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TELEX: 364412 INTR

**PRO-FX MODULE 512 DISTORTION  
PRELIMINARY SERVICE DATA**  
Manual No. TN512-0  
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.**

U113 8255 Programmable Peripheral Interface has three bus groups, denoted PA, PB and PC. The PA bus provides switch bits to U109 switch latch. The PB bus accepts the three switch inputs, plus a low signal from Q111 which codes the number of pots. The PC bus outputs the switch latch strobe, pot and S/H addresses and strobes to the Vadc multiplexer and Vdac demultiplexer. The Vadc multiplexer sequentially samples the pots to be digitized by the ADC window comparator in the System Controller. Likewise, control voltages for the Distortion module VCAs and VCF originate in the System Controller DAC and are output via the Vdac demux.

## CHECK/TRIM PROCEDURE

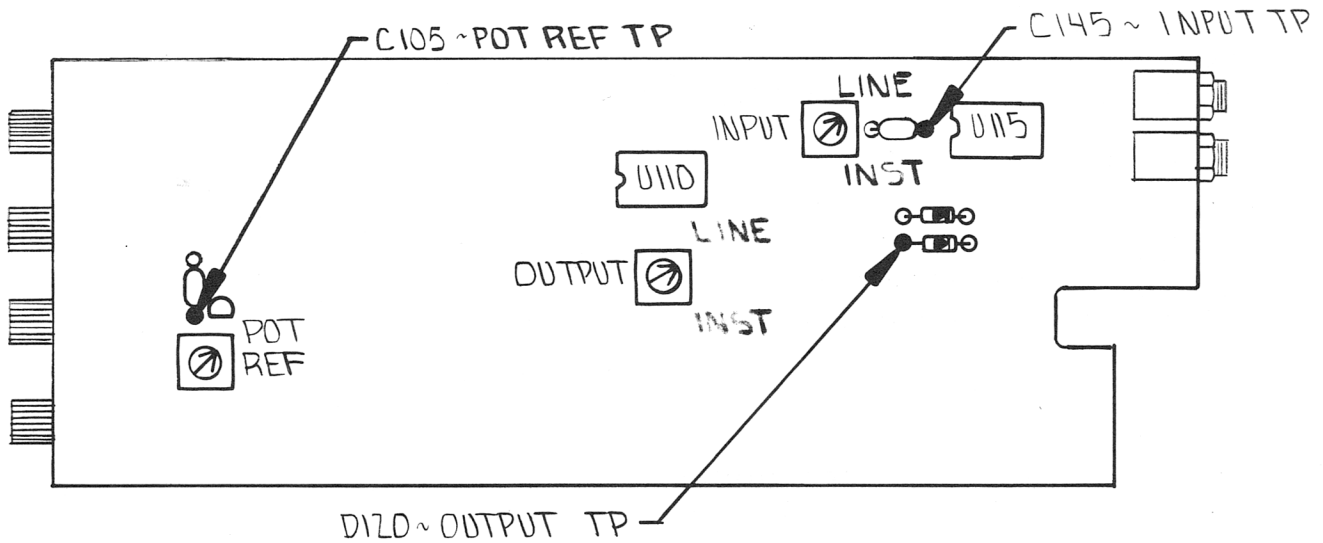


Fig. 512-1

1. Install the Pro-FX extender card (SCI #PC500-4-1) and connect module.
2. Check POT Ref: a) Switch power on, b) Turn all knobs to zero (fully counterclockwise), c) Switch PRESET off to enter Manual mode, d) Probe where shown on figure, or at "top" of any pot e) Check Pot Ref voltage and trim to  $+5.100V \pm 0/-0.05$ , if necessary.
3. Attach scope probes to module input at C145, and to output at D120 (see figure).
4. INPUT and OUTPUT Gain Trimmers
  - a. Input = 1 Vp-p, 1 kHz sine wave (Pro-One w/ filter in resonance).
  - b. Disable module.
  - c. Set trimmers and check as follows:
 

INPUT	OUTPUT	OUTPUT SIGNAL
INST	INST	Unity Gain (1 Vp-p)
LINE	LINE	Unity Gain
INST	LINE	Gain of greater than 10 (approx. X20)
5. Peak Detector Circuit
  - a. Turn up input signal until output reaches 20 Vp-p.
  - b. Check that PEAK LED is on.
  - c. Return Gain trimmers to Line setting.
  - d. Enable module.

## 6. POT Functions

Use the following table to set up condition to check output:

POT SETTINGS					
LEVEL	SUSTAIN	TONE	DIST	INPUT	OUTPUT
MAX	0	MAX	0	1 Vp-p	x2 gain (approx.)
0	0	MAX	0	1 Vp-p	10 mV (max.)
Set for unity before others	MAX	MAX	0	100 mVp-p	1 Vp-p (approx.)
No Change	0	MAX	MAX	100 mVp-p	1 Vp-p
Unity @ 1 kHz	0	MAX	0	1 Vp-p @ 1 kHz Increase to 20 kHz	500m Vp-p @ 20 kHz
No Change	0	0	0	Return to 1 kHz	500 mVp-p
Connect EXT CV PEDAL or any 0-5V source.				1 Vp-p sine @ 1 kHz	
MAX	0	MAX	0	Set EXT CV to 0V	0 - x2 gain
MAX	0	MAX	0	Set EXT CV to 5V	x2 gain
1/4	0	MAX	MAX	Disengage EXT LEVEL Engage EXT DIST	0 - MAX
1/4	0	MAX	MAX	Set EXT CV to 0V	No Dist
1/4	0	MAX	MAX	Set EXT CV to 5V	Max Dist

If using Pro-One, set RELEASE to 5.

No Change    MAX            MAX            MAX            Disengage EXT DIST

Trigger signal and listen for smooth transition to noise floor with no level oscillations.

7. These bench tests will reveal most malfunctions, but a final playing test using a guitar is recommended to verify that all functions are providing the desired musical results.

## PARTS

C101-5	C-016 .1 uF 50V
C106	NOT USED
C107	C-008 .001 uF 50V Mylar
C108	C-004 100 pF 50V Disc
C109	C-057 .003 uF 50V
C110	C-021 2.2 uF 25V Tant
C111	C-049 150 pF Disc
C112-15	C-012 .01 uF 50V
C116	C-045 .1 uF 50V
C117	C-004 100 pF 50V Disc
C118/19	NOT USED
C120-22	C-045 .1 uF 50V
C123	C-012 .01 uF 50V
C124/25	C-045 .1 uF 50V
C126/27	C-012 .01 uF 50V
C128	C-045 .1 uF 50V
C129	C-012 .01 uF 50V
C130	C-045 .1 uF 50V
C131	C-049 150 pF Disc
C132	C-045 .1 uF 50V
C133	C-046 .0056 uF
C134/35	C-016 .1 uF 50V
C136	C-045 .1 uF 50V
C137	C-050 1 uF 10V Elect
C138	C-045 .1 uF 50V
C139	C-016 .1 uF 50V
C140	C-004 100 pF 50V Disc
C141/42	C-045 .1 uF 50V
C143	C-021 2.2 uF 25V Tant
C144	C-002 10 pF
C145	C-050 1 uF 10V Elect
C146	C-016 .1 uF 50V
C147	C-004 100 pF 25V Tant
C148	C-045 .1 uF 50V
C149	C-018 .22 uF 35V Tant
C150/51	C-021 2.2 uF 25V Tant
C152	C-018 .22 uF 35V Tant
C153	C-055 47 uF 35V Mylar
C154/55	C-016 .1 uF 50V
C156	C-008 .001 uF 50V Mylar
C157	C-006 470 pF
C158/59	C-045 .1 uF 50V
DS101-03	see S101-03
DS104	L-002 Small LED
D101-13	D-005 1N914
D114-17	D-008 1N34
D118-20	D-005 1N914

J101/2 J-048 PHONE JACK MONO PCB SHORT  
 J103-5 J-061 Rt. angle switch socket  
 J106 Z-222 LED Connector Harness (E-009 Teflon; E-108 Wire; J-066 Housing;  
 J-067 Pins)

Q101/2 2N3904 NPN TRANSISTOR  
 Q103/4 2N4250 PNP TRANSISTOR  
 Q105/6 2N3904 NPN TRANSISTOR  
 Q107-9 2N4250 PNP TRANSISTOR  
 Q110/11 2N3904 NPN TRANSISTOR

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

R101-4 R-012 10K  
 R105 R-025 100K  
 R106 R-004 330  
 R107 R-025 100K  
 R108 R-211 5K Trim  
 R109 R-025 100K  
 R110/11 R-004 330  
 R112 R-022 75K  
 R113 R-010 2K  
 R114 R-036 3.3K  
 R115 R-022 75K  
 R116 R-006 300K  
 R117-22 R-012 10K  
 R123 R-004 330  
 R124-6 R-029 1M  
 R127 R-016 30K  
 R128 R-025 100K  
 R129/30 R-012 10K  
 R131 R-025 100K  
 R132 R-030 2.2M  
 R133 R-020 62K  
 R134/35 R-012 10K  
 R136 R-025 100K  
 R137 R-008 1K  
 R138 R-012 10K  
 R139 R-004 330  
 R140 R-018 47K  
 R141-44 R-043 47M  
 R145 R-025 100K  
 R146 R-008 1K  
 R147 R-003 220K  
 R148 R-101 2K  
 R149 R-180 237K  
 R150 R-011 4.7K  
 R151 R-025 100K  
 R152/53 R-082 820K  
 R154 R-025 100K

R155	R-022 75K
R156	R-179 221K
R157	R-018 47K
R158	R-087 220K
R159	R-062 5.6K
R160/61	R-028 470K
R162	R-018 47K
R163	R-025 100K
R164	R-014 15K
R165	R-201 20K Pot
R166	R-008 1K
R167	R-012 10K
R168	R-067 3.9K
R169/70	R-022 75K
R171	R-076 27K
R172	R-153 200K
R173/74	R-028 470K
R175	R-012 10K
R176	R-041 150K
R177	R-015 20K
R178	R-016 30K
R179	R-007 510
R180	R-009 1.5K
R181	R-153 200K
R182	R-014 15K
R183	R-041 150K
R184	R-023 82K
R185	R-094 180K
R186	R-030 2.2M
R187	R-073 24K
R188	R-203 25K Pot
R189	NOT USED
R190	R-025 100K
R191	R-023 82K
R192	R-039 18K
R193	R-025 100K
R194	R-026 200K
R195	R-025 100K
R196	R-042 160K
R197	R-024 91K
R198	R-025 100K

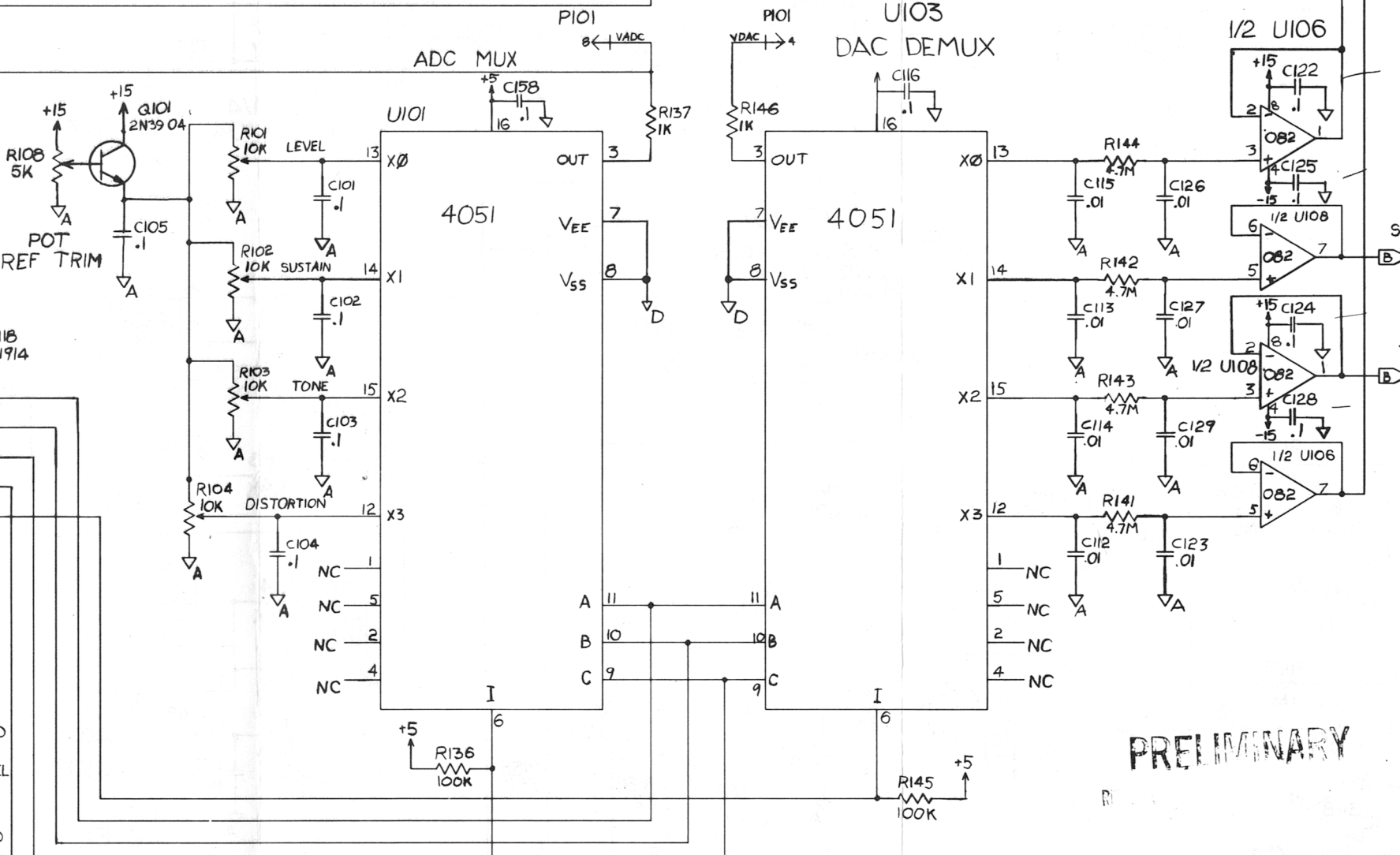
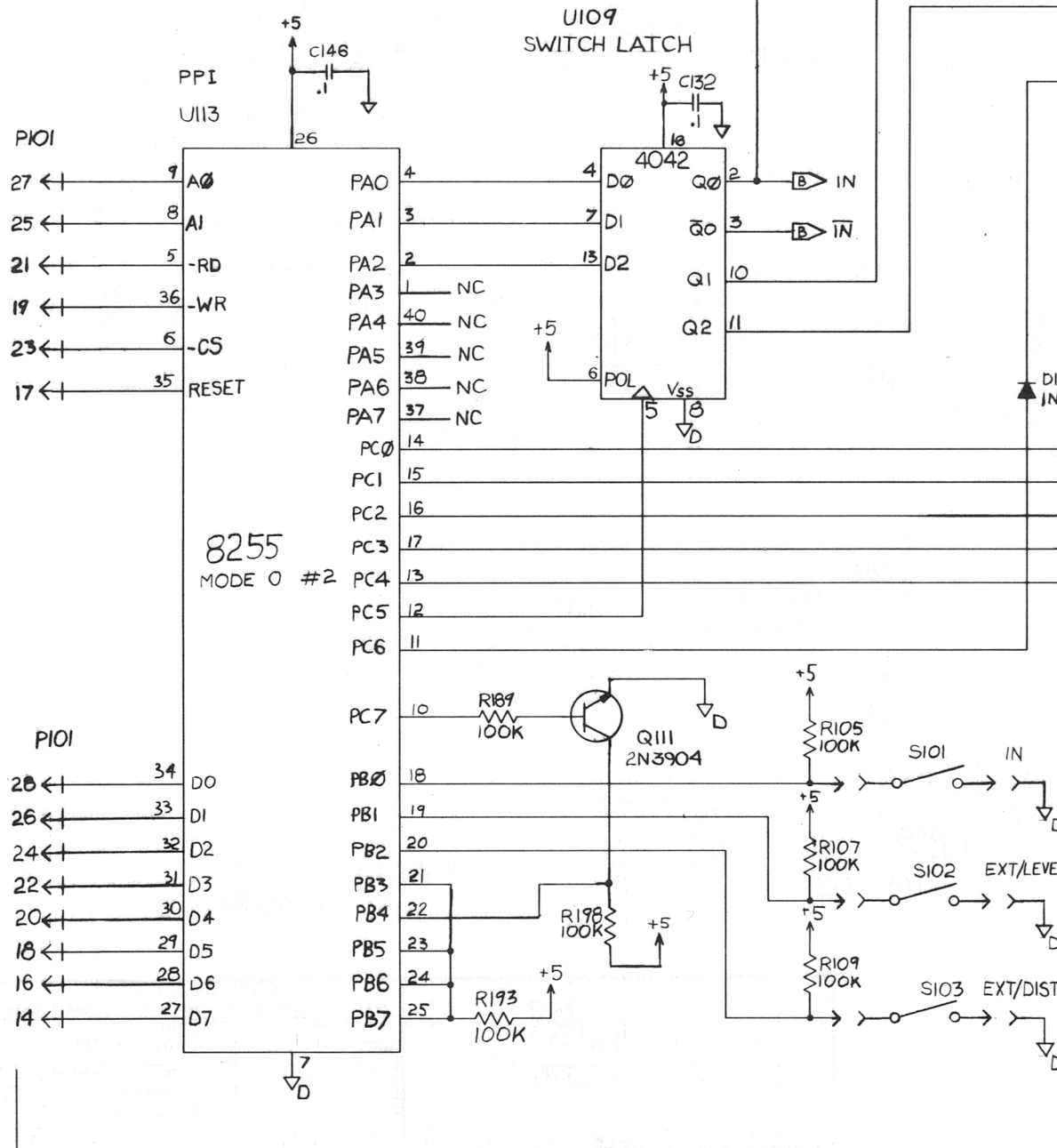
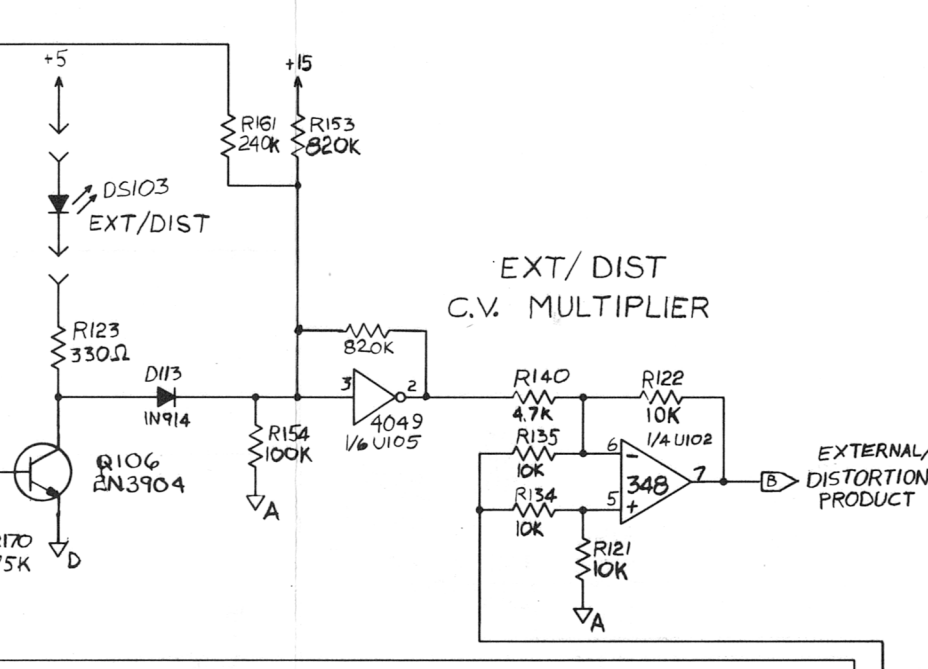
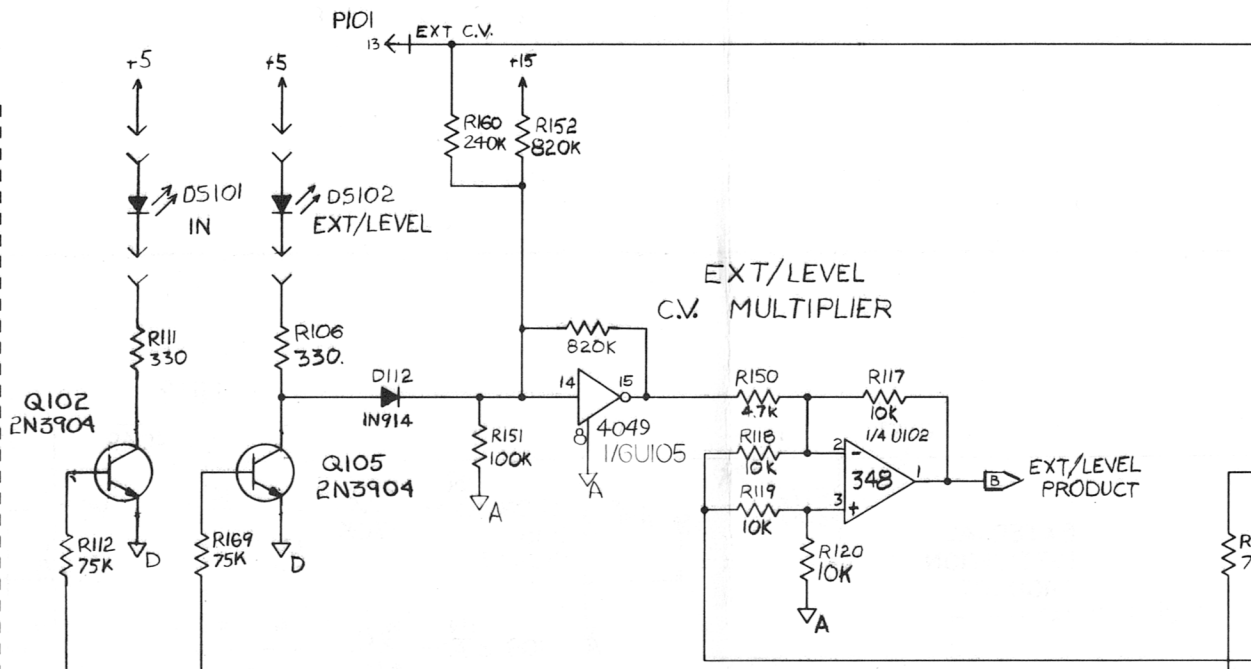
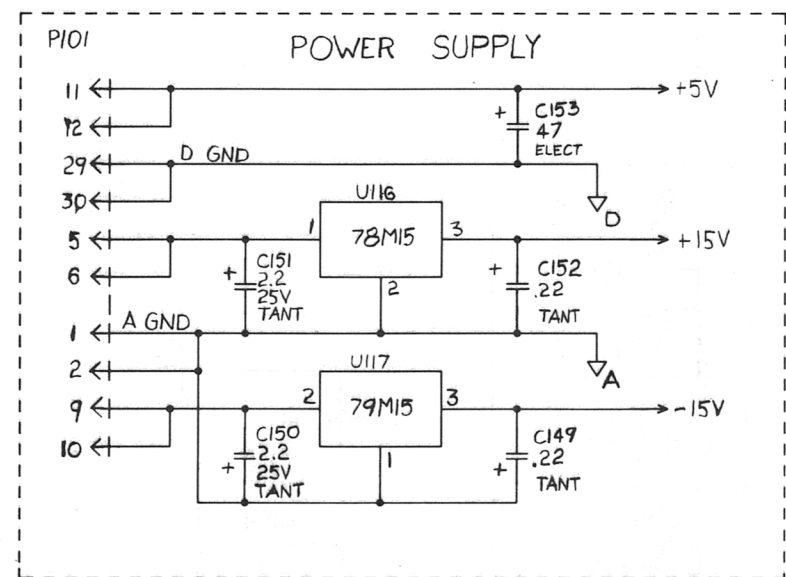
S101-3 S-057 Switch w/ LED

U101	I-211 4051 8-IN ANA MUX
U102	I-313 LM348 QUAD 741 OP AMP
U103	I-211 4051 8-IN ANA MUX
U104	I-313 LM348 QUAD 741 OP AMP
U105	I-209 4049 HEX INVERTER/DRIVER
U106	I-312 TL082 DUAL BI FET OP AMP
U107	I-322 3280 DUAL TRNSCND AMP
U108	I-312 TL082 DUAL BI FET OP AMP
U109	I-227 4042 QUAD LATCH
U110	I-324 5532

U111 I-322 3280 DUAL TRNSCND AMP  
U112 I-209 4049  
U113 I-045 8255 (PPI)  
U114 I-325 TL082 DUAL BI FET OP AMP  
U115 I-305 741 CN OP AMP  
U116 I-406 78M15 +15V Voltage Regulator  
U117 I-408 79M15 -15V Voltage Regulator

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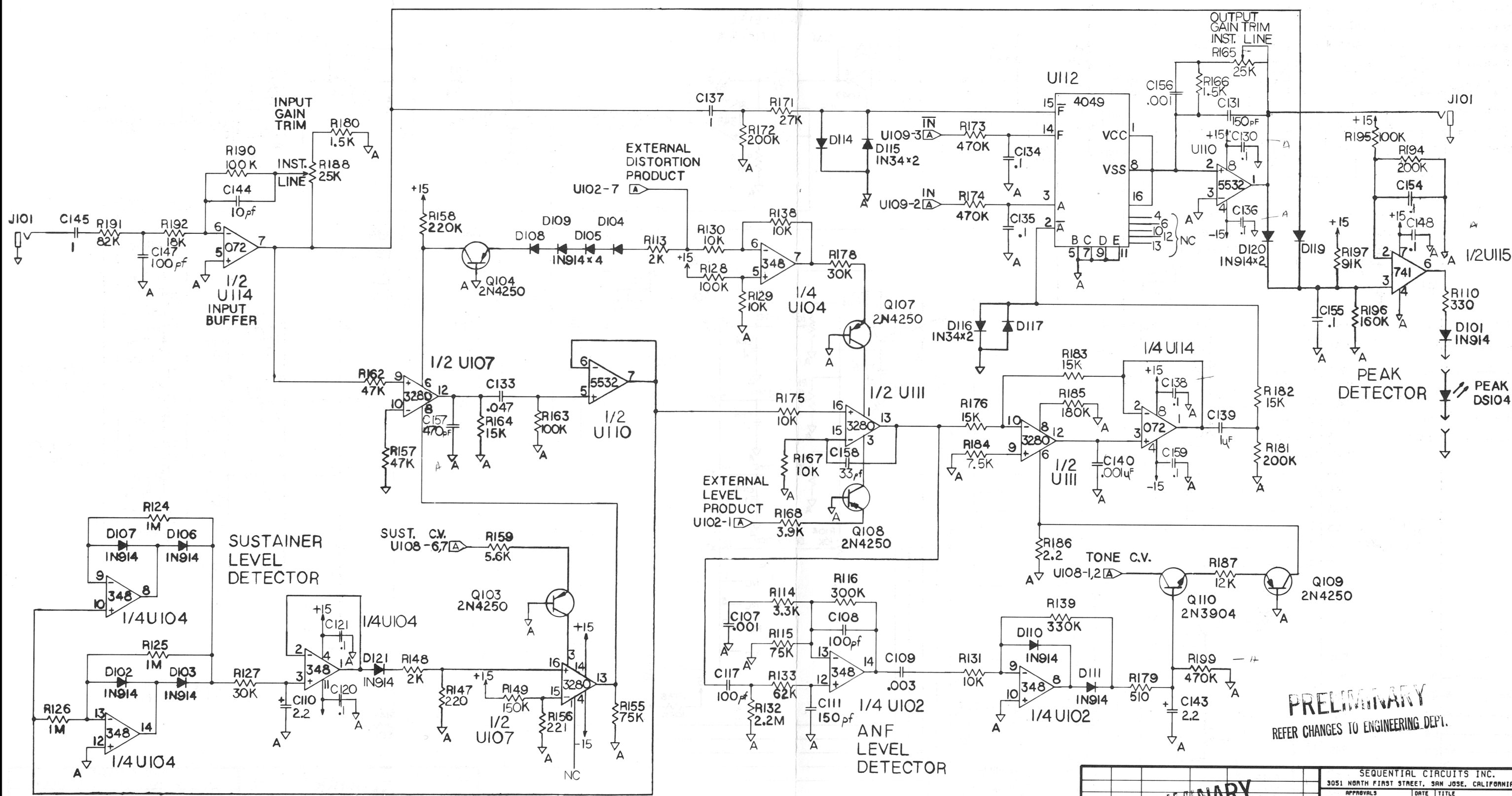


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				DOCUMENT NO. 50512-1-0			
FIRST	LAST	DATE	ECR NO.	REVISIONS	L R		SHEET 1 OF 2





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