

## wePilot3000

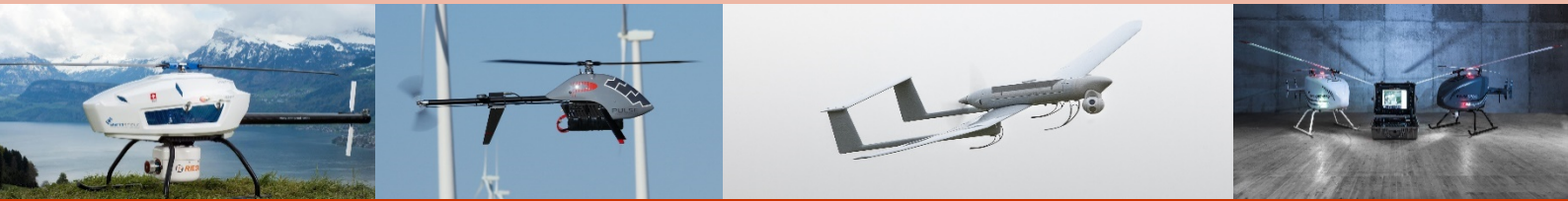
The wePilot3000 family is a flight control system for small rotary and fixed wing unmanned aircraft systems. It consists of a PCB stack which integrates an embedded computer system, a GNSS receiver, a magnetometer, a temperature calibrated IMU with three gyros and three accelerometers, an absolute and differential pressure sensor. All onboard power supply converters are doubled for redundancy. The PCB stack comes either as an OEM version with a PCB mounting connector or packaged in an aluminium housing with a military type of connector.

The wePilot3000 family combines integrated GPS/inertial navigation with robust controller design methodologies to provide attitude stabilization, velocity and

position control, motor speed and airspeed control. Guidance algorithms allow accurate trajectory tracking even under high wind conditions.

Various interfaces (RS-232/485, digital I/O, analog inputs, S-Bus inputs, PWM inputs/outputs) allow to read external sensors and to control custom payload equipment. A data-link may be added to interface with the weGCS ground control station.

The wePilot3000 comes with different options: Built-in IMU or external IMU, L1 or L1/L2 GPS receiver, 1 or 2 GNSS receivers for position redundancy, Novatel's Align option for accurate GPS heading.



## Specification

### CPU

PXA255, 400MHz, 64MB RAM, 32MB ROM

FPGA Spartan-6

### Sensors

3 gyroscopes .....  $\pm 300^\circ/s$

3 accelerometers .....  $\pm 10g$

3-axis magnetometer ..... 1

GPS/GLO receiver (Novatel OEM719) ..... 1/2

Absolute pressure sensor ..... 1034hPa

Differential pressure sensor ..... 68hPa

### Interfaces

RS-232 ..... 7

RS-232 or RS-485 ..... 2

RS-232 or TTL ..... 2

Power switches (max. 2A) ..... 2

Digital inputs/outputs ..... 8

PWM inputs/outputs ..... 8/8

Resolution ..... 100ns

S-Bus receiver interfaces ..... 2

Analog inputs (0-5V) ..... 8

Frequency counters (RPM sensor) ..... 2

### Environment

Operating temperature .....  $-40$  to  $+85^\circ C$

### Electrical

Input voltage ..... 10-18VDC

Supply current (@12VDC) ..... 1000mA

### Physical (OEM version)

Size ..... 80 x 80 x 76mm

Weight ..... 350g

### Physical (Enclosure version)

Size ..... 168 x 110 x 104mm

Weight ..... 500g

## Block diagram

