High-Performance SSB/CW QRP Transceiver User's Manual

Introduction

With the SMD doubly-balanced diode ring mixer as the receiving mixer, and the 4-Shottkey Barrier diode mixer as the product detector, **TJ6A** offers excellent low-noise reception, high sensitivity, good selectivity and strong signal handling ability.

TJ6A has such new features as Plug-in RX and TX BPF modules, Plug-in IF XTL filter module. These new features offer flexibility to modify and update.

TJ6A is used with DDS (AD9850) as LO, offering wider frequency coverage

Sensitivity:
-100dbm (0.6uV)

Operating Power:
12 – 13.8 V

Receiving Current:
170 – 180 mA

Transmitting Current:
2.6 A

Output Power:
8 W (15 m: 5W)

Frequency Coverage:
BAND 1: 3.5 – 4 MHz
BAND 2: 7 – 7.5 MHz
BAND 3: 10 – 15 MHz
BAND 4: 18 – 21.5 MHz

Operating Mode:
LSB, USB, CW

IF:
9 MHz

Tuning Step:
10 Hz
100 Hz
1 KHz
10 KHz
100 KHz

OPEARATION GUIDE

Functions of Controls

AF GAIN – used to control volume
STEP – used to select tuning step
MODE – used to select LSB, USB, CW
MEM – used to select the memorized channels
TUNE – used to tune when the knob is turned / to change band when the knob is pressed

Functions of sockets

MIC – Microphone socket
KEY – Straight key socket

Operating TJ6A

Connect the antenna to ANT on the back cover.

Connect the power cord from the back cover to 12 V regulated power supply (12 – 13.8 V can be used). Turn on the power switch of the power supply. The LCD lights and in 1 -2 seconds such information as frequency, mode and step displays.

Press TUNE, bands are changed.

Turn TUNE, the frequency is changed to tune in the signal you want.

Press STEP, suitable tuning steps are selected. Sometimes larger steps such as 100 KHz or 10 KHz are useful, for example, to tune from 5 MHz to 7 MHz.

Press MODE, LSB, USB and CW are selected. In USB mode, the LO frequency increases 3KHz to compensate XTL filter difference, so that you do not have to tune 3 KHz up to receive USB signal. In CW mode, LO frequency increases 2 KHz, so that you do not have to tune 1 KHz away to receive CW signal.

Press MEM, MEMS 0 – 7 are selected. Each memory is an independent VFO with independent modes. Frequency and mode are stored automatically. MCU stores the last operation before the rig shuts down. When the rig is turned on again, it works at the frequency, mode and step it had worked before it was turned off.

When you tune in an SSB station, and want to have QSO with this station, press PTT, you can try you luck.

CAUTION

Use dipole or other resonant antennas. Do not use a hookup wire of a few meters as the “antenna”, which degrades the sensitivity and would damage the transmitting transistors.

When power supply is lower than 10 V, the memory system would stop working.