

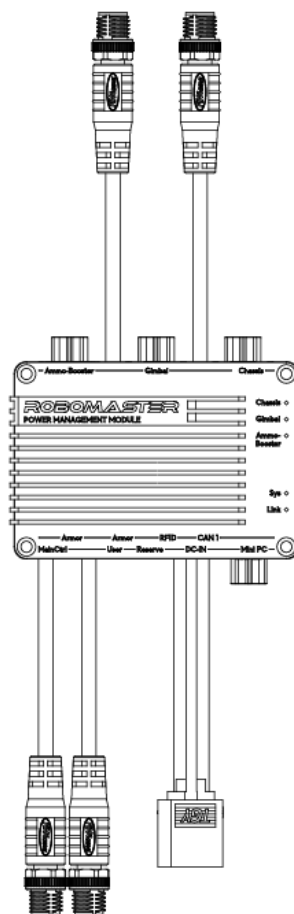
RoboMaster Referee System

Power Management Module PM01

User Guide

使用说明

v1.0 2018.11



Disclaimer

Thank you for purchasing the RoboMaster™ Referee System Power Management Module. Please read this disclaimer carefully before using this product. By using this product, you hereby signify that you have read and agree to all content herein. Please install and use this product properly and in strict accordance with the User Manual and product instructions, as well as any relevant laws, regulations, and policies. Users shall be responsible for the consequences resulting from their behavior while using this product. DJI™ will not bear any legal responsibilities for any damages due to improper use, installation or modification.

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Product Usage Precautions

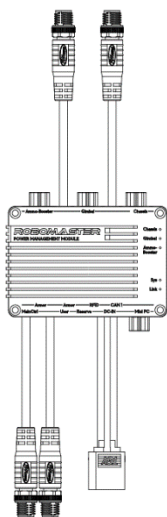
1. Make sure that the wiring connections are correct before use.
2. Make sure that the components are intact before use.
3. The case of the Power Management Module becomes hot under high power conditions. Do not touch it with your hands.
4. Please mount the Power Management Module in a well-ventilated place. Do not mount it on non-heat-resistant materials such as 3D-printed materials.
5. DO NOT use glue ,to secure the Power Management Module.
6. Before using the product, please download the RoboMaster 2019 Referee System User Manual from

the official RoboMaster website to learn more about the product.

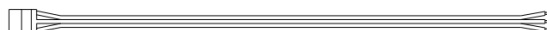
Introduction

The RoboMaster Referee System Power Management Module provides 24 V DC power output to the chassis, gimbal, and launching mechanism of your robot. The module monitors the current and voltage of each of the three channels and calculates power, and then turns on or off the power output according to the commands from the server. Additionally, the Power Management Module offers 5 V, 12 V, and 24 V DC power supply to other modules of the Referee System. The Power Management Module forwards the data packets sent by the modules to the target module as required. Information about the Referee System is output via the user serial interface (user interface) of the Power Management Module.

Inventory List

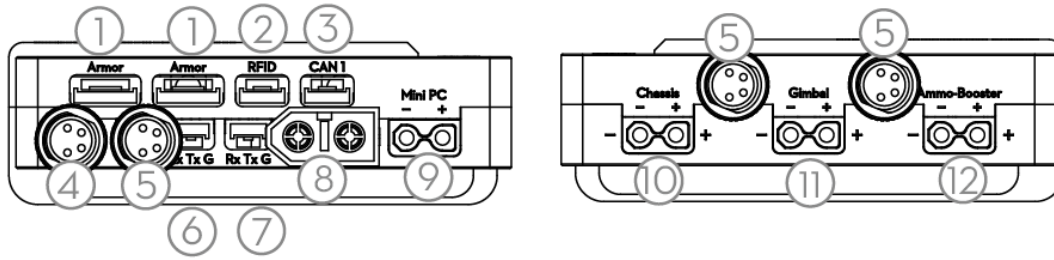


Power Management Module × 1



3-Pin Serial Cable × 1

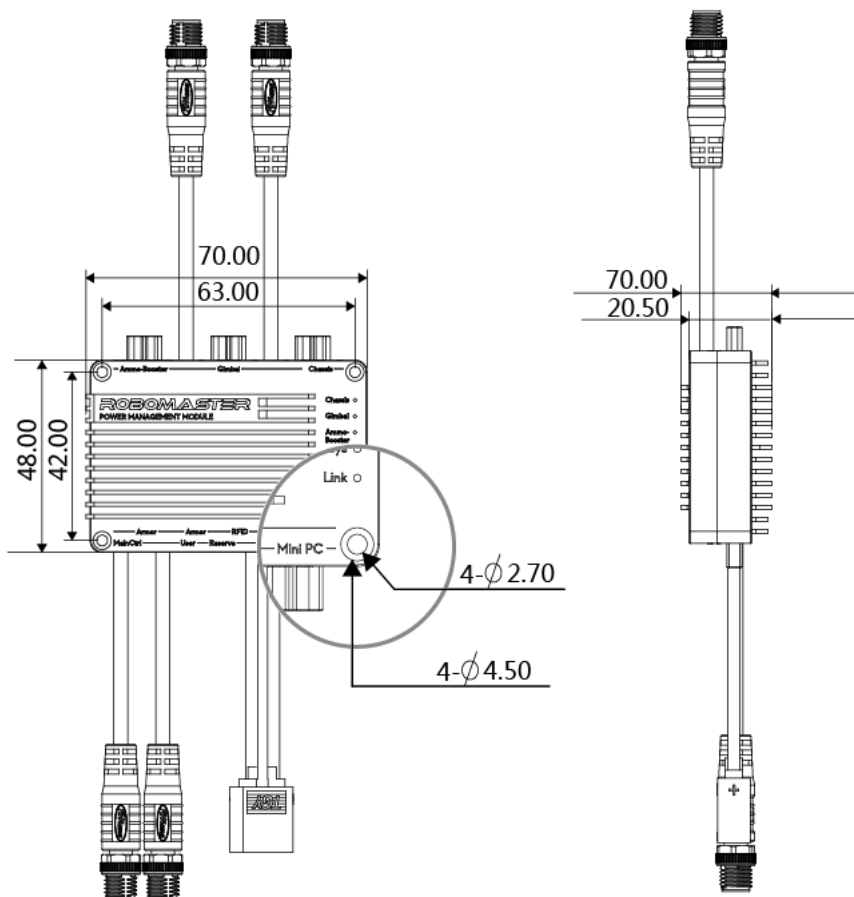
Interface Description



No.	Name	Description	No.	Name	Description
1	Armor Module SM06B-GHS-TB interface (6-pin socket)	Connected to the Armor Module, supplies power to it, and communicates with it.	2	RFID Interaction Module SM04B-GHS-TB interface (4-pin socket)	Connected to the RFID Interaction Module, supplies power to it, and communicates with it.
3	CAN communication SM04B-GHS-TB interface (4-pin socket)	Has the same function as the 4-pin interface of the RFID Interaction Module.	4	Main Control Module interface (an aviation connector with a black metal ring)	Connected to the Main Control Module, supplies power to it, and communicates with it.
5	Interfaces for other Referee System modules (three aviation connectors with a silver metal ring)	Connected to the Speed Monitor Module, UWB Module, Camera Video Transmitter Module (VTM) and Light Indicator Module, supplies power to them, and communicates with them.	6	User SM03B-GHS-TB interface (3-pin socket)	A user information output interface. The wiring scheme is visible on the surface screen printing at the bottom of the interface.
7	System upgrade SM03B-GHS-TB interface (3-pin socket)	A system upgrade interface. The wiring scheme is visible on the surface screen printing at the bottom of the interface.	8	Referee System power supply XT60 interface (input)	24 V DC power input (XT60 male)
9	Mini PC power supply XT30 interface (output)	Mini PC 24 V DC power input (XT30 female)	10	Power supply XT30 interface (output) for the chassis	24 V DC power output for the chassis (XT30 female)
11	Power supply XT30 interface (output) for the gimbal	24 V DC power output for the gimbal (XT30 female)	12	Power supply XT30 interface (output) for the launching mechanism	24 V power output for the launching mechanism (XT30 female)

Dimensions and Installation

Properly secure the Power Management Module to your robot using four M2.5 screws according to the size and distance of the mounting holes of the Power Management Module as shown in the figure.



Unit: mm

Light Status Description

The Power Management Module has five indicators in total from top to bottom: chassis indicator (which indicates the status of the power supply to the chassis), gimbal indicator (which indicates the status of the power supply to the gimbal), ammo-booster indicator (which indicates the status of the power supply to the launching mechanism), sys indicator (which indicates the status of the Power Management Module), and link indicator (which indicates the status of connection with the main controller). The specific meaning of the indicators are as follows:

Indicator	Status	Description
Sys indicator	Flashes red once per second	The system is functioning properly
Link indicator	No light	Not properly connected to the Main Control Module
	Flashes green	Connected to the Main Control Module
Chassis indicator	No light	The power output to the chassis is turned off
	Solid green	The power output to the chassis is turned on
Gimbal indicator	No light	The power output to the gimbal is turned off
	Solid green	The power output to the gimbal is turned on
Ammo-Booster indicator	No light	The power output to the launching mechanism is turned off
	Solid green	The power output to the launching mechanism is turned on

Product Parameters

Power Supply Voltage	DC 24 V	
Output Voltage	DC 5 V, DC 12 V, DC 24 V	
Dimensions	70 × 48 × 22.5 mm	
Weight	Approx. 120 g	
Maximum Output Current	Chassis	10 A (maximum continuous load); 30 A (output duration of less than 500 ms)
	Gimbal	10 A (maximum continuous load); 30 A (output duration of less than 500 ms)
	Ammo-Booster (launching mechanism)	8 A (maximum continuous load); 30 A (output duration of less than 500 ms)
	Total of the above 3 channels	20 A (maximum continuous load)
	Mini PC	6 A (maximum continuous load)
Power Consumption	Static no-load power consumption: 2.2 W	

免责声明

感谢您购买 RoboMaster™裁判系统电源管理模块。在使用前，请仔细阅读本声明，一旦使用，即被视为对本声明全部内容的认可和接受。请严格遵守手册、产品说明和相关的法律法规、政策、准则安装和使用该产品。在使用产品过程中，用户承诺对自己的行为及因此而产生的所有后果负责。因用户不当使用、安装、改装造成的任何损失，DJI™将不承担法律责任。

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产品使用注意事项

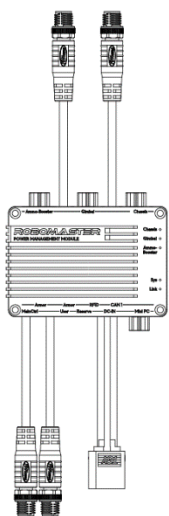
1. 使用前请确保连线正确。
2. 使用前请检查零部件是否完好。
3. 电源管理模块在大功率负载工况下，外壳温度偏高，请勿用手触碰。
4. 请将电源管理模块安装至通风良好的地方，避免安装于不耐热材料上，如 3D 打印材料。
5. 禁止使用 3M 胶等胶类物质固定电源管理模块。
6. 使用前，请前往 RoboMaster 官网下载《RoboMaster 2019 裁判系统用户手册》了解产品更为详细的使用功能。

简介

RoboMaster 电源管理模块可为机器人的底盘、云台、发射机构分别提供 3 个通道 24V 的直流电源输出，监测这

3 个通道的电流、电压并计算功率，然后根据服务器下发的控制指令执行电源输出通断控制操作。同时，除了为这三路通道提供供电和检测功能外，电源管理模块还可提供 5V、12V、24V 直流电源供其他裁判系统模块使用。电源管理模块具有通信转发功能，可将各模块发送的数据包按照要求转发至目标模块。裁判系统相关信息可通过电源管理模块的用户串口（User 接口）输出。

物品清单

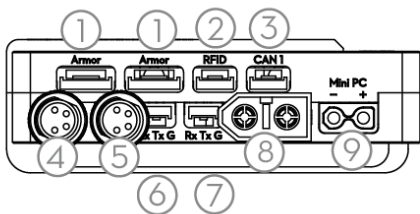


电源管理模块 × 1

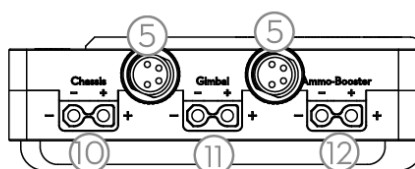


3-Pin 串口线 × 1

接口说明



1. 装甲模块 SM06B-GHS-TB 接口(6-Pin 插座)
连接至装甲模块，对装甲模块进行供电，并与其通信。



2. 场地交互模块 SM04B-GHS-TB 接口(4-Pin 插座)

连接至场地交互模块，对场地交互模块进行供电，并与其通信。

3. CAN 通讯 SM04B-GHS-TB 接口(4-Pin 插座)
与场地交互模块的 4-Pin 接口具有相同功能。

4. 主控模块接口(1 根金属圈为黑色的航空插头)
连接至主控模块，对主控模块进行供电，并与其通信。

5. 其他裁判系统模块接口(3 根金属圈为银白色的航空插头)

连接至测速模块、UWB 模块、相机图传模块和灯条模块，对上述模块进行供电，并实现模块间的通信。

6. 用户 SM03B-GHS-TB 接口(3-Pin 插座)

用户信息输出接口，可于接口下方的表面丝印查看线序。

7. 系统升级 SM03B-GHS-TB 接口(3-Pin 插座)
系统升级接口，可于接口下方的表面丝印获取线序。

8. 裁判系统电源 XT60 输入接口
24V 直流电源输入(XT60 公头)

9. Mini PC 电源 XT30 输出接口
Mini PC 24V 直流电源输出(XT30 母头)

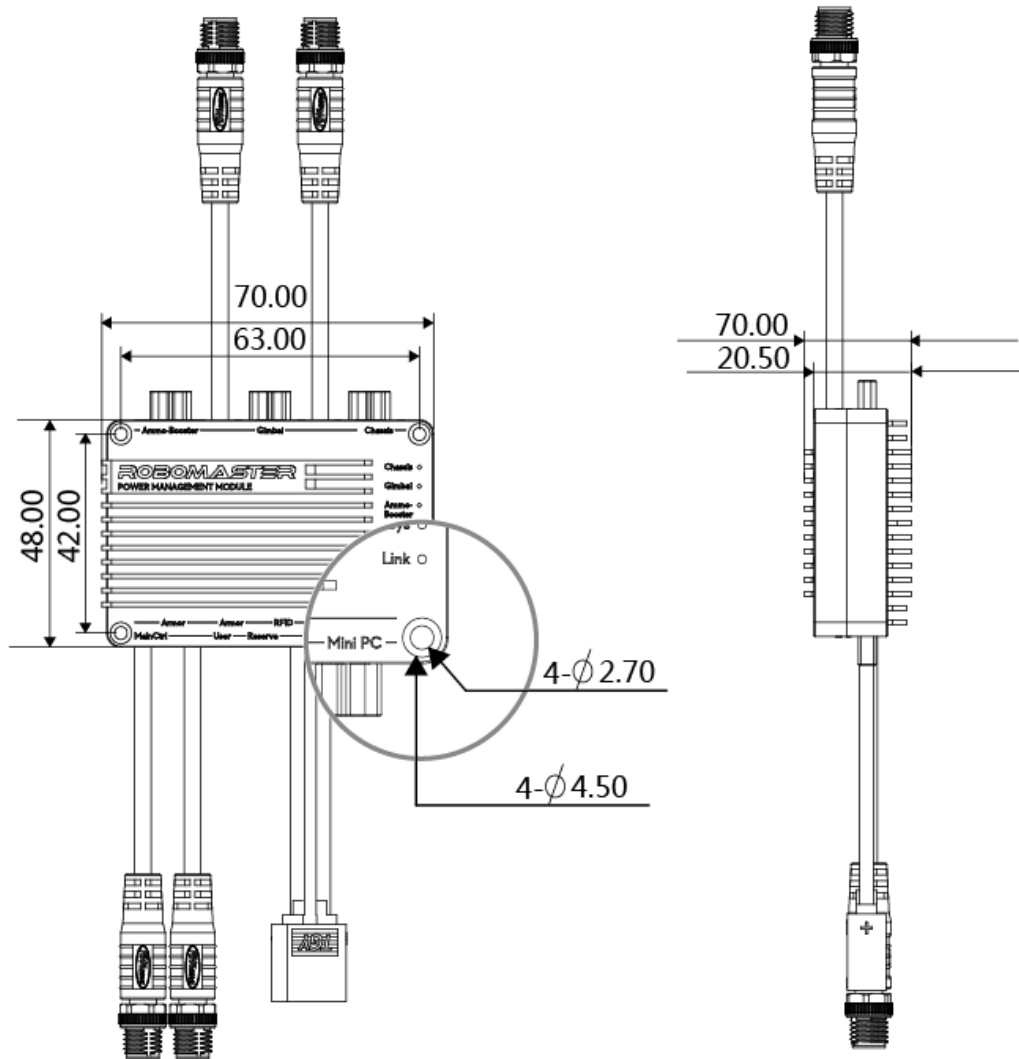
10. 底盘电源 XT30 输出接口
底盘 24V 直流电源输出(XT30 母头)

11. 云台电源 XT30 输出接口
云台 24V 直流电源输出(XT30 母头)

12. 发射机构电源 XT30 输出接口
发射机构 24V 电源输出(XT30 母头)

尺寸与安装

请按照图中电源管理模块安装孔尺寸大小及间距，使用 4 个 M2.5 螺丝固定电源管理模块到机器人的合适位置。



单位：mm

灯效说明

电源管理模块从上到下共有 5 个指示灯，分别为：Chassis 指示灯（指示底盘供电状态）、Gimbal 指示灯（指示云台供电状态）、Ammo-Booster 指示灯（指示发射机构供电状态）、Sys 指示灯（指示电源管理模块状态）和 Link 指示灯（指示与主控的连接状态），指示灯的具体意义如下：

信号灯	灯效	说明
Sys 指示灯	红灯每秒闪烁一次	系统正常工作
Link 指示灯	绿灯不亮	未正常连接至主控模块
	绿灯闪烁	已连接至主控模块

Chassis 通道输出状态 指示灯	绿灯不亮	底盘通道电源输出关闭
	绿灯常亮	底盘通道电源输出打开
Gimbal 通道输出状态 指示灯	绿灯不亮	云台通道电源输出关闭
	绿灯常亮	云台通道电源输出打开
Ammo-Booster 通道输出状态指示灯	绿灯不亮	发射机构通道电源输出关闭
	绿灯常亮	发射机构通道电源输出打开

产品参数

供电电压	DC 24 V	
输出电压	DC 5 V, DC 12 V, DC 24 V	
尺寸	70×48×22.5 mm	
重量	约 120 g	
最大输出电流	Chassis(底盘)	10 A (最大持续负载); 30 A (输出持续时间小于 500 毫秒)
	Gimbal(云台)	10 A (最大持续负载); 30 A (输出持续时间小于 500 毫秒)
	Ammo-Booster (发射机构)	8 A (最大持续负载); 30 A (输出持续时间小于 500 毫秒)
	以上 3 通道合计	20 A (最大持续负载)
	Mini PC	6 A (最大持续负载)
功耗	静态空载功耗 : 2.2 W	



Contact us

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