



# **Curiosity Plus Quadcopter UAV**

OM UAV Systems

**Curiosity Plus Quad copter UAV** is small category UAV designed for both civilian and military use. The craft is portable and can be operated in most terrains with small clearances because of portable GCS. Can be transported by personnel or 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 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.

## 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.
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## Physical Specifications:

Size	: 650mm (motor to motor)
Height	: 250 mm
Flying Weight	: 2400 gms
Payload	: 300 gms
Propulsion	: 266 Watt BLDC Motors @14.8 Volt X 4
Flying Battery	: Lithium-Ion 14.8 Volt, 16000mAh, 2C
Propeller	: 15x5.5 carbon fiber X 4

## 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

## 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.

## Payload Options:

- Color video/Still HD camera with onboard HD video recording on 32 GB memory at 1280 x 720 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, 10 X zoom color camera. Zoom controllable from the GCS, Radio Control.
- Thermal Camera (un-cooled) 320x240 Res and 40° FOV (Selectable) with athermal lens.
- Thermal Camera (un-cooled) 640x480 Res and 40 Deg FOV (selectable) with athermal lens.



## Radio Control Link:

Encoding	: PPM
Modulation	: FHSS
Freq	: 400-455 Mhz
Max RF Power	: 2000 mW Max
Channels	: 8
Range	: 4.5 Km., when airborne
Display	: Back-Lit LCD panel on Tx
Battery	: Li-Poly 11.1V, 2650 mAh (12 Hrs continuous operation).

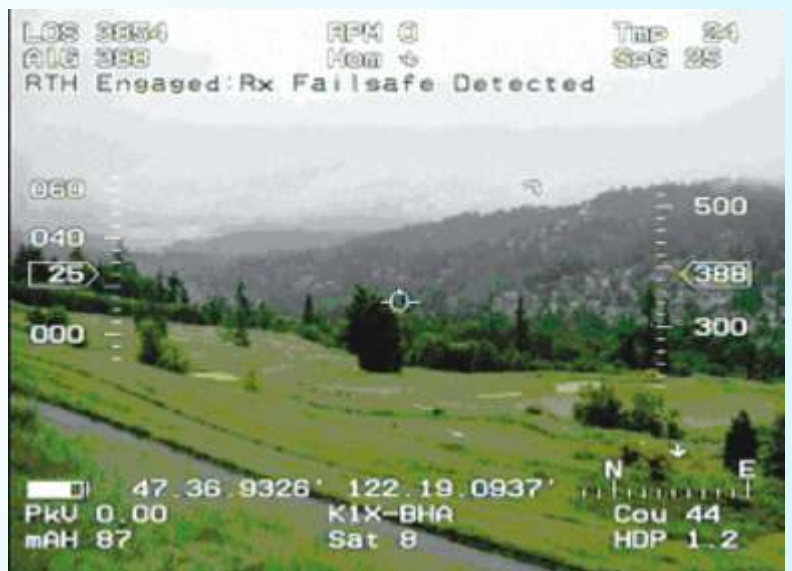
## Datalink:

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

## Onboard Video Recorder:

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

**CUSTOM VIDEO LINK OPTIONS AVAILABLE**



## Flying Characteristics:

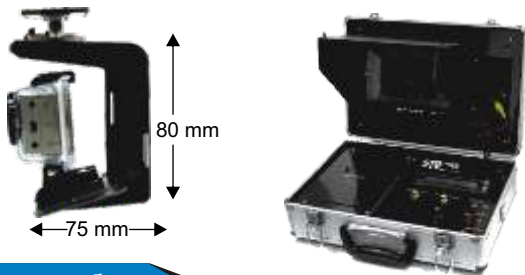
Range	: 4.5 Km *
Endurance	: 38 Mins+2 Mins reserve for failsafe
Accuracy	: within 3 m of the programmed way point
Cruise Speed	: 24 Km/Hr
Max Speed	: 30 Km/Hr
Max Winds	: 20 Km/Hr
Altitude (AGL)	: 1000 Meters
Altitude Ceiling	: 3000 Meter
* Total Distance Traveled	: 4.5Km +4.5Km = 9 Km

## Launch and Recovery:

- Auto Landing and Takeoff
- Manual or Auto Landing depending on the wind conditions prevailing during mission.
- 10 m x 10 m clearance is required to launch the craft.

## 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.



## Video Link:

Type	: Analog Video and Audio
RF Power	: 2000 mW
Frequency	: 5.8 Ghz, 32 Channels.
Power Consumption	: 300 mA @ 11.1 V
Video Resolution	: 520 x 420 TVL
Camera Mount	: Gyro Stabilized on Pan and Tilt Axis
Recording	: Onboard recording on 32 GB SD card in *.avi format.
Range	: 3.5 Km.

## FPV Capabilities:

Video Goggles	: 640 x 480 pixels
Resolution	
Virtual Screen Size	: 45" at 7'
Pixels	: 922,000 per eye
Video Signal	: PAL/NTSC switchable
Rx Frequency	: 5.8 GHz, 8 Channels
Power Supply	: 7.4 V, 1000 mAh Li-Po battery

The Curiosity can be flown in manual mode beyond visual range using FPV (First Person View) capability. The flyer gets the pilot's view as sitting in the cockpit of the aircraft. The feature is specially useful when the craft needs to be flown in tight spaces like between the buildings or between the trees or bushes. The craft can be switched to auto mode like RTL or Loiter at any stage.

## Video Overlay:

- ATMEL 328 based
- Displays: Airspeed, Lat, Long, Altitude, Compass Heading, Battery Capacity Remaining, LOS, Call Sign, time elapsed over the video image

## Capabilities:

- Fully autonomous from takeoff to landing.
- Can be programmed for 300 way points.
- Can loiter over the subject at any way point.
- Ha manual over ride at any stage.
- Can be 'Guided' to specific location during flight by clicking over map.
- Can activate/deactivate any payload from the GCS.
- Auto play load 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.

## Standard Package Contents:

- Curiosity 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

## Mission Applications:

- By Security Agencies for observations behind enemy lines.
- For Flood Control to locate stranded people.
- 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 News and Media aerial videography.
- Mining Industry for monitoring the mines.
- Border Patrolling.
- Surveillance in big industrial plants like refinery.

## 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.



# Curiosity Quadcopter UAV



## Our other products...



Curiosity Quadcopter UAV



Guardian Civilian UAV



Baaz Mini UAV

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