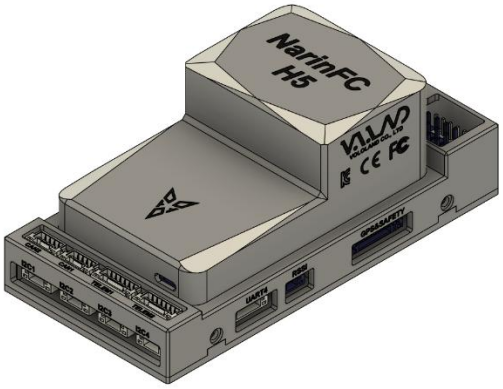
# NarinFC H5

# Manual

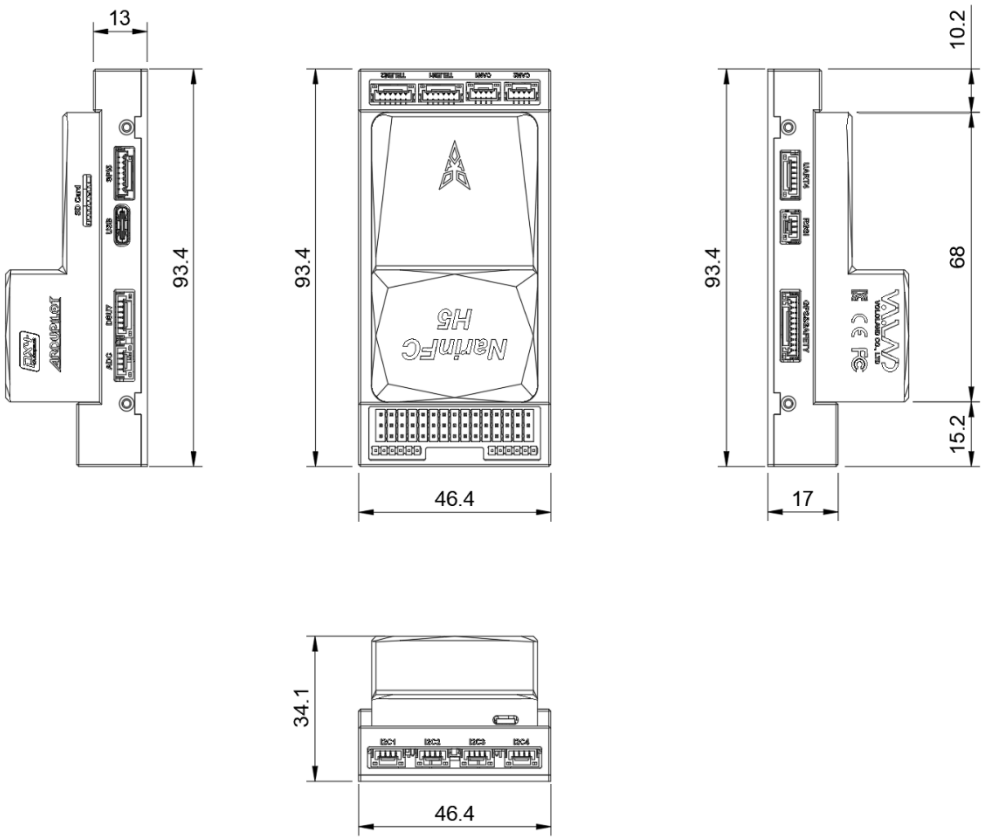


## 1. Basic Parameters

| | |
|---|---|
| **Main FMU Processor** | • STM32H743 |
| **On-board sensors** | • Accelerometer/Gyroscope: ICM-45686<br>• Accelerometer/Gyroscope: ICM-45686<br>• Accelerometer/Gyroscope: ICM-20649<br>• Magnetometer: RM3100<br>• Barometer: MS5611*2 |
| **Interfaces** | • 14 PWM Output<br>• Support multiple RC inputs (SBus / CPPM / DSM)<br>• 2 GPS ports (GPS and UART4 ports)<br>• 4 x I2C<br>• 2 x CAN bus ports<br>• 2 x Power ports<br>• 2 x ADC ports<br>• 1 x USB ports |
| **Power System** | • Power 4.3V ~ 5.4V<br>• USB Input 4.75V ~ 5.25V |
| **Weight** | • 106g |

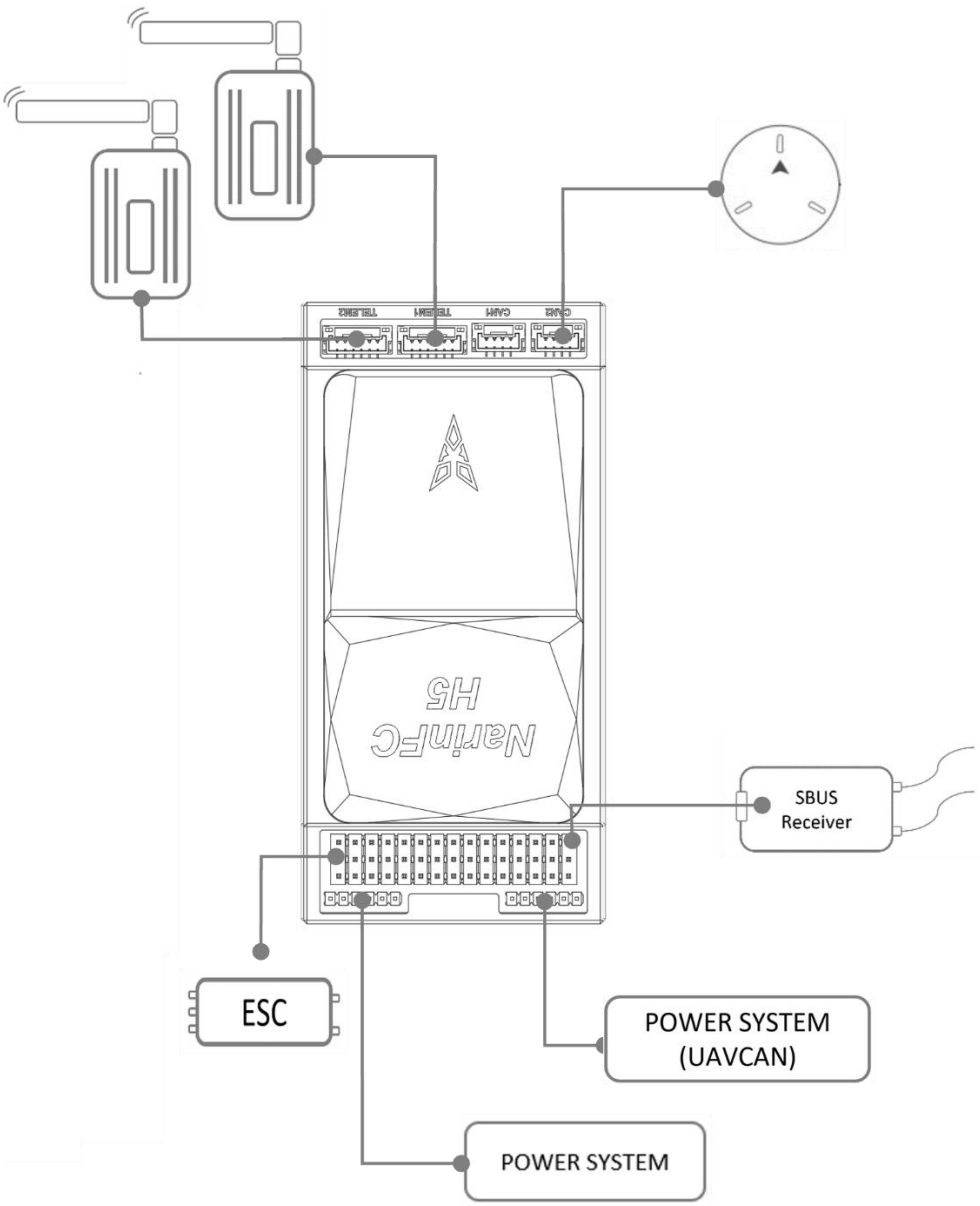
[Parameter]

## 2. Outline Dimensions



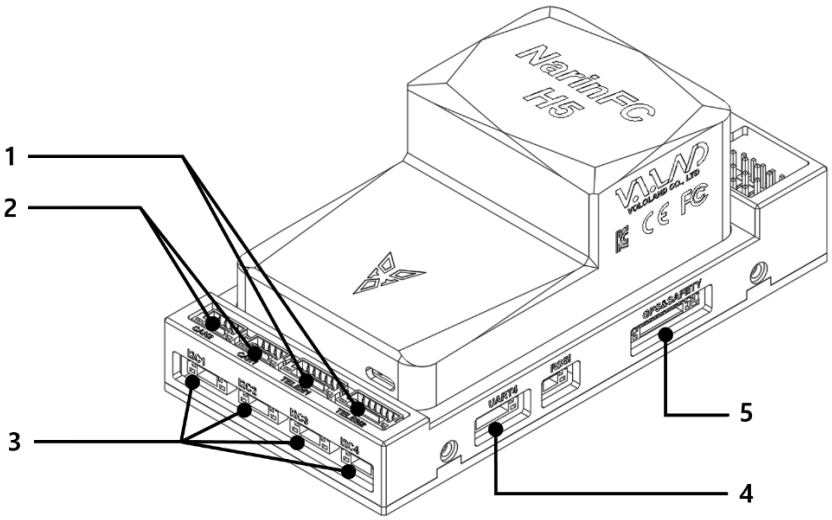

[Outline Dimensions]

## 3. Wire Diagram




[Wire Diagram]

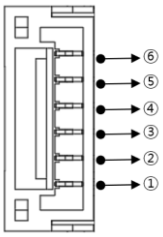
## 4. Port Diagram & Pin outs




[Port Diagram-A]

*1.* TELEM1, TELEM2 Port (JST GH 6P Connector)

- Telemetry system can be connected.
- TELEM1 = SERIAL1(MAVLINK 2 Default), TELEM2 = SERIAL2(MAVLINK 2 Default)

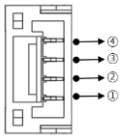



| | |
|---|---|
| ① | 5VDC |
| ② | TELEM_TX |
| ③ | TELEM_RX |
| ④ | TELEM_CTS |
| ⑤ | TELEM_RTS |
| ⑥ | GND |

[TELEM Pinout]

*2.* CAN1, CAN2 Port (JST GH 4P Connector)

• Able to connect UAVCAN devices such as CAN GPS.




| | |
|---|---|
| ① | 5VDC |
| ② | CAN_H |
| ③ | CAN_L |
| ④ | GND |

[CAN Pinout]

• Example of compatible GPS devices _ ARDUPILOT

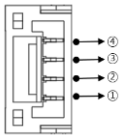
- NarinGPS-RTK
- CubePilot HERE 3/3+, HERE4, HEREPRO
- ARK RTK F9P
- CUAV Neo2 pro, Neo3 pro, Neo 3X, C-RTK2
- Holybro M8, M9, H-RTK F9P

• Example of compatible GPS devices _ PX4

- NarinGPS-RTK
- ARK GPS, ARK RTK GPS
- Cubepilot HERE3
- CUAV Neo2 pro, Neo3 pro, C-RTK2

*3.* I2C1, I2C2, I2C3, I2C4 Port (JST GH 4P Connector)

• Able to connect I2C device, such as External Compass.




| | |
|---|---|
| ① | 5VDC |
| ② | SCL |
| ③ | SDA |
| ④ | GND |

[I2C Pinout]

• Example of a power module compatible with I2C connections

- Holybro PM08D (6P cable)

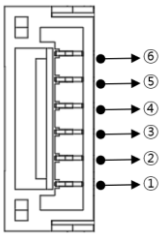
  (The product can connect I2C devices such as an external compass after separately disconnecting the I2C SCL and SDA cables.)

-

*4.* UART4 Port (JST GH 6P Connector)

• Able to connect a GPS with a pin map identical to the one shown below using a 6P connector.

• UART4 = GPS2 = SERIAL4



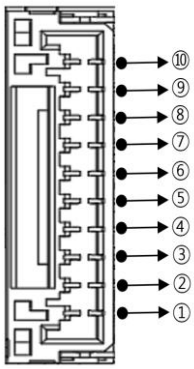

| | |
|---|---|
| ① | 5VDC |
| ② | UART4_TX |
| ③ | UART4_RX |
| ④ | I2C2_SCL |
| ⑤ | I2C2_SDA |
| ⑥ | GND |

[UART4 Pinout]

*5.* GPS & Safety Port (JST GH 10P Connector)

• It uses UART and can connect GPS include a safety switch

• GPS & Safety port = SERIAL3 = USART1

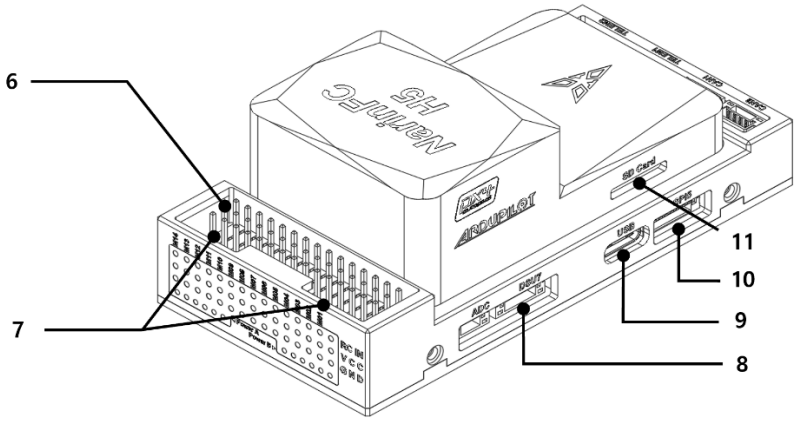



| | |
|---|---|
| ① | 5VDC |
| ② | GPS1_TX |
| ③ | GPS1_RX |
| ④ | GPS_SCL1 |
| ⑤ | GPS_SDA1 |
| ⑥ | SAFETY_SW |
| ⑦ | SAFETY_LED |
| ⑧ | SAFETY_VCC |
| ⑨ | BUZZER1 |
| ⑩ | GND |

[GPS & Safety Pinout]

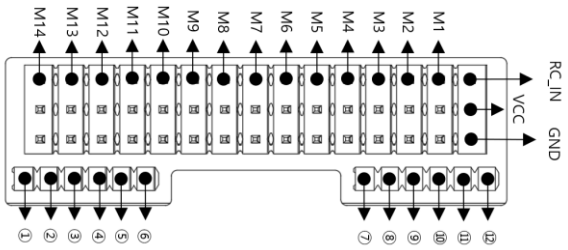
• Example of a compatible GPS device

- Holybro SKU12040 M10 Standard GPS (10P cable)
- CUAV Neo3 (10P cable)




[Port Diagram-B]

*6.* PWM Out(M1-M14)



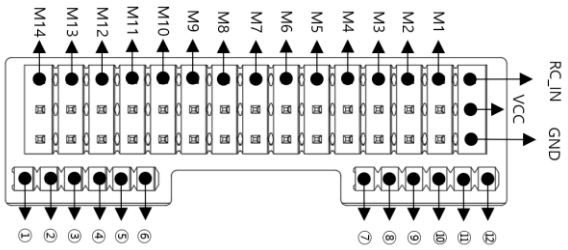

| | |
|---|---|
| RC_IN | Remote control receiver |
| M1~M14 | PWM OUT |

- Connect the transmitter receiver using the PWM output and RC IN port.
- 2.54mm pitch Dupont connector

7. Power Input

• Connect the controller receiver to the PWM output and RC IN Port.

• 2mm pitch Dupont connector




| | | | |
|---|---|---|---|
| ① | VDD 5V 1 | ⑦ | VDD 5V 2 |
| ② | VDD 5V 1 | ⑧ | VDD 5V 2 |
| ③ | BAT1_I_IN | ⑨ | CAN1_H |
| ④ | BAT1_V_IN | ⑩ | CAN1_L |
| ⑤ | GND | ⑪ | GND |
| ⑥ | GND | ⑫ | GND |

[PWM & POWER Pinout]

• Example of a power module compatible with CAN connection _ Ardupilot

- CUAV DRONECAN power module
- Matek CAN-L4-BM DRONECAN PMU
- Pomegranate system power module

• Example of a power module compatible with CAN connection _ PX4

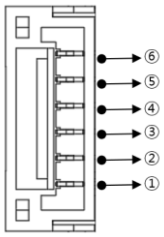
- Pomegranate system power module
- CUAV CAN PMU power module

• Example of a power module compatible with analog connections

- Holybro PM08

*8.* DEBUG Port (JST GH 6P Connector)

• Available for FMU Chip debugging.




| | |
|---|---|
| ① | 5VDC |
| ② | DEBUG_TX |
| ③ | DEBUG_RX |
| ④ | SWDIO |
| ⑤ | SWCLK |
| ⑥ | GND |

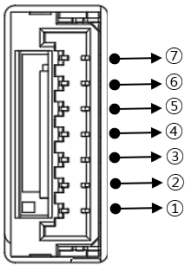
[DEBUG Pinout]

*9.* USB Port (USB C Type)

• Able to upload firmware by connecting to a PC through the USB port.

*10.* SPI Port (JST GH 7P Connector)

• Able to connect and use SPI devices.




| | |
|---|---|
| ① | 5VDC |
| ② | SPI5_SCK |
| ③ | SPI5_MISO |
| ④ | SPI5_MOSI |
| ⑤ | SPI5_CS1 |
| ⑥ | SPI5_CS2 |
| ⑦ | GND |

[SPI Pinout]

*11.* SD CARD

• SD card for log storage.