

DR-4020 DUAL BAND QRP DIGITAL RADIO

Manual



DR4020 is a 40m/20m dual-band radio for digital modes that requires a computer with specific applications to use. It can be used in the popular FT8, FT4, JT65, as well as PSK31, SSTV and other modes.

Specifications:

Dimensions	88*38*124mm (buttons are excluded)
Weights	320 G
Operating Voltage	10-14VDC
Current	50Ma @RX, 700-800mA (12V) @TX
Frequency	7.0-7.2MHz. 14-14.35MHz
Filter BW	USB 400-2800Hz
Output	4-5W (12V)
Memory	5 memories per each band,user defined
TX method	VOX, Control audio voltage: less than 30mVp , full power: 70mVp @40m, 120mVp @20m.

The signal inputs and outputs have a 1:1 isolation transformer to electrically isolate the radio from the computer and reduce interference.

Connecting to computer

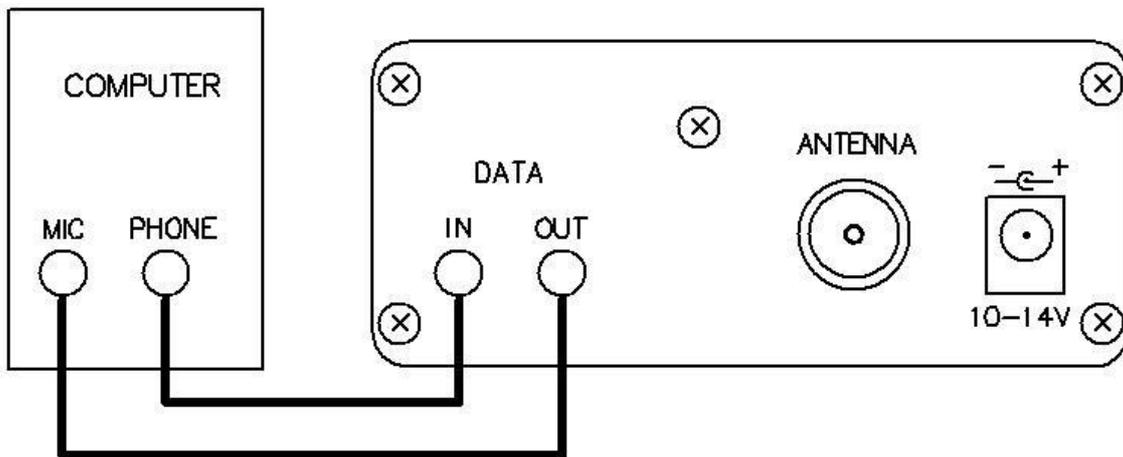


External power supply

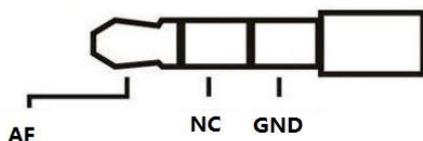
Any 10-14V DC supply or battery pack with a current greater than 1A can be connected via an external power connector. Polarity protection circuit available inside the radio.

Antenna

Any resonant antenna can be directly connected to the antenna interface (ANTENNA) with a BNC connector, and an antenna tuner should be connected between the antenna interface and the antenna for a non-resonant antenna.

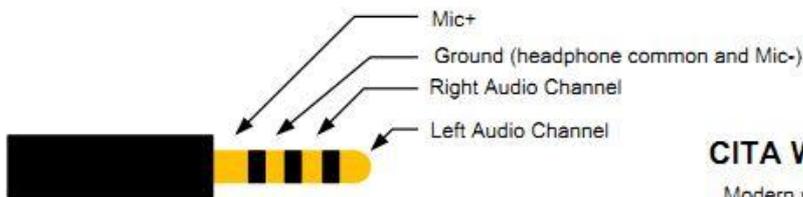


3.5mm stereo socket (DATA IN/OUT on DR4020)



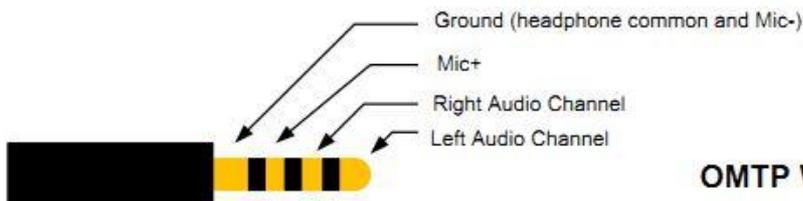
DR4020 can be used with PC, Laptop or Raspberry Pi.

1, While using a laptop, and if there is only one combined AF/MIC jack, please pay attention to the different wirings of the computer audio jacks below:



CITA Wiring Specification

Modern wiring specification for most Smart Phone/Tablet/PCs.
Typically a 3.5mm TRRS Plug*
Note: Some regions (e.g. China) require OMTP wiring below.



OMTP Wiring Specification

Old wiring specification for some Smart Phone/Tablet/PCs.*
Note some locals (e.g. China) require OMTP wiring.
Also found on some game consoles. Typically a 3.5mm TRRS Plug

2, An external USB sound card may be required if you use Raspberry Pi to connect to DR4020.

Operating



Power switch

Power switch PWR On the left side of the panel, press PWR to power on, press PWR again to turn off.

Band and Frequency selection

Short press the right VFO knob of the panel to select between 40 meters and 20 meters. Rotate VFO knob to change the stored working frequency. The storage frequency of each band is from MEM-01 to MEM-05. If you press this knob for more than 2 seconds, it will enter the VFO function, and you can change the frequency of the stored frequency. When the desired frequency is turned, you can press the knob again for 2 seconds. SAV will be displayed on the screen, and this new frequency will be stored in the corresponding memory frequency and exit the VFO function. A short press of this knob will not save the new frequency and exit the VFO function.

Transmitting (VOX)

Transmit is by the input audio signals from DATA IN, when the input signals are greater than the trigger level, it is automatically switched to transmit. The red LCD marked TX in the upper left corner of the panel is illuminated when transmitting, its brightness indicates the output power level, and RX in the lower right corner of the LCD becomes TX.



Computer settings

The MIC gain of the computer is generally set to the maximum. If the application software shows that the input level is too high, the MIC gain can be appropriately reduced.

The radio's transmitting can be adjusted using the tuning function in the application software. Adjust the volume output of the computer from low to high. When the output level exceeds the trigger level, the radio will be triggered to switch to the transmitting.

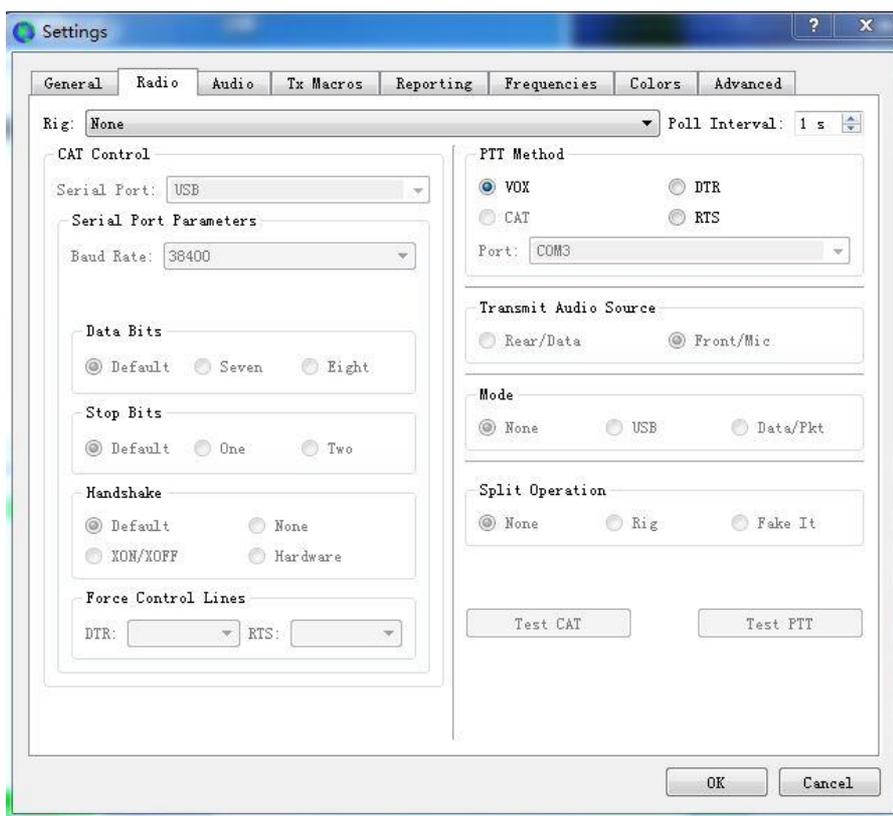
Continue to increase the volume. The power of the output station will increase, and the power of the radio will not increase with the volume.

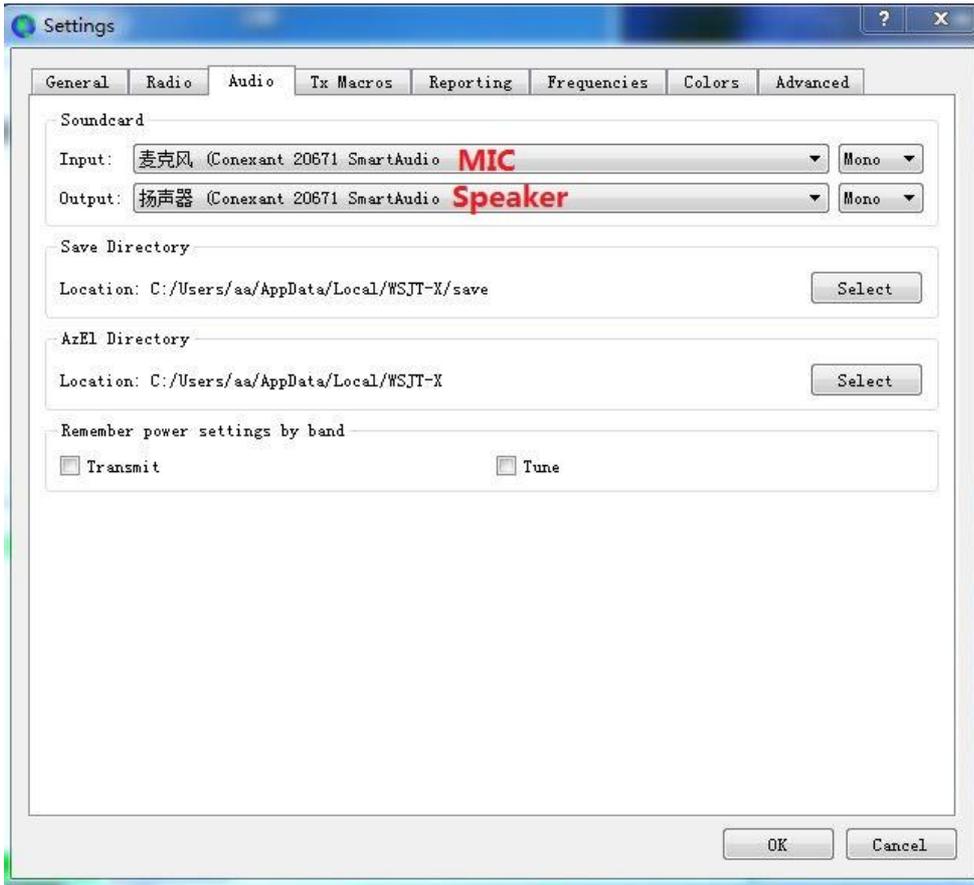
The time is the best volume output position, and then increasing the volume will not increase the power of the radio.

Observing the radio's transmit power can be judged according to the current of the radio's power supply. The higher the current, the greater the power.

If the power supply does not have a current meter, you can also observe the brightness of the radio's red indicator light TX to roughly determine the transmit power.

Typical WSJT-X settings (Other Digital programs will be similar)





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