

PRODUCT BRIEF

The Intel® Aero Ready to Fly Drone



Get Drone Applications Airborne Quickly

The Intel® Aero Ready to Fly Drone combines tremendous capabilities and design flexibility intended to accelerate development of sophisticated drone applications.



Powerful Compute

This drone development platform is built around the Intel® Aero Compute Board running a quad-core Intel® Atom™ processor, offering performance in a low power envelope. Ample memory and expandable storage enable development of demanding in-flight applications.

Enhanced Computer Vision

The integrated Intel® RealSense™ R200 camera with stereo vision 3D imaging and depth sensing offers developers a tool for developing advanced algorithms for collision avoidance, localization, and more.

Open Source

Running embedded Linux built with Yocto Project, developers can customize with confidence. The platform also integrates ROS, MAVROS, MAVlink, and OpenCV libraries, for broader development support.

Dronecode* PX4* Autopilot

PX4 autopilot is an open-source, fully-featured flight stack, providing all the ingredients necessary for flight. It is pre-loaded on the Intel® Aero Flight Controller and communicates with the Intel® Aero Compute Board using the MAVLink* protocol.

Flexible and Extendable

This drone is fully assembled, flight tested and ready to fly. It is designed to be modified and is intended to support rapid drone application development from inception to deployment on a production drone.



Compute and vision components can be purchased separately. For more information, ask an Intel sales representative, or visit intel.com/aero.

Technical Specifications



COMPUTE BOARD

Processor	Intel® Atom™ x7-Z8750 (2.56 GHz burst, quad core, 2M cache, 64 bit)
RAM	4 GB LPDDR3-1600
Storage	32 GB eMMC, MicroSD* memory card slot, M.2 connector 1 lane PCIe for SSD
Display	1 micro HDMI 1.4b
Communication	Intel® Dual Band Wireless-AC 8260, 802.11ac, 2x2 MIMO
I/O Expansion	USB 3.0 OTG, HUART, I2C, CAN, 6 processor GPIOs, 28 FPGA GPIOs, 5 FPGA Analog Sense, (accessed via the Altera® Max® 10 FPGA)

VISION

Cameras	Intel® RealSense™ Camera (R200), 8 MP RGB camera (front-facing), VGA camera, global shutter, monochrome (down-facing)
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FLIGHT CONTROL HARDWARE

Intel® Aero Flight Controller	STM32 microcontroller, 6 DoF IMU, magnetometer and altitude sensors
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REMOTE CONTROL

Transmitter	Spektrum® DXe (2.4 GHz DSMX)
Receiver	Spektrum® SPM4648 DSMX with Diversity

SOFTWARE

Operating System	Yocto Project* 2.1 (Krogoth), Linux* 4.4.3-yocto-standard
BIOS	Insyde Software InsydeH2O* UEFI BIOS
Flight Controller	Dronecode* PX4*
Communication Protocol	Dronecode* MAVLink*

DRONE

Drone Dimensions	360 mm - hub-to-hub (diagonal)
Drone Height	222 mm - from base to top of GPS antenna
Propeller	230 mm - length
Weight of Drone	865 g - basic configuration without battery
Gross Weight	1900 g ³ (maximum) - takeoff weight
Flight Time	20 min ³ (maximum) with 4S, 4000mAh battery ² , hovering, no added payload
Sustained Wind	15 knots ³ (maximum)
Control Distance	300 m ³ (maximum) - with supplied remote control
Airspeed	15 m/s ³ (maximum)
Altitude of Operation	5000 m ³ (maximum) - height above sea level
Outside Air Temperature	-0 C / +40 C (minimum / maximum)
ESC and Motor	Designed and manufactured by Yuneec for Intel® Aero Ready to Fly Drone
• Input Control Interface	UART
• ESC Input Voltage	11.1 - 14.8 V



For more information, visit www.intel.com/aero

¹ The Intel Aero Ready to Fly Drone is a kit for developers and is intended to be modified by developers according to their professional judgment. Intel has not established operating limitations for the kit nor tested any configurations other than the base configuration. Developers are responsible for testing and ensuring the safety of their own configurations, and establishing the operating limits of those configurations.

² Recommended battery: Li-Po, 4S, 4000+ mAh, with XT60 connector

³ Estimated

* Other names and brands may be claimed as the property of others.

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