



## Youkits TJ2B 2015 SSB CW HF TRANSCEIVER

### OPERATION GUIDE

TJ2B is a high-performance QRP portable multi-band SSB/CW transceiver, used with DDS as LO, offering wide frequency coverage and fine tuning rate. The Doubly Balanced Diode Ring Mixer makes strong signal handling capability possible. TJ2B incorporates a separate CW generating module to provide clear, clean, chirp-free CW notes.

Operating Frequency:

<b>BAND</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>RX</b>	5.000000 – 9.999900	10.000000 – 14.499900	15.000000 – 28.599900
<b>TX</b>	7.000000 – 7.300000	14.000000 – 14.350000	18.068000 – 18.168000

Note: No transmission outside amateur bands.

Mode: LSB, USB, CW

Tuning Rate: 100 Hz, 1 kHz, 10 kHz, 100kHz, 1MHz

IF: 9 MHz

Sensitivity: 0.3uV

Operating Power: DC 10.5 – 12.6V

Current Drain: 250 mA (RX); 1100 mA (TX)

Output Power: 5W (SSB); 3.5W (CW)

Features:

High Sensitivity

Strong Signal Handling Capability

Wide RX Frequency Coverage

40 Memories

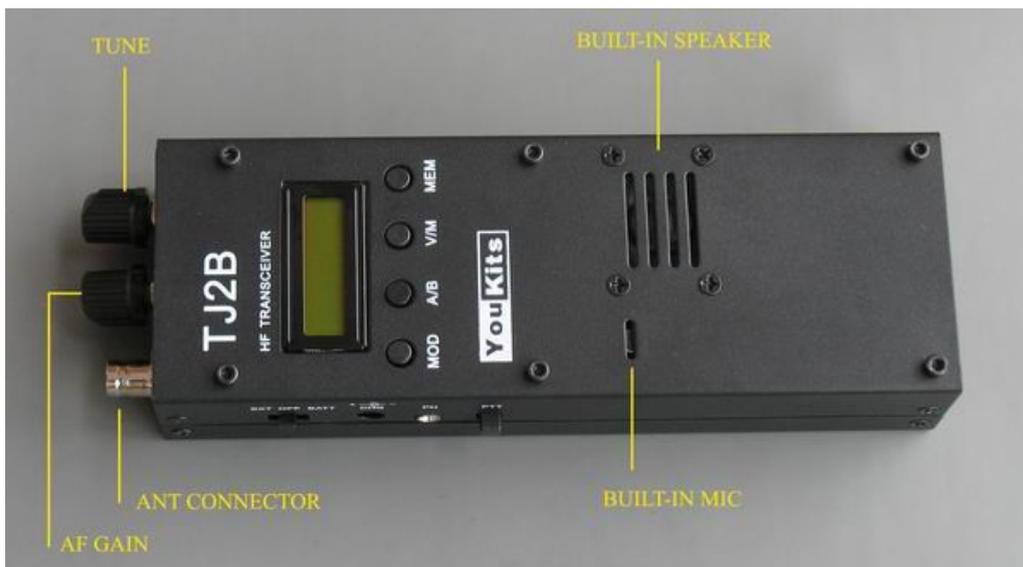
Dual VFO

Memory-VFO Transfer

High-Performance Built-in Speaker

High Sensitivity Built-in MIC

High-Performance Separate CW module to offer clear, clean CW note



### 1. Connector and Knob on Top Panel



**ANT** – Q9 connector for antenna. Connect 50 ohm antenna to this connector.

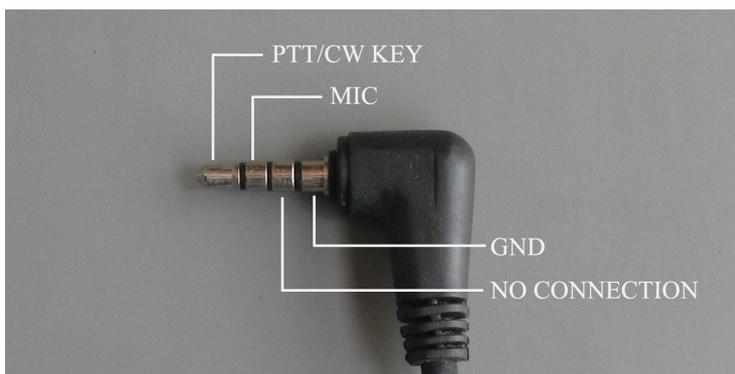
**MIC** - External MIC and PTT/CW key socket. Turn off the power before plugging in the external MIC plug. Built-in MIC is switched off when external MIC is plugged in. In CW mode MIC is switched off and PTT

functions as the CW key if the external MIC is used. The socket can be used as CW key socket in CW mode.

**AF GAIN** - Volume control. Turn clockwise to increase volume.

**TUNE** - Frequency tuning knob/Tuning rate selector. Rotate clockwise is frequency up, counter-clockwise frequency down. Press the

knob to select the tuning rate. The sequence is 100 Hz, 1 kHz, 10 kHz, 100 kHz, and 1 MHz.

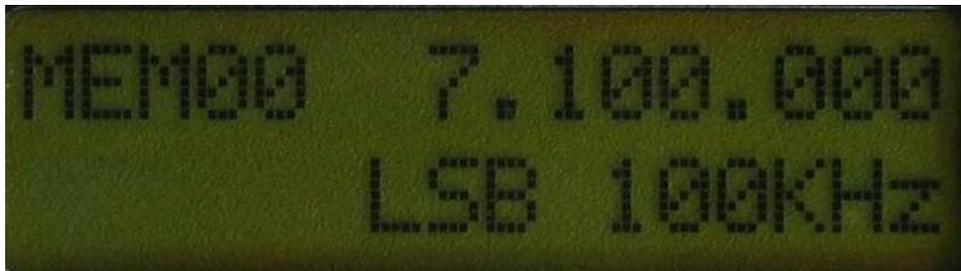


### 2. Buttons on Face Panel

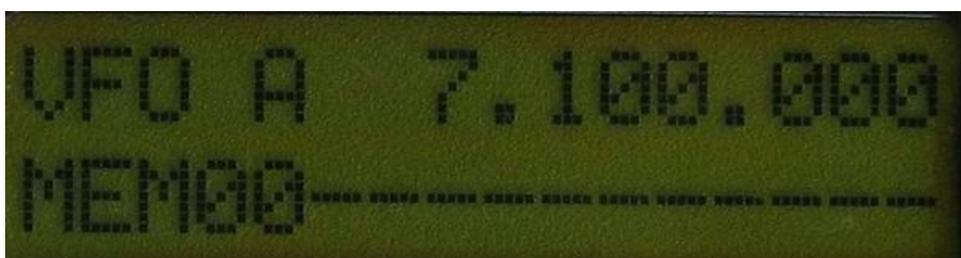
**MOD** - Mode switch. Press to select LSB, USB and CW. In CW mode, the displayed frequency is exactly the sender's frequency. The MCU compensates 650Hz offset.

**A / B** - VFO selecting / Memory clearing. Press to select VFO A or VFO B. In MEM state, hold the button until all the memories are cleared.

**V / M** - VFO/MEM switching. Press to switch between VFO and MEM. Turn TUNE to select the memory number.



**MEM** - Frequency saving / MEM to VFO transfer. Press to save the frequency to the memory. Press MEM, the memory number appears. The dashes indicate the blank state of the memory. Turn TUNE to select the MEM position you want to store the frequency to. MEM00 - MEM39 can be used to store the frequency.



In MEM state,

press MEM, VFO appears on the left corner. For example, VFO A may appear on the left corner (Press A/B to select the VFO you want to transfer the memory to). Press MEM, the frequency in the memory will be transferred to VFO A. Press V/M to enter VFO A, and now you can see the transferred frequency.

### S METER



In receive the bargraph shows relative signal strength. Each bar represents one level. The S-Meter levels are approximate, and accurate calibration is not supported.

### 3. Switch and Socket

**BATT** - When the switch is set at this position, the internal battery is switched on, and the rig works if the

battery pack is installed.

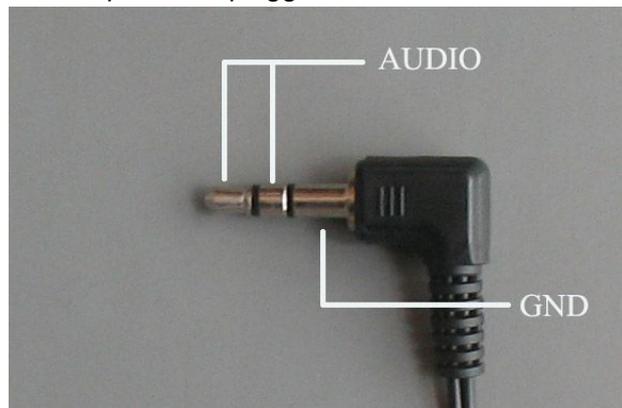
**OFF** - When the switch is set at this position, the power is off. The rig stops working.

**EXT** - When the switch is set at this position, external power is on, and the rig works if 12V DC is plugged in the 2.5mm DC socket.

**CHG** - Battery charging socket. The battery is charged no matter what position the switch is set.

**PH** - Earphone/speaker socket. Either earphones or speaker can be used. The Built-in speaker is switched off when the earphone or speaker is plugged in.

Use the stereo plug. Never use the mono one, which short-circuits one of the audio out put ring.



**PTT** - Push to talk. Press to transmit.

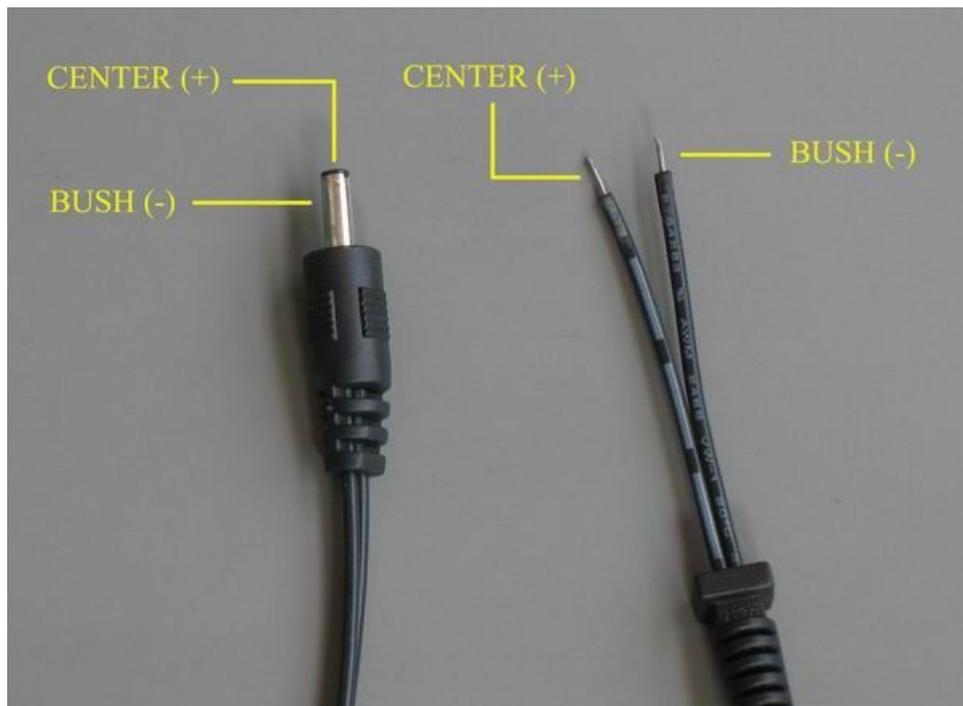


In CW mode MIC is cut off. This button functions as the CW key.

**DC12V** - External power socket. Use stabilized DC power supply.



#### 4. External Power DC Cable



Connect the DC cable as illustrated. The wire labeled white dash is the center, i.e., "+"; the other "-". However, use the ohm meter to confirm. The bush should be connected to "-", the center to "+", never use the wrong polarity!

#### 4. Operation

If you do not have the battery, use the external power. (The battery is optional. Not included in the rig)

Connect the antenna and turn on the power. Signals or noise can be heard. Rotate the TUNE knob to the frequency you want. For compactness, TJ2B has no band switch. Therefore, use fast tuning rate (For example, 10 kHz, 100 kHz or 1 MHz) as the band switch to get to the meter band so as to save time, and then use the fine tuning rate (100 Hz, 1 kHz) to search signals or tune accurately.

##### SSB Transmission

With the built-in MIC:

In LSB or USB mode, press the side PTT button, speak to MIC and your voice is transmitted.

With the external MIC:

In LSB or USB mode, press the handmic PTT button, speak to MIC and your voice is transmitted. The built-in MIC is disconnected when the handmic is plugged in.

##### CW Transmission

In CW mode, the CW note is sent out when PTT or CW key is pressed. A 650 Hz side-tone can be heard. Side-tone is not affected by AF GAIN. MIC stops working in this mode.

Either the side PTT button or the handmic PTT button functions as the CW key. Alternatively a key can be plug in the MIC socket.

**Important!**

Never hold the CW key down for longer than 30 seconds. Long key operation would overheat the power transistor, causing damage.

Outside Amateur Bands

The transmission and side tone circuitry stop working once the MCU “finds” that the frequency is outside the amateur bands.

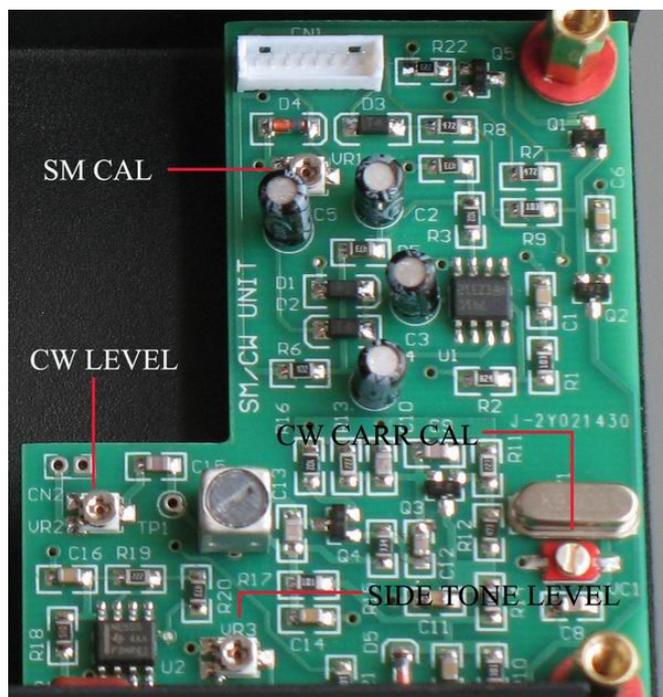
**5. Advanced User**

The S-meter can be calibrated by VR1.

The Side-tone level can be adjusted by VR3.

CW output can be adjusted by VR2.

CW offset frequency can be calibrated by VC1. The factory set value is 650 Hz higher than LSB.



The above settings have been set and calibrated in the factory. Do not calibrate unless:

- 1) The side-tone level does not suit you, i.e. the volume is too high or too low
- 2) A lower CW output level is preferred
- 3) CW transmission frequency is not accurate after many years of operation