



# MP2128<sup>HELI</sup>

## Vertical Take-off and Landing UAV Autopilot



Continuing its tradition of leadership in small UAV autopilots, MicroPilot announces the launch of the smallest vertical takeoff and landing (VTOL) autopilot in the world, the MP2128<sup>HELI</sup>. Despite its small size the MP2128<sup>HELI</sup> incorporates more functionality than is commonly found in larger UAV autopilots. It provides 150 MIPS of processing power, extraordinary user definability and upward compatibility, making it not only the smallest VTOL

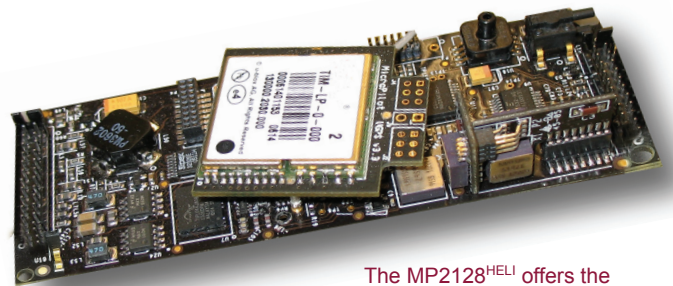
autopilot in the world, but also one of the most versatile at a price point never before seen in helicopter autopilots. Combined with HORIZON<sup>mp</sup> ground control software and MicroPilot's comprehensive customer service and technical support, the MP2128<sup>HELI</sup> will become the most sought-after helicopter autopilot package on the market today.

### *smallest helicopter autopilot in the world*

- At 28 grams, 4cm by 10cm, the MP2128<sup>HELI</sup> holds the title as the smallest vertical takeoff and landing (VTOL) autopilot in the world.

### *versatile helicopter control*

- Based on proven MicroPilot fixed-wing UAV autopilot technology, the MP2128<sup>HELI</sup> can fly both fixed-wing and VTOL UAV's. It is suitable for rotary wing, ducted fan and other VTOL UAV's.
- The MP2128<sup>HELI</sup> is upward compatible with the popular MP2028<sup>g</sup> and the recently-developed premium autopilot, the MP2128<sup>g</sup>.
- Equipped with an ultrasonic altitude sensor, the MP2128<sup>HELI</sup> supports autonomous takeoff and landing.



The MP2128<sup>HELI</sup> offers the world-renowned small size and weight of all MicroPilot's autopilots without compromising functionality.

### *a fully supported and integrated autopilot*

- Like all MicroPilot's autopilots, the MP2128<sup>HELI</sup> comes with the exceptional technical support of our highly qualified technical support representatives.
- The MP2128<sup>HELI</sup> comes equipped with MicroPilot's HORIZON<sup>mp</sup> UAV ground control software and is fully integrated--all sensors, including the IMU, fit in this one, powerful, lightweight autopilot.

*\*This document is a draft and subject to change without notice.*

# specifications



**world leaders in  
miniature UAV  
autopilots**

## servos

- 3 servo mechanical
- 3 servo 90° CCPM
- 4 servo 90° CCPM
- 3 servo 120° CCPM
- 4 servo 4 corner CCPM
- 50 to 200 Hz selectable servo update rate
- separate servo and main battery power supply
- separate voltage monitor for main and servo battery power supplies
- integrated RC override
- 11 bit servo resolution
- extra ADC channels available as an option

## navigation

- 4 Hz GPS update rate
- move servo at waypoint
- change altitude at waypoint
- change airspeed at waypoint
- user definable holding patterns
- user definable error handlers
- RPV and UAV modes
- supports DGPS accuracy
- 1000 waypoint command buffer

## telemetry, datalog and video

- telemetry (100 user defined fields transmitted each second)
- 5 to 30 Hz telemetry update rate
- 5 or 30 Hz datalog update rate and 8 user definable fields
- video overlay (16 user definable fields)

## control system

- gain scheduling for optimum performance
- 30/60/180 Hz selectable inner loop update rates
- autonomous takeoff and landing supported by AGL
- user definable PID feedback loops
- user definable table lookup functions
- plugin compatible with XTENDERmp software developer's kit

**350 clients in 49 countries**

## HORIZON<sup>mp</sup>

- HORIZON<sup>mp</sup> ground control software included with system
- MP2028<sup>g</sup> simulator for operator training
- in-flight adjustable gains
- change waypoints in-flight
- payload servos controlled from ground station
- point-and-click waypoint editor

## sensors

- altimeter max altitude: 12,000m
- 2G, 3 axis accelerometers
- 3-axis gyro
- max angular rate: 150° per second
- attitude update rate 200 Hz
- 12 state Kalman filter

## physical characteristics

- weight (including GPS receiver, gyros and all sensors) 28 grams
- 4.2 to 26V supply voltage
- 10cm in length, 4cm in width, 1.5 cm in height
- software upgradable in the field

The MP2128<sup>HELI</sup> comes equipped with MicroPilot's HORIZON<sup>mp</sup> UAV ground control software.



HORIZON<sup>mp</sup> effortlessly turns your laptop into a versatile virtual cockpit.



# We are $\mu$ p.

When test flights are launched at MicroPilot's 40-acre flight test facility, staff announce the occasion with the words, "We are up." To everyone in the on-site office, this is not only notification of a test flight in progress but a celebration of the continued success of MicroPilot's products. With more than 15 developers, a ground-breaking research and development philosophy, and a reputation for quality, MicroPilot is unparalleled in the growing miniature UAV autopilot industry. We are up!