

UAV Mate

High-Precision Multifunctional Station for Drones



Overview

UAV Mate is a compact, all-in-one multifunctional station designed to simplify UAV mapping and field surveying.

Powered by satellite-based PPP Service, it delivers real-time, centimeter-level positioning anywhere on

Earth — without relying on CORS networks, cellular coverage, or local reference stations.

Whether you need a reliable UAV base station or a flexible rover for GCP collection, UAV Mate adapts seamlessly to your workflow.

Key Features

- Multi-Mode Operation (PPP / RTK / PPK)
- Globally Aligned Precision Powered by PPP
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- GCP Collection with Tilt Compensation
- Integrated Radio & 4G Connectivity
- Rugged & Weatherproof (IP68)

UAV MATE

Precision Without Limits

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Performance

Signal Tracking	GPS: L1 C/A, L1C, L2C, L2P, L5C BDS: B1I, B2I, B3I, B1C, B2a, B2b GLONASS: L1OF, L2OF, L3OC Galileo: E1, E5a, E5b, E5AltBOC, E6 QZSS: L1 C/A, L1C, L2C, L5C SBAS: L1 C/A, L5 IRNSS: L5 L-Band
Channels	1792 ⁽¹⁾
Single Point Positioning Accuracy (RMS)	Horizontal 1.5 m Vertical 2.5 m
DGPS Positioning Accuracy (RMS)	Horizontal 0.25 m Vertical 0.5 m
High-Precision Static (RMS)	Horizontal 2.5 mm+0.1 ppm Vertical 3.5 mm+0.4 ppm
Static & Fast Static (RMS)	Horizontal 2.5 mm+0.5 ppm Vertical 5 mm+0.5 ppm
Post Processed Kinematic (RMS)	Horizontal 2.5 mm+1 ppm Vertical 5 mm+1 ppm
Real Time Kinematic (RMS)	Horizontal 8 mm+1 ppm Vertical 15 mm+1 ppm
Initialization (Typical)	4s ⁽²⁾
Initialization Reliability	>99.9% ⁽³⁾
Network Real Time Kinematic (RMS)	Horizontal 8 mm+0.5 ppm Vertical 15 mm+0.5 ppm
Observation Accuracy (Zenith Direction)	C/A Code 10 cm P Code 10 cm Carrier Phase 1 mm
Time To First Fix (TTFF)	Cold Start <30 s Warm Start <5 s
Re-acquisition	<1 s
Timing Accuracy (RMS)	20 ns
Velocity Accuracy (RMS)	0.03 m/s
Tilt Compensation Accuracy (No tilt angle limit)	≤2 cm(within 60°)

PPP ⁽¹⁾ Positioning Accuracy(RMS)	Horizontal 15 mm Vertical 30 mm
PPP Convergence Time	3 minutes
PPP Coverage	Global
PPP Signal Stability	99.99%
System & Data	
Operating System	Linux
Storage	Built-in 8 GB
Differential Data Format	CMR, RTCM 2.x/3.x
Data Output	RINEX, NMEA-0183, Binary
Data Update Rate	20 Hz
Communication	
Cellular	4G LTE/WCDMA/GSM/EDGE
Cellular Bands ⁽⁴⁾	LTE FDD B1, B3, B7, B8, B20, B28 LTE TDD B38, B40 WCDMA B1, B8 GSM/EDGE B3, B8
Network Protocols	Ntrip Client, Ntrip Server, TCP
Wi-Fi	802.11b/g/n
Bluetooth	4.1
Internal Radio	
RF Transmit Power	0.5 W/1.0 W
Frequency Range	410 MHz ~ 470 MHz
Operating Mode	Half-duplex
Channel Spacing	12.5 KHz / 25 KHz
Modulation Type	GMSK, 4FSK
Air Baud Rate	4800 / 9600 / 19200bps
Radio Protocols	
	TrimTalk450, TrimMark 3, South, Transparent, Satel
Wired Communication	
USB	Type-C, OTG

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User Interface

Button	Power Button
LED Indicators	Satellite, Correction Data, Static, Solution, Bluetooth
Voice	Support
Power Display	Support

Electrical

External Power Supply	Support USB (5~20 V)
Fast Charging	Support, 15 W max (5 V 3 A)
Lithium Battery	Built-in, 7000 mAh/7.4 V
Charging Time	3 hours (20%-90%)
Battery Charging Temperature	+10 °C ~ +45 °C
Working Time	up to 10 hours ⁽⁵⁾
Smart Battery with Power Display	Support
Electronic Bubble	Support

Physical

Dimension	φ132x68 mm
Weight	≈ 827 g ⁽⁶⁾
GNSS Antenna	Integrated
Operating Temperature	-40 °C ~ +70 °C
Storage Temperature	-55 °C ~ +85 °C
Relative Humidity	100% not condensed
Dust- & Waterproof	IP68
Pole Drop onto Concrete	2 m
Vibration	MIL-STD-810G, FIG 514.6C-1
Warranty Period	One Year

Note:

- (1) PPP Service is available exclusively on the UAV Mate version.
- (2) The initialization time depends on various factors, including the number of satellites, observation time, atmospheric conditions, multi-path, obstructions, satellite geometry, etc.
- (3) The initialization reliability may be affected by atmospheric conditions, signal multipath, and satellite geometry.
- (4) Optional for LTE FDD B28A.
- (5) The working time of the battery is related to the working environment, working temperature and battery life.
- (6) The actual size/weight may vary depending on the manufacturing process and measurement method.

Website: www.uav-mate.com

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