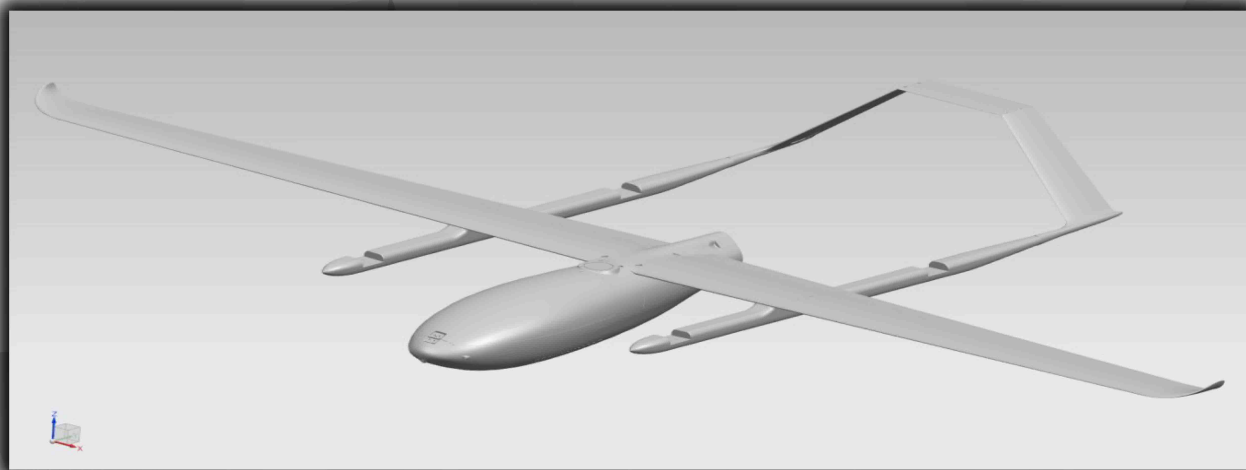


TIGER SHARK VTOL



Tiger Shark

VTOL 3.5m Gasoline Power



EFFICIENCY

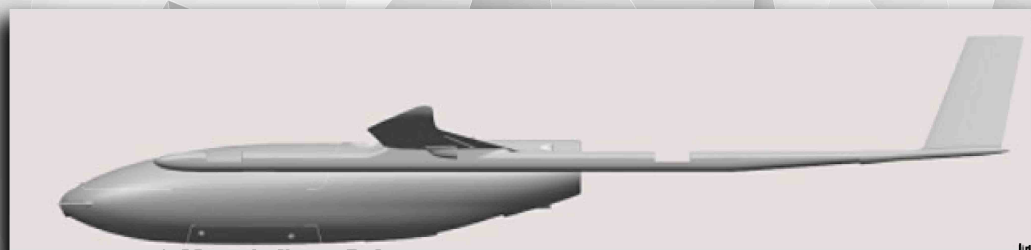
We designed the Tiger Shark VTOL based on the success platform of Eagle Hero which carry forward the most efficient of its kind. That means low stall speeds, high max efficiency, a large payload capacity and hot swap features, retract nose gear, built in component compartment and the long endurance gasoline engine power system. This equates to less energy expended and more time in the air.

WING

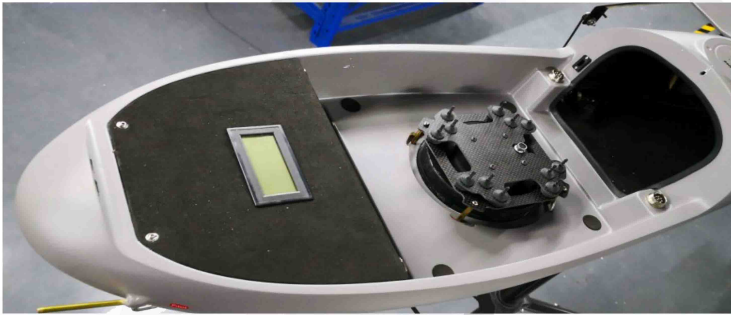
- Optimized foil & forward swept platform designed to ensure low stall speeds, high max efficiency and a large cruise window.
- Aspect ratio of 13.6 allows our custom in house wing foil selection to be tailored for a wider flight envelope.
- Upward style tips reduce drag via the reduction of tip vortices, as well as decrease aileron effectiveness at near-stall condition.

FUSELAGE

The trapezoidal shape of the fuselage minimizes the fuselage to wing interaction, drag and interference. It was designed with a high pressure region in the nose and a low pressure region behind the wing, on top and below the motor mounting area. This acts to create a pressure differential, essentially "pulling" air through the fuselage. The layout allows for smarter cooling, by cooling off lower temperature components towards the front, and higher temperature components in the rear (motor). The cooling exhaust placement was purposely in an area with turbulent airflow, so as to not disturb the otherwise laminar airflow over the rest of the fuselage.

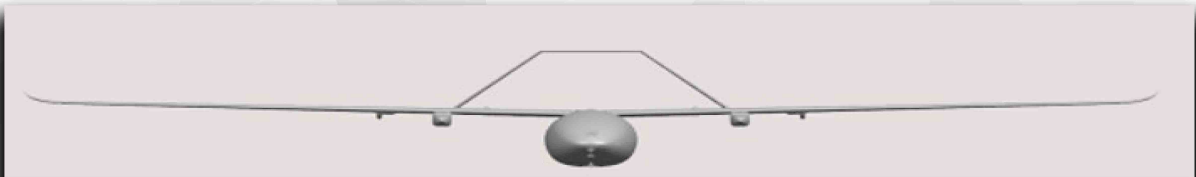


Special design of avionics arrangement eliminating the miss-operation by operator.



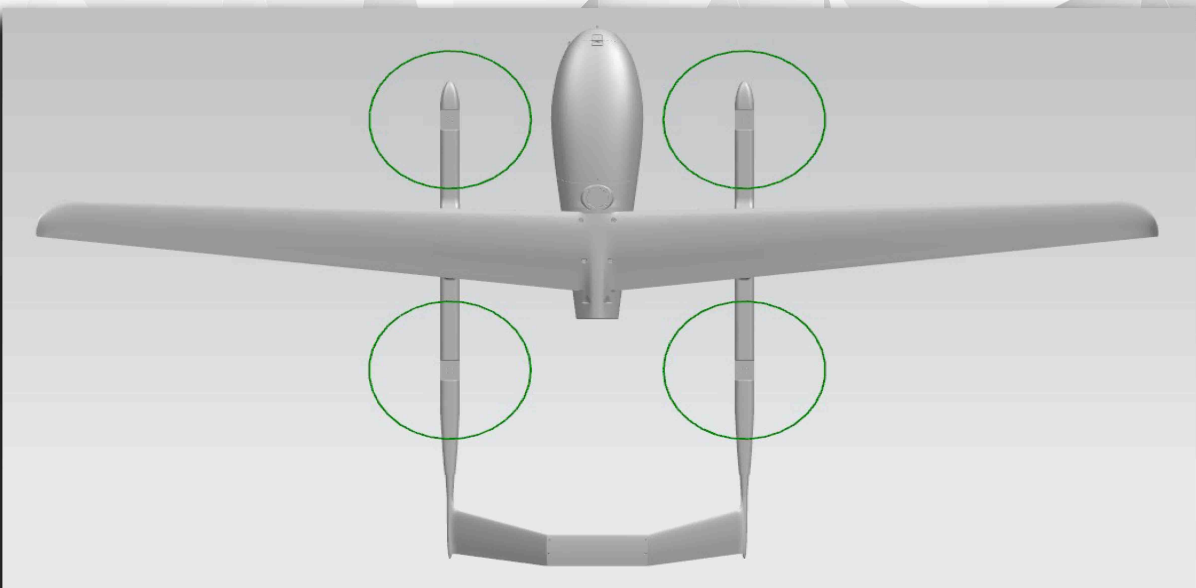
TAIL

Inverted V design improves efficiency while decreasing drag.



VTOL features

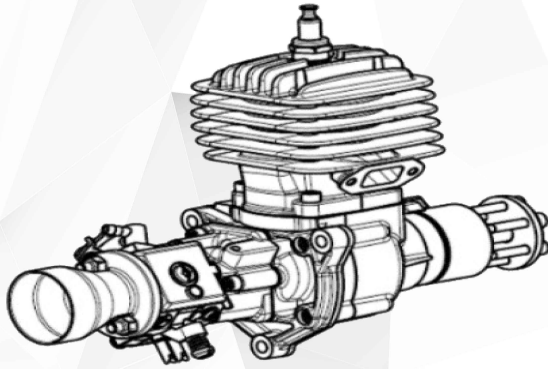
Implement the mature quad motor concept achieve vertical takeoff and landing eliminating the restriction of the runway requirement in the field. The quad motor also provide the maximum fail safe protection against any malfunctions situation during the mission.



ENGINE

3W-28i engine being used which made in Germany provided the maximum reliability for the long run of UAV application.

Factory grant a 36 month warranty from the date of purchase or 1200 operation hours.



	3W-28i
Cylinder capacity	28.50 ccm
Power	3.4 HP (2.5 KW)
Bore diameter	36.00 mm
Stroke	28.00 mm
Speed range	1,500 – 8,500 rpm
Weight, incl. ignition	1,210 g
Crankshaft	3 ball bearing
Rods	Needle bearings at both ends
Oil / gasoline ratio	1 : 50 – 1: 80 (min. 92 Octan)
IIS – ignition	6.0 – 8.4 V, 5 cells or 2 cells LiPo
2-blade propeller	18 x 8 wood part number 10.101.501 18 x 10 wood part number 10.101.505 20 x 8 wood part number 10.101.513
3-blade propeller	17 x 10 CFK part number 10.101.701

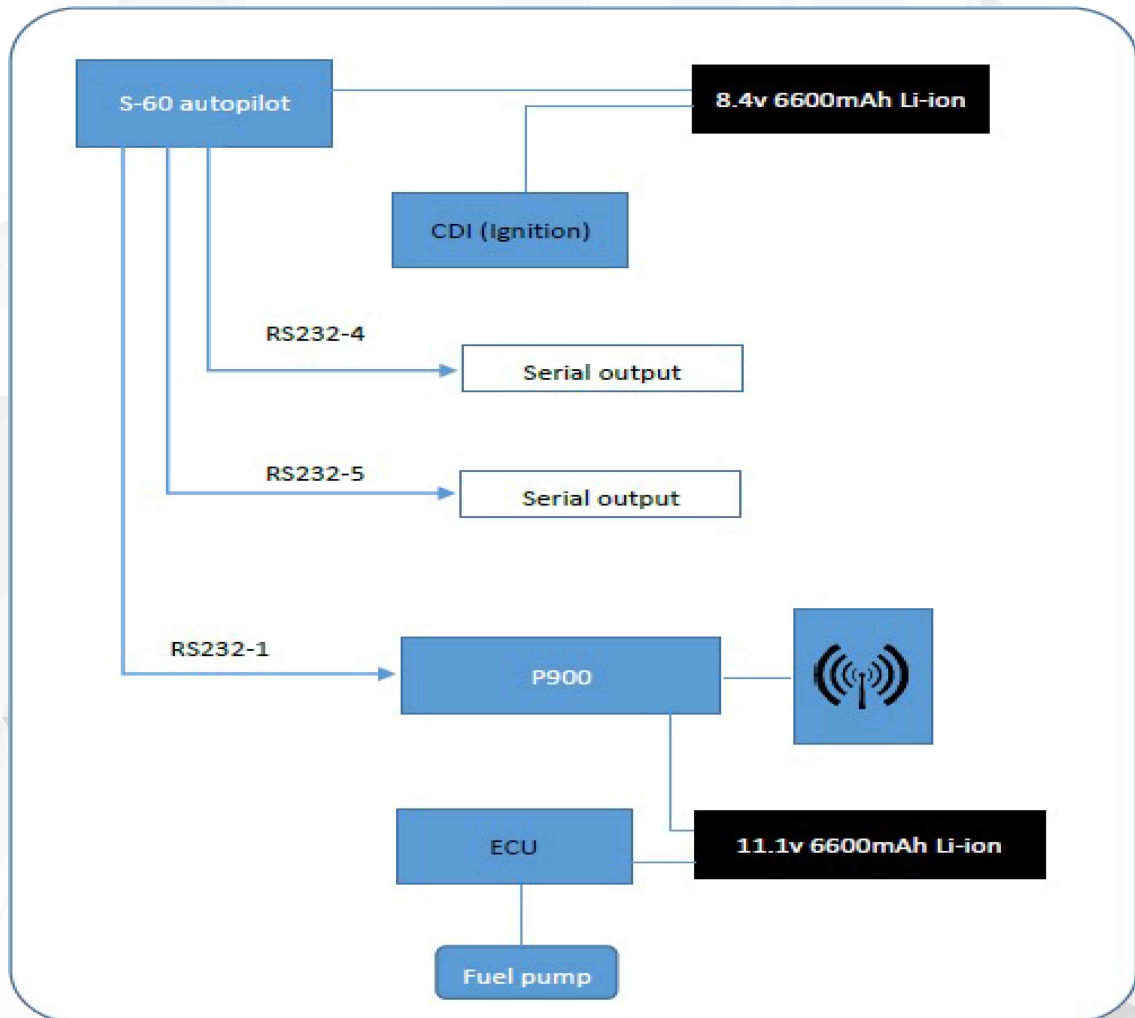
Customize Auto starter



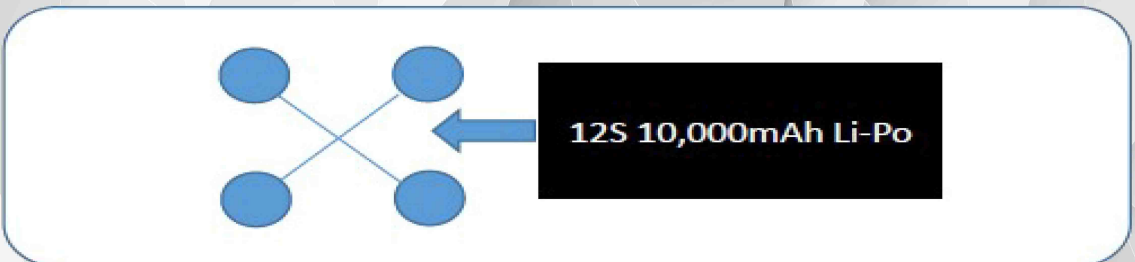
POWER SUPPLY SYSTEM

Redundance power supply system ensure the maximum safety factor against any failure of electrical issue in flight.

(1) System power system



(2) VOTL main power system



EMERGENCY HANDLING

Onboard S40 autopilot equip the unique emergency landing program. 100 pre-set emergency landing points available to be uploaded to the autopilot. In case of any malfunction detected in flight then autopilot will force the aircraft land to the nearby emergency landing points immediately.

VTOL power supply and autopilot power supply are independently, therefore, the emergency handling features provide the maximum safety protection under any occasion.

AUTOPILOT SYSTEM



S40 is the full autonomous flight controller and navigation system specifically designed for compound UAVs VTOL (vertical takeoff and landing fixed wing), which is also suitable for an air with the conventional fixed wing+quadrotor configuration. It internally integrates the flight control computer and micro-assembly navigation system (GPS/INS). Simply one-key action, it is capable of enabling automatic

takeoff, landing, hovering, circling, homing, altitude holding and parachute opening. Meanwhile, it is also capable of various autonomous cruise functions based on the pre-set route. Besides, S60 has the flight status monitoring & alarm functions and a sophisticated emergency protection mechanism, to ensure operational safety of the system.

Specification		
Attitude angle	Angle measurement range	$\pm 90^\circ / \pm 180^\circ$
	Pitch / roll	
	Static accuracy	0.5°
	Dynamic accuracy	1.0°
Heading angle	Measurement range:	$\pm 180^\circ$
	Accuracy	2.0°
GNSS	Position accuracy	2.5m
	Speed accuracy	0.05m/s
Gyroscope	Measurement range	$\pm 500^\circ/\text{s}$
	Stability	$25^\circ/\text{h}$
	Nonlinear	0.2%FS
Accelerometer	Measurement range	$\pm 4\text{g}$
	Stability	5mg
	Nonlinear	0.1% FS
Magnetometer	Measurement range	$\pm 2\text{Gauss}$
	Nonlinear	0.1% FS
Physical specification		
Power supply	Voltage range	DC3.0V-DC9.0V
	Power consumption	210mA@DC5.0V
Data interface	Electrical interface	Serial, RS232C
	Output frequency	1Hz-200Hz user defin
	Baud rate	Default307200,N,8,1 User define
Environment	Operating temperature	$-20^\circ\text{C} \sim 55^\circ\text{C}$
	Storage temperature	$-40^\circ\text{C} \sim 85^\circ\text{C}$

TELEMETRY SYSTEM

Microhard P400 telemetry module being used for data linkage. Range up to 60km at line of sight in open area with 1.8m fiberglass antenna setting up at 2m tripod.



VERSATILITY

Our transformative design allows for dynamic use, making each Tiger Shark truly unique. You can use the Tiger Shark for search and rescue missions, inspections of pipelines, photography, filmmaking, thermal imaging, 3D terrain mapping, precision agriculture, surveillance, reconnaissance, FPV, live video links, humanitarian aid, fun and much, much more.

CAPABILITY

We are committed to integrating efficient design with modern technology in a robust, entirely composite platform. The Tiger Sharkfly for over 4 hours, reach speeds of up to 100 km/h and travel for over 400km. The Tiger Shark allow you to fly autonomously, capture stunning HD photos and video, complete aerial surveys, monitor crop health, and wirelessly transmit live video. This is all done with incredible accuracy thanks to an onboard autopilot system.

TRANSPORTATION

Compact and light weight composite material carrying case providing the flexible mobility. Carrying case measurement is

1270mm x 360mm x 460mm. Weight 5Kg.

Total weight of system < 20kg.



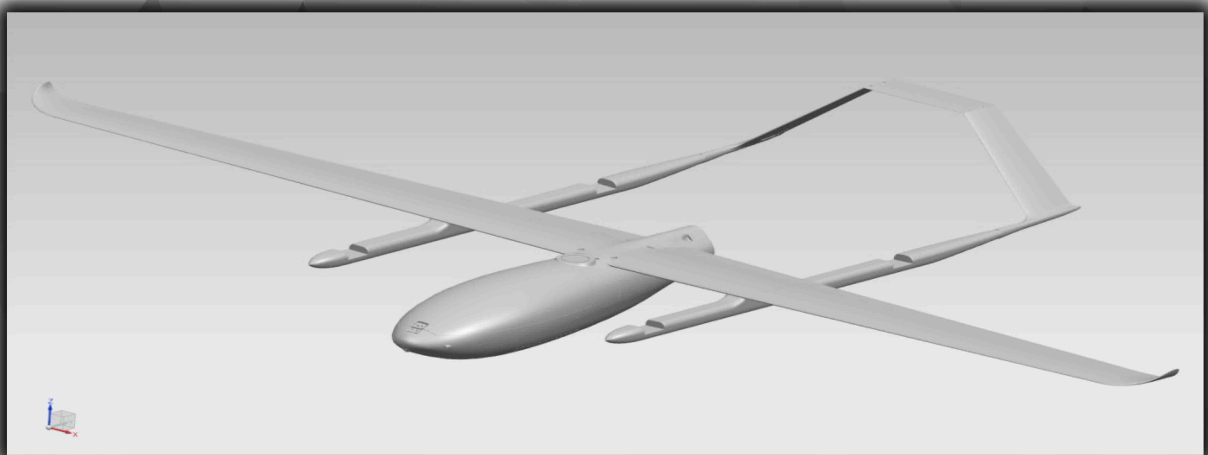
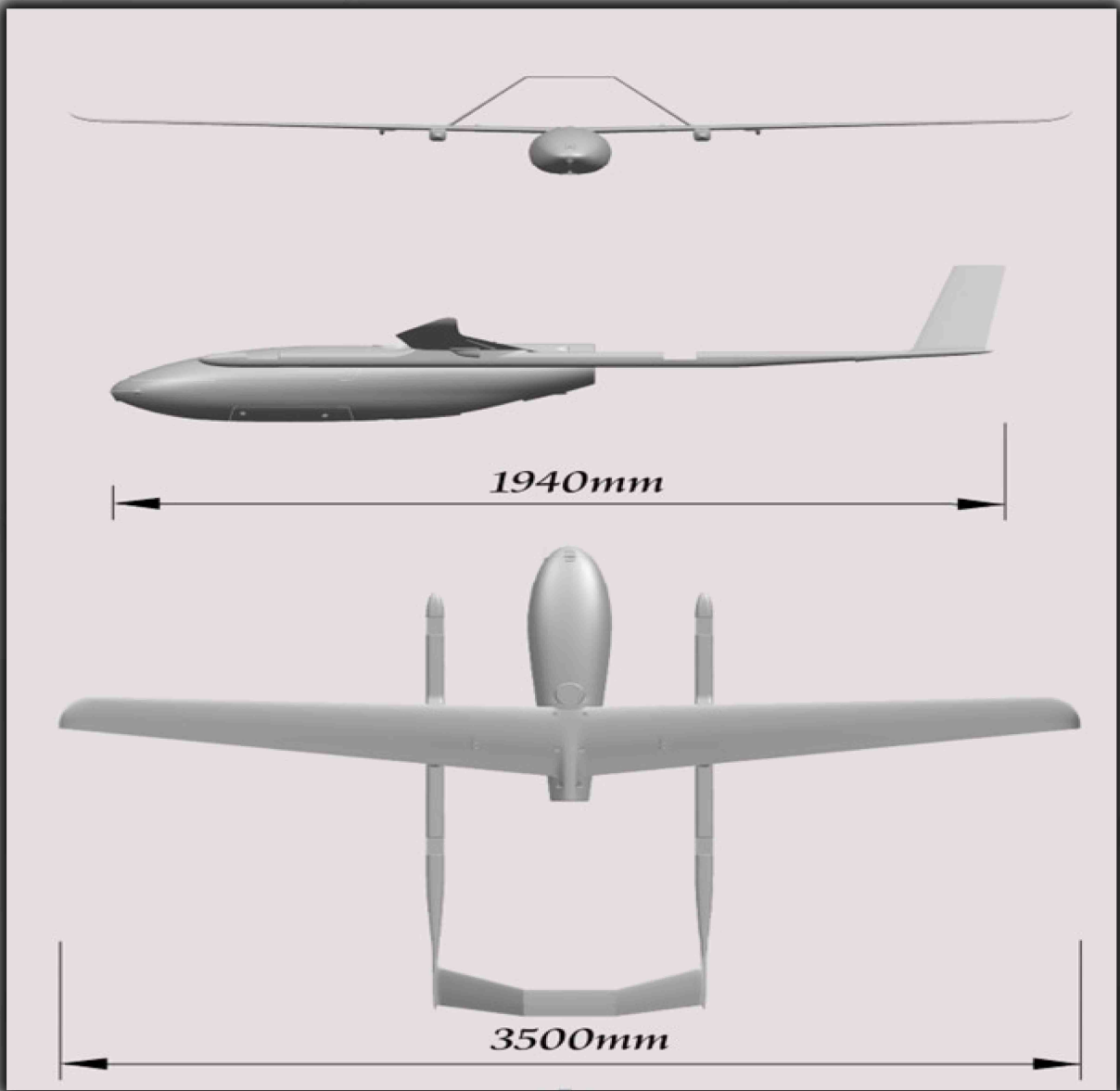
CONSTRUCTION :

- Full composite, Carbon fiber, Kevlar / Honeycomb core structure
- Gasoline engine for fix wing cruise, battery power for VTOL system
- Tough structure achieve industrial standard
- Dual battery power maximize the safety goal
- Compatible with full-featured PC-base, open source autopilot system
- Easy for assemble in the field, no need for expert skill
- VTOL suit for any mission

Airframe specification:

Wing Span	:	3500mm
MTOW	:	21kg
Fuel tank	:	4.5 Liter (gasoline)
Fuel consumption	:	<1L / hour (21kg MTOW)
Endurance	:	>4.5 hours (1.5kg payload)
Mission range	:	400 +km
Cruise speed	:	28m/s
Maximum speed	:	31m/s
Takeoff/landing	:	VTOL
Glide ratio (L / D)	:	20:1 ~ 23:1







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The Future Is Here...