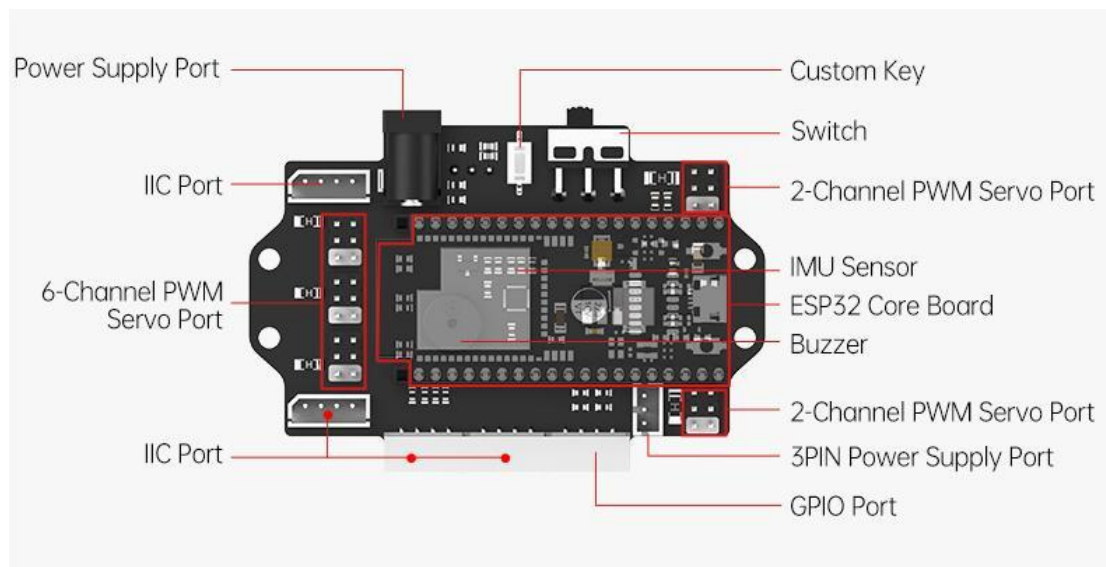


MechDog Technical Specification

1. Open Source ESP32 Controller

The MechDog controller features a flexible modular design, incorporating a high-performance ESP32-S dual-mode SoC chip. It integrates an IMU sensor, 10-channel PWM servo interfaces, a buzzer, customizable buttons, multiple IIC interfaces, and GPIO interfaces. This provides extensive peripheral support, facilitating secondary development and functional expansion.



Power input	6-8.4V
PWM servo port	10 channels
GPIO port	1 channel
Programmable key	1
Mounting hold diameter	72*12mm
IMU pose sensor	3-axis accelerometer/3-axis gyroscope
IIC port	4 channels
Buzzer	1
3PIN power port	1
Size	79*53mm

2. Coreless Servo

MechDog incorporates an 8KG stainless steel high-performance coreless servo, providing high accuracy, high efficiency, and robust force.



Coreless, small rotor inductance, compact size, strong torque, quick response, higher output efficiency.



Stainless steel gear for longer service life and strong power.



Use copper gear with great wear resistance.

Servo Parameters						
Name	Rotation Speed	Stall Torque	Motor	Rotation Range	Communication Method	Gear Type
 HPS-0618SG	$\leq 0.06\text{sec}/60^\circ$ 8.V	8kg.cm 8.4V	Coreless motor	0-180 degrees	PWM pulse width control	Stainless steel gear

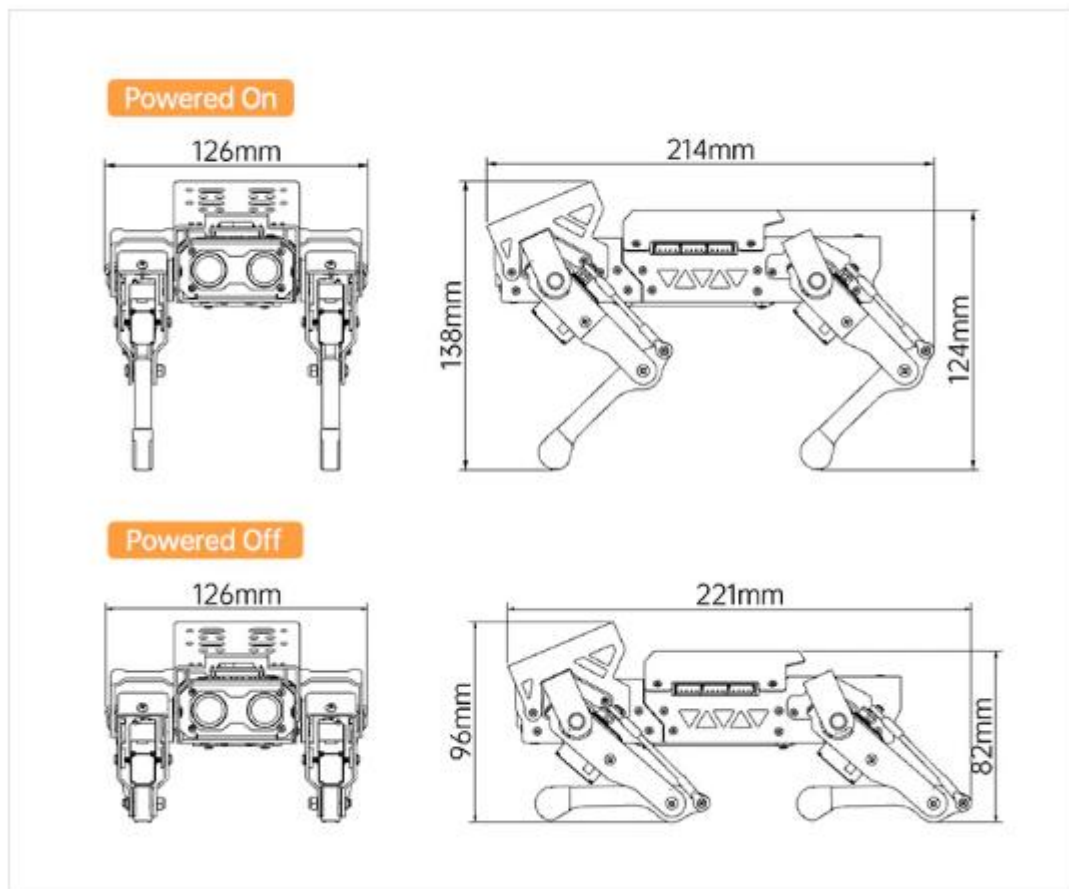
3. High-Performance WiFi Vision Module

The MechDog vision module is equipped with a high-performance ESP32-S3 chip and a 2MP high-definition camera. It supports Wi-Fi video streaming, facial recognition, color detection, and line tracking. The module also integrates a Type-C serial port, I2C interface, and customizable buttons, making it ideal for a variety of creative projects.



Parameters			
Power supply range	4.75-5.25V	Operating temperature	Room temperature
Data saving	IIC communication	Storage condition	Room temperature and normal pressure
SPI Flash	Maximum: 16MB	RAM	Internal 512KB + External 16MB PSRAM
Bluetooth	Support Bluetooth 5 and Bluetooth Mesh	Serial port baud rate	Default: 115200
WiFi	802.11 b/g/n	Supported port	UART, I2C
Frequency spectrum range	2412-2484MHz	Size	59*43*17.5mm

4. Robot Parameter



Product size	214*126*138mm (when it is powered on)
Product weight	About 560g
Material	Hard aluminum alloy
Camera resolution	320*240
DOF	8 DOF
Power supply	7.4V 1500mAh 5C Lithium battery
Hardware	ESP32 robot controller
Software	APP + action editing PC software
Servo	HPS-0618SG coreless servos
Control method	PC control/ APP control
Standard kit package size	35*17*14cm
Standard kit package weight	About 1.3kg