-127E334M50 CK Capacitor 0.33μF	303A4116M3334	1	

**2nd Tray Control PCB(AOLT-PCB) Rev.4
(YU5003-6135G011 - 3/4)**

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
17	C1, C4, C7, C9	FK20C0G1H102K 50V CC Capacitor 1000pF	303A1010C0102	4	
18	C11, C13	FK16C0G1H101J 50V CC Capacitor 100pF	303A1014C3101	2	
19	C2, C5, C10, C14	CK92F1H104ZY 50V CK Capacitor 0.1μF	303A0420Z3104	4	
20	C12	CK92C1H471MS 50V CK Capacitor 470pF	303A4115M3471	1	
21					
22	IC1	74LS38P BIP Digital IC	700A0503M0038	1	
23	IC2	LC6543N-4E07 MOS-CPU (ROM)	853A0036M0003	1	
24	IC3, IC4	TEA3717DP BIP Linear IC	720A1889M0001	2	
25	SEN1	SG-205-B Photocoupler	652A0114M0001	1	
26					
27					
28	TR1	DTA114S PNP-HF-TR	600A1035M0005	1	
29	OSC1	CST4.00MGW Ceramic Oscillator	381A1025B0002	1	
30					
31					
32	S1-S14	JPW02 Jumper wire	321A1520P0001	14	

**2nd Tray Control PCB(AOLT-PCB) Rev.4
(YU5003-6135G011 - 4/4)**

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
33					
34	F1	251-001 Fuse	540A2208S1102	1	
35					
36					
37	CN22	175487-7 PC Connector	224A4322P0070	1	
38	CN23	ZC-106 PC Connector	224A3591P0060	1	
39	CN24	00-8263-0411-00-000 PC Connector	224A3358P0040	1	



**2nd Tray Cassette Switch PCB(AOLD-PCB) Rev.4
(YU5003-6135G012 - 1/2)**

**2nd Tray Cassette Switch PCB(AOLD-PCB) Rev.4
(YU5003-6135G012 - 2/2)**

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
1	R22~R25	RD1/4Y10KΩJ RD Resistor	321A1421J0103	4	
2					
3	CN11	00-5062-301-006-000 PC Connector	224A5114P0060	1	
4					
5	SW1~SW4	SOR-113HS Push-button switch	205A1165P1000	4	
6					
7			4YX4046-1668G001	1	