

Service
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Service Manual

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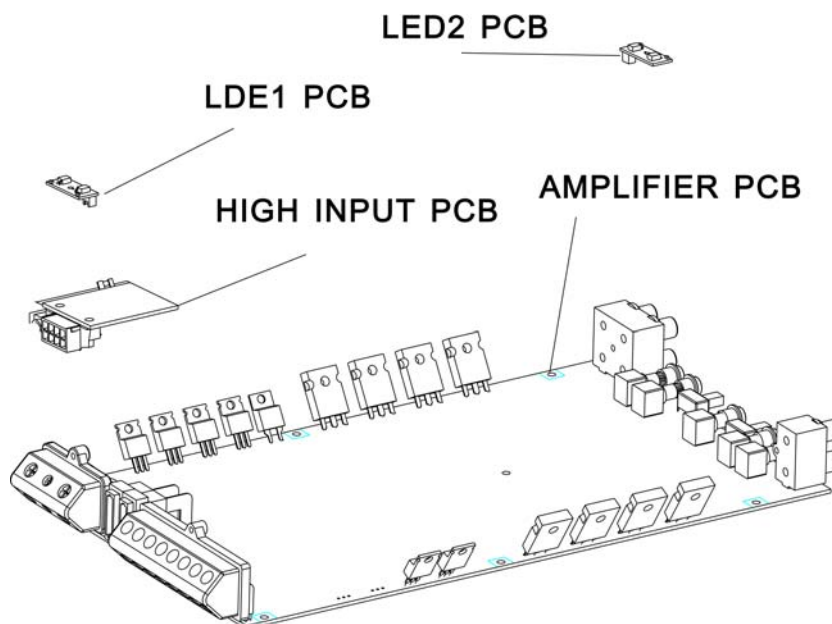
**CLASS 1
LASER PRODUCT**

Version 1.0



PHILIPS

PCBS LOCATION



VERSION VARIATIONS:

Type/versions		CMP400									
Board in used	Service policy	/55									
AMPLIFIER BOARD		C									
HIGE INPUT BOARD		C									
LED1 BOARD		C									
LED2 BOARD		C									
Type/Versions		CMP400									
Features in used	Feature difference										
LINE OUT											
SUBWOOFER OUT											
DIGITAL BOARD											
VOLTAGE SELECTOR											

*TIPS: C --Component Lever Repair

M-- Module Lever Repair

x--Used

SPECIFICATIONS

AMPLIFIER

Output power.....	4x50W RMS/4x100W music power
Signal-to-noise ratio.....	≥ 85 dBA (IEC)
Frequency response.....	10~100KHz ± 3 dB
Impedance loudspeakers.....	4 Ω
Impedance headphones.....	16 Ω

SERVICE AIDS

GB WARNING

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically.
When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance. Keep components and tools also at this potential.

ESD



GB

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified, be used

Safety components are marked by the symbol .

**CLASS 1
LASER PRODUCT**

INFORMATION ABOUT LEAD-FREE SOLDERING

Philips CE is producing lead-free sets from 1.1.2005 onwards.

IDENTIFICATION:

Regardless of special logo (not always indicated) one must treat all sets from 1 Jan 2005 onwards, according next rules:



- On our website www.atyourservice.ce.Philips.com you find more information to:

- * BGA-de-/soldering (+ baking instructions)
- * Heating-profiles of BGAs and other ICs used in Philips-sets
- * Lead free

You will find this and more technical information within the "magazine", chapter "workshop news".

For additional questions please contact your local repair-helpdesk.

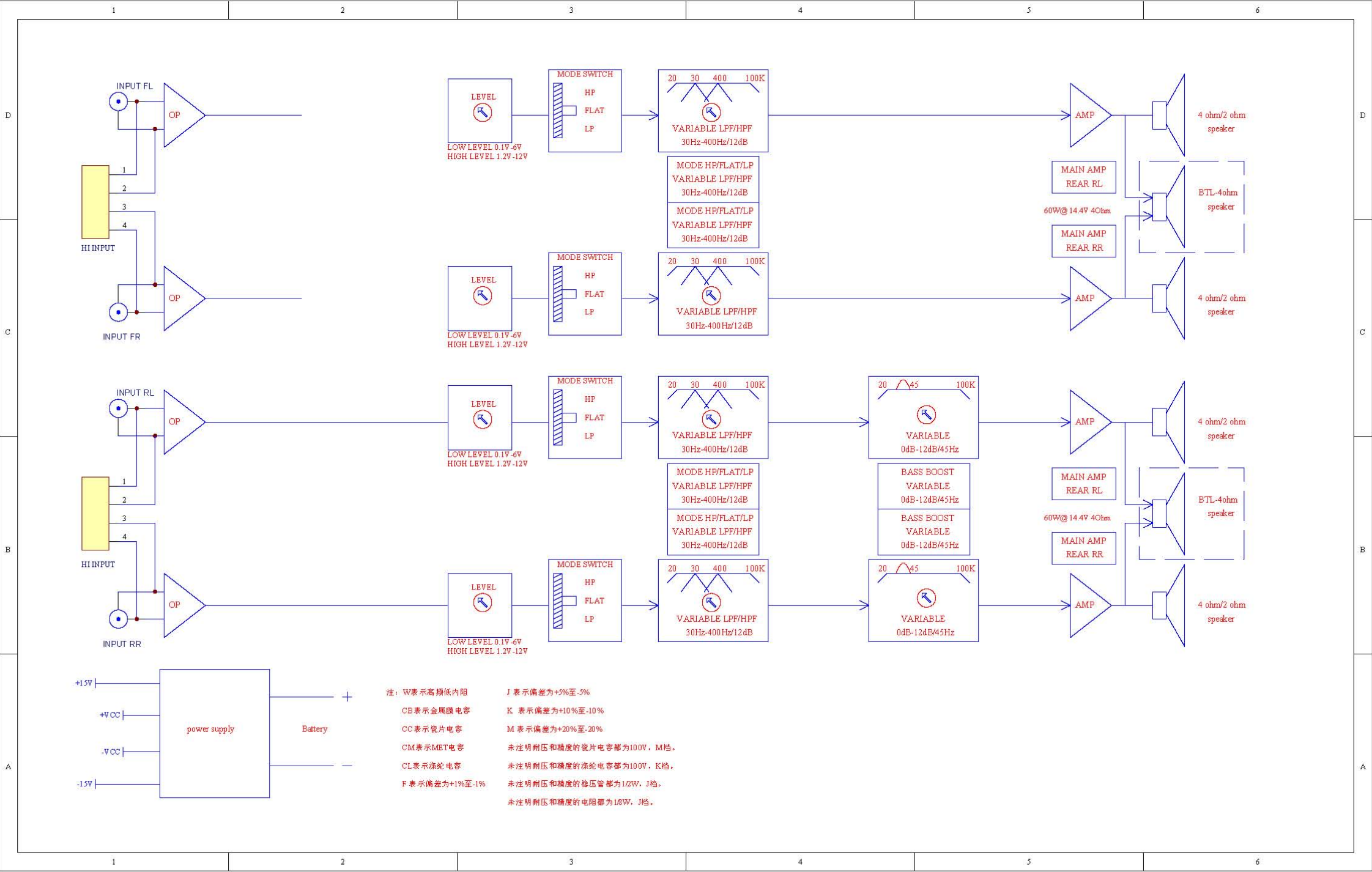
SERVICE INSTRUCTION

Safety regulations require that after a repair, the set must be returned in its original condition. Pay in particular attention to the following points:

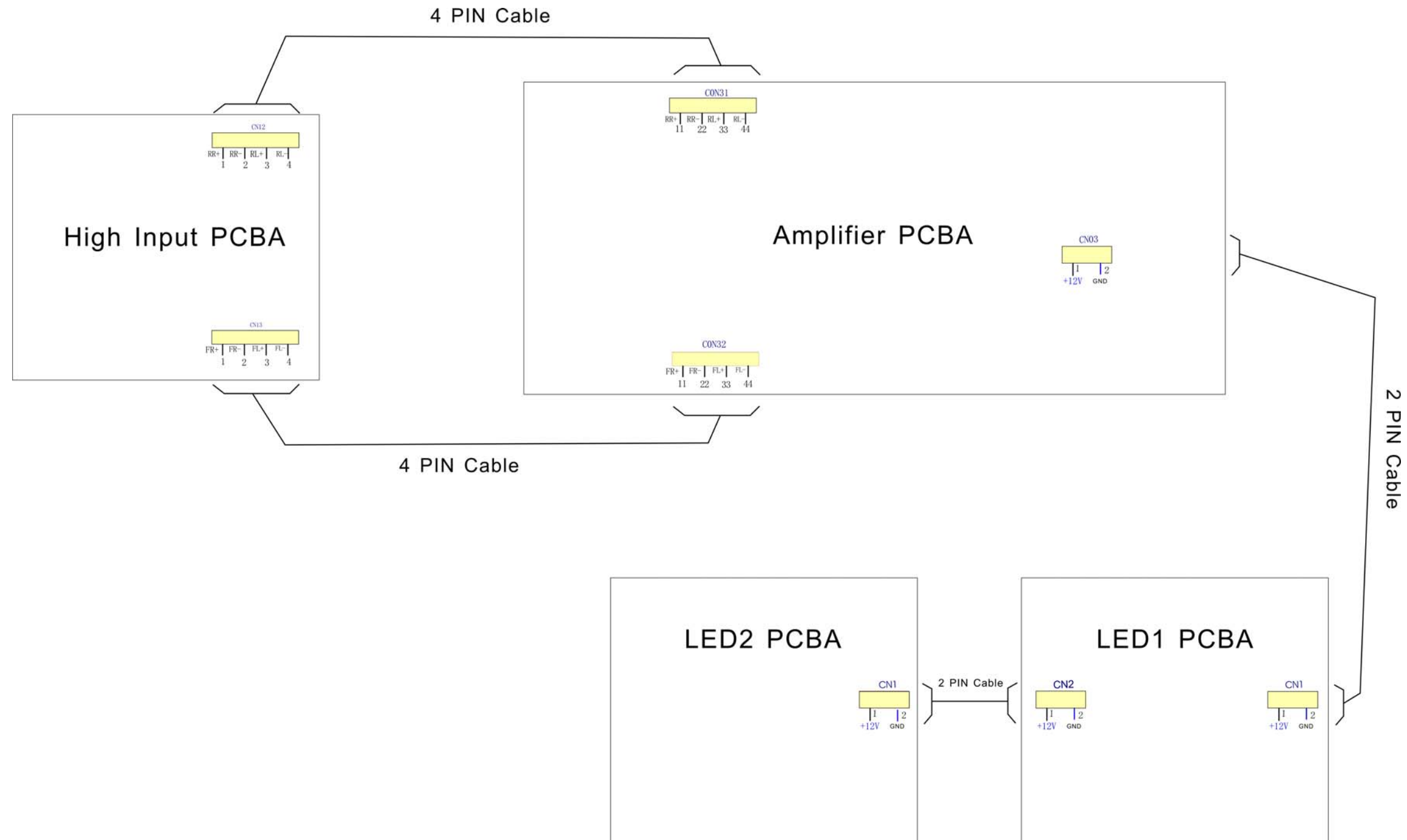
- Route the wire trees correctly and fix them with the mounted cable clamps.
- Check the insulation of the AC Power lead for external damage.
- Check the strain relief of the AC Power cord for proper function.
- Check the electrical DC resistance between the AC Power Plug and the secondary side (only for sets which have a AC Power isolated power supply):
 1. Unplug the AC Power cord and connect a wire between the two pins of the AC Power plug.
 2. Set the AC Power switch to the "on" position (keep the AC Power cord unplugged!).
 3. Measure the resistance value between the pins of the AC Power plug and the metal shielding of the tuner or the aerial connection on the set. The reading should be larger than 4.5 Mohm (For U.S. it should be between 4.2 Mohm and 12 Mohm).
 4. Switch "off" the set, and remove the wire between the two pins of the AC Power plug.
- Check the cabinet for defects, to avoid touching of any inner parts by the customer.

CMP400/55 Circuit Diagram

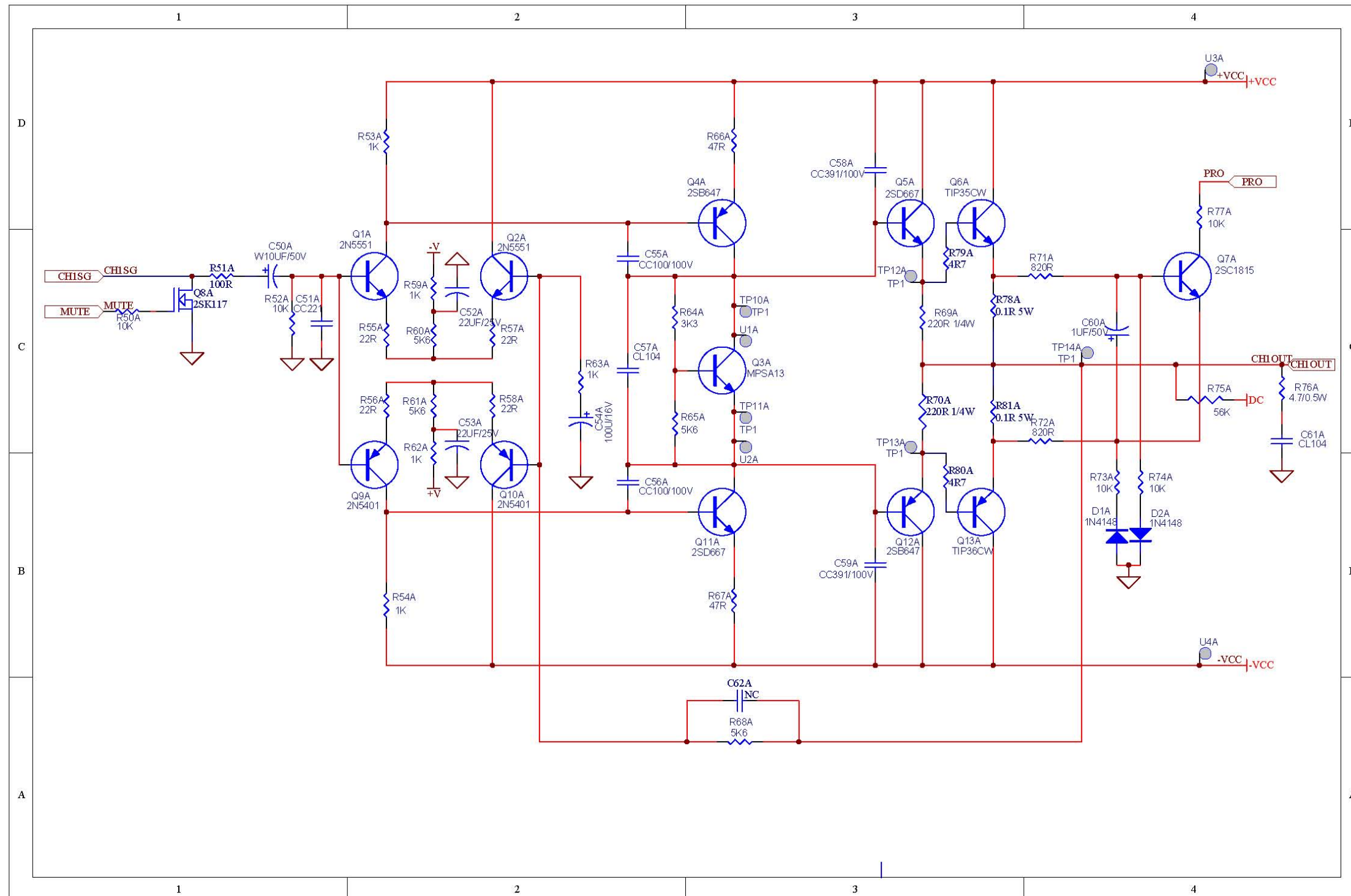
1 Block Diagram

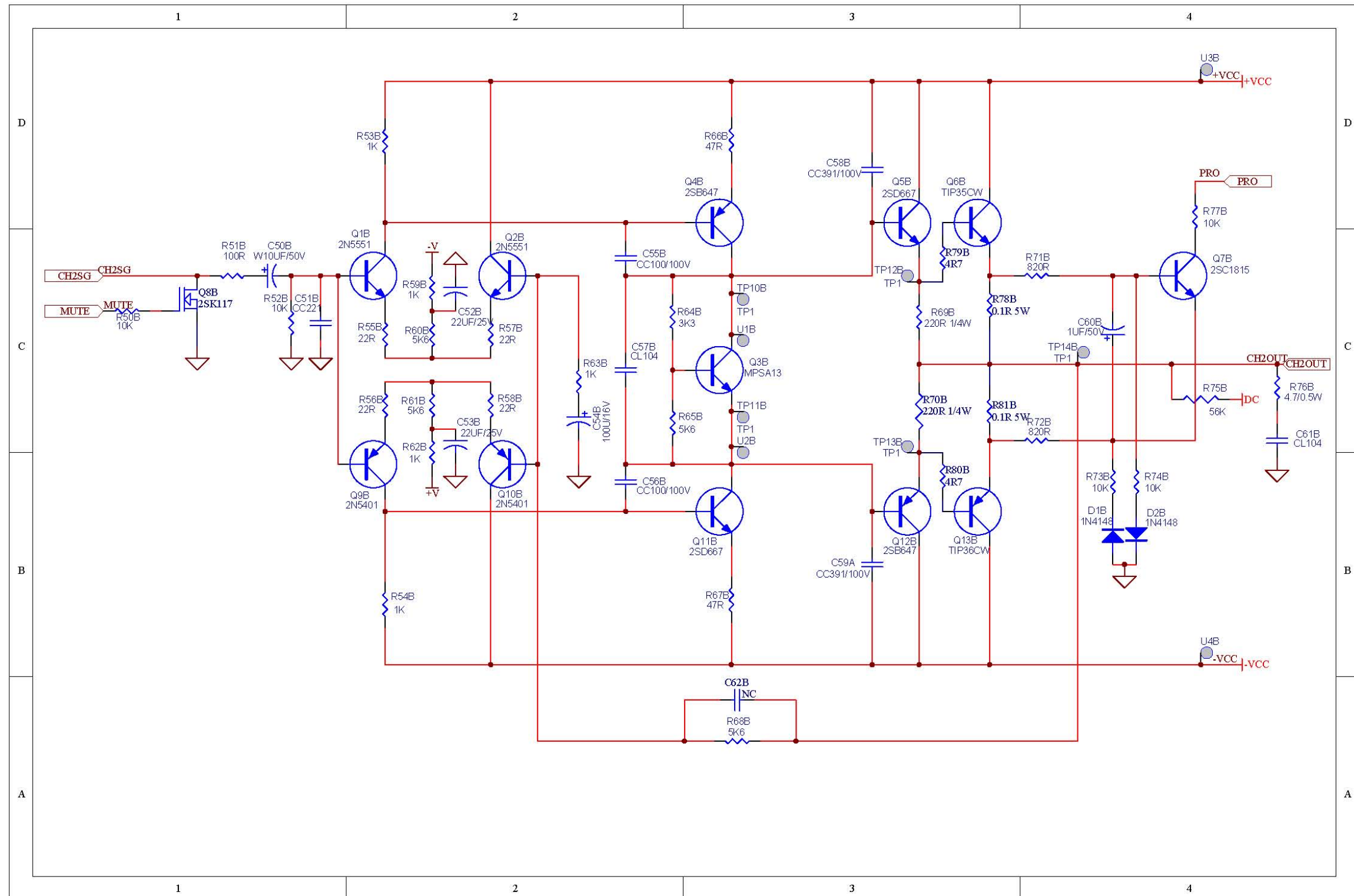


2 Wiring Diagram

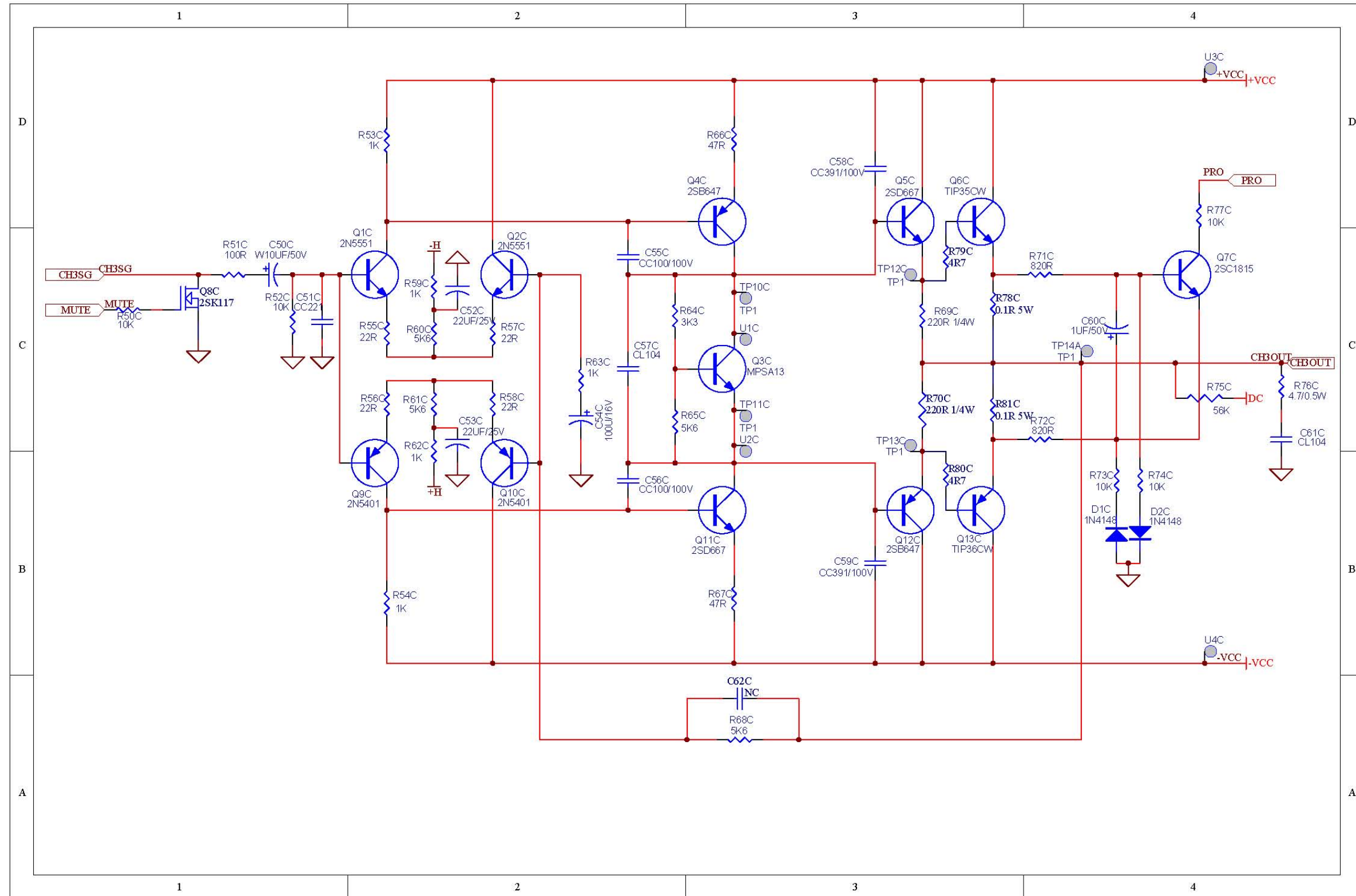


3 1-Channels

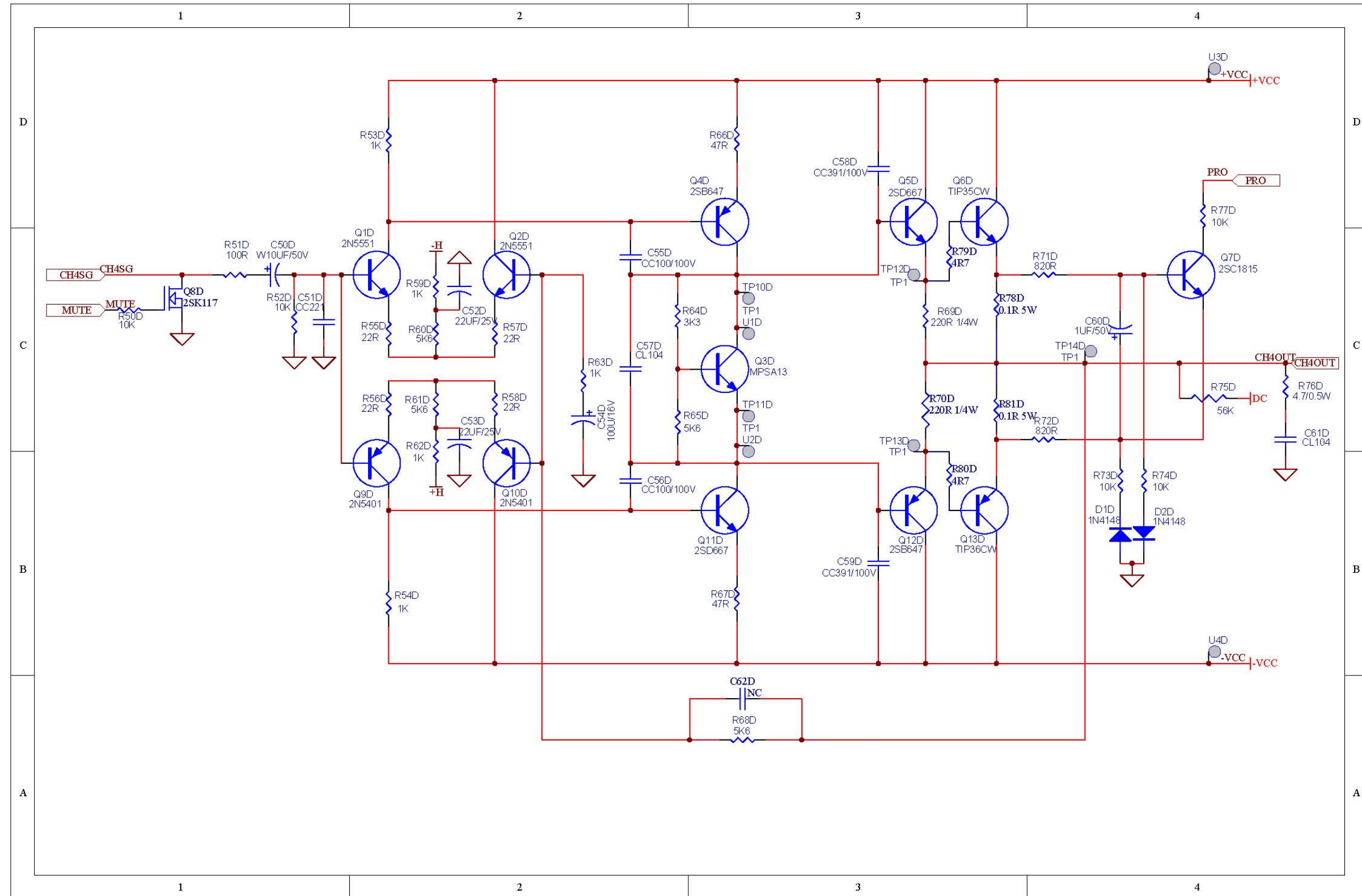




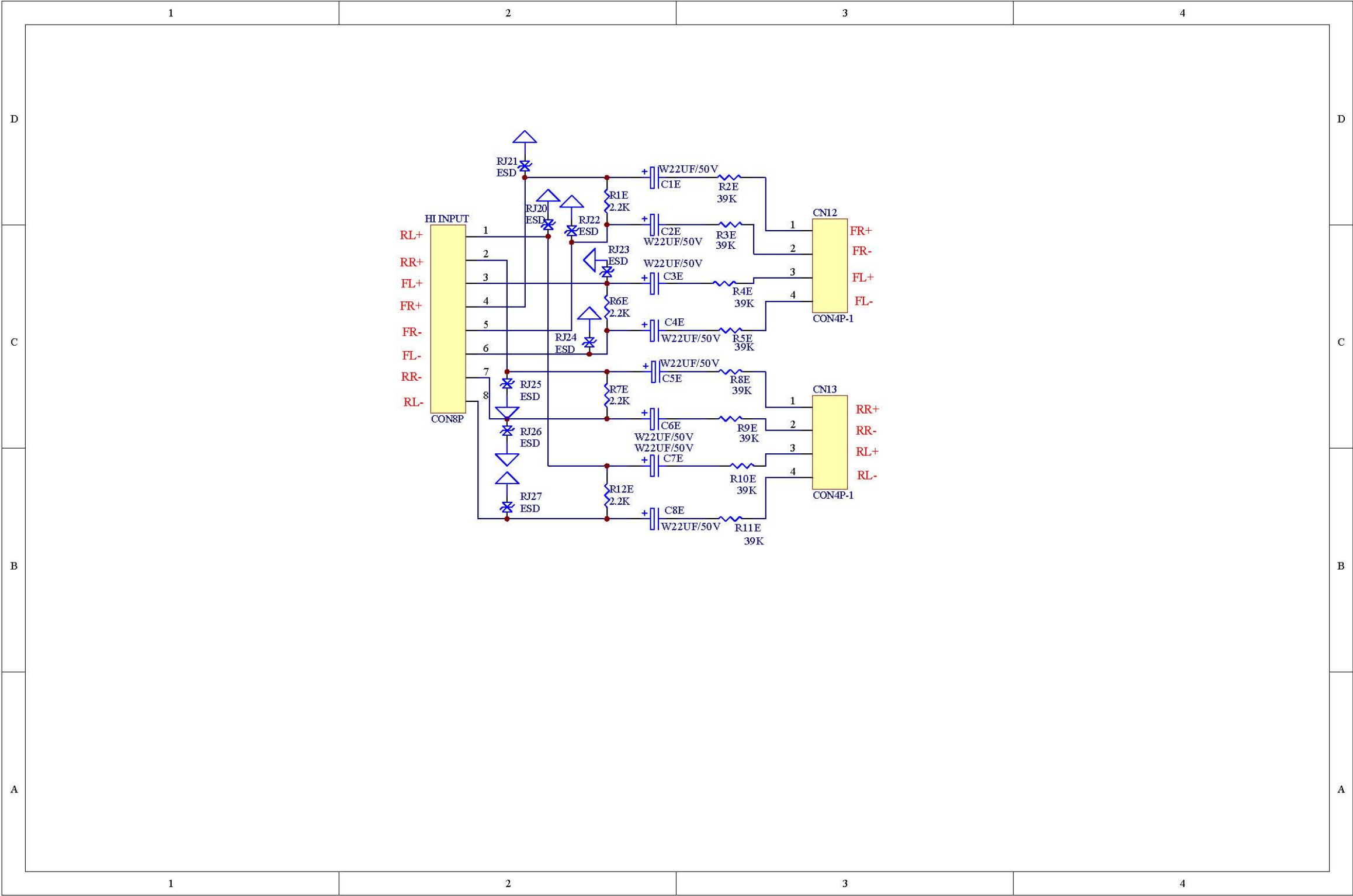
5 3-Channels



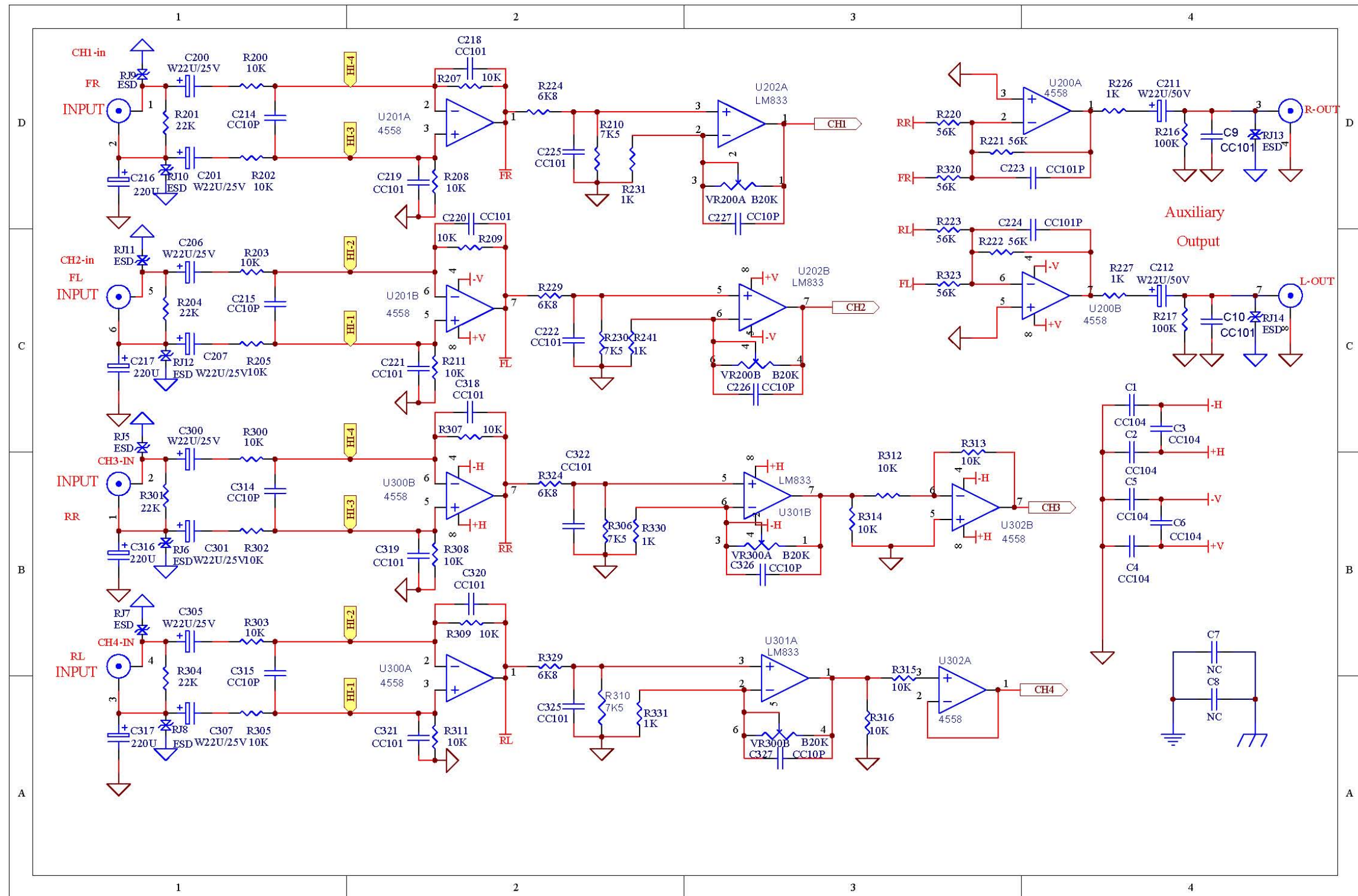
6 4-Channels

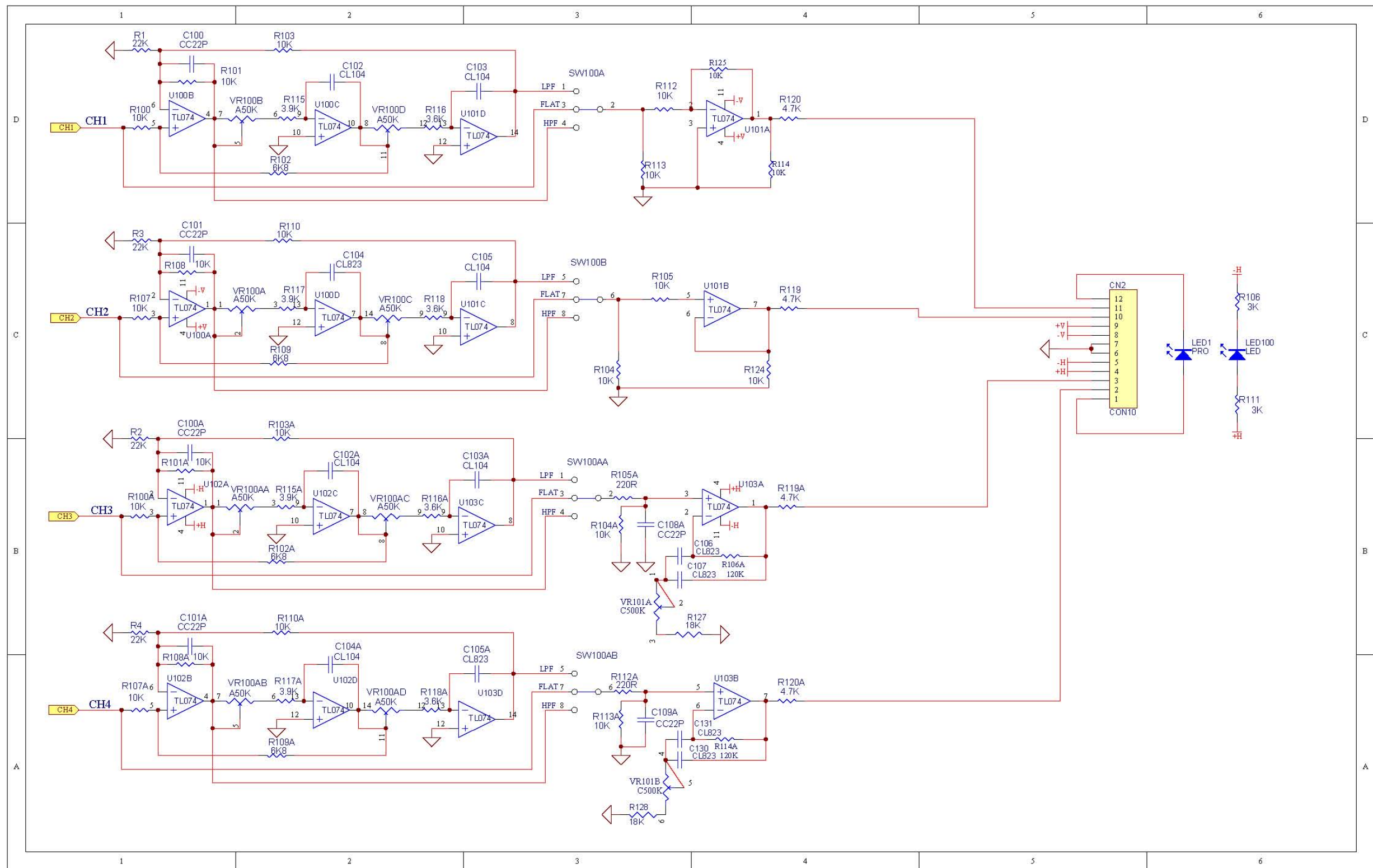


7 High Input

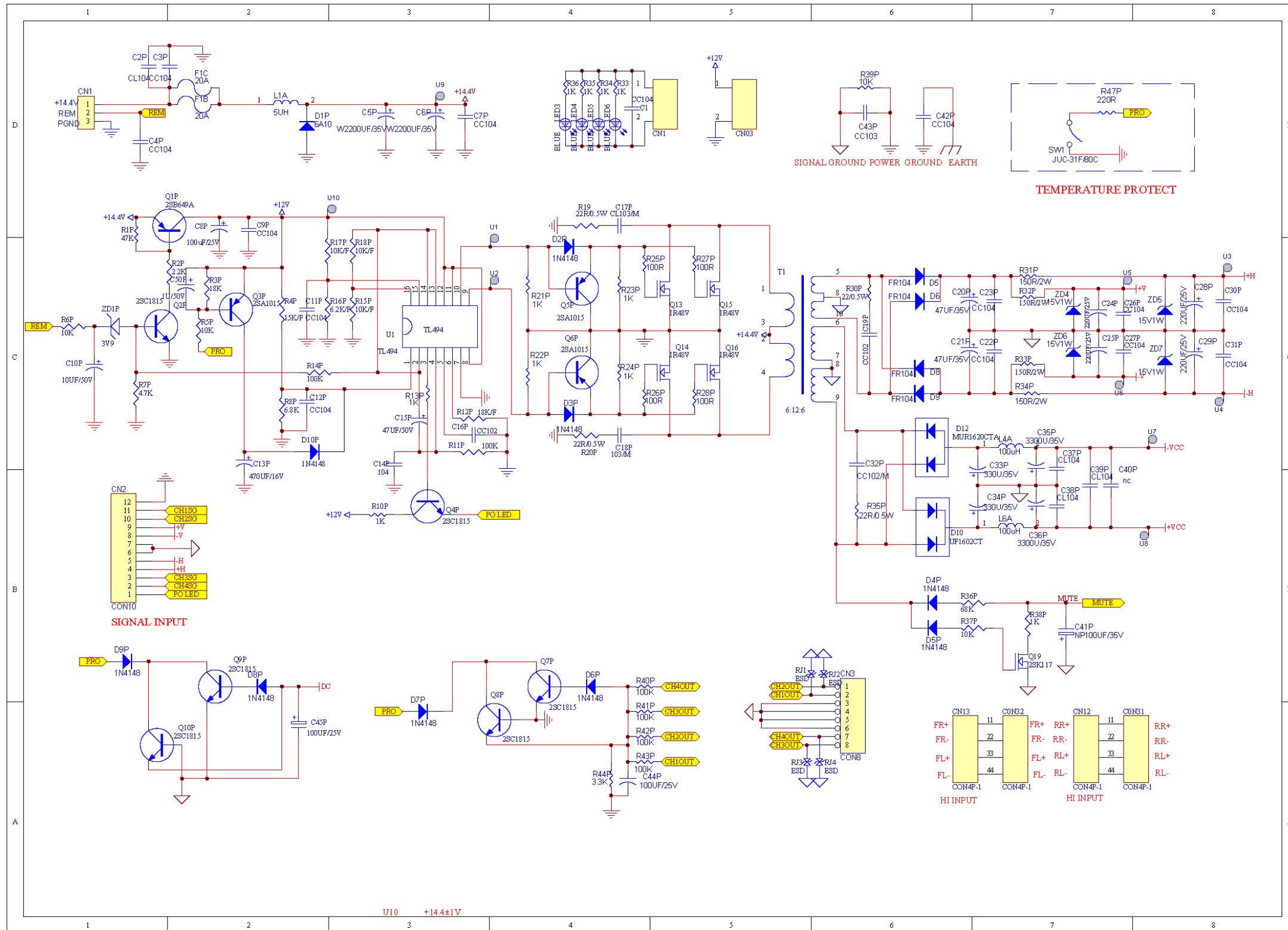


8 Input



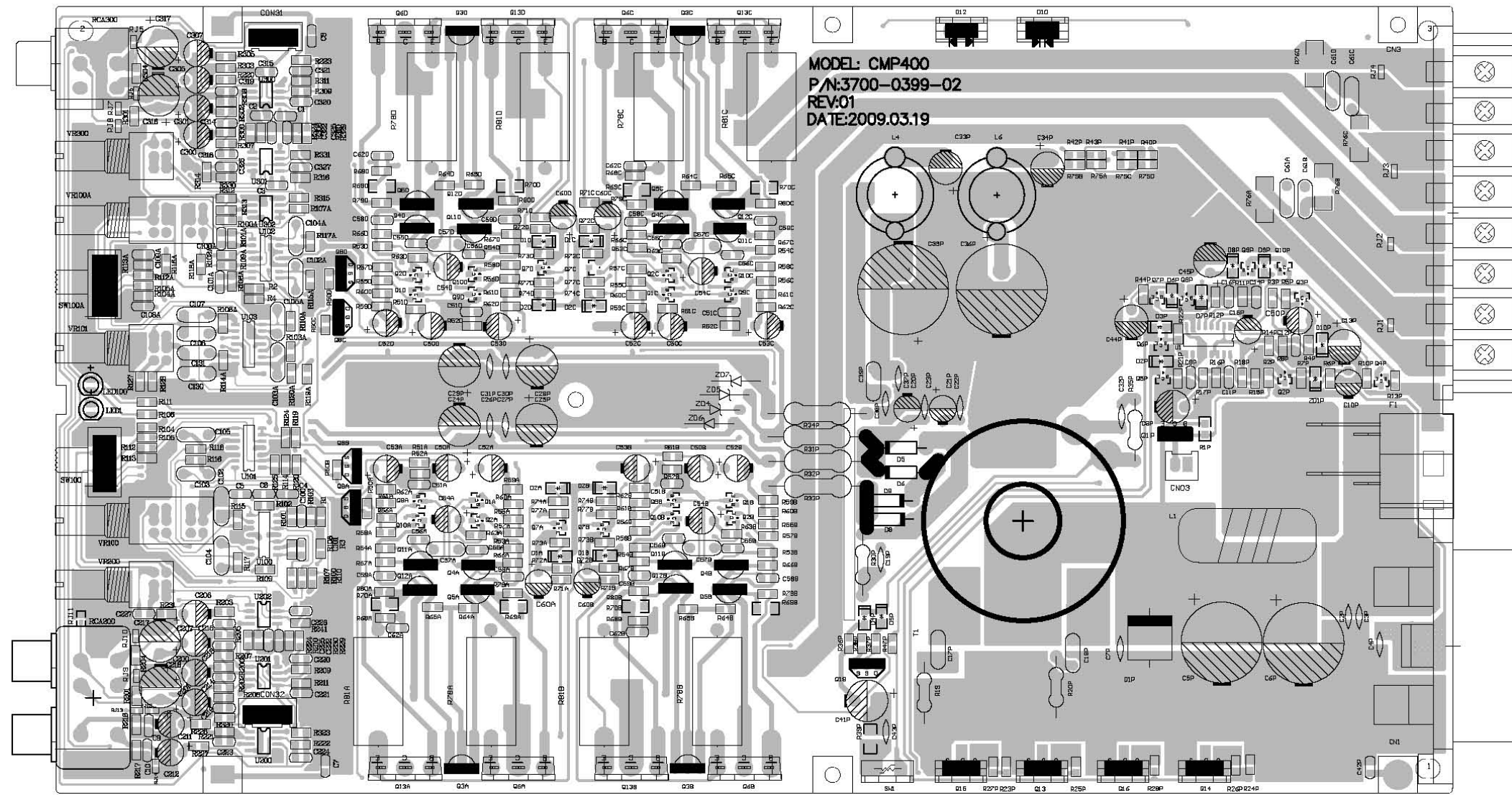


9 Power

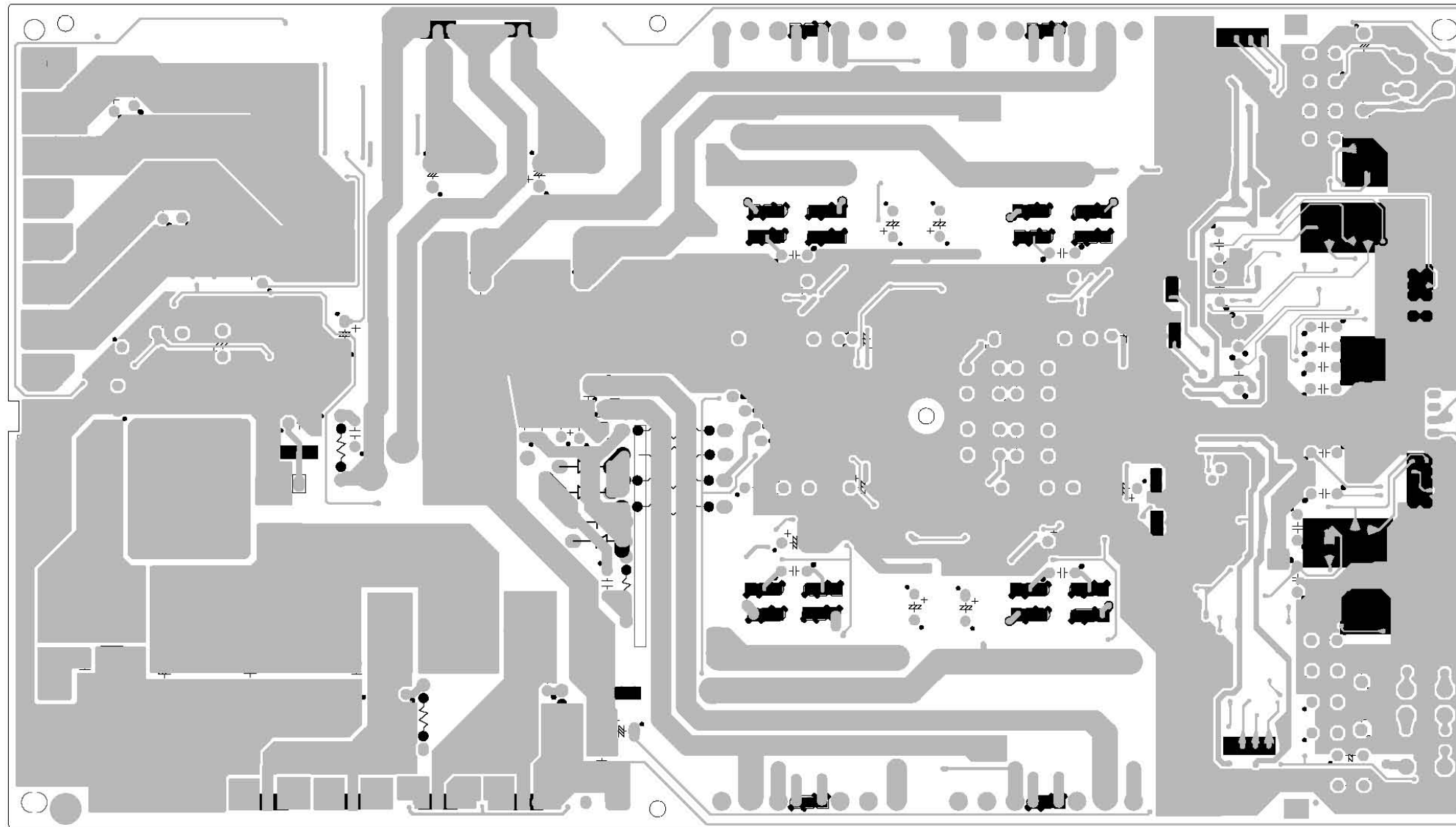


CMP400/55 PCB LAYOUT

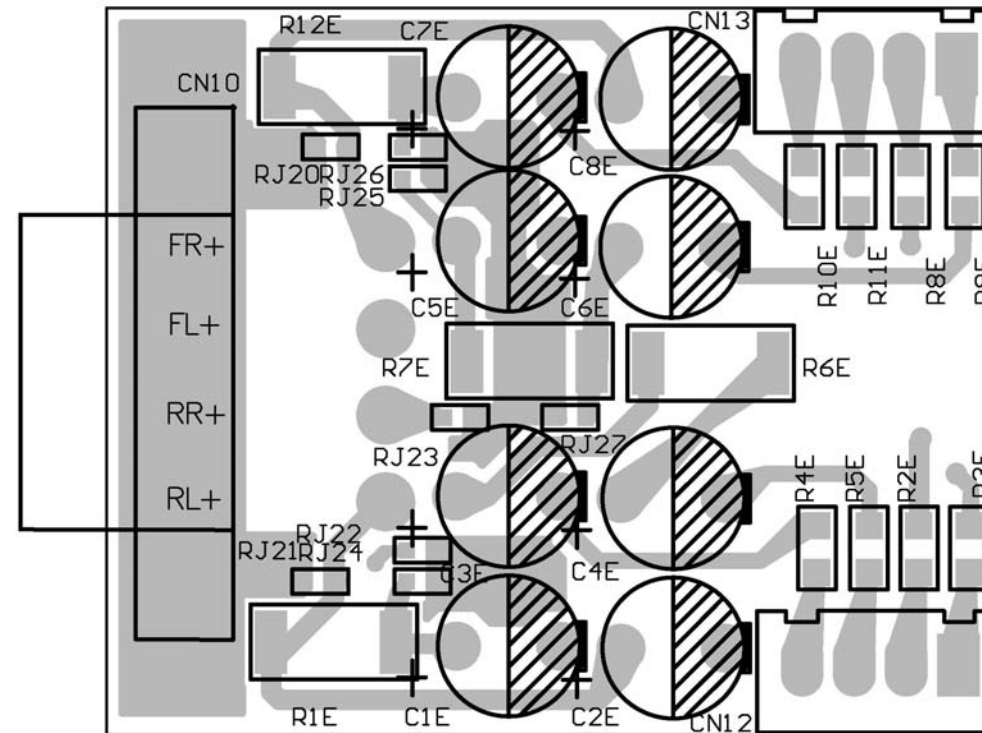
1 Amplifier PCB top layout



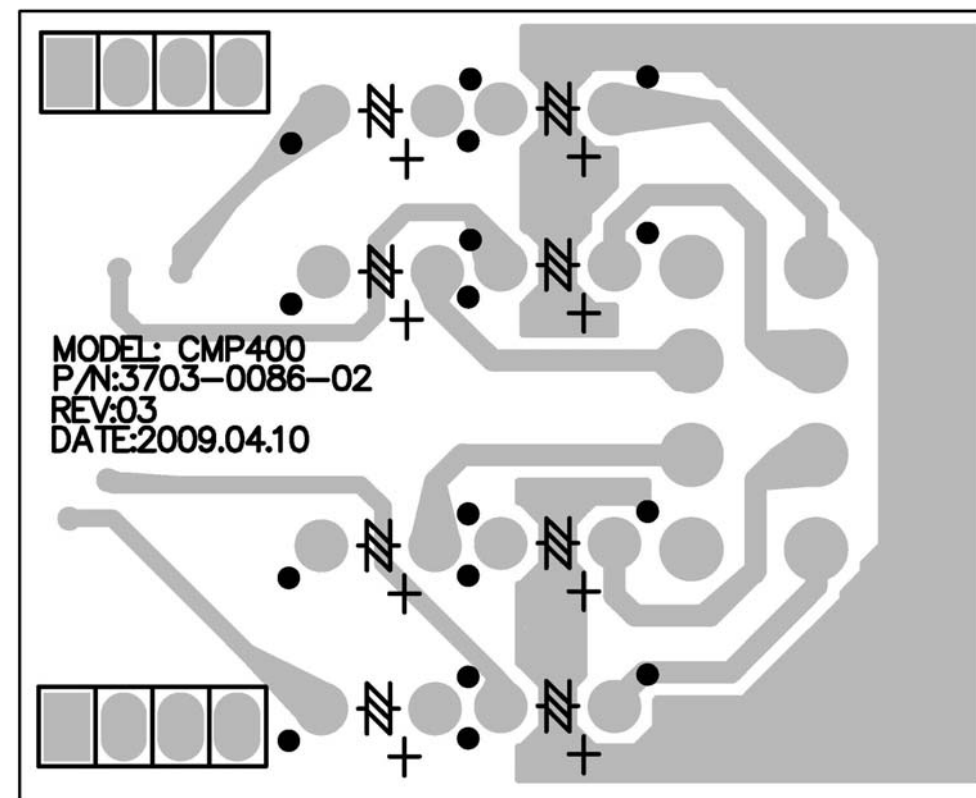
2 Amplifier PCB bottom layout



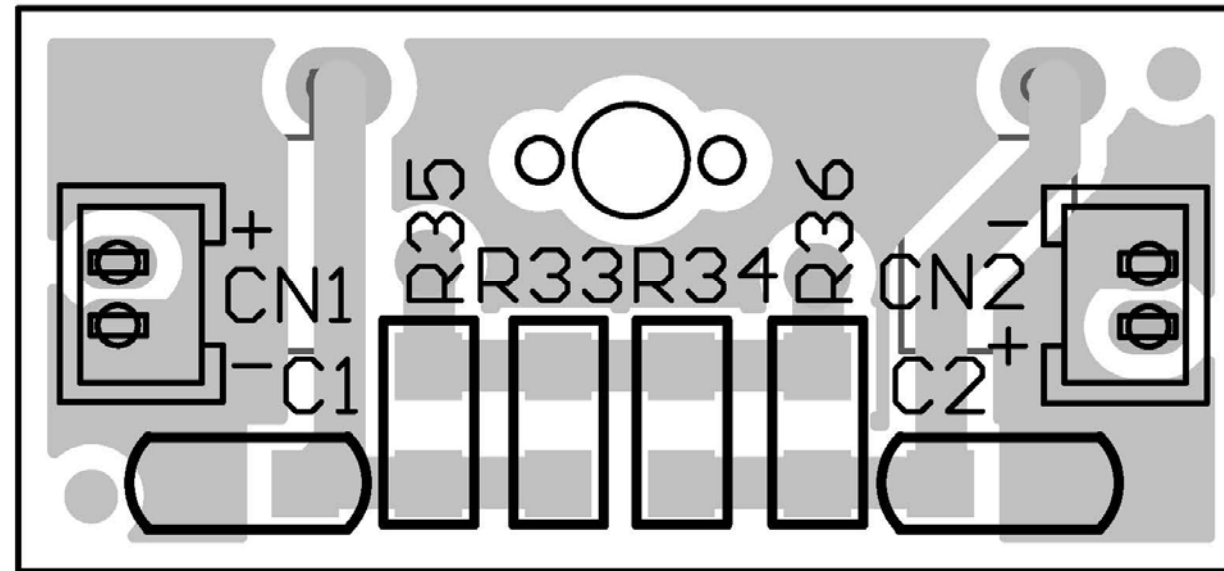
3 High Input PCB top layout



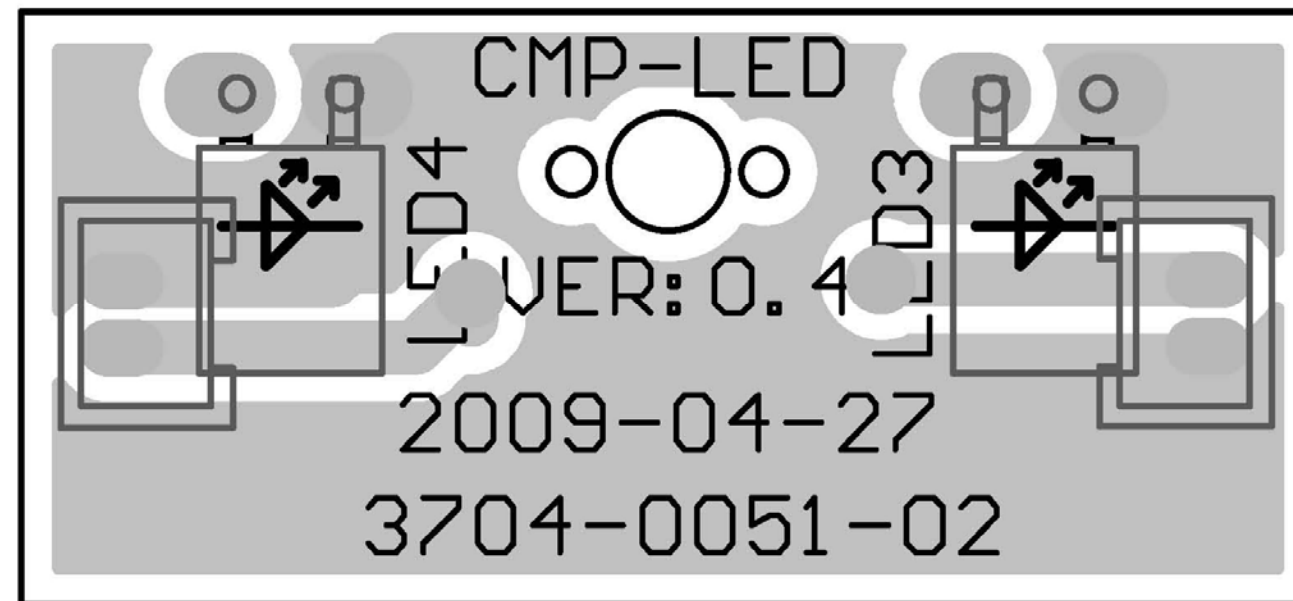
4 High Input PCB bottom layout



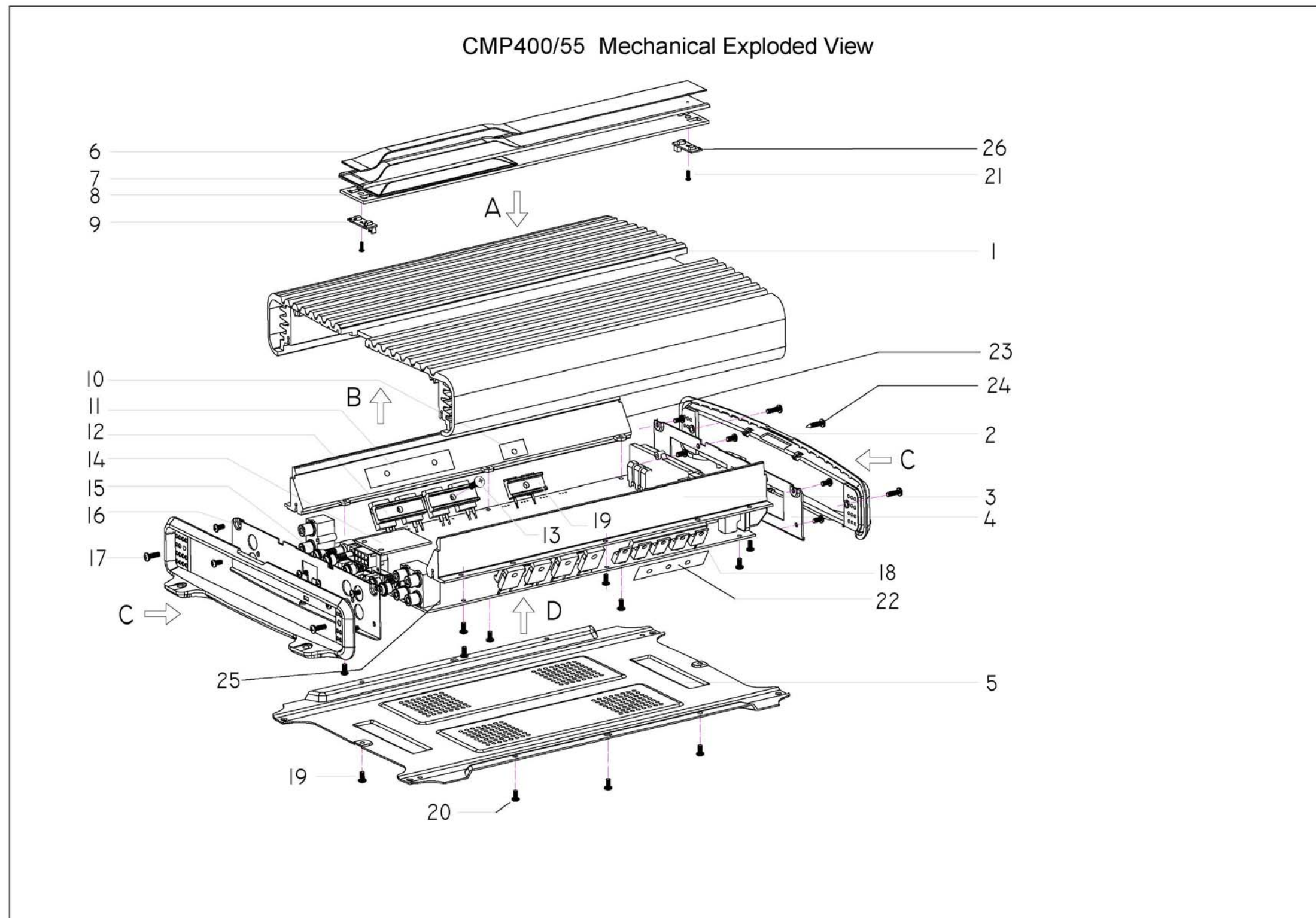
5 LED PCB top layout



6 LED PCB bottom layout



Mechanical exploded view



ELECTRICAL PARTS LIST

Loc.	12NC	Description
<i>LED1 PCB ASS'Y</i>		
C1	996510028386	CAP. 104/100V 0805 X7R 10%
C2	996510028386	CAP. 104/100V 0805 X7R 10%
CN1	996510028388	CONNECT 2P 1.25MM
CN2	996510028388	CONNECT 2P 1.25MM
LED3	996510028401	LED 2P WHITE/BLUE
LED4	996510028401	LED 2P WHITE/BLUE
<i>LED2 PCB ASS'Y</i>		
CN1	996510028388	CONNECT 2P 1.25MM
CN2	996510028388	CONNECT 2P 1.25MM
LED3	996510028401	LED 2P WHITE/BLUE
LED4	996510028401	LED 2P WHITE/BLUE
<i>AMPLIFIER PCB ASS'Y</i>		
CN03	996510028374	CONNECT 2P
CN1	996510028373	CONNECT 3P
CN3	996510028574	SPK JACK
D10	996510028418	RECTIFIER UF1602CT 16/200V
D12	996510028365	RECTIFIER MUR1620CTA 16A/200V
D5	996510028396	DIODE FR104 1A 400V
D6	996510028396	DIODE FR104 1A 400V
D8	996510028396	DIODE FR104 1A 400V
D9	996510028396	DIODE FR104 1A 400V
FS1	△ 996510028587	FUSE 20A/32V
FS2	△ 996510028587	FUSE 20A/32V
FS3	△ 996510028587	FUSE 20A/32V
FS4	△ 996510028587	FUSE 20A/32V
L1	996510028416	INDUCTOR 5uH 23 1.2*3
LED1	996510028366	LED D3.0 RED
LED100	996510028378	LED D3.0 BLUE
Q10A	996510028372	MMBT5401LT1 PNP SOT-23
Q10B	996510028372	MMBT5401LT1 PNP SOT-23
Q10C	996510028372	MMBT5401LT1 PNP SOT-23
Q10D	996510028372	MMBT5401LT1 PNP SOT-23
Q10P	996510028397	2SC1815 SOT-23 NPN
Q11A	996510028422	2SD667AC 1A 120V 0.9W NPN
Q11B	996510028422	2SD667AC 1A 120V 0.9W NPN

ELECTRICAL PARTS LIST

Loc.	12NC	Description
<i>AMPLIFIER PCB ASS'Y</i>		
Q11C	996510028422	2SD667AC 1A 120V 0.9W NPN
Q11D	996510028422	2SD667AC 1A 120V 0.9W NPN
Q12A	996510028385	2SB647 1A 120V 0.9W PNP
Q12B	996510028385	2SB647 1A 120V 0.9W PNP
Q12C	996510028385	2SB647 1A 120V 0.9W PNP
Q12D	996510028385	2SB647 1A 120V 0.9W PNP
Q13	996510028414	MOS TL494B
Q13A	996510028585	TRANSISTOR TIP36CW PNP
Q13B	996510028585	TRANSISTOR TIP36CW PNP
Q13C	996510028585	TRANSISTOR TIP36CW PNP
Q13D	996510028585	TRANSISTOR TIP36CW PNP
Q14	996510028414	MOS TL494B
Q15	996510028414	MOS TL494B
Q16	996510028414	MOS TL494B
Q19	996510028419	MOS 2SK117BL
Q2P	996510028397	2SC1815 SOT-23 NPN
Q3P	996510028382	2SA1015 SOT-23 PNP
Q4A	996510028385	2SB647 1A 120V 0.9W PNP
Q4B	996510028385	2SB647 1A 120V 0.9W PNP
Q4C	996510028385	2SB647 1A 120V 0.9W PNP
Q4D	996510028385	2SB647 1A 120V 0.9W PNP
Q4P	996510028397	2SC1815 SOT-23 NPN
Q5A	996510028422	2SD667AC 1A 120V 0.9W NPN
Q5B	996510028422	2SD667AC 1A 120V 0.9W NPN
Q5C	996510028422	2SD667AC 1A 120V 0.9W NPN
Q5D	996510028422	2SD667AC 1A 120V 0.9W NPN
Q5P	996510028382	2SA1015 SOT-23 PNP
Q6A	996510028578	TRANSISTOR TIP35CW NPN
Q6B	996510028578	TRANSISTOR TIP35CW NPN
Q6C	996510028578	TRANSISTOR TIP35CW NPN
Q6D	996510028578	TRANSISTOR TIP35CW NPN
Q6P	996510028382	2SA1015 SOT-23 PNP
Q7A	996510028397	2SC1815 SOT-23 NPN
Q7B	996510028397	2SC1815 SOT-23 NPN
Q7C	996510028397	2SC1815 SOT-23 NPN
Q7D	996510028397	2SC1815 SOT-23 NPN
Q7P	996510028397	2SC1815 SOT-23 NPN
Q8A	996510028419	MOS 2SK117BL
Q8B	996510028419	MOS 2SK117BL
Q8C	996510028419	MOS 2SK117BL
Q8D	996510028419	MOS 2SK117BL
Q8P	996510028397	2SC1815 SOT-23 NPN
Q9A	996510028372	MMBT5401LT1 PNP SOT-23

ELECTRICAL PARTS LIST

Loc.	12NC	Description
<i>AMPLIFIER PCB ASS'Y</i>		
Q9B	996510028372	MMBT5401LT1 PNP SOT-23
Q9C	996510028372	MMBT5401LT1 PNP SOT-23
Q9D	996510028372	MMBT5401LT1 PNP SOT-23
Q9P	996510028397	2SC1815 SOT-23 NPN
RCA300	996510028368	RCA AV2-8.4-38
RJ1	996510028398	ESD DIODE 15KV 0603
RJ10	996510028398	ESD DIODE 15KV 0603
RJ11	996510028398	ESD DIODE 15KV 0603
RJ12	996510028398	ESD DIODE 15KV 0603
RJ13	996510028398	ESD DIODE 15KV 0603
RJ14	996510028398	ESD DIODE 15KV 0603
RJ2	996510028398	ESD DIODE 15KV 0603
RJ3	996510028398	ESD DIODE 15KV 0603
RJ4	996510028398	ESD DIODE 15KV 0603
RJ5	996510028398	ESD DIODE 15KV 0603
RJ6	996510028398	ESD DIODE 15KV 0603
RJ7	996510028398	ESD DIODE 15KV 0603
RJ8	996510028398	ESD DIODE 15KV 0603
RJ9	996510028398	ESD DIODE 15KV 0603
SW1	996510028377	TEMP SWITCH
U1	996510028361	IC TL494B SO-16
U200	996510028411	IC NJM4558 SO-8
U201	996510028411	IC NJM4558 SO-8
U202	996510028575	IC LM833 SOP-8
U300	996510028411	IC NJM4558 SO-8
U301	996510028575	IC LM833 SOP-8
U302	996510028411	IC NJM4558 SO-8
VR100	996510028582	POTENTIOMETER A50K L15 10%
VR100A	996510028582	POTENTIOMETER A50K L15 10%
VR101	996510028584	POTENTIOMETER C500K L15 10%
VR200	996510028406	POTENTIOMETER B20K
VR300	996510028406	POTENTIOMETER B20K
Z1P	996510028425	DIODE 6A10 1000V
ZD1P	996510028383	VOLTAGE REGULATOR DIODE
ZD4	996510028569	VOLTAGE REGULATOR DIODE
ZD5	996510028569	VOLTAGE REGULATOR DIODE
ZD6	996510028569	VOLTAGE REGULATOR DIODE
ZD7	996510028569	VOLTAGE REGULATOR DIODE

ELECTRICAL PARTS LIST

Loc.	12NC	Description
------	------	-------------

HIGH INPUT PCB ASS'Y

C1E	996510028573	ELECTROLYTIC CAPACITOR
C2E	996510028573	ELECTROLYTIC CAPACITOR
C3E	996510028573	ELECTROLYTIC CAPACITOR
C4E	996510028573	ELECTROLYTIC CAPACITOR
C5E	996510028573	ELECTROLYTIC CAPACITOR
C6E	996510028573	ELECTROLYTIC CAPACITOR
C7E	996510028573	ELECTROLYTIC CAPACITOR
C8E	996510028573	ELECTROLYTIC CAPACITOR
CN10	996510028583	POWER. JACK 8PIN RJ11
CN12	996510028579	SIGNAL JACK
CN13	996510028579	SIGNAL JACK
R10E	996510028576	RESISTOR 33K 1/8W 1%
R11E	996510028576	RESISTOR 33K 1/8W 1%
R12E	996510028572	RESISTOR 2.2K 1W 5%
R1E	996510028572	RESISTOR 2.2K 1W 5%
R2E	996510028576	RESISTOR 33K 1/8W 1%
R3E	996510028576	RESISTOR 33K 1/8W 1%
R4E	996510028576	RESISTOR 33K 1/8W 1%
R5E	996510028576	RESISTOR 33K 1/8W 1%
R6E	996510028572	RESISTOR 2.2K 1W 5%
R7E	996510028572	RESISTOR 2.2K 1W 5%
R8E	996510028576	RESISTOR 33K 1/8W 1%
R9E	996510028576	RESISTOR 33K 1/8W 1%
RJ20	996510028398	ESD DIODE 15KV 0603
RJ21	996510028398	ESD DIODE 15KV 0603
RJ22	996510028398	ESD DIODE 15KV 0603
RJ23	996510028398	ESD DIODE 15KV 0603
RJ24	996510028398	ESD DIODE 15KV 0603
RJ25	996510028398	ESD DIODE 15KV 0603
RJ26	996510028398	ESD DIODE 15KV 0603
RJ27	996510028398	ESD DIODE 15KV 0603

Note: Only these parts mentioned in the list are
normal service parts.