

# Prioria

DATA SHEET



**Maveric™**

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Unmanned Aerial Vehicle System



# Maveric™ Datasheet

Maveric is a single-man portable and operable, immediate launch capable, unmanned aerial vehicle system (UAS) designed as a high-performance, next-generation platform for small- and micro-UAS operations. Capitalizing on advanced composite materials and patented technology, Maveric's bendable-wings allow for the unparalleled ability to store a fully-assembled airframe in a six inch tube. This unique airframe design, combined with Prioria's proprietary on-board, collision-avoidance processing platform, Merlin®, gives Maveric the ability to fly in complex environments. For more information on Prioria or Maveric, visit our website at [www.prioria.com](http://www.prioria.com).

## Configurations

### Maveric Standard Configuration

A Maveric platform configured with a fixed EO (analog) payload, a forward-look (analog) camera, 900MHz datalink, 2.4GHz video link, a battery pack, storage tube, and a field repair kit.

### Maveric Upgrades

- Merlin On-board Processing Package
  - Collision Avoidance
  - Analog Digital Zoom
- Advanced Flight Management Package
- Retractable Gimbal Payload
- Thermal IR Camera Payload
- Command & Control Freq 300-400MHz
- Video Frequency L-band
- Video Frequency C-band
- Visible / IR Strobe

### GCS Standard Configuration

The standard GCS configuration includes a rugged Toughbook PC, a Hub Box, a RF Box configured for 900MHz datalink and 2.4GHz video link, a tripod, cables, Virtual Cockpit software, and Maveric Toolbox software.

### GCS Upgrades

- Stabilization and Click Tracking Software
- Command & Control Frequency 300MHz
- Video Frequency L-band
- Video Frequency C-band
- High-gain Antenna Package

## Maveric Specifications

### Features

- Single-person Portable / Operable
- On-board Vision Processing
- Advanced Composite Materials
- Bendable wing folds around fuselage
- Stored in a 6 inch Tube,  
No assembly required
- Immediate Launch Capability
- Hand Launched
- Fully Autonomous Operation for  
Takeoff, Navigation, and Landing
- Camouflaged Bird-like Profile
- Up to 90 min flight endurance
- Retractable EO Gimbal Payload
- Multiple payload options available
- Customizable payload

### Missions

- Intelligence, Surveillance, Reconnaissance,  
and Target Tracking (ISRT<sup>2</sup>)
- Persistent / Under the clouds ISR
- Day / Night Operation
- Minimal Visible and Audible Signatures
- Squad-level Recon & Surveillance
- Urban / Complex Environment Operation
- Battle Damage Assessment
- Vehicle Chase (Dash speed of 55 knots)

### Design

Size - Storage and Transportation:

- 31" Length x 6" Diameter
- Wings bend around fuselage  
to < 6" diameter

### Size - In Flight:

- 29.5" Wingspan (Tip to Tip)
- 26.5" Length (Nose to Tail)

### Weight

- 1150g (2.5lbs)

### Body Info

- Rugged / Ultra-light Carbon fiber
- Control surfaces: Stabilators and Rudders
- Modular nose, tail, fuselage, wing, and payload
- Hatches for battery and electronics bay access
- Hatches use captured thumbscrews for use with gloves
- Low-profile GPS and wireless antennas
- Water resistant in light precipitation

### Payload Info

- Retractable EO Gimbaled Camera  
Analog NTSC Output, 480 lines
- Optional Fixed IR Camera  
320 x 240 resolution, white or black hot
- Optional High-res Fixed EO Camera  
Digital 5 Mp
- Fully customizable to customer specified optics.

### Custom Payload Info

- Available Dimensions: 2.5" x 1.5" x 4"
- 100g (0.22lbs) to 300g (0.66lbs) available depending on configuration
- Larger size payload capable with custom housing (Solid model available)

### Storage Tube Info

- Size: 6" diameter x 31" Length
- Pockets for batteries and supplies
- MOLLE system compatible
- Water resistant fabric cover with shoulder strap

### On-board Vision

- Merlin Processing Platform
- Forward-look Camera
- Autonomous Collision Avoidance Capability
- Camera Switching
- Information Overlay

### Electrical

- Autopilot Sensors : GPS, IMU, Altitude, Airspeed, Temp
- Battery Type: Rechargeable 11.1V Lithium-Polymer
- Custom Payload Power: 12V / 5V

### Performance

#### Modes

- Navigation: Autonomous waypoint following
- Altitude: Autonomous altitude / airspeed hold, manual (via joystick) heading control
- Loiter: Circle a configured waypoint
- Rally: Go to a configured rally point and loiter
- Home: Go to a Home point (auto configured at power-up)
- Takeoff: Autonomous takeoff (Requires plane to be thrown)
- Land: Autonomous landing
- Manual: (via joystick) control of altitude, heading, and throttle

#### Speed

- Stall Speed: 18 kts (21 mph, 9 m/s)
- Cruise Speed: 26 kts (30 mph, 13 m/s)
- Dash Speed: 55 kts (63 mph, 28 m/s)

#### Altitude

- Maximum (theoretical): 25,000 ft (7620 m)
- Tested to 16,000 ft (4875 m)

#### Endurance

- Endurance: 45 min to 90 min (depending on configuration)

#### Wireless Range (without high-gain antennas on GCS)

- Commercial-band 2.4GHz Video Link (1W): 5km
- Command & Control 900MHz Data Link (1W): 5km
- Optional Military-band 1.7GHz Video Link
- Optional Military-band 300MHz Data Link

### Operational

- Deployment Time: < 2 min
- Payload Change Times: < 5 min
- Launch Method: Hand launched

- Recovery Methods: Skid / Deep-stall Vertical
- Deep-stall Vertical Fall Rate: 10 ft/s
- Battery Change Time: < 30 s
- Battery Charge Time: < 1 hr
- Propeller Change Time < 30 s

### Fail safes

- Loss of Communication
- Loss of GPS
- Low-power

### Environmental Conditions

- Operational Wind: Up to 20 kts sustained, 30 kts gusting
- Precipitation: Light Rain

## GCS PC Specifications

### Software Features

- Mission Planning / Operation
- Human-in-the-loop Control
- Live Video / Sensor Data Viewing
- Geo-map Support
- Click-tracking
- Image Stabilization

### Hardware Features

- Full Magnesium Alloy Case with Handle
- Designed using MIL-STD-810F
- Moisture and dust resistant LCD, keyboard, and touchpad
- 13.3-inch daylight viewable display with optional touch screen and stylus
- Sealed port connector covers
- Shock-mounted removable hard drive
- Vibration, shock, and drop resistant

### Design

- Housing: Full Magnesium Alloy Case with Handle
- Dimensions: 2.8(H)" x 11.9(W)" x 11.3(D)"
- Weight: 8.4 lbs
- Ports: 3xUSB, Power, VGA, Headphones, Mic, Serial, Firewire, and Ethernet

### Electrical

- Battery Life: 8 hrs

- AC Power Adapter
- Optional Extra Batteries

### Performance

- CPU: Intel Core 2 Duo
- Memory: 1024 MB (up to 4GB option)
- Storage: 80 GB Removable HD (up to 120 GB and solid state options available)
- Display: Daylight Readable 1024x768 with optional Touchscreen
- Video: Intel GMA-965 (with external VGA port)
- Wireless: Bluetooth 2.0, 802.11b/g, optional GPS, optional mobile broadband

### Operational

- GCS Deployment Time: < 3 min

## GCS Hub and RF Box Specifications

### Features

- Rugged, water-resistant enclosures
- Quick-connect locking connectors
- Ultra small form factor
- On-board GPS allows Maveric to follow the GCS in "Convoy Mode"
- Distributed layout for minimized interference
- Expandable auxiliary port for customized applications
- Supports mounted / dismounted configurations

### Design

- Housing: Rugged glass-filled nylon
- Dimensions: 3.8" x 4.9" x 1.7"
- Weight: 2.2 lbs (1.0kg) – without Tripod, 5.1 lbs (2.3 kg) – with Tripod
- Ports: USB to PC, Battery, HUB-RF Interface, Aux (RC Futaba access, analog RCA Video out, etc.)

### Electrical

- Communications Box Battery Life: 4 hrs
- Utilizes Maveric Battery Pack

### Operational

- Battery Change Time: < 10 s