Skycatch Explore2

User Manual

v1.0 2022.01

Searching for Keywords

Search for keywords such as “battery” and “install” to find a topic. If you are using Adobe Acrobat Reader to read this document, press Ctrl+F on Windows or Command+F on Mac to begin a search.

Navigating to a Topic

View a complete list of topics in the table of contents. Click on a topic to navigate to that section.

Printing this Document

This document supports high resolution printing.

Using This Manual

Legends

Warning Important Hints and Tips Reference

⚠ The operating temperature of this product is -20° to 50° C. It does not meet the standard operating temperature for military grade application (-55° to 125° C), which is required to endure greater environmental variability. Operate the product appropriately and only for applications that it meets the operating temperature range requirements of that grade.

Contents

Product Profile

This chapter describes the features of the Explore2, shows how to assemble the aircraft, and contains diagrams of the aircraft and remote controller with component explanations.

Product Profile

Introduction

The Explore2 is a powerful industrial drone platform with an advanced flight controller system, 6 Directional Sensing and Positioning system and FPV camera. To enhance reliability and safety, it also supports CSM Radar - an additional obstacle detection component that can be mounted on top of the drone. It features several advanced flight functions including 6 directional sensing and positioning Primary Flight Display and more. The built-in sensors provide awareness of nearby aircraft within the surrounding airspace to ensure safety.

Its airframe design gives it an IP45 Ingress Protection, in accordance with the global IEC 60529 standard. The mechanical design, along with quick-release landing gears and mounted folding arms, makes it easy to transport, store, and prepare for flight. The safety beacons on both the top and the bottom of the aircraft allow the aircraft to be identified at night or in low light conditions. The auxiliary lights help the camera sensing system achieve better performance at night or in low light conditions, improving aircraft takeoff, landing and flight safety.

Explore2 is compatible with many connector gimbals, supporting multi-gimbal system, which can support up to three independent gimbals to meet the needs of different scenarios.**

The Explore2 is equipped with several expansion ports for broader applications. It has a built-in RTK module, which provides more accurate heading data for positioning.** An advanced power management system along with dual batteries ensures power supply and enhances flight safety. Without a payload, the Explore2 has a flight time of up to 55 minutes. ***

** The Camera and Infrared Sensing Systems are affected by surrounding conditions. Read the Disclaimer and Safety Guidelines to learn more.

*** Please note that maximum flight time is measured in ideal flight conditions. Actual flight time may vary depending on your environment

Feature Highlights

The flight controller provides a safe and reliable flight experience. A flight recorder stores critical data from each flight. Dual IMUs and barometers design provide additional redundancy. The aircraft can hover and fly in extremely low altitude and indoor environments, and provides 6 directional obstacle sensing and vision positioning functions.

The built-in sensor system alerts you of nearby aircraft in the surrounding airspace to ensure safety. The safety beacons on both the top and the bottom of the aircraft allow the aircraft to be identified at night or in low light conditions. The auxiliary lights help the camera sensing system achieve better performance at night or in low light conditions, improving aircraft takeoff, landing and flight safety. The airframe design gives the aircraft an IP45 Ingress Protection, in accordance with the global IEC 60529 standard.

Powered by a new design of software and hardware platform, Explore2 boasts multiple intelligent features.

The Skycatch Secure Controller (hereinafter referred to as “Secure Controller”) features radio technology, capable of controlling aircraft that supports this technology, and providing a live HD view from the aircraft's camera. It can transmit image data at distances of up to 9.32 mi (15 km) and comes with a number of aircraft and gimbal controls as well as some customizable buttons. The built-in 5.5-inch high brightness 1000 cd/m² screen has a resolution of 1920×1080 pixels, featuring an Android system with multiple functions such as Bluetooth and GNSS. In addition to supporting Wi-Fi connectivity, it is also compatible with other mobile devices for more flexible usage. An HDMI port is available for HD images and video output. The transmission system supports 2.4 GHz and 5.8 GHz to ensure a more reliable connection in environments prone to signal interference. The AES-256 encryption keeps your data transmission secure so you can be sure that your critical information remains safe.*

The Time Synchronization system continuously aligns the flight controller, camera, GNSS module, as well as onboard accessories via the Payload SDK or Onboard SDK at the microsecond level. It meets SDK developers’ requirements on time precision.

An advanced power management system along with dual batteries ensures power supply and enhances flight safety. Without a payload, the aircraft has a flight time of up to 55 minutes. The batteries can be replaced when without powering off the aircraft, enabling non-stop, continuous operations.

The camera unit is independent from image processor so that you have the flexibility to choose the perfect gimbal and camera system for each of your application. This means that regardless of which camera you choose, you have the same powerful processing backing it. The Explore2 allows for multiple payload configurations. It supports an upward gimbal, a single downward gimbal, dual downward gimbals, or an upward gimbal + a downward gimbal. It is equipped with many expansion ports for broader applications.

The aircraft has a built-in RTK module, which provides more accurate heading data for positioning.

* The Secure Controller can reach its maximum transmission distance (FCC) in an unobstructed area with no electromagnetic interference at an altitude of about 400 feet (120 meters). The actual maximum transmission distance may be less than the distance mentioned above due to interference in the operating environment, and the actual value will fluctuate according to the strength of interference. To comply with local regulations, the 5.8 GHz frequency is not available in some countries and regions.

*** The aircraft must be updated to the latest firmware.