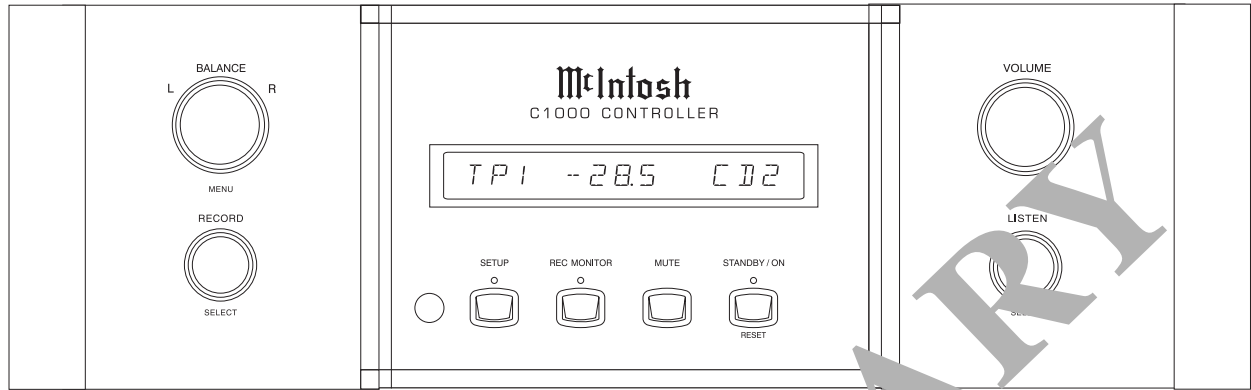




C1000

CONTROLLER



PRELIMINARY

CONTENTS

Performance Specifications	2	Display Schematic and PCB	11 - 14
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SERVICE MANUAL

PERFORMANCE SPECIFICATIONS

Power Requirements

100 Volts, 50/60Hz at 120 watts
110 Volts, 50/60Hz at 120 watts
120 Volts, 50/60Hz at 120 watts
220 Volts, 50/60Hz at 120 watts
230 Volts, 50/60Hz at 120 watts
240 Volts, 50/60Hz at 120 watts

Note: Refer to the rear panel of the C1000 Controller for the correct voltage.

General Specifications

Overall Dimensions

C1000C:

Width is 17-1/2 inches (44.45cm)
Height is 6 inches (15.24cm) including feet
Depth is 24 inches (61.0cm) including the Front Panel, Knobs and Interconnect Cables¹

C1000P:

Width is 17-1/2 inches (44.45cm)
Height is 6 inches (15.24cm) including feet
Depth is 24 inches (61.0cm) including the Front Panel and Interconnect Cables¹

C1000T:


Width is 17-1/2 inches (44.45cm)
Height is 6 inches (15.24cm) including feet
Depth is 24 inches (61.0cm) including the Front Panel and Interconnect Cables¹

Weight

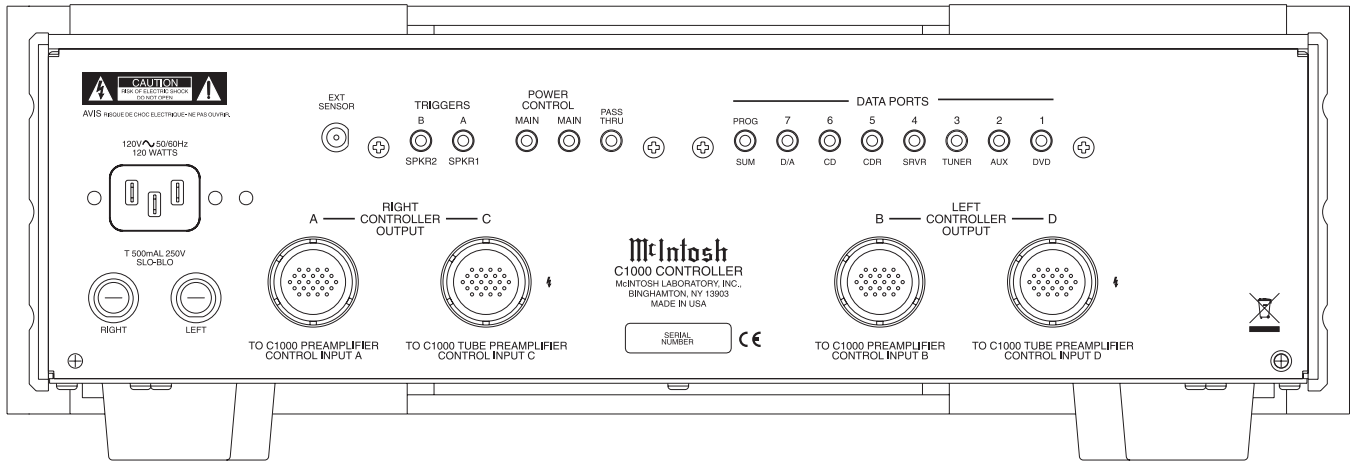
C1000C - 39.0 pounds (17.7 kg) net
61.4 pounds (27.9 kg) in shipping carton
C1000P - 33.0 pounds (15.0 kg) net
53.6 pounds (24.3 kg) in shipping carton
C1000T - 34.0 pounds (15.4 kg) net
54.6 pounds (24.8 kg) in shipping carton

¹ Interconnect Cables are supplied with the C1000 Preamplifier and C1000 Tube Preamplifier. They are used to connect Preamplifier(s) to the C1000 Controller.

NOTES

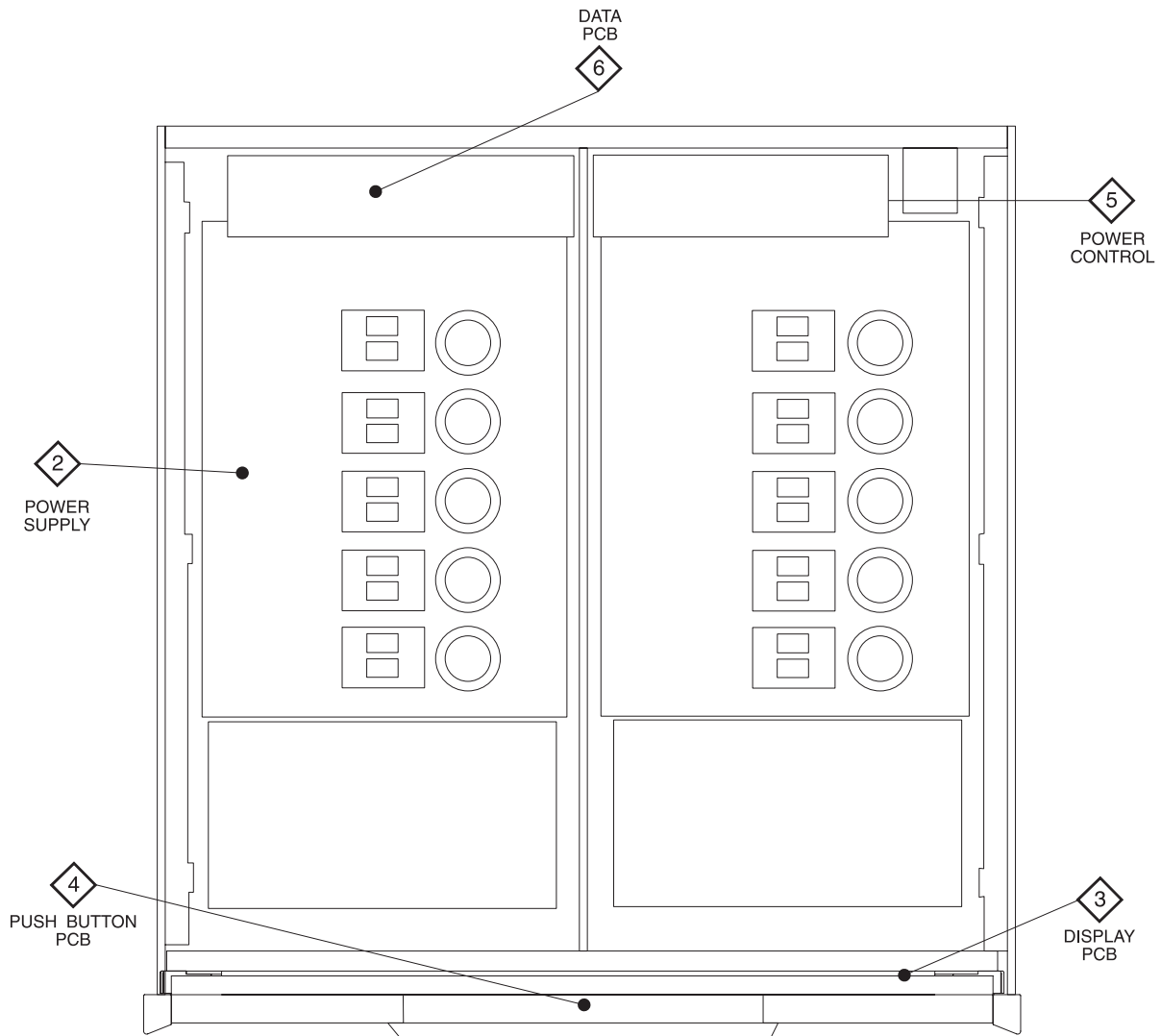
1. The heavy notes on the schematic denote the primary signal path.
2. Unless otherwise noted, all voltages indicated on the schematics are measured under the following conditions:
 - a. AC input at 120 volts, 50/60Hz.
 - b. All voltages are +/-10% with respect to ground. A high impedance (10 megaohm) voltmeter must be used.
3. Unless otherwise specified:
 - a. Resistor values are in ohms.
 - b. Capacitor values are microfarads (uF).
 - c. Inductor values are in microhenries (uH).
4. On PC board drawings, Square pad indicates:
 - a. Polarized Capacitors - Positive
 - b. Diodes - Cathode
 - c. Others - Pin 1
5. **WARNING**
Parts marked with the symbol  have critical characteristics. Use only replacement parts recommended by the manufacturer.
6. Use McIntosh Remote Control Model HR052 with the MVP861.

REAR PANEL

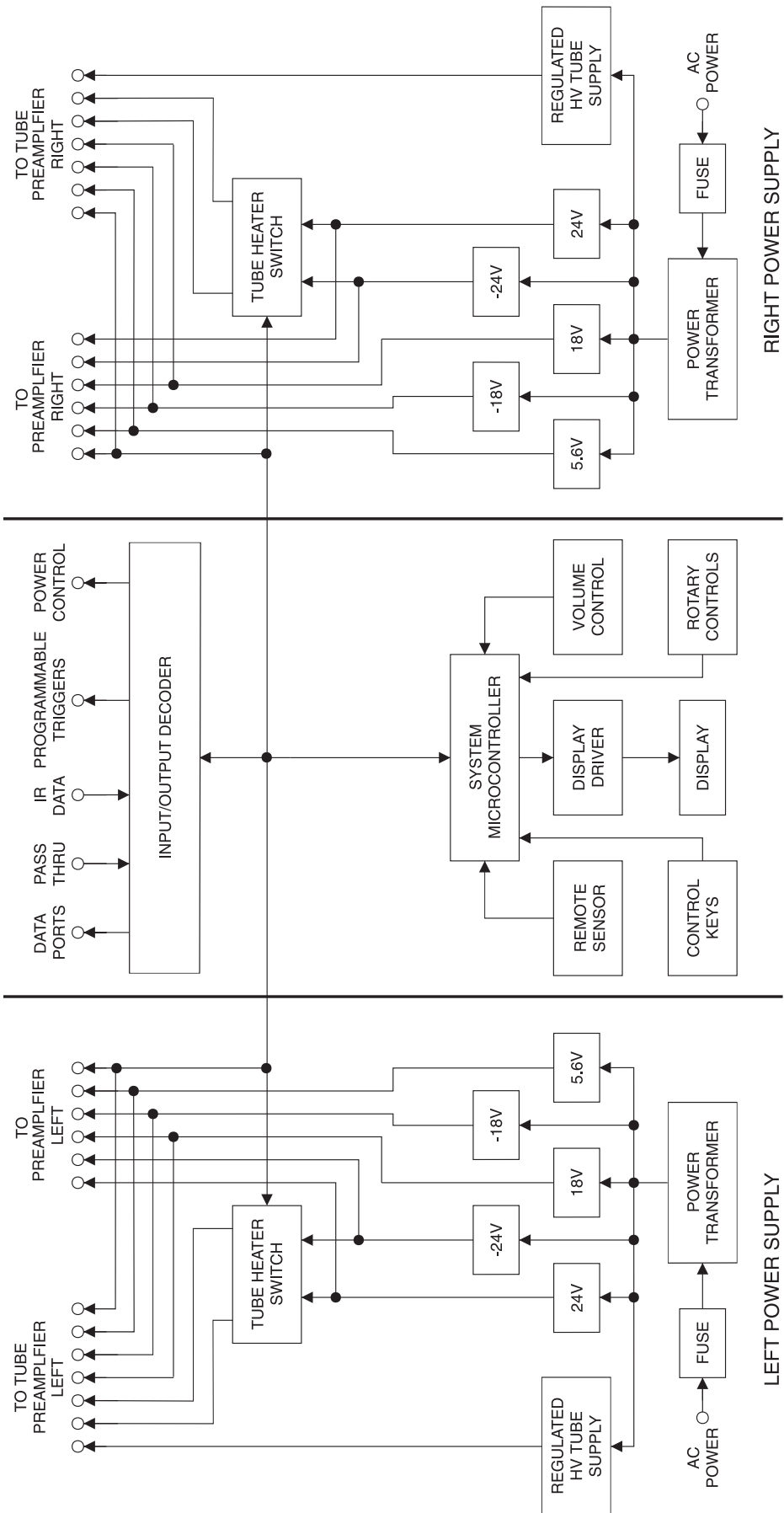


SECTION LOCATIONS

TOP VIEW WITH COVER REMOVED

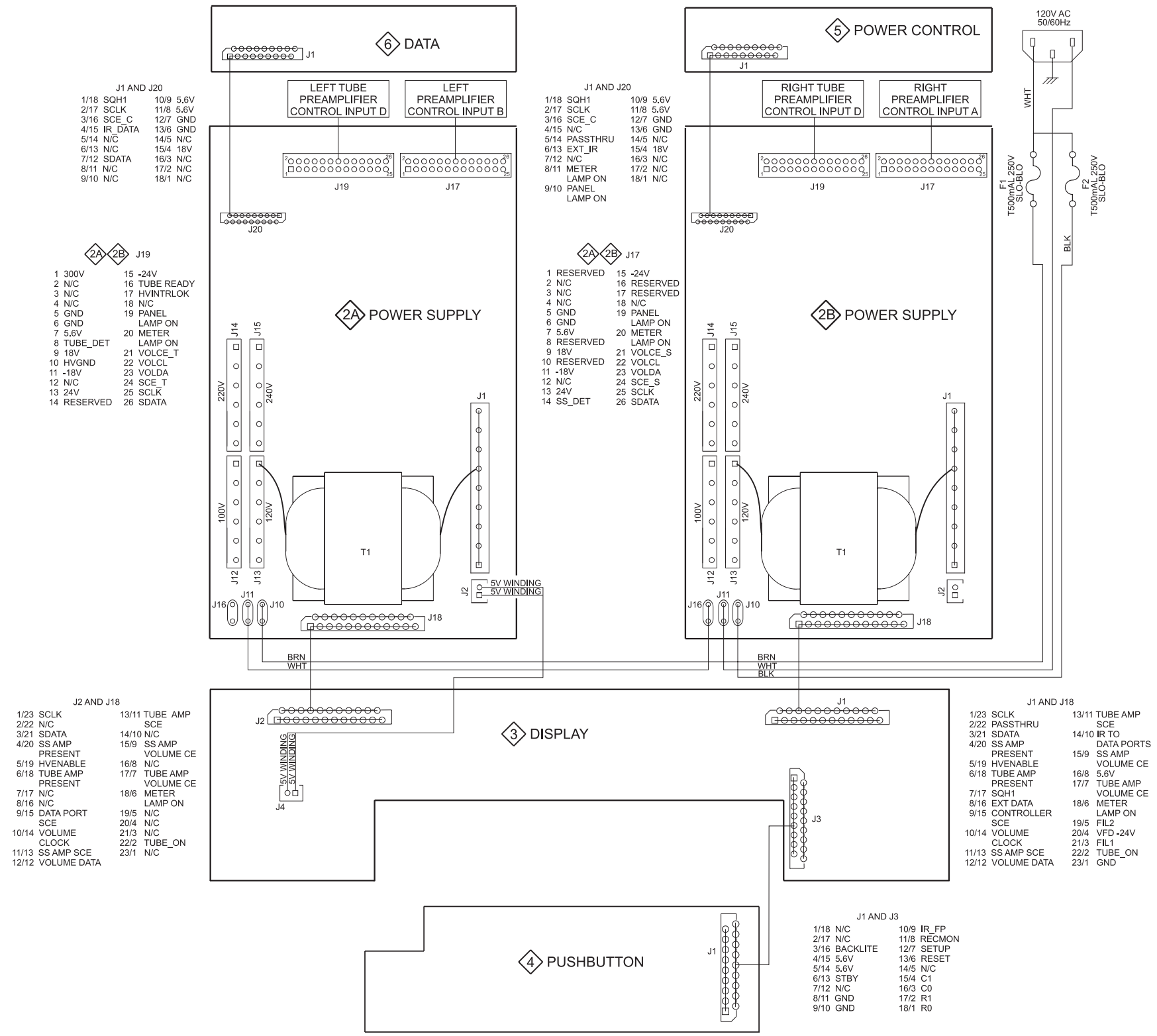


BLOCK DIAGRAM

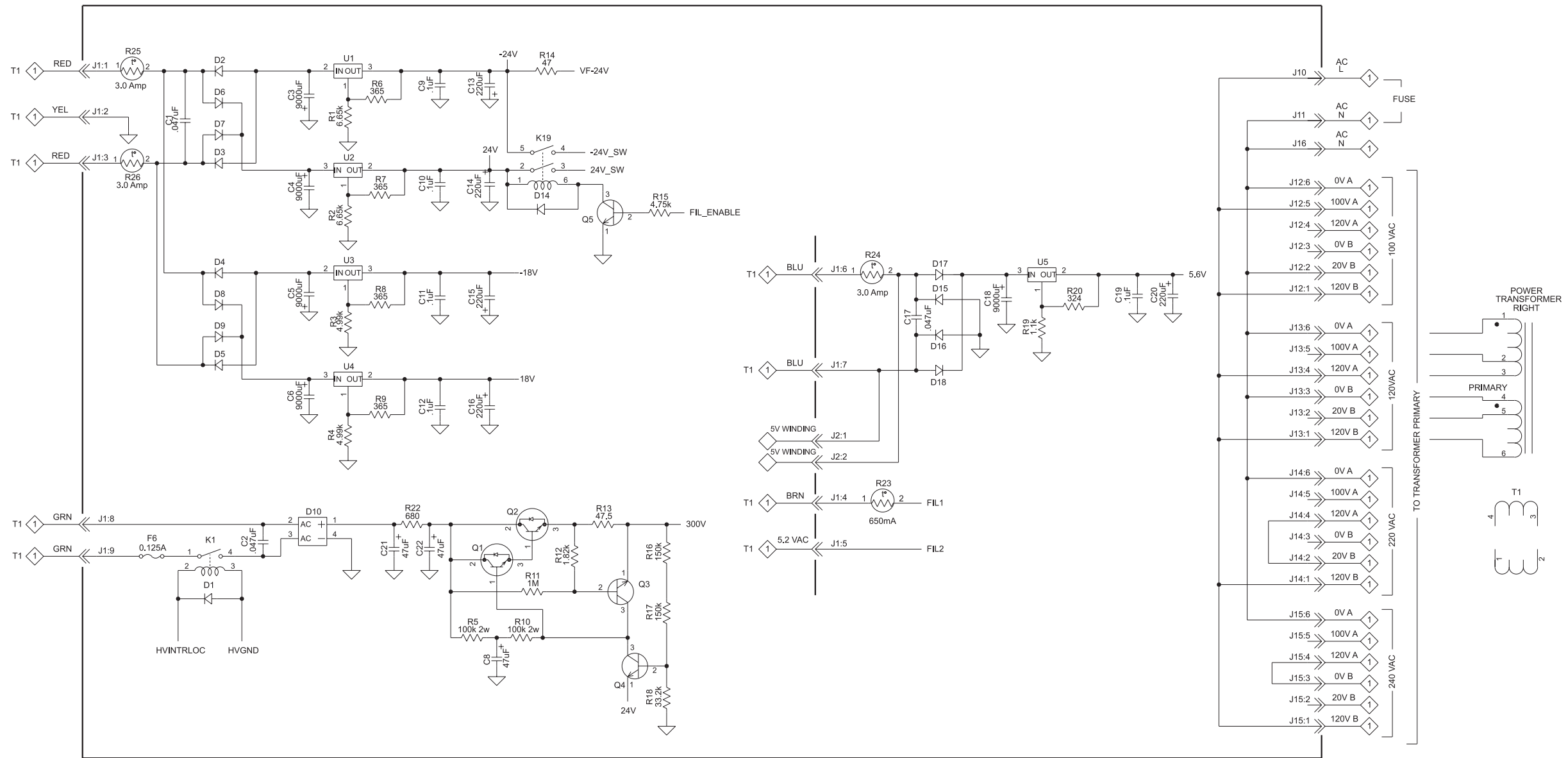


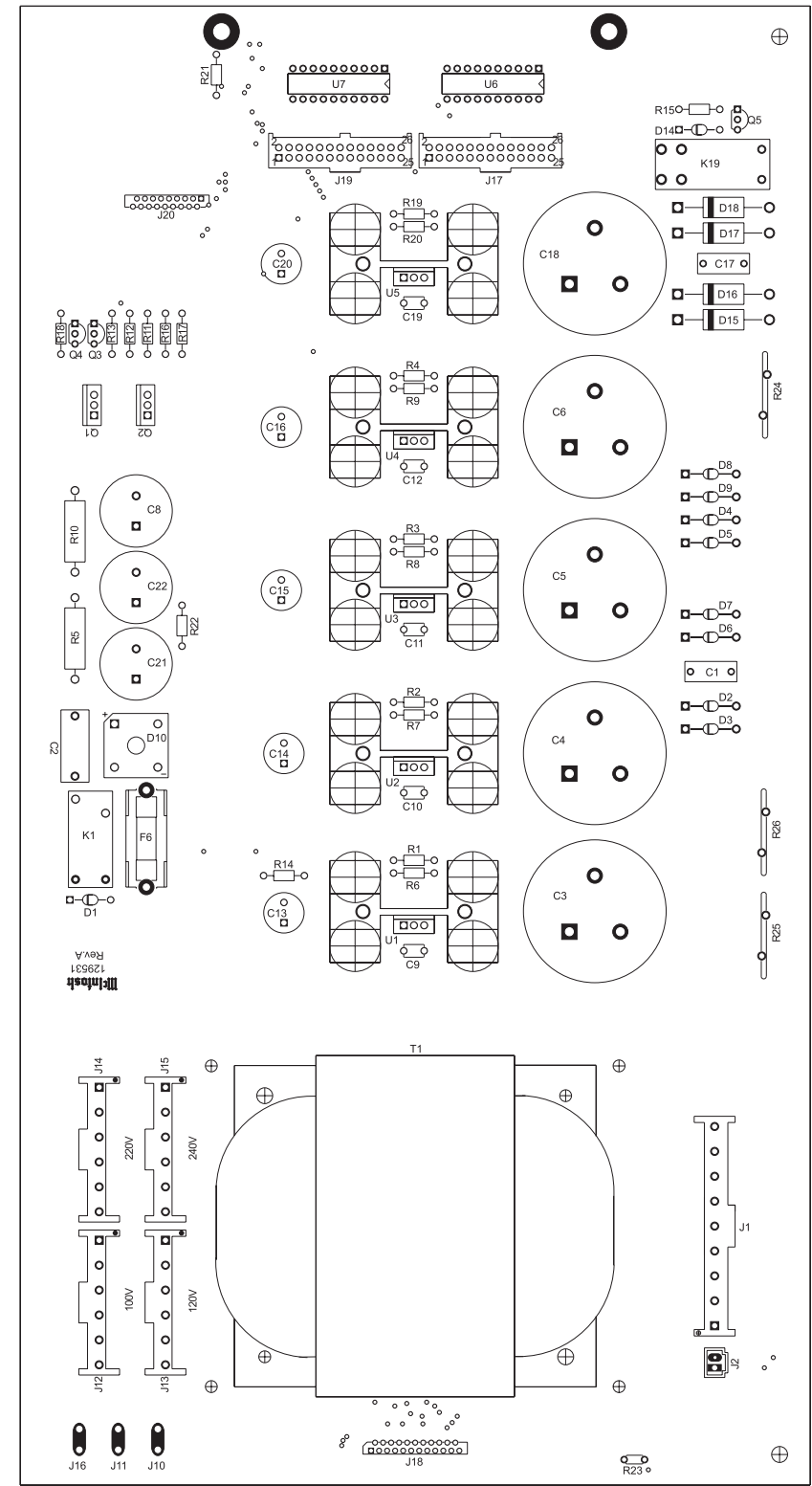
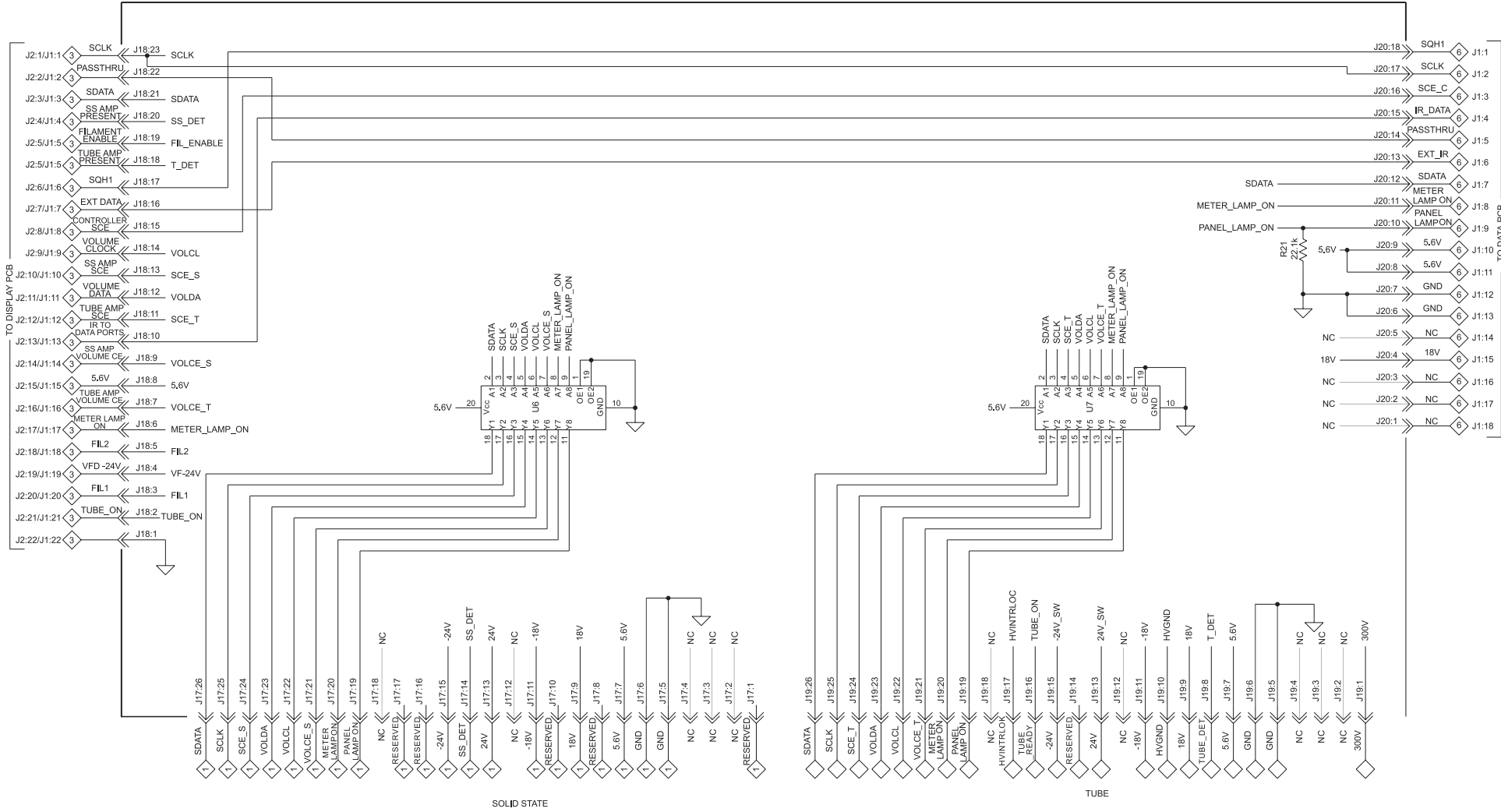
INTERCONNECT

C1000 CONTROLLER

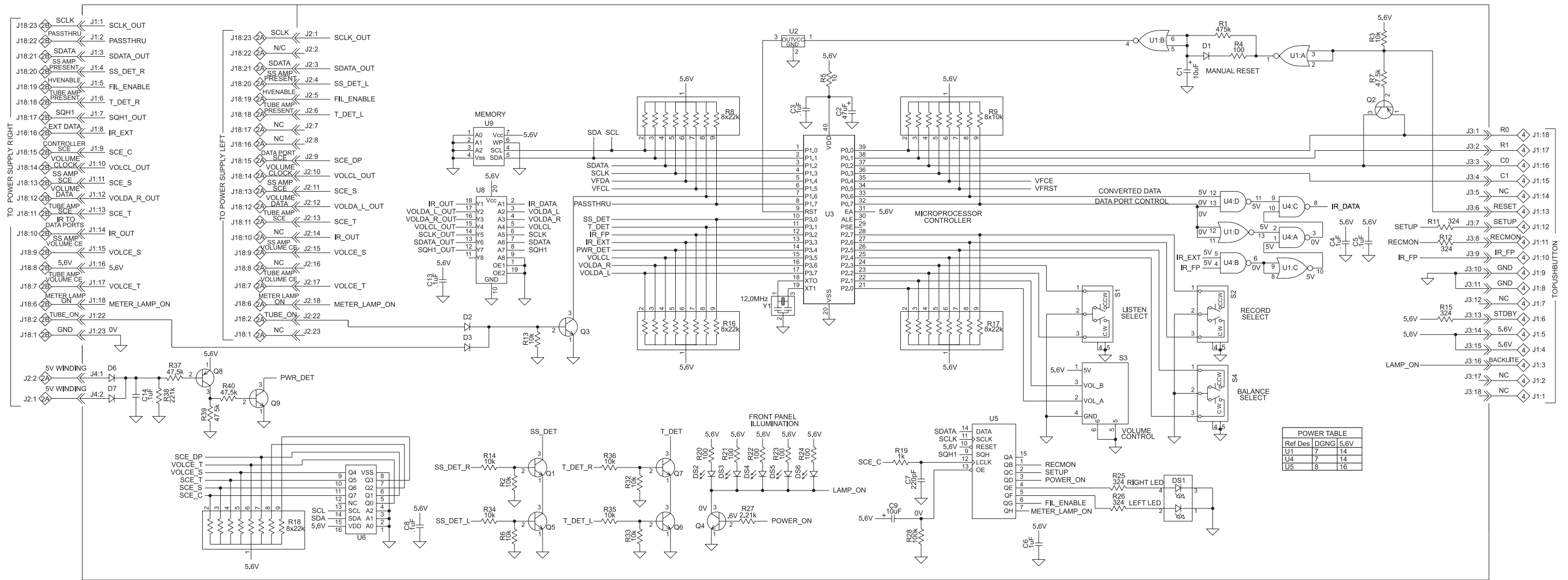


2A 2B POWER SUPPLY 050098 SCH 1 OF 2



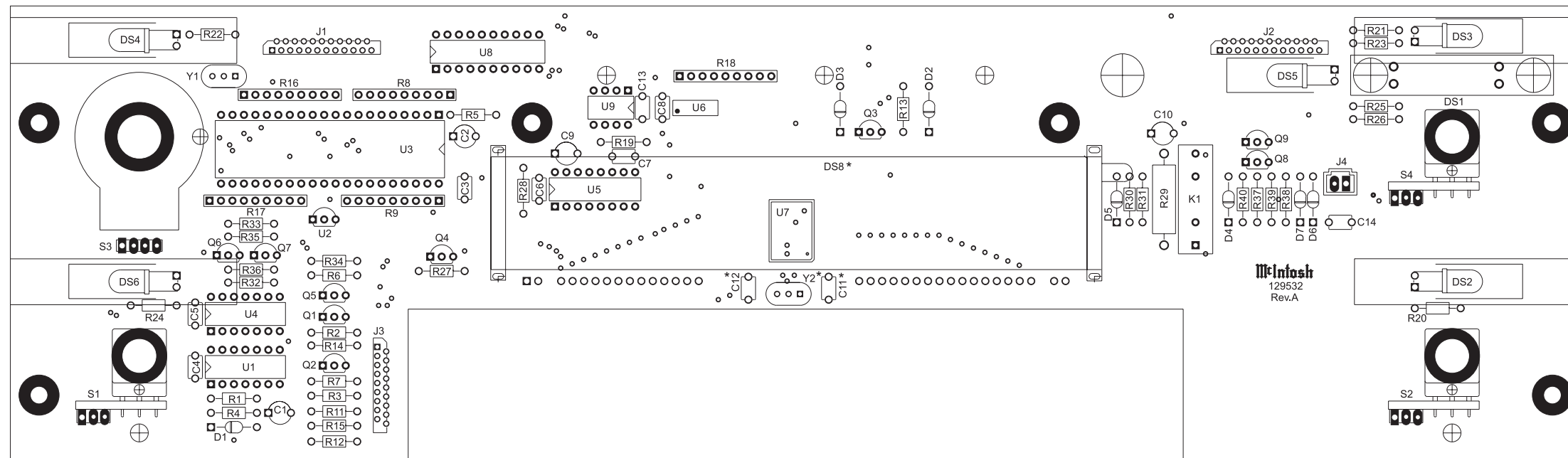
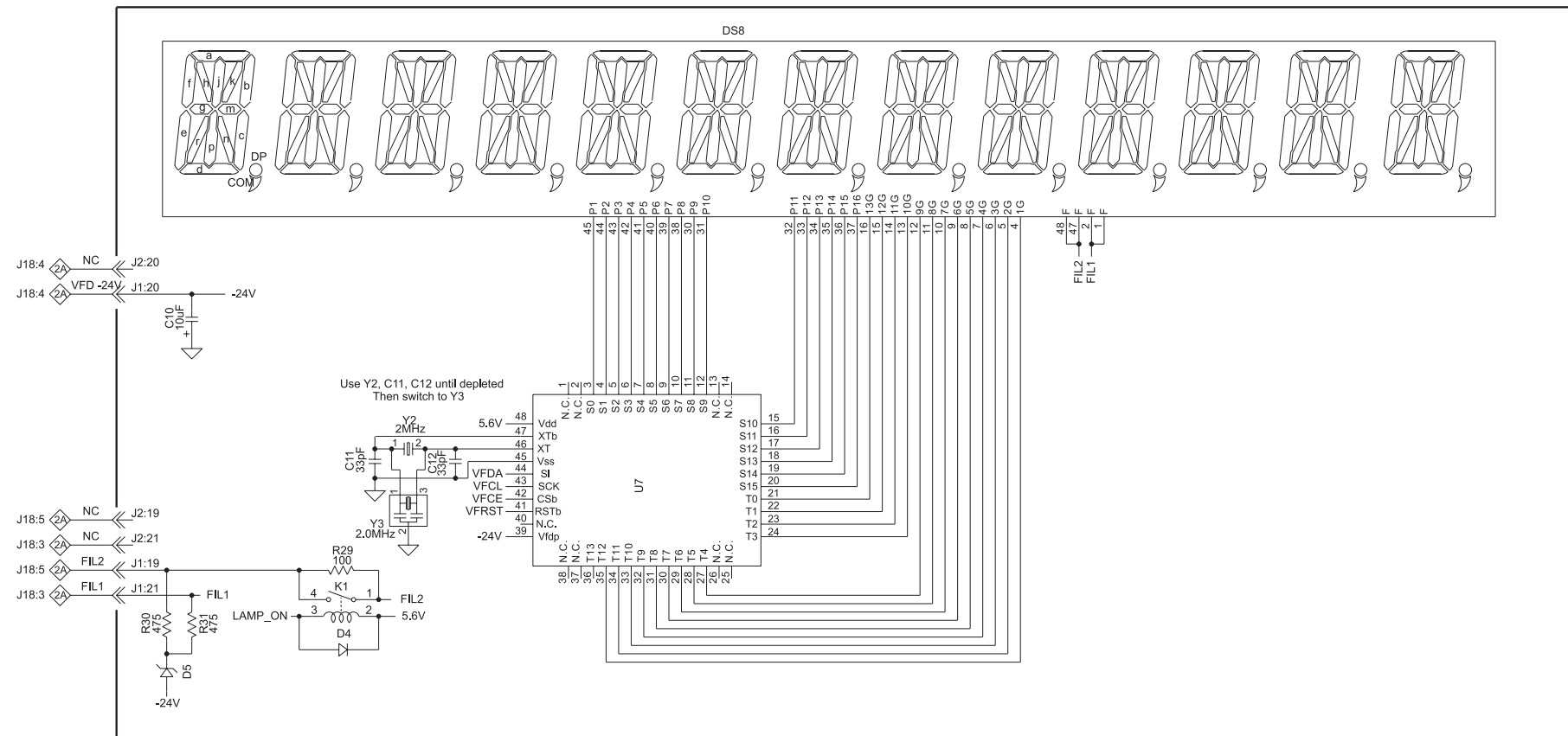


3 DISPLAY 050099 SCH 1 OF 2

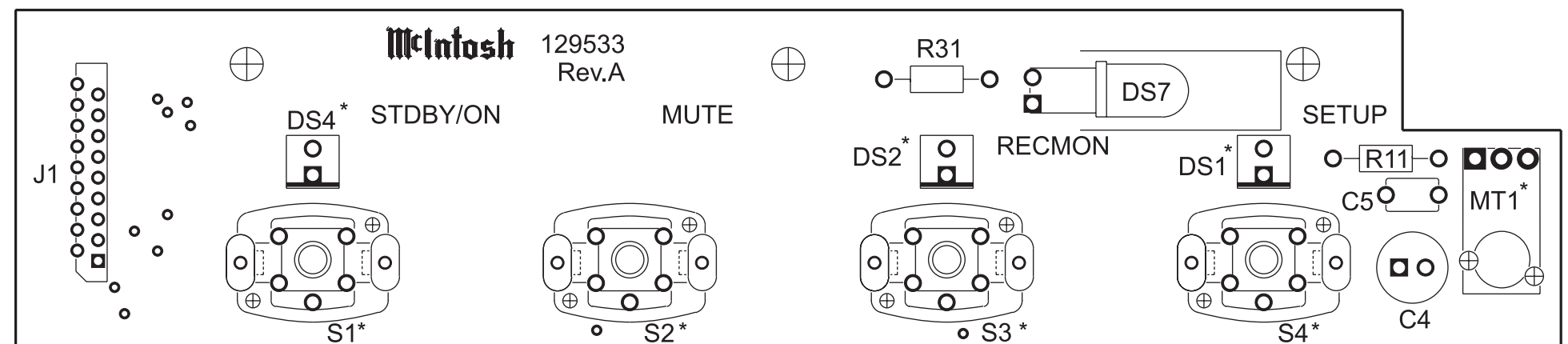
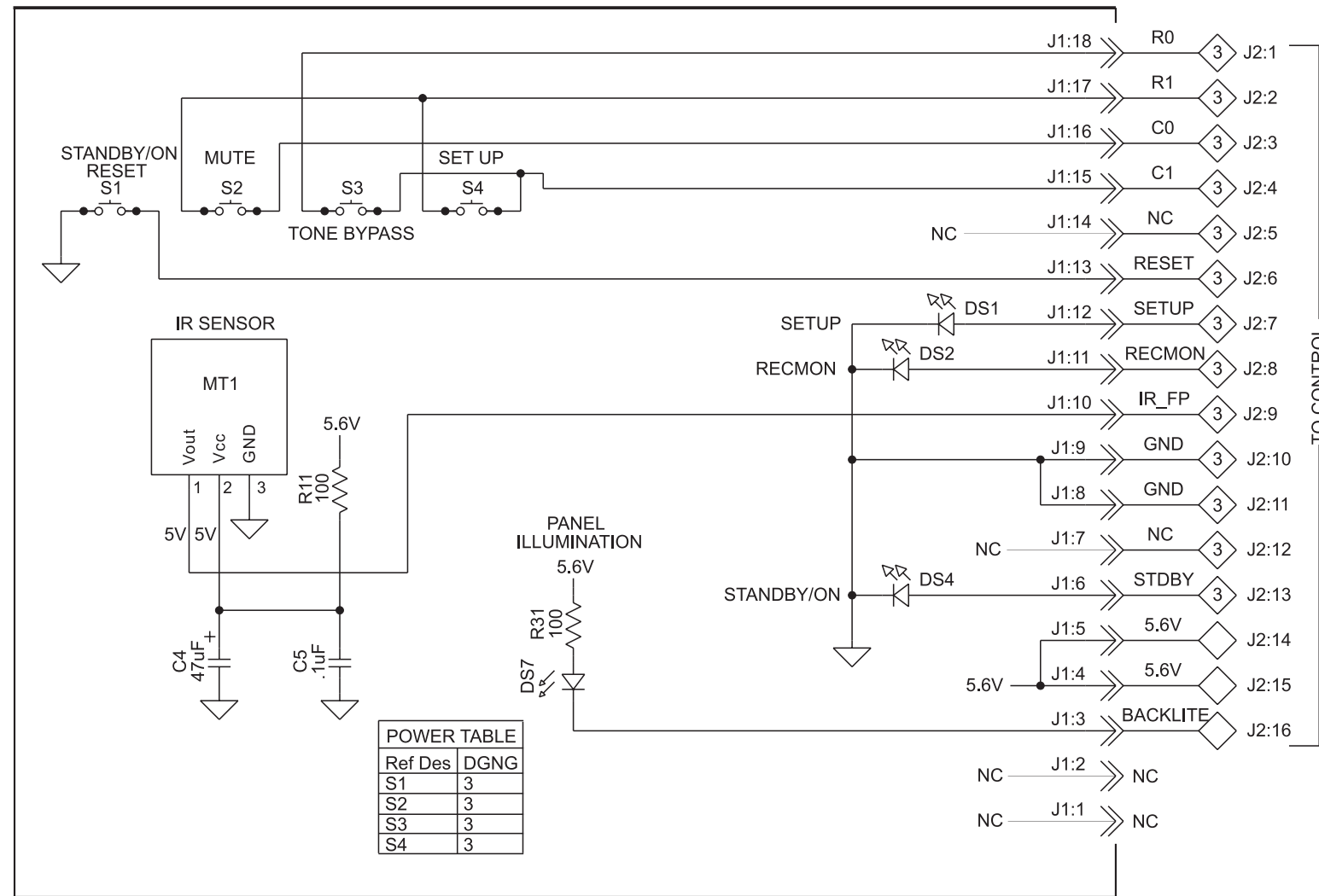


C1000
CONTROLLER

3 DISPLAY 050099 SH 2 OF 2 and PCB

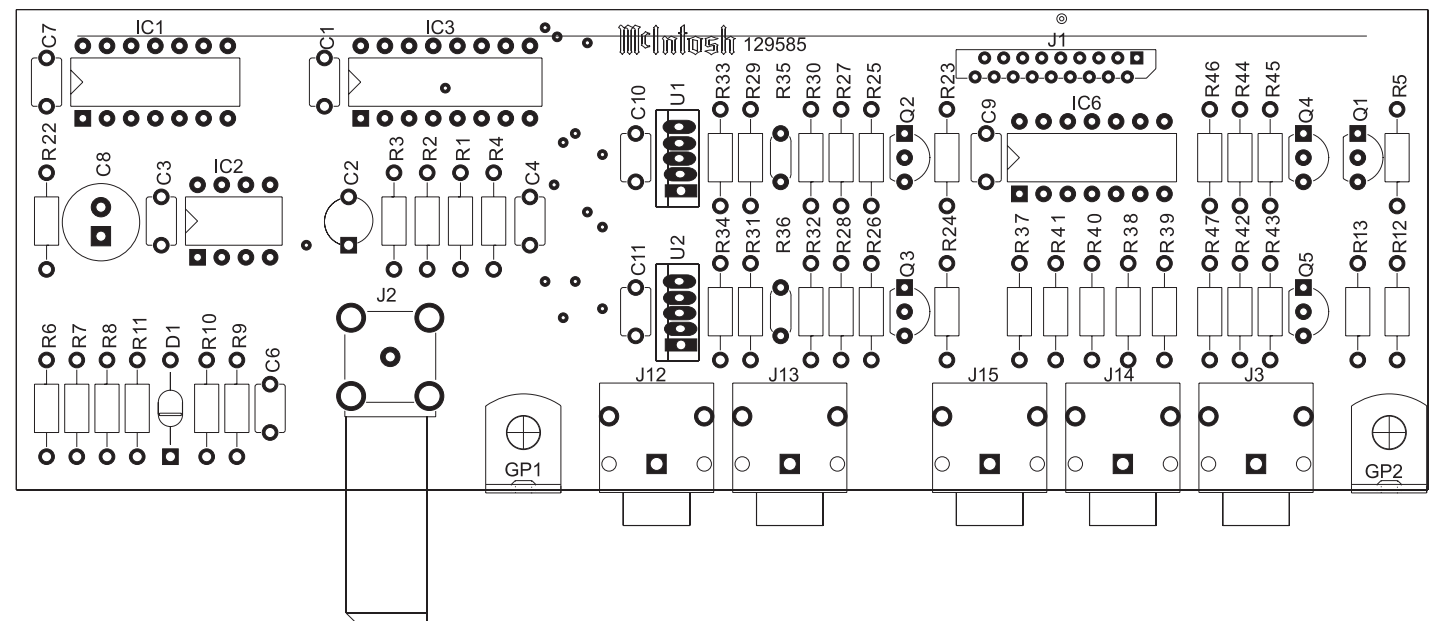
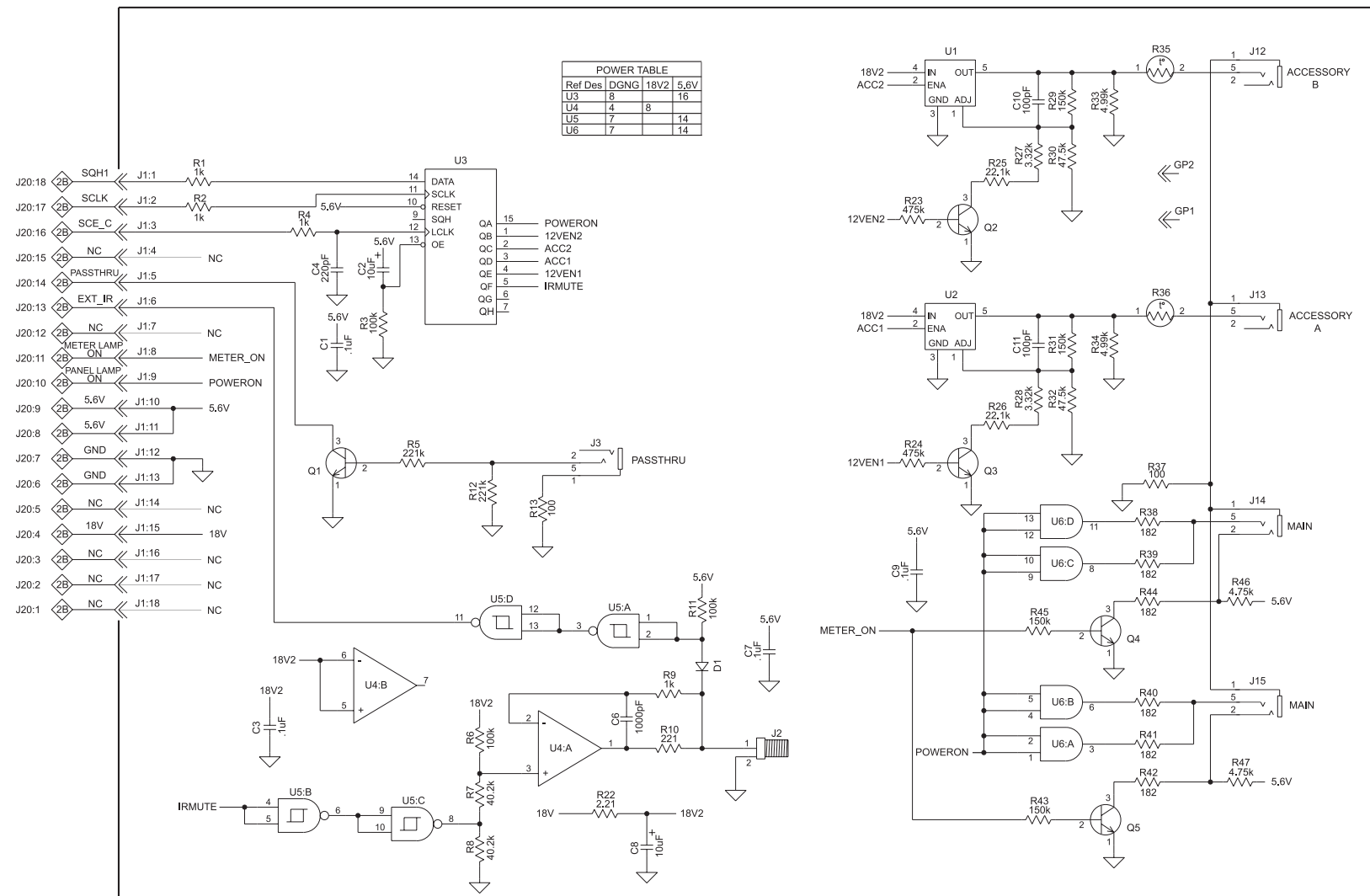


4 PUSHBUTTON 050100 SCH and PCB

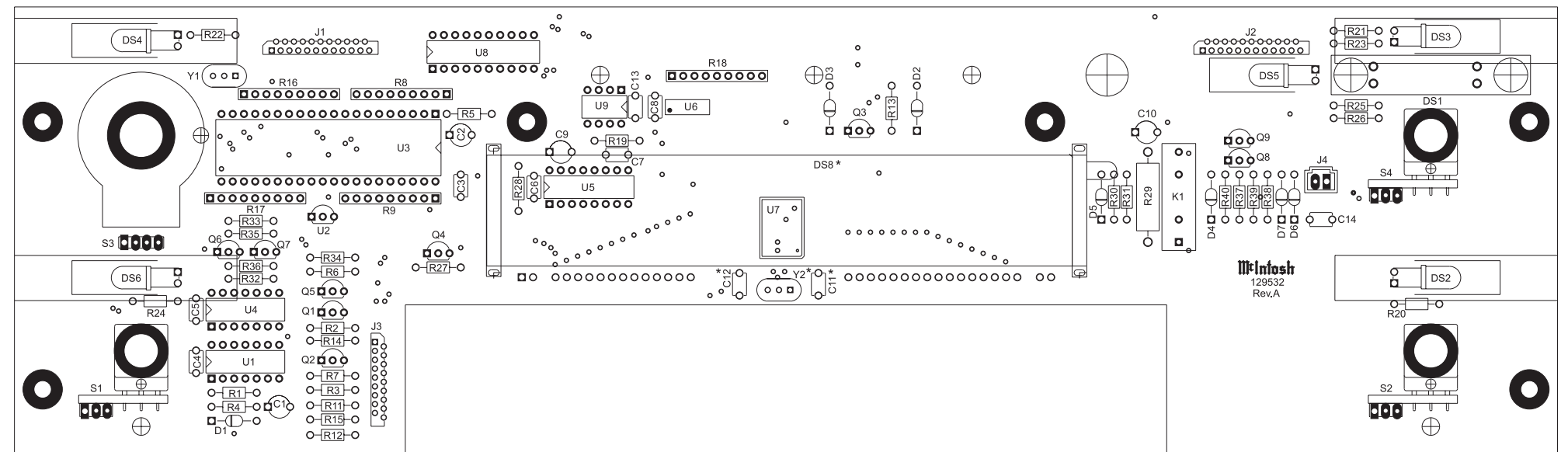
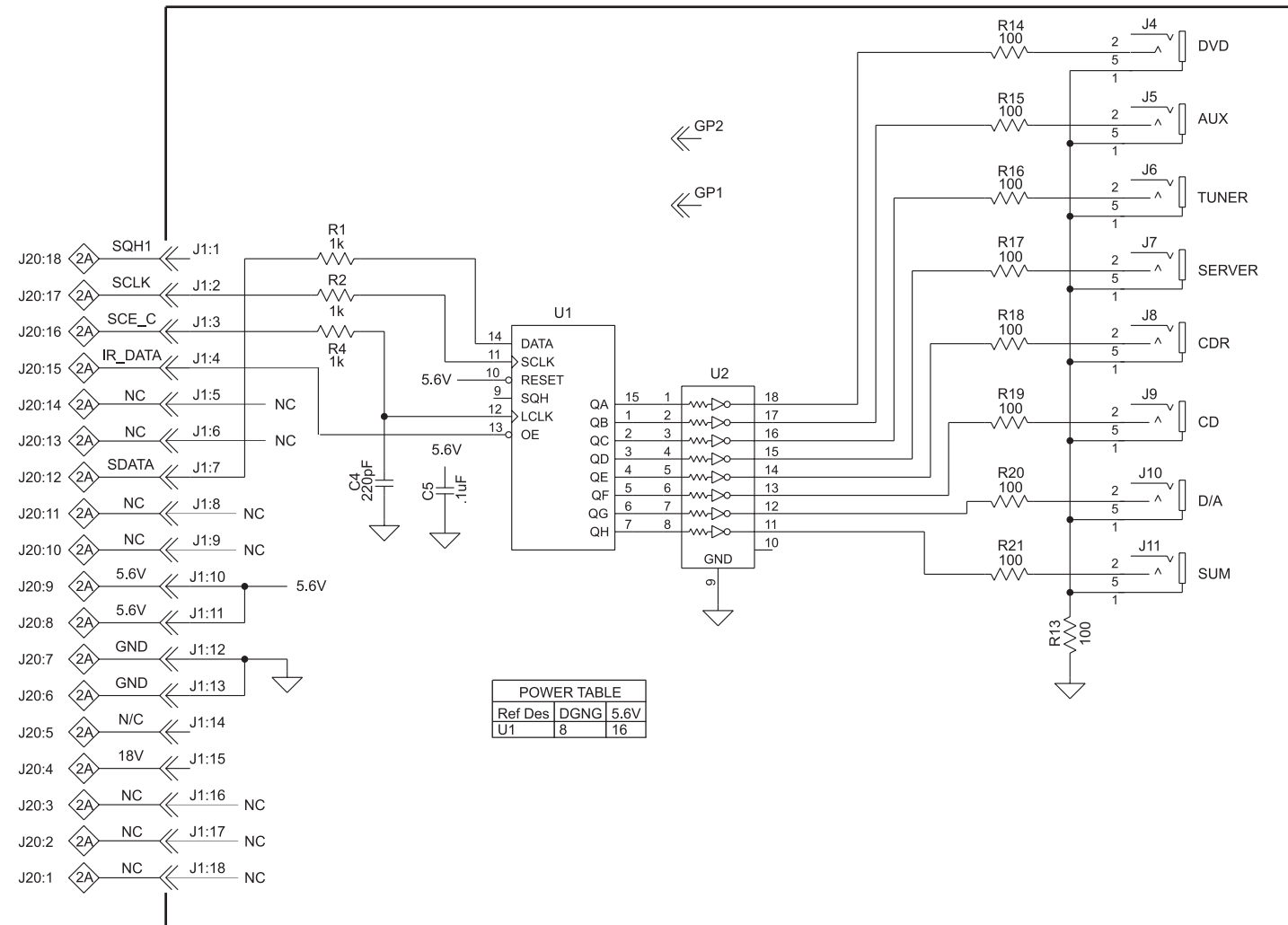


C1000
CONTROLLER

5 POWER CONTROL 050196 SCH and PCB



6 DATA 050101 SCH and PCB



PARTS LISTS

◆ 050098 POWER SUPPLY PCB

Ref No.	Description	Part No.	Ref No.	Description	Part No.
C1	CAP POLY .047UF 10% 250VDC	064364	R3	RES MF 4.99K 1% 1/4W	144098
C2	CAP POLY .047UF 10% 1000VDC	064434	R4	RES MF 4.99K 1% 1/4W	144098
C3	CAP ELECT 9000UF 40V	066474	R5	RES MO 100K 5% 2W	144438
C4	CAP ELECT 9000UF 40V	066474	R6	RES MF 365 OHM 1% 1/4W	144071
C5	CAP ELECT 9000UF 40V	066474	R7	RES MF 365 OHM 1% 1/4W	144071
C6	CAP ELECT 9000UF 40V	066474	R8	RES MF 365 OHM 1% 1/4W	144071
C8	CAP ELECT 47UF 450V	066497	R9	RES MF 365 OHM 1% 1/4W	144071
C9	CAP MONO .1uF 50V 20% Z5U	061305	R10	RES MO 100K 5% 2W	144438
C10	CAP MONO .1uF 50V 20% Z5U	061305	R11	RES MF 1M 1/4W	144269
C11	CAP MONO .1uF 50V 20% Z5U	061305	R12	RES MF 1.82K 1% 1/4W	144296
C12	CAP MONO .1uF 50V 20% Z5U	061305	R13	RES MF 47.5 OHM 1% 1/4W	144442
C13	CAP ELECT 220UF 50V 20%	066254	R14	RES MET OX 47 OHM .5W 5%	137096
C14	CAP ELECT 220UF 50V 20%	066254	R15	RES MF 4.75K 1% 1/4W	144097
C15	CAP ELECT 220UF 50V 20%	066254	R16	RES MF 150K 1% 1/4W	144419
C16	CAP ELECT 220UF 50V 20%	066254	R17	RES MF 150K 1% 1/4W	144419
C17	CAP POLYPROP .047UF 10% 250VDC	064364	R18	RES MF 33.2K 1% 1/4W	144015
C18	CAP ELECT 9000UF 40V	066474	R19	RES MF 1.1K 1% 1/4W	144091
C19	CAP MONO .1uF 50V 20% Z5U	061305	R20	RES MF 324 OHM 1% 1/4W	144338
C20	CAP ELECT 220UF 50V 20%	066254	R21	RES MF 22.1K 1% 1/4W	144187
C21	CAP ELECT 47UF 450V	066497	R22	RES MET OX 680 OHM .5W 5%	137093
C22	CAP ELECT 47UF 450V	066497	R23	FUSE PTC RESETTABLE	144488
D1	DIODE SILICON 1N4148	070047	R24	POLYSWITCH RXE300	144267
D2	DIODE SIL 400 PIV @ 1.5A	070031	R25	POLYSWITCH RXE300	144267
D3	DIODE SIL 400 PIV @ 1.5A	070031	R26	POLYSWITCH RXE300	144267
D4	DIODE SIL 400 PIV @ 1.5A	070031	T1	R-Core Power Transformer	159358
D5	DIODE SIL 400 PIV @ 1.5A	070031	U1	LM337 1.5A Adj Reg/Htsk 6298B-CNE42	133334
D6	DIODE SIL 400 PIV @ 1.5A	070031	U2	LM317T 1.5A Adjustable Reg	133333
D7	DIODE SIL 400 PIV @ 1.5A	070031	U3	LM337 1.5A Adj Reg/Htsk 6298B-CNE42	133334
D8	DIODE SIL 400 PIV @ 1.5A	070031	U4	LM317T 1.5A Adjustable Reg	133333
D9	DIODE SIL 400 PIV @ 1.5A	070031	U5	LM317T 1.5A Adjustable Reg	133333
D10	DIODE BRID RECT 1000V 6A	070165	U6	IC OCT 3-ST NI BF/LD/LR	133157
D14	DIODE SILICON	070047	U7	IC OCT 3-ST NI BF/LD/LR	133157
D15	DIODE RECT SI 3A 100V	070041			
D16	DIODE RECT SI 3A 100V	070041			
D17	DIODE RECT SI 3A 100V	070041			
D18	DIODE RECT SI 3A 100V	070041			
F6	0.125A 5x20 fuse IEC	089094			
J1	HEADER 9 CIRCUIT POST NATURAL	117724			
J2	HEADER 2 PIN LATCHING	117766			
J10	BLADE FASTON W/FEET	117708			
J11	BLADE FASTON W/FEET	117708			
J12	CONN PCB MOUNT POWER RED	117719			
J13	CONN PCB MOUNT POWER RED	117719			
J14	CONN PCB MOUNT POWER RED	117719			
J15	CONN PCB MOUNT POWER RED	117719			
J16	BLADE FASTON W/FEET	117708			
J17	HEADER SHROUDED 2ROW 26PIN V	117870			
J18	CONN 23 PIN FFC	117715			
J19	HEADER SHROUDED 2ROW 26PIN V	117870			
J20	CONN FFC 18PIN	117765			
K1	RELAY POWER TV5 24V	087069			
K19	24v 22ma 1100ohms	087057			
Q1	TRANSISTOR: NPN POWER	132295			
Q2	TRANSISTOR: NPN POWER	132295			
Q3	TRANSISTOR NPN SILICON	132171			
Q4	TRANSISTOR NPN	132136			
Q5	TRANSISTOR NPN	132223			
R1	RES MF 6.65K OHM 1% 1/4W	144449			
R2	RES MF 6.65K OHM 1% 1/4W	144449			

◆ 050099 DISPLAY PCB

C1	CAP ELECT 10UF 50V	066445
C2	CAP ELECT 47UF 35V	066446
C3	CAP MONO .1UF 50V 20%	061305
C4	CAP MONO .1UF 50V 20%	061305
C5	CAP MONO .1UF 50V 20%	061305
C6	CAP MONO .1UF 50V 20%	061305
C7	CAP MONO 220PF 200V 10%	061301
C8	CAP MONO .1UF 50V 20%	061305
C9	CAP ELECT 10UF 50V	066445
C10	CAP ELECT 10UF 50V	066445
C11	CAP MONO 33PF 200V 5%NPO T&R	061307
C12	CAP MONO 33PF 200V 5%NPO T&R	061307
C13	CAP MONO .1UF 50V 20%	061305
C14	CAP MONO .1UF 50V 20%	061305
D1	DIODE SILICON 1N4148	070047
D2	DIODE SILICON	070047
D3	DIODE SILICON	070047
D4	DIODE SILICON	070047
D5	DIODE ZENER 6.2V 5% 500MW	070085
D6	DIODE SILICON	070047
D7	DIODE SILICON	070047
DS1	LED BAL PCB	058109
DS2	LED GRN 5MM HI-INTENSITYVF[V] 3.5	058165
DS3	LED GRN 5MM HI-INTENSITY VF[V] 3.5	058165

Ref No.	Description	Part No.	Ref No.	Description	Part No.
DS4	LED GRN 5MM HI-INTENSITY VF[V] 3.5	058165	U5	IC SHFT REG SER-PAR	133186
DS5	LED GRN 5MM HI-INTENSITY VF[V] 3.5	058165	U6	IC 8BIT DRIVER	133461
DS6	LED GRN 5MM HI-INTENSITY VF[V] 3.5	058165	U7	VFD Controller 16 Seg x 14 digit	133510
DS8	16 Digits VF display	058169	U8	IC OCT 3-ST NI BF/LD/LR	133157
J1	CONN 23 PIN FFC	117715	U9	IC CMOS EPROM	133249
J2	CONN 23 PIN FFC	117715	Y1	RESONATOR CERAMIC 12.0MHZ W/CAP	180059
J3	CONN FFC 18PIN	117765	Y2	CERAMIC RESONATOR 2MHZ	180047
J4	HEADER 2 PIN LATCHING	117766	Y3	RESONATOR CERAMIC 2.0MHZ W/CAP	180064
K1	RELAY REED FORM 1A 5V 500 OHMS	087050			
Q1	TRANSISTOR NPN	132223	050100 PUSHBUTTON PCB		
Q2	TRANSISTOR NPN	132224	C4	47uf 16v small can	066380
Q3	TRANSISTOR NPN	132223	C5	CAP MONO .1UF 50V 20% Z5U	061305
Q4	TRANSISTOR NPN	132223	DS1	LED SQUARE RED	058109
Q5	TRANSISTOR NPN	132223	DS2	LED SQUARE RED	058109
Q6	TRANSISTOR NPN	132223	DS4	LED SQUARE RED	058109
Q7	TRANSISTOR NPN	132223	DS7	LED GRN 5MM HI-INTENSITY VF[V] 3.5	058165
Q8	TRANSISTOR PNP	132224	J1	CONN FFC 18PIN	117765
Q9	TRANSISTOR NPN	132223	MT1	VISHAY TSOP2238YA1	121046
R1	RES MF 475K 1% 1/4W	144364	R11	RES MF 100 OHM 1% 1/4W	144196
R2	RES MF 10K 1% 1/4W	144053	R31	RES MF 100 OHM 1% 1/4W	144196
R3	RES MF 10K 1% 1/4W	144053	S1	SWITCH PB TACT	150058
R4	RES MF 100 OHM 1% 1/4W	144196	S2	SWITCH PB TACT	150058
R5	RES MF 10 OHM 1% 1/4W	144157	S3	SWITCH PB TACT	150058
R6	RES MF 10K 1% 1/4W	144053	S4	SWITCH PB TACT	150058
R7	RES MF 47.5K 1% 1/4W	144108			
R8	RES NETWORK 9X-1-223	144238	050101 DATA PCB		
R9	RES NET 10K X8 RES B	144253	C4	CAP MONO 220PF 100V 10% NPO	061301
R11	RES MF 324 OHM 1% 1/4W	144338	C5	CAP MONO .1uF 50V 20% Z5U	061305
R12	RES MF 324 OHM 1% 1/4W	144338	GP1	BRACKET PCB CARD MOUNTING	003611
R13	RES MF 10K 1% 1/4W	144053	GP2	BRACKET PCB CARD MOUNTING	003611
R14	RES MF 10K 1% 1/4W	144053	J1	CONN FFC 18PIN	117765
R15	RES MF 324 OHM 1% 1/4W	144338	J4	JACK HEADPHONE STEREO 1/8IN	117759
R16	RES NETWORK 9X-1-223	144238	J5	JACK HEADPHONE STEREO 1/8IN	117759
R17	RES NETWORK 9X-1-223	144238	J6	JACK HEADPHONE STEREO 1/8IN	117759
R18	RES NETWORK 9X-1-223	144238	J7	JACK HEADPHONE STEREO 1/8IN	117759
R19	RES MF 1K 1% 1/4W	144090	J8	JACK HEADPHONE STEREO 1/8IN	117759
R20	RES MF 100 OHM 1% 1/4W	144196	J9	JACK HEADPHONE STEREO 1/8IN	117759
R21	RES MF 100 OHM 1% 1/4W	144196	J10	JACK HEADPHONE STEREO 1/8IN	117759
R22	RES MF 100 OHM 1% 1/4W	144196	J11	JACK HEADPHONE STEREO 1/8IN	117759
R23	RES MF 100 OHM 1% 1/4W	144196	R1	RES MF 1K 1% 1/4W	144090
R24	RES MF 100 OHM 1% 1/4W	144196	R2	RES MF 1K 1% 1/4W	144090
R25	RES MF 324 OHM 1% 1/4W	144338	R4	RES MF 1K 1% 1/4W	144090
R26	RES MF 324 OHM 1% 1/4W	144338	R13	RES MF 100 OHM 1% 1/4W	144196
R27	RES MF 2.21K 1% 1/4W	144298	R14	RES MF 100 OHM 1% 1/4W	144196
R28	RES MF 100K 1% 1/4W	144113	R15	RES MF 100 OHM 1% 1/4W	144196
R29	RES WW 100 OHM 10% 2W BWH	139134	R16	RES MF 100 OHM 1% 1/4W	144196
R30	RES MF 475 OHM 1% 1/4W	144086	R17	RES MF 100 OHM 1% 1/4W	144196
R31	RES MF 475 OHM 1% 1/4W	144086	R18	RES MF 100 OHM 1% 1/4W	144196
R32	RES MF 10K 1% 1/4W	144053	R19	RES MF 100 OHM 1% 1/4W	144196
R33	RES MF 10K 1% 1/4W	144053	R20	RES MF 100 OHM 1% 1/4W	144196
R34	RES MF 10K 1% 1/4W	144053	R21	RES MF 100 OHM 1% 1/4W	144196
R35	RES MF 10K 1% 1/4W	144053	U1	IC SHFT REG SER-PAR	133186
R36	RES MF 10K 1% 1/4W	144053	U2	LB1720	133180
R37	RES MF 47.5K 1% 1/4W	144108			
R38	RES MF 221K 1% 1/4W	144421	050196 POWER CONTROL PCB		
R39	RES MF 47.5K 1% 1/4W	144108	C1	CAP MONO .1uF 50V 20% Z5U	061305
R40	RES MF 47.5K 1% 1/4W	144108	C2	CAP ELECT 10UF 50V	066445
S1	16encoder	129294	C3	CAP MONO .1uF 50V 20% Z5U	061305
S2	16encoder	129294	C4	CAP MONO 220PF 100V 10% NPO	061301
S3	ENCODER OPTICAL ROTARY	146246	C6	CAP MONO 1000PF 50V 10% NPO	061303
S4	16encoder	129294	C7	CAP MONO .1uF 50V 20% Z5U	061305
U1	IC NOR 2 INPUT X 4	133176	C8	CAP ELECT 10UF 50V	066445
U2	IC MICRO RESET POS	133241	C9	CAP MONO .1uF 50V 20% Z5U	061305
U3	IC PROGRAMMED c45 V1.00	133504	C10	CAP MONO 100PF 100V 10%	061300
U4	IC NAND 2 INPUT X 4	133161	C11	CAP MONO 100PF 100V 10%	061300

Ref No.	Description	Part No.	Ref No.	Description	Part No.
D1	DIODE SILICON 1N4148	070047	R25	RES MF 22.1K 1% 1/4W	144187
GP1	BRACKET PCB CARD MOUNTING	003611	R26	RES MF 22.1K 1% 1/4W	144187
GP2	BRACKET PCB CARD MOUNTING	003611	R27	RES MF 3.32K 1% 1/4W	144095
J1	CONN FFC 18PIN	117765	R28	RES MF 3.32K 1% 1/4W	144095
J2	CONN GOLD F RIGHT ANGLE	117661	R29	RES MF 150K 1% 1/4W	144419
J3	JACK HEADPHONE STEREO 1/8IN	117759	R30	RES MF 47.5K 1% 1/4W	144108
J12	JACK HEADPHONE STEREO 1/8IN	117759	R31	RES MF 150K 1% 1/4W	144419
J13	JACK HEADPHONE STEREO 1/8IN	117759	R32	RES MF 47.5K 1% 1/4W	144108
J14	JACK HEADPHONE STEREO 1/8IN	117759	R33	RES MF 4.99K 1% 1/4W	144098
J15	JACK HEADPHONE STEREO 1/8IN	117759	R34	RES MF 4.99K 1% 1/4W	144098
Q1	TRANSISTOR NPN	132223	R35	RES POLYSWITCH RXE030	144240
Q2	TRANSISTOR NPN	132223	R36	RES POLYSWITCH RXE030	144240
Q3	TRANSISTOR NPN	132223	R37	RES MF 100 OHM 1% 1/4W	144196
Q4	TRANSISTOR NPN	132223	R38	RES MF 182 OHM 1/4W 1%	144273
Q5	TRANSISTOR NPN	132223	R39	RES MF 182 OHM 1/4W 1%	144273
R1	RES MF 1K 1% 1/4W	144090	R40	RES MF 182 OHM 1/4W 1%	144273
R2	RES MF 1K 1% 1/4W	144090	R41	RES MF 182 OHM 1/4W 1%	144273
R3	RES MF 100K 1% 1/4W	144113	R42	RES MF 182 OHM 1/4W 1%	144273
R4	RES MF 1K 1% 1/4W	144090	R43	RES MF 150K 1% 1/4W	144419
R5	RES MF 221K 1% 1/4W	144421	R44	RES MF 182 OHM 1/4W 1%	144273
R6	RES MF 100K 1% 1/4W	144113	R45	RES MF 150K 1% 1/4W	144419
R7	RES MF 40.2K 1% 1/4W	144107	R46	RES MF 4.75K 1% 1/4W	144097
R8	RES MF 40.2K 1% 1/4W	144107	R47	RES MF 4.75K 1% 1/4W	144097
R9	RES MF 1K 1% 1/4W	144090	U1	1.25A Low Dropout Regulator	133431
R10	RES MF 221 OHM 1% 1/4W	144172	U2	1.25A Low Dropout Regulator	133431
R11	RES MF 100K 1% 1/4W	144113	U3	IC SHFT REG SER-PAR	133186
R12	RES MF 221K 1% 1/4W	144421	U4	IC OPERATIONAL AMPLIFIER	133189
R13	RES MF 100 OHM 1% 1/4W	144196	U5	IC NAND SCHMIT 2-IN X 4	133192
R22	RES MF 2.21 OHM 1% 1/4W	144378	U6	IC AND 2 INPUT X 4	133175
R23	RES MF 475K 1% 1/4W	144364			
R24	RES MF 475K 1% 1/4W	144364			

NOTES

EXPLODED VIEW AND PARTS LIST

C1000
CONTROLLER

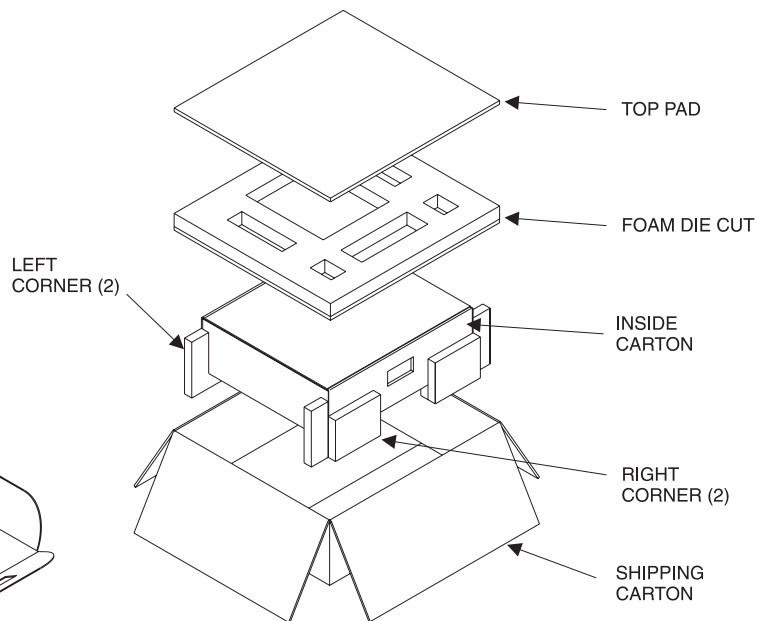
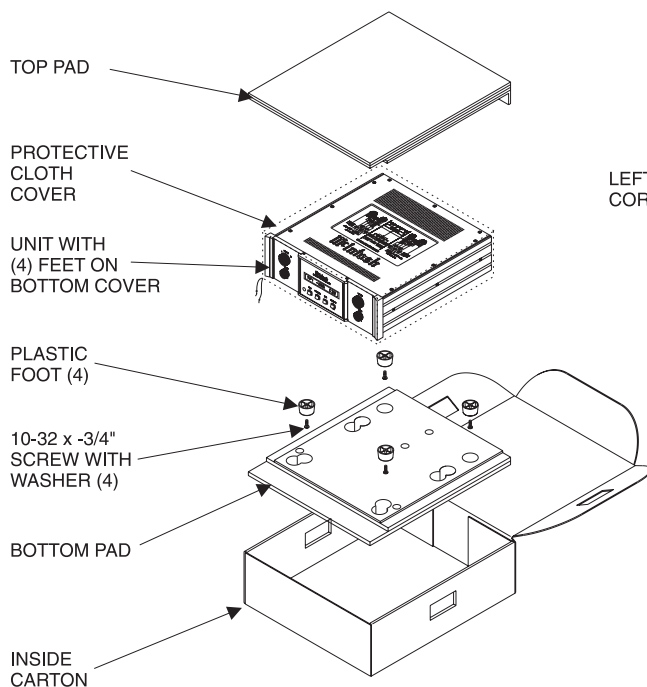
NOTES

REPACKING INSTRUCTIONS

In the event it is necessary to repack the equipment for shipment, the equipment must be packed exactly as shown below. It is very important that the four plastic feet are attached to the bottom of the equipment. This will ensure the proper equipment location on the bottom pad. Failure to do this will result in shipping damage.

Use the original shipping carton and interior parts only if they are all in good serviceable condition. If a shipping carton or any of the interior part(s) are needed, please call or write Customer Service Department of McIntosh Laboratory. Refer to page 4. Please see the Part List for the correct part numbers.

Qty.	Part No.	Description
1	033838	Shipping carton only
2	034346	Foam left corner
2	034347	Foam right corner
1	034348	Foam top pad diecut for Manual and accessories
1	034345	Foam top pad diecut for cables
1	034351	Top pad
1	033836	Inside carton only
1	033725	Top pad
1	034301	Bottom pad
1	034355	Protective blue cloth cover
4	017937	Plastic foot
4	100159	#10-32 x 3/4" Machine screws



C1000

CONTROLLER

SERVICE MANUAL



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