Instruction Manual for Rife MOPA

Ver.2025

Electrical Characteristics of MOPA

- Operating Voltage: 120V AC, 220V AC
- Equipment Power: 200W
- High-Voltage Operating Current: 150mA
- Input Frequency: 0.1Hz - 100kHz
- Carrier Frequency: 2.2MHz - 3.6MHz
- Electronic Triode: 812A
- Lamp Tube: Suitable for any lamp tube or spherical lamp with an electrode spacing of less than 35cm.
- Frequency Generator: Any signal generator capable of outputting a peak voltage of 3 to 10 volts.

Panel and Interface Description

MOPA:

- **Rear Panel**: Mainly consists of an audio input interface (Audio Input) and a power interface. The audio input interface is connected to the frequency generator, and the power interface is connected to the household power supply (the interface includes a fuse: 250V 5A / 125V 10A).
- **Front Panel**:
    1. There are three main switches: Power Switch (Power ON/OFF), Frequency Counter Switch (Counter ON/OFF), and Signal Input & Carrier Frequency Setting Selection Switch (Run Input/Set Frequency).
    2. On the upper left side of the front panel, there is a carrier frequency setting knob (Frequency Regulate); rotate the knob to set the frequency.
    3. The two jacks on the upper part of the front panel are output interfaces, which are connected to the lamp tube. The red interface outputs high voltage.
    4. The ammeter on the upper right side of the front panel displays the current consumed by the main circuit. The current is slightly higher when setting the carrier frequency, and ranges from 100mA to 150mA during normal operation.

Operation Instructions

1. **Electronic Tube Installation**:

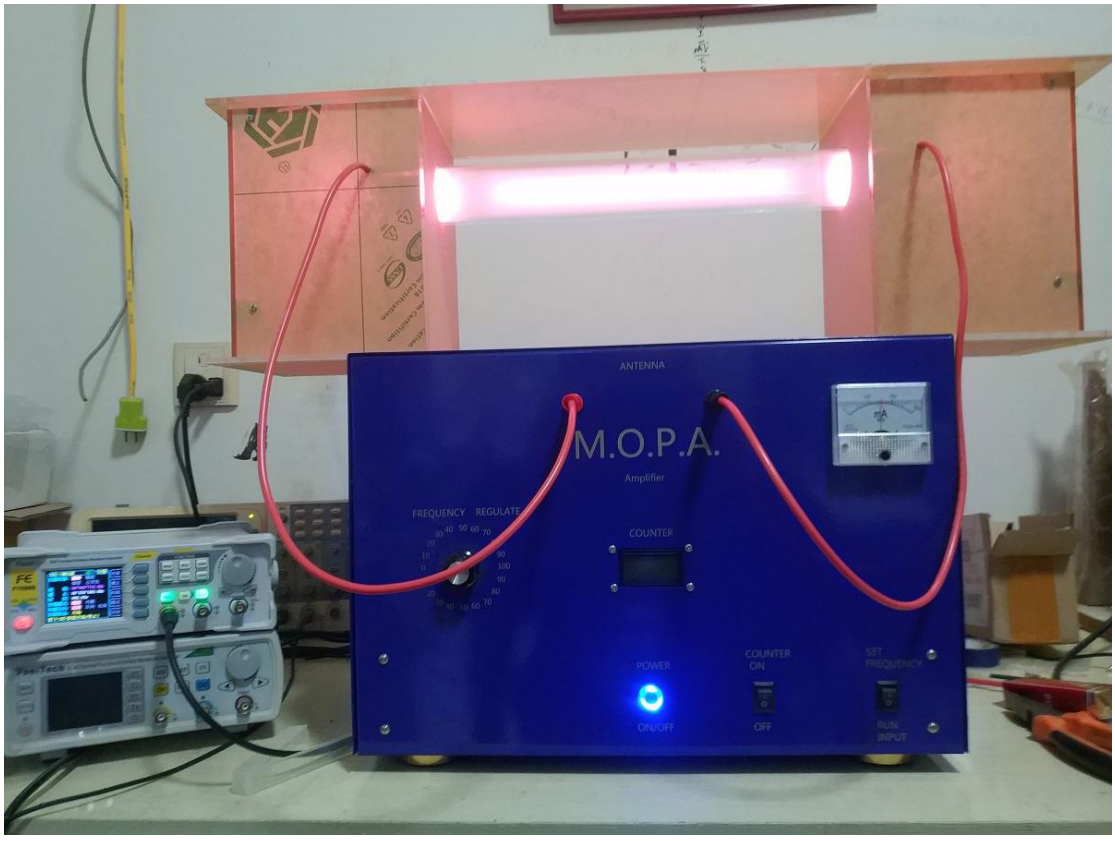
Generally, the 812A electronic tube inside the MOPA equipment is not installed when you receive the goods. First, remove the screws on both sides of the chassis. Insert the electronic tube into the tube socket according to the thickness of the tube pins, and then plug the white tube cap onto the top of the electronic tube.

2. **Carrier Frequency Setting**:
    - First, connect the power supply, lamp tube, and MOPA main unit properly. Select the frequency input mode (Run Input) using the switch on the far right of the main unit.
    - After the machine preheats for a few seconds, switch to the Set Frequency mode; the lamp tube will light up at this time.
    - Then turn on the Counter switch, and rotate the left knob to set the carrier frequency. The carrier frequency will be displayed on the frequency counter screen.
    - After the setting is completed, switch back to the frequency input mode (Run Input) and turn off the frequency counter.
3. **Frequency Input Mode**:
    - Before connecting the frequency generator to the MOPA equipment, turn on the frequency generator in advance and set the waveform, frequency, and amplitude of CH1.
        - General settings: Square wave waveform (COMS or square wave), amplitude between 3V and 10V, frequency within 100kHz.
        - Save these settings as the default power-on settings, so that you do not need to repeat the settings when using the signal generator later.
    - Connect the power supply, lamp tube, signal generator, and MOPA equipment properly. Then press the MOPA power button. After setting the carrier frequency, switch to the frequency input mode (Run Input).
    - Turn on the signal generator; the lamp tube will light up. You can then continue to set the frequency you want to input or use the sweep function of the signal generator (supports a frequency range of 1Hz - 100kHz). For specific operation methods of the frequency generator, refer to its instruction manual.
    - When sweeping, it is recommended to set the sweep time to 900 seconds. You can also divide the frequency band into two or more parts and perform sweeping on each part separately.
    - For the use of the GB4000 frequency generator, please refer to its instruction manual.

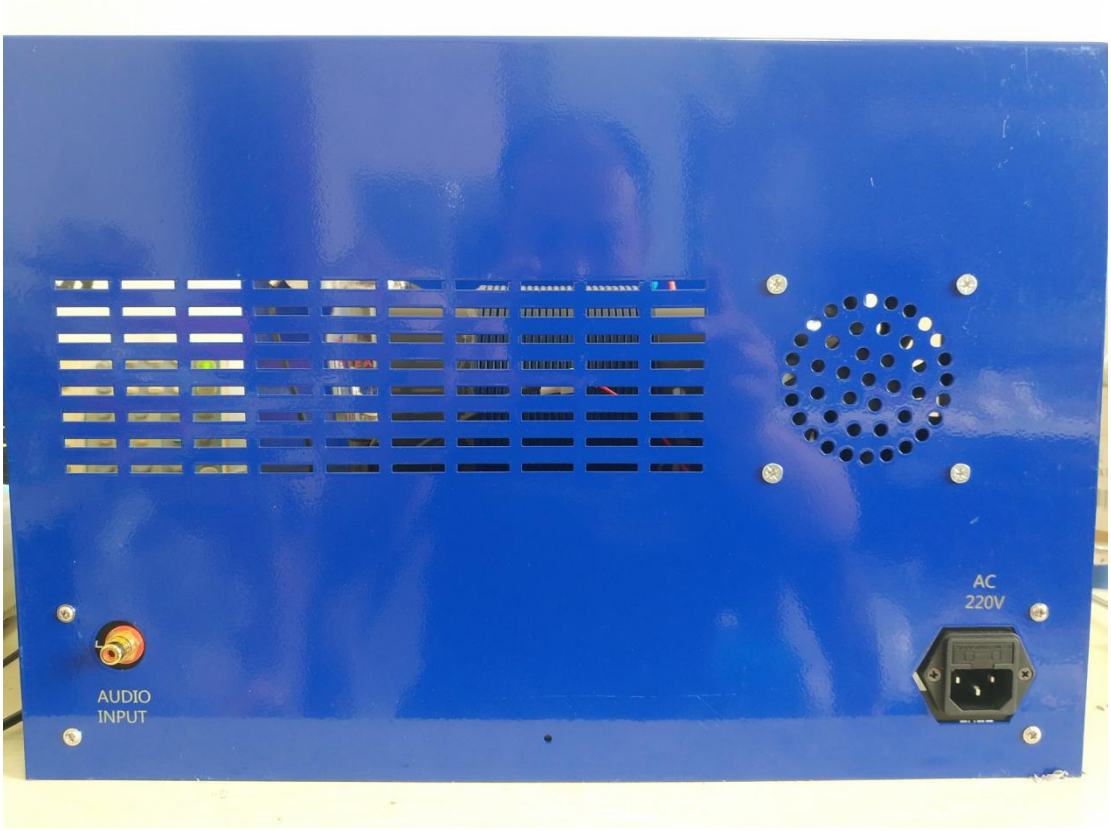
Precautions

1. When the MOPA main unit is running, the red output port outputs high voltage. Do not touch the exposed electrodes with your hands.
2. Since the electronic tube generates high temperature during operation, do not touch the electronic tube with your hands to avoid scalding.

3. The lamp tube outputs pulsed light with a wide spectral coverage. Do not look directly at the lamp tube for a long time to avoid eye damage.
4. The internal fan should work normally. If you cannot hear the fan running when the unit is turned on, turn off the main unit immediately to prevent internal components from being burned.
5. Note: Sometimes the lamp tube may not light up normally when turned on for the first time. This is caused by low ambient temperature or long-term inactivity of the lamp tube. You can try multiple times in the carrier frequency setting mode to make it light up normally.




ANTENNA
M.O.P.A.
Amplifier
FREQUENCY REGULATE
COUNTER
POWER
ON/OFF
COUNTER ON
OFF
SET FREQUENCY
RUN INPUT


AC 220V
AUDIO INPUT