



# SERVICE BULLETIN

from: TRIO-KENWOOD COMMUNICATIONS, INC.

24

SUBJECT: GENERAL NOTES ON TS-820

DATE 10-25-77

1. No output Tx: SG switch is "off".
2. No Tx, Rx, or VFO: There is not a 9P plug installed.
3. Low Rx sensitivity, no Tx: The transverter switch is "on".
4. S meter full deflection when first turned on: Make sure RF gain is not fully CCW.
5. If digital display does not count: Make sure DH is not "on".
6. If there is no DG display: Make sure you are not in remote VFO with no remote VFO.
7. When intermittant in any circuit:
  - a. Check for loose black jumper from point to point on circuit board.
  - b. Check for broken foil path.
  - c. Check for component that has been pulled out or loosely soldered.
  - d. Check for solder spash across foil path.
  - e. Check for loose pins.
  - f. Check for component leads touching to metal IF cans.
  - g. Check for wire not soldered at function switch or at any switch or control.
  - h. When checking FET, check for excessive voltage at can top usually source, or same G-1, G-2 voltage.
  - i. Check for loose Molex mini connector or any foreign substance on pins.
8. Complaint of frequency shift when Tx - CW: This is normal. 800 Hz.
9. Not proper PLL action: Make sure PLL slide switch is in NOR not TUNE.
10. Receiver audio self oscillation at high level: Make sure audio board mounting screws are tight.



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DATE 10-25-77

## RECEIVER

1. Low audio output receiver sensitivity and no transmit: -6V supply is bad. Q13 on fix VOX (X50-1350-00).
2. 25KHz callibrator will not zero: ADD 3pf in parallel with TC-1 at (X52-0005-01) marker unit.
3. Receiver sensitivity down: Q2 3SK35(GR) on RF unit (X44-1150-00). +9V on PD unit is shorted. L-6 shorted to ground.
4. Intermittant receive when moving set. (Shock): Check for touching terminals at final relay socket.
5. No receiver or digital: 14V wire pinched between DG-1 chassis and ground.
6. Receiver sensitivity 40dB down: Check for shorted L-8 1.9 antenna coil on coil pack (X44-1140-00).
7. Adjacent signal interference: See TKC bulletin.
8. No receive audio: Check for shorted TA 7201-P IC module at (X49-1080-00).
9. Poor receive audio: The 100V AC 120 volt taps were mis-wired.
10. Receiver doesn't work 20-40: Check for wafer touch to ground on band switch.
11. No DG-1, no Rx, no Tx, no VCO: Bad D-1 5 volt Zener on Relayunit (X43-1190-00).
12. RIT action seems warbly: See TKC bulletin.
13. Receiver has bad static and is noisy: Bad C14, C15 tantalum on PD unit (X50-1340-00).
14. VFO frequency shift: Check for loose tension of VFO tension spring.
15. USB - LSB will not work: Check for loose connection at C-18 CAR-1 on (X50-1310-00).
16. Intermittant audio: Check for Loose mounting screws on audio board (X49-1080-00).



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## TRANSMITTER

1. Mushy audio on transmit: Mic. amps. Q20 and Q21 on IF (X48-1150-00) are bad.
2. No 14V supply: Bad bridge diodes D8 - D10 on (X43-1090-02).
3. Intermittant operation of any one band: Check for loosely soldered Xtals in PD unit (X50-1340-00).
4. Mic. gain down: Cold solder joint at SSB xtal filter IF unit (X48-1150-00).
5. Self oscillation when Tx: Bad final tubes S2001-X2. Burned cathode resistors 10 ohms R2 R3 at final unit (X56-1200-00).
6. No VOX operation. No sidetone: Burned resistor R12 220 ohms at key socket.
7. No USB or LSB: Check CAR-1 X1 - X2 crystal cold soldered CAR-1 on (X50-1310-00).
8. No Tx: Check for shorted Q-1 and Q-8 balanced mixer on RF unit (X44-1150-00).
9. No ALC meter movement: Readjustment of meter amp VR-1, VR-2 on IF unit (X48-1150-00).
10. Intermittant ALC action after peaking drive: One final tube S2001-A is bad.
11. Fix lite on when in VFO position: Wire shorted terminals of function switch.
12. No loading of Tx: Cold solder joint at relay socket RL-1 antenna relay.
13. Using Sure 444 speech processor is distorted: See TKC bulletin regarding 16dB pad for mic. input.
14. No relay closure on Tx: Q9 on fix VOX (X50-1350-00) is bad.
15. Very low RF output only when using RF speech processor: Bad Q30 2SC733(y) on IF (X48-1150-00).



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TRANSMITTER (Cont'd.)

16. Low RF output on SSB without RF speech processor: Bad Q20 2SC733(y) on (X48-1150-00).
17. Large audio difference between USB and LSB: realign carrier unit per TKC specifications.
18. No loading on 40 meters: Foil path is open on RF coil pack.
19. No Tx when using send switch: Bad R-28 1K and Q-9 2SA562(y) on fix VOX (X50-1350-00).
20. Blows fuse: Check for shorted C-21, C-22 100uf 500V.
21. No drive, no Tx or bias: Open screen resistor R-6 470 ohms at reflector unit (X43-1090-02).
22. VFO intermittant: Check for cold solder at VFO power plug.
23. Audio distortion on Tx with processor: C96 may be loose on IF board (X48-1150-00)
24. Faulty LED indications: Check for loose ground screws on LED board (X54-1180-00).
25. Low output on CW: R-14 470 ohms touch to filter case on IF unit (X48-1150-00).
26. VOX operation is intermittant: Solder touch VS terminal and 14V at (50-1350-00).
27. Intermittant Tx: Make sure ground strap for 12BY7 shield is under shield.
28. Insuffient power out to drive linear amp: An increase of 5-7 watts can be obtained by paralleling R-6 on receiver unit (X43-1090-02).with 47 ohm 2 watt.
29. VFO output level is down: Q2 2SK19(y) inside VFO is bad.
30. No Tx or Rx on any band. No VCO output: Q14 2SC741 on (X50-1330-00) is bad.
31. No Tx or Rx: Loose contact VFO output terminal on fix VOX (X50-1350-00).