OKI

OKIPAGE 10ex
LED Page Printer

Troubleshooting Manual with Component Parts List

ODA/OEL/INT

1999. 1. 18 Rev.1

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1. OUTLINE

This manual has been written to provide guidance for troubleshooting of the OKIPAGE 10ex Printer (primarily for its printed circuit boards), based on the assumption that the reader has a thorough knowledge concerning the printer. Read the maintenance manual for this printer, 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. Thus, the objects to be locally repaired as a result of troubleshooting are switches and fuses.
2. Replacement of CPU (MHM2029) is not recommended. If CPU is found 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
Extension cord kit	P/N: 40581901
Oscilloscope	Frequency response 100 MHz or higher
Soldering iron	A slender tip type, 15-20 watts

3. CIRCUIT DESCRIPTION

3.1 Outline

The main control board 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 engine and the operator panel. Its block diagram is shown in Fig. 3-1 .

(1) Reception control
The OKIPAGE 10ex Printer can be equipped with one I/F port by adding an RS232C I/F option board in addition to the Centronics I/F on the main control board.
Either of the two I/F ports which receives data first can be used automatically.
The other I/F port outputs a busy state signal.
The parallel I/F port can specify the following item when set by the control panel:
I-PRIME: Enabled/Disabled

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

Flow control	:	DTRHI/DTR LO/XONXOFF/RBSTXON
Baud rate	:	300/600/1200/2400/4800/9600/19200 (Baud)
Data bit	:	7/8 (bits)
Minimum busy time	:	200/1000 (ms)
Parity	:	NONE/ODD/EVEN

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

(2) Command analysis processing
The OKIPAGE 10ex Printer support PCL6 (Hewlett Packard LJ6P compatible).
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 developes 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.

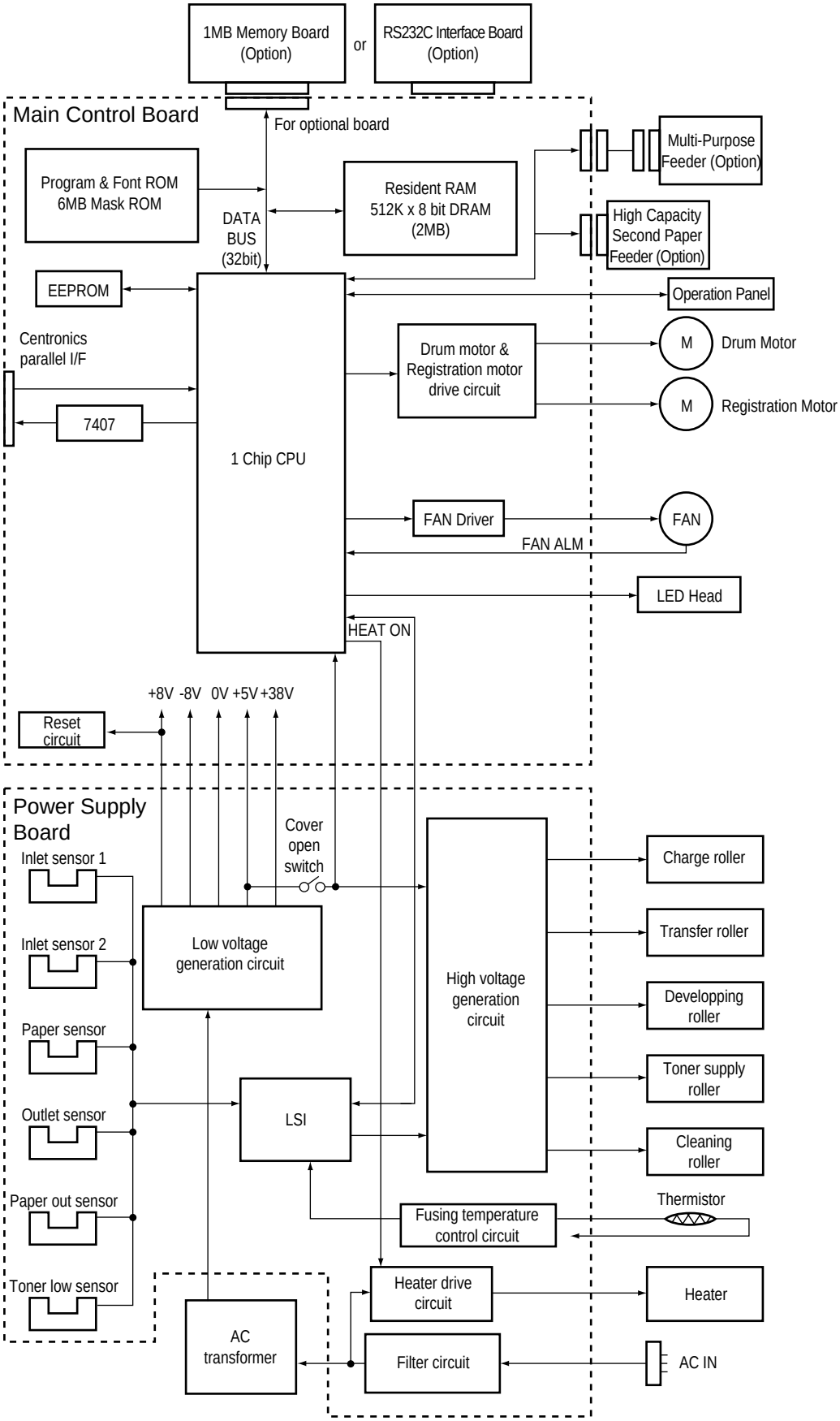


Figure 3-1 Block Diagram

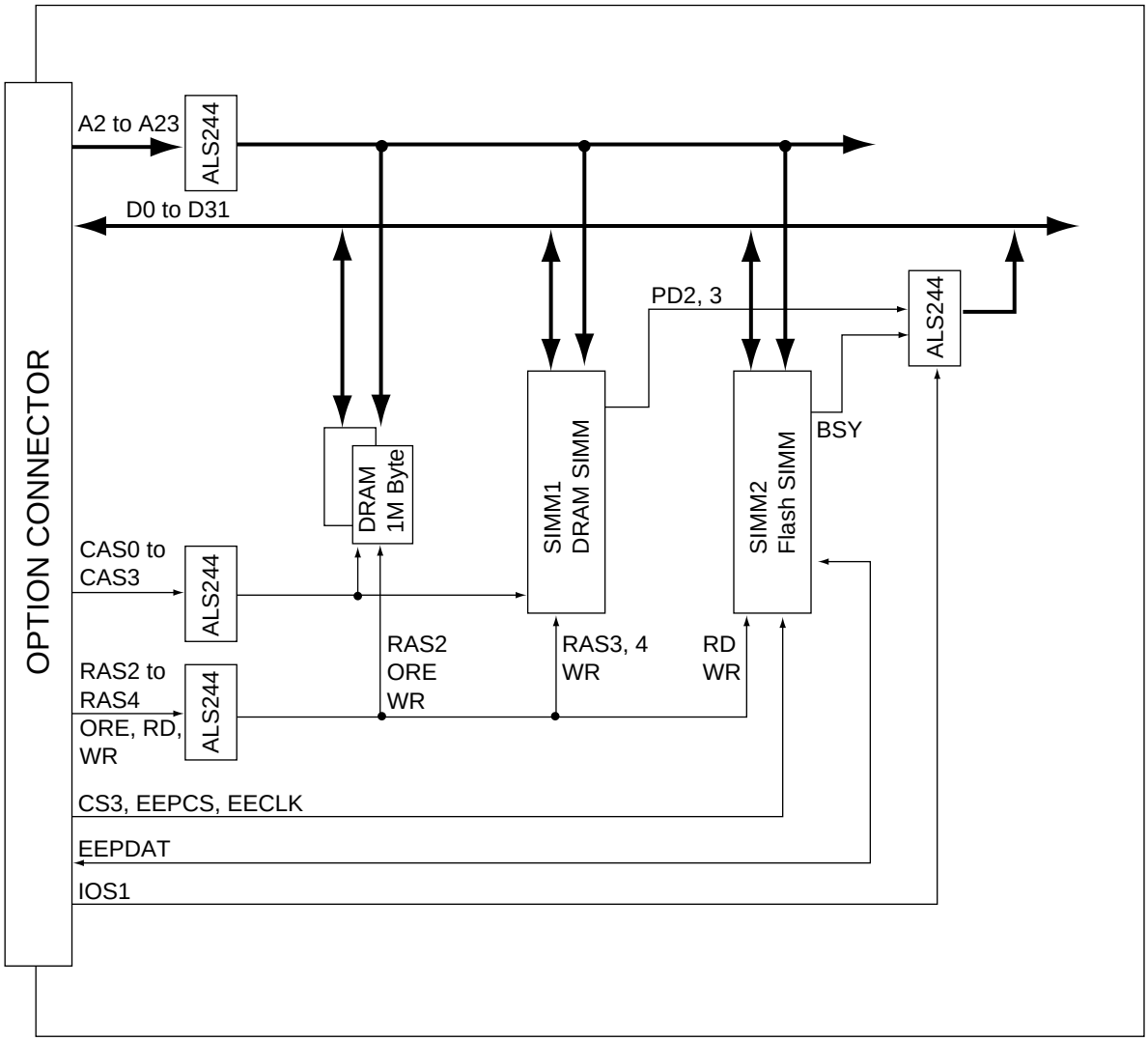


Figure 3-2 Memory Expansion Board Block Diagram (Option)

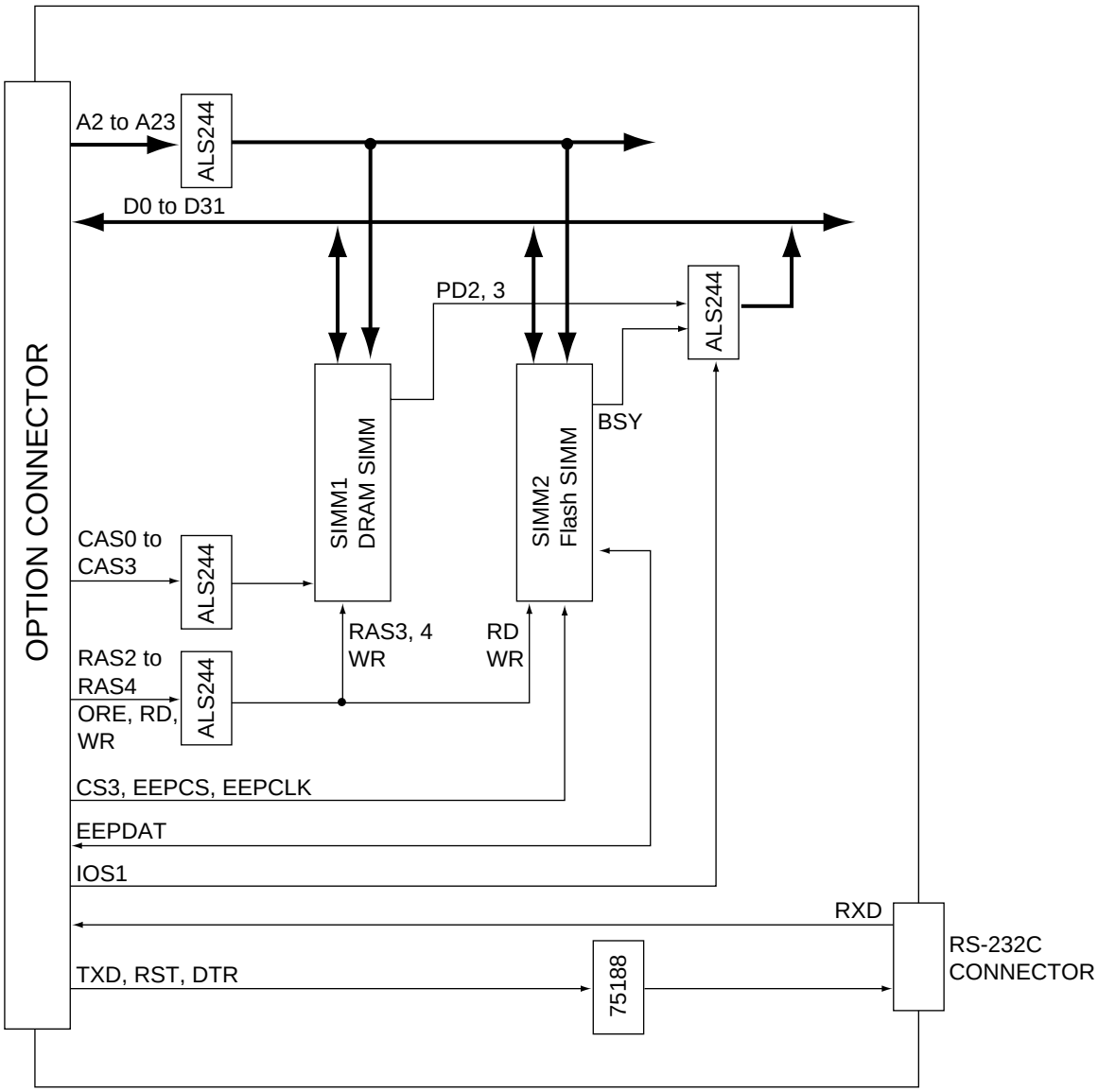


Figure 3-3 RS-232C Serial Interface Board Block Diagram (Option)

3.2 CPU and Memory

(1) CPU (MHM2029-004K)

CPU core	RISC CPU (MIPS R3000 compatible)
CPU clock	7.067 MHz
Internal CPU CLK	28.268 MHz

(2) Program and Font ROMs

ROM capacity	6M bytes (24M bit mask ROM two pieces)
ROM type	24M bits (1.5M x 16 bits)
Access time	100 ns

(3) Resident RAM

RAM capacity	2M bytes (4-Mbit D-RAM four pieces)
RAM type	4M bits (512k x 8 bits)
Access time	70 ns

(4) Option Board

RAM capacity (chip)	1M byte	
RAM type (chip)	4M bits D-RAM two pieces	} Memory Expansion Board only
Access time (chip)	60 ns	

SIMM 1 socket	2, 4, 8, 16 or 32M bytes, 72 pin DRAM SIMM, 60 to 100 ns
SIMM 2 socket	Flash SIMM (72 pin)

The block diagram of CPU and memory circuit is shown in Fig. 3-4.

The timing chart of CPU and memory ciucuit is shown in Fig. 3-5.

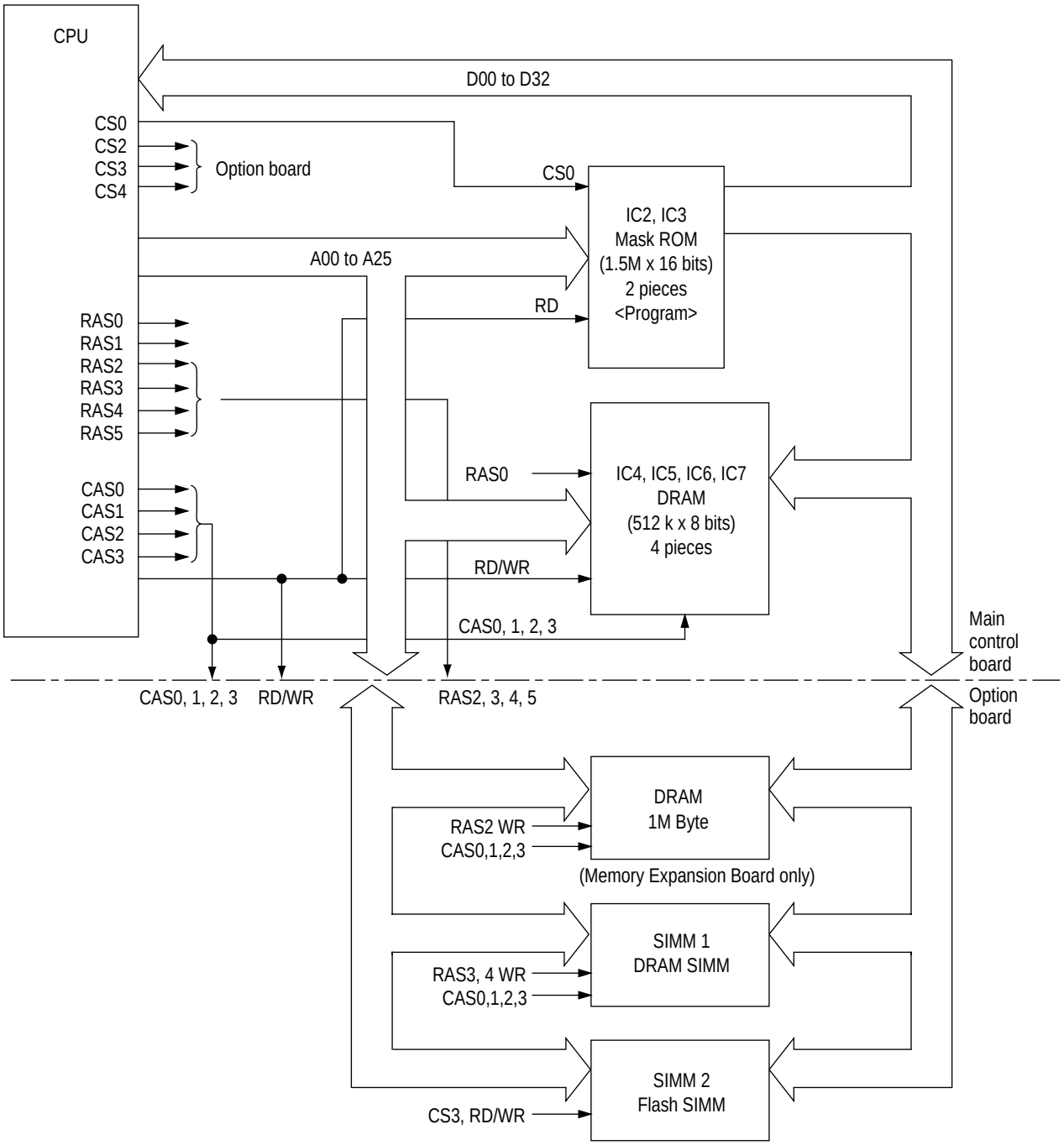
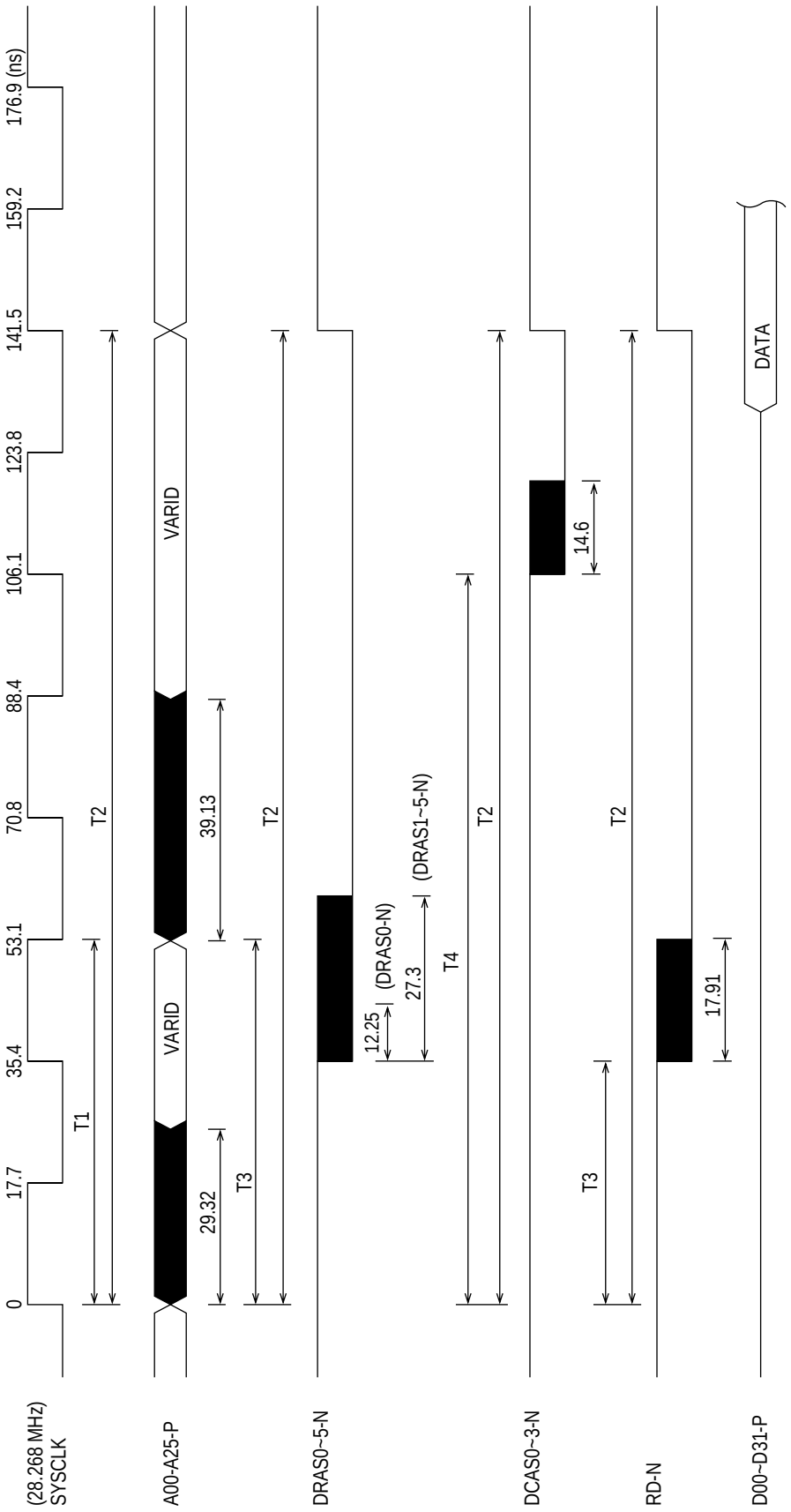


Figure 3-4 Block Diagram of CPU & Memory Circuit



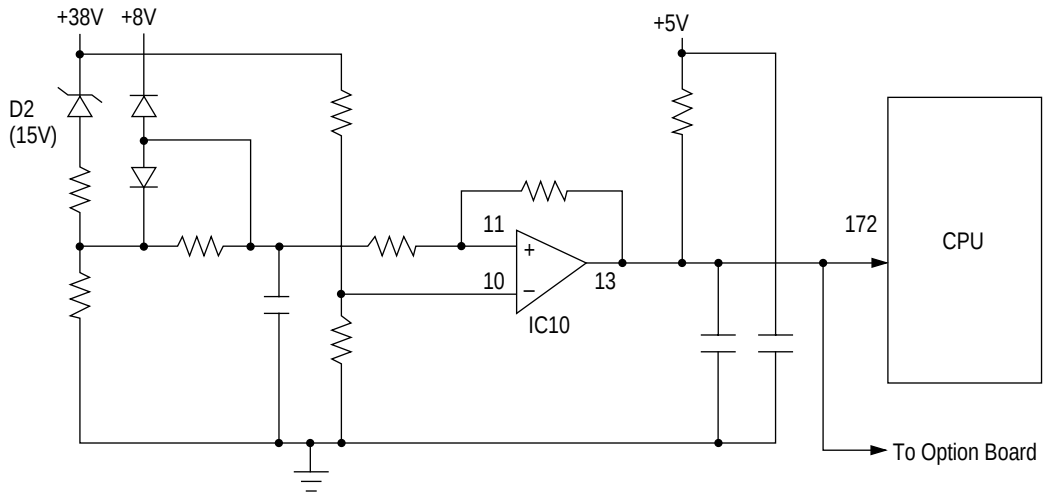
TIME / SIMM speed	T1	T2	T3	T4
No SIMM	61.0 ns	162.8 ns	40.7 ns	122.1 ns
60 ns	101.7 ns	183.1 ns	61.0 ns	142.4 ns
70 ns	101.7 ns	223.8 ns	61.0 ns	142.4 ns
80 ns	101.7 ns	223.8 ns	61.0 ns	142.4 ns
100 ns	101.7 ns	223.8 ns	61.0 ns	142.4 ns

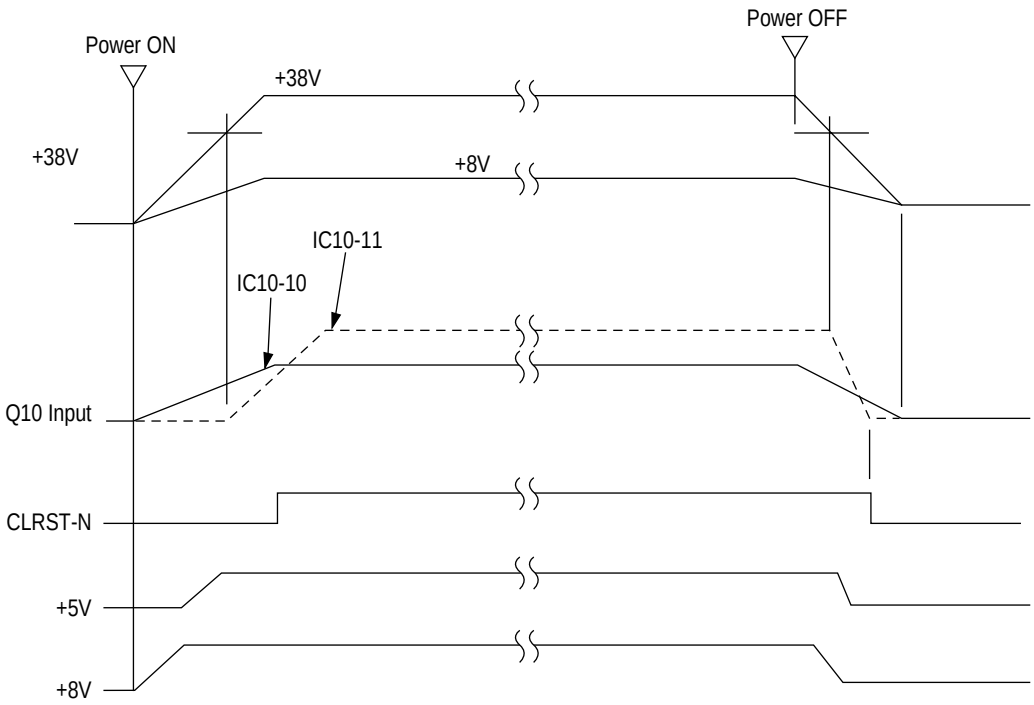
CPU detects the type of SIMM memory installed on the memory expansion board, and sets the suitable timing as shown in the left handside table.
Due to this, T1~T4 values shown above vary depending on the type of SIMM memory being used.

Figure 3-5 Timing Chart of CPU & Memory Circuit

3.3 Reset Control

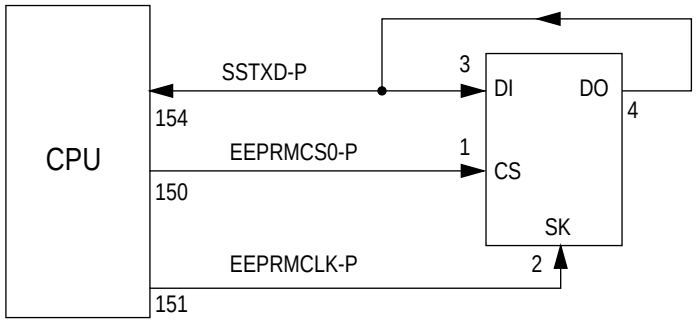
When power is turned on, a CLRST-N signal is generated by the rising sequence of +38V and +8V power supply.





3.4 EEPROM Control

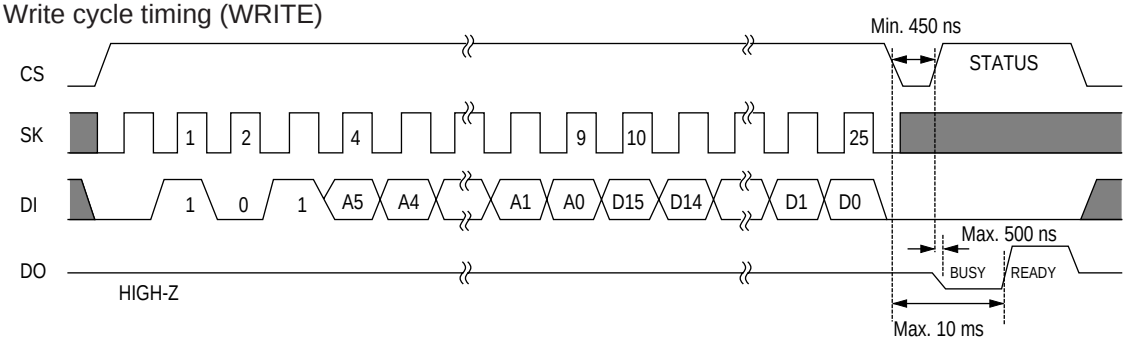
The 93LC46A is an electrical erasable/programmable ROM of 64-bit x 16-bit configuration. Data input to and output from the ROM are bidirectionally transferred in units of 16 bits through a serial I/O port (SSTXD-P) in serial transmission synchronized with a clock signal from the CPU.
The EEPROM operates in the following instruction modes



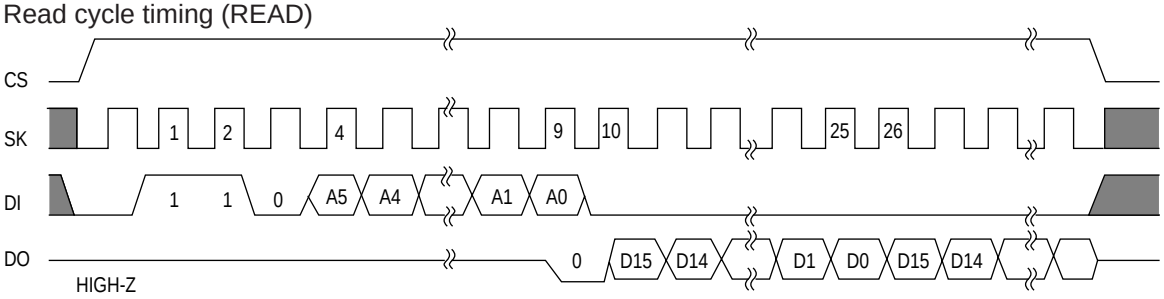
The EEPROM operates in the following instruction modes

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

Write cycle timing (WRITE)

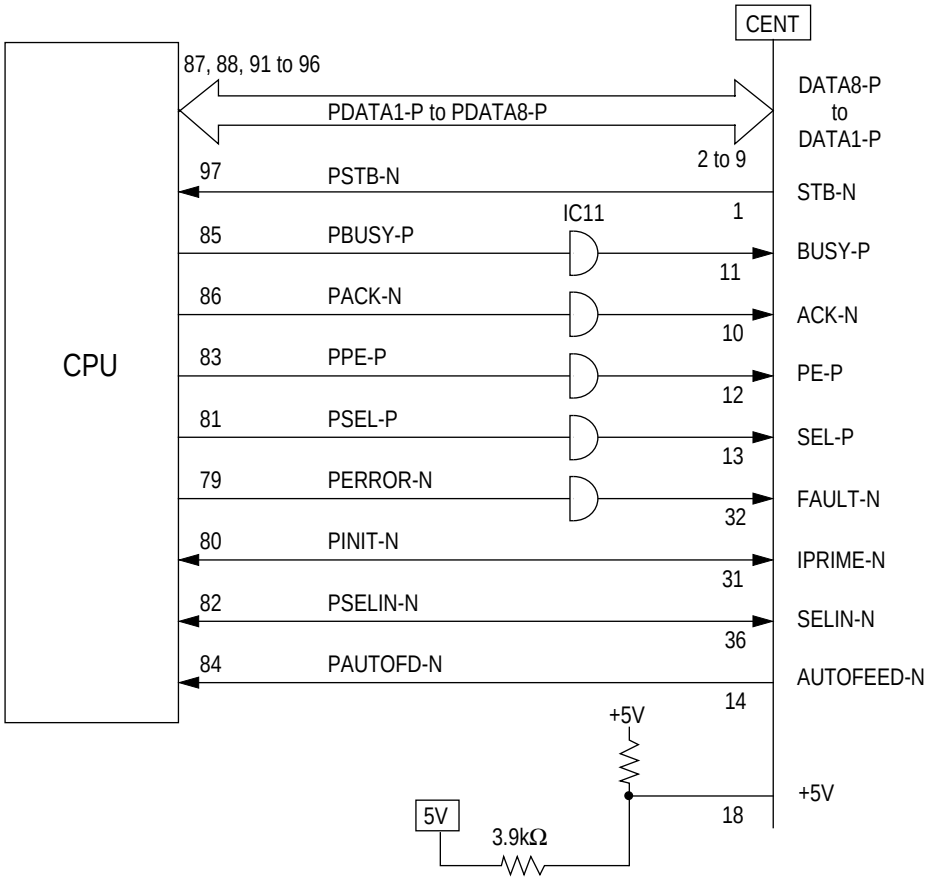


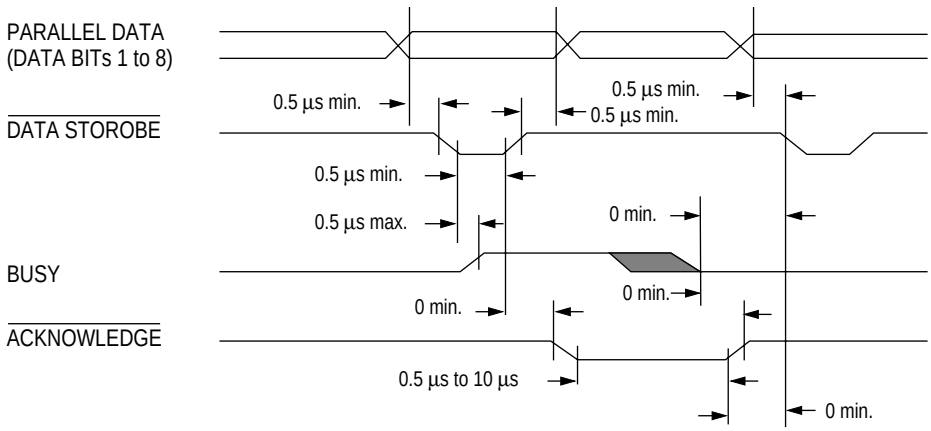
Read cycle timing (READ)



3.5 Centronics Parallel Interface

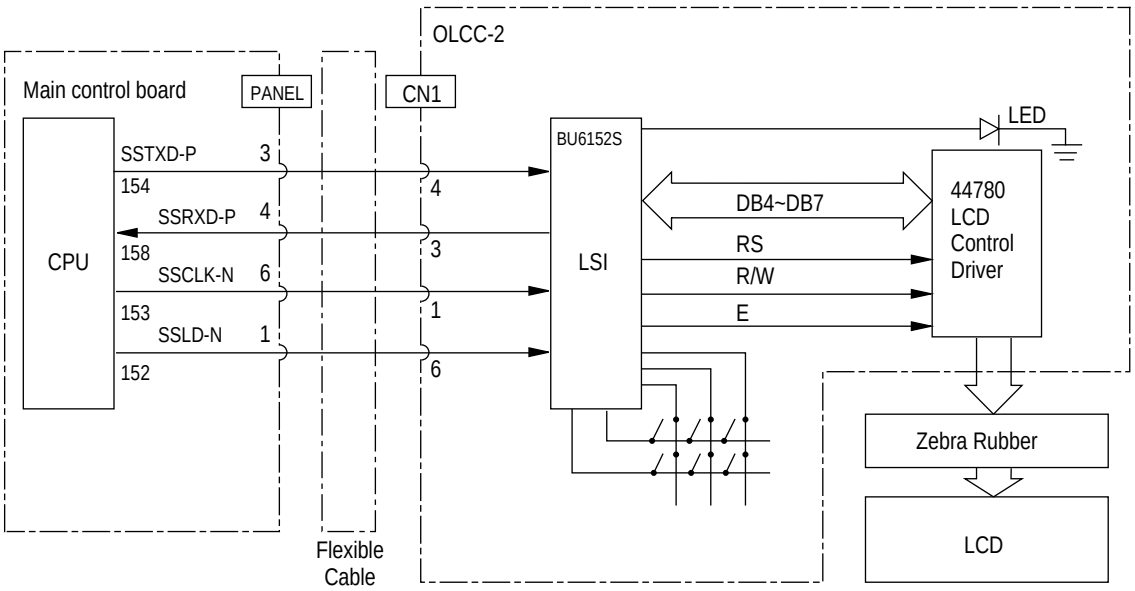
The CPU sets a BUSY-P signal to ON at the same time when it reads the parallel data (PDATA1-P to PDATA 8-P) from the parallel port at the fall of PSTB-N signal. Furthermore, it makes the store processing of received data into a receive buffer terminate within a certain fixed time and outputs an ACK-N signal, setting the BUSY-P signal to OFF.





3.6 Operator Panel Control

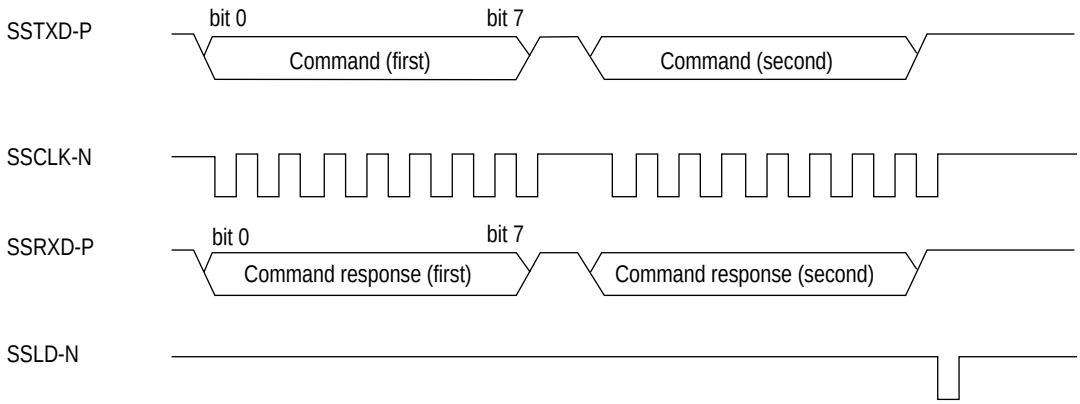
The operator panel consists of the following circuits.



(1) BU6152S (LSI)

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

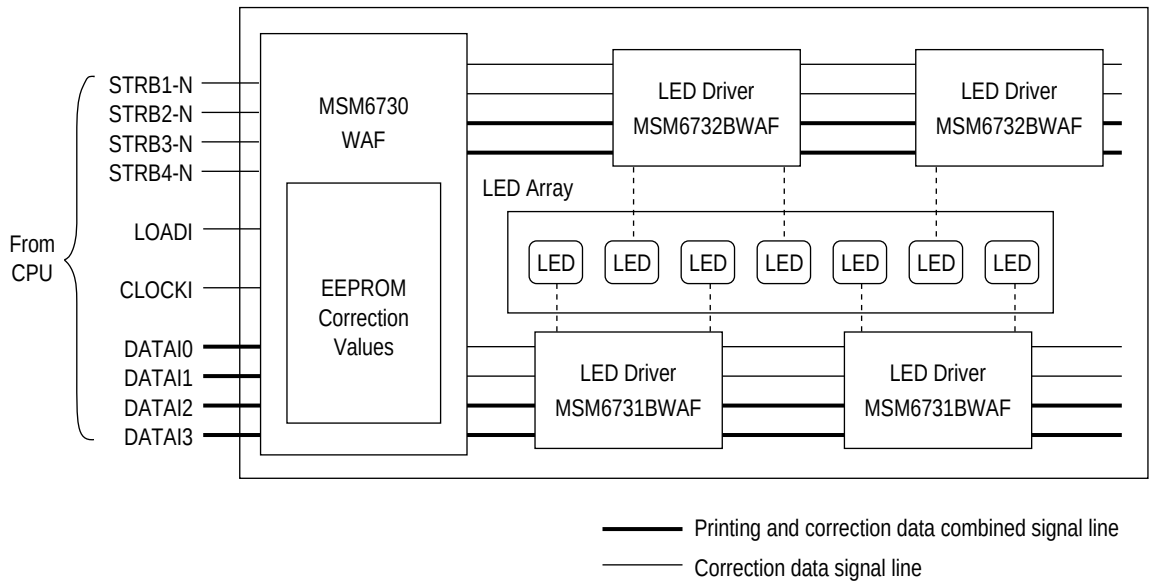
On receiving a command sent from the CPU, the LSI, synchronizing with the serial clock of the command, returns a 2-byte command response to the CPU.



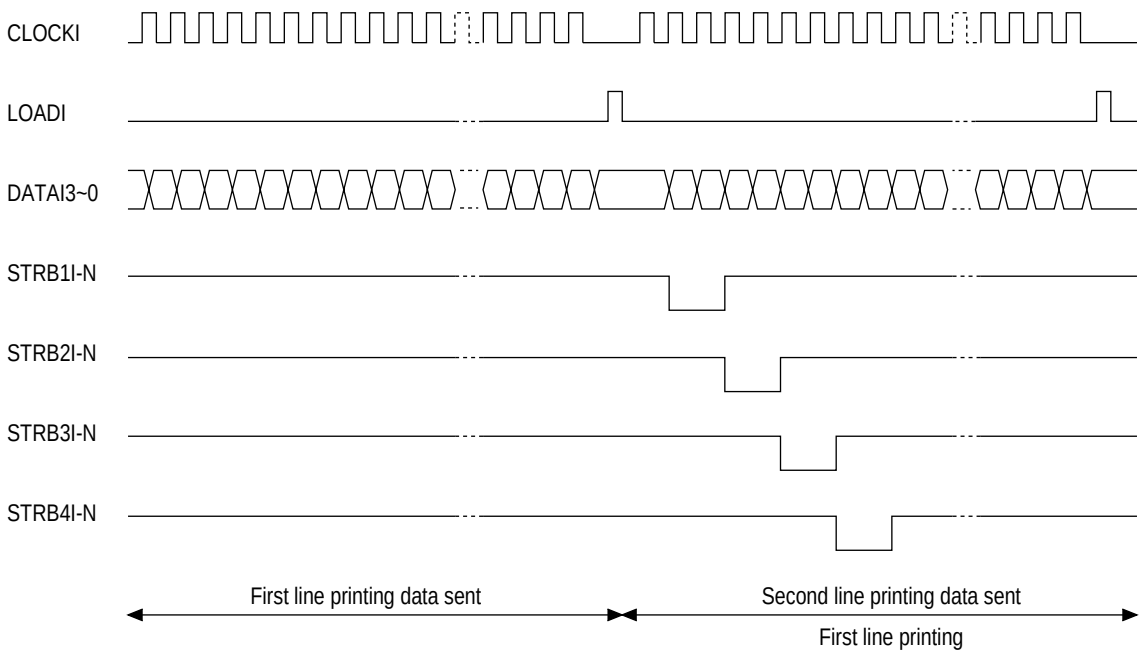
3.7 LED Head Control

An LED correcting head, which is capable of correcting the illumination of the LED for each dot, is being used in this printer. LED illumination correction function of 16 steps is carried out by using an EEPROM which is installed in the LSI that maintains the LED illumination correction values, and an LED correction drivers (MSM6731BWAF or MSM6732BWAF) together as a pair.

The LED correcting head consists of the correction control LSI (MSM6730WAF), LED drivers (MSM6731BWAF or MSM6732BWAF), and an LED array.



Normal Mode Printing Timing Chart

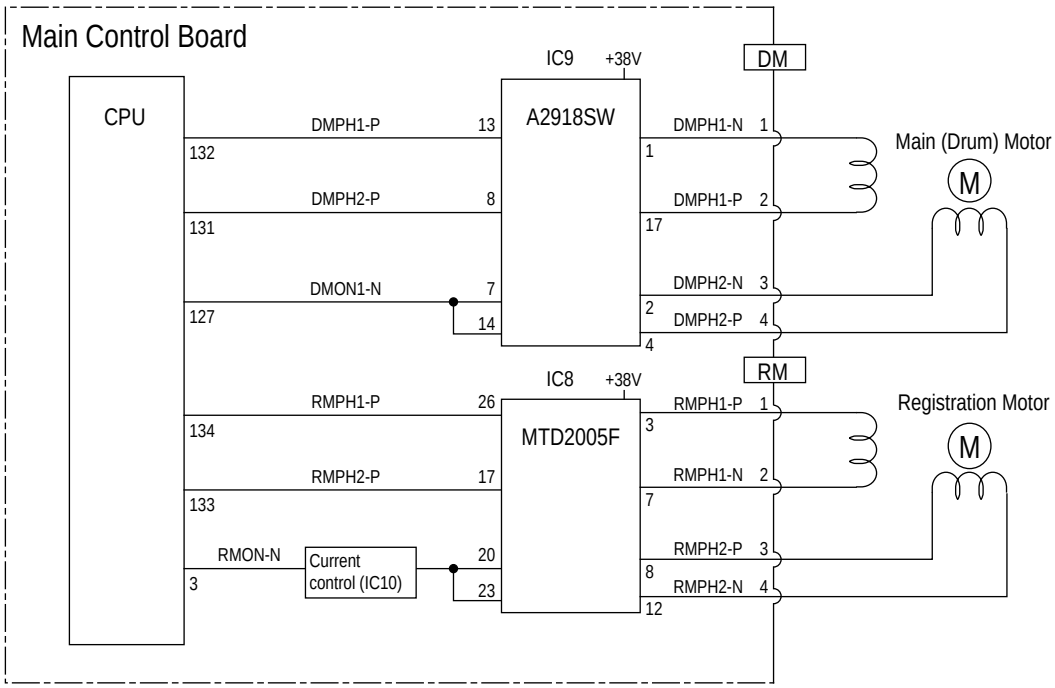


The printing operation is carried out in the following sequence. First, the printing data DATAI3 through DATAI0 are stored, sequentially shifted, in the shift registers of the LED drivers, by the printing data synchronous clock, CLOCKI. Then the printing data stored in shift registers are latched by the high level pulse of LOADI. The latched printing data turns the LEDs on by STRB1I-N through STRB4I-N and actuates printing.

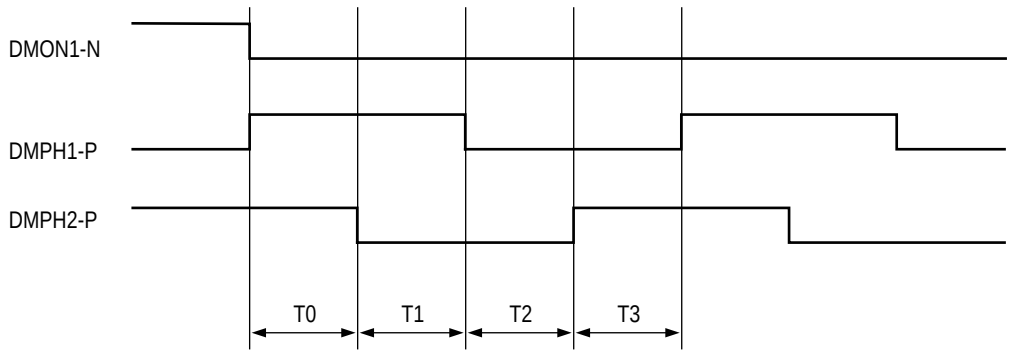
3.8 Motor Control

(1) Registration and main (drum) motors

A registration motor and a drum motor are driven by means of control signals from the CPU and a driver IC.

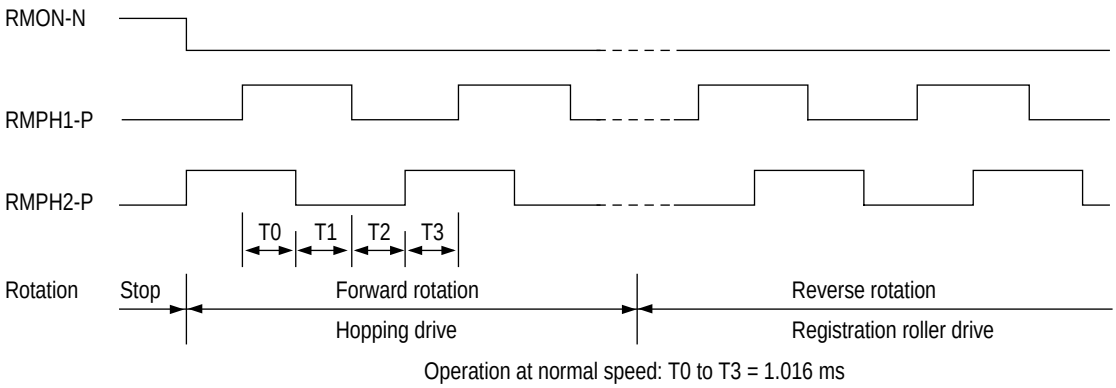


(2) Drum motor



Operation at normal speed: T0 to T3 =1.016 ms

(3) Registration motor



Operation at normal speed: T0 to T3 = 1.016 ms

(4) Drive control

Time T0 to T3 determines the motor speed, while the difference of phase direction between phase signals DMPH1-P and DMPH2-P (RMPH1-P and RMPH2-P) determines the rotation direction. DMON1-N and RMON-N signals control a motor coil current. According to the polarity of the phase signal, the coil current flow as follows:

1) +38V $\rightarrow$ SW $\rightarrow$ motor coil $\rightarrow$ $\overline{\text{SW}}$ $\rightarrow$ resistor $\rightarrow$ earth, or,

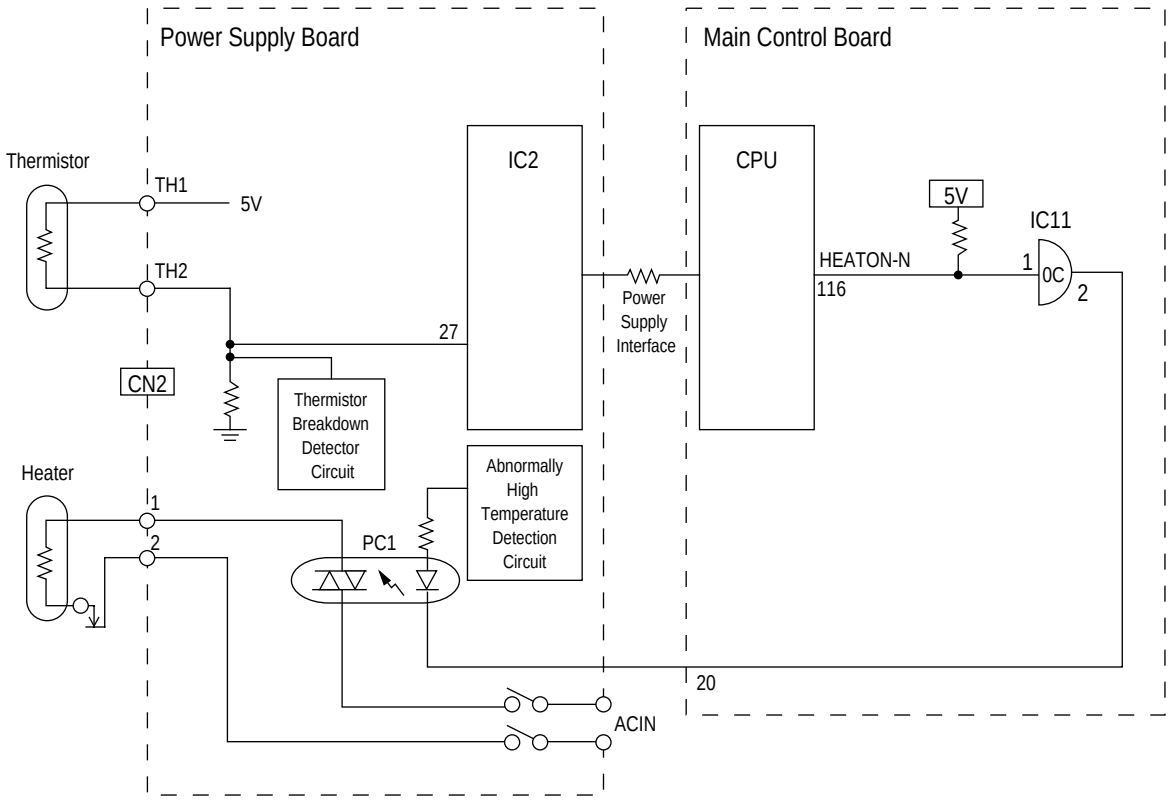
2) +38V $\rightarrow$ $\overline{\text{SW}}$ $\rightarrow$ motor coil $\rightarrow$ SW $\rightarrow$ resistor $\rightarrow$ earth

The voltage drop across the resistor is input to comparator, where it is compared with a reference voltage. If an overcurrent flow occurs, a limiter operates to maintain it within a certain fixed amount of current.

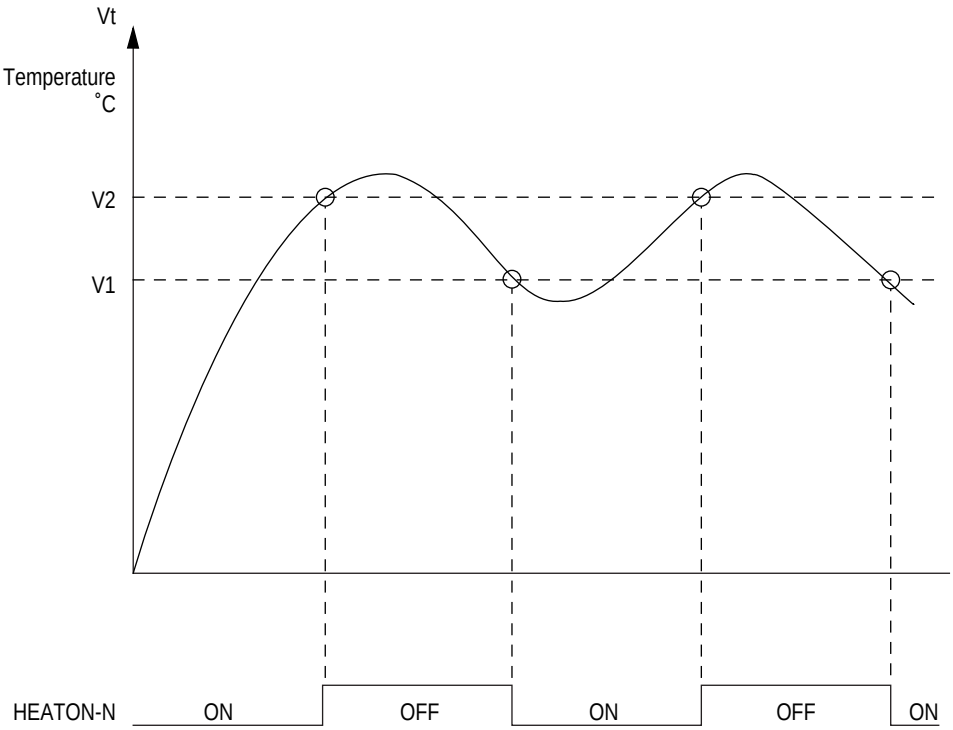
3.9 Fuser Temperature Control

For the temperature control by heater control, the variation in the resistance of the thermistor is A/D converted in IC2 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 IC2 to keep the temperature at a constant level.

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 abnormally 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 when the resistance of the thermistor is detected to be exceeding the predetermined value.



The temperature control is described below.



V2	176˚C
V1	175˚C

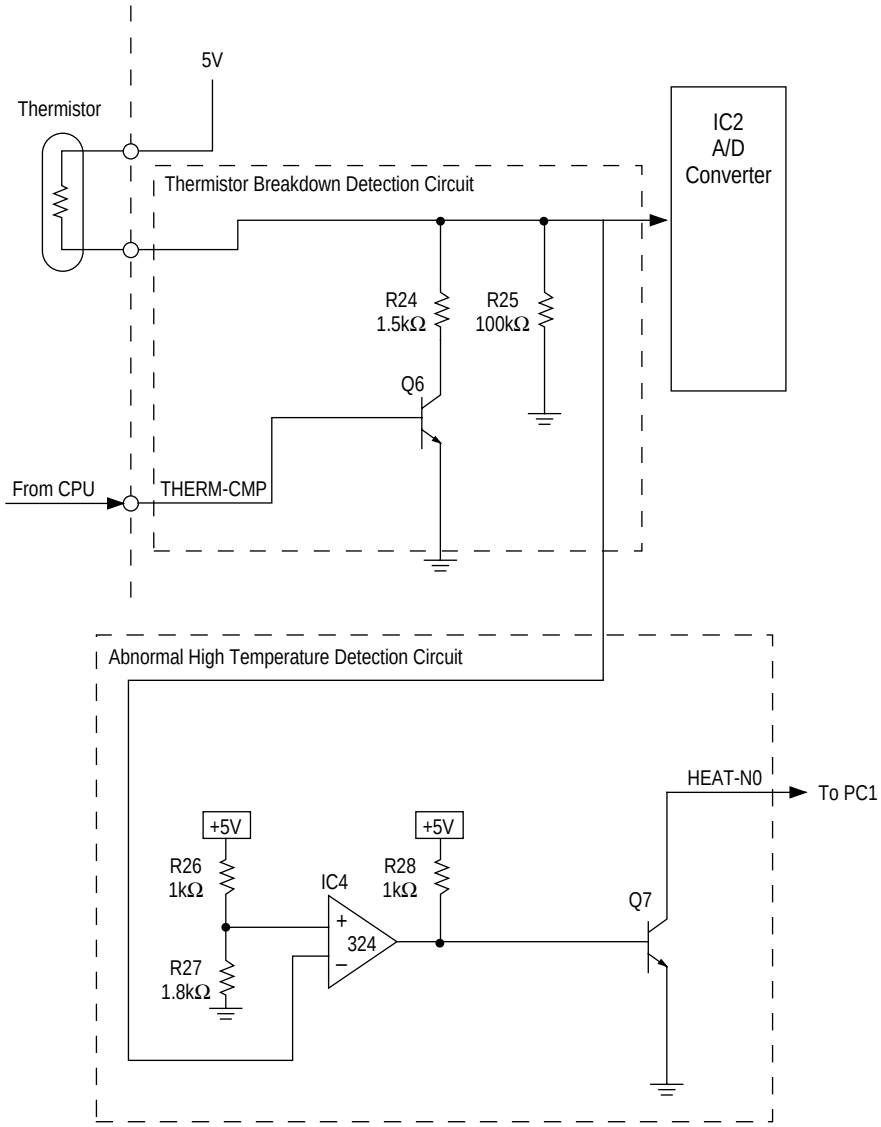
* The values V1 and V2 vary according to setting mode.

(Standard temperature)

When Vt rises to V2 or more, the heater is turned off (by setting HEATON-N signal to LOW). When Vt drops to V1 or less, the heater is turned on (by setting HEATON-N signal to HIGH). In this way, the temperature can be kept within the predetermined range.

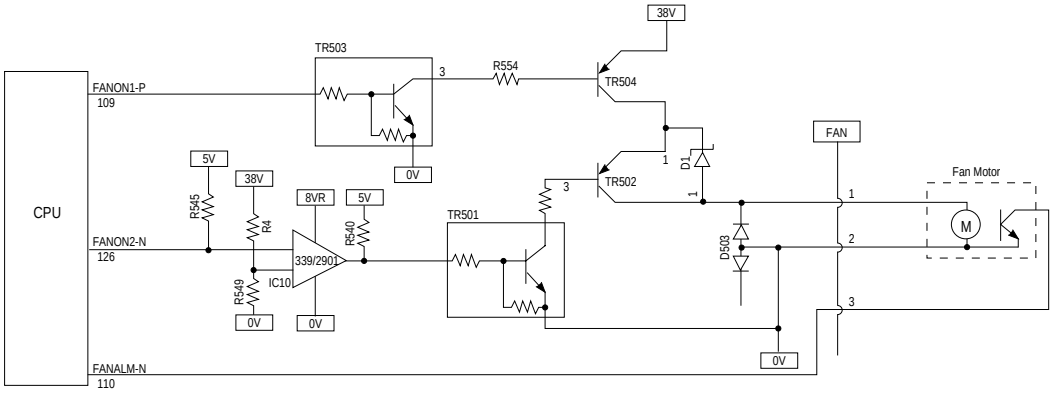
For heater breakdown detection, the heater must first be turned on. When a temperature rise which corresponds to the switching on of the heater does not occur, then a heater breakdown is detected. To shorten the breakdown detection time, the following circuit is used. Immediately after the power is turned on, the thermistor is checked and THERM-CMP signal is turned on to turn the resistor Q44 on. The reading resolution is increased through the variation of the thermistor resistance value.

If, for whatever reason, temperature control fails and the temperature rises abnormally, the abnormal high temperature detection circuit shown below forcibly cuts the power supply to the fuser.

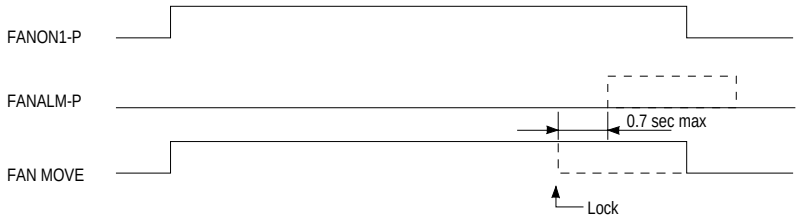


3.10 Fan Motor Control

The stop/rotation of the fan motor is controlled by FANON1-P and FANON2-N signals. When the fan motor rotates normally, FANALM-P signal generated in the hole element built in the fan motor is input to the CPU.

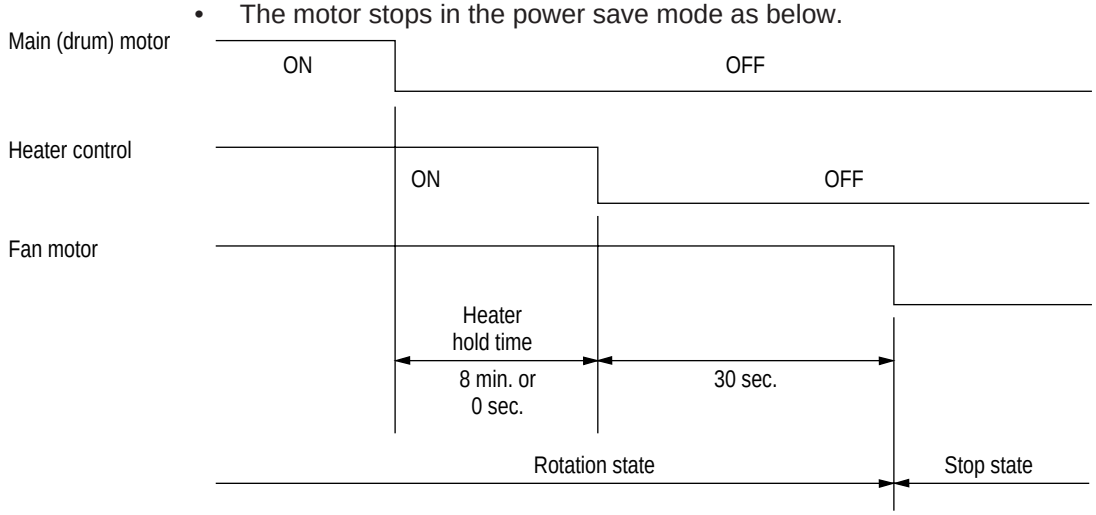


FANON1-P	FANON2-N	Fan motor rotation
H	L	Normal speed
H	H	Half speed
L	X	STOP



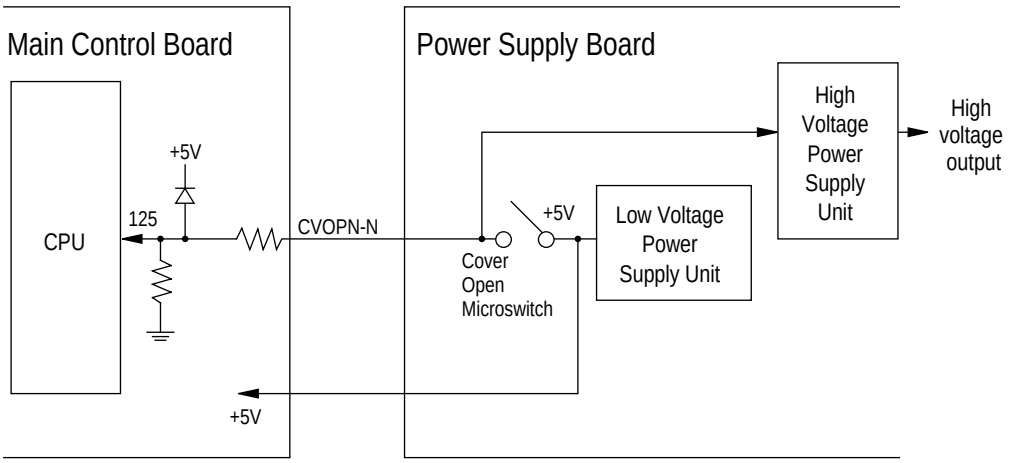
Fan motor start: Initial request, heater on, print start request

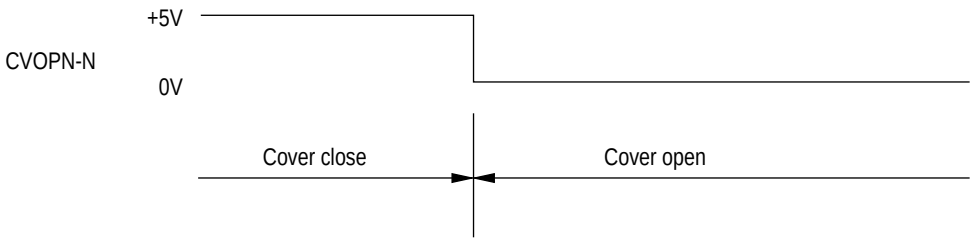
Fan motor stop:
- The motor immediately stops when an engine error or a fan error occurs.
- The motor stops 0 second or 20 minutes after the occurrence of a paper jam, size error, or fuse error.
- The motor stops in the power save mode as below.



3.11 Cover Open

When the cover is opened, a cover open microswitch is opened. This makes a CVOPN-N signal low, thereby the CPU detects the open state. Furthermore, opening the cover stops applying a +5V power to the high voltage power supply unit, resulting in stopping all high voltage outputs.

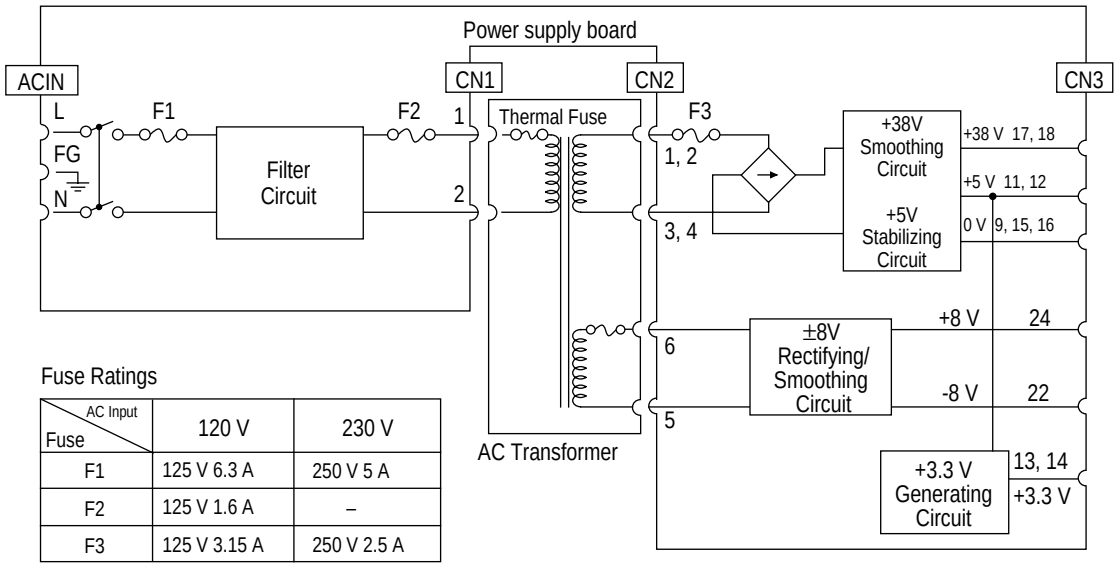




3.12 Power Supply Board

(1) Low voltage power supply

An AC power from an inlet is input to a transformer via fuses, AC switch and noise filter and then lowered to a 32 VAC power and a 10 VAC power. The 32 VAC power is converted to a +38 VDC output through a rectifying/smoothing circuit. A +5 VDC output is derived from the resultant +38 VDC power through a regulation circuit. The 10 VAC power is converted to a +8 VDC output and a -8 VDC output through a rectifying/smoothing circuit.

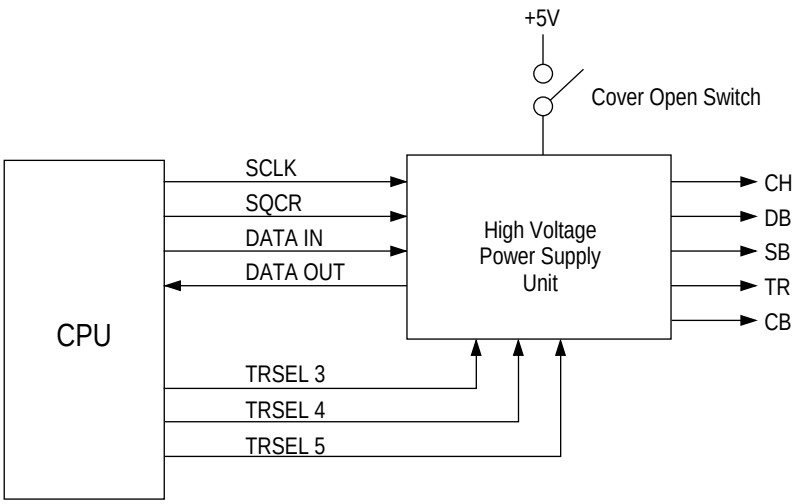


Fuse Ratings

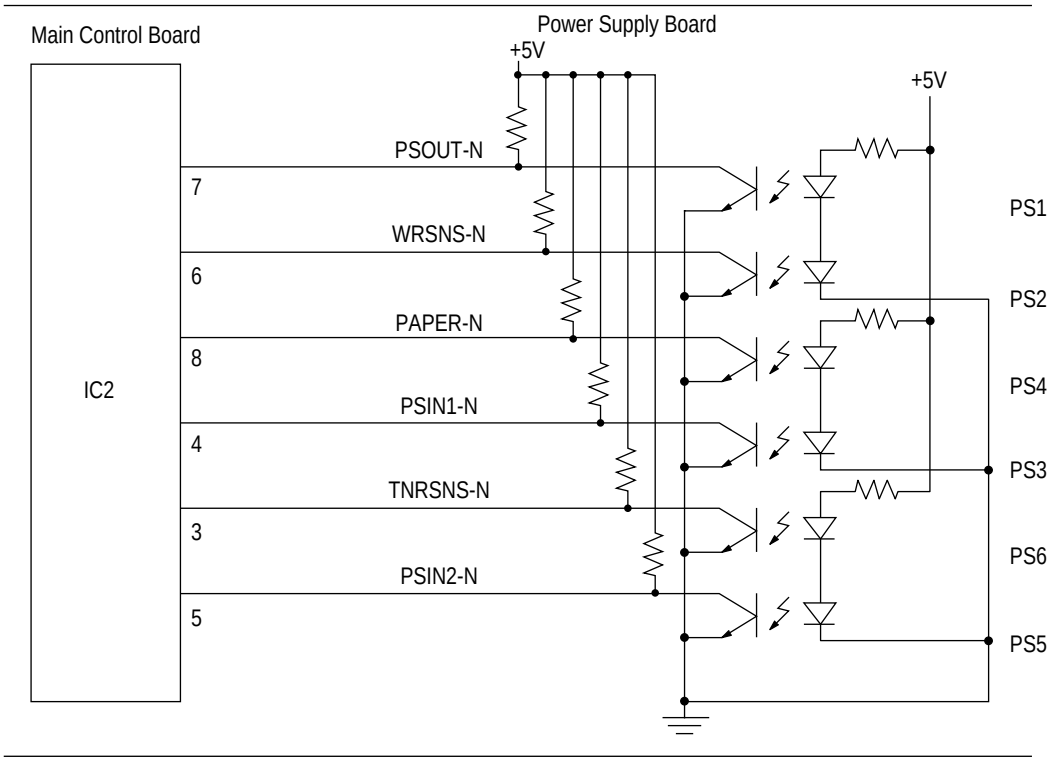
Fuse \ AC Input	120 V	230 V
F1	125 V 6.3 A	250 V 5 A
F2	125 V 1.6 A	–
F3	125 V 3.15 A	250 V 2.5 A

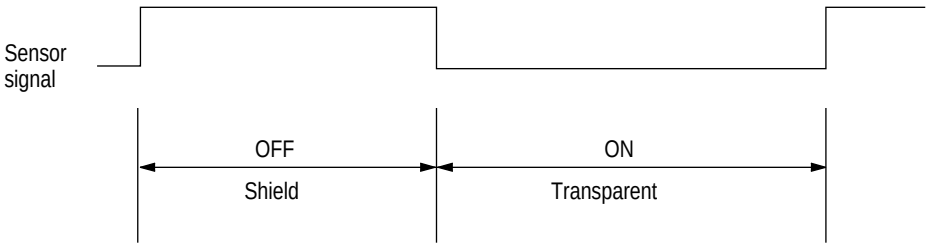
(2) High voltage power supply

The +5 VDC power supplied to the high voltage power supply unit via the cover open microswitch as source voltage. The high voltage power supply unit supplies necessary voltage for electro-photography print to output terminals CH, DB, SB, TR, and CB according to a control signal from the CPU. The table on the next page shows the relationship between control signals and high voltage outputs.



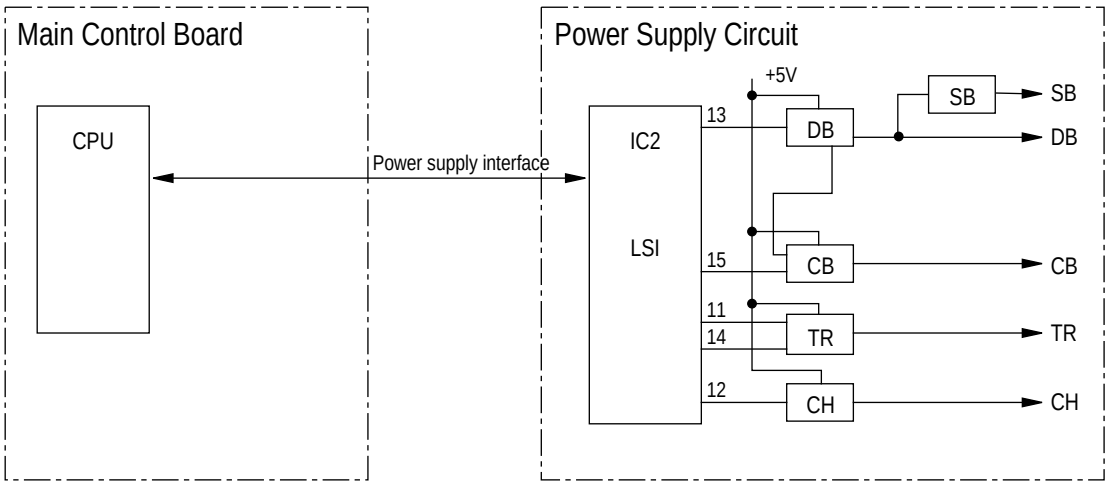
(3) Sensor control





(4) 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 (IC2) and outputs high-frequency pulses to the corresponding high-voltage generating circuits through pins 11, 12, 13, 14 and 15 of LSI (IC2). It supplies +5V to each high-voltage generating circuit as the source voltage. When the cover is open, the supply of +5V is interrupted to interrupt all the high-voltage outputs. The relationship between the high-frequency pulse output pins and the high-voltage outputs is shown in the following table.



High-voltage outputs / High -frequency pulse output pins	SB	DB	CB	TR	CH	Remarks
11				+1.2kV		
12					-1.3kV	
13	0V	+300V				TRSEL 3: Hi-Z TRSEL 5: L
	-500V	-265V	+400V			TRSEL 3: L TRSEL 5: Hi-Z
14				-1.1kV		
15			-1.35kV			

Part with slant line: no output

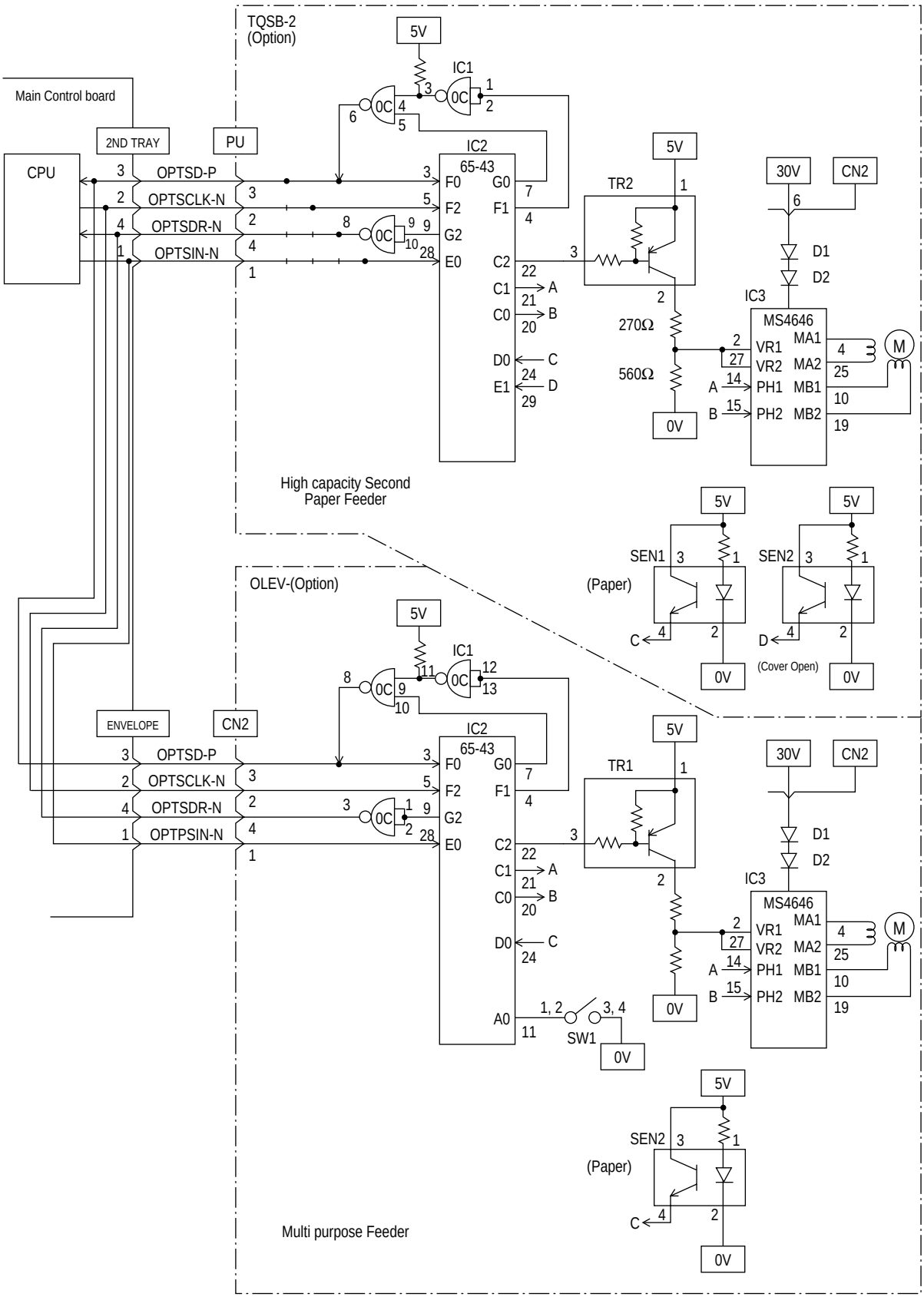
3.13 Option Tray Control

The kinds of option trays, High capacity Second Paper Feeder and Multi purpose Feeder can be connected to the printer. The trays are distinguished by two digit ID numbers.

The option trays and the printer communicate with each other through bi-directional clock synchoronized serial interface. The printer always sends a command first, then each option tray interpret it. Because the command contains an ID, the selectes option tray takes approriate actions, then sends back a reply. The command and reply are transmitted back and forth on OPTSD-P signal line by synchronizing OPTSCLK-N clock signal which is sent by the printer. The printer knows the timing when it outputs the clock for the reply by sensing OPTSDR-N signal which is turned to zero by the option tray when it is ready for the reply.

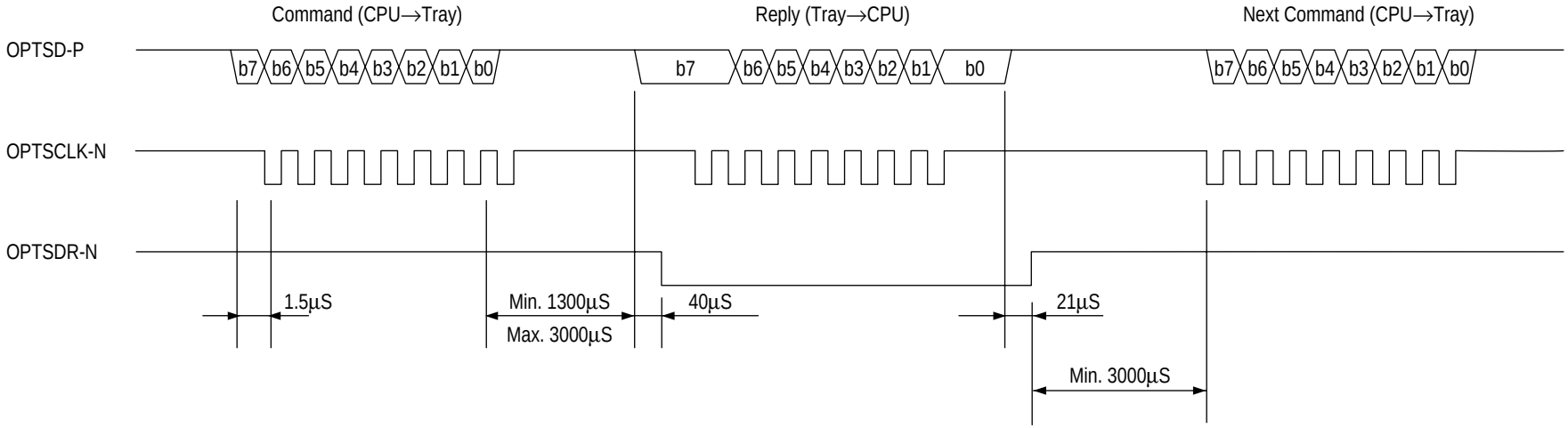
The option tray's paper feeding action is triggered by a command sent by the printer. When the tray delects a signal on OPTPSIN-N signal line, which indicates the paper reaches a input sensor in the printer, the tray stops the paper feeding after carrying out the paper feeding according to the predetermined steps which have been downloaded from the printer at power-up time.

Status of the option trays such as no paper cassette, paper out and cover open, are informed to the printer though a reply in response to a status inquiry command.



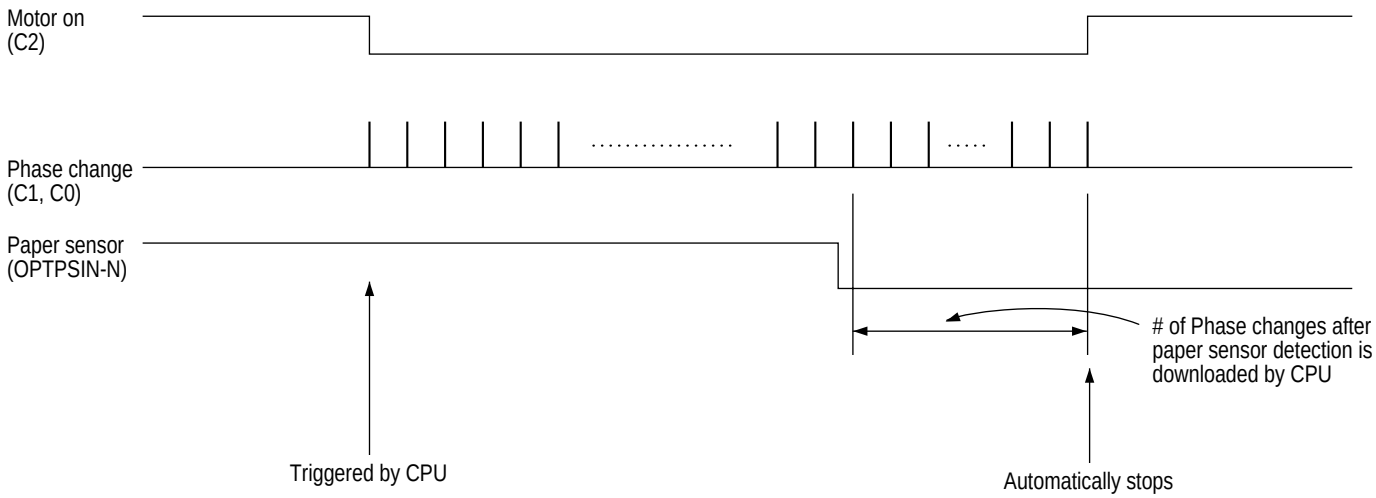
Option Tray Connection and Block Diagram

Option Tray Control Serial Interface Time Chart



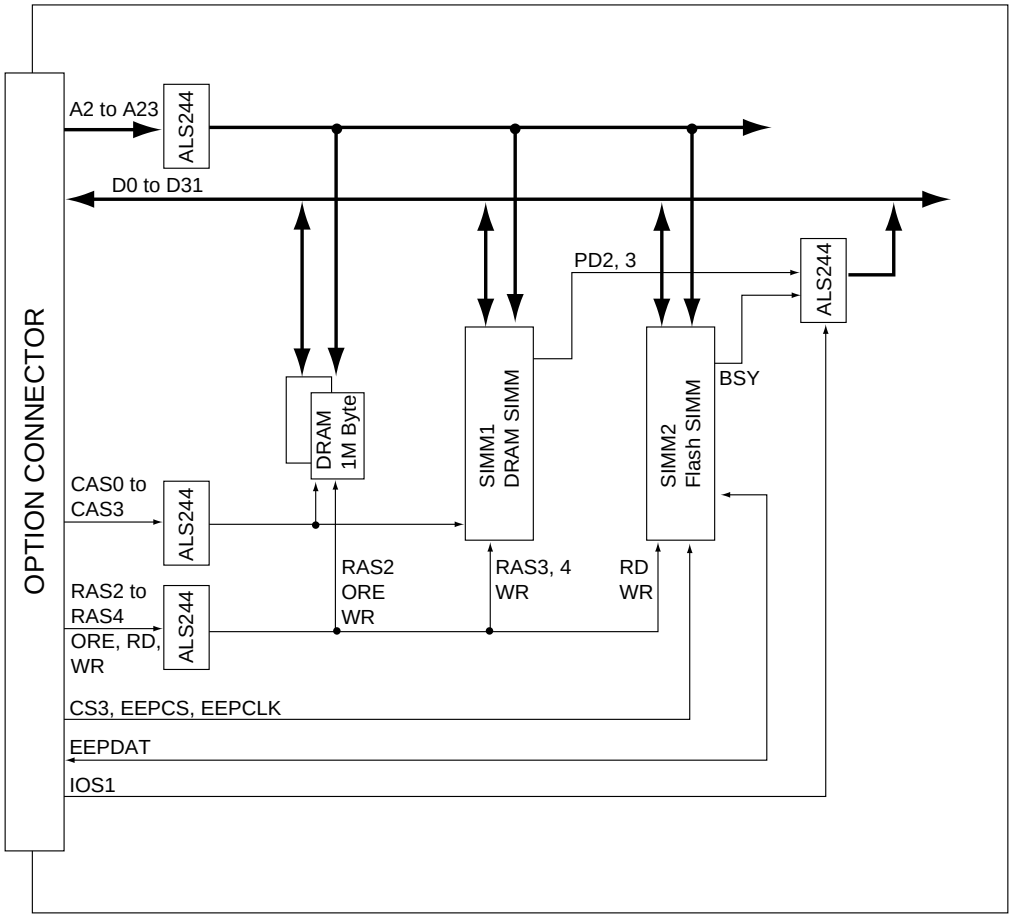
Option Tray Serial Interface Time Chart

Motor Control Time Chart



Option Tray Motor Control Time Chart

3.14 Memory Expansion Option Board



Memory Expansion Board Block Diagram (Option)

The Memory Expansion Option Board is provided with two DRAM chips and two SIMM slots.
The SIMM1 slot is used for installation of a DRAM SIMM.
The SIMM2 slot is used for installation of Flash SIMM.
With the Board, a printer will have 3M bytes of Memory even without any additional DRAM SIMM memory on the SIMM1 slot because 1M DRAM is mounted on the board.

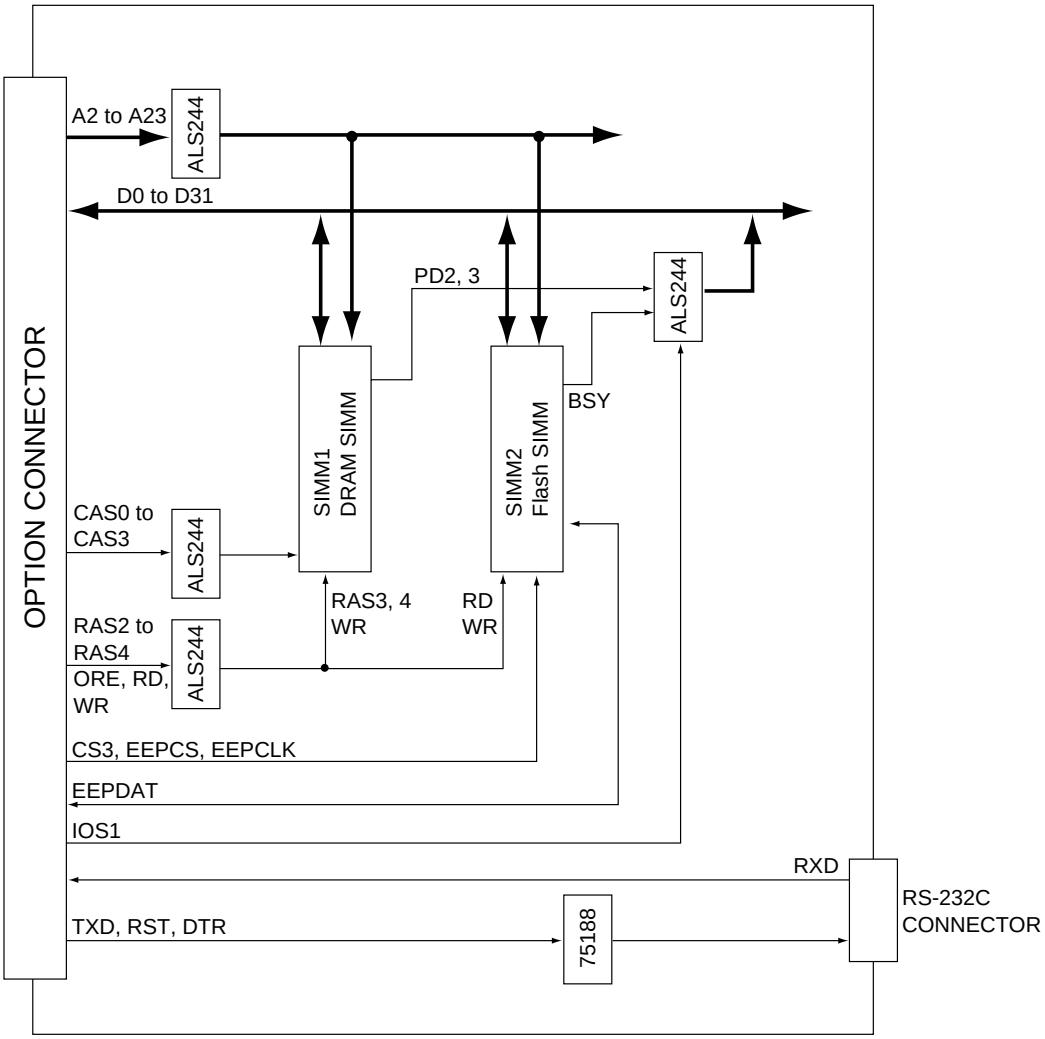
(1) DRAM
Two 4M bits DRAMs are installed. Memory capacity totals 1M byte.

(2) SIMM Memory Module
The board is provided with two Slots for a 72-pin DRAM SIMM Memory Module and Flash SIMM.

The SIMM1 slot is used for installation of a 72-pin DRAM SIMM Memory Module. Up to 6 types of SIMM Memory Module can be installed.
1M byte, 2M bytes, 4M bytes, 8M bytes, 16M bytes and 32M bytes. 4 types of access speed can be used. 60, 70, 80 and 100n sec.

The SIMM2 slot is used for installation of a Flash SIMM.
The Flash SIMM is a Flash ROM Memory Module.

3.15 RS-232C Serial Interface Option Board



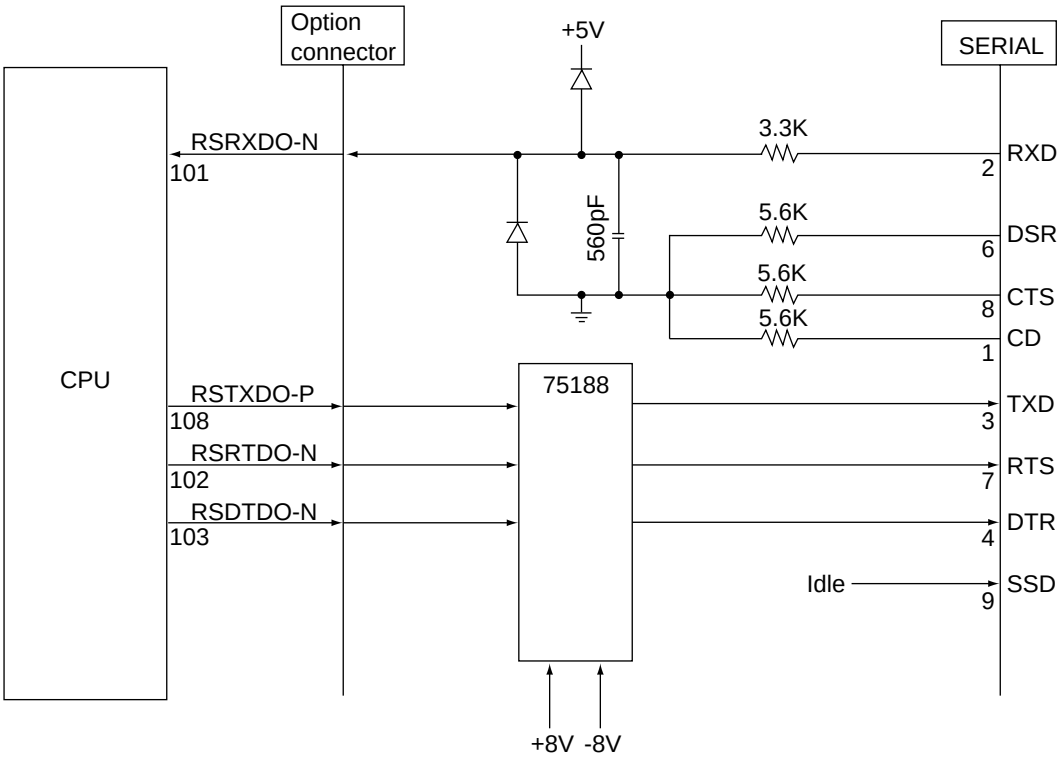
RS-232C Serial Interface Board Block Diagram (Option)

The RS-232C Serial Interface Option Board is provided with a RS-232C I/F and two SIMM slots.
The SIMM1 slot is used for installation of a DRAM SIMM.
The SIMM2 slot is used for installation of a Flash SIMM.

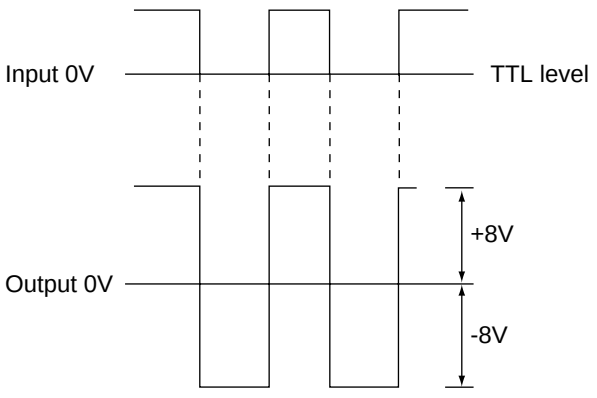
(1) RS-232C Interface

The serial data RXD from the host system, whose line voltage is clamped at the TTL level by D4/D512, are received by the CPU built-in serial controller.

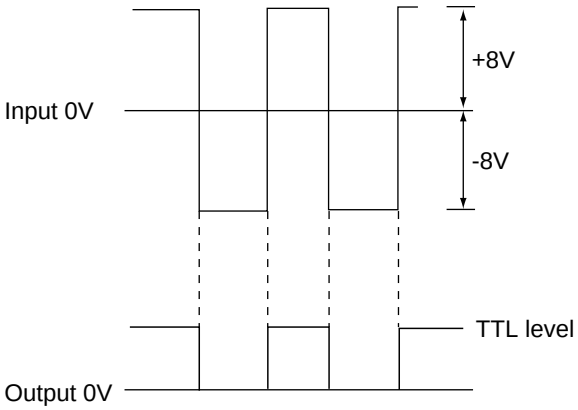
DSR and CTS signals are terminated through 5.6kΩ resistors. Send signals TXD, RTS and DTR are put out from the CPU and are sent to lines through a line driver IC (75188).



(a) Send signal level



(b) Receive signal level



(2) SIMM Memory Module

The board is provided with two Slots for a 72-pin DRAM SIMM Memory Module and Flash SIMM.

The SIMM1 slot is used for installation of a 72-pin DRAM SIMM Memory Module. Up to 6 types of SIMM Memory Module can be installed.
1M byte, 2M bytes, 4M bytes, 8M bytes, 16M bytes and 32M bytes. 4 types of access speed can be used; 60, 70, 80 and 100n sec.

The SIMM2 slot is used for installation of a Flash SIMM.
The Flash SIMM is a Flash ROM Memory Module.

4. TROUBLESHOOTING

4.1 Troubleshooting Table

(A) Power Supply Board (OL1- or OL2-PCB)

Note: The malfunction of the power supply is not repaired by an agency. The abnormality to be treated here is that of sensors only.

Failure	LCD Message	Flowchart No.
Paper input jam occurs frequently. #: TRAY1, TRAY2, FEEDER, MANUAL	# INPUTJAM	A - 1
Paper feed jam occurs frequently. #: TRAY1, TRAY2, FEEDER	# FEED JAM	A - 2
Paper-exit jam occurs frequently. #: TRAY1, TRAY2, FEEDER, MANUAL	# EXIT JAM	A - 3
Paper size error occurs frequently. #: TRAY1, TRAY2, FEEDER, MANUAL	# SIZE ERR	A - 4
The message "TRAY PAPEROUT" remains displayed on the LCD. #: TRAY1, TRAY2, FEEDER	# PAPEROUT	A - 5
The message "COVER OPEN" remains displayed on the LCD.	COVER OPEN	A - 6
The message "TONERLOW" remains displayed on the LCD.	 TONERLOW or ERROR 77	A - 7
The message "TONERSNS" remains displayed on the LCD.	 TONERSNS	A - 8
The printer does not function at all, and the LCD does not display any messages.		A - 9
Thermistor open error.	ERROR 72	A - 10
Thermistor short error.	ERROR 73	A - 10
Serial interface does not connect to the host device.		A - 11

(B) Main Control Board (1/2)

Failure	LCD Message	Flowchart No.
Abnormal message display on the LCD (no display, unclear display, display with some dot not lit).		B - 1
Program ROM error.	ERROR 10	B - 2
Font ROM error.	ERROR 20	B - 3
Resident RAM error.	ERROR 30	B - 4
EEPROM error.	ERROR 40	B - 5
Option RAM error.	ERROR 60	B - 6
Cooling fan error.	ERROR 70	B - 7
SSIO error.	ERROR 74	B - 8
Operator panel I/F error.	ERROR 80	B - 9
Option tray I/F timeout error	ERROR 81	B - 10
Watchdog timer timeout occurs frequently, or illegal CPU version.	ERROR 9*	B - 11
Program error.	ERROR F*	B - 12

(B) Main Control Board (2/2)

Failure	LCD Message	Flowchart No.
Processor error.	ERROR 0*	B - 13
Print overrun occurs frequently.	PRINT OVERRUN	B - 14
Error host I/F occurs frequently.	HOST I/F ERROR	B - 15
Error receive buffer overflow occurs frequently.	REC BUF OVERRUN	B - 16
Paper input jan occurs frequently. #: TRAY1, TRAY2, FEEDER, MANUAL	# INPUT JAM	B - 17
Paper input jam occurs frequently. #: TRAY1, TRAY2, FEEDER, MANUAL	# FEED JAM	B - 18
The key switch operation on the operator panel is disabled frequently.		B - 19
Data sent through the Centronics I/F cannot be received.		B - 21
Cover open occurs frequently.	COVER OPEN	B - 22

(C) Operator Panel Board (OLCC-2-PCB)

Failure	LCD Message	Flowchart No.
Abnormal message display on the LCD (no display, unclear display, display with some dot not lit, etc.)		C - 1
The key switch operation on the operator panel is disabled.		C - 2
The LCD does not display any message.		C - 3
Display on the LCD with some dot not lit.		C - 4
Unclear display on the LCD.		C - 5

(D) High capacity second paper feeder board (TQSB-2)

Failure	LCD Message	Flowchart No.
Paper input jams occur frequently.	TRAY 2 INPUTJAM	D - 1
Paper out occurs even if the papersare in cassette or a tray.	TRAY 2 PAPEROUT	D - 2
Second tray cover open errors occur even if the cover is closed.	COVER T2 OPEN	D - 3
The printer does not recognize an option tray.		D - 4

(E) Multi purpose feeder (OLEV)

Failure	LCD Message	Flowchart No.
Paper input jams occur frequently.	FEEDER INPUTJAM	E - 1
Paper out occurs even if the papers are in cassette or a tray.	FEEDER PAPEROUT	E - 2
The printer does not recognize an option tray.		E - 3

(F) Memory Expansion Option Board (MM6)

Failure	LCD Message	Flowchart No.
Option RAM error.	ERROR 60	F - 1

(G) RS-232C interface option board (SMIF)

Failure	LCD Message	Flowchart No.
Error host I/F occurs frequently.	HOST I/F ERROR	G - 1
Loop test error occurs during loop test.		G - 2

4.2 Troubleshooting Flowchart

A-1 Paper input jam occurs frequently.

- Is PS3 (Inlet Sensor 1) operating normally?
  - No Replace PS3.
- Yes Is PS5 (Inlet Sensor 2) operating normally?
  - No Replace PS5.
- Yes Replace IC2 (LC26023A).

A-2 Paper feed jam occurs frequently.

- Is PS3 (Inlet Sensor 1) operating normally?
  - No Replace PS3.
- Yes Is PS5 (Inlet Sensor 2) operating normally?
  - No Replace PS5.
- Yes Is PS2 (Paper Sensor) operating normally?
  - No Replace PS2.
- Yes Is PS1 (Outlet Sensor) operating normally?
  - No Replace PS1.
- Yes Replace IC2 (LC26023A).

A-3 Paper exit jam occurs frequently.

- Is PS1 (Outlet Sensor) operating normally?
  - No Replace PS1.
- Yes Replace IC2 (LC26023A).

A-4 Paper size error occurs frequently.

- Is PS3 (Inlet Sensor 1) operating normally?
  - • No Replace PS3.
- Yes Is PS5 (Inlet Sensor 2) operating normally?
  - • No Replace PS5.
- Yes Replace IC2 (LC26023A).

A-5 The message “TRAY PAPEROUT” remains displayed on the LCD

- Is PS4 (Paper End Sensor) operating normally?
  - • No Replace PS4.
- Yes Replace IC2 (LC26023A).

A-6 The message “COVER OPEN” remains displayed on the LCD.

- Is SW2 (Cover Open Switch) operating normally?
  - • No Replace SW2.
- Yes Is the CVOPN-N signal low at SW2?
  - • No Replace SW2.
- Yes Is CVOPN-N signal low at Pin-2 of R600?
  - • No Replace the power supply board.
- Yes Replace R564.

A-7 The message “TONERLOW” remains displayed on the LCD, or ERROR 77.

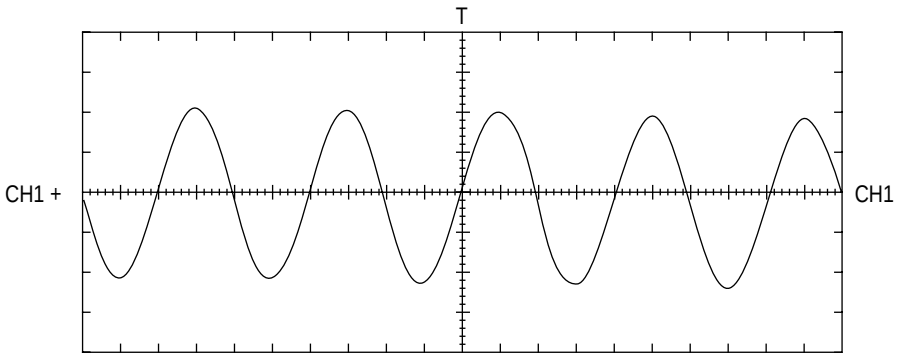
- Is PS6 (Toner Sensor) operating normally?
  - • No Replace PS6 or check Main Motor/Main control board.
- Yes Replace IC2 (LC26023A).

A-8 The message “TONERSNS” remains displayed on the LCD.

- Is PS6 (Toner Sensor) operating normally?
  - • No Replace PS6.
- Yes Replace IC2 (LC26023A).

A-9 The printer does not function at all, and the LCD does not display any messages.

- Is fuse F1 open?
  - Yes Replace F1.
- No Is the voltage waveform between Pins 1 and 3 of the connector (CN2) same as the waveform shown below?



CH1: DC 20V/div. Normal 5ms/div.

  - No Replace the transformer T1.
  - Has the problem been solved?
    - Yes End.
  - No Is the voltage output between Pins 2 and 3 of the filter L101 100 VAC?
    - No Replace the filter L101.
  - Yes Replace the filter L1.
  - Has the problem been solved?
    - Yes End.
  - No Replace the capacitors C1, C2 and C3.
- Yes Is the fuse F3 open?
  - Yes Replace F3.
- No Is the voltage output of Pin 17 of the connector (CN3) about 38 VDC?
  - No Replace the diode bridge DS1.
- Yes Is the voltage output of Pin 11 of the connector (CN3) about 5 VDC?

- No Replace the transistor Q1.
- Has the problem been solved?
  - Yes End.
- No Replace the transistor Q2.
- Has the problem been solved?
- No Replace IC1 (FA7617P-1).

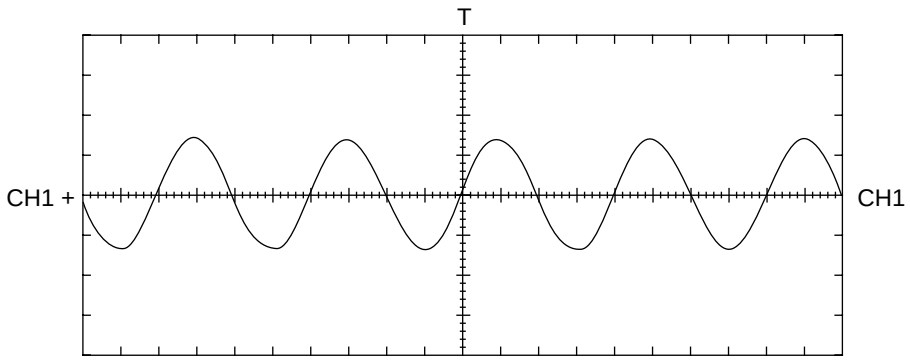
- Yes Check the connection between the power supply board and main control board.

A-10 Thermistor open error (ERROR 72), Thermistor short error (ERROR 73).

- Is the voltage output between (L) and (N) of the connector ACOUT correct (240V or 120V)?
  - Yes Replace IC2 (LC26023A).
  - Has the problem been solved?
    - Yes End.
  - No Thermistor of fuser failure.
- No Is Pin 2 (HEAT-N signal) of PC1 (S21ME4) low?
  - No Check the connection between the power supply board and main control board.
- Yes Is Pin 1 (HEAT-NO signal) of PC1 (S21ME4) low?
  - No Replace the photo coupler PC1 (S21ME4).
  - Has the problem been solved?
    - Yes End.
  - No Replace the thyristor D1 (TM1241/TM1261).
- Yes Is Pin 10 of IC4 (324P) low?
  - No Replace Q7 (2SC3400).
- Yes Replace IC4 (324P).

A-11 Serial interface does not connect to the host device.

- Is the voltage waveform between Pins 5 and 6 of the connector (CN2) same as the waveform shown below?



CH1: DC 5V/div. Normal 5ms/div.

  - No Replace the transformer T1.
  - Has the problem been solved?
    - Yes End.
  - No Replace the diode D10.

- Yes Is the voltage output at Pin 24 of the connector CN3 +8 VDC?
  - Yes Check the connector to the power supply board and main control board.
- No Replace the diode D9.
- Has the problem been solved?
  - Yes End.
- No Replace the capacitors C17 and C18.

B-1 Abnormal message display on the LCD.

- Replace IC2, IC3.
- Has the problem been solbed?
  - Yes End.
- No Is the 7.067-MHz clock signal being sent to Pin 3 of OSC1?
  - No Replace OSC1 (CST 7.067MTW).
- Yes Is the output at Pin 13 (CLRST-N) of IC10 (NJM2901 or μPC339G2) normal (see Section 3.3 Reset Control on page 7)?
  - No Replace IC10 (NJM2901 or μPC339G2).
- Yes Failure of IC1 (MHM2029-004K).

B-2 Program ROM error (ERROR 10).

- Replace IC2 and IC3.

B-3 Font ROM error (ERROR 20).

- Replace IC2 and IC3.

B-4 Resident RAM error (ERROR 30).

- Are negative pulses being put out to Pin 8 (DRASO-N) of IC4, IC5, IC6, IC7, (MSM514807C-70JS)?
  - No Failure of 03E (MHM2029-004K).
- Yes Are negative pulses being sent to Pin 23 (DCAS0-N, DCAS1-N, DCAS2-N, DCS3-N) of IC4, IC5, IC6, IC7 (MSM514807C-70JS)?
  - No Failure of IC1 (MHM2029-004K).
- Yes Replace IC4, IC5, IC6, IC7 (MSM514807C-70JS).

B-5 EEPROM error (ERROR 40).

- Replace IC12 (93LC46A).
- Has the problem been solved?
  - Yes End.
- No Failure of IC1 (MNM2029-004K).

B-6 Option RAM error (ERROR 60).

- The MENU PRINT memory capacity does not increase even when an expansion memory board is installed.

- Are negative pulses being sent to Pin 83 (DRAS2-N), Pin 84 (DRAS3-N), Pin 85 (DRAS4-N), Pin 86 (DRAS5-N) of the connector (OPTION)?
  - No Failure of IC1 (MHM2029-004K).
- Yes Failure of Option PCB. Go to flowchart F-1, G-1 or H-1.

B-7 Cooling fan error (ERROR 70).

- Is the fan rotating?
  - No Is +38V power being supplied to Pin 1 (FAN POW) of the connector (FAN)?
    - No Is the output at Pin 109 (FANON-P) of IC1 (MHM2029-004K) at high level?
      - No Failure of IC1 (MHM2029-004K).
    - Yes Is +38V power being supplied to Pin 3 of TR501?
      - No Replace TR502, TR503 and TR504.
    - Yes Replace TR501 and IC10 (NJM 2901 or PC339G2)
  - Yes Are negative pulses being sent to Pin 3 (FANALM-N) of the connector (FAN)?
    - No Replace the fan.
  - Failure of IC1 (MHM2029-004K).

B-8 SSIO error (ERROR 74).

- Is the connection at the connector (POWER) properly engaged?
  - No Replace the connector (POWER).
- Yes Failure of IC1 (MHM2029-004K).

B-9 Operator panel I/F timeout error (ERROR 80).

- Is the connection at the connector (PANEL) properly engaged?
  - No Replace the connector (PANEL).
- Yes Failure of IC1 (MHM2029-004K).

B-10 Option tray I/F timeout error (ERROR 81).

- Is the connection at the connector (2NDTRAY) properly engaged?
  - No Replace the connector (2NDTRAY).
- Yes Is the connection at the connector (ENVELOPE) properly engaged?
  - No Replace the connector (ENVELOPE).

B-11 Watchdog timer timeout error occurs frequently (ERROR 90), or illegal CPU version (ERROR 91).

- Failure at IC1 (MHM2029-004K).

B-12 Program error (ERROR F*).

- Replace IC2 and IC3.
- Has the problem been solved?
  - Yes End.
- No Failure of IC1 (MHM2029-004K).

B-13 Processor error (ERROR 0*).

- Replace IC4, IC5, IC6 and IC7.
- Has the problem been solved?
  - Yes End.
- No Failure of IC1 (MHM2029-004K).

B-14 Print overrun occurs frequently.

- Is an option board mounted?
  - Yes Go to the flowchart B-6.
  - No Set DRAM SIMM Memory Module on an option board, then mount it to the printer.
    - Has the problem been solved?
      - Yes Print Data is too complex to print out, so it is necessary to mount an option board with DRAM (SIMM Memory Module) to the printer.
      - No Go to the flowchart B-6.

B-15 Error host I/F occurs frequently.

- Remove the option PCB (RS-232C). Has the Problem been solved?
  - Yes Failure of option PCB. Go to flowchart of each option PCB
  - No Failure of IC1 (MHM2029-004K)

B-16 Error receive buffer overflow occurs frequently.

[Centronics I/F]

- Is the BUSY signal being sent to Pin 11 (BUSY-P) of the connector (CENT)?
  - No Is the BUSY signal being sent to Pin 3 (BUSY-P) of IC11 (7407)?
    - Yes Replace IC11 (7407).
    - No Failure of IC1 (MHM2029-004K).
  - Yes Verify the host settings.

[Serial I/F]

- Is the DTR signal being sent to Pin 4 (DTR) of the connector (CN2 on the RS-232C option PCB)?
  - No Is the DTR signal being set to Pin 9 (DTR-N) of Q111 (75188 on the RS-232C option PCB)?
    - Yes Replace Q11 (75188 on the RS-232C option PCB).
    - No Failure of IC1 (MHM2029-004K).
  - Yes Verify the operation of the host.

B-17 Paper input jam.

- Is the hopping motor rotating normally?
  - No — Are the waveforms of RMPH1-P and RMPH2-P signals as shown in Section 3.9 (2) being sent to Pins 26 and 17 of IC8 (MTD2005F) respectively?
    - No — Failure of IC1 (MHM2029-004K).
  - Yes — When the motor is rotating, does the output to Pin 20 and Pin 23 of IC8 (MTD2005F) go high?
    - No — Failure of IC1 (MHM2029-004K).
    - Yes — Replace IC10 (NJM2901 or μPC339G2).
  - Yes — Is the voltage at Pin 1 of IC8 (MTD2005F) +38V?
    - No — Is the voltage at Pin 2 of FU1 +38V?
      - No — Replace FU1 (fuse).
  - Yes — Replace IC8 (MTD2005F).
- No — Failure of the power supply board or mechanical parts.

B-18 Paper feed jam occurs frequently.

- Is the main (drum) motor rotaing normally?
  - No — Are the waveforms of DMPH1-P and DMPH2-P as shown in Section 3.9 (1) being sent to Pins 13 and 8 of IC9 (A2918SW) respectively?
    - No — Failure of IC1 (MHM2029-004K).
  - Yes — When the main (drum) motor is rotating, is DMON1-N at Pin 7 and 14 of IC9 (A2918SW) low?
    - No — Failure of IC1 (MHM2029-004K).
  - Yes — Is the voltage at Pin 5 of IC9 (A2918SW) +38V?
    - No — Replace FU1 (FUSE).
  - Yes — Replace IC9 (A2918SW).
  - No — Failure of the power supply board or mechanical parts.

B-19 The key switch operation on the operator panel is disabled frequently.

- Is the clock signal (285kHz) being sent to Pin 6 of PANEL during key operations?
  - No — Failure of IC1 (MHM2029-004K).
- Yes — Is the data signal being sent to Pin 3 (PDATAOUT-P) of PANEL during key operations?
  - No — Failure of IC1 (MHM2029-004K).
- Yes — Verify the connection of PANEL.

B-21 Data sent through the centronics I/F cannot be received.

- Is the signal at Pin 11 (BUSY-P) of the connector (CENT) low?
  - No Is the signal at Pin 3 (PBUSY-P) of IC11 (7407) change at data reception as shown below?

	ON-LINE	OFF-LINE
PBUSY-P	Low	High

    - No Failure of IC1 (MHM2029-004K).
  - Yes Replace IC11 (7407).
- Yes Is the level of the signal at Pin 1 (PSTB-N) of the connector (CENT) change at data reception?
  - No Verify the connection of I/F cable or the operation of the host computer.
- Yes Are the signals at Pin 5 (PACK-N), Pin 13 (PERROR-N) of IC11 (7407) respectively low and high in on-line mode?
  - No Replace IC11 (7407).

    Has the problem been solved?
    - Yes End.
  - No
- Yes Failure of IC1 (MHM2029-004K).

B-22 Cover open occurs frequently.

- Are Pins 2 and 3 of the diode D501 open?
  - Yes Replace D501.
- No Is the connection of the connector (POWER), correct?
  - No Replace the connector (POWER).
- Yes Failure of IC1 (MHM2029-004K).

C-1

Abnormal message display on the LCD (no display, unclear display, display with some dot not lit, etc.)

- Is +5V power being supplied to Pin 8 of IC1 (BU6152S)?
  - No Replace CN1.
- Yes Is the CLOCK signal being sent to Pin 26 (OP-CLOCK-N) of IC1 (BU6152S)?
  - No Replace CN1.
- Yes Is the DATA signal being sent to Pin 2 (OP-DATA-IN) of IC1 (BU6152S)?
  - No Replace CN1.
- Yes Is the LOAD signal being sent to Pin 11 (OP-LOAD-N) of IC1 (BU6152S)?
  - No Replace CN1.
- Yes Is the DATA signal being sent to Pin 24 (OP-DATA-OUT) of IC1 (BU6152S)?
  - No Replace IC1 (BU6152S).
- Yes Is +5V power being supplied to Pin 2 of CN1? (OLCC-PCB)
  - No Replace CN1. (OLCC-PCB)
- Yes Is the DB signal being sent to Pins, 19, 20, 29, 30 (DB4 to DB7) of IC1 (BU6152S)?
  - No Replace IC1 (BU6152S).
- Yes Is the RS signal being sent to Pin 22 of IC1 (BU6152S)?
  - No Replace IC1 (BU6152S).
- Yes Is the R/W signal being sent to Pin 27 of IC1 (BU6152S)?
  - No Replace IC1 (BU6152S).
- Yes Is the E signal being sent to Pin 9 of IC1 (BU6152S)?
  - No Replace IC1 (BU6152S).
- Yes Replace CN2.

C-2 The key switch operation on the operator panel is disabled.

- Do the signals at Pins, 3, 7, 10, 18, 23, 31 of IC1 (BU6152S) change from high to low level by key switch pushing?
  - • No Replace SW1 to SW8.
- Yes Is the connection of CN1 correct? (OLCC-PCB)
  - • No Connect the connector correctly.
- Yes Replace IC1 (BU6152S).

C-3 The LCD does not display any message.

- Is +5V power being supplied to Pin 33 of IC2 (HD44780)?
  - • No Replace CN1. (OLCC-PCB)
- Yes Are 4.15V, 3.3V, 2.46V, 1.61V, and 0.77V powers being supplied respectively to Pins 26,27, 28, 29 and 30 of IC2 (HD44780)?
  - • No Are the resistance values of R5 through R10 correct? (OLCC-PCB)
    - • No Replace R5 through R10. (OLCC-PCB)
  - Yes
- Yes Replace IC2 (HD44780).
- Has the problem been solved?
  - • Yes End.
- No Replace CN1. (OLCC-PCB)
- Has the problem been solved?
  - • Yes End.
- No Is the contact surface of the zebra rubber dirty?
  - • No Clean the dirt.
- Yes Replace the zebra rubber.
- Has the problem been solved?
  - • Yes End.
- No Replace the LCD.

C-4 Display on the LCD with some dot not lit.

- Are 4.15V, 3.3V, 2.46V, 1.61V, and 0.77V powers being supplied respectively to Pins 26, 27, 28, 29 and 30 of IC2 (HD44780)?
  - No Replace R5 through R10. (OLCC-PCB)
- Yes Is the COM signal being sent to Pins 47 through 62 (COM01 to COM16) of IC2 (HD44780)?
  - No Replace IC2 (HD44780).
- Yes Is the SEG signal being sent to Pins 1 through 22 (SEG 19 to SEG40), Pins, 63 through 80 (SEG01 to SEG18) of IC2 (HD44780)?
  - No Replace IC2 (HD44780).
- Yes Is the contact surface of the zebra rubber dirty?
  - No Clear the dirt.
- Yes Replace the zebra rubber.
- Has the problem been solved?
  - Yes End.
- No Replace the LCD.

C-5 Unclear display on the LCD.

- Is +5V power being supplied to Pin 33 of IC2 (HD44780)?
  - No Replace CN1. (OLCC-PCB)
- Yes Are 4.15V, 3.3V, 2.46V, 1.61V, and 0.77V power being supplied respectively to Pins 26, 27, 28, 29 and 30 of IC2 (HD44780)?
  - No Replace R5 through R10. (OLCC-PCB)
- Yes Is the contact surface of a zebra rubbber dirty?
  - No Clear the dirt.
- Yes Replace the zebra rubber.
- Has the problem been solved?
  - Yes End.
- No Replace the LCD.

D-1 Paper input jams occur frequently.

- Has the fuse F1 opened?
  - No Is the high voltage (around 38V being sent to Pin 2 of D1 and Pin 2 of D2?
    - No Replace D1 or D2.
  - Yes Is the signal level at Pin 22 of IC2 at low level?
    - No Replace IC2.
  - Yes Are the signals at Pins 20 and 21 of IC2 being altered?
    - No Replace IC2.
  - Yes Is the signal level at Pin 2 of TR2 around 5V?
    - No Replace TR2.
  - Yes Are the signal levels at Pin 20 and 27 of IC3 around 3.4V?
    - No Replace R6 and R17.
  - Yes Are the signals at Pins 1 to 4 of connector (MOTOR) being altered?
    - No Replace IC3.
  - Yes Replace motor.
- Yes Replace the Fuse F1.

D-2 Paper out occurs even if the papers are in a cassette.

- Is paper sensor (SEN1) operating normally?
  - No Replace the paper sensor.
- Yes Replace IC2.

D-3 High capacity Second Paper Feeder cover open errors occur even if the cover is closed.

- Is cover open sensor (SEN2) operating normally?
  - No Replace SEN2.
- Yes Replace IC2.

D-4 The printer does not recognize High capacity Second Paper Feeder.

- Do signal levels at Pin 2 (OPTSCLK-N) and 3 (OPTSD-P) PU alter at power-up time?
  - No Replace Cable.
    - No Replace D1 or D2.
  - Yes Do signal levels at Pin 4, 7, and 9 of IC2 alter at power-up time?
    - No Is signal level at Pin 2 of D5 at 3.9V?
      - No Replace D5.
    - Yes Is signal level at Pin 2 of TR1 around 5V?
      - No Replace TR1.
    - Yes Is signal level at Pin 2 of C3 high?
      - No Replace C3.
    - OK?
    - No Is OSC1 being oscillated at 4MHz?
      - No Replace OSC1.
    - Yes Replace IC2.
  - Yes Do signal levels at Pin 3 and 8 of IC1 alter at power-up time?
    - No Replace IC1.
  - Yes Does signal level at Pin 6 of IC1 alter at power-up time when Pin 8 of IC1 is at low level?
    - No Replace IC1.

E-1 Paper input jams occur frequently.

- Is the motor rotating?
  - No — Has the fuse F1 opened?
    - No — Is the high voltage (around 38V) being sent to Pin 2 of D1 and Pin 2 of D2?
      - No — Replace D1 or D2.
    - Yes — Is the signal level at Pin 22 of IC2 at low level?
      - No — Replace IC2.
    - Yes — Are the signals at Pins 20 and 21 of IC2 being altered?
      - No — Replace IC2.
    - Yes — Is the signal level at Pin 2 of TR1 around 5V?
      - No — Replace TR1.
    - Yes — Is the signal level at Pin 2 and 27 of IC3 around 1.8V?
      - No — Replace R6 and R17.
    - Yes — Are the signals at Pins 1 to 4 of CN3 being altered?
      - No — Replace IC3.
    - Yes — Replace motor.
  - Yes — Replace the Fuse F1.

E-2 Paper out occurs even if the papers are in a cassette or a tray.

- Is paper sensor (SEN1 in Second Tray and SEN2 in Multi-purpose Feeder) operating normally?
  - No — Replace the paper sensor.
- Yes — Replace IC2.

E-3 The printer does not recognize Multi Purpose Feeder.

- Do signal levels at Pin 2 (OPTSCLK-N) and 3 (OPTSD-P) CN1 alter at power-up time?
  - • No Replace Option Tray Cable.
  - Yes Do signal levels at Pin 4, 7, and 9 of IC2 alter at power-up time?
    - • No Is signal level at Pin 2 of D4 at 3.9V?
      - • No Replace D5.
    - Yes Is signal level at Pin 2 of TR4 around 5V?
      - • No Replace TR4.
    - Yes Is signal level at Pin 2 of C2 high?
      - • No Replace C2.
    - OK?
    - No Is OSC1 being oscillated at 4MHz?
      - • No Replace OSC1.
    - Yes Replace IC2.
  - Yes Do signal levels at Pin 3 and 11 of IC1 alter at power-up time?
    - • No Replace IC1.
  - Yes Does signal level at Pin 8 of IC1 alter at power-up time when Pin 3 of IC1 is at low level?
    - • No Replace IC1.

F-1 Option RAM error (ERROR 60)

- Remove the DRAM SIMM. Has the problem been solved?
  - Yes Failure of DRAM SIMM.
- Are negative pulses being sent to Pin 83 (DRAS2-N), Pin 84 (DRAS3-N), Pin 85 (DRAS4-N), Pin 86 (DRAS5-N) of the connector (CN1)?
  - No Failure of IC1 (MHM2029-004K) or Main Control PCB (M5B).
- Yes Replace D1, D2 (514260).

G-1 Error host I/F occurs frequently.

- Is the connection at the connector (CN2) properly engaged?
  - • No Replace the connector (CN2).
- Yes Is the voltage at Pin 14 of Q11 (75188) about +8V and the voltage at Pin 1 of Q11 (75188) about -8V?
  - • No Check the connection of the connector (CN1).
- Yes Replace Q11 (75188).
- Has the problem been solved?
  - • Yes End.
- No Replace BF1 (ZBF253D-01).
- Has the problem been solved?
  - • Yes End.
- No Failure of IC1 (MHM2029-004K) on the Main Control PCB (M5B).

G-2 Loop test error occurs during loop test.

- Does the state of RXD-N signal vary?
  - No Does the state of TXD signal at Pin 3 of Q11 (75188) vary?
    - • No Check the loop connector.
  - Yes Does the state of TXD signal at Pin 2 of Q11 (75188) vary?
    - • No Failure of IC1 (MHM2029-004K) on the Main Control PCB (M5B).
  - Yes Replace Q11 (75188).
- Yes Failure of IC1 (MHM2029-004K) on the Main Control PCB (M5B).

5. CIRCUIT DIAGRAM

5. CIRCUIT DIAGRAM

Figure 5-1(1/11~11/11)	Main Control Board	(M5B-PCB, Rev.5)	(40217002)
Figure 5-2(1/1)	Operator Panel Board	(OLCC-2-PCB, Rev.4)	(4YA4130-1001G002)
Figure 5-3(1/4~4/4)	Power Supply Board	(OL1-PCB, Rev.6)	(40217701)
Figure 5-4(1/4~4/4)	Power Supply Board	(OL2-PCB, Rev.6)	(40217702)
Figure 5-5(1/1)	High Capacity Second Paper Feeder Board	(TQSB-2-PCB, Rev.1)	(4YA4046-1651G002)
Figure 5-6(1/2~2/2)	Multi Purpose Feeder Board	(OLEV-PCB, Rev.4)	(4YA4121-1014G011)
Figure 5-7(1/5~5/5)	Memory Expansion Board	(MM6-PCB, Rev.4)	(40369105)
Figure 5-8(1/5~5/5)	RS-232C interface Board	(SMIF-PCB, Rev.4)	(00025304)

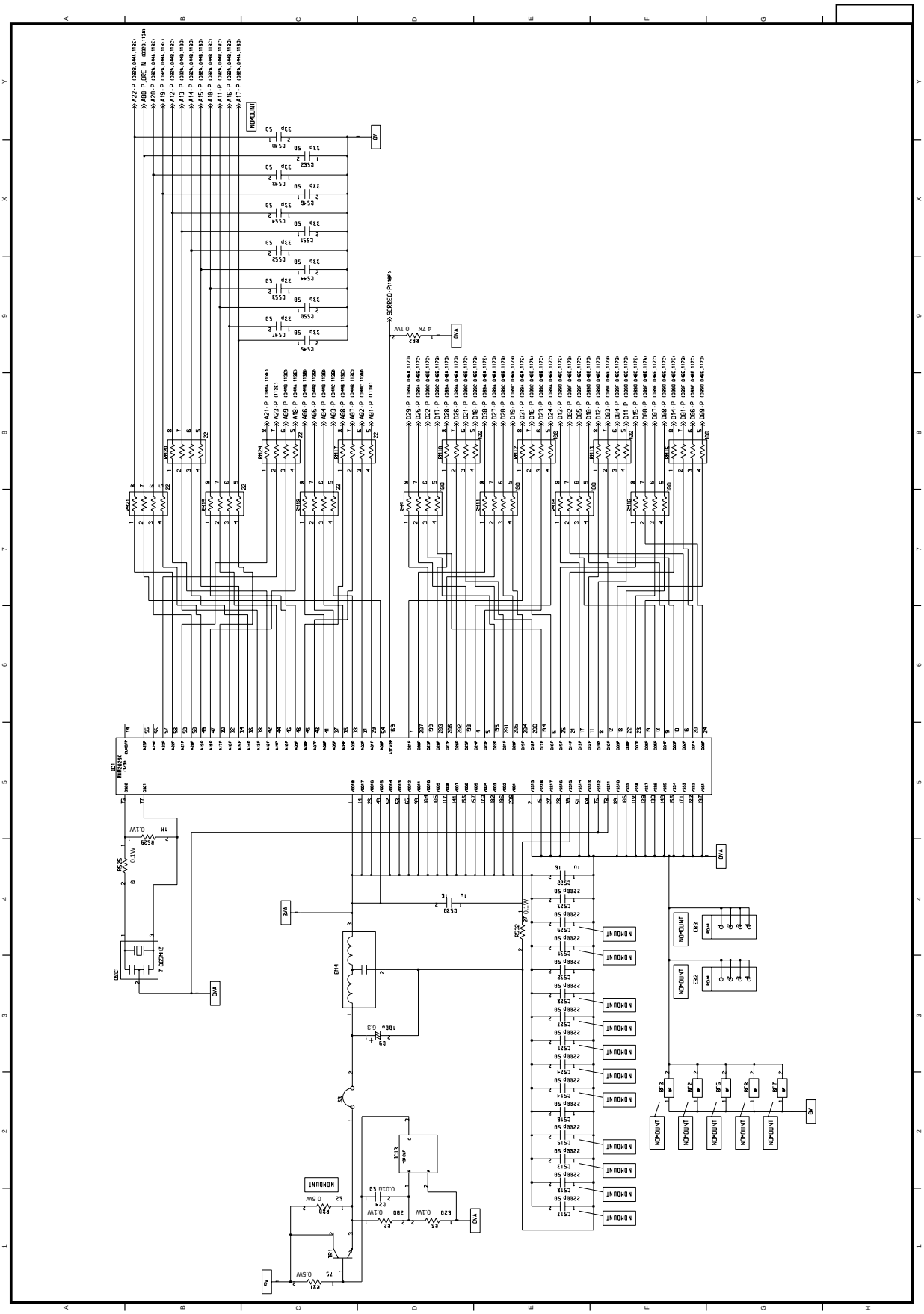


Figure 5-1 Main Control Board (M5B-PCB, Rev.5) (1/11)

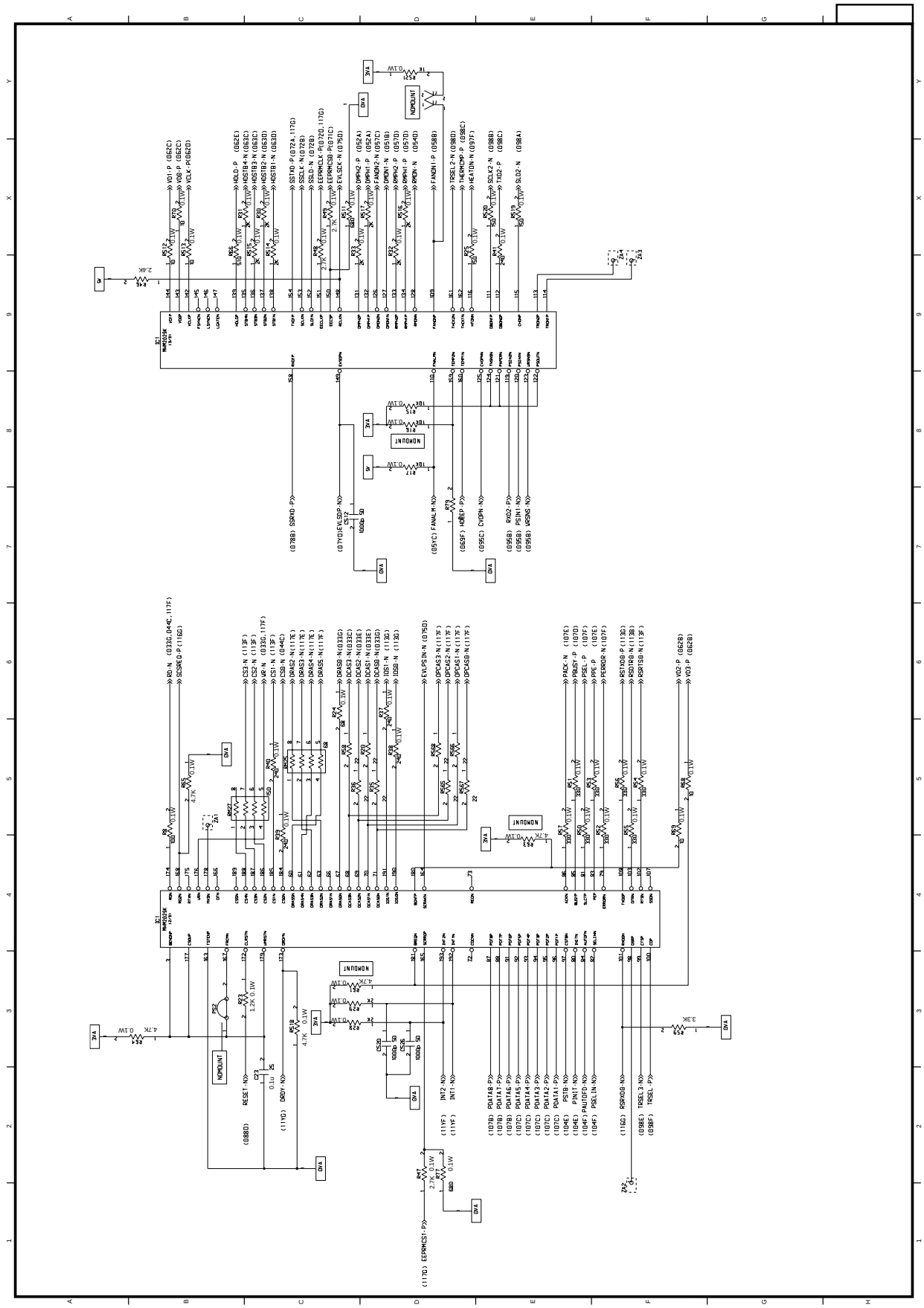


Figure 5-1 Main Control Board (M5B-PCB, Rev.5) (2/11)

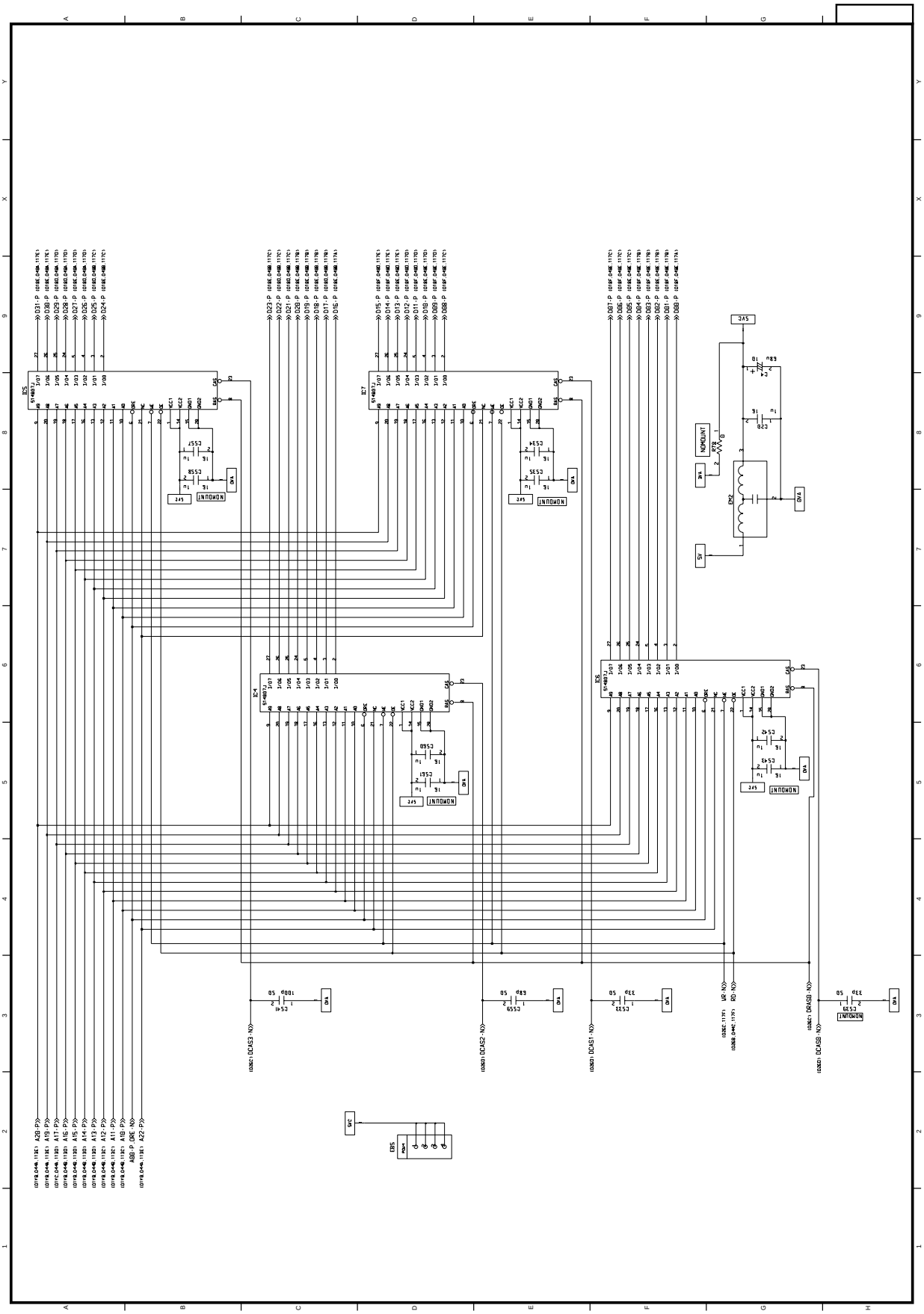


Figure 5-1 Main Control Board (M5B-PCB, Rev.5) (3/11)

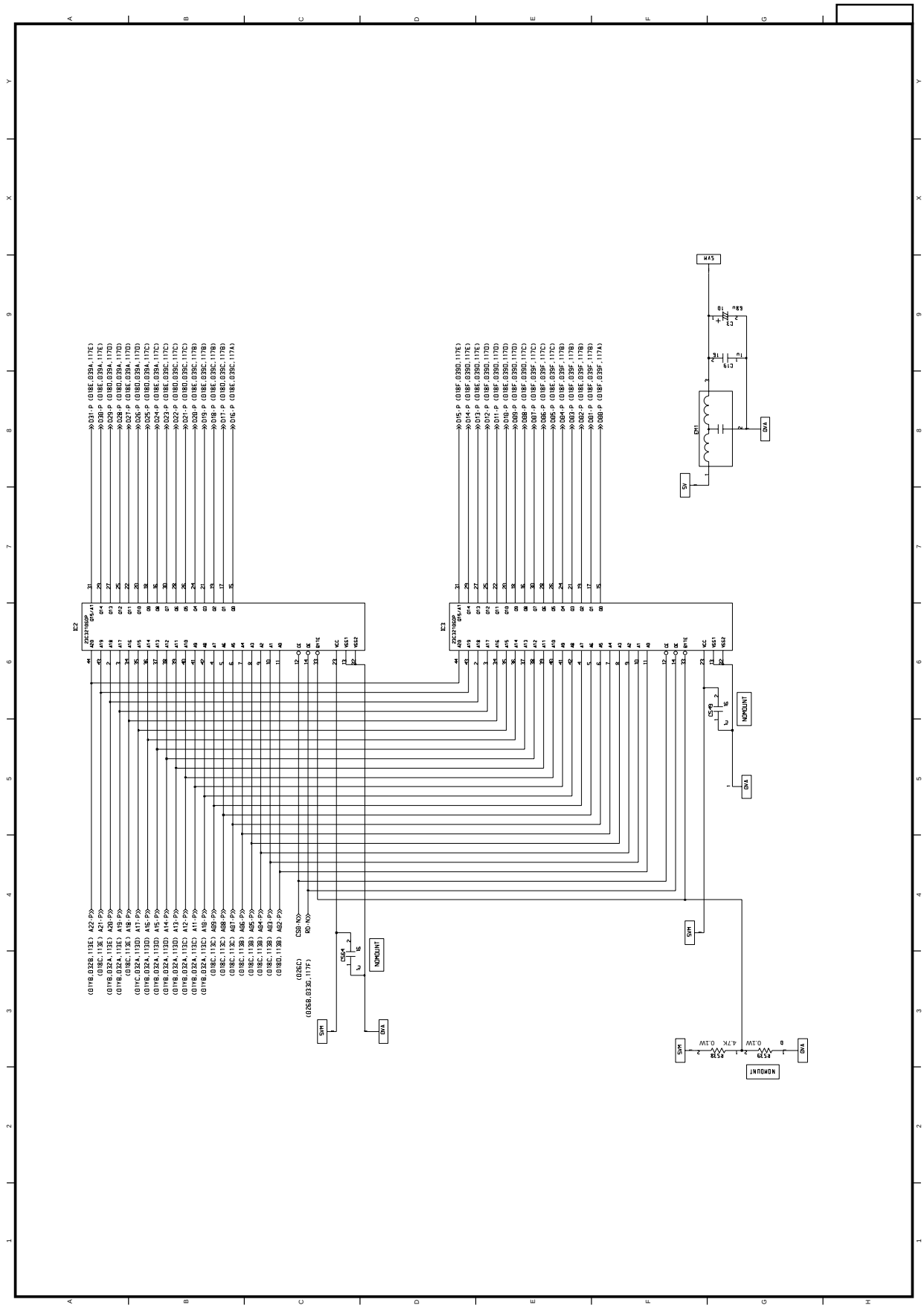


Figure 5-1 Main Control Board (M5B-PCB, Rev.5) (4/11)

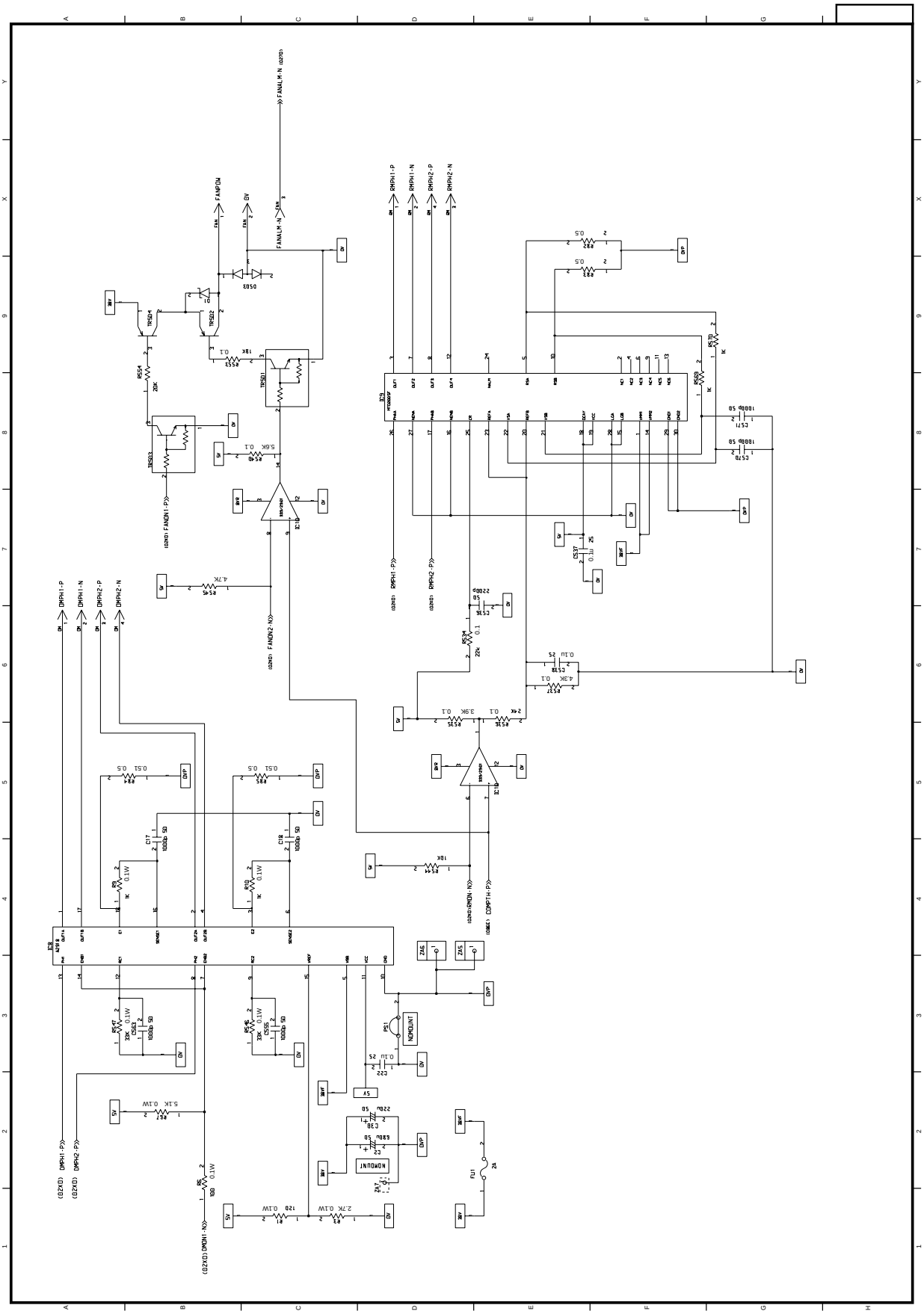


Figure 5-1 Main Control Board (M5B-PCB, Rev.5) (5/11)

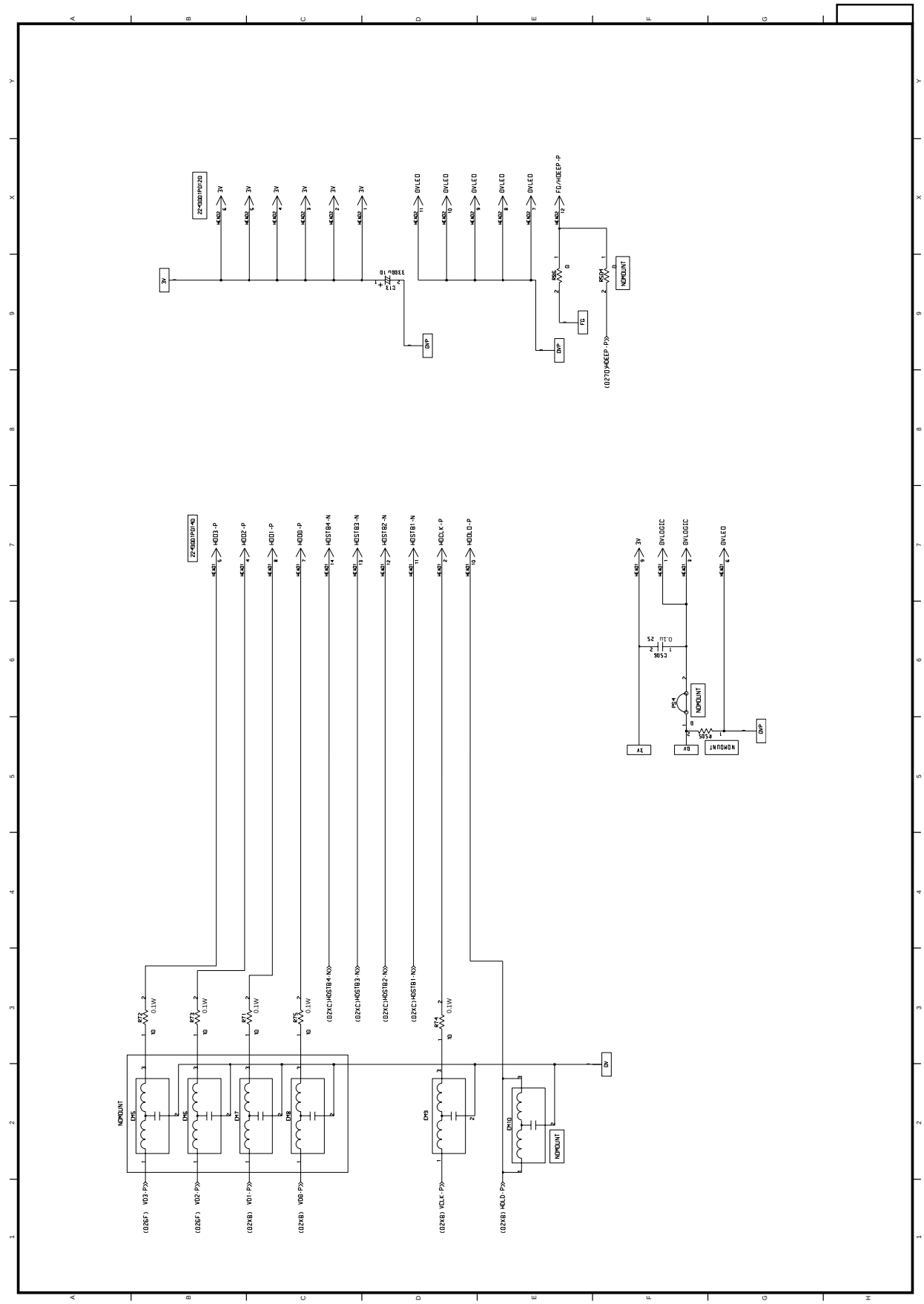


Figure 5-1 Main Control Board (M5B-PCB, Rev.5) (6/11)

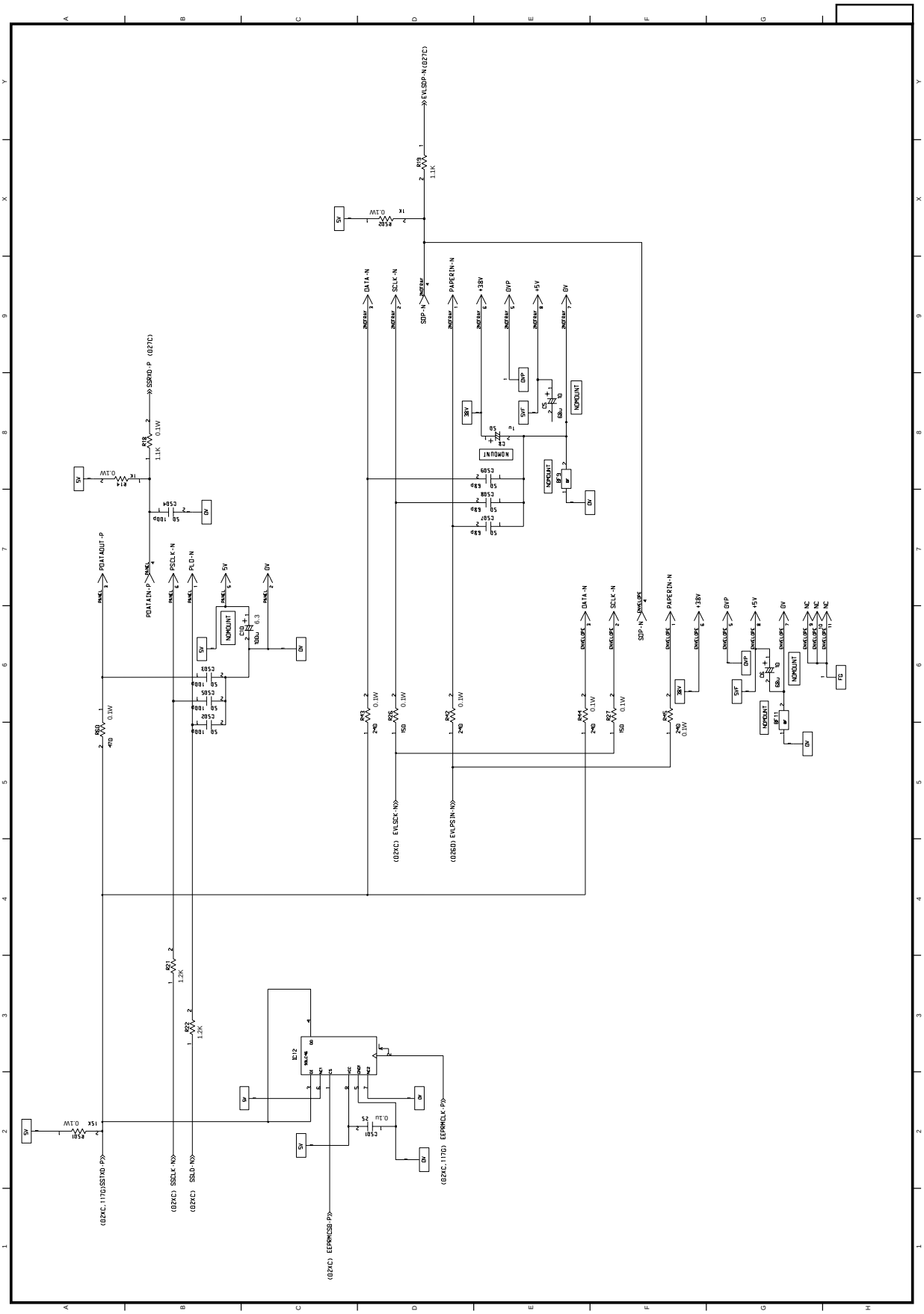


Figure 5-1 Main Control Board (M5B-PCB, Rev.5) (7/11)

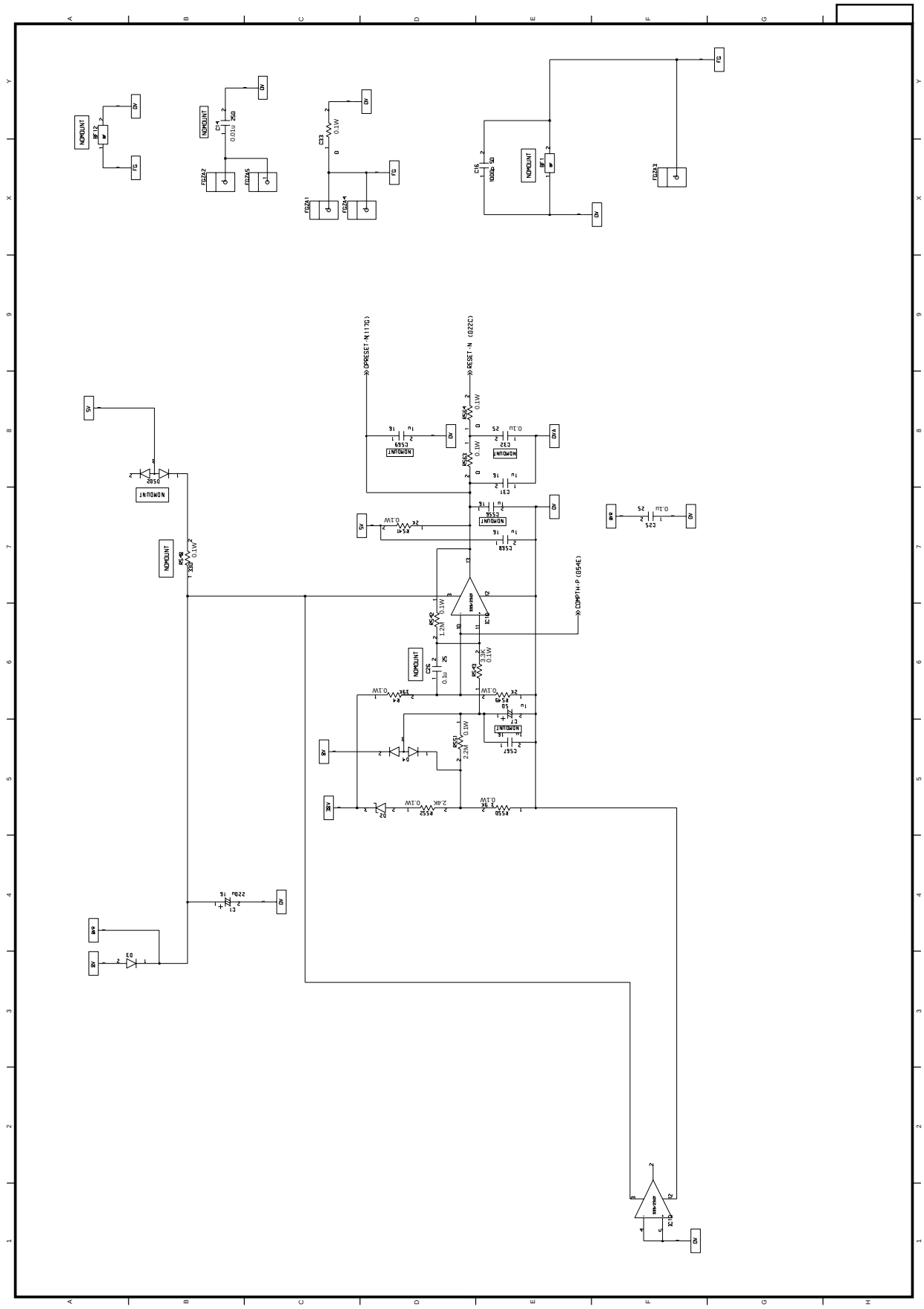


Figure 5-1 Main Control Board (M5B-PCB, Rev.5) (8/11)

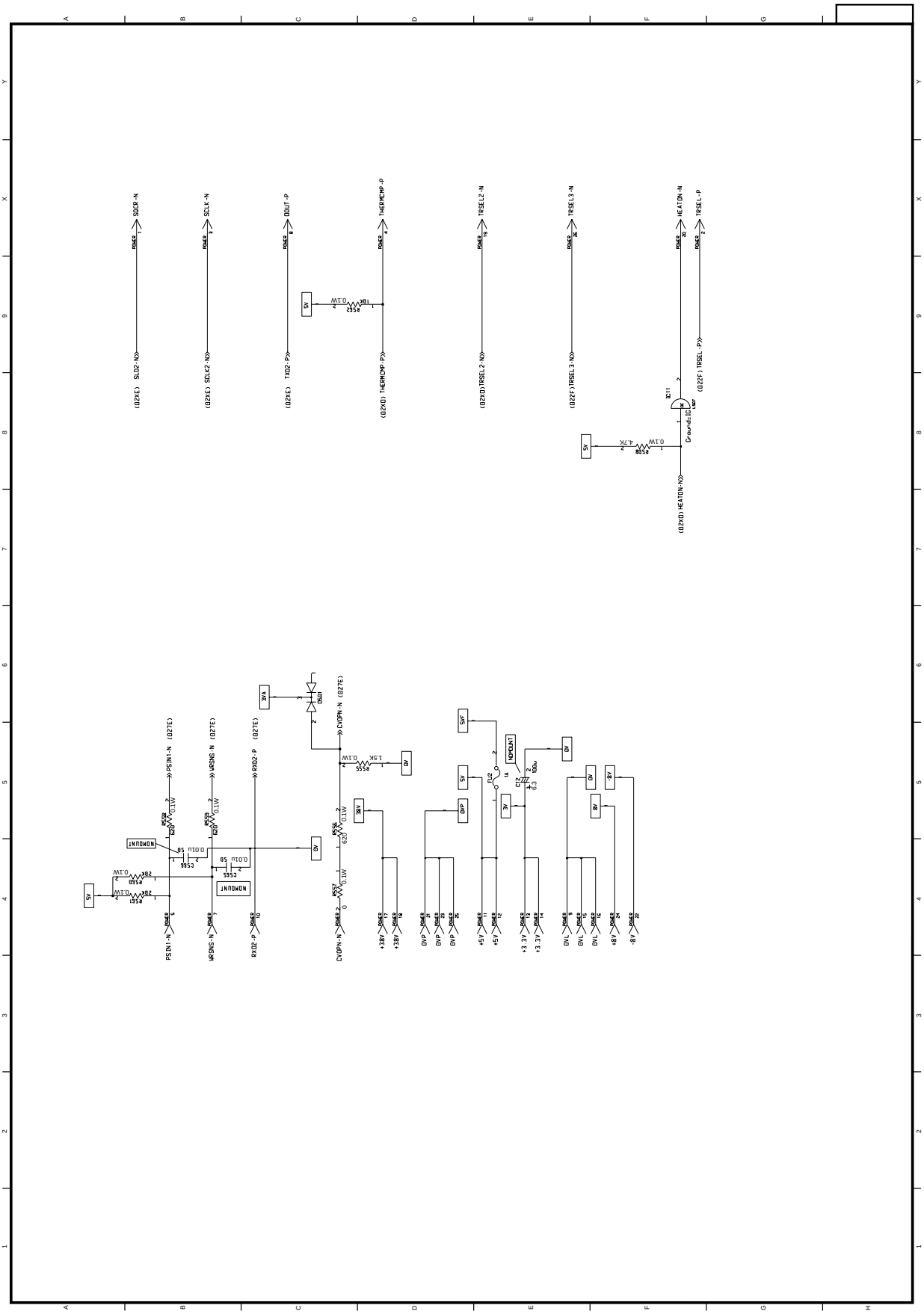


Figure 5-1 Main Control Board (M5B-PCB, Rev.5) (9/11)

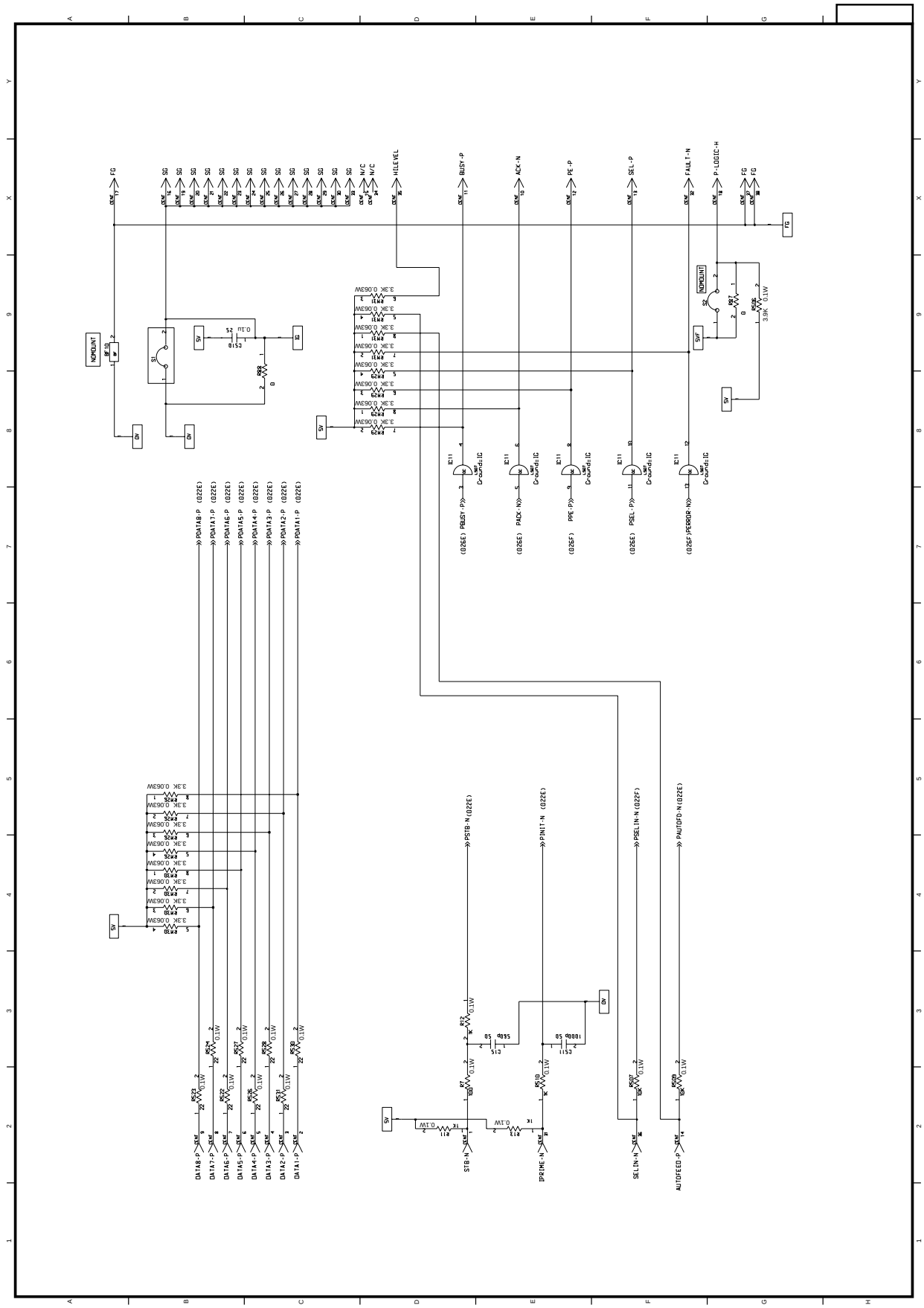


Figure 5-1 Main Control Board (M5B-PCB, Rev.5) (10/11)

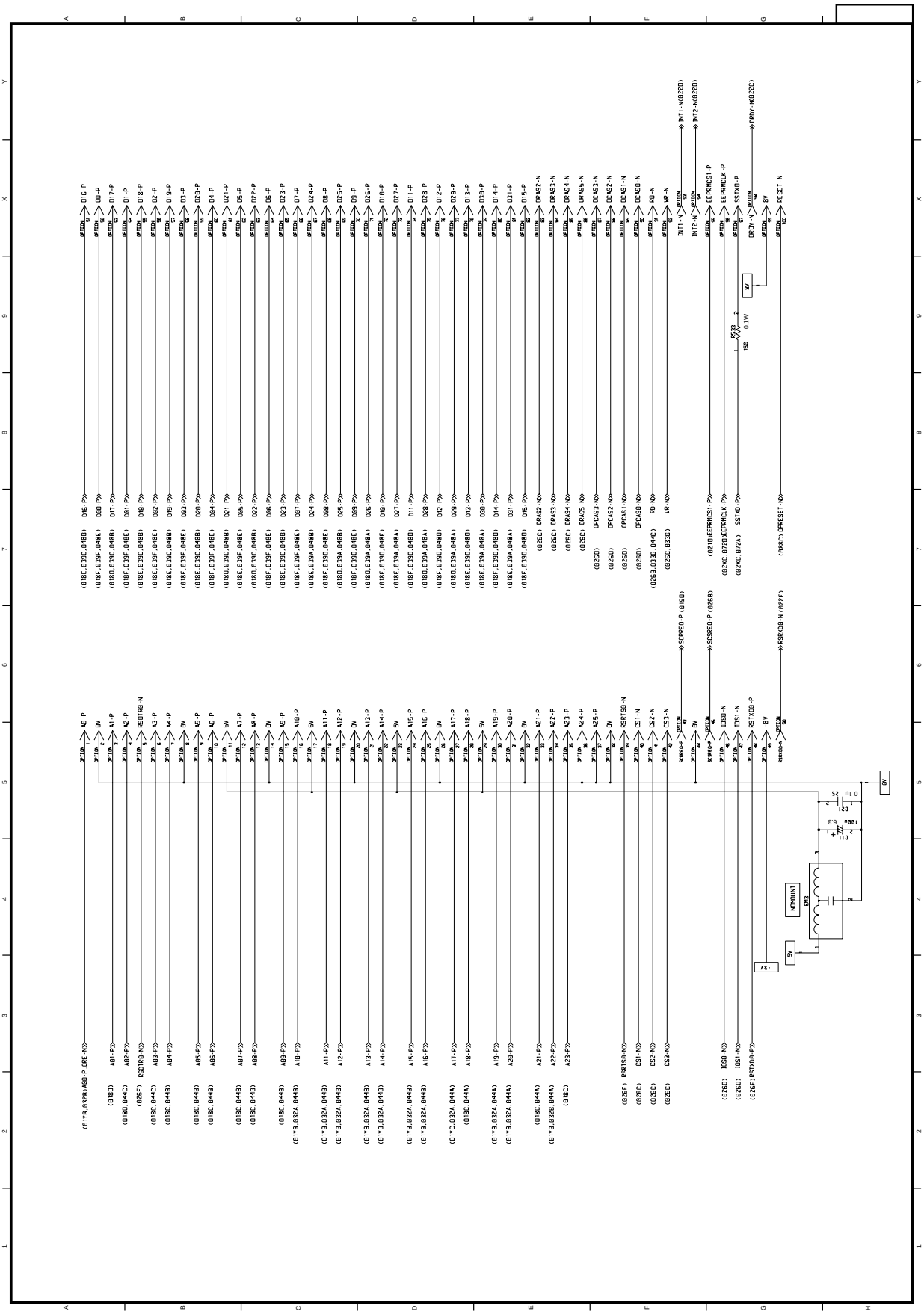


Figure 5-1 Main Control Board (M5B-PCB, Rev.5) (11/11)

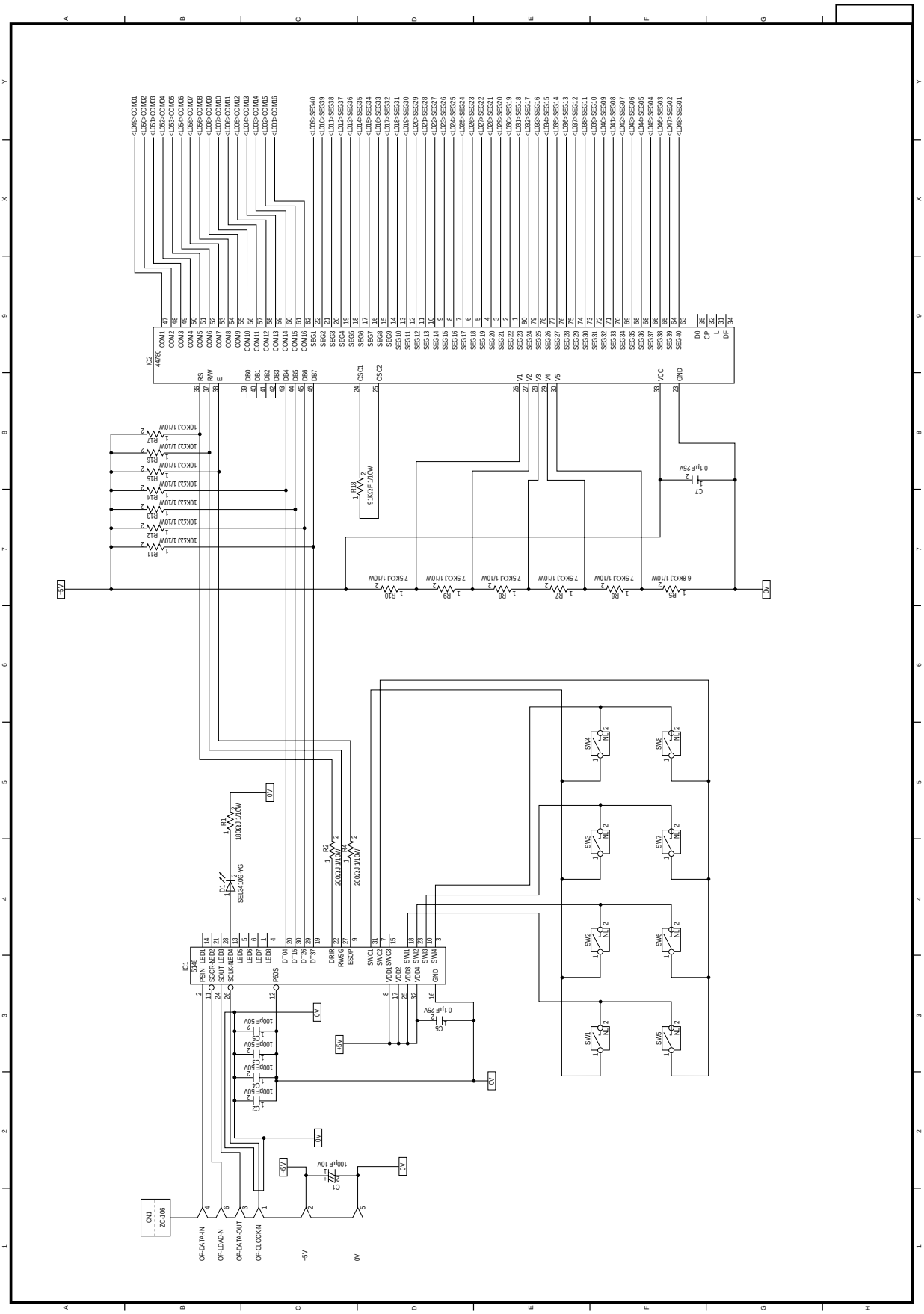


Figure 5-2 Operator Panel Board (OLCC-2-PCB, Rev.4) (1/1)

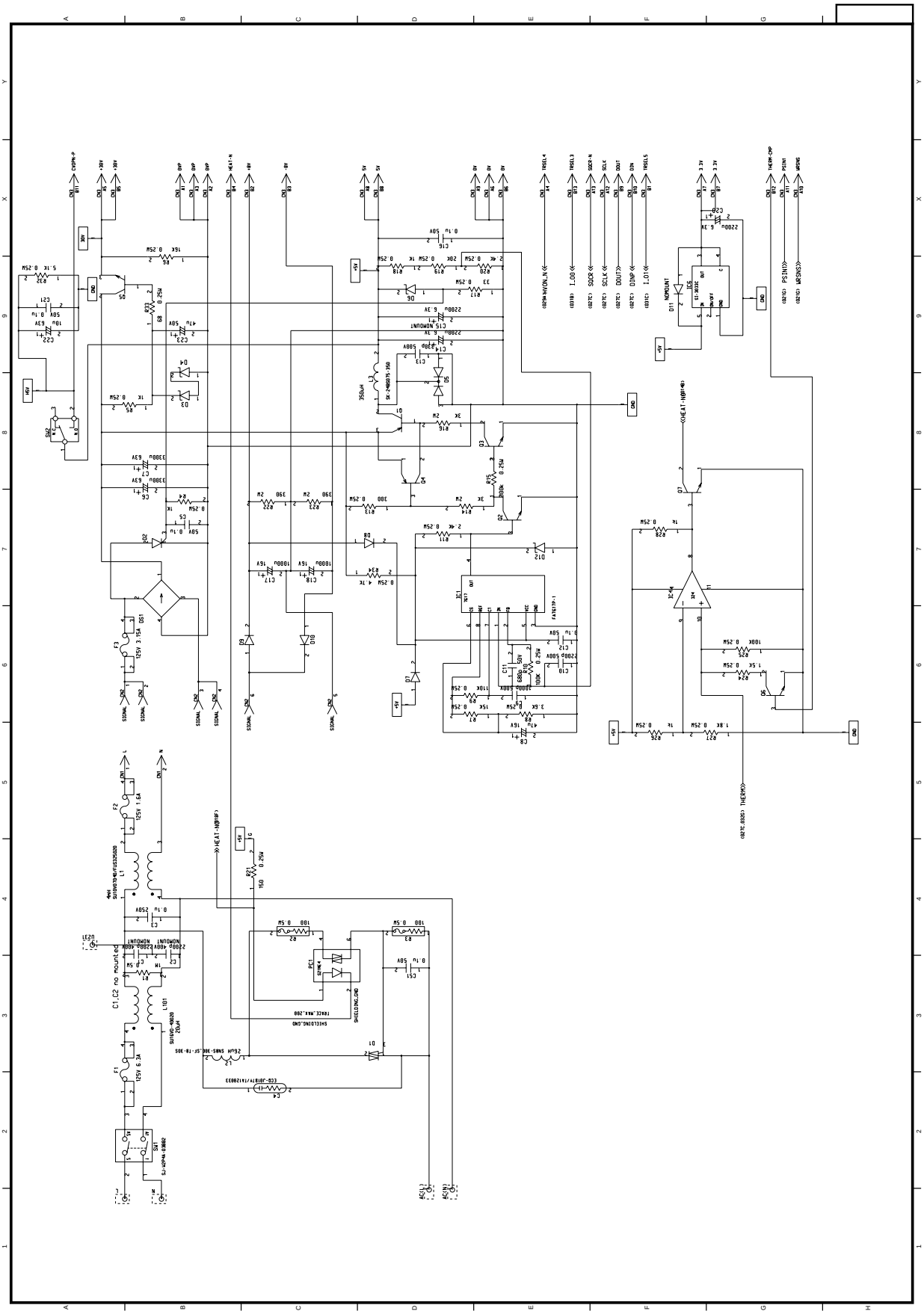


Figure 5-3 Power Supply Board (OL1-PCB, Rev.6) (1/4)

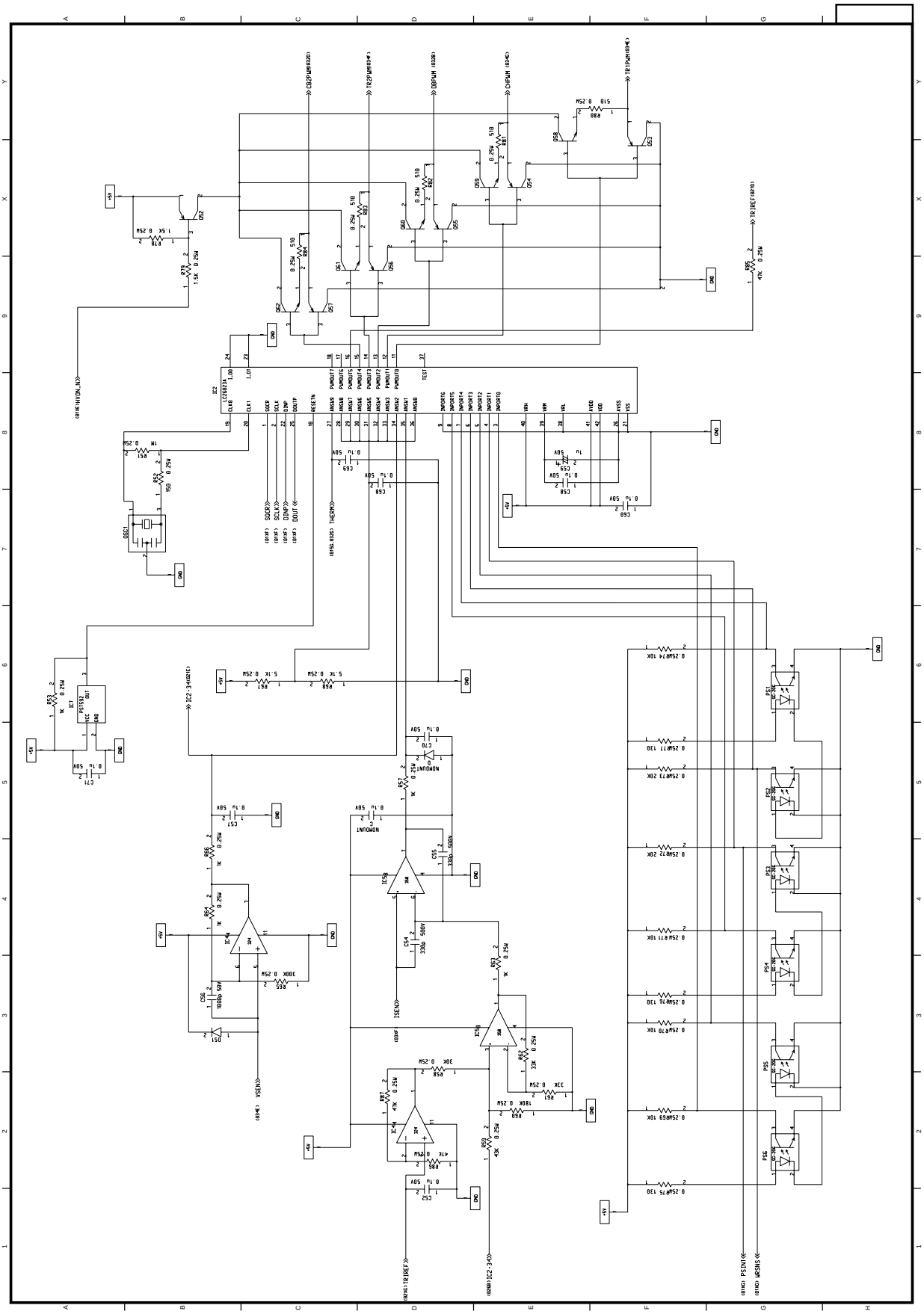


Figure 5-3 Power Supply Board (OL1-PCB, Rev.6) (2/4)

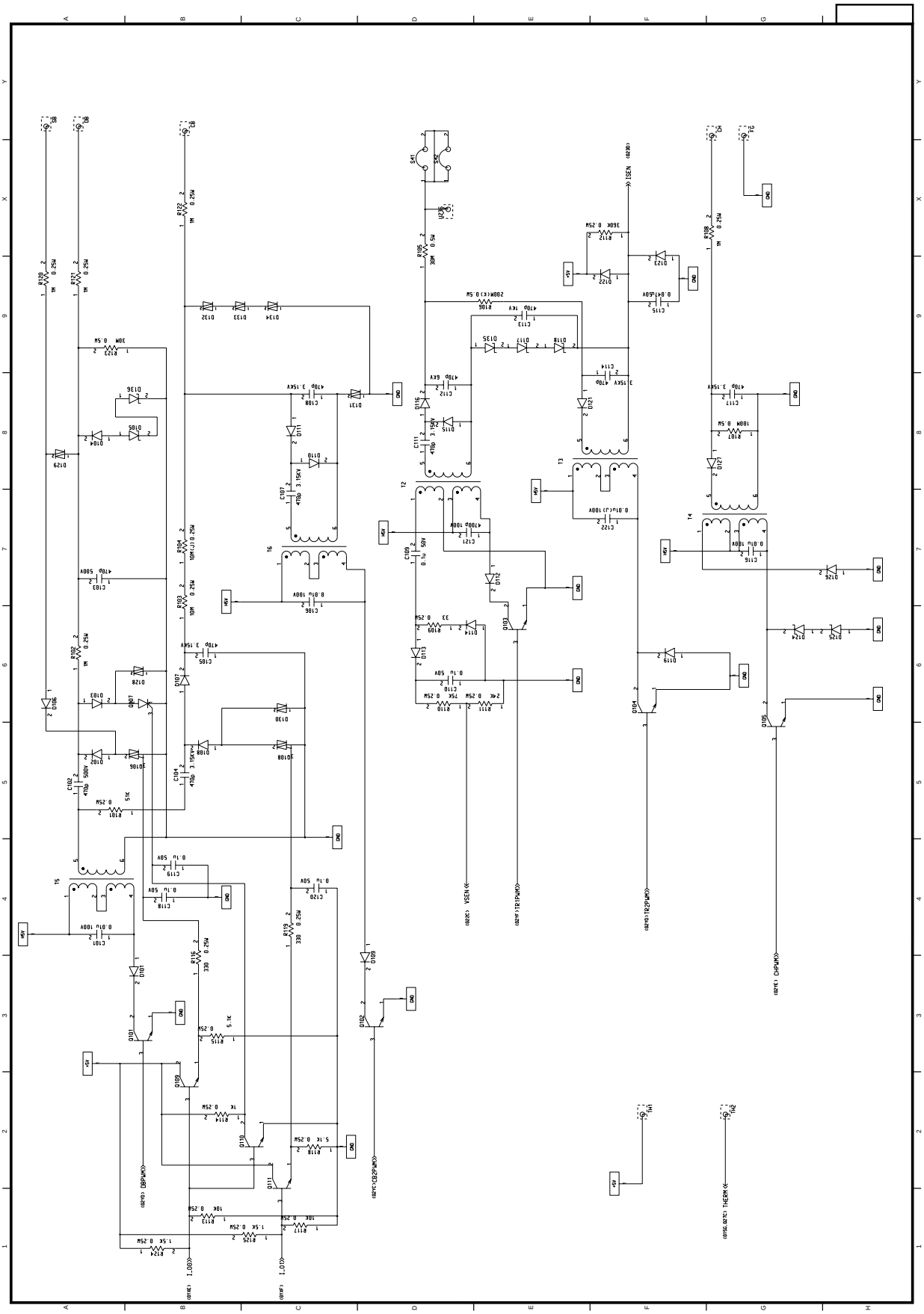


Figure 5-3 Power Supply Board (OL1-PCB, Rev.6) (3/4)

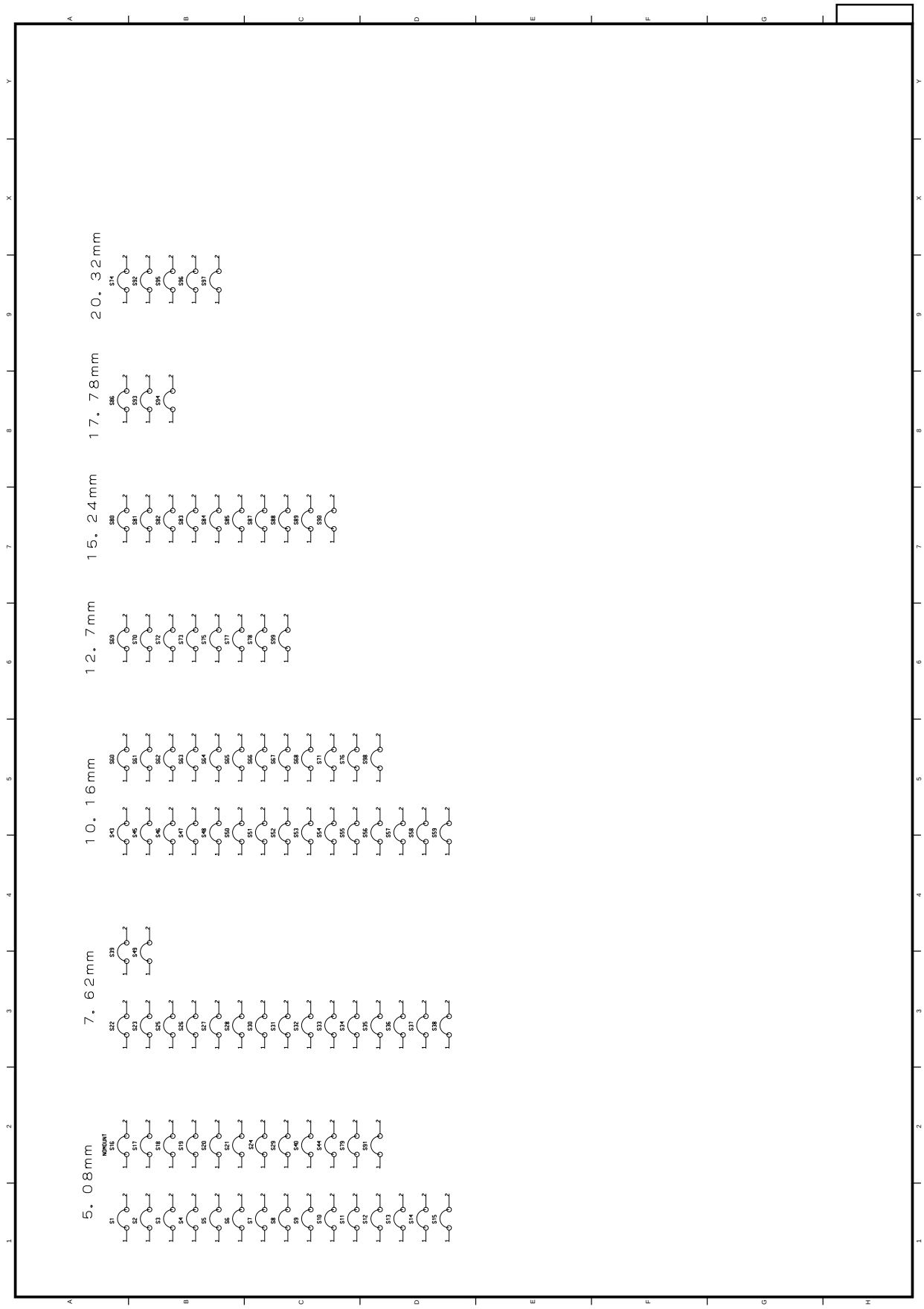


Figure 5-3 Power Supply Board (OL1-PCB, Rev.6) (4/4)

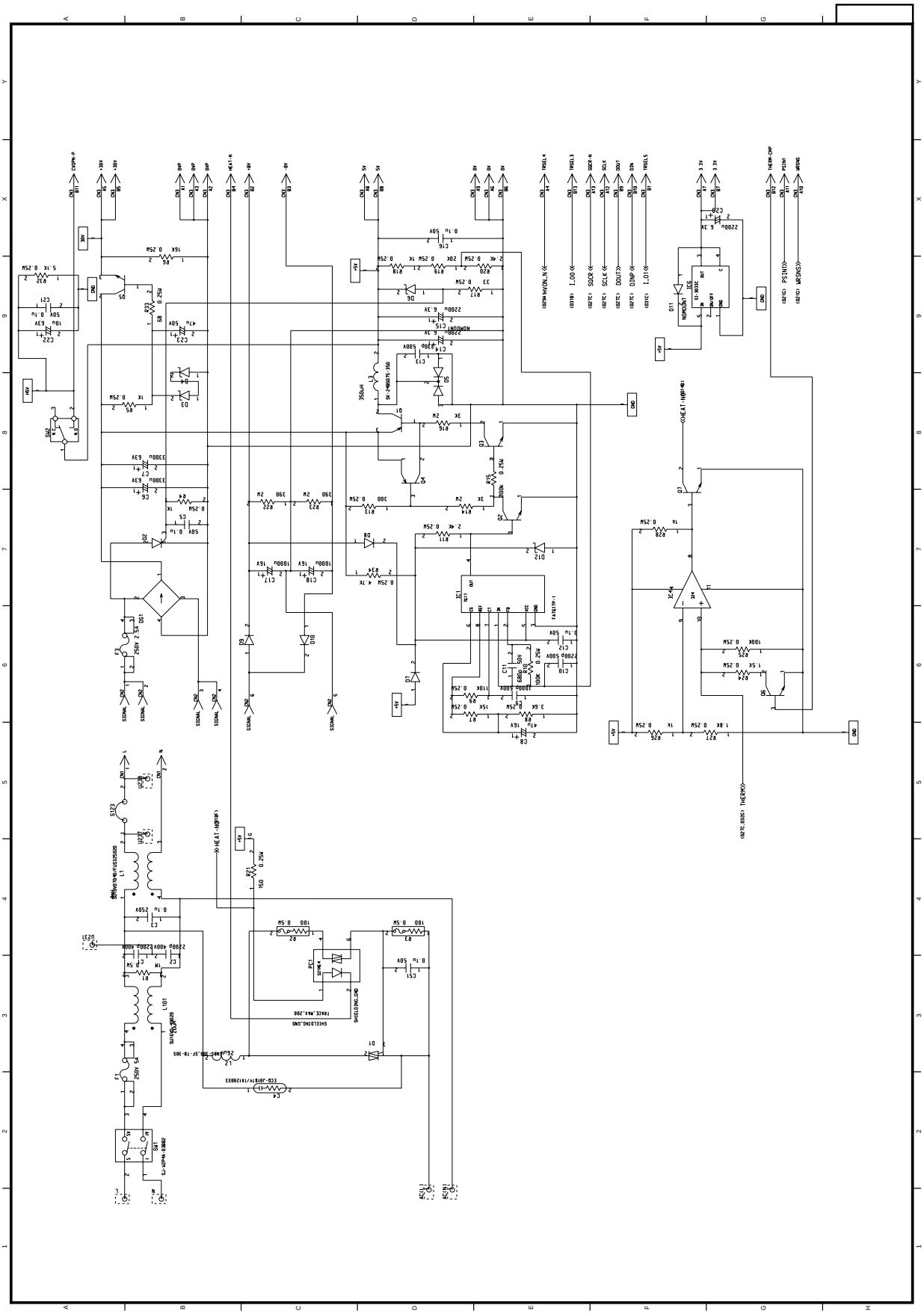


Figure 5-4 Power Supply Board (OL2-PCB, Rev.6) (1/4)

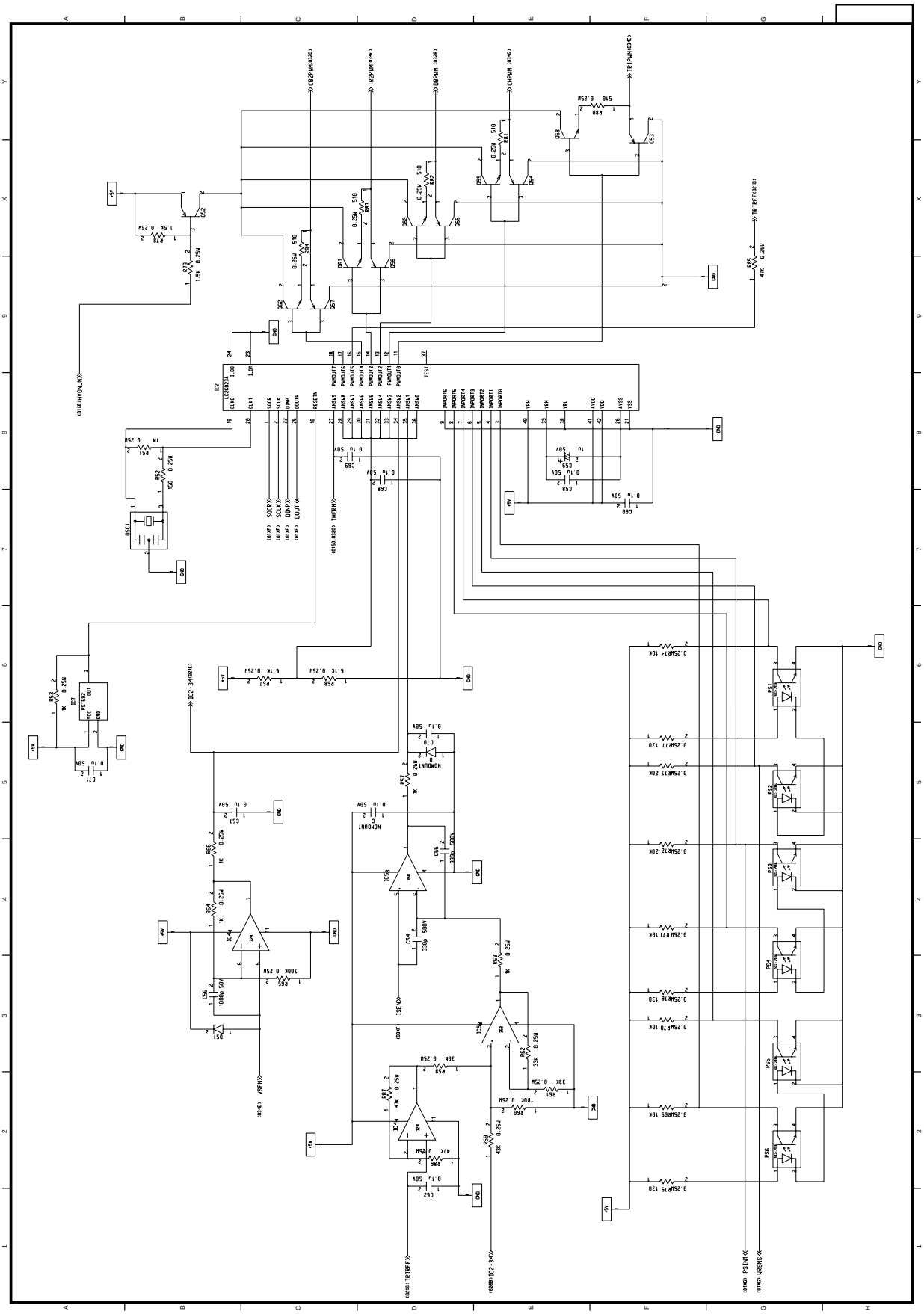


Figure 5-4 Power Supply Board (OL2-PCB, Rev.6) (2/4)

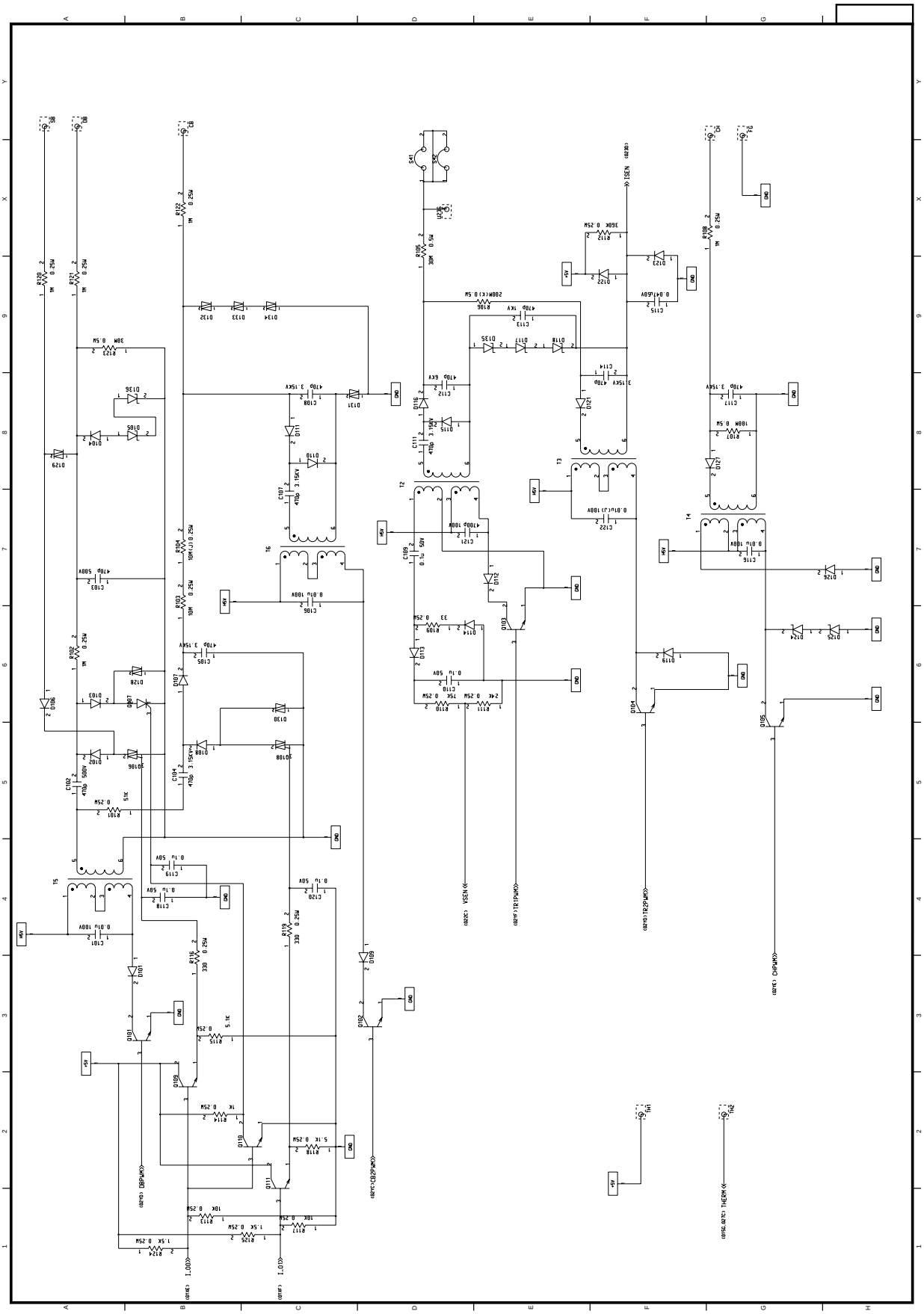


Figure 5-4 Power Supply Board (OL2-PCB, Rev.6) (3/4)

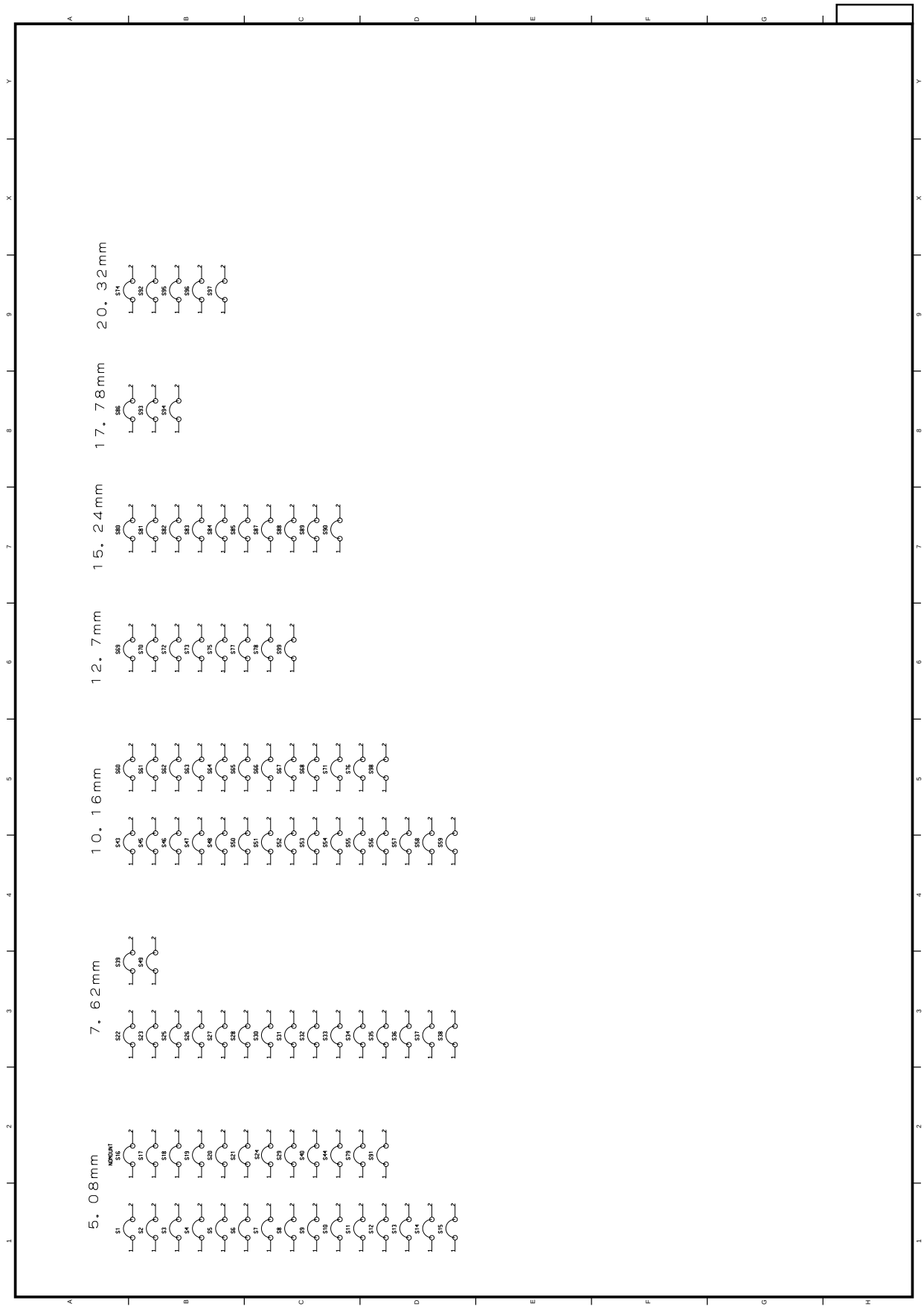


Figure 5-4 Power Supply Board (OL2-PCB, Rev.6) (4/4)

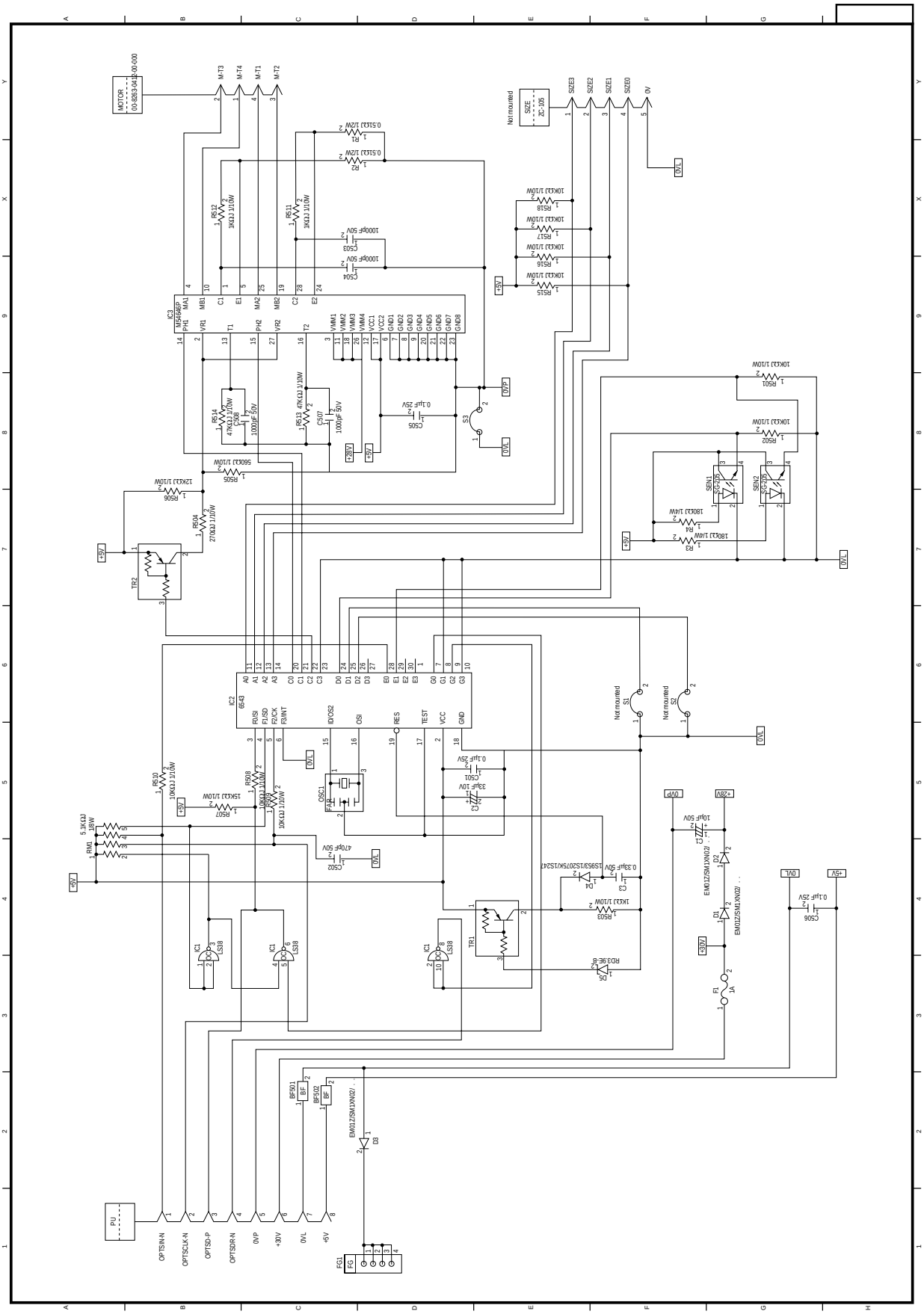


Figure 5-5 High Capacity Second Paper Feeder Board (TQSB-2-PCB, Rev.1) (1/1)

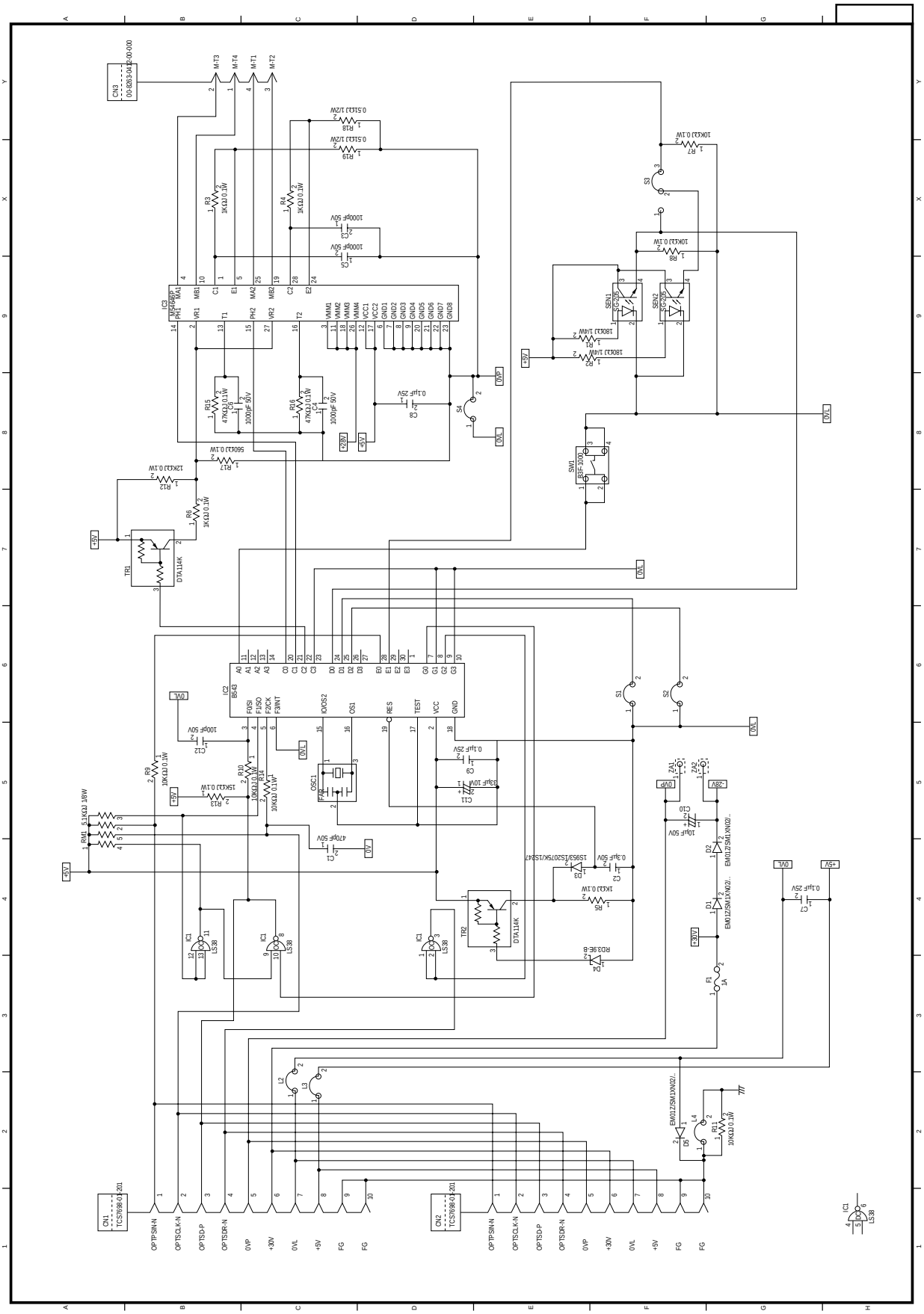


Figure 5-6 Multi Purpose Feeder Board (OLEV-PCB, Rev.4) (1/2)

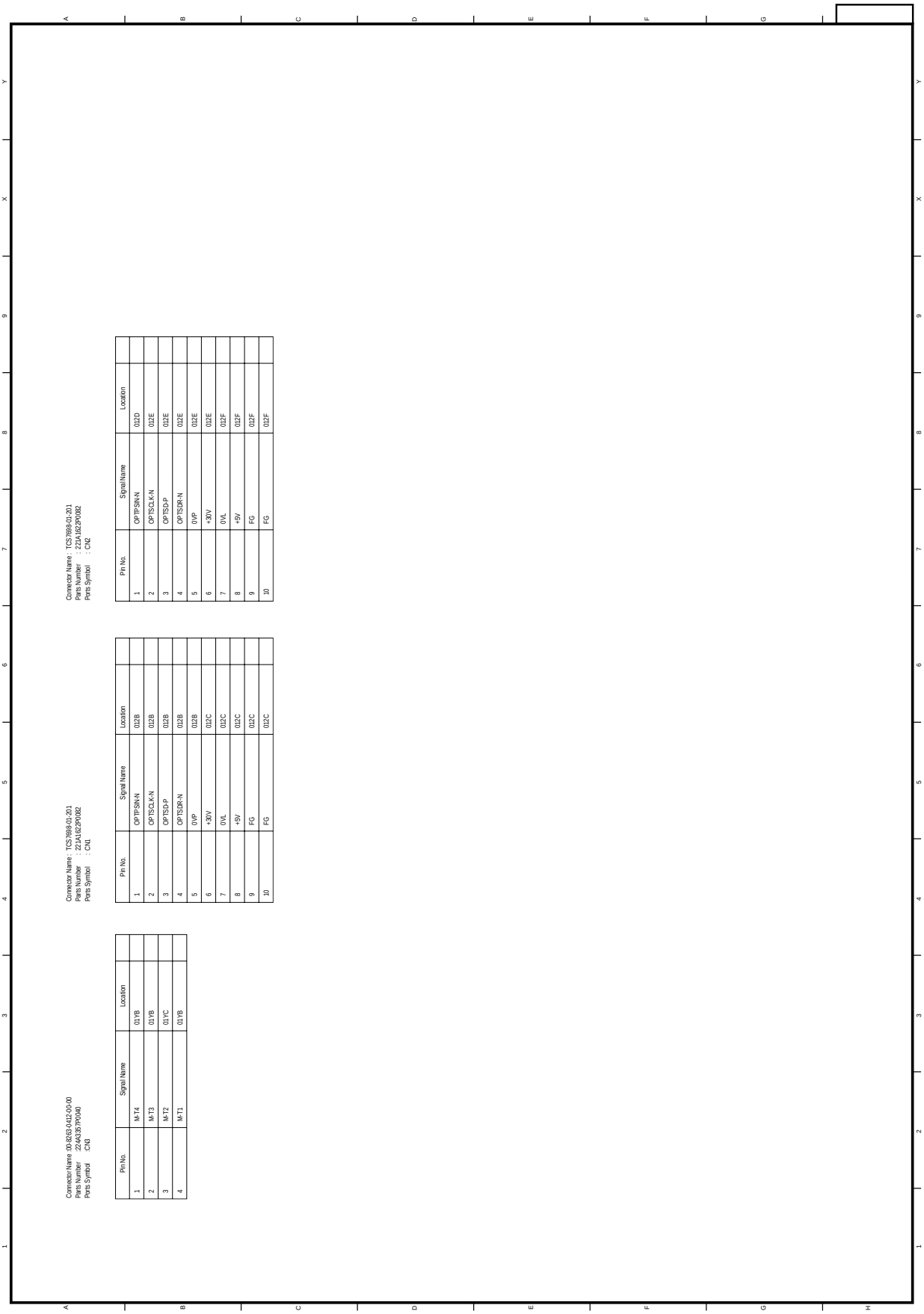


Figure 5-6 Multi Purpose Feeder Board (OLEV-PCB, Rev.4) (2/2)

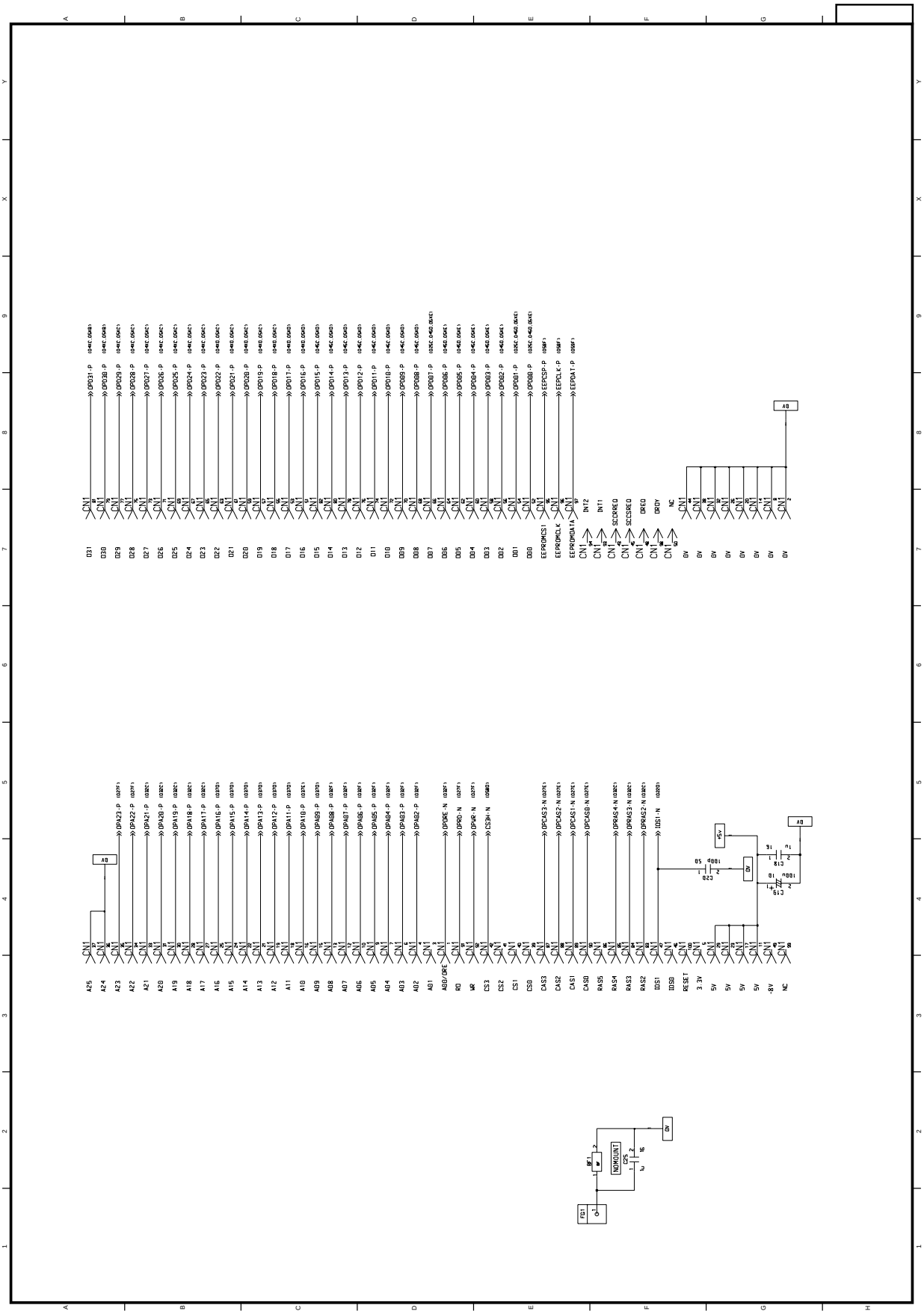


Figure 5-7 Memory Expansion Bord (MM6-PCB, Rev.4) (1/5)

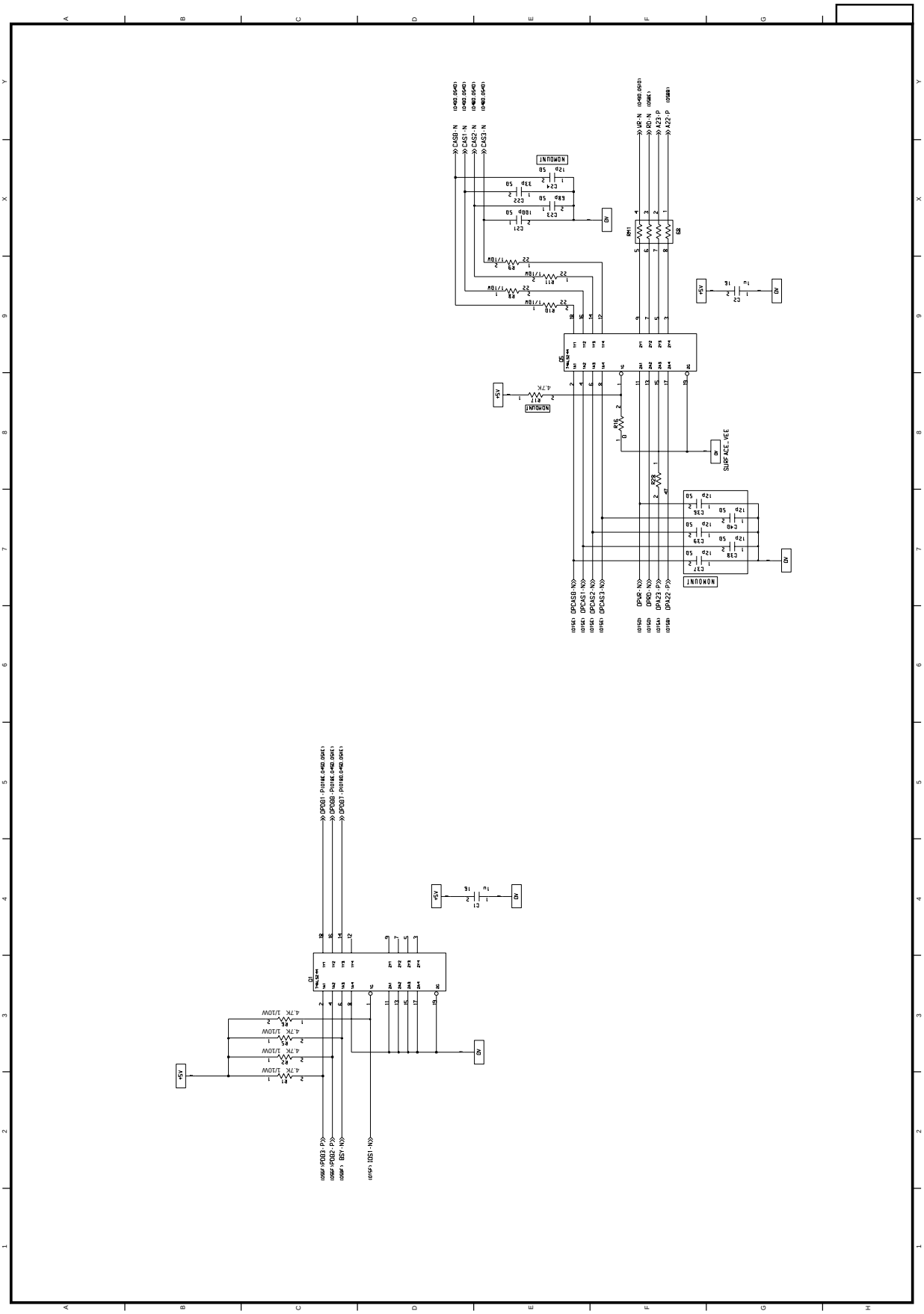


Figure 5-7 Memory Expansion Bord (MM6-PCB, Rev.4) (2/5)

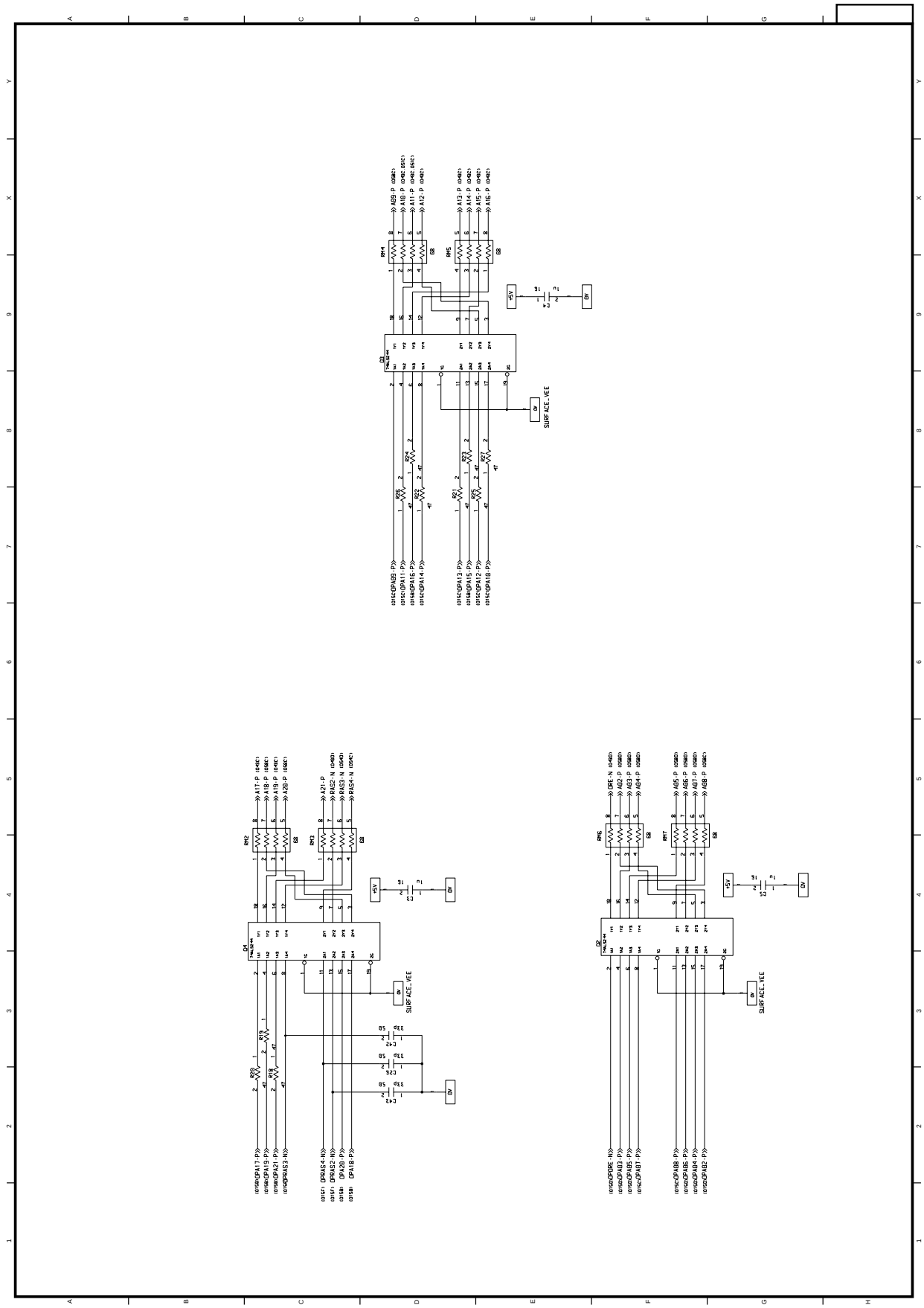


Figure 5-7 Memory Expansion Bord (MM6-PCB, Rev.4) (3/5)

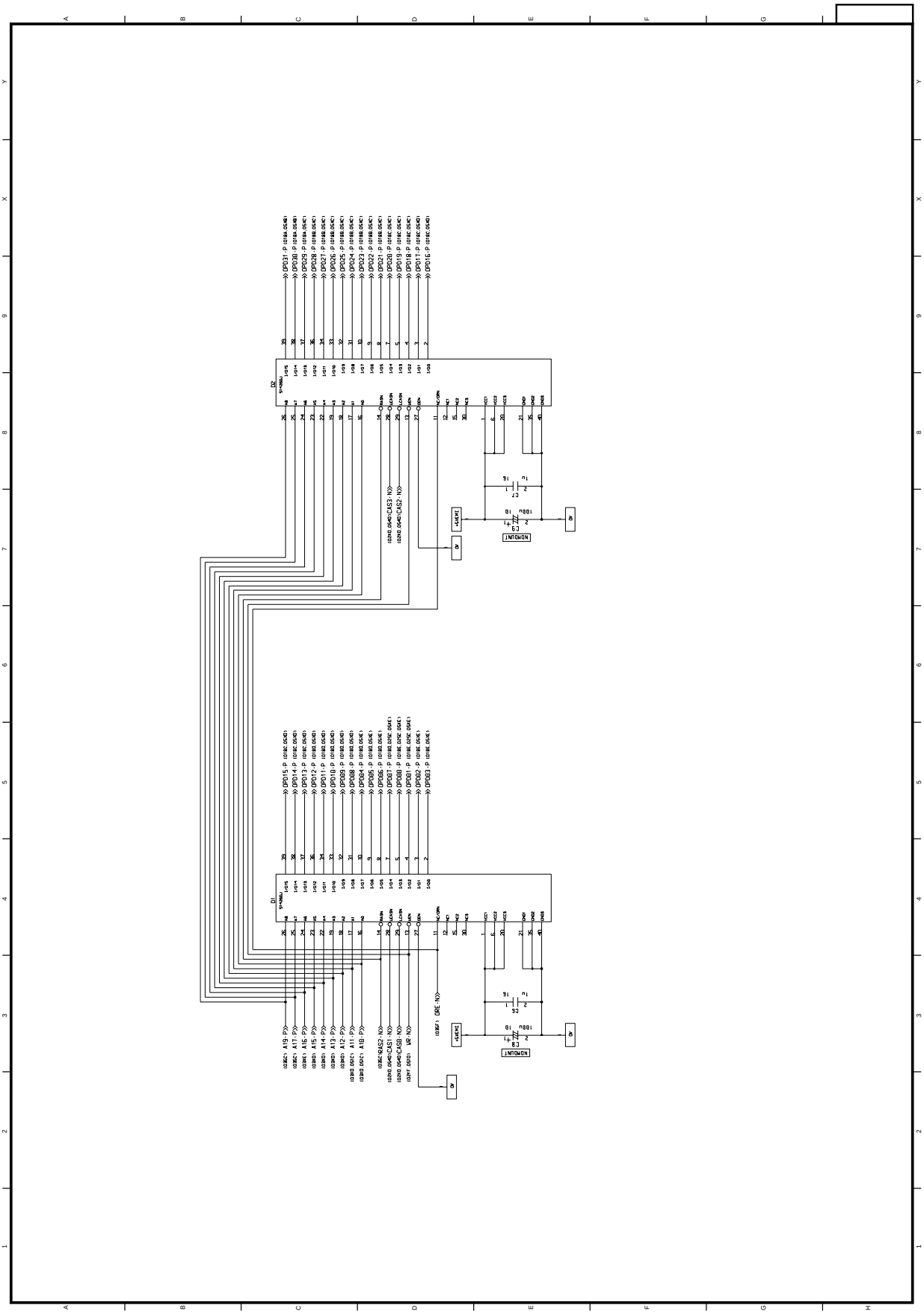


Figure 5-7 Memory Expansion Bord (MM6-PCB, Rev.4) (4/5)

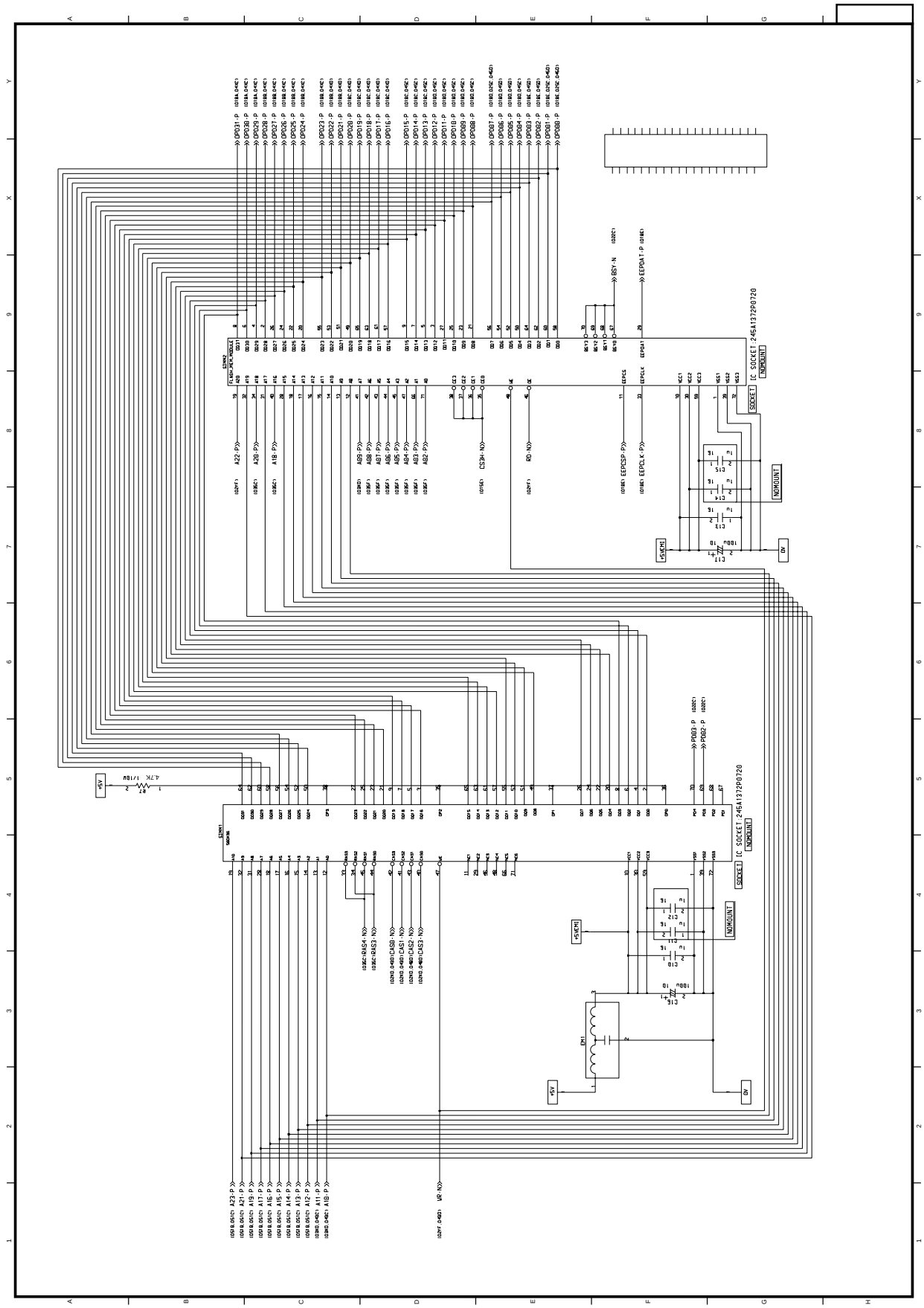


Figure 5-7 Memory Expansion Bord (MM6-PCB, Rev.4) (5/5)

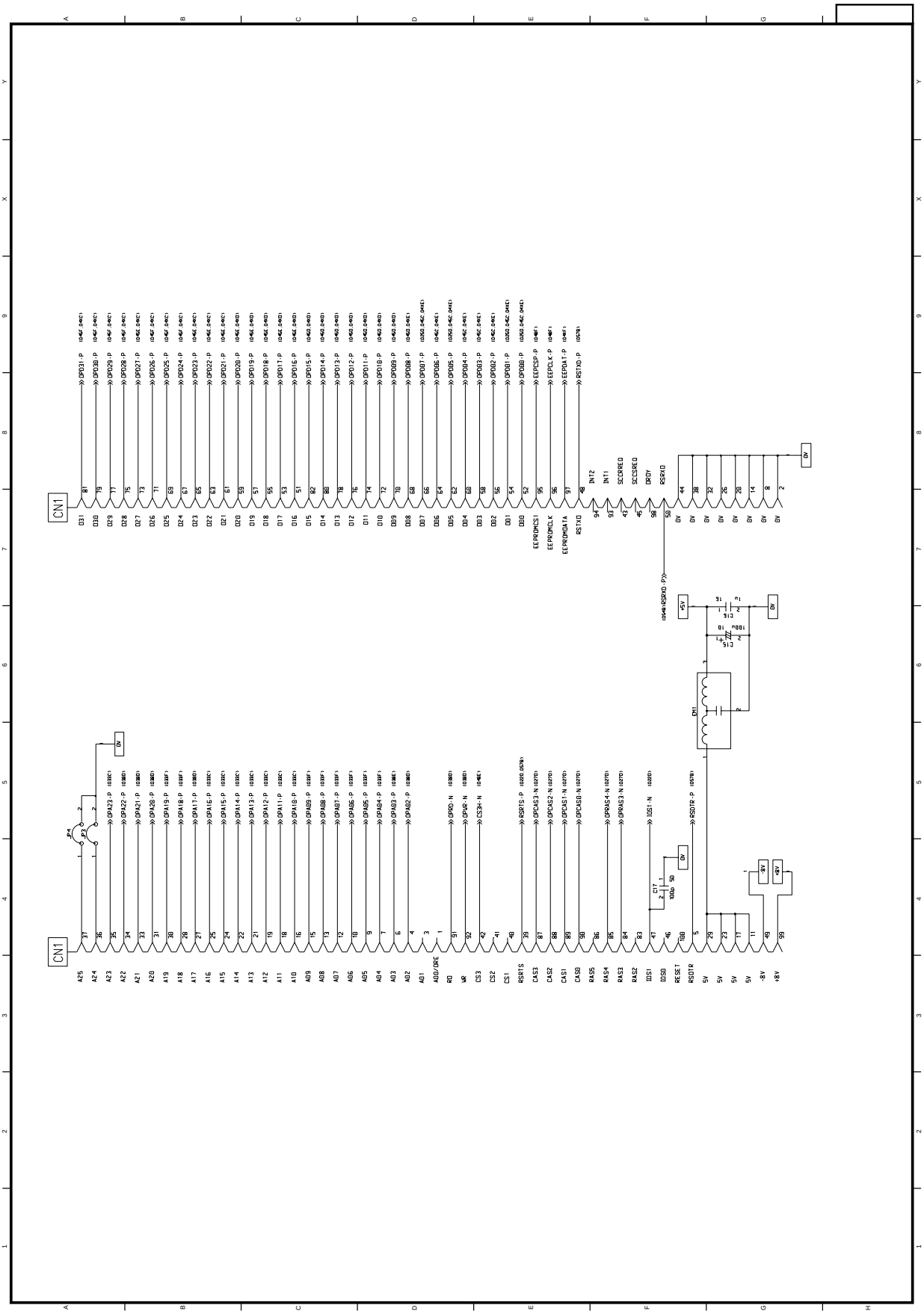


Figure 5-8 RS-232C Interface Board (SMIF-PCB, Rev.4) (1/5)

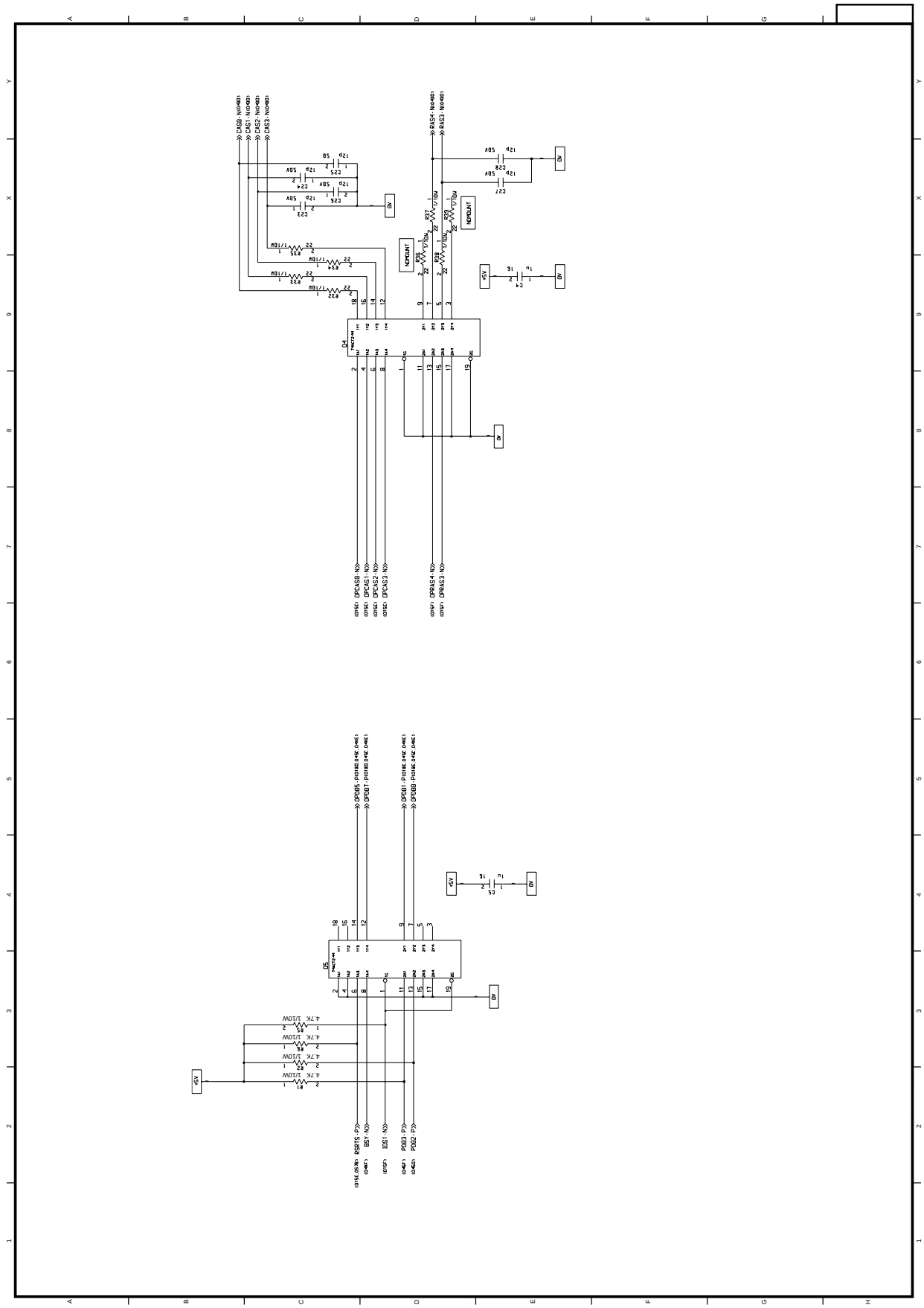


Figure 5-8 RS-232C Interface Board (SMIF-PCB, Rev.4) (2/5)

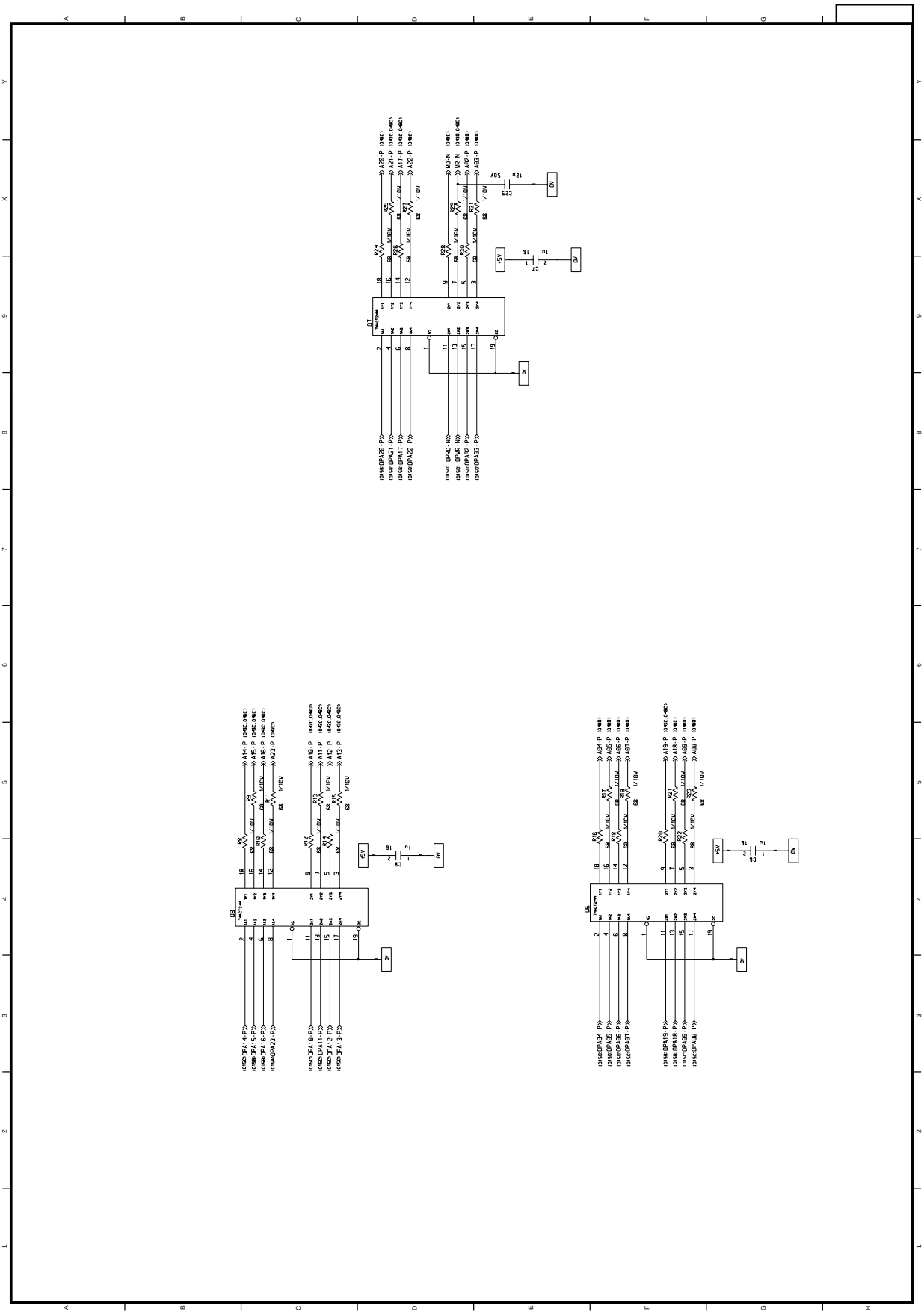


Figure 5-8 RS-232C Interface Board (SMIF-PCB, Rev.4) (3/5)

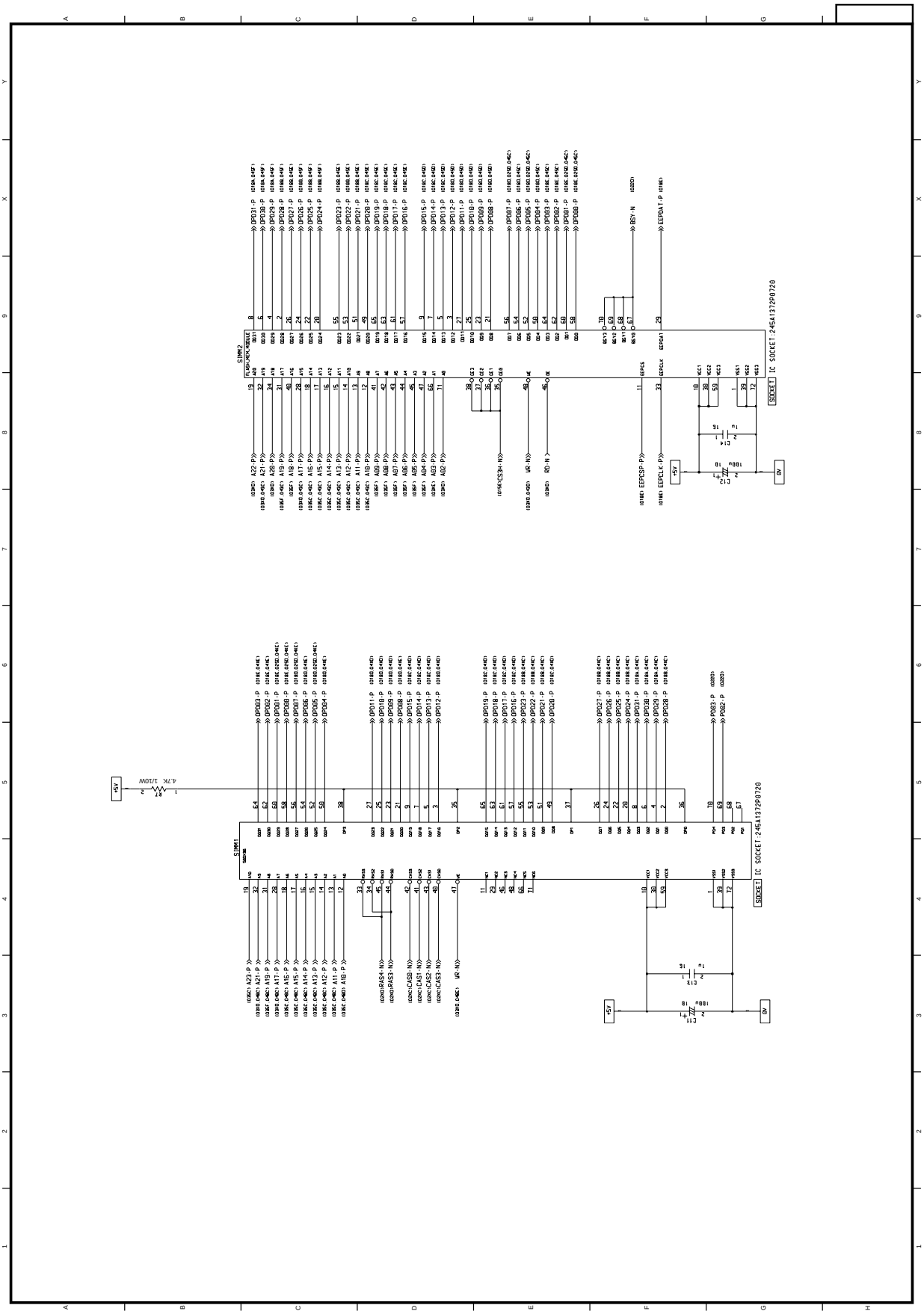


Figure 5-8 RS-232C Interface Board (SMIF-PCB, Rev.4) (4/5)

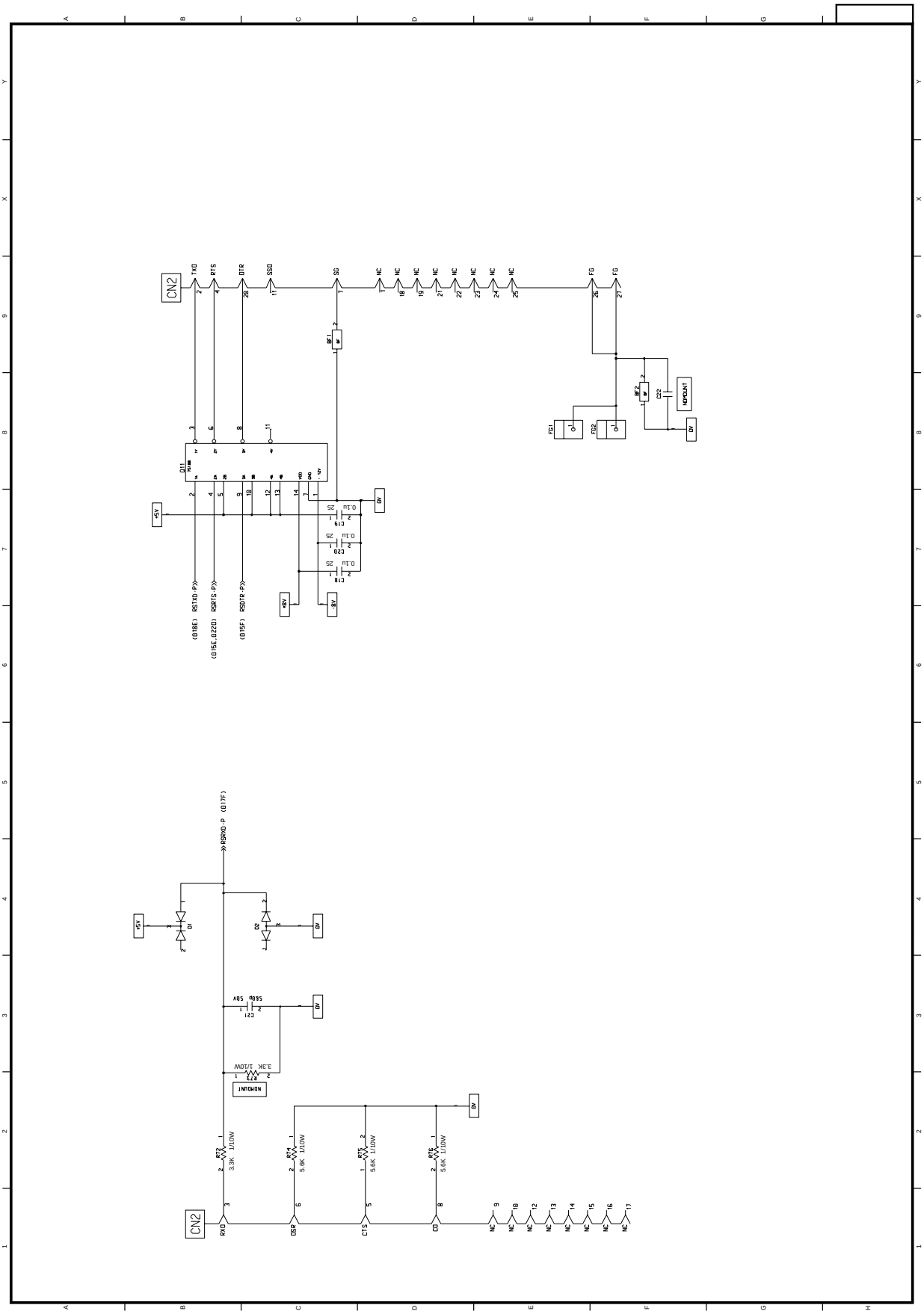
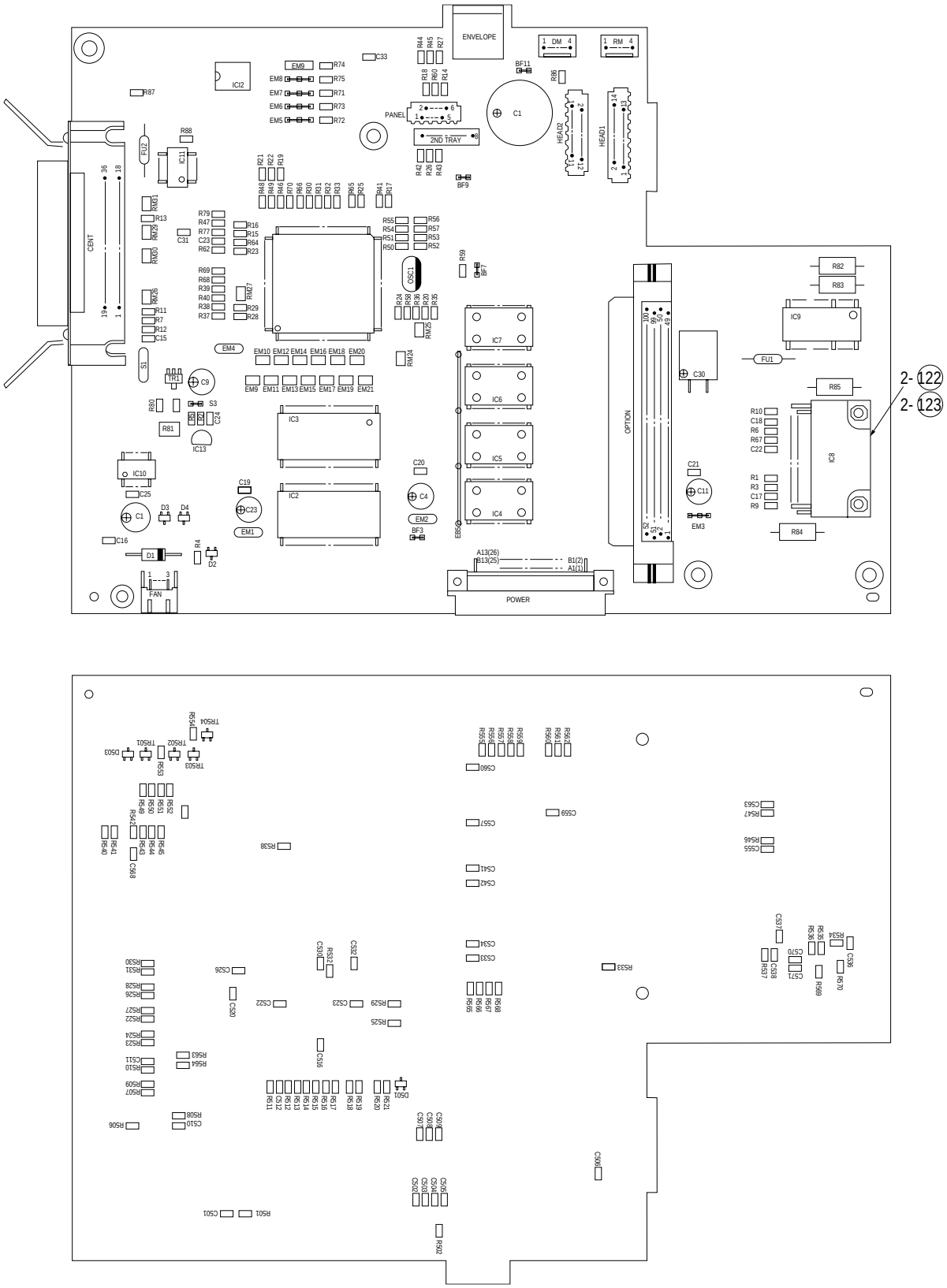


Figure 5-8 RS-232C Interface Board (SMIF-PCB, Rev.4) (5/5)

6. COMPONENT PARTS LIST

DRAWING LIST

Main Control Board	(M5B-PCB, Rev. 5)	40217002
Operator Panel Board	(OLCC-2-PCB, Rev. 4)	4YA4130-1001G002
Power Supply Board	(OL1-PCB, Rev. 6)	40217701
Power Supply Board	(OL2-PCB, Rev. 6)	40217702
High Capacity Second Paper Feeder Board	(TQSB-2-PCB, Rev. 1)	4YA4046-1651G002
Multi Purpose Feeder Board	(OLEV-PCB, Rev. 4)	4YA4121-1014G011
Memory Expansion Board	(MM6-PCB, Rev. 4)	40369105
RS-232C Interface Board	(SMIF-PCB, Rev. 4)	00025304



M5B-PCB Assy. (Main Control Board) Rev. 5
(40217002-1/9)

M5B-PCB Assy. (Main Control Board) Rev. 5
(40217002-2/9)

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
1	D3	SB05-05CP D-Rectifying -C	610A0332N0001	1	
2	D4, D503	SS100MA80VACP D-Signal -C	611A0000N0001	2	
3	D501	SS100MA80VKCP D-Signal -C	611A0000N0002	1	
4	D2	RD15M-B2 D-Zener -C	613A0233M0222B	1	
5	D1	RD10F-B D-Zener -	613A2232L0182	1	
6					
7	R1	RM73B2A121F RES-MET RN -C	323A5003F0121	1	
8	R2	RM73B2A201F RES-MET RN -C	323A5003F0201	1	
9	R549	RM73B2A202F RES-MET RN -C	323A5003F0202	1	
10	R551	RM73B2A225F RES-MET RN -C	323A5003F0225	1	
11	R552	RM73B2A242F RES-MET RN -C	323A5003F0242	1	
12	R536	RM73B2A243F RES-MET RN -C	323A5003F0243	1	
13	R3	RM73B2A272F RES-MET RN -C	323A5003F0272	1	
14	R535, R550	RM73B2A392F RES-MET RN -C	323A5003F0392	2	
15	R4	RM73B2A393F RES-MET RN -C	323A5003F0393	1	
16	R537	RM73B2A432F RES-MET RN -C	323A5003F0432	1	
17	R5	RM73B2A621F RES-MET RN -C	323A5003F0621	1	

M5B-PCB Assy. (Main Control Board) Rev. 5
(40217002-3/9)

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
18					
19	R68~R75, R512, R513	RM73B2A100J RES-MET RN -C	323A5003J0100	10	
20	R6~R8	RM73B2A101J RES-MET RN -C	323A5003J0101	3	
21	R9~R14, R502, R510, R521, R569, R570	RM73B2A102J RES-MET RN -C	323A5003J0102	11	
22	R15, R17, R507, R509, R544, R562	RM73B2A103J RES-MET RN -C	323A5003J0103	6	
23	R529	RM73B2A105J RES-MET RN -C	323A5003J0105	1	
24	R18, R19	RM73B2A112J RES-MET RN -C	323A5003J0112	2	
25	R21~R23	RM73B2A122J RES-MET RN -C	323A5003J0122	3	
26	R542	RM73B2A125J RES-MET RN -C	323A5003J0125	1	
27	R25~R27, R519, R520, R533	RM73B2A151J RES-MET RN -C	323A5003J0151	6	
28	R555	RM73B2A152J RES-MET RN -C	323A5003J0152	1	
29	R501	RM73B2A153J RES-MET RN -C	323A5003J0153	1	
30	R553	RM73B2A183J RES-MET RN -C	323A5003J0183	1	
31	R28~R33, R514~R517, R541	RM73B2A202J RES-MET RN -C	323A5003J0202	11	
32	R554, R560, R561	RM73B2A203J RES-MET RN -C	323A5003J0203	3	
33	R20, R35, R36, R58, R522~R524, R526~ R528, R530, R531, R565~R568	RM73B2A220J RES-MET RN -C	323A5003J0220	16	
34	R534	RM73B2A223J RES-MET RN -C	323A5003J0223	1	

M5B-PCB Assy. (Main Control Board) Rev. 5
(40217002-4/9)

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
35	R37~R45	RM73B2A241J RES-MET RN -C	323A5003J0241	9	
36	R46	RM73B2A242J RES-MET RN -C	323A5003J0242	1	
37	R532	RM73B2A270J RES-MET RN -C	323A5003J0270	1	
38	R47~R49	RM73B2A272J RES-MET RN -C	323A5003J0272	3	
39	R50~R57	RM73B2A331J RES-MET RN -C	323A5003J0331	8	
40	R59, R543	RM73B2A332J RES-MET RN -C	323A5003J0332	2	
41	R546, R547	RM73B2A333J RES-MET RN -C	323A5003J0333	2	
42	R506	RM73B2A392J RES-MET RN -C	323A5003J0392	1	
43	R60	RM73B2A471J RES-MET RN -C	323A5003J0471	1	
44	R62, R64, R65, R508, R518, R538, R545	RM73B2A472J RES-MET RN -C	323A5003J0472	7	
45	R66	RM73B2A511J RES-MET RN -C	323A5003J0511	1	
46	R67	RM73B2A512J RES-MET RN -C	323A5003J0512	1	
47	R540	RM73B2A562J RES-MET RN -C	323A5003J0562	1	
48	R556, R558, R559	RM73B2A621J RES-MET RN -C	323A5003J0621	3	
49	R24	RM73B2A680J RIπMMET RN -C	323A5003J0680	1	
50	R77, R511	RM73B2A681J RES-MET RN -C	323A5003J0681	2	
51	R79, R86~R88, R525, R557, R563, R564, C33	2125JPW RES-MET RN -C	323A5003P0001	9	

M5B-PCB Assy. (Main Control Board) Rev. 5
(40217002-5/9)

REF. NO.	SYMBOL	TYPE/NAME		PART NO.	Q'TY	REMARKS
52	R81	5:J-12YJ750 RES-MET RN -C		323A5019J0750	1	
53	R82, R83	MSF1/2B2ohmJ RES-MET OX -		324A1001J0209	2	
54	R84, R85	MSF1/2B0.5ohmJ RES-MET OX -		324A1001J0518	2	
55						
56	RM9~RM16	MNR14ABJ101 RES-Block -C		334A5012J0101	8	
57	RM27	MNR14ABJ151 RES-Block -C		334A5012J0151	1	
58	RM17~RM21, RM24	CN1J4/EXBV8V22ohmJ RES-Block -C		3345003J0220	6	
59	RM26, RM29~RM31	MNR14ABJ332 RES-Block -C		334A5012J0332	4	
60	RM25	MNR14ABJ680 RES-Block -C		334A5012J0680	1	
61						
62	C502~C505, C541	CC2012CH1H101J CAP-Ceramic -C	50V	303A3007C0101	5	
63	C533	CC2012CH1H330J CAP-Ceramic -C	50V	303A3007C0330	1	
64	C507~C509, C559	CC2012CH1H680J CAP-Ceramic -C	50V	303A3007C0680	4	
65	C15	CC2012SL1H561J CAP-Ceramic -C	50V	303A3007K0561	1	
66	C16~C18, C511, C512, C520, C526, C555, C563, C570, C571	CK2012B1H102K CAP-Ceramic -C	50V	303A6008K3102	11	
67	C516, C523, C532, C536	CK2012B1H222K CAP-Ceramic -C	50V	303A6008K3222	4	

M5B-PCB Assy. (Main Control Board) Rev. 5
(40217002-6/9)

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
68	C19, C20, C31, C522, C530, C534, C542, C557, C560, C567, C568	CK2012F1C105Z 16V CAP-Ceramic -C 1μF	303A6008Z1105	11	
69	C21~C23, C25, C501, C506, C510, C537, C538	CK2012F1E104Z 25V CAP-Ceramic -C	303A6008Z2104	9	
70	C24	CK2012F1H103Z 50V CAP-Ceramic -C	303A6008Z3103	1	
71					
72	C1	URS1C221MNA1FA 16V CAP-Alum (CE) -	304A1007C1221	1	
73	C3, C4	10MS5-68M 10V CAP-Alum (CE) - 68μF	304A1046A1680	2	
74					
75	C9, C11	6.3MS5-100M 6.3V CAP-Alum (CE) -	304A1046J0101	2	
76	C30	KMG50VB-220M 50V CAP-Alum (CE) -	304A1164H1221	1	
77	C13	UVS1A332MHA 10V CAP-Alum (CE) -	304A1137A1332	1	
78					
79	IC11	74LS07FP Digital IC-BIP-S	700A0503N0007	1	
80	IC13	TL431CLP/NJM431L-T3 Analog-BILPLIN -P	7200903M9001	1	
81	IC8	A2918SWH Analog-BIPLIN -	7201826M0001	1	
82	IC10	NJM2901M/UPC339G2 Analog-BIPLIN -S	720A0503N0007	1	
83	IC9	MTD2005F Analog-BIPLIN -S	720A1816N0001	1	

M5B-PCB Assy. (Main Control Board) Rev. 5
(40217002-7/9)

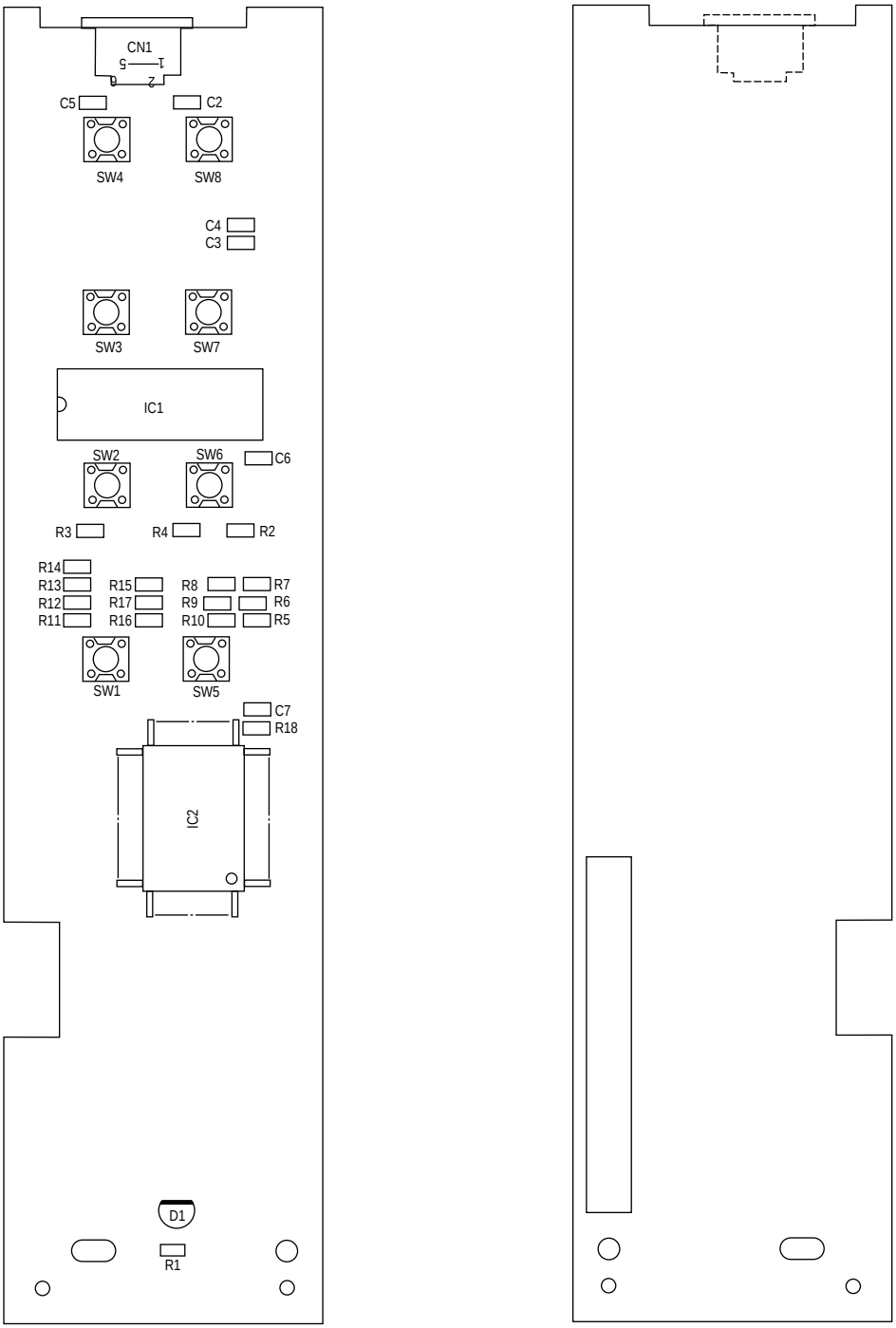
REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
84	IC4~IC7	MSM514807C-70JS Memory-MOSDRAM-S	8020024N2626	4	
85	IC12	93C46LDP-NW Memory-MOSEEPR -	8160303M0000	1	
86	IC1	MHM2029-004K-29 CPU-MOS -F	8510440N0001	1	
87					
88					
89	IC2	MX23C2410MC-10-101 Memory-MOSMROM -S or MX23C2410MC-10-107 Memory-MOSMROM -S or MX23C2410MC-10-110 Memory-MOSMROM -S	8174627N0012 or 8174627N0014 or 8174627N0016	1	
90	IC3	MX23C2410MC-10-100 Memory-MOSMROM -S or MX23C2410MC-10-106 Memory-MOSMROM -S or MX23C2410MC-10-109 Memory-MOSMROM -S	8174627N0011 or 8174627N0013 or 8174627N0015	1	
91					
92					
93	EM1, EM2, EM4	DSS306-OAE222Z COMP PAR-LC -	342A1009P2222	3	
94	EM9	ZJSC-R10-470-TA COMP PAR-LC -P	3421000P0470	1	
95					
96	TR502, TR504	2SA1338 TR-PNP/H FREQ -C	600A1032N0010	2	

M5B-PCB Assy. (Main Control Board) Rev. 5
(40217002-8/9)

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
97	TR501, TR503	DTC123YK TR-NPN/H-FREQ -C	602A1035N0019	2	
98	TR1	2SD1623S TR-NPN/L-FREQ -C	603A1132N0001S	1	
99					
100	CENT	57RE-40360-830F-D29 Connector-SQR -	2201001P0360	1	
101	ENVELOPE	MD-S8000B-70 Connector-RND -	2211001P0080	1	
102	POWER	128A-026P2B-L14N Connector-PCB -	224A3222P0261	1	
103	DM	00-8263-0412-00-000 Connector-PCB -	224A3357P0040	1	
104	RM	00-8263-0412-00-003 Connector-PCB -	224A3357P0041	1	
105	OPTION	PQ100A2FA Connector-PCB -	224A3516P1000	1	
106	FAN	S3B-XH-A Connector-PCB -	224A3528P0030	1	
107	2NDTRAY	B8B-PH-K-S Connector-PCB -	224A3529P0080	1	
108	PANEL	ZC-006 Connector-PCB -	224A3590P0060	1	
109	HEAD2	SLD12S-2 Connector-PCB -	2243001P0120	1	
110	HEAD1	SLD14S-2 Connector-PCB -	2243001P0140	1	
111					
112	S1	ZBF503D-00 Coil-HF -	353A3004P2001	1	
113					

M5B-PCB Assy. (Main Control Board) Rev. 5
(40217002-9/9)

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
114	OSC1	CST7.06MTW040-TF01 OSC-Ceramic -P	3811000B0001	1	
115					
116	FU2	251-001 FUSE-	540A2208S1102	1	
117	FU1	251-002 FUSE-	540A2218S1202	1	
118					
119	S3, BF3, BF7, BF9, BF11	LINK WIRE 0.65 P=2.5	KH-31036-25	5	
120	EM3, EM5~EM8	SHORT WIRE (U TYPE)	KH-31036-50	5	
121	EB5	POWER BAR	LH-31313-5	1	
122		Screw	PSW2W3-8C	2	
123		Nut	3N3-HH	2	
124					
125					
126					
127					
128					
129					
130					



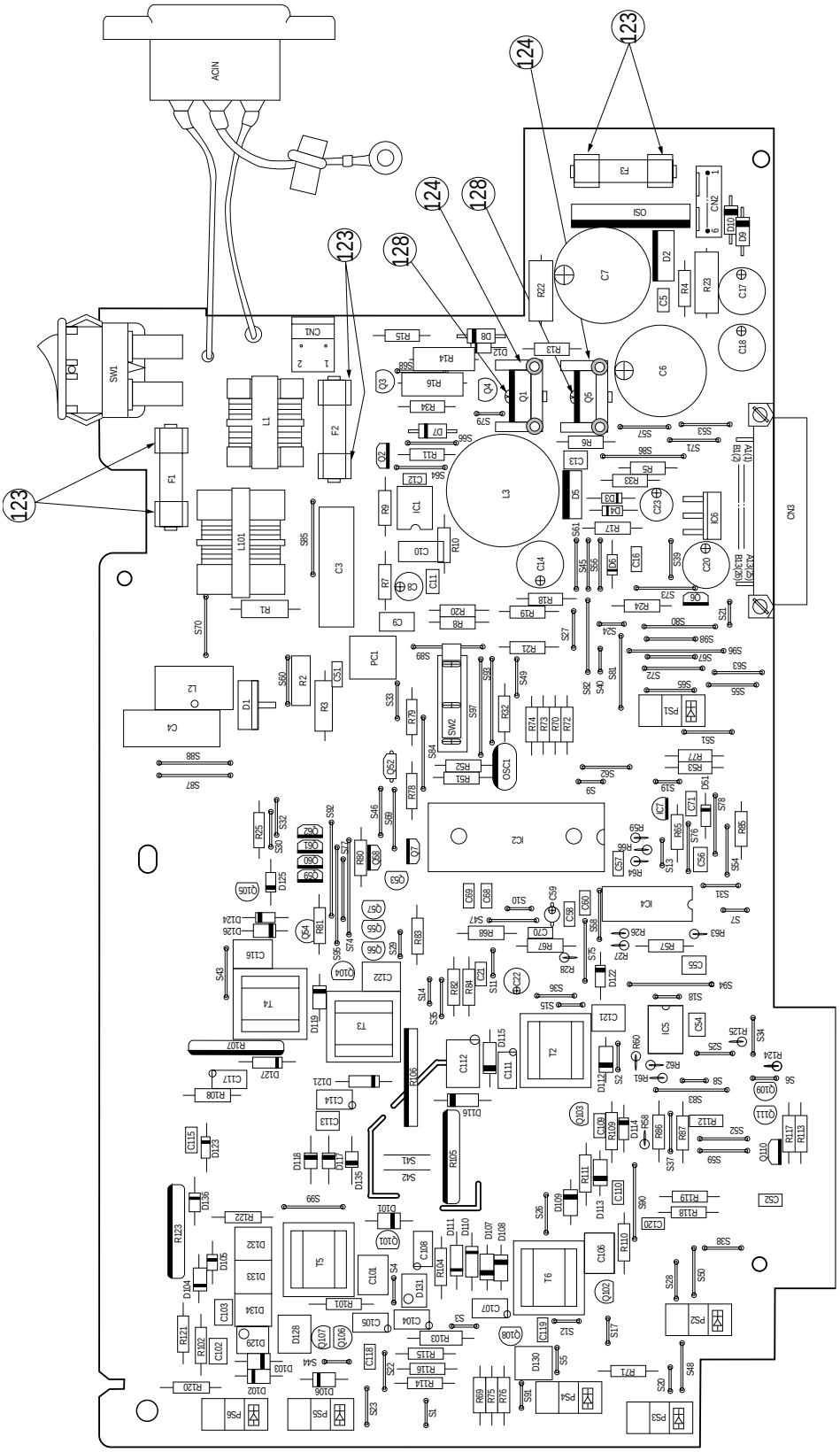
OLCC-2-Printed Circuit Board (Operator Panel Board) Rev. 4
(4YA4130-1001G002-1/3)

OLCC-2-Printed Circuit Board (Operator Panel Board) Rev. 4
(4YA4130-1001G002-2/3)

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
1					
2					
3	D1	SEL3910D-YZ LED	650A0229M0018	1	
4					
5	C2~C5	CC2012CH1H101J 50V CC Capacitor (CP)	303A3007C0101	4	
6	C6, C7	CK2012F1E104Z 25V CK Capacitor (CP)	303A6008Z2104	2	
7					
8	R1	RM73B2A181J RN Resistor (CP)	323A5003J0181	1	
9	R2~R4	RM73B2A201J RN Resistor (CP)	323A5003J0201	3	
10	R5	RM73B2A682J RN Resistor (CP)	323A5003J0682	1	
11	R6~R10	RM73B2A752J RN Resistor (CP)	323A5003J0752	5	
12	R11~R17	RM73B2A103J RN Resistor (CP)	323A5003J0103	7	
13					
14	R18	RM73B2A913F RN Resistor (CP)	323A5003F0913	1	
15					
16	IC1	BU6152S MOS Digital IC	702A4733M0002	1	
17	IC2	HD44780UB01FS CPU-INF-IC (FP)	855A0421N0002	1	

OLCC-2-Printed Circuit Board (Operator Panel Board) Rev. 4
(4YA4130-1001G002-3/3)

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
18					
19	SW1~SW8	SOR-113HS Push-button Switch	205A1165P1000	8	
20					
21					
22	CN1	ZC-106 PC Connector	224A3591P0060	1	
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					



OL1-PCB Assy. (Power Supply Board) Rev. 6
(40217701-1/9)

OL1-PCB Assy. (Power Supply Board) Rev. 6
(40217701-2/9)

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
1	D2	TF341M THY-Gate -	620A0026M0002	1	
2	DS1	RBV-402/D3SBA20 D-Rectifying -	610A1003M0001	1	
3	D7~D10	OR-D-Rectifying -Q	40401401	4	
4	D101~D104, D106~ D109, D112, D113, D119, D126	EU02A/RL105F-F D-Rectifying -Q	6100003M0001	12	
5					
6	D5	FML-12S D-Rectifying -	610A2226M0016	1	
7	D51, D114, D122, D123	1S953/1S2075K/1S2473 D-Signal -	611A0003L0001	4	
8					
9	D6	RD5.6E-B D-Zener -	613A1231L0122	1	
10	D3, D4, D12, D124, D125	RD22E-B2 D-Zener -	613A1231L0262B	5	
11	D136	RD12E-B2 D-Zener -	613A1231L0202B	1	
12	D105	1ZB270-Y/Z (TPA2) D-Zener -Q	6132003M0001	1	
13	D117, D118, D135	1ZB390 D-Zener -	613A2258M0350	3	
14	D110, D111, D115, D116, D121, D127	OR-DHM/ESJA/SHV-06	40681301	6	
15	D128, D130, D132~ D134	ERZ/JVR-05N471 SEMICO-Vari -	6320003M0001	5	
16	D131	ERZV05D391 SEMICO-Vari -	6320229M0003	1	
17	D129	ERZV05D271 SEMICO-Vari -	6320229M0004	1	

OL1-PCB Assy. (Power Supply Board) Rev. 6
(40217701-3/9)

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
18					
19	R26, R28, R63, R64, R66	RD16U/VTJ1Kohm RES-Carbon flm -	3213420J0102	5	
20	R27	RD16UJ1.8Kohm RES-Carbon flm -N	3213420J0182	1	
21	R124, R125	RD16UJ1.5Kohm RES-Carbon flm -	3213420J0152	2	
22	R61, R62	SN15K2CU 33KohmF RES-MET RN -	3233020F0333	2	
23	R58	SN15K2CU 30KohmF RES-MET RN -	3233020F0303	1	
24	R59	SN15K2CU 43KohmF RES-MET-RN -	3233020F0433	1	
25	R60	SN15K2CU 180KohmF RES-MET RN -	3233020F0184	1	
26	R13	RD1/4Y300ohmJ RES-Carbon flm -	321A1421J0301	1	
27	R17, R109	RD1/4Y33ohmJ RES-Carbon flm -	321A1421J0330	2	
28	R7	RD1/4Y15KohmJ RES-Carbon flm -	321A1421J0153	1	
29	R8	RD1/4Y3.6KohmJ RES-Carbon flm -	321A1421J0362	1	
30	R10, R15, R25	RD1/4Y100KohmJ RES-Carbon flm -	321A1421J0104	3	
31	R9	RD1/4Y110KohmJ RES-Carbon flm -	321A1421J0114	1	
32	R11	RD1/4Y2.4KohmJ RES-Carbon flm -	321A1421J0242	1	
33	R4, R5, R53, R57, R114	RD1/4Y1KohmJ RES-Carbon flm -	321A1421J0102	5	
34	R21, R52	RD1/4Y150ohmJ RES-Carbon flm -	321A1421J0151	2	

OL1-PCB Assy. (Power Supply Board) Rev. 6
(40217701-4/9)

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
35	R6	RD1/4Y16KohmJ RES-Carbon flm -	321A1421J0163	1	
36	R51, R102, R108, R120~R122	RD1/4Y1MohmJ RES-Carbon flm -	321A1421J0105	6	
37	R116, R119	RD1/4Y330ohmJ RES-Carbon flm -	321A1421J0331	2	
38	R32, R67, R68, R115, R118	RD1/4Y5.1KohmJ RES-Carbon flm -	321A1421J0512	5	
39	R101	RD1/4Y51KohmJ RES-Carbon flm -	321A1421J0513	1	
40	R75~R77	RD1/4Y30ohmJ RES-Carbon flm -	321A1421J0131	3	
41	R24, R78, R79	RD1/4Y1.5KohmJ RES-Carbon flm -	321A1421J0152	3	
42	R80~R84	RD1/4Y510ohmJ RES-Carbon flm -	321A1421J0511	5	
43	R65	RD1/4Y300KohmJ RES-Carbon flm -	321A1421J0304	1	
44	R69~R71, R74, R113, R117	RD1/4Y10KohmJ RES-Carbon flm -	321A1421J0103	6	
45	R72, R73	RD1/4Y20KohmJ RES-Carbon flm -	321A1421J0203	2	
46	R33	RD1/4Y68ohmJ RES-Carbon flm -	321A1421J0680	1	
47	R34	RD1/4Y4.7KohmJ RES-Carbon flm -	321A1421J0472	1	
48	R110	1/4W 75KohmF (AXIAL) RES-MET RN -Q	3231203F0753	1	
49	R111	RNL1/4C3F10Kohm RES-MET RN -	323A1222F0103	1	
50	R19	RNL1/4C3F20Kohm RES-MET RN -	323A1222F0203	1	
51	R20	RNL1/4C3F2.4Kohm RES-MET RN -	323A1222F0242	1	

OL1-PCB Assy. (Power Supply Board) Rev. 6
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REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
52	R18	RNL1/4C3F1.0Kohm RES-MET RN -	323A1222F0102	1	
53	R85~R87	RNL1/4C3F47Kohm RES-MET RN -	323A1222F0473	3	
54	R112	RNF1/4W/RN26K2E360KF RES-MET RN -P	3234003F0364	1	
55	R1	RD1/2Y1MohmJ RES-Carbon flm -	321A1431J0105	1	
56	R2, R3	FMR1/2-100ohmJ RES-Fuse	327A1001J0101	2	
57	R105, R123	HV-22-30MK RES-MET solid -	3263120K0306	2	
58	R107	MRH100WK/HV-38-100MK RES-MET solid -	3263103K0107	1	
59	R106	MRH200MK/HV-38-200MK RES-MET solid -	3263103K0207	1	
60	R103	HMP1/4-106J RES-MET RN -	323A1029J0106	1	
61	R104	RK14B2ET52 20MohmJ RES-MET solid -Q	3261110J0206	1	
62	R14, R16	MOS2-3KohmJL RES-MET OX -	324A3024J0302	2	
63	R22, R23	MOS2-390ohmJL RES-MET OX -	324A3024J0391	2	
64					
65	C101, C106, C116, C122	MY2A/CQMF-100V-103J CAP-Plast flm -P	3064003J2103	4	
66	C121	CQMF/MY2A472J-T 100V CAP-Plast flm -P	3064003J2472	1	
67	C3	PA104-L CAP-Plast flm -	3062201M5104	1	
68	C4	ECQ-J0187Y/TA120033 COMP PAR-RC -	3402003P0001	1	

OL1-PCB Assy. (Power Supply Board) Rev. 6
(40217701-6/9)

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
69	C5, C12, C16, C21, C51, C52, C57, C58, C60, C68~C70, C71, C109, C110, C118~C120	MLRD/FK16Y5V1H104Z CAP-Ceramic -N	3034003Z3104	18	
70	C59	UMA/50MS5-1M 50V CAP-Alum (CE) -P 1μF	3041103H1109	1	
71	C13, C54, C55	HLY5P/DD05-500V-331K CAP-Ceramic -P	3024003K6331	3	
72	C14, C20	ECA0JMH222BQ 6.3V CAP-Alum (CE) -P	3041101J0222	2	
73	C9	HLY5P/DD07-500V-102K CAP-Ceramic -P	3024003K6102	1	
74	C10	HLY5P/DD09-500V-222K CAP-Ceramic -P	3024003K6222	1	
75	C8	UVX/SME-16V-47μF 16V CAP-Alum (CE) -P	3041003C1470	1	
76	C22	UVX/SME-63V-10μF 63V CAP-Alum (CE) -P	3041003J1100	1	
77	C17, C18	ECA1CMH102BQ 16V CAP-Alum (CE) -P	3041101C1102	2	
78	C56	RD16XR/CK92C1H102 CAP-Ceramic -P	3034003M3102	1	
79	C115	MLRD/FK16Y5V1H473Z CAP-Ceramic -N	3034003Z3473	1	
80	C102, C103	HLY5P/DD05-500V-471K CAP-Ceramic -P	3024003K6471	2	
81	C113	HNY5P/DE07-1KV-471K CAP-Ceramic -P	3024003K7471	1	
82	C104, C105, C107, C108, C111, C114, C117	DE07/HCYB3F471 CAP-Ceramic -P	3024203K2471	7	
83	C6, C7	UVR1J332MRA 63V CAP-Alum (CE) -	3041102J1332	2	
84	C112	DE1010B471K6K 6KV CAP-Ceramic -	302A4028K4471	1	
85	C11	RD16XR/CK92C1H681 CAP-Ceramic -P	3034003M3681	1	

OL1-PCB Assy. (Power Supply Board) Rev. 6
(40217701-7/9)

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
86	C23	KME50VB-47 50V CAP-Alum (CE) - 47µF	304A1115H1470	1	
87					
88	Q1	2SB1351 TR-PNP/L-FREQ -	601A1226M0002	1	
89	Q5	2SD1590 TR-NPN/L-FREQ -	603A1223M0022	1	
90	Q3, Q109, Q111	2SC1740S TR-NPN/H-FREQ -	602A1035M0002	3	
91	Q2, Q6, Q7, Q58~Q62, Q110	DTD114ESTP TR-NPN/H-FREQ -P	6021035M0001	9	
92	Q52	2SA608SP/2SA933S TR-PNP/H FREQ -	600A1003M0001	1	
93	D1	TM1261I-LE-LF625 THY-Bi/Dir -	622A0026M0003	1	
94	Q101~Q105	2SC2235-Y TR-NPN/H-FREQ -	602A1125M0039Y	5	
95	Q106, Q108	BCR1AM-12/MAC97-008 THY-Bi/Dir -	622A0003M0001	2	
96	Q107	CR04AM-12 THY-Gate -	620A0022M0008	1	
97	Q4, Q53~Q57	2SA1152-K/L TR-PNP/H FREQ -	600A1123M0015	6	
98					
99	PC1	TLP666JF/S21ME4FY PHOTO-Coupler -	652A0203M0002	1	
100	PS1~PS6	RPI-574/#9568 PHOTO-Coupler -	652A0103M0002	6	
101	IC1	FA7617P-1 Analog-BIPLIN -	720A0843M0001	1	
102	IC2	LC26023A-NA5 Digital IC-MOS -	7024633M2003	1	

OL1-PCB Assy. (Power Supply Board) Rev. 6
(40217701-8/9)

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
103	IC4	324P Analog-BIPLIN -	720A0000M0002	1	
104	IC5	358P Analog-BIPLIN -	720A0000M0033	1	
105	IC6	SI-3033C (LF1101) Analog-BIPLIN -	720A1029M8002	1	
106	IC7	PST592D-2 Analog-BIPLIN -	720A4037M0015	1	
107	OSC1	CST10.0MTW OSC-Ceramic -	381A1045B0014	1	
108					
109	L1	SU10V07040/FUS325020 Coil-Choke -	350A0223P0402	1	
110	L2	SN8S-300/SF-T8-30S Coil-Choke -	350A0221P1001	1	
111	L3	SK-24BS075-350 Coil-Choke -	350A2512P0351	1	
112	L101	SU16VD-40020 Coil-Choke -	350A2027P0200	1	
113					
114	T2~T6	HIGH VOLTAGE TRANSFORMER	YB4049-7078P003	5	
115					
116	CN1	5281-02A Connector-PCB -	224A3907P0020	1	
117	CN2	00-8263-0612-00-000 Connector-PCB -	224A3357P0060	1	
118	CN3	128A-026S2B-L14A Connector-PCB -	224A3222P0262	1	
119					

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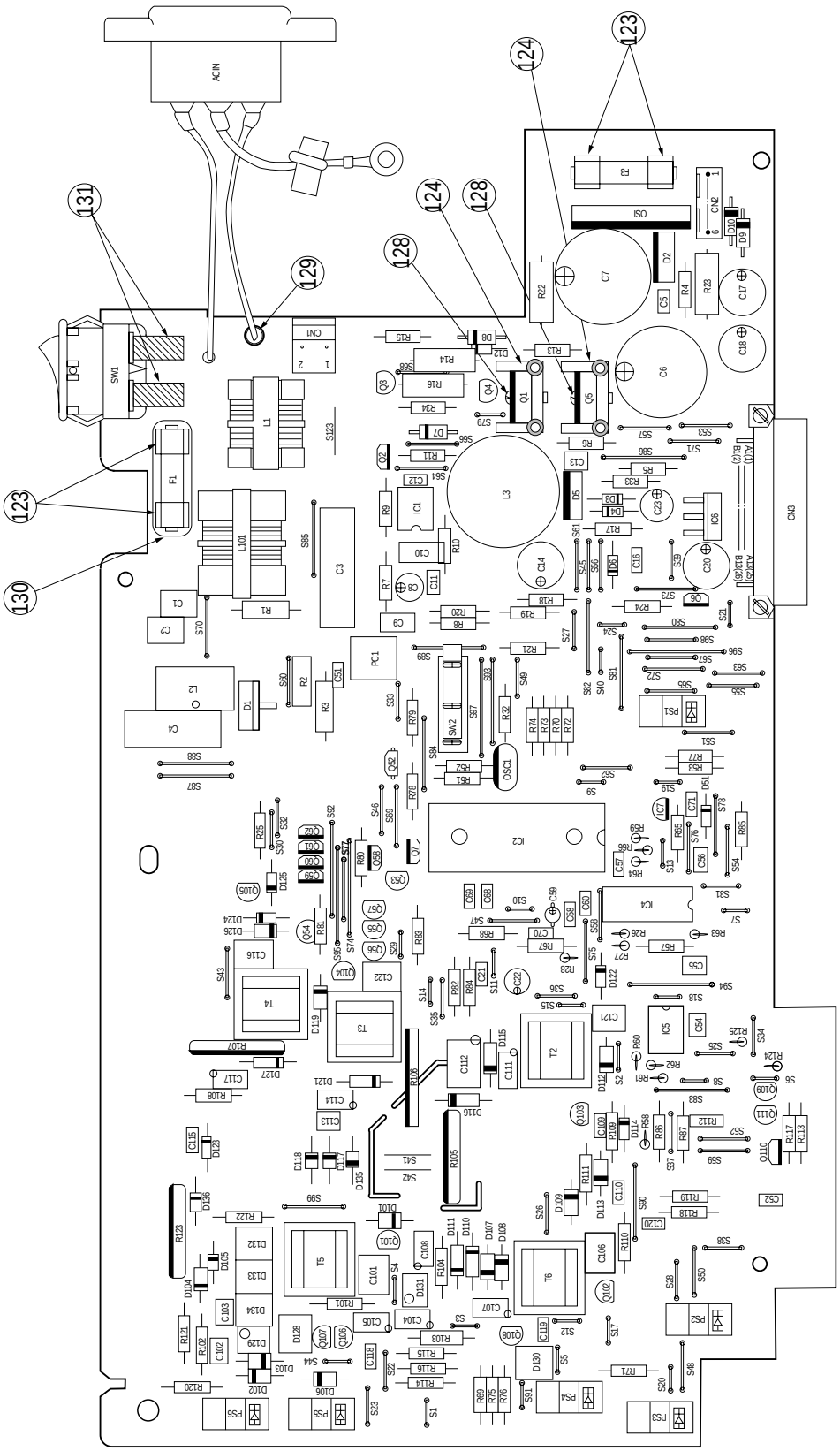
(40217701-9/9)

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
120	F1	51MS063L FUSE-	540A2076N0632	1	
121	F2	51MS016L FUSE-	540A2076N0162	1	
122	F3	GGS3.15 FUSE-	540A2036M1322	1	
123		F220 Holder-Fuse -	2423000P0001	6	
124		OSH-1025-MP Heat sink- -	161A1233P0001	2	
125	SW1	SJ-W2P4A-03BB2 Switch-Toggle -	2003200P2000	1	
126	SW2	SM-05S-04A-9 Switch-Micro -	207A2020P0001	1	
127	INLET	SPECIAL CORD	YS4011-2894P001	1	
128		Screw	PSWW3-8C	2	
129					
130	S1~S15, S17~S21, S24, S29, S40, S44, S79, S91	SHORT WIRE	TA-0.6	26	
131	S22, S23, S25~S28, S30~S39, S49	SHORT WIRE	TA-0.6	17	
132	S41~S43, S45~S48, S50~S68, S71, S76, S98	SHORT WIRE	TA-0.6	29	
133	S69, S70, S72, S73, S75, S77, S78, S79	SHORT WIRE	TA-0.6	8	
134	S80~S85, S87~S90	SHORT WIRE	TA-0.6	10	
135	S86, S93, S94	SHORT WIRE	TA-0.6	3	
136	S74, S92, S95~S97	SHORT WIRE	TA-0.6	5	



OL2-PCB Assy. (Power Supply Board) Rev. 6
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(40217702-2/10)

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
1	D2	TF341M THY-Gate -	620A0026M0002	1	
2	DS1	RBV-402/D3SBA20 D-Rectifying -	610A1003M0001	1	
3	D7~D10	OR-D-Rectifying-Q	40401401	4	
4	D101~D104, D106~D109, D112, D113, D119, D126	EUO2A/RL105F-F D-Rectifying -Q	6100003M0001	12	
5					
6	D5	FML-12S D-Rectifying -Q	610A2226M0016	1	
7	D51, D114, D122, D123	1S953/1S2075K/1S2473 D-Signal -	611A0003L0001	4	
8					
9	D6	RD5.6E-B D-Zener -	613A1231L0122	1	
10	D3, D4, D12, D124, D125	RD22E-B2 D-Zener -	613A1231L0262B	5	
11	D136	RD12E-B2 D-Zener -	613A1231L0202B	1	
12	D105	1ZB270-Y/Z (TPA2) D-Zener -	6132003M0001	1	
13	D117, D118, D135	1ZB390 D-Zener -	613A2258M0350	3	
14	D110, D 111, D115, D116, D121, D127	OR-DHM/ESJA/SHV-06	40681301	6	
15	D128, D130, D132~D134	ERZ/JVR-05N471 SEMICO-Vari -	6320003M0001	5	
16	D131	ERZV05D391 SEMICO-Vari -	6320229M0003	1	
17	D129	ERZV05D271 SEMICO-Vari -	6320229M0004	1	

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(40217702-3/10)

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
18					
19	R26, R28, R63,R64, R66	RD16U/VTJ1kohm RES-Carbon flm -	3213420J0102	5	
20	R27	RD16UJ1.8Korm RES-Carbon flm -N	3213420J0182	1	
21	R124, R125	RD16UJ1.5Kohm RES-Carbon flm -	3213420J0152	2	
22	R61, R62	SN15K2CU 33KohmF RES-MET RN -	3233020F0333	2	
23	R58	SN15K2CU 30KohmF RES-MET RN -	3233020F0303	1	
24	R59	SN15K2CU 43KohmF RES-MET RN -	3233020F0433	1	
25	R60	SN15K2CU 180KohmF RES-MET RN -	3233020F0184	1	
26	R13	RD1/4Y300ohmJ RES-Carbon flm -	321A1421J0301	1	
27	R17, R109	RD1/4Y33ohmJ RES-Carbon flm -	321A1421J0330	2	
28	R7	RD1/4Y15KohmJ RES-Carbon flm -	321A1421J0153	1	
29	R8	RD1/4Y3.6KohmJ RES-Carbon flm -	321A1421J0362	1	
30	R10, R15, R25	RD1/4Y100KohmJ RES-Carbon flm -	321A1421J0104	3	
31	R9	RD1/4Y110KohmJ RES-Carbon flm -	321A1421J0114	1	
32	R11	RD1/4Y2.4KohmJ RES-Carbon flm -	321A1421J0242	1	
33	R4, R5, R53, R57, R114	RD1/4Y1KohmJ RES-Carbon flm -	321A1421J0102	5	
34	R21, R52	RD1/4Y150ohmJ RES-Carbon flm -	321A1421J0151	2	

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(40217702-4/10)

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
35	R6	RD1/4Y16KohmJ RES-Carbon flm -	321A1421J0163	1	
36	R51, R102, R108, R120~122	RD1/4Y1MohmJ RES-Carbon flm -	321A1421J0105	6	
37	R116, R119	RD1/4Y330ohmJ RES-Carbon flm -	321A1421J0331	2	
38	R32,R67, R68, R115, R118	RD1/4Y5.1KohmJ RES-Carbon flm -	321A1421J0512	5	
39	R101	RD1/4Y51KohmJ RES-Carbon flm -	321A1421J0513	1	
40	R75~R77	RD1/4Y130ohmJ RES-Carbon flm -	321A1421J0131	3	
41	R24, R78, R79	RD1/4Y1.5KohmJ RES-Carbon flm -	321A1421J0152	3	
42	R80~R84	RD1/4Y510ohmJ RES-Carbon flm -	321A1421J0511	5	
43	R65	RD1/4Y300KohmJ RES-Carbon flm -	321A1421J0304	1	
44	R69~R71, R74, R113, R117	RD1/4Y10KohmJ RES-Carbon flm -	321A1421J0103	6	
45	R72, R73	RD1/4Y20KohmJ RES-Carbon flm -	321A1421J0203	2	
46	R33	RD1/4Y68ohmJ RES-Carbon flm -	321A1421J0680	1	
47	R34	RD1/4Y4.7KohmJ RES-Carbon flm -	321A1421J0472	1	
48	R110	1/4W 75KohmF (AXIAL) RES-MET RN -Q	3231203F0753	1	
49	R111	RNL1/4C3F10Kohm RES-MET RN -	323A1222F0103	1	
50	R19	RNL1/4C3F20Kohm RES-MET RN -	323A1222F0203	1	
51	R20	RNL1/4C3F2.4Kohm RES-MET RN -	323A1222F0242	1	

OL2-PCB Assy. (Power Supply Board) Rev. 6
(40217702-5/10)

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
52	R18	RNL1/4C3F1.0Kohm RES-MET RN -	323A1222F0102	1	
53	R85~R87	RNL1/4C3F47Kohm RES-MET RN -	323A1222F0473	3	
54	R112	RNF1/4W/RN26K2E360KF RES-MET RN -P	3234003F0364	1	
55	R1	RD1/2Y1MohmJ RES-Carbon f1mn -	321A1431J0105	1	
56	R2, R3	FMR1/2-100ohmJ RES-Fuse -	327A1001J0101	2	
57	R105, R123	HV-22-30MK RES-MET solid -	3263120K0306	2	
58	R107	MRH100MK/HV-38-100MK RES-MET solid -	3263103K0107	1	
59	R106	MRH200MK/HV-38-100MK RES-MET solid -	3263103K0207	1	
60	R103	HMP1/4-106J RES-MET RN -	323A1029J0106	1	
61	R104	RK14B2ET52 20MohmJ RES-MET solid -Q	3261110J0206	1	
62	R14, R16	MOS2-3KohmJL RES-MET OX -	324A3024J0302	2	
63	R22, R23	MOS2-390ohmJL RES-MET OX -	324A3024J0391	2	
64					
65	C101, C106, C116,C122	MY2A/CQMF-100V-103J CAP-Plast flm -P	3064003J2103	4	
66	C121	CQMF/MY2A472J-T 100V CAP-Plast flm -P	3064003J2472	1	
67	C3	PA104-L CAP-Plast flm -	3062201M5104	1	
68	C4	ECQ-J0187Y/TA120033 COMP PAR-RC -	3402003P0001	1	

OL2-PCB Assy. (Power Supply Board) Rev. 6
(40217702-6/10)

REF. NO.	SYMBOL	TYPE/NAME			PART NO.	Q'TY	REMARKS
69	C5, C12, C16,C21, C51, C52, C57,C58, C60, C68~C71, C109, C110, C118~C120	MLRD/FK16Y5V1H104Z CAP-Ceramic	-N		3034003Z3104	18	
70	C59	UMA/5OMS5-1M CAP-Alum (CE)	-P	50V 1µF	3041103H1109	1	
71	C1, C2	DE1007E222M-KH CAP-Ceramic	-	250V	3024000M5222	2	
72	C13, C54, C55	HLY5P/DD05-500V-331K CAP-Ceramic	-P		3024003K6331	3	
73	C14, C20	ECA0JMH222BQ CAP-Alum (CE)	-P	6.3V	3041101J0222	2	
74	C9	HLY5P/DD07-500V-102K CAP-Ceramic	-P		3024003K6102	1	
75	C10	HLY5P/DD09-500V-222K CAP-Ceramic	-		3024003K6222	1	
76	C8	UVX/SME-16V-47µF CAP-Alum (CE)	-P	16V	3041003C1470	1	
77	C22	UVX/SME-63V-10µF CAP-Alum (CE)	-P	63V	3041003J1100	1	
78	C17, C18	ECA1CMH102BQ CAP-Alum (CE)	-P	16V	3041101C1102	2	
79	C56	RD16XR/CK92C1H102 CAP-Ceramic	-P		3034003M3102	1	
80	C115	MLRD/FK16Y5V1H473Z CAP-Ceramic	-N		3034003Z3473	1	
81	C102, C103	HLY5P/DD05-500V-471K CAP-Ceramic	-P		3024003K6471	2	
82	C113	HNY5P/DE07-1KV-471K CAP-Ceramic	-P		3024003K7471	1	
83	C104, C105, C107, C108, C111, C114, C117	DE07/HCYB3F471 CAP-Ceramic	-P		3024203K2471	7	
84	C6, C7	UVR1J332MRA CAP-Alum (CE)	-	63V	3041102J1332	2	
85	C112	DE1010B471K6K CAP-Ceramic	-	6KV	302A4028K4471	1	

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REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
86	C11	RD16XR/CK92C1H681 CAP-Ceramic -P	3034003M3681	1	
87	C23	KME50VB-47 50V CAP-Alum (CE) - 47μF	304A1115H1470	1	
88					
89	Q1	2SB1351 TR-PNP/L-FREQ -	601A1226M0002	1	
90	Q5	2SD1590 TR-NPN/L-FREQ -	603A1223M0022	1	
91	Q3, Q109, Q111	2SC1740S TR-NPN/H-FREQ -	602A1035M0002	3	
92	Q2, Q6, Q7, Q58~Q62, Q110	DTD114ESTP TR-NPN/H-FREQ -P	6021035M0001	9	
93	Q52	2SA608SP/2SA933S TR-PNP/H-FREQ -	600A1003M0001	1	
94	D1	TM1261I-LE-LF625 THY-Bi/Dir -	622A0026M0003	1	
95	Q101~Q105	2SC2235-Y TR-NPN/H-FREQ -	602A1125M0039Y	5	
96	Q106, Q108	BCR1AM-12/MAC97-008 THY-Bi/Dir -	622A0003M0001	2	
97	Q107	CR04AM-12 THY-Gate -	620A0022M0008	1	
98	Q4, Q53~Q57	2SA1152-K/L TR-PNP/H FREQ -	600A1123M0015	6	
99					
100	PC1	S21ME4FY PHOTO-Coupler -	652A0228M0004	1	
101	PS1~PS6	RPI-574/#9568 PHOTO-Coupler -	652A0103M0002	6	
102	IC1	FA7617P-1 Analog-BIPLIN -	720A0843M0001	1	

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(40217702-8/10)

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
103	IC2	LC26023A-NA5 Digital IC-MOS-	7024633M2003	1	
104	IC4	324P Analog-BIPLIN -	720A0000M0002	1	
105	IC5	358P Analog-BIPLIN -	720A0000M0033	1	
106	IC6	SI-3033C (LF1101) Analog-BIPLIN -	720A1029M8002	1	
107	IC7	PST592D-2 Analog-BIPLIN -	720A4037M0015	1	
108	OSC1	CST10.0MTW OSC-Ceramic -	381A1045B0014	1	
109					
110	L2	SN8S-300/SF-T8-30S Coil-Choke -	350A0221P1001	1	
111	L3	SK-24BS075-350 Coil-Choke -	350A2512P0351	1	
112	L101	SU16VD-40020 Coil-Choke -	350A2027P0200	1	
113	L1	SU10V07040/FUS325020 Coil-Choke -	350A0223P0402	1	
114					
115	T2~T6	HIGH VOLTAGE TRANSFO RMER	YB4049-7078P003	5	
116					
117	CN1	5281-02A Connector-PCB -	224A3907P0020	1	
118	CN2	00-8263-0612-00-000 Connector-PCB -	224A3357P0060	1	
119	CN3	128A-026S2B-L14A Connector-PCB -	224A3222P0262	1	

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(40217702-9/10)

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
120					
121	F1	215005 FUSE -	540A2077T0155	1	
122	F3	21702.5 FUSE -	540A2221S0252	1	
123		F220 Holder-Fuse -	2423000P0001	4	
124		OSH-1025-MP Heat Sink -	161A1233P0001	2	
125	SW1	SJ-W2P4A-03BB2 Switch-Toggle -	2003200P2000	1	
126	SW2	SM-05S-04A-9 Switch-Micro -	207A2020P0001	1	
127	INLET	SPECIAL CORD	YS4011-2894P002	1	
128		Screw	PSWW3-8C	2	
129		201840-23 Sleeve- -	121A1037P0001	1	
130		840622-23 Holder-Fuse -	242A7041P0001	1	
131		PS TUBE	YC4061-1076P006	2	
132					
133	S1~S15, S17~S21, S24, S29, S40, S44, S79, S91	SHORT WIRE	TA-0.6	26	
134	S22, S23, S25~S28, S30~S39, S49	SHORT WIRE	TA-0.6	17	
135	S41~S43, S45~S48, S50~S68, S71, S76, S98, S123	SHORT WIRE	TA-0.6	30	
136	S69, S70, S72, S73, S75, S77, S78, S79	SHORT WIRE	TA-0.6	8	

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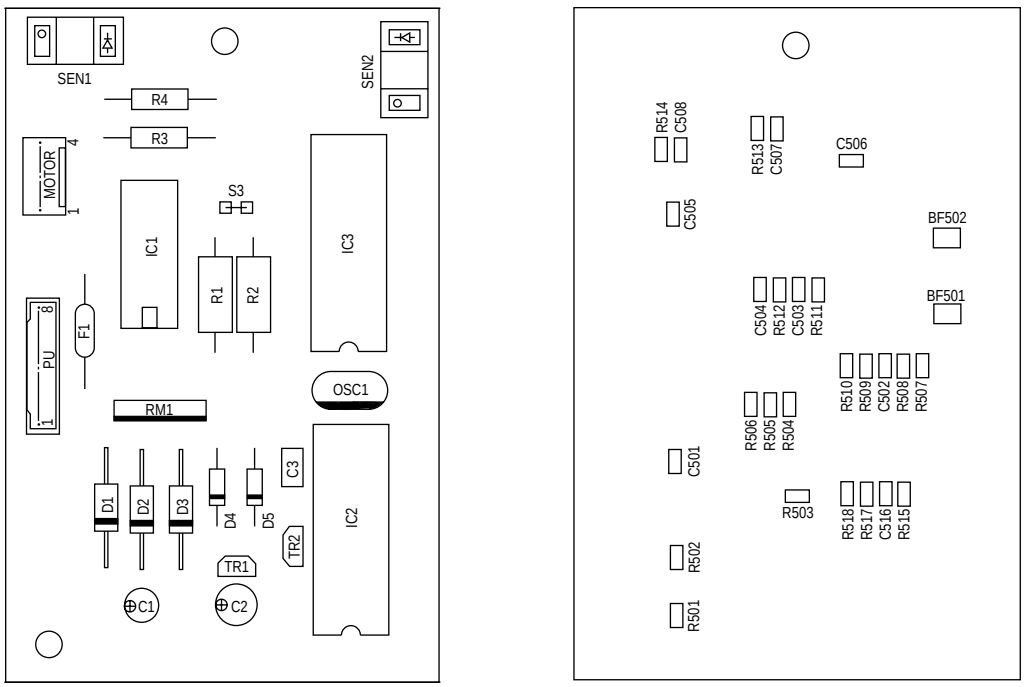
(40217702-10/10)

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
137	S80~S85, S87~S90	SHORT WIRE	TA-0.6	10	
138	S86, S93, S94	SHORT WIRE	TA-0.6	3	
139	S74, S92, S95~S97	SHORT WIRE	TA-0.6	5	



TQSB-2-Printed Circuit Board (High Capacity Second Paper Feeder Board) Rev. 1 (4YA4046-1651G002-1/4)

TQSB-2-Printed Circuit Board (High Capacity Second Paper Feeder Board) Rev. 1 (4YA4046-1651G002-2/4)

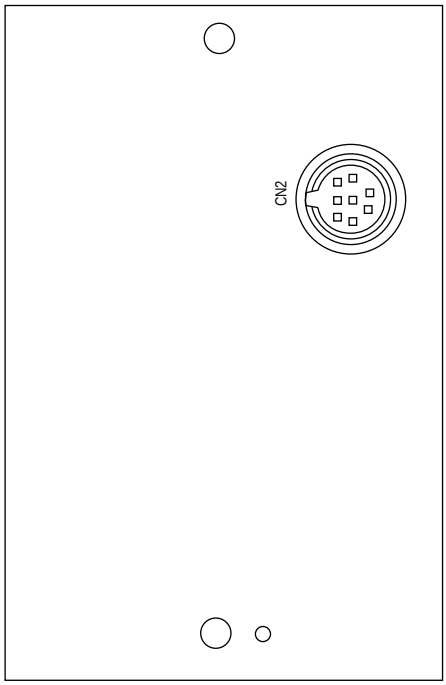
REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
1					
2					
3	D1~D3	EM01Z/SM1XN02/DSM1D2 Rectifier D1	610A0003M0001	3	
4	D5	RD3.9E-B Zener-D1	613A1231L0082	1	
5	D4	1S953/1S2075K/1S2473 Signal D1	611A0003L0001	1	
6					
7	R513, R514	RM73B2A473J RN Resistor (CP)	323A5003J0473	2	
8	R1, R2	MSF1/2B0.51ΩJ RS Resistor	324A1001J0518	2	
9	R503, R511, R512	RM73B2A102J RN Resistor (CP)	323A5003J0102	3	
10	R3, R4	RD1/4Y180ΩJ RD Resistor	321A1421J0181	2	
11	R501, R502, R508~R510	RM73B2A103J RN Resistor (CP)	323A5003J0103	9	
12	R515~R518				
13	R506	RM73B2A123J RN Resistor (CP)	323A5003J0123	1	
14	R505	RM73B2A561J RN Resistor (CP)	323A5003J0561	1	
15	R507	RM73B2A153J RN Resistor (CP)	323A5003J0153	1	
16	R504	RM73B2A271J RN Resistor (CP)	323A5003J0271	1	
17					

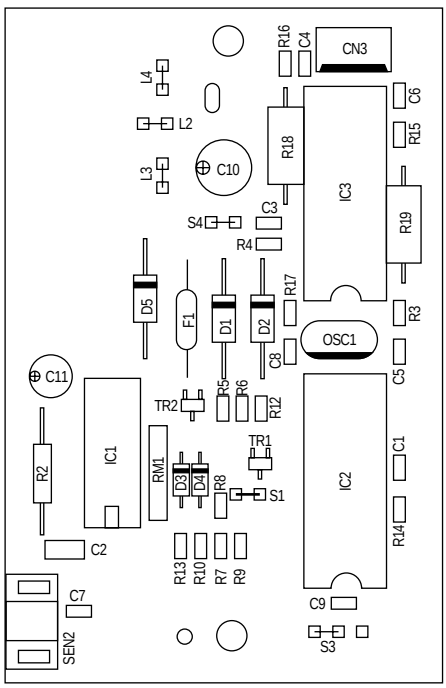
TQSB-2-Printed Circuit Board (High Capacity Second Paper Feeder Board) Rev. 1 (4YA4046-1651G002-3/4)

REF. NO.	SYMBOL	TYPE/NAME		PART NO.	Q'TY	REMARKS
18	RM1	MRM-4-512JA Block Resistor		334A3266J0512	1	
19						
20	C1	SXE50VB-10-4D-FC CE Capacitor	50V 10µF	304A1008H1100	1	
21	C2	10MS5-33M CE Capacitor	10V 33µF	304A1046A1330	1	
22	C3	RPE122-127E334M50 CK Capacitor	 0.33µF	303A4116M3334	1	
23	C503, C504, C507, C508	CK2012B1H102K CK Capacitor (CP)	50V	303A6008K3102	4	
24	C502	CC2012SL1H471J CC Capacitor (CP)	50V	303A3007K0471	1	
25	C501, C505, C506	CK2012F1E104Z CK Capacitor (CP)	25V	303A6008Z2104	3	
26						
27	IC3	M54646AP BIP Linear IC		720A1822M0002	1	
28	IC1	74LS38P BIP Digital IC		700A0503M0038	1	
29	IC2	LC6543N-4E07 MOS-CPU (ROM)		853A0036M0003	1	
30						
31	BF501, BF502	CB30-322513 Beads Core (CP)		105A5001C1001	2	
32						
33	SEN1, SEN2	SG-205-B Photocoupler		652A0114M0001	2	
34						

TQSB-2-Printed Circuit Board (High Capacity Second Paper Feeder Board) Rev. 1 (4YA4046-1651G002-4/4)

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
35	TR1, TR2	DTA114S PNP-HF-TR	600A1035M0005	2	
36	OSC1	CST4.00MGW Ceramic Oscillator	381A1025B0002	1	
37					
38					
39					
40	F1	251-001 Fuse	540A2208S1102	1	
41					
42	MOTOR	00-8263-0412-00-000 PC Connector	224A3357P0040	1	
43	PU	IL-S-8P-S2T2-EF PC Connector	224A3052P0080	1	
44					
45	S3	Short Wire (U type) 0.65 P=2.5	5KH-31036-25	1	
46					
47					
48					
49					
50					
51					





OLEV-Printed Circuit Board (Multi Purpose Feeder Board) Rev. 4
(4YA4121-1014G011-1/4)

OLEV-Printed Circuit Board (Multi Purpose Feeder Board) Rev. 4 (4YA4121-1014G011-2/4)

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
1					
2					
3	D1, D2, D5	EM01Z/SM1XN02/DSM1D2 Rectifier Diode	610A0003M0001	3	
4	D4	RD3.9E-B Zener Diode	613A1231L0082	1	
5	D3	1S953/1S2075K/1S2473 Signal Diode	611A0003L0001	1	
6					
7	R15, R16	RM73B2A473J RN Resistor (CP)	323A5003J0473	2	
8	R18, R19	MSF1/2B0.51ΩJ RS Resistor	324A1001J0518	2	
9	R3~R6	RM73B2A102J RN Resistor (CP)	323A5003J0102	4	
10	R2	RD1/4Y180ΩJ RD Resistor	321A1421J0181	1	
11	R7~R10, R14	RM73B2A103J RN Resistor (CP)	323A5003J0103	5	
12	R12	RM73B2A123J RN Resistor (CP)	323A5003J0123	1	
13	R17	RM73B2A561J RN Resistor (CP)	323A5003J0561	1	
14	R13	RM73B2A153J RN Resistor (CP)	323A5003J0153	1	
15	RM1	MRM-4-512JA Block Resistor (CP)	334A3266J0512	1	
16					
17	C10	50MS5-10M CE Capacitor	304A1046H1100	1	

OLEV-Printed Circuit Board (Multi Purpose Feeder Board) Rev. 4 (4YA4121-1014G011-3/4)

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
18	C11	10MS5-33M 10V CE Capacitor 33µF	304A1046A1330	1	
19	C2	RPE122-127E334M50 CK Capacitor 0.33µF	303A4116M3334	1	
20	C1	CC2012SL1H471J 50V CC Capacitor (CP)	303A3007K0471	1	
21	C3~C6	CK2012B1H102K 50V CK Capacitor (CP)	303A6008K3102	4	
22	C7~C9	CK2012F1E104Z 25V CK Capacitor (CP)	303A6008Z2104	3	
23					
24	IC3	M54646AP BIP Linear IC	720A1822M0002	1	
25	IC1	74LS38P BIP Digital IC	700A0503M0038	1	
26	IC2	LC6543N-4B52 MOS-CPU (ROM)	853A0036M0002	1	
27					
28	SEN2	SG-205-B Photocoupler	652A0114M0001	1	
29	TR1, TR2	A1344/UN2111/DTA114K PNP-HF-TR (CP)	600A1003N0003	2	
30	OSC1	CST4.000MGW Ceramic Oscillator	381A1025B0002	1	
31					
32	S1, S3, S4, L2~L4	Short Wire (U type) 0.65 P=2.5	5KH-31036-25	6	
33	F1	251-001 Fuse	540A2208S1102	1	
34	CN2	TCS7698-01-201 Round-Shaped Connector	221A1622P0082	1	

OLEV-Printed Circuit Board (Multi Purpose Feeder Board) Rev. 4 (4YA4121-1014G011-4/4)

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
35	CN3	00-8263-0412-00-000 PC Connector	224A3357P0040	1	
36					
37					
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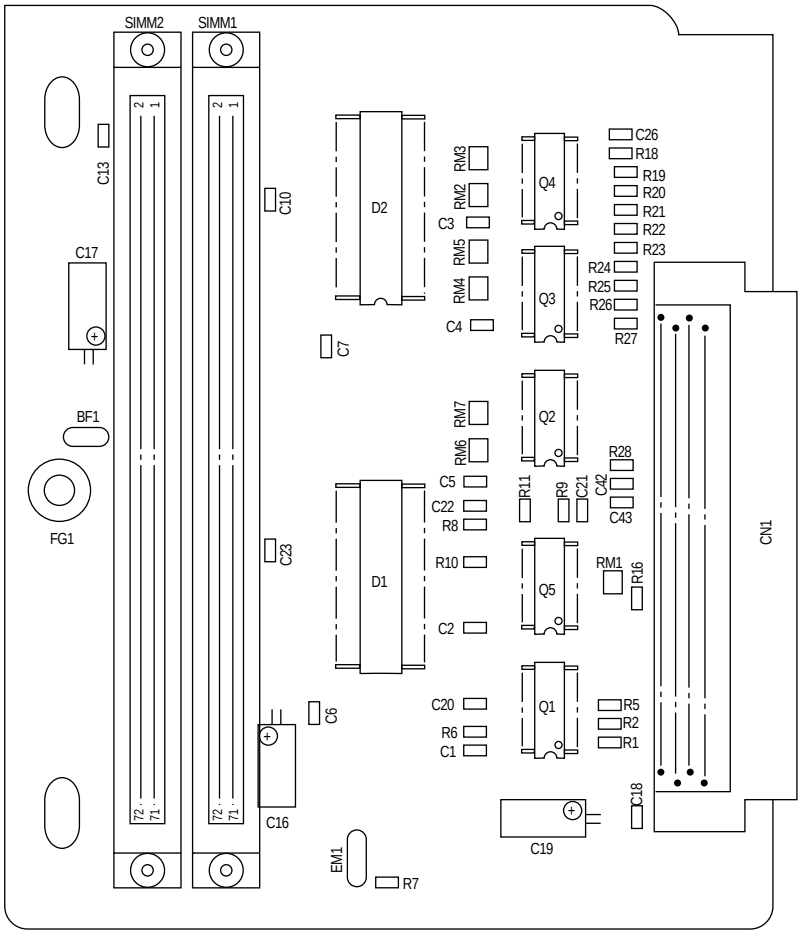
51					



MM6-PCB Assy. (Memory Expansion Board) Rev. 4
(40369105-1/3)

MM6-PCB Assy. (Memory Expansion Board) Rev. 4
(40369105-2/3)

REF. NO.	SYMBOL	TYPE/NAME			PART NO.	Q'TY	REMARKS
1	R8~R11	RM73B2A220J RES-MET RN	 -C		323A5003J0220	4	
2	R18~R28	RM73B2A470J RES-MET RN	 -C		323A5003J0470	11	
3	R1, R2, R5, R6, R7	RM73B2A472J RES-MET RN	 -C		323A5003J0472	5	
4	R16	2125JPW RES-MET RN	 -C		323A5003P0001	1	
5							
6	RM1~RM7	MNR14ABJ680 RES-Block	 -C		334A5012J0680	7	
7							
8	C20, C21	CC2012CH1H101J CAP-Ceramic	 -C	50V	303A3007C0101	2	
9	C22, C26, C42, C43	CC2012CH1H330J CAP-Ceramic	 -C	50V	303A3007C0330	4	
10	C23	CC2012CH1H680J CAP-Ceramic	 -C	50V	303A3007C0680	1	
11	C1~C7, C10, C13, C18	CK2012F1C105Z CAP-Ceramic	 -C	16V 1μF	303A6008Z1105	10	
12							
13	C16, C17, C19	KME10VB-100 CAP-Alum (CE)	 -	10V	304A1115A1101	3	
14							
15	Q1~Q5	74ALS244AFP Digital IC-BIP-S			700A2503N0244	5	
16							
17	EM1	DSS306-OAE222Z COMP PAR-LC	 -		324A1009P2222	1	

MM6-PCB Assy. (Memory Expansion Board) Rev. 4
(40369105-3/3)

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
18					
19	D1, D2	514260JP-70 Memory-MOSDRAM-S	8020003N2601	2	
20					
21	CN1	PQ100A2MA Connector-PCB -	224A3515P1000	1	
22					
23	BF1	ZBF253D-01 Filter-PW line -	377A1115P1309	1	
24					
25	SIMM1, SIMM2	2-176438-7 Socket-SEMICON - or 11088-1 Socket-SEMICON	245A1372P0720 or 2451002P0720	2	
26					
27					
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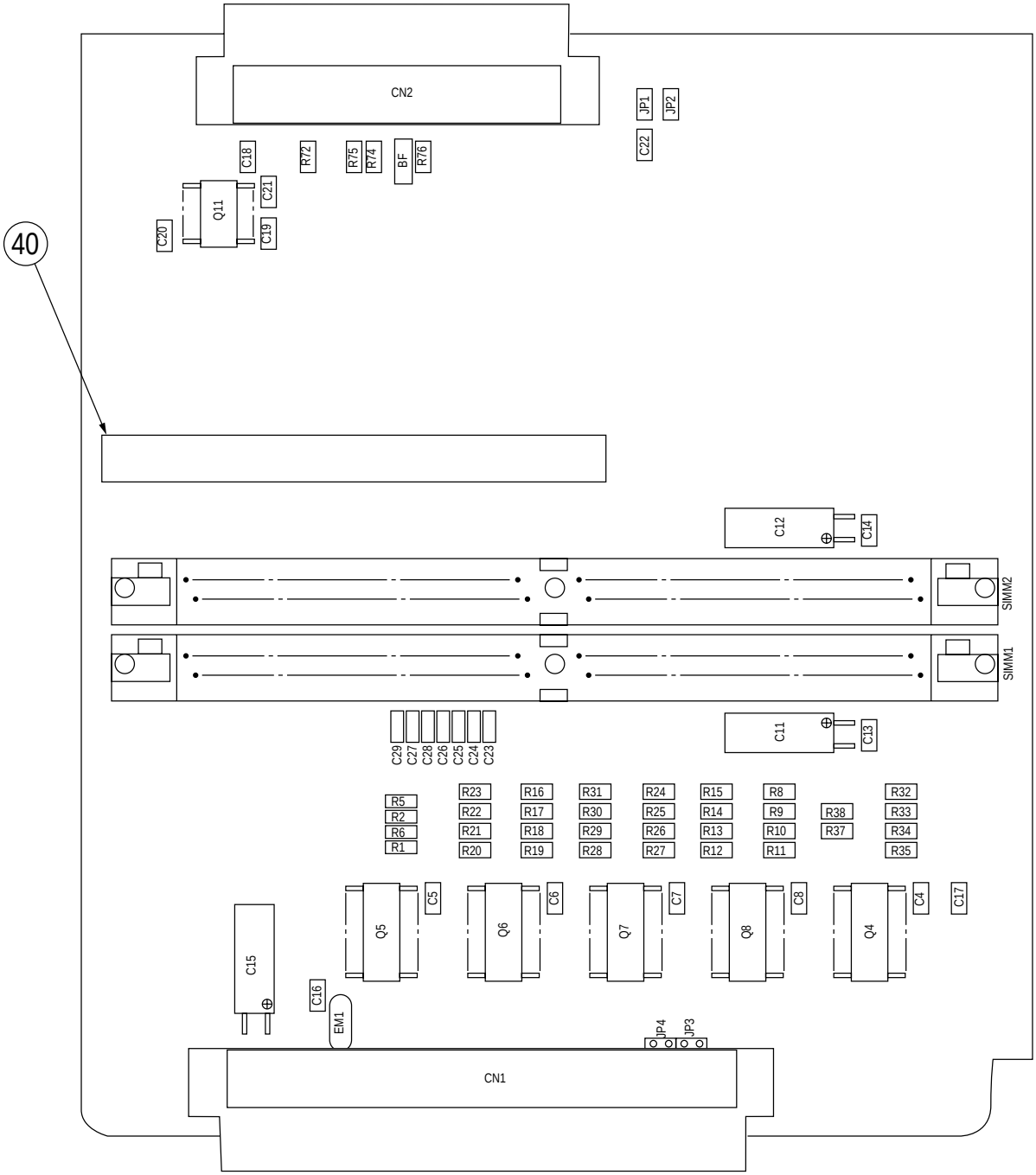
33					



SMIF-Serial Memory Interface PCB (RS232C Interface Board) Rev. 4 (0025304-1/4)

SMIF-Serial Memory Interface PCB (RS232C Interface Board) Rev. 4 (0025304-2/4)

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
1	R1, R2, R5, R6	RM73B2A472J RN RESISTOR (CP)	323A5003J0472	4	
2	R8~R31	RM73B2A680J RN RESISTOR (CP)	323A5003J0680	24	
3	R32~R35, R37, R38	RM73B2A220J RN RESISTOR (CP)	323A5003J0220	6	
4					
5	R72	RM73B2A332J RN RESISTOR (CP)	323A5003J0332	1	
6					
7	JP1~JP4	2125JPW RN RESISTOR (CP)	323A5003P0001	4	
8					
9	R74~R76	RM73B2A562J RN RESISTOR (CP)	323A5003J0562	3	
10					
11	C11, C12, C15	KME10VB-100 CE CAPACITOR	304A1115A1101	3	
12					
13	C4~C8, C13, C14, C16	CK2012B1H105K 50V CK CAPACITOR (CP)	303A6008K1105	8	
14					
15	C18~C20	CK2012F1E104Z 25V CK CAPACITOR (CP)	303A6008Z2104	3	
16	C17	CC2012CH1H101J 50V CC CAPACITOR (CP)	303A3007C0101	1	
17					

SMIF-Serial Memory Interface PCB (RS232C Interface Board) Rev. 4 (0025304-3/4)

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
18	C21	CK2012B1H561K 50V CK CAPACITOR (CP)	303A6008K3561	1	
19					
20	C22	CK2012B1H102K 50V CK CAPACITOR (CP)	303A6008K3102	1	
21					
22	C23~C29	CC2012PHIH120J CC CAPACITOR (CP)	303A3007P0120	7	
23					
24	Q4~Q8	74ACT244FP MOS DIGITAO IC (SO)	702A2503N3244	5	
25					
26	Q11	75188NS BIP DIGITAL IC (SO)	710A0050N0188	1	
27					
28	D1, D2	SS100MA80VKCP SIGNAL DIODE (CP)	611A0000N0002	2	
29					
30	CN1	PQ100A2MA PC CONNECTOR	224A3515P1000	1	
31					
32	CN2	17LE-13250-27 (D4CC) PC CONNECTOR	220A1448P0250	1	
33					
34	SIMM1, SIMM2	2-176438-7 IC SOCKET	245A1372P0720	2	

SMIF-Serial Memory Interface PCB (RS232C Interface Board) Rev. 4 (0025304-4/4)

REF. NO.	SYMBOL	TYPE/NAME	PART NO.	Q'TY	REMARKS
35					
36	BF	ZBF253D-01 BEAD FILTER	377A1115P1309	1	
37					
38	EMI	DSS306-OAFZ103N EMI FILTER	342A1009P3103	1	
39					
40		ADHESIVE BARCODE LABEL	4YC4100-1062P001	1	
41					
42					
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