Intel® Aero Ready to Fly Drone

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This ready-to-fly unmanned aerial vehicle (UAV) development platform is a fully assembled, fully functional quadcopter powered by the Intel® Aero Compute Board, equipped with Intel® RealSense™ depth and vision capabilities, running an open-source Linux* operating system. It is geared for developers and researchers who desire a fast path to getting applications airborne. *Read about all the features in the DETAILS tab below.*
Battery required. See requirements in DETAILS.
Your Aero Ready to Fly Drone will ship within 48 hours once the order has been received.
* Other names and brands may be claimed as the property of others.

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Preview of the Intel® Aero Ready to Fly Drone

Video Introduction to the Intel® Aero Compute Board and Vision Accessory Kit for UAVs

Intel® Aero Ready To Fly Drone combines the Aero Compute Board and the Aero Vision Accessory Kit with the Aero Flight Controller, GPS, Compass, airframe, ESCs, motors, transmitter and receiver. The only thing needed to start flying is a charged battery. (recommended battery: Li-Po, 4S, 4000+ mAh, with XT60 connector).

Battery Requirements:

- Li-Po, 3S or 4S, XT60 connector
- Max dimensions (mm): 150 x 50 x 32

Required accessories:

- Micro HDMI to standard HDMI cable and HDMI monitor
- Support for USB 2.0 peripherals:
  - Self-powered USB 2.0 Hub
  - USB host cable [1]: USB 2.0 Micro-B to Type-A female
- USB keyboard
- USB 2.0 flash drive 2GB or larger for firmware updates

Optional Accessories:

- USB mouse
- Support for USB 3.0 peripherals:
  - Self-powered USB 3.0 Hub
  - USB host cable [2]: USB3.0 Micro-B to Type-A female

[1] This is the same cable supplied with the Intel® Aero Compute Board

[2] Available as an accessory through Intel (coming soon)

The Intel Aero Ready to Fly Drone includes the following:

Intel Aero Compute Board

Intel® Atom™ x7-Z8750 processor

4 GB LPDDR3-1600

32 GB eMMC

MicroSD* memory card slot

M.2 connector 1 lane PCIe for SSD

Intel® Dual Band Wireless-AC 8260

USB 3.0 OTG

Reprogrammable I/O via Altera® Max® 10 FPGA

8MP RGB camera (front-facing) – one of the 3 camera modules included with the Aero Vision Accessory Kit

VGA camera, global shutter, monochrome (down-facing)

Open-source embedded Linux*, Yocto Project

Insyde Software InsydeH2O* UEFI BIOS optimized for the Intel® Aero Platform for UAVs. More about InsydeH20*

Intel® RealSense™ camera (R200)

Intel® Aero Flight Controller with Dronecode* PX4* autopilot

STM32* microcontroller

Temperature compensated: 6 DoF IMU, magnetometer, and altitude sensors

Connected to the Aero Compute board over HSUART and communicates using MAVLink* protocol

Pre-assembled quadcopter

Carbon fiber airframe

GPS and compass

Power distribution board

4 electronic speed controllers

4 motors

8 snap-on propellers

Spektrum* DSMX* Serial Receiver

Spektrum DXe Transmitter (2.4GHz DSMX)

Other Specifications

The Intel Aero Ready to Fly Drone is a platform for developers and is intended to be modified by developers according to their professional judgment. Intel has not established operating limitations for this drone development platform, or tested any configurations other than the base configuration as shipped. Developers are responsible for testing and ensuring the safety of their own configurations, and establishing the operating limits of those configurations.

(†) Parameters below are estimated

Dimensions: hub-to-hub	360 mm
Drone Height - base to top of GPS antenna	222 mm
Propeller (Yuneec Typhoon H) – Length	230 mm
Weight of Drone – basic configuration without battery	865 g
Gross Weight (max) – max takeoff weight	1900 g †
Flight Time (max) – with 4S, 4000mAh battery, hovering, no added payload	20 min †
Maximum Sustained Wind	15 knots †
Maximum Control Distance with supplied remote control	300 m †
Airspeed (max)	15 m/s †
Altitude of Operation (max) – height above sea level	4500 m †
Flight Height Limit (max) – height Above Ground Level (AGL)	122 m †
Outside Air Temperature (min / max)	0 C / +45 C
ESC and Motor - designed and manufactured by Yuneec, modified for Intel® Aero	
- Input control interface	UART
- Input voltage range	11.1 - 14.8V