

Parasound HCA-3500 Power Amplifier

Audio Upgrade Modification

Driver/Output Stage B2860A(L) B2861A(R):

Remove C19~C32, C37~C40, C45~C52, C55~C58, C66, C69~C73, C77~C79, C81~C84, C86~C89.
Remove capacitors in R71~R76, R79, R80 locations.

C7, C8, C12, C13 = 100uF/25V Nichicon Muse KZ electrolytic (*may already be* Rubycon Black Gate)
C19, C22 = 100uF/100V Nichicon Muse KZ electrolytic
C38, C39, C47, C48 = .1uF/250V WIMA MKP10 polypropylene film
C21 (drill hole), C24, C28 (drill hole), C31 (move R70 right side), C50, C51, C55, C58 (raised up) = .1uF/160V Roederstein MKP1839 polypropylene (RELCap RT *optional*)
C66 = 10uF/50V Panasonic FC electrolytic
C69 = 22uF/50V Panasonic SU BP
C70 = 100uF/25V Panasonic SU BP
C71, C78, C79 = 47uF/50V Panasonic SU BP
C72 = .47uF/50V Panasonic SU BP
C73, C77, C81, C83, C84, C89 = 10uF/50V Panasonic SU BP
C82 = 1uF/50V Panasonic SU BP
C86, C87 = 1000uF/35V Panasonic FC electrolytic
C88 = 100uF/25V Panasonic FC electrolytic

R28 = 2.21k, ¼W, 1% PRP PR9372 metal film
R43, R47 = 2.2k, ½W, 1% Vishay Dale RN60D metal film RN60D2201FB14
R44 = 47k (46.4k) ½W, 1% Holco H4 metal film (feedback)
R46, R48 = 390Ω, ½W, 1% Vishay Dale RN60D metal film RN60D3900FB14

Install (4) Kemet .1uF/500V monolithic ceramic C330C104KCR5 across bridge rectifier D8.

Replace Q5 (IRF9610) with Harris IRF9620.

Remove R94 & R140 to eliminate dynamic bias circuit.

Power Supply:

Remove C145, C146, C148~C151, C155~C160.

C150, C151, C158, C159 = .1uF/160V Roederstein MKP1839 polypropylene (REL RELCap RT *optional*).

D53, D57 = Diotec FDB3506P/T-S soft recovery bridge rectifier.

Install .1uF/850V Roederstein MKP1839HQ across T1 & T2 secondary.

Install .1uF/275V Evox Rifa PHE840 Class X2 EMI suppression capacitor across AC power inputs (*optional*).

Proper AC Polarity:

IEC AC socket hot (white) to AC In (C167~C170 & C171~C174). AC Out (red) to front power switch.
IEC AC socket neutral (red) to AC In copper pc trace strip to AC Out (white) to front power switch.
Xfmr output (red) to AC S. (Switch only transformer primary wires to determine lowest AC leakage on chassis).

Alignment:

TVR1 (idle bias) = ~4mV (+/-1mV) DC across R51 (or any of the .22Ω emitter resistors) *with top cover on*.
Increase idle bias to ~20mV (+/-2mV) if dynamic bias circuit disabled.

TVR3 (dynamic bias) with a signal applied for ~20mV (+/-2mV) DC *with top cover on*.