



Designed for Multirotor Flight Control

Today's Autopilots

Not Safe

Requires retuning for minor changes due to reliance on PID control methodology

Can't fly in high winds or inclement weather

Automatic flight not reliable; problems with flyaways and unpredictable response

Not Smart

Challenging to implement new flight control and navigation algorithms as manual coding is error prone

Issues with legacy "spaghetti" code and complex, opaque design

Retuning required for swapping of payload and cameras

The SafeSmart Solution

Very Safe

Robust adaptive control approach; once configured for airframe, tuning is not necessary

Fly in high winds or inclement weather right away

Predictable, reliable automatic flight, including take-offs and landings

Very Smart

Natively based on autocoding: develop/simulate/test algorithms in MATLAB/Simulink and then automatically generate code for the autopilot to fly

Transparent, model-based design enabled via MATLAB/Simulink environment

Swap payloads and cameras with no retuning required

SafeSmart Robust Adaptive Control

Validated by NASA and the U.S. Air Force for stable and safe flight even in the most unfavorable conditions

Onboard features include: **CAN, SPI, I2C, UART** ports and radio supporting multipoint communication

Ships **ready to be integrated** into airframe with all necessary components including easy-to-use ground control software and communication links

Flight control software developed in MATLAB/Simulink and compiled into onboard firmware using autocoding (**no manual C coding necessary**)

Built-in VICON integration enables indoor flight while outdoor flight is based on integrated GPS

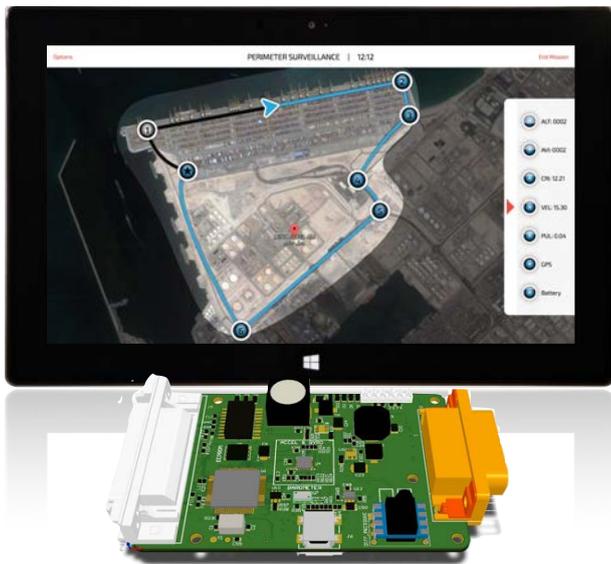
USER FRIENDLY FOR RESEARCH AND TEACHING APPLICATIONS

SAFESMART AUTOPILOT AP-100 INCLUDES:

Easy to reprogram autopilot

MATLAB/Simulink Toolbox

Easy-to-use ground control software and communication links



Get the AP-100

To order contact sales@intelinair.com

IntelinAir is the Complete Solution

Powered by SafeSmart Robust Adaptive Control, the IntelinAir platform supports the next generation of commercial UAS applications

Overview

Dimensions 9 x 5.5 x 2 cm

Microchip MCU dsPIC33 Family

32MB Flash Memory

1024 Kbit SPI EEPROM to store user-defined parameters and waypoints

Sensors

Onboard Invensense MPU-6000 3-axis IMU

Onboard MEAS MS5611 barometer

Onboard differential pressure transducer

Onboard temperature sensor for IMU temperature compensation

Interfaces

Eight High-Speed PWM outputs for servo/ESC control

I2C port for external modules

UART port for external GPS module

Onboard radio for wireless telemetry link, integrated with ground control software

Onboard memory card for real-time data logging

Independent servo power rail to optionally power all 8 PWM channels from BEC or separate battery

2 Auxiliary Analog inputs wired to the MCU ADC

2 DIO Auxiliary inputs wired to the MCU DIO pins

ICSP programming port

RS232 and TTL HIL/Debug port

IntelinAir Ground Control Software

Easy to use flight planning interface

Intuitive display for in-flight monitoring and decision-making

Seamless transition between manual and automatic flight

Support for Windows OS

Spektrum DX8 RC transmitter for piloted control (optional)

IntelinAir-MATLAB Toolbox

Integrated development environment enables quick prototyping, simulation, and deployment of new control software

Automatically generate reliable code using well established MATLAB/Simulink tools

No hassle hardware-in-the-loop test capability

VICON-ready

Out-of-the box integration support for indoor VICON flight testing

For more information visit  **IntelinAir**