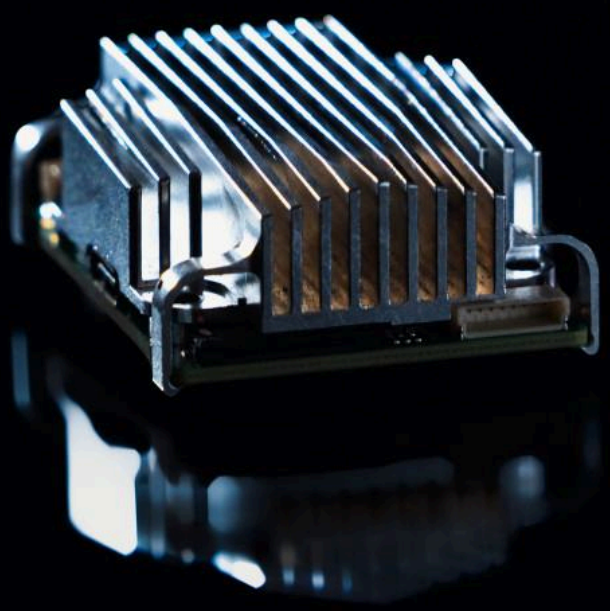
Auterion

— SKYNODE S

Integrated flight control and mission compute for small, attritable UAS



Skynode™ S is the all-in-one solution designed to power any small UAS system running the Auterion software stack.Its compact design allows easy integration on space-constrained vehicles while providing the compute and flight control capabilities required for autonomous operations.

Skynode™ S combines a modern flight control software running on FMUv6x with a dedicated mission computer, delivering the performance needed to run AI, computer vision, and autonomous applications onboard.

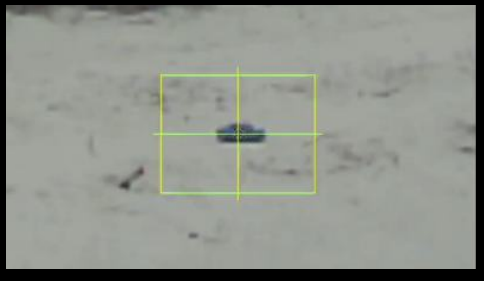
It unlocks the full functionality of Auterion's software ecosystem, including capabilities such as autonomous tracking and terminal guidance through the Track & Intercept (T&I) application.The platform is designed to be flexible and extensible, supporting additional software and hardware components from the broader Auterion ecosystem.

BENEFITS

- **Faster time to market**
  Tested and validated hardware and software allow manufacturers to field UAS quickly and scale production.
- **Simplified operator workflows**
  Integrated with Mission Control to enable intuitive mission planning, live video streaming, and camera control with minimal operator training.
- **Autonomous tracking and terminal guidance**
  Supports the Track & Intercept (T&I) app for onboard target tracking and automated terminal guidance.
- **AI and application deployment onboard**
  Supports containerized applications, enabling AI models and mission applications to run directly on the vehicle.

Auterion T&I (Track and Intercept) workflow:

Minimally trained operators can identify object and place tracker near the object

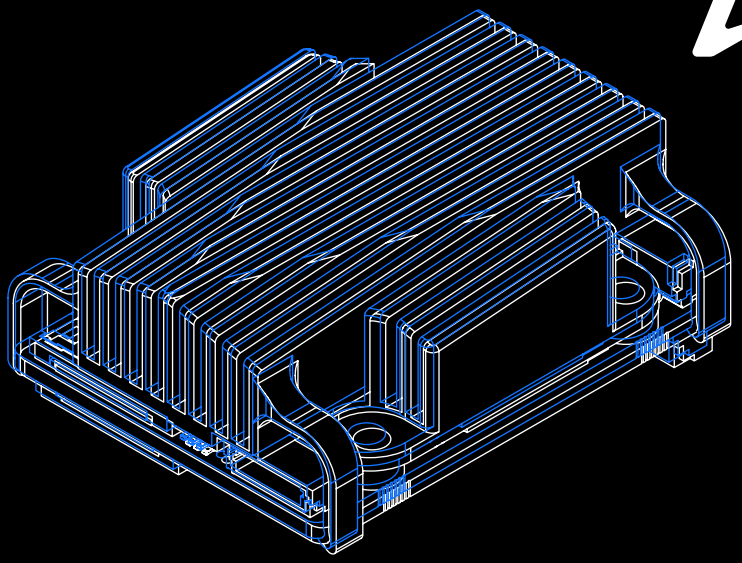


Zoom in and refine tracker placement. The tracked object will stay in the center of the screen when zooming and enter Precision Delivery flight mode

The drone will fly to the object with no manual piloting required, and even if link is lost (operator configurable)

Hardware Overview

Chip-down, compact, versatile



Full software capabilities

- Auterion Enterprise PX4 (on dedicated HW)
- ROS2 (in Docker containers)
- Payload / camera control
- Port for USB Radios

Flight management unit (FMUv6x class)

- Cortex M7 Core
- 1x GPS + I2C for mag sensor
- 1x CAN
- 1x UART
- SBUS input
- 8x PWM channels
- ESC telemetry input
- ADC Input for current measurement
- 2x GPIO pins

Radio

- Default: Doodle Labs Mini OEM (HEX band version)
- Still supports existing radios in partner ecosystem like Silvus, Persistent Systems, and Trellisware

External interfaces - Mission computer

- Quad core ARM Cortex-A53 1.8 GHz
- 2.3 TOPS Neural Processing Unit
- 4 GB RAM
- 32 GB EMMC
- USB-C (USB 2.0 host and device, USB3.0)
- USB 2.0 connection with high current supply (up to 5A*) for radio links like OpenHD
- 2x MIPI CSI with image processing unit
- 1080p60 H.265 and H.264 hardware encoding
- Secure element with NFC (for authentication and out-of band radio pairing)
- Other IO: SPI, GPIO

*shared with other peripherals connected to Skynode S

Power interface

- Voltage input: 4s-8s (12-34 V)
- Max power input: 5W-30W (25W for peripherals)
- Max power output: 25W (input voltage dependent)