

TK-785 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 "B" key while turn on the transceiver. After about 1 second, the test mode starts. Next, press "A" key, now in tuning mode.

1.2 Tuning mode

Use "C" button to write tuning data through tuning modes, and right side ▲ key

▼ key to adjust tuning requirements (1 to 256 appears on LCD)

Use "D" button to select the adjustment items through tuning modes.

Use "B" button to adjust 3 to 5 points tuning.

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

LCD Display(Tuning mode)

Frequency	256
Adjustment item	Adjustment(1 to 256)

1.3 Transmitter tuning

1.3.1 Connect a voltmeter to TP1

1.3.2 Adjust the voltage 1.4 to 1.5V(TX:TC102,RX:TC101) at the test channel 3-1 and check Less than 7.5V at the test channe2-1 in the Transmission and Reception mode.

1.3.3 Select the test channel 1-1 and select the item "FREQ" then adjust the transmission frequency to 229.100MHz $\pm 100\text{Hz}$.

1.3.4 Select Tuning item "HPOW", RF power adjustment(5points).
Adjust RF output power to 10W $\pm 1\text{W}$.

1.3.5 Select Tuning item "LPOW", RF power adjustments(5points).
Adjust RF output power to 5W $\pm 1\text{W}$.

1.3.6 Select Tuning item "BAL", DQT balance adjustment(3points).
Adjust the DQT pulse shape to obtain neat demodulation wave-form.

1.3.7 Select Tuning item "Max", deviation adjustment(3points).
Apply a 1000Hz tone with a 50mV RMS level to the Microphone input.
Adjust the maximum deviation to 1.75KHz $\pm 0.05\text{KHz}$.

1.3.8 Select Tuning item "QT", QT deviation adjustment(3points).
Adjust the QT deviation to 0.35kHz $\pm 50\text{Hz}$.

1.3.9 Select Tuning item "DQT", DQT deviation adjustment(3points).
Adjust the DQT deviation to 0.35kHz $\pm 50\text{Hz}$.

1.3.10 Select Tuning item "DTMF", DTMF deviation adjustment.
Adjust the DTMF deviation to 1.5kHz $\pm 50\text{Hz}$.

1.3.11 Select Tuning item "FFSK", FFSK deviation adjustment.
Adjust the FFSK deviation to 1.5kHz $\pm 50\text{Hz}$.

1.3.12 Select Tuning item "TONE", TONE deviation adjustment.
Adjust the TONE deviation to 1.5kHz $\pm 50\text{Hz}$.

1.4 Receiver tuning

- 1.4.1 Select Tuning item "SENS", QT sensitivity adjustment(3points).
Apply a 217.050MHz to the transceiver antenna terminal.
- 1.4.2 Tune L202,L203,and L204 to obtain the maximum receiver SINAD.
(at L SENS adjustment value 90)
- 1.4.3 Tune on the frequencies of 226.050MHz(C SENS) and 234.950MHz(H SENS).
Adjust to obtain the maximum receiver SINAD.
- 1.4.4 Select Tuning item "SQL", squelch adjustment(3points).
Apply a 217.050,226.050 and 234.95MHz with 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.
- 1.4.8 Select Tuning item "L RSI", RSS1(L) adjustment(3points).
Apply a 217.050,226.050 and 234.95MHz with 12dB SINAD to the transceiver.
- 1.4.9 Select Tuning item "H RSI", RSS1(H) adjustment(3points).
Apply a 217.050,226.050 and 234.95MHz with -70dBm.