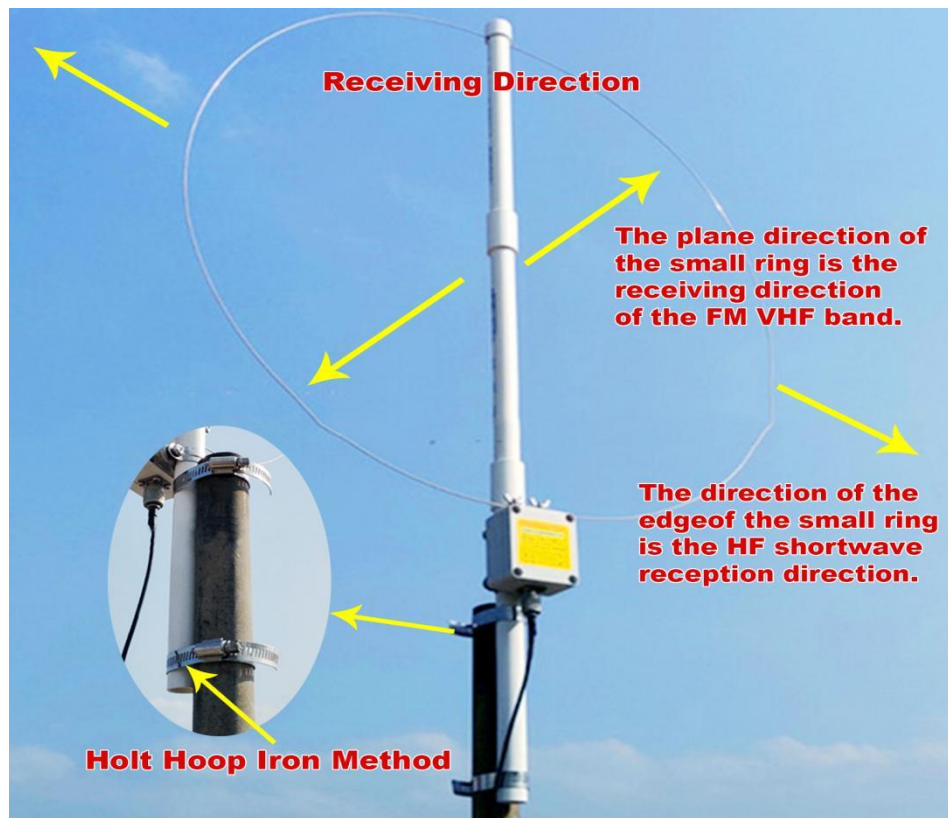


K-180WLA Antenna Installation and Operation Instructions

K-180WLA (upgraded version) is a wideband loop receiving antenna, the preamplifier adopts ultra-high frequency low noise device, the low noise gain is about 20DB, and it can withstand -10DBM signal strength is not saturated. The RF.BOX small loop antenna input terminal and the P.BOX radio terminal have added protection circuits. The latest version of the K-180WLA preamplifier has added HF and FMDX switches to adjust the FM band gain. The excellent receiving directivity of the small ring diameter of 55CM can effectively avoid the interference source, make the received signal clearer, and effectively improve the received signal strength and signal-to-noise ratio. The working frequency is 0.1MHz-180MHz, covering the long-wave medium-wave short-wave and FM radio and VHF aviation bands, and the working voltage is DC 5-12V. The charging voltage of P.BOX is DC 5V (remember not to charge higher than this voltage, otherwise it may damage the circuit and other risks!), the charging interface is a MICRO USB socket (common with Android mobile phone 5V charging head and data cable), and the charging current is 1A Full self-stop. The output voltage of the feeding box is 9V, and an isolation circuit is designed inside, which can effectively suppress in-band interference and make the output DC voltage more pure. There is a built-in 3.7V 18650 flat-head lithium battery, and the feeder box has: overcharge, overcurrent, overdischarge protection and short circuit protection of the antenna feeder output.

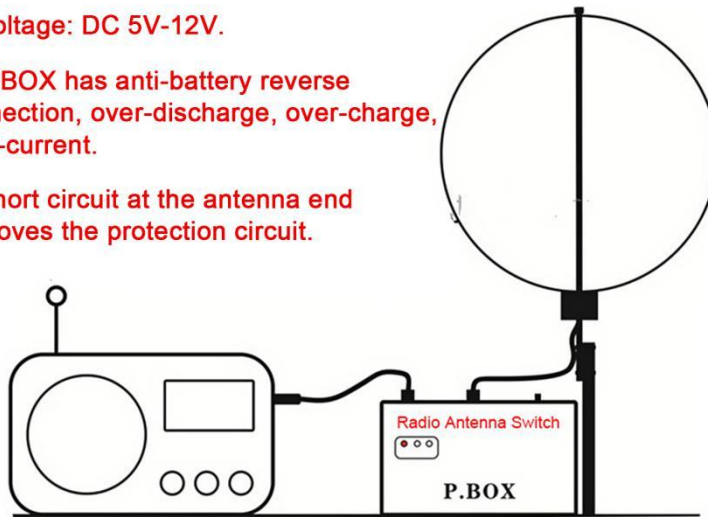
The receiving direction of FM and aviation band VHF is shown in the figure below, the plane direction of the small ring is the receiving direction of FM VHF band, and the direction of the edge of the small ring is the receiving direction of HF short wave.



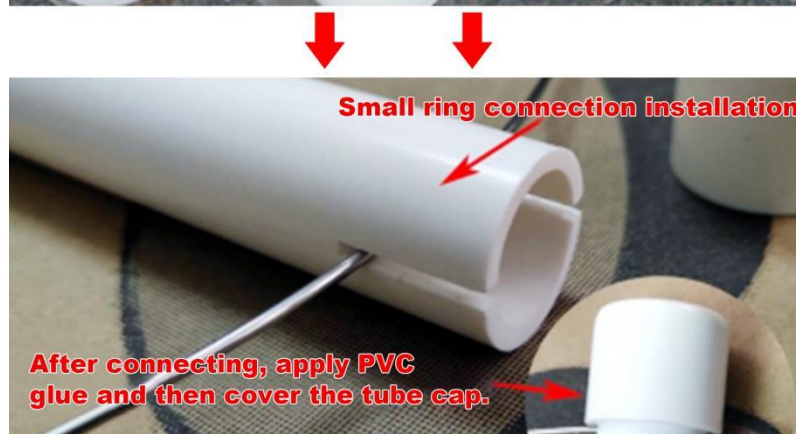
Connection and Installation Method:

K-180WLA Active Loop Antenna Connection Diagram

1. Using ultra-high frequency low noise preamplifier.
2. Frequency: 0.1-180MHz.
3. Gain 20DB.
4. Voltage: DC 5V-12V.
5. P.BOX has anti-battery reverse connection, over-discharge, over-charge, over-current.
6. Short circuit at the antenna end improves the protection circuit.



PVC Bracket Connection and Installation Method:





1.Tighten by hand

2.The distance measured from the position of the fixing slot to the fixing clip is about 56cm.



3.The pre-amplifier box is installed and fixed, tighten the four screws.



The latest version of K-180WLA has added FMDX and HF switches in the RF.BOX box under the small ring, which can adjust the gain of HF and FM bands. When it is close to the local FM broadcast transmitting station, the super strong FM signal will reduce the sensitivity of the pre-blocking of radios with poor reception dynamics. At this time, you can adjust the switch to the HF position to reduce the gain of the FM band by about 15DB, while the gain of the HF band will increase by about 1 to 3.5DB. At this time, you can adjust the switch to the HF position to reduce the gain of the FM band by about 15DB, while the gain of the HF band will increase by about 1 to 3.5DB. The default position of the switch is FMDX. For radio enthusiasts who like to listen to

the HF band, they can open the preamplifier box and adjust the switch position to HF. (When opening the upper cover of the pre-amplifier box, pay attention to the original position of the waterproof strip. When you cover it back, you must pay attention to restoring it to prevent the waterproof strip from being installed in the wrong position and causing water to enter. Please Remember!)

Uses a 3.7V 18650 flat head lithium battery



Pay attention to the polarity of the lithium battery ! Please note that it cannot be charged after reverse connection, otherwise the circuit will be damaged.

Erection requirements:

K-180WLA should be installed in an unobstructed area around the roof as much as possible. It is not recommended for indoor use, because various indoor interference and building shielding will seriously attenuate the signal (especially the high frequency band), which will lead to poor indoor effect. If the requirements are not met, try to erect it outside the balcony or window, but the antenna cannot be installed on the wall or anti-theft net. It must be extended more than 1 meter away from these objects (the farther the better), and try

to stay away from power lines and The interference sources of the air conditioner's external unit must not be combined with other transmitting antennas. It needs to be more than 5 meters away from other transmitting antennas, and there are communication base stations around should be avoided as much as possible.

PAY ATTENTION:

The P.BOX power supply box is compatible with 5V 1A charging head for mobile phones, plug in the MICRO USB charging cable, the charging indicator light is on, the charging current is about 1A, and the normal charging time is about 5 hours to be fully charged(If you using until automatic shutdown, the charging time will be longer)When fully charged, the green light will turn on, please remember to unplug the charging cable! ! A full charge provides about 40 hours of continuous use. Over-current and short-circuit protection circuits do not work if an antenna is used while charging! Remember not to use it while charging! ! The charging voltage cannot exceed 5V, overvoltage will cause permanent damage to the circuit and may cause other safety risks! Remember!

In addition, the battery of the P.BOX feeding box has an anti-reverse connection protection circuit, and the reverse connection of the positive and negative poles of the battery will not damage the circuit. However, if the positive and negative poles of the battery are reversed, please change

the polarity immediately. If the battery is reversed and then charged, the circuit will be damaged! Remember! !

The antenna end of the P.BOX feeding box is connected to the antenna preamplifier box, and the radio port is connected to the radio or receiver. If the antenna is not connected properly, can't work, please turn on the power switch to the ON position after making sure that the connection is correct, and the PWR power indicator will light up. At this point the antenna is working normally.

After the protection circuit operates, the PWR light will be off. At this time, the protection state can be released by removing the short circuit and switching the power switch again.

When the antenna is installed and used, the metal part of the small ring cannot touch other objects (especially metal objects such as leaves and other anti-theft nets). The port of the radio is connected to the 3.5 plug, not only the middle core wire (that is, a single core wire is connected to the receiver), otherwise it may damage the preamplifier, remember!

This antenna is an active antenna and cannot be transmitted! ! Launching will definitely cause damage to the preamp! ! Remember! !

About the Difference between FM Mode and AM Mode

FM is the most commonly used modulation mode for local broadcasting. The working frequency is 88-108MHz. The advantage of this mode is that as long as the signal exceeds the receiver's receiving threshold, it will

not When there is noise, it occupies the frequency band of the frequency spectrum and the sound quality can reach a high-fidelity level, and it can broadcast continuously and continuously throughout the day. The AM mode is the amplitude modulation mode, which is usually used for short-wave broadcasting. It occupies a narrow frequency band and can accommodate more broadcasting stations in the HF band with limited spectral resources. The sound quality is relatively only for broadcasting requirements. Long-distance transmission through ionospheric reflection, so the ability of ionospheric reflection and transmission is different in different seasons and different times. Usually, medium wave 500K-1600K will propagate at night, while shortwave only propagates better at 6-9 megabytes at night. In the daytime, 9-15 megabits are good for propagation, high-band propagation is good in summer, and low-band is good in winter because this is determined by the propagation characteristics of the ionosphere. The low frequency of shortwave is easily affected by common mode and differential mode interference generated by industrial equipment such as home appliances, energy-saving lamps, etc., resulting in various additional noises. This is a soft underbelly of shortwave (especially the most serious interference from electric vehicle chargers), coupled with ionospheric reflection propagation It is impossible to be stable all day, which leads to the fact that the shortwave effect is definitely not as good as FM radio.

Little Knowledge about Active Antennas

Many people think that the higher the gain, the better, but this is actually a misunderstanding. The higher the gain of the preamplifier, the higher the spatial noise is, and the noise floor is more than that of the S9, so it is impossible to improve the reception effect (signal-to-noise ratio). The signal is stronger, the noise floor is bigger, and the signal-to-noise ratio is worse. Therefore, it is not simple to make an active antenna. It is necessary to amplify the useful signal and at the same time make the noise generated by the device itself smaller and more dynamic. In addition to circuit design, the use of devices is also the most important factor. Only by using low-noise devices can the effect of improving the signal-to-noise ratio be achieved. The most important indicator of an active antenna is the signal-to-noise ratio. It is an excellent active antenna to effectively improve the signal-to-noise ratio of the received signal while improving the signal strength.