

TKR-750 Tuning procedure

Before attempting to tune the transceiver, connect the unit to a suitable power supply. Whenever the transmitter tuned, unit must be connected to a suitable dummy load, unless the instruction specify otherwise. The speaker output connector must be terminated with a 4 Ohm dummy load at any time during the tuning and connected to an AC voltmeter and an audio distortion meter or a SINAD measurement at all the time during the tuning.

Turn the power switch on when connect to PC and FPU cable (KPG-46) with Radio. Start up the FPU (KPG-66D). Select to "Program – Test-Mode" from the menu bar at the FPU window, or press the CTRL-T , then select "Test Mode" and open the "Test Mode" window.

(1) Manual Tuning

The Manual Tuning needs to be done before PC tuning. The items are as follows; 1. RX VCO lock voltage, 2. BPF adjustment, 3. MCF adjustment, 4. Discriminator adjustment, 5. TX VCO lock voltage.

These adjustment parts (L2/L3/L5/L7/L14/L15/L16/L17/L18/L19/L24) and connectors (CN1/CN2/CN4) are on TX/RX unit(X57-626* A/2).

1.RX VCO lock voltage

- a. Connect DVM (Digital Volt Meter) to "RX CV" terminal.
- b. Adjust the PLL lock voltage with TC350/351 at the VCO unit (X58-478*).

2.BPF adjustment

- a. Connect the TG (tracking generator) to RX IN connector on the rear panel.
- b. Connect CN1 to the spectrum analyzer input.
- c. Adjust L2/L3/L5/L7, and obtain the correct waveform at the desired frequency.

3.MCF adjustment

- a. Connect the TG to CN2, then connect CN4 to the spectrum analyzer input.
- b. Adjust L14/L17/L18 in the wide mode, and obtain the correct waveform at the desired frequency (44.85MHz).
- c. Adjust L15/L16/L19 in the narrow mode and obtain the correct waveform at the desired frequency (44.85MHz).

4.Discriminator adjustment

- a. Connect the SSG to the RX IN connector.
- b. Input desired RF signal with standard modulation.
- c. Adjust L24 until obtain the maximum AF level.

5.TX VCO lock voltage

- a. Connect to DVM to "TX CV" terminal.
- b. Adjust the PLL lock voltage with TC350/351 at the VCO unit (X58-479*).

(2) PC Tuning

1 Transmitter section

1.1 Transmitter frequency

- a. In the item window, double-click "Frequency (TX)", then the "Frequency (TX)" window will be appeared.
- b. Click "TX On", then the radio will transmit.
- c. Adjust the data for the transmitter frequency then click "OK".

1.2 R.F High Power

- a. In the item window, double-click "TX High Power ", then the "TX High Power" window will be appeared.
- b. Same as "a" click the tag of Lower frequency, Center frequency, Higher frequency.

- c. Click "TX On", then the radio will transmit.
- d. Adjust the data for the R.F High Power then click "OK".

1.3 R.F Low Power

- a. In the item window, double-click "TX Low Power ", then the "TX Low Power" window will be appeared.
- b. Same as "a" click the tag of Lower frequency, Center frequency, Higher frequency.
- c. Click "TX On", then the radio will transmit.
- d. Adjust the data for the R.F Low Power then click "OK".

1.4 Signalling Balance

- a. Select the " Wide " in the [Wide/Narrow] pull-down list.
- b. In the item window, double-click "DQT balance", then the " DQT balance" window will be appeared.
- c. Same as "b" click the tag of Lower frequency, Higher frequency.
- d. Click "TX On", then the radio will transmit.
- e. Adjust the data for the DQT balance then click "OK".
- f. Same as "b" to "e", select the " Narrow " in the [Wide/Narrow] pull-down list.

1.5 Max, Deviation

- a. Select the " Wide " in the [Wide/Narrow] pull-down list.
- b. In the item window, double-click "Maximum Deviation", then the "Maximum Deviation" window will be appeared.
- c. Same as "b" click the tag of A: Lower frequency, A: Center frequency, A: Higher frequency, B: Lower frequency, B: Center frequency, B: Higher frequency.
- d. Click "TX On", then the radio will transmit.
- e. Adjust the data for the Maximum Deviation then click "OK".
- f. Same as "b" to "e", select the " Narrow " in the [Wide/Narrow] pull-down list.

1.6 TA Deviation (VCO A)

- a. Select the " Wide " in the [Wide/Narrow] pull-down list.
- b. In the item window, double-click "TX Audio input (TA) VCO A", then the "TX Audio input (TA) VCO A" window will be appeared.
- c. Click "TX On", then the radio will transmit.
- d. Adjust the data for the TX Audio input (TA) VCO A then click "OK".
- e. Same as "b" to "d", select the " Narrow " in the [Wide/Narrow] pull-down list.

1.7 TA Deviation (VCO B)

- a. Select the " Wide " in the [Wide/Narrow] pull-down list.
- b. In the item window, double-click "TX Audio input (TA) VCO B", then the "TX Audio input (TA) VCO B" window will be appeared.
- c. Click "TX On", then the radio will transmit.
- d. Adjust the data for the TX Audio input (TA) VCO B then click "OK".
- e. Same as "b" to "d", select the " Narrow " in the [Wide/Narrow] pull-down list.

1.8 TD Deviation VCO A

- a. Select the " Wide " in the [Wide/Narrow] pull-down list.
- b. In the item window, double-click "TD Deviation VCO A", then the " TD Deviation VCO A" window will be appeared.
- c. Click "TX On", then the radio will transmit.
- d. Adjust the data for the TD Deviation VCO A then click "OK".
- e. Same as "b" to "d", select the " Narrow " in the [Wide/Narrow] pull-down list.

1.9 TD Deviation VCO B

- a. Select the " Wide " in the [Wide/Narrow] pull-down list.
- b. In the item window, double-click "TD Deviation VCO B", then the " TD Deviation VCO B" window will be appeared.
- c. Click "TX On", then the radio will transmit.
- d. Adjust the data for the TD Deviation VCO B then click "OK".
- e. Same as "b" to "d", select the " Narrow " in the [Wide/Narrow] pull-down list.

- 1.10 QT Deviation VCO A
 - a. Select the " Wide " in the [Wide/Narrow] pull-down list.
 - b. In the item window, double-click "QT Deviation VCO A", then the "QT Deviation VCO A" window will be appeared.
 - c. Click "TX On", then the radio will transmit.
 - d. Adjust the data for the QT Deviation VCO A then click "OK".
 - e. Same as "b" to "d", select the " Narrow " in the [Wide/Narrow] pull-down list.
- 1.11 QT Deviation VCO B
 - a. Select the " Wide " in the [Wide/Narrow] pull-down list.
 - b. In the item window, double-click "QT Deviation VCO B", then the "QT Deviation VCO B" window will be appeared.
 - c. Click "TX On", then the radio will transmit.
 - d. Adjust the data for the QT Deviation VCO B then click "OK".
 - e. Same as "b" to "d", select the " Narrow " in the [Wide/Narrow] pull-down list.
- 1.12 DQT Deviation VCO A
 - a. Select the " Wide " in the [Wide/Narrow] pull-down list.
 - b. In the item window, double-click "DQT Deviation VCO A" then the " DQT Deviation VCO A" window will be appeared.
 - c. Click "TX On", then the radio will transmit.
 - d. Adjust the data for the DQT Deviation VCO A then click "OK".
 - e. Same as "b" to "d", select the " Narrow " in the [Wide/Narrow] pull-down list.
- 1.13 DQT Deviation VCO B
 - a. Select the " Wide " in the [Wide/Narrow] pull-down list.
 - b. In the item window, double-click "DQT Deviation VCO B" then the " DQT Deviation VCO B" window will be appeared.
 - c. Click "TX On", then the radio will transmit.
 - d. Adjust the data for the DQT Deviation VCO B then click "OK".
 - e. Same as "b" to "d", select the " Narrow " in the [Wide/Narrow] pull-down list.
- 1.14 CW ID Deviation VCO A
 - a. Select the " Wide " in the [Wide/Narrow] pull-down list.
 - b. In the item window, double-click "CW ID Deviation VCO A" then he "CW ID Deviation VCO A" window will be appeared.
 - c. Click "TX On", then the radio will transmit.
 - d. Adjust the data for the CW ID Deviation VCO A then click "OK".
 - e. Same as "b" to "d", select the " Narrow " in the [Wide/Narrow] pull-down list.
- 1.15 CW ID Deviation VCO B
 - a. Select the " Wide " in the [Wide/Narrow] pull-down list.
 - b. In the item window, double-click "CW ID Deviation VCO B" then he "CW ID Deviation VCO B" window will be appeared.
 - c. Click "TX On", then the radio will transmit.
 - d. Adjust the data for the CW ID Deviation VCO B then click "OK".
 - e. Same as "b" to "d", select the " Narrow " in the [Wide/Narrow] pull-down list.
- 1.16 Test Tone Deviation VCO A
 - a. Select the " Wide " in the [Wide/Narrow] pull-down list.
 - b. In the item window, double-click "Test Tone Deviation VCO A" then the "Test Tone Deviation VCO A" window will be appeared.
 - c. Click "TX On", then the radio will transmit.
 - d. Adjust the data for the Test Tone Deviation VCO A then click "OK".
 - e. Same as "b" to "d", select the " Narrow " in the [Wide/Narrow] pull-down list.
- 1.17Test Tone Deviation VCO B
 - a. Select the " Wide " in the [Wide/Narrow] pull-down list.
 - b. In the item window, double-click "Test Tone Deviation VCO B" then the "Test Tone

- Deviation VCO B" window will be appeared.
- c. Click "TX On", then the radio will transmit.
 - d. Adjust the data for the Test Tone Deviation VCO B then click "OK".
 - e. Same as "b" to "d", select the "Narrow" in the [Wide/Narrow] pull-down list.
- 1.18 Repeat Gain
- a. Select the "Wide" in the [Wide/Narrow] pull-down list.
 - b. In the item window, double-click "Repeat Gain" then the "Repeat Gain" window will be appeared.
 - c. Click "TX On", then the radio will transmit.
 - d. Adjust the data for the Repeat Gain then click "OK".
 - e. Same as "b" to "d", select the "Narrow" in the [Wide/Narrow] pull-down list.
2. Receiver section
- 2.1 Receiver frequency
- a. In the item window, double-click "Frequency (RX)" then the "Frequency (RX)" window will be appeared.
 - b. Adjust the data for the receiver frequency then click "OK".
- 2.2 Squelch Tight
- a. Select the "Wide" in the [Wide/Narrow] pull-down list.
 - b. In the item window, double-click "Squelch Tight" then the "Squelch Tight" window will be appeared.
 - c. Adjust the data for the Squelch Tight then click "OK".
 - d. Same as "b" to "c", select the "Narrow" in the [Wide/Narrow] pull-down list.
- 2.3 Squelch Open
- a. Select the "Wide" in the [Wide/Narrow] pull-down list.
 - b. In the item window, double-click "Squelch Open" then the "Squelch Open" window will be appeared.
 - c. Adjust the data for the Squelch Open then click "OK".
 - d. Same as "b" to "c", select the "Narrow" in the [Wide/Narrow] pull-down list.
- 2.4 RD level
- a. Select the "Wide" in the [Wide/Narrow] pull-down list.
 - b. In the item window, double-click "RD level" then the "RD level" window will be appeared.
 - c. Select to numbers for the RD level then click "OK".
 - d. Same as "b" to "c", select the "Narrow" in the [Wide/Narrow] pull-down list.
- 2.5 RA level
- a. Select the "Wide" in the [Wide/Narrow] pull-down list.
 - b. In the item window, double-click "RA level" then the "RA level" window will be appeared.
 - c. Adjust the data for the RA level then click "OK".
 - d. Same as "b" to "c", select the "Narrow" in the [Wide/Narrow] pull-down list.