



A joint venture between **CYIENT** &  **BlueBird**
Aero Systems

ThunderB UAV System

For operational and
intelligence supremacy



Overview

ThunderB is a mature, tactical UAV system ideal for long-range, long-endurance ISTAR (Intelligence, Surveillance, Target Acquisition, and Reconnaissance), or tactical mapping-on-demand missions across open and urban areas for military, peacekeeping, low-intensity conflict resolution, security, law enforcement, disaster management, search and rescue, and commercial applications.

The UAV system comprises three ThunderB air-vehicles, a ground control station (GCS), ground data terminal (GDT), ground support equipment (GSE), emergency transmitter unit (ETU), and rugged transport cases. It is designed to offer live streaming videos, mapping-on-demand capabilities, and can collect intelligence for users on the ground.

ThunderB is integrated with dual and triple sensor payloads to enable transmission of high-quality stabilized day and IR imagery in real time to the GCS. It can also be integrated with high-resolution photogrammetric payloads, while providing an unprecedented mission time of up to 24 hours (configuration and mission dependent), and an impressive control range of up to 150 km.

This UAV system is designed for field automatic takeoffs using a pneumatic ground launcher and for point landings with a parachute and an airbag.

ThunderB UAV System Specifications and Highlights

Features	Description
Maximum takeoff weight	32 kg
Wing span	400 cm
Length	190 cm
Power plant	Two-stroke engine with computerized fuel-injection (EFI) system
Payload capacity	Up to 4 kg (extendable)
Endurance	Up to 24 hours
Field deployment time	30 min/three-men crew
Speed	Minimum speed: 66 km/hr Maximum speed: 130 km/hr Cruise speed: 80 km/hr
Payloads	Triple sensor stabilized payload (CCD, cooled-IR, pointer) Dual sensor stabilized payload (CCD, IR)
Optional items	Photogrammetric payload: High-res color/IR Radiometric payload: Thermal mapping payload High Definition 1080i day payload LiDAR Others
Communication range	Up to 150 km
Communication link	The system has a secondary, redundant link, supporting mission continuation under COMJAM environment
Mission continuity in GPS-denied environment	Optional multi-layer protection against GPS jamming, for mission continuity even in GPS-denied environments
Covert operation	Low acoustic, thermal, and visual signatures

To meet the requirements of specific missions and applications more effectively, the ThunderB UAV system is available in two customized variants:

ThunderB VTOL

For added operational flexibility



A dual-hybrid version, the ThunderB Vertical Takeoff and Landing (VTOL) can take off vertically from a very small patch of ground or marine vessel using its quad vertical electrical motors. Its transition to a level flight is powered by a high endurance horizontal fuel-injection engine, and after fulfilling its operational mission, it transitions back to a precise, vertical landing that requires a much smaller logistical footprint as compared to a standard launch and recovery system.

An unprecedented long range of 150 km, endurance of up to 12 hours in VTOL configuration, advanced Full-HD real-time video image, and the ability to work in com-jam and GPS-denied environments make ThunderB VTOL an ideal UAV system for tactical land and maritime operations where there are limited areas for takeoff and landing. The potential applications include military operations, HLS, pipeline monitoring, safeguarding of exclusive economic zones (EEZ) and waterways, and also civilian applications.

ThunderB Cargo

For cargo carrying and release capability



This version of ThunderB can carry small cargo units under each of its wings and release the cargo automatically where required or through a GCS command. The cargo is hauled and released via an integrated, electro-mechanical release mechanism. The released cargo is enclosed in an aerodynamic capsule to minimize the drag and soon after the release of the capsule it reaches the target accurately following a ballistic trajectory. The cargo capsules may also be dropped using a small parachute to prevent any damage to fragile articles.

The special release ability of ThunderB Cargo can be leveraged for numerous missions and under varied conditions including:

- Life-saving search and rescue missions where after locating the lost/trapped people it is also important to offer rescue measures such as a communication device and other essentials.
- Dropping medicines and food packets in areas affected by natural disasters
- Scattering small ground intelligence sensors to attain wide ground coverage

While designing these ThunderB variants, significant attention has been given to the criticality and demands of particular applications. The custom-built features help users in dealing with the challenges of different environments and improve mission outcomes.



About Cyient Solutions & Systems

Cyient Solutions & Systems is a joint venture between Cyient and Israel-based BlueBird Aero Systems that provides UAS-based intelligence gathering, surveillance, target acquisition, and reconnaissance capabilities for defence and civilian applications. CSS leverages Cyient's engineering and manufacturing capabilities and BlueBird's globally-proven UAS technology to offer a range of solutions, carefully crafted to address the diverse needs of Indian defence, paramilitary, homeland security, and civilian users.

For more information please visit
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