FM Tracking

1. Turn the MUTING and MPX FILTER switches to the OFF position, turn the IF BAND switch to the NARROW position, and the FUNCTION switch to the FM position.
2. Set up the test equipment as Fig. 7-4.
3. Connect the wire between Tuner ass'y terminal 26 and ground.
4. Connect a DC voltmeter between Tuner ass'y terminal 43(+) and ground(−).
5. Adjust the VR_3 of the APC ass'y to obtain a reading of +8V on the DC voltmeter (refer to Fig. 7-2).
6. Disconnect the DC voltmeter from the Tuner ass'y.
7. Set the FM signal generator (FM SG) to a modulation frequency of 400Hz, FM deviation of 75kHz, and output level of 60dB to 80dB.
8. Set the FM SG output frequency and the dial frequency of the TX-9800 to 90MHz.
9. Adjust the core of L_{10} to obtain a maximum reading on the SIGNAL meter.
10. Set the FM SG output frequency and dial frequency of the TX-9800 to 106MHz.
11. Adjust the TC_5 to obtain a maximum reading on the SIGNAL meter.
12. Adjust by repeating steps 8 to 11.
13. Set output level of the FM SG from 20dB to 30dB.
14. Set the FM SG output frequency and dial frequency of the TX-9800 to 90MHz.
15. Adjust the gap of coils (L_3 to L_5)* and core of L_2 and T_1 to T_3 to obtain a maximum reading on the signal meter.
16. Set the FM SG output frequency and dial frequency of the TX-9800 to 106MHz.
17. Adjust TC_1 to TC_4 to obtain a maximum reading on the SIGNAL meter.
18. Adjust by repeating steps 14 to 17.
19. Connect the wire between Tuner ass'y terminal 37 and ground.
20. Turn the dial frequency of the TX-9800 to 98MHz without any input signal.
21. Adjust the core of T_4-a so that the TUNING meter reads dead center.
22. Turn the IF BAND switch to the WIDE position.
23. Set the FM SG output frequency and dial frequency of the TX-9800 to 98MHz. Then TUNING meter reads dead center.
24. Set output level of the FM SG to 60dB.
25. Adjust the core of T_4-b to reduce distortion in the output to a minimum.
26. Repeat steps 20 to 25 above so that the TUNING meter reads dead center with a minimum of distortion.
27. Disconnect wire between Tuner ass'y terminal 26 and ground.
28. Adjust the TC_1 of the APC ass'y so that the TUNING meter reads dead center.
29. Disconnect the wire between Tuner ass'y terminal 37 and ground.
30. Set the FM SG output frequency and dial frequency of the TX-9800 to 98MHz.
31. Set the FM SG output level to 100dB, and then adjust VR_3 so that the SIGNAL meter reads 4.8 on the scale.
32. Set the FM SG output level to 35dB, and record the deflection level of the SIGNAL meter.
33. Turn the IF BAND switch to the NARROW position.
34. Adjust VR_1 to obtain the same deflection level of the SIGNAL meter as the deflection level recorded in step 32.
35. Turn the IF BAND switch to the WIDE position.
36. Turn the MUTING switch to the ON position.
37. Set the FM SG output level to 20dB, and then adjust VR_2 to the point where the muting operated.

Multiplex Decoder

38. Connect the multiplex signal generator (MPX SG) to the external modulator terminals of FM SG, thereby using FM SG as external modulation.
39. Connect the frequency counter between terminal 17 of the Tuner ass'y and ground.
40. Turn the MUTING switch to the ON position and IF BAND switch to the WIDE position.
41. Set the FM SG output frequency to 98MHz, and output level to 60dB, unmodulated.
42. Tune the TX-9800 to check that the SIGNAL meter gives maximum deflection, and the TUNING meter reads dead center.
43. Adjust VR_5 to obtain a reading of 76kHz on the frequency counter.
44. Disconnect the frequency counter.
45. Set the MPX SG modulation output to pilot signal (19kHz) only, and set the FM deviation to 7.5kHz.
46. Adjust VR_4 so that the AC voltmeter (OUTPUT) shows minimum reading (19kHz leak).
47. Set the MPX SG to 1kHz (L or R) 33.75kHz deviation and 19kHz (pilot signal) 7.5kHz deviation.
48. Adjust the core of T_2 (less than ±90°) for minimum distortion at the L or R output.
49. Turn the IF BAND switch to the NARROW position.