



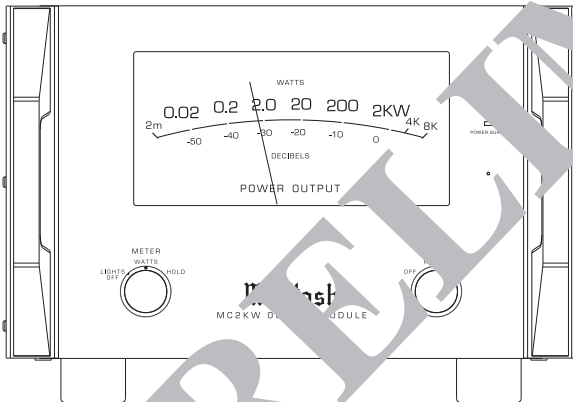
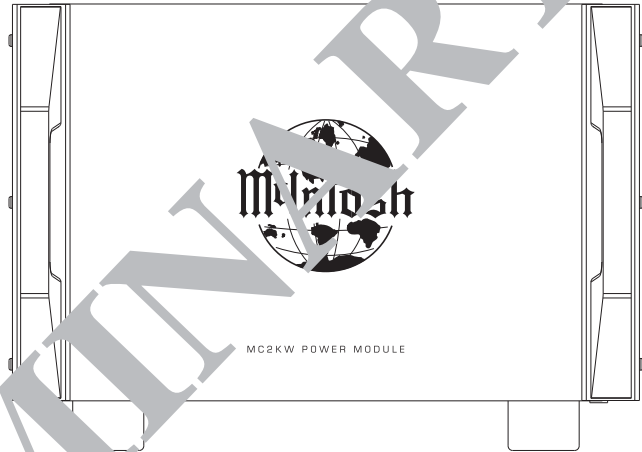
# MC2KW

## POWER AMPLIFIER

SERIAL NO.

POWER MODULE WJ-A001 And Above  
 POWER MODULE WJ-B001 And Above  
 OUTPUT MODULE WJ-C001 And Above

### POWER MODULE



### OUTPUT MODULE

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# SERVICE MANUAL

# PERFORMANCE SPECIFICATIONS

## Power Output

2000 watts into an 8, 4 or 2 ohm load is the minimum sine wave continuous average power output. The output RMS voltage is:

126.5V across 8 ohms  
89.5V across 4 ohms  
62.2V across 2 ohms

## Output Load Impedance

8, 4 and 2 ohms (with three pairs of terminals each for impedance)

## Rated Power Band

20Hz to 20,000Hz

## Total Harmonic Distortion

0.005% maximum harmonic distortion at any power level from 250 milliwatts to 2000 watts, 20Hz to 20,000Hz

## Dynamic Headroom

2dB

## Frequency Response

+0, -0.25dB from 20Hz to 20,000Hz  
+0, -3dB from 10Hz to 100,000Hz

## Sensitivity

5.0 Volts Balanced Input  
2.5 Volts Unbalanced Input

## A-Weighted Signal To Noise Ratio

90dB Unbalanced (123dB below rated output)  
94dB Balanced (127dB below rated output)

## Intermodulation Distortion

0.005% maximum, if instantaneous peak power output does not exceed 4000 watts, for any combination of frequencies from 20Hz to 20kHz.

## Wide Band Damping Factor

Greater than 40

## Input Impedance

10,000 ohms

## Power Guard

Less than 2% THD with up to 14dB overdrive

## General Specifications

### MC2KW Output Module Power Requirements

100 Volts, 50/60Hz at 35 watts  
110 Volts, 50/60Hz at 35 watts  
120 Volts, 50/60Hz at 35 watts  
220 Volts, 50/60Hz at 35 watts  
230 Volts, 50/60Hz at 35 watts  
240 Volts, 50/60Hz at 35 watts

### MC2KW Power Module Power Requirements<sup>1</sup>

100 Volts, 50/60Hz at 1440 watts  
110 Volts, 50/60Hz at 13.0 amps  
120 Volts, 50/60Hz at 12 amps  
220 Volts, 50/60Hz at 7.5 amps  
230 Volts, 50/60Hz at 6.5 amps  
240 Volts, 50/60Hz at 6.5 amps

*Note: Refer to the rear panels of the MC2KW Output Module and MC2KW Power Modules for the correct voltage.*

## Overall Dimensions

MC2KW Output Module: Width is 17-3/4 inches (45.09cm), Height is 12-5/16 inches (31.27cm) including feet, Depth is 26-5/8 inches (62.54cm) including the front panel, handles, knobs and interconnect cables<sup>2</sup>

MC2KW Power Module: Width is 17-3/4 inches (45.09cm), Height is 12-5/16 inches (31.27cm) including feet, Depth is 26-5/8 inches (62.54cm) including the front panel, handles and interconnect cables<sup>2</sup>


## Weight

MC2KW Output Module is 121 pounds (54.9kg) net, 146 pounds (66.2kg) in shipping carton  
MC2KW Power Module is 158 pounds (71.7kg) net, 183 pounds (83.0kg) in shipping carton

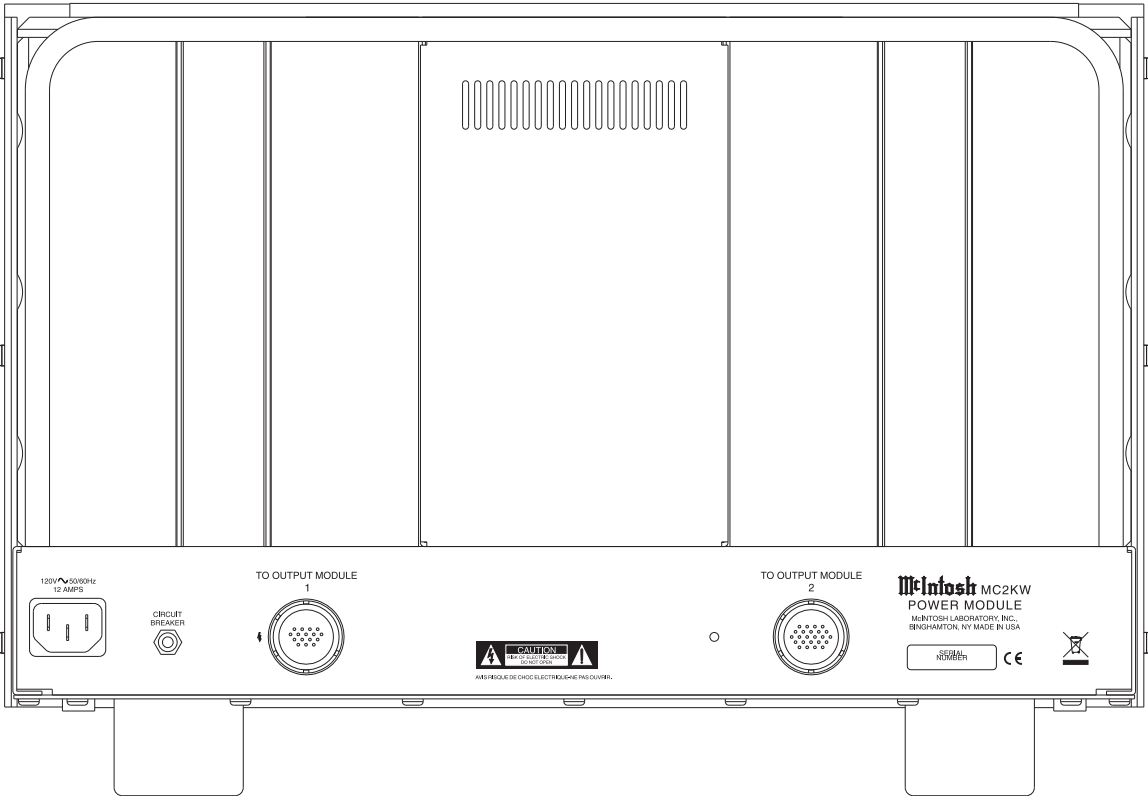
<sup>1</sup> The power requirements listed are for each MC2KW Power Module, two are required for each MC2KW Power Amplifier

<sup>2</sup> Interconnect cables are supplied with the MC2KW Output Module and both MC2KW Power Modules connect to the MC2KW Output Module.

# 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. Soft startup procedure for servicing:
  1. Interconnect output module and power modules
  2. Connect Output Module to 120VAC
  3. Connect Power Modules to variac and set the output to zero.
  4. Turn Output Module power switch to on. (This will energize the power relays in the Power Modules.)
  5. Gradually advance the variac to 120VAC while monitoring the AC current.

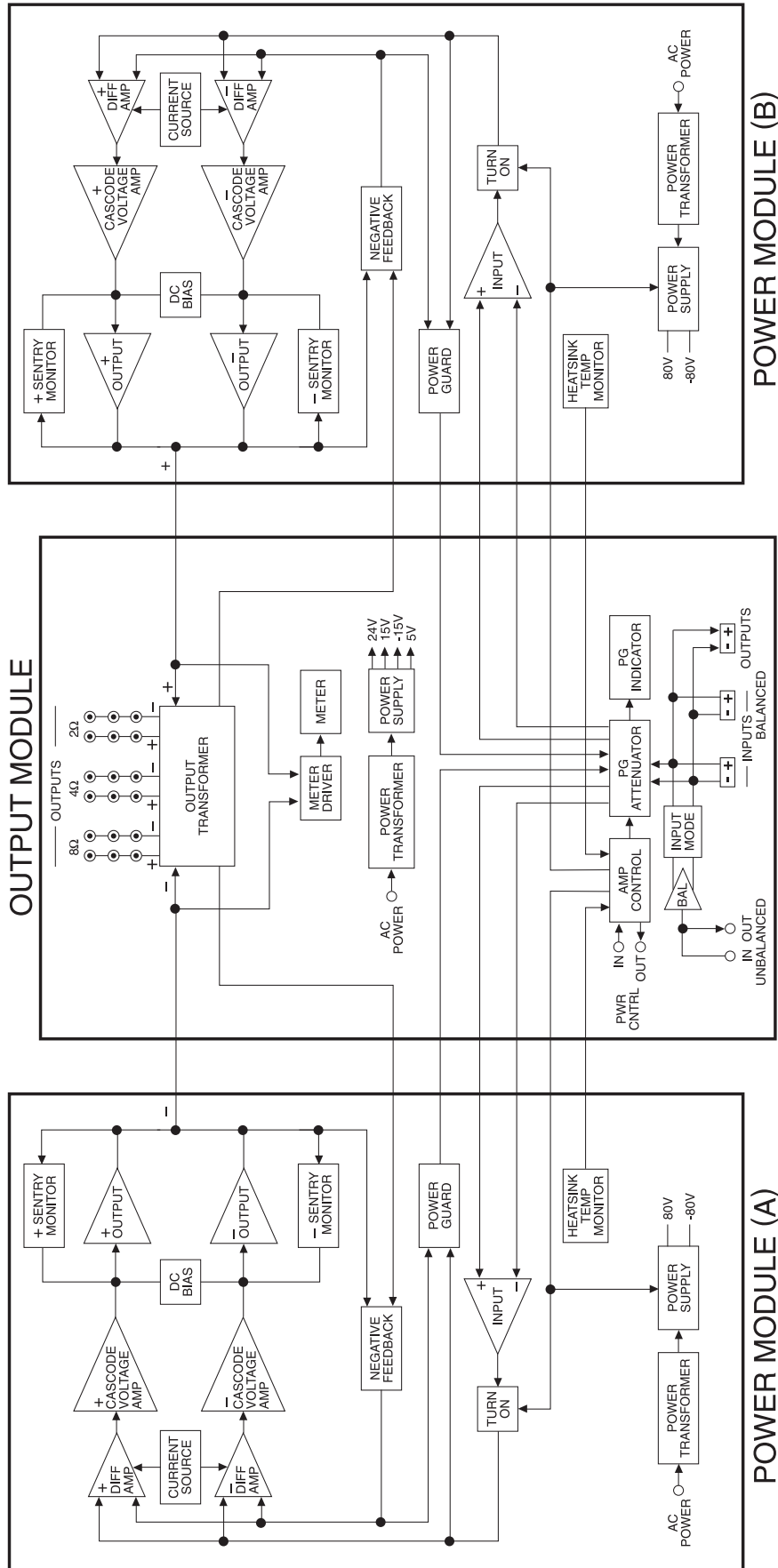
# REAR PANEL



# SECTION LOCATION

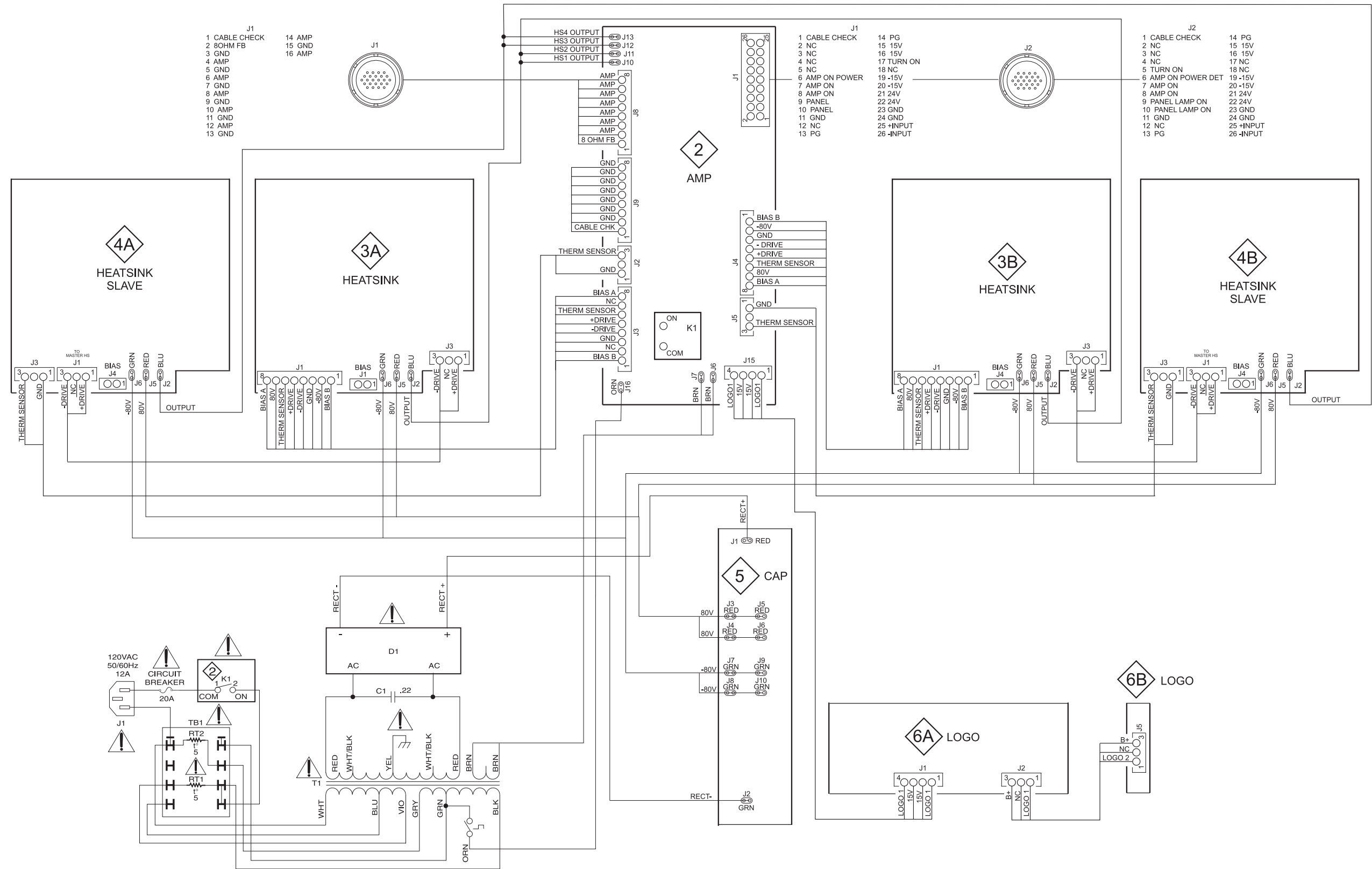
TOP VIEW WITH COVER REMOVED

# BLOCK DIAGRAM



# 1 INTERCONNECT


## MC2KW OUTPUT



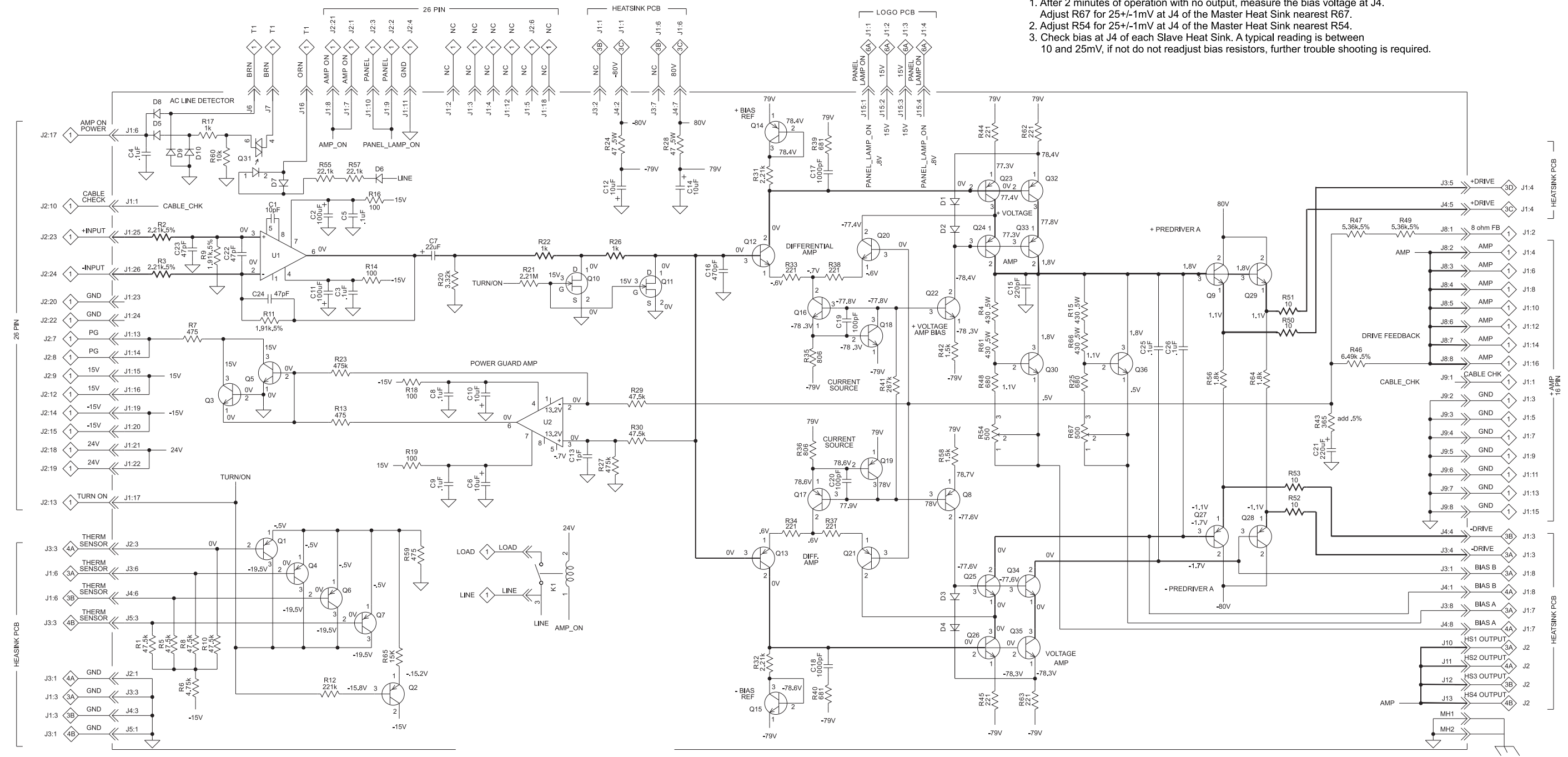
- J1
- |               |        |
|---------------|--------|
| 1 CABLE CHECK | 14 AMP |
| 2 8OHM FB     | 15 GND |
| 3 GND         | 16 AMP |
| 4 AMP         |        |
| 5 GND         |        |
| 6 AMP         |        |
| 7 GND         |        |
| 8 AMP         |        |
| 9 GND         |        |
| 10 AMP        |        |
| 11 GND        |        |
| 12 AMP        |        |
| 13 GND        |        |

- J1
- |                |            |
|----------------|------------|
| 1 CABLE CHECK  | 14 PG      |
| 2 NC           | 15 15V     |
| 3 NC           | 16 15V     |
| 4 NC           | 17 TURN ON |
| 5 NC           | 18 NC      |
| 6 AMP ON POWER | 19 -15V    |
| 7 AMP ON       | 20 -15V    |
| 8 AMP ON       | 21 24V     |
| 9 PANEL        | 22 24V     |
| 10 PANEL       | 23 GND     |
| 11 GND         | 24 GND     |
| 12 NC          | 25 +INPUT  |
| 13 PG          | 26 -INPUT  |

- J2
- |                    |           |
|--------------------|-----------|
| 1 CABLE CHECK      | 14 PG     |
| 2 NC               | 15 15V    |
| 3 NC               | 16 15V    |
| 4 NC               | 17 NC     |
| 5 TURN ON          | 18 NC     |
| 6 AMP ON POWER DET | 19 -15V   |
| 7 AMP ON           | 20 -15V   |
| 8 AMP ON           | 21 24V    |
| 9 PANEL LAMP ON    | 22 24V    |
| 10 PANEL LAMP ON   | 23 GND    |
| 11 GND             | 24 GND    |
| 12 NC              | 25 +INPUT |
| 13 PG              | 26 -INPUT |

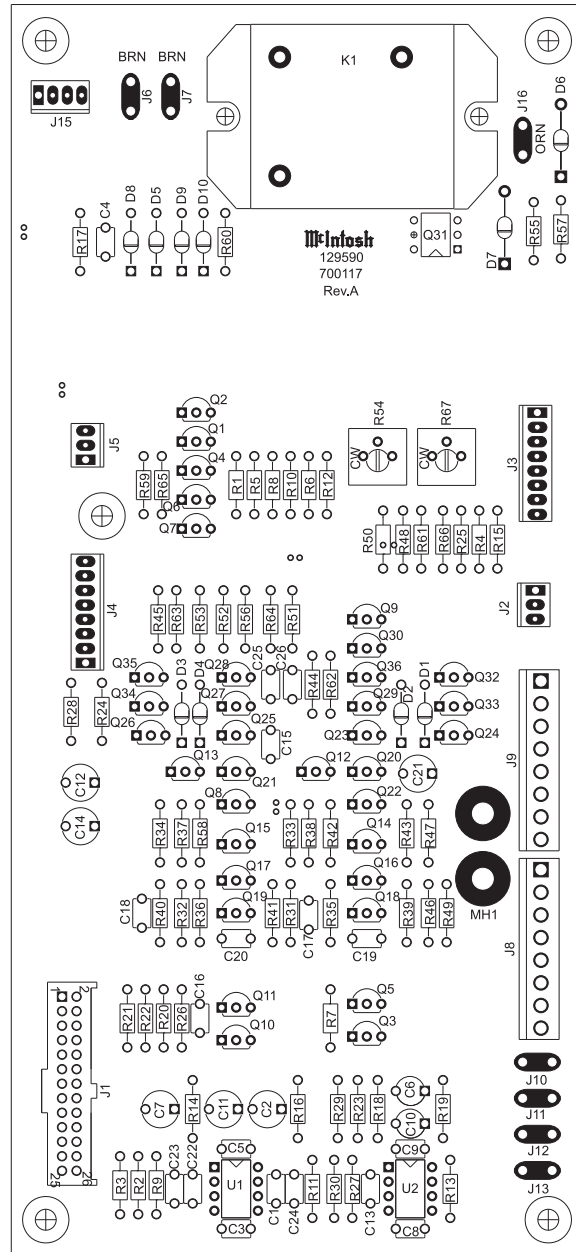
 **WARNING** Parts marked with a triangle and exclamation mark have critical characteristics. Use only replacement parts recommended by the manufacturer.

# 2 AMP 050215 SCH

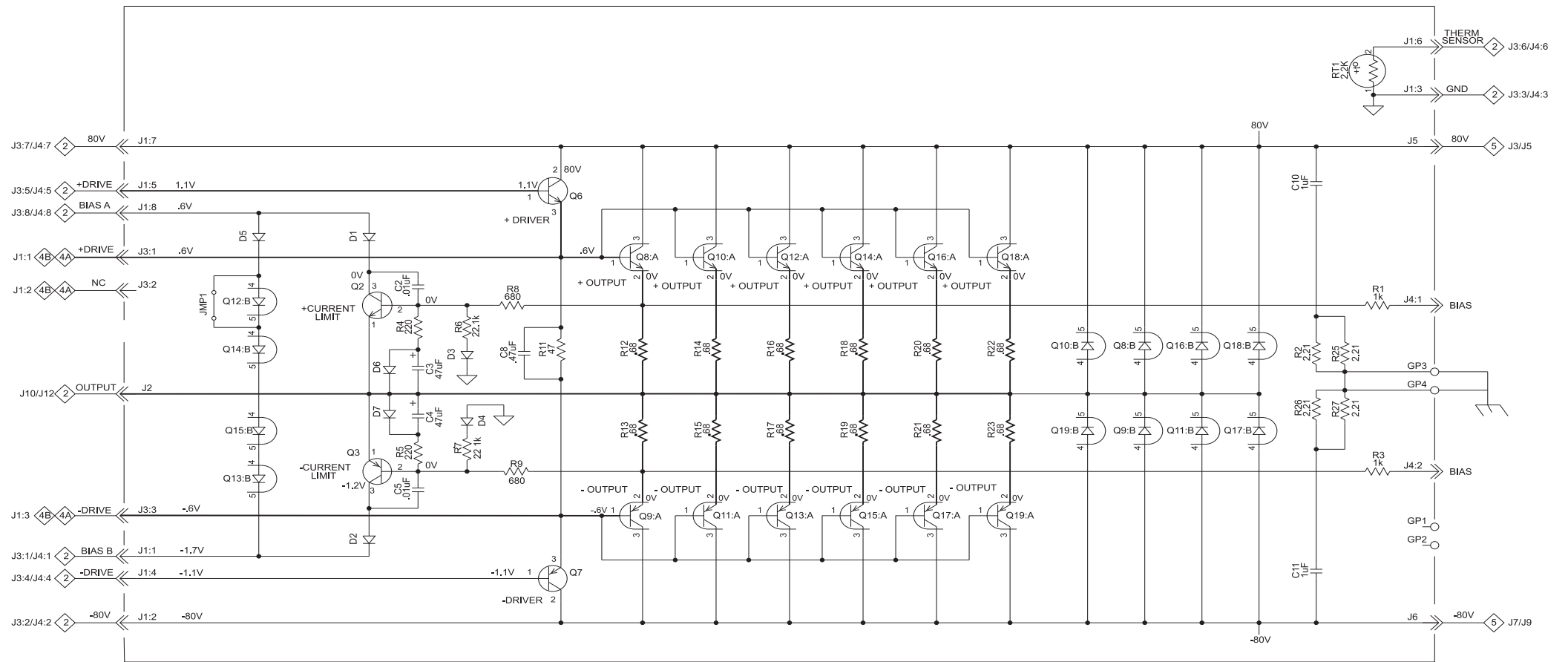


**BIAS ADJUST:**  
 1. After 2 minutes of operation with no output, measure the bias voltage at J4.  
 Adjust R67 for 25+/-1mV at J4 of the Master Heat Sink nearest R67.  
 2. Adjust R54 for 25+/-1mV at J4 of the Master Heat Sink nearest R54.  
 3. Check bias at J4 of each Slave Heat Sink. A typical reading is between 10 and 25mV, if not do not readjust bias resistors, further trouble shooting is required.

**2** AMP 050215 PCB

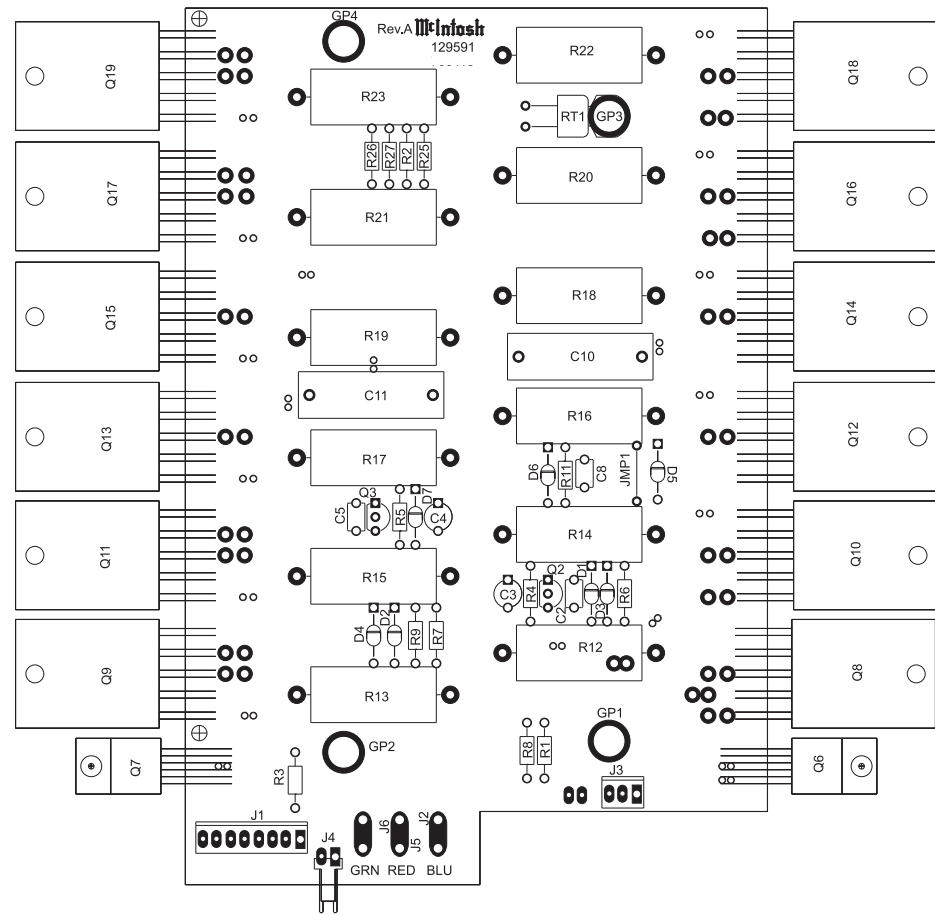


**3A** **3B** POWER HEATSINK 050216 SCH



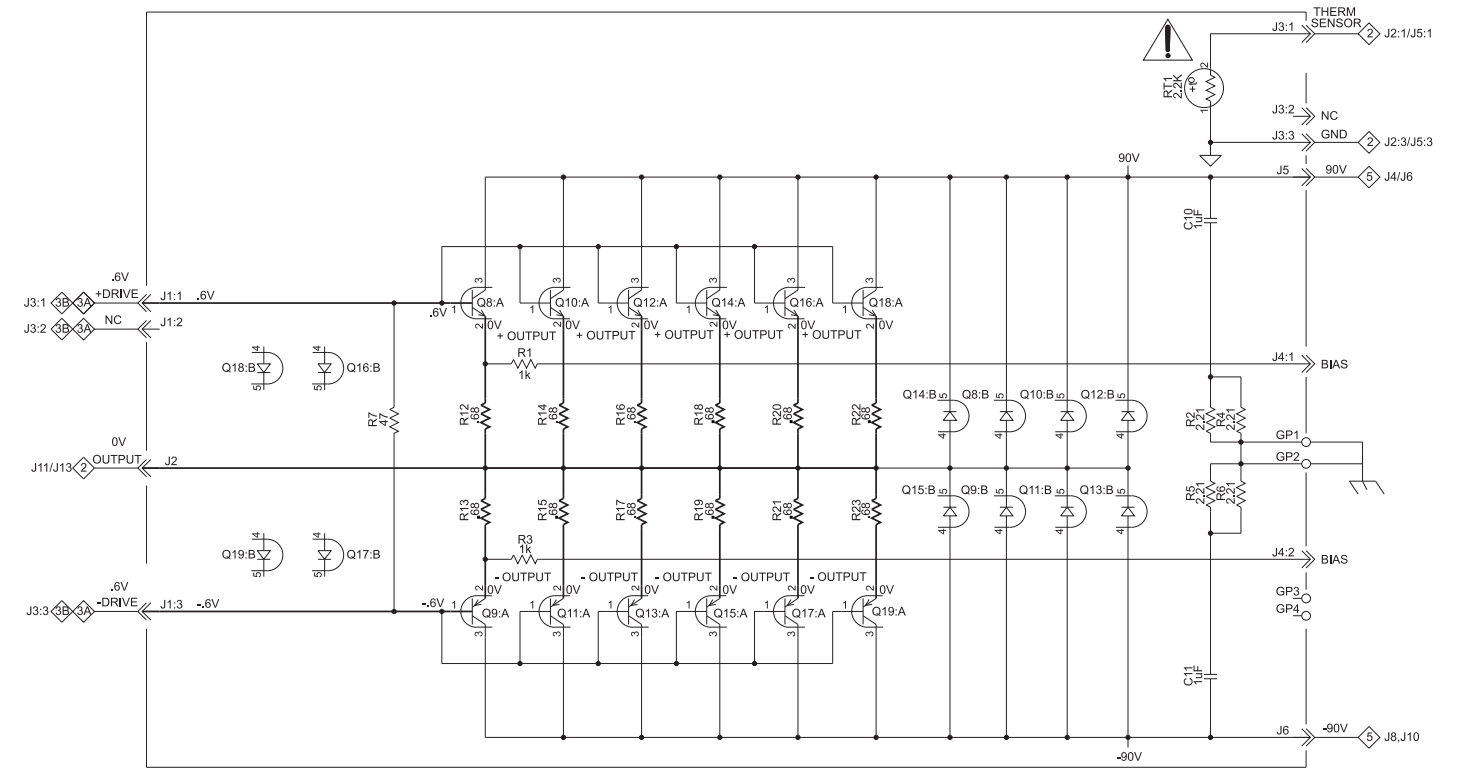
**3A 3B**

**HEATSINK** 050216 PCB



**4A 4B**

**HEATSINK SLAVE** 050282 SCH

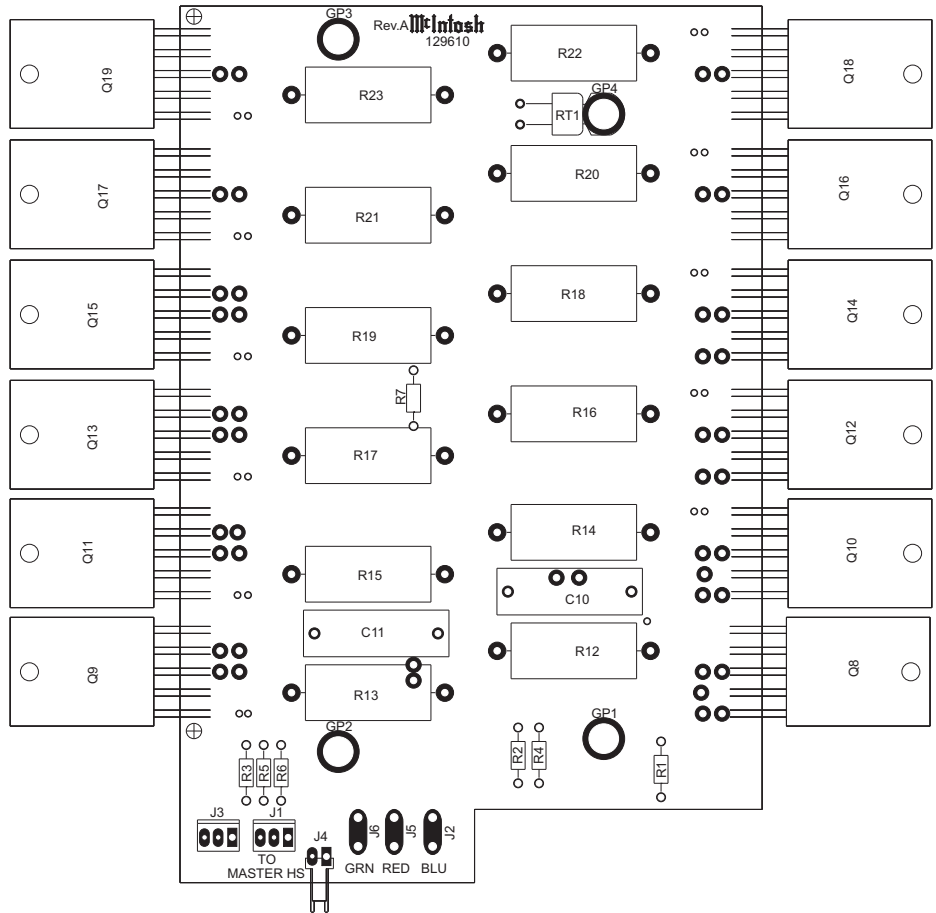


**WARNING** Parts marked with a triangle and exclamation mark have critical characteristics. Use only replacement parts recommended by the manufacturer.



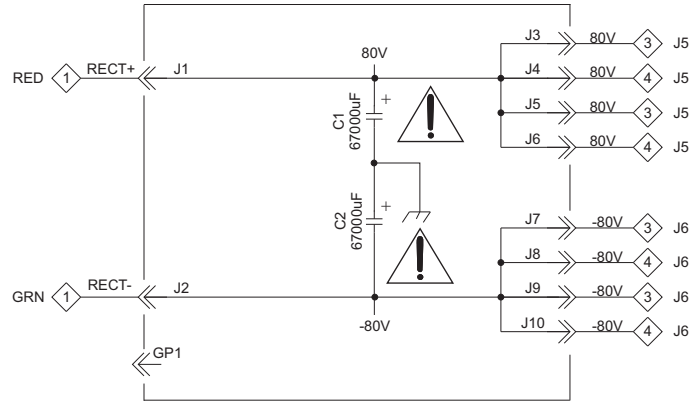
**4A** **4B**


*HEATSINK SLAVE 050282*

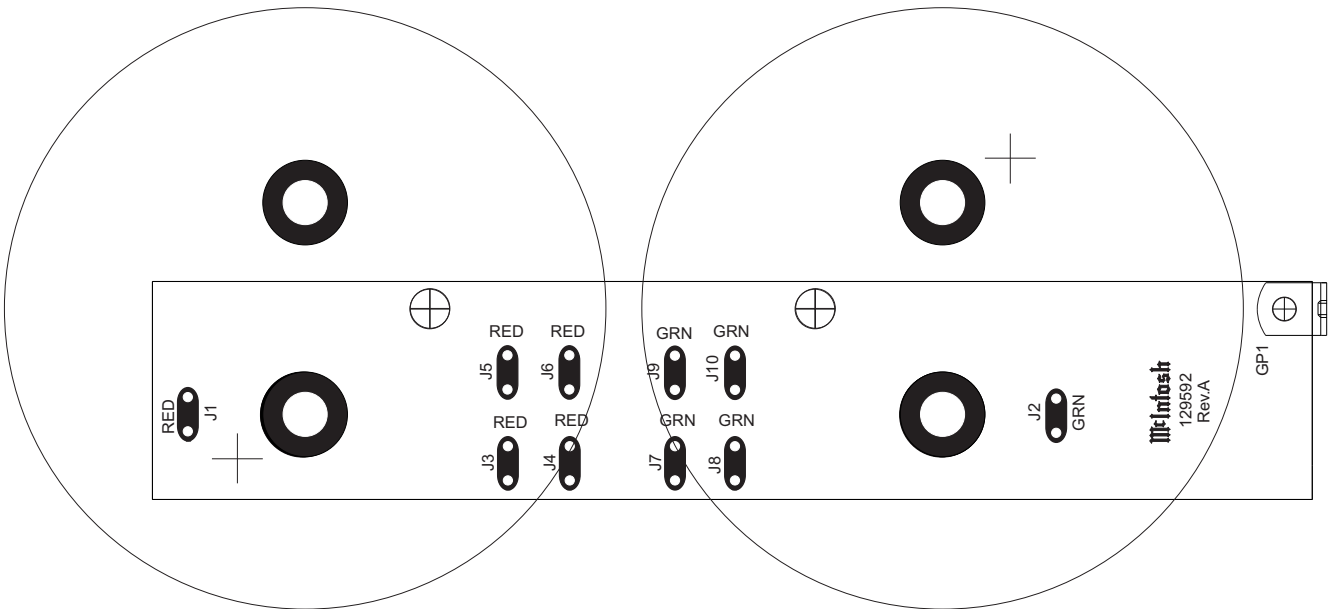


# 5

## CAPACITOR 050217



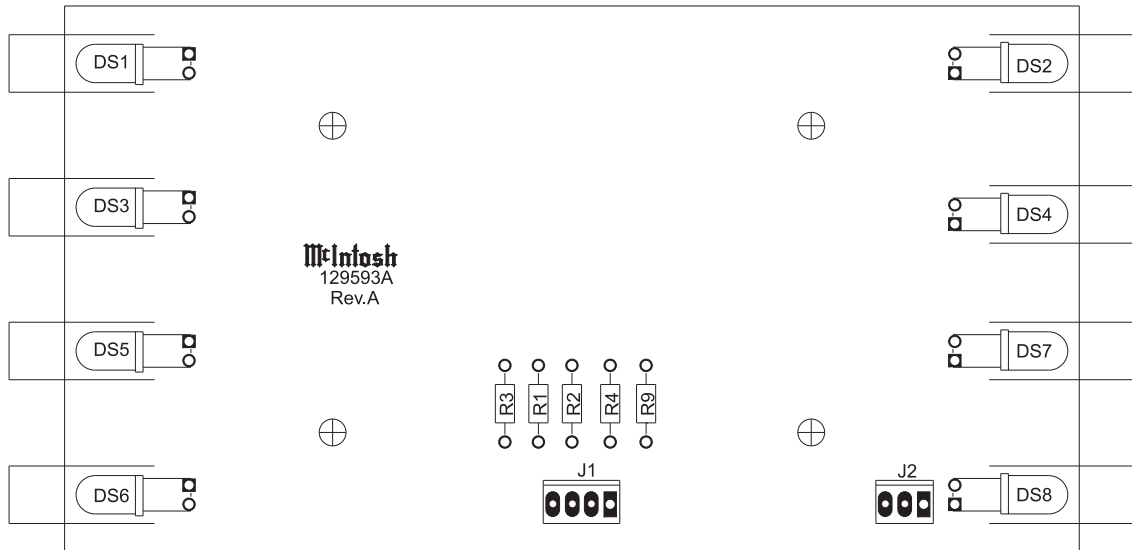
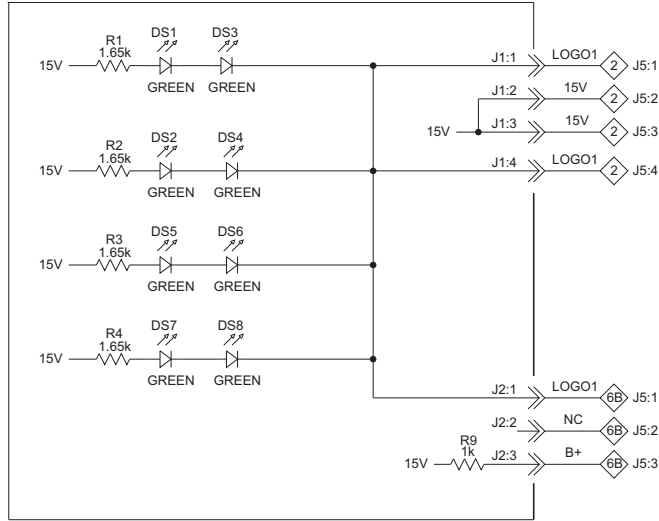
 **WARNING** Parts marked with a triangle and exclamation mark have critical characteristics. Use only replacement parts recommended by the manufacturer.



6A

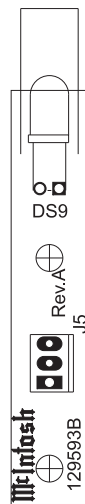
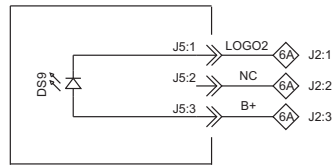
LOGO 050218

MC2KW  
POWER





LOGO 050218



# PARTS LIST

Ref. No.	Description	Part No.			
<b>◇ INTERCONNECT</b>			Q1	TRANSISTOR PNP	132224
T1	POWER TRANSFORMER	050230	Q2	TRANSISTOR PNP POWER	132255
D1	DIODE BRIDGE RECT	070181	Q3	TRANSISTOR NPN	132223
RT1	ASSY THERMISTOR	052017	Q4	TRANSISTOR PNP	132224
RT2	ASSY THERMISTOR	052017	Q5	TRANSISTOR NPN	132223
CB	CIRCUIT BREAKER 20A 240V	088022	Q6	TRANSISTOR PNP	132224
			Q7	TRANSISTOR PNP	132224
			Q8	TRANSISTOR PNP 2SA1321C	132286
<b>◇ AMPLIFIER PCB 050215</b>			Q9	TRANSISTOR NPN 2SC3334C	132285
C1	CAP MONO 10PF 200V 10%	061297	Q10	TRANSISTOR N JFET	132222
C2	CAP ELECT 100UF 25V	066447	Q11	TRANSISTOR N JFET	132222
C3	CAP MONO .1UF 50V 20%	061305	Q12	TRANSISTOR SI NPN 25V	132254
C4	CAP MONO .1UF 50V 20%	061305	Q13	TRANSISTOR PNP POWER	132255
C5	CAP MONO .1UF 50V 20%	061305	Q14	TRANSISTOR PNP	132224
C6	CAP ELECT 10UF 50V	066445	Q15	TRANSISTOR NPN	132223
C7	CAP ELECT 22UF 100V	066506	Q16	TRANSISTOR SI NPN 25V	132254
C8	CAP MONO .1UF 50V 20%	061305	Q17	TRANSISTOR PNP POWER	132255
C9	CAP MONO .1UF 50V 20%	061305	Q18	TRANSISTOR NPN	132223
C10	CAP ELECT 10UF 50V	066445	Q19	TRANSISTOR PNP	132224
C11	CAP ELECT 100UF 25V	066447	Q20	TRANSISTOR SI NPN 25V	132254
C12	CAP ELECT 10UF 100VDC	066462	Q21	TRANSISTOR PNP POWER	132255
C13	CAP MONO 1PF 100V NPO	061319	Q22	TRANSISTOR NPN 2SC3334C	132285
C14	CAP ELECT 10UF 100VDC	066462	Q23	TRANSISTOR PNP SILICON	132172
C15	CAP MONO 220PF 200V 10%	061301	Q24	TRANSISTOR PNP 2SA1321C	132286
C16	CAP MONO 470PF 100V 10%	061302	Q25	TRANSISTOR NPN 2SC3334C	132285
C17	CAP MONO 1000PF 50V 10%	061303	Q26	TRANSISTOR NPN SILICON	132171
C18	CAP MONO 1000PF 50V 10%	061303	Q27	TRANSISTOR PNP 2SA1321C	132286
C19	CAP MONO 100PF 100V 10%	061300	Q28	TRANSISTOR PNP 2SA1321C	132286
C20	CAP MONO 100PF 100V 10%	061300	Q29	TRANSISTOR NPN 2SC3334C	132285
C21	CAP ELECT 220UF 25V	066507	Q30	TRANSISTOR NPN	132223
C22	CAP MONO 47PF 200V 10%	061299	Q31	TRIAC OPTOCOUPLER	131024
C23	CAP MONO 47PF 200V 10%	061299	Q32	TRANSISTOR PNP SILICON	132172
C24	CAP MONO 47PF 200V 10%	061299	Q33	TRANSISTOR PNP 2SA1321C	132286
C25	CAP MONO .1UF 50V 20%	061305	Q34	TRANSISTOR NPN 2SC3334C	132285
C26	CAP MONO .1UF 50V 20%	061305	Q35	TRANSISTOR NPN SILICON	132171
D1	DIODE SILICON	070047	Q36	TRANSISTOR NPN	132223
D2	DIODE SILICON	070047	R1	RES MF 47.5K 1% 1/4W	144108
D3	DIODE SILICON	070047	R2	RES MF 2.21K .5% 1/4W	144396
D4	DIODE SILICON	070047	R3	RES MF 2.21K .5% 1/4W	144396
D5	DIODE SILICON	070047	R4	RES MET OX 430 OHM .5W 5%	137095
D6	DIODE SIL 400 PIV @ 1.5A	070031	R5	RES MF 47.5K 1% 1/4W	144108
D7	DIODE SIL 400 PIV @ 1.5A	070031	R6	RES MF 4.75K 1% 1/4W	144097
D8	DIODE SILICON	070047	R7	RES MF 475 OHM 1% 1/4W	144086
D9	DIODE SILICON	070047	R8	RES MF 47.5K 1% 1/4W	144108
D10	DIODE SILICON	070047	R9	RES MF 1.91K .5% 1/4W	144395
J1	HDR SHROUDED 2ROW 26PIN V	117870	R10	RES MF 47.5K 1% 1/4W	144108
J2	CONN 3 POS M MTS100 NRML	117214	R11	RES MF 1.91K .5% 1/4W	144395
J3	CONN 8 POS M FRICTION LOCK	117275	R12	RES MF 221K 1% 1/4W	144421
J4	CONN 8 POS M FRICTION LOCK	117275	R13	RES MF 475 OHM 1% 1/4W	144086
J5	CONN 3 POS M MTS100 NRML	117214	R14	RES MF 100 OHM 1% 1/4W	144196
J6	BLADE FASTON W/FEET	117708	R15	RES MET OX 430 OHM .5W 5%	137095
J7	BLADE FASTON W/FEET	117708	R16	RES MF 100 OHM 1% 1/4W	144196
J8	HEADER 8 PIN MTA-156	117717	R17	RES MF 1K 1% 1/4W	144090
J9	HEADER 8 PIN MTA-156	117717	R18	RES MF 100 OHM 1% 1/4W	144196
J10	BLADE FASTON W/FEET	117708	R19	RES MF 100 OHM 1% 1/4W	144196
J11	BLADE FASTON W/FEET	117708	R20	RES MF 3.32K 1% 1/4W	144095
J12	BLADE FASTON W/FEET	117708	R21	RES MF 2.21M 1/4W	144265
J13	BLADE FASTON W/FEET	117708	R22	RES MF 1K 1% 1/4W	144090
J15	CONN 4 PIN	117215	R23	RES MF 475K 1% 1/4W	144364
J16	BLADE FASTON W/FEET	117708	R24	RES MET OX 47 OHM .5W 5%	137096
K1	RELAY POWER 24VDC/TV-15	087042	R25	RES MET OX 680 OHM .5W 5%	137093

# PARTS LIST con't

R26	RES MF 1K 1% 1/4W	144090	GP3	STANDOFF 6-32 X 1/4 PCB MNT	112130
R27	RES MF 475K 1% 1/4W	144364	GP4	STANDOFF 6-32 X 1/4 PCB MNT	112130
R28	RES MET OX 47 OHM .5W 5%	137096	HS1	HEATSINK	018787
R29	RES MF 47.5K 1% 1/4W	144108	J1	CONN 8 POS M FRICTION LOCK	117275
R30	RES MF 47.5K 1% 1/4W	144108	J2	BLADE FASTON W/FEET	117708
R31	RES MF 2.21K 1% 1/4W	144298	J3	CONN 3 POS M MTS100 NRML	117214
R32	RES MF 2.21K 1% 1/4W	144298	J4	CONN 2 POS RIGHT ANGLE	117274
R33	RES MF 221 OHM 1% 1/4W	144172	J5	BLADE FASTON W/FEET	117708
R34	RES MF 221 OHM 1% 1/4W	144172	J6	BLADE FASTON W/FEET	117708
R35	RES MF 806 OHM 1% 1/4W	144089	Q2	TRANSISTOR NPN SILICON	132171
R36	RES MF 806 OHM 1% 1/4W	144089	Q3	TRANSISTOR PNP SILICON	132172
R37	RES MF 221 OHM 1% 1/4W	144172	Q6	TRANSISTOR MJE15032 NPN	132288
R38	RES MF 221 OHM 1% 1/4W	144172	Q7	TRANSISTOR MJE15033 PNP	132289
R39	RES MF 681 OHM 1% 1/4W	144195	Q8	TRANS NPN THERMTRAK	132300
R40	RES MF 681 OHM 1% 1/4W	144195	Q9	TRANS PNP THERMTRAK	132301
R41	RES MF 267K 1% 1/4W	144118	Q10	TRANS NPN THERMTRAK	132300
R42	RES MF 1.5K 1% 1/4W	144128	Q11	TRANS PNP THERMTRAK	132301
R43	RES MF 365 OHM 1% 1/4W	144071	Q12	TRANS NPN THERMTRAK	132300
R44	RES MF 221 OHM 1% 1/4W	144172	Q13	TRANS PNP THERMTRAK	132301
R45	RES MF 221 OHM 1% 1/4W	144172	Q14	TRANSR NPN THERMTRAK	132300
R46	RES MF 6.49K .5% 1/4W	144401	Q15	TRANSR PNP THERMTRAK	132301
R47	RES MF 5.36K .5% 1/4W	144399	Q16	TRANSR NPN THERMTRAK	132300
R48	RES MET OX 680 OHM .5W 5%	137093	Q17	TRANS PNP THERMTRAK	132301
R49	RES MF 5.36K .5% 1/4W	144399	Q18	TRANS NPN THERMTRAK	132300
R50	RES FP 10 OHM 5% 1/4W	137025	Q19	TRANS PNP THERMTRAK	132301
R51	RES FP 10 OHM 5% 1/4W	137025	R1	RES MF 1K 1% 1/4W	144090
R52	RES FP 10 OHM 5% 1/4W	137025	R2	RES MF 2.21 OHM 1% 1/4W	144378
R53	RES FP 10 OHM 5% 1/4W	137025	R3	RES MF 1K 1% 1/4W	144090
R54	POT 500 OHMS LINEAR 20%	134396	R4	RES MET OX 220 OHM .5W 5%	137097
R55	RES MF 22.1K 1% 1/4W	144187	R5	RES MET OX 220 OHM .5W 5%	137097
R56	RES MET OX 1.8k .5W 5%	137094	R6	RES MF 22.1K 1% 1/4W	144187
R57	RES MF 22.1K 1% 1/4W	144187	R7	RES MF 22.1K 1% 1/4W	144187
R58	RES MF 1.5K 1% 1/4W	144128	R8	RES MET OX 680 OHM .5W 5%	137093
R59	RES MF 475 OHM 1% 1/4W	144086	R9	RES MET OX 680 OHM .5W 5%	137093
R60	RES MF 10K 1% 1/4W	144053	R11	RES MET OX 47 OHM .5W 5%	137096
R61	RES MET OX 430 OHM .5W 5%	137095	R12	RES WW .68 OHM 5W 5%	139245
R62	RES MF 221 OHM 1% 1/4W	144172	R13	RES WW .68 OHM 5W 5%	139245
R63	RES MF 221 OHM 1% 1/4W	144172	R14	RES WW .68 OHM 5W 5%	139245
R64	RES MET OX 1.8k .5W 5%	137094	R15	RES WW .68 OHM 5W 5%	139245
R65	RES MF 15K 1% 1/4W	144412	R16	RES WW .68 OHM 5W 5%	139245
R66	RES MET OX 430 OHM .5W 5%	137095	R17	RES WW .68 OHM 5W 5%	139245
R67	POT 500 OHMS LINEAR 20%	134396	R18	RES WW .68 OHM 5W 5%	139245
U1	IC OPERATIONAL AMP LOW NSE	133067	R19	RES WW .68 OHM 5W 5%	139245
U2	IC OPERATIONAL AMP LOW NSE	133067	R20	RES WW .68 OHM 5W 5%	139245
			R21	RES WW .68 OHM 5W 5%	139245
			R22	RES WW .68 OHM 5W 5%	139245
			R23	RES WW .68 OHM 5W 5%	139245
			R25	RES MF 2.21 OHM 1% 1/4W	144378
			R26	RES MF 2.21 OHM 1% 1/4W	144378
			R27	RES MF 2.21 OHM 1% 1/4W	144378
			RT1	SENSOR THERMAL	144249

## 4A HEATSINK PCB 050216

4B C2	CAP MONO .01UF 50V 20% X7R	061304
C3	CAP ELECT 47UF 35V	066446
C4	CAP ELECT 47UF 35V	066446
C5	CAP MONO .01UF 50V 20% X7R	061304
C8	CAP DISC MONO .47UF 50V	061249
C10	CAP POLYPROP 1uF 160V 5%	064451
C11	CAP POLYPROP 1uF 160V 5%	064451
D1	DIODE SILICON	070047
D2	DIODE SILICON	070047
D3	DIODE SILICON	070047
D4	DIODE SILICON	070047
D5	DIODE SILICON	070047
D6	DIODE SILICON	070047
D7	DIODE SILICON	070047
GP1	STANDOFF 6-32 X 1/4 PCB MNT	112130
GP2	STANDOFF 6-32 X 1/4 PCB MNT	112130

## 4A HEATSINK SLAVE PCB 050282

4B C10	CAP POLYPROP 1uF 250V 5%	064451
C11	CAP POLYPROP 1uF 250V 5%	064451
GP1	STANDOFF 6-32 X 1/4 PCB MNT	112130
GP2	STANDOFF 6-32 X 1/4 PCB MNT	112130
GP3	STANDOFF 6-32 X 1/4 PCB MNT	112130
GP4	STANDOFF 6-32 X 1/4 PCB MNT	112130
HS1	HEATSINK	018787
J1	CONN 3 POS M MTS100 NRML	117214
J2	BLADE FASTON W/FEET	117708

# PARTS LIST con't

J3	CONN 3 POS M MTS100 NRML	117214	J6	BLADE FASTON W/FEET	117708
J4	CONN 2 POS RIGHT ANGLE	117274	Q2	TRANSISTOR NPN SILICON	132171
J5	BLADE FASTON W/FEET	117708	Q3	TRANSISTOR PNP SILICON	132172
J6	BLADE FASTON W/FEET	117708	Q6	TRANSISTOR MJE15032 NPN	132288
Q8	TRANS NPN THERMLTRAK	132300	Q7	TRANSISTOR MJE15033 PNP	132289
Q9	TRANS PNP THERMLTRAK	132301	Q8	TRANS NPN THERMLTRAK	132300
Q10	TRANS NPN THERMLTRAK	132300	Q9	TRANS PNP THERMLTRAK	132301
Q11	TRANS PNP THERMLTRAK	132301	Q10	TRANS NPN THERMLTRAK	132300
Q12	TRANS NPN THERMLTRAK	132300	Q11	TRANS PNP THERMALTRAK	132301
Q13	TRANS PNP THERMLTRAK	132301	Q12	TRANS NPN THERMALTRAK	132300
Q14	TRANS NPN THERMLTRAK	132300	Q13	TRANS PNP THERMLTRAK	132301
Q15	TRANS PNP THERMLTRAK	132301	Q14	TRANS NPN THERMLTRAK	132300
Q16	TRANS NPN THERMLTRAK	132300	Q15	TRANS PNP THERMLTRAK	132301
Q17	TRANS PNP THERMLTRAK	132301	Q16	TRANS NPN THERMLTRAK	132300
Q18	TRANS NPN THERMLTRAK	132300	Q17	TRANS PNP THERMLTRAK	132301
Q19	TRANS PNP THERMLTRAK	132301	Q18	TRANS NPN THERMLTRAK	132300
R1	RES MF 1K 1% 1/4W	144090	Q19	TRANS PNP THERMLTRAK	132301
R2	RES MF 2.21 OHM 1% 1/4W	144378	R1	RES MF 1K 1% 1/4W	144090
R3	RES MF 1K 1% 1/4W	144090	R2	RES MF 2.21 OHM 1% 1/4W	144378
R4	RES MF 2.21 OHM 1% 1/4W	144378	R3	RES MF 1K 1% 1/4W	144090
R5	RES MF 2.21 OHM 1% 1/4W	144378	R4	RES MET OX 220 OHM .5W 5%	137097
R6	RES MF 2.21 OHM 1% 1/4W	144378	R5	RES MET OX 220 OHM .5W 5%	137097
R7	RES MET OX 47 OHM .5W 5%	137096	R6	RES MF 22.1K 1% 1/4W	144187
R12	RES WW .68 OHM 5W 5%	139245	R7	RES MF 22.1K 1% 1/4W	144187
R13	RES WW .68 OHM 5W 5%	139245	R8	RES MET OX 680 OHM .5W 5%	137093
R14	RES WW .68 OHM 5W 5%	139245	R9	RES MET OX 680 OHM .5W 5%	137093
R15	RES WW .68 OHM 5W 5%	139245	R11	RES MET OX 47 OHM .5W 5%	137096
R16	RES WW .68 OHM 5W 5%	139245	R12	RES WW .68 OHM 5W 5%	139245
R17	RES WW .68 OHM 5W 5%	139245	R13	RES WW .68 OHM 5W 5%	139245
R18	RES WW .68 OHM 5W 5%	139245	R14	RES WW .68 OHM 5W 5%	139245
R19	RES WW .68 OHM 5W 5%	139245	R15	RES WW .68 OHM 5W 5%	139245
R20	RES WW .68 OHM 5W 5%	139245	R16	RES WW .68 OHM 5W 5%	139245
R21	RES WW .68 OHM 5W 5%	139245	R17	RES WW .68 OHM 5W 5%	139245
R22	RES WW .68 OHM 5W 5%	139245	R18	RES WW .68 OHM 5W 5%	139245
R23	RES WW .68 OHM 5W 5%	139245	R19	RES WW .68 OHM 5W 5%	139245
RT1	SENSOR THERMAL	144249	R20	RES WW .68 OHM 5W 5%	139245
			R21	RES WW .68 OHM 5W 5%	139245
			R22	RES WW .68 OHM 5W 5%	139245
			R23	RES WW .68 OHM 5W 5%	139245
			R25	RES MF 2.21 OHM 1% 1/4W	144378
			R26	RES MF 2.21 OHM 1% 1/4W	144378
			R27	RES MF 2.21 OHM 1% 1/4W	144378
			RT1	SENSOR THERMAL	144249

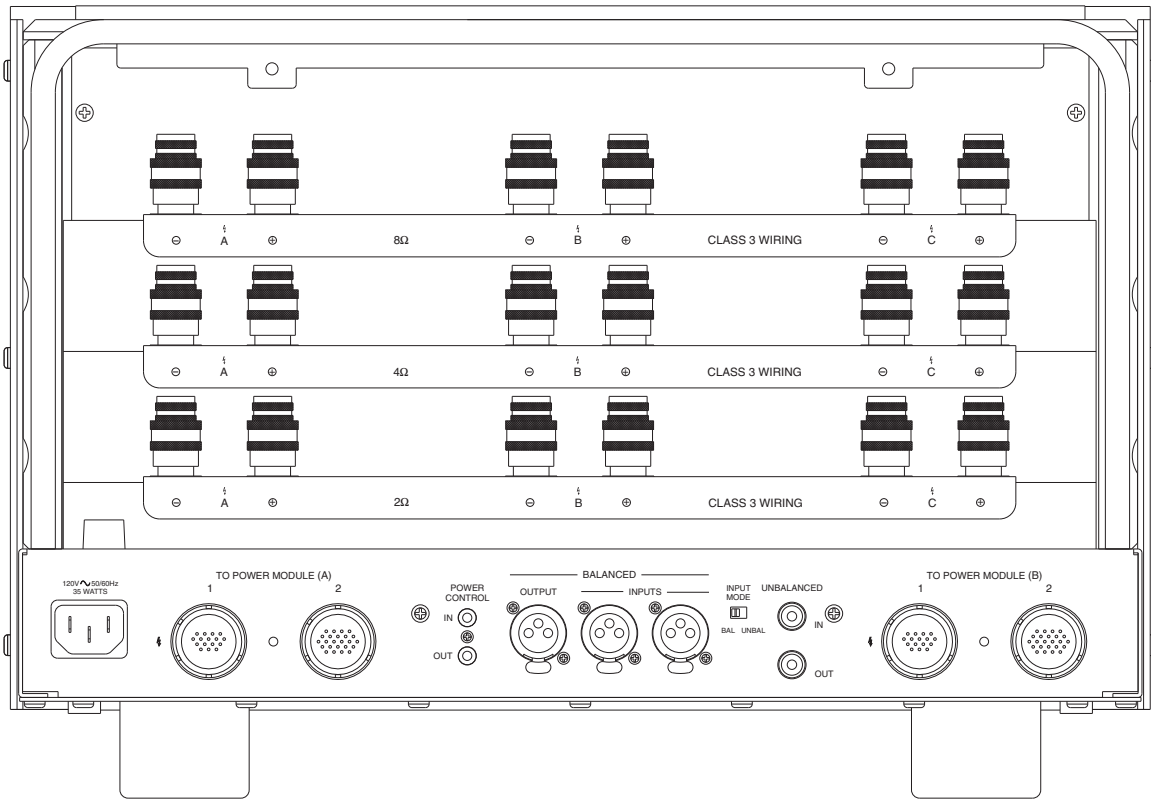
## 5 CAPACITOR PCB 050217

C2	CAP MONO .01UF 50V 20% X7R	061304
C3	CAP ELECT 47UF 35V	066446
C4	CAP ELECT 47UF 35V	066446
C5	CAP MONO .01UF 50V 20% X7R	061304
C8	CAP DISC MONO .47UF 50V	061249
C10	CAP POLYPROP 1uF 160V 5%	064451
C11	CAP POLYPROP 1uF 160V 5%	064451
D1	DIODE SILICON	070047
D2	DIODE SILICON	070047
D3	DIODE SILICON	070047
D4	DIODE SILICON	070047
D5	DIODE SILICON	070047
D6	DIODE SILICON	070047
D7	DIODE SILICON	070047
GP1	STANDOFF 6-32 X 1/4 PCB MNT	112130
GP2	STANDOFF 6-32 X 1/4 PCB MNT	112130
GP3	STANDOFF 6-32 X 1/4 PCB MNT	112130
GP4	STANDOFF 6-32 X 1/4 PCB MNT	112130
HS1	HEATSINK	018787
J1	CONN 8 POS M FRICTION LOCK	117275
J2	BLADE FASTON W/FEET	117708
J3	CONN 3 POS M MTS100 NRML	117214
J4	CONN 2 POS RIGHT ANGLE	117274
J5	BLADE FASTON W/FEET	117708

## 6A 6B LOGO AND LOGOB PCB 050218

DS1	LED GR 5MM HI-INT VF[V] 3.5	058165
DS2	LED GR 5MM HI-INT VF[V] 3.5	058165
DS3	LED GR 5MM HI-INT VF[V] 3.5	058165
DS4	LED GR 5MM HI-INT VF[V] 3.5	058165
DS5	LED GR 5MM HI-INT VF[V] 3.5	058165
DS6	LED GR 5MM HI-INT VF[V] 3.5	058165
DS7	LED GR 5MM HI-INT VF[V] 3.5	058165
DS8	LED GR 5MM HI-INT VF[V] 3.5	058165
DS9	LED GR 5MM HI-INT VF[V] 3.5	058165
J1	CONN 4 PIN	117215
J2	CONN 3 POS M MTS100 NRML	117214
J5	CONN 3 POS M MTS100 NRML	117214
R1	RES MF 1.65K 1% 1/4W	144093
R2	RES MF 1.65K 1% 1/4W	144093
R3	RES MF 1.65K 1% 1/4W	144093
R4	RES MF 1.65K 1% 1/4W	144093
R9	RES MF 1K 1% 1/4W	144090

# REAR PANEL



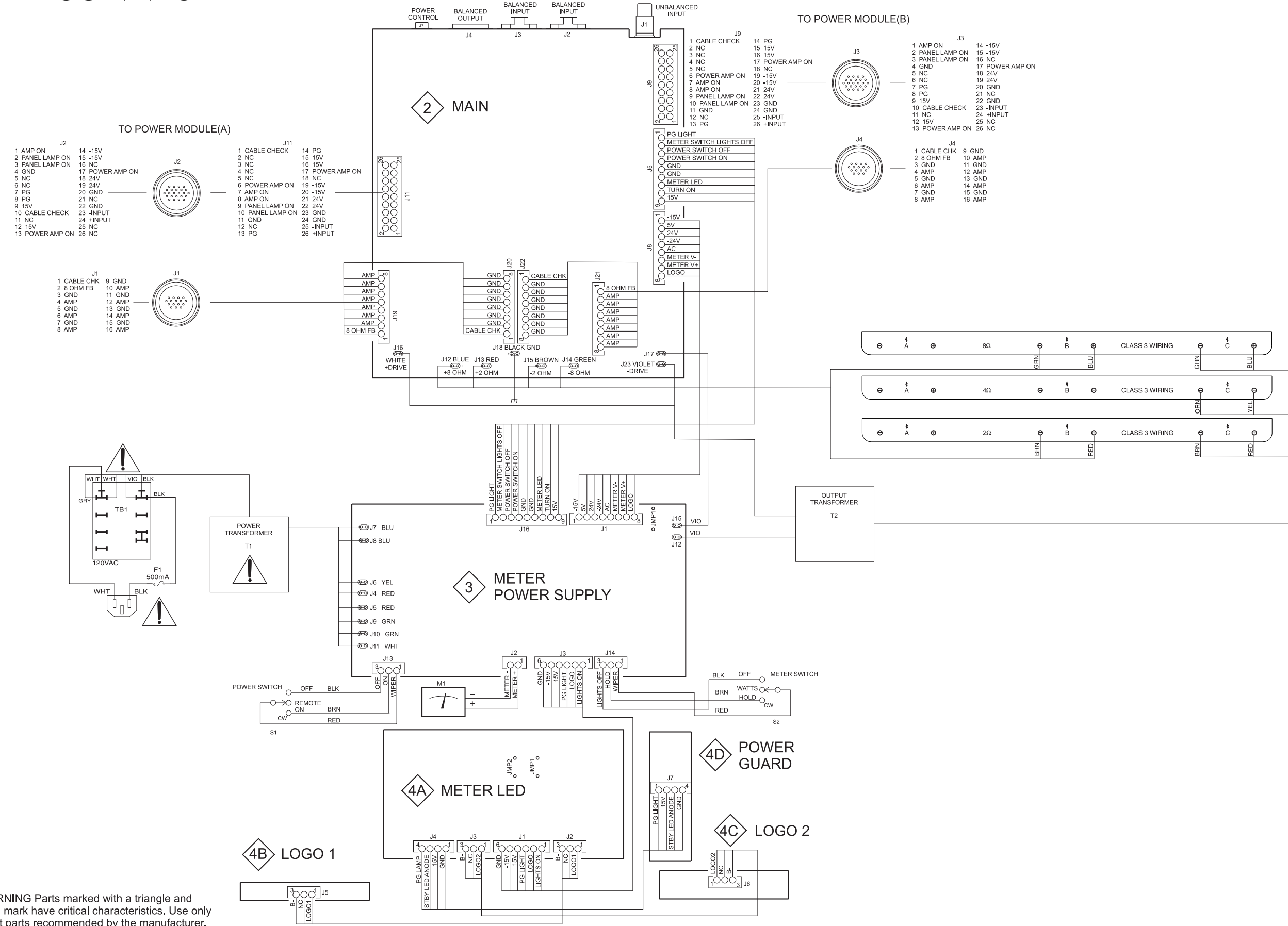
# SECTION LOCATION

TOP VIEW WITH COVER REMOVED

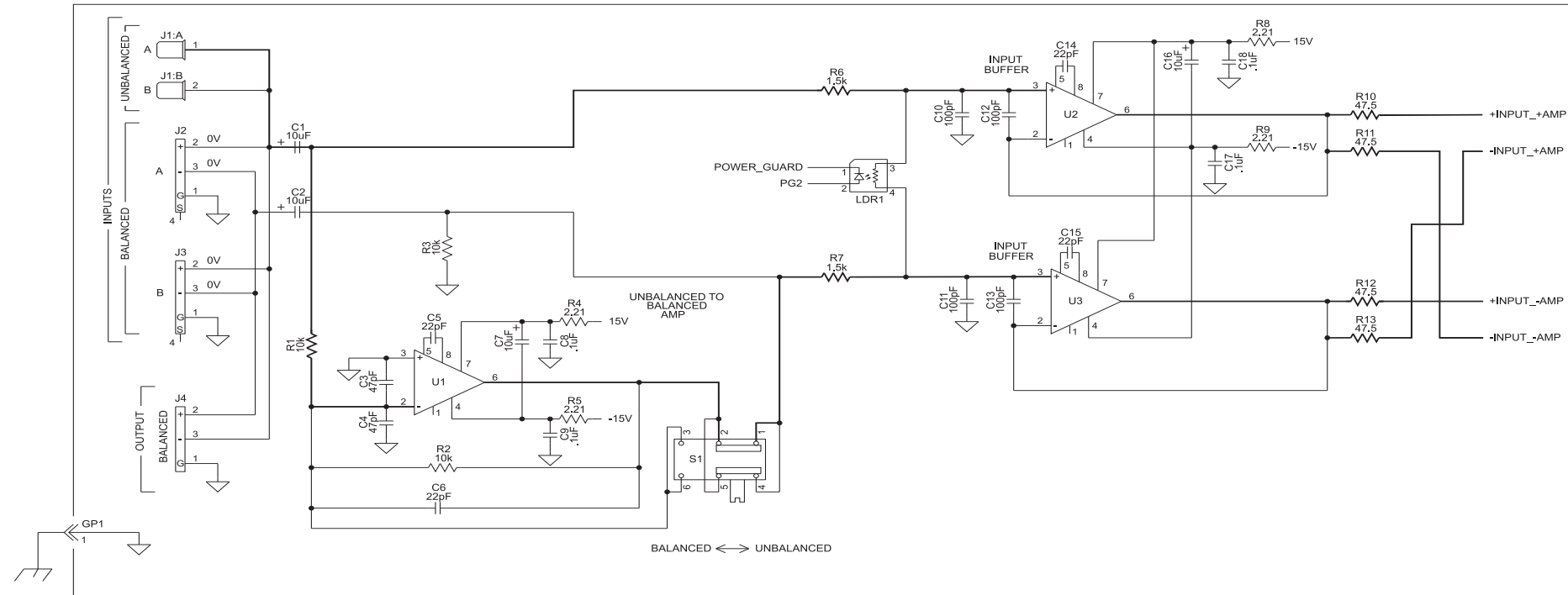


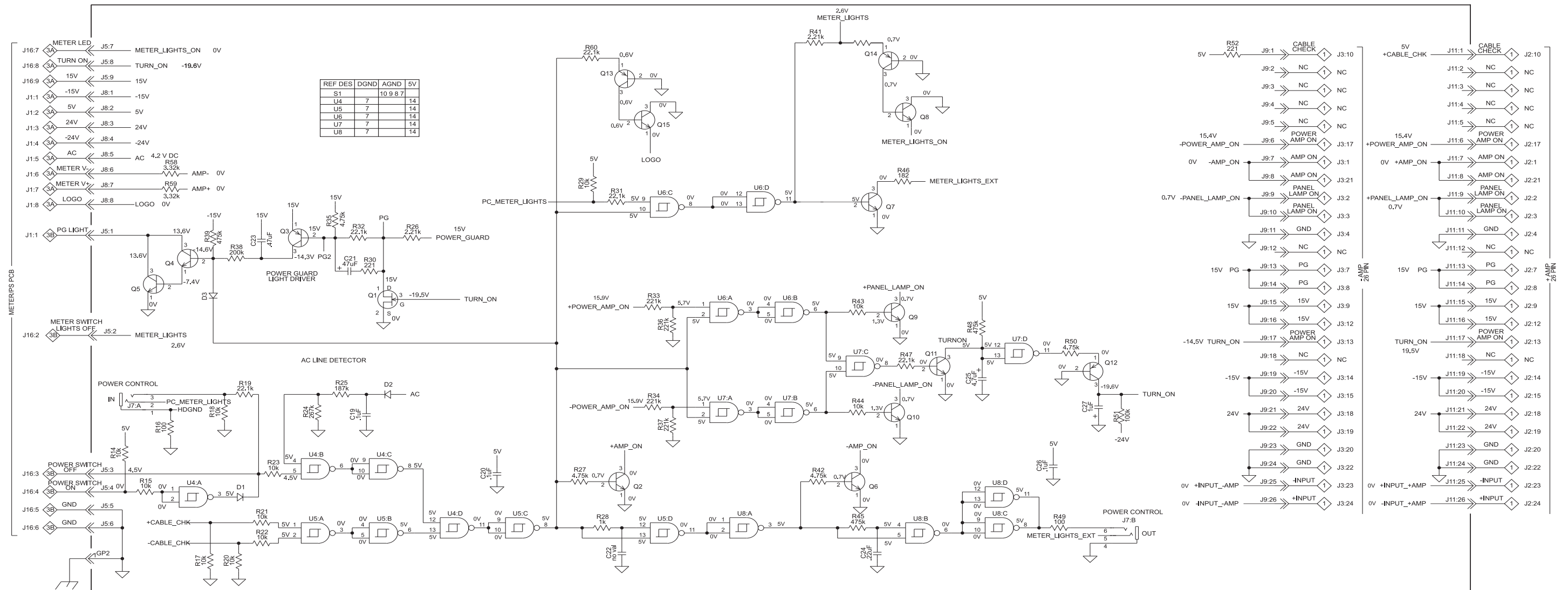
**MC2KW**  
OUTPUT

**1 INTERCONNECT**

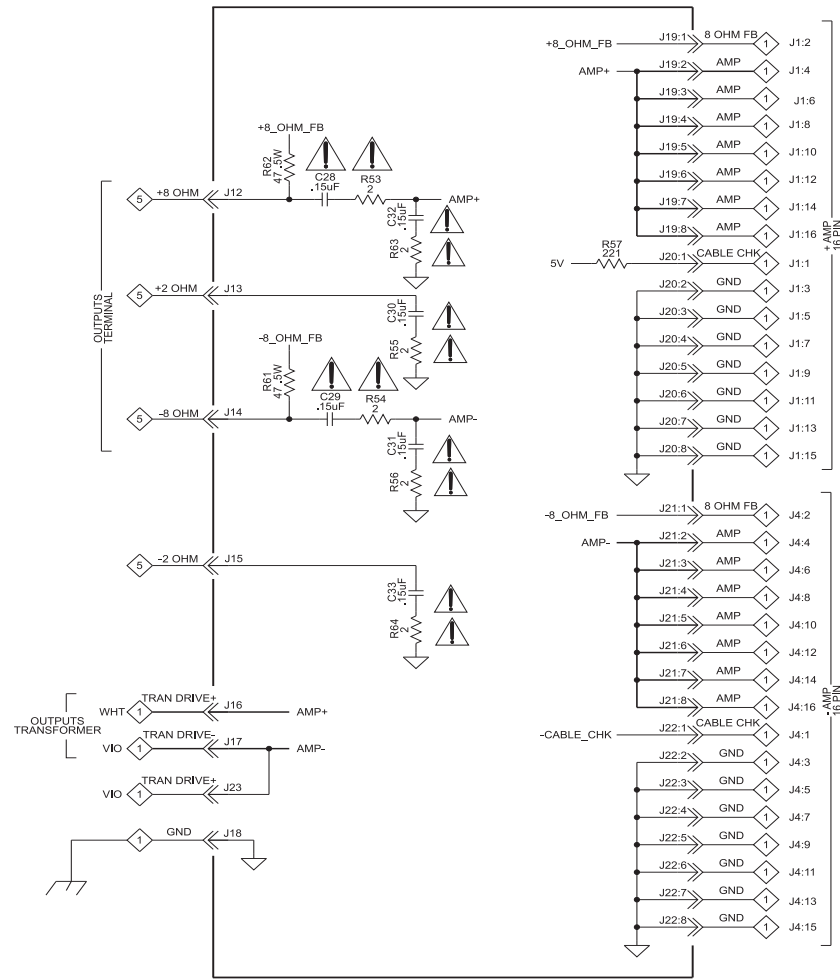


**!** WARNING Parts marked with a triangle and exclamation mark have critical characteristics. Use only replacement parts recommended by the manufacturer.



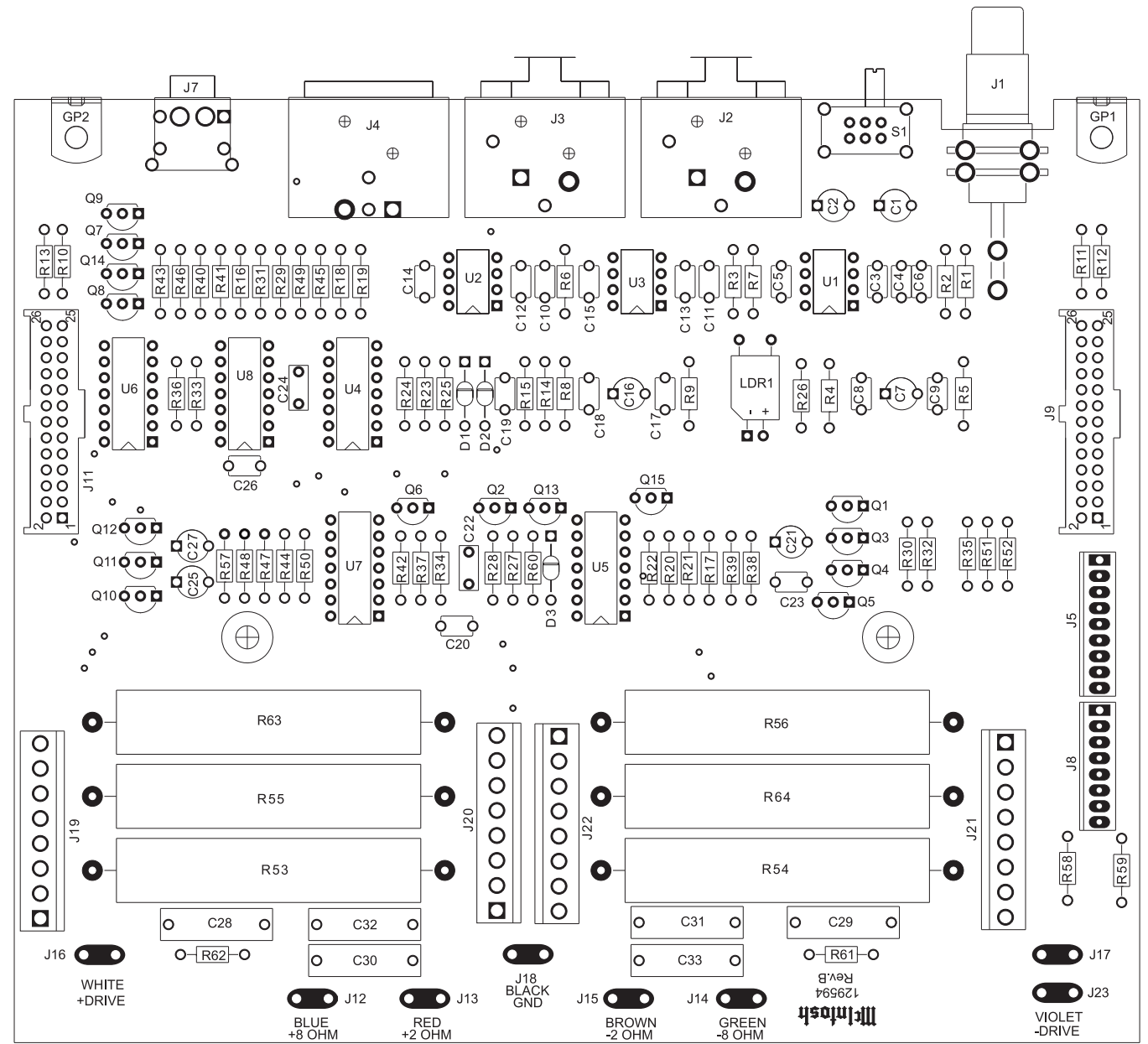


**2** MAIN 050219 SCH 3 OF 3

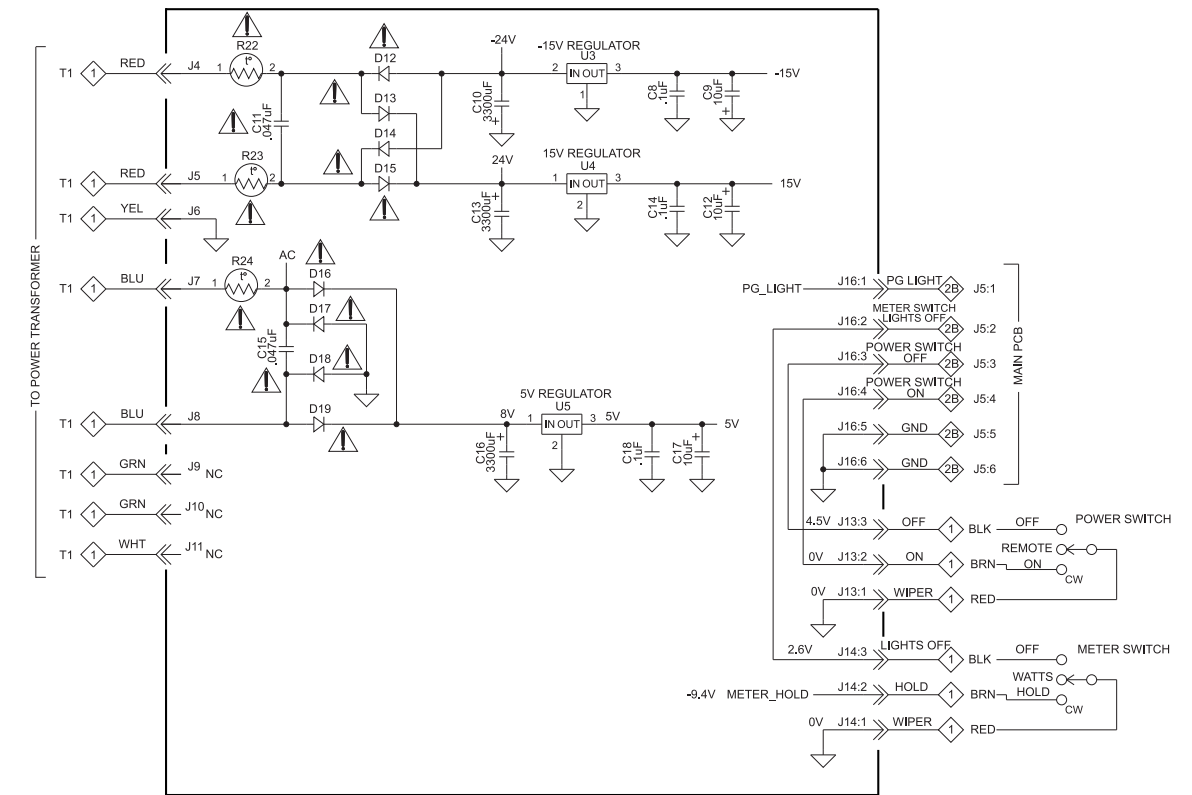
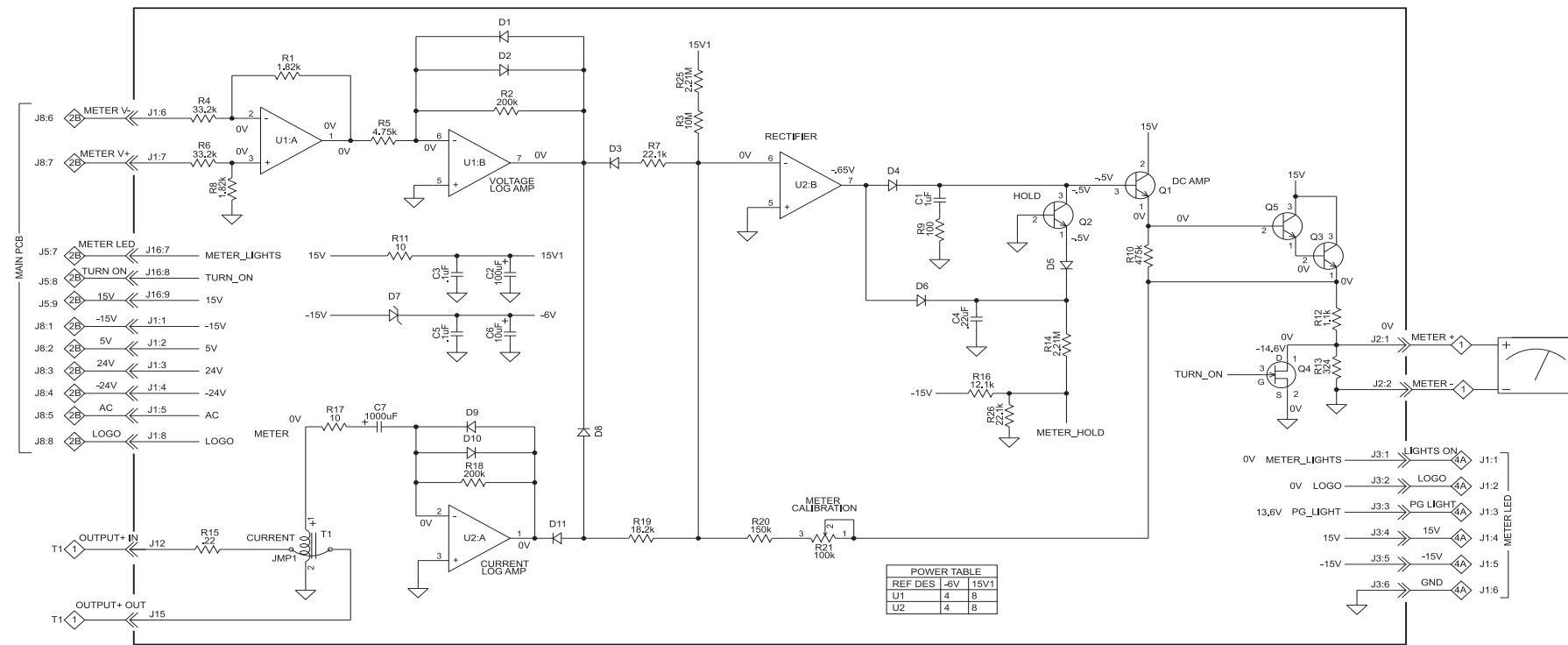


**!** WARNING Parts marked with a triangle and exclamation mark have critical characteristics. Use only replacement parts recommended by the manufacturer.

**2** MAIN 050219 PCB

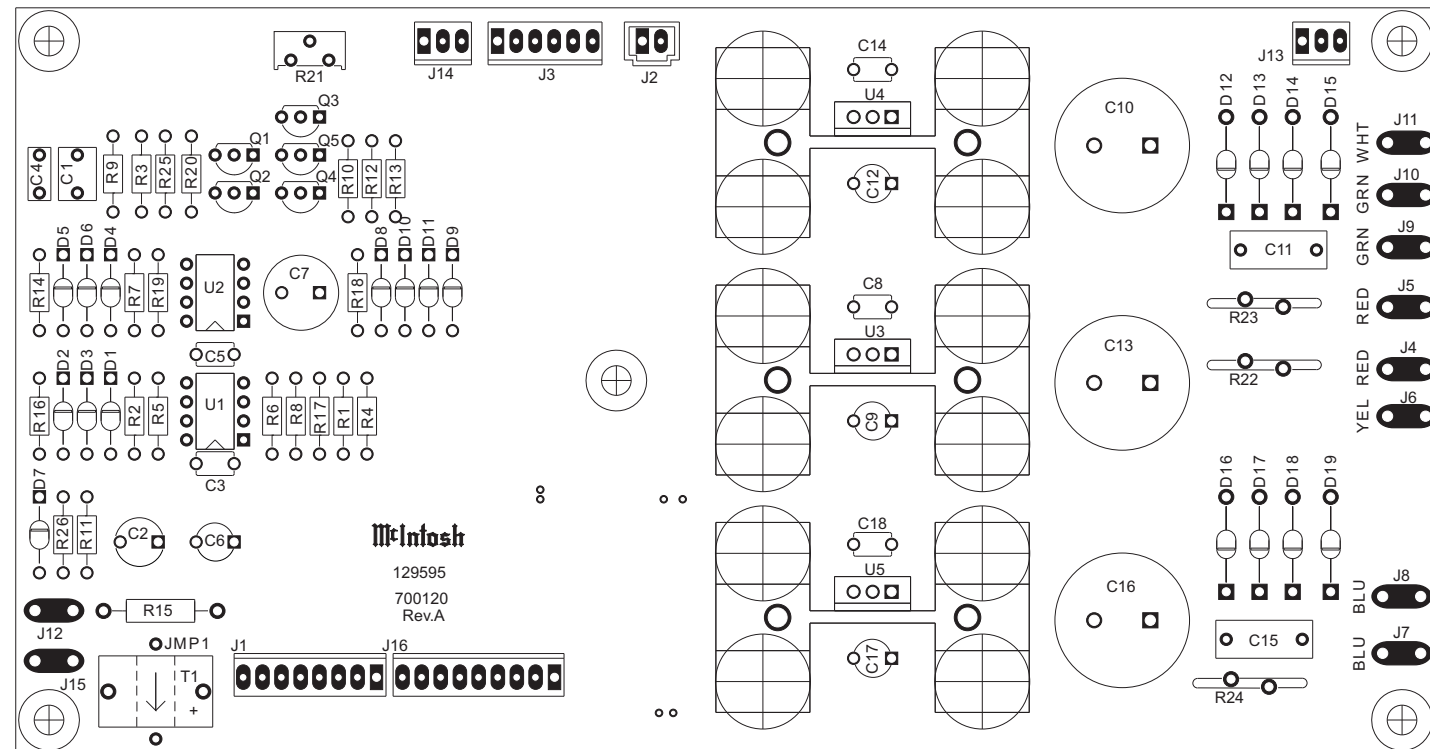


### 3 METER POWER SUPPLY 050220 SCH



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

# 3 METER POWER SUPPLY 050220 PCB



MC2KW

OUTPUT

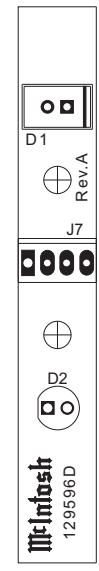
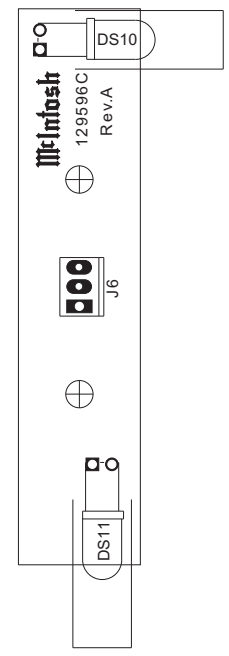
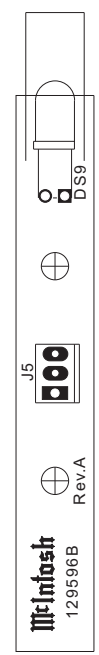
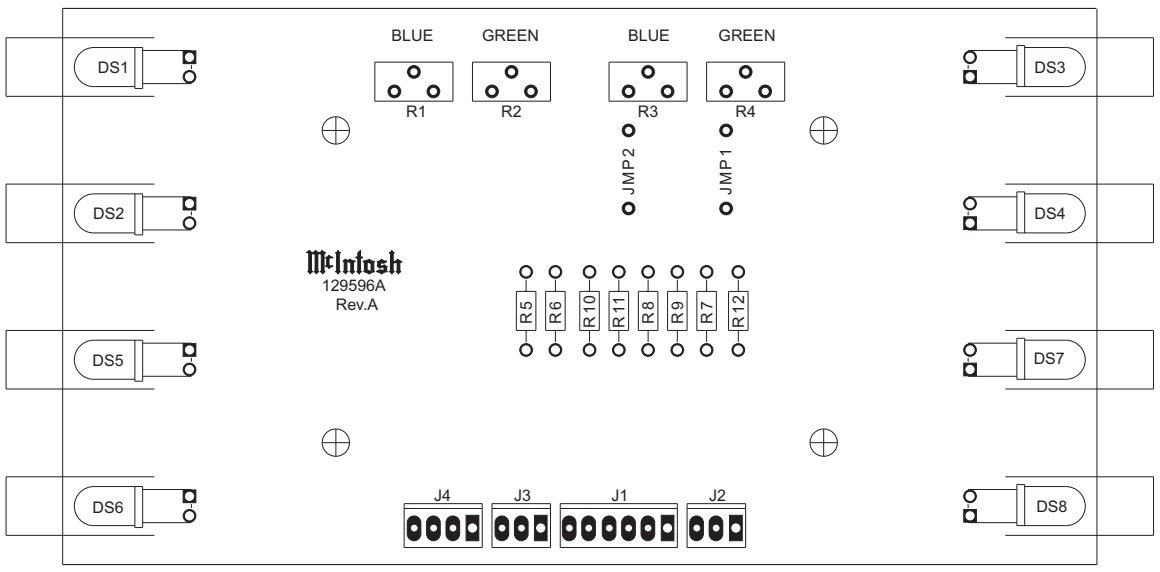
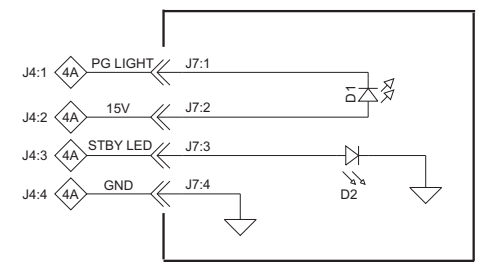
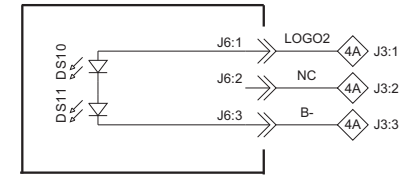
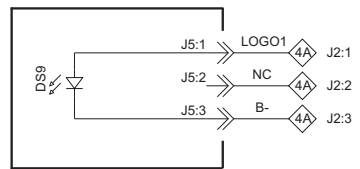
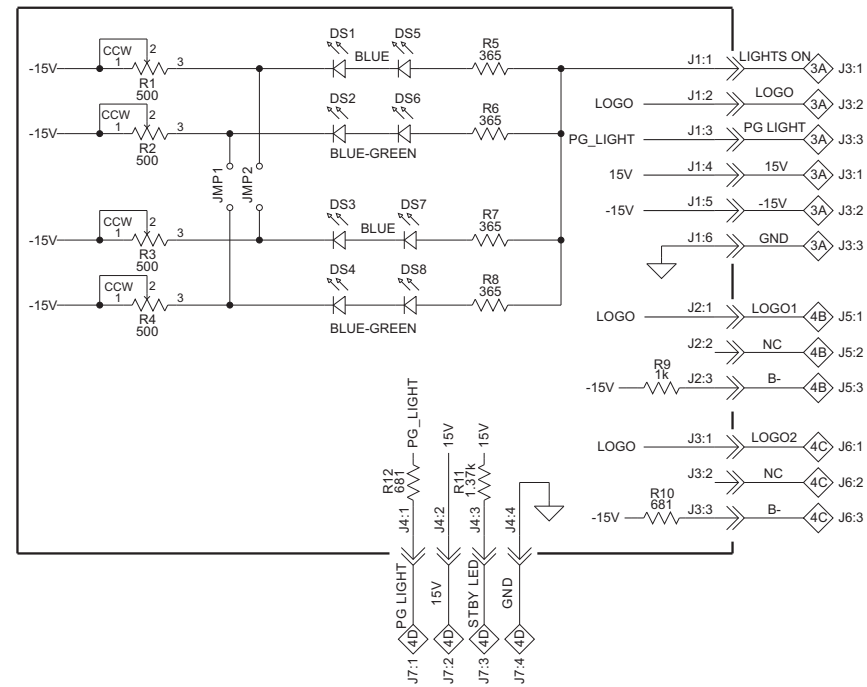
LOGO1

4A METER LED 050221 SCH and PCB

4B

4C LOGO2

4D POWER GUARD



# PARTS LIST

Ref. No.	Description	Part No.	Ref. No.	Description	Part No.	Ref. No.	Description	Part No.
<b>◇ INTERCONNECT</b>			J9	HEADER SHROUDED 2ROW 26PIN V	117870	R30	RES MF 221 OHM 1% 1/4W	144172
J1	CABLE ASSY 16 COND	171746	J11	HEADER SHROUDED 2ROW 26PIN V	117870	R31	RES MF 22.1K 1% 1/4W	144187
J2	CABLE ASSY 24 COND	171745	J12	BLADE FASTON W/FEET	117708	R32	RES MF 22.1K 1% 1/4W	144187
J3	CABLE ASSY 24 COND	171745	J13	BLADE FASTON W/FEET	117708	R33	RES MF 221K 1% 1/4W	144421
J4	CABLE ASSY 16 COND	171746	J14	BLADE FASTON W/FEET	117708	R34	RES MF 221K 1% 1/4W	144421
M1	METER MC2KW	124090	J15	BLADE FASTON W/FEET	117708	R35	RES MF 4.75K 1% 1/4W	144097
S1	SWITCH ASSY POWER/METER	052126	J16	BLADE FASTON W/FEET	117708	R36	RES MF 221K 1% 1/4W	144421
S2	SWITCH ASSY POWER/METER	052126	J17	BLADE FASTON W/FEET	117708	R37	RES MF 221K 1% 1/4W	144421
T1	TRANSFORMER POWER	159340	J18	BLADE FASTON W/FEET	117708	R38	RES MF 200K 1% 1/4W	144117
T2	TRANSFORMER OUTPUT	050236	J19	HEADER 8 PIN MTA-156	117717	R39	RES MF 475K 1% 1/4W	144364
16	PIN CABLE	171620	J20	HEADER 8 PIN MTA-156	117717	R40	RES MF 22.1K 1% 1/4W	144187
24	PIN CABLE	171611	J21	HEADER 8 PIN MTA-156	117717	R41	RES MF 2.21K 1% 1/4W	144298
<b>◇ MAIN PCB 050219</b>			J22	HEADER 8 PIN MTA-156	117717	R42	RES MF 4.75K 1% 1/4W	144097
C1	CAP ELECT 10UF 50V	066445	J23	BLADE FASTON W/FEET	117708	R43	RES MF 10K 1% 1/4W	144053
C2	CAP ELECT 10UF 50V	066445	LDR1	LDR NETWORK	144179	R44	RES MF 10K 1% 1/4W	144053
C3	CAP MONO 47PF 200V 10%	061299	Q1	TRANSISTOR N JFET	132222	R45	RES MF 475K 1% 1/4W	144364
C4	CAP MONO 47PF 200V 10%	061299	Q2	TRANSISTOR NPN SILICON	132171	R46	RES MF 182 OHM 1% 1/4W	144273
C5	CAP MONO 22PF 200V 10%	061298	Q3	TRANSISTOR PNP	132224	R47	RES MF 22.1K 1% 1/4W	144187
C6	CAP MONO 22PF 200V 10%	061298	Q4	TRANSISTOR NPN	132223	R48	RES MF 475K 1% 1/4W	144364
C7	CAP ELECT 10UF 50V	066445	Q5	TRANSISTOR NPN	132223	R49	RES MF 100 OHM 1% 1/4W	144196
C8	CAP MONO .1UF 50V 20%	061305	Q6	TRANSISTOR NPN SILICON	132171	R50	RES MF 4.75K 1% 1/4W	144097
C9	CAP MONO .1UF 50V 20%	061305	Q7	TRANSISTOR NPN	132223	R51	RES MF 100K 1% 1/4W	144113
C10	CAP MONO 100PF 100V 10%	061300	Q8	TRANSISTOR NPN SILICON	132171	R52	RES MF 221 OHM 1% 1/4W	144172
C11	CAP MONO 100PF 100V 10%	061300	Q9	TRANSISTOR NPN	132223	R53	RES WW 2 OHM 10W 5%	139085
C12	CAP MONO 100PF 100V 10%	061300	Q10	TRANSISTOR NPN	132223	R54	RES WW 2 OHM 10W 5%	139085
C13	CAP MONO 100PF 100V 10%	061300	Q11	TRANSISTOR NPN	132223	R55	RES WW 2 OHM 10W 5%	139085
C14	CAP MONO 22PF 200V 10%	061298	Q12	TRANSISTOR PNP SILICON	132172	R56	RES WW 2 OHM 10W 5%	139085
C15	CAP MONO 22PF 200V 10%	061298	Q13	TRANSISTOR PNP	132224	R57	RES MF 221 OHM 1% 1/4W	144172
C16	CAP ELECT 10UF 50V	066445	Q14	TRANSISTOR PNP	132224	R58	RES MF 3.32K 1% 1/4W	144095
C17	CAP MONO .1UF 50V 20%	061305	Q15	TRANSISTOR NPN SILICON	132171	R59	RES MF 3.32K 1% 1/4W	144095
C18	CAP MONO .1UF 50V 20%	061305	R1	RES MF 10K 1% 1/4W	144053	R60	RES MF 22.1K 1% 1/4W	144187
C19	CAP MONO .1UF 50V 20%	061305	R2	RES MF 10K 1% 1/4W	144053	R61	RES MET OX 47 OHM .5W 5%	137096
C20	CAP MONO .1UF 50V 20%	061305	R3	RES MF 10K 1% 1/4W	144053	R62	RES MET OX 47 OHM .5W 5%	137096
C21	CAP ELECT 47UF 35V	066446	R4	RES MF 2.21 OHM 1% 1/4W	144378	R63	RES WW 2 OHM 10W 5%	139085
C22	CAP MPF 0.22UF 5% 63VDC	064329	R5	RES MF 2.21 OHM 1% 1/4W	144378	R64	RES WW 2 OHM 10W 5%	139085
C23	CAP DISC MONO .47UF 50V	061249	R6	RES MF 1.5K 1% 1/4W	144128	S1	SWITCH SLIDE	148059
C24	CAP MPF 0.22UF 5% 63VDC	064329	R7	RES MF 1.5K 1% 1/4W	144128	U1	IC OPERATIONAL AMP LOW NOISE	133067
C25	CAP ELECT 4.7UF 50V	066512	R8	RES MF 2.21 OHM 1% 1/4W	144378	U2	IC OPERATIONAL AMP LOW NOISE	133067
C26	CAP MONO .1UF 50V 20%	061305	R9	RES MF 2.21 OHM 1% 1/4W	144378	U3	IC OPERATIONAL AMP LOW NOISE	133067
C27	CAP ELECT 1UF 50V	066510	R10	RES MF 47.5 OHM 1% 1/4W	144442	U4	IC NAND SCHMIT 2-IN X 4	133192
C28	CAP PLYPROP 0.15UF 10% 250VDC	064363	R11	RES MF 47.5 OHM 1% 1/4W	144442	U5	IC NAND SCHMIT 2-IN X 4	133192
C29	CAP PLYPROP 0.15UF 10% 250VDC	064363	R12	RES MF 47.5 OHM 1% 1/4W	144442	U6	IC NAND SCHMIT 2-IN X 4	133192
C30	CAP PLYPROP 0.15UF 10% 250VDC	064363	R13	RES MF 47.5 OHM 1% 1/4W	144442	U7	IC NAND SCHMIT 2-IN X 4	133192
C31	CAP PLYPROP 0.15UF 10% 250VDC	064363	R14	RES MF 10K 1% 1/4W	144053	U8	IC NAND SCHMIT 2-IN X 4	133192
C32	CAP PLYPROP 0.15UF 10% 250VDC	064363	R15	RES MF 10K 1% 1/4W	144053	<b>◇ METER/PS PCB 050220</b>		
C33	CAP PLYPROP 0.15UF 10% 250VDC	064363	R16	RES MF 100 OHM 1% 1/4W	144196	C1	CAP MPF 0.1UF 100V	064337
D1	DIODE SILICON	070047	R17	RES MF 10K 1% 1/4W	144053	C2	CAP ELECT 100UF 25V	066447
D2	DIODE SILICON	070047	R18	RES MF 10K 1% 1/4W	144053	C3	CAP MONO .1UF 50V 20%	061305
D3	DIODE SILICON	070047	R19	RES MF 22.1K 1% 1/4W	144187	C4	CAP MPF 0.22UF 5% 63VDC	064329
GP1	BRACKET PCB CARD MOUNTING	003611	R20	RES MF 10K 1% 1/4W	144053	C5	CAP MONO .1UF 50V 20%	061305
GP2	BRACKET PCB CARD MOUNTING	003611	R21	RES MF 10K 1% 1/4W	144053	C6	CAP ELECT 10UF 50V	066445
J1	JACK PHONO GOLD	117862	R22	RES MF 10K 1% 1/4W	144053	C7	CAP ELECT 1000UF 25V	066513
J2	XLR FML HORIZ PCB WITH LATCH	117814	R23	RES MF 10K 1% 1/4W	144053	C8	CAP MONO .1UF 50V 20%	061305
J3	XLR FMLE HORIZ PCB WITH LATCH	117814	R24	RES MF 267K 1% 1/4W	144118	C9	CAP ELECT 10UF 50V	066445
J4	RECEPTACLE XLR MALE	117686	R25	RES MF 187K 1% 1/4W	144406	C10	CAP ELECT 3300UF 35V	066509
J5	CONN MALE 9 POS FRICTION LOCK	117244	R26	RES MF 2.21K 1% 1/4W	144298	C11	CAP PLYPROP .047UF 10% 250VDC	064364
J7	JACK HEADPHONE DUAL BLACK 1/8	117825	R27	RES MF 4.75K 1% 1/4W	144097	C12	CAP ELECT 10UF 50V	066445
J8	CONN 8 POS MALE FRICTION LOCK	117275	R28	RES MF 1K 1% 1/4W	144090			
			R29	RES MF 10K 1% 1/4W	144053			





# *NOTES*

# REPACKING INSTRUCTION

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 feet are attached to the bottom of the equipment. This will ensure the proper equipment location on the bottom foam pad. Failure to do this will result in shipping damage. Also, to protect the finish of the glass and metal surfaces it is advisable to place the MC2KW Output Module and the MC2KW Power Modules into the original protective cotton blue bag before placing them into the shipping carton.

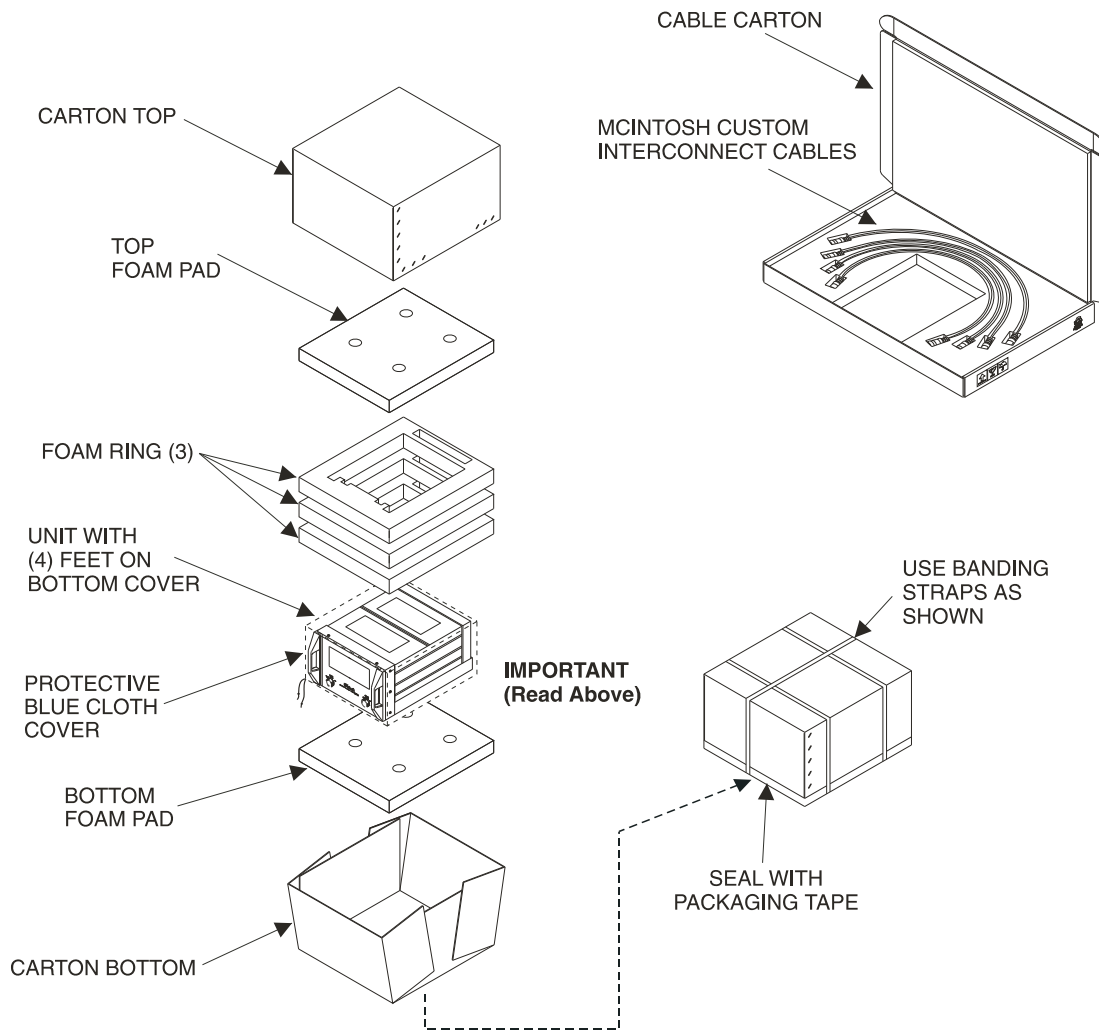
*Note: Unless instructed otherwise, please return the McIntosh Custom Interconnect Cables along with the MC2KW Power Amplifier.*

Use the original shipping carton and interior parts only if they are all in good serviceable condi-

tion. If a shipping carton or any of the interior part(s) are needed, please call or write Customer Service Department of McIntosh Laboratory. Please see the Part List for the correct part numbers.

*Note: The McIntosh MC2KW Output Module and MC2HW Power Module use the same shipping carton.*

Qty.	Part No.	Description
1	034104	Shipping carton bottom
1	034105	Shipping carton top
1	034356	Protective blue cloth cover
4	018445	Feet
3	034349	Foam ring
2	034349	Foam pad (top and bottom)
1	034341	Shipping carton for interconnect cables



**IMPORTANT**  
(Read Above)

# MC2KW

## POWER AMPLIFIER and OUTPUT MODULE

### SERVICE MANUAL

SERIAL NO.

POWER MODULE WJ-A001 And Above  
POWER MODULE WJ-B001 And Above  
OUTPUT MODULE WJ-C001 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 insure, and does not warrant, the accuracy of the within schematic material, which is intended for information only.