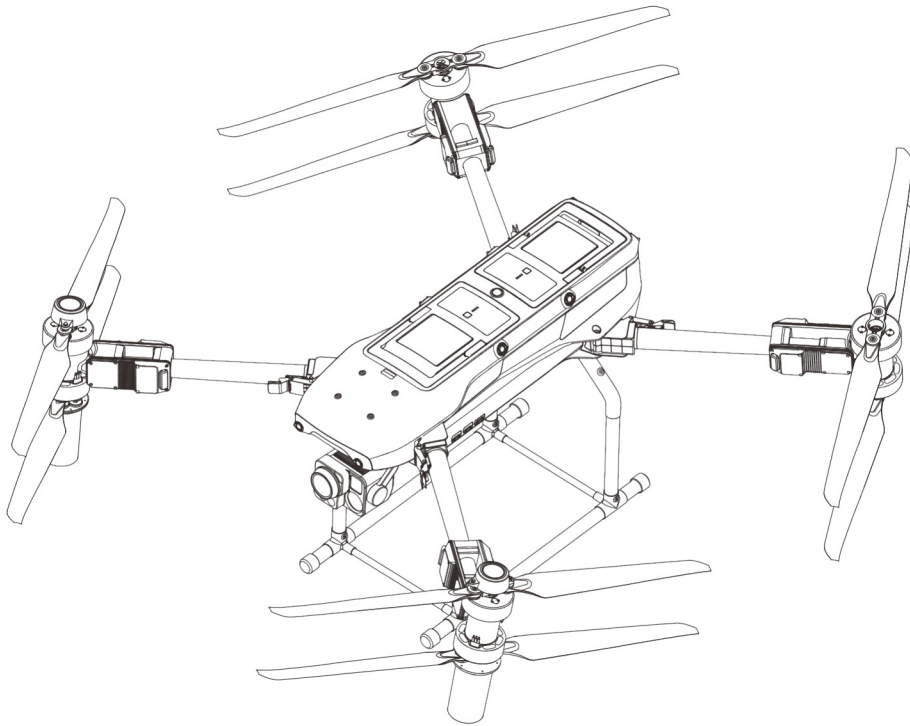


Autel Titan

Aircraft

User Manual

V1.0 2023.12



AUTEL
ROBOTICS

Copyright

This manual is copyrighted by Autel Robotics Co., Ltd. with all rights reserved. Without prior written authorization from the company, no person (or entity) may copy, scan, store, distribute, reproduce, sell, transfer, or modify any part or all of this manual in any form for personal use or use by others. Users should only refer to this manual and the content thereof as instructions to operate this product. This manual should not be used for other purposes.


Trademark Information

Autel Titan[™], Autel Enterprise[™] and **AUTEL**[®] trademarks are registered trademarks of the Autel Robotics Co., Ltd. (hereinafter referred to as "Autel Robotics") in China or other countries/regions.

Reading Assistance





- This manual is an electronic PDF document that supports high-resolution printing.
- If you are using a PDF reader such as Adobe Reader or Microsoft Edge to read this manual, press Ctrl+F on Windows or Command+F on Mac to search for keywords.
- View the content structure in the table of contents and click on titles to navigate to the respective pages.

Thank you for purchasing and using the Autel Titan aircraft (hereinafter referred to as "aircraft") from Autel Robotics. Relevant user documents for this product are provided in electronic and print form along with the product, and download links are provided in this manual. Before using this product, please carefully read the operation steps and precautions in this manual, so that you can quickly understand the characteristics and usage methods of this product, so as to ensure safe use of the product.

	<ul style="list-style-type: none">• The final interpretation right of this document and all related documents of this product belongs to Autel Robotics.• This document is subject to update without notice.
---	---

Legend

The following symbols are used in this manual to draw the user's attention to important safety and operating information. Please be sure to follow the notes or requirements under each symbol, otherwise, it may affect the safety features of the product or cause personal injury.

Symbol	Definition
	Warning: Alerts to a potentially hazardous situation.
	Important: Reminds the user to pay attention to a point.
	Remarks: Supplementary information.
	Tips: Quick tips to get the best possible experience.

Read Before Your First Flight

To ensure safe use of the Autel Titan aircraft, Autel Robotics provides you with the following documents and relevant tutorial videos. Please scan the QR codes in this manual or use the provided links to access them.

1. "Packing List": A list of everything that should be included in the packing box.
2. "Disclaimer and Safety Operation Guidelines": Instructions on how to operate the product safely.
3. "Battery Safety Operation Guidelines": Basic knowledge and safe handling of smart batteries.
4. "Quick Start Guide": Basic knowledge of operating the product.
5. "User Manual": A guide for you to master the operation method of the product proficiently.
6. "Maintenance Manual": Instructions on how to maintain the aircraft and its accessories.

We recommend that you first check the completeness of the items in the packing box according to the "Packing List", then read the "Disclaimer and Safety Operation Guidelines" carefully, and then watch the tutorial videos and read the "Quick Start Guide" to get a basic understanding of how to use the product.

Before your first flight, please read the "Battery Safety Operation Guidelines" and "User Manual" carefully to get a more detailed understanding of how to use the product.

Getting Tutorial videos, User Documents, and Relevant Software

You can scan the QR codes below or visit the following links to access tutorial videos and user documents or download relevant software for the Autel Titan aircraft:

To watch tutorial videos, please visit:

<https://www.autelrobotics.com/videos/autel-titan/>.



To download resources, please visit:

<https://manuals.autelrobotics.com/?dir=/Autel%20Titan/Aircraft/>.



Manual Guide

This manual contains 7 main chapters and 2 appendices. You can refer to the corresponding chapters for the desired information.

Chapter	Chapter Overview
Product Overview	This chapter introduces the main functions of the Autel Titan aircraft.
Flight Safety	This chapter introduces the flight environment, wireless communication requirements, and important flight safety features of the aircraft.
Aircraft	This chapter introduces the functions and usage of various components of the Autel Titan aircraft.
Remote Controller	This chapter introduces the functions of the Autel Smart Controller V3, including how to use the controller to operate the aircraft.
Smart Battery	This chapter introduces how to use, store, and maintain the smart battery of the aircraft.
Autel Enterprise App	This chapter introduces the interfaces and functions of the Autel Enterprise App.

Firmware Updates and Maintenance	This chapter introduces how to perform firmware updates and routine maintenance for the aircraft.
Appendix A	This chapter provides technical specifications for the Autel Titan aircraft and its accessories.
Appendix B	EU Declaration of Conformity for Autel Titan Aircraft.

Disclaimer

To ensure the safe and successful operation of this product, please read and fully understand all user documents listed above and strictly follow the operating instructions and steps described in this manual. Store the aircraft and its accessories out of the reach of children and pets. If you do not abide by the Safety Operation Guidelines, Autel Robotics shall not be responsible for any product damage or personal and property loss during use, and shall not provide any warranty service. Never modify the product using any incompatible component or in any way that does not conform to the official instructions of Autel Robotics. Please make sure that the operations you perform do not endanger the personal or property safety of yourself or those around you. By starting to use this product, you agree that you have read and accepted all terms related to this product. You undertake to be responsible for your own actions and all consequences arising therefrom. You undertake to use this product only for legitimate purposes and agree to these terms and any relevant policies or guidelines that Autel Robotics may establish.

Important

- When unboxing the product for the first time, carefully check the aircraft and other accessories included in the packing box according to the "Packing List".
- The content of this manual will be updated from time to time based on the function updates of the product.
- Please be aware that in the absence of flight logs from the Autel Enterprise App, Autel Robotics may not be able to analyze the causes of product damage or accidents and provide after-sales service.

Warning

- Using the Autel Titan aircraft of Autel Robotics involves certain safety risks. Do not allow minors to operate the aircraft.
- The operation of this aircraft requires obtaining flight certifications in accordance with the relevant local laws and registrations of the country or region where it is being operated.

Warranty Policy

Autel Robotics guarantees users who purchase products through its official authorized channels that:

- Under normal use, the Autel Robotics products you purchase will be free from material and workmanship defects during the warranty period.
- If you can provide a valid purchase receipt, the warranty period of this product is calculated from the midnight of the next day after you receive the product.
- If you cannot provide a valid purchase receipt, the warranty start date will be postponed by 90 days from the date of manufacture indicated by the product's serial number or as defined by Autel Robotics.

Tip

- For the after-sales policy of the product, please visit:
<https://www.autelrobotics.com/service/policy/>.

After-Sales Support

If you have any questions or concerns about our products, please contact Autel Robotics customer support:

Hotline: (844) MY AUTEL or (844) 692-88 35

Maintenance Service

If your equipment needs to be inspected or repaired, please contact Autel Robotics through the following methods:

- Email after-sale@autelrobotics.com or support@autelrobotics.com.
- Call Autel Robotics customer support at (844) MY AUTEL or (844) 692-88 35.
- Contact dealers authorized by Autel Robotics.

Important

- All data stored on the product may be erased during the repair process. To avoid data loss, please back up important files in your aircraft or remote controller before the product is under warranty.

Table of Contents

Chapter 1 Product Overview	1
1.1 Introduction	1
1.2 What's In The Rugged Case.....	2
1.3 Product Acceptance Checklist	3
1.4 UAS Introduction	5
Chapter 2 Flight Safety	8
2.1 Legal Use Notice.....	8
2.1.1 Chinese Mainland.....	8
2.1.2 The U.S.....	9
2.1.3 The EU.....	9
2.1.4 Other Countries and Regions	9
2.2 Flight Operation Guidelines.....	9
2.3 Flight Environment Requirements.....	10
2.4 Wireless Communication Requirements	11
2.5 Declaration of Maximum Take-off Mass.....	11
2.6 Obstacle Avoidance System.....	11
2.6.1 Introduction to Visual Sensing System and Millimeter-Wave Radar Sensing System	11
2.6.2 Observation Range.....	13
2.6.3 Visual Positioning Function	14
2.6.4 Visual Obstacle Avoidance Function.....	15
2.6.5 Precautions for Using Obstacle Avoidance Systems.....	15
2.7 Auto-return	16
2.7.1 Manual Auto-return Activation.....	17
2.7.2 Low Battery Auto-return Activation.....	17
2.7.3 Behavior-based Auto-return Activation	17
2.7.4 Auto-return Mechanism	18
2.7.5 Auto-return Obstacle Avoidance Process	19
2.7.6 Landing Protection Function	19
2.8 Rebuilding the C2 Link.....	20
2.9 Flight Restrictions and Unlocking Restricted Zones	20
2.9.1 Geofencing System	21
2.9.2 Restricted Zones.....	21
2.9.3 Unlocking No-Fly Zones.....	24
2.10 Altitude and Distance Limits	24
2.11 Aircraft Calibration.....	25
2.11.1 Compass Calibration.....	25

2.11.2 Gimbal Calibration	27
2.12 Emergency Stop Propellers During Flight.....	28
2.13 Mid-flight Sensing	29
2.14 Direct Remote Identification	29
2.15 Standard Flight Operation Process	30
2.15.1 Pre-Flight Checklist.....	30
2.15.2 Basic Flight Process.....	31
Chapter 3 Aircraft	32
3.1 Aircraft Activation.....	32
3.2 Aircraft Components	32
3.3 Preparation Of Aircraft.....	38
3.3.1 Installation Of The Mount	38
3.3.2 Fold/Unfold The Arms.....	39
3.3.3 Replacing Propellers	40
3.4 Arm Light.....	43
3.5 Strobe	44
3.6 Auxiliary Bottom Light.....	45
3.7 Camera*	46
3.7.1 Camera Structure.....	46
3.7.2 Camera Operations.....	47
3.7.3 Gimbal Structure	48
3.7.4 Gimbal Mechanical Rotation Range.....	49
3.7.5 Gimbal Operations.....	50
3.7.6 Replacing The Gimbal	50
3.7.7 Other Functions.....	52
3.8 Flight Control System.....	52
3.8.1 Flight Status.....	53
3.8.2 Flight Modes.....	54
3.8.3 Intelligent Flight Function.....	54
3.8.4 Hot Swap Battery.....	55
3.9 Installing the microSD Card	55
3.10 Connecting to PC/MAC	56
3.11 Extension Interface.....	56
3.12 Protection Rating	57
3.13 Autel SkyLink Image Transmission Function.....	57
Chapter 4 Remote Controller	61
4.1 Introduction	61
4.1.1 Remote Controller Components.....	61
4.1.2 Communication Frequency Bands.....	64

4.2 Installing the Remote Controller Lanyard	66
4.3 Installing/Storing Command Sticks.....	67
4.4 Turning the Remote Controller On/Off.....	68
4.5 Checking the Battery Level of the Remote Controller	69
4.6 Charging the Remote Controller	70
4.7 Adjusting the Antenna Position of the Remote Controller.....	71
4.8 Remote Controller System Interfaces	72
4.8.1 Remote Controller Main Interface	72
4.8.2 Shortcut Menu	75
4.9 Frequency Pairing With the Remote Controller	76
4.9.1 Using the Autel Enterprise App	76
4.9.2 Using Combination Keys (For Forced Frequency Pairing).....	77
4.10 Selecting Stick Mode.....	78
4.10.1 Stick Modes	78
4.10.2 Setting Stick Mode.....	80
4.10.3 Starting/Stopping the Aircraft Motor	82
4.11 Remote Controller Keys	82
4.11.1 Custom Keys C1 and C2	82
4.11.2 Take-off/Return-to-Home Button and Pause Button	84
4.12 Turning On/Off the Remote Controller Prompt Sound	85
4.13 Calibrating the Remote Controller	85
4.14 HDMI Screen Output	86
Chapter 5 Smart Battery	87
5.1 Battery Introduction	87
5.2 Smart Battery Functions	88
5.3 Smart Battery Usage.....	89
5.3.1 Installing/Removing the Smart Battery	90
5.3.2 Checking Battery Level	91
5.3.3 Smart Battery Self-heating.....	92
5.3.4 Charging the Smart Battery	94
5.4 Storing and Transporting the Smart Battery.....	95
5.5 Maintaining and Handling the Smart Battery	96
5.5.1 Maintaining the Smart Battery	96
5.5.2 Standard Charging and Discharging Process	97
5.5.3 Smart Battery Replacement Standards.....	97
5.5.4 Recycling the Smart Battery.....	97
Chapter 6 Autel Enterprise App.....	98
6.1 Software Introduction	98
6.2 Main Interface.....	99

6.3 Status Notification Bar	100
6.4 Shortcut Toolbar	102
6.5 "Settings" Interface.....	105
6.5.1 Flight Control Parameter Setting	105
6.5.2 OA Settings.....	108
6.5.3 RC Settings.....	110
6.5.4 Image Transmission Settings.....	111
6.5.5 Aircraft Battery	112
6.5.6 Gimbal Settings.....	114
6.5.7 RTK Settings	115
6.5.8 More.....	116
6.6 Attitude Ball	120
6.7 "Map" Interface	121
6.8 Camera Interfaces.....	124
6.8.1 Camera Function Area.....	124
6.8.2 "Zoom Camera" Interface.....	127
6.8.3 "Thermal Camera" Interface	128
6.8.4 "Wide Angle Camera" Interface	130
6.9 Flight Missions	131
6.9.1 Waypoint.....	132
6.9.2 Rectangle Mission.....	138
6.9.3 Polygon	144
6.9.4 Pre-flight Check.....	147
6.9.5 Resume Mission	148
6.9.6 Mission and Favorites.....	149
6.9.7 Personal Center.....	150
Chapter 7 Firmware Updates and Maintenance	151
7.1 Aircraft and Remote Controller Firmware Updates	151
7.2 Aircraft Parts Maintenance.....	152
7.3 Troubleshooting Guide	153
Appendix A Product Specifications	157
A.1 Aircraft.....	157
A.2 Gimbal Camera	161
A.3 Remote Controller	165
A.4 Smart Battery	167
Appendix B Declaration of Conformity.....	169

Chapter 1 Product Overview

1.1 Introduction

The Autel Titan aircraft is a small drone, equipped with an industry-leading high-performance processing chip, has powerful autonomous flight and self-organizing network mission capabilities, is integrated with a visual sensing system and a millimeter-wave radar sensing system, and has an omnidirectional obstacle avoidance system. With an excellent power management system, the aircraft can reach a flight time of up to 60 minutes. Also, it can mount a three-axis stabilized gimbal, allowing you to view observed videos and data from different lenses in real time through the Autel Enterprise App.

The Autel Titan aircraft adopts a foldable arm design and can hold its propellers for easy storage and transportation. The aircraft is equipped with 3 interfaces, allowing you to add different industry-specific mounts on the top, left and right side of the aircraft to meet various operational needs.

The Autel Titan aircraft comes with a built-in ADS-B receiver, which can detect the status of manned aircraft and provide alerts on the Autel Enterprise App. This allows for quick and safe operation, thereby avoiding potential collisions. The top and bottom of the aircraft are equipped with high-intensity strobes for indicating the aircraft's position in the air, while the bottom is equipped with auxiliary lights to improve visual positioning performance in weak light conditions, thus enhancing flight safety during landing.

The Autel Smart Controller V3 (hereinafter referred to as "remote controller") adopts the Autel SkyLink 2.0 Image Transmission solution, has strong anti-interference capabilities, and can achieve stable transmission of HD videos to the display screen of the Remote Controller. The remote controller is equipped with multiple function buttons, enabling quick aircraft control and camera operation.

The remote controller features a 7.9-inch 2048×1536 high-brightness touchscreen with a maximum brightness of 2000 nits. It adopts a customized Android system that supports the installation of third-party apps and offers functions such as satellite-based positioning, Wi-Fi, Bluetooth, and HDMI output. Moreover, it supports the PD65 fast charging protocol, allowing it to operate up to 4.0 hours on a full charge.

Tip

- The visual sensing system and millimeter-wave radar sensing system have limitations in usage environments and regions. Please read the "Disclaimer and Safety Operation Guidelines" to learn about relevant safety precautions.
- The flight time of the aircraft is measured in a laboratory environment (The aircraft flies at a constant speed of 10 meters per second in a light breeze environment) and is for reference only. The actual flight time may vary depending on factors such as environmental conditions and flight mode.
- The 4.0-hour operating time of the remote controller is measured with the screen brightness set to 50% and is for reference only. The operating time may vary in different scenarios.

Warning

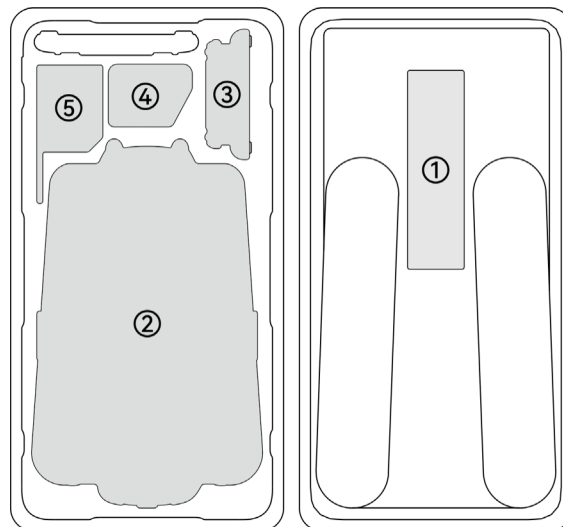
- If multiple aircraft are flying in an area at the same time, please keep an appropriate air distance to avoid any accidents.

1.2 What's In The Rugged Case

Autel Titan Bundle consists of a rugged case, a mount packaging box and a battery packaging box. In the battery box, there's the battery charger and two ABMC0 smart batteries.

Note

- Autel Titan bundle doesn't include the gimbal camera, please contact Autel Robotics to purchase according to your need.



No.	Item	Note
1	Spare propellers and screwdriver	Includes 2 pair of spare propellers (CW*2 and CCW*2), and T6 screwdriver*1
2	Aircraft	Includes propellers. When storing it, please fold the arms and hold the propellers.
3	Remote Controller	Comes with 1 Autel Smart Controller V3 (includes the RC protective cover).
4	Gimbal Camera	Optional: L35T gimbal camera.
5	Accessory Area And Document Bag	Includes "Quick Start Guide" "Manuel" Includes 6 dampeners, a dust blower, a lens cleaner, a soft brush, a camera lens cleaning cloth. A remote controller

charger, a C-to-C charging cable, a C-to-A data cable, a remote controller lanyard, a maintenance screwdriver, 10 propeller washers, 5 spare interface rubber covers and 2 spare sticks.

! Important

- Upon receiving the product, please inspect the rugged case in its entirety and confirm that its outer packaging is intact, with no signs of unpacking. Meanwhile, save the unboxing video for potential logistics damage claims.

1.3 Product Acceptance Checklist

After unboxing the product, please check whether the actual items match the items described in the following packing list and carefully inspect the appearance of the aircraft and all accessories. If anything missing or damage is found, please contact Autel Robotics After-Sales Support or authorized dealers promptly.

Table 1-1 Packing List

No.	Item	Model/Specification	Quantity	Note
1	Aircraft	MDM	1	Includes propellers.
2	Mount		1	In the mount packaging box.
3	Gimbal Interface Cover		1	On the aircraft.
4	Spare Propeller		4	CW*4, CCW*4
5	Dampener		6	
6	Propeller Screw	M4x12	10	
7	Propeller Washer		10	
8	Screw For Fastening The Mount	M4x22	8	
9	Interface Rubber Cover		6	Spare
10	Lens Cleaner		1	
11	Soft Brush		1	
12	Dust Blower		1	

13	C-to-A Data Cable		1	
14	T6 Screwdriver		1	Used for install the Interface Rubber Cover
15	Maintenance Kit		1	Includes the hex screwdriver
16	Gimbal Camera	DG-L35T	1	Optional accessory
17	MicroSD Card	128G	1	Optional accessory
18	Gimbal Interface Cover		2	On the gimbal camera, optional
19	Gimbal Protective Cover		1	On the gimbal camera, optional
20	Smart Battery	ABMC0	2	In the battery packaging box.
21	Battery Charger	DF 15_CHARGER	1	In the battery packaging box.
22	AC Power Cable		1	Used with the battery charger. In the battery packaging box.
23	Remote Controller	RCPad	1	Autel Smart Controller V3 comes with 2 command sticks and 2 antennas.
24	Remote Controller Charger	GaN-001US	1	
25	C-to-C Charging Cable		1	Used with the remote controller charger.
26	Spare Stick		2	
27	Remote Controller Lanyard		1	
28	Smart Controller Cover		1	
29	Quick Start Guide		1	Placed in the document bag.

30	User Manual	1	Placed in the document bag.
31	Lens Cleaning Cloth	1	Placed in the document bag.
32	Product Certification	1	

1.4 UAS Introduction

Before first flight, please perform a comprehensive inspection of the UAS to ensure that all components meet the following requirements. A complete UAS consists of two parts: the aircraft and the remote controller. The relevant requirements and explanations are as follows :

■ Aircraft Components And Payload

Please be noted that a complete aircraft includes the aircraft body, the mount, gimbal camera (optional), propellers, and the battery. Any damage or missing of these components may result in a malfunction.

The RTK module is an optional accessory for enhancing aircraft positioning accuracy.

Table 1-2 Autel Titan Component List

Item	Product Info	Manufacturer	Note
Autel Titan Aircraft	Max. weight: 23500 g Max. Dimension: 1879×1866×584 mm EAN: 6924991125457 UPC: 889520205450	Autel Robotics	Includes propeller, battery.
ABMC0 Smart Battery	Max. weight: 4130 g Max. Dimension: 252×145×126 mm EAN: 6924991126492 UPC: 889520206495	Autel Robotics	Included
CW/CCW Propeller	Max. weight: 45 g Max. Dimension: 33 inches	Autel Robotics	Included
Payload DG-L35T	Max. weight: 910 g Max. Dimension: 144.7×133.3×158.4 mm EAN: 6924991126195 UPC: 8889520206198	Autel Robotics	Optional
Mount	Max. Dimension: 434×422×390mm	Autel Robotics	Included

■ Remote Controller Components & The App

A complete remote controller includes the controller body (equipped with a functional touchscreen and buttons), joysticks, and antennas. Any damage or missing of these components

may result in a malfunction. The Autel Enterprise App, serving as the flight application software that controls the aircraft, should be maintained to ensure comprehensive control over the UAS.

Table 1-3 Remote Controller Components List

Item	Product Info	Operating System	Manufacturer	Note
Autel Smart Controller V3	Max. weight: 1194 g Max. Dimension: 269×302×87 mm EAN: 6924991129011 UPC: 889520209014	Android 11	Autel Robotics	Includes command sticks and antennas.

Table 1-4 Firmware and Software version explanation

No.	Item	Release Version	Note	Release Date
1	Image Transmission	V1.6.0.13	/	23Q3
2	Remote Controller	V6.0.4.3	/	23Q3
3	Android System	V1.6.0.13	Based on Android 11	23Q3
4	Autel Enterprise	1.4.5	Flight Control Software	23Q3

 **Tip**

- The above information is for reference only. Both the remote controller and the aircraft have been upgraded to the latest versions before shipment. Users can use accordingly.
- When the remote controller and the aircraft are frequency-paired and the remote controller is connected to the internet, Autel Enterprise App will automatically check for firmware updates. More instructions, see [“7.1 Aircraft and Remote Controller Firmware Updates”](#) in the Chapter 7.
- When there's any prompt for updates, please follow the instructions to update accordingly to address any issues and to enjoy the new features. Users also have the option to temporarily pause updates; however, this won't affect the existing functions.

Table 1-5 List of Pre-installed Apps on the Remote Controller

NO.	Pre-installed App	Software Version	Note
1	Autel Enterprise	1.4.5	Flight Control Software
2	Files	11	System Software
3	Gallery	1.1.40030	System Software
4	Chrome	68.0.3440.70	System Software

5	Settings	11	System Software
6	Maxitools	2.45	System Software
7	Google Pinyin Input	4.5.2.193126728-arm64-v8a	System Software
8	Android Keyboard (AOSP)	11	System Software

 **Tip**

- The pre-installed system apps mentioned are the basic application for the remote controller. Users also have the option to install third-party software if desired.