

## TVA142 Crosstalk Reduction Kit

Part Number 0040-1429

A design improvement has been made on the TVA 142 and TVA142-1, improving the "off-channel attenuation." Due to the characteristics of the LED/LDR optical coupler used for audio switching, the high frequency attenuation was poor at best. The problem is generally apparent as tape rewind noise leaking to the program bus. The combination of high level and high frequency makes the problem apparent with rewinding tapes, but not with normal program audio.

The design change has been included in all units with serial numbers 1130 and above. The change consists of replacing the LED/LDR unit with a reed relay (two per channel), and changing the circuitry immediately surrounding the relay. The attached drawing shows the actual circuitry changes for a single relay.

Previously, R211 was a current limiting resistor for the LED/LDR unit and the front panel LED. It now shunts the reed relay coil, maintaining the same current through the front panel LED. The new R211 also provides a "discharge" path for induced EMF when the relay is released. This prevents a high voltage spike that could cause an audio pop. In addition, the new circuitry insures that the base of the muting transistor (ie Q511) is pulled to ground when the channel is switched off. This improves the muting circuitry reliability.

Finally, capacitors that were in the circuit to cancel audio leakage in the LDR (ie C211) are removed.

When complete, off channel attenuation should exceed 70 dB at 20 KHz.

### PARTS DELETED

C211, C311, C221, C321, C231, C331, C241, C341, C251, C351, C261, C361	H&F 1529-3000 30 pF Polystyrene
R211, R311, R221, R321, R231, R331, R241, R341, R251, R351, R261, R361	H&F 4711-4561 560 ohm, 1/4 watt
U212, U312, U222, U322, U232, U332, U242, U342, U252, U352, U262, U362	H&F 3717-0001 LED/LDR Optical Coupler

### PARTS ADDED

K212, K312, K222, K322, K232, K332, K242, K342, K252, K352, K262, K362	H&F 4500-0112 Reed Relay, SPST-NO, 12 VDC, EAC B1A12AH
R211, R311, R221, R321, R231, R331, R241, R341, R251, R351, R261, R361	H&F 4711-4202 2 K, 1/4 watt

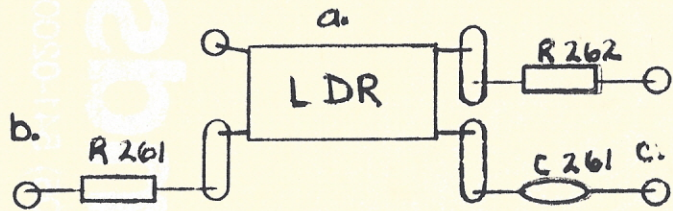
# Hallikainen & Friends

101 Suburban Road,

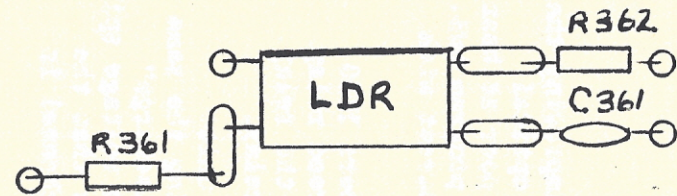
San Luis Obispo, CA 93401-7590

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# Original

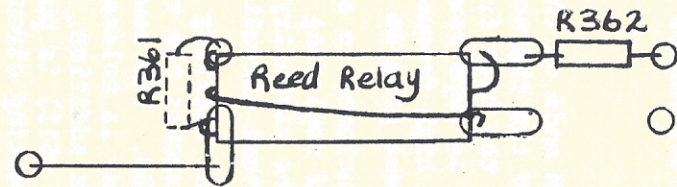
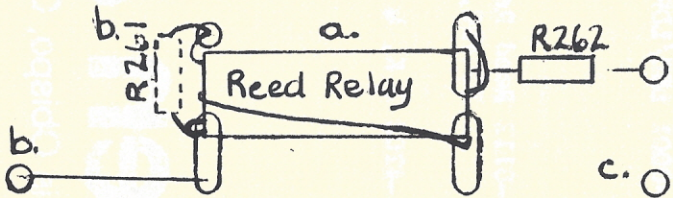


↓ change all LDR's  
in this column



↓ change all LDR's  
in this column

# Conversion



a) Reed Relay's replace LDR's. Leads will need to be bent inward under Relay's to fit.



b) Resistor R261 changes from a  $560\Omega$  series current limiting resistor to a  $2K$  shunt resistor which is soldered on the bottom of the board.

Jumper wire replaces series current limiting resistor R261.

c) Capacitor C261 is deleted.