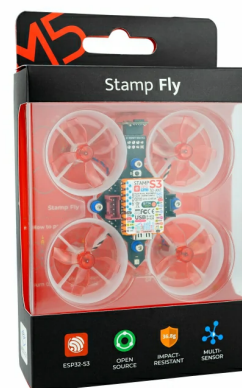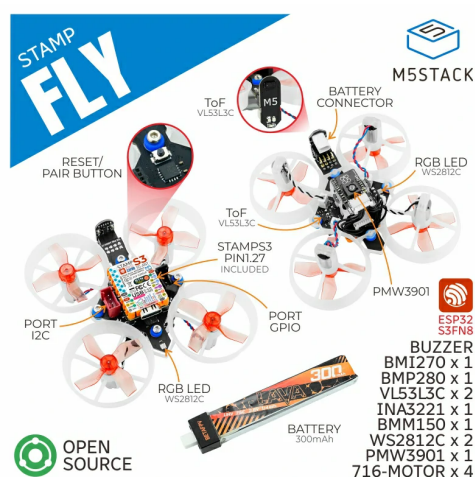# Stamp Fly

SKU:K138

Description

M5Stamp Fly is a programmable open-source quadcopter kit, featuring the StampS3 as the main controller. It integrates a BMI270 6-axis gyroscope and a BMM150 3-axis magnetometer for attitude and direction detection. The BMP280 barometric pressure sensor and two VL53L3 distance sensors enable precise altitude hold and obstacle avoidance. The PMW3901MB-TXQT optical flow sensor provides displacement detection. The kit includes a buzzer, a reset button, and WS2812 RGB LEDs for interaction and status indication. It is equipped with a 300mAh high-voltage battery and four high-speed coreless motors. The PCB features an INA3221AIRGVR for real-time current/voltage monitoring and has two Grove connectors for additional sensors and peripherals. Preloaded with debugging firmware, the Stamp Fly can be controlled using an Atom Joystick via the ESP-NOW protocol. Users can choose between automatic and manual modes, allowing for easy implementation of functions like precise hovering and flips. The firmware source code is open-source, making the product suitable for education, research, and various drone development projects.

Instructions for Use

1. Pairing

- Long press the middle button on the AtomS3 to power on, then press again as prompted on the screen to enter pairing mode.

- Press the reset button on the Stamp Fly to send a pairing broadcast.

- Wait for pairing to complete.

2. Operation

Takeoff and Landing: Single-click the middle button on the AtomS3 to control takeoff or landing.

Control Mode: Press the left front button on the Atom Joystick to switch control modes.

- Stable Mode: Provides stable control interaction, suitable for routine flying and cruising.

- Sport Mode: Offers maximum control freedom, capable of performing complex maneuvers, requiring high operating skills.

Altitude Mode: Press the right front button on the Atom Joystick to switch altitude modes.

- Auto Altitude: Keeps altitude stable at a set value; pushing the left joystick up or down changes the set altitude.

- Manual Altitude: Full throttle control of altitude, requiring high operating skills.

Aerial Stunts:

- Flip: During flight, pressing the center button of the right joystick on the Atom Joystick performs a flip maneuver.

Product Features

- M5StampS3 as the main controller
- BMP280 for barometric pressure detection
- VL53L3 distance sensors for altitude hold and obstacle avoidance
- 6-axis attitude sensor
- 3-axis magnetometer for direction detection
- Optical flow detection for hovering and displacement detection

Optical flow detection for hovering and displacement detection

- Buzzer
- 300mAh high-voltage battery
- Current and voltage detection
- Grove connector expansion

Includes

- 1x Stamp Fly
- 1x 300mAh high-voltage lithium battery

Applications

- Education
- Research
- Drone development
- DIY projects

Specifications

Specification	Parameter
M5StampS3	ESP32-S3@Xtensa LX7, 8M-FLASH, WiFi, OTG\CDC support
Distance Sensor	VL53L3CXV0DH/1 (0x52) @ max 3m
Optical Flow Sensor	PMW3901MB-TXQT
Barometric Sensor	BMP280 (0x76) @ 300-1100hPa

Specification	Parameter
3-axis Magnetometer	BMM150 (0x10)
6-axis IMU Sensor	BMI270
Battery	300mAh high-voltage lithium battery
Current/Voltage Detection	INA3221AIRGVR (0x40)
Buzzer	Built-in Buzzer @ 5020
Product Size	107*107*30mm
Packaging Size	162*99*36mm
Product Weight	36.2g
Packaging Weight	70.7g
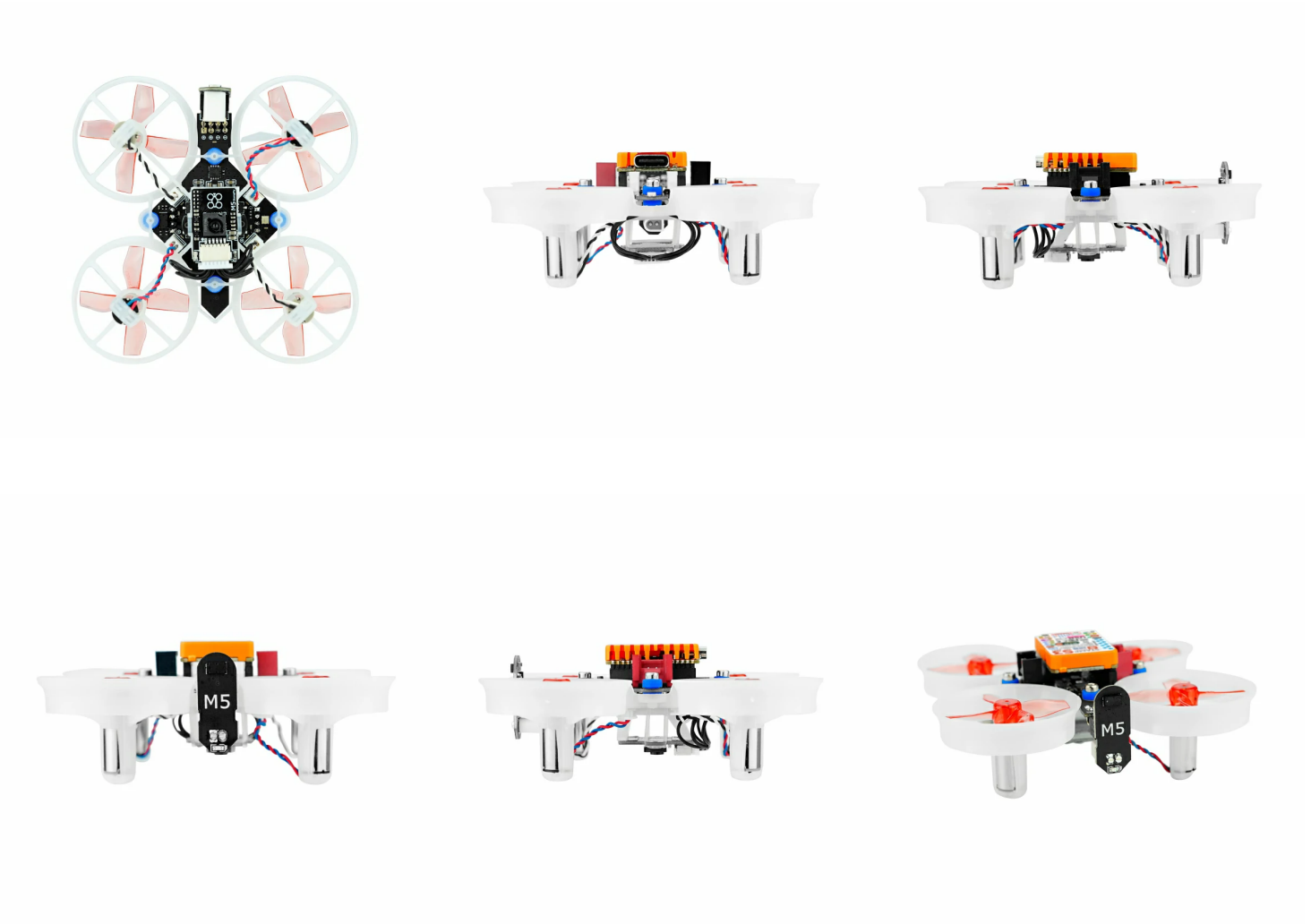
EasyLoader

> **EasyLoader is a simple and fast program burner that comes with a product-related example program. By following a few easy steps, you can burn the program to the main controller and perform a series of functional verifications.**

Download Windows Version EasyLoader

Related Links

- VL53L3 (ToF)
- PMW3901MB-TXQT (Optical Flow Sensor Chip)
- BMP280 (Pressure Sensor Chip)
- BMM150 (3D Magnetometer Compass)
- BMI270 (6-axis Inertial Measurement Unit (IMU) Sensor)

Schematic Diagram

Download Full Schematic Diagram StampS3_Fly_Hat

Download Full Schematic Diagram Stamp_Fly

Download Full Schematic Diagram PMW3901MB

PinMap

PinMap

I2C Interface

Stamp Fly (StampS3)	G3	G4
INA3221AIRGVG	INA_SDA	INA_SCL
BMM150	INA_SDA	INA_SCL
BMP280	INA_SDA	INA_SCL
VL53L3	INA_SDA	INA_SCL

SPI Interface

Stamp Fly (StampS3)	G14	G44	G43	G46	G12
BMI270	MOSI	SCK	MISO	CS	
PMW3901MB-TXQT	MOSI	SCK	MISO		CS2

Grove Interface

Stamp Fly (StampS3)	G13	G15	G1	G2
Grove (RED)	SDA	SCL		
Grove (BLACK)			GROVE I	GROVE O

Buzzer and RGB LEDs

Stamp Fly (StampS3)	G12	G14
BEEP	BEEP	
WS2812		RGB