‘PATANG’
Long Endurance
Unmanned Aerial Vehicle

Dynamatic is India’s leading private sector enterprise engaged in the development of exacting Airframe Structures and Precision Aerospace components.

Dynamatic Technologies has the largest infrastructure for aeronautic manufacturing in the Indian Private Sector and is India’s only global Tier-1 supplier to Airbus, Boeing and Bell Helicopter on a single source basis.

PATANG

Dynamatic ‘PATANG’ is a result of continuous R&D and user trials and a gap analysis of the Technology available and the actual user requirement.

Patang is a lightweight, easily deployable vertical take off and landing Unmanned Aerial Vehicle, capable of being launched from an area of 25 m² or less, with no need of preparation of surfaces.

Rapid deployment and quick turnaround, ruggedness and reliability, long endurance and mission time, negligible audio signature, no need of launching aids and complete autonomy makes Patang an ideal platform for a number of applications including

- Law and Order
  - Surveillance and Reconnaissance
  - Event Monitoring & VIP security
  - Crime or accident investigation
  - Intelligence & evidence gathering
  - Search and Rescue
  - Traffic & Crowd monitoring
  - Tactical operation
  - Emergency & Disaster response

- Industrial and Infrastructure
  - Asset Monitoring
  - Precision Agriculture
  - Oil and Gas Pipeline Monitoring
  - Gas leak detection
  - Aerial Mapping
  - Wildlife Monitoring and Anti Poaching
  - Forest Fire and Forest Conservation
  - Construction site planning & monitoring

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### Patang Technical Specifications

<table>
<thead>
<tr>
<th>SPECIFICATIONS</th>
<th>DESCRIPTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>0.8 m x 0.8 m</td>
</tr>
<tr>
<td>All Up Weight</td>
<td>&lt;3.0 kg</td>
</tr>
<tr>
<td>Set Up Time</td>
<td>&lt;10 minutes</td>
</tr>
<tr>
<td>Turnaround Time</td>
<td>&lt;10 minutes</td>
</tr>
<tr>
<td>Power Plant</td>
<td>Electric Brushless Motor</td>
</tr>
<tr>
<td>Cruise Speed</td>
<td>Up to 25 kmp or more</td>
</tr>
<tr>
<td>Max Launch Altitude</td>
<td>Up to 2000 m ASL or more</td>
</tr>
<tr>
<td>Operating Altitude</td>
<td>Up to 600 m AGL</td>
</tr>
<tr>
<td>Launch &amp; Landing</td>
<td>Autonomous</td>
</tr>
<tr>
<td>Video &amp; Telemetry Range</td>
<td>5 km (LOS) or more</td>
</tr>
<tr>
<td>Operating Wind Conditions</td>
<td>20 kph or more</td>
</tr>
<tr>
<td>Construction</td>
<td>Composite material construction for light weight and ruggedness</td>
</tr>
<tr>
<td>Endurance</td>
<td>40 minutes</td>
</tr>
</tbody>
</table>

### Acoustic & Thermal Signature

Patang is powered with brushless DC motor and has a very low acoustic signature while cruising at an altitude of 300m AGL, its aural signature is less than 40 dB.

Patang designed using advanced ProE and AnSys software and optimisation technique, has light weight composite material. It is extremely rugged and can handle up to 500 landings or more without significant damage to structure. That paint used reduces ‘Patang’ thermal signature and makes it completely undetectable and suitable for stealth missions.

Since there are no heat sources, Patang has negligible thermal signature.
**Electro Optic and Thermal Payloads**

Patang is a highly stabilised multi-rotor platform capable of carrying payloads up to 300 grams. Dynamatic provides a number of Electro-Optic and IR / Thermal sensor payload options suitable to the mission requirement. These payloads are modular and swappable in design, easily replaceable for quick turn around, each optimized for different light conditions of the mission.

The payload can be controlled from the ground control station through a customised joystick with built-in Pan Tilt, Zoom, Static & Dynamic Target lock control. Patang has option of 2 axis or 3 axis high accuracy gimbal stabilised payloads designed indeginously by Dynamatic. The gimbal stabilisation coupled with our own DyNav control algorithm provides real time high quality video critical for the mission requirement.

**Payload Options**

<table>
<thead>
<tr>
<th>SENSOR</th>
<th>SPECIFICATION</th>
<th>MISSION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Electro Optic Payload</strong></td>
<td>2 MP Resolution, 10x Optical zoom, 12x digital zoom, 360° pan, 90° pitch control</td>
<td>Suitable for day mission and low light mission</td>
</tr>
<tr>
<td><strong>Electro Optic Payload</strong></td>
<td>752x582 resolution, 10x optical zoom, 360° pan, 90° pitch control</td>
<td>Suitable for day mission</td>
</tr>
<tr>
<td><strong>Thermal Payload</strong></td>
<td>640x512 resolution, 4x digital zoom, 360° pan, 90° pitch control</td>
<td>Suitable for night mission</td>
</tr>
<tr>
<td><strong>Thermal Payload</strong></td>
<td>384x288 resolution, 4x digital zoom, 360° pan, 90° pitch control</td>
<td>Suitable for night mission</td>
</tr>
</tbody>
</table>
**GCS**

PATANG GCS is composed of a rugged laptop, Communication Box, Joystick for payload control and RC Box (optional). The Rugged Toughbook is the heart of the GCS and includes the DyNav software for UAV Control Navigation and payload function control. DyNav has the capability to integrate georeferenced maps of the commonly used digital map formats (gif, tiff etc). It supports the Google Maps and automatically download maps of specified GPS coordinates.

**GCS Specification**

- MIL Standard 810G certified (6’ drop rating)
- MIL Standard 461F certified
- IP65 certified sealed all-weather design
- Operating temperature of -29°C to +60°C
- Keyboard input and touch sensor
- **CPU:** Intel Core i5-3320M vPro Processor 2.6GHz with Turbo Boost up to 3.2GHz
- **Storage:** 500GB HDD
- **Display:** 10.1” XGA Sunlight viewable LED 1024x768 with Touch screen
- **Audio:** Intelligent front facing speaker, Keyboard Volume controls
- **Battery Operation:** upto 8 hours or more
- **Charging Time:** 3.5 Hours
- **Interface:** External Video (VGA X1), Headphone/Speakers, Microphone/Line-In, IEEE1394a, 10/100/1000 Ethernet

**Safety Features**

The system is equipped with

- Return Home on Low Battery
- Return Home on Link Loss/ Option to continue the mission
- Hover Mode on GPS Loss
- Redundant GPS
- Night beacon