

# ALPHA 87A

## Schematic Set

Caution! Read all schematic notes carefully

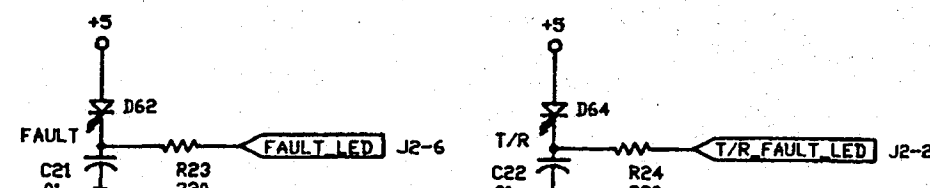
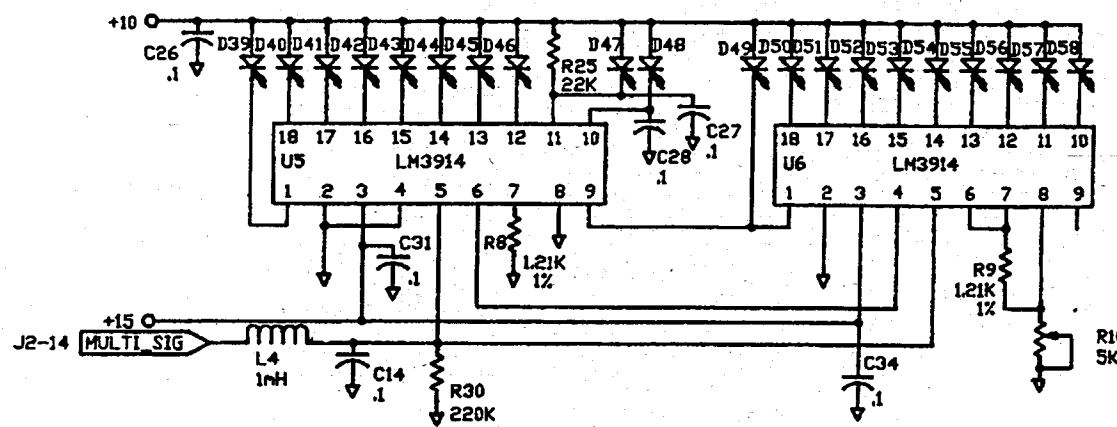
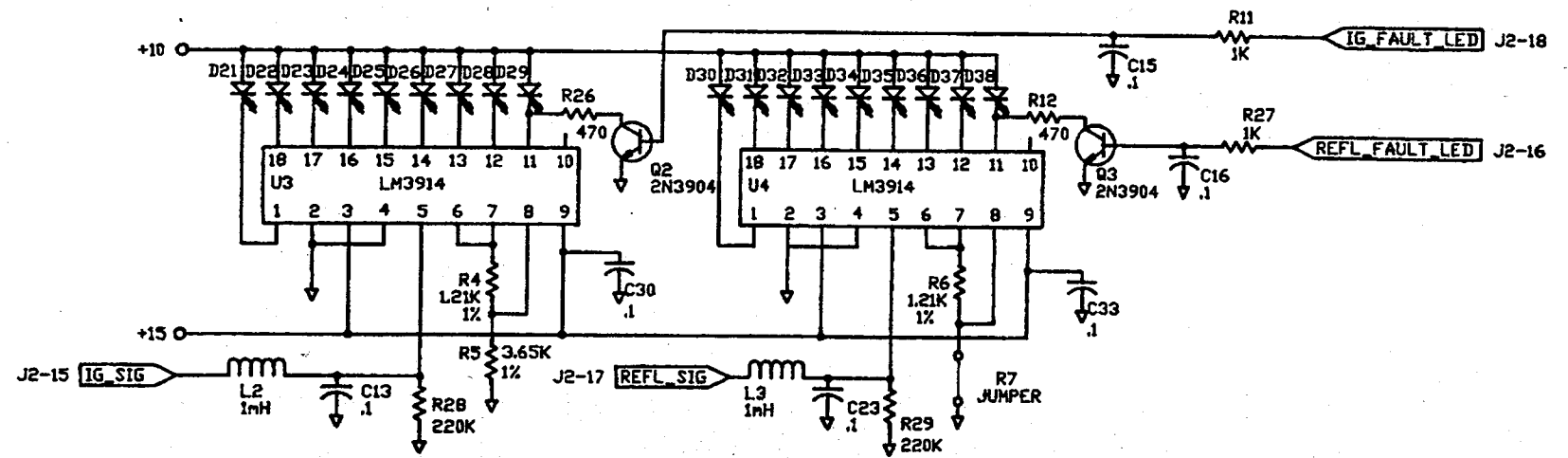
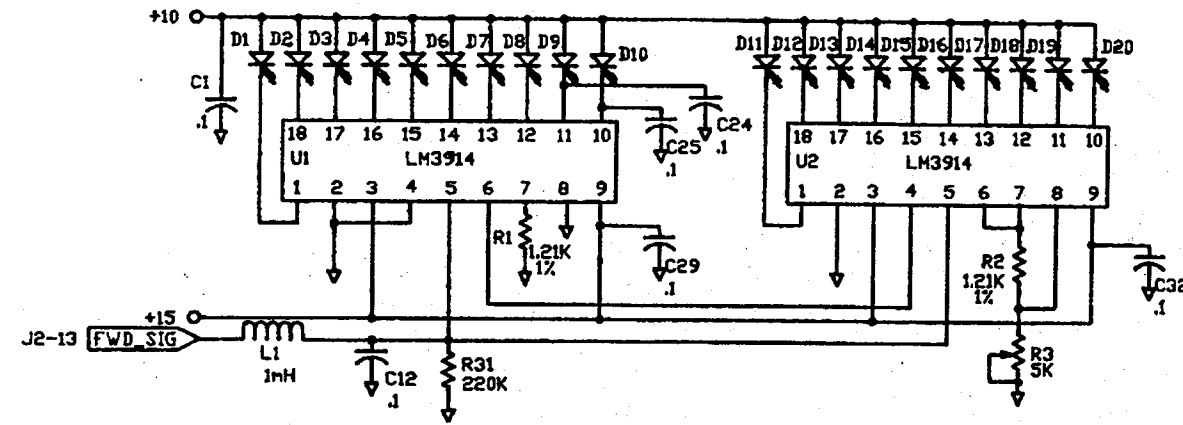
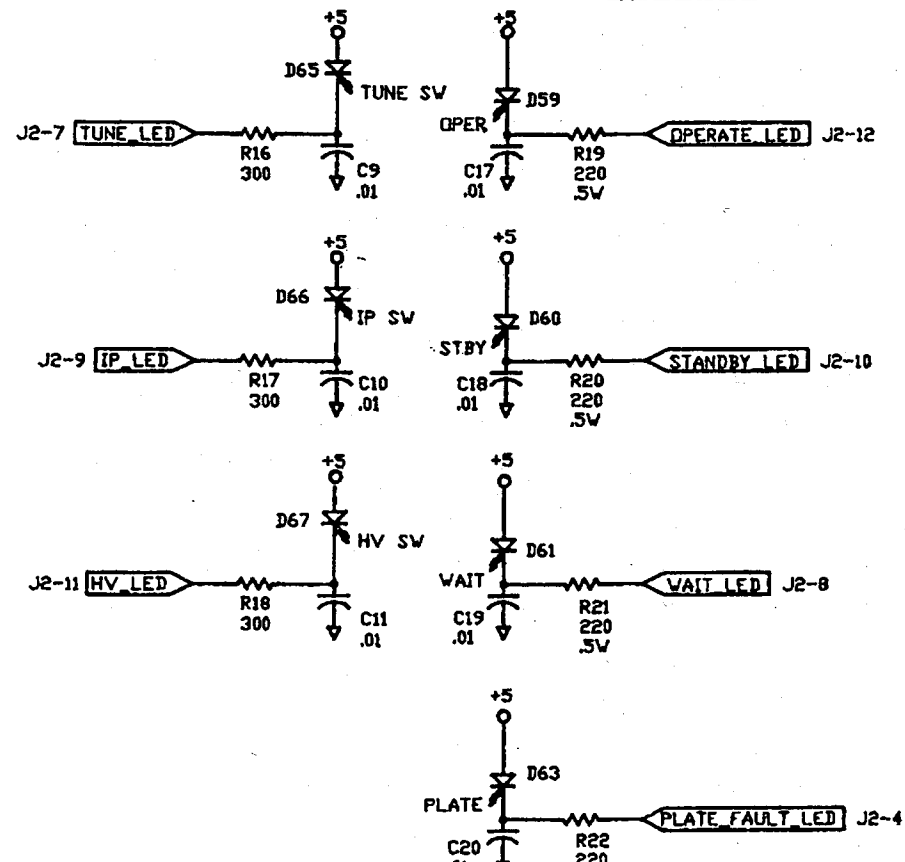
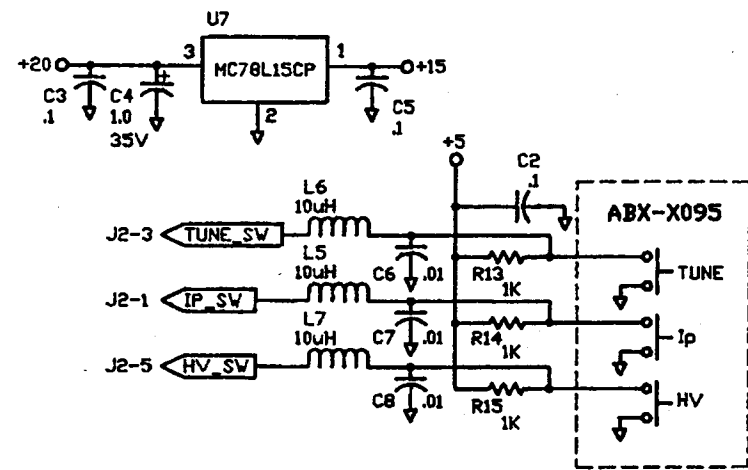
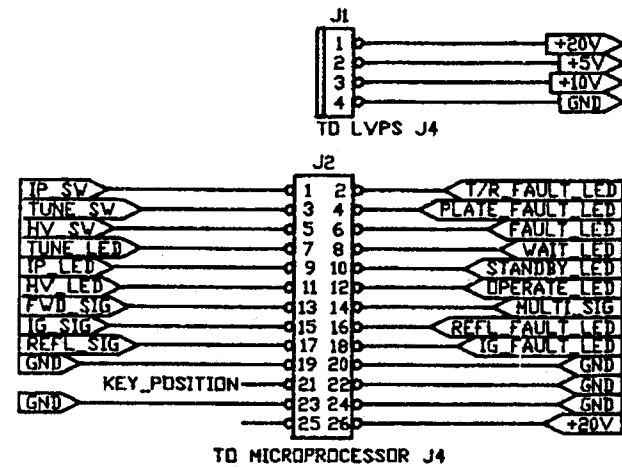
These diagrams are intended to be used in conjunction with the ZMX-X113 Operating Manual. All safety warnings described in the Operating Manuals must be adhered to while using these diagrams.

ALPHA/POWER PART NO. ZMX-X131

Revision A

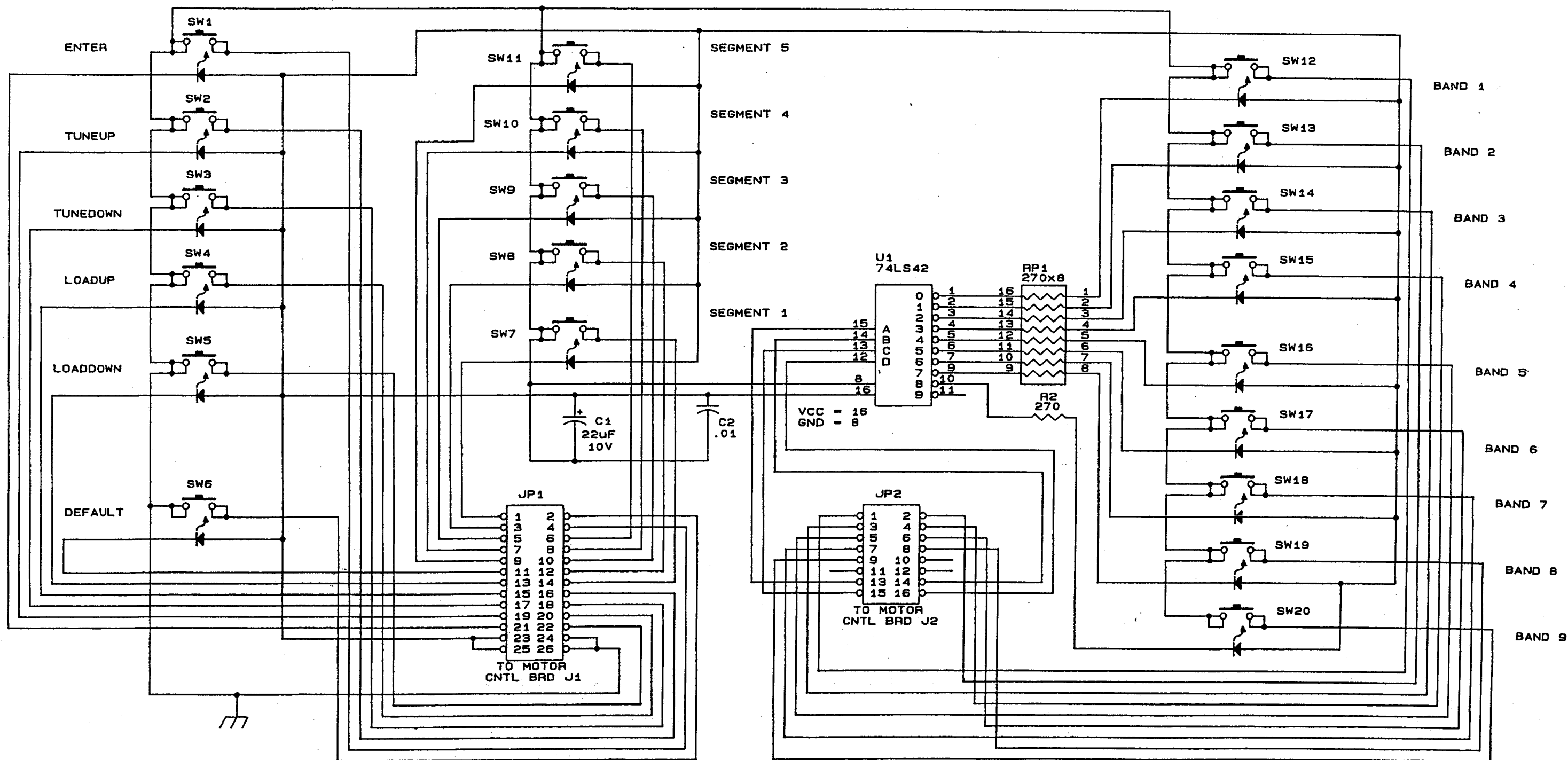
May 24<sup>th</sup> 1994

NOTES: UNLESS OTHERWISE SPECIFIED,  
 1. CAPACITOR VALUES ARE UF.  
 2. RESISTORS ARE 1/4W.

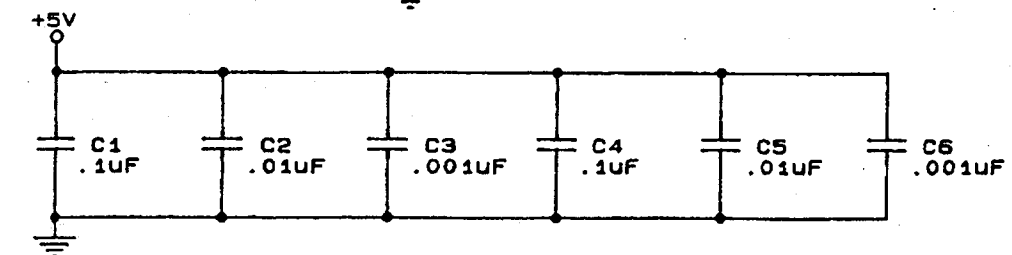
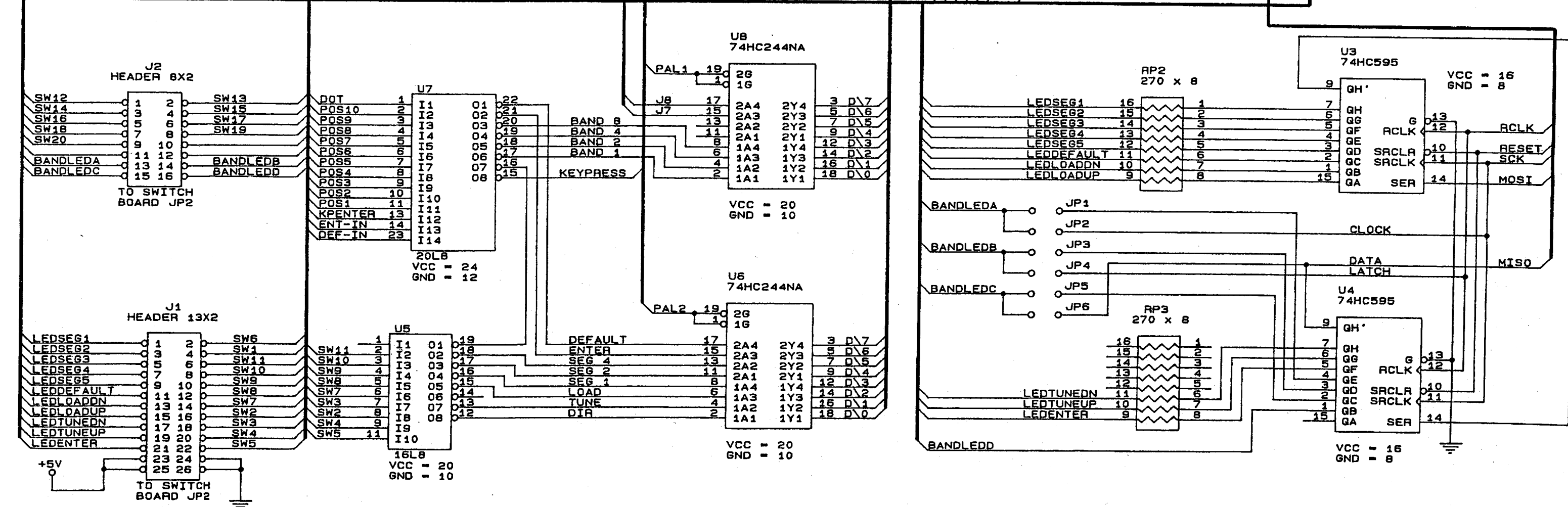
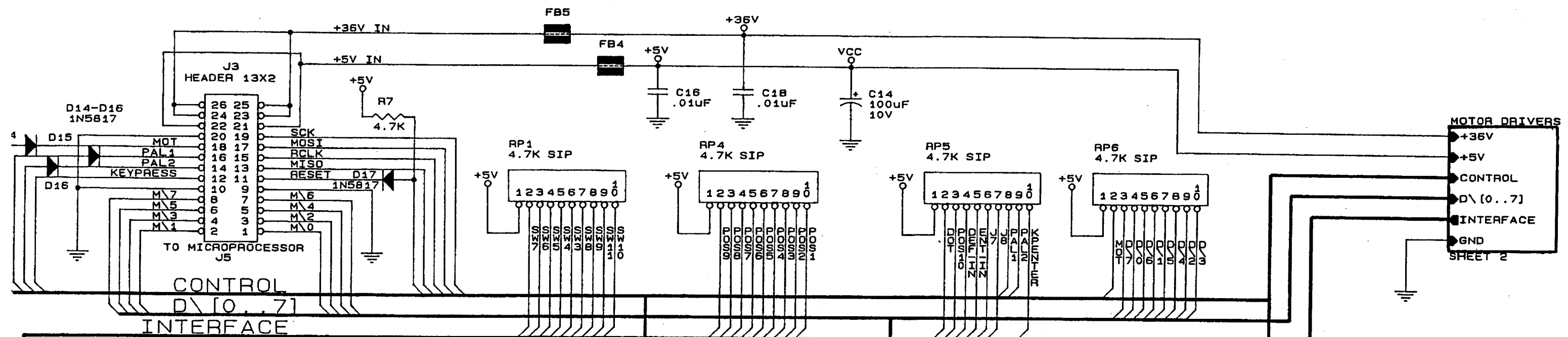


# DISPLAY BOARD

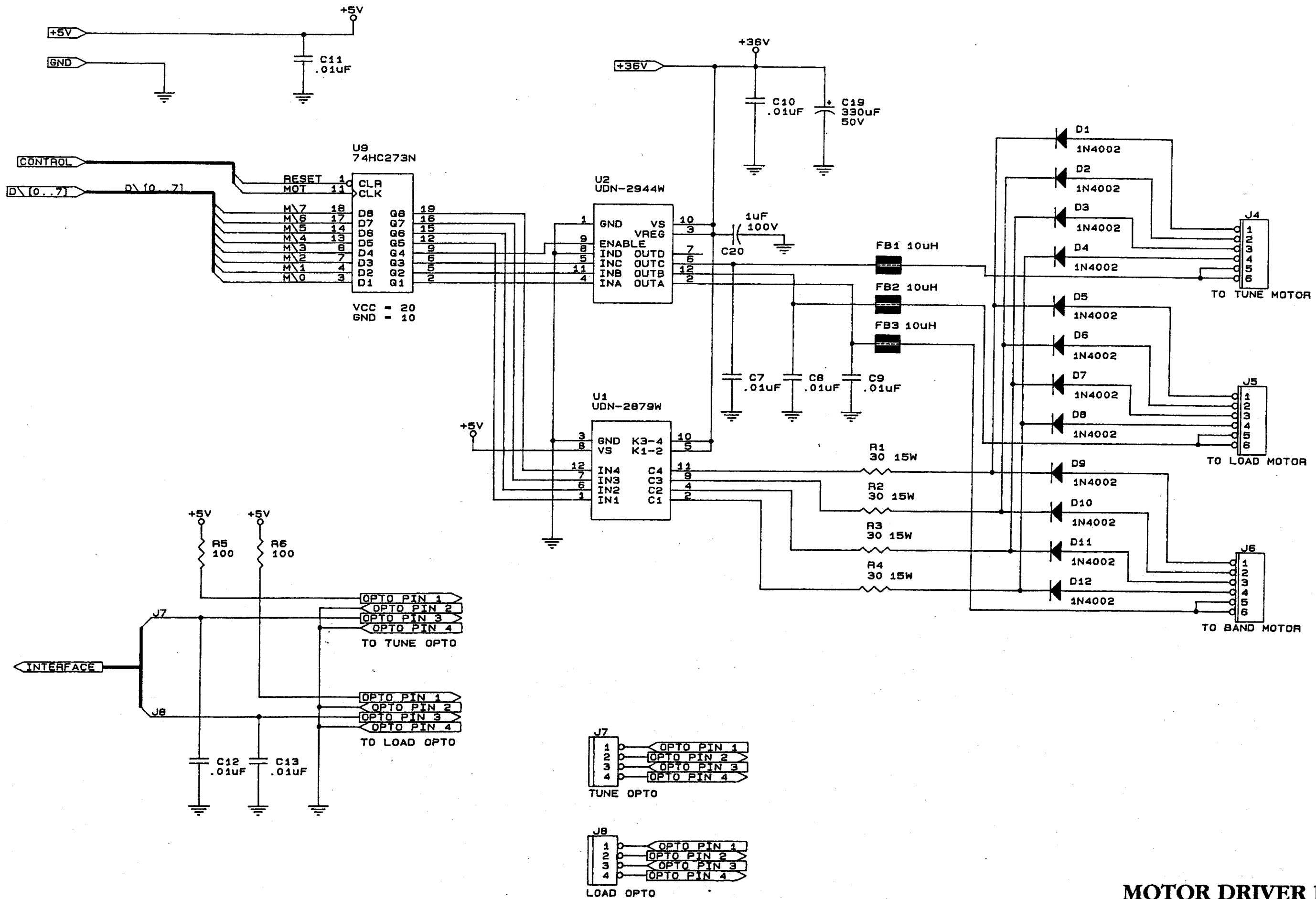
Assembly: ABX-5160



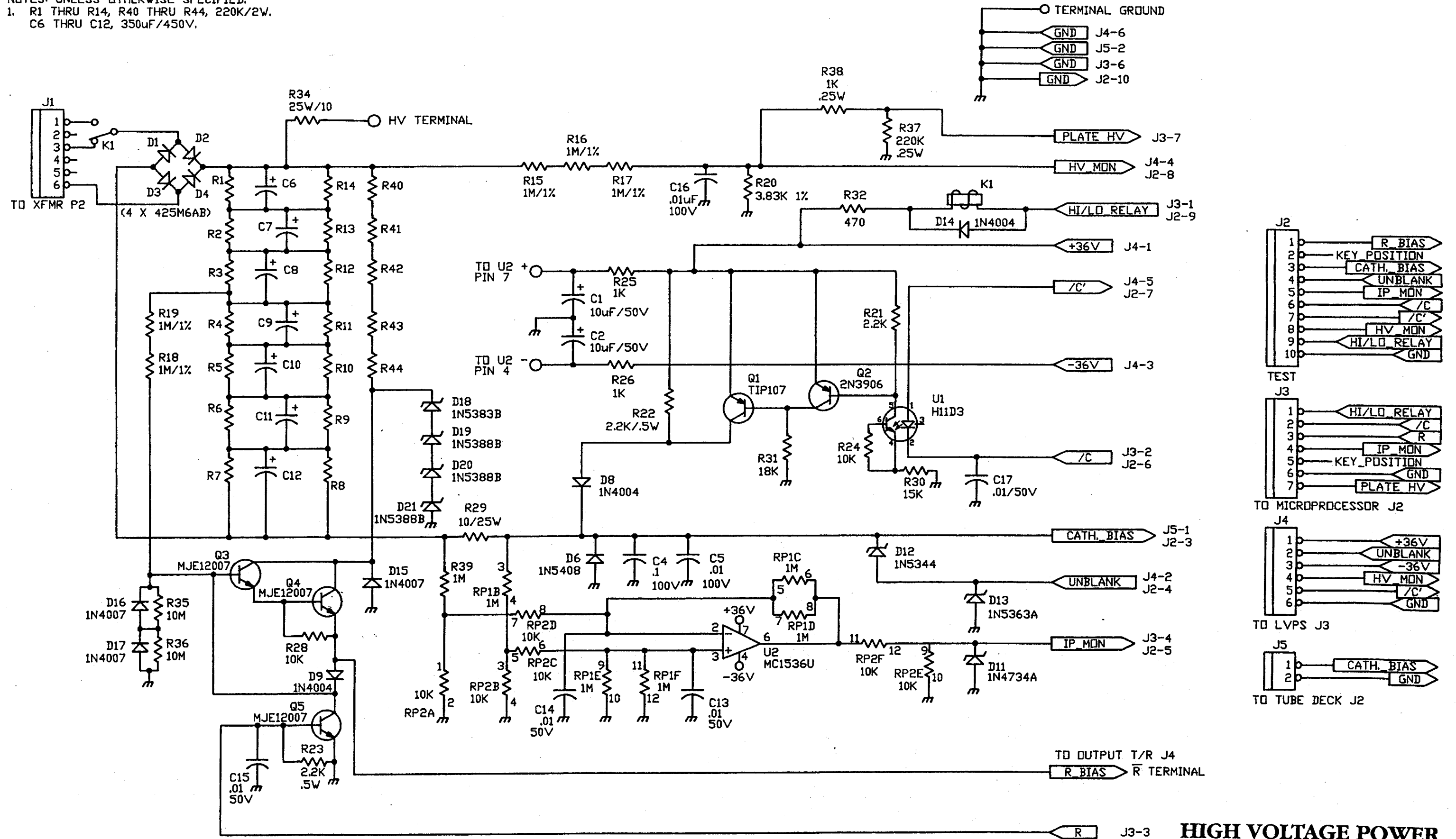
**SWITCH BOARD**



**MOTOR DRIVER BOARD** (pg. 1 of 2)  
 Assembly ABX-X176, Dwg. #SXX-X160, Rev. I

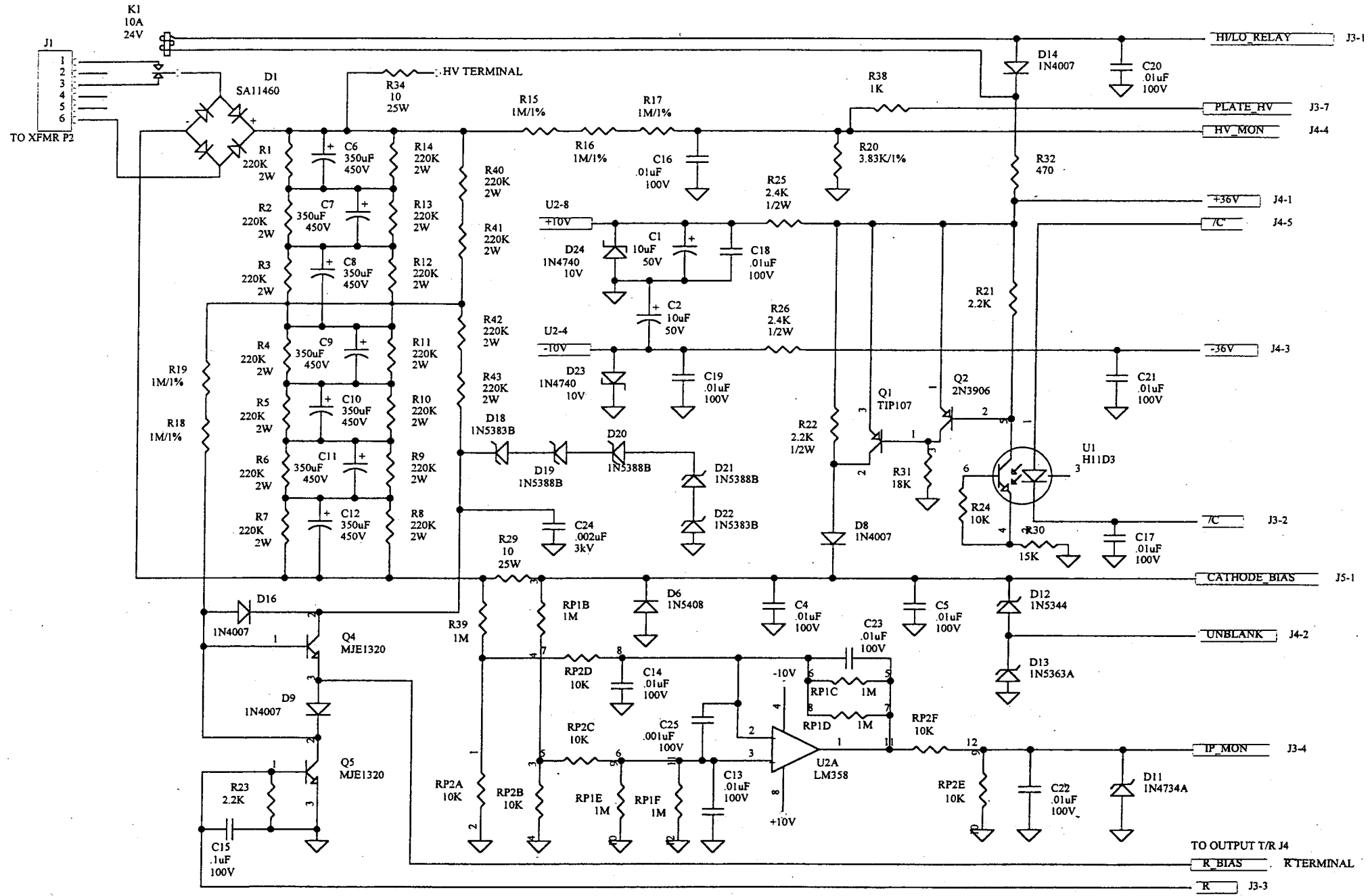


NOTES: UNLESS OTHERWISE SPECIFIED.  
 1. R1 THRU R14, R40 THRU R44, 220K/2W.  
 C6 THRU C12, 350uF/450V.

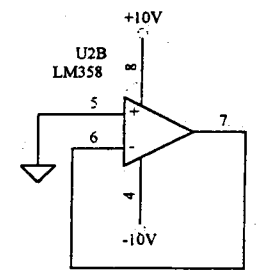
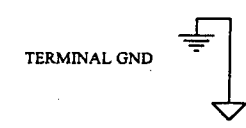
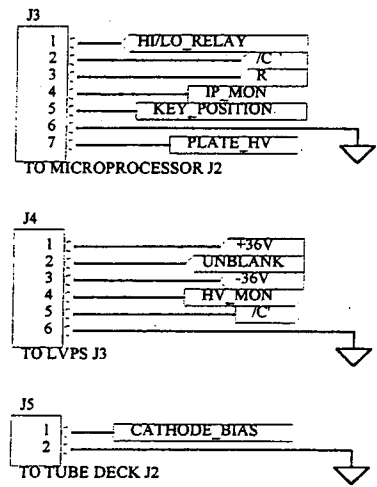


**HIGH VOLTAGE POWER  
 SUPPLY BOARD**

NOTES: UNLESS OTHERWISE SPECIFIED.  
 1. ALL RESISTORS ARE 1/4W AND ALL CAPACITORS ARE (uF).

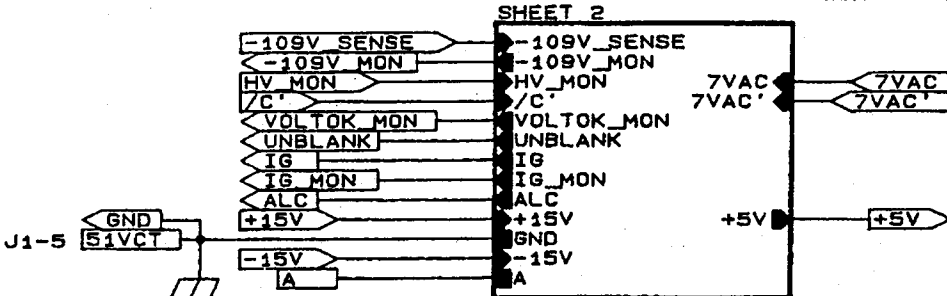
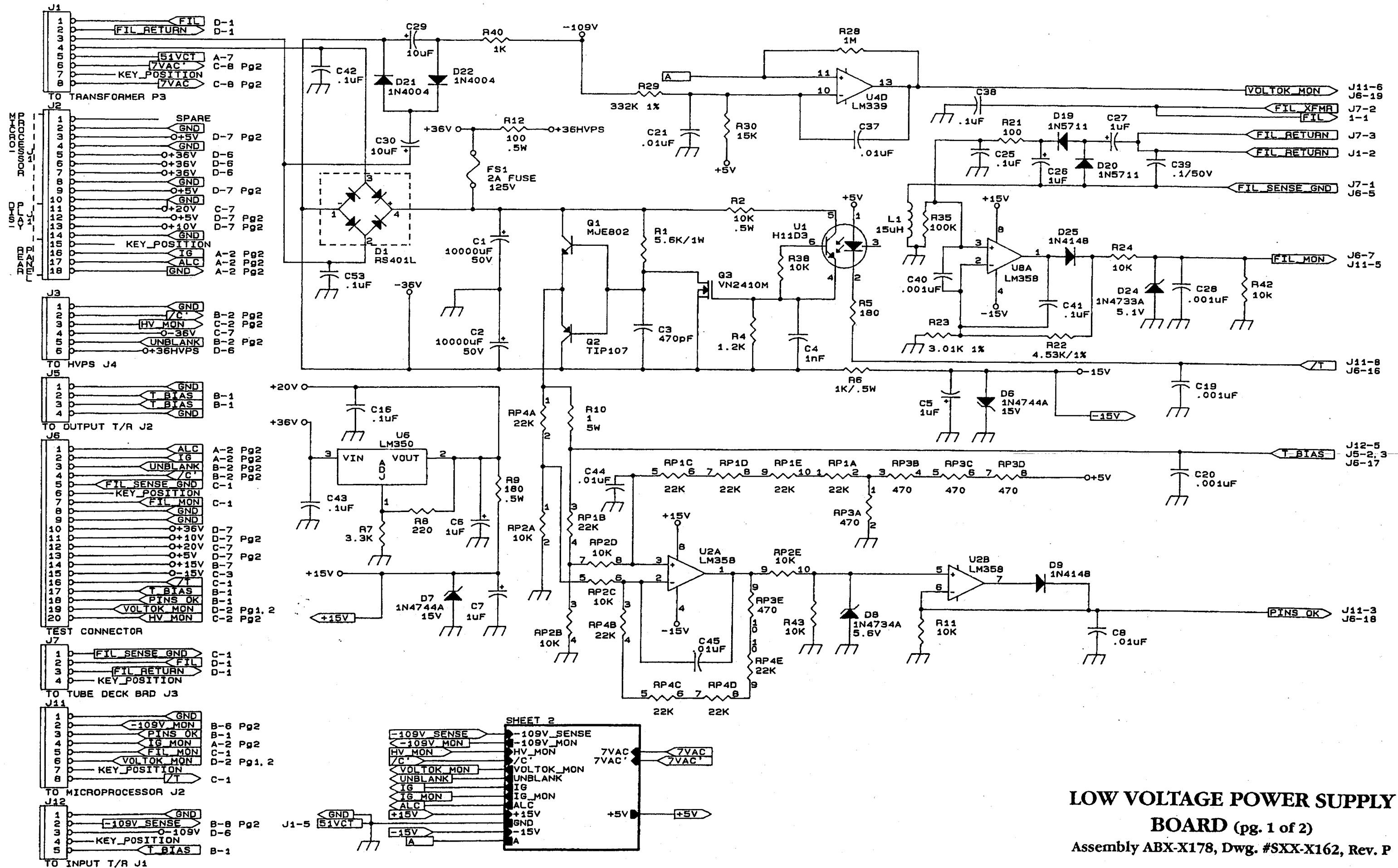


REVISIONS			
LT#	DESCRIPTION	DATE	APPR
A	INITIAL DESIGN, DLM	02/26/90	CKL
B	CHG VARIOUS VAL & J#, DLM	03/08/90	CKL
C	CHG CONN/ADD RP VAL, DLM	04/11/90	CKL
D	ADD R24, DLM	05/25/90	CKL
E	DEL D10/CHG Q1&R20, DLM	07/03/90	JKJ
F	DEL D5,D7/CHG R30,R32,RP1A TO R39/ADD D&R#, DLM	08/07/90	JKJ
G	CHG C16,R37,R38 VAL, JKJ	10/15/90	JKJ
H	REV'D PER ECN #971, DLM	07/29/91	JKJ
I	REV'D PER ECN #1023, DLM	11/05/91	CCM
J	REV'D PER ECN #1335, DLM	11/17/93	CCM
K	REV'D PER ECN #1575, DLM	04/28/95	CCM



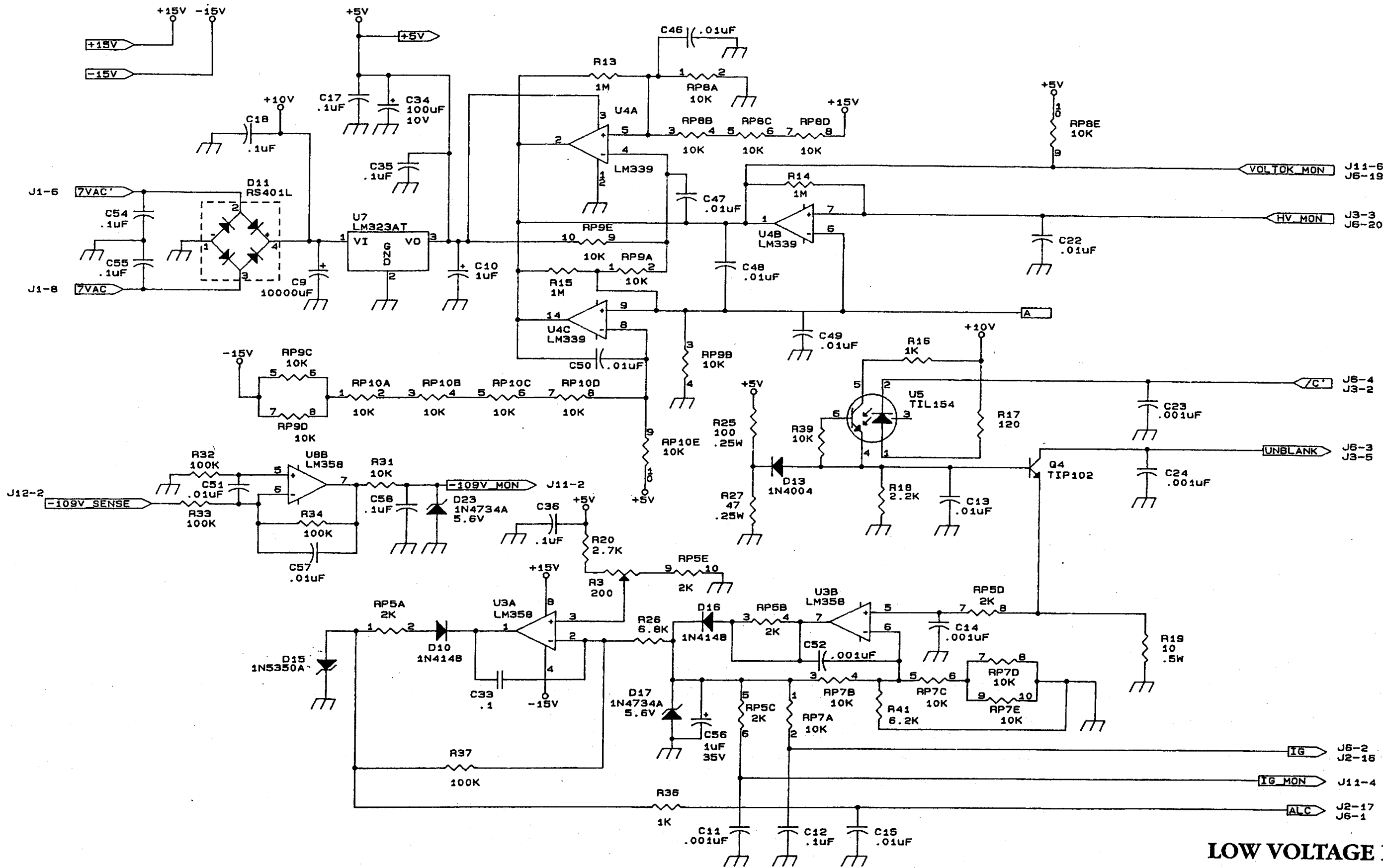
LAST USED	NOT USED
C25	C3
D24	D2-5,7,10,15,17
K1	Q3
Q5	R27,28,33,35-37
R43	
RP2	
U2	

DRN BY DLM 2/26/90	EHRHORN TECHNOLOGICAL OPERATIONS, INC. 4975 N. 30th COLO SPGS, CO 80919	REV K
CHK BY CKL 2/26/90		DWG NO. SXX-XI61
DRIG BY JRP 2/22/90	DWG TITLE	
<b>SCHEM, HIGH VOLTAGE POWER SUPPLY PCB</b>		
USED ON	ALPHA 87A	DWG SIZE B
NEXT ASSY	ABX-XI77	SCALE NONE
REF DOC	BCX-X236	SHEET NO.



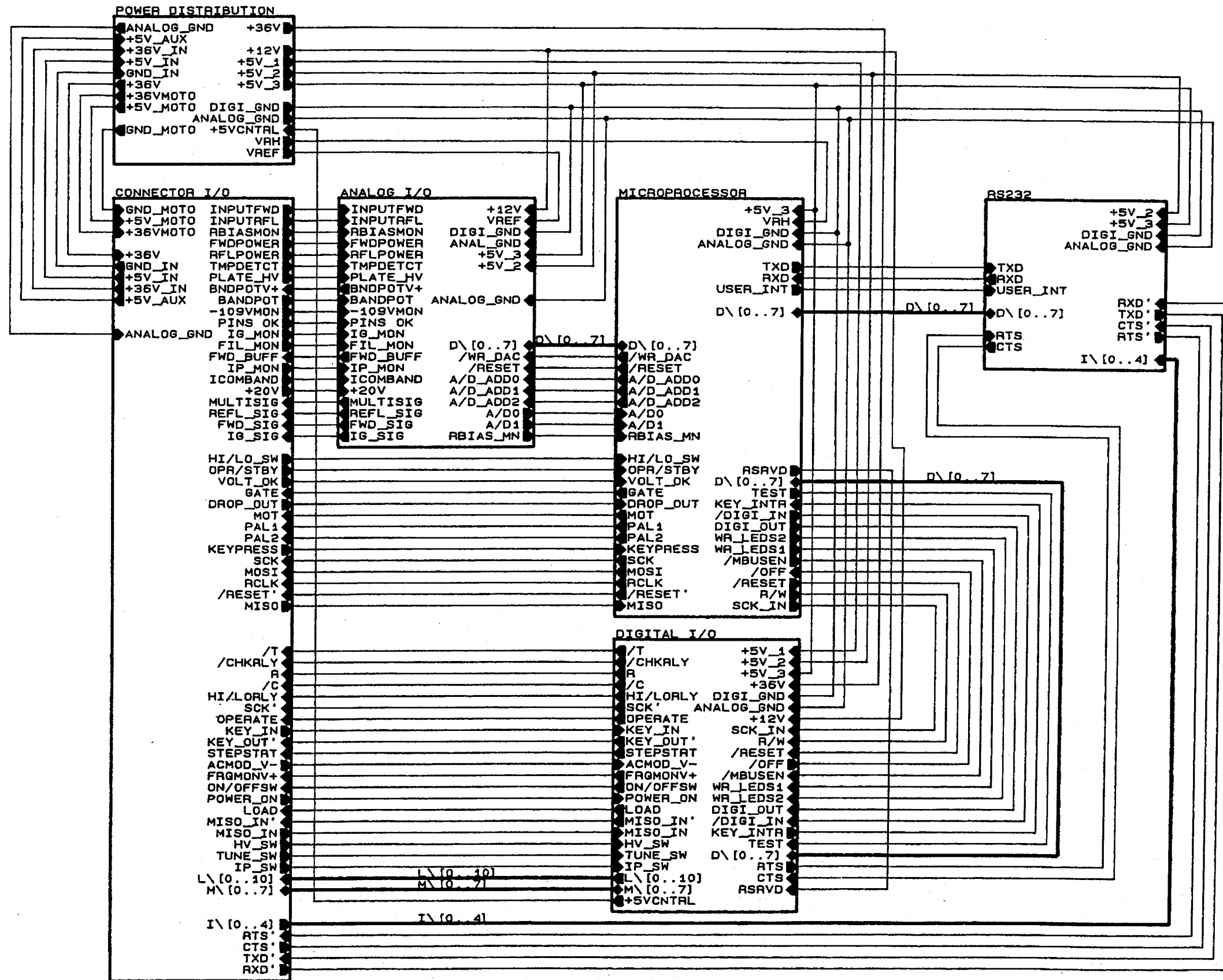
**LOW VOLTAGE POWER SUPPLY BOARD** (pg. 1 of 2)  
 Assembly ABX-X178, Dwg. #SXX-X162, Rev. P



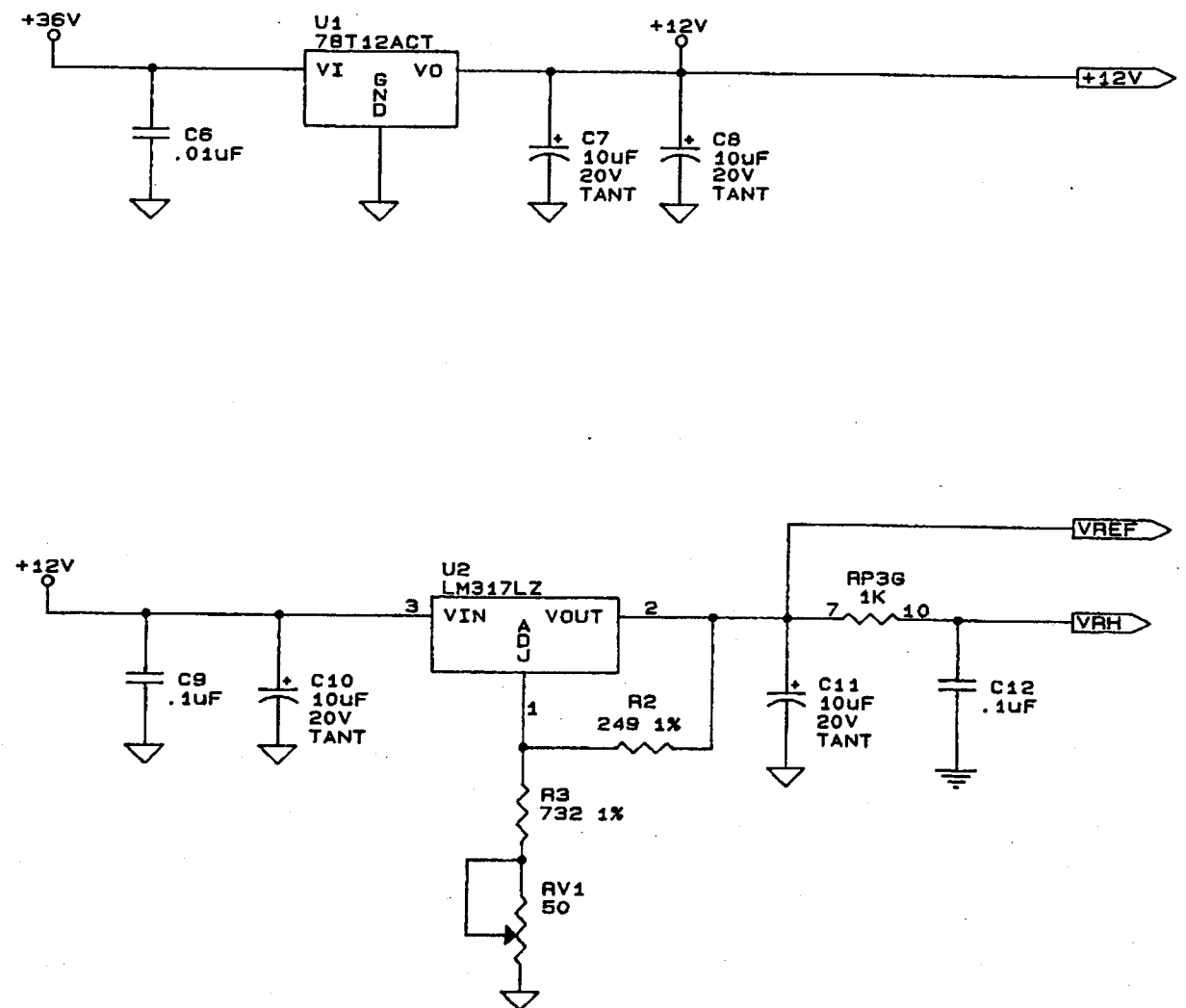
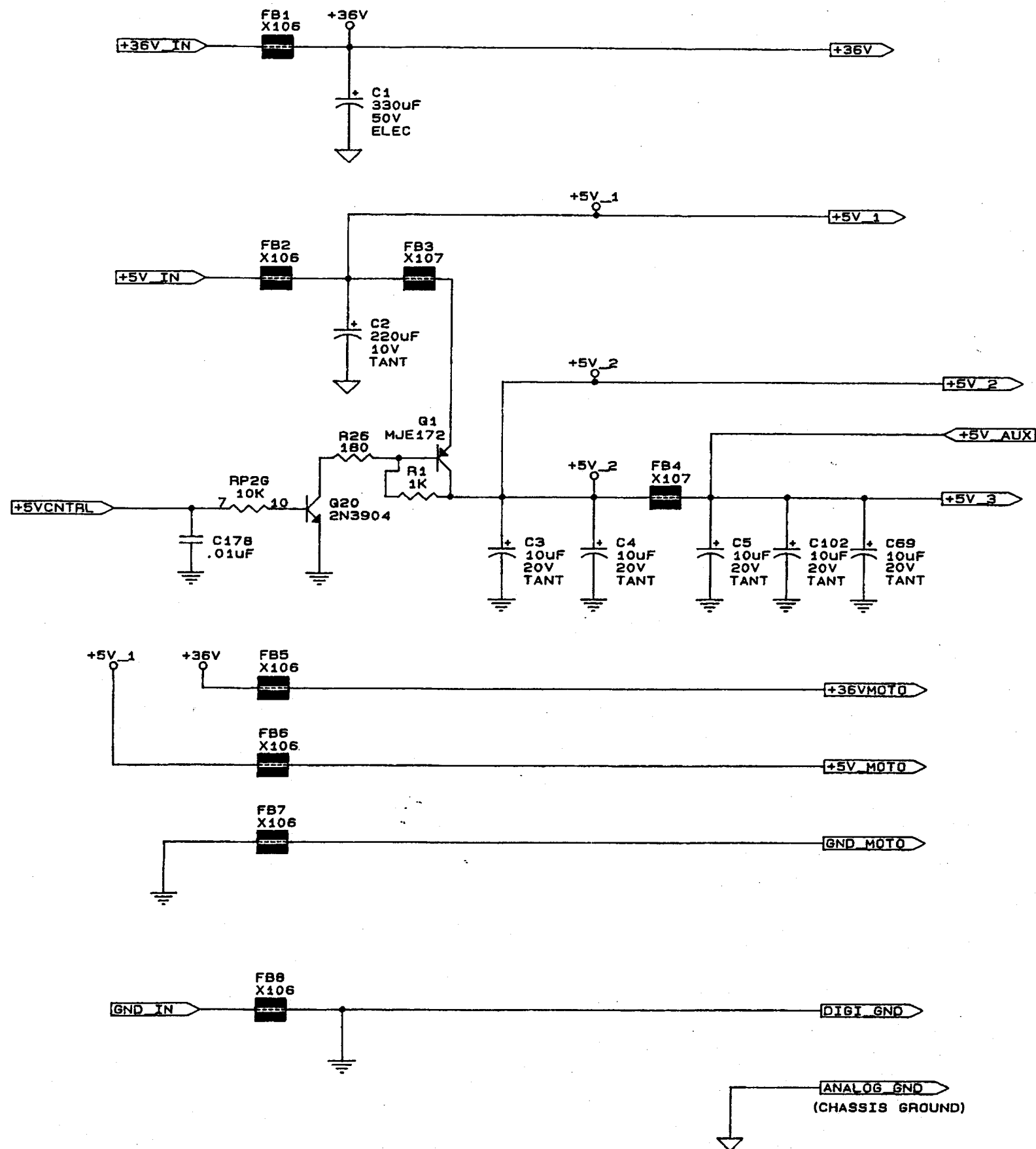


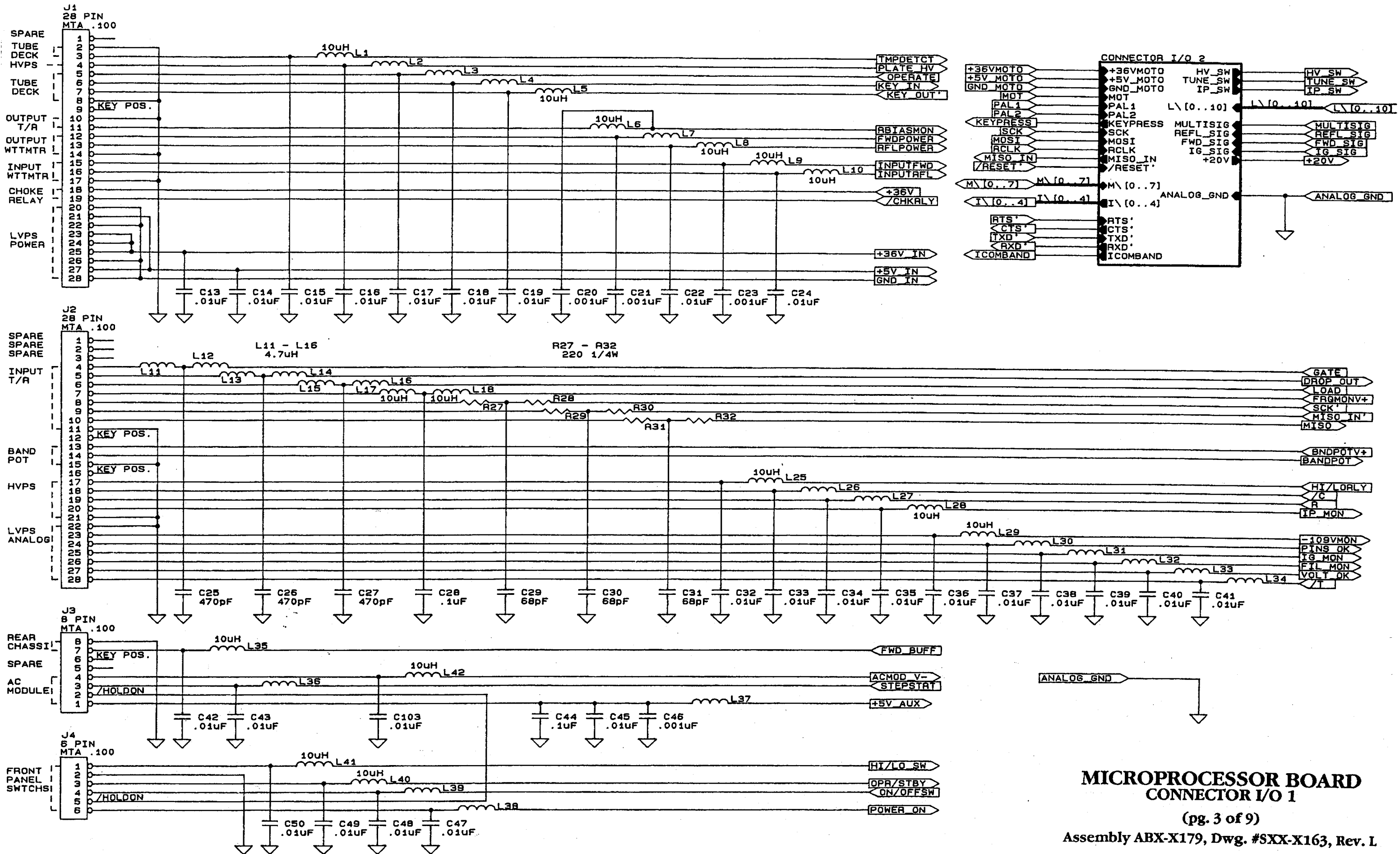
**LOW VOLTAGE POWER  
SUPPLY BOARD (pg. 2 of 2)**

Assembly ABX-X178, Dwg. #SXX-X162, Rev. P

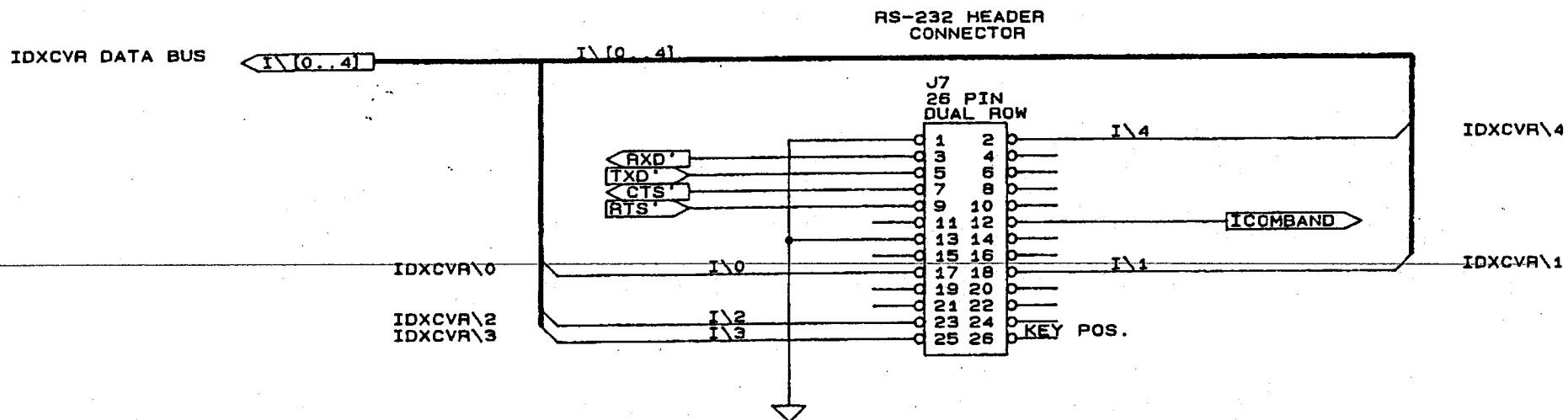
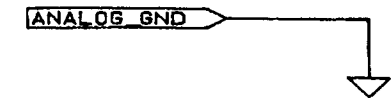
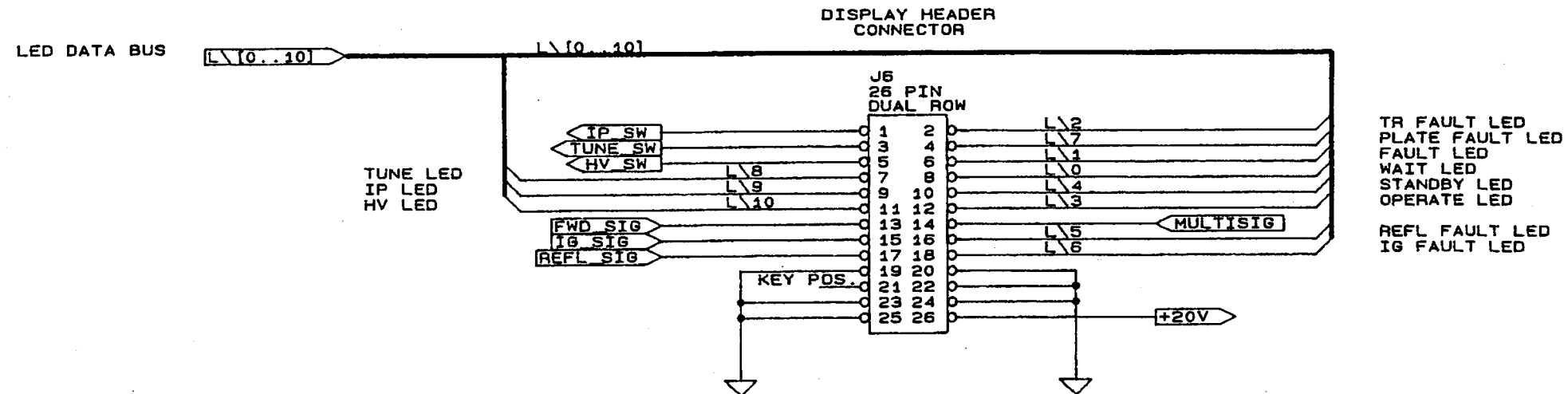
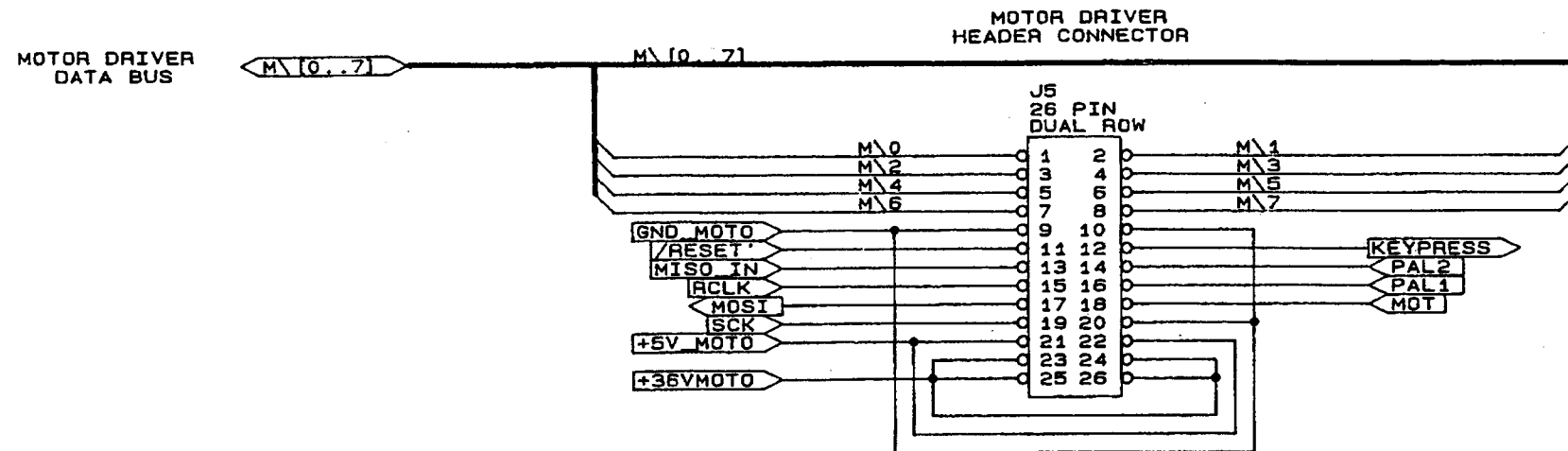


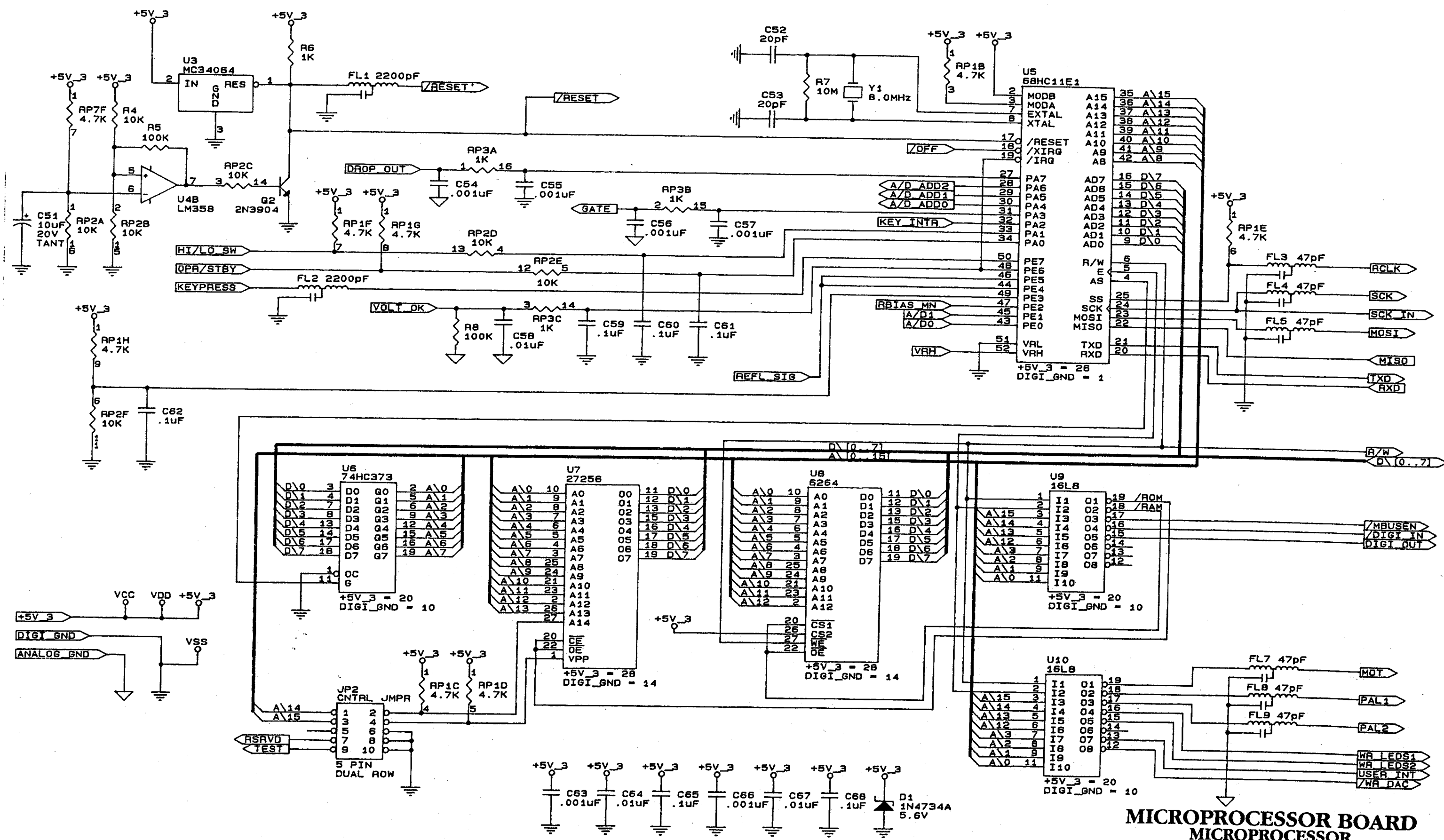
**MICROPROCESSOR BOARD  
BLOCK DIAGRAM**



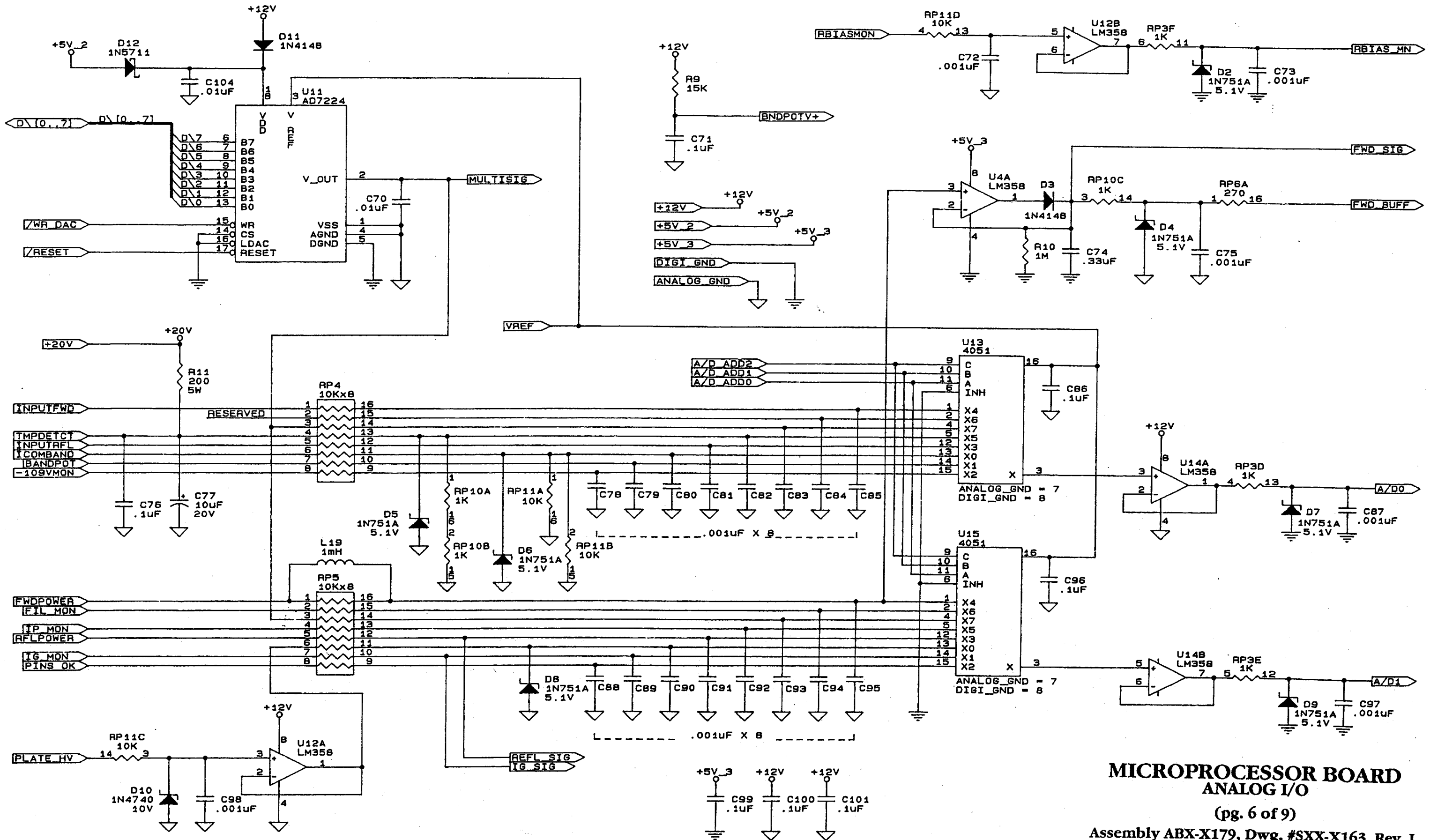


**MICROPROCESSOR BOARD  
CONNECTOR I/O 1**  
(pg. 3 of 9)  
Assembly ABX-X179, Dwg. #SXX-X163, Rev. L

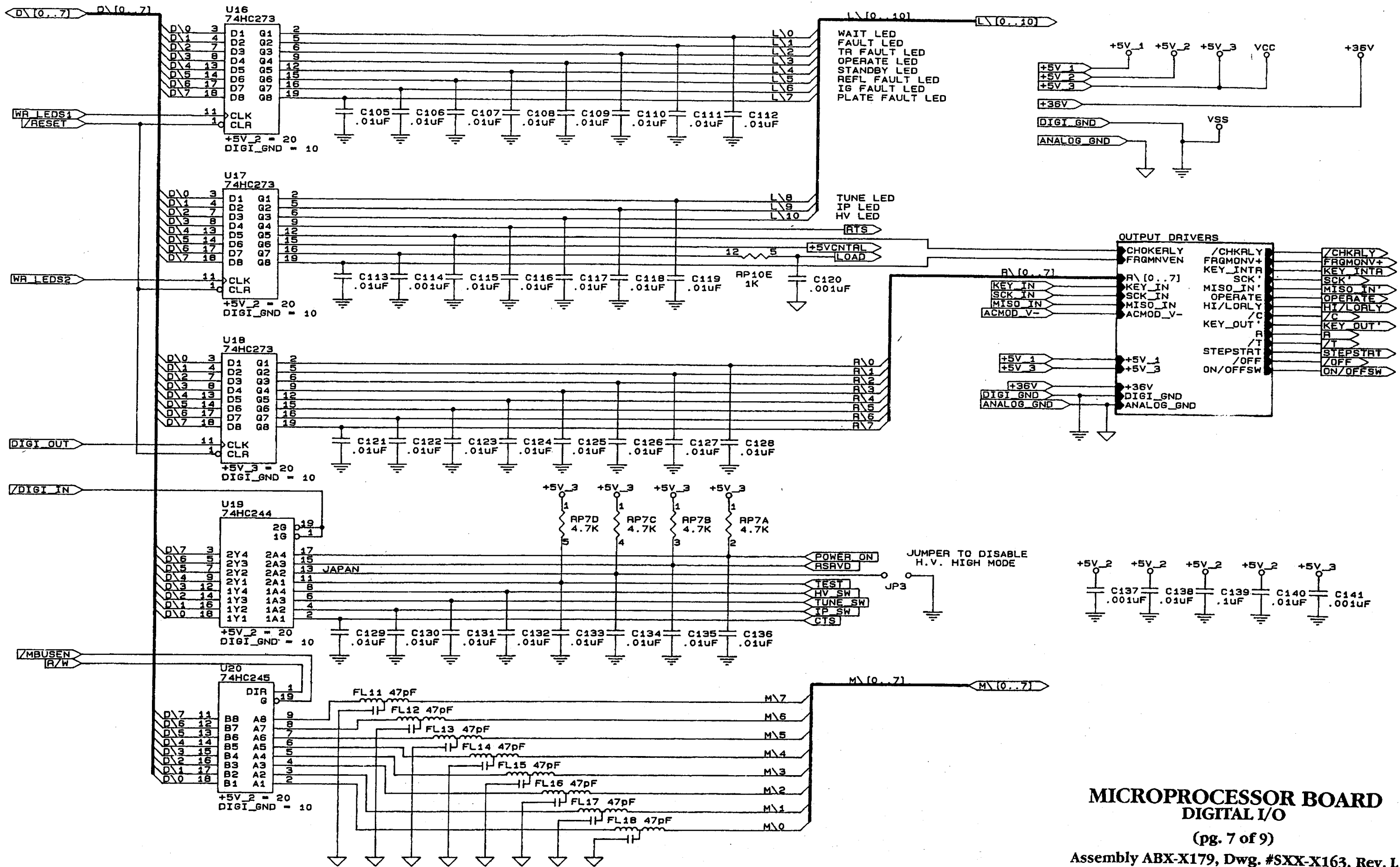




**MICROPROCESSOR BOARD  
MICROPROCESSOR**



**MICROPROCESSOR BOARD  
ANALOG I/O**  
(pg. 6 of 9)  
Assembly ABX-X179, Dwg. #SXX-X163, Rev. L

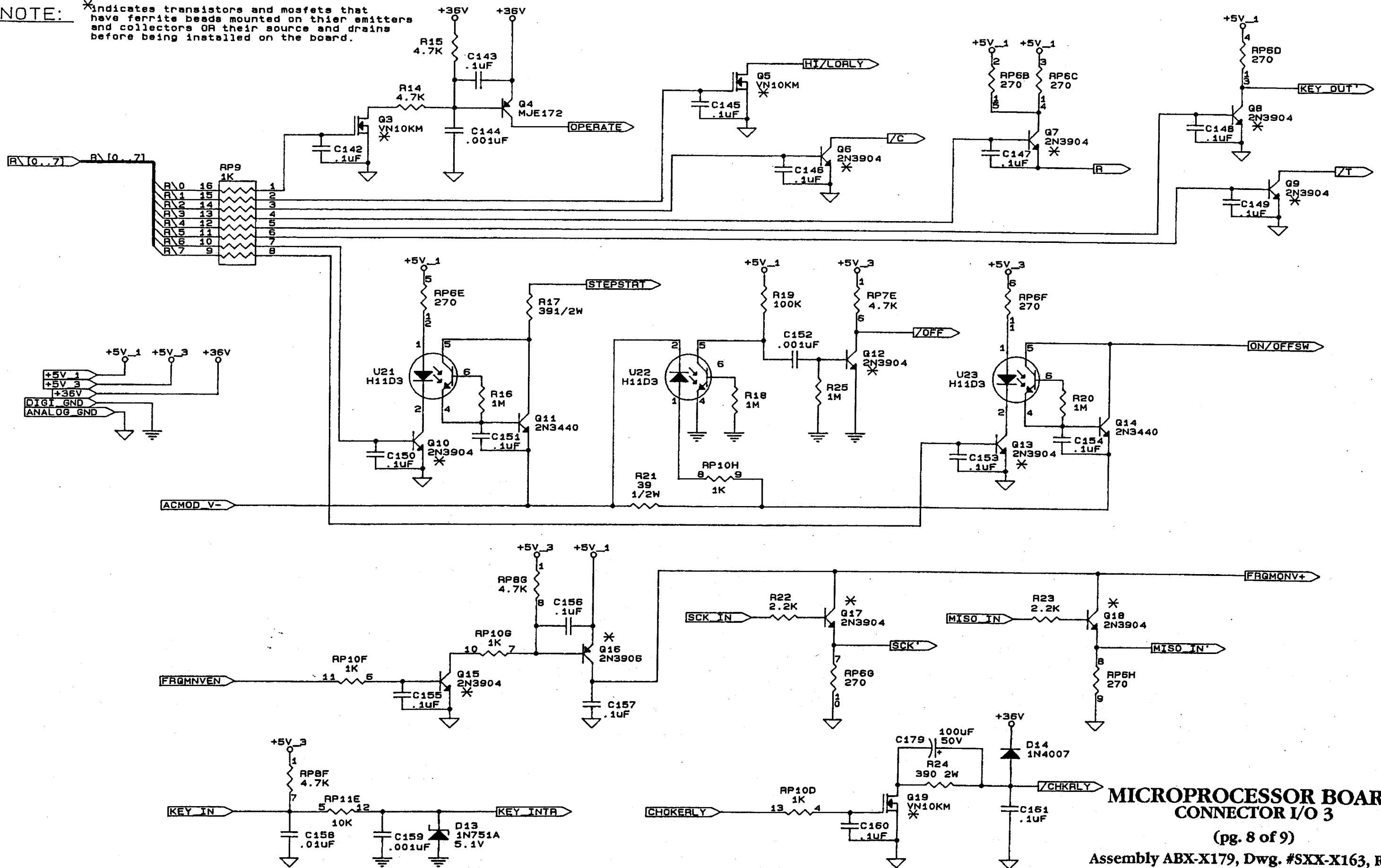


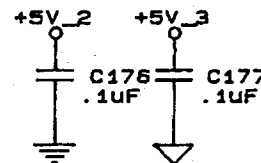
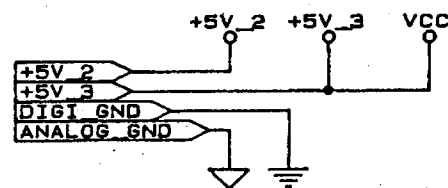
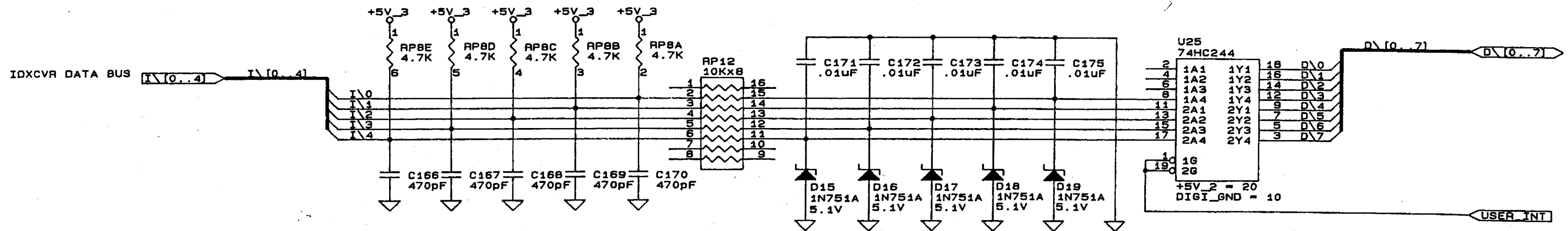
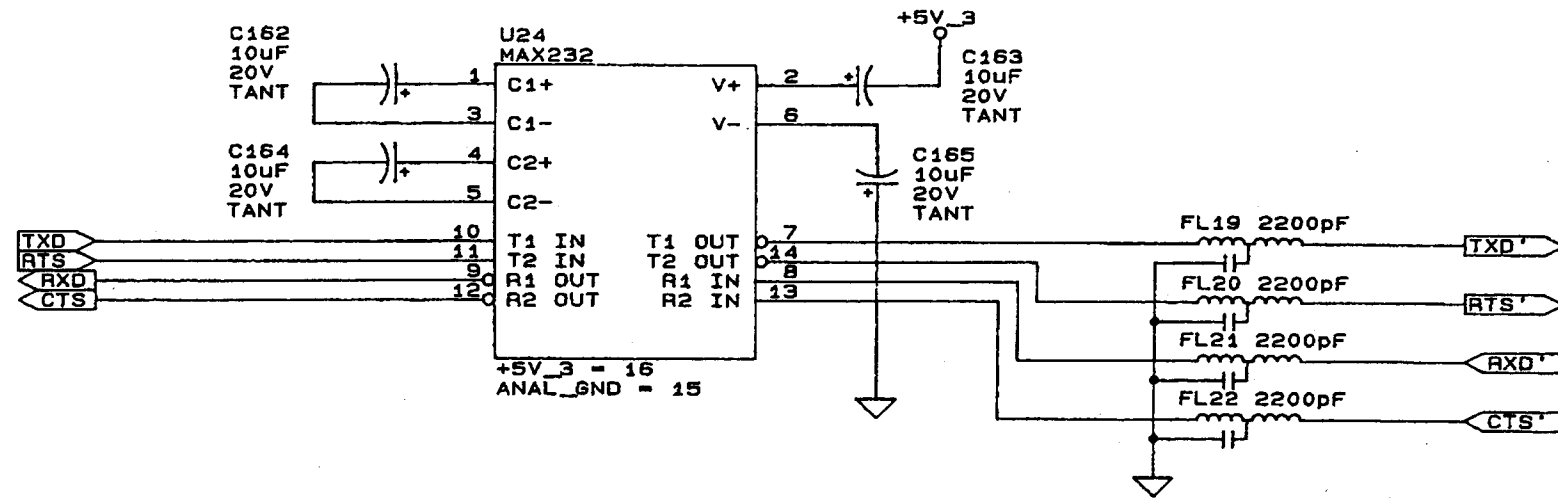
**MICROPROCESSOR BOARD  
DIGITAL I/O**  
(pg. 7 of 9)  
Assembly ABX-X179, Dwg. #SXX-X163, Rev. L



**NOTE:**

\*Indicates transistors and mosfets that have ferrite beads mounted on their emitters and collectors OR their source and drains before being installed on the board.

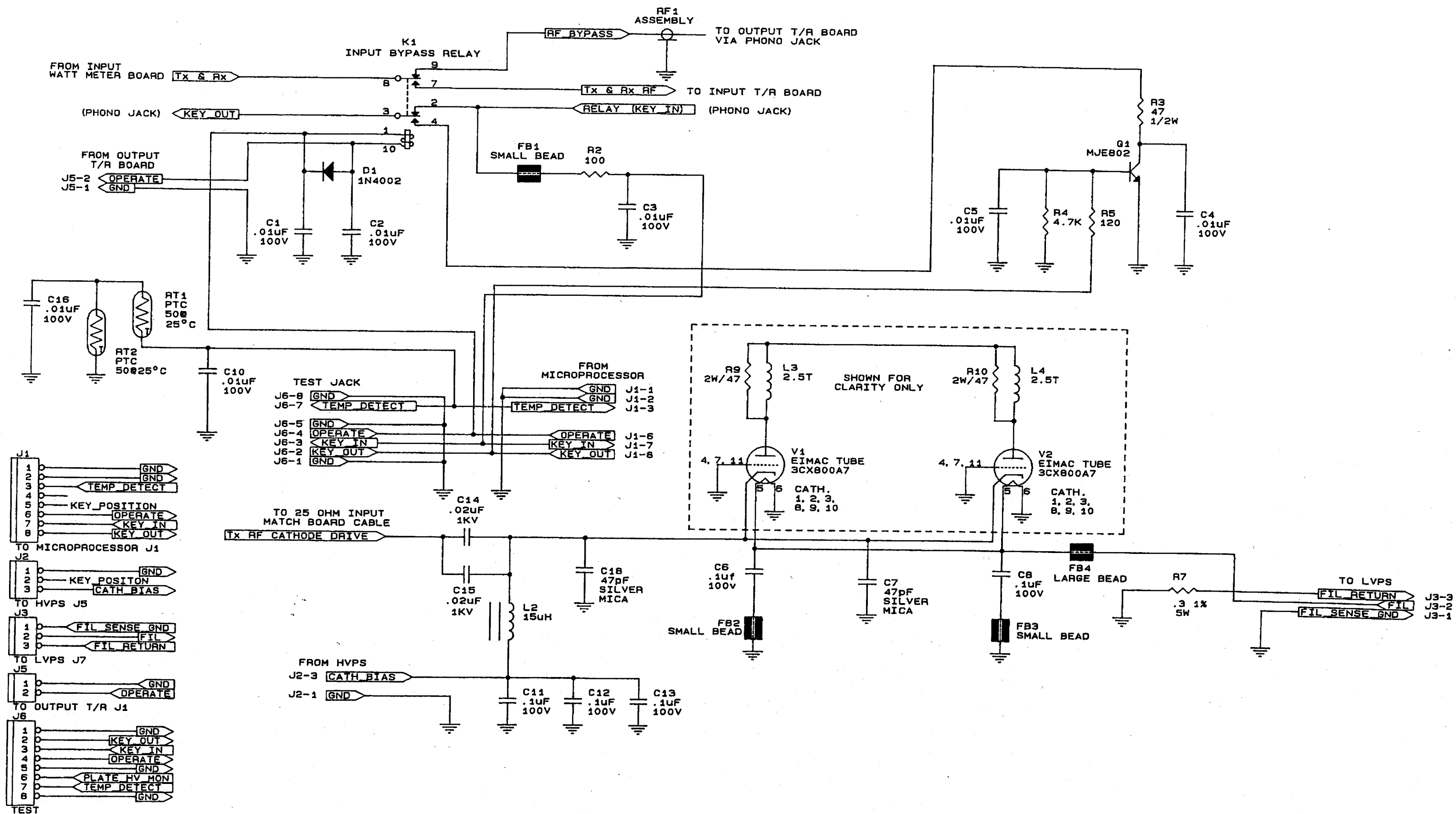




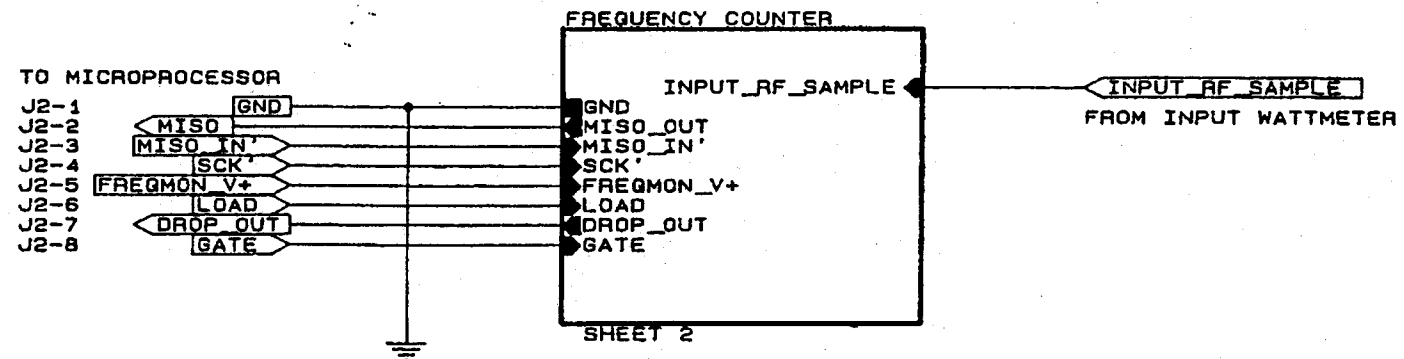
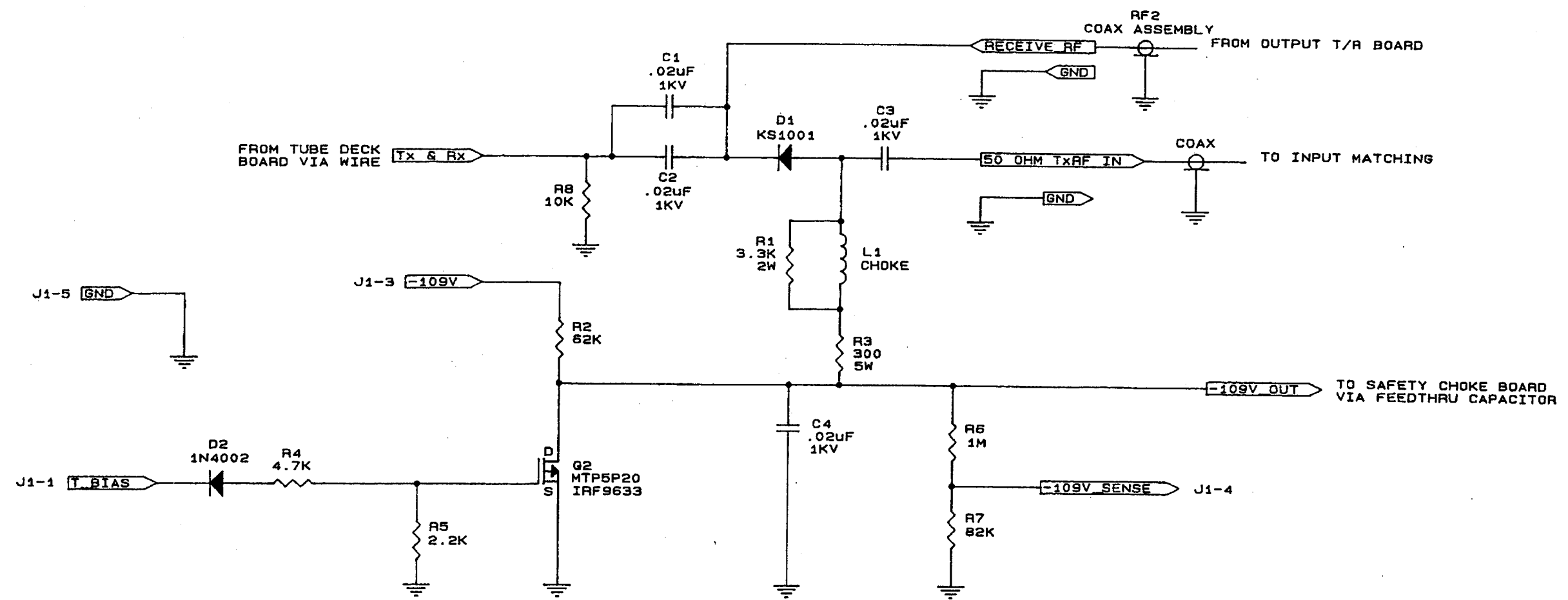
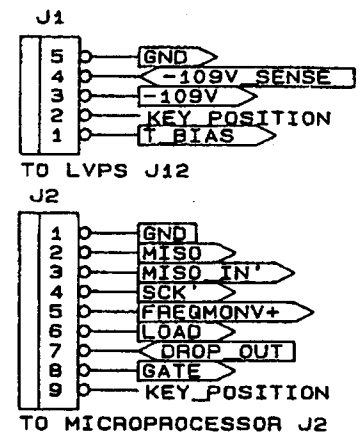
**MICROPROCESSOR BOARD  
RS-232**

(pg. 9 of 9)

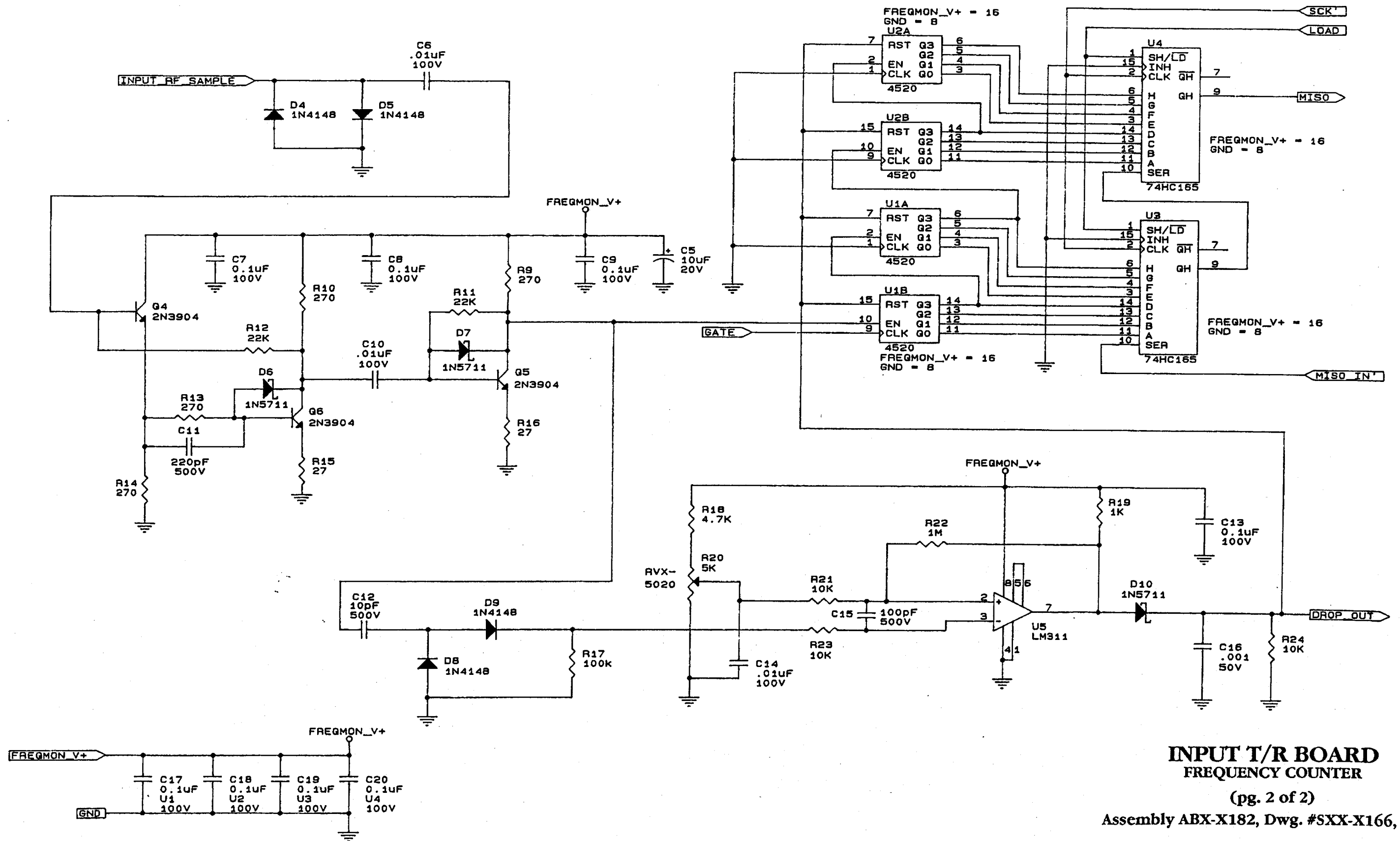
Assembly ABX-X179, Dwg. #SXX-X163, Rev. L



**TUBE DECK BOARD**  
 Assembly ABX-X181, Dwg. #SXX-X165, Rev. H



**INPUT T/R BOARD**  
**CATHODE PIN SWITCH**  
 (pg. 1 of 2)  
 Assembly ABX-X182, Dwg. #SXX-X166, Rev. I

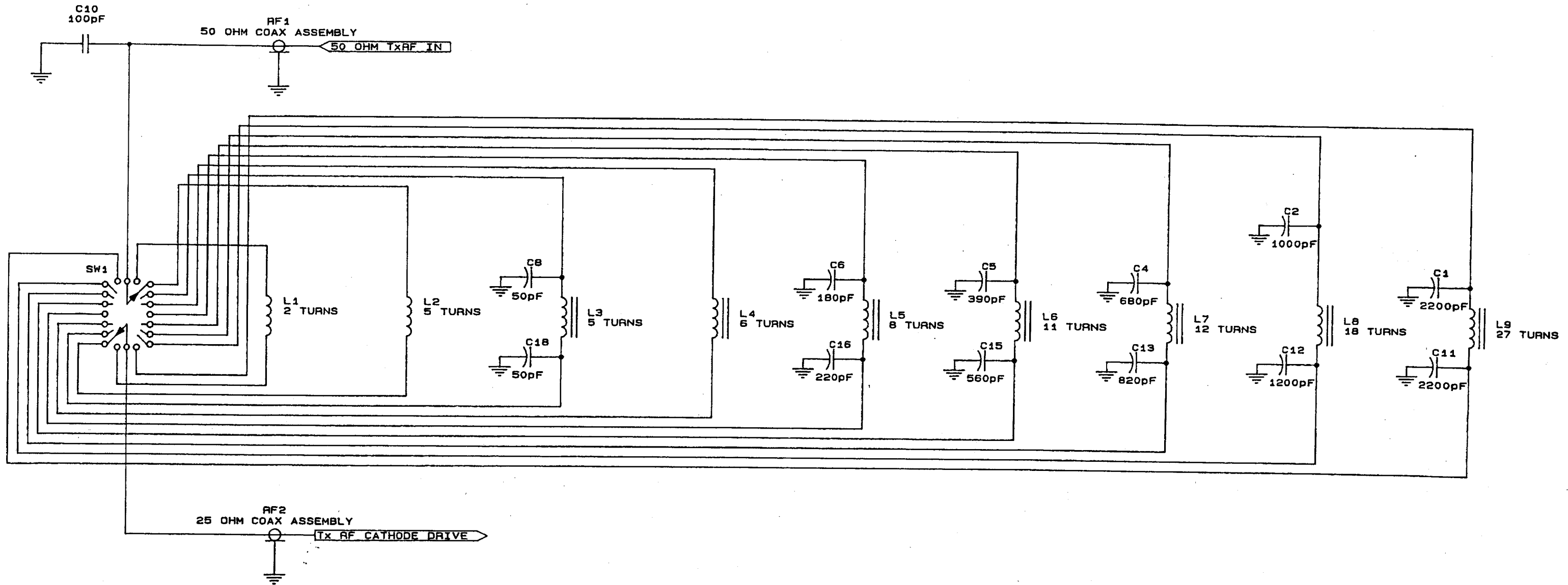


**INPUT T/R BOARD  
FREQUENCY COUNTER**

(pg. 2 of 2)

Assembly ABX-X182, Dwg. #SXX-X166, Rev. I

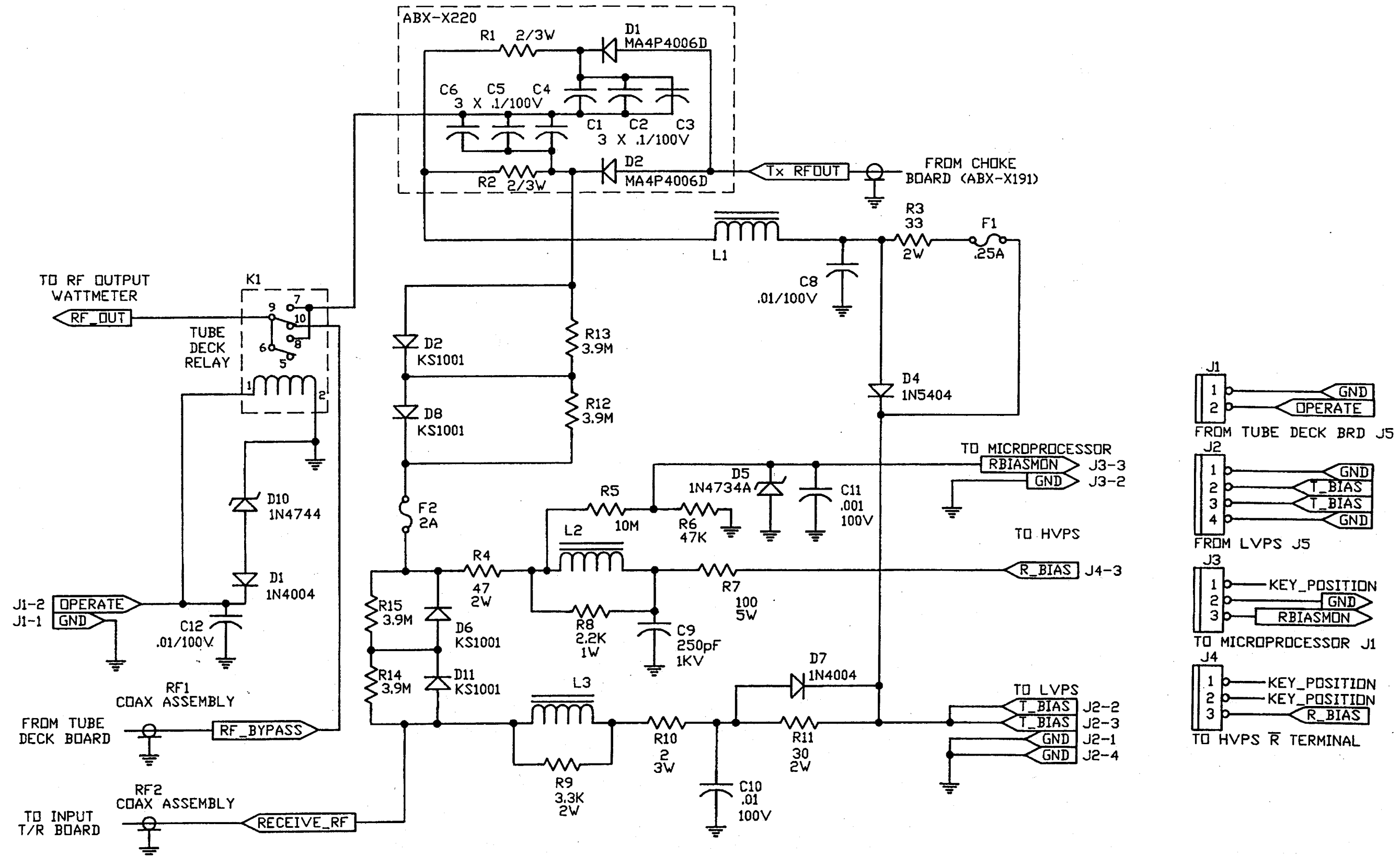
NOTES: UNLESS OTHERWISE SPECIFIED.  
 1. ALL CAPACITOR VALUES ARE IN (UF).  
 ALL RESISTOR VALUES ARE 1/4 WATT.



## INPUT MATCHING NETWORK BOARD

Assembly ABX-X183, Dwg. #SXX-X167, Rev. F

NOTE: UNLESS OTHERWISE NOTED, RESISTORS ARE 1/4W AND CAPACITORS ARE IN  $\mu\text{F}$ .

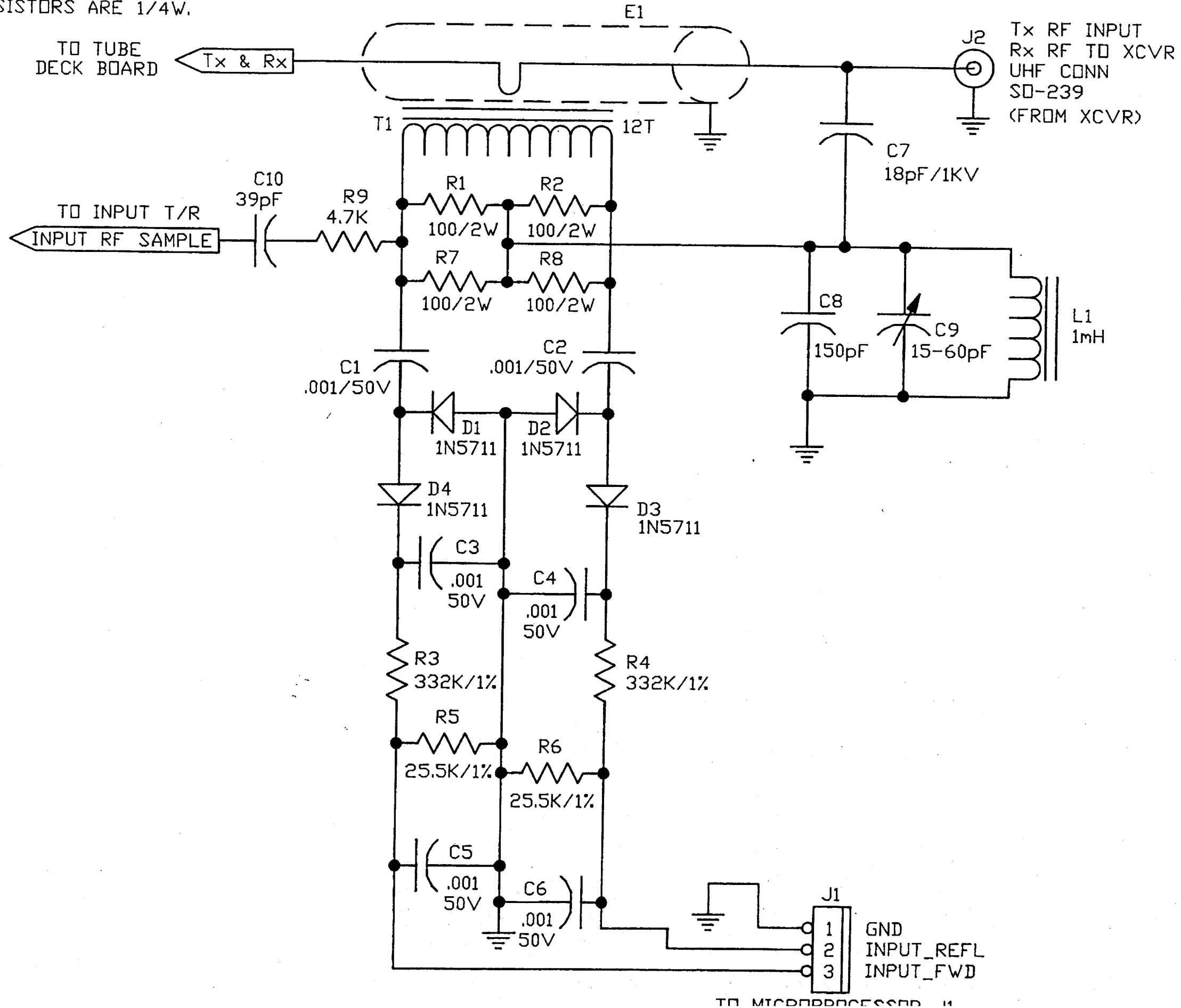


**OUTPUT T/R BOARD**

NOTES: UNLESS OTHERWISE SPECIFIED.

1. CAPACITOR VALUES ARE  $\mu\text{F}$ .

2. RESISTORS ARE 1/4W.



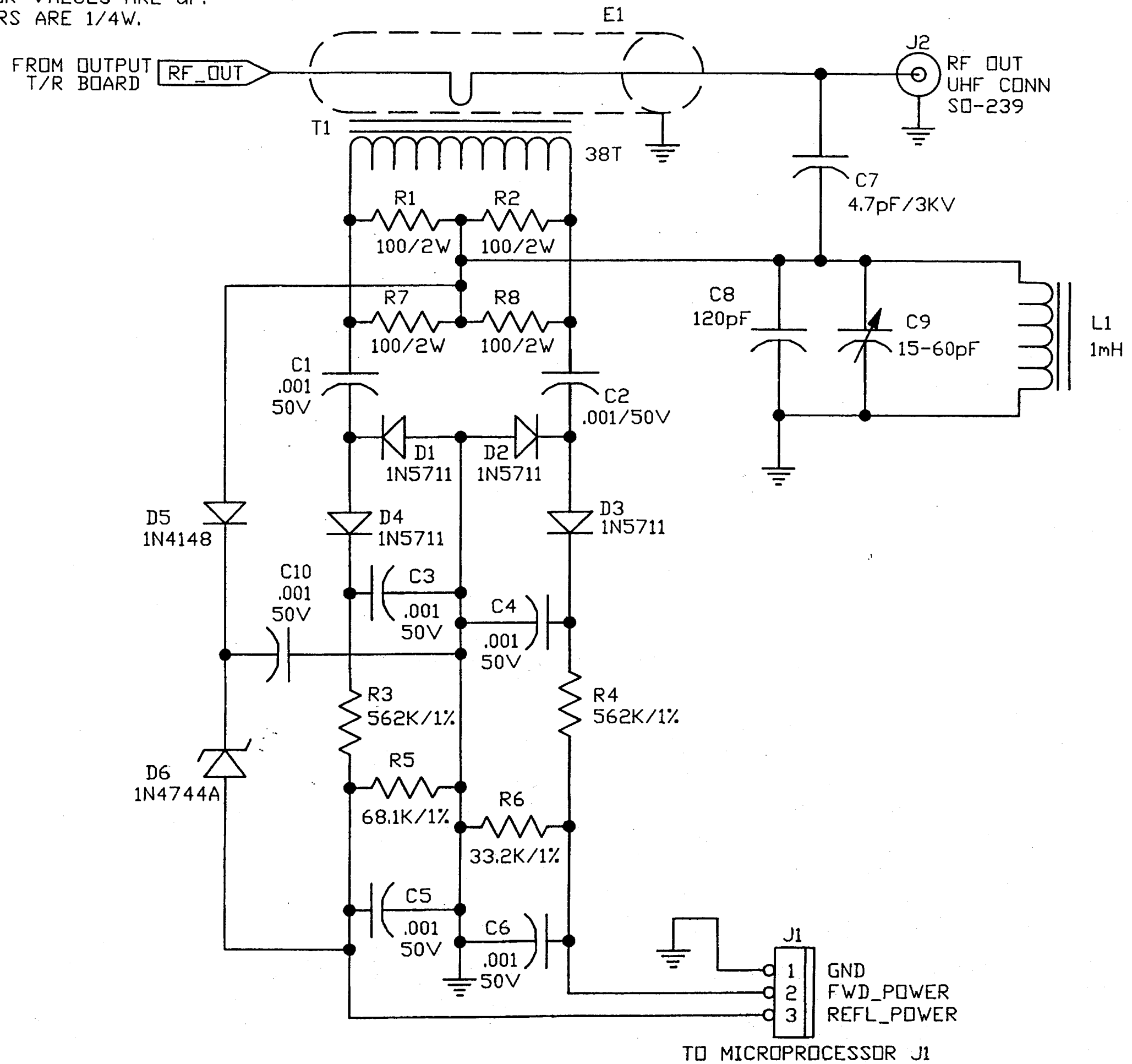
**INPUT WATTMETER BOARD**  
Assembly ABX-X184, Dwg. #SXX-X169, Rev. G



NOTES: UNLESS OTHERWISE SPECIFIED.

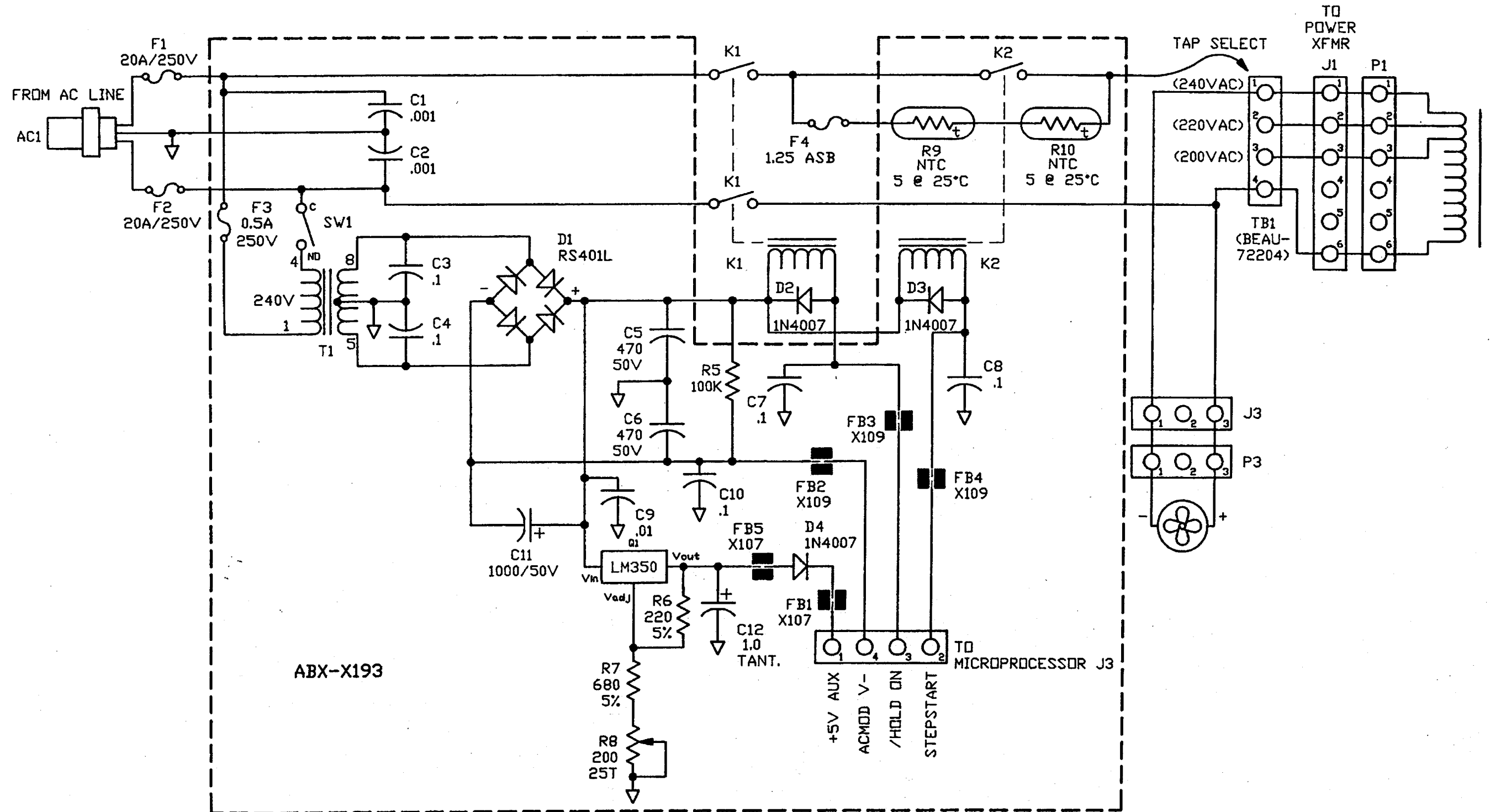
1. CAPACITOR VALUES ARE  $\mu\text{F}$ .

2. RESISTORS ARE 1/4W.



**OUTPUT WATTMETER BOARD**  
Assembly ABX-X190, Dwg. #SXX-X174, Rev. C

NOTES: UNLESS OTHERWISE SPECIFIED.  
 1. CAPACITOR VALUES ARE  $\mu\text{F}$ .  
 2. RESISTORS ARE 1/4W.



**AC MODULE**