



**APPRO**

# APPRC eVTOL

**6 h**

Practical endurance  
(1kg payload)

**400 km**

Max. mileage one single  
charge

**100 km**

Max. real-time image  
transmission  
(30/60km optional)

**7500 m**

Practical ceiling

**8 kg**

Max. payload



# APPRC eVTOL

**4 h**

Practical endurance  
(1kg payload)

**300 km**

Max. mileage one single  
char

**100 km**

Max. real-time image  
transmission  
(30/60km optional)

**7500 m**

Practical ceiling

**6 kg**

Max. payload



## Unique technology

The excellent aerodynamic design, three-dimensional simulation, and computer fluid dynamics analysis capabilities of the MetriDynamic team have created a series of exclusive technologies that enable the deep optimization of the P6 series power system to achieve the ultra-efficient use of energy for the P6 series VTOL.



### INVERTED VERTICAL TAIL

Break the tradition, vertical tail upside down. Improved heading stability performance at high angles of attack, and also serves as tail landing gear and propulsion propeller protection



### PES-VTOL

The specially designed vertical take-off and landing system finds the best point in the position and angle of the vertical lift rotor, and the low resistance shape of the load-bearing arm. Minimize the resistance burden of the hanging system on the whole aircraft



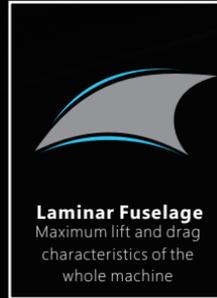
### EMBEDDED ANTENNA

Innovative use of this antenna technology with take-off weight less than 25 kg. The aerodynamic surface is integrated with the datalink antenna. Reduce air resistance in a large way



## EDGE WING

This innovative wing technology on a low-speed aircraft. Improved the lift characteristics of the wing body transition section. In particular at low speeds, high angles of attack and steep turns, additional eddy current lift compensation is provided to improve the aircraft's low speed and circling performance



## LAMINAR FLOW FUSELAGE

The particular-designed full-free curved fuselage fully fits the most natural three-dimensional airflow streamline, so that the air flowing through the fuselage and the wing body transition section flows in a laminar flow. Maximum lift and drag characteristics of the whole aircraft



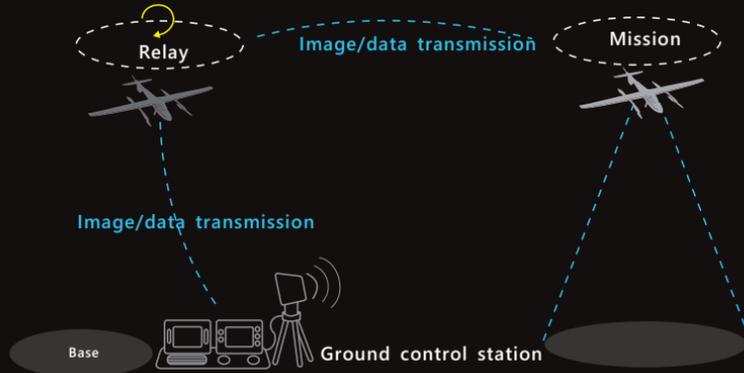
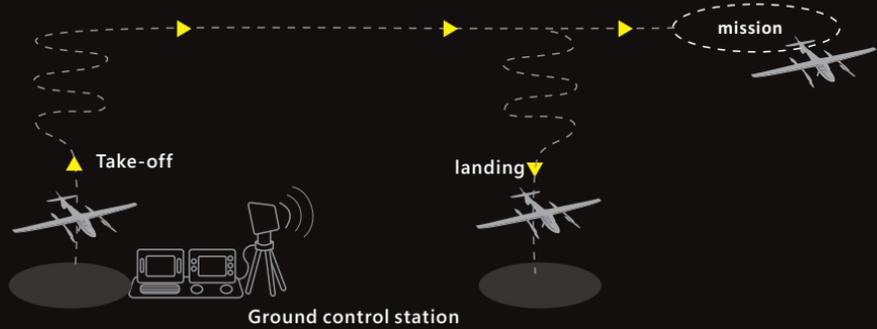
## SPEED-ADAPTIVE FLAPRONS

Automatically compensate and devolve at low speeds, maintain a stable lift and flight level angle of incidence, and automatically come up to compensate at high speeds, so that the aircraft can turn or cruise at a high speed as fast as 155 km/h

# Unique Features

## Landing in different places

Landing site can be different from the take-off site and by accurately plan the site coordinates and height information of the landing site, to allow the aircraft perform an autonomous landing process in a remote location

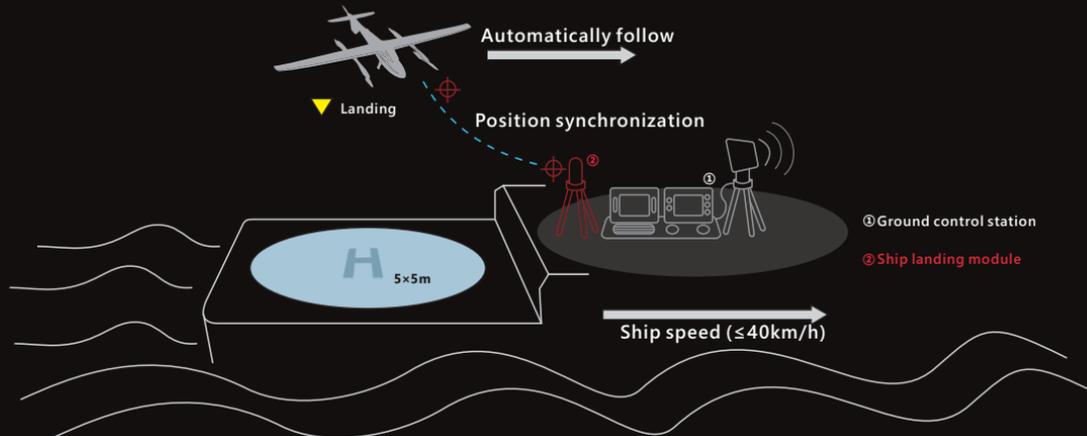


## Data relay in air (Optional)

When Two P6 are lifted into the air, one is used as a relay station for signal receiving platform at high altitude, and the other one is for normal missions. Correct deployment can ensure the realization of 60-100km ultra-long-distance image and control datalink in complex terrain areas.

## Moving platform landing

By setting up a unique mobile positioning module on the moving platform it can update/synchronize aircraft with platform position information in real time, so that it can synchronously follow the continuously moving position coordinates, so as to perform take-off and landing actions on a continuously moving platform.



## Key parameter table



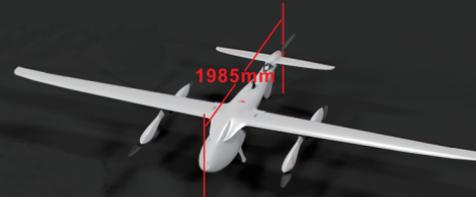
### Aircraft platform

Material	Full Carbon Fiber Composite Material
Wingspan	≤3.4m
Fuselage	≤1.9m
Height	≤0.4m
Take-off and Landing Method	No hand controller required, fully autonomous vertical take-off and landing
Take-off Weight	≤18kg
Practical endurance	≥6h(with 1kg gimbal) / ≥2.5h(equipped with LiDAR)
Cruise Speed	65km/h-150km/h
Practical Ceiling altitude	≥7500m
Wind Resistance	Take-off and landing stage level 6 , cruise stage downwind and upwind level 8, cross wind level 6
Working Temperature	-20°Cto50°C
Task Response Time	Unfold ≤3min, pullin : ≤3min
Payload	Mapping model support orthographic/3D camera/LiDAR/ multi-spectral camera, Surveillance model supports EO/IR/ range finder/weak light 3 in 1 or 4 in 1

### Control system

Navigation control	Dual-frequency navigation system, support GPS/ Beidou /GLONASS
Attitude sensor	No less than 3 channels of extra sensors are designed to mission mode
Mission mode	Fully automatic
Safety mechanism	Support for emergency return to home in strong wind, GPS loss, automatic return to home after loss of connection, automatic power calculation

# Key parameter table



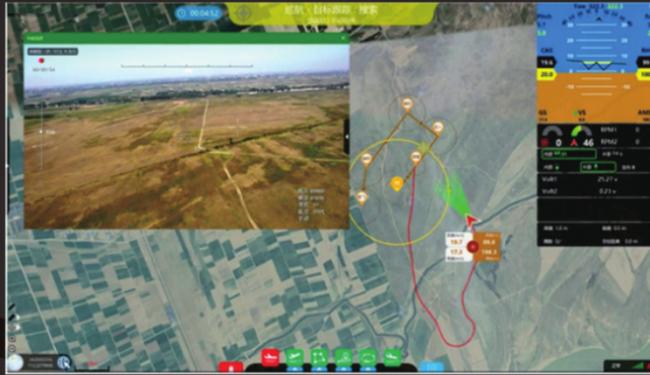
## Aircraft platform

Material	Full Carbon Fiber Composite Material
Wingspan	≤3m
Fuselage	≤1.9m
Height	≤0.4m
Take-off and Landing Method	No hand controller required, fully autonomous vertical take-off and landing
Take-off Weight	≤15kg
Practical endurance	≥4.5h (with 1kg gimbal) /≥1.5h(equipped with LiDAR)
Cruise Speed	65km/h-150km/h
Practical Ceiling altitude	≥7500m
Wind Resistance	Take-off and landing stage level 6 , cruise stage downwind and upwind level 8 , cross wind level 6
Working Temperature	-20°Cto50°C
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# Autopilot Features

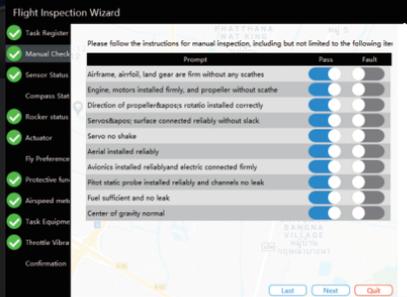


## Surveillance tasks

- High-resolution EO and thermal imaging for day/night surveillance
- Moving targets tracking and by intelligent follow-up logic to ensure that the target does not exceed the optical monitoring range.
- Targets outside the range are pursued in a straight line, and the flight altitude is kept in consistent.
- Target position is displayed in the satellite map panel of the ground station in real time.
- With the target location indicator, the overall situation is clear at a glance.
- Point touch the ground target or location in the real-time screen, and you can fly to it.

## Moving platform take-off and landing

- Real-time synchronization of the moving position to achieve precise guidance or landing.
- It is suitable for three-dimensional positioning of the horizontal and height positions of moving platforms landing such as vehicles and ships.
- The centimeter-level precise ground station interface monitors the landing and docking status in real time



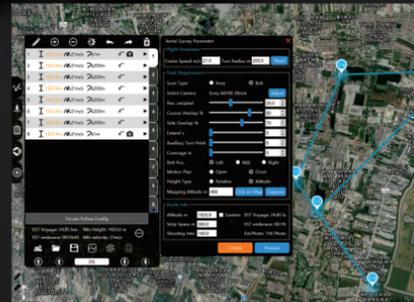
## Pre-flight inspection

- Clear self-inspection indicators, complete parameters, fully self-inspected avionics
- Manual physical inspection prompts a complete and comprehensive inspection list to improve flight reliability.
- Self-inspected report will be generated automatically. Self-Inspection records will be saved for each flight.



## Terrain follow

- The highest point in the target area is automatically sampled as the baseline to ensure flight safety.
- The altitude collection interval is automatically adjusted to ensure reliable flight while eliminating complicated manual operations.
- Routes are automatically generated, and can be individually and manually modified.



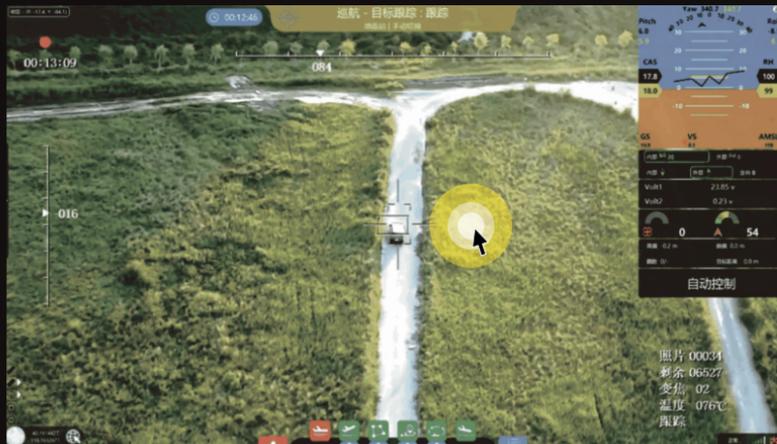
## Routine Inspection planning

- A single route can plan up to 1,800 way points, adapting to various complex terrain and airspace environments.
- It is suitable for regular and fixed inspection missions of the team to improve standardization and data consistency.
- The route planning can be stored, and it is convenient for normalized and repeated use.



## Remote monitoring and collaboration

Through the Internet connection, the remote pilot can fully operate and monitor the flight platform for flight missions, and realize remote command training, demonstration operations, and technical assistance



## Target vision follow

According to the real-time picture streamed by the EO, you can directly click on the vehicle, building, and location in the screen to control, so that the aircraft can reach the target location and continue to monitor

## Synchronous webcast

The video images collected by aircraft are transmitted to the remote command center through Internet streaming technology, live broadcast the situation on the front line, and provide instant information reference for the command work

# Flight Simulation System



- Real-world flight simulation system can realize manual and fully autonomous flight simulation.
- The system is equipped with an excellent flight simulation platform.
- Pre-set airports around the world have exquisite picture quality and rich details.
- Able to simulate various weather conditions and are suitable for testing various performances of aircraft (such as wind resistance, etc.).
- The precise physical model will bring a realistic flight experience, whether it is remote control flight or advanced parameter adjustment.
- The system includes a variety of flight modes, seamless conversion between line-of-sight flight and beyond-line-of-sight flight.
- Applied to user training at different stages. Whether you are a novice pilot or experienced pilot the simulator will be useful practice platform

## Feature

- A variety of flight modes, including remote control flight within the line-of-sight, fully autonomous flight beyond the line-of-sight, etc., are suitable for all stages of UAV training tasks. The system is equipped with an excellent flight simulation platform.
- The powerful flight control algorithm perfectly supports all kinds of models for fully autonomous take-off and landing, mission route flight, emergency protection, etc.
- The equipment is simple to install and use, and you can quickly experience the fun of flying with just a few simple operations.
- Exquisite aircraft physical modeling, aircraft models include VTOL, fixed wing, multi-rotor, helicopter, etc.
- Realistic physical effects, such as vibration, stall, spiral, crash, etc.
- The detailed flight environment simulation covers airports all over the world, giving flight a real world.
- It can simulate various weather effects such as wind, thunder, rain, and snow, and supports random weather.

## Application

Newcomer's practice, improve remote control flight ability, advanced tuning parameters, and make you a flying master. Trainees can seamlessly switch between in-line and out-of-sight flight training to quickly improve trainees' practical ability.

Item	parameter	Remarks
Weight	158g	
Size	80 * 80 * 19mm	
Supply voltage	DC 5V	
Operating temperature	0~65°C	
Power supply interface	Type-C	
Device interface	Type-C, 3 Pin Molex	Communication serial port

## Gimbal



GS3W



GS4T



GS4L

- 30x zoom, 1080P EO.
- Thermal imaging, grayscale view and color mode.2 FOV
- 8mm fixed focus weak light camera and thermal imaging fusion display
- Three-axis mechanical stabilization, more stable field of view.
- High-precision range finder, more accurate target distance
- Powerful target tracking ability, the target is always displayed in the center of the screen
- Optically guided flight, the aircraft will automatically follow and monitor the target

	Three-axis stabilization	30x zoom HD EO	Weak light fusion display	Thermal imaging	Thermal FOV x 2	Laser range finder	Intelligent tracking
<b>GS3W</b>	✓	✓	✓	✓			✓
<b>GS4T</b>	✓	✓	✓	✓	✓		✓
<b>GS4L</b>	✓	✓	✓	✓		✓	✓

### PTZ

Type	three-axis mechanical stabilization
Pitch angle	+110°to-110°
Heading angle	360°unlimited
Roll angle	±50°
Stability accuracy	0.3°

### EO unit

Lens	30x optical zoom
Focal length	4.3mm to 129.0mm/F1.6 to F4.7
Sensor	CMOS
Image format	1920×1080@60fps
FOV	63° x35° to 2.3°x1.3°

### Weak light unit

Image format	1920×1080@60fps
Focal length	8mm
FOV	38.4°x22.2°

### Thermal unit

Resolution	640×512@60fps
Types	Uncooled (8-14um)
Focal length	35mm
FOV	12°x9°
FOV x 2	Narrow 12°x9° Wide32° x 25°
NETD	50mk@25°C

### System adaptability

Weight	Max.980g
Working temperature	-20°Cto60°C
Storage temperature	-40°Cto60°C

### Laser range finder

Range	≥2km (accuracy±1m)
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### Tracking module

Tracking speed	±48pixels/frame
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# Data link



**ATA**  
(Automatic tracking antenna)  
30cmx20cmx41cm, weight 6kg



**Tripod**  
Expand height 2.3m  
Pull-in height 1.2 m Weight 2kg)



**DI60/DI100**



**DI30**

DI30 / DI60 / DI100  
(Transmission distance: 30km / 60km / 100km)

- Point-to-point high-definition wireless radio transmission, 1080P/60 frame video
- Cooperative sensing algorithm for electromagnetic environment, strong anti-interference performance and electromagnetic environment adaptability
- Excellent transmission capability, the maximum single point transmission distance can reach 100km@1800m flying height.
- Installation of directional tracking antenna system, high-intensity signal directional concentrated, enhance signal stability
- The P6 series unique data link relay scheme enables the transmission distance capacity to be expanded up to 200km

Working frequency	1.4GHz/2.4GHz (or customized)
Channel bandwidth	20MHz
Radio frequency transmitting power:	2W (60km) 、 4W (100km)
Radio frequency receiving sensitivity	90dBm
Effective transmission distance	60 km and above (LOS)
Modulation mode	QPSK
Link rate	10Mbps
HD The minimum delay of the image terminal	250ms
Cold start time	5s
Link establishment time	10 ms
Operating temperature	-35°C ~ +60°C

## Ts2

Oblique mapping camera



		Pixels/Len	CNC housing	CNC housing	Independent POS data	J30J Port	SkyPort for DJI
Ts2	42MP	✓	✓	✓	✓	✓	
Ts2 Pro	42MP	✓	✓	✓	✓	✓	✓

### General

Operating Temperature	-10°C-50°C
Humidity	90%
Size	160×160×105mm
Weight	1150g

**Camera**

QTY of Lens	5 pcs
Focal Length	56mm×440mm×1
Effective Pixels	42.4MP,total pixels≥210MP
Sensor Size	Full Frame(35.9mm×24mm )
Pixel Size	7952×530
Lens Angle	445degree
Exposure Interval	≥1.2s
Storage	1280GB
Power Supply	SkyPort/J30J-15
Power On/Off	Auto On/Off

**Os6**  
Orthographic mapping camera



61Million Pixels Full Frame Mapping Camera

- Lightweight,easy mounting
- SkyPort Connector,seamless docking with DJI drones
- Minimum exposure interval $\geq$ 0.8s

**General**

Operating Temperature	-10°C-40°C
Humidity	95%
Size	136×76×61mm
Weight	350g

## Camera

Focal Length	56mm×440mm×1(Optional)
Effective Pixels	61MP
Sensor Size	Full Frame (35.7mm×23.8mm)
Exposure Interval	≥0.8s
Storage	1280GB
Power Supply	SkyPort
Power On/Off	Auto On/Off

## LiDAR

Airborne laser scanning is a rapid, highly accurate and efficient method of capturing 3D data of large areas, such as agricultural or forestry sites, urban areas, industrial plants, etc.

RIEGL airborne laser scanners make use of the latest state-of-the-art laser and signal processing technology. They are exceptionally compact, light weight and cost effective, and are designed to meet the most challenging requirements in airborne surveying.



### Features

- Maximum measuring distance 950m/1350m
- The maximum scan rate is 550,000 points/ 820,000 points
- Scanning field of view 330°, can easily obtain the point cloud on side
- Unlimited echo reception, with excellent plantation penetration ability
- Obtain image data with position information and attitude information at the same time
- Turn on and turn off laser scanning at fixed points according to the route design, and control camera exposure
- Package-style customization

## LiDAR Unit

	Lr900	Lr1350
Field of View (FOV)	330° ( adjustable )	330° ( adjustable )
Max. Effective Measurement Rate	500,000 meas./sec	820,000 meas./sec
Measure precision/Repeat precision	10mm/5mm(@150m)	15mm/10mm(@150m)
Max. Range	@50kHz	@50kHz
@ Target Reflectivity 80%	920m	1350m
@ Target Reflectivity 20%	550m	820m
Max. functional height (FOV = 90 deg)	@50kHz 100% laser power	@50kHz 100% laser power
@ Target Reflectivity 60%	650	950
@ Target Reflectivity 20%	390	580
Eye Safety Class	Laser Class 1	Laser Class 1
Data storage	Internal 240 GB SSD	Internal 240 GB SSD
Weight	3.75kg	3.75kg
Power consumption	10mm/5mm	15mm/10mm

### IMU/GNSS Unit

		APX-20	Ap20	Ap60
Pose accuracy	Pitch angle	0.015°	0.015°	0.002°
	Roll angle	0.035°	0.035°	0.005°
Positioning accuracy	Plane	<0.05m	<0.05m	<0.05m
	Altitude	< 0.01m	< 0.1m	< 0.1m

### Camera Unit

	Nicon D850	Phase One IXU-1000	Phase One IXM-100
CCD size	53.7mm×40.3mm	43.9mm×32.9mm	43.9mm×32.9mm
Camera resolution	8256×5504	11608×8708	11664×8750
Effective resolution	47M Pixels	100M Pixels	100M Pixels
Focal length	24mm	50mm	35mm
Field angle	84°/59°		

APPRC

[www.appro.com.tr](http://www.appro.com.tr)