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MODEL 500 PRO-FX SYSTEM CONTROLLER
PRELIMINARY SERVICE DATA
Manual No. TN500-0
Issued: September, 1982

Nijverheidsweg 11c
3641 RP Mijdrecht
Netherlands
02979-6211
TELEX: 12721 SQNTL NL

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PRELIMINARY INFORMATION
All subject to change.

The System Controller is a Z-80-based microcomputer running from a 4K PROM. Two RAM ICs are standardly included, but up to six RAM ICs can be added.

System Inputs include the control switches, footswitches, tape input (sync tones and data), and the ADC voltage, V_{adc} , which is multiplexed from each module and processed in the computer by U224 DAC and U227 ADC window comparator, similarly to ADC function in the Rev 3 Prophet-5s. U225 System Bus transceiver transfers data from the Module Bus to the Controller data bus.

System outputs include the switch and display LEDs, tape output (sync tones and data), Slot Selects (from U108), data via the transceiver, and V_{dac} , which is strobed to the Module Bus and demultiplexed within installed modules.

TRIMS

The only Controller adjustment is DAC GAIN. The adjustment is sealed at the factory and should not need readjustment (unless a repair in the DAC circuit has been made). The Controller software includes a DAC Trim routine which is used to alternately set all bits to 0 and 1.

1. Push and hold PROGRAM switch #3.
2. Press PROGRAM switch #7.
3. Press PROGRAM switch #1, which causes the DAC to output OOH.
4. Measure DAC offset (for example, .013V).

5. Press PROGRAM switch #2, which causes the DAC to output FFH.
6. Trim DAC gain to read exactly +5V plus the offset measured in step 4 (for example, +5.013V).
7. If necessary, repeat from step 3.
8. To exit trim routine, press PROGRAM switch #8.

PARTS

PCB1 MOTHER BOARD

C101	C-021 2.2 uF 25V Tant
C102	C-036 10 uF 25V Tant
C103	C-037 10000 uF 35V
C104/5	C-045 .1 uF 50V
C106	C-037 10000 uF 35V Elect
C107/8	C-021 2.2 uF 25V Tant
C109	C-036 10 uF 25V Tant
C110	C-056 4.7 uF 25V Tant
C111	C-037 10000 uF 35V
C112	C-020 1 uF 25V Tant
C113	C-036 10 uF 25V Tant
C114	C-021 2.2 uF 25V Tant
C115	C-060 1 uF Elect
D101	D-006 6V 1W ZENER
D102	D-005 1N914
D103-8	D-004 MR501
D109	D-005 1N914
D110	D-004 MR501
D111	D-007 1N5235 6.8V
F101-3	E-095 1A SLO-BLO
J105-11	J-060 30-PIN EDGE CONNECTOR
P102	P-042 6-PIN PC MOUNT
P103	P-061 24-PIN PC MOUNT
P104	P-060 3-PIN XLR
Q101	T-013 2N4441
R101	R-156 243K
R102	R-140 3.32K
R103	R-029 1M
R104	R-008 1K
R105	R-047 10K
R106	R-125 121K
R107	R-155 324K
R108	R-211 5K Trimmer (optional)
R109	R-174 909K
R110	R-156 243K
R111	R-096 68K

PCB2 CPU

C201	C-031 10 uF 10V Tant
C202	C-055 47 uF 35V Elect
C203-8	C-045 .1 uF 50V
C209	C-021 2.2 uF 25V Tant
C210-13	C-045 .1 uF 50V
C214	C-046 .0056 uF 100V Mylar
C215-16	C-045 .1 uF 50V
C217	C-003 33pF 50V Disc
C218	C-014 .02 uF 50V Mylar
C219/18	Not used
C221-22	C-045 .1 uF 50V
D201-6	D-005 1N914
D207	D-001 1N4002 100V 1A

NOTE: SCI #R-001 THROUGH R-099 ARE 5%
 R-101 THROUGH R-177 ARE 1%
 R-200 THROUGH R-228 ARE POTENTIOMETERS

R201	R-067 3.9K
R202	R-004 330
R203-5	R-025 100K
R206	R-022 75K
R207	R-014 15K
R208	R-025 100K
R209	R-040 22K
R210	R-025 100K
R211	R-219 200K POT
R212	R-011 4.7K
R213	R-025 100K
R214/15	R-026 200K
R216	R-066 300K
R217	R-156 243
R218/19	R-014 15K
R220-22	R-011 4.7K
R223	R-139 1.82K
R224	R-025 100K
R225	R-012 10K
R226/27	R-107 4.99K
R228	R-144 20K
R229/30	R-115 301K
R231	R-156 243K
R232/33	R-112 15K
R234	R-028 470K

U201-5	I-043 6116 LP
U206	I-040 2732 EPROM
U207-10	I-043 6116 LP
U211	I-117 74LS138 3-8 DECODER
U212	I-503 5 MHz CLOCK
U213	I-025 Z-80 CPU
U214	I-117 74LS138 3-8 DECODER
U215	I-241 74C32

U216	I-117 74LS138 3-8 DECODER
U217	I-008 7474 DUAL FLIP-FLOP
U218	I-107 74LS32 QUAD 2-IN OR
U219	I-230 74C02 QUAD NOR
U220	I-123 74LS10
U221	I-119 74LS174 HEX QUAD D FLIP-FLOP
U222	I-101 74LS00 QUAD NAND
U223	I-216 4503 HEX 3-STATE BUFFER
U224	I-504 AD558 DAC
U225	I-124 74LS245
U226	I-216 4503 HEX 3-STATE BUFFER
U227	I-302 LM339 QUAD COMPARATOR
U228	I-316 NE5534

PCB3 CONTROL PANEL

C301-7 C-045 .1 uF 50V

D301-13 See S301-13

DS301/2	L-006 LED RECTANGULAR
DS303	see S309
DS304	L-001 LED LG. RED
DS305	see S310
DS306	L-006 LED RECTANGULAR
DS307	see S313
DS308	L-006 LED RECTANGULAR
DS309	see S311
DS310	L-001 LED LG. RED
DS311	see S312
DS312/13	L-006 LED RECTANGULAR
DS314	L-001 LED LG. RED
DS315	L-005 6740 DUAL DIG MAN DISPLAY
DS316	L-001 LED LG. RED

J301 J-060 30-PIN EDGE CONNECTOR

Q301 T-003 2N4250

QA301 T-011 3082

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R301	R-078 39K
R302	R-010 2K
R303-9	R-078 39K
R310/11	R-010 2K
R312	R-012 10K

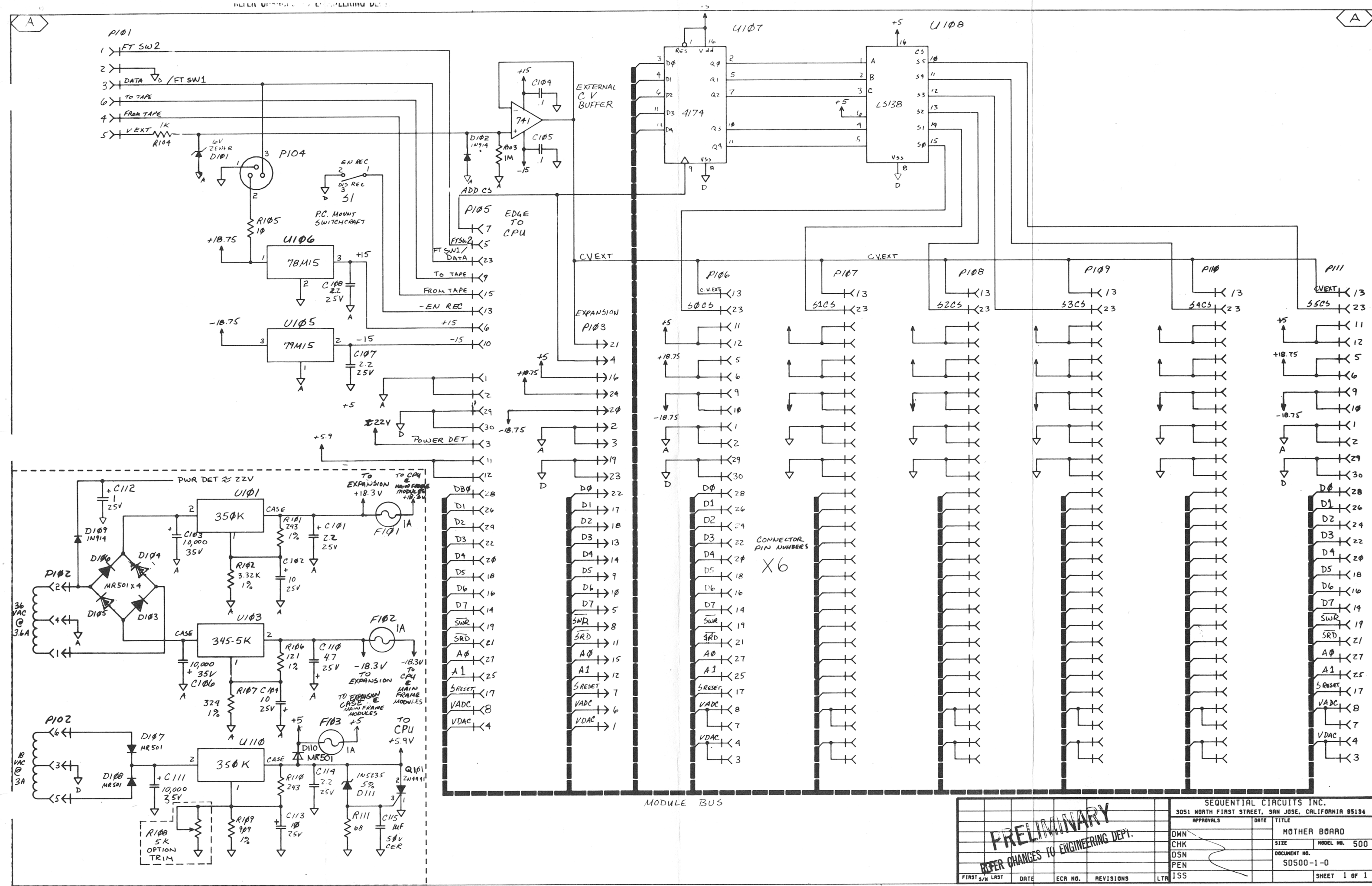
RA301 R-301 22K x 15 NETWORK

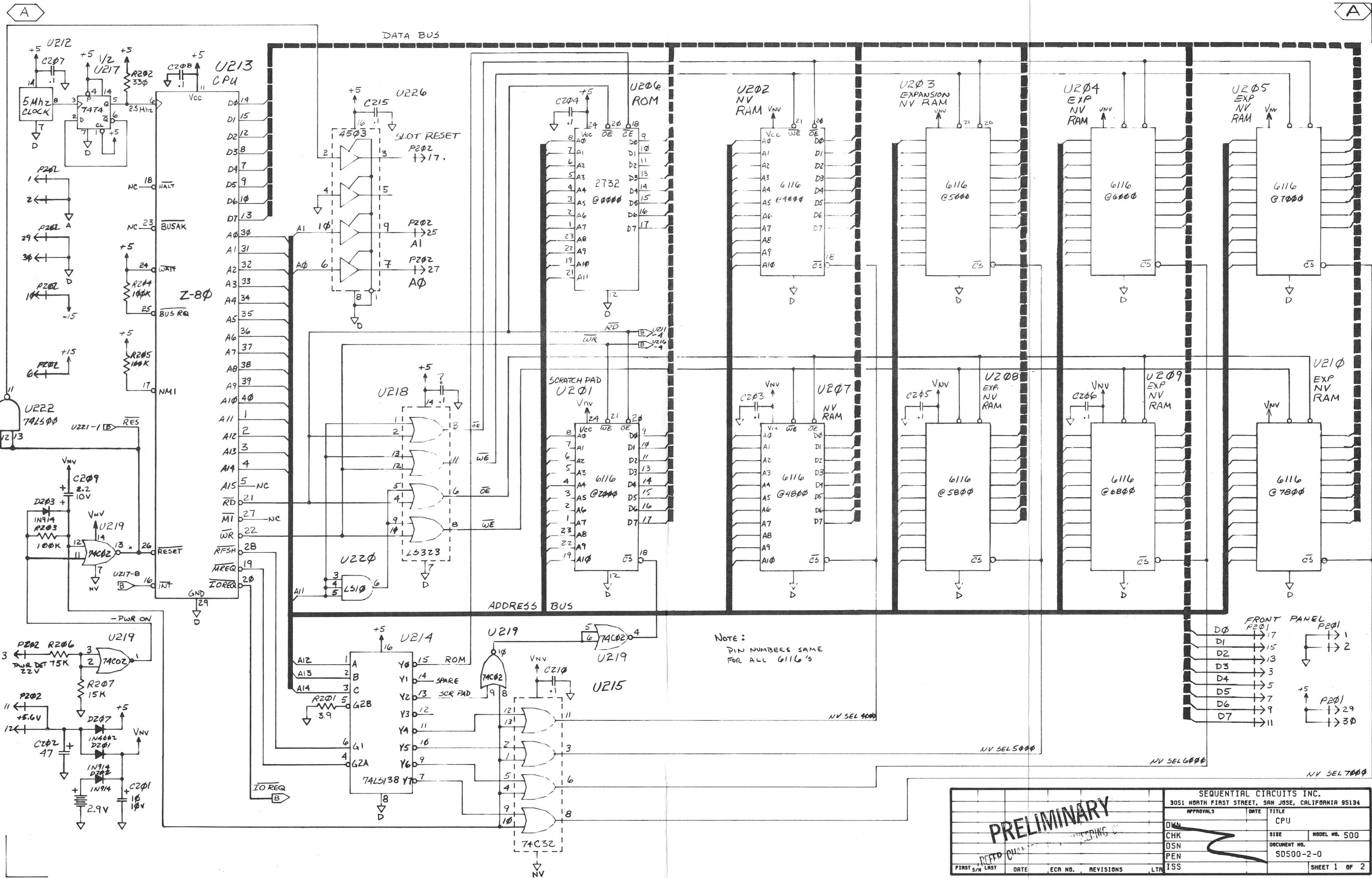
S301-8 S-058 SWITCH SRL BLK
S309 S-030 SWITCH SRL LED ORG
S310-13 S-028 SWITCH SRL LED BLK

U301 I-227 4042 QUAD LATCH
U302 I-235 MC1413 (2003)
U303/4 I-216 4053 HEX STATE BUFFER
U305 I-228 4174 HEX LATCH
U306 I-205 4013 DUAL FLIP-FLOP

DOCUMENTS

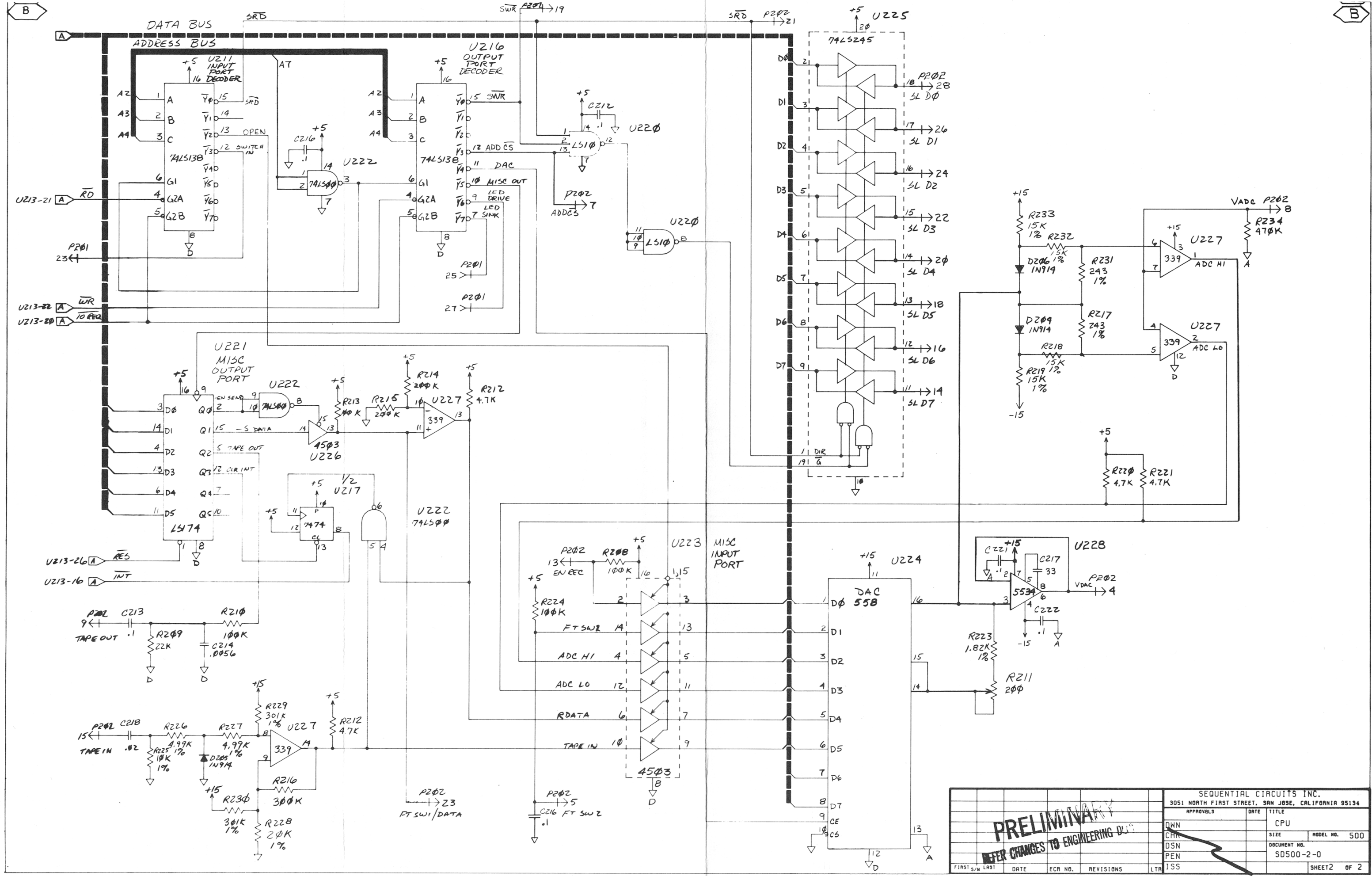
ABSTRACT SCHEMATIC
SD500-1-0 MOTHERBOARD
SD500-2-0 (1/2) CPU
SD500-2-0 (2/2) CPU
SD500-3-0 CONTROLLER FRONT PANEL
STANDARD MODULAR INTERFACE



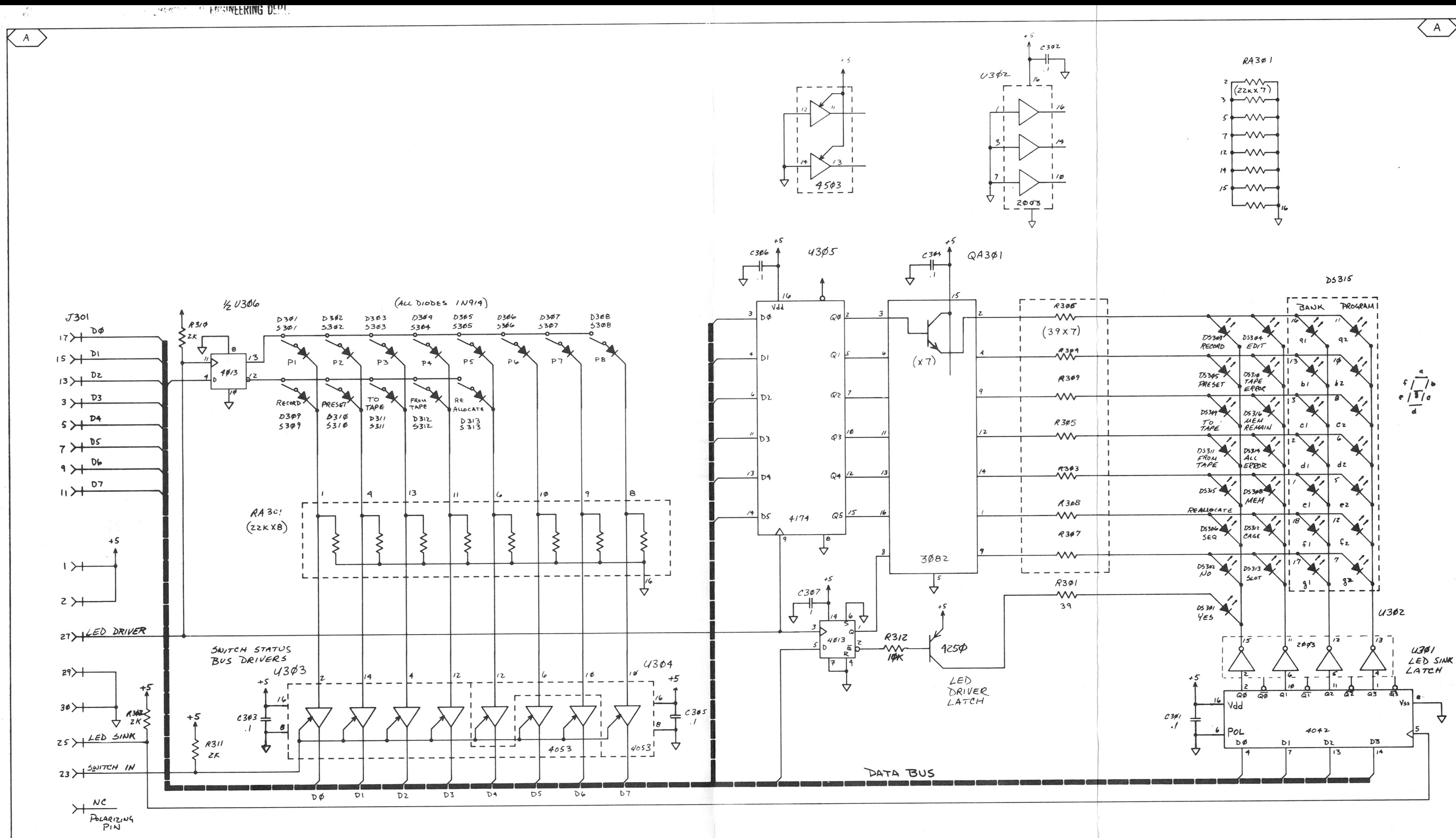


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<p style="text-align: center; font-weight: bold; font-size: 1.2em;">PRELIMINARY</p> <p style="text-align: center;">REFER CHANGES TO ENGINEERING DESIGNS</p>		SEQUENTIAL CIRCUITS INC. 3051 NORTH FIRST STREET, SAN JOSE, CALIFORNIA 95134	
		APPROVALS QWN CHN DSN PEN ISS	DATE
FIRST, S/W, LAST 	DATE 	ECR NO. 	REVISIONS



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REFER CHANGES TO ENGINEERING DEPT.				3051 NORTH FIRST STREET, SAN JOSE, CALIFORNIA 95134			
APPROVALS	DATE	TITLE	DATE	APPROVALS	DATE	TITLE	DATE
DWN		FRONT PANEL		ISS		FRONT PANEL	
CHK		MODEL NO. 500					
DSN		DOCUMENT NO.					
PEN		S0500-3-0					
FIRST	LAST	DATE	ECA NO.	REVISIONS	LTR		SHEET 1 OF 1

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