

SW-3C 3 band CW QRP Transceiver manual



Specifications

Size: 100*44*103mm (not including protrusions such as knobs)

Weight: about 250 grams.

Input voltage: 10-14VDC.

Current consumption:

When receiving, turn on the backlight about 80mA, turn off the backlight about 65mA.

When transmitting, about 0.7-0.8A (when voltage is 12V)

Frequency Range:

Receiving 5-8MHz, 8-11MHz, 11-16MHz (the peak receiving sensitivity is only in the 40m, 30m, 20m amateur band)

Transmit: 7.0-7.2MHz, 10.1-10.15MHz, 14.0-14.35MHz.

Filter: CW, SSB, automatically switch according to the mode, CW filter bandwidth is about 400Hz, SSB is about 2KHz.

RIT/XIT RIT adjustment range: -9KHz to +9KHz, XIT adjustment range: -30KHz to +30KHz.

RF Output power: about 5W (when the power supply voltage is 12V)

Side tone: 600Hz

Automatic keyer: The speed of the built-in automatic keyer is adjustable.

Stored frequency memories: Each band has 8 stored frequency memories, the frequency and mode can be stored by the user.

Receive mode: CW, CWR, USB, LSB. CW signal can also be transmitted in SSB working mode, so as to realize the cross communication of CW/SSB.

AGC Simple audio AGC, S meter shows the relative strength of the signal.

Connections

External power supply

Any 10-14V DC voltage or battery can be connected through the external power jack. The power jack has a polarity protection circuit to prevent damage to the machine due to reverse power connection.

Headset

Connect stereo headphones to the headphone jack (PHONE), impedance 8-32 ohms.

Antenna

Any resonant antenna can be directly connected to the antenna input (ANT) with a BNC connector. For non-resonant antennas, an antenna tuner should be connected between the antenna input and the antenna.

Key

This circuit has the function of automatically identifying Paddle and straight keys. Just connect the straight key to the mono plug or connect the middle ring and the bottom of the stereo plug to the ground as shown in the figure below. When the power is turned on, the circuit will be different according to the inserted key. For automatic detection, when you hear a click (Morse code letter A), it is a paddle, and when you hear a click (Morse code letter M), it is a straight key. (Be sure to insert the straight key into the socket first and then turn on the power to get into the straight key function).

3.5mm Stereo Plug



paddle dit or straight key

paddle dat or straight key GND

paddle GND/straight key GND

Start-up Screen



Operating:

Power switch and Gain control

The power switch is in the lower left corner of the panel, turn it to the right to turn on the power.

The AF GAIN knob on the left side of the radio panel is the audio gain control knob, turn it clockwise to the end to maximize the gain.



ATT



The ATT button is on the back of the radio. Press this button. The radio's high frequency gain is attenuated by about 15dB, and the LCD screen will display the word ATT.

BAND

The BAND button on the panel is the band selection button. Each time you press the BAND button, the radio will switch the bands in the order of 40m, 30m, and 20m. When the band is switched, it will get into the last stored frequency memo in the corresponding band. Each band has 8 stored frequencies. The frequency and mode of each frequency memo can be set by the user.

M/V/S



Tap this button once to switch between memory frequency (MEM) and VFO. The upper left corner of the LCD screen will display MEM-** or VFO-** (** is a number from 01-08). When MEM-** is displayed, it is the mode of storing frequency memo. At this time, turning the knob on the right can change the stored frequency memo. Turn clockwise to increase and counterclockwise to decrease. When VFO-** is displayed, it is the mode of changing the frequency. At this time, turning the knob can change the frequency, turning clockwise to increase the frequency, and turning counterclockwise to decrease the frequency.



Press the M/V/S button for more than 2 seconds to store the current frequency and mode in the current storage unit. The word Sav-** will be displayed in the upper left corner of the LCD screen. **Everytime the radio powered on,last saved memory of band, frequency and mode will recall.**

RIT/M



Tap this button once to enter or exit the receive fine-tuning and transmit fine-tuning (RIT and XIT) functions. At this time, the upper right of the LCD screen will display RIT or XIT and the amount of fine-tuning. After entering the fine-tuning state, press the right tuning knob to switch between receiving fine-tuning RIT and transmitting fine-tuning XIT.

At this time, you can fine-tune the receiving or transmitting frequency by turning the knob on the right. The step frequency of RIT is 10 Hz, and the step frequency of XIT is 100 Hz.

Pressing the RIT/M button for more than 2 seconds will change the mode. Each time the button is pressed for 2 seconds, the mode will change in the order of CW, CWR, LSB, and USB.

Change frequency step



Press the knob on the right to switch the step frequency between 100KHz, 1KHz, 100Hz and 10Hz (press the knob for more than 2 seconds to change the step frequency in the opposite direction). When the step frequency is changed, there is a small triangle mark above the corresponding frequency display position on the LCD screen. If you press the big knob in the MEM state, it will get into the VFO mode.

Select backlight mode



Press and hold the M/V/S button and the RIT/M button at the same time to enter the backlight setting state. At this time, turn the knob on the right to change the backlight setting. There are three settings for the backlight of the LCD screen: ON means that the backlight is always on, OFF means that the backlight is always off, AUTO is automatic, and the backlight will automatically turn off if the radio is not operated for about 10 seconds when the radio is selected, and the backlight will automatically turn on when the radio is operated. Press and hold the M/V/S button and the RIT/M button at the same time again to exit the backlight setting mode.

Transmit



The allowed transmit frequencies are: 7.0-7.2MHz, 10.1-10.15MHz, 14.0-14.35MHz. When sending a message in these frequency ranges, the display will show TX, the S meter under the LCD will change to display the transmit power P. There are 3 scales on the transmit power scale except for the 0 scale. The approximate power of the first scale is 1W, the second scale (slim one) is about 3W, and the third scale is about 5W (because the radio detects the RF voltage output to the antenna port, so the displayed power is only accurate when the SWR is close to 1:1). When the signal is not sent in these frequency ranges, it will be invalid. The display will show NO. At this time, no signal will be sent from the antenna, but the side tone can still be heard. This feature can be used as a morse code trainer.

CQ & Auto CQ

1. Auto CQ

Short press the CQ button and release it immediately, that is, enter the automatic call program, the content of the call is input by the user, and the input method is described below. After automatically calling the content entered by the users on both sides, the radio station automatically adds a K to end the automatic call. If you want to cancel the automatic call during the automatic call, press the CQ button for 1 second and then release it.

The following 2 and 3 functions can only be operated in the paddle mode, and they are invalid when keyed by hand.

2. Speed

Press the CQ button and hold it down, about 2 seconds later, you will hear a beep (Morse code letter S). At this time, release the CQ button to increase the speed of the automatic key paddle to "dot" and dial to "swipe" The speed slows down. You can reach the appropriate speed (it will automatically exit after 8 seconds without input and maintain the original speed). Press the CQ button for a short time to release it immediately, and exit when you hear a beep (Morse code letter E), or wait for about 8 seconds to exit automatically.

3. Edit CQ message

Press the CQ button and hold it down. After about 2 seconds, you will hear a beep (Morse code letter S). Continue to press and hold the CQ button. After about 2 seconds, you will hear a beep (Morse code letter I). At this time, release the CQ button, and use the automatic key paddle to send the content you want to enter as usual. At this time, press the CQ button and release it immediately, and you will exit when you hear a beep (Morse code letter E). For example, if you enter the content of CQ CQ DE BA4TB, the following content will be automatically shot and sent during automatic call: CQ CQ DE BA4TB CQ CQ DE BA4TB K

When in speed adjustment and call sign input modes, the display will show the word TX but will not transmit signals to the antenna, which is normal.

4. CQ message's length

The automatic call storage capacity in the radio station can store about 20 characters. Because the code length of each character is different, the number of characters that the memory can store is also different. If the number of characters entered exceeds the content of the memory, the radio will not be able to Store, the radio will clear the contents of the memory at this time.

SW-3C's adjustment **(Don't do this unless you are an expert)**

Open the upper cover of the radio's case and you can see that there are three adjustable components on the PCB board, TONE, VC1, and PWR.

“TONE” adjustable resistor can adjust the side tone volume.

“VC1” adjustable capacitor is used to adjust the side tone frequency. The default side tone frequency of the radio is 600Hz.

“PWR” adjustable resistance adjusts the transmitting power of the radio. The transmitting power of the radio is about 5 watts when the design of the 12V power supply voltage.

If there is a deviation in the transmitting frequency of the radio station, you can adjust it as follows:

Turn off the power, press and hold the M/V/S button and the RIT/M button at the same time, then turn on the power, wait until the LCD screen displays the word RESET and then release the button, and then the LCD screen displays the following:



At this time, use a frequency meter to detect the frequency of the TEST point on the PCB board (between IC4 and IC5), turn the knob on the right side of the radio panel to adjust the frequency until the frequency meter displays 7.000.00MHz, press the M/V/S button for about 2 seconds Just exit.

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