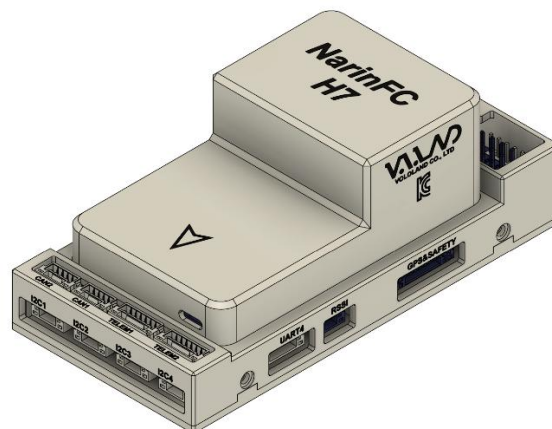


NarinFC H7

Manual

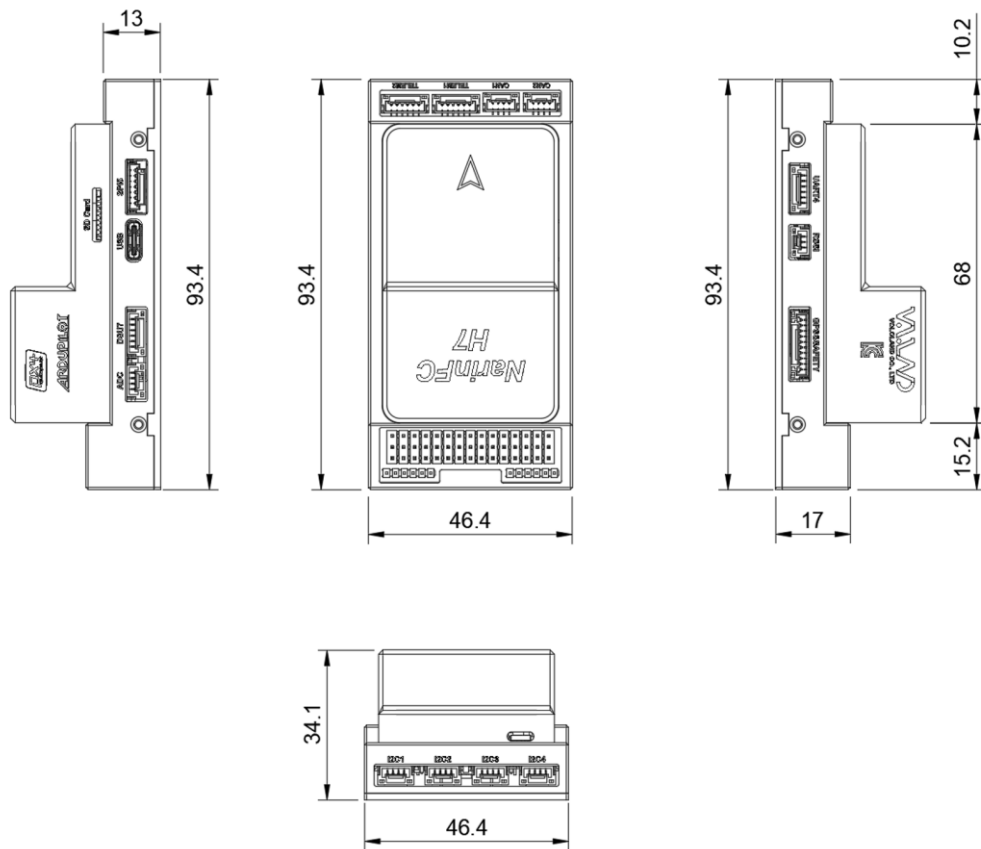


1. Basic Parameters

Main FMU Processor	• STM32H743
On-board sensors	• Accelerometer/Gyroscope: ADIS16470 • Accelerometer/Gyroscope: ICM-20649 • Accelerometer/Gyroscope: BMI088 • Magnetometer: RM3100 • Barometer: MS5611*2
Interfaces	• 14 PWM Output • Support multiple RC inputs (SBUS / CPPM / DSM) • 2 GPS ports (GPS and UART4 ports) • 4 x I2C • 2 x CAN bus ports • 2 x Power ports • 2 x ADC ports • 1 x USB ports
Power System	• Power 4.3V ~ 5.4V • USB Input 4.75V ~ 5.25V
Weight	• 106g

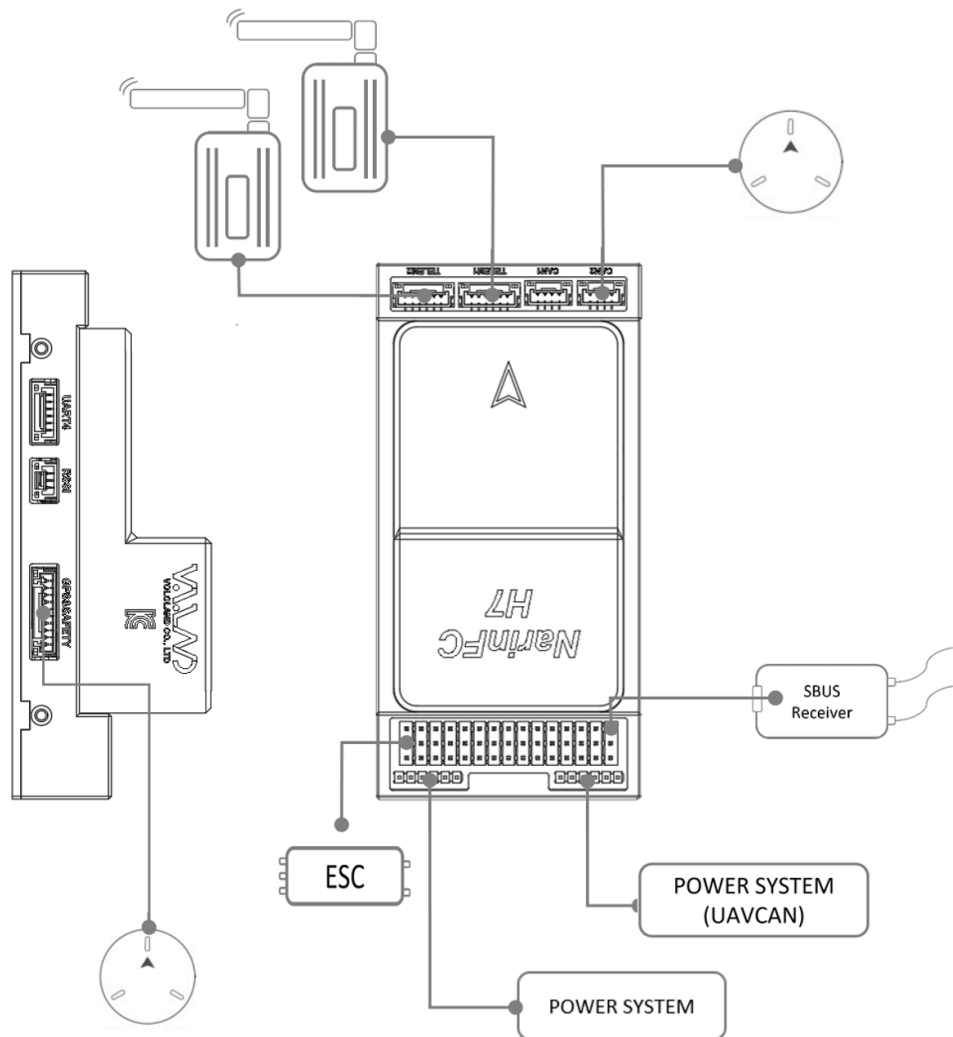
[표1. Parameter]

2. Outline Dimensions



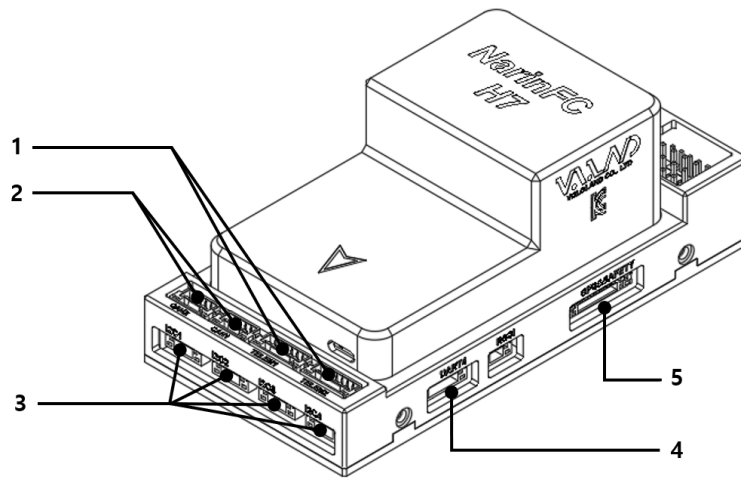
[그림 1. Outline Dimensions]

3. Wire Diagram



[그림 2. Wire Diagram]

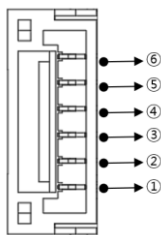
4. Port Diagram & Pin outs



[그림 3. Port Diagram-A]

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

- Telemetry 시스템을 연결할 수 있습니다.
- TELEM1 = SERIAL1(MAVLINK 2 Default), TELEM2 = SERIAL2(MAVLINK 2 Default)

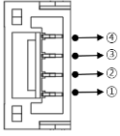


①	5VDC
②	TELEM_TX
③	TELEM_RX
④	TELEM_CTS
⑤	TELEM_RTS
⑥	GND

[표2. TELEM Pinout]

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

- CAN GPS와 같은 UAVCAN 디바이스를 연결할 수 있습니다.

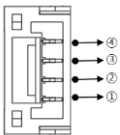
	①	5VDC
	②	CAN_H
	③	CAN_L
	④	GND

[표3. CAN Pinout]

- 연결 가능한 GPS 예시 _ Ardupilot
 - CubePilot HERE 3/3+, HERE4, HEREPRO
 - ARK RTK F9P
 - CUAV Neo2 pro, Neo3 pro, Neo 3X, C-RTK2
 - Holybro M8, M9, H-RTK F9P
- 연결 가능한 GPS 예시 _ PX4
 - ARK GPS, ARK RTK GPS
 - Cubepilot HERE3
 - CUAV Neo2 pro, Neo3 pro, C-RTK2

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

- 외부 Compass와 같은 I2C 디바이스를 연결할 수 있습니다.

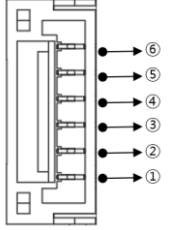
	①	5VDC
	②	SCL
	③	SDA
	④	GND

[표4. I2C Pinout]

- I2C 연결 가능한 Power module 예시
 - Holybro PM08D (6P cable) _ 해당 제품의 I2C SCL, SDA cable 별도 분리 후 연결 시 사용 가능

4. UART4 Port (JST GH 6P Connector)

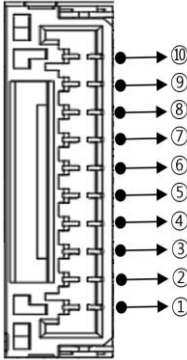
- 6P Connector로 아래 핀맵과 동일한 형태의 GPS를 연결할 수 있습니다.
- UART4 = GPS2 = SERIAL4

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

[표5. UART4 Pinout]

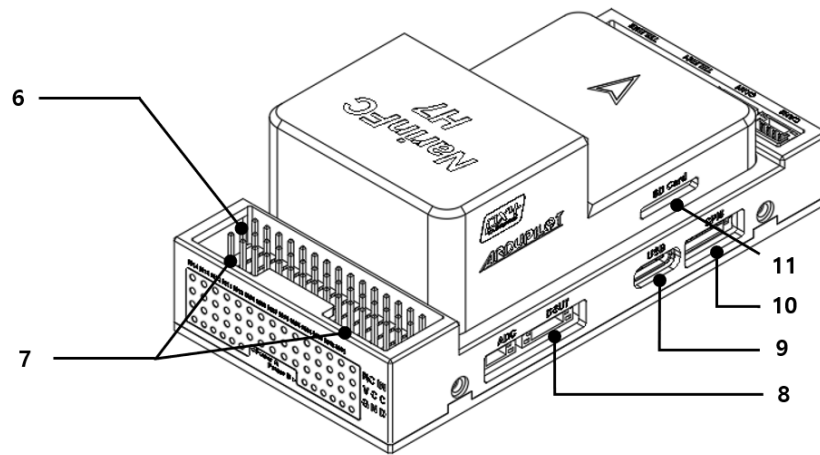
5. GPS & Safety Port (JST GH 10P Connector)

- UART를 사용하며 Safety 스위치가 포함된 GPS를 연결할 수 있습니다.
- 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

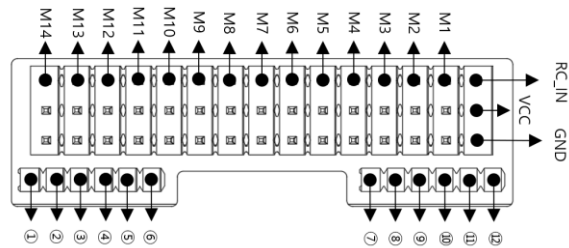
[표6. GPS & Safety Pinout]

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



[그림 4. Port Diagram-B]

6. PWM Out(M1-M14)

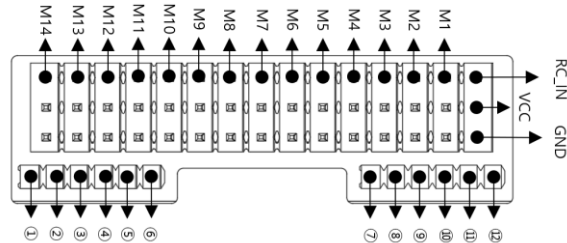


RC_IN	Remote control receiver
M1~M14	PWM OUT

- PWM 출력 및 RC IN Port로 조종기 리시버를 연결합니다.
- 별도로 컨트롤러에 전원을 공급하지 않습니다.
- 2.54mm pitch Dupont connector

7. Power Input

- 디바이스 전원 공급을 하는 Port로 2개의 입력으로 구성되어 있습니다.
- 2mm pitch Dupont connector



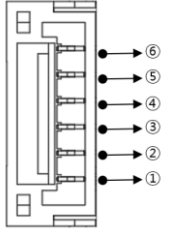
①	VDD 5V 1	⑦	VDD 5V 2
②	VDD 5V 1	⑧	VDD 5V 2
③	BAT1_IN	⑨	CAN1_H
④	BAT1_V_IN	⑩	CAN1_L
⑤	GND	⑪	GND
⑥	GND	⑫	GND

[표7. PWM & POWER Pinout]

- CAN 연결 가능한 Power module 예시 _ Ardupilot
 - CUAV DRONECAN power module
 - Matek CAN-L4-BM DRONECAN PMU
 - Pomegranate system power module
- CAN 연결 가능한 Power module 예시 _ PX4
 - Pomegranate system power module
 - CUAV CAN PMU power module
- Analog 연결 가능한 Power module 예시
 - Holybro PM08

8. DEBUG Port (JST GH 6P Connector)

- FMU Chip 디버깅용으로 사용할 수 있습니다.

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

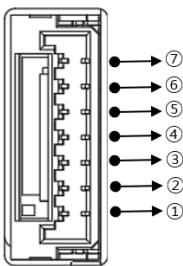
[표8. DEBUG Pinout]

9. USB Port (USB C Type)

- USB Port로 PC와 연결하여 펌웨어를 업로드할 수 있습니다.

10. SPI Port (JST GH 7P Connector)

- SPI 디바이스를 연결하여 사용 수 있습니다.

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

[표9. SPI Pinout]

11. SD CARD

- 로그 저장장치로 사용됩니다.