

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.
 $470.100\text{MHz} \pm 50\text{Hz}$.

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 $4.0\text{W} \pm 0.1\text{W}$.
 - 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 [H2 Hpow***] 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 $1.0\text{W} \pm 0.1\text{W}$.
 - 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)