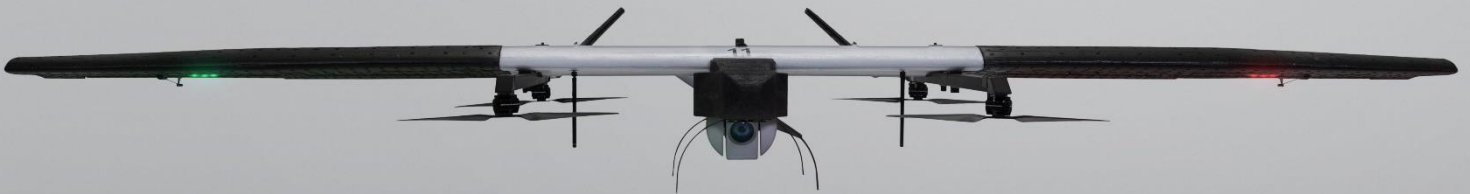


TECHNICAL SPECIFICATION

SWITCH UAV



Sr. No.	Parameters	Specification
1.	Physical Characteristics	
a.	UAV Weight with battery and payload	5 kg
b.	UAV Size with propellers	< 2.5 m x 1.5 m
2.	UAV Performance Characteristics	
a.	Endurance	Minimum 120 minutes with either payload @ MSL for every 1000 m increase in take-off altitude, endurance reduction of 10%. Endurance to be tested at ISA +20°C temperature with full mission performance (range & operating altitude)
b.	Range	Minimum 10 km LOS (Line-of-sight) @ 640 x 480 pixels transmitted resolution (day or thermal payload) Minimum 5 km LOS (Line-of-sight) @ 1280 x 720 pixels transmitted resolution (day payload)
c.	Maximum launch altitude	3000 m AMSL (Above Mean Sea Level) or more
d.	Maximum operating altitude	1000 m AGL (Above Ground Level) or more
e.	Functional Temperature Range	-10°C to +50°C (Test results from any recognized/accredited Lab to be submitted)
f.	Dust & Drizzle Resistance	IP53 rating or better (Test results from any recognized/accredited Lab to be submitted)
g.	Wind Resistance	25 knots or more
h.	Aural Signature	Nil aural signature at slant range of 500m during cruise condition
i.	Technical Life of UAV	Minimum 500 landings (Test results from any recognized/accredited Lab to be submitted)
3.	Operational Characteristics	
a.	Launch & Recovery	Fully Autonomous Vertical Take-Off & Landing (VTOL) or other suitable launch and recovery method Must be capable of Launch & Recovery from an unprepared surface
b.	Maximum space for launch & recovery	25 m x 25 m clear area Should have the capability to Take-Off/Land even if there are trees/obstacles etc. around this 25 m x 25 m area
c.	Flight Modes	Fully autonomous from Take-off to Landing without using any R/C controller Altitude Hold Hover/Loiter at a defined waypoint Autonomous Waypoint Navigation (predefined as well as dynamically adjustable waypoints during flight) Remotely Piloted mode for video-based navigation (RPV Mode)
d.	Deployment Time (from fully packed state to UAV Take-off)	< 15 minutes
e.	Packing Time (after UAV landing to fully packed state)	< 15 minutes
f.	Failsafe features	Return to Home on communication failure Return to Home/Land on low battery Multiple GPS on-board for GPS failure redundancy
g.	Packaging and Storage	Waterproof Backpack(s) that house all the subsystems which allow the complete system to be carried and operated on field by the crew. It should have IP53 or better rating for dust & drizzle resistance (Test results from any recognized/accredited Lab to be submitted) Hard case for transportation & storage

Sr. No.	Parameters	Specification
h.	Operating Crew	Maximum 2
4.	Payload Characteristics	
a.	Payloads (Combined D/N or Separate)	Colour Electro Optic (EO) for day Thermal Imager (TI) for night
b.	Payload Replacement Time	< 5 minutes (if separate D/N payloads)
c.	Payload Control	Pan: 360° continuous Tilt: 90°
d.	Daylight Payload	Resolution: Minimum 1280 x 720 pixels Zoom: 20x Optical Option to transmit video @ 1280x720 pixels or 640 x 480 pixels resolution (selectable during flight)
e.	Night Payload	Resolution: Minimum 640x480 Zoom: 4x Digital Modes: White Hot & Black Hot
f.	Target Detection Slant Range (Human Size Target)	Daylight: Minimum 1000 m Thermal: Minimum 500 m
g.	Stabilization	Gimbal stabilisation of both payloads Electronic stabilisation of video output at all zoom levels in real-time
h.	Target Tracking	Vision based Autonomous Target Tracking Real-time tracking of Static and Moving targets
i.	Night Recovery Beacon	Switchable (from GCS) LED light when operating with Night Payload
5.	Communication Link Characteristics	
a.	Communication link capability	Transmit control commands from GCS to UAV Transmit telemetry data from UAV to GCS Transmit day and night video from UAV to GCS
b.	Video Link	Digital and Encrypted
c.	Frequency Band	2.4GHz band and/or 5GHz band up-link and downlink (unlicensed)
d.	Number of Channels / Number of UAVs that can be operated in same vicinity	Minimum 4 Channels (User Selectable) Minimum 2 UAVs to be operated in the same vicinity
6. ✦	Ground Control Station (GCS) Characteristics	
a.	Computing Hardware	Ruggedized Laptop/Tablet with following minimum specifications: <ul style="list-style-type: none"> ○ MIL-STD810G (or equivalent) for -10°C operation ○ MIL-STD810G (or equivalent) for +50°C operation ○ MIL-STD810G (or equivalent) 3 feet drop tests ○ IP53 or better for dust and drizzle resistance Test results from any recognized/accredited Lab to be submitted Sunlight Viewable Display Single Screen with Touch Screen Control for complete GCS operation including 2D/3D Map Display and Real-Time Video Display Battery operation: Minimum 2 full endurance flights in one battery charge