

TKR-850 K3 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/L4/L5/ L14/ L15/L16/ L17/L18/ L19/L24) and connectors (CN1/CN2/CN4) are on TX/RX unit (X57-627* 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 (X58-480*).

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/L4/L5, 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 DVM to "TX CV" terminal.
- b. Adjust the PLL lock voltage with TC350/351 at the VCO unit (X58-481*).

(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" Select to 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" Select to 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. Click "TX On", then the radio will transmit.
 - d. Adjust the data for the DQT balance then click "OK".
 - e. Same as "b" to "d", 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" Select to Lower frequency, Center frequency, 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
- a. Select the " Wide " in the [Wide/Narrow] pull-down list.
 - b. In the item window, double-click "TX Audio input (TA)", then the "TX Audio input (TA)" window will be appeared.
 - c. Click "TX On", then the radio will transmit.
 - d. Adjust the data for the TX Audio input (TA) then click "OK".
 - e. Same as "b" to "d", select the " Narrow " in the [Wide/Narrow] pull-down list.
- 1.7 TD Deviation
- a. Select the " Wide " in the [Wide/Narrow] pull-down list.
 - b. In the item window, double-click "TD Deviation", then the " TD Deviation " window will be appeared.
 - c. Click "TX On", then the radio will transmit.
 - d. Adjust the data for the TD Deviation then click "OK".
 - e. Same as "b" to "d", select the " Narrow " in the [Wide/Narrow] pull-down list.
- 1.8 QT Deviation
- a. Select the " Wide " in the [Wide/Narrow] pull-down list.
 - b. n the item window, double-click "QT Deviation", then the "QT Deviation" window will be appeared.
 - c. Click "TX On", then the radio will transmit.
 - d. Adjust the data for the QT Deviation then click "OK".
 - e. Same as "b" to "d", select the " Narrow " in the [Wide/Narrow] pull-down list.
- 1.9 DQT Deviation
- a. Select the " Wide " in the [Wide/Narrow] pull-down list.
 - b. In the item window, double-click "DQT Deviation" then the " DQT Deviation " window will be appeared.
 - c. Click "TX On", then the radio will transmit.
 - d. Adjust the data for the DQT Deviation then click "OK".
 - e. Same as "b" to "d", select the " Narrow " in the [Wide/Narrow] pull-down list.

1.10 CW ID Deviation

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

1.11 Test Tone Deviation

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

1.12 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 "d", 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 "d", 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.