

kestrel™

Autopilot version 3.0

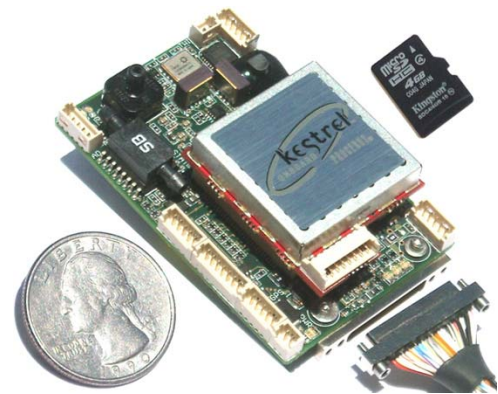


The Kestrel Autopilot is highly integrated, light, small and elegant. Innovative, small, weight-cutting, size-shaving design. It integrates all flight sensors, comm. and payload interfaces into a neat, elegant package. The new Kestrel v3.0 continues the Procerus tradition of pioneering mini avionics development; light, powerful and now with higher end sensors, blazing DSP processor, and advanced guidance & control for hovering platforms.

Kestrel™ Autopilot v3.0

- High bandwidth control for VTOL platforms
- 17 state EKF navigation solution
- Multiple, tightly integrated payloads
- High accuracy gimbal pointing / geo-location
- GPS position and altitude hold (high wind capable)
- High speed maneuvers (ascent, descent, forward flight)

- Autopilot Specifications:
 - 500MHz DSP, 32Mb flash, 32Mb RAM
 - Integrated 3-axis magnetometer
 - Factory calibrated, temp. compensated IMU
 - 51 pin miniaturized wiring harness
- Extensive IO:
 - TWI, External SPI, CAN
 - Servos (8), High speed servos (5)
 - 10 A/D input, Multiple GPIO
 - 4 UARTs (modem, GPS, (2) Payload)
 - 5 Timer pins (RPM, Pulse Capture, etc)
 - Deadman / high current GPIO (2 Amp)
 - Micro SD Card for high speed onboard data logging
 - External IO expander board provides additional serial and GPIO



Kestrel Autopilot v3.0
2.26" x 1.46" x .67"
24 grams

Integrated Platforms:

- Droidworx platforms (quad, hex, & octo rotor, heli)
- CyberQuad mini and maxi platforms
- Any hovering platform



CyberQuad Maxi

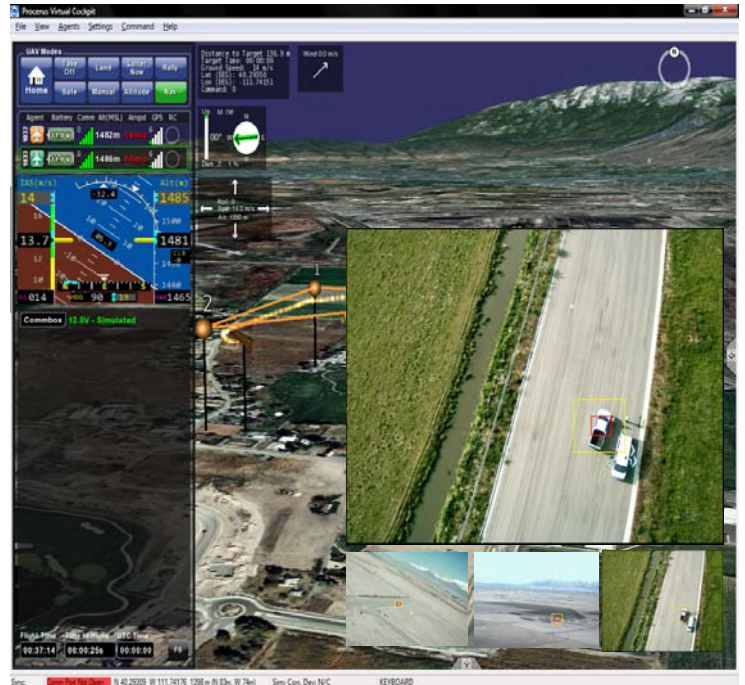


VTOL: Quad, Hex, Octo, Heli



Ground Control: Virtual Cockpit™ 3.0

- Easy user modes: waypoint nav, manual, etc
- Fly out of visual range (multiple radio modems supported; Microhard & Maxstream)
- Auto takeoff & landing. GPS gimbal pointing mode. Moving maps. DTED
- Geo-referenced maps and camera view “flashlight” overlaid on map display
- Simultaneous, multiple platform support from single GCS (fixed wing and vtol platforms)
- Intuitive mission planning, re-tasking during flight. Full flight telemetry. Safe/retrieve plans.
- Easy waypoint placement, management, & editing (click and drag)
- Fail safes: multiple, user configurable
- Telemetry data playback from within Virtual Cockpit and hardware-In-the-Loop simulation



Virtual Cockpit 3D with OnPoint Onboard GUI integrated – multiple video

Multiple Payloads:

- | | |
|--|-----------|
| ▪ Procerus Perceptor DG™ (electronic PTZ digital gimbal) | 20 grams |
| ▪ BTC40 gimbal; 90°/360° (EO, low light) | 76 grams |
| ▪ BTC88 gimbal; 90°/360° (Sony FCB-IX 10x zoom) | 268 grams |
| ▪ Sony FCB-IX; 10x optic zoom | 95 grams |
| ▪ 12mp Pentax Optio W90 | 160 grams |
| ▪ Sony HD1080p video camera | 362 grams |
| ▪ FLIR TAU, DRS E3500 – Thermal Imager | 72 grams |
| ▪ 480 Line CCD | 13 grams |



FLIR TAU



480 line CCD EO & low light option



Perceptor DG digital gimbal



BTC40 Gimbal



Sony FCB-IX



Pentax Optio 12mp



Sony HD 1080p

Vision-based Targeting: OnPoint Targeting™

- **OnPoint Targeting:** Ground-based (runs on laptop) Target Tracking, Geo-location, Video Stabilization, Virtual Hover, click 'n fly operation. Multiple payload support. TIVO-like video pause/playback/record. Configurable GUI w/ dockable windows. All payloads noted above plus any NTSC camera, are supported.

Tracking Car: www.procerus.com/video/track_car.wmv

Virtual Hover: www.procerus.com/video/virtual_hover.wmv

- **OnPoint Onboard:** This version of OnPoint runs on the OnPoint VPU™ which is installed onboard the aircraft. Tracking, Stabilization, Geo-Location and Terminal Guidance (add on) are available OnPoint features. Multiple payloads supported including Procerus' Perceptor DG™ (electronic PTZ, 5mp imager, onboard CD card. All payloads noted above plus any NTSC camera are supported.



OnPoint VPU™
1.9" x 1.35"
11 grams (.4oz)
2.1 watts

ePTZ - 5mp Imager
1.3" x 0.9"
9.2 gram (.32oz)
2.25 watts