

## TR509 FM TRANSMITTER INSTRUCTIONS

### Thanks for buying the TR509 protable FM transmitter

Before you use this transmitter for the first time, please read the user manual carefully and operate the device following the instructions. It is multi-functional device but easy to operate. We sincerely hope our products will bring you happy experience.

#### Precautions for Use

- Ensure that the power supply voltage is within the extent permitted
- Maintenance can only be professional and technical personnel to operate
- Do not touch the antenna after the transmitter is powered
- Do not boot the machine before the antenna is connected
- Do not use in an explosive environment (such as gas stations, gas, steam, etc.)
- Do not place the transmitter in extremely dusty, humid, high temperature to use
- Please be sure to use complying with local radio regulatory agencies require

#### Product Features

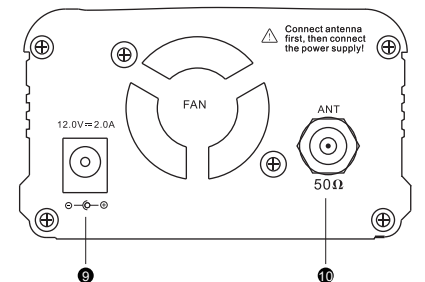
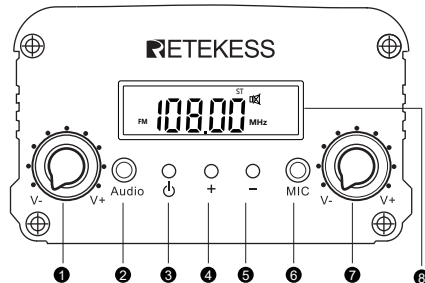
1. High-fidelity high stability: Motherboard is adopted by next-generation integrated NC FM stereo radio transmitter chip the BH1415 from Japan ROHM Company, built-in PLL frequency PLL, audio pre-emphasis, limiter and low pass filter circuit to achieve high fidelity, high stability signal transmission
2. Stereo clear sound: the control panel is consisted of AT89C2051 and AT24C02; after the stage by two 2SC3355 and one 2SC2053 total of three power amplifier to ensure that the three-dimensional sound quality output effect
3. Good shielding: Structure design closely, not because of external signal induction frequency drift
4. Excellent heat dissipation: The stability of the chassis using high quality aluminum alloy material, lightweight and excellent heat dissipation can work continuously to ensure that equipment
5. Easy to use: Panel use LCD to display the transmission frequency, according to the identification of the interface to connect to other hardware, easy to adjust and it is intuitive
6. Switching power: 1W and 7W power can be switched to use
7. Switching frequency: Can arbitrarily set from 76M to 108M range from 86M to 90M 95M to 108M, 87M to 108M
8. This subsection is with a microphone and volume control

#### Product Configuration

NO.	Product name	Specification	Quantity	Unit
1	Host machine	TR509	1	piece
2	antenna	TNC	1	set
3	Power adapter	DC 12V/1.67A	1	set
4	Audio cable	3.5mm audio cable	1	piece
5	manual	Instruction manual	1	piece

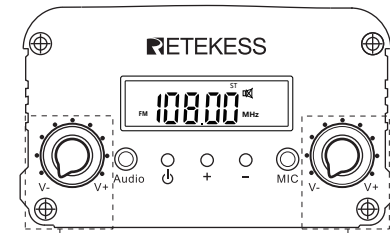
### Operating Instructions

#### • Front panel and rear panel



① Audio input volume adjustment	⑥ The 3.5mm microphone input hole
② The 3.5mm audio input hole	⑦ The microphone input volume adjustment
③ The power switch button	⑧ Display
④ Frequency increases button	⑨ Power supply interface
⑤ Frequency down button	⑩ TNC antenna interface

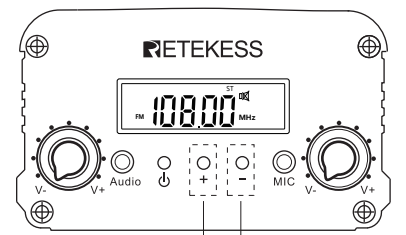
#### • Audio volume and microphone adjustment



Audio volume control  
The left smaller volume, right larger

MIC volume control  
The left smaller volume, right larger

#### • Frequency adjustment

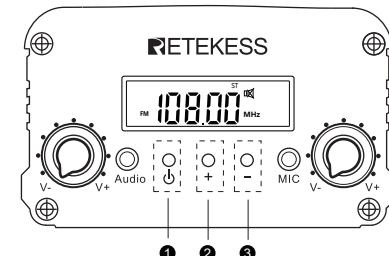


adjust up      adjust down

Step is 100KHz

#### • Power adjustment

The output power of the machine in two stages:  
High-power file (H): >7W;  
Low power file (L): <1W

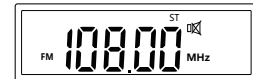


Turn off the power adapter, disconnect the transmitter power finish line state to follow these steps:

1. First press and hold the power switch **【⏻】**, and connect the power (DC 12V) to the antenna, after 3 seconds after release the key, at this time into the power adjustment status, the LCD display shows "L" or "H" (default image file H high power)
2. Press **【▲】**, and set it as high power (H)
3. Press **【▼】**, and set it as low power (L)
4. Select the desired power profile, and press **【⏻】**.power setting finished, and it will into frequency range setting state.

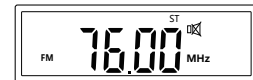
#### • Frequency range setting

- (1) After the power setting, it will enter the frequency range setting state, power setting is completed, press the LCD screen display shows a set of frequencies, the frequency data is the high-end of the operating band (below)



(Factory default frequency is 108MHZ)

- (2) For example, to set the operating frequency range of 90MHz to 100MHz, then through the key **【▲】 【▼】**, adjust the frequency data as 100.00MHz



- (3) Band after the completion of the high-end setting, press key **【⏻】**, the band will enter the low-end setting, LCD displayed data band low frequency (below), through key **【▲】 【▼】** to adjust the data to 90.00MHz



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Then press key **【 0 1 】** , at this time the setting finished.  
(Note that the low-end band must not be higher than the high-end band.)

• **Product Technical Parameter**

1	Working voltage	11~13V DC
2	Worknig current	1.67A
3	Frequency domain	76-108MHz
4	Frequency stability	±10PPM
5	Stepped frequency	100KHZ
6	The operating temperature of the environment	10℃~+50℃
7	Outptu impedance	50Ω
8	RF power output range	H:7W (L:1W)
9	Harmonic and noise radiation	≤-60dB
10	Audio distortion	<0.30%
11	Frequency response	50HZ~15000HZ
12	Preemphasis delay	75us
13	Degree of separation	≥35dB
14	Input level	≤15dB
15	Modulation frequency deviation	±75KHZ
16	SNR(Signal to Noise Ratio)	≥60dB
17	Machine Size	128*95*55mm
18	Machine weight	269g

• **Common Troubleshooting**

NO.	Undesirable phenomena	Reason
1	Can not be boot	1) outlet for power; 2) The power cord is plugged in; 3) the power adapter is normal.
2	Standing wave is greater	1) The antenna is not connected; 2) The antenna does not match; 3) Antenna installation location next to the reflector too
3	Transmitter distance is close	1) feeder loss; 2) poor launch environment; 3) Output power is not adjusted; 4) antenna installation height is not high enough; 5) The antenna does not match; 6) receiver sensitivity
4	No power output	1) Output power is not adjusted; 2) Machine standby or power.
5	Audio muting	1) The master volume is not large; 2) the input audio signal is normal.
6	The microphone is silent	1) microphone is normal; 2) the microphone volume is not large; 3) whether the microphone dynamic microphone; 4) microphone is plugged.
7	The microphone is silent	1) microphone quality is not good; 2) Input audio sound quality is not good; 3) antenna installation method is not correct; 4) audio signal or machine volume is not adjusted.

**RF ENERGY EXPOSURE AND PRODUCT SAFETY GUIDE**

**ATTENTION!**  
Before using this radio, read this guide which contains important operating instructions for safe usage and RF energy awareness and control for compliance with applicable standards and regulations.

**Local Government Regulations**

When radios are used as a consequence of employment, the Local Government Regulations requires users to be fully aware of and able to control their exposure to meet occupational requirements. Exposure awareness can be facilitated by the use of a product label directing users to specific user awareness information. Your Reteless radio has a RF Exposure Product Label. Also, your Reteless user manual, or separate safety booklet includes information and operating instructions required to control your RF exposure and to satisfy compliance requirements.

**Unauthorized modification and adjustment**

Changes or modifications not expressly approved by the party responsible for compliance may void the user's authority granted by the local government radio management departments to operate this radio and should not be made. To comply with the corresponding requirements, transmitter adjustments should be made only by or under the supervision of a person certified as technically qualified to perform transmitter maintenance and repairs in the private land mobile and fixed services as certified by an organization representative of the user of those services. Replacement of any transmitter component (crystal, semiconductor, etc.) not authorized by the local government radio management departments equipment authorization for this radio could violate the rules.

**FCC Requirements:**

- This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:  
(1) This device may not cause harmful interference, and  
(2) this device must accept any interference received, including interference that may cause undesired operation.
- (If applicable) This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.  
This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the

- following measures:
- Reorient or relocate the receiving antenna.
  - Increase the separation between the equipment and receiver.
  - Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
  - Consult the dealer or an experienced radio/TV technician for help.

**CE Requirements:**

- (Simple EU declaration of conformity) Henan Eshow Electronic Commerce Co.,Ltd declares that the radio equipment type is in compliance with the essential requirements and other relevant provisions of RED Directive 2014/53/EU and the ROHS Directive 2011/65/EU and the WEEE Directive 2012/19/EU; the full text of the EU declaration of conformity is available at the following internet address: [www.reteless.com](http://www.reteless.com).
- Disposal  
The crossed-out wheeled-bin symbol on your product, literature, or packaging reminds you that in the European Union, all electrical and electronic products, batteries, and accumulators (rechargeable batteries) must be taken to designated collection locations at the end of their working life. Do not dispose of these products as unsorted municipal waste. Dispose of them according to the laws in your area.



**IC Requirements:**

- Licence-exempt radio apparatus  
This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:  
(1) This device may not cause interference.  
(2) This device must accept any interference, including interference that may cause undesired operation of the device.  
Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :  
(1) l'appareil ne doit pas produire de brouillage;  
(2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

**RF Warning Statements**

The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.

**RF Exposure Information(if appropriate)**

- DO NOT operate the radio without a proper antenna attached, as this may damage the radio and may also cause you to exceed RF exposure limits. A proper antenna is the antenna supplied with this radio by the manufacturer or an antenna specifically authorized by the manufacturer for use with this radio, and the antenna gain shall

- not exceed the specified gain by the manufacturer declared.
- To avoid interference, turn off the radio in areas where signs are posted to do so.
- DO NOT operate the transmitter in areas that are sensitive to electromagnetic radiation such as hospitals, aircraft, and blasting sites.

**Avoid Choking Hazard**



Small Parts. Not for children under 3 years.

**Protect your hearing:**



**WARNING**

- Use the lowest volume necessary to do your job.
- Turn up the volume only if you are in noisy surroundings.
- Turn down the volume before adding headset or earpiece.
- Limit the amount of time you use headsets or earpieces at high volume.
- When using the radio without a headset or earpiece, do not place the radio's speaker directly against your ear
- Use careful with the earphone maybe possible excessive sound pressure from earphones and headphones can cause hearing loss



Note: Exposure to loud noises from any source for extended periods of time may temporarily or permanently affect your hearing. The louder the radio's volume, the less time is required before your hearing could be affected. Hearing damage from loud noise is sometimes undetectable at first and can have a cumulative effect.

**Approved Accessories**



**WARNING**

- This radio meets the RF exposure guidelines when used with the Reteless accessories supplied or designated for the product. Use of other accessories may not ensure compliance with the RF exposure guidelines and may violate regulations.
- For a list of Reteless-approved accessories for your radio model, visit the following website: <http://www.Reteless.com>

EU Importer: Germany Retevis Technology GmbH  
Address: Uetzenacker 29,38176 wendeburg

**RETEKESS**

**Guarantee**

Model Number: .....

Serial Number: .....

Purchasing Date: .....

Dealer: .....

Telephone: .....

User's Name: .....

Telephone: .....

Country: .....

Address: .....

Post Code: ..... Email: .....

**Remarks**

1. This guarantee card should be kept by the user, no replacement if lost.
2. Most new products carry a two-year manufacture's warranty from the date of purchase.
3. The user can get warranty and after-sales service as below:
  - Contact the seller where you buy.
  - Products Repaired by Our Local Repair Center
4. For warranty service, you will need to provide a receipt proof of purchase from the actual seller for verification.

**Exclusions from Warranty Coverage:**

1. To any product damaged by accident.
2. In the event of misuse or abuse of the product or as a result of unauthorized alterations or repairs.
3. If hte serial number has been altered, defaced, or removed.

说明书要求：

尺寸--90\*130mm

印刷--黑白印刷

装订--折页

材质--普通纸张

注意--本文字无需印刷