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How to install the Powerband RFX75  
on Magnum S-3, S-6, and S-9 radios  
with main printed circuit board number 9821R17 – 9821R21

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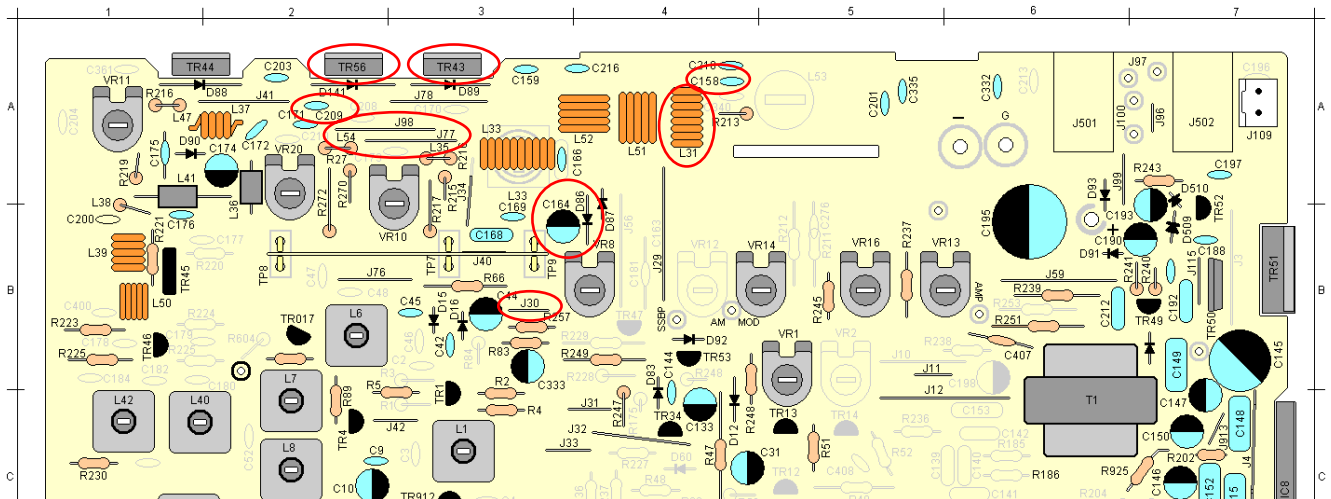
## RFX75 Installation for Magnum S-3, Magnum S-6, and Magnum S-9 10 Meter Amateur Transceivers with Main Printed Circuit Board Numbers\* 9821R17 through 9821R21

\* The printed circuit board number is found on the solder side of the main PCB at the front of the transceiver.

- 1) Test the transceiver and verify that both transmit and receive function correctly. It is important to verify the radio is operating prior to any installation.
- 2) Turn off the transceiver and disconnect it from all power sources.
- 3) Remove the stock heatsink from the rear panel of the transceiver.
- 4) Using a 1/8 inch drill bit, drill out the two holes that were used for mounting the stock heatsink.
- 5) In the rear panel of the transceiver, drill a 3/8 inch to 1/2 inch diameter hole centered between the two 1/8 inch holes that were drilled in step 4. It is recommended to drill this hole so that it does not interfere with the mounting of the original finals and driver transistors – in case the radio needs to be returned to stock configuration at a later date.

**WARNING:** After drilling, make sure that no drill shavings and debris is in the transceiver.

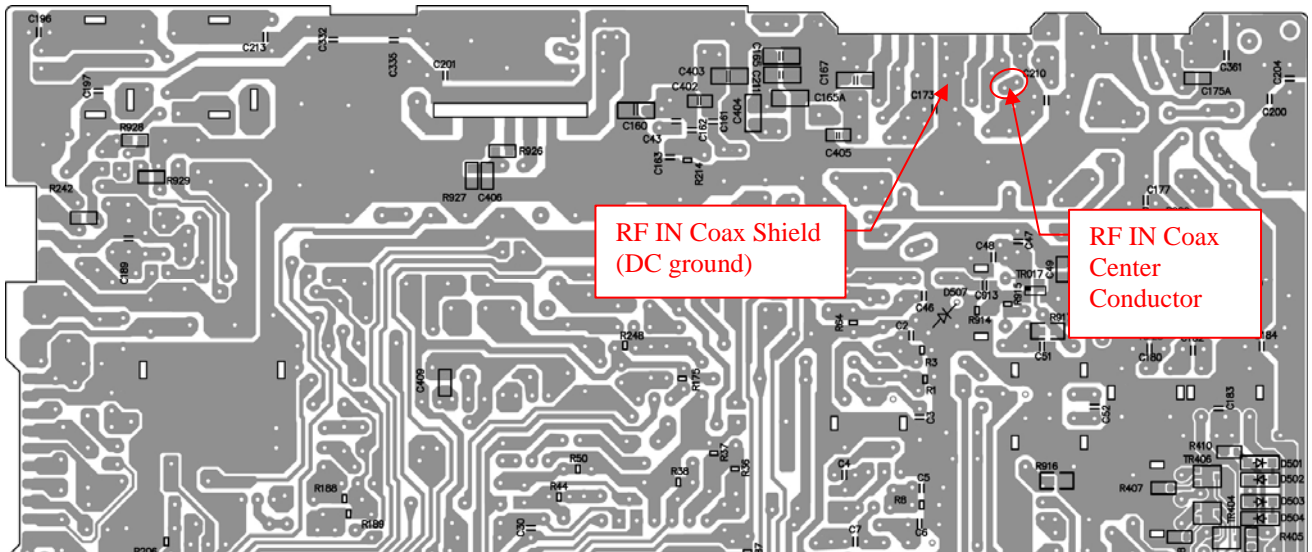
- 6) Unsolder and remove the following parts from the transceiver: J30, J77, J98, L31, TR43, TR56, D86, C158, C164, and C209. These parts are circled in red on the parts layout diagram below. NOTE: J77 and J98 are circled together. D86 and C164 are circled together.



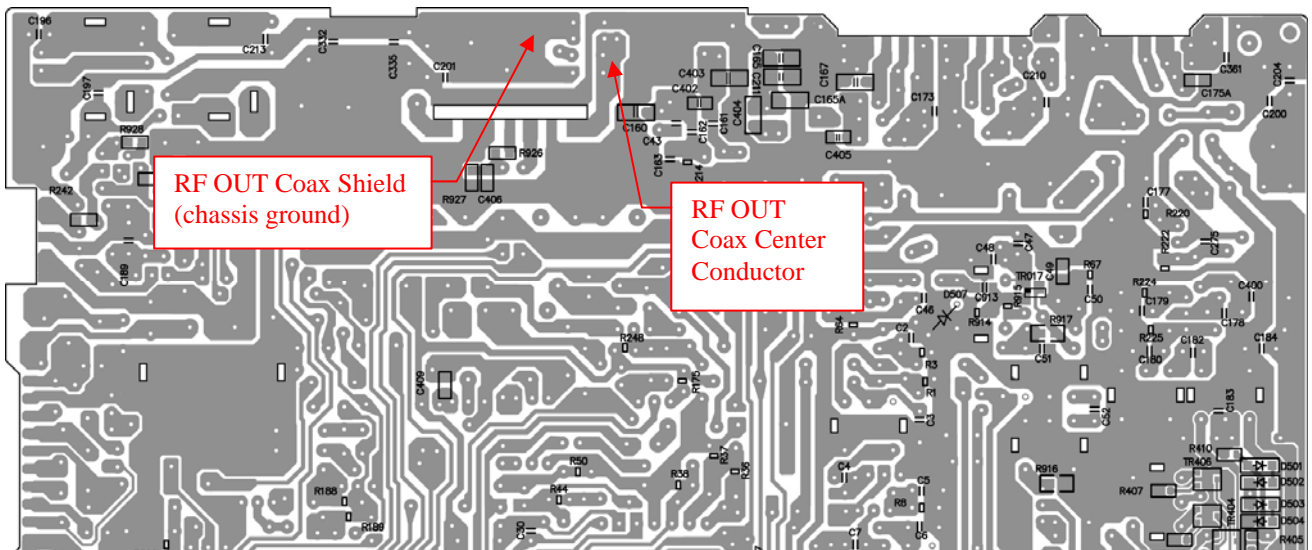
- 7) On the RFX75, disassemble the fuse holder on the positive (red) power lead so it will fit through the hole drilled in step 5. Open the fuse holder and carefully remove the glass fuse and wire from the plastic fuse holder.
- 8) Route the RFX75 wires and coax cables through the large hole drilled in step 5.
- 9) Reassemble the fuse holder assembly on the inside of the transceiver.

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- 10) Using the supplied 40mm long machine screws and nylon-insert nuts, bolt the RFX75 to the transceiver.
  - a. Insert the 40mm machine screws through the holes in the back of the RFX75 (between the heatsink fins).
  - b. Line up the screws with the 1/8 inch holes drilled in step 4, and hold the RFX75 to the transceiver.
  - c. On the inside of the transceiver, use the nylon-insert nuts to secure the RFX75.
  
- 11) Locate the RF IN coax cable on the RFX75. This is the copper color (clear jacket) coax cable that is next to the Orange wire on the PCB. Route the RF IN coax from the RFX75 through the slot on the transceiver's PCB where TR43 and TR56 were removed. On the solder side of the transceiver PCB, solder the RF IN coax center conductor to the trace at the junction of C171 and J98. Solder the RF IN coax shield to DC ground. See diagram below.

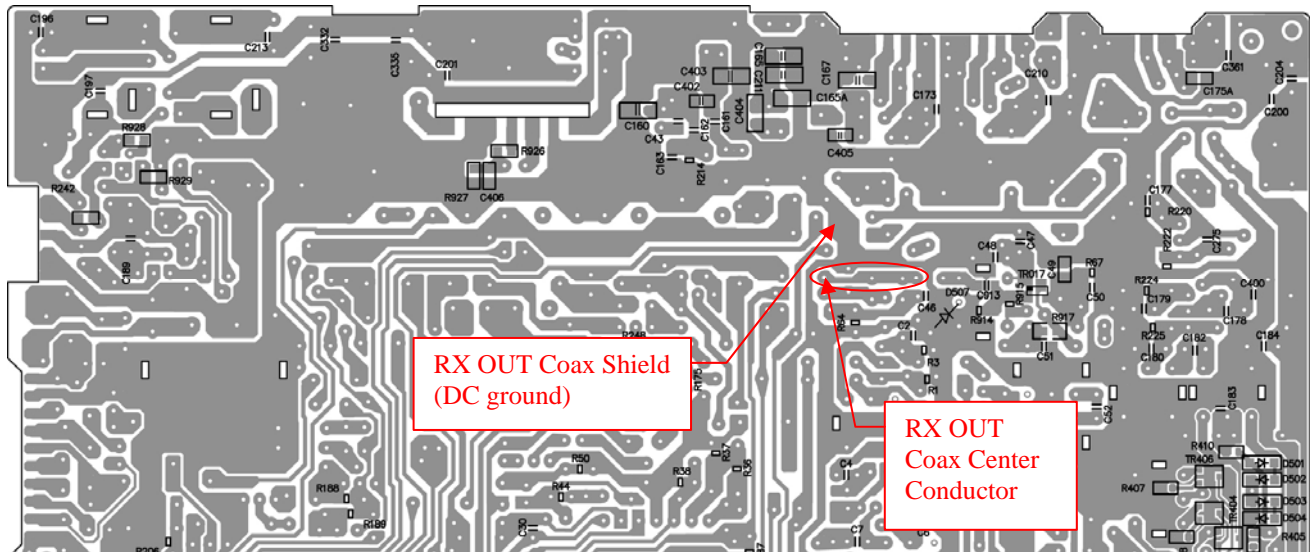


- 12) Locate the RF OUT coax cable on the RFX75. This is the black color coax cable. Route the RF OUT coax through the slot on the transceiver's PCB where TR43 and TR56 were removed. On the solder side of the transceiver PCB, solder the RF OUT coax center conductor to the trace at the junction of L31 and C158. Solder the RF OUT coax shield to chassis ground. See diagram below.

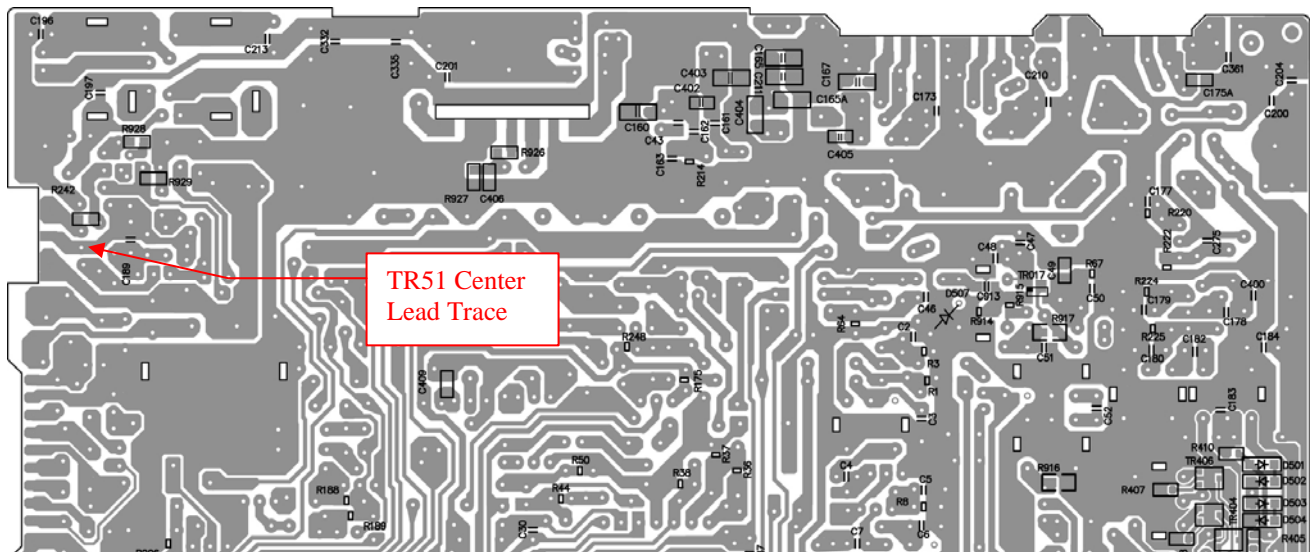


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- 13) Locate the RX OUT coax cable on the RFX75. This is the only remaining coax cable. Route the RX OUT coax through the slot on the transceiver's PCB where TR43 and TR56 were removed. On the solder side of the transceiver PCB, solder the RX OUT coax center conductor to the trace at the junction of J30 and D16. Solder the RX OUT coax shield to DC ground. See diagram below.

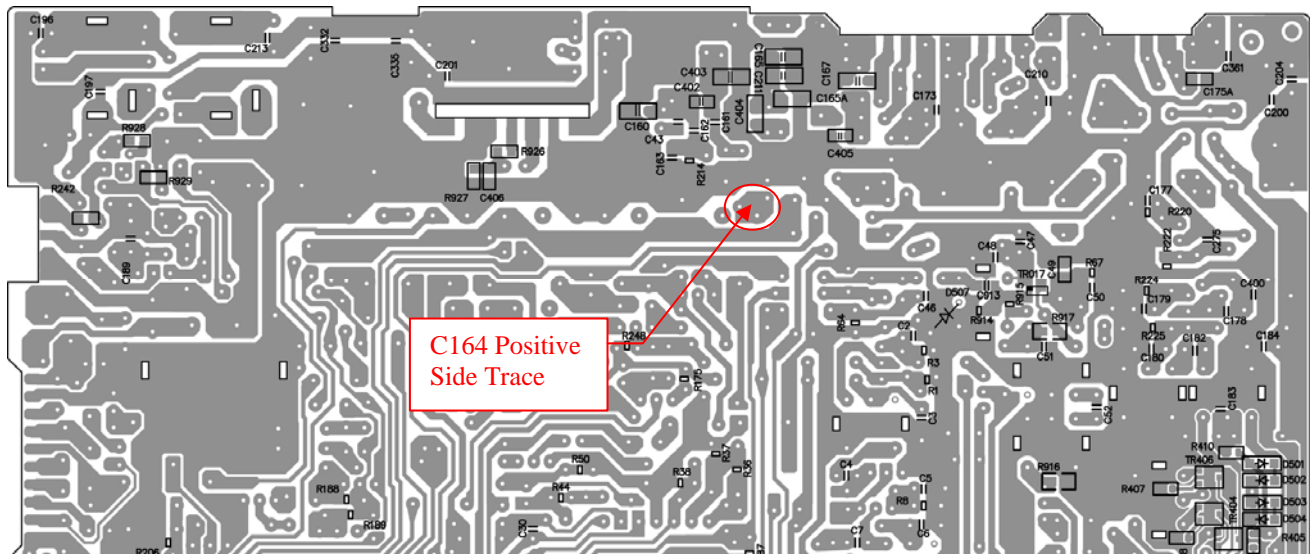


- 14) Solder the positive (red) power lead from the RFX75 to the positive side of the transceiver's DC IN jack.
- 15) Solder the negative (black) power lead from the RFX75 to the negative side of the transceiver's DC IN jack.
- 16) Locate the Orange wire from the RFX75 and route it through the slot on the transceiver's PCB where TR43 and TR56 were removed. On the solder side of the transceiver PCB, solder the Orange wire to the center lead of TR51 in the transceiver. See diagram below.

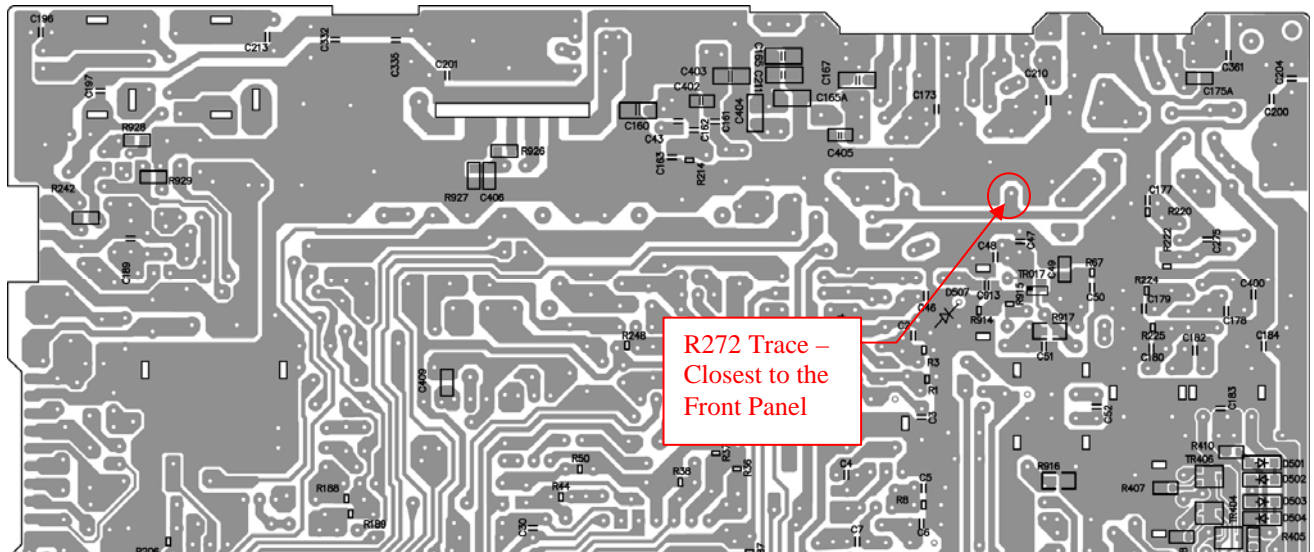


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- 17) Locate the Yellow wire from the RFX75 and route it through the slot on the transceiver's PCB where TR43 and TR56 were removed. On the solder side of the transceiver PCB, solder the Yellow wire to the trace at the positive side of C164. See diagram below.



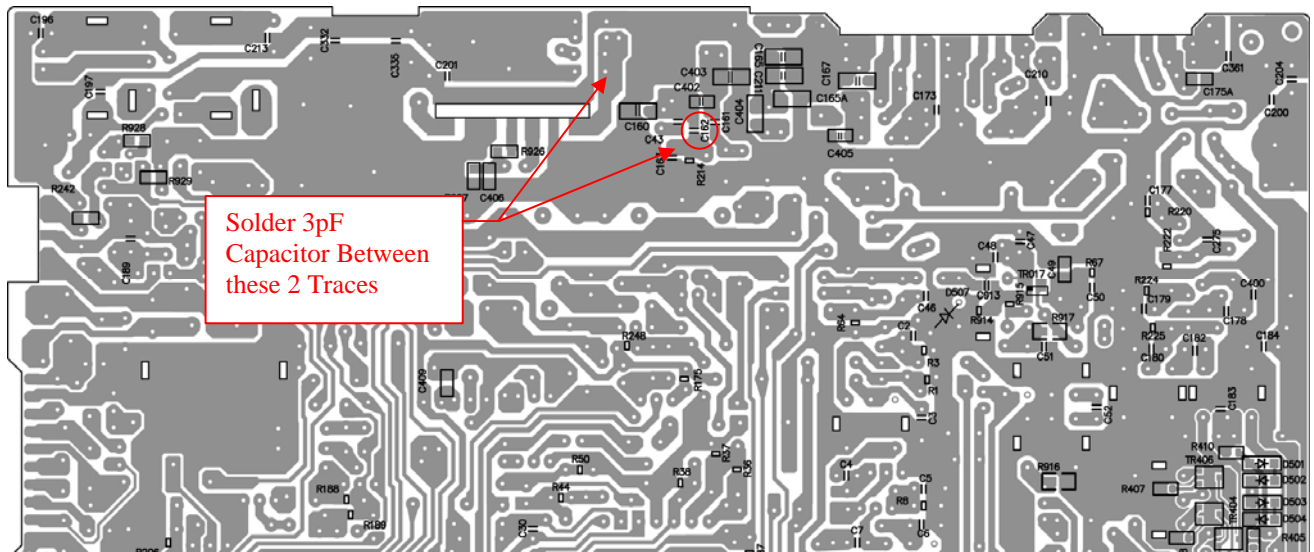
- 18) Locate the Blue wire from the RFX75 and route it through the slot on the transceiver's PCB where TR43 and TR56 were removed. On the solder side of the transceiver PCB, solder the Blue wire to the trace at R272 that is closest to the front panel of the transceiver. This location is +8 volts in transmit only. See diagram below.



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**19) For S-9 Models Only – Do not perform this step on S-3 or S-6 models.**

- a. On solder side of transceiver PCB, unsolder and remove the chip capacitor at C162 (circled in red on diagram below).
- b. Add a 3pF ceramic disc capacitor from the trace where the RF OUT coax center conductor is soldered to the trace of C162 closest to the front panel of the transceiver. See diagram below.
- c. Make sure to insulate the leads of the 3pF capacitor so that they do not short-out on any traces.



20) Double check installation and confirm that all wires are installed correctly.

21) Connect transceiver to power and test equipment and re-tune the transmit and receive sections of the transceiver as needed. **WARNING: DO NOT SET AM CARRIER HIGHER THAN 15 WATTS ON TRANSCEIVER WITH RFX75 INSTALLED.**

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