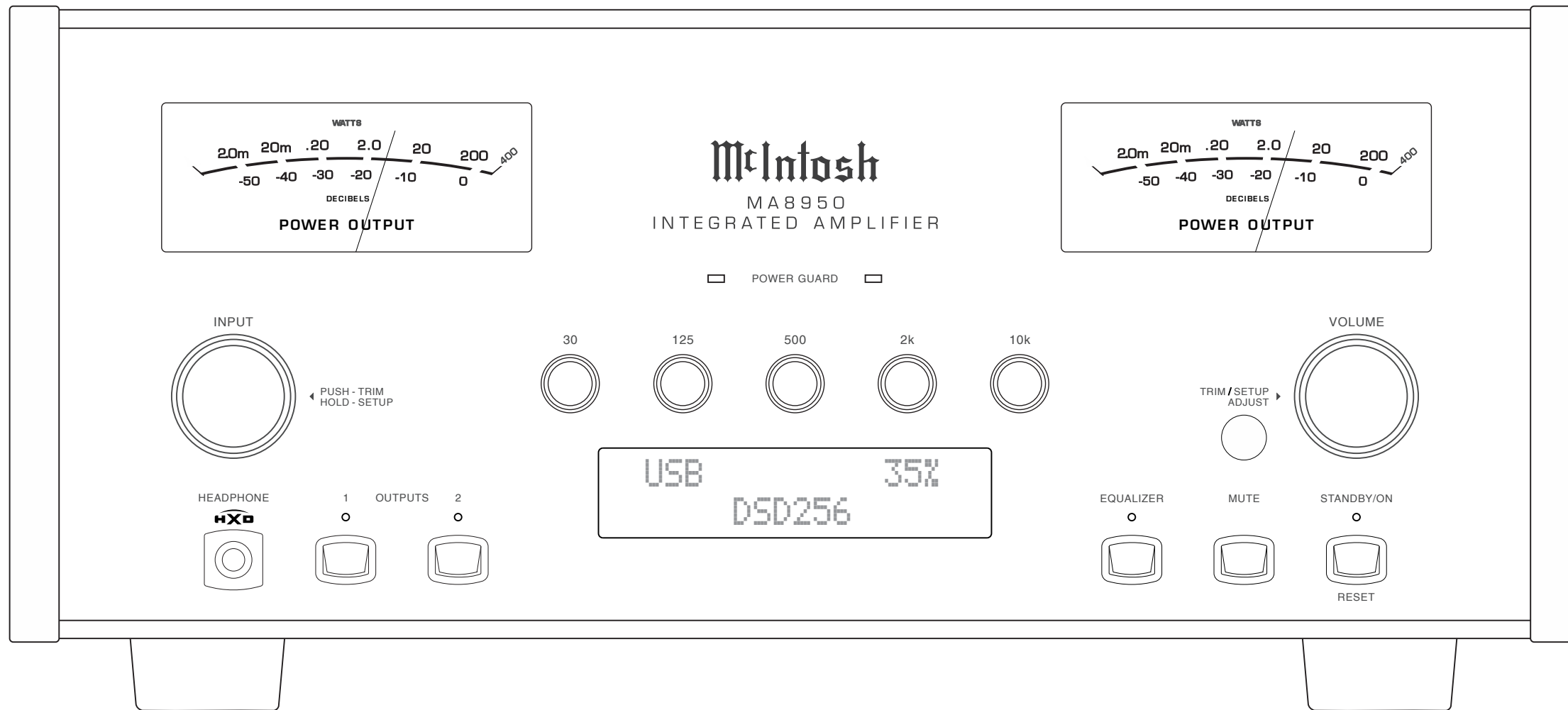




# MA8950

## INTEGRATED AMPLIFIER SERIAL NO. AJP1001 And Above

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# PERFORMANCE SPECIFICATIONS

## Amplifier Specifications

**Power Output**  
200 watts is the minimum sine wave continuous average power output per channel, both channels operating

**Output Load Impedance**  
2, 4 or 8 ohms

**Rated Power Band**  
20Hz to 20,000Hz

**Total Harmonic Distortion**  
0.005% maximum with both channels operating from 250 milliwatts to rated power, 20Hz to 20,000Hz

**Intermodulation Distortion**  
0.005% maximum, if the instantaneous peak power is 400 watts or less per channel with both channels operating for any combination of frequencies from 20Hz to 20,000Hz

**Dynamic Headroom**  
2.8dB

**Wide Band Damping Factor**  
Greater than 40

**Power Guard**  
Less than 2% THD with up to 16dB overdrive at 1,000Hz

**Frequency Response**  
+0, -0.5dB from 20Hz to 20,000Hz  
+0, -3dB from 10Hz to 100,000Hz

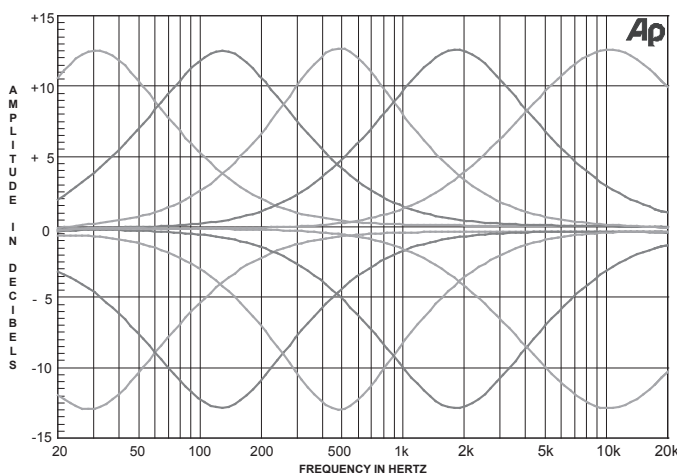
**Preamplifier Output 1 and 2 (for rated input)**  
1.4V unbalanced (8V Maximun)

**Sensitivity (for rated output)**  
High Level, 250mV unbalanced, 500mV balanced  
Phono MM, 2.5mV  
Phono MC, 0.25mV  
Power Amp In, 1.4V

**Signal To Noise Ratio (A-Weighted)**  
High Level, 95dB below rated output  
Phono MM, 82dB below 5mV input  
Phono MC, 80dB below 0.5mV input  
Power Amplifier, 113dB below rated output

**Input Impedance**  
High Level, 20K ohms  
Phono MM - 47K ohms; 50pF  
Phono MC - 50, 100, 200, 400 or 1,000 ohms; 100pF

**Preamplifier Output Impedance**  
220 ohms



## Equalizer Controls

**Maximum Input Signal**  
High Level, 8V unbalanced, 16V balanced  
Phono MM, 80mV  
Phono MC, 8mV  
Power Amplifier In, 16V

**Preamplifier Output Impedance**  
220 ohms

**Headphone Impedance**  
100 to 600 ohms

**Voltage Gain**  
High Level to Rec Output: 0dB  
High Level to Output 1 and 2: 15dB  
Phono MM to Rec Output: 40dB  
Phono MC to Rec Output: 60dB  
Phono MM to Output 1 and 2: 55dB  
Phono MC to Output 1 and 2: 75dB  
Power Amplifier: 29dB

**Power Control and Trigger Output**  
12VDC, 25mA

**Digital Audio Specifications**  
Digital Input Signal Format  
Coaxial and Optical Inputs - SPDIF (PCM)  
MCT and USB Inputs - PCM, DSD

**Digital Input Sample Rates**  
Optical: PCM - 16Bit, 24Bit - 44.1kHz to 192kHz  
Coaxial: PCM -16Bit, 24Bit - 44.1kHz to 192kHz  
MCT: PCM, SACD, -16Bit, 24Bit - 44.1kHz to 192kHz  
USB: PCM - 16Bit, 24Bit, 32Bit - 44.1kHz to 384kHz  
DXD - DXD352.8kHz, DXD384kHz  
DSD - DSD64, DSD128, DSD256, DSD512  
HDMI: PCM 24bit, 44.1kHz - 192kHz  
DTS  
Dolby Digital

**Digital Inputs**  
Coaxial: 0.5V p-p/75 ohms  
Optical: -15dbm to -21dbm (TOS Link)  
MCT: 0.5V p-p/75 ohms  
USB: USB Type B Connector

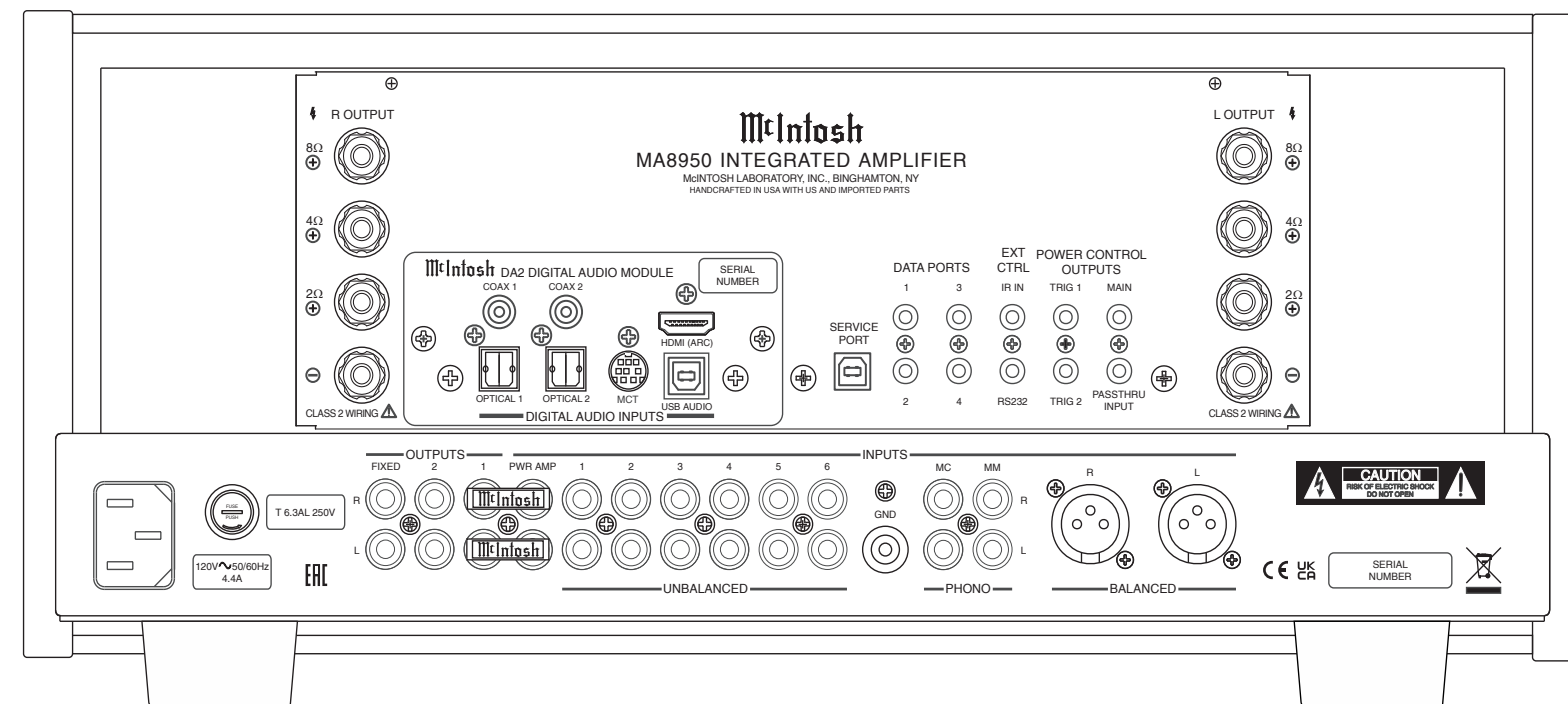
**General Specifications**  
Power Requirements  
Field AC Voltage conversion of the MA8950 is not possible.  
The MA8950 is factory configured for one of the following AC Voltages:  
100 Volts, 50/60Hz at 5.2 amps  
110 Volts, 50/60Hz at 4.4 amps  
120 Volts, 50/60Hz at 4.4 amps  
220 Volts, 50/60Hz at 2.45 amps  
230 Volts, 50/60Hz at 2.35 amps  
240 Volts, 50/60Hz at 2.25 amps  
Standby: Less than 0.25 watt  
Note: Refer to the rear panel of the MA8950 for the correct voltage.

**Overall Dimensions**  
Width is 17-1/2 inches (44.45cm)  
Height is 7-5/8 inches (19.37cm) including feet  
Depth is 22 inches (55.88cm) including the Front Panel, Knobs and Cables

**Weight**  
75 pounds (34.1 kg) net, 93 pounds (42.3 kg) in shipping carton

**Shipping Carton Dimensions**  
Width is 29-1/2 inches (74.93cm)  
Depth is 29 inches (73.66cm)  
Height is 17 inches (43.18cm)

# REAR PANEL



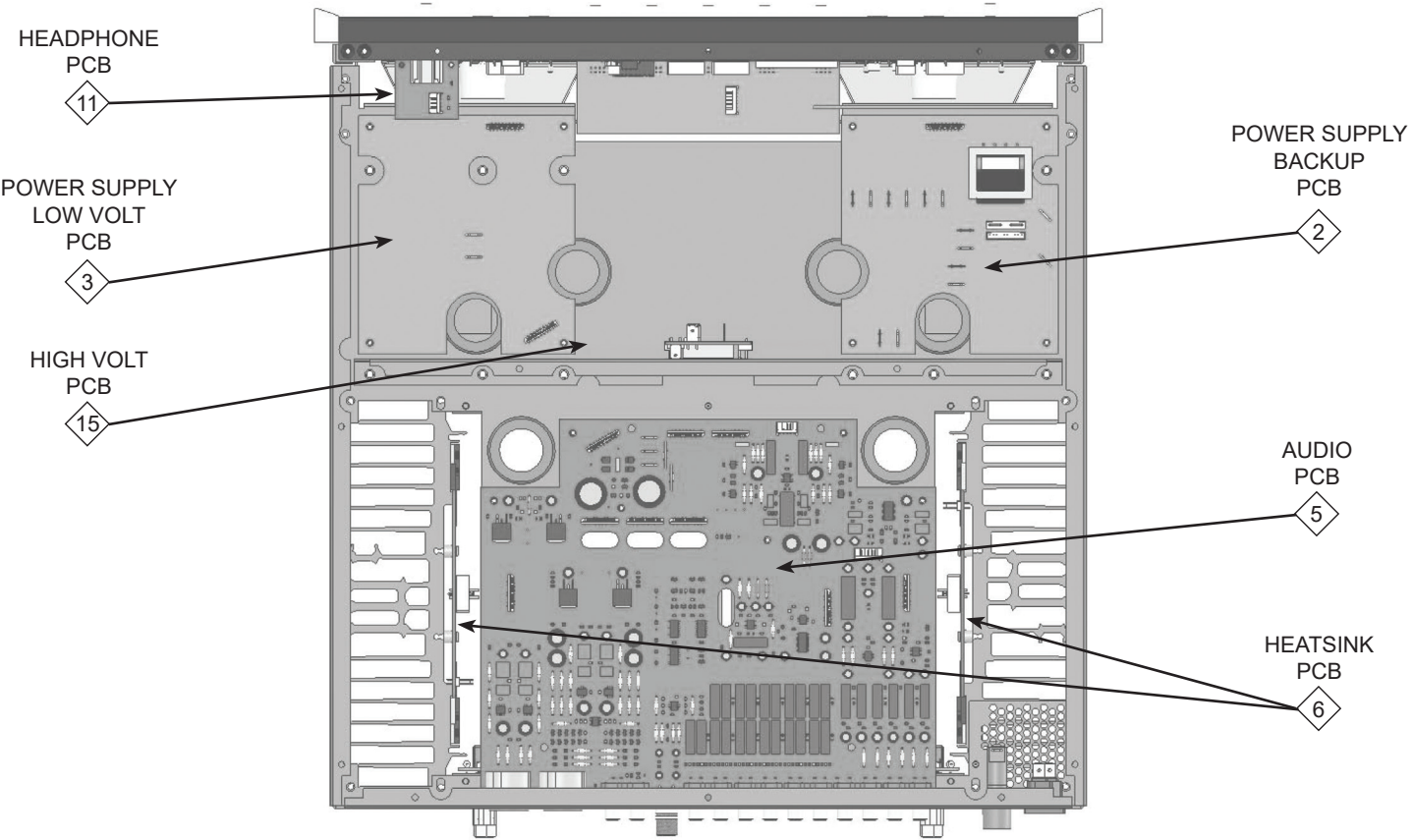
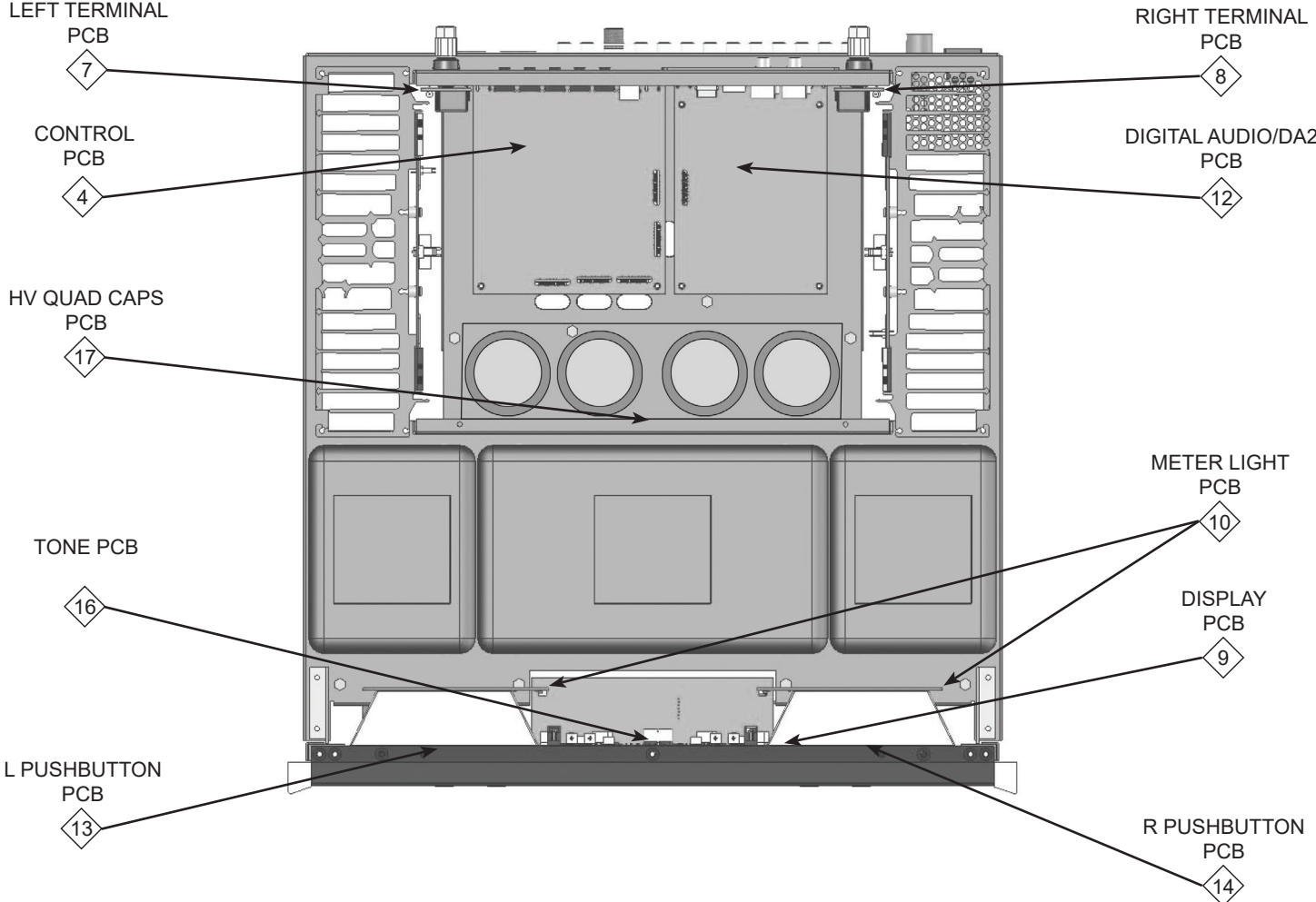
## NOTES

- Unless otherwise noted, all voltages indicated on the schematics are measured under the following conditions:
  - AC input at rated voltage marked on rear panel.
  - All voltages are +/-10% with respect to ground. A high impedance (10 megaohm) voltmeter must be used.
- Unless otherwise specified:
  - Resistor values are in ohms.
  - Capacitor values are microfarads (uF).
  - Inductor values are in microhenries (uH)
- On PC board drawings, Square pad indicates:
  - Polarized Capacitors - Positive
  - Diodes - Cathode
  - Others - Pin 1
- WARNING**  
Parts marked with the symbol have critical characteristics. Use only replacement parts recommended by the manufacturer.
- Use McIntosh Remote Control Model HR085.

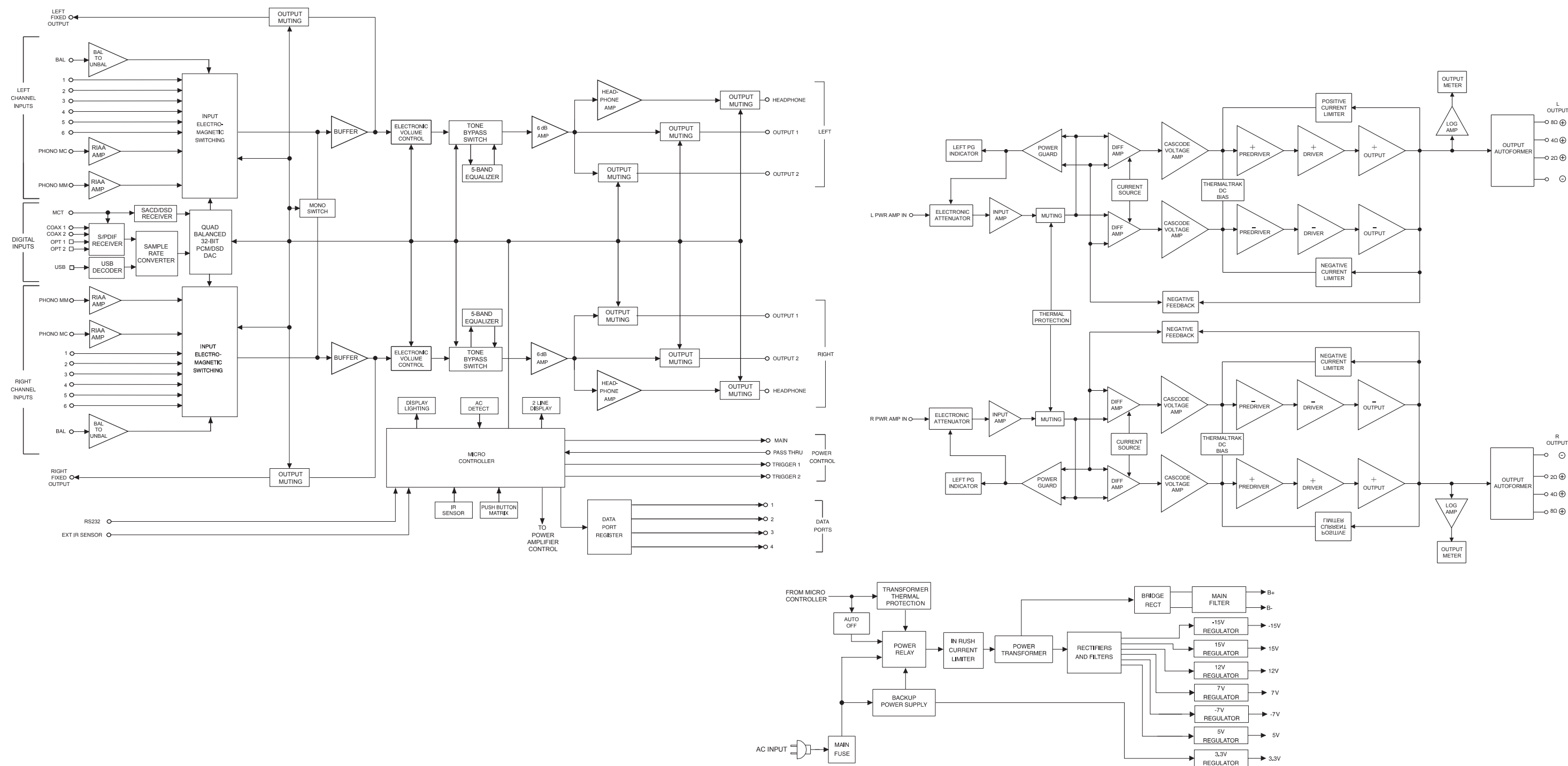
# SECTION LOCATIONS

Top View

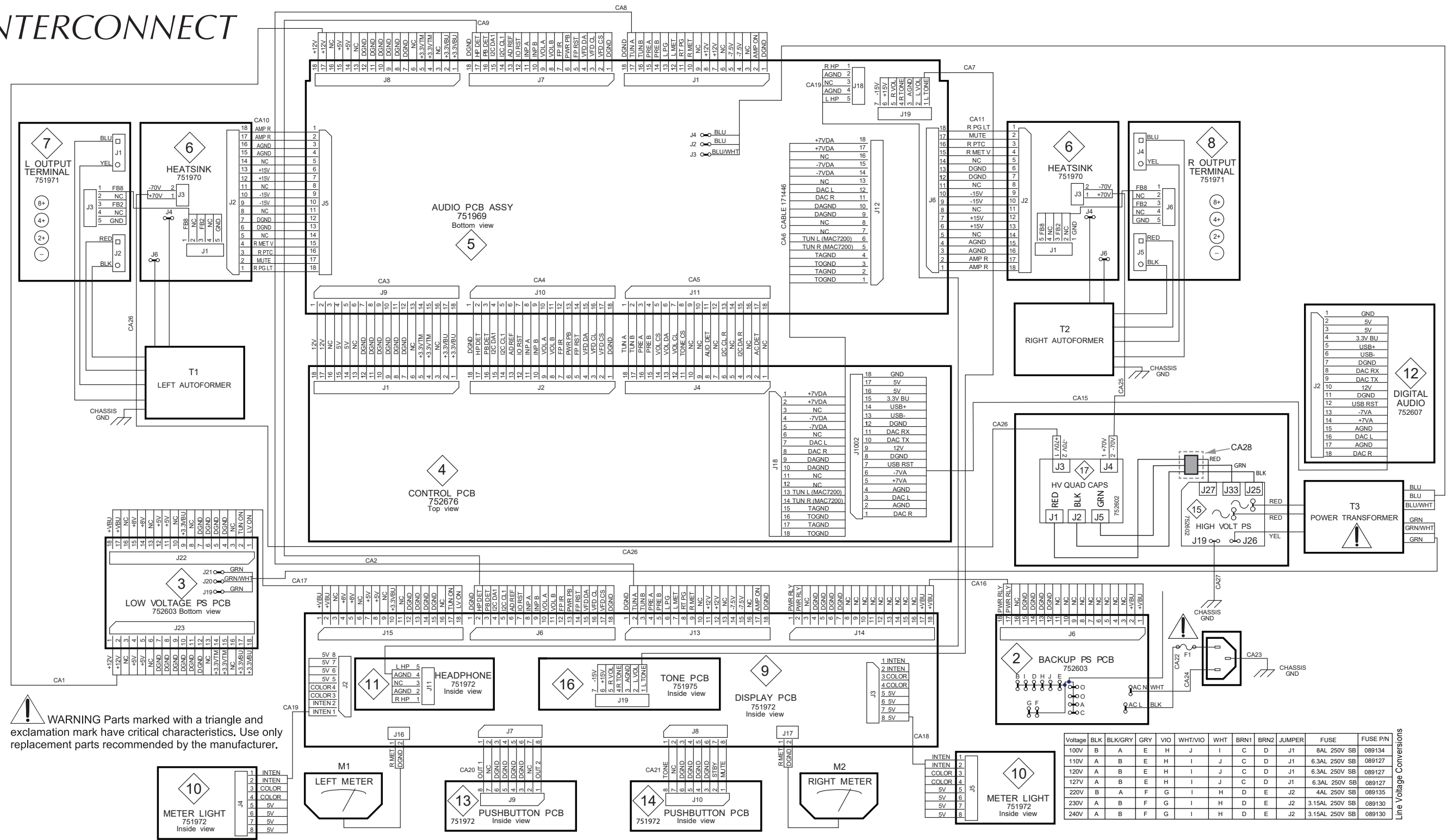
Bottom View



# BLOCK DIAGRAM



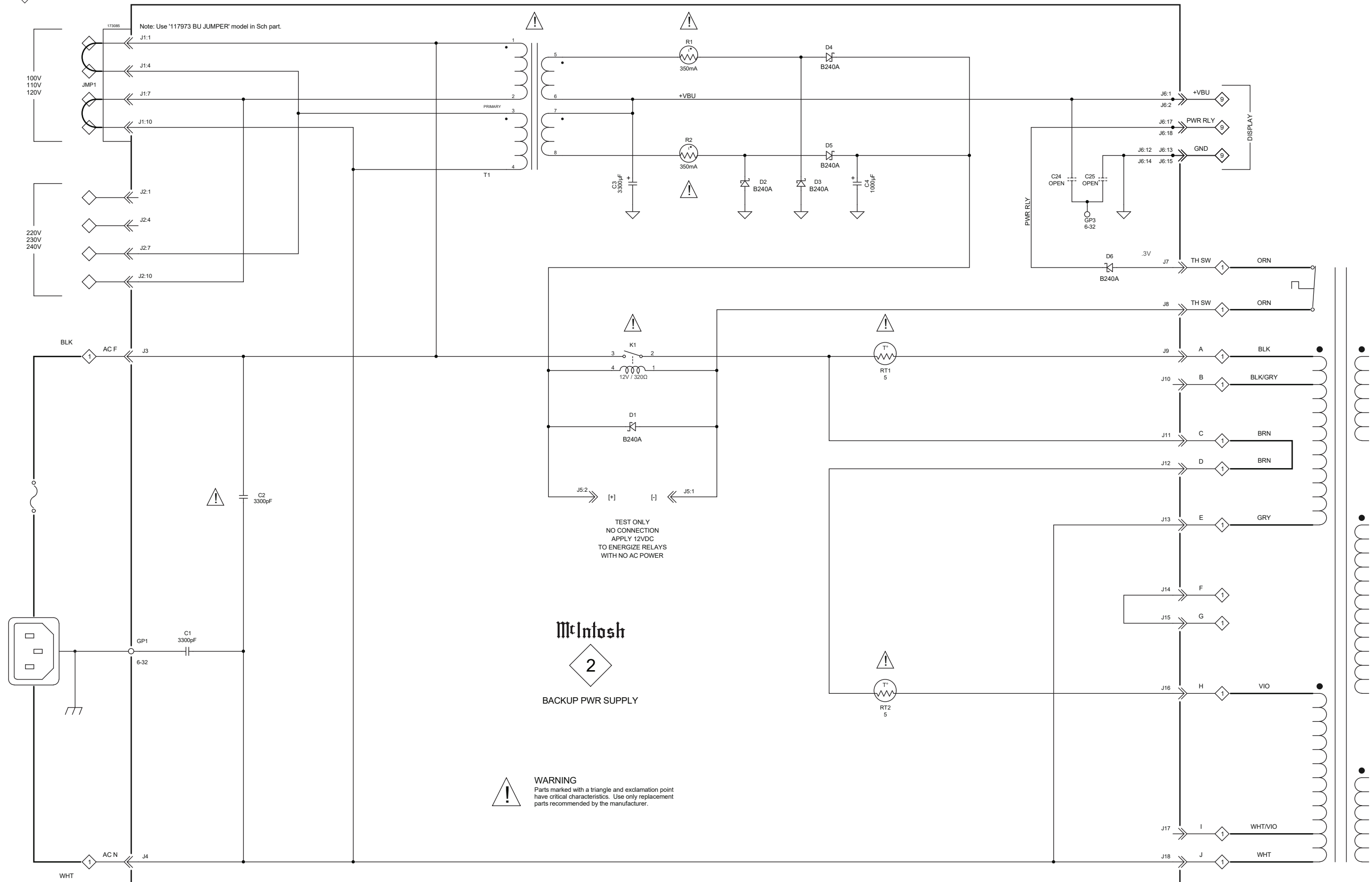
# 1 INTERCONNECT



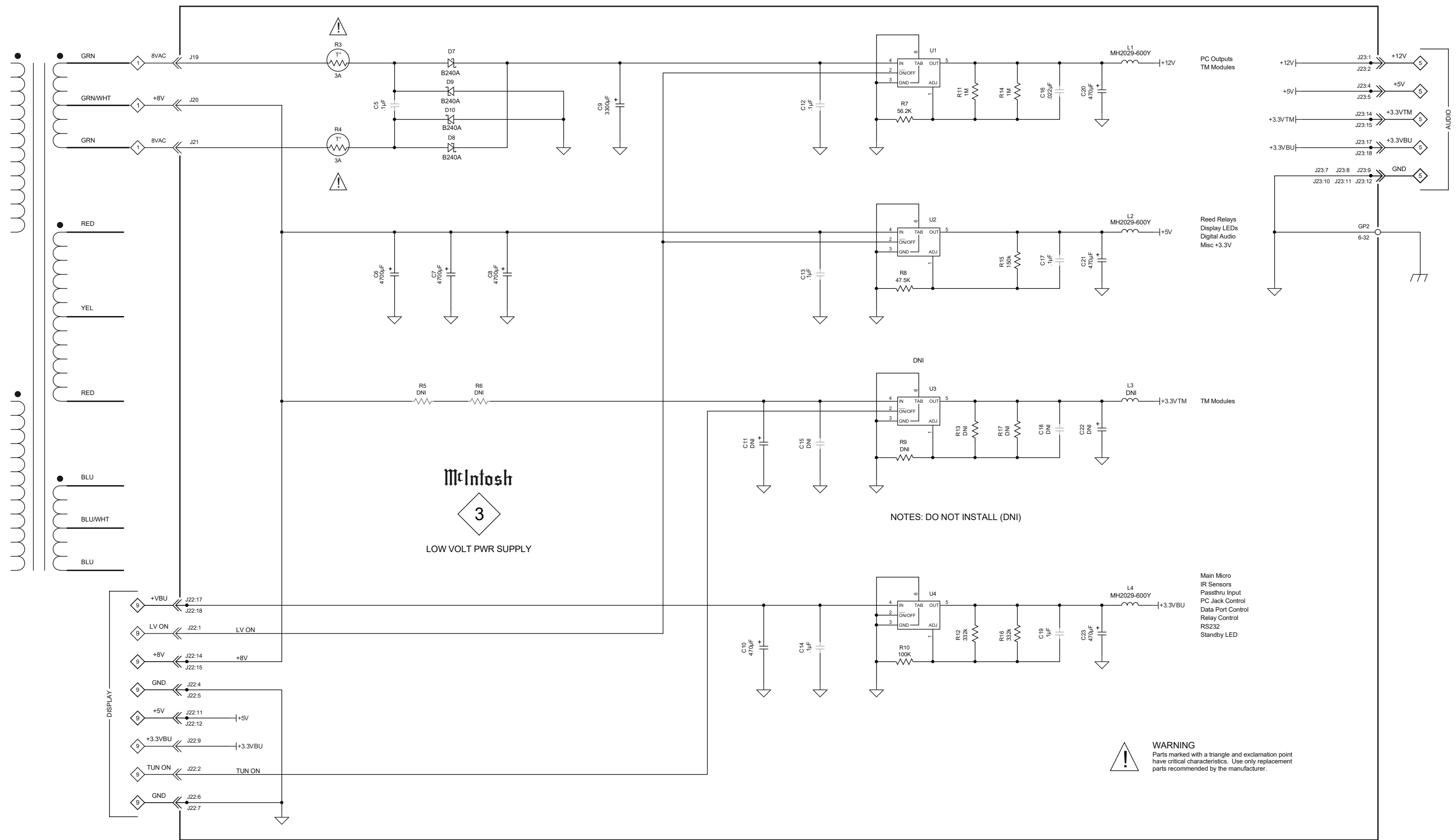
# 1 PARTS LIST 751972

Ref. No.	Description	Part No.	Ref. No.	Description	Part No.	Ref. No.	Description	Part No.
CA1	CABLE FFC 18 COND 90MM	171446	CA10	CABLE FFC 18 COND 90MM	171446	CA18	CABLE FLAT FLEX 8 PIN 1MM	173026
CA2	CABLE FFC 18 COND 240MM	171316	CA11	CABLE FFC 18 COND 90MM	171446	CA19	CABLE FLAT FLEX 8 PIN 1MM	173026
CA3	CABLE FFC 18 COND 90MM	171446	CA12	CABLE ASSY FEEDBACK	173161	CA20	CABLE FLAT FLEX 8 PIN 1MM	173026
CA4	CABLE FFC 18 COND 90MM	171446	CA13	CABLE ASSY FEEDBACK	173161	CA21	CABLE FLAT FLEX 8 PIN 1MM	173026
CA5	CABLE FFC 18 COND 90MM	171446	CA14	CABLE ASSY HEADPHONE	173167	CA22	CABLE ASSY AC FUSE	173195
CA6	CABLE FFC 18 COND 90MM	171446	CA15	CABLE FFC 18 COND 90MM	171446	CA23	CABLE ASSY AC/CHASSIS GRN/YEL	171787
CA7	CABLE ASSY AC	173194	CA16	CABLE FFC 18 COND 90MM	171446	CA24	CABLE ASSY AC	173194
CA8	CABLE FFC 18 COND 240MM	171316	CA17	CABLE FFC 18 COND 90MM	171446	CA25	CABLE ASSY CAP/HEATSINK	173305
CA9	CABLE FFC 18 COND 240MM	171316				CA26	CABLE ASSY CAP/HEATSINK	173305
						CA27	CABLE ASSY CAPACITOR GND	173173
						CA28	CABLE ASSY CAPACITOR	173378
						T1	ASSY AUTOFORMER	751391
						T2	ASSY AUTOFORMER	751391
						T3	CONTACT MACINTOSH SERVICE DEPARTMENT	
						M1	METER	124121
						M2	METER	124121

**2 3** POWER SUPPLY / BACKUP / LOW VOLT 752603 SCH 1 of 2



**2** **3** POWER SUPPLY / BACKUP / LOW VOLT 752603 SCH 2 of 2

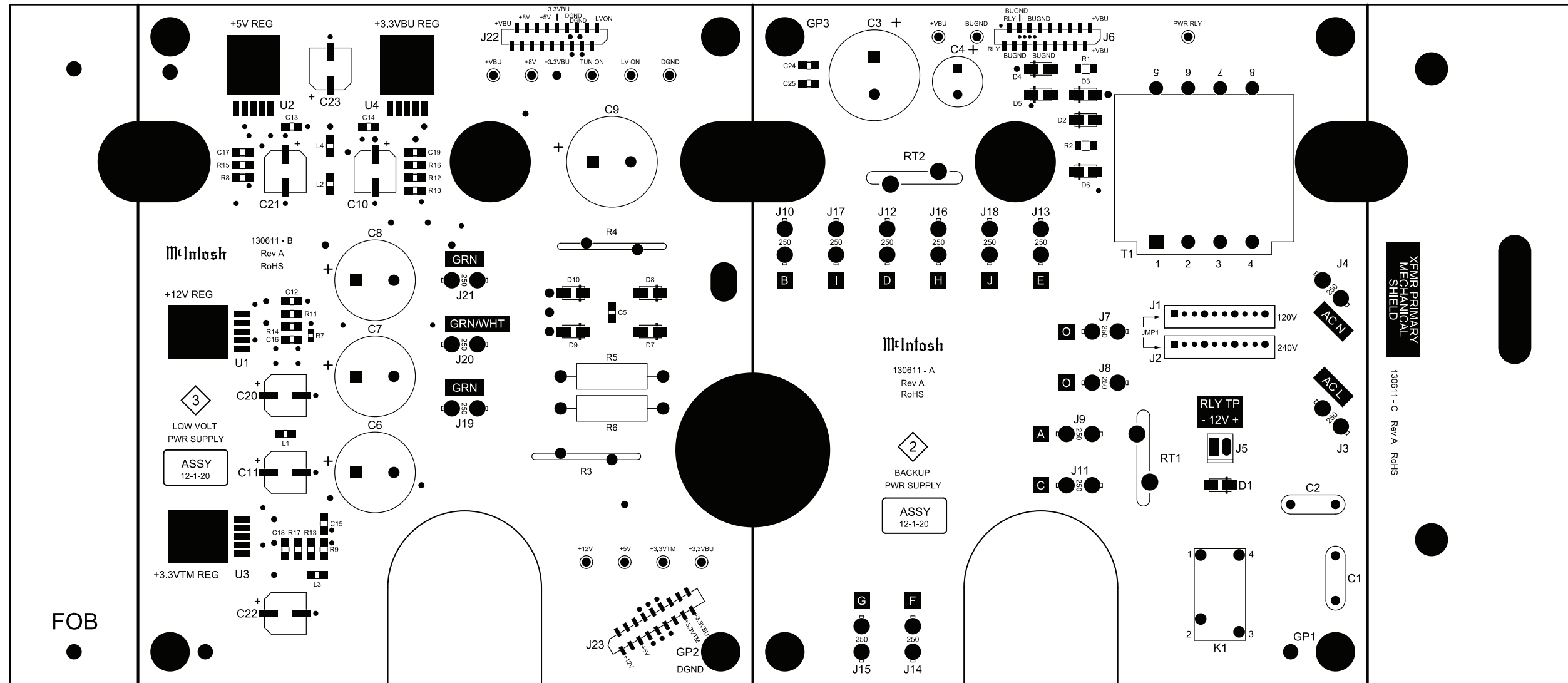


**McIntosh**  
**3**  
 LOW VOLT PWR SUPPLY

NOTES: DO NOT INSTALL (DNI)

**WARNING**  
 Parts marked with a triangle and exclamation point have critical characteristics. Use only replacement parts recommended by the manufacturer.

**2** **3** POWER SUPPLY / BACKUP / LOW VOLT 752603 PCB

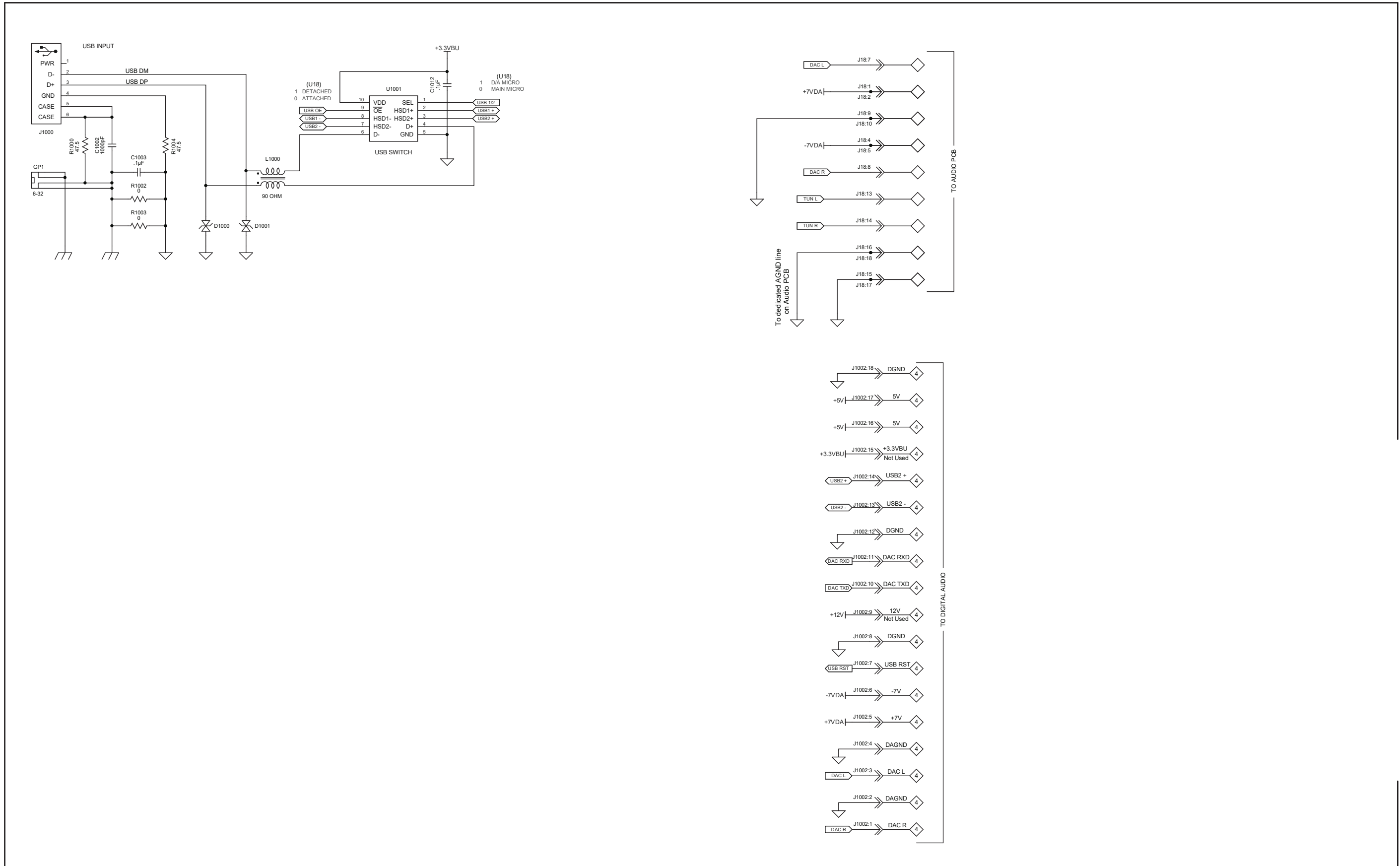




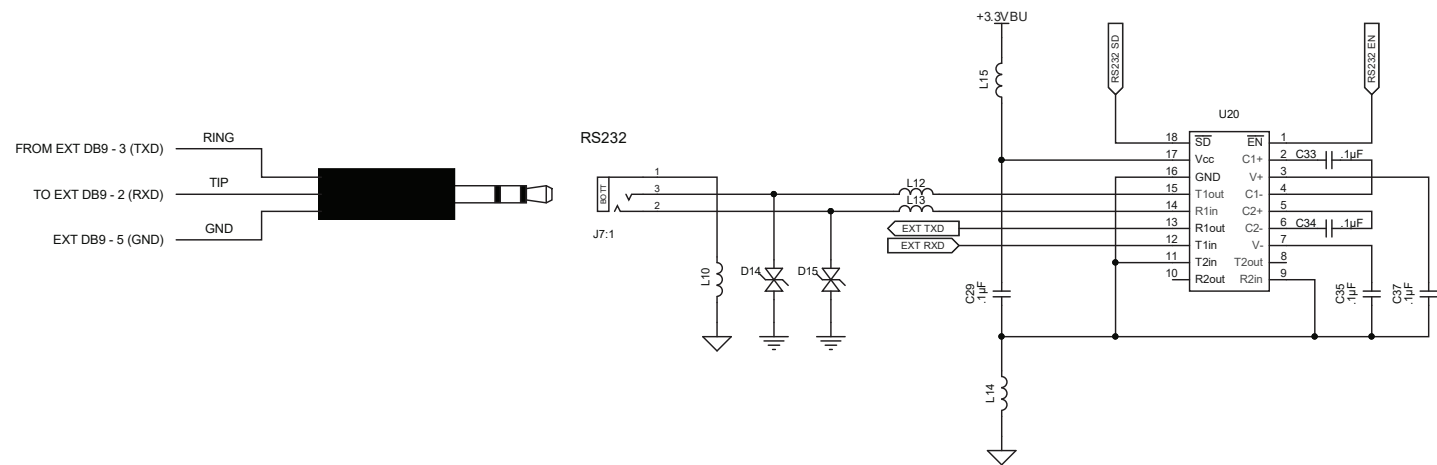
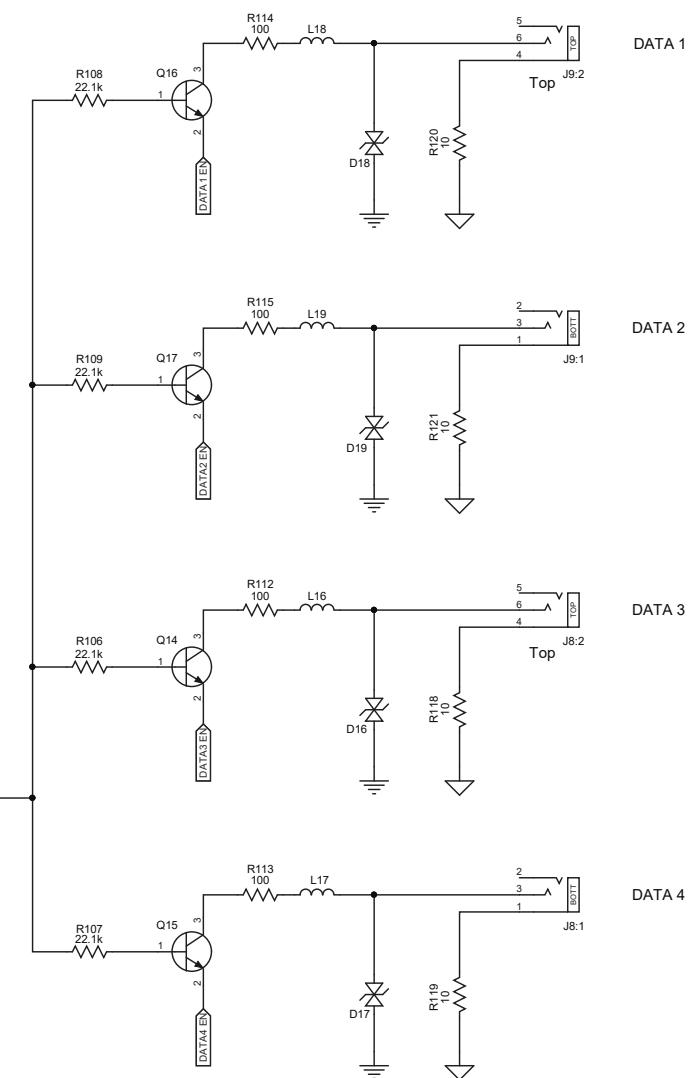
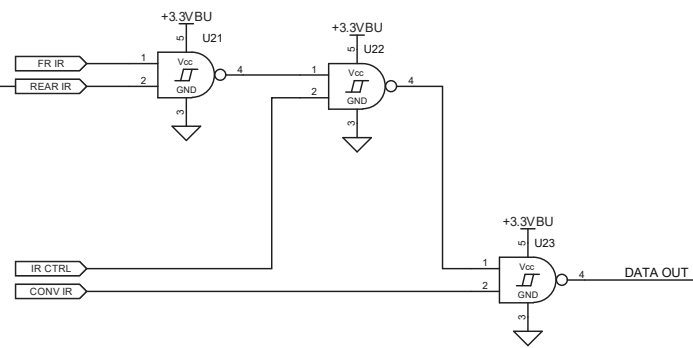
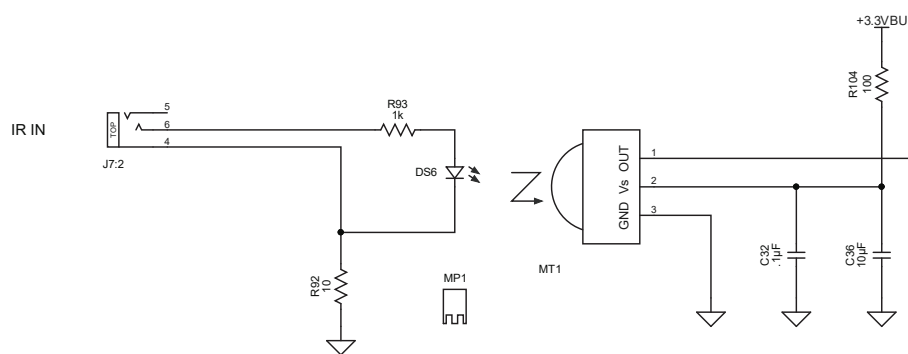
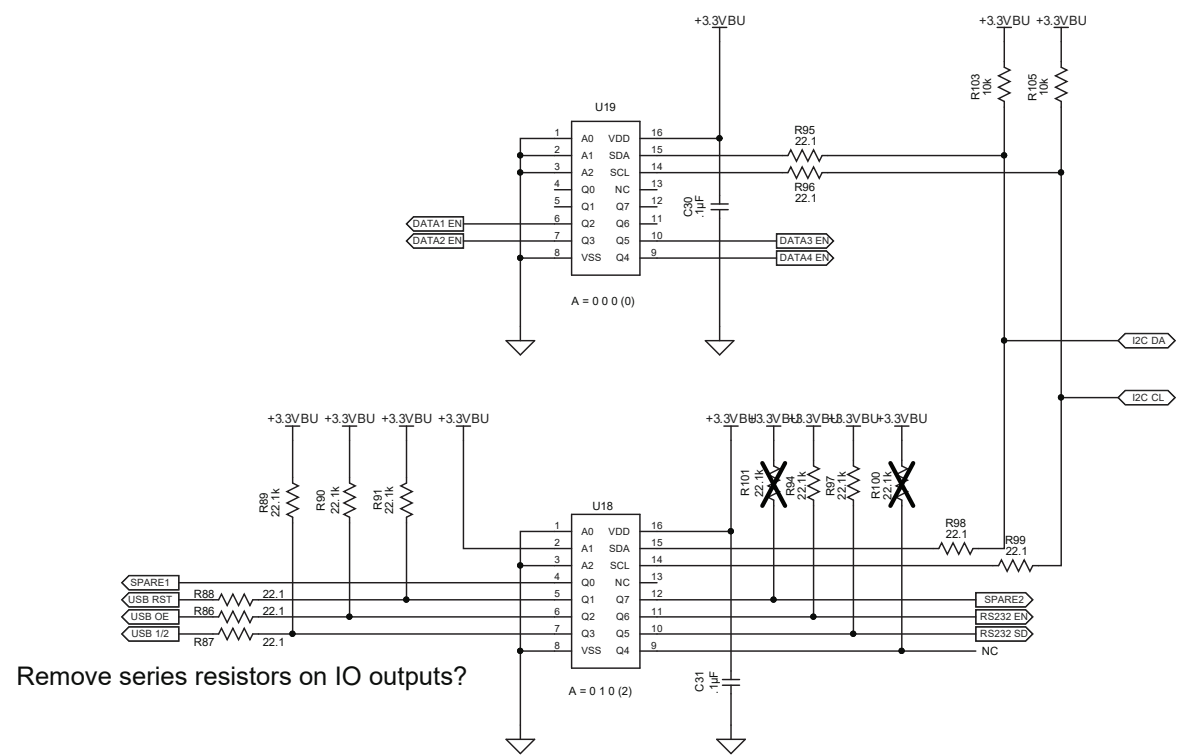
# 2 3 POWER SUPPLY / BACKUP / LOW VOLT 752603 PARTS LIST

Ref. No.	Description	Part No.	Ref. No.	Description	Part No.	Ref. No.	Description	Part No.
C1	CAP 3300PF 250V UL/CSA	061312	D7	DIODE SCHOTTKY 40V 2A SMD	070210	J22	CONN 18 PIN FFC SMD	118003
C2	CAP 3300PF 250V UL/CSA	061312	D8	DIODE SCHOTTKY 40V 2A SMD	070210	J23	CONN 18 PIN FFC SMD	118003
C3	CAP ELECT 3300UF 35V	066509	D9	DIODE SCHOTTKY 40V 2A SMD	070210	K1	RELAY 12V 1 Form A (NO) TV-8	087094
C4	CAP ELECT 1000UF 25V	066513	D10	DIODE SCHOTTKY 40V 2A SMD	070210	L1	FERRITE 60 OHM 5 AMP SMD	076025
C5	CAP MONO X7R .1uF 20% 50V SMD0805	061365	J1	10 PIN SHROUDED HEADER 2MM	117973	L2	FERRITE 60 OHM 5 AMP SMD	076025
C6	CAP ELECT 4700UF 16V 20%	066611	J2	10 PIN SHROUDED HEADER 2MM	117973	L4	FERRITE 60 OHM 5 AMP SMD	076025
C7	CAP ELECT 4700UF 16V 20%	066611	J3	BLADE FASTON W/FEET	117708	PCB1	PC BD LOW VOLT BACK UP PWR SUP	130611
C8	CAP ELECT 4700UF 16V 20%	066611	J4	BLADE FASTON W/FEET	117708	R1	FUSE 0.35A 16V RESET 1206 SMD	145054
C9	CAP ELECT 3300UF 35V	066509	J5	CONN 2 PIN MALE	117213	R2	FUSE 0.35A 16V RESET 1206 SMD	145054
C10	CAP ELECT 470UF 16V SMD	066607	J6	CONN 18 PIN FFC SMD	118003	R3	POLYSWITCH 3.00A 72V	144722
C12	CAP MONO X7R .1uF 20% 50V SMD0805	061365	J7	BLADE FASTON W/FEET	117708	R4	POLYSWITCH 3.00A 72V	144722
C13	CAP MONO X7R .1uF 20% 50V SMD0805	061365	J8	BLADE FASTON W/FEET	117708	R7	RES TF 56.2K 1% 1/16W SMD0603	145059
C14	CAP MONO X7R .1uF 20% 50V SMD0805	061365	J9	BLADE FASTON W/FEET	117708	R8	RES TF 47.5K 1% .125W SMD0805	145132
C16	CAP X7R .022uF 5% 50V SMD0805	061406	J10	BLADE FASTON W/FEET	117708	R10	RES TF 100K 1% 0.1W SMD0805	145062
C17	CAP MONO X7R .1uF 20% 50V SMD0805	061365	J11	BLADE FASTON W/FEET	117708	R11	RES TF 1M 1% 0.125W SMD0805	145131
C19	CAP MONO X7R .1uF 20% 50V SMD0805	061365	J12	BLADE FASTON W/FEET	117708	R12	RES SMD0805 332K 1/8W 1%	145039
C20	CAP ELECT 470UF 16V SMD	066607	J13	BLADE FASTON W/FEET	117708	R14	RES TF 1M 1% 0.125W SMD0805	145131
C21	CAP ELECT 470UF 16V SMD	066607	J14	BLADE FASTON W/FEET	117708	R15	RES SMD0805 150K 1/8W 1%	145037
C23	CAP ELECT 470UF 16V SMD	066607	J15	BLADE FASTON W/FEET	117708	R16	RES SMD0805 332K 1/8W 1%	145039
D1	DIODE SCHOTTKY 40V 2A SMD	070210	J16	BLADE FASTON W/FEET	117708	RT1	THERMISTOR 5 OHM	144151
D2	DIODE SCHOTTKY 40V 2A SMD	070210	J17	BLADE FASTON W/FEET	117708	RT2	THERMISTOR 5 OHM	144151
D3	DIODE SCHOTTKY 40V 2A SMD	070210	J18	BLADE FASTON W/FEET	117708	T1	TRANSFORMER BACKUP	159376
D4	DIODE SCHOTTKY 40V 2A SMD	070210	J19	BLADE FASTON W/FEET	117708	U1	IC REG 1.2A LO-DROP ENABLE SMD	133717
D5	DIODE SCHOTTKY 40V 2A SMD	070210	J20	BLADE FASTON W/FEET	117708	U2	IC REG 1.2A LO-DROP ENABLE SMD	133717
D6	DIODE SCHOTTKY 40V 2A SMD	070210	J21	BLADE FASTON W/FEET	117708	U4	IC REG 1.2A LO-DROP ENABLE SMD	133717

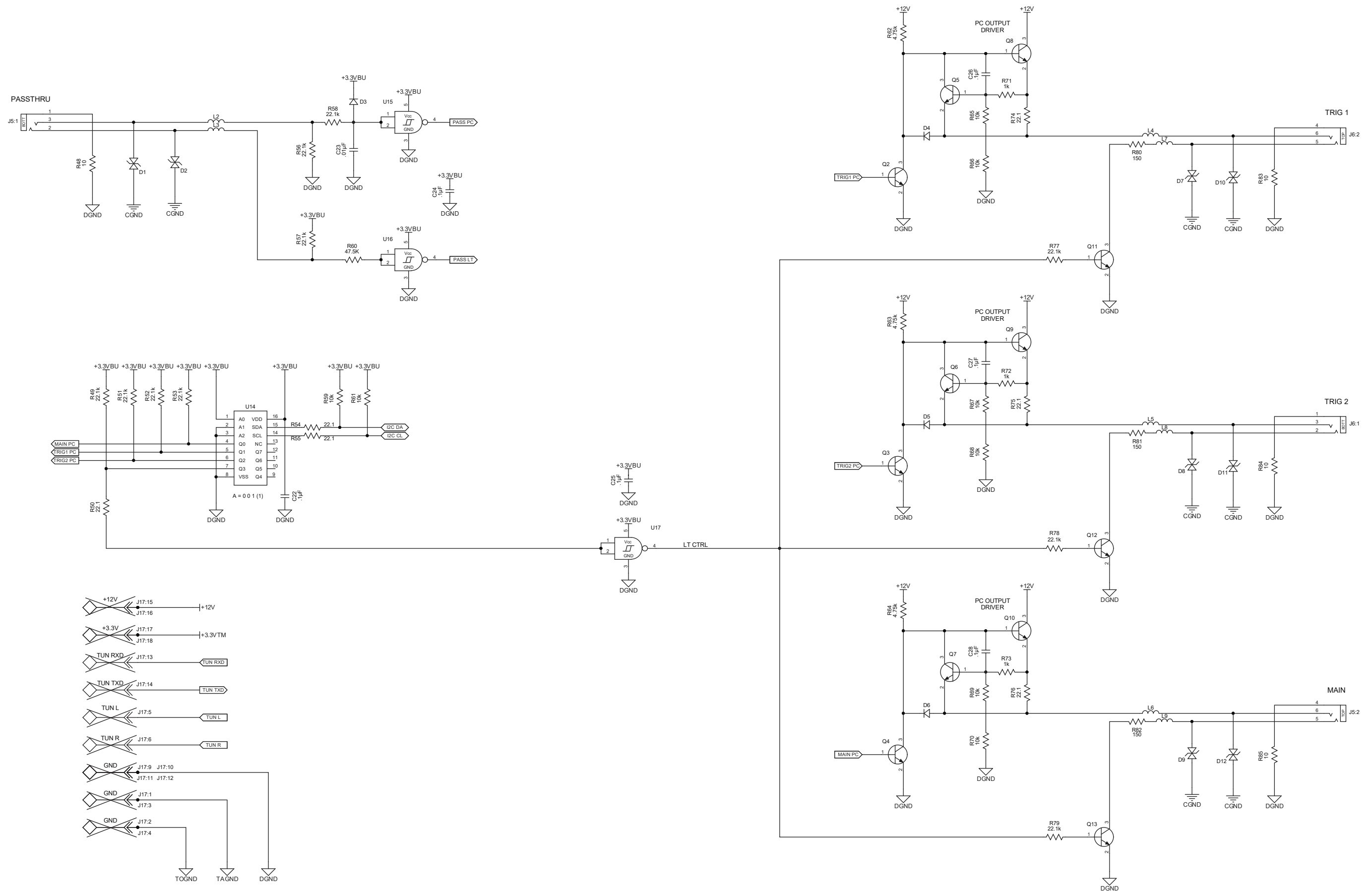
4 CONTROL 752676 SCH 1 of 5



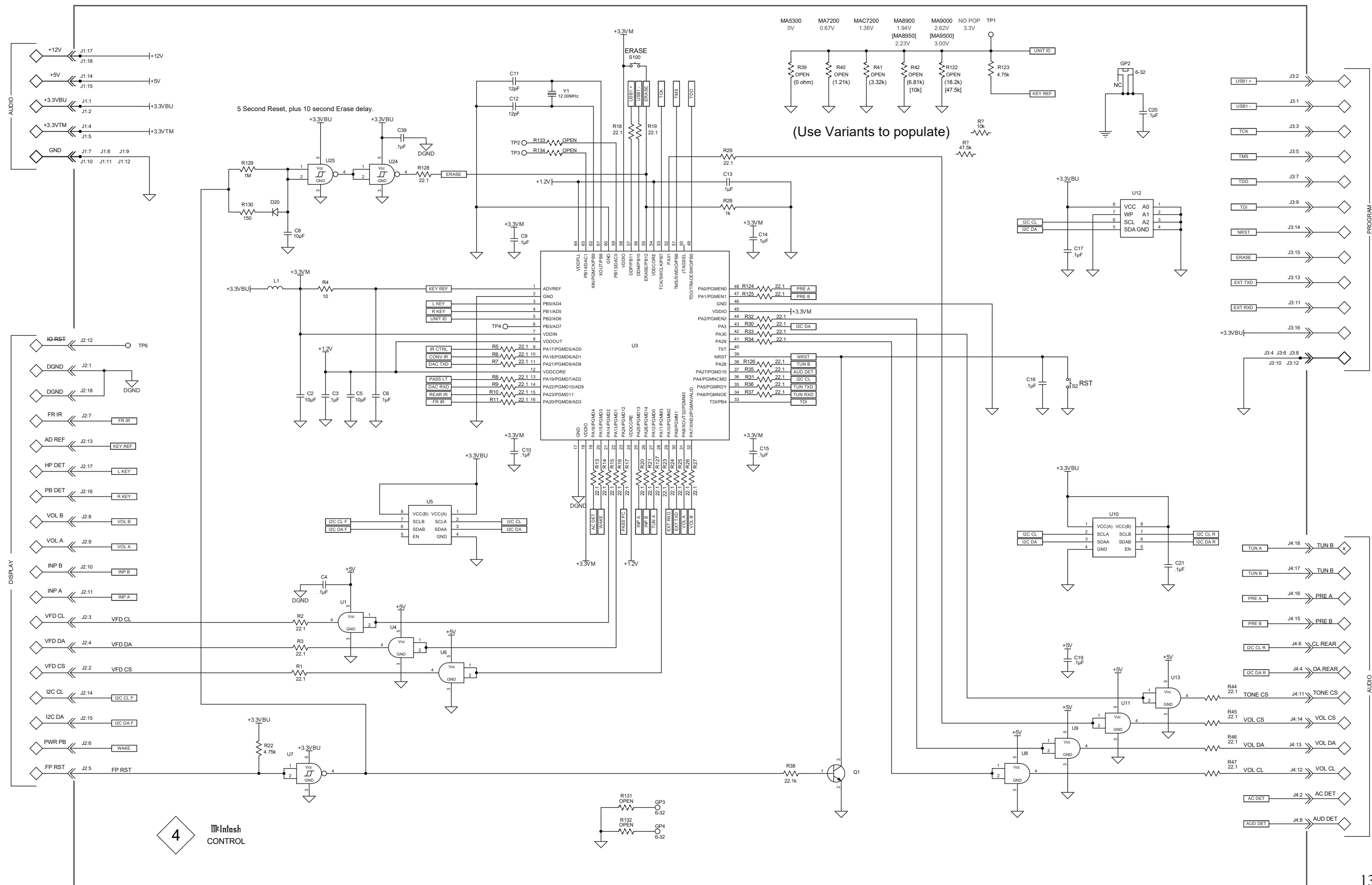
# 4 CONTROL 752676 SCH 2 of 5



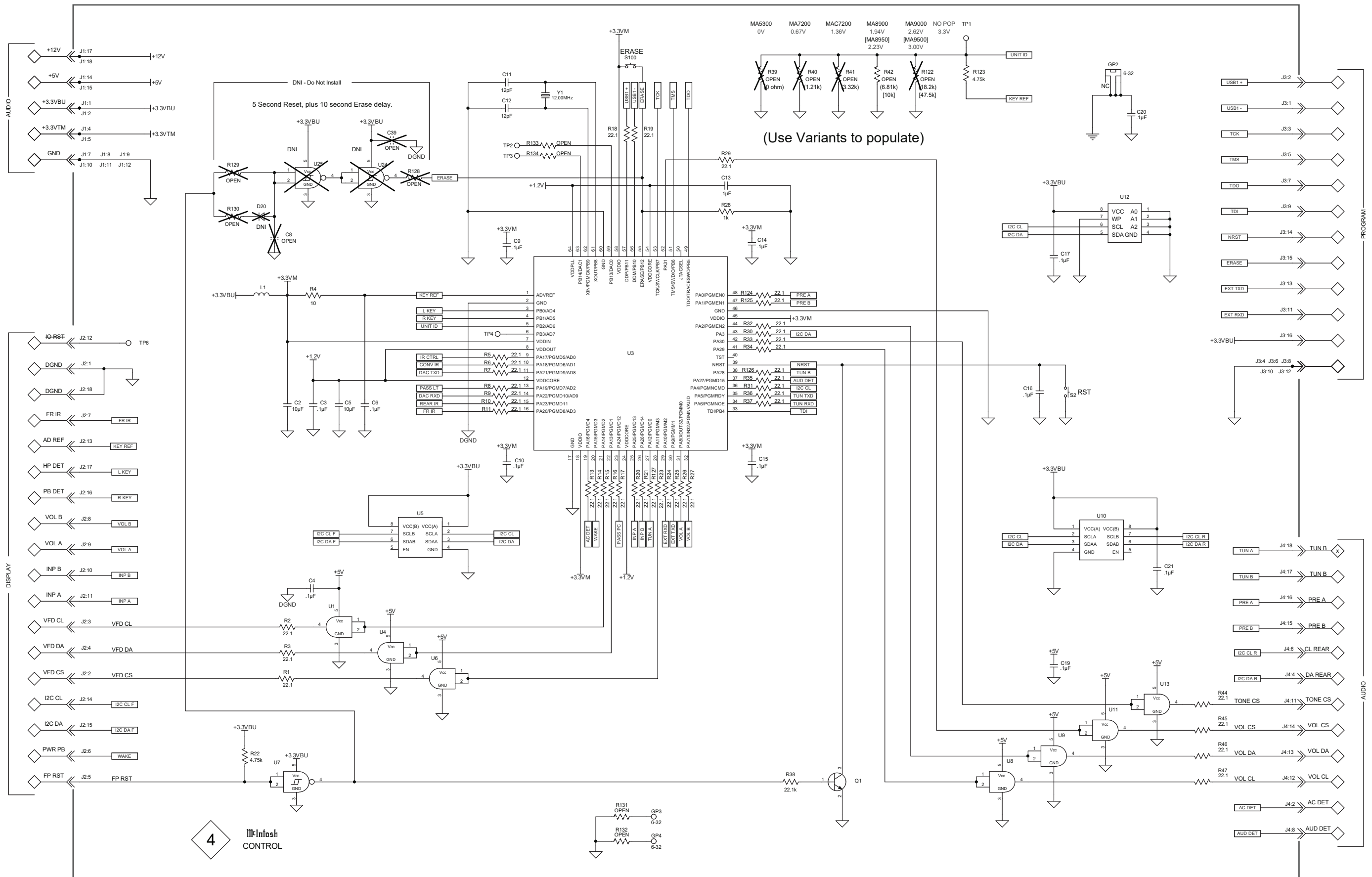
# 4 CONTROL 752676 SCH 3 of 5



# 4 CONTROL 752676 SCH 4 of 5

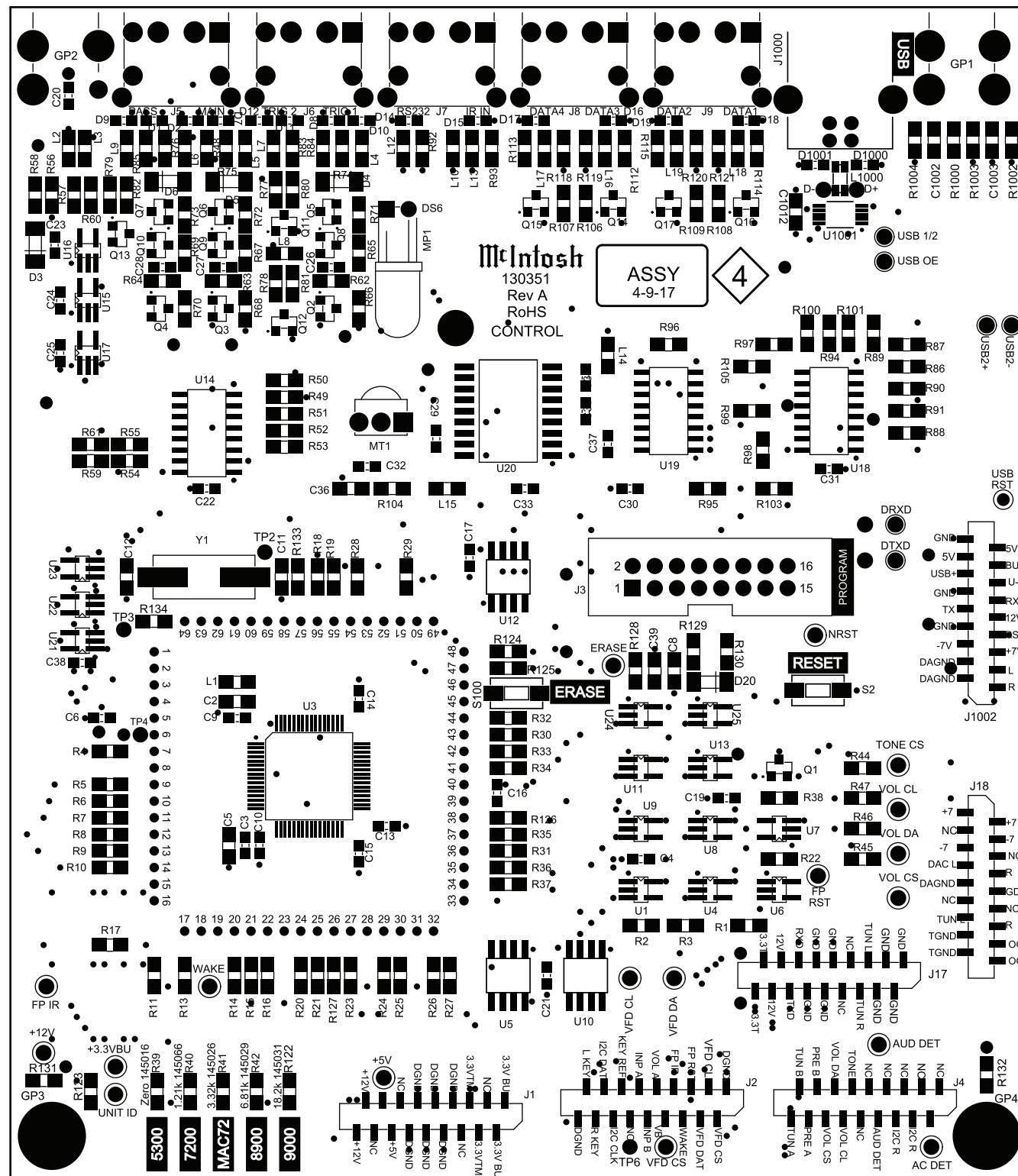


# 4 CONTROL 752676 SCH 5 of 5



4 **InfFlash** CONTROL

4 CONTROL 752676 PCB



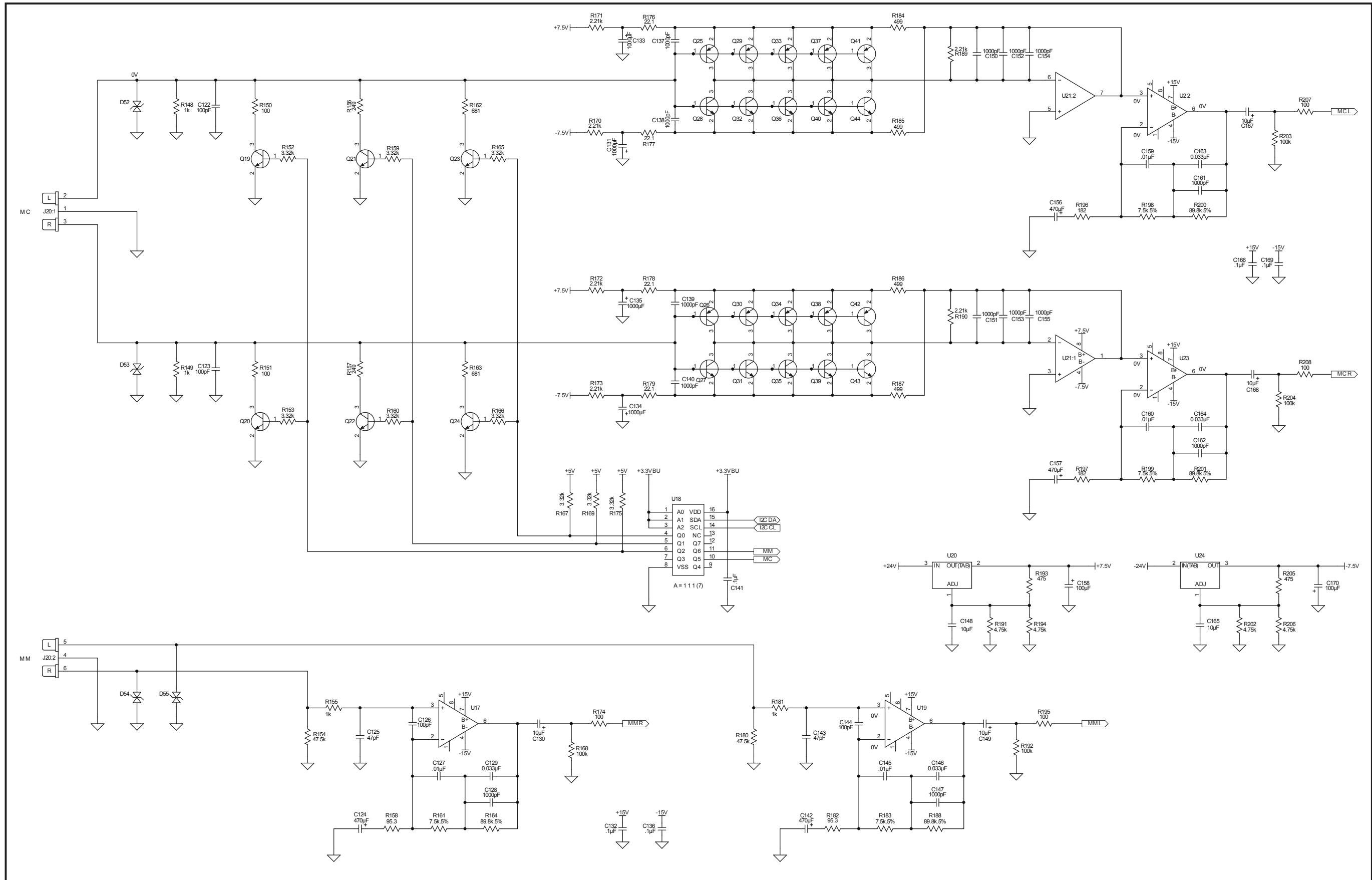




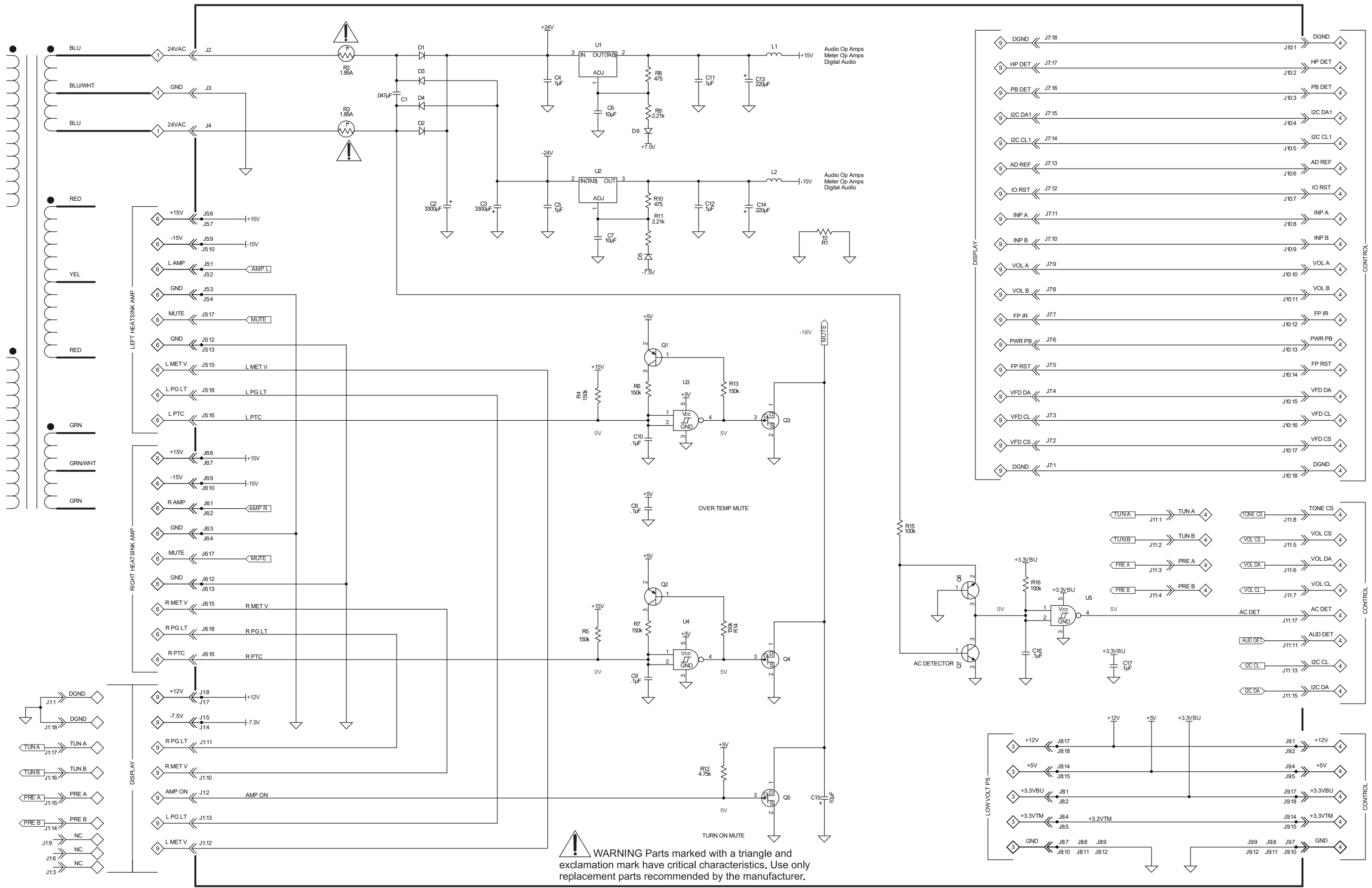
# 4 CONTROL 752676 PARTS LIST (Cont'd)

Ref. No.	Description	Part No.
R118	RES TF 10 1% 0.1W SMD0805	145063
R119	RES TF 10 1% 0.1W SMD0805	145063
R120	RES TF 10 1% 0.1W SMD0805	145063
R121	RES TF 10 1% 0.1W SMD0805	145063
R123	RES SMD0805 4.75K 1/8W 1%	145008
R128	RES TF 22.1 5% 0.1W SMD0805	145133
R129	RES TF 1M 1% .125W SMD0805	145131
R130	RES 150 1% .125W SMD0805	145019
R131	RES SMD0805 OPEN	NONE
R132	RES SMD0805 OPEN	NONE
R1000	RES TF 47.5 1% .125W SMD0805	145128
R1002	RES SMD0805 0 1/8W 0%	145016
R1003	RES SMD0805 0 1/8W 0%	145016
R1004	RES TF 47.5 1% .125W SMD0805	145128
S2	SWITCH TACT 260GF 5MM SMD	150072
S100	SWITCH TACT 260GF 5MM SMD	150072
U1	IC SINGLE 2-INPUT AND GATE SMD	133552
U3	IC MICRO 32-BIT SAM4S SMD	133875
U4	IC SINGLE 2-INPUT AND GATE SMD	133552
U5	IC I2C BUS REPEATER SMD	133769
U6	IC SINGLE 2-INPUT AND GATE SMD	133552
U7	IC SINGLE NAND SCHMITT SMD	133724
U8	IC SINGLE 2-INPUT AND GATE SMD	133552
U9	IC SINGLE 2-INPUT AND GATE SMD	133552
U10	IC I2C BUS REPEATER SMD	133769
U11	IC SINGLE 2-INPUT AND GATE SMD	133552
U12	IC EEPROM 256K BITS 3.3V SMD	133709
U13	IC SINGLE 2 INPUT AND GATE SMD	133552
U14	IC 8 BIT DRIVER SMD	133461
U15	IC SINGLE NAND SCHMITT SMD	133724
U16	IC SINGLE NAND SCHMITT SMD	133724
U17	IC SINGLE NAND SCHMITT SMD	133724
U18	IC 8 BIT DRIVER SMD	133461
U19	IC 8 BIT DRIVER SMD	133461
U20	IC DUAL RS232 3V W/SHUTDWN SMD	133707
U21	IC SINGLE NAND SCHMITT SMD	133724
U22	IC SINGLE NAND SCHMITT SMD	133724
U23	IC SINGLE NAND SCHMITT SMD	133724
U24	IC SINGLE NAND SCHMITT SMD	133724
U25	IC SINGLE NAND SCHMITT SMD	133724
U1001	IC USB 2:1 MUX SWITCH SMD	133754
Y1	CRYSTAL 12.00MHZ SMD	180103

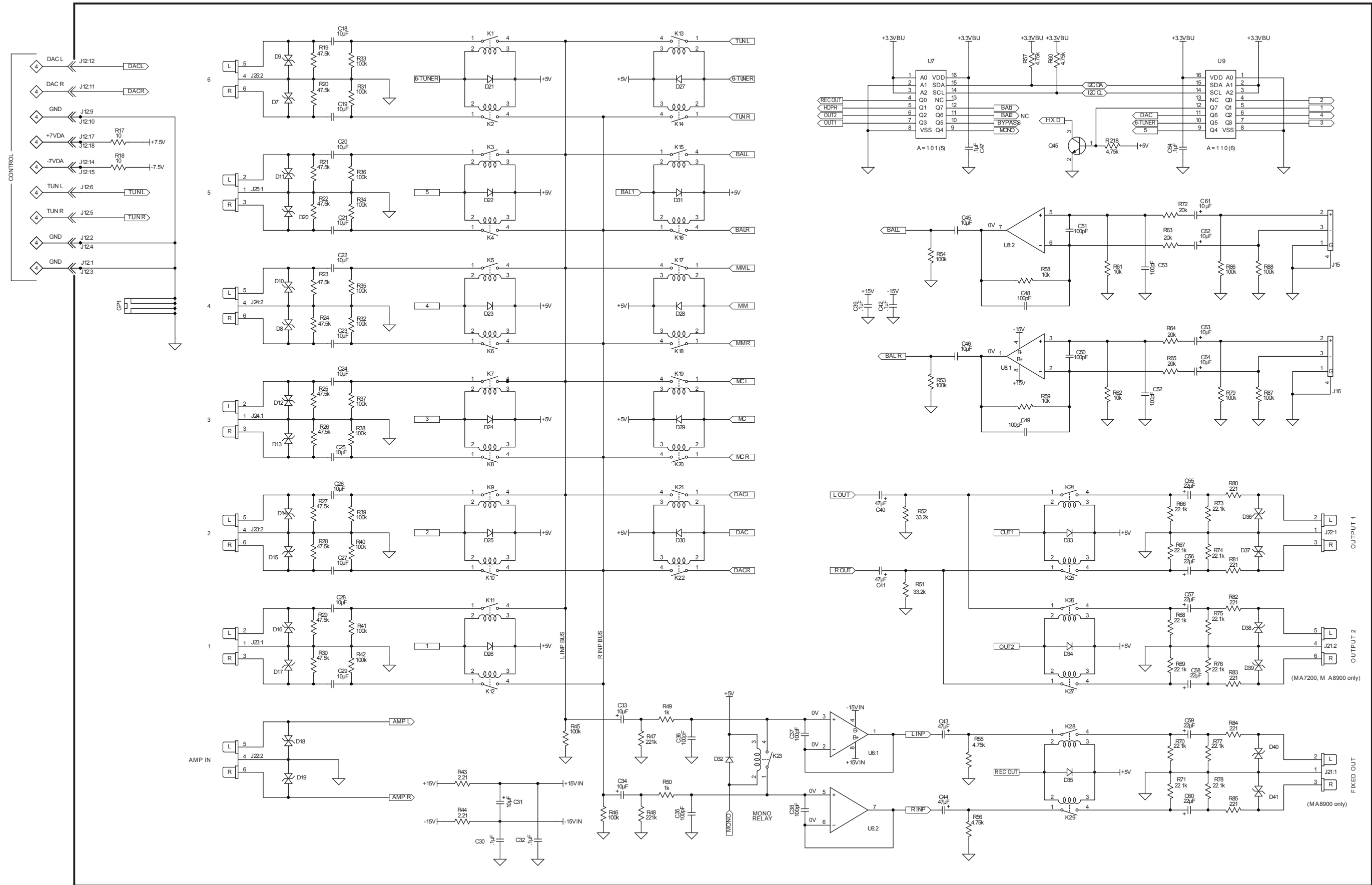
5 AUDIO 751969 SCH 1 of 4



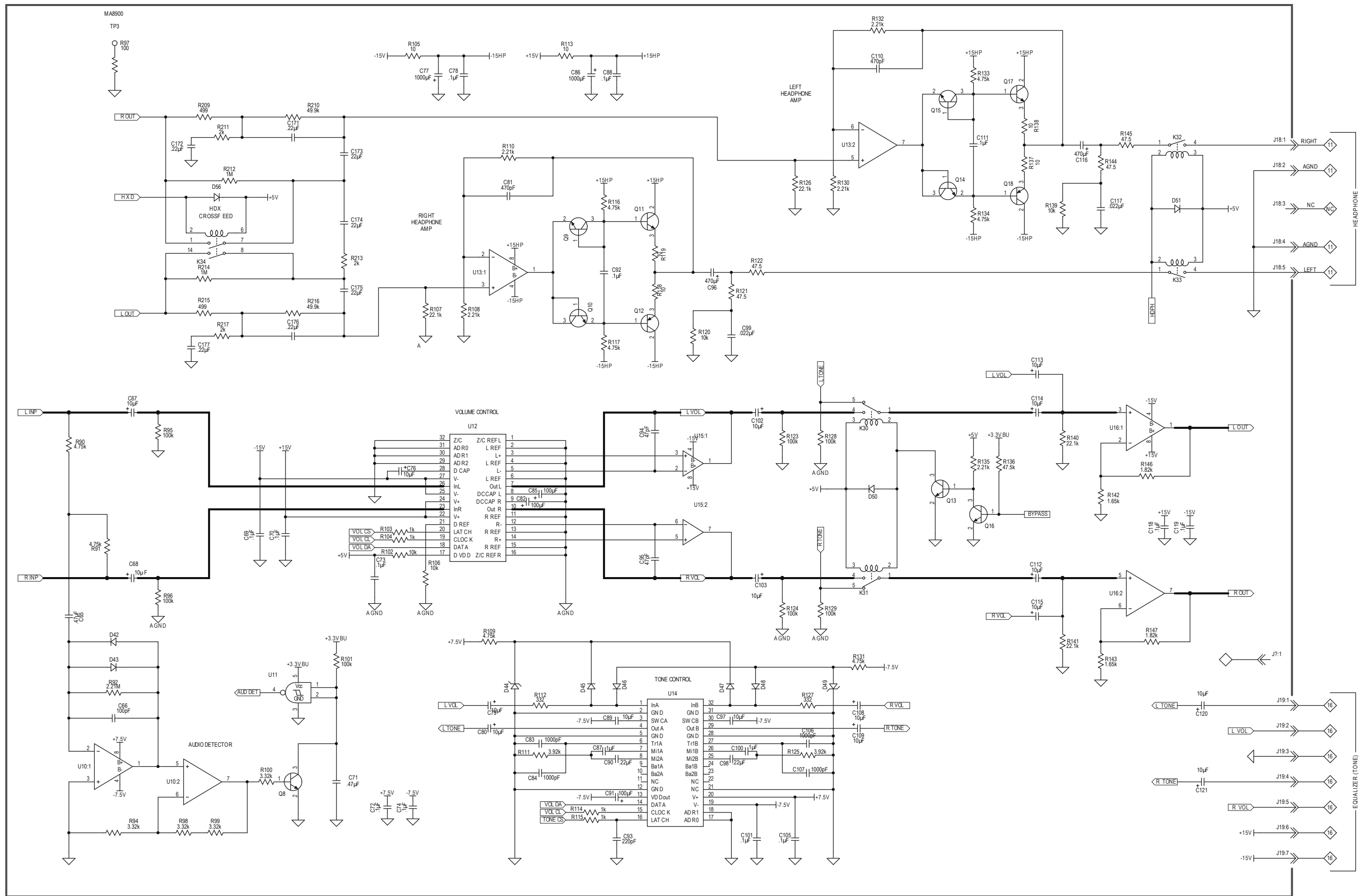
5 AUDIO 751969 SCH 2 of 4



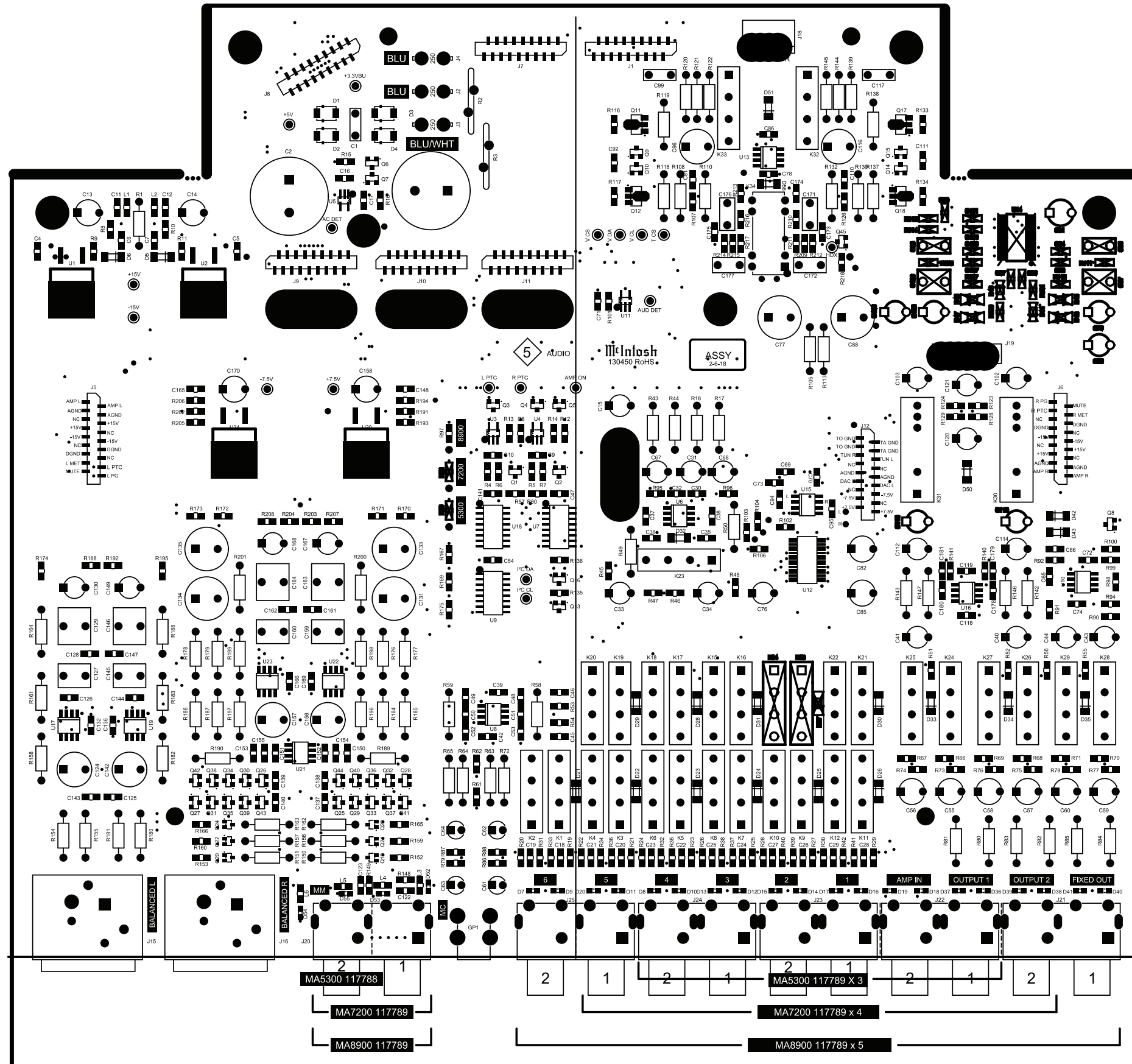
5 AUDIO 751969 SCH 3 of 4



5 AUDIO 751969 SCH 4 of 4



5 AUDIO 751969 PCB



**5** **AUDIO** 751969 PARTS LIST

Ref. No.	Description	Part No.	Ref. No.	Description	Part No.	Ref. No.	Description	Part No.	Ref. No.	Description	Part No.
C1	CAP MPF 0.047UF 5% 63VDC	064320	C57	CAP ELECT 22UF 100V	066574	C135	CAP ELECT 1000UF 25V	066513	D14	DIODE ESD SUPPRESSOR SMD	070198
C2	CAP ELECT 3300UF 35V	066509	C58	CAP ELECT 22UF 100V	066574	C136	CAP MONO .1uF 50V 20% X7R SMD0805	061365	D15	DIODE ESD SUPPRESSOR SMD	070198
C3	CAP ELECT 3300UF 35V	066509	C59	CAP ELECT 22UF 100V	066574	C137	CAP 1000PF 50V NPO SMD0805	061317	D16	DIODE ESD SUPPRESSOR SMD	070198
C4	CAP MONO .1uF 50V 20% X7R SMD0805	061365	C60	CAP ELECT 22UF 100V	066574	C138	CAP 1000PF 50V NPO SMD0805	061317	D17	DIODE ESD SUPPRESSOR SMD	070198
C5	CAP MONO .1uF 50V 20% X7R SMD0805	061365	C61	CAP ELECT 10UF 16V	066580	C139	CAP 1000PF 50V NPO SMD0805	061317	D18	DIODE ESD SUPPRESSOR SMD	070198
C6	CAP 10uF 20% 16V X5R SMD0805	061392	C62	CAP ELECT 10UF 16V	066580	C140	CAP 1000PF 50V NPO SMD0805	061317	D19	DIODE ESD SUPPRESSOR SMD	070198
C7	CAP 10uF 20% 16V X5R SMD0805	061392	C63	CAP ELECT 10UF 16V	066580	C141	CAP MONO .1uF 50V 20% X7R SMD0805	061365	D20	DIODE ESD SUPPRESSOR SMD	070198
C8	CAP MONO .1uF 50V 20% X7R SMD0805	061365	C64	CAP ELECT 10UF 16V	066580	C142	CAP ELECT 470UF 16V	066508	D21	DIODE SMALL SIGNAL 4148 SMD	070199
C9	CAP MONO .1uF 50V 20% X7R SMD0805	061365	C65	CAP .47uF 50V 20% X7R SMD0805	061373	C143	CAP 47pF 200V 10% NPO SMD0805	061368	D22	DIODE SMALL SIGNAL 4148 SMD	070199
C10	CAP MONO .1uF 50V 20% X7R SMD0805	061365	C66	CAP SMC 100PF 50V NPO SMD0805	061316	C144	CAP SMC 100PF 50V NPO SMD0805	061316	D23	DIODE SMALL SIGNAL 4148 SMD	070199
C11	CAP MONO .1uF 50V 20% X7R SMD0805	061365	C67	CAP ELECT 10UF 50V	066445	C145	CAP POLYPROP .01UF 63V 2.5%	064444	D24	DIODE SMALL SIGNAL 4148 SMD	070199
C12	CAP MONO .1uF 50V 20% X7R SMD0805	061365	C68	CAP ELECT 10UF 50V	066445	C146	CAP POLYPROP .033uF 63V 2.5%	064446	D25	DIODE SMALL SIGNAL 4148 SMD	070199
C13	CAP ELECT 220UF 25V	066507	C69	CAP MONO .1uF 50V 20% X7R SMD0805	061365	C147	CAP 1000PF 50V NPO SMD0805	061317	D26	DIODE SMALL SIGNAL 4148 SMD	070199
C14	CAP ELECT 220UF 25V	066507	C70	CAP MONO .1uF 50V 20% X7R SMD0805	061365	C148	CAP 10uF 20% 16V X5R SMD0805	061392	D28	DIODE SMALL SIGNAL 4148 SMD	070199
C15	CAP ELECT 10UF 50V	066445	C71	CAP .47uF 50V 20% X7R SMD0805	061373	C149	CAP ELECT 10UF 50V	066445	D29	DIODE SMALL SIGNAL 4148 SMD	070199
C16	CAP MONO .1uF 50V 20% X7R SMD0805	061365	C72	CAP MONO .1uF 50V 20% X7R SMD0805	061365	C150	CAP 1000PF 50V NPO SMD0805	061317	D30	DIODE SMALL SIGNAL 4148 SMD	070199
C17	CAP MONO .1uF 50V 20% X7R SMD0805	061365	C73	CAP MONO .1uF 50V 20% X7R SMD0805	061365	C151	CAP 1000PF 50V NPO SMD0805	061317	D31	DIODE SMALL SIGNAL 4148 SMD	070199
C18	CAP 10uF 20% 16V X5R SMD0805	061392	C74	CAP MONO .1uF 50V 20% X7R SMD0805	061365	C152	CAP 1000PF 50V NPO SMD0805	061317	D32	DIODE SMALL SIGNAL 4148 SMD	070199
C19	CAP 10uF 20% 16V X5R SMD0805	061392	C76	CAP ELECT 10UF 50V	066445	C153	CAP 1000PF 50V NPO SMD0805	061317	D33	DIODE SMALL SIGNAL 4148 SMD	070199
C20	CAP 10uF 20% 16V X5R SMD0805	061392	C77	CAP ELECT 1000UF 25V	066513	C154	CAP 1000PF 50V NPO SMD0805	061317	D34	DIODE SMALL SIGNAL 4148 SMD	070199
C21	CAP 10uF 20% 16V X5R SMD0805	061392	C78	CAP MONO .1uF 50V 20% X7R SMD0805	061365	C155	CAP 1000PF 50V NPO SMD0805	061317	D35	DIODE SMALL SIGNAL 4148 SMD	070199
C22	CAP 10uF 20% 16V X5R SMD0805	061392	C81	CAP 470pF 100V 10% NPO SMD0805	061370	C156	CAP ELECT 470UF 16V	066508	D36	DIODE ESD SUPPRESSOR SMD	070198
C23	CAP 10uF 20% 16V X5R SMD0805	061392	C82	CAP ELECT 100UF 25V	066573	C157	CAP ELECT 470UF 16V	066508	D37	DIODE ESD SUPPRESSOR SMD	070198
C24	CAP 10uF 20% 16V X5R SMD0805	061392	C85	CAP ELECT 100UF 25V	066573	C158	CAP ELECT 100UF 25V	066573	D38	DIODE ESD SUPPRESSOR SMD	070198
C25	CAP 10uF 20% 16V X5R SMD0805	061392	C86	CAP MONO .1uF 50V 20% X7R SMD0805	061365	C159	CAP POLYPROP .01UF 63V 2.5%	064444	D39	DIODE ESD SUPPRESSOR SMD	070198
C26	CAP 10uF 20% 16V X5R SMD0805	061392	C88	CAP ELECT 1000UF 25V	066513	C160	CAP POLYPROP .01UF 63V 2.5%	064444	D40	DIODE ESD SUPPRESSOR SMD	070198
C27	CAP 10uF 20% 16V X5R SMD0805	061392	C92	CAP MONO .1uF 50V 20% X7R SMD0805	061365	C161	CAP 1000PF 50V NPO SMD0805	061317	D41	DIODE ESD SUPPRESSOR SMD	070198
C28	CAP 10uF 20% 16V X5R SMD0805	061392	C94	CAP 47pF 200V 10% NPO SMD0805	061368	C162	CAP 1000PF 50V NPO SMD0805	061317	D42	DIODE SMALL SIGNAL 4148 SMD	070199
C29	CAP 10uF 20% 16V X5R SMD0805	061392	C95	CAP 47pF 200V 10% NPO SMD0805	061368	C163	CAP POLYPROP .033uF 63V 2.5%	064446	D43	DIODE SMALL SIGNAL 4148 SMD	070199
C30	CAP MONO .1uF 50V 20% X7R SMD0805	061365	C96	CAP ELECT 470UF 16V	066508	C164	CAP POLYPROP .033uF 63V 2.5%	064446	D50	DIODE SMALL SIGNAL 4148 SMD	070199
C31	CAP ELECT 10UF 50V	066445	C99	CAP MPF 0.022UF 5% 63VDC	064316	C165	CAP 10uF 20% 16V X5R SMD0805	061392	D51	DIODE SMALL SIGNAL 4148 SMD	070199
C32	CAP MONO .1uF 50V 20% X7R SMD0805	061365	C102	CAP ELECT 10UF 50V	066445	C166	CAP MONO .1uF 50V 20% X7R SMD0805	061365	D52	DIODE ESD SUPPRESSOR SMD	070198
C33	CAP ELECT 10UF 50V	066445	C103	CAP ELECT 10UF 50V	066445	C167	CAP ELECT 10UF 50V	066445	D53	DIODE ESD SUPPRESSOR SMD	070198
C34	CAP ELECT 10UF 50V	066445	C110	CAP 470pF 100V 10% NPO SMD0805	061370	C168	CAP ELECT 10UF 50V	066445	D54	DIODE ESD SUPPRESSOR SMD	070198
C35	CAP SMC 100PF 50V NPO SMD0805	061316	C111	CAP MONO .1uF 50V 20% X7R SMD0805	061365	C169	CAP MONO .1uF 50V 20% X7R SMD0805	061365	D55	DIODE ESD SUPPRESSOR SMD	070198
C36	CAP SMC 100PF 50V NPO SMD0805	061316	C112	CAP ELECT 10UF 50V	066445	C170	CAP ELECT 100UF 25V	066573	D56	DIODE SMALL SIGNAL 4148 SMD	070199
C37	CAP SMC 100PF 50V NPO SMD0805	061316	C114	CAP ELECT 10UF 50V	066445	C171	CAP MPF 0.22UF 5% 63VDC	064329	GP1	TERMINAL PC MOUNT 6-32	117975
C38	CAP SMC 100PF 50V NPO SMD0805	061316	C116	CAP ELECT 470UF 16V	066508	C172	CAP MPF 0.22UF 5% 63VDC	064329	J1	CONN 18 PIN FFC SMD	118003
C39	CAP MONO .1uF 50V 20% X7R SMD0805	061365	C117	CAP MPF 0.022UF 5% 63VDC	064316	C173	CAP SMC 22uF 6.3V 20% SMD0805	061397	J2	BLADE FASTON W/FEET	117708
C40	CAP ELECT 47UF 35V	066446	C118	CAP MONO .1uF 50V 20% X7R SMD0805	061365	C174	CAP SMC 22uF 6.3V 20% SMD0805	061397	J3	BLADE FASTON W/FEET	117708
C41	CAP ELECT 47UF 35V	066446	C119	CAP MONO .1uF 50V 20% X7R SMD0805	061365	C175	CAP SMC 22uF 6.3V 20% SMD0805	061397	J4	BLADE FASTON W/FEET	117708
C42	CAP MONO .1uF 50V 20% X7R SMD0805	061365	C120	CAP ELECT 10UF 50V	066445	C176	CAP MPF 0.22UF 5% 63VDC	064329	J5	CONN 18 PIN FFC SMD	118003
C43	CAP ELECT 47UF 35V	066446	C121	CAP ELECT 10UF 50V	066445	C177	CAP MPF 0.22UF 5% 63VDC	064329	J6	CONN 18 PIN FFC SMD	118003
C44	CAP ELECT 47UF 35V	066446	C122	CAP SMC 100PF 50V NPO SMD0805	061316	D1	DIODE RECTIFIER 400V 1A SMD	070208	J7	CONN 18 PIN FFC SMD	118003
C45	CAP 10uF 20% 16V X5R SMD0805	061392	C123	CAP SMC 100PF 50V NPO SMD0805	061316	D2	DIODE RECTIFIER 400V 1A SMD	070208	J8	CONN 18 PIN FFC SMD	118003
C46	CAP 10uF 20% 16V X5R SMD0805	061392	C124	CAP ELECT 470UF 16V	066508	D3	DIODE RECTIFIER 400V 1A SMD	070208	J9	CONN 18 PIN FFC SMD	118003
C47	CAP MONO .1uF 50V 20% X7R SMD0805	061365	C125	CAP 47pF 200V 10% NPO SMD0805	061368	D4	DIODE RECTIFIER 400V 1A SMD	070208	J10	CONN 18 PIN FFC SMD	118003
C48	CAP SMC 100PF 50V NPO SMD0805	061316	C126	CAP SMC 100PF 50V NPO SMD0805	061316	D5	DIODE SMALL SIGNAL 4148 SMD	070199	J11	CONN 18 PIN FFC SMD	118003
C49	CAP SMC 100PF 50V NPO SMD0805	061316	C127	CAP POLYPROP 0.01UF 63V 2.5%	064444	D6	DIODE SMALL SIGNAL 4148 SMD	070199	J12	CONN 18 PIN FFC SMD	118003
C50	CAP SMC 100PF 50V NPO SMD0805	061316	C128	CAP 1000PF 50V NPO SMD0805	061317	D7	DIODE ESD SUPPRESSOR SMD	070198	J15	RECEPTACLE XLR FEMALE	117685
C51	CAP SMC 100PF 50V NPO SMD0805	061316	C129	CAP POLYPROP .033uF 63V 2.5%	064446	D8	DIODE ESD SUPPRESSOR SMD	070198	J16	RECEPTACLE XLR FEMALE	117685
C52	CAP SMC 100PF 50V NPO SMD0805	061316	C130	CAP ELECT 10UF 50V	066445	D9	DIODE ESD SUPPRESSOR SMD	070198	J18	CONNECTOR 2MM 5 PIN RA	118032
C53	CAP SMC 100PF 50V NPO SMD0805	061316	C131	CAP ELECT 1000UF 25V	066513	D10	DIODE ESD SUPPRESSOR SMD	070198	J19	HEADER 7PIN SHROUDED	117910
C54	CAP MONO .1uF 50V 20% X7R SMD0805	061365	C132	CAP MONO .1uF 50V 20% X7R SMD0805	061365	D11	DIODE ESD SUPPRESSOR SMD	070198	J20	JACK RCA 2X2 WHT/RED 14MM	117789
C55	CAP ELECT 22UF 100V	066574	C133	CAP ELECT 1000UF 25V	066513	D12	DIODE ESD SUPPRESSOR SMD	070198	J21	JACK RCA 2X2 WHT/RED 14MM	117789
C56	CAP ELECT 22UF 100V	066574	C134	CAP ELECT 1000UF 25V	066513	D13	DIODE ESD SUPPRESSOR SMD	070198	J22	JACK RCA 2X2 WHT/RED 14MM	117789

**5** **AUDIO** 751969 PARTS LIST (Cont'd.)

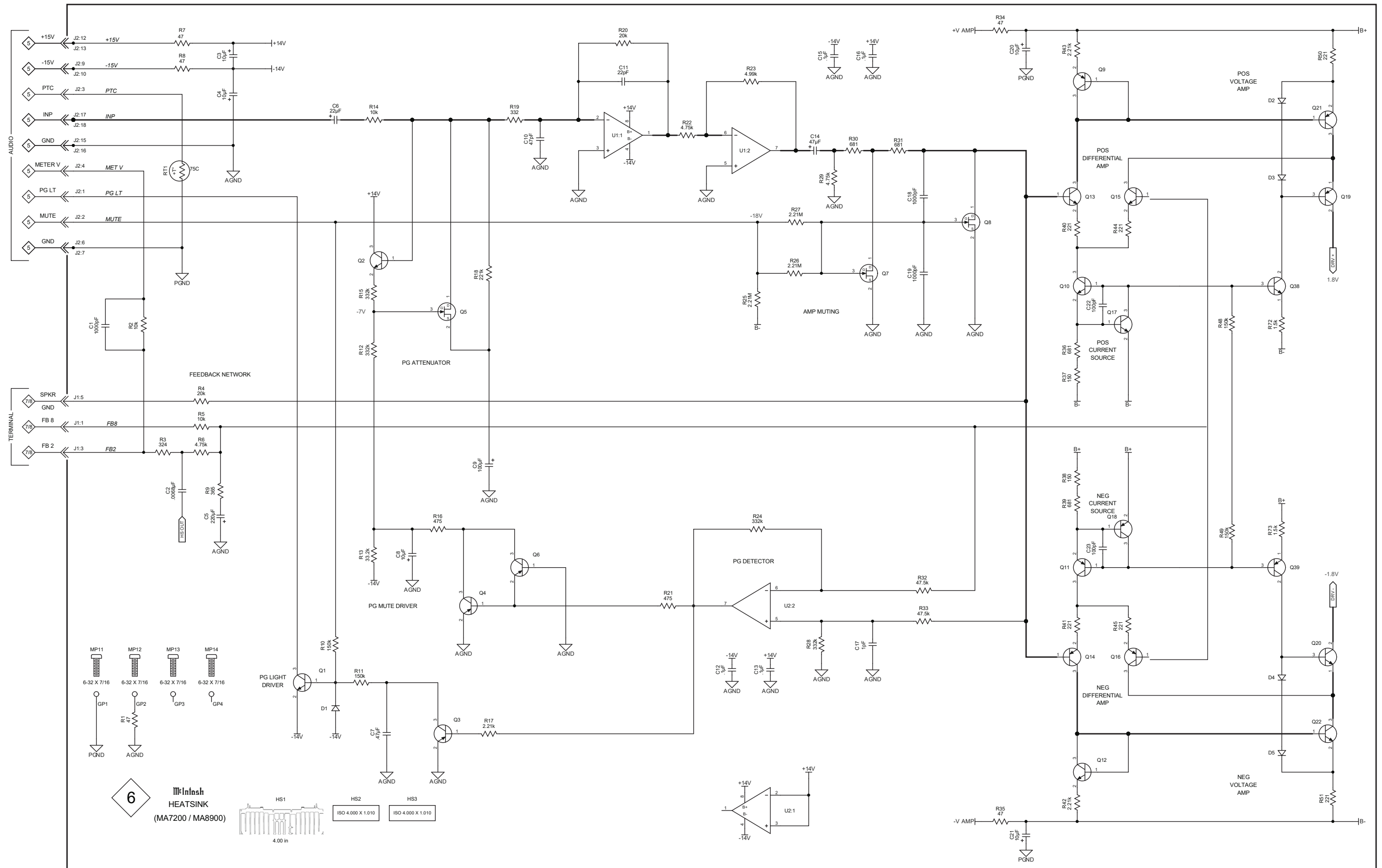
Ref. No.	Description	Part No.	Ref. No.	Description	Part No.	Ref. No.	Description	Part No.	Ref. No.	Description	Part No.
J23	JACK RCA 2X2 WHT/RED 14MM	117789	Q15	TRANSISTOR NPN A05 SMD	132333	R26	RES TF 47.5K 1% .125W SMD0805	145132	R82	RES MF 221 OHM 1% 1/4W	144559
J24	JACK RCA 2X2 WHT/RED 14MM	117789	Q16	TRANSISTOR NPN A05 SMD	132333	R27	RES TF 47.5K 1% .125W SMD0805	145132	R83	RES MF 221 OHM 1% 1/4W	144559
J25	JACK RCA 2X2 WHT/RED 14MM	117789	Q17	TRANSISTOR NPN 2SC5994 SMD	132341	R28	RES TF 47.5K 1% .125W SMD0805	145132	R84	RES MF 221 OHM 1% 1/4W	144559
K1	RELAY REED SPST-NO 5V 1.2A	087078	Q18	TRANSISTOR PNP SMD	132340	R29	RES TF 47.5K 1% .125W SMD0805	145132	R85	RES MF 221 OHM 1% 1/4W	144559
K2	RELAY REED SPST-NO 5V 1.2A	087078	Q19	TRANSISTOR NPN 2SC4694 SMD	132336	R30	RES TF 47.5K 1% .125W SMD0805	145132	R86	RES TF 100K 1% 0.1W SMD0805	145062
K3	RELAY REED SPST-NO 5V 1.2A	087078	Q20	TRANSISTOR NPN 2SC4694 SMD	132336	R31	RES TF 100K 1% 0.1W SMD0805	145062	R87	RES TF 100K 1% 0.1W SMD0805	145062
K4	RELAY REED SPST-NO 5V 1.2A	087078	Q21	TRANSISTOR NPN 2SC4694 SMD	132336	R32	RES TF 100K 1% 0.1W SMD0805	145062	R88	RES TF 100K 1% 0.1W SMD0805	145062
K5	RELAY REED SPST-NO 5V 1.2A	087078	Q22	TRANSISTOR NPN 2SC4694 SMD	132336	R33	RES TF 100K 1% 0.1W SMD0805	145062	R90	RES SMD0805 4.75K 1/8W 1%	145008
K6	RELAY REED SPST-NO 5V 1.2A	087078	Q23	TRANSISTOR NPN 2SC4694 SMD	132336	R34	RES TF 100K 1% 0.1W SMD0805	145062	R91	RES SMD0805 4.75K 1/8W 1%	145008
K7	RELAY REED SPST-NO 5V 1.2A	087078	Q24	TRANSISTOR NPN 2SC4694 SMD	132336	R35	RES TF 100K 1% 0.1W SMD0805	145062	R92	RES SMD0805 2.21M 1/8W 1%	145043
K8	RELAY REED SPST-NO 5V 1.2A	087078	Q25	TRANSISTOR PNP A55 SMD	132334	R36	RES TF 100K 1% 0.1W SMD0805	145062	R94	RES SMD0805 3.32K 1/8W 1%	145026
K9	RELAY REED SPST-NO 5V 1.2A	087078	Q26	TRANSISTOR PNP A55 SMD	132334	R37	RES TF 100K 1% 0.1W SMD0805	145062	R95	RES TF 100K 1% 0.1W SMD0805	145062
K10	RELAY REED SPST-NO 5V 1.2A	087078	Q27	TRANSISTOR NPN A05 SMD	132333	R38	RES TF 100K 1% 0.1W SMD0805	145062	R96	RES TF 100K 1% 0.1W SMD0805	145062
K11	RELAY REED SPST-NO 5V 1.2A	087078	Q28	TRANSISTOR NPN A05 SMD	132333	R39	RES TF 100K 1% 0.1W SMD0805	145062	R97	RES TF 100 1% 0.1W SMD0805	145060
K12	RELAY REED SPST-NO 5V 1.2A	087078	Q29	TRANSISTOR PNP A55 SMD	132334	R40	RES TF 100K 1% 0.1W SMD0805	145062	R98	RES SMD0805 3.32K 1/8W 1%	145026
K15	RELAY REED SPST-NO 5V 1.2A	087078	Q30	TRANSISTOR PNP A55 SMD	132334	R41	RES TF 100K 1% 0.1W SMD0805	145062	R99	RES SMD0805 3.32K 1/8W 1%	145026
K16	RELAY REED SPST-NO 5V 1.2A	087078	Q31	TRANSISTOR NPN A05 SMD	132333	R42	RES TF 100K 1% 0.1W SMD0805	145062	R100	RES SMD0805 3.32K 1/8W 1%	145026
K17	RELAY REED SPST-NO 5V 1.2A	087078	Q32	TRANSISTOR NPN A05 SMD	132333	R43	RES MF 2.21 OHM 1% 1/4W	144607	R101	RES TF 100K 1% 0.1W SMD0805	145062
K18	RELAY REED SPST-NO 5V 1.2A	087078	Q33	TRANSISTOR PNP A55 SMD	132334	R44	RES MF 2.21 OHM 1% 1/4W	144607	R102	RES TF 10K 1% 0.1W SMD0805	145061
K19	RELAY REED SPST-NO 5V 1.2A	087078	Q34	TRANSISTOR PNP A55 SMD	132334	R45	RES TF 100K 1% 0.1W SMD0805	145062	R103	RES TF 1K 1% 0.1W SMD0805	145117
K20	RELAY REED SPST-NO 5V 1.2A	087078	Q35	TRANSISTOR NPN A05 SMD	132333	R46	RES TF 100K 1% 0.1W SMD0805	145062	R104	RES TF 1K 1% 0.1W SMD0805	145117
K21	RELAY REED SPST-NO 5V 1.2A	087078	Q36	TRANSISTOR NPN A05 SMD	132333	R47	RES TF 221K .125W .5% SMD0805	145140	R105	RES FP 10 OHM 5% 1/4W	137105
K22	RELAY REED SPST-NO 5V 1.2A	087078	Q37	TRANSISTOR PNP A55 SMD	132334	R48	RES TF 221K .125W .5% SMD0805	145140	R106	RES TF 10K 1% 0.1W SMD0805	145061
K23	RELAY REED SPST-NO 5V 1.2A	087078	Q38	TRANSISTOR PNP A55 SMD	132334	R49	RES MF 1K 1% 1/4W	144513	R107	RES SMD0805 22.1K 1/8W 1%	145012
K24	RELAY REED SPST-NO 5V 1.2A	087078	Q39	TRANSISTOR NPN A05 SMD	132333	R50	RES MF 1K 1% 1/4W	144513	R108	RES MF 2.21K 1% 1/4W	144584
K25	RELAY REED SPST-NO 5V 1.2A	087078	Q40	TRANSISTOR NPN A05 SMD	132333	R51	RES SMD0805 33.2K 1/8W 1%	145033	R110	RES MF 2.21K 1% 1/4W	144584
K26	RELAY REED SPST-NO 5V 1.2A	087078	Q41	TRANSISTOR PNP A55 SMD	132334	R52	RES SMD0805 33.2K 1/8W 1%	145033	R113	RES FP 10 OHM 5% 1/4W	137105
K27	RELAY REED SPST-NO 5V 1.2A	087078	Q42	TRANSISTOR PNP A55 SMD	132334	R53	RES TF 100K 1% 0.1W SMD0805	145062	R116	RES SMD0805 4.75K 1/8W 1%	145008
K28	RELAY REED SPST-NO 5V 1.2A	087078	Q43	TRANSISTOR NPN A05 SMD	132333	R54	RES TF 100K 1% 0.1W SMD0805	145062	R117	RES SMD0805 4.75K 1/8W 1%	145008
K29	RELAY REED SPST-NO 5V 1.2A	087078	Q44	TRANSISTOR NPN A05 SMD	132333	R55	RES SMD0805 4.75K 1/8W 1%	145008	R118	RES MF 10 OHM 1% 1/4W	144553
K30	RELAY REED FORM 1C 5V 125 OHM	087056	Q45	TRANSISTOR NPN A05 SMD	132333	R56	RES SMD0805 4.75K 1/8W 1%	145008	R119	RES MF 10 OHM 1% 1/4W	144553
K31	RELAY REED FORM 1C 5V 125 OHM	087056	R1	RES FP 10 OHM 5% 1/4W	137105	R57	RES SMD0805 4.75K 1/8W 1%	145008	R120	RES MF 10K 1% 1/4W	144504
K32	RELAY REED SPST-NO 5V 1.2A	087078	R2	POLYSWITCH 1.85A 72V	144716	R58	RES MF 10K 1% 1/4W	144504	R121	RES MF 47.5 OHM 1% 1/4W	144642
K33	RELAY REED SPST-NO 5V 1.2A	087078	R3	POLYSWITCH 1.85A 72V	144716	R59	RES MF 10K 1% 1/4W	144504	R122	RES MF 47.5 OHM 1% 1/4W	144642
K34	RELAY REED DPST-NO 1.2A 5VDC	087089	R4	RES SMD0805 150K 1/8W 1%	145037	R60	RES SMD0805 4.75K 1/8W 1%	145008	R123	RES TF 100K 1% 0.1W SMD0805	145062
L1	FERRITE 60 OHM 5 AMP SMD	076025	R5	RES SMD0805 150K 1/8W 1%	145037	R61	RES TF 10K 1% 0.1W SMD0805	145061	R124	RES TF 100K 1% 0.1W SMD0805	145062
L2	FERRITE 60 OHM 5 AMP SMD	076025	R6	RES SMD0805 150K 1/8W 1%	145037	R62	RES TF 10K 1% 0.1W SMD0805	145061	R126	RES SMD0805 22.1K 1/8W 1%	145012
L3	FERRITE 1500 OHMS 1A SMD	122464	R7	RES SMD0805 150K 1/8W 1%	145037	R63	RES MF 20K 1% 1/4W	144524	R128	RES TF 100K 1% 0.1W SMD0805	145062
L4	FERRITE 1500 OHMS 1A SMD	122464	R8	RES SMD0805 475 1/8W 1%	145020	R64	RES MF 20K 1% 1/4W	144524	R129	RES TF 100K 1% 0.1W SMD0805	145062
L5	FERRITE 1500 OHMS 1A SMD	122464	R9	RES TF 2.21K 1% 0.1W SMD0805	145126	R65	RES MF 20K 1% 1/4W	144524	R130	RES MF 2.21K 1% 1/4W	144584
L6	FERRITE 1500 OHMS 1A SMD	122464	R10	RES SMD0805 475 1/8W 1%	145020	R66	RES SMD0805 22.1K 1/8W 1%	145012	R132	RES MF 2.21K 1% 1/4W	144584
PCB1	PC BD AUDIO	130450	R11	RES TF 2.21K 1% 0.1W SMD0805	145126	R67	RES SMD0805 22.1K 1/8W 1%	145012	R133	RES SMD0805 4.75K 1/8W 1%	145008
Q1	TRANSISTOR PNP A55 SMD	132334	R12	RES SMD0805 4.75K 1/8W 1%	145008	R68	RES SMD0805 22.1K 1/8W 1%	145012	R134	RES SMD0805 4.75K 1/8W 1%	145008
Q2	TRANSISTOR PNP A55 SMD	132334	R13	RES SMD0805 150K 1/8W 1%	145037	R69	RES SMD0805 22.1K 1/8W 1%	145012	R135	RES TF 2.21K 1% 0.1W SMD0805	145126
Q3	TRANSISTOR PCH MMBFJ176 SMD	132355	R14	RES SMD0805 150K 1/8W 1%	145037	R70	RES SMD0805 22.1K 1/8W 1%	145012	R136	RES TF 47.5K 1% .125W SMD0805	145132
Q4	TRANSISTOR PCH MMBFJ176 SMD	132355	R15	RES TF 100K 1% 0.1W SMD0805	145062	R71	RES SMD0805 22.1K 1/8W 1%	145012	R137	RES MF 10 OHM 1% 1/4W	144553
Q5	TRANSISTOR PCH MMBFJ176 SMD	132355	R16	RES SMD0805 150K 1/8W 1%	145037	R72	RES MF 20K 1% 1/4W	144524	R138	RES MF 10 OHM 1% 1/4W	144553
Q6	TRANSISTOR NPN A05 SMD	132333	R17	RES FP 10 OHM 5% 1/4W	137105	R73	RES SMD0805 22.1K 1/8W 1%	145012	R139	RES MF 10K 1% 1/4W	144504
Q7	TRANSISTOR NPN A05 SMD	132333	R18	RES FP 10 OHM 5% 1/4W	137105	R74	RES SMD0805 22.1K 1/8W 1%	145012	R140	RES SMD0805 22.1K 1/8W 1%	145012
Q8	TRANSISTOR NPN A05 SMD	132333	R19	RES TF 47.5K 1% .125W SMD0805	145132	R75	RES SMD0805 22.1K 1/8W 1%	145012	R141	RES SMD0805 22.1K 1/8W 1%	145012
Q9	TRANSISTOR NPN A05 SMD	132333	R20	RES TF 47.5K 1% .125W SMD0805	145132	R76	RES SMD0805 22.1K 1/8W 1%	145012	R142	RES MF 1.65K 1% 1/4W	144516
Q10	TRANSISTOR NPN A05 SMD	132333	R21	RES TF 47.5K 1% .125W SMD0805	145132	R77	RES SMD0805 22.1K 1/8W 1%	145012	R143	RES MF 1.65K 1% 1/4W	144516
Q11	TRANSISTOR NPN 2SC5994 SMD	132341	R22	RES TF 47.5K 1% .125W SMD0805	145132	R78	RES SMD0805 22.1K 1/8W 1%	145012	R144	RES MF 47.5 OHM 1% 1/4W	144642
Q12	TRANSISTOR PNP SMD	132340	R23	RES TF 47.5K 1% .125W SMD0805	145132	R79	RES TF 100K 1% 0.1W SMD0805	145062	R145	RES MF 47.5 OHM 1% 1/4W	144642
Q13	TRANSISTOR NPN A05 SMD	132333	R24	RES TF 47.5K 1% .125W SMD0805	145132	R80	RES MF 221 OHM 1% 1/4W	144559	R146	RES MF 1.82K 1% 1/4W	144582
Q14	TRANSISTOR NPN A05 SMD	132333	R25	RES TF 47.5K 1% .125W SMD0805	145132	R81	RES MF 221 OHM 1% 1/4W	144559	R147	RES MF 1.82K 1% 1/4W	144582



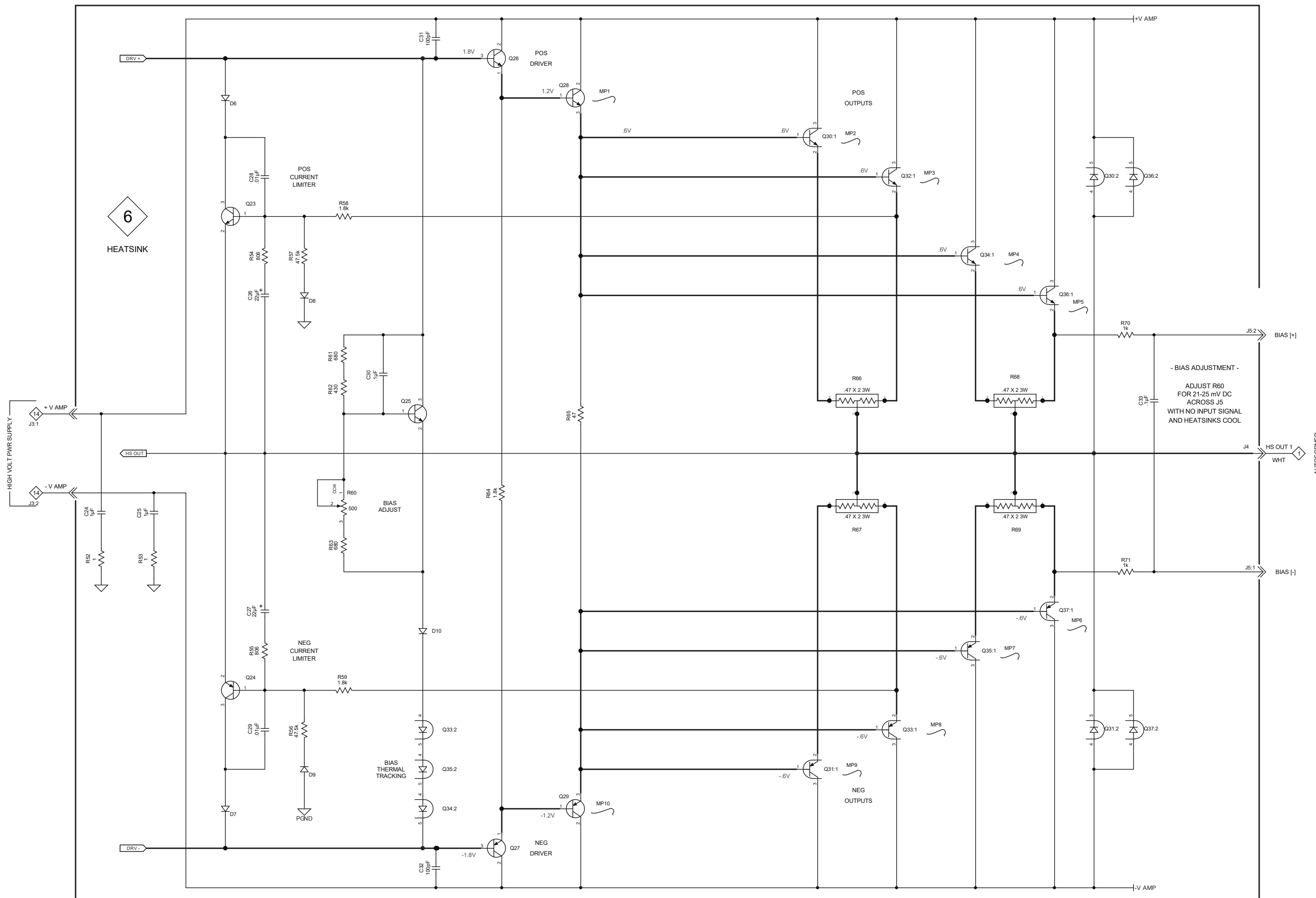
**5** **AUDIO** 751969 PARTS LIST (Cont'd.)

Ref. No.	Description	Part No.	Ref. No.	Description	Part No.	Ref. No.	Description	Part No.	Ref. No.	Description	Part No.
R148	RES TF 1K 1% 0.1W SMD0805	145117	R173	RES TF 2.21K 1% 0.1W SMD0805	145126	R198	RES MF 7.5k .5% 1/4W	144605	U5	IC SINGLE NAND SCHMITT SMD	133724
R149	RES TF 1K 1% 0.1W SMD0805	145117	R174	RES TF 100 1% 0.1W SMD0805	145060	R199	RES MF 7.5k .5% 1/4W	144605	U6	IC DUAL AMP 5532 SMD	133718
R150	RES MF 100 OHM 1% 1/4W	144568	R175	RES SMD0805 3.32K 1/8W 1%	145026	R200	RES MF 89.8k .5% 1/4W	144606	U7	IC 8 BIT DRIVER SMD	133461
R151	RES MF 100 OHM 1% 1/4W	144568	R176	RES MF 22.1 OHM 1% 1/4W	144554	R201	RES MF 89.8k .5% 1/4W	144606	U8	IC DUAL AMP 5532 SMD	133718
R152	RES SMD0805 3.32K 1/8W 1%	145026	R177	RES MF 22.1 OHM 1% 1/4W	144554	R202	RES SMD0805 4.75K 1/8W 1%	145008	U9	IC 8 BIT DRIVER SMD	133461
R153	RES SMD0805 3.32K 1/8W 1%	145026	R178	RES MF 22.1 OHM 1% 1/4W	144554	R203	RES TF 100K 1% 0.1W SMD0805	145062	U10	IC OP AMP 33178 SMD	133720
R154	RES MF 47.5K 1% 1/4W	144526	R179	RES MF 22.1 OHM 1% 1/4W	144554	R204	RES TF 100K 1% 0.1W SMD0805	145062	U11	IC SINGLE NAND SCHMITT SMD	133724
R155	RES MF 1K 1% 1/4W	144513	R180	RES MF 47.5K 1% 1/4W	144526	R205	RES SMD0805 475 1/8W 1%	145020	U12	IC 2CHANNEL VOLUME CNTRL SMD	133779
R156	RES MF 249 OHM 1% 1/4W	144721	R181	RES MF 1K 1% 1/4W	144513	R206	RES SMD0805 4.75K 1/8W 1%	145008	U13	IC DUAL AMP 5532 SMD	133718
R157	RES MF 249 OHM 1% 1/4W	144721	R182	RES MF 95.3 OHM 1% 1/4W	144572	R207	RES TF 100 1% 0.1W SMD0805	145060	U15	IC DUAL JFET OP AMP SMD	133778
R158	RES MF 95.3 OHM 1% 1/4W	144572	R183	RES MF 7.5k .5% 1/4W	144605	R208	RES TF 100 1% 0.1W SMD0805	145060	U16	IC DUAL AMP 5532 SMD	133718
R159	RES SMD0805 3.32K 1/8W 1%	145026	R184	RES MF 499 OHM 1% 1/4W	144510	R209	RES TF 499 1% 0.1W SMD0805	145084	U17	IC OP AMP LOW NOISE 5534 SMD	133719
R160	RES SMD0805 3.32K 1/8W 1%	145026	R185	RES MF 499 OHM 1% 1/4W	144510	R210	RES TF 49.9K 1% 0.1W SMD0805	145085	U18	IC 8 BIT DRIVER SMD	133461
R161	RES MF 7.5k .5% 1/4W	144605	R186	RES MF 499 OHM 1% 1/4W	144510	R211	RES TF 2K 1% 0.1W SMD0805	145115	U19	IC OP AMP LOW NOISE 5534 SMD	133719
R162	RES MF 681 OHM 1% 1/4W	144567	R187	RES MF 499 OHM 1% 1/4W	144510	R212	RES TF 1M 1% 0.125W SMD0805	145131	U20	REG POS ADJ 1.5A SMD	133822
R163	RES MF 681 OHM 1% 1/4W	144567	R188	RES MF 89.8k .5% 1/4W	144606	R213	RES TF 2K 1% 0.1W SMD0805	145115	U21	IC DUAL AMP 5532 SMD	133718
R164	RES MF 89.8k .5% 1/4W	144606	R189	RES MF 2.21K 1% 1/4W	144584	R214	RES TF 1M 1% 0.125W SMD0805	145131	U22	IC OP AMP LOW NOISE 5534 SMD	133719
R165	RES SMD0805 3.32K 1/8W 1%	145026	R190	RES MF 2.21K 1% 1/4W	144584	R215	RES TF 499 1% 0.1W SMD0805	145084	U23	IC OP AMP LOW NOISE 5534 SMD	133719
R166	RES SMD0805 3.32K 1/8W 1%	145026	R191	RES SMD0805 4.75K 1/8W 1%	145008	R216	RES TF 49.9K 1% 0.1W SMD0805	145085	U24	REG NEG ADJ 1.5A SMD	133821
R167	RES SMD0805 3.32K 1/8W 1%	145026	R192	RES TF 100K 1% 0.1W SMD0805	145062	R217	RES TF 2K 1% 0.1W SMD0805	145115			
R168	RES TF 100K 1% 0.1W SMD0805	145062	R193	RES SMD0805 475 1/8W 1%	145020	R218	RES SMD0805 4.75K 1/8W 1%	145008			
R169	RES SMD0805 3.32K 1/8W 1%	145026	R194	RES SMD0805 4.75K 1/8W 1%	145008	U1	REG POS ADJ 1.5A SMD	133822			
R170	RES TF 2.21K 1% 0.1W SMD0805	145126	R195	RES TF 100 1% 0.1W SMD0805	145060	U2	REG NEG ADJ 1.5A SMD	133821			
R171	RES TF 2.21K 1% 0.1W SMD0805	145126	R196	RES MF 182 OHM 1% 1/4W	144579	U3	IC SINGLE NAND SCHMITT SMD	133724			
R172	RES TF 2.21K 1% 0.1W SMD0805	145126	R197	RES MF 182 OHM 1% 1/4W	144579	U4	IC SINGLE NAND SCHMITT SMD	133724			

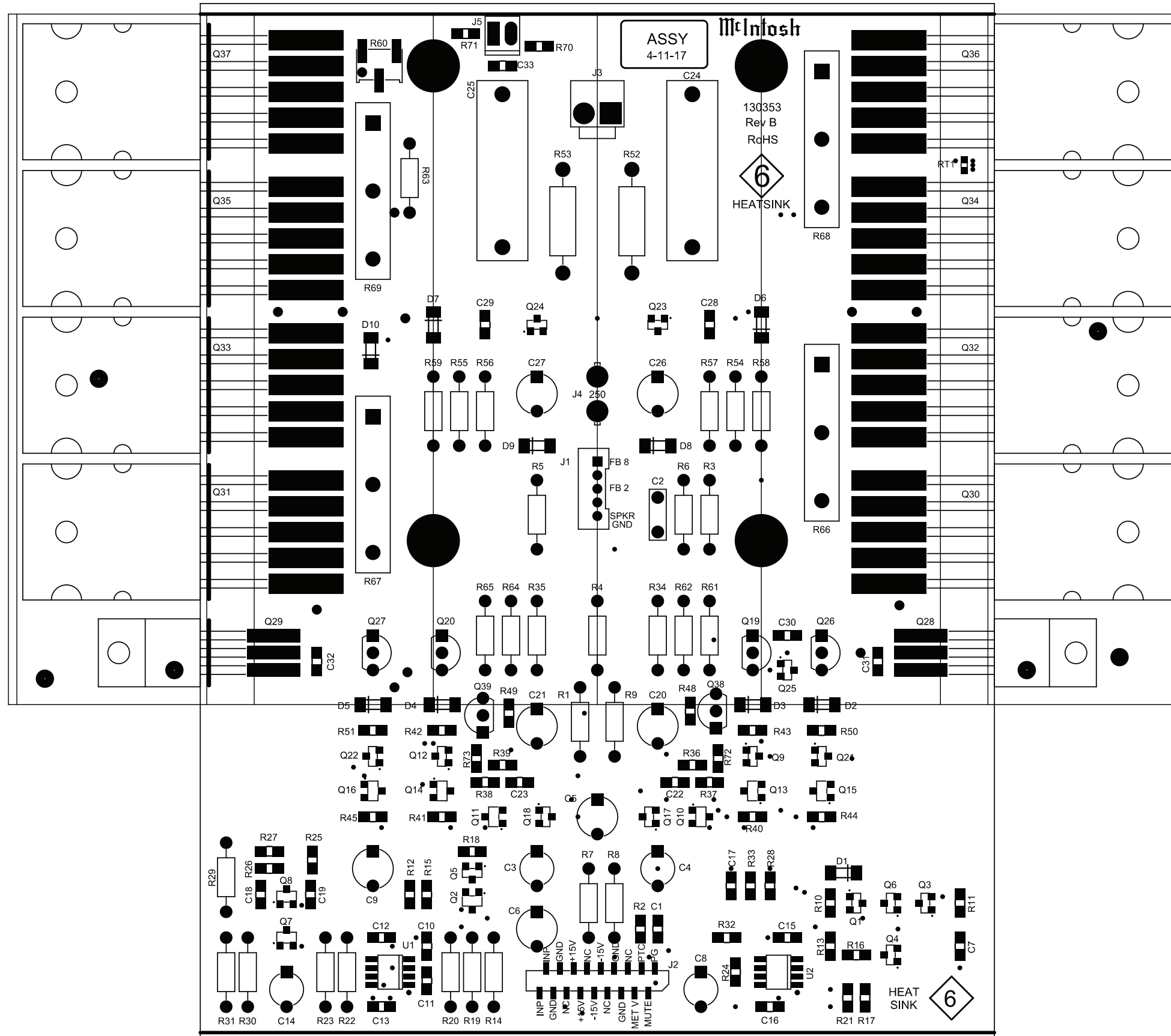
# 6 HEATSINK 751970 SCH 1 of 2



# 6 HEATSINK 751970 SCH 2 of 2



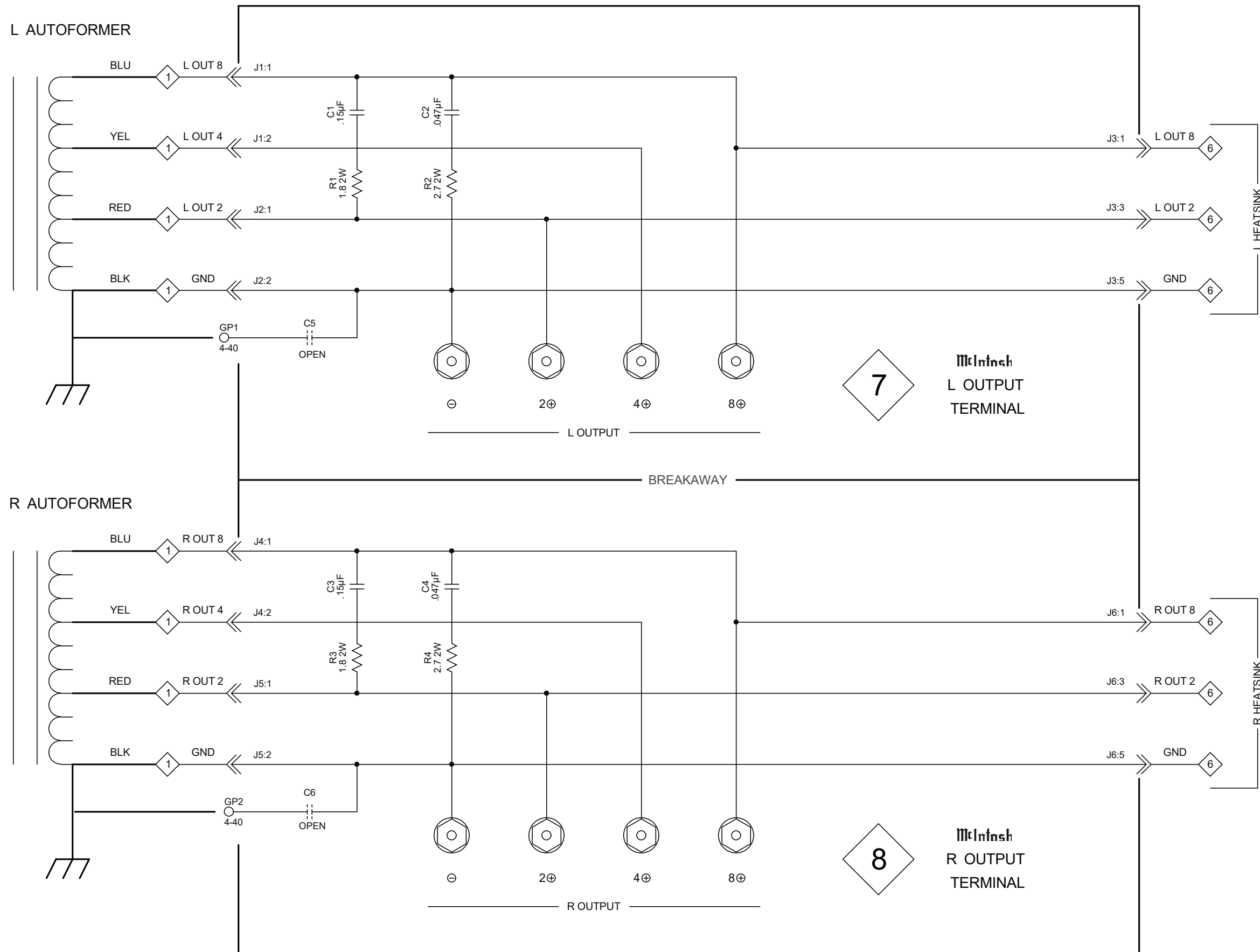
6 HEATSINK 751970 PCB



# 6 HEATSINK 751970 PARTS LIST

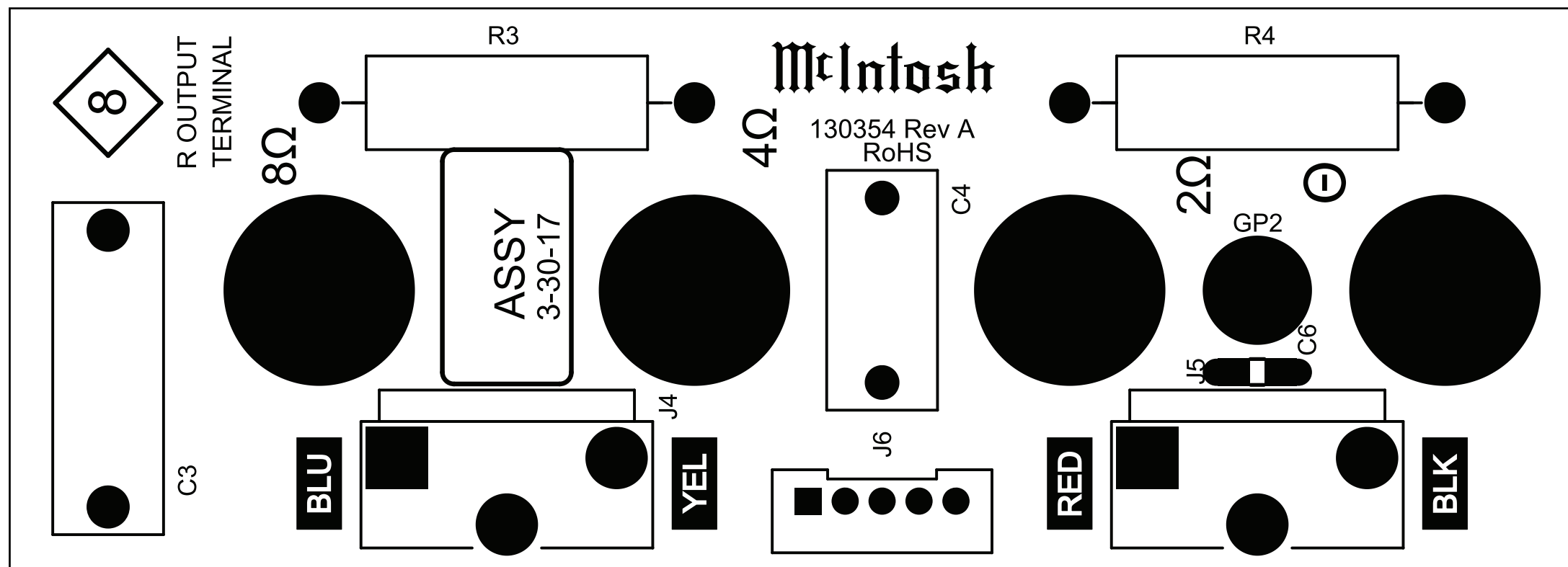
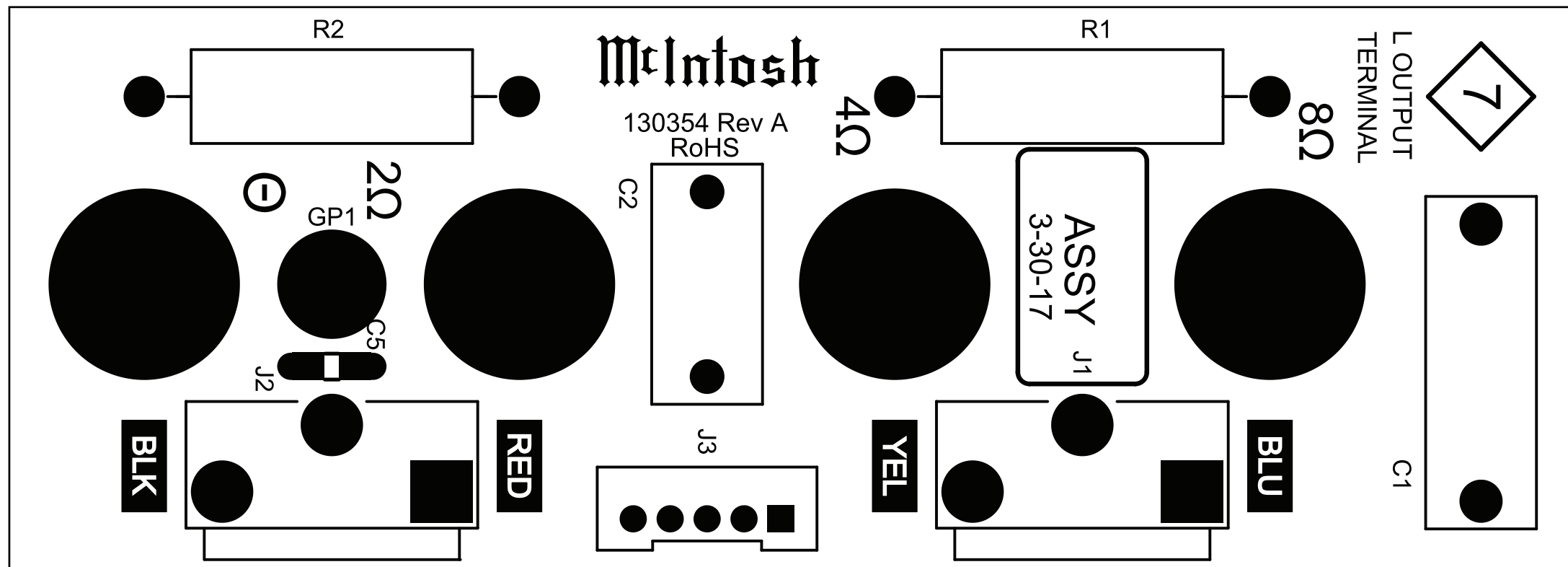
Ref. No.	Description	Part No.	Ref. No.	Description	Part No.	Ref. No.	Description	Part No.	Ref. No.	Description	Part No.
C1	CAP NPO 1000pF 100V 5% SMD0805	061391	MP2	TRANSISTOR CLIP TO-247	414167	R4	RES MF 20K 1% 1/4W	144524	R62	RES MET OX 430 OHM 5% 1/2W	137101
C2	CAP MPF 0.0068UF 5% 63VDC	064310	MP3	TRANSISTOR CLIP TO-247	414167	R5	RES MF 10K 1% 1/4W	144504	R63	RES MET OX 680 OHM 5% 1/2W	137099
C3	CAP ELECT 10UF 50V	066445	MP4	TRANSISTOR CLIP TO-247	414167	R6	RES MF 4.75K 1% 1/4W	144520	R64	RES MET OX 1.8k 5% 1/2W	137100
C4	CAP ELECT 10UF 50V	066445	MP5	TRANSISTOR CLIP TO-247	414167	R7	RES MET OX 47 OHM 5% 1/2W	137102	R65	RES MET OX 47 OHM 5% 1/2W	137102
C5	CAP ELECT 220UF 25V	066507	MP6	TRANSISTOR CLIP TO-247	414167	R8	RES MET OX 47 OHM 5% 1/2W	137102	R66	RES WW DUAL 0.47 OHM 5% 3W	139274
C6	CAP ELECT 22UF 100V	066574	MP7	TRANSISTOR CLIP TO-247	414167	R9	RES MF 365 OHM 1% 1/4W	144505	R67	RES WW DUAL 0.47 OHM 5% 3W	139274
C7	CAP .47uF 50V 20% X7R SMD0805	061373	MP8	TRANSISTOR CLIP TO-247	414167	R10	RES SMD0805 150K 1/8W 1%	145037	R68	RES WW DUAL 0.47 OHM 5% 3W	139274
C8	CAP ELECT 10UF 50V	066445	MP9	TRANSISTOR CLIP TO-247	414167	R11	RES SMD0805 150K 1/8W 1%	145037	R69	RES WW DUAL 0.47 OHM 5% 3W	139274
C9	CAP ELECT 100UF 25V	066573	MP10	TRANSISTOR CLIP TO-220	414166	R12	RES SMD0805 332K 1/8W 1%	145039	R70	RES TF 1K 1% 0.1W SMD0805	145117
C10	CAP 47pF 200V 10% NPO SMD0805	061368	MP11	SCR TT 6-32 X 7/16 PHIL PAN	401280	R13	RES SMD0805 33.2K 1/8W 1%	145033	R71	RES TF 1K 1% 0.1W SMD0805	145117
C11	CAP 22pF 200V 10% NPO SMD0805	061367	MP12	SCR TT 6-32 X 7/16 PHIL PAN	401280	R14	RES MF 10K 1% 1/4W	144504	R72	RES SMD0805 1.5K 1/8W 1%	145022
C12	CAP MONO .1uF 50V 20% X7R SMD0805	061365	MP13	SCR TT 6-32 X 7/16 PHIL PAN	401280	R15	RES SMD0805 332K 1/8W 1%	145039	R73	RES SMD0805 1.5K 1/8W 1%	145022
C13	CAP MONO .1uF 50V 20% X7R SMD0805	061365	MP14	SCR TT 6-32 X 7/16 PHIL PAN	401280	R16	RES SMD0805 475 1/8W 1%	145020	RT1	THERMISTOR 75C SMD	144753
C14	CAP ELECT 47UF 35V	066446	PCB1	PC BD HEATSINK	130353	R17	RES TF 2.21K 1% 0.1W SMD0805	145126	U1	IC DUAL OP AMP 5532 SMD	133718
C15	CAP MONO .1uF 50V 20% X7R SMD0805	061365	Q1	TRANSISTOR NPN A05 SMD	132333	R18	RES TF 221K .125W .5% SMD0805	145140	U2	IC OP AMP 33178 SMD	133720
C16	CAP MONO .1uF 50V 20% X7R SMD0805	061365	Q2	TRANSISTOR NPN 2SC2713 SMD	132345	R19	RES MF 332 OHM 1% 1/4W	144646			
C17	CAP MONO NPO 1pF 50V SMD0805	061393	Q3	TRANSISTOR PNP A55 SMD	132334	R20	RES MF 20K 1% 1/4W	144524			
C18	CAP NPO 1000pF 100V 5% SMD0805	061391	Q4	TRANSISTOR PNP A55 SMD	132334	R21	RES SMD0805 475 1/8W 1%	145020			
C19	CAP NPO 1000pF 100V 5% SMD0805	061391	Q5	TRANSISTOR NCH MMBF4392 SMD	132349	R22	RES MF 4.75K 1% 1/4W	144520			
C20	CAP ELECT 10UF 100VDC	066462	Q6	TRANSISTOR PNP A55 SMD	132334	R23	RES MF 4.99K 1% 1/4W	144521			
C21	CAP ELECT 10UF 100VDC	066462	Q7	TRANSISTOR NCH MMBFJ108 SMD	132354	R24	RES SMD0805 332K 1/8W 1%	145039			
C22	CAP NPO 100pF 200V 5% SMD0805	061390	Q8	TRANSISTOR NCH MMBFJ108 SMD	132354	R25	RES SMD0805 2.21M 1/8W 1%	145043			
C23	CAP NPO 100pF 200V 5% SMD0805	061390	Q9	TRANSISTOR PNP A55 SMD	132334	R26	RES SMD0805 2.21M 1/8W 1%	145043			
C24	CAP POLYPROP 1uF 160V 20%	064451	Q10	TRANSISTOR NPN 2SC2713 SMD	132345	R27	RES SMD0805 2.21M 1/8W 1%	145043			
C25	CAP POLYPROP 1uF 160V 20%	064451	Q11	TRANSISTOR PNP 2SA1163 SMD	132344	R28	RES SMD0805 332K 1/8W 1%	145039			
C26	CAP ELECT 22UF 100V	066574	Q12	TRANSISTOR NPN A05 SMD	132333	R29	RES MF 4.75K 1% 1/4W	144520			
C27	CAP ELECT 22UF 100V	066574	Q13	TRANSISTOR NPN 2SC2713 SMD	132345	R30	RES MF 681 OHM 1% 1/4W	144567			
C28	CAP .01uF 50V 20% X7R SMD0805	061372	Q14	TRANSISTOR PNP 2SA1163 SMD	132344	R31	RES MF 681 OHM 1% 1/4W	144567			
C29	CAP .01uF 50V 20% X7R SMD0805	061372	Q15	TRANSISTOR NPN 2SC2713 SMD	132345	R32	RES TF 47.5K 1% .125W SMD0805	145132			
C30	CAP MONO .1uF 50V 20% X7R SMD0805	061365	Q16	TRANSISTOR PNP 2SA1163 SMD	132344	R33	RES TF 47.5K 1% .125W SMD0805	145132			
C31	CAP NPO 100pF 200V 5% SMD0805	061390	Q17	TRANSISTOR NPN A05 SMD	132333	R34	RES MET OX 47 OHM 5% 1/2W	137102			
C32	CAP NPO 100pF 200V 5% SMD0805	061390	Q18	TRANSISTOR PNP A55 SMD	132334	R35	RES MET OX 47 OHM 5% 1/2W	137102			
C33	CAP MONO .1uF 50V 20% X7R SMD0805	061365	Q19	TRANSISTOR PNP 300V BF421	132352	R36	RES SMD0805 681 1/8W 1%	145002			
D1	DIODE SMALL SIGNAL 4148 SMD	070199	Q20	TRANSISTOR NPN 300V BF420	132351	R37	RES SMD0805 150 1/8W 1%	145019			
D2	DIODE SMALL SIGNAL 4148 SMD	070199	Q21	TRANSISTOR PNP A55 SMD	132334	R38	RES SMD0805 150 1/8W 1%	145019			
D3	DIODE SMALL SIGNAL 4148 SMD	070199	Q22	TRANSISTOR NPN A05 SMD	132333	R39	RES SMD0805 681 1/8W 1%	145002			
D4	DIODE SMALL SIGNAL 4148 SMD	070199	Q23	TRANSISTOR NPN A05 SMD	132333	R40	RES SMD0805 221 1/8W 1%	145001			
D5	DIODE SMALL SIGNAL 4148 SMD	070199	Q24	TRANSISTOR PNP A55 SMD	132334	R41	RES SMD0805 221 1/8W 1%	145001			
D6	DIODE SMALL SIGNAL 4148 SMD	070199	Q25	TRANSISTOR NPN A05 SMD	132333	R42	RES TF 2.21K 1% 0.1W SMD0805	145126			
D7	DIODE SMALL SIGNAL 4148 SMD	070199	Q26	TRANSISTOR NPN 300V BF420	132351	R43	RES TF 2.21K 1% 0.1W SMD0805	145126			
D8	DIODE SMALL SIGNAL 4148 SMD	070199	Q27	TRANSISTOR PNP 300V BF421	132352	R44	RES SMD0805 221 1/8W 1%	145001			
D9	DIODE SMALL SIGNAL 4148 SMD	070199	Q28	TRANSISTOR NPN 250V MJE15032	132310	R45	RES SMD0805 221 1/8W 1%	145001			
D10	DIODE SMALL SIGNAL 4148 SMD	070199	Q29	TRANSISTOR PNP 250V MJE15033	132311	R48	RES SMD0805 150K 1/8W 1%	145037			
GP1	STANDOFF PCB 0.144DIA X 0.188L	412186	Q30	TRANSISTOR NPN 260V NJL3281D	132330	R49	RES SMD0805 150K 1/8W 1%	145037			
GP2	STANDOFF PCB 0.144DIA X 0.188L	412186	Q31	TRANSISTOR PNP 260V NJL1302D	132331	R50	RES SMD0805 221 1/8W 1%	145001			
GP3	STANDOFF PCB 0.144DIA X 0.188L	412186	Q32	TRANSISTOR NPN 260V NJL3281D	132330	R51	RES SMD0805 221 1/8W 1%	145001			
GP4	STANDOFF PCB 0.144DIA X 0.188L	412186	Q33	TRANSISTOR PNP 260V NJL1302D	132331	R52	RES MO 1 OHM 1W 5%	144752			
HS1	HEATSINK MC COMPLETE 4.00"	218070	Q34	TRANSISTOR NPN 260V NJL3281D	132330	R53	RES MO 1 OHM 1W 5%	144752			
HS2	ISOSTRATE 4.000 X 1.010	084194	Q35	TRANSISTOR PNP 260V NJL1302D	132331	R54	RES MF 806 OHM 1% 1/4W	144512			
HS3	ISOSTRATE 4.000 X 1.010	084194	Q36	TRANSISTOR NPN 260V NJL3281D	132330	R55	RES MF 806 OHM 1% 1/4W	144512			
J1	5 PIN SHROUDED HEADER	117916	Q37	TRANSISTOR PNP 260V NJL1302D	132331	R56	RES MF 47.5K 1% 1/4W	144526			
J2	CONN 18 PIN FFC SMD	118003	Q38	TRANSISTOR NPN 300V BF420	132351	R57	RES MF 47.5K 1% 1/4W	144526			
J3	CONN HEADER 2 POS 3.96MM	118147	Q39	TRANSISTOR PNP 300V BF421	132352	R58	RES MET OX 1.8k 5% 1/2W	137100			
J4	BLADE FASTON W/FEET	117708	R1	RES MET OX 47 OHM 5% 1/2W	137102	R59	RES MET OX 1.8k 5% 1/2W	137100			
J5	CONN 2 PIN MALE	117213	R2	RES TF 10K 1% 0.1W SMD0805	145061	R60	POT 1/4" HORIZ 500 OHM .5W SMD	134517			
MP1	TRANSISTOR CLIP TO-220	414166	R3	RES MF 324 OHM 1% 1/4W	144597	R61	RES MET OX 680 OHM 5% 1/2W	137099			

**7** **8** L & R TERMINAL 751971 SCH



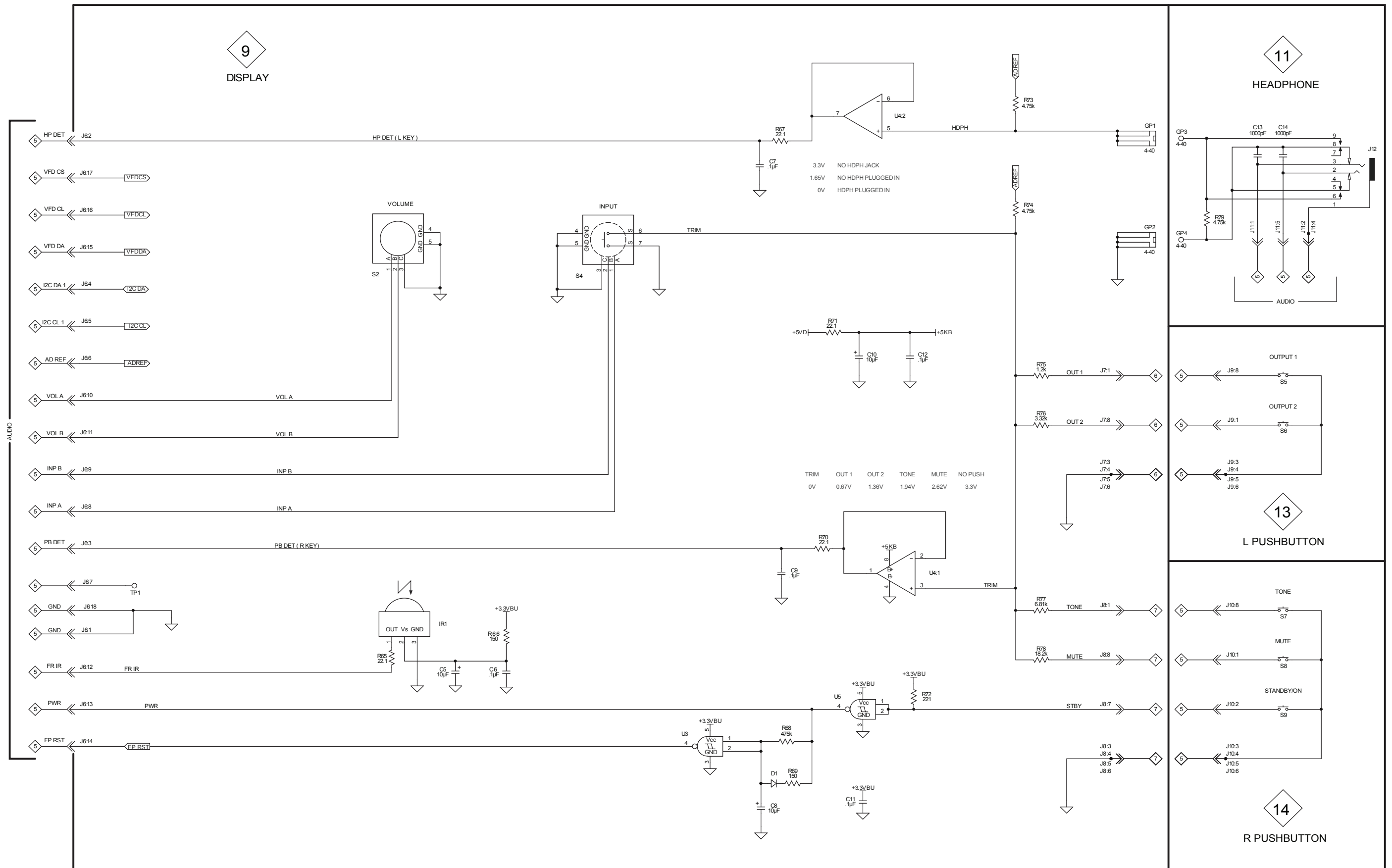
7 8 L & R TERMINAL 751971 PCB

7 8 L & R TERMINAL  
751971 PARTS LIST



Ref. No.	Description	Part No.
C1	CAP POLYPROP 0.15UF 10% 275VDC	064464
C2	CAP POLYPROP 0.047UF 10% 275VDC	064466
C3	CAP POLYPROP 0.15UF 10% 275VDC	064464
C4	CAP POLYPROP 0.047UF 10% 275VDC	064466
J1	CONNECTOR 2PIN HEADER 11.88MM	118026
J2	CONNECTOR 2PIN HEADER 11.88MM	118026
J3	5 PIN SHROUDED HEADER	117916
J4	CONNECTOR 2PIN HEADER 11.88MM	118026
J5	CONNECTOR 2PIN HEADER 11.88MM	118026
J6	5 PIN SHROUDED HEADER	117916
PCB1	PC BD TERMINAL OUTPUT	130354
R1	RESWW 1.8 OHM 5% 2W MTL FLM FP	139264
R2	RES WW 2.7 OHM 2W 5% FP	139263
R3	RESWW 1.8 OHM 5% 2W MTL FLM FP	139264
R4	RES WW 2.7 OHM 2W 5% FP	139263

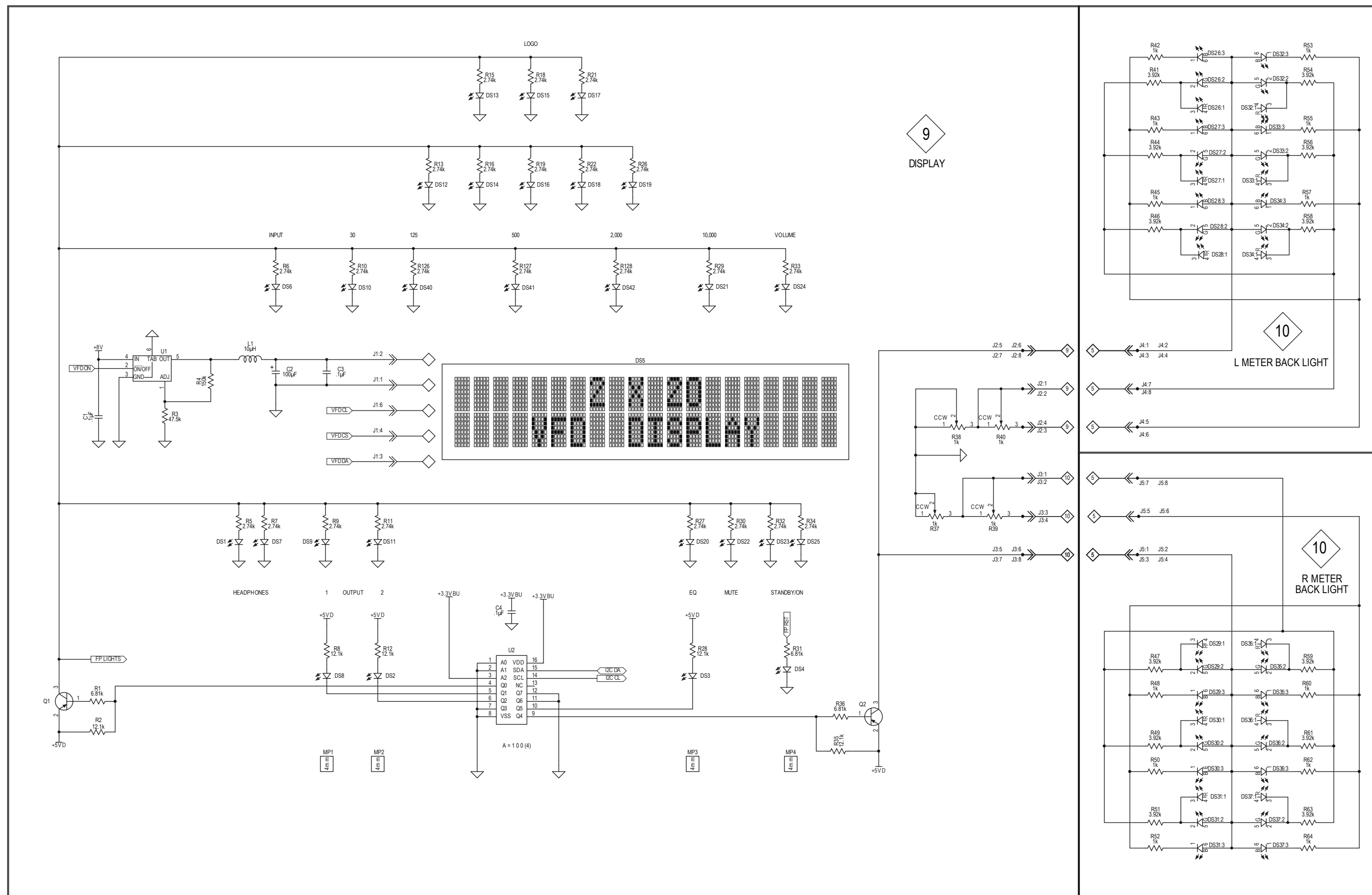
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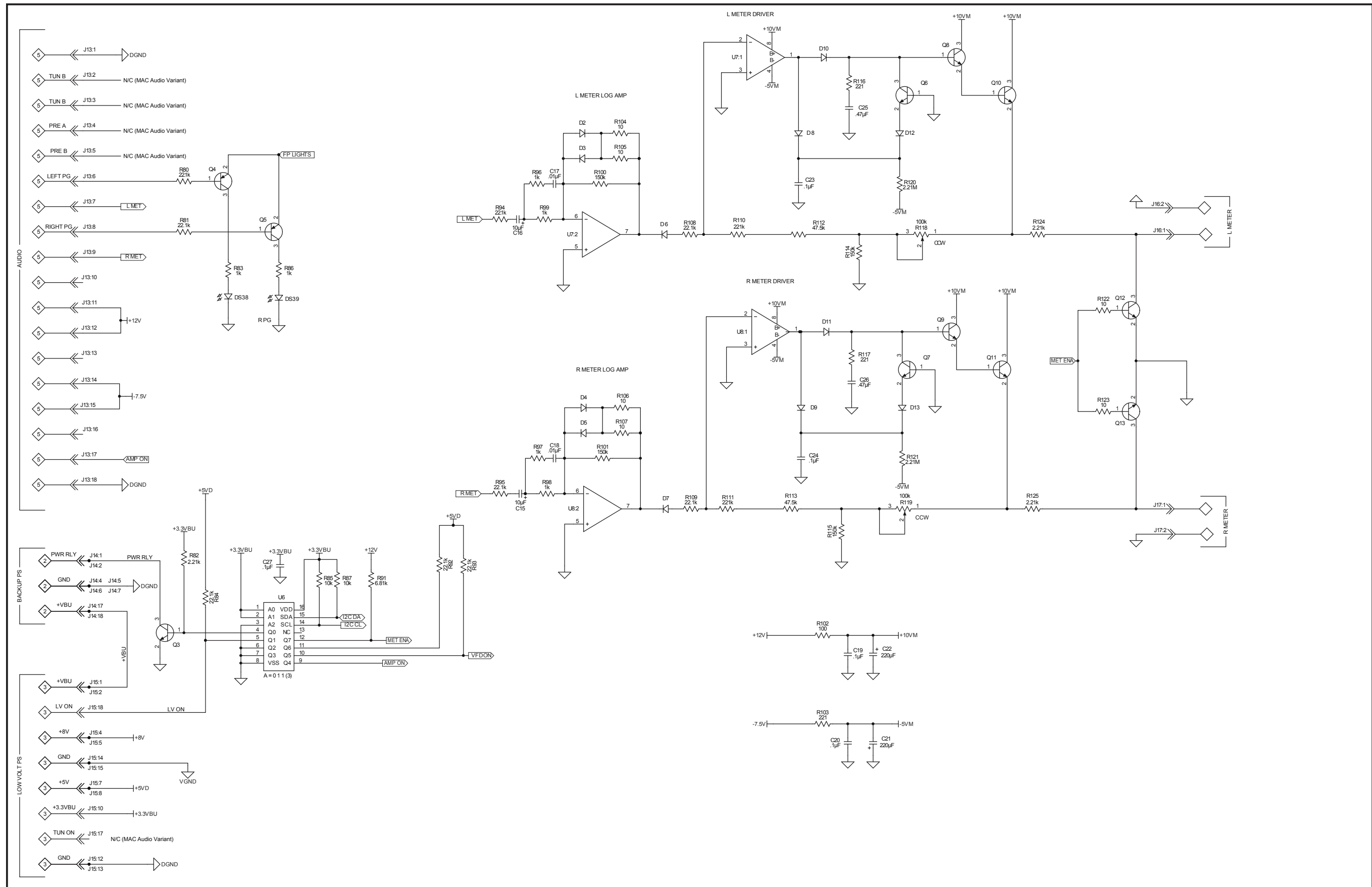


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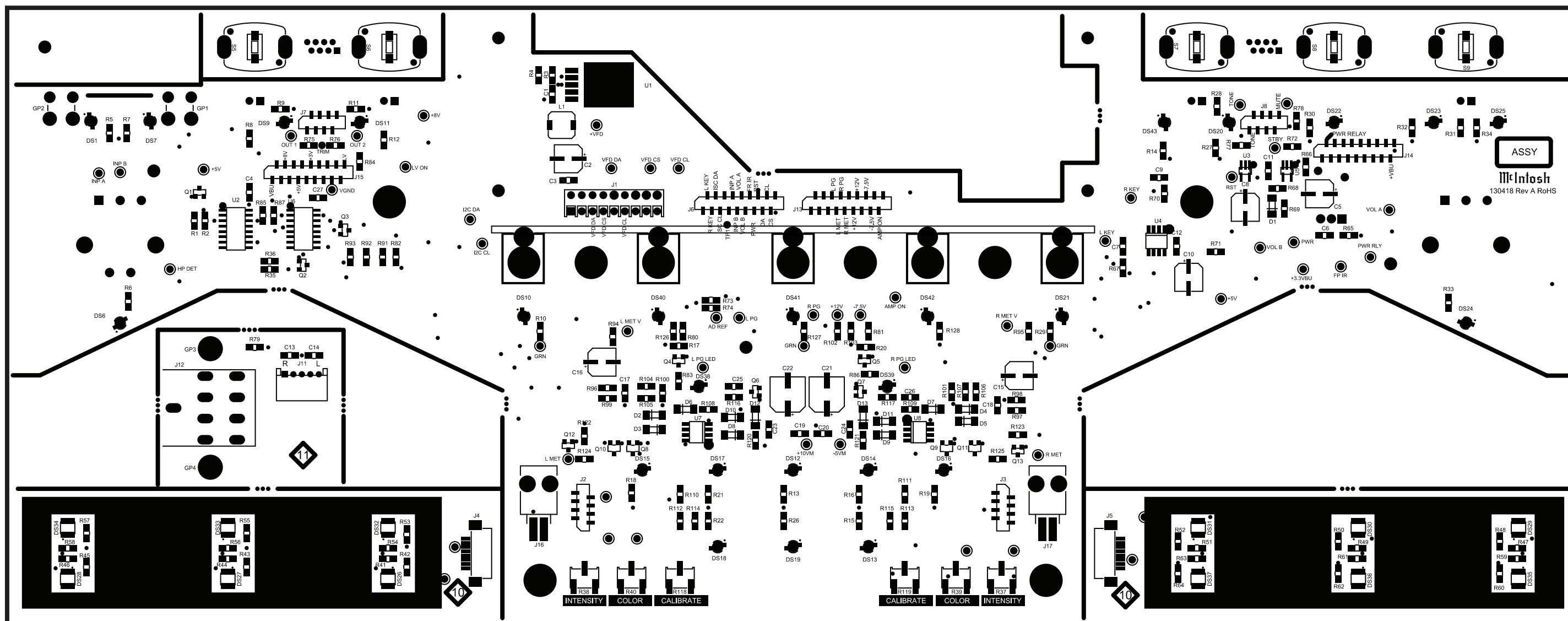
DSPLY / METER LT / HDPHN / L PUSHBUTTON / R PUSHBUTTON 751972 SCH 2 of 3



9 10 11 13 14 DSPLY / METER LT / HDPHN / L PUSHBUTTON / R PUSHBUTTON 751972 SCH 3 of 3



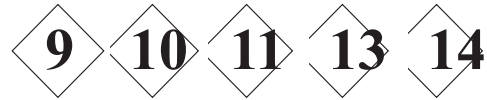
9 10 11 13 14 DSPLY / METER LT / HDPHN / L PUSHBUTTON / R PUSHBUTTON 751972 SCH 3 of 3





DSPLY / METER LT / HDPHN / L PUSHBUTTON / R PUSHBUTTON 751972 PARTS LIST

Ref. No.	Description	Part No.	Ref. No.	Description	Part No.	Ref. No.	Description	Part No.	Ref. No.	Description	Part No.
C1	CAP MONO .1uF 50V 20% X7R SMD0805	061365	DS8	LED RED HIGH EFFICIENCY 5MM	058207	J9	CONN 8 PIN FFC	117915	R20	RES TF 2.21K 1% 0.1W SMD0805	145126
C2	CAP ELECT 100UF 25V SMD	066605	DS9	LED GRN REV MOUNT SMD	058222	J10	CONN 8 PIN FFC	117915	R21	RES TF 3.00K 1% 0.1W SMD0805	145078
C3	CAP MONO .1uF 50V 20% X7R SMD0805	061365	DS10	LED GRN REV MOUNT SMD	058222	J11	CONNECTOR 2MM 5 PIN RA	118032	R22	RES TF 3.00K 1% 0.1W SMD0805	145078
C4	CAP MONO .1uF 50V 20% X7R SMD0805	061365	DS11	LED GRN REV MOUNT SMD	058222	J12	JACK HDPH 1/4IN BLK W/ SWITCH	118117	R26	RES TF 3.00K 1% 0.1W SMD0805	145078
C5	CAP ELECT 10UF 50V SMD	066602	DS12	LED GRN REV MOUNT SMD	058222	J13	CONN 18 PIN FFC SMD	118003	R27	RES TF 3.00K 1% 0.1W SMD0805	145078
C6	CAP MONO .1uF 50V 20% X7R SMD0805	061365	DS13	LED GRN REV MOUNT SMD	058222	J14	CONN 18 PIN FFC SMD	118003	R28	RES SMD0805 12.1K 1/8W 1%	145030
C7	CAP MONO .1uF 50V 20% X7R SMD0805	061365	DS14	LED GRN REV MOUNT SMD	058222	J15	CONN 18 PIN FFC SMD	118003	R29	RES TF 3.00K 1% 0.1W SMD0805	145078
C8	CAP ELECT 10UF 50V SMD	066602	DS15	LED GRN REV MOUNT SMD	058222	J16	CONNECTOR LATCHING 2PIN RA SMD	118027	R30	RES TF 3.00K 1% 0.1W SMD0805	145078
C9	CAP MONO .1uF 50V 20% X7R SMD0805	061365	DS16	LED GRN REV MOUNT SMD	058222	J17	CONNECTOR LATCHING 2PIN RA SMD	118027	R31	RES SMD0805 6.81K 1/8W 1%	145029
C10	CAP ELECT 10UF 50V SMD	066602	DS17	LED GRN REV MOUNT SMD	058222	L1	INDUCTOR 10UH 30% SMD	122438	R32	RES TF 3.00K 1% 0.1W SMD0805	145078
C11	CAP MONO .1uF 50V 20% X7R SMD0805	061365	DS18	LED GRN REV MOUNT SMD	058222	MP1	SPACER LED 4MM LEN	163186	R33	RES TF 3.00K 1% 0.1W SMD0805	145078
C12	CAP MONO .1uF 50V 20% X7R SMD0805	061365	DS19	LED GRN REV MOUNT SMD	058222	MP2	SPACER LED 4MM LEN	163186	R34	RES TF 3.00K 1% 0.1W SMD0805	145078
C13	CAP NPO 1000pF 100V 5% SMD0805	061391	DS20	LED GRN REV MOUNT SMD	058222	MP3	SPACER LED 4MM LEN	163186	R35	RES SMD0805 12.1K 1/8W 1%	145030
C14	CAP NPO 1000pF 100V 5% SMD0805	061391	DS21	LED GRN REV MOUNT SMD	058222	MP4	SPACER LED 4MM LEN	163186	R36	RES SMD0805 6.81K 1/8W 1%	145029
C15	CAP ELECT 10UF 50V SMD	066602	DS22	LED GRN REV MOUNT SMD	058222	PCB1	PC BD DISPLAY	130418	R37	POT 1/4" HORIZ 1K OHM 1/2W SMD	134518
C16	CAP ELECT 10UF 50V SMD	066602	DS23	LED GRN REV MOUNT SMD	058222	Q1	TRANSISTOR PNP A55 SMD	132334	R38	POT 1/4" HORIZ 1K OHM 1/2W SMD	134518
C17	CAP .01uF 50V 20% X7R SMD0805	061372	DS24	LED GRN REV MOUNT SMD	058222	Q2	TRANSISTOR PNP A55 SMD	132334	R39	POT 1/4" HORIZ 1K OHM 1/2W SMD	134518
C18	CAP .01uF 50V 20% X7R SMD0805	061372	DS25	LED GRN REV MOUNT SMD	058222	Q3	TRANSISTOR NPN A05 SMD	132333	R40	POT 1/4" HORIZ 1K OHM 1/2W SMD	134518
C19	CAP MONO .1uF 50V 20% X7R SMD0805	061365	DS26	LED RGB SMD	058218	Q4	TRANSISTOR PNP A55 SMD	132334	R41	RES SMD0805 3.92K 1/8W 1%	145027
C20	CAP MONO .1uF 50V 20% X7R SMD0805	061365	DS27	LED RGB SMD	058218	Q5	TRANSISTOR PNP A55 SMD	132334	R42	RES TF 1K 1% 0.1W SMD0805	145117
C21	CAP ELECT 220UF 25V SMD	066606	DS28	LED RGB SMD	058218	Q6	TRANSISTOR NPN A05 SMD	132333	R43	RES TF 1K 1% 0.1W SMD0805	145117
C22	CAP ELECT 220UF 25V SMD	066606	DS29	LED RGB SMD	058218	Q7	TRANSISTOR NPN A05 SMD	132333	R44	RES SMD0805 3.92K 1/8W 1%	145027
C23	CAP MONO .1uF 50V 20% X7R SMD0805	061365	DS30	LED RGB SMD	058218	Q8	TRANSISTOR NPN 2SC2713 SMD	132345	R45	RES TF 1K 1% 0.1W SMD0805	145117
C24	CAP MONO .1uF 50V 20% X7R SMD0805	061365	DS31	LED RGB SMD	058218	Q9	TRANSISTOR NPN 2SC2713 SMD	132345	R46	RES SMD0805 3.92K 1/8W 1%	145027
C25	CAP .47uF 50V 20% X7R SMD0805	061373	DS32	LED RGB SMD	058218	Q10	TRANSISTOR NPN 2SC2713 SMD	132345	R47	RES SMD0805 3.92K 1/8W 1%	145027
C26	CAP .47uF 50V 20% X7R SMD0805	061373	DS33	LED RGB SMD	058218	Q11	TRANSISTOR NPN 2SC2713 SMD	132345	R48	RES TF 1K 1% 0.1W SMD0805	145117
C27	CAP MONO .1uF 50V 20% X7R SMD0805	061365	DS34	LED RGB SMD	058218	Q12	TRANSISTOR NPN A05 SMD	132333	R49	RES SMD0805 3.92K 1/8W 1%	145027
D1	DIODE SMALL SIGNAL 4148 SMD	070199	DS35	LED RGB SMD	058218	Q13	TRANSISTOR NPN A05 SMD	132333	R50	RES TF 1K 1% 0.1W SMD0805	145117
D2	DIODE SMALL SIGNAL 4148 SMD	070199	DS36	LED RGB SMD	058218	R1	RES SMD0805 4.75K 1/8W 1%	145008	R51	RES SMD0805 3.92K 1/8W 1%	145027
D3	DIODE SMALL SIGNAL 4148 SMD	070199	DS37	LED RGB SMD	058218	R2	RES SMD0805 12.1K 1/8W 1%	145030	R52	RES TF 1K 1% 0.1W SMD0805	145117
D4	DIODE SMALL SIGNAL 4148 SMD	070199	DS38	LED ORN REV MOUNT SMD	058210	R3	RES TF 47.5K 1% .125W SMD0805	145132	R53	RES TF 1K 1% 0.1W SMD0805	145117
D5	DIODE SMALL SIGNAL 4148 SMD	070199	DS39	LED ORN REV MOUNT SMD	058210	R4	RES SMD0805 150K 1/8W 1%	145037	R54	RES SMD0805 3.92K 1/8W 1%	145027
D6	DIODE SMALL SIGNAL 4148 SMD	070199	DS40	LED GRN REV MOUNT SMD	058222	R5	RES TF 3.00K 1% 0.1W SMD0805	145078	R55	RES TF 1K 1% 0.1W SMD0805	145117
D7	DIODE SMALL SIGNAL 4148 SMD	070199	DS41	LED GRN REV MOUNT SMD	058222	R6	RES TF 3.00K 1% 0.1W SMD0805	145078	R56	RES SMD0805 3.92K 1/8W 1%	145027
D8	DIODE SMALL SIGNAL 4148 SMD	070199	DS42	LED GRN REV MOUNT SMD	058222	R7	RES TF 3.00K 1% 0.1W SMD0805	145078	R57	RES TF 1K 1% 0.1W SMD0805	145117
D9	DIODE SMALL SIGNAL 4148 SMD	070199	DS43	LED GRN REV MOUNT SMD	058222	R8	RES SMD0805 12.1K 1/8W 1%	145030	R58	RES SMD0805 3.92K 1/8W 1%	145027
D10	DIODE SMALL SIGNAL 4148 SMD	070199	GP1	TERMINAL PC MOUNT 4-40	118115	R9	RES TF 3.00K 1% 0.1W SMD0805	145078	R59	RES SMD0805 3.92K 1/8W 1%	145027
D11	DIODE SMALL SIGNAL 4148 SMD	070199	GP2	TERMINAL PC MOUNT 4-40	118115	R10	RES TF 3.00K 1% 0.1W SMD0805	145078	R60	RES TF 1K 1% 0.1W SMD0805	145117
D12	DIODE SMALL SIGNAL 4148 SMD	070199	IR1	IR SENSOR 38KHZ 3V-5V	121066	R11	RES TF 3.00K 1% 0.1W SMD0805	145078	R61	RES SMD0805 3.92K 1/8W 1%	145027
D13	DIODE SMALL SIGNAL 4148 SMD	070199	J1	CONN 9 PIN FEMALE BOTTOM MOUNT	117987	R12	RES SMD0805 12.1K 1/8W 1%	145030	R62	RES TF 1K 1% 0.1W SMD0805	145117
DS1	LED GRN REV MOUNT SMD	058222	J2	CONN 8 PIN FFC SMD	118118	R13	RES TF 3.00K 1% 0.1W SMD0805	145078	R63	RES SMD0805 3.92K 1/8W 1%	145027
DS2	LED RED HIGH EFFICIENCY 5MM	058207	J3	CONN 8 PIN FFC SMD	118118	R14	RES TF 3.00K 1% 0.1W SMD0805	145078	R64	RES TF 1K 1% 0.1W SMD0805	145117
DS3	LED RED HIGH EFFICIENCY 5MM	058207	J4	CONN 8 PIN FFC RA SMD	117933	R15	RES TF 3.00K 1% 0.1W SMD0805	145078	R65	RES TF 22.1 5% 0.1W SMD0805	145133
DS4	LED RED HIGH EFFICIENCY 5MM	058207	J5	CONN 8 PIN FFC RA SMD	117933	R16	RES TF 3.00K 1% 0.1W SMD0805	145078	R66	RES SMD0805 150 1/8W 1%	145019
DS5	ASSY PCB VFD 9 PIN W/ SPACERS	751888	J6	CONN 18 PIN FFC SMD	118003	R17	RES TF 2.21K 1% 0.1W SMD0805	145126	R67	RES TF 22.1 5% 0.1W SMD0805	145133
DS6	LED GRN REV MOUNT SMD	058222	J7	CONN 8 PIN FFC SMD	118118	R18	RES TF 3.00K 1% 0.1W SMD0805	145078	R68	RES SMD0805 475K 1/8W 1%	145040
DS7	LED GRN REV MOUNT SMD	058222	J8	CONN 8 PIN FFC SMD	118118	R19	RES TF 3.00K 1% 0.1W SMD0805	145078	R69	RES SMD0805 150 1/8W 1%	145019



DSPLY / METER LT / HDPHN / L PUSHBUTTON / R PUSHBUTTON 751972 PARTS LIST (Cont'd.)

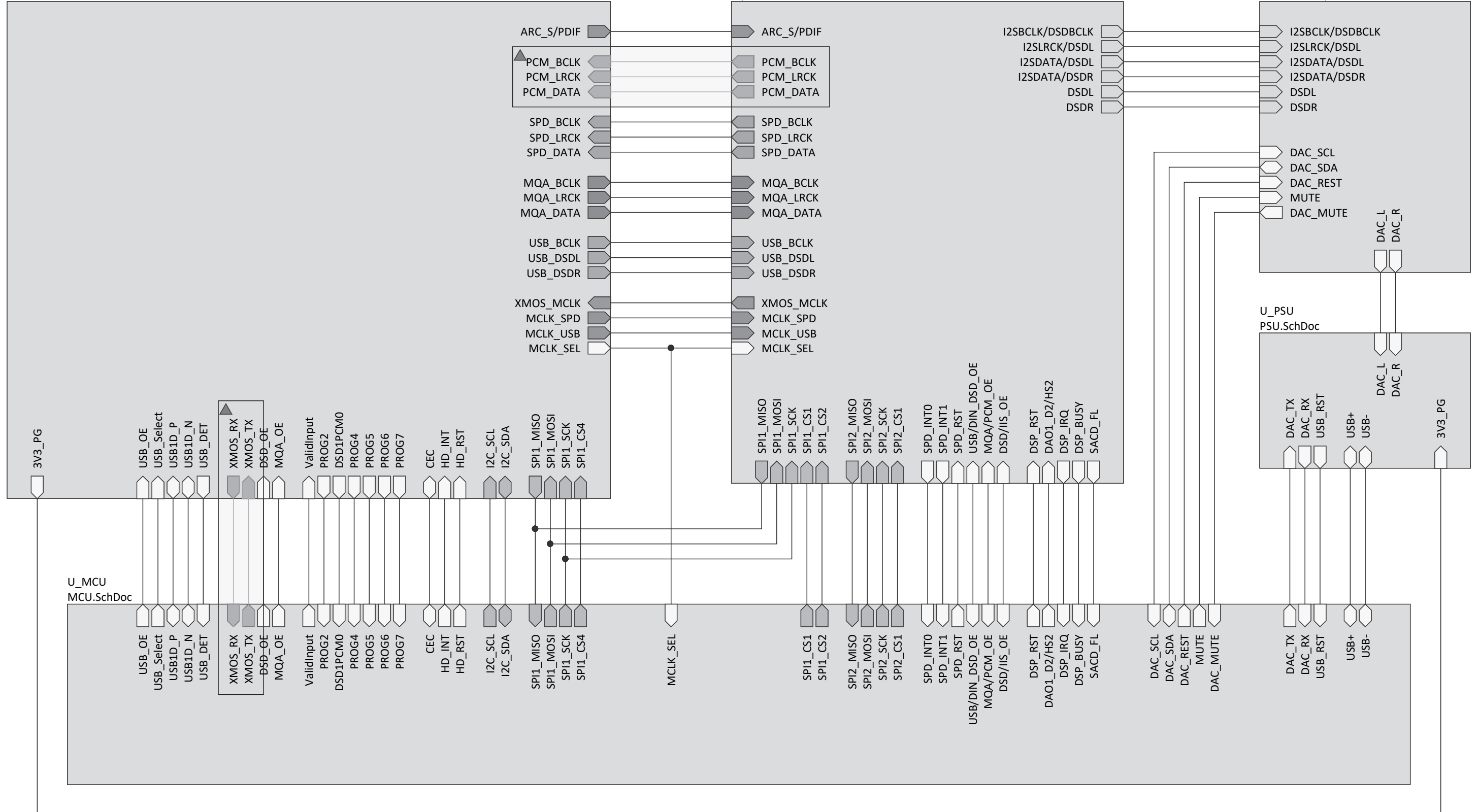
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R70	RES TF 22.1 5% 0.1W SMD0805	145133	R94	RES SMD0805 22.1K 1/8W 1%	145012	R115	RES SMD0805 150K 1/8W 1%	145037	U1	IC REG 1.2A LO-DROP ENABLE SMD	133717
R71	RES TF 22.1 5% 0.1W SMD0805	145133	R95	RES SMD0805 22.1K 1/8W 1%	145012	R116	RES SMD0805 221 1/8W 1%	145001	U2	IC 8 BIT DRIVER SMD	133461
R72	RES SMD0805 221 1/8W 1%	145001	R96	RES TF 1K 1% 0.1W SMD0805	145117	R117	RES SMD0805 221 1/8W 1%	145001	U3	IC SINGLE NAND SCHMITT SMD	133724
R73	RES SMD0805 4.75K 1/8W 1%	145008	R97	RES TF 1K 1% 0.1W SMD0805	145117	R118	POT 1/4" HORIZ 100K .5W SMD	134515	U4	IC DUAL OP-AMP RAIL SMD	133714
R74	RES SMD0805 4.75K 1/8W 1%	145008	R98	RES TF 1K 1% 0.1W SMD0805	145117	R119	POT 1/4" HORIZ 100K .5W SMD	134515	U5	IC SINGLE NAND SCHMITT SMD	133724
R75	RES TF 1.2K 1% 0.1W SMD0805	145066	R99	RES TF 1K 1% 0.1W SMD0805	145117	R120	RES SMD0805 2.21M 1/8W 1%	145043	U6	IC 8 BIT DRIVER SMD	133461
R76	RES SMD0805 3.32K 1/8W 1%	145026	R100	RES SMD0805 150K 1/8W 1%	145037	R121	RES SMD0805 2.21M 1/8W 1%	145043	U7	IC OP AMP 33178 SMD	133720
R77	RES SMD0805 6.81K 1/8W 1%	145029	R101	RES SMD0805 150K 1/8W 1%	145037	R122	RES TF 10 1% 0.1W SMD0805	145063	U8	IC OP AMP 33178 SMD	133720
R78	RES SMD0805 18.2K 1/8W 1%	145031	R102	RES TF 100 1% 0.1W SMD0805	145060	R123	RES TF 10 1% 0.1W SMD0805	145063			
R79	RES SMD0805 4.75K 1/8W 1%	145008	R103	RES SMD0805 221 1/8W 1%	145001	R124	RES TF 2.21K 1% 0.1W SMD0805	145126			
R80	RES SMD0805 22.1K 1/8W 1%	145012	R104	RES TF 10 1% 0.1W SMD0805	145063	R125	RES TF 2.21K 1% 0.1W SMD0805	145126			
R81	RES SMD0805 22.1K 1/8W 1%	145012	R105	RES TF 10 1% 0.1W SMD0805	145063	R126	RES TF 3.00K 1% 0.1W SMD0805	145078			
R82	RES TF 2.21K 1% 0.1W SMD0805	145126	R106	RES TF 10 1% 0.1W SMD0805	145063	R127	RES TF 3.00K 1% 0.1W SMD0805	145078			
R83	RES TF 1K 1% 0.1W SMD0805	145117	R107	RES TF 10 1% 0.1W SMD0805	145063	R128	RES TF 3.00K 1% 0.1W SMD0805	145078			
R84	RES SMD0805 22.1K 1/8W 1%	145012	R108	RES SMD0805 22.1K 1/8W 1%	145012	S2	SWITCH ROTARY ENCODER NO DETENT	146256			
R85	RES TF 10K 1% 0.1W SMD0805	145061	R109	RES SMD0805 22.1K 1/8W 1%	145012	S4	ENCODER ROTARY W/ DETENT & PB	146272			
R86	RES TF 1K 1% 0.1W SMD0805	145117	R110	RES TF 221K .125W .5% SMD0805	145140	S5	SWITCH TACT 260GF 5MM SMD	150072			
R87	RES TF 10K 1% 0.1W SMD0805	145061	R111	RES TF 221K .125W .5% SMD0805	145140	S6	SWITCH TACT 260GF 5MM SMD	150072			
R91	RES SMD0805 6.81K 1/8W 1%	145029	R112	RES TF 47.5K 1% .125W SMD0805	145132	S7	SWITCH TACT 260GF 5MM SMD	150072			
R92	RES SMD0805 22.1K 1/8W 1%	145012	R113	RES TF 47.5K 1% .125W SMD0805	145132	S8	SWITCH TACT 260GF 5MM SMD	150072			
R93	RES SMD0805 22.1K 1/8W 1%	145012	R114	RES SMD0805 150K 1/8W 1%	145037	S9	SWITCH TACT 260GF 5MM SMD	150072			

# 12 DIGITAL AUDIO / DA2 320689 SCH 1 of 7

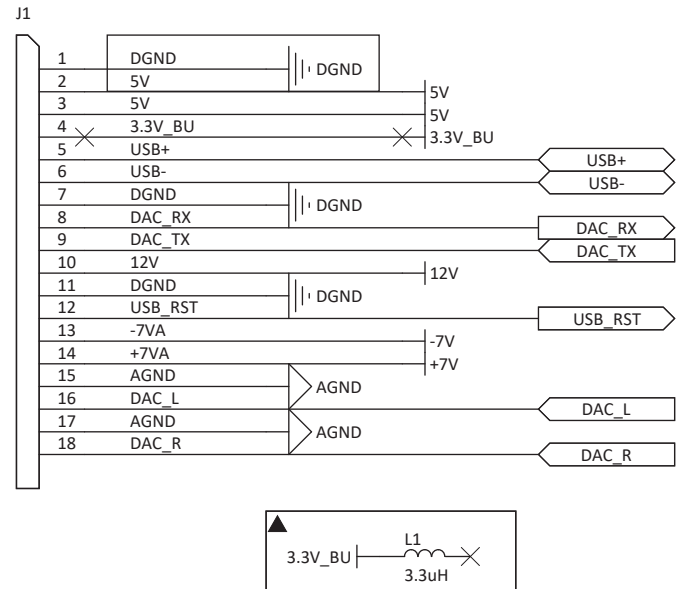
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USB and HDMI.SchDoc

U\_Input and DSP  
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U\_DAC and Output  
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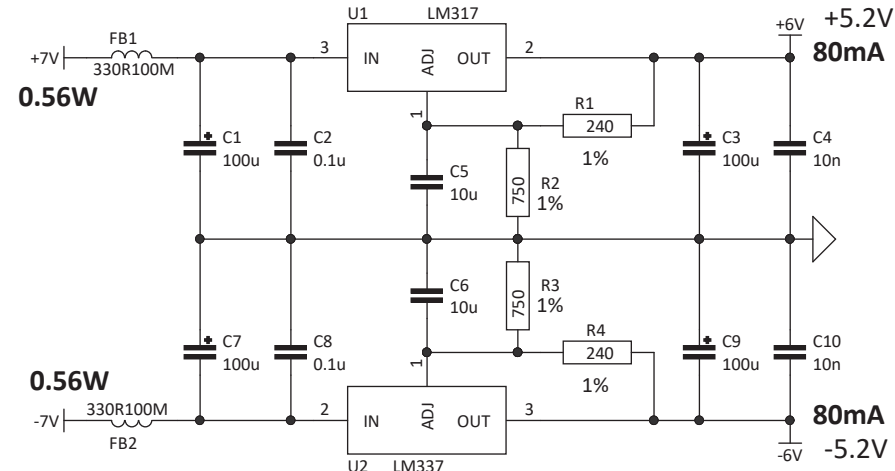
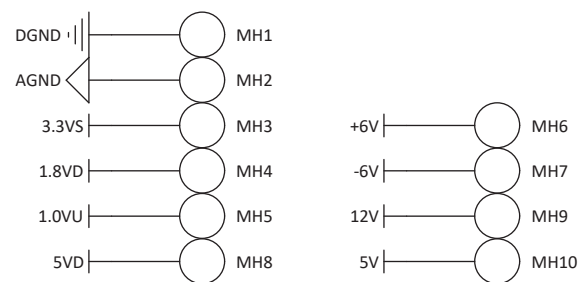


# 12 DIGITAL AUDIO / DA2 320689 SCH 2 of 7

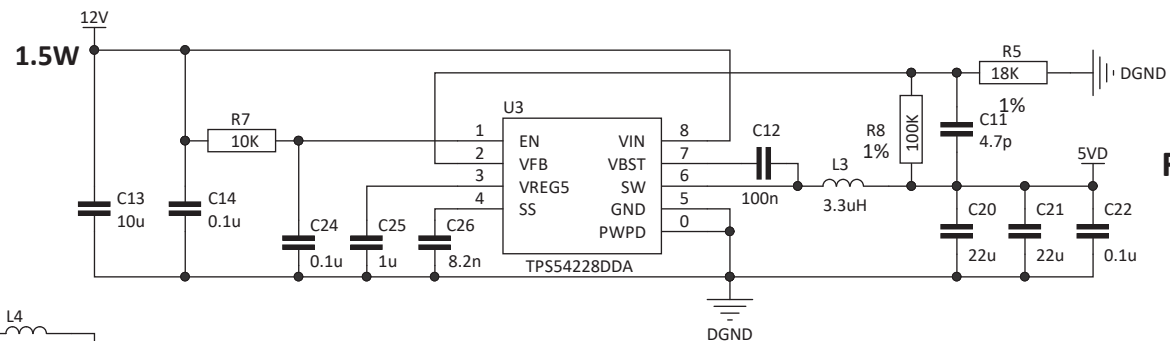


### Absolute Maximum Ratings

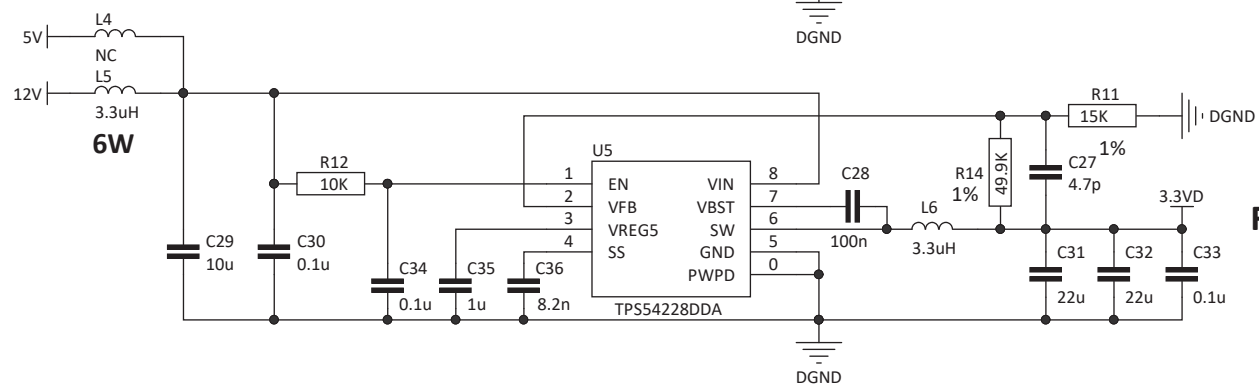
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3.3V_BU	Unused
5V	600mA
12V	600mA
+7V	80mA
-7V	80mA



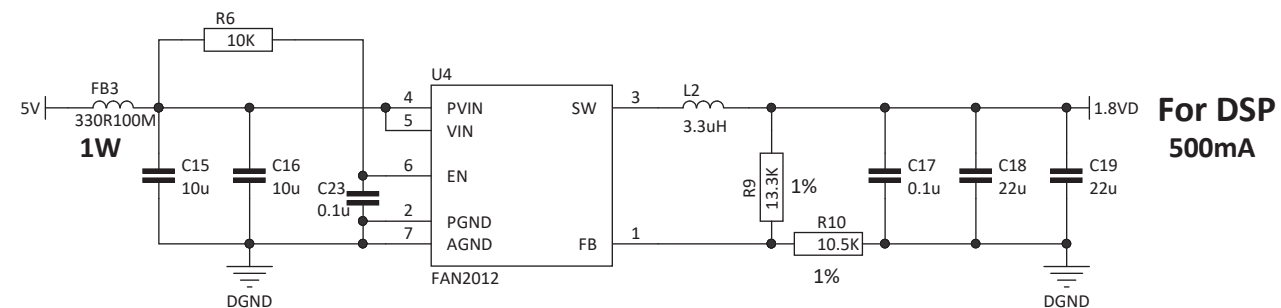
For Analog



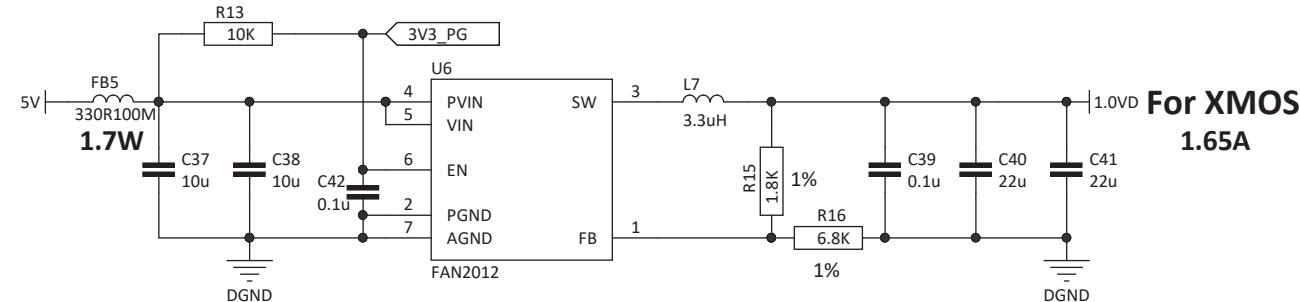
For USB and HDMI  
300mA



For MCU, DAC, XMOS ..  
1.8A

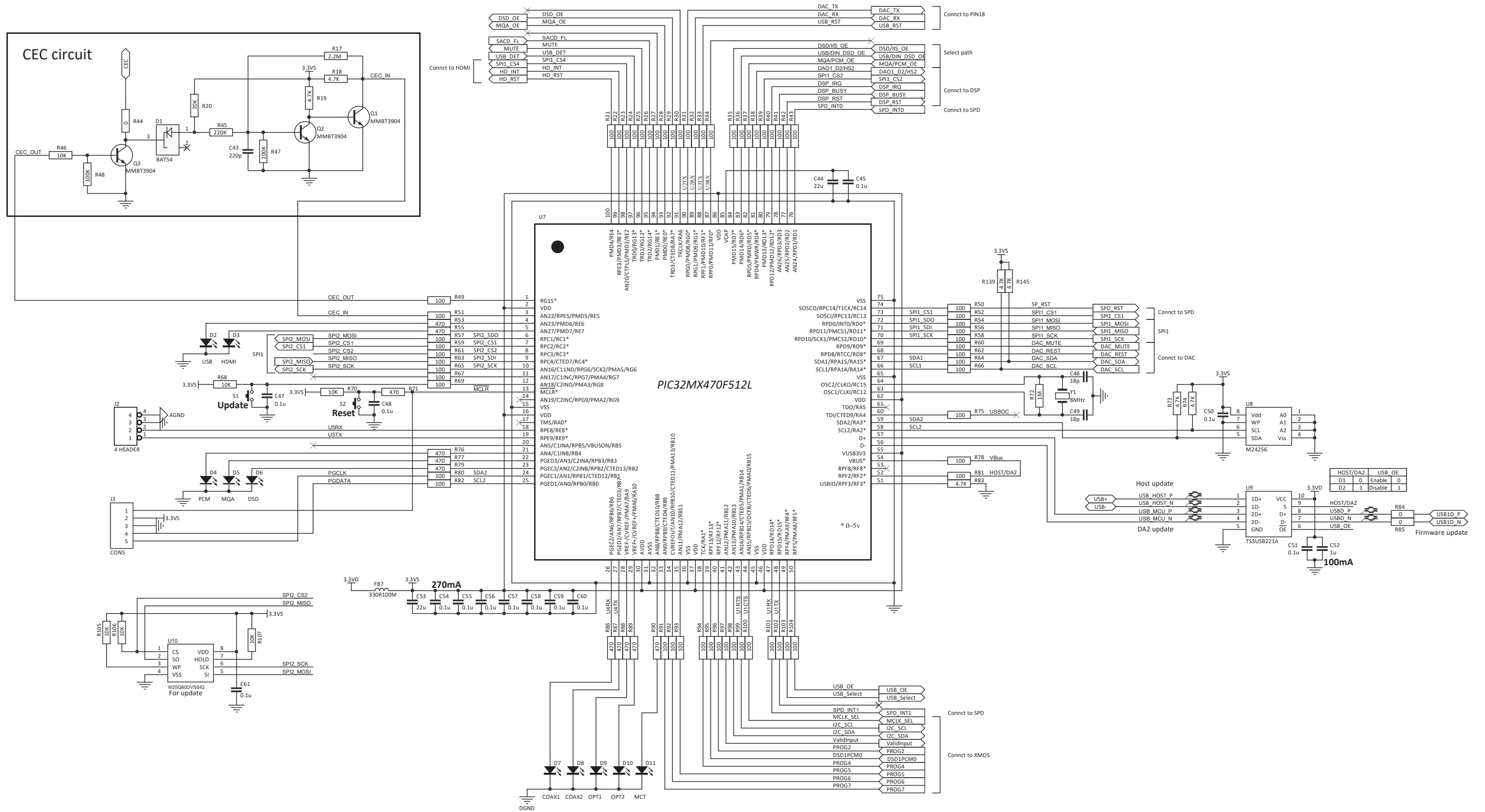


For DSP  
500mA



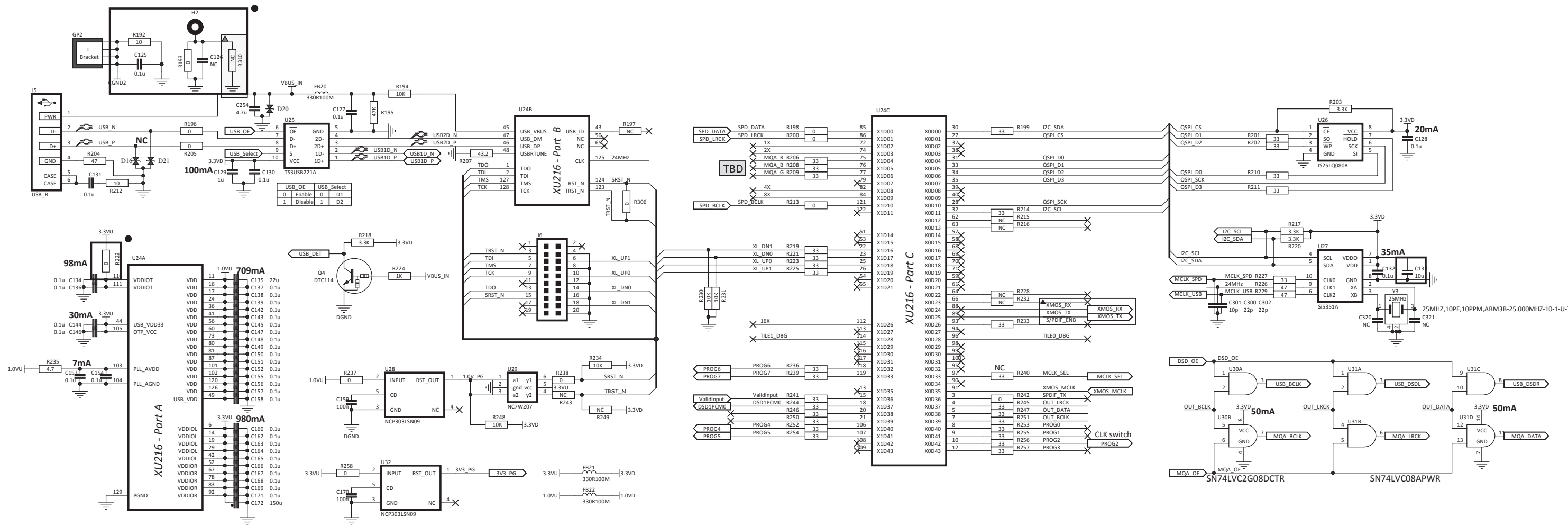
For XMOS  
1.65A

12 DIGITAL AUDIO / DA2 320689 SCH 3 of 7

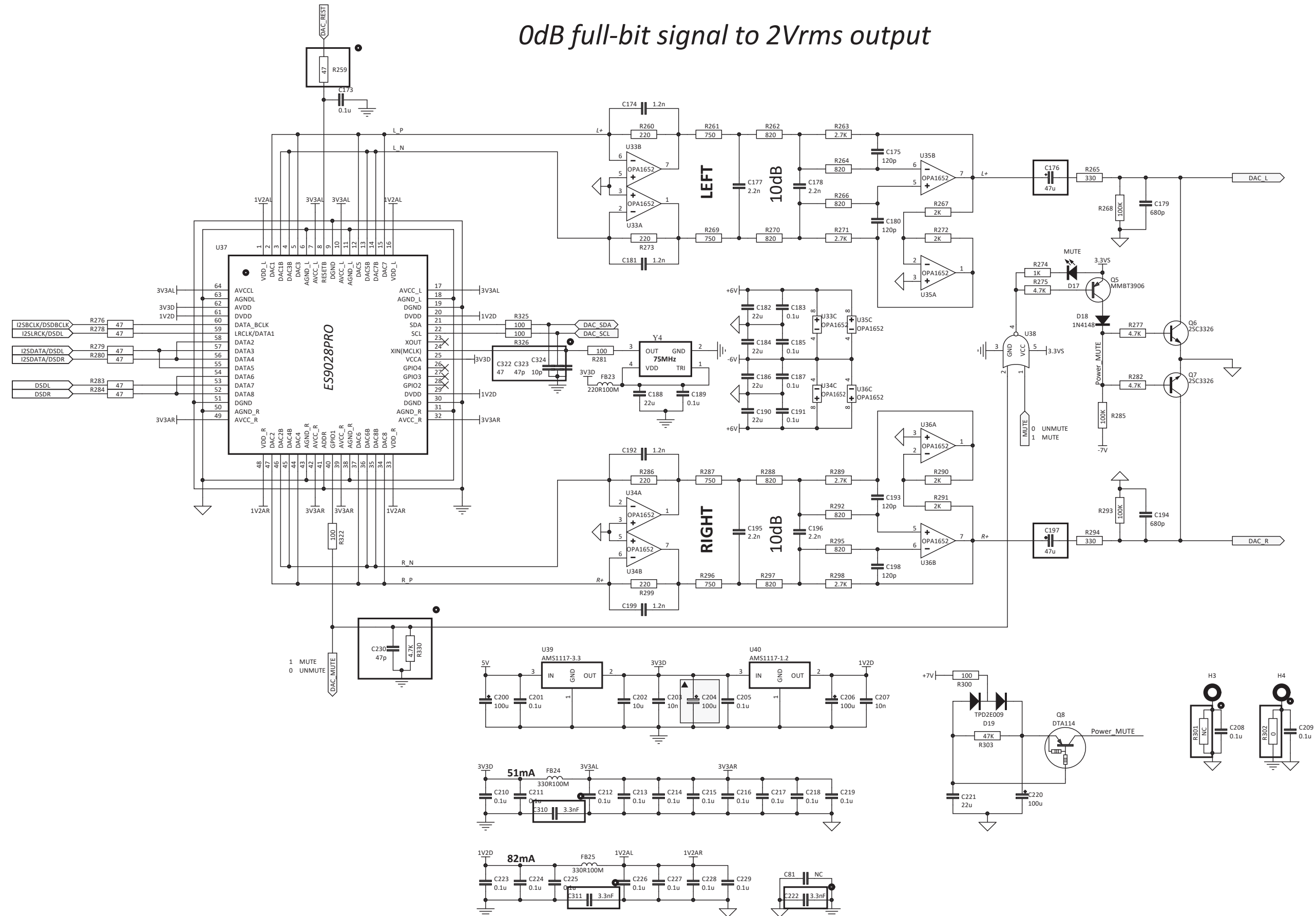




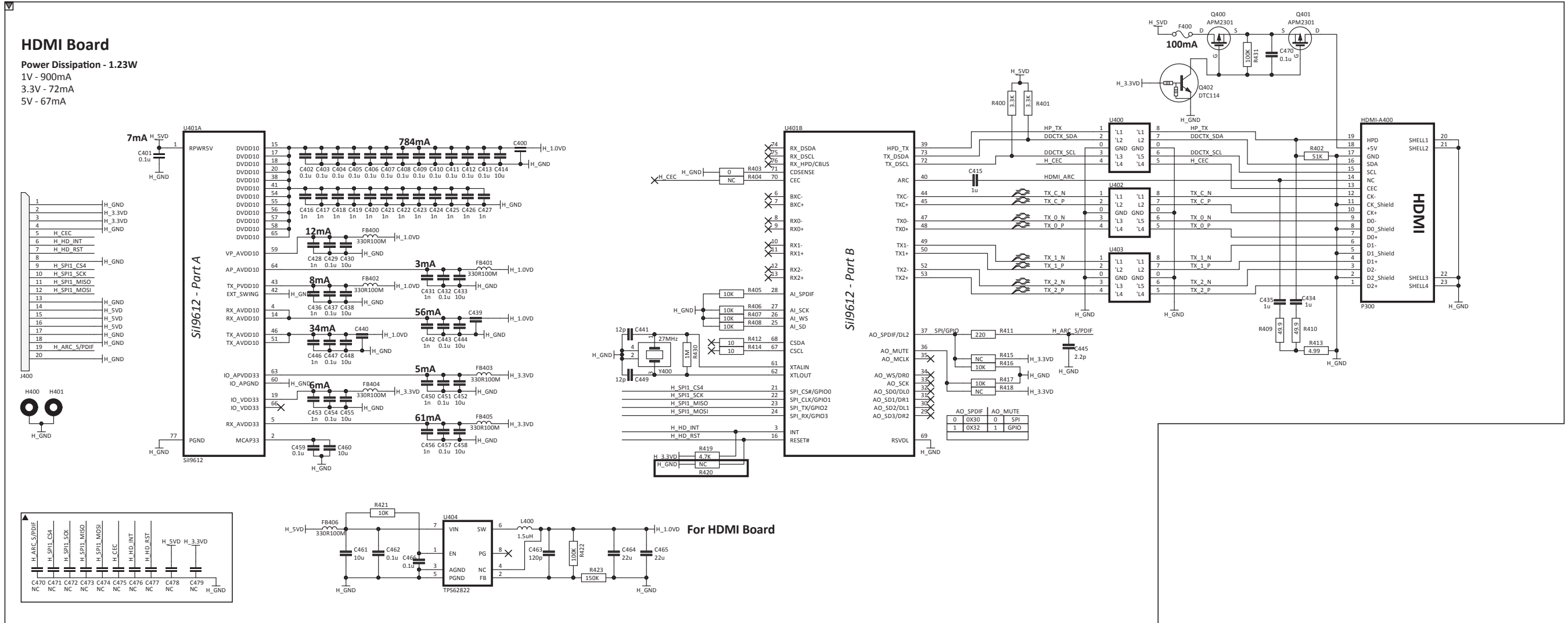
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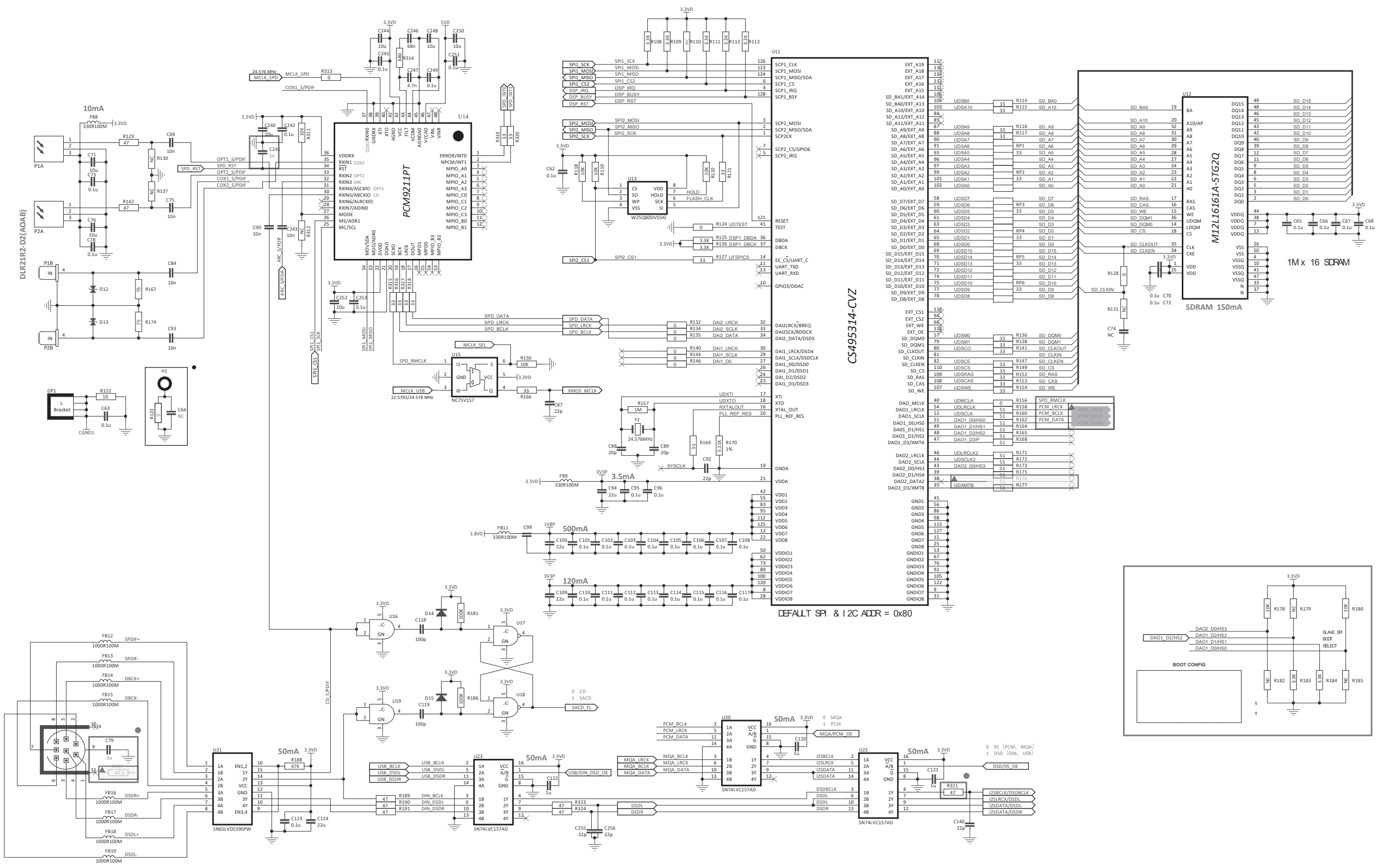


0dB full-bit signal to 2Vrms output

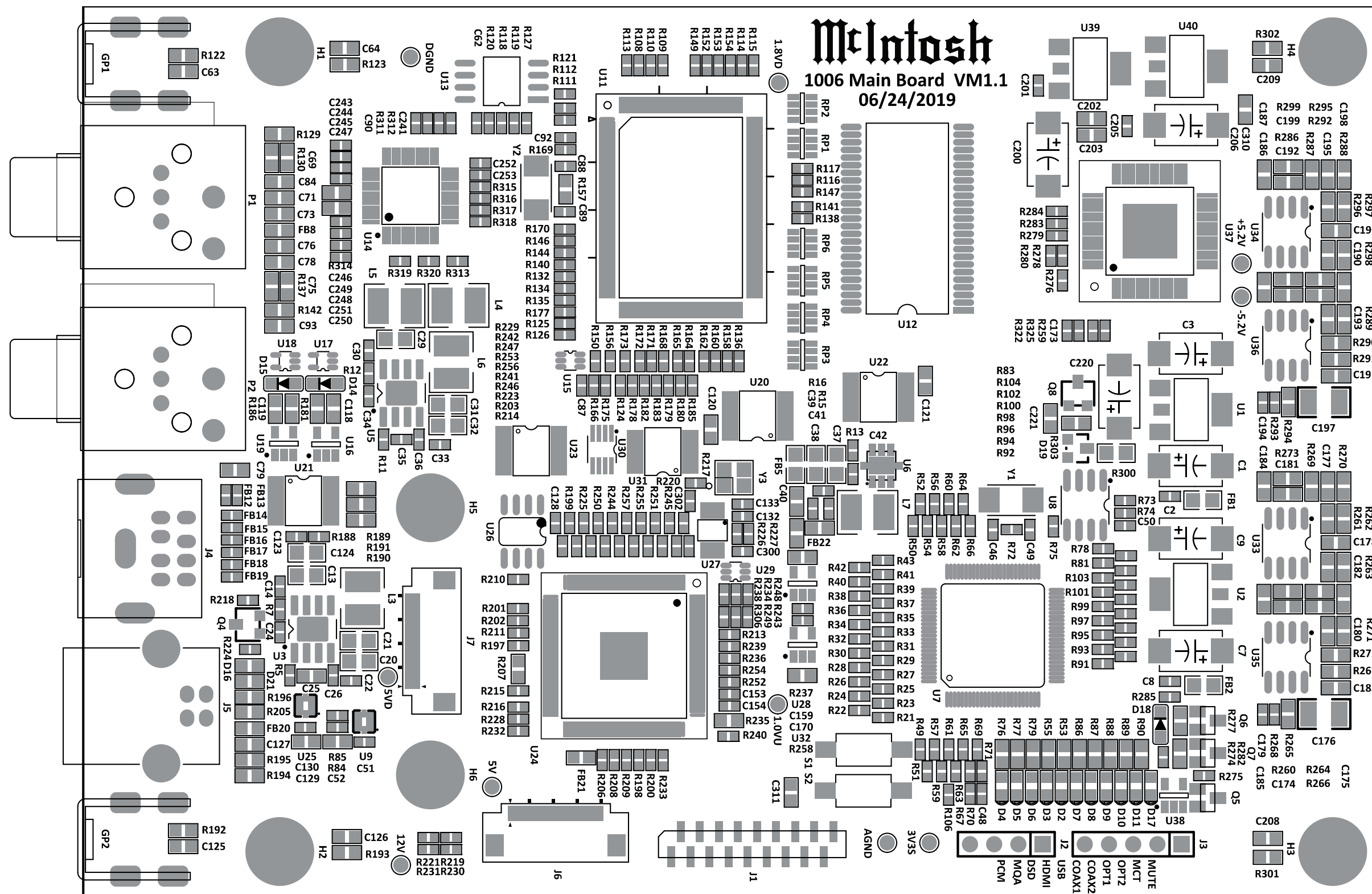


# 12 DIGITAL AUDIO / DA2 320689 SCH 6 of 7

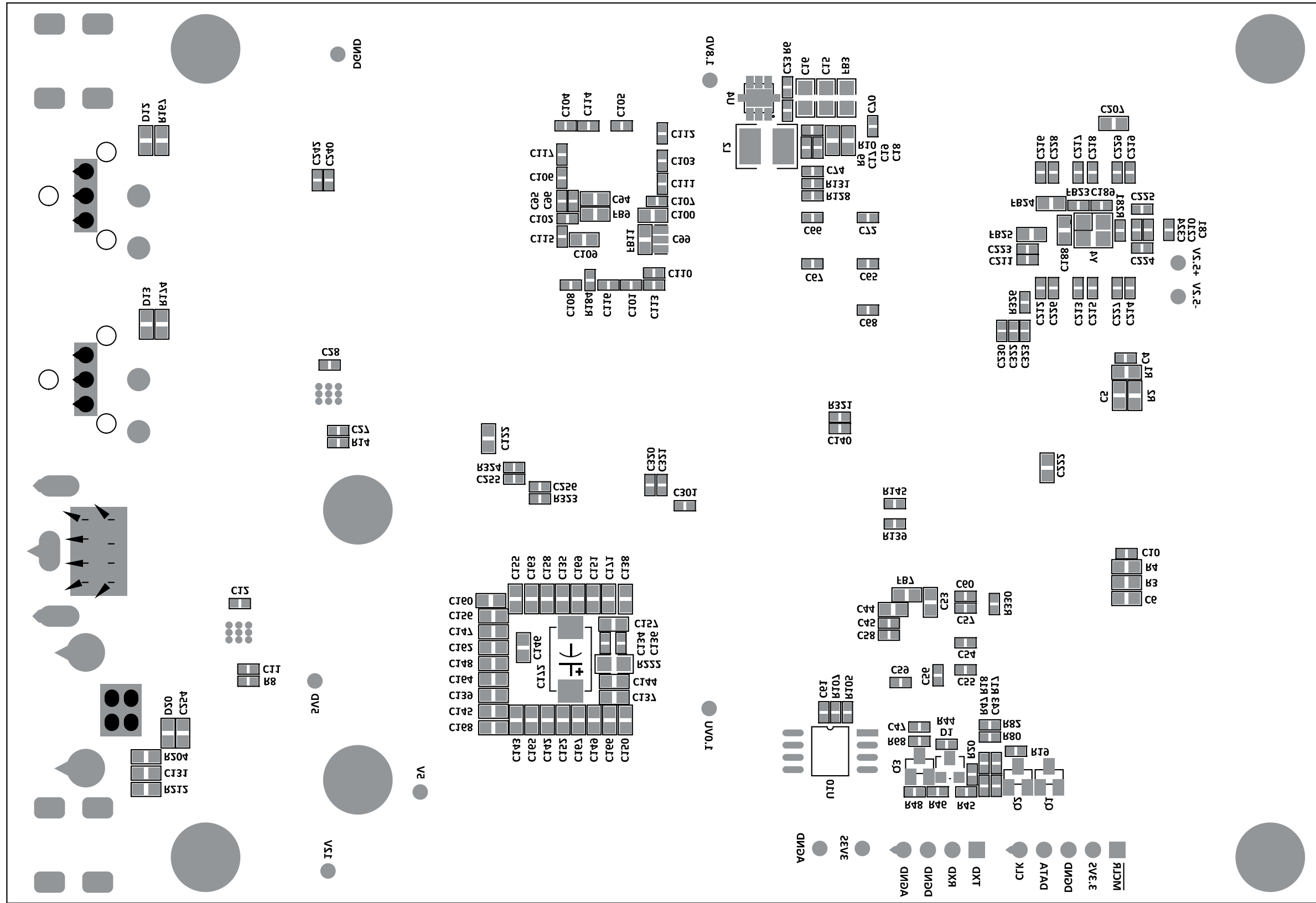




12 DIGITAL AUDIO / DA2 320689 PCB 1 of 3



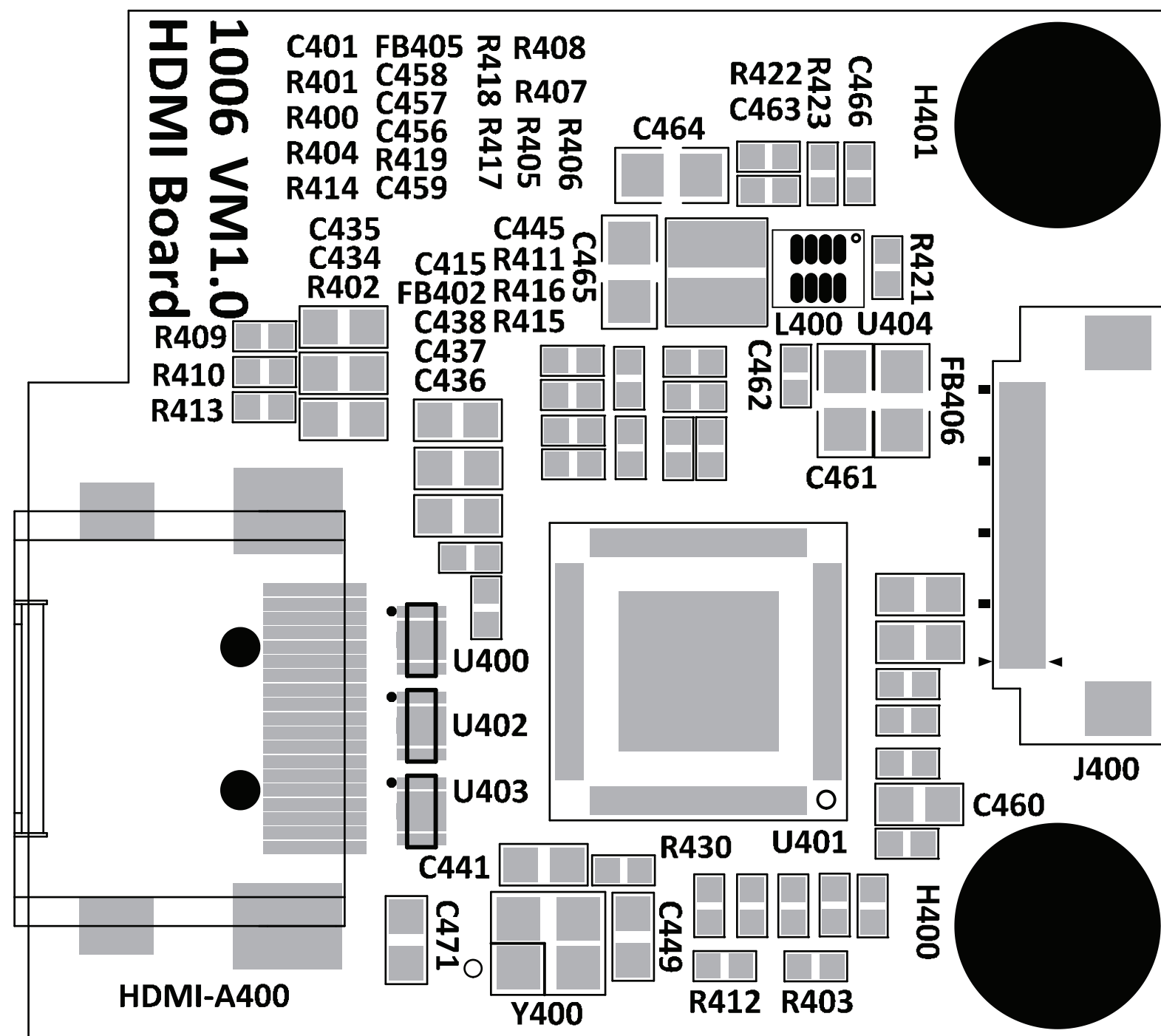
12 DIGITAL AUDIO / DA2 320689 PCB 2 of 3



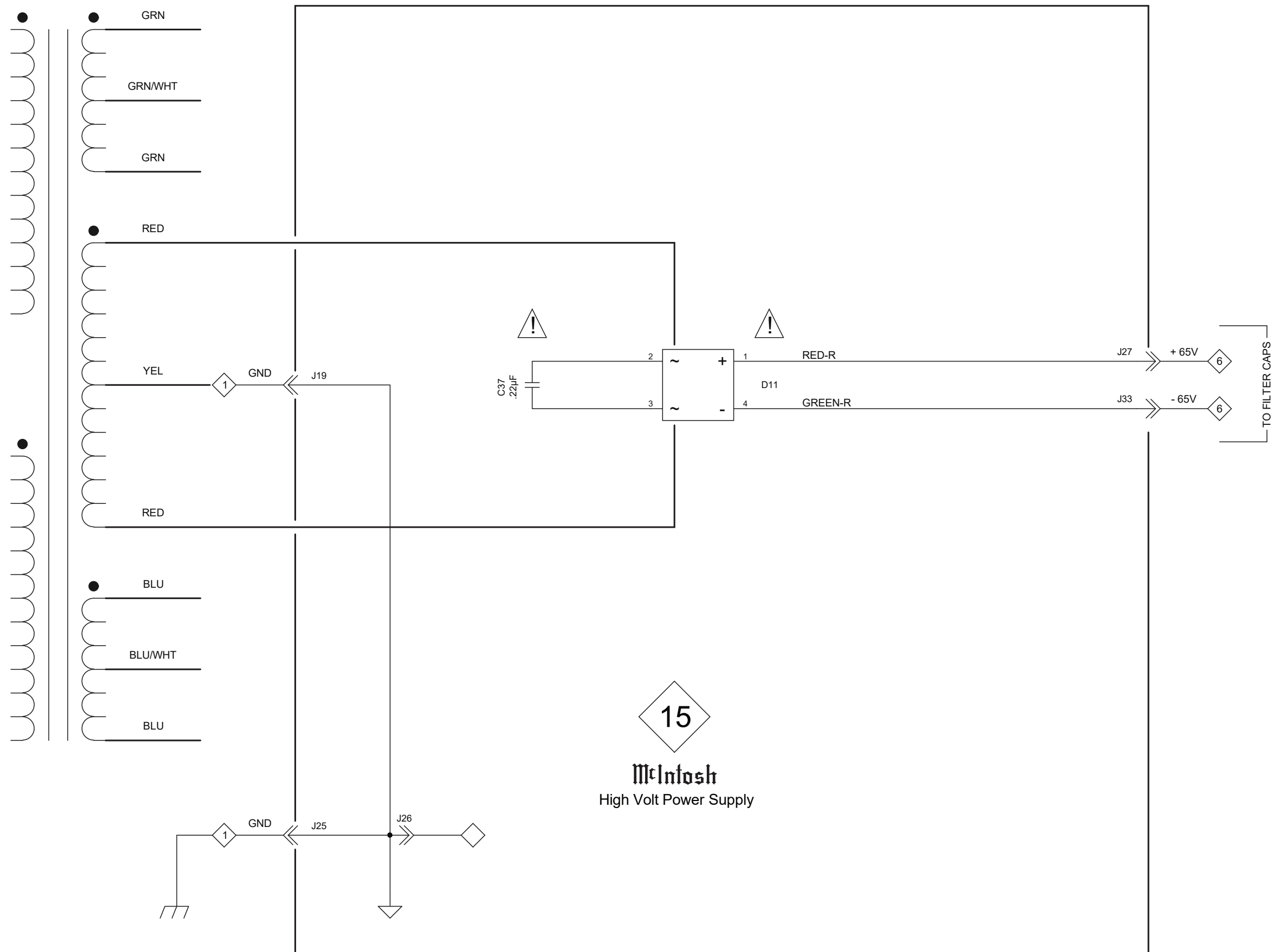
**12** DIGITAL AUDIO / DA2 320689 PCB 3 of 3

**12** DIGITAL AUDIO / DA2 320689  
PARTS LIST

Ref. No. Description Part No.  
NO SERVICE PARTS. REPLACE COMPLETE ASSEMBLY

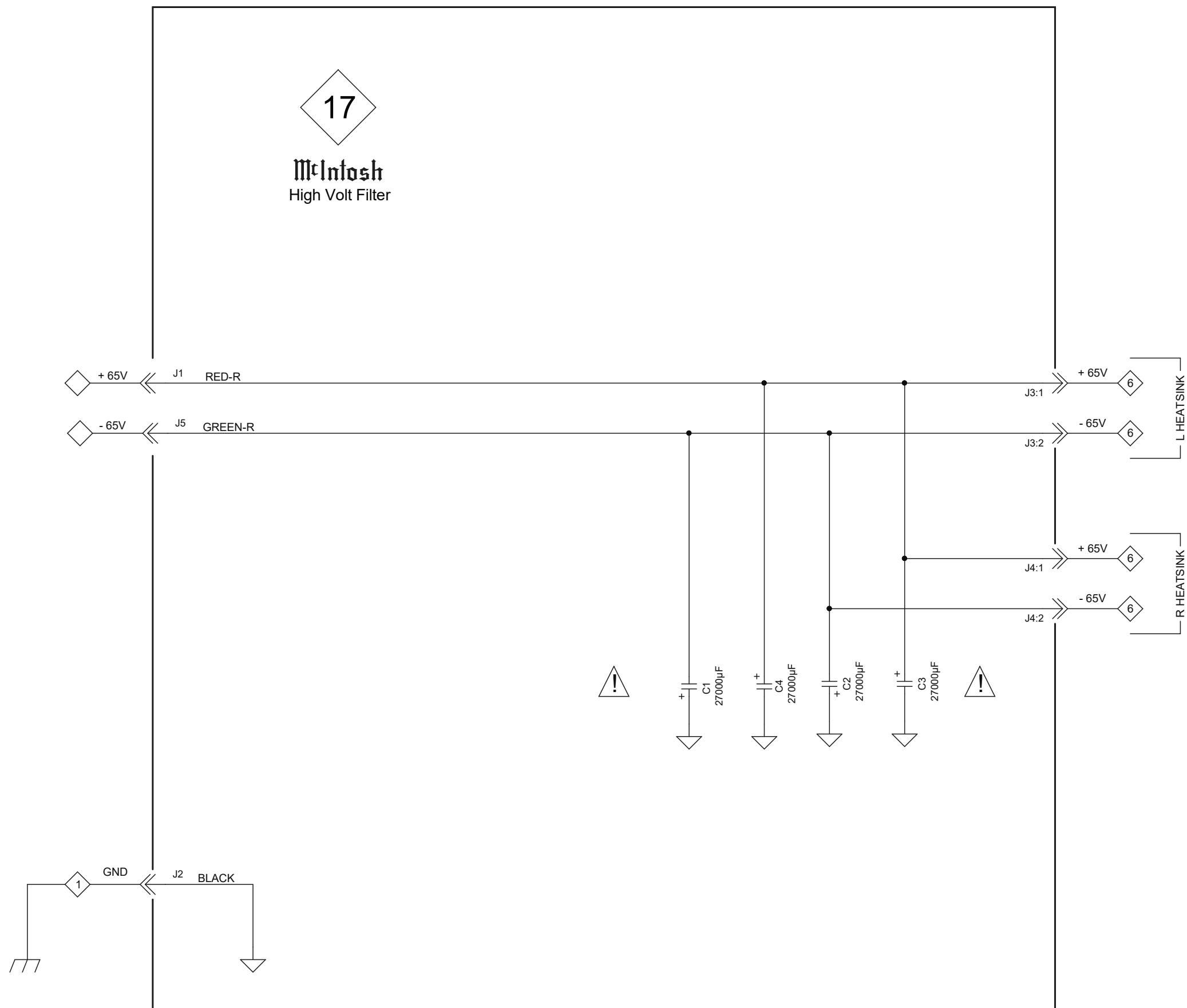


**15 17** HIGH VOLT POWER SUPPLY 752602 SCH 1 of 2

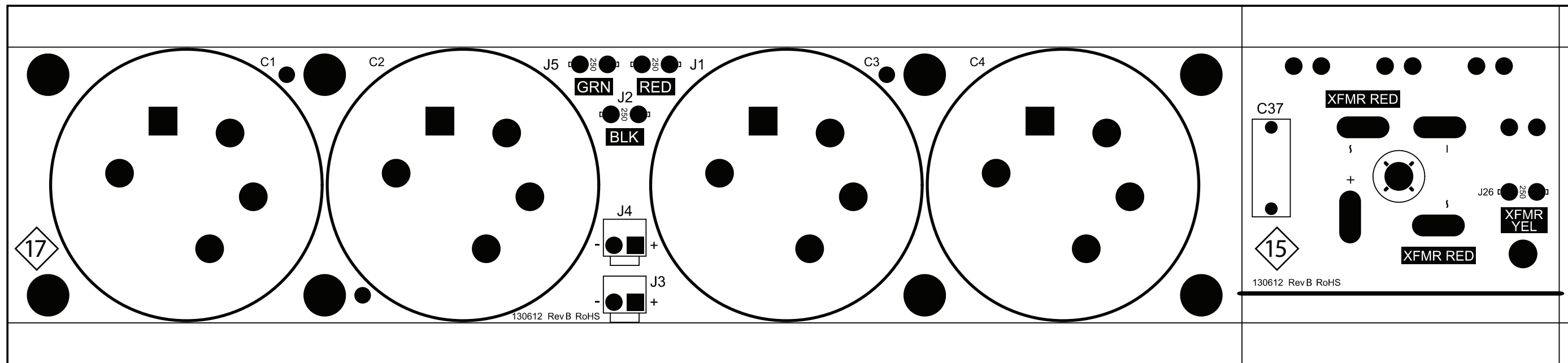




15 17 HIGH VOLT POWER SUPPLY 752602 SCH 2 of 2



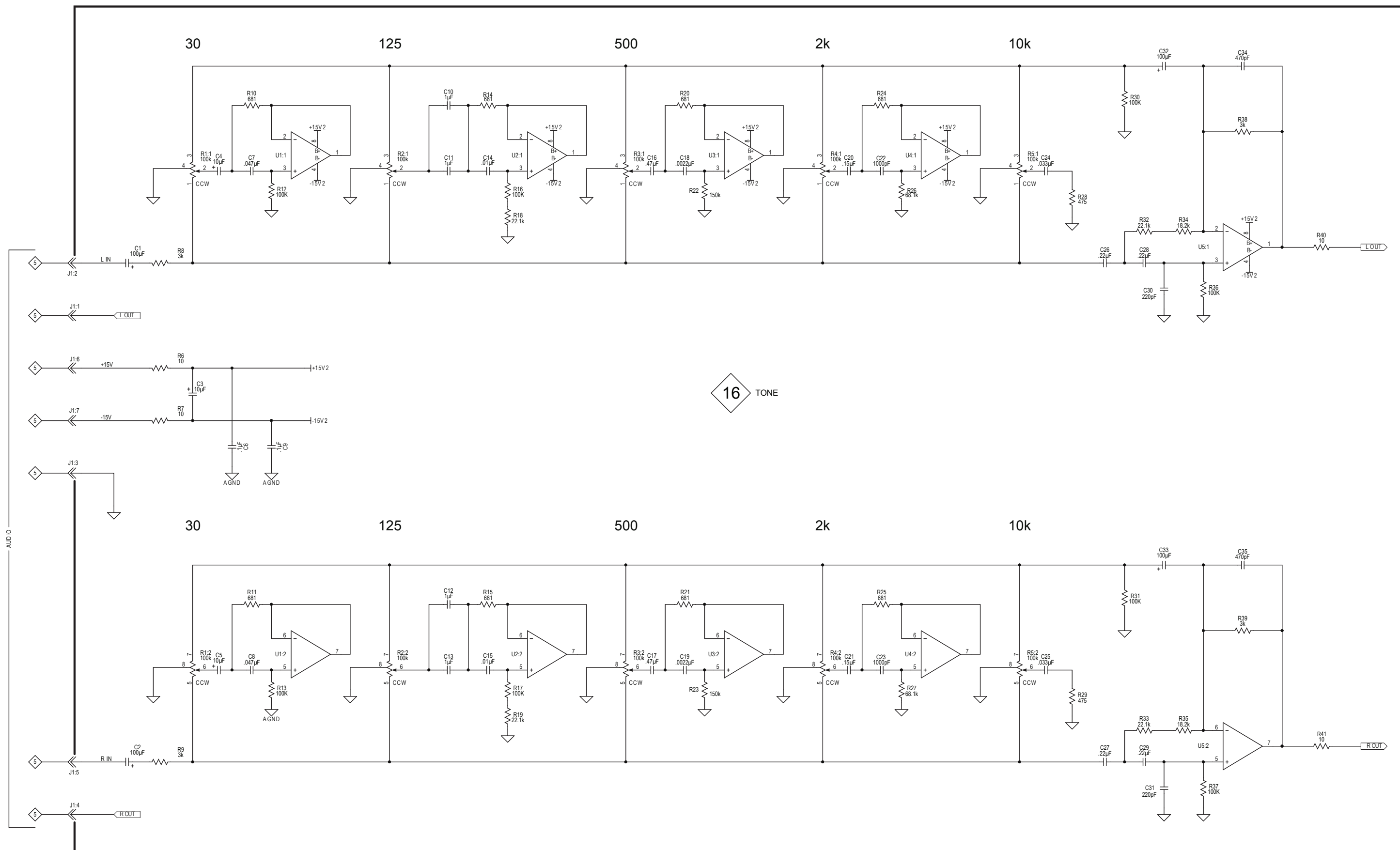
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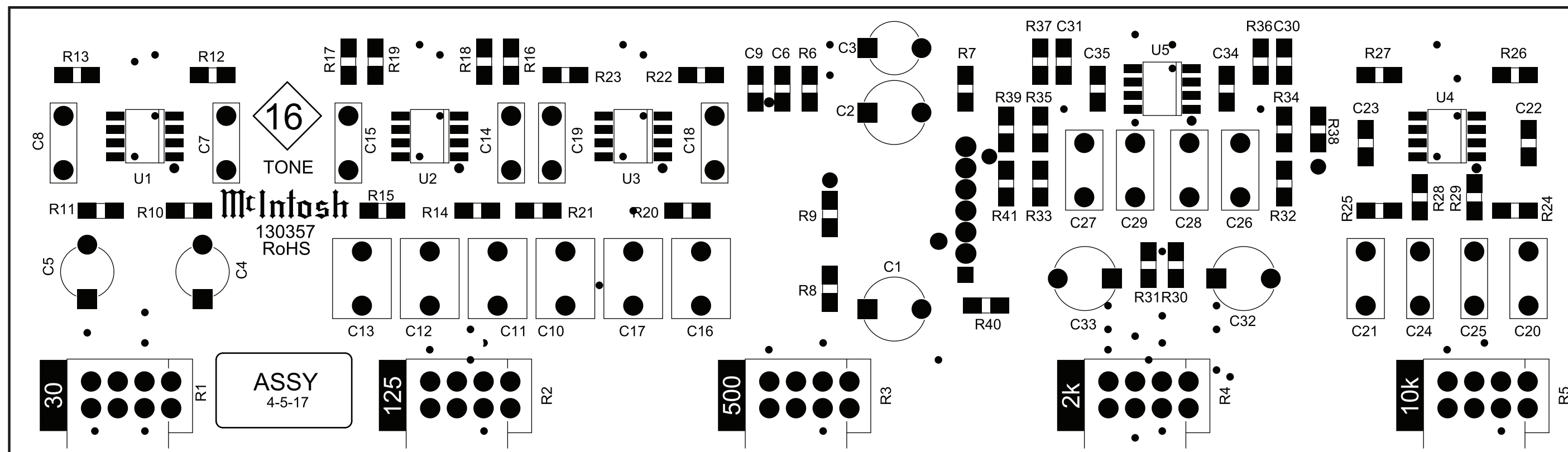
**15 17** HIGH VOLT POWER SUPPLY 752602 PARTS LIST

Ref. No.	Description	Part No.
C1	CAP ELECT 27000UF 100V 5pin	066596
C2	CAP ELECT 27000UF 100V 5pin	066596
C3	CAP ELECT 27000UF 100V 5pin	066596
C4	CAP ELECT 27000UF 100V 5pin	066596
C37	CAP POLYPROP 0.22UF 400V 20%	064438
D11	DIODE BRIDGE RECT	070181
J1	BLADE FASTON W/FEET	117708
J2	BLADE FASTON W/FEET	117708
J3	CONN HEADER 2 POS 3.96MM	118147
J4	CONN HEADER 2 POS 3.96MM	118147
J5	BLADE FASTON W/FEET	117708
J19	BLADE FASTON W/FEET	117708
J25	BLADE FASTON W/FEET	117708
J26	BLADE FASTON W/FEET	117708
J27	BLADE FASTON W/FEET	117708
J33	BLADE FASTON W/FEET	117708
PCB1	PC BD HV QUAD CAP W/BRIDG RECT	130612

# 16 TONE 751975 SCH



**16** TONE 751975 PCB



**16** TONE 751975 PARTS LIST

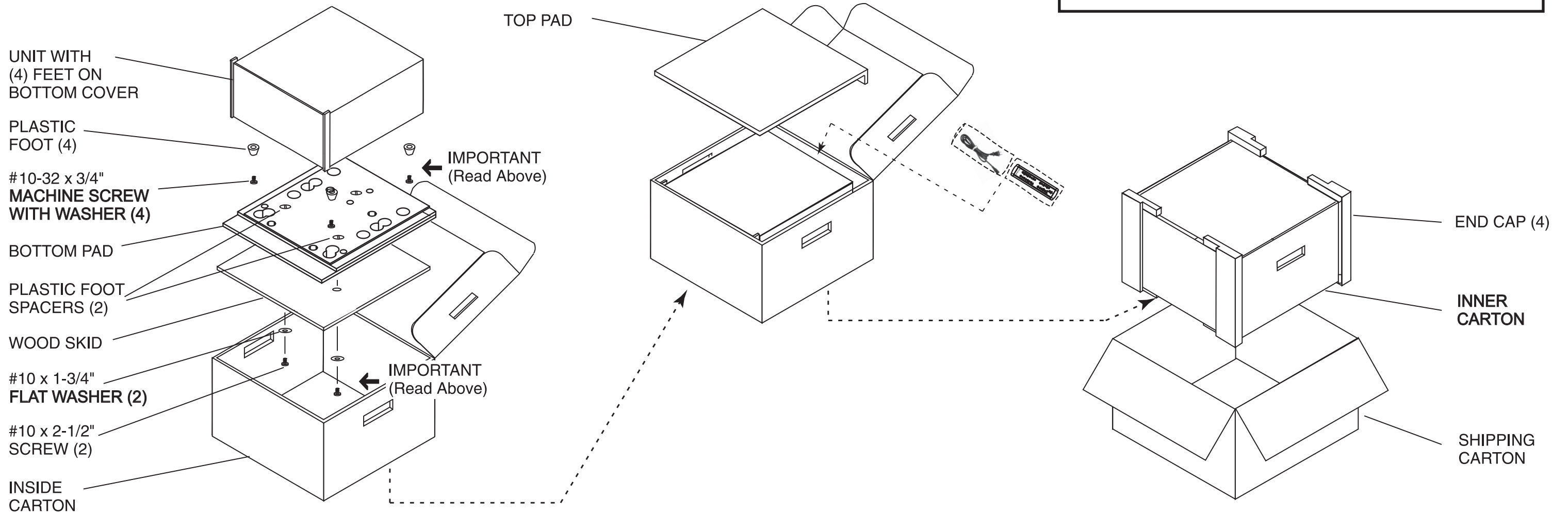
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C1	CAP ELECT 100UF 25V	066573	C22	CAP NPO 1000pF 100V 5% SMD0805	061391	R6	RES TF 10 1% 0.1W SMD0805	145063
C2	CAP ELECT 100UF 25V	066573	C23	CAP NPO 1000pF 100V 5% SMD0805	061391	R7	RES TF 10 1% 0.1W SMD0805	145063
C3	CAP ELECT 10UF 50V	066445	C24	CAP MPF 0.033UF 5% 63VDC	064318	R8	RES TF 3.00K 1% 0.1W SMD0805	145078
C4	CAP ELECT 10UF 50V	066445	C25	CAP MPF 0.033UF 5% 63VDC	064318	R9	RES TF 3.00K 1% 0.1W SMD0805	145078
C5	CAP ELECT 10UF 50V	066445	C26	CAP MPF 0.22UF 5% 63VDC	064329	R10	RES SMD0805 681 1/8W 1%	145002
C6	CAP MONO .1uF 50V 20% X7R SMD0805	061365	C27	CAP MPF 0.22UF 5% 63VDC	064329	R11	RES SMD0805 681 1/8W 1%	145002
C7	CAP MPF 0.047UF 5% 63VDC	064320	C28	CAP MPF 0.22UF 5% 63VDC	064329	R12	RES TF 100K 1% 0.1W SMD0805	145062
C8	CAP MPF 0.047UF 5% 63VDC	064320	C29	CAP MPF 0.22UF 5% 63VDC	064329	R13	RES TF 100K 1% 0.1W SMD0805	145062
C9	CAP MONO .1uF 50V 20% X7R SMD0805	061365	C30	CAP 220pF 200V 10% NPO SMD0805	061369	R14	RES SMD0805 681 1/8W 1%	145002
C10	CAP MPF 1UF 5% 63VDC	064337	C31	CAP 220pF 200V 10% NPO SMD0805	061369	R15	RES SMD0805 681 1/8W 1%	145002
C11	CAP MPF 1UF 5% 63VDC	064337	C32	CAP ELECT 100UF 25V	066573	R16	RES TF 100K 1% 0.1W SMD0805	145062
C12	CAP MPF 1UF 5% 63VDC	064337	C33	CAP ELECT 100UF 25V	066573	R17	RES TF 100K 1% 0.1W SMD0805	145062
C13	CAP MPF 1UF 5% 63VDC	064337	C34	CAP 470pF 100V 10% NPO SMD0805	061370	R18	RES SMD0805 22.1K 1/8W 1%	145012
C14	CAP MPF 0.01UF 5% 63VDC	064312	C35	CAP 470pF 100V 10% NPO SMD0805	061370	R19	RES SMD0805 22.1K 1/8W 1%	145012
C15	CAP MPF 0.01UF 5% 63VDC	064312	J1	HEADER 2MM 7PIN R-ANGLE	117941	R20	RES SMD0805 681 1/8W 1%	145002
C16	CAP MPF 0.47UF 5% 100VDC	064442	PCB1	PC BD TONE	130357	R21	RES SMD0805 681 1/8W 1%	145002
C17	CAP MPF 0.47UF 5% 100VDC	064442	R1	POT 100K X25B W/DET & TAP	134521	R22	RES SMD0805 150K 1/8W 1%	145037
C18	CAP MPF 0.0022UF 5% 63VDC	064454	R2	POT 100K X25B W/DET & TAP	134521	R23	RES SMD0805 150K 1/8W 1%	145037
C19	CAP MPF 0.0022UF 5% 63VDC	064454	R3	POT 100K X25B W/DET & TAP	134521	R24	RES SMD0805 681 1/8W 1%	145002
C20	CAP MPF 0.15UF 5% 63VDC	064327	R4	POT 100K X25B W/DET & TAP	134521	R25	RES SMD0805 681 1/8W 1%	145002
C21	CAP MPF 0.15UF 5% 63VDC	064327	R5	POT 100K X25B W/DET & TAP	134521	R26	RES SMD0805 68.1K 1/8W 1%	145035
						R27	RES SMD0805 68.1K 1/8W 1%	145035
						R28	RES SMD0805 475 1/8W 1%	145020
						R29	RES SMD0805 475 1/8W 1%	145020
						R30	RES TF 100K 1% 0.1W SMD0805	145062
						R31	RES TF 100K 1% 0.1W SMD0805	145062
						R32	RES SMD0805 22.1K 1/8W 1%	145012
						R33	RES SMD0805 22.1K 1/8W 1%	145012
						R34	RES SMD0805 18.2K 1/8W 1%	145031
						R35	RES SMD0805 18.2K 1/8W 1%	145031
						R36	RES TF 100K 1% 0.1W SMD0805	145062
						R37	RES TF 100K 1% 0.1W SMD0805	145062
						R38	RES TF 3.00K 1% 0.1W SMD0805	145078
						R39	RES TF 3.00K 1% 0.1W SMD0805	145078
						R40	RES TF 10 1% 0.1W SMD0805	145063
						R41	RES TF 10 1% 0.1W SMD0805	145063
						U1	IC OP AMP 33178 SMD	133720
						U2	IC OP AMP 33178 SMD	133720
						U3	IC OP AMP 33178 SMD	133720
						U4	IC OP AMP 33178 SMD	133720
						U5	IC DUAL JFET OP AMP SMD	133778

# 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. Two #10 x 2-1/2 inch screws and washers must be used to fasten the unit securely to the bottom pad and wood skid. 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.

Quantity	Part Number	Description
1	033888	Shipping carton
4	034670	End Cap
1	033697	Inner carton
1	033725	Top pad
1	034576	Bottom pad
1	034480	Wood skid
2	017218	Plastic foot (spacer)
2	401204	#10 x 2-1/2 inch wood screw
2	404033	#10 flat washer 1-3/4 inch
4	017937	Plastic foot
4	400159	#10-32 x 3/4 machine screw
4	404080	#10 flat washer

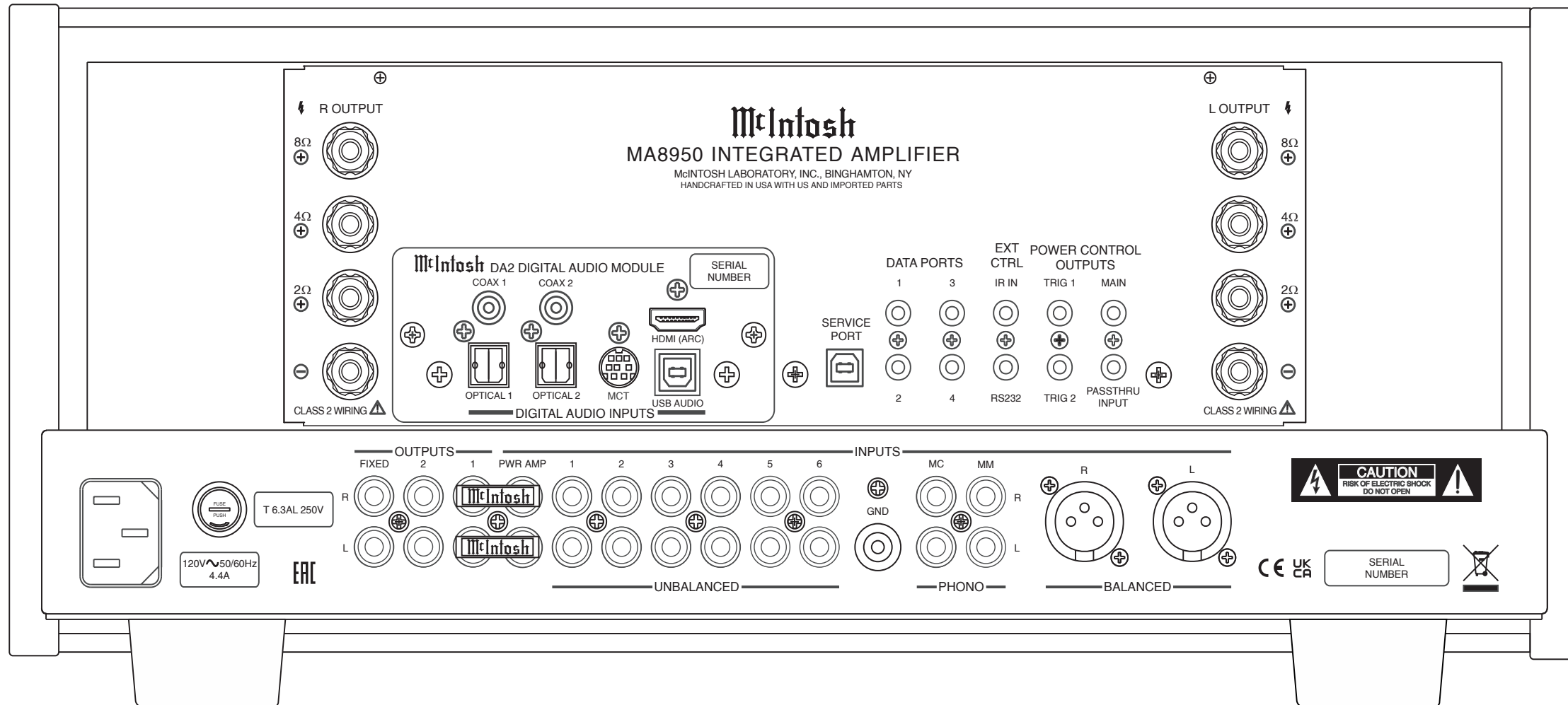




# MA8950

## INTEGRATED AMPLIFIER

SERIAL NO. AJP1001 And Above



The continuous improvement of its products is the policy of McIntosh Laboratory Incorporated, who reserve the right to improve design without notice. Because of the constant upgrading of McIntosh products' circuitry and components, the Company cannot ensure, and does not warrant, the accuracy of the within schematic material, which is intended for information only.

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