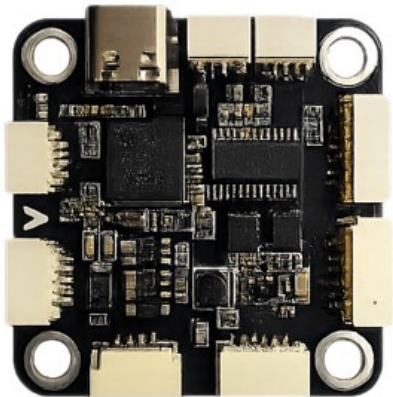
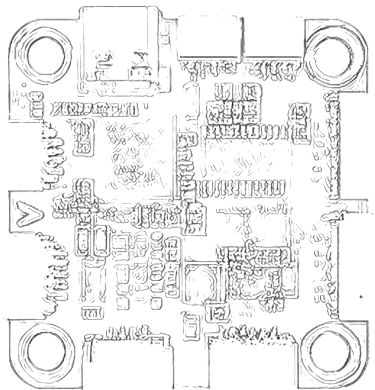


AF-H7 nano

User Guide



AF-H7 nano Overview



Compact STM32H743 flight controller with two ICM-42688-P IMUs. Provides 10 motor/servo outputs, 1 WS2812 LED output and 7 UARTs with 2-8S input.

AF-H7 nano Specifications

• Basic Specifications

MCU	STM32H743VIH6, 480 MHz (1MB RAM, 2MB Flash)
IMU	2× ICM-42688-P
Barometer	DPS-368
Operating Voltage	6 – 36 V DC (2–8S LiPo)
Output Voltage	BEC 5V @ 2.5A
USB Input	USB-C (Firmware & Power)
PWM Output	10 motor/servo channels + 1 WS2812 LED channel
UART	7 Port
CAN	1 Port
RC Input	S.Bus, PPM, CRSF, DSM
Size	36 × 36 × 5 mm
Mount Hole	30.5 × 30.5 mm / M4

AF-H7 nano Specifications

• Basic Specifications

Weight	7 g
Operating Temp	-20 ~ +85 °C
Supported F/W	novaX ArduPilot (released); Betaflight board configuration available

AF-H7 nano Pinout

• Pinout

AF-H7 nano · novaX ArduPilot

Board ID 6200 · Firmware mapping — NOT connector pin order

Connection	Hardware UART	ArduPilot	MCU pins TX / RX
GPS	USART3	SERIAL3	PD8 / PD9
ELRS / RC	USART6	SERIAL6	PC6 / PC7
VTX serial control	USART1	SERIAL1	PA9 / PA10
DJI O3 RC	USART2	SERIAL2	PD5 / PD6
DJI O3 MSP	UART4	SERIAL4	PB9 / PB8
Spare pads	UART7 / UART8	SERIAL7 / 8	PE8/7 · PE1/0

PWM1-10: motor / servo · PWM11: WS2812 LED

Source: novaX-ALUX/fc · boards/AF-H7_nano/ardupilotfw/def.dat

Verify PCB revision and connector orientation before wiring. Flash only matching AF-H7_nano firmware.

AF-H7 nano Pinout

• Pinout Notes

Pinout follows novaX AF-H7_nano, not a generic H7 target. PWM1–10 are motor/servo outputs; PWM11 is the WS2812 LED line. The GPS connector is USART3 (SERIAL3, PD8/PD9), the ELRS/RC connector is USART6 (SERIAL6, PC6/PC7), and UART7/8 are spare pads. UART4 is assigned to DJI O3 MSP.

VBat input is routed through a 4-pin connector accepting 2S–8S LiPo. The on-board 5 V / 2.5 A regulator powers the FC, receiver and low-current peripherals. Servo rail is unregulated — feed it directly from a BEC or motor PDB.

AF-H7 nano Setup

1. **Mounting** — Align the board's forward direction with the vehicle nose on a vibration-damped mount; otherwise set `AHRS_ORIENTATION`. Mounting: 30.5 × 30.5 mm / M4.
2. **Power** — Supply power within the operating range and check polarity first. Operating voltage: 6 – 36 V DC (2–8S LiPo).
3. **Peripherals** — Connect the receiver, GPS / compass and ESCs according to the pinout.
4. **Firmware** — Load this product's novaX ArduPilot image from the catalog Web Updater; never use another board's firmware.
5. **Setup** — In Mission Planner or similar, choose the frame, calibrate accelerometer, compass and radio, and set flight modes and failsafes.

AF-H7 nano Firmware

• Available Firmware

Type	Version	Date
ArduPilot (.apj package)	1.2.3	2026-07-11
Bootloader + App (merged HEX · DFU / SWD)	1.2.3	2026-07-11

Download files from the product page (QR).

AF-H7 nano Safety Notes

- Always remove propellers while wiring, configuring or updating firmware.
- Pull connectors by the housing, never by the wires.
- Beware of static discharge; do not operate in wet or dusty conditions.
- The servo rail is unregulated — feed it directly from a BEC or PDB.
- Use only the novaX image for board ID 6200 (do not substitute Matek firmware).



<Detailed Manual>

novaX