

**博创时空 BCSK-W50
射频功率放大器模块
安装指导手册**

**Bochuang Spacetime BCSK-W50
RF Power Amplifier Module
Installation Manual**

1. 产品概述 / 1. Product Overview

BCSK-W50 是一款高性能 2.4GHz 频段射频功率放大器模块，专为无人机干扰、无线通信增强等应用场景设计。该模块采用坚固的金属外壳，具备高效的散热性能和稳定的输出功率。

The BCSK-W50 is a high-performance 2.4GHz RF power amplifier module designed for applications such as drone jamming and wireless communication enhancement. It features a robust metal housing with efficient heat dissipation and stable output power.

2. 包装清单 / 2. Packing List

- BCSK-W50 射频功率放大器模块 x 1
BCSK-W50 RF Power Amplifier Module x 1
- 电源连接线（红黑线） x 1
Power cable (Red/Black wires) x 1
- 安装螺丝包 x 1
Mounting screw kit x 1
- 本产品电子说明书 x 1
This product electronic manual x 1

3. 安装前准备 / 3. Pre-installation Preparation

在安装之前，请确保您已准备好以下工具和条件：

Before installation, please ensure you have prepared the following tools and conditions:

- 十字螺丝刀
Phillips screwdriver
- 直流稳压电源（DC 24-28V, 至少 5A 输出能力）
DC regulated power supply (DC 24-28V, at least 5A output capacity)
- SMA 接口射频线缆及负载/天线
SMA interface RF cable and load/antenna
- 模块散热器，散热冷却风扇
Module heat sink, cooling fan for heat dissipation

4. 安装步骤 / 4. Installation Steps

请按照以下步骤进行模块的物理安装：

Please follow these steps for physical installation of the module:

图 1: BCSK-W50 模块外观及接口示意



Figure 1: BCSK-W50 Module Appearance and Interface Diagram

- 步骤 1: 确定安装位置。选择带有锯齿加厚的散热器，模块背面涂抹散热膏。
Step 1: Determine the installation location. Choose a heat sink with serrated thickening and apply heat dissipation paste on the back of the module.
- 步骤 2: 对齐安装孔。将模块底部的四个螺丝孔对准安装外壳或散热器的对应孔位。
Step 2: Align the installation holes. Align the four screw holes at the bottom of the module with the corresponding holes for installing the housing or heat sink.
- 步骤 3: 固定模块。使用提供的螺丝将模块牢固地固定在安装位置上。注意不要过度拧紧以免损坏螺纹。

Step 3: Secure the module. Use the provided screws to firmly fix the module in the installation position. Do not overtighten to avoid damaging the threads.

- 步骤 4: 检查稳固性。轻轻晃动模块，确认其已安装牢固，无松动现象。

Step 4: Check stability. Gently shake the module to confirm it is securely installed and not loose.

5. 接线说明 / 5. Wiring Instructions

BCSK-W50 模块的接线非常简单，请严格按照以下极性连接电源：

The wiring of the BCSK-W50 module is very simple. Please connect the power strictly according to the following polarity:

引脚/线缆颜色 Pin/Wire Color	功能 Function	说明 Description
红色 Red	正极 Positive (+)	连接 DC 24-28V 电源正极
黑色 Black	负极 Negative (-)	连接 DC 24-28V 电源负极/地
白线/黄线 White/Yellow Line	使能线 ENABLE(+)	连接 DC 3-28V 电源正极

****注意：**** 射频输出接口位于模块右侧，50 瓦以下功率为标准 SMA 母头，100 瓦功率为标准 N 母头。请确保在通电前已连接好负载或天线，严禁空载大功率运行。

****Note:**** The RF output interface is located on the right side of the module, with a standard SMA female head for power below 50 watts and a standard N female head for power below 100 watts. Please ensure that the load or antenna is connected before powering on, and it is strictly prohibited to operate at high power without load.

6. 调试与测试 / 6. Commissioning & Testing

- 1. 冷态检查：上电前测量电源引脚对地阻抗，确认无短路。
1. Cold check: Measure the impedance of the power pins to ground before powering on to confirm there is no short circuit.
- 2. 负载检查：检查连接器是否接好负载或者连接好对应频率天线。
2. Load check: Check if the connector is properly connected to the load or to the corresponding frequency antenna.
- 3. 模块散热检查：模块和散热器是否固定牢固，冷却风扇是否连接好。
3. Module heat dissipation inspection: Check if the module and heat sink are securely fixed, and if the cooling fan is properly connected.

- 4. 通电验证：检查红色正极和黑色负极是否连接正确，白色使能线是否连接正确（50W 以上模块），通电监测输出功率、效率及温升，确保未触发保护且指标达标。
- 4. Power on verification: Check if the red positive and black negative poles are connected correctly, if the white enable wire is connected correctly (for modules above 50W), monitor the output power, efficiency, and temperature rise during power on to ensure that the protection is not triggered and the indicators meet the standards.

7. 安全警告 / 7. Safety Warnings

为了确保人身安全和设备正常运行，请务必遵守以下安全规定：

To ensure personal safety and normal operation of the equipment, please strictly abide by the following safety regulations:

- 严禁在通电状态下插拔射频线缆，以免损坏接口或产生电弧，烧坏模块。
It is strictly forbidden to plug or unplug RF cables while powered on to avoid damaging the interface or generating arcs Burn out module.
- 模块工作时会产生高温，请勿直接触摸金属外壳，以免烫伤。
The module will generate high temperature during operation. Please do not touch the metal casing directly to avoid burns.
- 请确保供电电压在 DC 24-28V 范围内，过压可能导致模块永久损坏。
Please ensure the supply voltage is within the range of DC 24-28V. Overvoltage may cause permanent damage to the module.
- 本设备仅由经过培训的专业人员操作和维护。
This equipment should only be operated and maintained by trained professionals.

8. 技术参数 / 8. Technical Specifications

型号 Model	BCSK-W50
工作频率 Frequency	2400-2500 MHz
输出功率 Output Power	50 Watts
工作电压 Working Voltage	DC 24-28V
工作电流 Working Current	Max 4.8A
接口类型 Connector	SMA Female