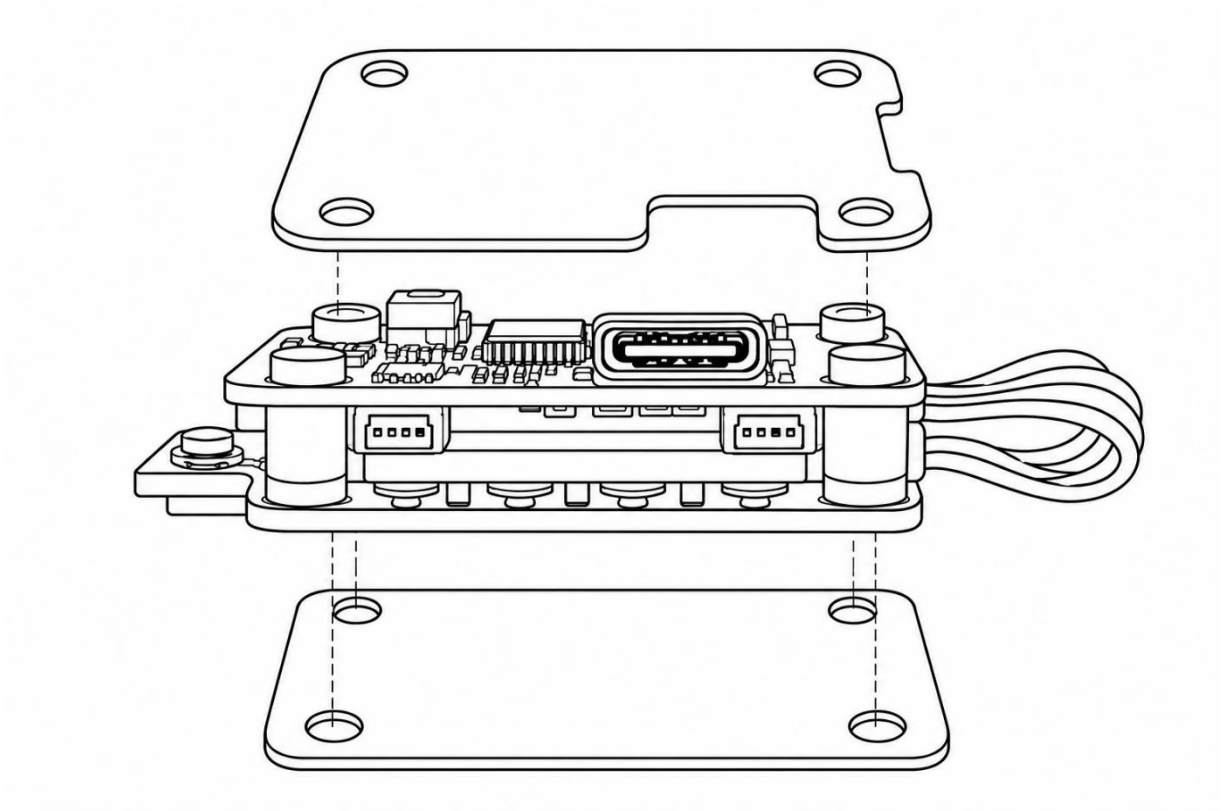
USER MANUAL

Simplify H7 - 55A 30x30 Stack



Simplify H7 - 55A 30x30 Stack Contents

Part 1 — Overview

- 1.1 Specification Overview
- 1.2 Dimensions
- 1.3 Important Tips for Installing the Flight Stack
- 1.4 Package
- 1.5 FC & ESC Connection

Part 2 — Simplify H7 Flight Controller

- 2.1 Layout
- 2.2 FC's Peripheral Connection

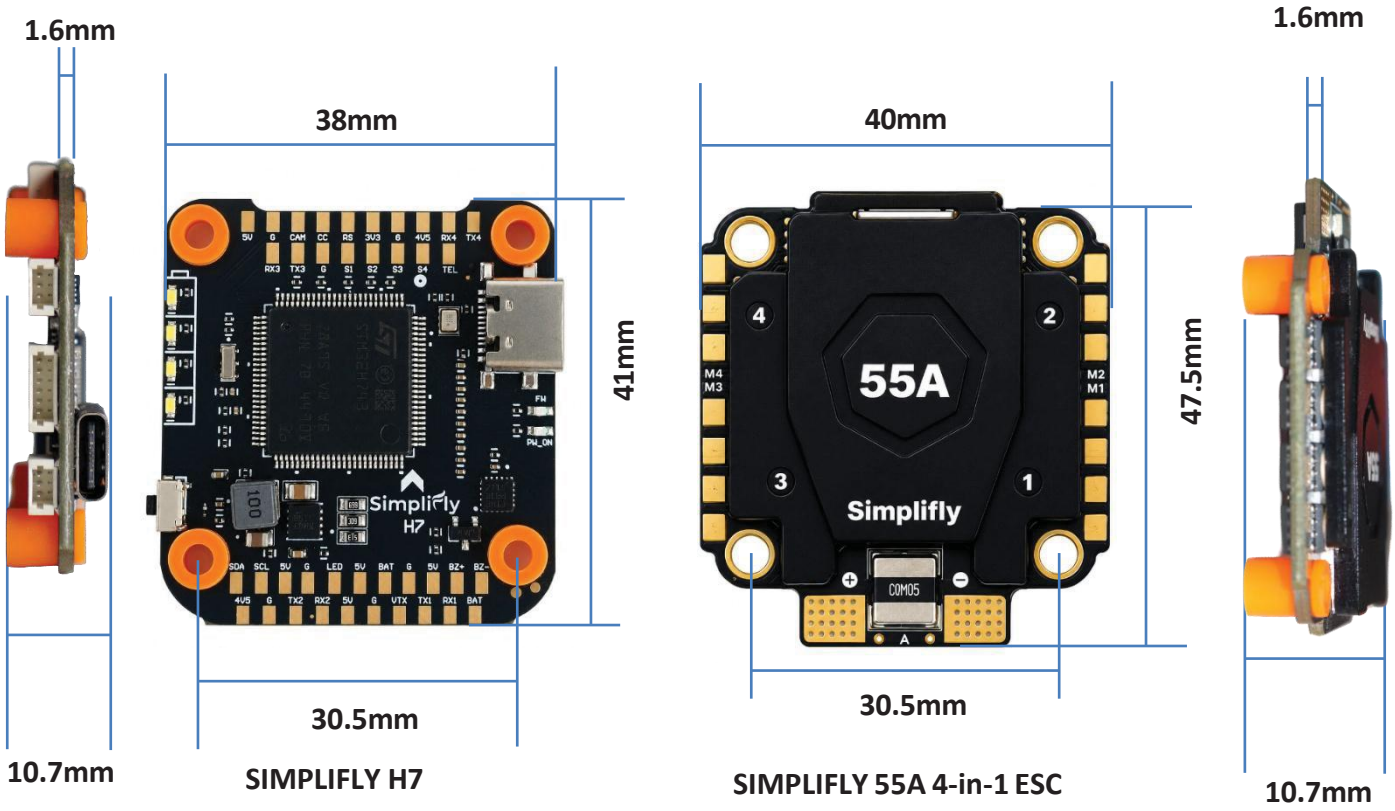
Part 3 — Specification

1. Overview

1.1 Specification Overview

Product Name	SIMPLIFLY H7-55A 30x30 Stack
Flight Controller	SIMPLIFLY H7
ESC	SIMPLIFLY 55A 4-in-1 ESC
Power Input	3-6S LiPo / Li-on
Mounting	30.5 x 30.5mm（4mm hole size）
Dimension	47.2mm(L) x 40.5mm(W) x 16mm(H)
Weight	29.9g

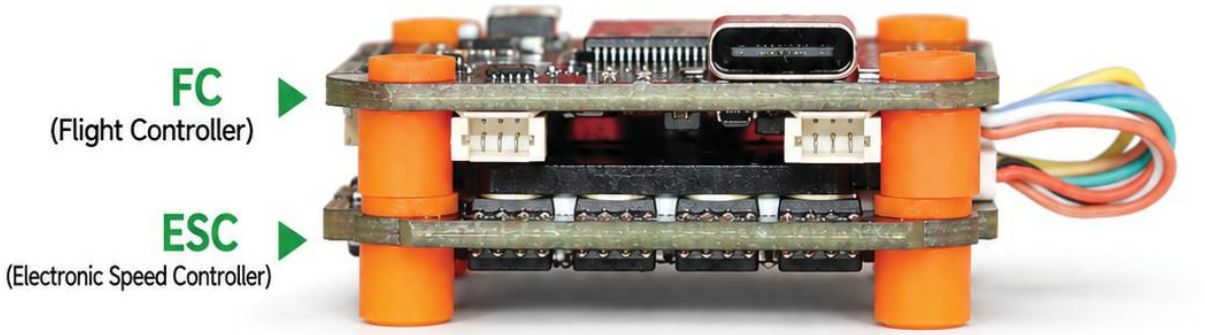
1.2 Dimensions



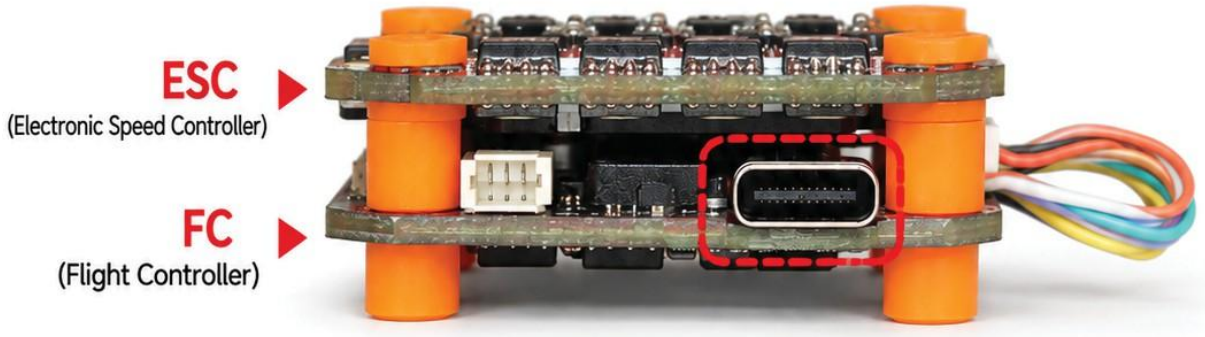
1.3 Important Tips for Installing the Flight Stack

Install the stack in the recommended configuration, with the Flight Controller (FC) positioned on top and the Electronic Speed Controller (ESC) underneath. Incorrect installation may cause damage to the components, which is not covered under warranty.

Standard Installation Manner



Incorrect Installation Manner



Please ensure that the Stack is installed in the standard manner, with the Flight Controller (FC) on top and the Electronic Speed Controller (ESC) on the bottom.

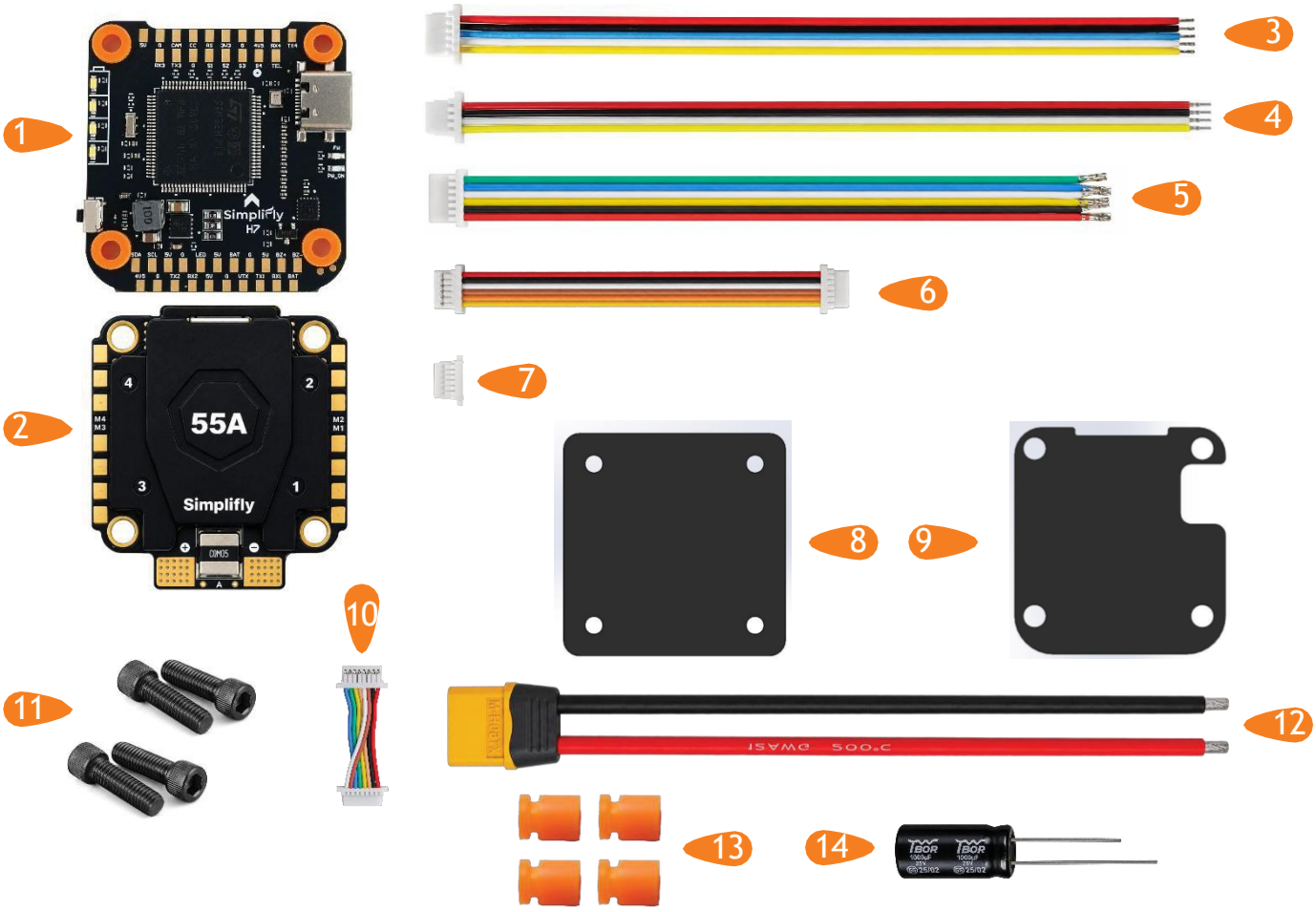
Any damage resulting from improper installation is not covered under our warranty.

FLIGHT CONTROLLER ASSEMBLY



Assembly Note: Assemble the flight controller stack in the sequence **Drone Frame → Lower Flight Controller Plate → ESC → Flight Controller → Upper Flight Controller Plate.** Align all mounting holes and install the supplied vibration dampers, spacers, and screws. Ensure the FC/USB connector orientation is correct and all connectors remain accessible. Tighten screws evenly without over-compressing the vibration dampers.

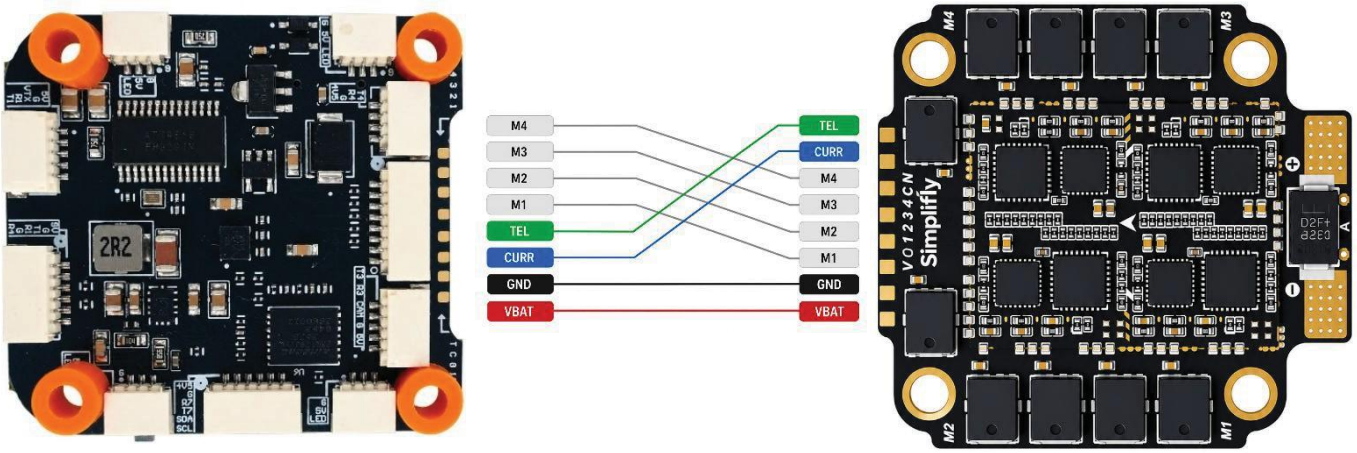
1.4 Package



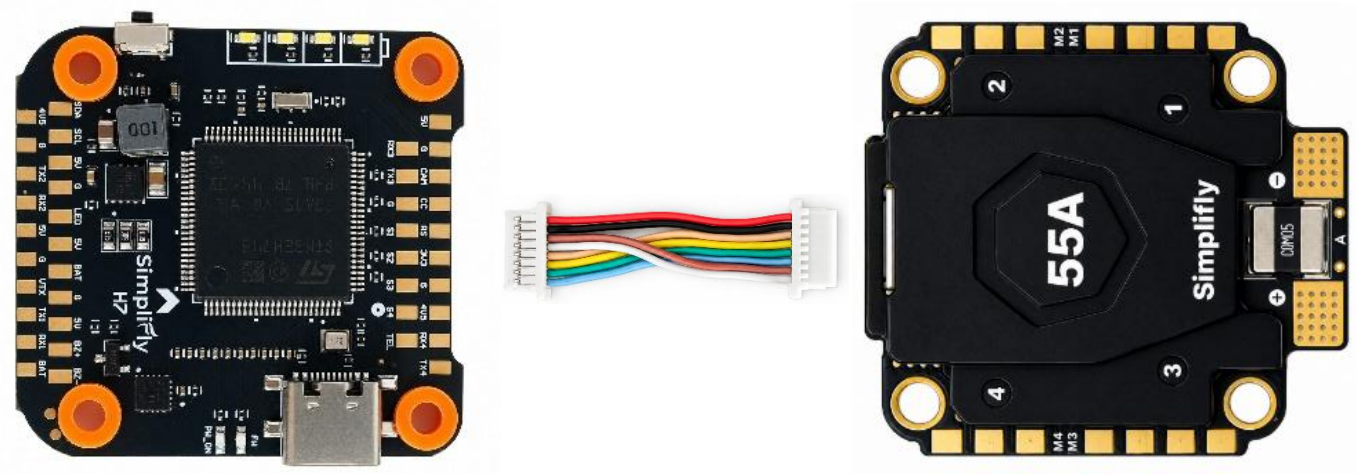
1. SIMPLIFLY H7 Flight Controller x 1
2. SIMPLIFLY 55A 4-in-1 ESC x 1
3. 5pin SH1.0 Analog VTX Cable x 1
4. 4pin SH1.0 Radio Receiver Cable(100mm) x 1
5. 6pin SH1.0 GPS Module Cable without Connector on another end(100mm) x 1
6. DJI 6pin Cable(80mm) x 1
7. 6pin SH1.0 GPS Module Cable Connector of another end x 1
8. ESC Controller Plate x 1
9. Flight Controller Plate x 1
10. 8pin Cable (for FC-ESC connection) x 1
11. M3*30mm Iner-hexagon Screws x 5
12. XT60 Power Cable(100mm) x 1
13. M3*8mm Silicone Grommets (for FC & ESC) x 4
14. 35V 1000uF Low ESR Capacitor x 1

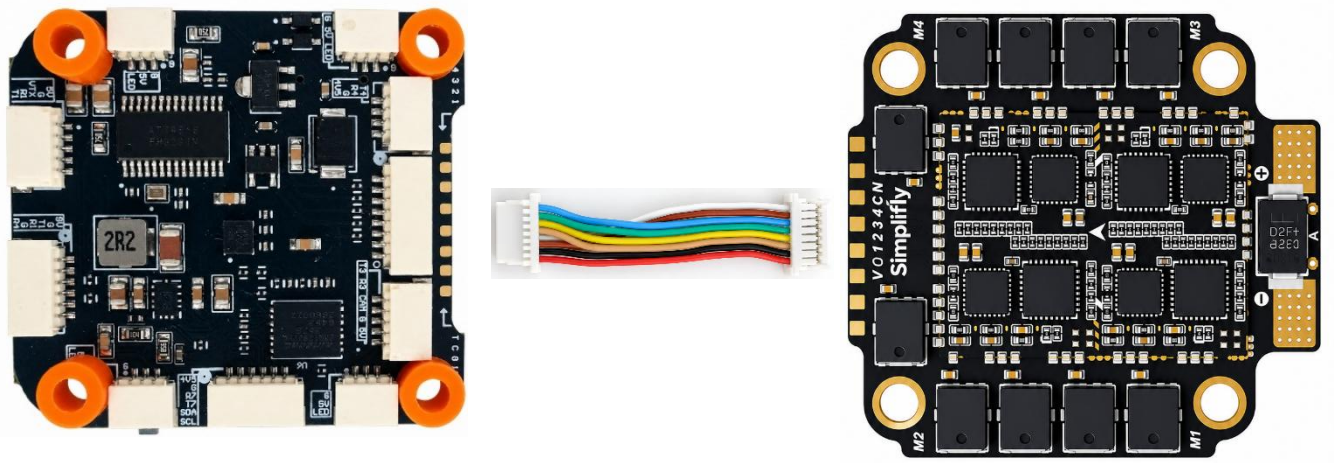
1.5 FC & ESC Connection

Method 1 - Direct Soldering



Method 2 – All Connectors

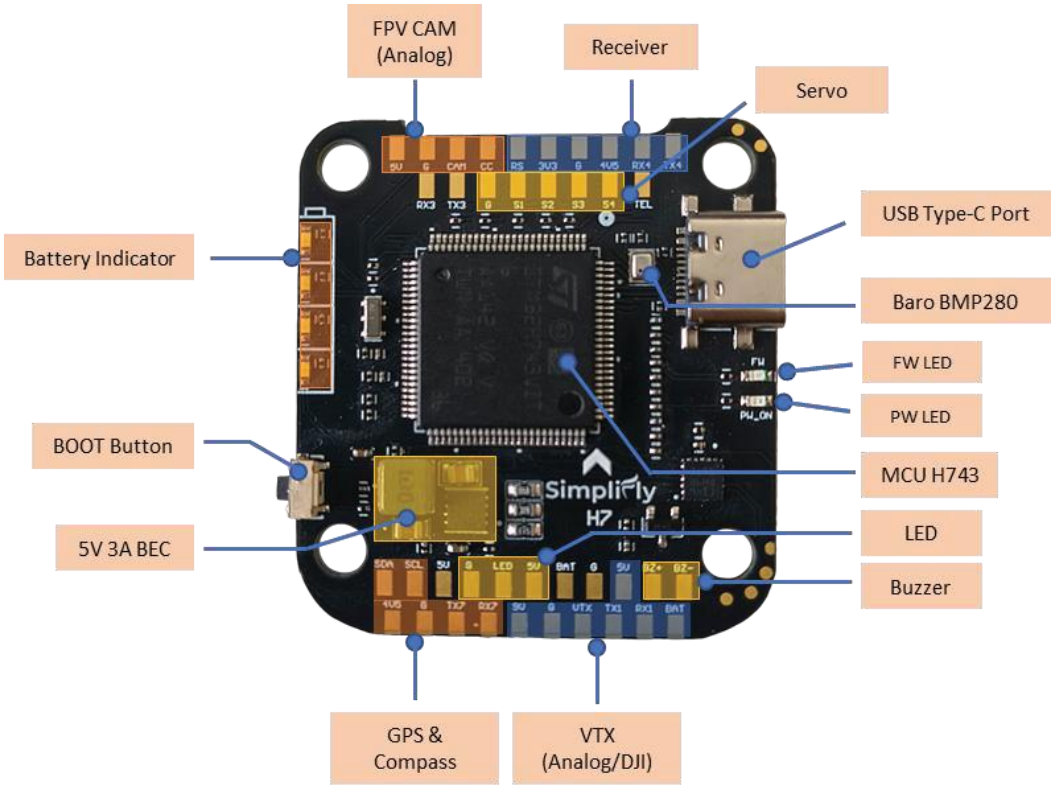


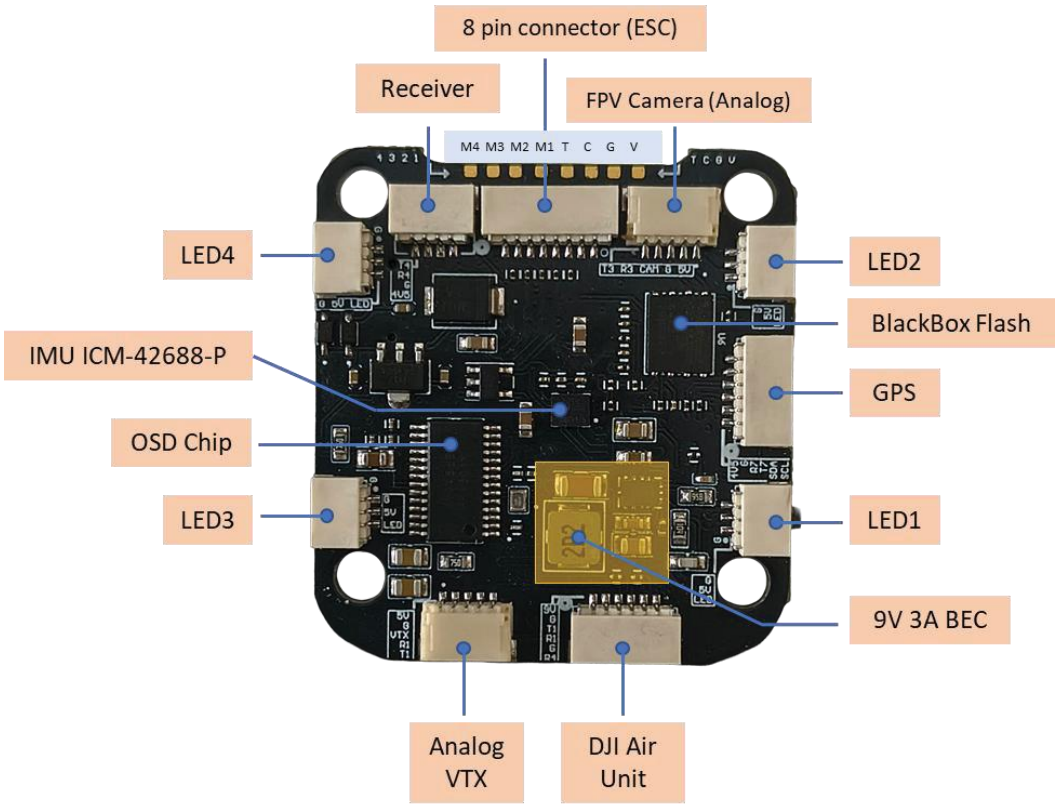


⚠ **Important:** Please verify the connector orientation and polarity carefully before connecting the battery. Damage caused by incorrect connection or reversed polarity is **not covered under warranty**.

2. Simplifly H7 Flight Controller

2.1 Layout





LED Indicator Definition

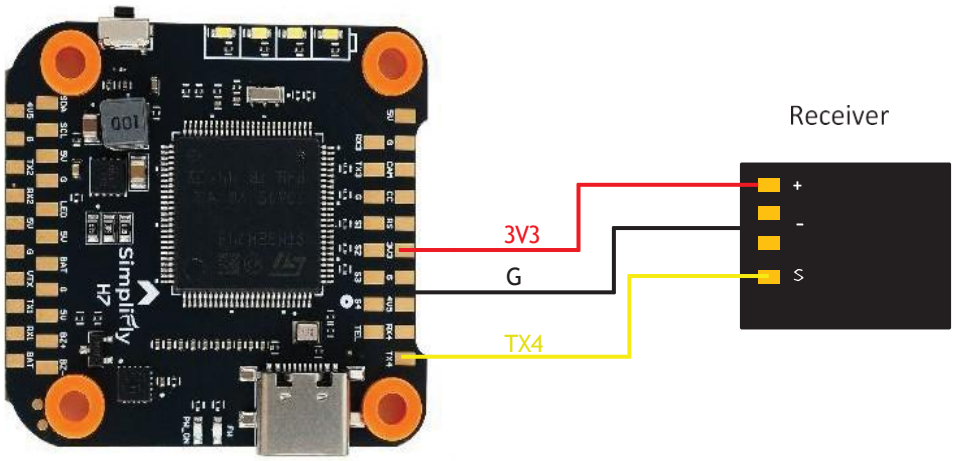
RED LED (PW LED) : Power Indicator. Solid Red after powering up.

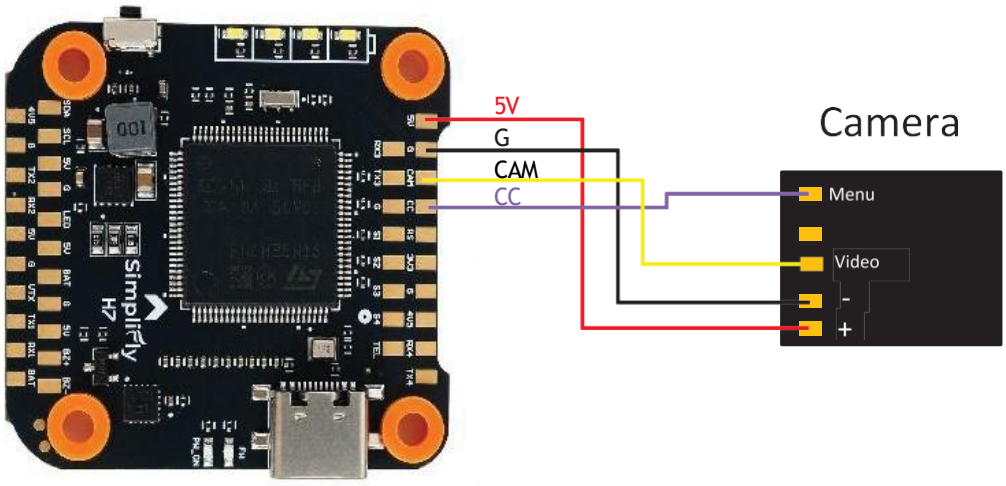
BLUE LED (FW LED) : Flight controller status light which is controlled by the light controller Firmware.

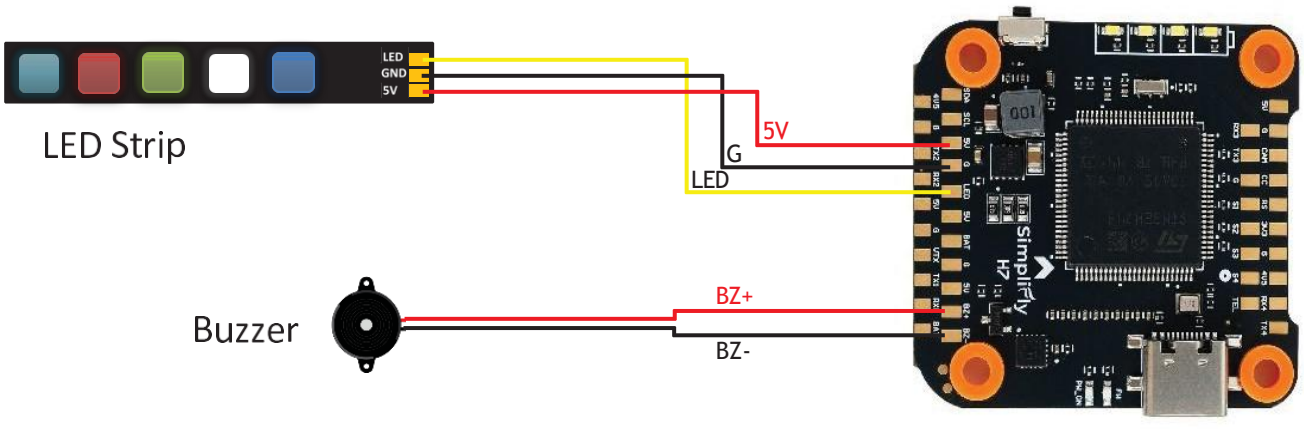
➢ 2.2 FC's Peripheral Connection

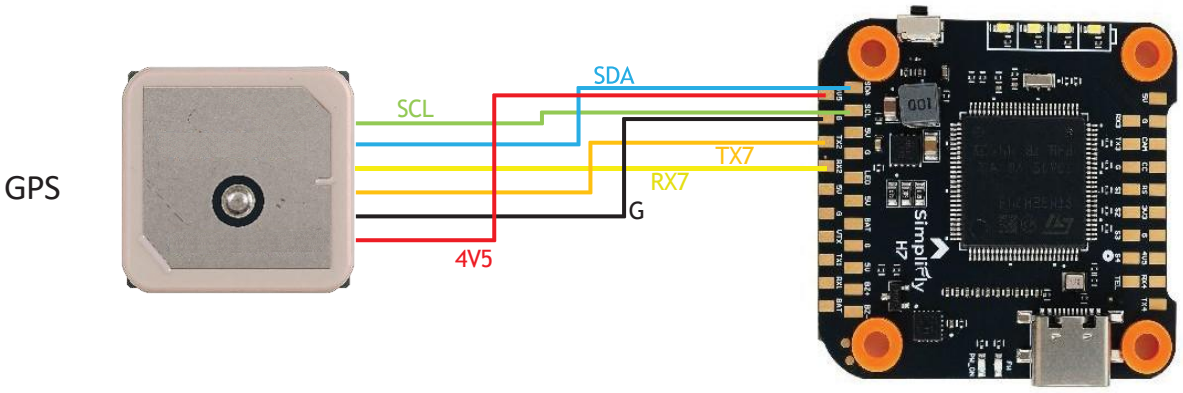
2.2.1 Wiring Guide

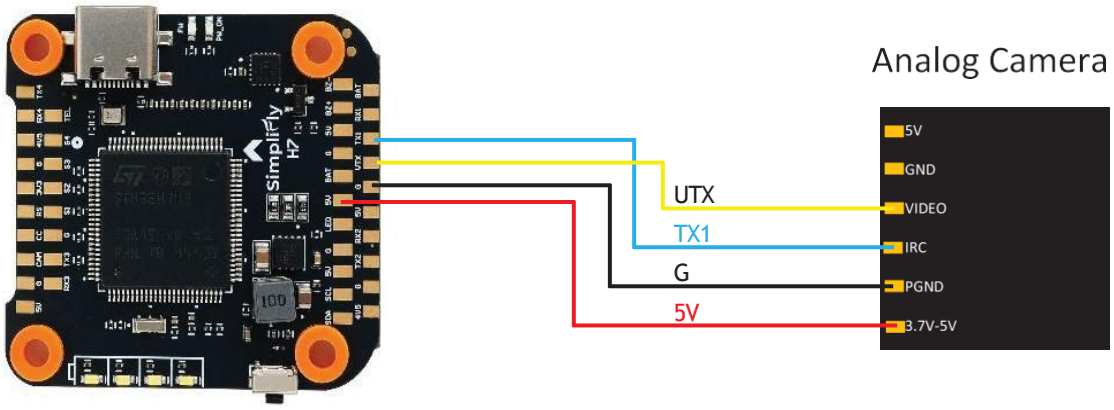
Method 1 - All Wires

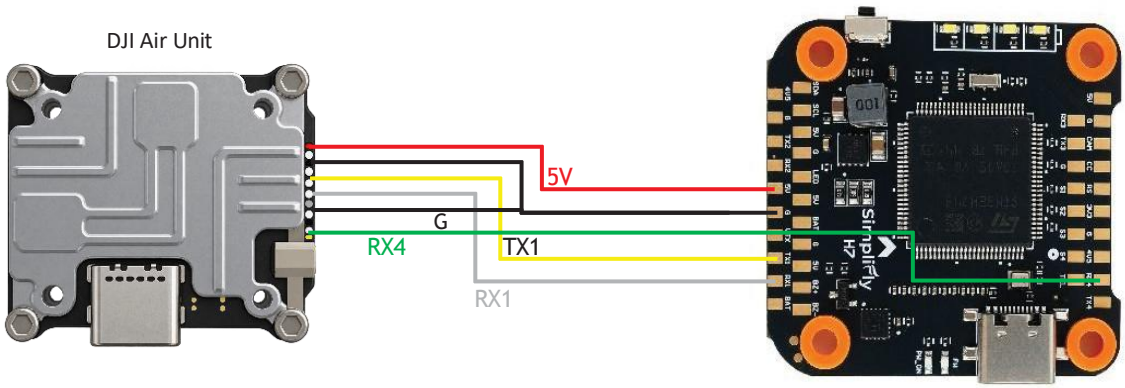




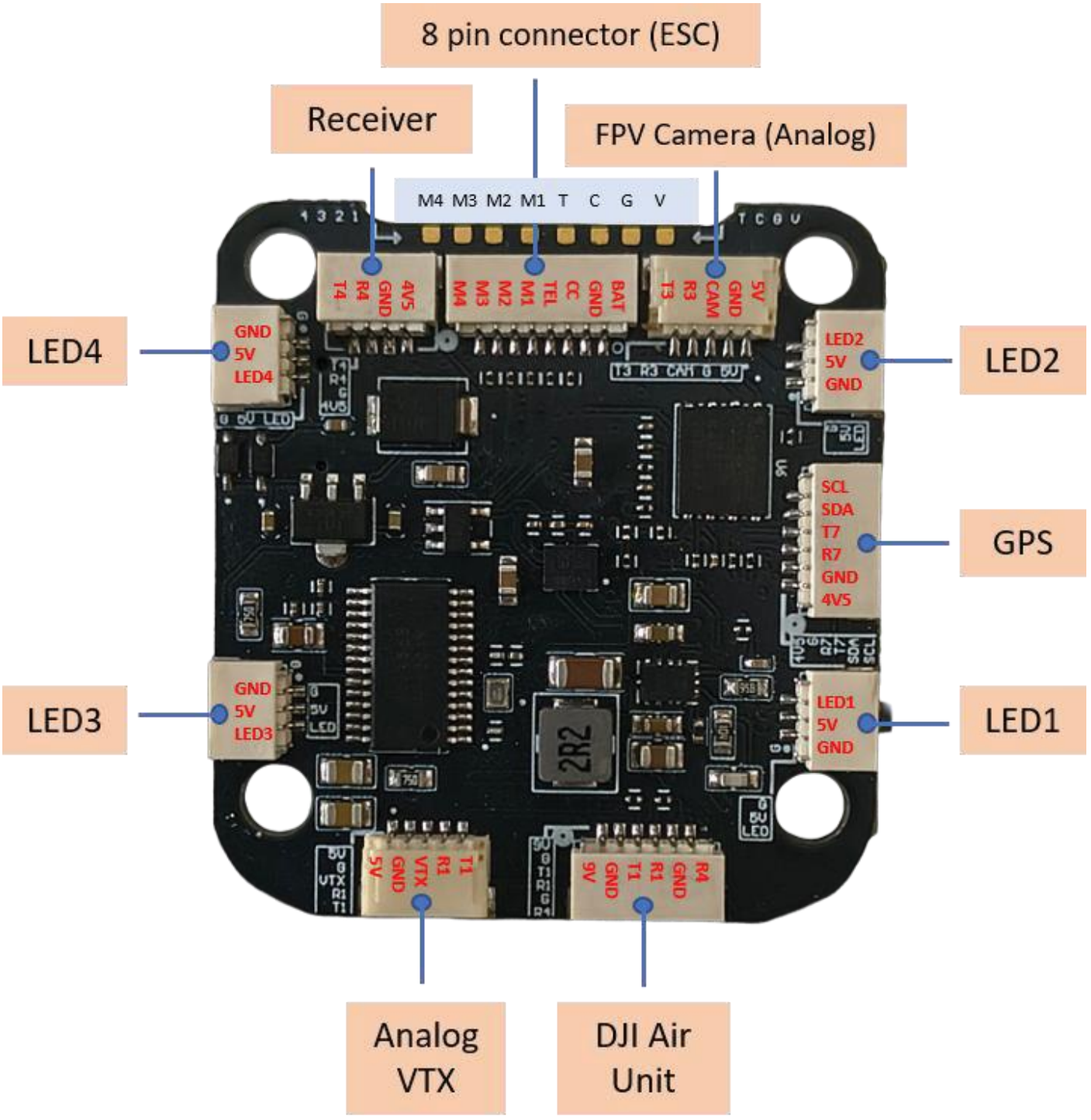



GPS
SCL
SDA
TX7
RX7
G
4V5


Analog Camera
UTX
TX1
G
5V
5V
GND
VIDEO
IRC
PGND
3.7V-5V


DJI Air Unit
5V
G
RX4
TX1
RX1

Method 2 - All connectors



2.2.2 Important notice for SBUS receiver

SBUS Receiver Connection and DJI Air Unit
The Simplifly H743 flight controller does not provide a dedicated SBUS pad. The receiver interface is available through the Receiver connector, which is connected to UART4 (RX4/TX4).
For an SBUS receiver, connect the following:

- **Receiver VCC → 4.5V**
- **Receiver GND → GND**
- **Receiver SBUS Signal → R4 (UART4 RX)**

If a DJI Air Unit is connected simultaneously, use the dedicated DJI Air Unit connector. The connector provides the following signals:
9V, GND, T1, R1, GND, and R4
Configure the DJI Air Unit and receiver in Betaflight according to the corresponding UART configuration.
Important: Do not connect the SBUS signal to any pad labelled SBUS, as the Simplifly H743 does not have a dedicated SBUS pad.
Note: Please refer to the Board Layout section of this manual for the exact location and orientation of the Receiver and DJI Air Unit connectors before making any connections.

2.2.3 Important notice for ELRS receiver

ELRS Receiver Connection

- **Connect the ELRS receiver to the TX4/RX4 pads (UART4) on the flight controller.**
- **ELRS TX → R4 (FC RX4)**
- **ELRS RX → T4 (FC TX4)**
- **ELRS VCC → 4.5V/5V**
- **ELRS GND → GND**

ELRS Receiver + DJI Air Unit
When using an ELRS receiver together with a DJI Air Unit, some ELRS receivers may not be detected properly by the flight controller.
If this issue occurs, disconnect the SBUS signal wire from the DJI Air Unit 6-pin harness. The DJI Air Unit's SBUS line is connected to RX4 (UART4 RX), which is also used by the ELRS receiver.

- **Carefully remove the SBUS wire from the 6-pin harness connector using tweezers, or cut the SBUS wire.**
- **Insulate the exposed end of the wire properly.**
- **Do not reconnect the SBUS wire when using the ELRS receiver on UART4.**

Note: The DJI Air Unit can remain connected for power and UART1 communication; only the SBUS signal wire needs to be disconnected when the ELRS receiver is not detected

3. Specifications

Product Name	SIMPLIFLY H7 Flight Controller
MCU	STM32H743
IMU(Gyro)	ICM-42688-P
USB Port Type	Type-C
Barometer	BMP280
OSD Chip	AT7456E chip
Download/Analyze Blackbox	Supported.
DJI Air Unit Connection Way	Two ways supported: 6-pin connector or direct soldering.
6-pin DJI Air Unit Plug	Supported.
Flash(for BlackBox)	16MB
BetaFlight Camera Control Pad	Yes (CC pad on the front side)
Power Input	3S - 6S Lipo / Li-On
5V Output	10 groups of 5V output, three +5V pads and 1 BZ+ pad (used for Buzzer) on front side, and six +5V output included in the connectors on bottom side. The total current load is 3A.
9V Output	2 groups of 9V output, one +9V pad on front side and other included in a connector on bottom side. The total current load is 3A.
3.3V Output	Supported. Designed for 3.3V-input receivers. Up to 500mA current load.
4.5V Output	Supported. Designed for receiver and GPS module even when the FC is powered through the USB port. Up to 500mA current load.
ESC Signal Pads	M1 - M4 on bottom side and M5-M8 on front side.
UART	5 sets (UART1, UART3, UART4, UART5(For ESC Telemetry), UART7)
ESC Telemetry UART	R5(UART5)
I2C	Supported. SDA & SCL pads on front side. Used for magnetometer etc.
LED Pad	Used for WS2812 LED controlled by Betaflight/INAV firmware.
Buzzer	BZ+ and BZ- pad used for 5V Buzzer
BOOT Button	Supported.
RSSI Input	Supported. Named as RS on the front side.
SmartPort	Use any TX pad of UART for the SmartPort feature.
Supported Flight Controller Firmware	BetaFlight (Default), INAV, Ardupilot
Firmware Target Name	SIMPLIFLYH7

Note : ArduPilot firmware files are provided with the product listing for easy access.