UAV Systems

Guardian UAV

OM UAV Systems

Guardian UAV is small category UAV also called mini UAV. The craft is portable and can be operated in most terrains with small clearances because of short takeoff run portable GCS. Can be transported in a small vehicle. The airframe and part avionics have been designed and manufactured in India so the components and maintenance cost would be bare minimum. The autopilot has been developed in India so upgrade of software would keep the technology upto date. The propulsion system is all electric using high power electric motors powered by batteries that can be charged on field so the operations are simple. The GCS software and the autopilot software are windows based making it easier for most would be customers to use the system. The operational cost of the craft is bare minimum thus providing cost effective surveillance systems as compared to ground based vehicles.

OM UAV Major Advantages:

- The airframe and part avionics have been designed and manufactured in India so the components and maintainable cost would be bare minimum.
- The autopilot has been developed in India so upgrade of software would be a simple.
- The propulsion system is all electric so the field operations are simple.
- The GCS software and the autopilot software are windows based making it easier for most would be customers to use the system.
- The operational cost of the craft is bare minimum thus providing cost effective surveillance systems as compared to ground based vehicles.

Standard Package Contents:

- Guardian Aircraft 1 Nos.
- GCS consisting of windows based laptop and Video Monitor.
- Helical Video Antenna.
- Clover Leaf Video Antenna.
- Auto Antenna Tracker (optional).
- Yagi Antenna for Data Link.
- Microprocessor based battery Charger.
- Radio Control Transmitter.
- Mini Tool Kit.

Autopilot:

- Based on ARM Cortex M4 32 bit Processor @ 168 Mhz, running at 252 Mips, with Real Time Operating System.
- 3-D Six Axis Dual Gyro+Acc.
- uBlox GPs with positioning from GPSS, GLONSS, Galelio, Biedu.
- Secondary GPS for Backup.
- 3-Axis Dual Magnetometer.
- High Resolution Barometer.
- Onboard Micro SD Card for Flight Data Logging.

Ground Control Station:

- Mission control software on rugged Windows Laptop.
- Live video monitoring station using a standard AV video monitor.
- Live video and audio recording at GCS
- Power supplies for GCS and antenna tracker.

Mission Applications:

- For flood control to locate stranded people
- Patrolling of national wild life parks
- For real estate videography
- For patrolling oil and gas pipe lines.
- As Transmission relay station for video links and data links
- For traffic monitoring on highways
- For weather data collection using data collection sensors.
- For news and media aerial videography
- Mining industry for monitoring the mines.

Payload Options:

- Color video/Still HD camera with onboard HD video recording on 32 GB memory at 1280x720 pixels and AV out of 640x480 pixels. Can be programmed for still images with preset time interval. Max Video HD resolution of 2700 x 2000 pixels.
- Day Light/Low Light, 10x zoom color camera. Zoom controllable from the GCS, Radio Control with onboard HD Recording in *.Mov format.
- Thermal Camera (uncooled) 320x240 Res and 40deg FOV (Selectable) with athermal lens.
- Thermal Camera (uncooled) 640x480 Res and 40 Deg FOV (selectable) with athermal lens.

Capabilities:

- Fully Autonomous from Takeoff to Landing.
- Can be programmed for 300 Way points / Mission commands
- Can loiter over the subject at any way points
- Has manual control override at any stage.
- Can be "Guided" to specific location during flight by clicking over map.
- Can activate/deactivate any payload from the GCS.
- Auto payload activation on reaching the way point.
- Failsafe built in. Will "RTL" if link is lost. Will "Land" if battery is low.
- Radio Control switchable navigation lights.

Launch and Recovery:

- Manual Take Off
- Manual Landing depending on the wind conditions prevailing during mission.
- Parachute recovery possible with optional parachute recovery module.
- 100m x 20m clearance is required to launch the craft.

Video Link:

Type	:	Analog audio and video
RF power	:	2000mW
Frequency	:	5.8Ghz, 32 Channels.
Power consumption	:	300mA @ 11.1 V
Video resolution	:	520x420 TVL
Camera Mount	:	Gyro Stabilized on Pan and Tilt Axis
Recording	:	Onboard recording on 32 GB SD Card in *.avi format.

Helical High Gain Antenna. (Circularly Polarized).

Radio Control Link:

Encoding	:	PPM
Modulation	:	FHSS
Freq	:	400-455 Mhz
Max RF output	:	2000 mW
Channels	:	8
Range	:	10 Km., when airborne.
Display	:	Back - Lit LCD panel on Tx
Battery	:	Li-Poly 11.1V, 2650 mAh (12 Hrs continuous operation.)

Support and Backup:

Lot of the contents are indigenous, the after sales and support would be prompt. The promoters of the company are highly qualified engineers with experience in UAV airframes and avionics. The head quarters of the company are located in the capital city of New Delhi, India. Spare parts would be despatched promptly and technical man power be send at short notices.

Training:

Basic Training would be provided and is included in the package. Advanced level training can be arranged on paid basis.

Note:

- The electronic hardware changes will apply to all the catalogs since the avionics is same on all the UAVS.
- Specifications subject to change without notice.
- All values & capabilities mentioned one under ideal test conditions.
- Optional items do effect pricing.

Physical Specifications:

Wingspan	:	1760 mm
Length	:	1300 mm
Height	:	200 mm
Flying Weight	:	2400 gms
Payload	:	300 gms
Propulsion	:	200W-BLDC Motors @ 11.1 Volt
Battery	:	Lithium Polymer 11.1V, 12400mAh, Discharge @ 2C.
Propeller	:	9x6 carbon fiber

Video Overlay

- ATMEL328 based
- Displays: Airspeed, Lat, Long, Altitude, Compass Heading, Battery Capacity Remaining, LOS, Call Sign, Time Elapsed over the video image

Flying Characteristics:

Range	:	10 Km*
Endurance	:	80 Mins + 10 Mins reserve for failsafe
Accuracy	:	within 10 Mtr. of programmed way point
Cruise Speed	:	48 Km/Hr
Max Speed	:	60 Km/Hr
Stall Speed	:	35 Km/Hr
Max Winds	:	20 Km/Hr
Altitude	:	2000 Meters

* Total Distance Travailed : 10Km +10Km = 20 Km

Camera Gimbal:

- Gyro Stabilized on Roll and Pitch Axis. Microprocessor based. Correction rate of 2000 deg/sec. Common Gimbal for all cameras mentioned in the camera options list. Cameras are changeable in the field in very short time.

Onboard Video Recorder:

- 32GB onboard micro SD card recorder. H.264 compression. *.avi format.

Datalink:

Output Power	:	1000 mW (Configurable)
Modulation Type	:	FHSS
Chipset	:	RF HM-TRP Radio Module
Freq Band	:	900Mhz (885-915 Mhz)
Baud Rate	:	19,200 kpbs (Selectable)
Range	:	10 Km (with Yagi antenna)

CUSTOM VIDEO LINK OPTIONS AVAILABLE

Guardian UAV

Our other products...

Curiosity Plus Quad copter UAV

Curiosity Quad copter UAV

Baaz Mini UAV

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