

PASS LABORATORIES
ALEPH ONO SERVICE MANUAL

REV 0, 1, 2, 3 9/30/1997

Product Description

The Aleph Ono starts off with a low noise power supply using a custom designed, shielded, low noise 60 Watt toroid transformer. This gives plus and minus 42-volt DC primary supplies. These are passively filtered with resistors and capacitors. The rails are then actively regulated down to plus and minus 32 volts with zero feedback Mosfets, Q9 for the positive rail and Q23 for the negative. The Mosfets references are filtered zener stacks of four 9.1 volt zeners. These supplies are then passively filtered again for each channel. The moving coil stage has it's own separate capacitance multiplier Q24 that regulates down to 26 Volts for Q14 the MC amp cascode.

The moving coil stage uses 4 matched very low noise Jfets (Q 10 - Q13) operated in parallel giving a noise floor of 475 picovolts. These are operated at about 15 volts on the drain. These devices operate feedback free and feed a cascode stage (Q14) whose output is buffered by Q15 unity gain inverter. This signal is then feed to the main gain and equalization stage.

The main gain stage provides its gain with a dual monolithic JFET (Q5) biased with a low noise current source (Q16). This differential pair is cascoded into Q1 and Q2 and feeds a P channel Mosfet and then Transistor Q6 . Q3 and Q6 are feed to current source Q17. The reference for Q17 and Q18 is red Led D5 witch sets the voltage across R53 and R67 at 1 volt after the base emitter drops. This reading across these two resistors is important for this stage to work properly.

The equalization is performed using 1-% tolerance metal film resistors and polypropylene capacitors. C4, C5 and C6 along with R8 and R9 provide the Riaa equalization curve in the feedback loop. R28 and C8 provide the high frequency EQ and roll off.

Balanced negative out is provided by a unity gain inverter. Q21 and Q22 differential pair feed Q8 and Q19 N channel Mosfets.

Q25 and Q26 are used to power the mute relays. The front panel LED must function for Q25 to turn on and pull the mute relays off.

The differences between revisions are generally minor in nature. In rev 1 muting relays were added to the output. More gain settings were added in rev 2, along with a physical layout change. An extra loading resistor was added to the moving magnet input in rev 3.

ALEPH ONO SPECIFICATIONS

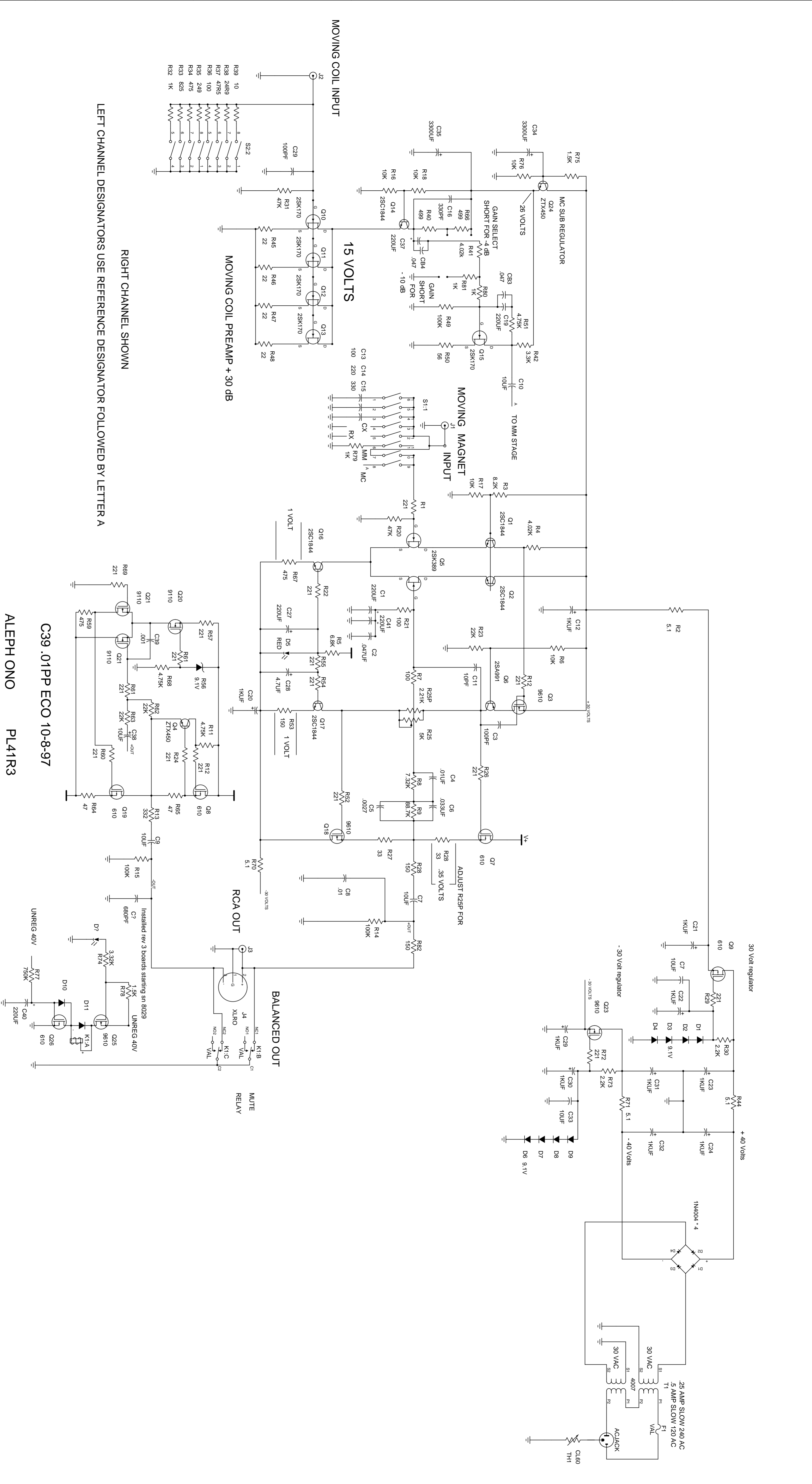
Gain	40 dB @ 1 KHz (MM)
	71 dB @ 1 KHz (MC)
	76 dB @ 1 KHz (MC)
RIAA response	plus/minus .1 dB 20-20 KHz
Distortion	< .05 % THD @ 20 volts
	balanced @ 1 KHz
Maximum Output	20 volts rms.
Output Impedance	150/150 ohms
Input Impedance	47 Kohm 0-650 pF (MM)
	5 ohm - 47 Kohm (MC)
Unweighted Noise	-90 dB ref. 10 mV input (MM)
	-81 dB ref. 1 mV input (MC)
Power consumption	20 watts
Dimensions	19 " W x 11.5 " D x 4 " H
Weight	35 lbs.



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RIGHT CHANNEL SHOWN
LEFT CHANNEL DESIGNATORS USE REFERENCE DESIGNATOR FOLLOWED BY LETTER A

C39 .01PP ECO 10-8-97

ALEPH ONO PL41R3

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This Alpha One has extra gain settings for the MC stage
 These included jumpers can adjust gain down 4 or 10 dB
 They can be used together to bring the gain down 14 dB

