

Harman Kardon Citation 19 Power Amplifier

Audio Upgrade Modification

Driver Board (x2):

C1 = 100uF/25V Nichicon Muse ES BP
C2 = 330pF/500V 2% mica CDE CD15FD331GO3F
C6 = 470uF/25V Elna Cerafine electrolytic
C7 = 100pF/500V 1% mica CDE CD15FD101FO3F
C8, C9 = 47uF/100V Nichicon Muse KZ electrolytic (bypass with .1uF/100V WIMA MKP2 polypropylene film)
C10, C15 = .01uF/200V KEMET monolithic ceramic C322C103K2R5
C11, C14 = 1uF/50V Panasonic FC electrolytic
C12, C13 = 22uF/50V Panasonic SU BP
C16 = 1.0uF/160V KEMET R75GI4100AA00K polypropylene film

R1 = 150k
R2 = 30k
R3 = 2.7k, ¼W, 1% PRP PR9372
R4, R5 = 47Ω (standoffs)
R6, R16, R22 = 470Ω
R8 = 1.5k
R9, R10 = 220k
R11 = 560Ω
R13 = 1.5k (*keep original*)
R14 = 33.2k, ½W, 1% Holco H4 (feedback)
R15 = 27k, 1W Yageo RSF metal oxide
R19 = 20k (*keep original*)
R20, R25 = 330Ω
R24 = 82Ω
R27, R28, R38 = 100Ω
R29, R30 = 8.2k
R31, R32 = 390Ω
R33, R34 = 15Ω, ¼W, 1% PRP PR9372
R35 = 15k (*keep original*)
R36 = 390Ω, 1W Yageo RSF metal oxide
R37 = 27Ω, 1W Yageo RSF metal oxide

All resistors are Yageo ¼W, 1% MFR metal film (except as marked)

VR1 = 100Ω Bourns 3386P

CR3, CR8~CR13 = 1N914
CR4~CR7 = FDH400

Q3 = MPS-U07
Q11 = 2N5551
Q12 = 2N5401

Output Stage & Heat Sink Assembly (x2):

C1, C2 = 47uF/160V Nichicon TVX electrolytic

Q1 = 2N3583
Q2 = 2N6211
Q3, Q5 = MJ15003
Q4, Q6 = MJ15004

Wakefield 175-6-310P TO-3 Kapton Insulators (8)
Wakefield 175-6-610P TO-66 Kapton Insulators (4)

Power Supply:

C1, C2 = 1000uF/25V Nichicon TVX electrolytic
C3, C4, C5, C6 = 15,000uF/100V United Chemi-Con 32D101HPN153MD79M (63.5x79mm)

Install .1uF/200V Sprague 715P across C3, C4, C5, C6 for bypass.

Replace CR1, CR2 with Diotec FDB3506P/T-S soft recovery bridge rectifier. Use 10-24 x 3/4" machine screws (H90236) with #10 external lock washers (1388-M) and 10-24 kept nuts (2406-D).

Install .01uF/250V Vishay WYO103MCMCF0KR Class X2 EMI suppression capacitor across AC side of bridge rectifiers using multi-stack or piggyback crimp connector (*optional*).

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

Change front panel neon lamps to APEM Q8P1BXXR110E or Q8P1BXXHR110E LED indicators.

Front panel power switch = Carling 2GK50-D-4B-B

LED Display Board:

C1, C3 = 2.2uF/50V Panasonic FC electrolytic
C2, C9 = 10uF/50V Panasonic FC electrolytic

LEDs = Lumex SSL-LX5093 (gd) green, (id) red, (yd) yellow

Alignment:

VR1 (bias) = 70mV DC across R3 & R4 emitter resistors (Q5 & Q6) or R31 (bottom) to R32 (bottom) on pc board.