

TK-860HG 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 Ohms 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.

1.1 Enter into tuning mode

Press "SCN" key while turn on the transceiver. After about 1 second, the tuning mode starts.

1.2 Frequency version selection

The following operation frequency band can be chosen for the set under tuning.

| Panel Display | Frequency |
|---------------|---------------|
| UHF F1 | 450 to 490MHz |

Following keys on the panel can be used for frequency selection:

- ▲ key Next (Up) frequency selection
- ▼ key Next (Down) frequency selection
- Channel down key Enter (or confirm)

Once, the channel down key is pressed the set tuning items will be started.

1.3 Transmitter tuning

Use "SCN", "▼" key to choose tuning item and "A", "▼", "D/A" key to adjust tuning requirement.

- 1.3.1 Connect a voltmeter to TP1
- 1.3.2 Be sure the voltage should be below 7.5V at the test channel 3 and more than 1.0V at the test channel 2 in the Transmission and Reception mode.
- 1.3.3 Select the test channel 1 and adjust the transmission frequency to 470.100MHz ± 100 Hz.
- 1.3.4 Select Tuning Item 2, RF power adjustment.
Adjust RF output power to 40W ± 2 W.
- 1.3.5 Select Tuning Item 4, DQT balance adjustment.
Adjust the DQT pulse shape to obtain neat demodulation wave-form.
- 1.3.6 Select Tuning Item 5, Max. deviation adjustment.
Apply a 1000Hz tone with a 50mV RMS level to the Microphone input.
Adjust the maximum deviation to 3.9kHz ± 0.1 kHz (for the Wide band), or 1.9kHz ± 0.05 kHz (for the Narrow band).
- 1.3.7 Reduce a 1000Hz tone voltage to 5mV.
Be sure the deviation should be in ± 2.5 kHz to ± 3.5 kHz.
- 1.3.8 Select Tuning Item 6, QT deviation adjustment.
Adjust the QT deviation to 0.75kHz ± 50 Hz (for the Wide band), or 0.35kHz ± 25 kHz (for the Narrow band).
- 1.3.9 Select Tuning Item 7, DQT deviation adjustment.
Adjust the DQT deviation to 0.75kHz ± 50 Hz (for the Wide band), or 0.35kHz ± 25 kHz (for the Narrow band).
- 1.3.10 Be sure the DTMF deviation should be in ± 2.8 kHz to ± 3.2 kHz (for the Wide band), or ± 1.4 kHz to ± 1.6 kHz (for the Narrow band).

1.4 Receiver tuning

- 1.4.1 Select Tuning Item 8, sensitivity adjustment.
Apply a 470.050MHz to the transceiver antenna terminal.
- 1.4.2 Tune L13 and L22 to obtain the maximum receiver SINAD.
- 1.4.3 Tune on the frequencies of 450.050MHz and 489.950MHz,
Change the TV voltage using “□” and “○” key to obtain the maximum receiver SINAD.
- 1.4.4 Select Tuning Item 9, squelch adjustment.
Apply a 470.050MHz with 3dB subtracted from the sensitivity value of 12dB SINAD to the transceiver.
- 1.4.5 Be sure to make the squelch closed once then opened.
- 1.4.6 Set the RF signal level to 8dB SINAD. Confirm the squelch should be opened.
- 1.4.7 Turn off the RF signal. Then confirm the squelch should be closed.