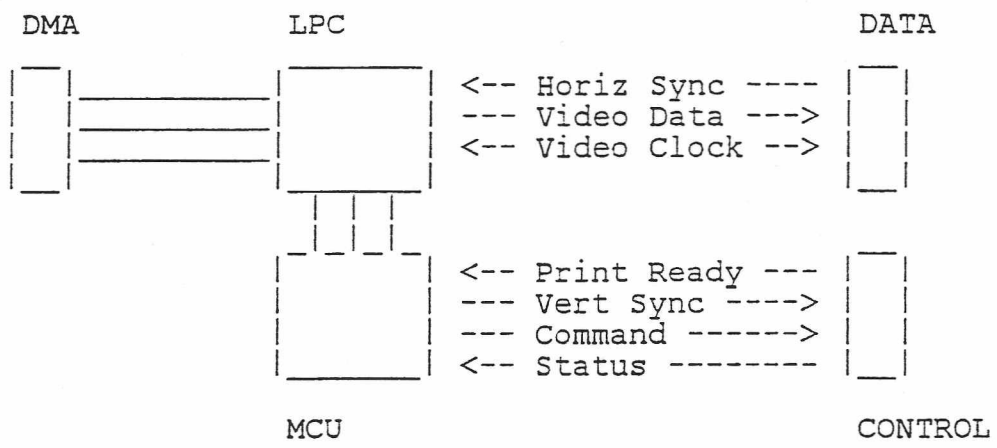
THE SCOPE OF THIS DOCUMENT is limited to a description of the Atari Page Printer Interface host adapter hardware and software system-level interface. This document does not provide information on the controller to printer engine device-level interface.

1. Introduction

The Atari Page Printer Controller functions as a translator between the parallel DMA bus interface (aka the Atari Computer System Interface) of the Atari ST and the serial video interface of the xerographic printer engine. The page printer controller is intelligent, providing device-independent command interpretation and control of printer operations. The following is a simplified block diagram of the Atari Page Printer Controller.

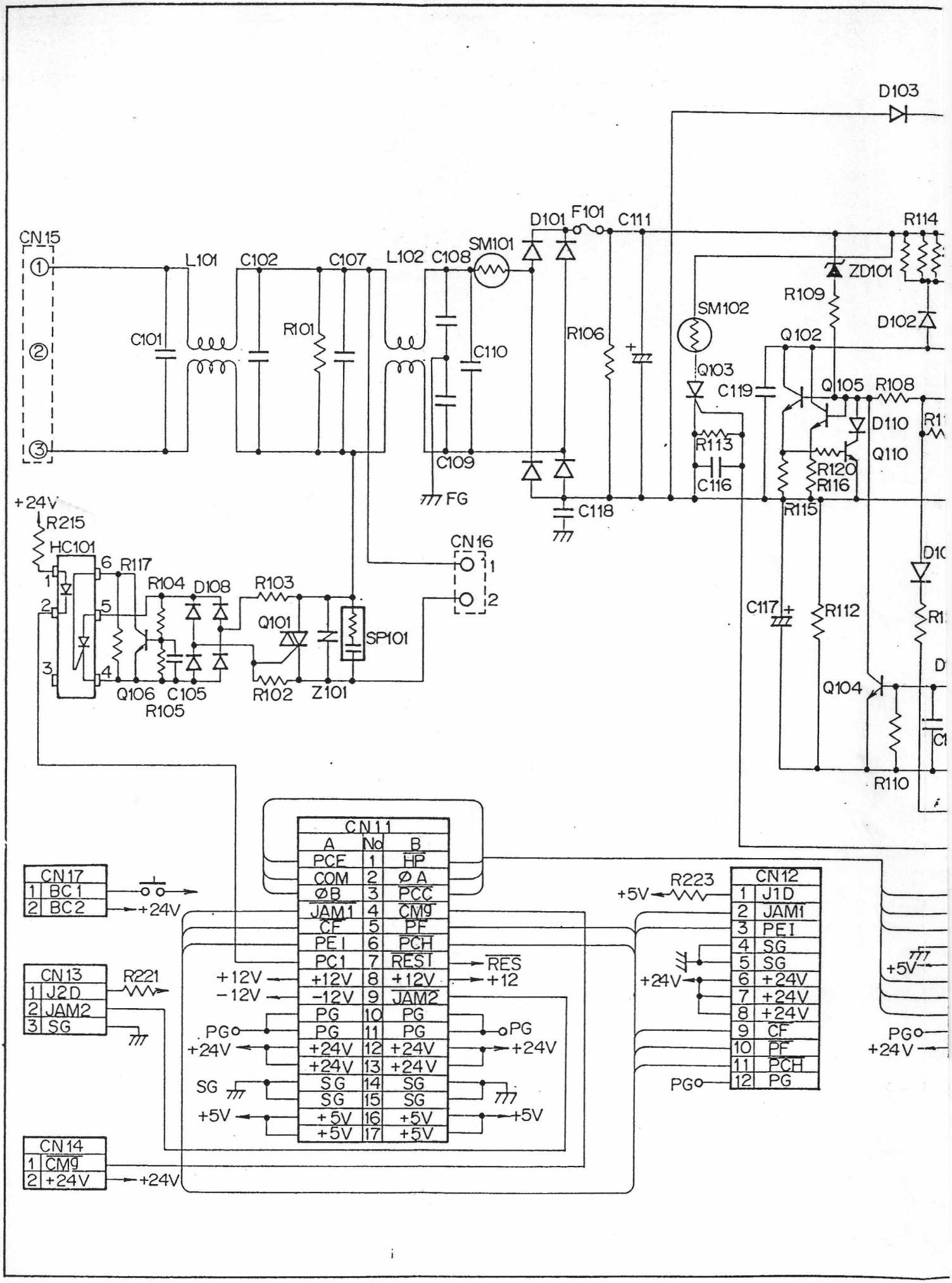
ATARI PAGE PRINTER CONTROLLER

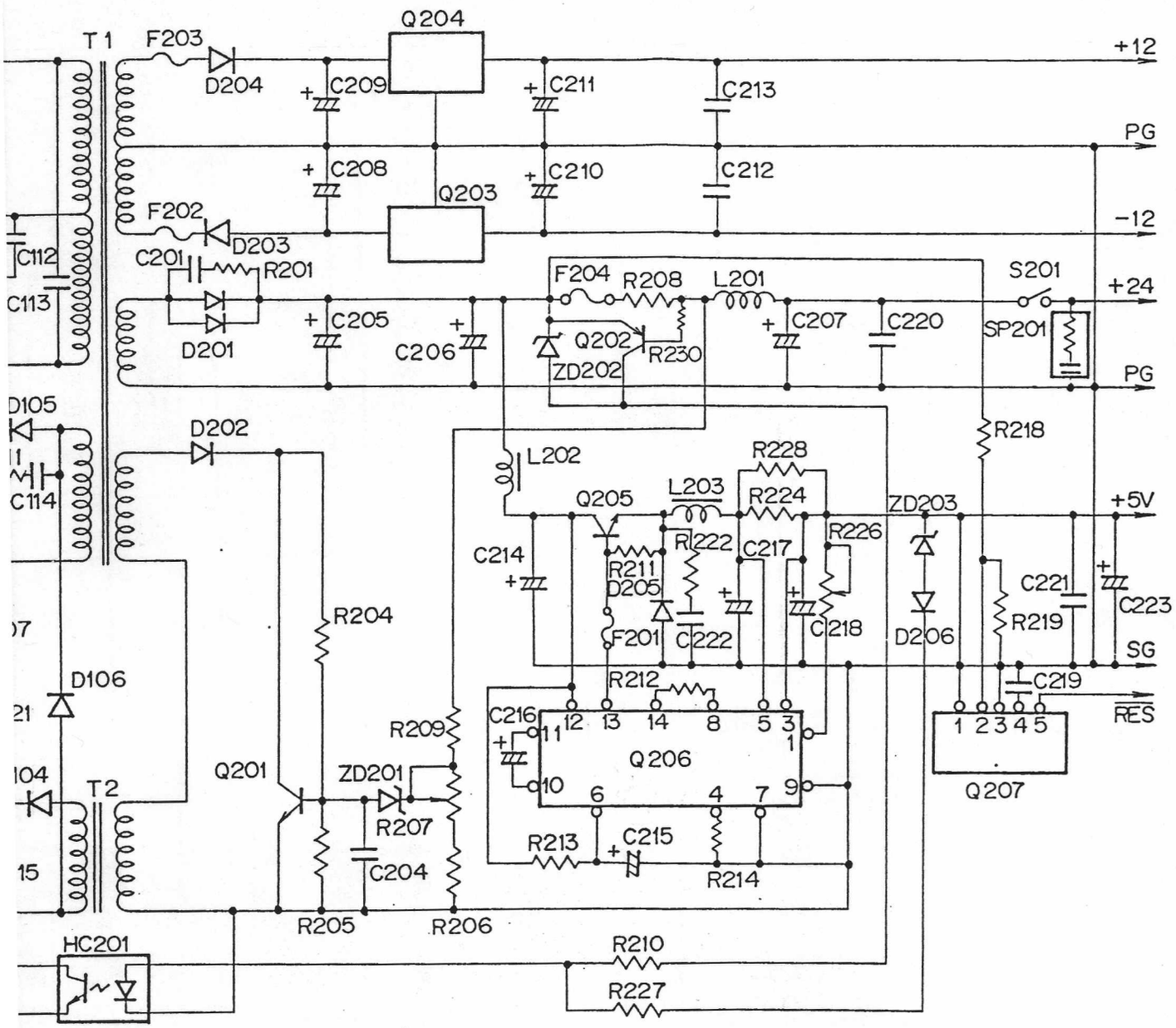


Bus communication follows a defined host-initiated dialog sequence consisting of a COMMAND PHASE, DATA OUT PHASE, and STATUS PHASE. Data transfers are asynchronous and follow a Data Request / Acknowledge handshake protocol, with one byte of data tranferred during each handshake.

Please note that the controller contains a two-byte FIFO which is loaded prior to the transfer of a new block of data.

The host can interrogate the controller for a list of configuration parameters which is received during an EXTENDED STATUS PHASE. The host can also send the controller a parameter list during an EXTENDED COMMAND PHASE.


D103
CN15
L101
C102
C107
L102
C108
SM101
D101
F101
C111
R114
ZD101
R109
D102
SM102
Q102
C101
R101
C110
R106
Q103
C119
Q105
R108
D110
R113
Q110
C116
R120
R116
C109
FG
C118
R115
+24V
R215
HC101
CN16
R117
R104
D108
R103
Q101
SP101
C117
R112
Q104
Q106
C105
R105
R102
Z101
R110
CN11
A
No
B
PCE 1 HP
COM 2 ØA
ØB 3 PCC
JAM1 4 CMG
CF 5 PF
PEI 6 PCH
PC1 7 RESI
+12V 8 +12V
-12V 9 JAM2
PG 10 PG
PG 11 PG
+24V 12 +24V
+24V 13 +24V
SG 14 SG
SG 15 SG
+5V 16 +5V
+5V 17 +5V
CN17
1 BC1
2 BC2
+24V
CN13
1 J2D
2 JAM2
3 SG
R221
CN14
1 CMG
2 +24V
+24V
+12V
-12V
PG
+24V
SG
+5V
RES
+12
PG
+24V
+5V
R223
+5V
+24V
PG
CN12
1 J1D
2 JAM1
3 PEI
4 SG
5 SG
6 +24V
7 +24V
8 +24V
9 CF
10 PF
11 PCH
12 PG
+5V
PG
+24V



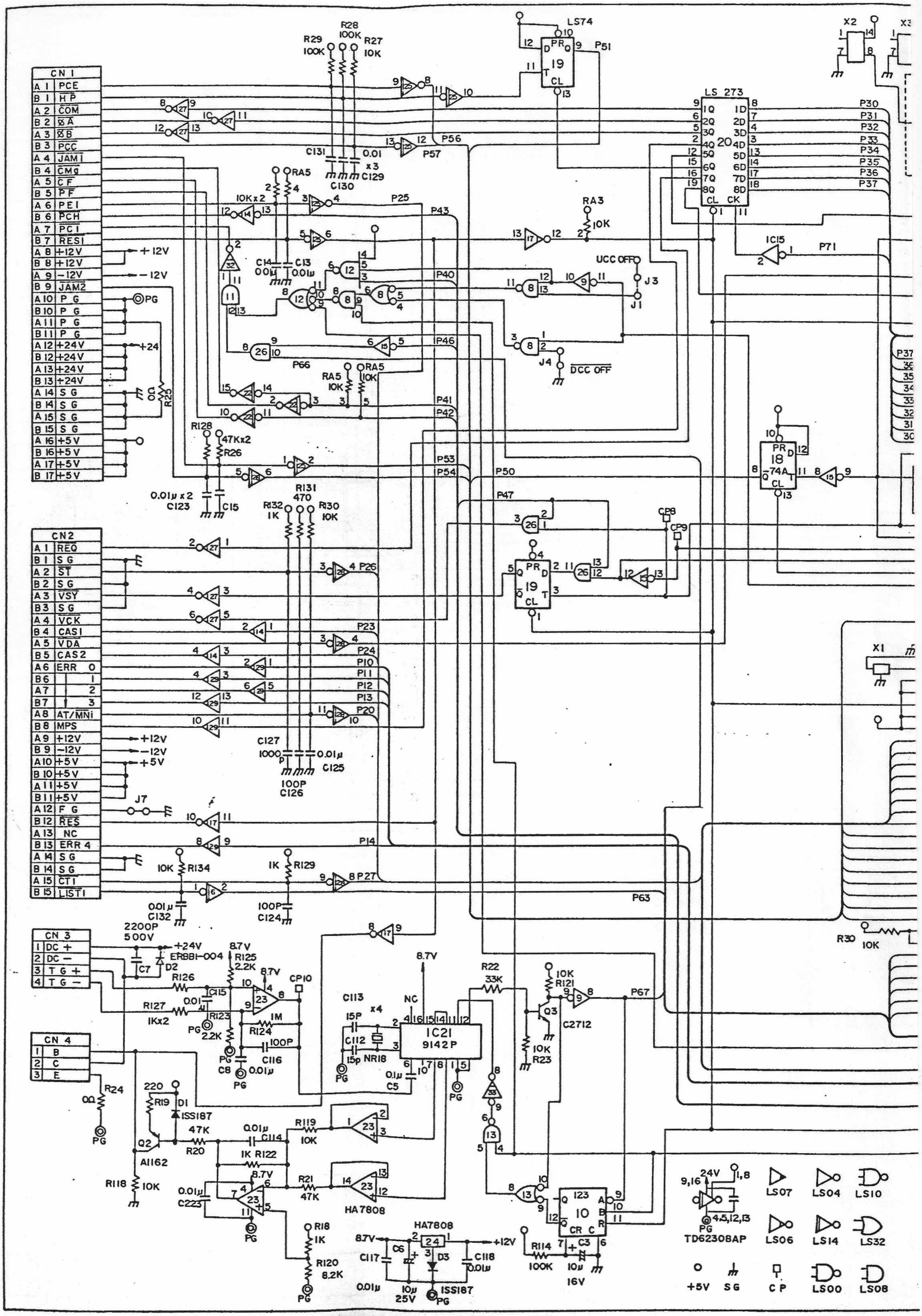
CN18	
1	PCE
2	H P
3	PCC
4	S G
5	+5V
6	COM
7	Ø A
8	Ø B
9	P G
10	+24V

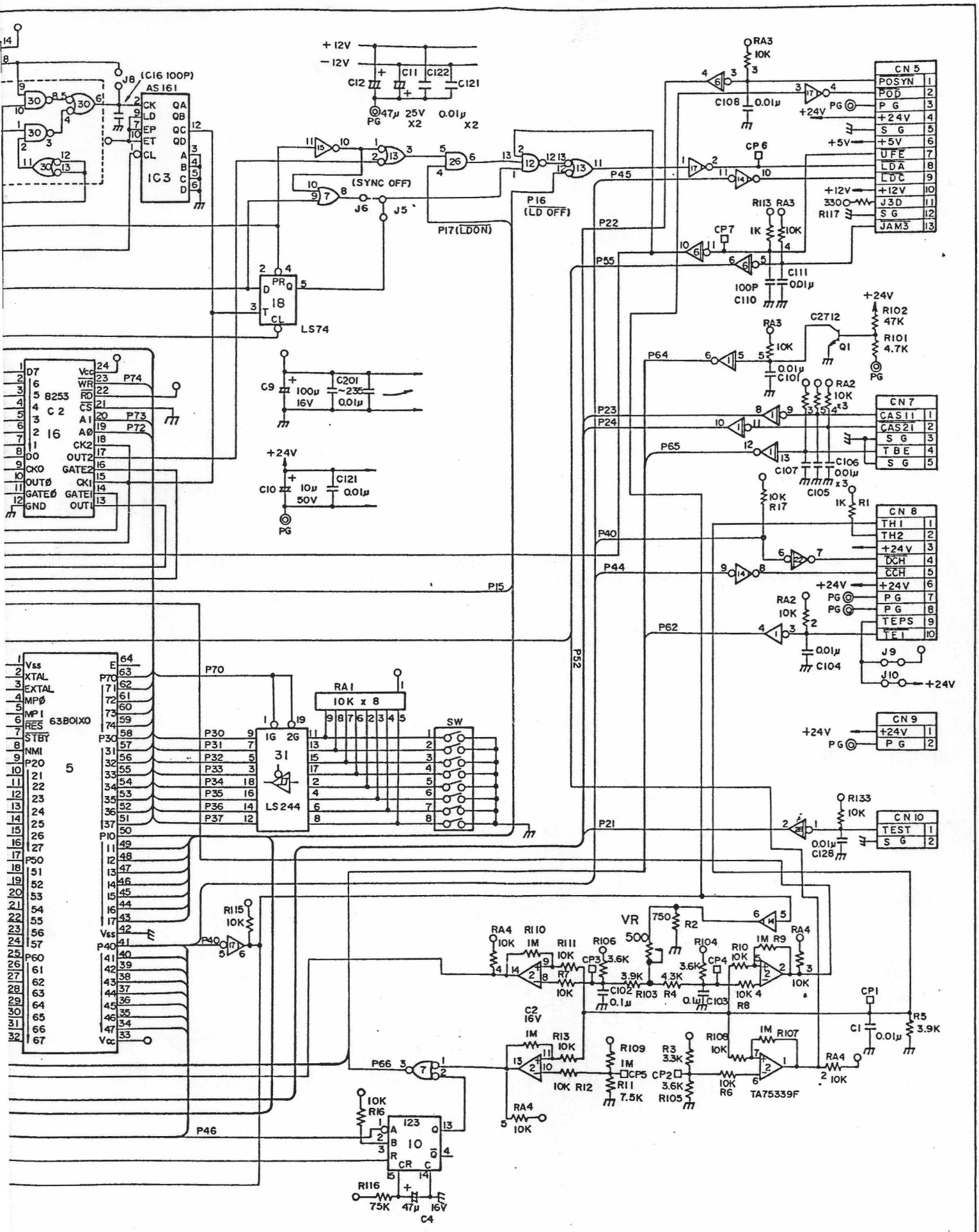
CN19		
1	+5V	→ +5V
2	+5V	
3	SG	⏚
4	SG	
5	+12V	→ +12V
6	-12V	→ -12V

This circuit is applicable to
PWB NO, SLE61-0081

ARTICLE	Laser Printer Power Supply 200V
DRAWING No.	SLE52-00301

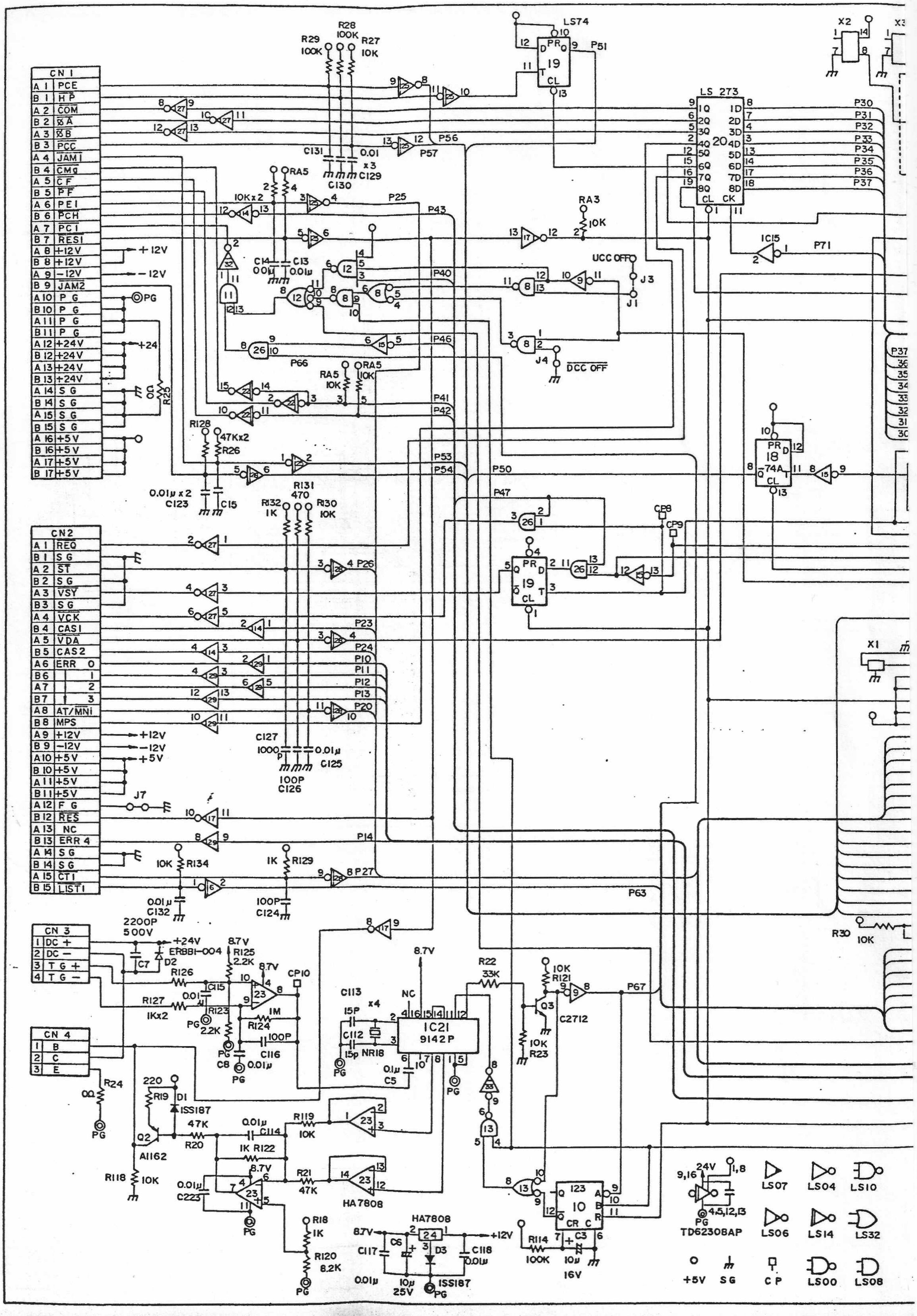
(ORIGINAL) APL., 1987


CN 1
A 1 PCE
B 1 HP
A 2 COM
B 2 ØA
A 3 ØB
B 3 PCC
A 4 JAM1
B 4 CMG
A 5 CF
B 5 PF
A 6 PE1
B 6 PCH
A 7 PC1
B 7 RES1
A 8 +12V
B 8 +12V
A 9 −12V
B 9 JAM2
A 10 P G
B 10 P G
A 11 P G
B 11 P G
A 12 +24V
B 12 +24V
A 13 +24V
B 13 +24V
A 14 S G
B 14 S G
A 15 S G
B 15 S G
A 16 +5V
B 16 +5V
A 17 +5V
B 17 +5V
CN2
A 1 REQ
B 1 S G
A 2 ST
B 2 S G
A 3 VSY
B 3 S G
A 4 VCK
B 4 CAS1
A 5 VDA
B 5 CAS2
A6 ERR 0
B6 1
A7 2
B7 3
A8 AT/MNi
B8 MPS
A 9 +12V
B 9 −12V
A10 +5V
B 10 +5V
A 11 +5V
B 11 +5V
A 12 F G
B 12 RES
A 13 NC
B 13 ERR 4
A 14 S G
B 14 S G
A 15 CT1
B 15 LIST1
CN 3
1 DC +
2 DC −
3 TG +
4 TG −
CN 4
1 B
2 C
3 E
LS74
LS 273
IC21 9142P
HA7808
TD62308AP
C2712
A1162
1SS187
ERB81-004
UCC OFF
DCC OFF
2200P 500V
LS07 LS04 LS10
LS06 LS14 LS32
+5V SG CP LS00 LS08

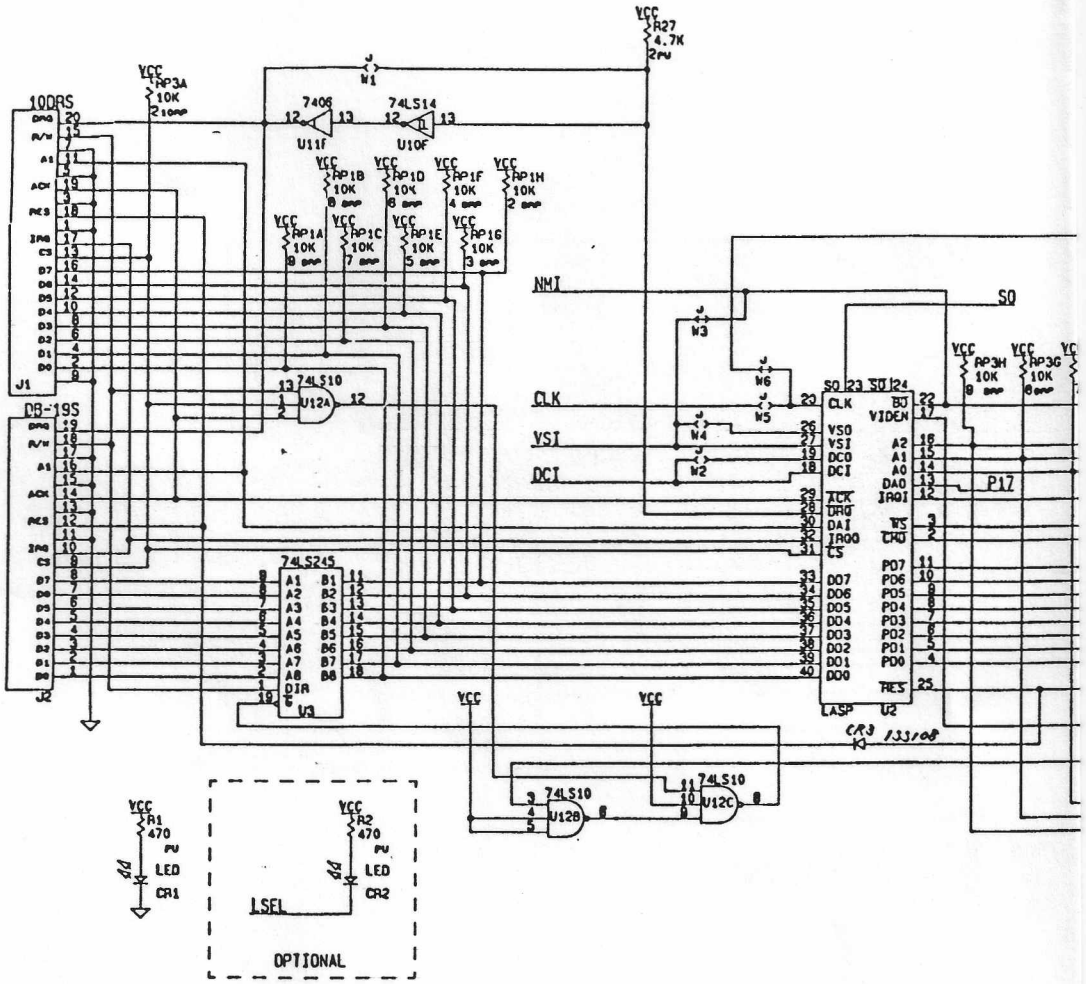


ARTICLE	~~LB-1301~~ SLM-804 MCON-T CCT
DRAWING NO.	JRE52-05101

(REVISED) APR., 1987
(ORIGINAL) JAN., 1987



CN 1
A 1 PCE
B 1 HP
A 2 COM
B 2 ØA
A 3 ØB
B 3 PCC
A 4 JAM1
B 4 CMg
A 5 CF
B 5 PF
A 6 PE1
B 6 PCH
A 7 PC1
B 7 RES1
A 8 +12V
B 8 +12V
A 9 −12V
B 9 JAM2
A 10 P G
B 10 P G
A 11 P G
B 11 P G
A 12 +24V
B 12 +24V
A 13 +24V
B 13 +24V
A 14 S G
B 14 S G
A 15 S G
B 15 S G
A 16 +5V
B 16 +5V
A 17 +5V
B 17 +5V
CN2
A 1 REQ
B 1 S G
A 2 ST
B 2 S G
A 3 VSY
B 3 S G
A 4 VCK
B 4 CAS1
A 5 VDA
B 5 CAS2
A 6 ERR 0
B 6 1
A 7 2
B 7 3
A 8 AT/MNi
B 8 MPS
A 9 +12V
B 9 −12V
A 10 +5V
B 10 +5V
A 11 +5V
B 11 +5V
A 12 F G
B 12 RES
A 13 NC
B 13 ERR 4
A 14 S G
B 14 S G
A 15 CT1
B 15 LIST1
CN 3
1 DC +
2 DC −
3 T G +
4 T G −
CN 4
1 B
2 C
3 E
LS74
LS 273
IC21 9142P
IC15
74A
HA7808
TD62308AP
C2712
A1162
1SS187
ERBB1-004
NR18
UCC OFF
DCC OFF
P30 P31 P32 P33 P34 P35 P36 P37
P51 P56 P57 P25 P43 P40 P46 P66 P41 P42 P53 P54 P50 P47 P26 P23 P24 P10 P11 P12 P13 P20 P14 P27 P63 P67 P71
R29 100K R28 100K R27 10K
R25 0Ω
R128 R26 47K×2
C123 0.01μ×2 C15
R132 1K R131 470 R130 10K
C127 1000P C126 100P C125 0.01μ
R134 10K R129 1K
C132 0.01μ C124 100P
2200P 500V C7 D2
R125 2.2K R126 R127 1K×2 R123 2.2K R124 1M C116 100P
C113 15P ×4 C112 15p C5 0.1μ
R22 33K R121 10K R23 10K Q3
R19 220 D1 R20 47K R24 0Ω Q2 R118 10K
C114 0.01μ R119 10K R122 1K
C223 0.01μ R21 47K
R18 1K R120 8.2K
C117 0.01μ C6 10μ 25V D3 C118 0.01μ
R114 100K C3 10μ 16V
R30 10K
8.7V +12V +24V +5V −12V
+5V SG CP
LS07 LS04 LS10
LS06 LS14 LS32
LS00 LS08

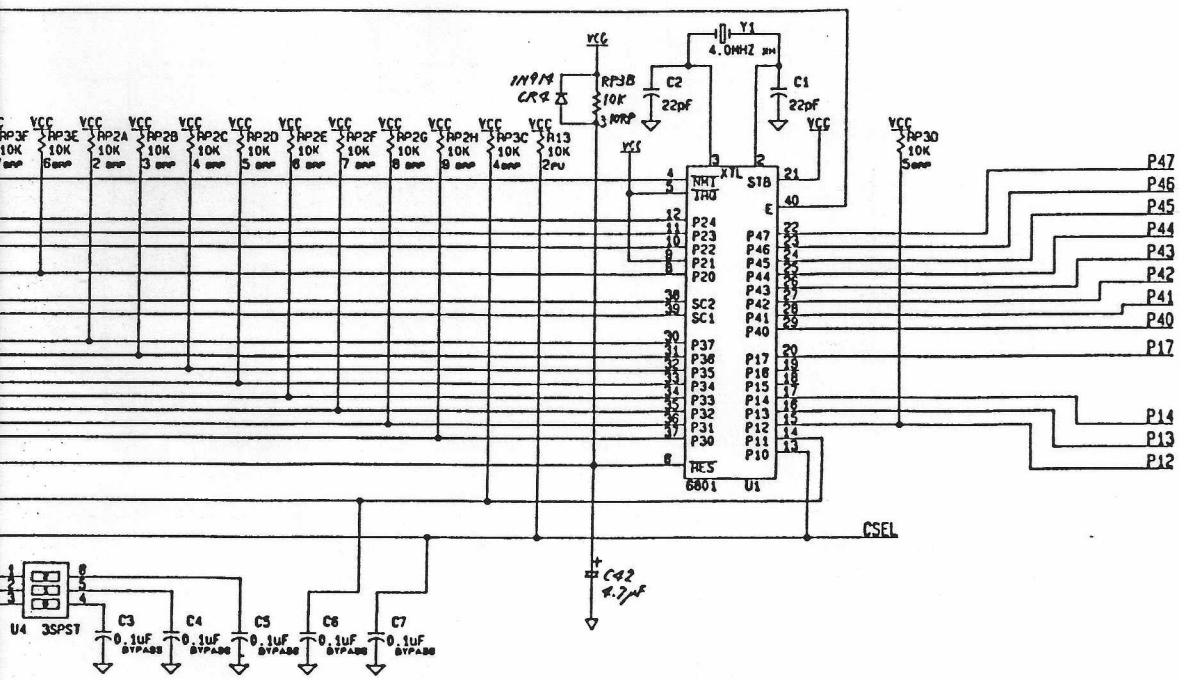


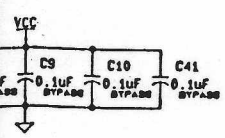
LAST REFERENCE: C1-C10, C41 CR1-CR2 J1-J2 R1-R2, R13, R27 RP1-RP3 U1-U4, U10-U12 W1-W6 Y1

1. RESISTORS ARE MEASURED IN OHMS.

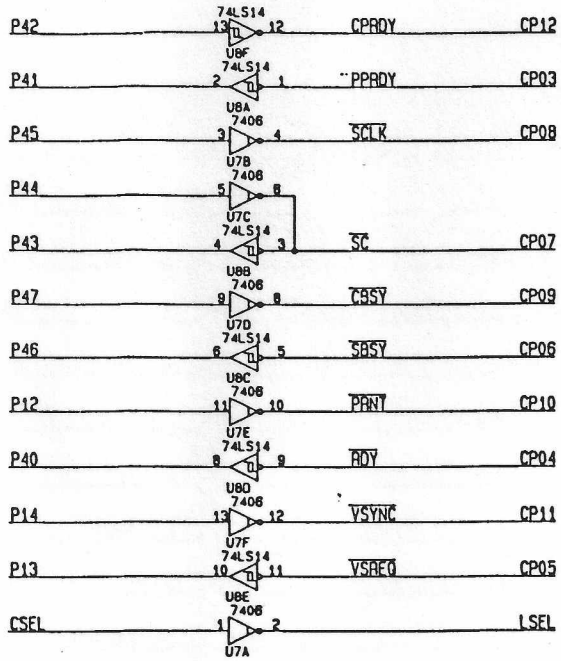
NOTES- UNLESS OTHERWISE SPECIFIED :

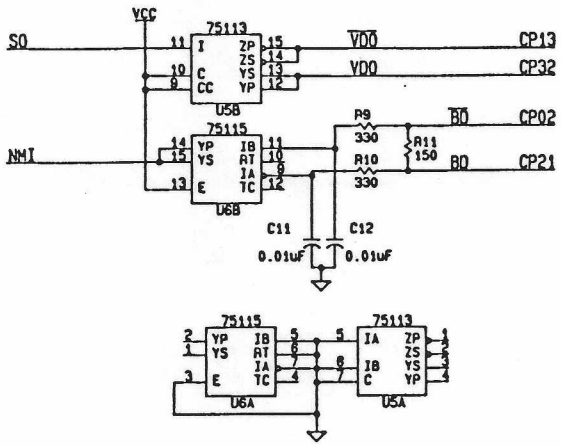
REV	REVISIONS DESCRIPTION	DATE	APPROVED
1	ENGINEERING ISSUE	8/6/87	
2	PRELIMINARY RELEASE (CHANGED VALUE : R17)	9/3/87	

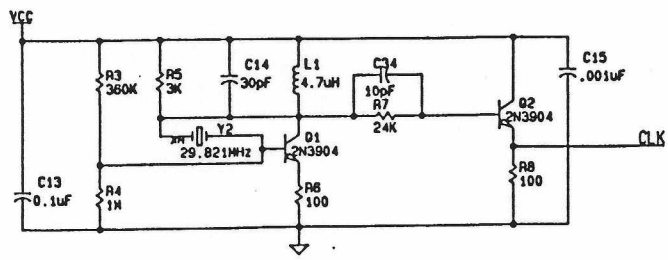


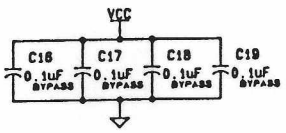


USED ON: SLMC 804	DRAWN BY: S. Yamada 7-28-87	ATARI (JAPAN) CORPORATION	
NEXT ASSY: CA200168-xxx	CHECKED: K. Kitagawa 8-6-87	Toranomon Kiyoshi Building 3F, 4-3-10, Toranomon Minato-ku, Tokyo 105	
MATERIAL:	ENGINEER: T. Saito 8-6-87	TITLE: SCHEMATIC DIAGRAM SLMC 804	
FINISH:	APPROVED: S. OKADAKI 9/4/87	SIZE: D; DRAWING NO.: C026455; REV: 2	
		SCALE: NONE; SHEET 1 OF 3	



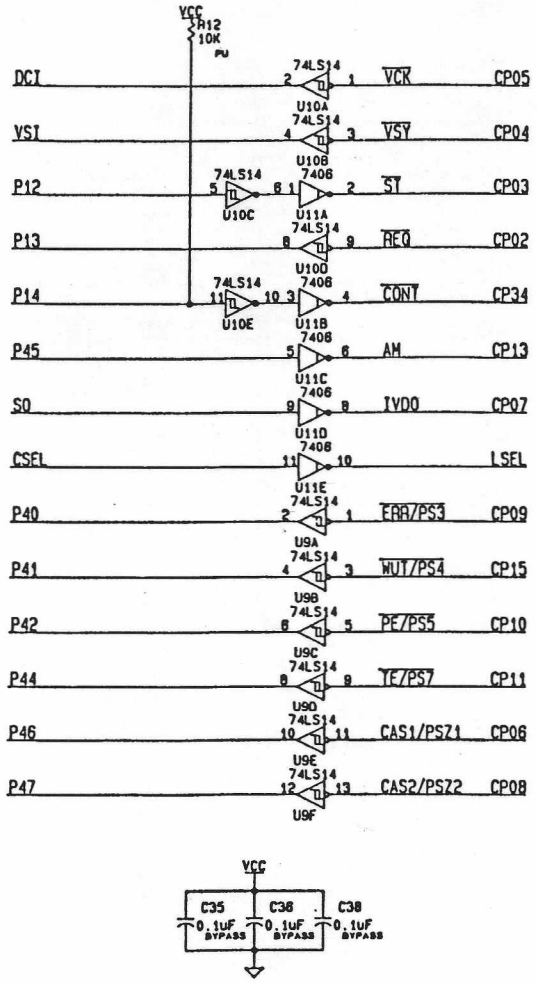






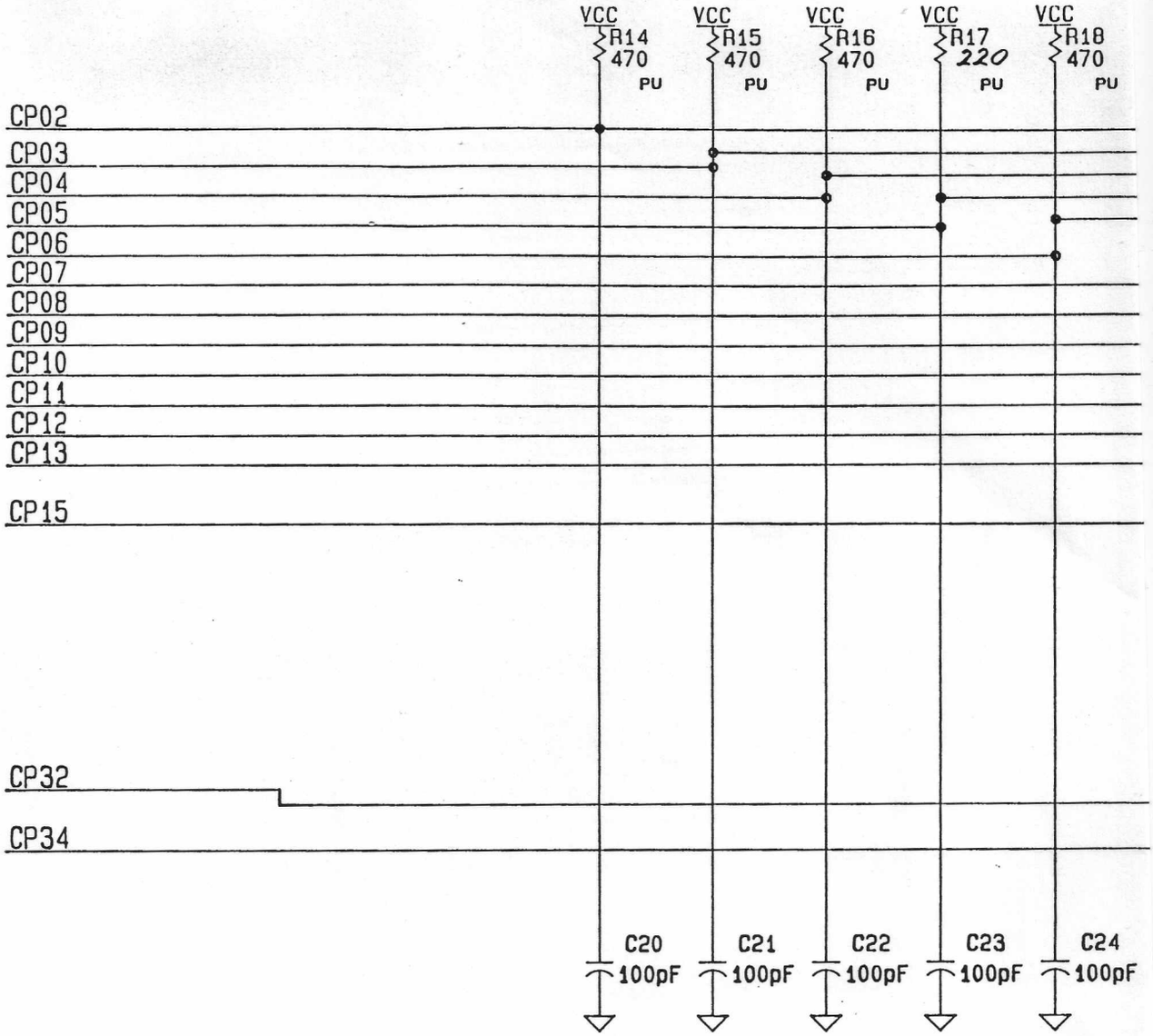
LAST REFERENCE: C11-C19, C34-C38, C38 L1 Q1-Q2 R3-R12 U5-U11 Y2

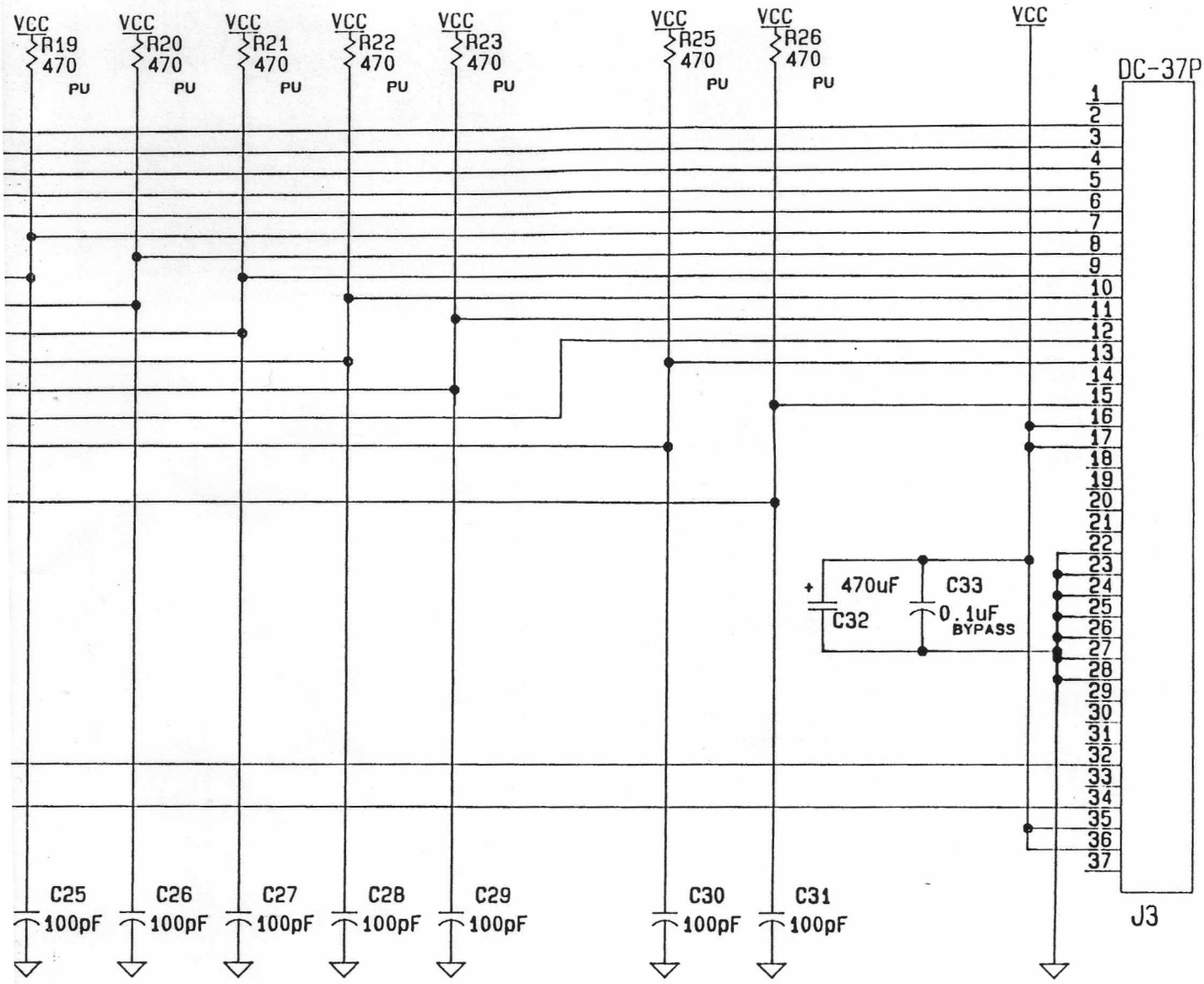
REV	REVISION DESCRIPTION	DATE	APPROVED
	SEE SHEET 1.		



n TEC →

USED ON	DRAWN BY / DATE: S.Yamada 7-28-87	ATARI (JAPAN) CORPORATION Toranomon Kiyoshi Building 3F 4-3-10, Toranomon Minato-ku, Tokyo 105
NEXT ASSY	CHECKED / DATE: K.Kitagawa 8-5-87	TITLE: SCHEMATIC DIAGRAM SLMC 804
MATERIAL	ENGINEER / DATE: T.Okuyo 8-6-87	SIZE: D — DRAWING NO.: C026455 — REV: 2
FINISH	APPROVED / DATE: S.OKAZAKI 8/4/87	SCALE: NONE — SHEET 2 OF 3


VCC
R14
470
PU
VCC
R15
470
PU
VCC
R16
470
PU
VCC
R17
220
PU
VCC
R18
470
PU
CP02
CP03
CP04
CP05
CP06
CP07
CP08
CP09
CP10
CP11
CP12
CP13
CP15
CP32
CP34
C20
100pF
C21
100pF
C22
100pF
C23
100pF
C24
100pF



USED ON	DRAWN BY S. Yamada DATE 7-28-87	ATARI (JAPAN) CORPORATION Toranomon Kiyoshi Building 3F 4-3-10, Toranomon Minato-ku, Tokyo 105
NEXT ASSY	CHECKED K. Kitagawa DATE 8-5-87	TITLE SCHEMATIC DIAGRAM SLMC 804
MATERIAL	ENGINEER T. Ohkijo DATE 8-6-87	SIZE D / DRAWING NO. C026455 / REV 2
FINISH	APPROVED S. OKAZAKI DATE 8/6/87	SCALE NONE / SHEET 3 OF 3

THIRD ANGLE SYSTEM DIMENSION mm

ATARI CORP. 16JUNE87
LASER PRINTER CONTROLLER SILKSCREEN

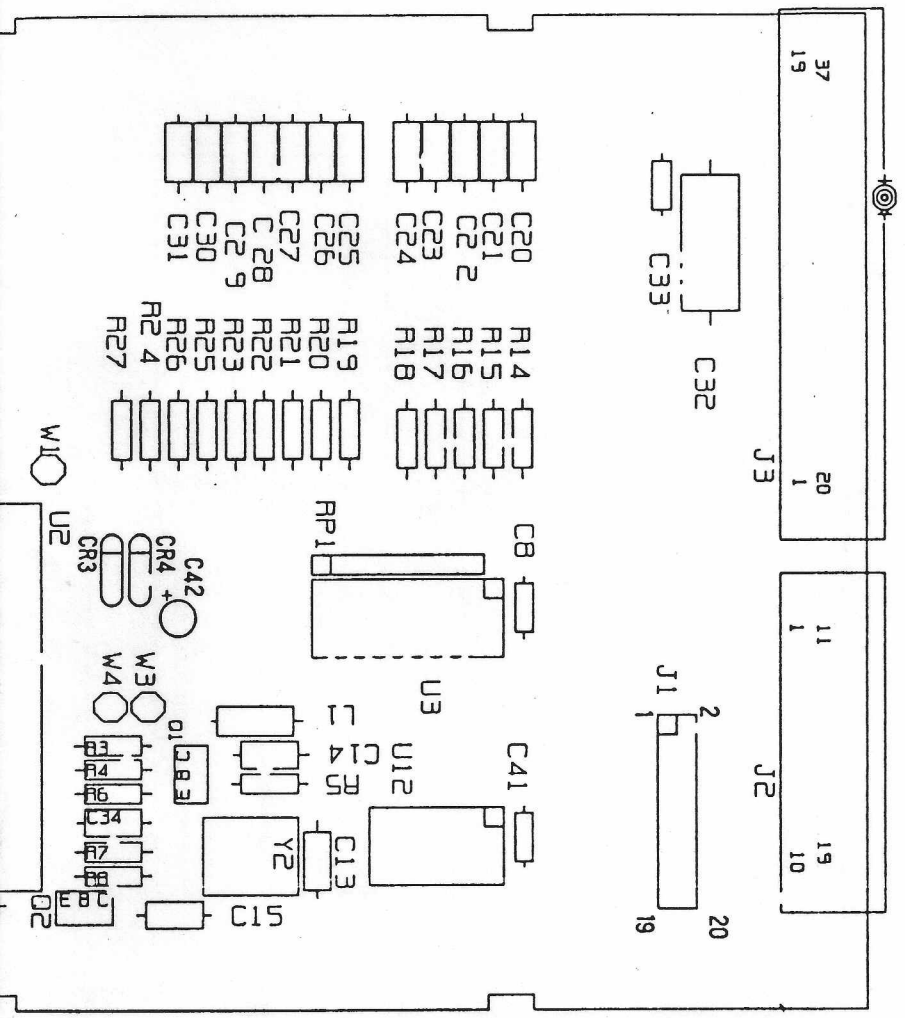
SILK

NOTES—UNLESS OTHERWISE SPECIFIED:

NEXT ASSY

APPLICAT

REV	REVISIONS DESCRIPTION	DATE	APPROVED
	SEE SHEET 1.		



PRINT

TOLERANCES	
UNDER 30	±0.1
30 THRU 300	±0.2
OVER 300	±0.4

MATERIAL

FINISH

USED ON

ION

DRAWN BY / DATE	N. NANBA. 10-6-87
CHECKED / DATE	K. Kitagawa 10-9-87
ENGINEER / DATE	10/7/87
APPROVED / DATE	
APPROVED / DATE	S. OKAZAKI 10/7/87

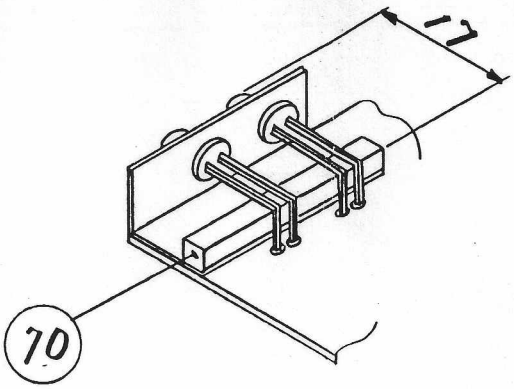
ATARI JAPAN CORPORATION
Toranomon Kiyoshi Building
4-3-10, Toranomon Minato-ku, Tokyo 105

TITLE: PCB SLMC804

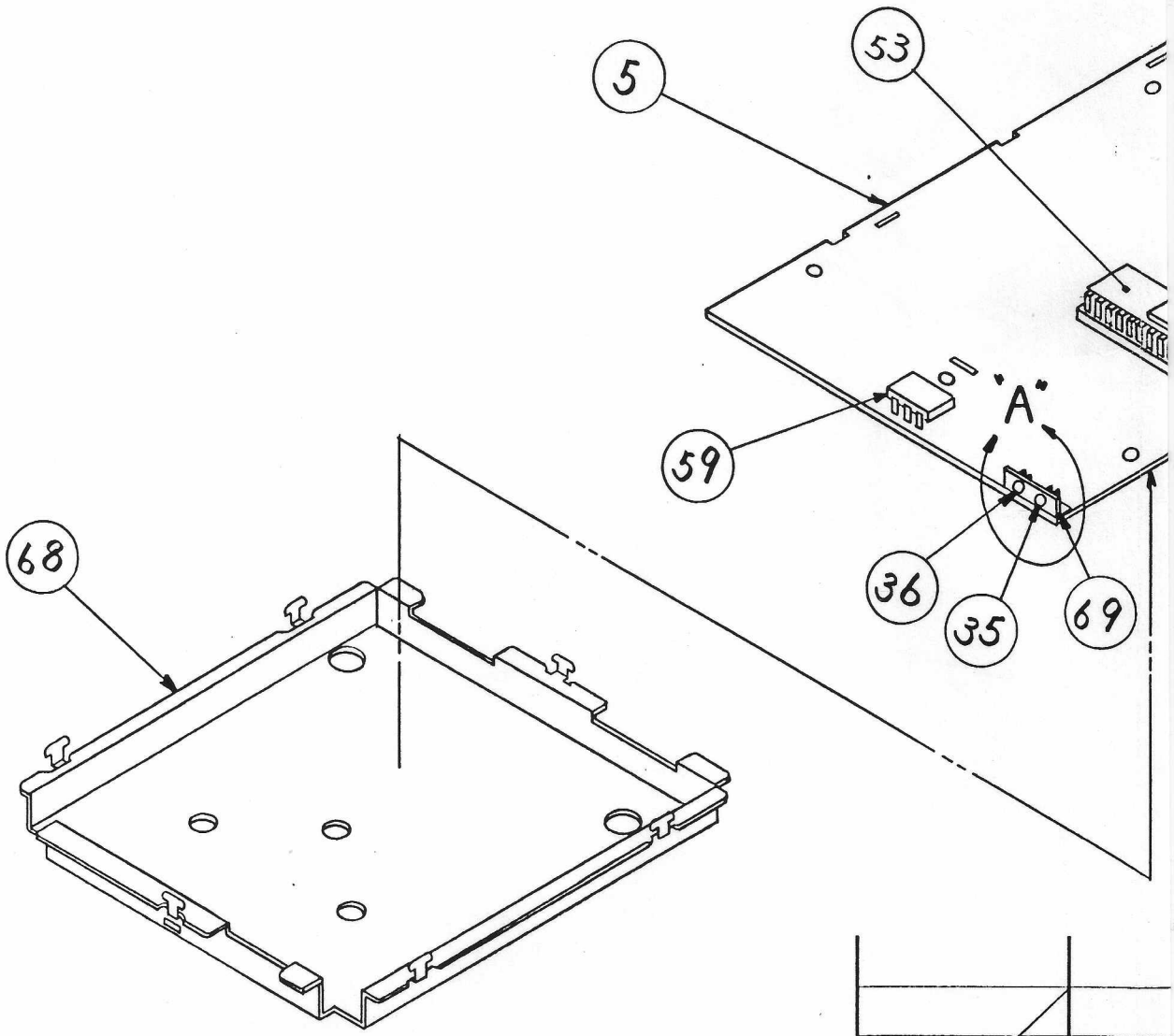
SIZE	DRAWING NO.	REV
B	C100519	2

SCALE NONE | SHEET 2 OF 7

THIRD ANGLE SYSTEM. DIMENSION : mm



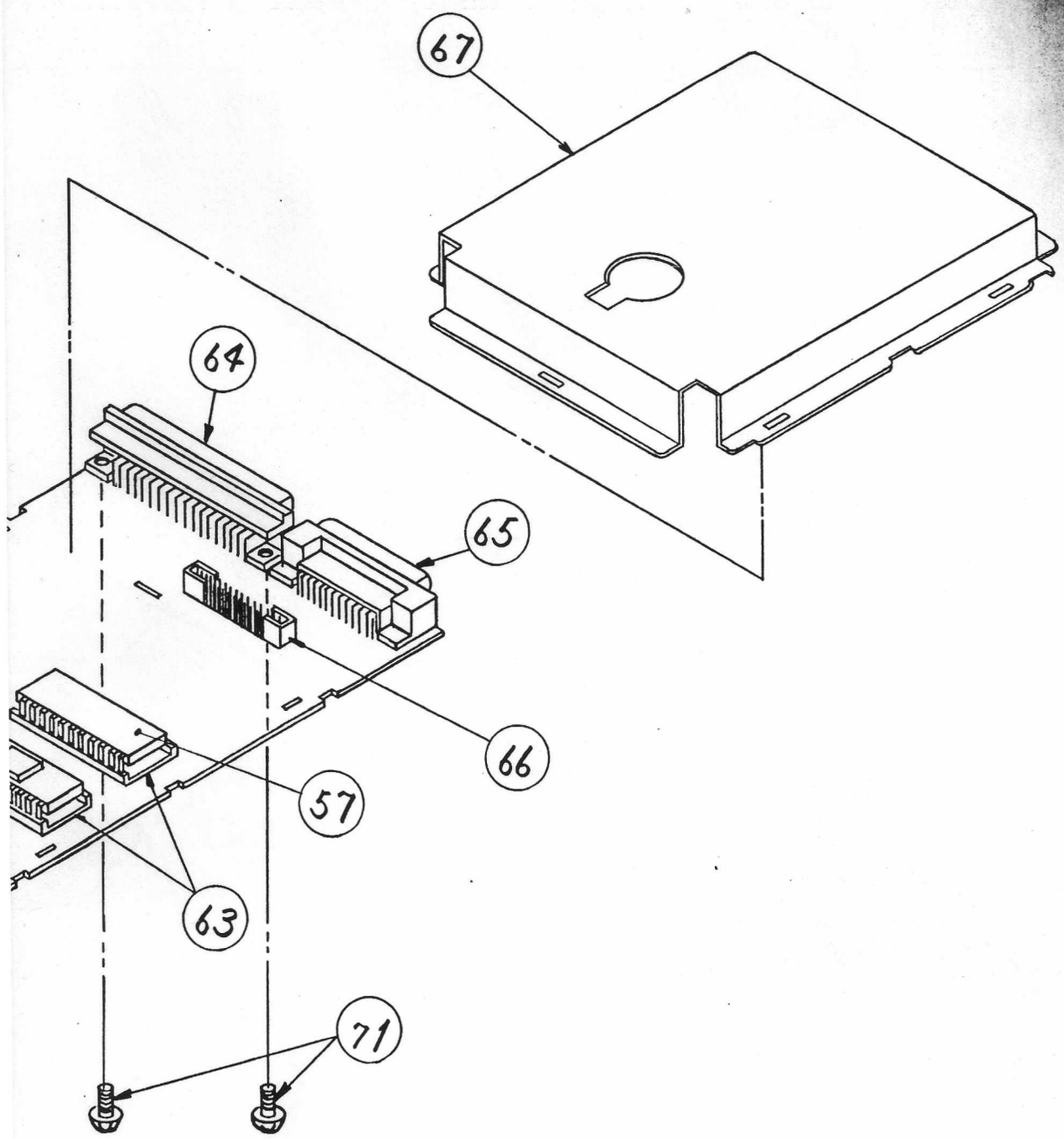
DETAIL "A"



NOTES—UNLESS OTHERWISE SPECIFIED:

	SLMC
NEXT ASSY	USED ORIGINAL
APPLICATION	

REV	REVISIONS DESCRIPTION	DATE	APPROVED
	SEE SHEET 1.		



UNLESS OTHERWISE SPECIFIED TOLERANCES		
ON LINIER DIMENSIONS		ON ANGULAR DIMENSIONS
UNDER 30	±	
30 THRU 300	±	±
OVER 300	±	

MATERIAL

FINISH

804

ON MODEL

DRAWN BY	DATE
H. Kawamata	8-31-87
CHECKED	DATE
K. Kitagawa	9-1-87
ENGINEER	DATE
T. Ashijo	9/1/87
APPROVED	DATE
H. H	9/2/87
APPROVED	DATE
S. OKABAKI	9/3/87

ATARI® **ATARI CORPORATION**

TITLE: PCB ASSY SLMC804

SIZE	DRAWING NO.	REV
B	CA200168-XXX	3

SCALE NONE

SHEET 6 OF 6

THIRD ANGLE SYSTEM. DIMENSION : mm

1. Summary

1- 1 Scope

This specification applies to Laser Printer Model SLM 804.

1- 2 Features

This printer is a Desk Top Page Printer using Electrographic method to produce image on the paper using Semiconductor Laser and it has the following features.

1) It is a non impact printer using Laser Beam Scanning and Dry Electrophotographic imaging technique and printing is very quiet and printing speed is 8 pages per minute.

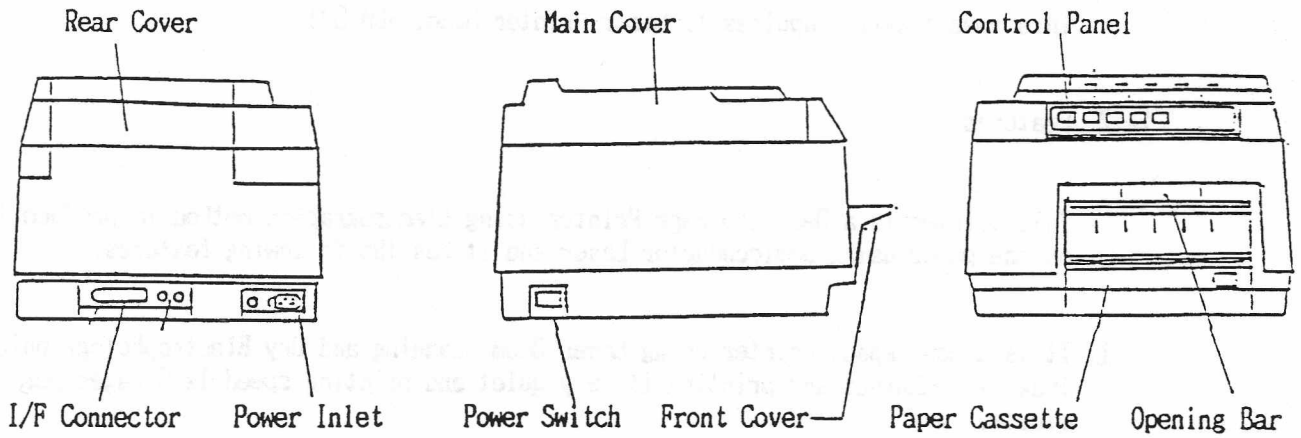
2) Laser Beam Scanning mechanism, Reprographic mechanism and Fixing mechanism are separated into modules and they are easy for maintenance.

3) The top part of the cabinet can be opened manually, and paper jam can be easy cured.

4) This Laser Printer is designed to protect the operator from Laser Beam.

2. Outside Dimension

2- 1 Appearace



2- 2 Dimension

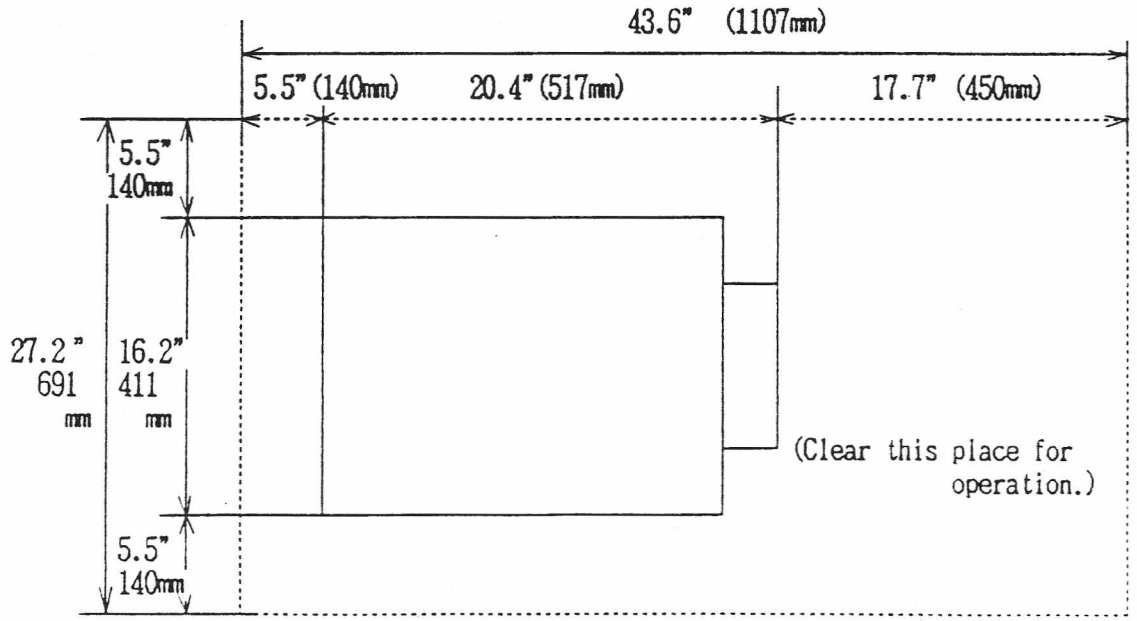
16.2" (W) × 20.3" (D) × 12.2" (H)
(411mm) (517mm) (310mm)

2- 3 Weight

Less than 50.7 lb (23kg)

(Conditions of Drop Test ; One Corner, 3 edge 6 faces and 60cm high)

2- 4 Occupying Space



3. Basic Specification

3- 1	Type	Desk-Top
3- 2	Print Method	Laser Beam Scanning with Dry Type Electrophotography
	Laser Beam Scanning Electrophotography	Semiconductor Laser Polygon Mirror scanner . Photoreceptor : OPC Drum Charger : Corona Discharger Exposure : Laser Beam Scanning Develop : Dry Dualcomponent Transfer : Corona Discharger Fixing : Heat Roll Fixation
3- 3	Print Speed	First Printout Time : Less than 22 Seconds (Letter) Cassette Feed : 8 Pages/Minute (Letter) (continuous printing) Warm up time : Less than 2 Minutes
3- 4	Resolution	300 × 300 Dots/Inch
3- 5	Paper Size	Cassette Feed : A4, B5, Letter, Regal (16 ~21.3 lbs) Manual Feed : Width 3.9" ~ 8.5" Length 5.8"~ 14" (16 ~21.3 lbs) (Standard Post Card, Envelope, Transparency)
3- 6	Paper Cassette	Letter/Legal, A4, B5 (Selectable from cassette of 3types.) Up to 250 sheets (17lbs)
3- 7	Output Tray	Up to 50 sheets (17lbs)
3- 8	Acoustic Noise Level	Printing : Less than 55 db(A) Standby : Less than 45 db(A)

3- 9 Power Supply

AC 90~132V 50/60Hz
AC 198~264V 50Hz
(Selectable from 2 types)

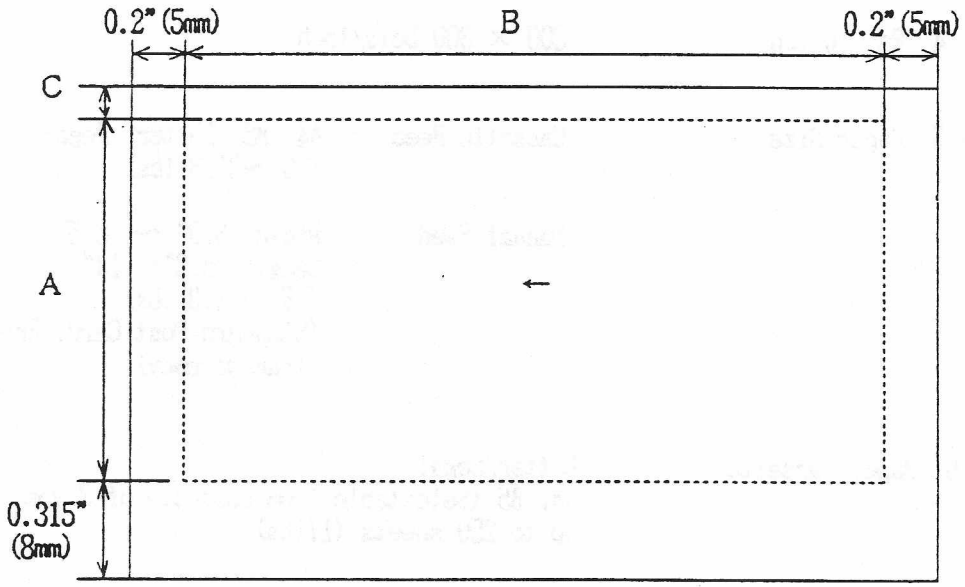
3-10 Environment

	Temperature	Humidity
Operating	10~ 90 °F(10~32.5°C)	20~80% RH
Storage	32~ 95 °F(0~35°C)	35~80% RH
Transport	-4~ 113 °F(-20 ~45°C)	Less than 90% RH

3-11 Safety Standards

UL
CSA
FCC(class A)
TÜV
FTZ

3-12 Printable Area



	A	B	C
Letter (8.5" ×11")	8 "	10.6 "	0.185 "
Regal (8.5" ×14")	8 "	13.6 "	0.185 "
A4 (210×297 mm)	198 mm	287 mm	4 mm
B5 (182×257 mm)	170 mm	247 mm	4 mm

4. Operation Panel

The operational panel is located at upper front of the printer and cosists of 5 indicators.
The specifications of the indicator are as follows:

(1) READY LED ; ○
This LED lights when the printer is in a standby condition and turns off when the printer is in a waiting condition (warming up the heater) or an error occurs.

(2) WAIT LED ; ⏻
This LED lights when the printer is in a waiting condition (warming up the heater) or an error occurs.

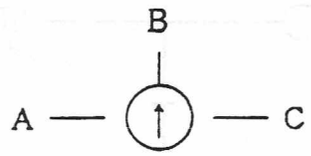
(3) ADD PAPER LED ; ▭
This LED lights when a paper cassette is out of paper or during the manual paper feed mode.

(4) CHECK PAPER PATH LED ;
This LED lights to indicate a paper jam.

(5) REPLACE TONER LED ;
This LED lights to indicate the TE (Toner Empty) conditon.

5. Variohm

a) Drum Sensitivity Adjustment
When replacing the Drum, this Variohm has to be adjusted to compensate the difference between Drum sensitibity.



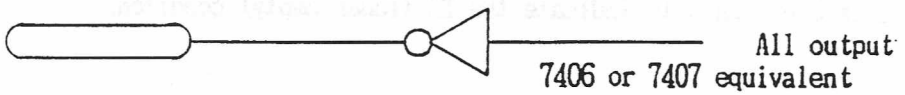
b) Veriohm for adjusting shading or print instensity.
This Variohm is to adjust the intensity of the printouts.

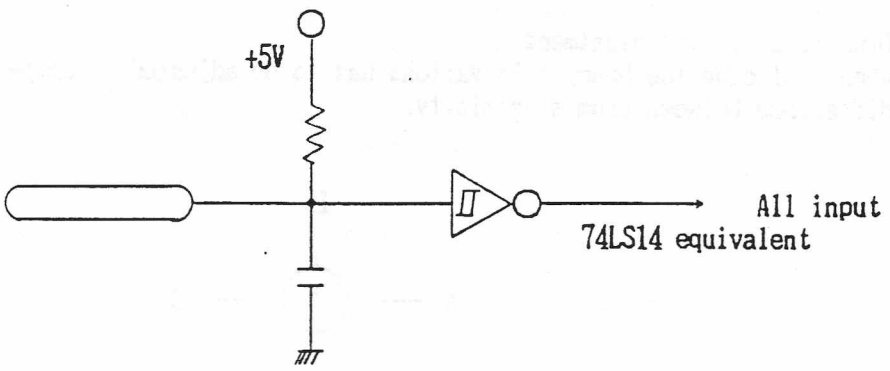
6. Interface

6- 1 Video Interface

1) Pin Assignment

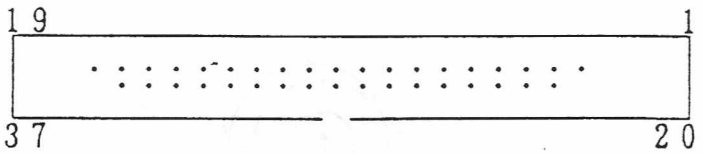
Pin No.	Signal	I/O	Pin No.	Signal	I/O
1	+12V	---	19	NC	--
2	$\overline{REQ}$	OUT	20	-12V	--
3	$\overline{ST}$	IN	21	SG	--
4	$\overline{VSY}$	OUT	22	SG	--
5	$\overline{VCK}$	OUT	23	SG	--
6	$\overline{CAS1}$	OUT	24	SG	--
7	$\overline{VDA}$	IN	25	SG	--
8	$\overline{CAS2}$	OUT	26	SG	--
9	$\overline{Err}$	OUT	27	SG	--
10	$\overline{PE}$	OUT	28	SG	--
11	$\overline{TE}$	OUT	29	SG	--
12	$\overline{PJ}$	OUT	30	SG	--
13	$\overline{AT/MN}$	IN	31	NC	--
14	$\overline{RES}$	OUT	32	NC	--
15	$\overline{WUT}$	OUT	33	NC	--
16	+5V	--	34	$\overline{CONT}$	IN
17	+5V	--	35	+5V	--
18	NC	--	36	+5V	--
			37	NC	--





2) Connecter

FUJITSU;FCN-774J037-G/C



3) Description of Signal

(1) Request (2 pin) REQ

This is the output signal from the printer. When this is on "L" (Low) level it will be able to receive Video Data, and it will become "H" (High) level by the "Start" signal from the hose computer.

(2) Start (3 pin) $\overline{ST}$

This is the input signal from the host computer. When Video Data is ready, host will set this level to "L" level. When this comes to "L" level, the engine controller will become active and printer starts to feed paper.

(3) Video Sync (4 pin) $\overline{VSY}$

This is the output signal from the printer and the Video Data is active on "L" level. The level will be "L" or "H" at each one line scan controls the print area.

(4) Video Clock (5 pin) VCK

This is the output signal from the printer and it is a sync signal for Video Data which one cycle corresponds to one dot. It starts before the Video Sync signal starts and it ends after the Video Sync signal ends. The number of the clock during one scan is not definite.

(5) Video Data (7 pin) $\overline{VDA}$

This is the input from the host computer, and it is the printer data. It is syncronized to the falling edge of the Video Clock signal. Printer will print block when this level is "L".

(6) Error (9 pin) $\overline{ERR}$

This signal is the output signal from printer and this will be on "L" level when printer is on error state. Error state means Polygon motor sync error, memory error, control error, heat fixing control error, paper jam error, paper empty error.

(7) Toner Empty (11pin) $\overline{TE}$

This is the output from printer and tells the host the state of toner empty.

(8) Auto/Manual (13 pin) AT/$\overline{MN}$

This signal is the input signal of the printer from the host, it tells the printer whether it is automatic feed. The printer recognize this signal at the same time printer recognize CONT or ST signal.

(9) +12V (1pin)

±12V +10% 0.15A power output.
It can be used for controller and controller interface.

(10) + 5V (16, 17, 35, 36 pin)

+ 5V +10% 3A power output.
It can be used as controllers power supply.

(11) Frame Ground (2 1 pin) FG

Frame Ground terminal.

(12) Signal Ground (2 0～ 3 0 pin) SG

Signal Ground terminal.

(13) Continue (3 4pin) $\overline{\text{CONT}}$

This signal is the input signal from the host computer, and it informs continuous printing to the printer when this signal is at "L" level. The printer starts feeding the paper even ST signal is not on "L" level after 2 seconds. REQ signal will come to "H" level and the paper will be exhausted without printing, and REQ level will be back to "L" levels.

(14) CAS1 (6 pin) CAS2 (8 pin)

This is an output signal from the printer and it informs the host the kind of paper cassette used.

Kind of Paper	CAS1	CAS2
A4	L	L
B5	L	H
Letter	H	L
Legal	H	H

(15) Paper Empty (1 0 pin) $\overline{\text{PE}}$

This is an output signal from printer and it informs the host computer the paper is empty in the paper cassette. "L" level indicates paper empty.
-It indicates the same even there is no paper cassette.

(16) Paper jam (1 2 pin) $\overline{\text{PJ}}$

This is the output signal from the printer and it informs the host when paper jam occurs. "L" level indicates jam. Also indicates paper jam when cover is open.

(17) -12V (2 0pin)

-12V ±10% 0.15A Power output.
Can be used for controller or controller interface.

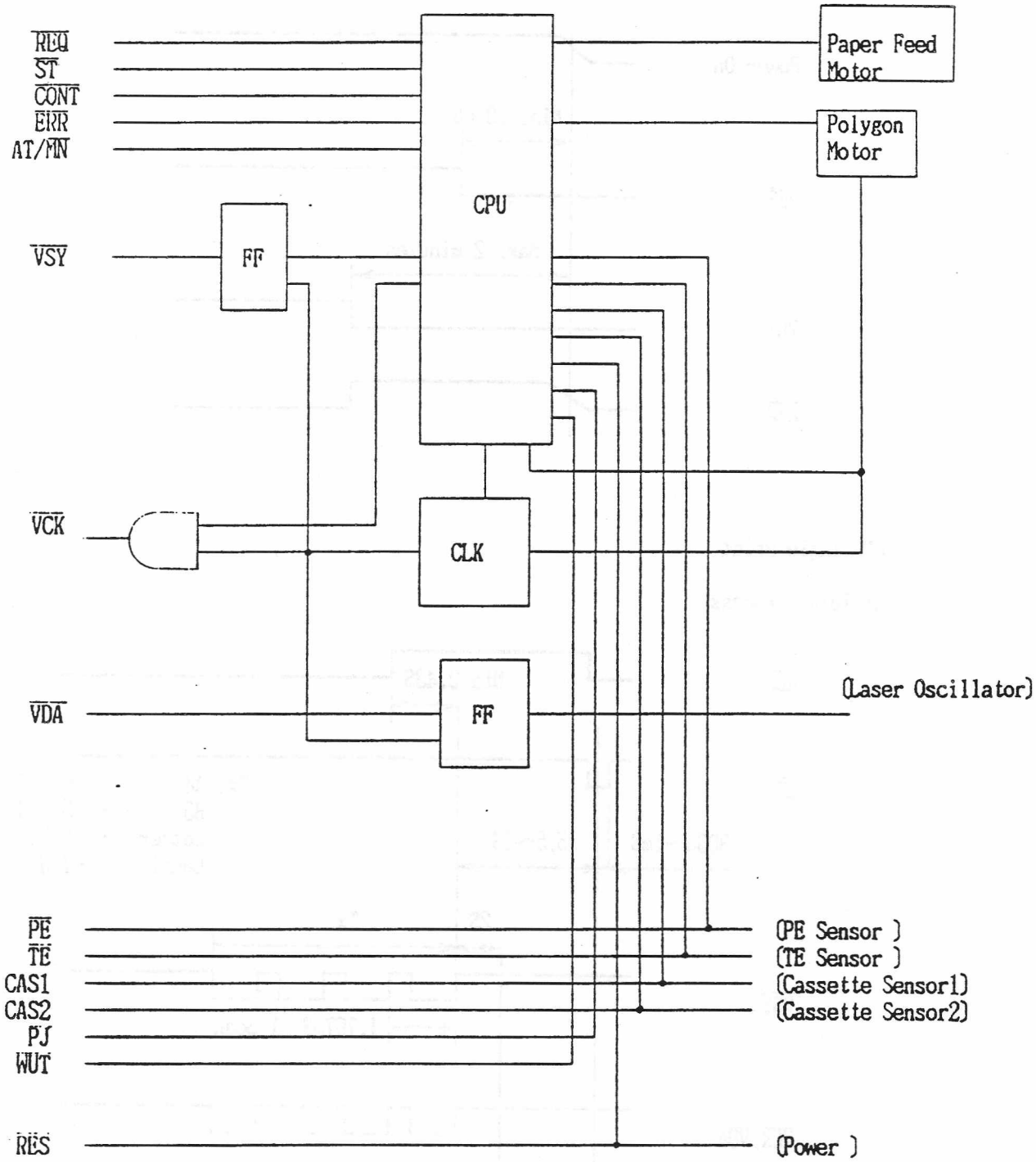
(18) Reset (1 4pin) $\overline{\text{RES}}$

This is the output signal from printer when power is on the set to "L" level for defined period to avoid faulty funcion of the printer.

(19) Warm Up Time (1 5 pin) $\overline{\text{WUT}}$

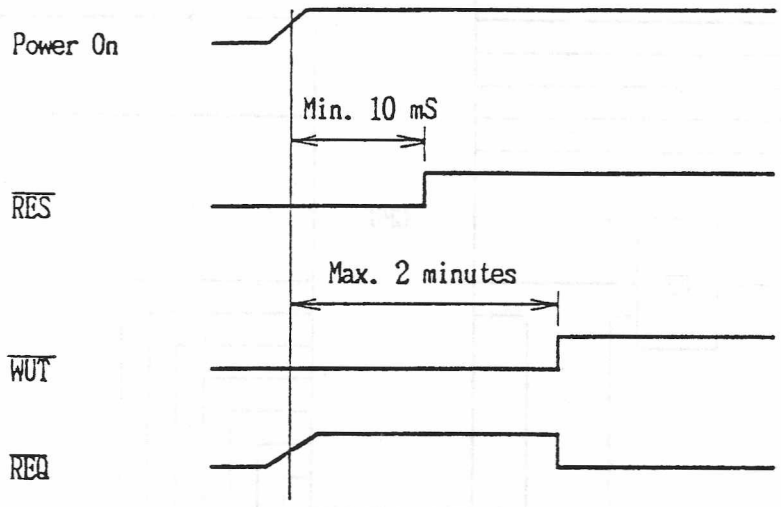
This is the output signal from printer and it informs the host when the heater is ready for print. When it is ready the level is "H".

4) Video Interface Clock Diagram



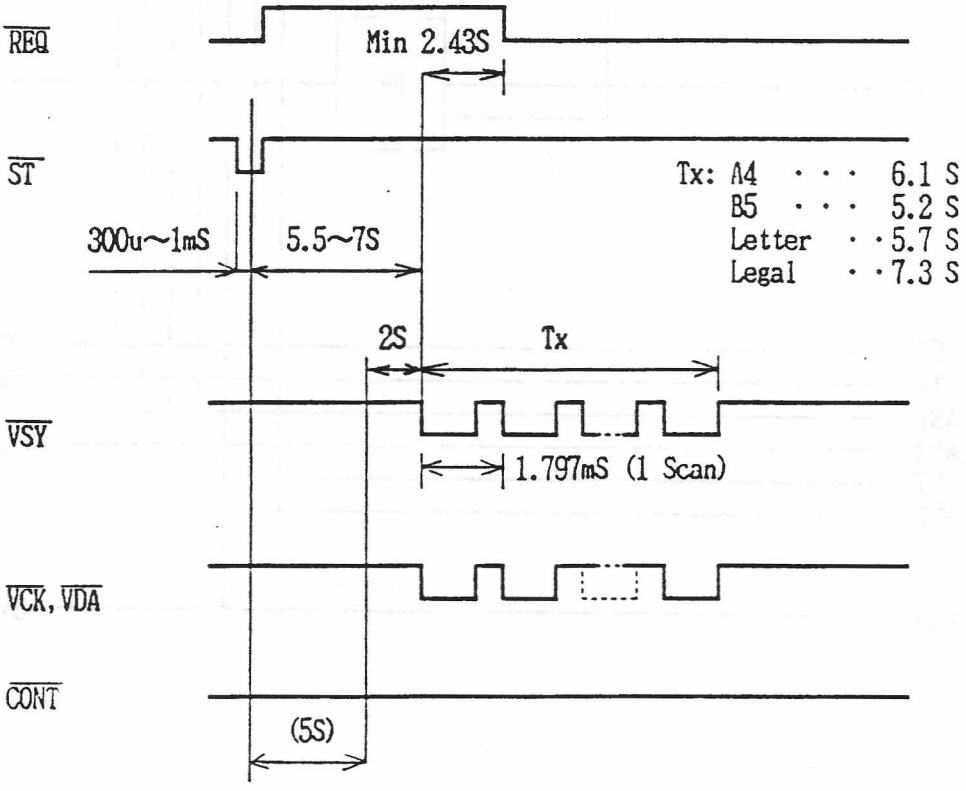
5) Timing Chart

(1) Power On

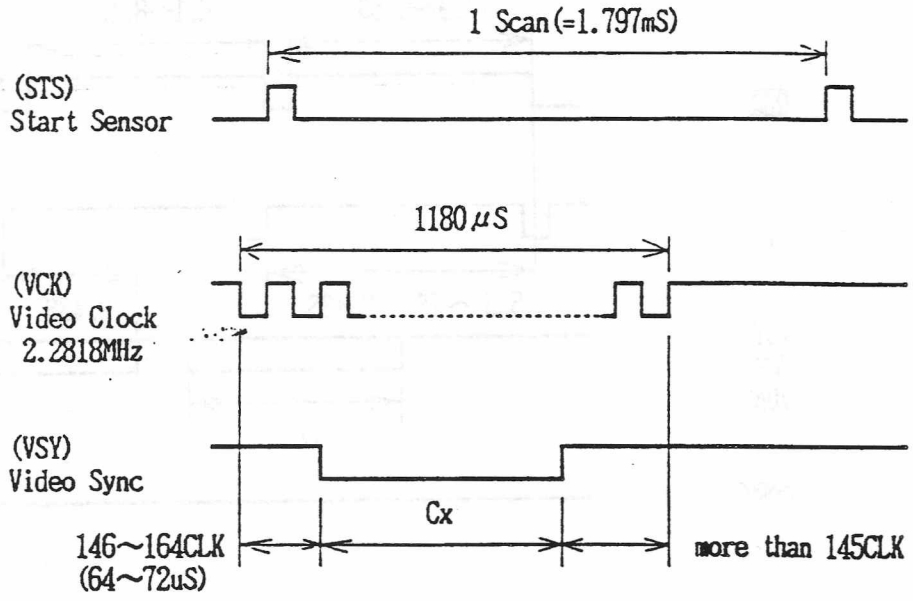


(2) Single Print

a) Total Process

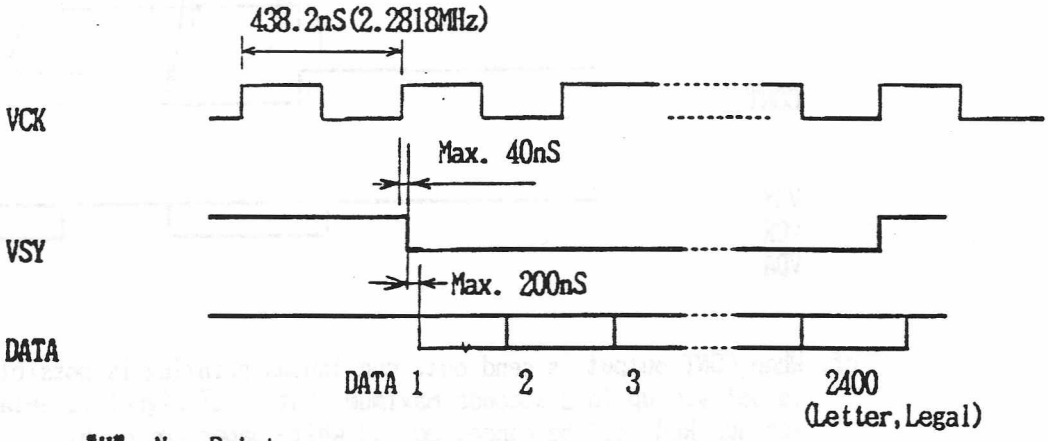


b) Process by One Line Scan



Cx: A4 ····2237 CLK
B5 ····2017 CLK
Letter···2401 CLK
Legal ···2401 CLK

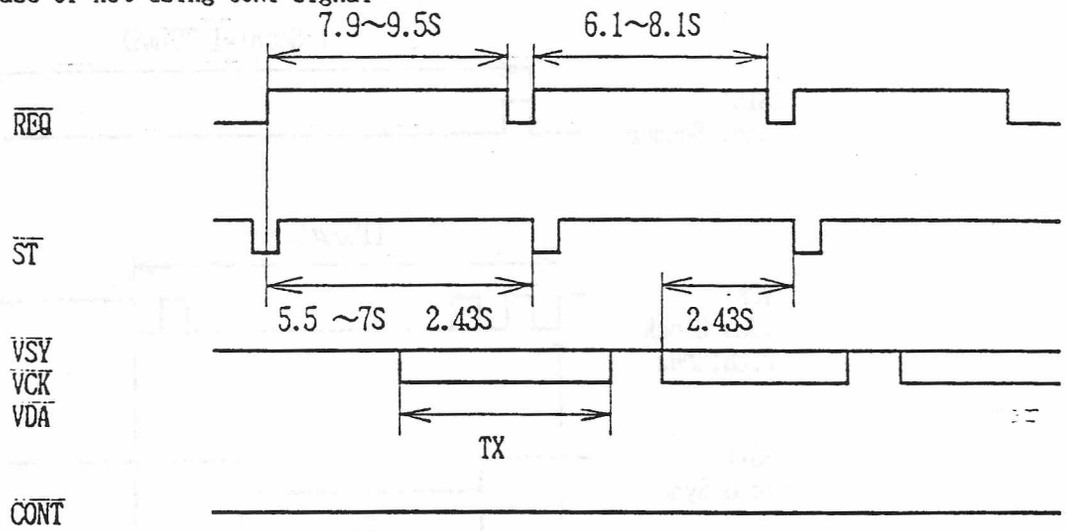
Magnifying



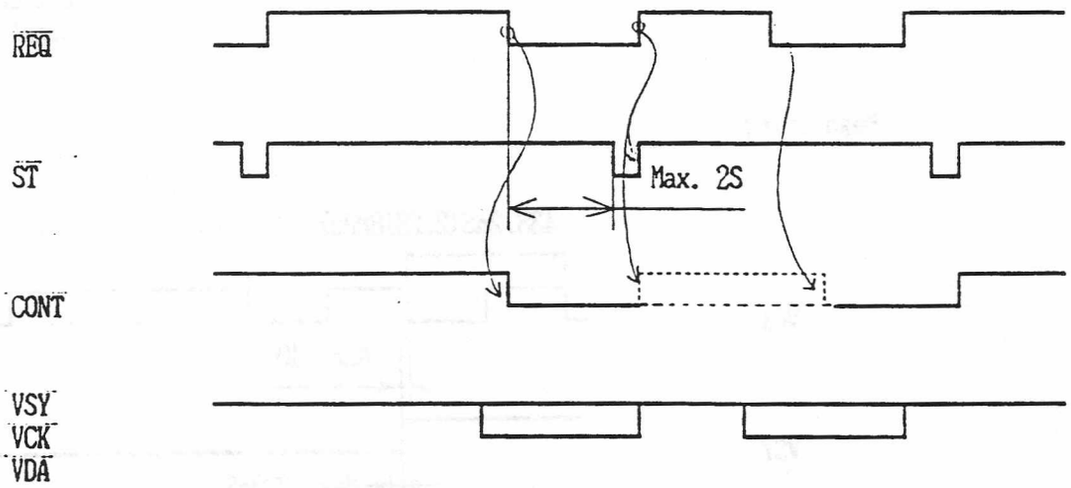
"H"..Non Print
"L"..Print (Black)

(3) Continuous Print

a) In case of not using CONT signal



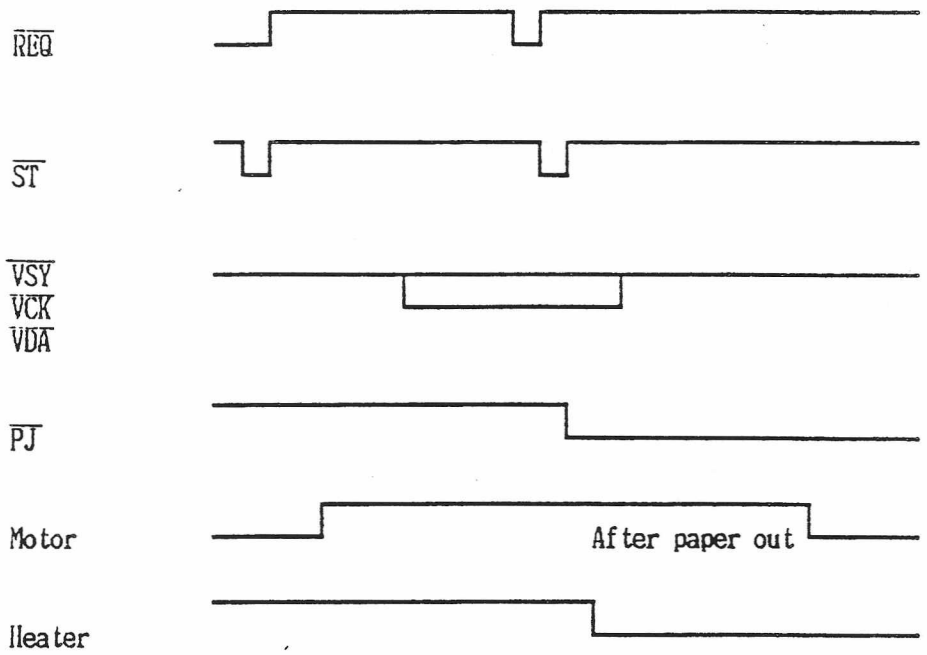
b) In case of using CONT signal



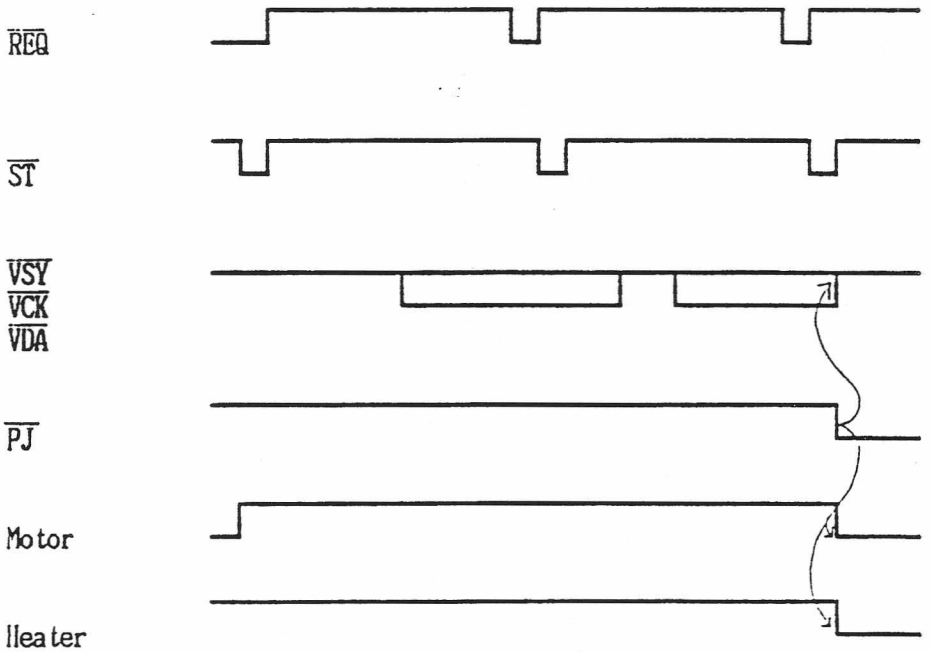
cf. When CONT output is send out, continuous printing is possible even ST signal is delayed up to 2 seconds maximum, but if ST signal is delayed more than 2 seconds REQ will be cancelled and white paper comes out.

(4) Error

a) Paper Jam Error 1, Paper Empty



a) Paper Jam Error 2, 3, Cover Open



<FLOWCHART OF PRINTING SEQUENCE>

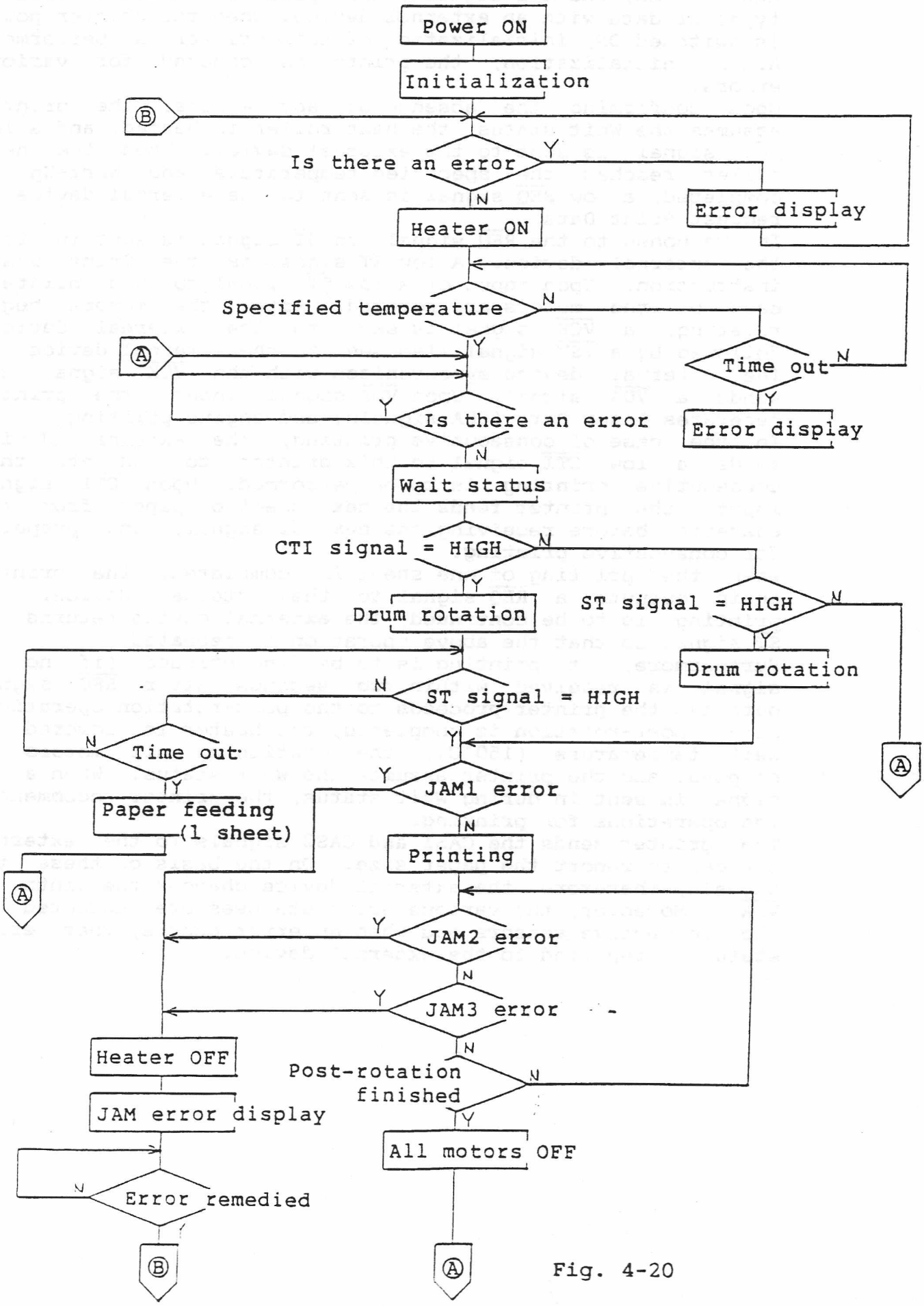


Fig. 4-20

SERVICE MANUAL

MODEL SLM - 804

ORIGINAL JUN., 1987

(REVISED SEP., 1987)

DOCUMENT NO. E0-16172A

TEC TOKYO ELECTRIC CO., LTD.

PRINTED IN JAPAN
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