



TARTM

(TETHERED AERIAL ROBOT)

 Specification Sheet

Technical Specification: UAV

Physical Characteristics

Dimensions (without propellers)	52 X 52 X 30 cm
Dimensions (with propellers)	94 X 94 X 30 cm
Max take-off weight (with battery and payload)	≤6 kg
Empty weight (without battery and with payload)	≤5.3 kg
Empty weight (without battery and payload)	≤5 kg
Max payload capacity	750 g
Payload ground clearance	25 mm (Variable)
Propeller type	Non-foldable
Configuration	Co-axial quadcopter
Propeller size (size and pitch)	15" X 5.0 " (upper) 16" X 10" (Lower)
Airframe make	Carbon fibre and Nylon
Top and bottom shell make	Composite material

Performance Characteristics



True Endurance™ (with payload)	Up to 24 hours
Command and control range	100/70 m
Live Video Transmission	100/70 m
Max take-off altitude (AMSL)	4000 m
Max flight altitude (AGL)	100/70 m
Operating temperature range	-20°C to +60°C
Wind resistance	12 m/s (20 knots)
Ascend speed	2 m/s
Descend speed	1 m/s
Deployment time	<5 minutes
Packaging Time (After landing)	<10 minutes
Aural Signature	<60 db at 300 ft
Launch type	Autonomous vertical take-off and landing

Max space required for recovery

2.5 m X2.5 m

Flight modes

Fully autonomous from take-off to landing without using any R/C controller, Altitude hold, Remote piloted mode for video-based navigation (RPV mode)

Failsafe features

Return to Home on communication failure, Return to Home/Land on tether breakage Multiple GPS on-board for GPS failure redundancy, High wind indication, High wind fail-safe, Return to land on power cutout

Extra features

Plug and perform tether system,

Datalink Characteristics



Communication Link capability

Transmit control commands, telemetry data, day and night video from UAV to

Video Output

GCS

Video Link

Ethernet

Frequency band

Digital and Encrypted
2.4GHz band or 5.8GHz band

Number of channels

16 communication channels

Technical Specification: Payload

Payload - I (Day-Night dual vision)



Dimensions (LxWxH) 57 x 52 x 88 mm

Weight 235 g

Gimble 3 -axes mechanical

Control range Pitch: -90° to +135° YAW: -165° to +165° ROLL:

-45° to +45°

Day camera:

Resolution 1920 x 1080P

Zoom 20x & 2x digital, (total 40x) Continuous zoom

Field of view HFOV: 60° WFOV: 3° NFOV: 1.5°

Night camera:

Resolution 640 x 480

Zoom 4x continuous digital

Detection & Tracking 2km (Day)

800 m (Night)

Payload - II (Day-Night dual vision)



Dimensions 118 x 92 x 159.88 mm

(LxWxH) 730 g

Weight 3 -axes mechanical

Gimble Pitch: -45° to +95° YAW: ±300° to ±365° ROLL:

Control range ±70°

Day camera: 1920 x 1080P

Resolution 10x & 32x digital,

Zoom HFOV: 54° DFOV: 68° VFOV: 31°

Field of view

Night camera: 640 x 512

Resolution 8x continuous digital

Zoom

Detection & Tracking

2km (Day)

800 m (Night)

Payload - III (Day vision only)



Dimensions (LxWxH)

100 x 77 x 105 mm

Weight

365 g

Gimble

3 -axes mechanical

Control range

Pitch: -45° to +45° YAW: +240° to -240°

ROLL: +45° to -100°

Day camera:

Effective megapixel

4MP

Resolution

1920 x 1080P

Zoom

10x optical

Field of view

DFOV: 66.6° - 7.2°

PAL/NTSC Supported

Yes

Payload - IV (Day vision only)



Dimensions (LxWxH)

55 x 55 x 70 mm

Weight

95 g

Gimble

3 -axes mechanical

Control range

Pitch: -135° to +45° YAW: -160° to +160° ROLL:

-30° to +30°

Day camera:

Effective megapixel

8MP

Resolution

3840 x 2160P

Zoom

6x digital

Field of view

FOV: 93°

Tether station - (100 m)



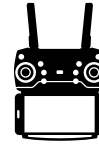
Tether length	100 m
Tether weight	16 g/m
Tensile strength	120-150 daN
Power output	2200 W
Micro Tether management	Electric and manual winch with various torque
Portable Power Source	230 VAC, 50-60 Hz (4 kW min), 120 VAC, 50-60 Hz (3 kW min)
Dimensions	408 x 603 261 mm
Tether box weight	<=24 kg
Rugged Structure	IP54 Certified
Operating temperature	-20°C to +50°C
Portability	Cushioned/non cushioned handlebars

Tether station - (70 m)



Tether length	70 m
Tether weight	16 g/m
Tensile strength	100 daN
Power output	1500 W
Micro Tether management	Electric and manual winch various torque
Portable Power Source	230 VAC, 50-60 Hz (4 kW min), 120 VAC, 50-60 Hz (3 kW min)
Dimensions	627 x 475 x 292 mm
Tether box weight	<=20 kg
Rugged Structure	IP54 Certified
Operating temperature	-20°C to +50°C
Portability	Telescopic handle and wheels

GCS (Ground Control Station) Characteristics



Built-in pre-flight checks

Yes

Features

Mission planning, Structure scans, Survey scans,
Failsafe feature, Geo-fencing, etc

GUI display:

Geographic map along with UAV location, UAV trajectory, waypoints, and flight plan, Real-time video from the UAV with on-screen display of important parameters like UAV coordinates, target(payload) coordinates, and range from UAV, Distance from Home, etc.

User controls:

One-click Take-off / Land / Hover set the altitude of the UAV Waypoint navigation Dynamic flight plan adjustment point payload to ground coordinate function, RPV mode which allows UAV to be flown in semi-autonomous mode by looking at the onboard video.

Battery



Dimensions (LxWxH)

137X55X44 mm

Weight

695 ± 5 g

Battery type

Li-polymer

Capacity

5200 mAh

Standard voltage

21.6 V

Max charging voltage

25.2 V

Energy density

115.44 wh

Charging time

25 minutes at 3C

Charging temperature

10°C to 45°C

Storage temperature

5°C to 45°C

Charging cycle

200 cycles