

Service Information Bulletin

Catalog No.: 31-4016

Description: QTA-770 Receiver

SUBJECT: CD-4 Modification

In a number of cases, the QTA-770 does not perform properly when playing a CD-4 disc in the discrete mode. Changing the CD-4 cartridge, stylus or Disc often cures this complaint — but not in every case.

Symptoms are — breakup of the 4 channel signal, especially on high level or high-frequency passages. If you have a unit which exhibits this problem — i.e. **only** on high frequency/high amplitude passages, there is a modification available which may reduce or eliminate the problem.

Before making the modification:

1. Be sure the Disc is not the problem. CD-4 discs wear very rapidly. Some suppliers say less than 25 plays can be obtained before distortion increases due to loss of carrier (even the slightest wear can deteriorate the 30 kHz carrier and higher frequencies). To be sure, use a Disc of known recording quality and one that has not been played often.
2. Be sure the Cartridge is capable of reproducing frequencies up to 45 kHz. (It must be a CD-4 Type Cartridge).
3. Be sure the stylus is not worn.
4. Be sure the stylus is tracking at the right force.
5. Use a good quality turntable with low-capacity cables.

Only when you have eliminated the above as possible sources of the problem, should you perform the modification.

CD-4 DEMODULATOR DECODING MODIFICATION

1. Remove the Bottom Cover of the QTA-770. It is not necessary to remove the wood case for this change.
 2. Locate the CD-4 PCB (left rear).
- The changes to the CD-4 PCB can be made either on the top or bottom of the Board. We recommend that you loosen the PCB (8 screws) and do all the modification on the foil side.

3. Refer to the TOP VIEW of the CD-4 PCB and carefully remove C708a & b, 470 pF disc capacitors (left and right channel). Save these capacitors; they are to be used later.
4. Connect a 680 ohm resistor in series with a 1500 pF disc capacitor (allow about 3/8" leads on each component) and then place these two in series with a 15 mH Choke (in this order).

NOTE: Choke will be marked "153J" and capacitor will be marked "152J"

5. On the foil side of the CD-4 PCB, solder the free lead of the 680 ohm resistor to the junction of C707a and the hole where you removed C708a. Solder the free lead of the 15 mH choke to ground point #7.
6. Now solder one lead of C708a (previously removed 470 pF) to the junction of the 1500 pF capacitor and the 15 mH choke. Solder the other lead to the PCB junction of C709a and C708a.
7. On the foil side, solder a 33 mH choke across (in parallel with) R712a.

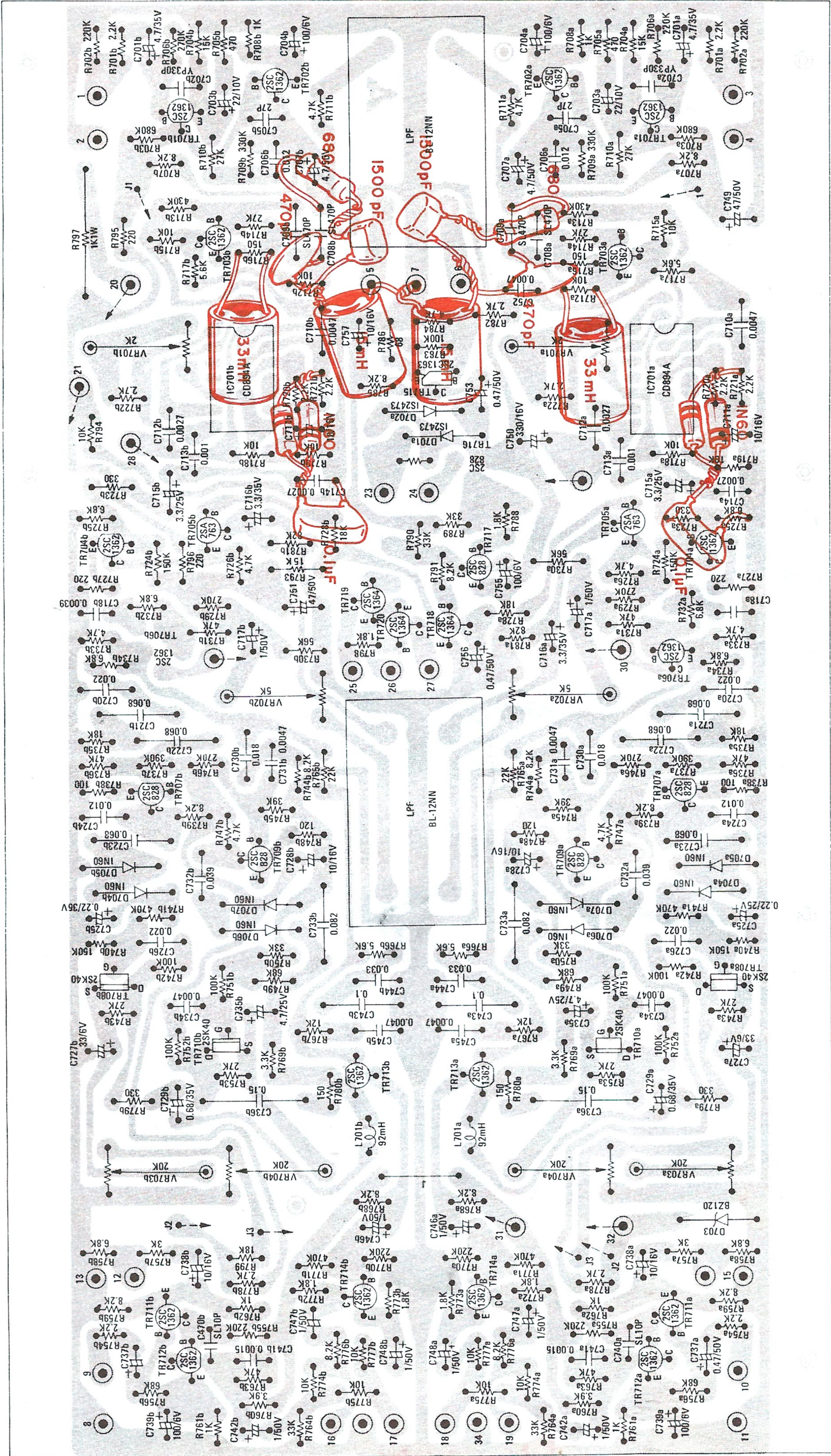
NOTE: Choke will be marked "333J"

8. Connect two 1N60 Diodes together, back-to-back (in parallel with each other, in opposing polarity). Connect this assembly in series with a 0.1 μ F Mylar capacitor.
9. Solder the free lead of the two diodes to the PCB junction of R721a and C710a. Solder the free lead of the 0.1 μ F mylar capacitor to ground.
10. Make sure all connections are well soldered. If necessary insulate bare lead connections (make sure they won't touch the chassis or nearby foil connections).
11. Add the same modifications to the other channel.

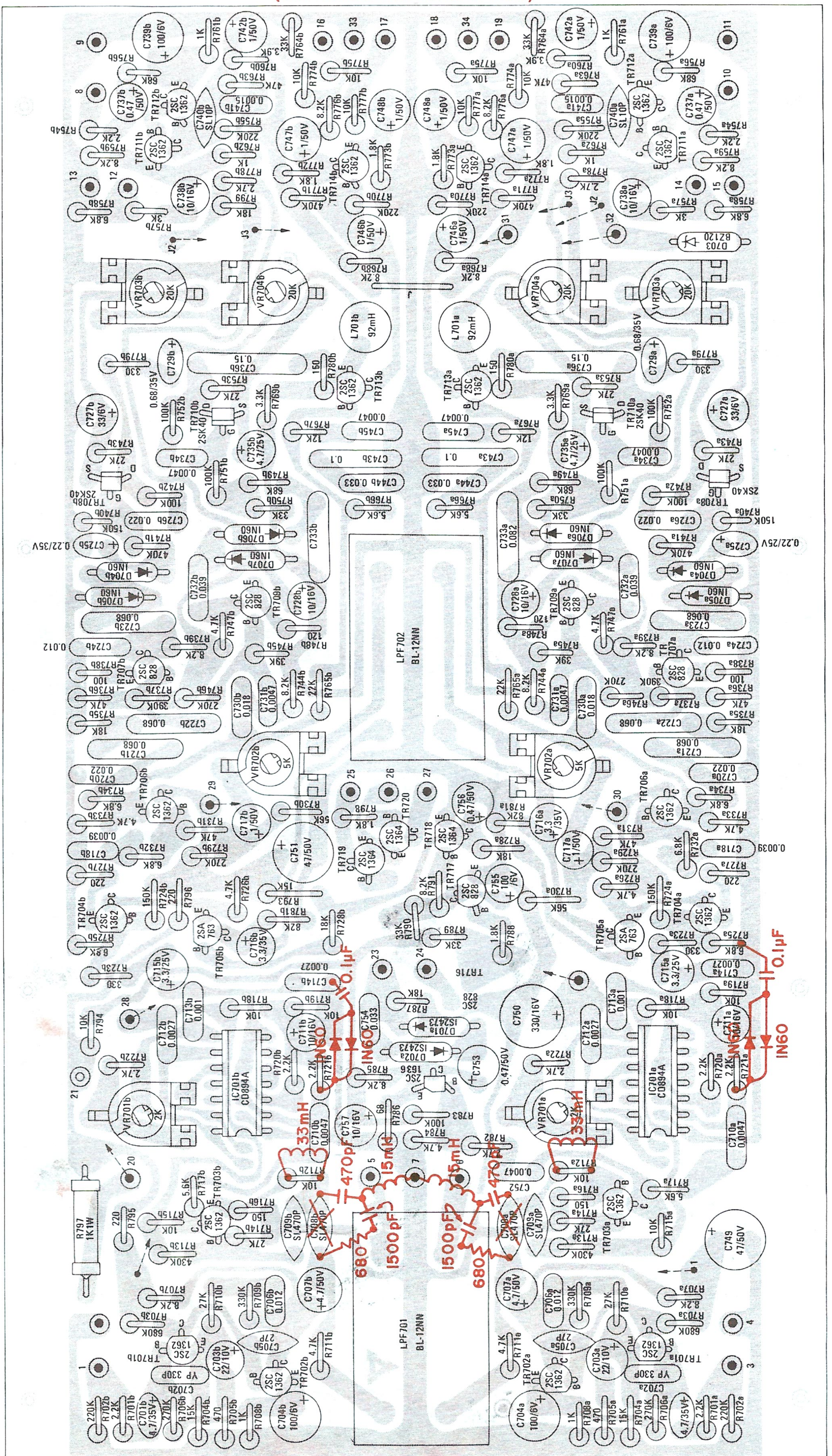
Carefully remount the CD-4 PCB. Be sure you reconnect all capacitor ground leads.

7100 CD-4 DEMODULATOR BOARD (BOTTOM VIEW)

(CD-4 Modifications in Red)

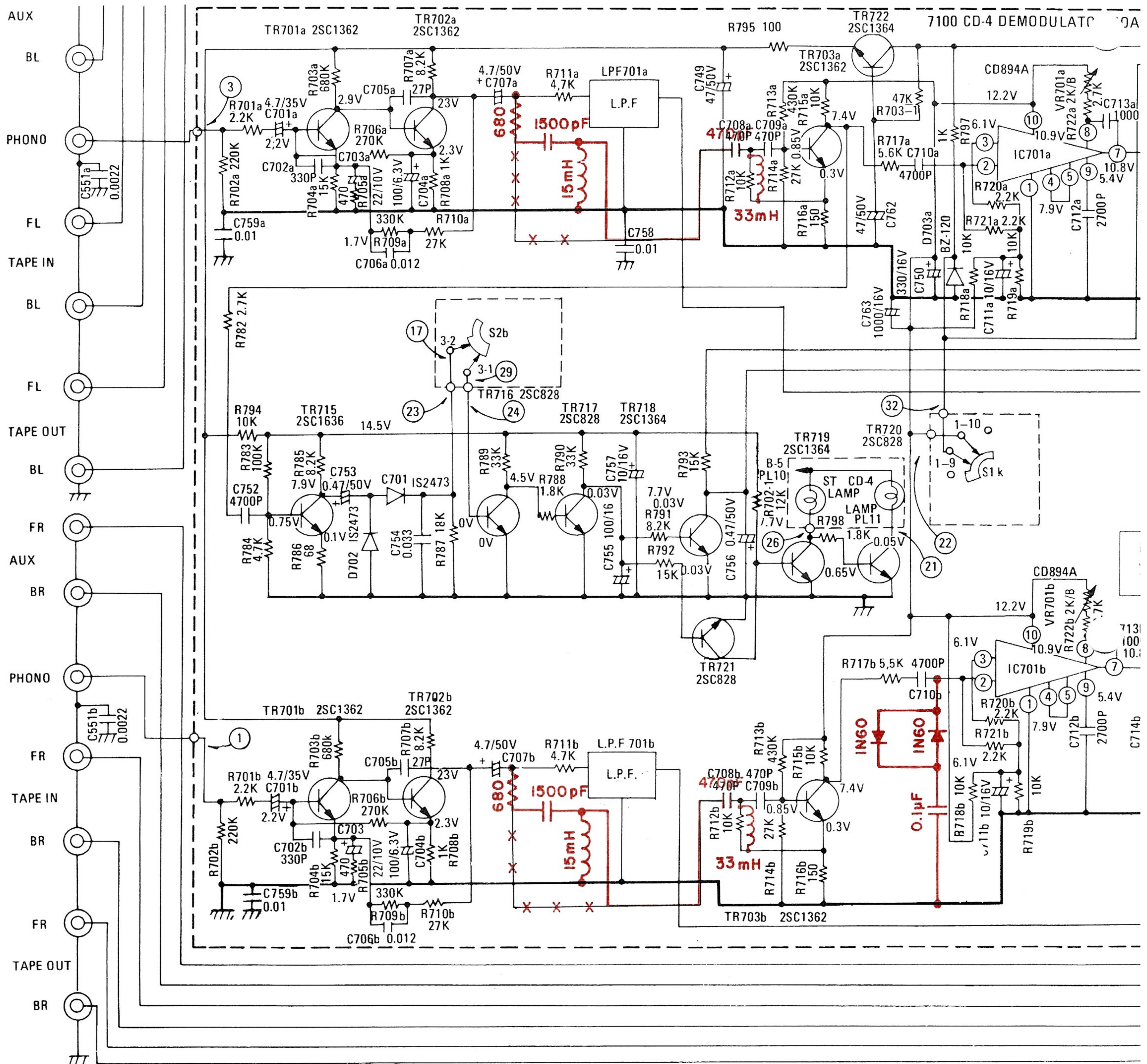


(CD-4 Modifications in Red)



SCHEMATIC DIAGRAM

(CD-4 Modifications in Red)



RADIO SHACK  **A DIVISION OF TANDY CORPORATION**
 U.S.A.: FORT WORTH, TEXAS 76102
 CANADA: BARRIE, ONTARIO, CANADA L4M 4W5
TANDY CORPORATION