MM right

MC right

MM/AA/WARP right

6dB gain/output right

total current = (8+30+5+7+11)*2+12*6+7=201 ma

RIGHT positive DIP switch SPST to GND.

RIGHT positive DIP switch SPST to GND.

Four positive DIP switch SPST to GND.

Four positive DIP switch SPST to GND.

MC rail drive board

Active load
Will drive 1.5Ma and above. 67R shims at DC.

Inrushs to current through CCS at 100Ma

100k ok

FET cell1

FET cell2

FET cell3

FET cell4

CH1/CH2 relay. RIGHT channel supplies.

Actually - 2N5550RLRP

Open/Sw to GND when 5.5VA

1mA

2k5 Relay

RIGHT MC/MM relay. RIGHT channel supplies.

Actually - 2N5550RLRP

Open/Sw to GND when 5.5VA

1mA

2k5 Relay

MM 26dB buffer and 9/15dB gain RIAA stage

5ma

NAB/15dB gain at 1kHz. RIAA stereophonic.
1% C0G 0805 Murata 1% C0G 0805/1206

+6dB boost gain switch

-3% pref.

-3% pref.

Connected to LEFT channel supplies.

Warp filter

11mA

3mA

3mA

5mA

OPA1642

1 off TLV9362/ OPA1642

LOUT = 1/R1/(R1/P-R3/P)/2)+-1/R+/(R3/P-1/R1/P)/2
ROUT= R3/R1/R1/P+R3/P/2)+1/R+/(R3/P-R3/P)/2

Connected to LEFT channel supplies.

Mono/Stereo/balance

Switch selected gains. Short to GND.

0 - 6dB gain block and output drivers.

11mA

5mA

1mA

1mA

5mA

OPA1656

OPA1656

Switch selected gains. Short to GND.

0 - 2dB gain block relay. LEFT channel supplies.

1mA

12mA

2N5550

Q27

2N7002

Q28

1mA

1mA

2k5 Relay

ONLY ONE CHANNEL SHOWN
RELAYS RECOMMENDED STATE

0/6dB gain relay. RIGHT channel supplies.

1mA

12mA

2N5550

Q24

Actually - 2N5550RLRP

Open/Sw to GND when 5.5VA

1mA

2k5 Relay

RIGHT

F

Kemet EC2-3VNU

LEFT

F

Kemet EC2-3VNU

warp/ mono relays. LEFT channel supplies.

12mA

1mA

12mA

1mA

2N5550

Q22

2N5550

Q23

Actually - 2N5550RLRP

Open/Sw to GND when 5.5VA

1mA

2k5 Relay

Actually - 2N5550RLRP

Open/Sw to GND when 5.5VA

1mA

2k5 Relay

PHONOSP

WARPSWRelay

PHONOSP

STEREOSP

ONLY ONE CHANNEL SHOWN
RELAYS RECOMMENDED STATE

Kemet EC2-3VNU

0 - 6dB gain block relay. LEFT channel supplies

1mA

12mA

2N5550

Q27

2N7002

Q28

1mA

1mA

2k5 Relay

Switch selected gains. Short to GND.

0 - 6dB gain block and output drivers.

11mA

5mA

1mA

1mA

5mA

OPA1656

OPA1656

Switch selected gains. Short to GND.

OUTPUT relays. Controls linnocm and p for both channels. RIGHT channel supplies.

24mA

2N5550

Q21

Actually - 2N5550RLRP

Tail of 10k balance pot Wiper at ground

Tail of 10k balance pot Wiper at ground

3mA

2k5 Relay

2k5 Relay

ONLY ONE CHANNEL SHOWN
RELAYS RECOMMENDED STATE

Relays: Kemet EA2-12NU Non-latching DPDT or similar
Use NO inputs for line input, pins 2 (P), 7 (L)
Connect NC inputs to GND, pins 4 (R), 5 (L)
Outputs 3 (R), 6 (L)

0 - 6dB gain block and output drivers.

11mA

5mA

1mA

1mA

5mA

OPA1656

OPA1656

Switch selected gains. Short to GND.

0 - 6dB gain block relay. LEFT channel supplies

1mA

12mA

2N5550

Q27

2N7002

Q28

1mA

1mA

2k5 Relay

Switch selected gains. Short to GND.

6dB gain/output left

LEFT MC/MM relay. LEFT channel supplies.

12mA

2N5550

Q26

Actually - 2N5550RLRP

Open/Sw to GND when 5.5VA

1mA

2k5 Relay

MM 26dB buffer and 9/15dB gain RIAA stage

NAB/15dB gain at 1kHz. RIAA stereophonic.
1% C0G 0805/1206

+6dB boost gain switch

-3% pref.

-3% pref.

Warp filter

11mA

3mA

3mA

OPA1642

1 off TLV9362/ OPA1642

LOUT = 1/R1/(R1/P-R3/P)/2)+-1/R+/(R3/P-1/R1/P)/2
ROUT= R3/R1/R1/P+R3/P/2)+1/R+/(R3/P-R3/P)/2

MM left

MC left

MC left

MM/AA/WARP left

all Rs 1% except where specified. All Cs <= 20% except where specified.

+/-15v, +5v POWER SUPPLY FILTERS/REGULATORS

18v 1A Wall WART NO GND.
2nd terminal becomes phono input gnd.