

## TK-3140 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 16 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.

Power sw on during "A" push to test mode [1-1] then push "S" to tuning mode.  
This \*\*\* mean using 3 numbers from CHANNEL NOB.

### 1 Transmitter section

#### 1.1 Frequency adjustment

Set test mode CH1, Push "S" to enter tuning mode, Select [FREQ\*\*\*], then PTT on.  
470.100MHz  $\pm$  50Hz.

#### 1.2 TX High power adjustment

Set test mode CH1, Push "S" to enter tuning mode, Select Hpow, Push "A" to 5 points.

- Select [L Hpow\*\*\*] then PTT on 4.0W  $\pm$  0.1W.
  - Push "C" to select [L2 Hpow\*\*\*] then PTT on, push "B" after tuned.
  - Push "C" to select [C Hpow \*\*\*] then PTT on, push "B" after tuned.
  - Push "C" to select [H2Hpow\*\*\*] then PTT on, push "B" after tuned.
  - Push "C" to select [H Hpow\*\*\*] then PTT on, push "S" to return test mode.
- The TX current is 2.2A or less.

#### 1.3 TX Low power adjustment

Set test mode CH1, Push "S" to enter tuning mode, Select L pow, Push "A" to 5 points.

- Select [L Lpow\*\*\*] then PTT on 1.0W  $\pm$  0.1W.
  - Push "C" to select [L2 Lpow\*\*\*] then PTT on, push "B" after tuned.
  - Push "C" to select [C Lpow\*\*\*] then PTT on, push "B" after tuned.
  - Push "C" to select [H2 Lpow\*\*\*] then PTT on, push "B" after tuned.
  - Push "C" to select [H Lpow\*\*\*] then PTT on, push "S" to return test mode.
- The TX current is 1.0A or less.

#### 1.4 DQT BAL adjustment

Set test mode CH1, Push "S" to enter tuning mode, Select [BAL\*\*\*], Push "A" to enter 3 Points,

- Select [LBAL\*\*\*] adjustments mode then PTT on Push "B" after tuned .
- Push "C" to select [C BAL\*\*\*] then PTT on push "B" after tuned.
- Push "C" to select [H BAL\*\*\*] then PTT on push "B" after tuned.  
Push "A" to return to tuning mode.
- Push "Lamp" to narrow adjustment mode [n BAL\*\*\*], then PTT on push "B" after tuned.  
Push "Lamp" to return tuning mode.  
Make the de-modulation waves into square waves.

#### 1.5 Max deviation adjustment

Set test mode CH1, push "S" to enter tuning mode, Push "A" to 3 points adjustment mode.

- a) Select [L MAX\*\*\*] then PTT on push "B" after tuned.
- b) push "C" to select [C MAX\*\*\*] then PTT on push "B" after tuned.
- c) push "C" to select [H MAX\*\*\*] then PTT on push "B" after tuned  
Push "A" to return tuning mode.  
Deviation  $\pm 3.80\text{KHz}$ (Wide),  $\pm 1.75\text{KHz}$ (Narrow)  
Push "Lamp" to narrow adjustment mode [n MAX\*\*\*] then PTT on push "Lamp" to return tuning mode.

### 1.6 QT Deviation adjustment

- a) Push "S" to enter tuning mode select [FQT\*\*\*] push "A" to adjustment mode.  
Select [L FQT\*\*\*] then PTT on push "B" after tuned.  
Deviation  $\pm 0.75\text{KHz}$ ( $\pm 0.05\text{KHz}$ ) (Wide)  $\pm 0.35\text{KHz}$  ( $\pm 0.05\text{KHz}$ )(Narrow)
- b) same [C FQT\*\*\*]
- c) same [H FQT\*\*\*]
- d) same [n FQT\*\*\*]

### 1.7 DQT Deviation adjustment

- a) same as QT. Select [FDQT\*\*\*]
- b) same as [L FDQT\*\*\*]
- c) same as [C FDQT\*\*\*]
- d) same as [H FDQT\*\*\*]
- e) same as [n FDQT\*\*\*]  
Deviation  $\pm 0.75\text{KHz}$ ( $\pm 0.05\text{KHz}$ ) (Wide)  $\pm 0.35\text{KHz}$  ( $\pm 0.05\text{KHz}$ )(Narrow)

### 1.8 LTR Deviation adjustment

- a) Select [FLTR\*\*\*]
- b) Select [L FLTR\*\*\*]
- c) Select [C FLTR\*\*\*]
- d) Select [H FLTR\*\*\*]
- e) Select [n FLTR\*\*\*]  
Deviation  $\pm 1.0\text{KHz}$ ( $\pm 0.05\text{KHz}$ )(Wide)  $\pm 0.75\text{KHz}$ ( $\pm 0.05\text{KHz}$ )(Narrow)

### 1.9 DTMF Deviation adjustment

- a) Select [DTMF\*\*\*] Deviation  $\pm 3\text{KHz}$ ( $\pm 0.05\text{KHz}$ )(Wide)
- b) Select [n DTMF\*\*\*] Deviation  $\pm 1.5\text{KHz}$ ( $\pm 0.05\text{KHz}$ )(Narrow)

### 1.10 MSK Deviation adjustment

- a) Select [FMSK\*\*\*] Deviation  $\pm 3\text{KHz}$ ( $\pm 0.05\text{KHz}$ )(Wide)
- b) Select [n MSK\*\*\*] Deviation  $\pm 1.5\text{KHz}$ ( $\pm 0.05\text{KHz}$ )(Narrow)

## 2 Receiver section

### 2.1 Sensitivity

- a) Select [SENS\*\*\*] , Push "A" to 5 points.
- b) Push "C" to select [L SENS\*\*\*] to get best Sensitivity , then push "B" after tuned
- c) Push "C" to select [L2 SENS\*\*\*] to get best Sensitivity , then push "B" after tuned
- d) Push "C" to select [C SENS \*\*\*] to get best Sensitivity , then push "B" after tuned
- e) Push "C" to select [H2 SENS\*\*\*] to get best Sensitivity , then push "B" after tuned

- f) Push "C" to select [H SENS\*\*\*] to get best Sensitivity , then push "B" after tuned
- g) push "A" to return test mode.

## **2.2 Open squelch adjustment**

- a) Push "A" to 3 point ( SSG level : 12dB SINAD)
- b) Select [OSQL\*\*\*] Adjust to point of opening squelch.(Wide)
- c) Select [OSQL\*\*\*] Adjust to point of opening squelch
- d) Select [OSQL\*\*\*] Adjust to point of opening squelch
- e) Select [n OSQL\*\*\*] Adjust to point of opening squelch.(Narrow)

## **2.3 Tight squelch adjustment**

- a) Push "A" to 3 point ( SSG level : 12dB SINAD + 5 dB)
- b) Select [TSQL\*\*\*] Adjust to point of opening squelch.(Wide)
- c) Select [TSQL\*\*\*] Adjust to point of opening squelch
- d) Select [TSQL\*\*\*] Adjust to point of opening squelch
- f) Select [n TSQL\*\*\*] Adjust to point of opening squelch.(Narrow)