



cyberQuad

The **CyberQuad** is an electric ducted quadrotor Vertical Take Off and Landing (VTOL) Unmanned Aerial Vehicle (UAV).

CyberQuad is a unique amalgamation of state-of-the-art VTOL UAV technologies, combining the mechanical simplicity, low noise, stability and agility of a quadrotor, with the compactness, safety and efficiency of ducted fans.

With only four moving parts that are safely shrouded, the **CyberQuad** is low maintenance, easily transportable and rapidly deployable.



continued overleaf

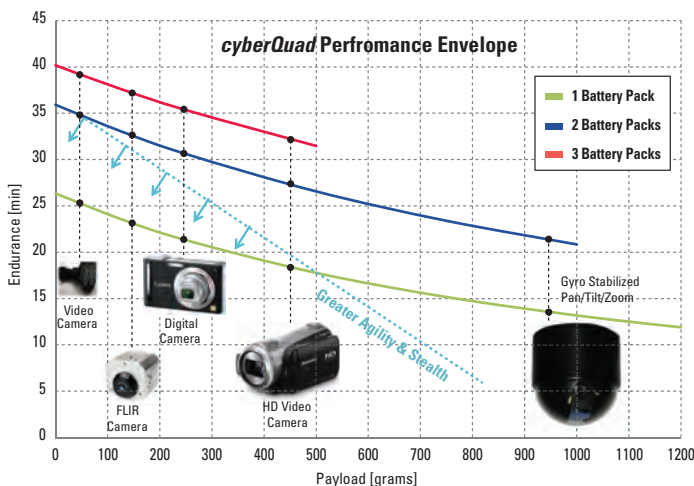
The **CyberQuad** employs direct drive brushless electric motors, avoiding the inefficiencies, maintenance and noise of gearboxes and internal combustion engines. By running relatively low speed rotors with the tips aerodynamically entrained by the duct wall, BVI noise and tip losses are significantly reduced. These features contribute to the **CyberQuad** having a very low noise signature for stealth applications.

CyberQuad does not employ any complicated, inefficient control surfaces, swash plates, stabilizer bars, or tail rotors for control. In fact, it does not pay any additional weight or power penalty for control as it simply differentially controls the four modular fans that are already being employed to create lift. Furthermore, it has counter rotating pairs of fans so that all gyroscopic dynamics and dissymmetry of lift issues are eliminated.

CyberQuad employs state-of-the-art inertial sensors and high frequency speed controllers to actively stabilise its attitude and heading. This allows both robust disturbances rejection in hover and high maneuverability if needed.

SPECIFICATIONS	MAXIMUM	NOMINAL
Endurance	40 min	25 min
Payload	1.5 kg	500 g
Take Off Weight	3 kg	2 kg
Airspeed	70 km/h	50 km/h
Climb Rate	10 m/s	5 m/s
Decent Rate	4 m/s	2 m/s
Altitude	1 km (video link)	120 m (CASA101)
Range	1 km (video link)	500 m
Noise	65dBA @ 3m	Inaudible > 30m
Time to deploy	1 min	10 seconds
Dimensions	530 x 530 x 160mm	

The **CyberQuad** ducted fans are optimised for high static thrust efficiency (hover endurance); producing 33% more lift than a helicopter with the same power and rotor area. This equates to a much smaller footprint for the same payload/endurance capability. With this compact footprint and no exposed rotors, **CyberQuad** can safely operate near people and through urban environments.



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