



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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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 'RTH' if link is lost. Will 'Land' if battery is low.
- GCS 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)
- Omni Antenna for Data Link
- Microprocessor based battery Charger.
- Radio Control Transmitter
- Mini Tool Kit
- Aluminum Packing Case
- Video Packing Box

Flying Characteristics:

| | |
|---------------------------|--|
| Range | : 4.0 Km* |
| Endurance | : 36 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 Optimum | : 200 Meters AGL |
| Altitude (AGL) | : 1000 Meters |
| Altitude Ceiling | : 3000 Meters |
| * Total Distance Traveled | : 4.0Km + 4.0Km = 8 Km |

Physical Specifications:

| | |
|----------------|---------------------------------------|
| Size | : 650mm (motor to motor) |
| Height | : 250 mm |
| Flying Weight | : 2400 gms |
| Payload | : 400 gms |
| Propulsion | : 266 Watt BLDC Motors @14.8 Volt X 4 |
| Flying Battery | : Lithium-Ion 14.8 Volt, 12000mAh, |
| Propeller | : 15x5.5 carbon fiber X 4 |

Payload Options:

Option 1: 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.

Option 2: Thermal Camera (uncooled) 640x480 Res and 40 Deg FOV (selectable) with athermal lens.



CUSTOM VIDEO LINK OPTIONS AVAILABLE



Autopilot:

- Based on ARM Cortex M4 32 bit processor @ 168 Mhz, running at 252 Mips, on NuttX real time operating system.
- ST Micro L3GD20, 3-Axis Gyro
- MPU6000, Invensense 3-Axis Gyro + Accelerometer
- uBlox GPS with positioning from GPSS, GLONSS, Galelio, Biedu
- Secondary GPS for backup (optional)
- HMC5883L 3-Axis Dual Magnetometer (Dual)
- MS5611 High Resolution Barometer
- Onboard Micro SD card for Flight Data Logging

Radio Control Link:

| | |
|--------------|---|
| Encoding | : PPM |
| Modulation | : FHSS |
| Freq | : 400-455 Mhz |
| Max RF Power | : 1000 mW Max |
| Channels | : 8 |
| Range | : 4.0 Km., (when airborne) |
| Display | : Back-Lit LCD panel on Tx |
| Battery | : Li-Poly 11.1V, 2650 mAh (12 Hrs continuous operation). |



Onboard Video Recorder:

- 32 GB 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 | : 900 Mhz (885-915 Mhz) |
| Baud Rate | : 19,200 kbps (Selectable) |
| Range | : 4 Km (with Yagi antenna) |

Video Link:

| | |
|--|---|
| Type | : Analog Video and Audio |
| Rf Power | : 600mW |
| Frequency | : 5.8 Ghz, 40 Channels |
| Power Consumption | : 300mA @11.1 V |
| Video Resolution | : 520x420 TVL |
| Camera Mount | : High Accuracy Gyro Stabilization on Roll and Pitch Axis |
| Recording | : Onboard recording on 32 GB SD SD card in *.avi format. |
| Helical High Gain Antenna (Circularly Polarized) | |

Camera Gimbal:

- Gyro Stabilized on Roll and Pitch Axis and is microprocessor based. Correction rate of 2000 deg/sec. Each camera has its own gimbal so that the gimbal is finely tuned to weight of the camera to be mounted. Cameras are changeable in the field in under Five minutes.





Curiosity Quadcopter UAV



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