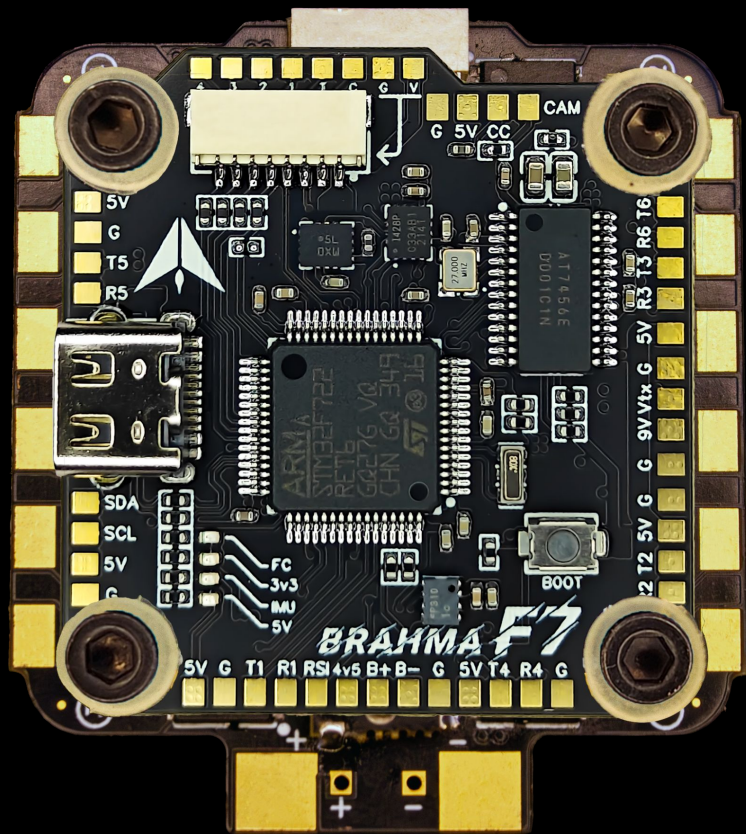




STACK 760

MADE IN INDIA

DATASHEET

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BRAHMA F7 – Specifications 1/3

Product Name	DARKMATTER BRAHMA F7
Product Category	Flight Controller
Processor (MCU)	F7 – STM32F722
Gyroscope (IMU)	ICM42688P
Barometer	DPS310
On-Screen Display	AT7456E
Blackbox	32MB Winbond Blackbox
USB Port Type	Type-C
Supported Flight Controller Firmware	BetaFlight (Default), INAV
Power Input	3-6S LiPo
Mounting	30.5 X 30.5mm (4mm hole size)
Dimensions	39mm(L) x 37mm(W) x 5mm(H)
Weight	9g

BRAHMA F7 – Specifications 2/3

5V Output	7 groups of 5V output, four +5V pads and 1 BZ+ pad (used for Buzzer) on front side, and 2x LED 5V pads. The total current load is 2A.
9V Output	1 9V output, one +9V pad on front side. The total current load is 2A.
4v5 Output	1 4.5V output, 500mA from USB to connect receiver or other peripherals
3.3V Output	Supported. Up to 500mA current load.
Traditional BetaFlight LED Pad	Supported. 5V, G and LED pads on the bottom side. Used for WS2812 LED controlled by BetaFlight firmware.
Buzzer	BZ+ and BZ- pad used for 5V Buzzer
ESC Signal	M1 - M4 on front side M5-M8 on bottom side
DJI Air Unit Connection Way	Plug & Play Port

BRAHMA F7 – Specifications 3/3

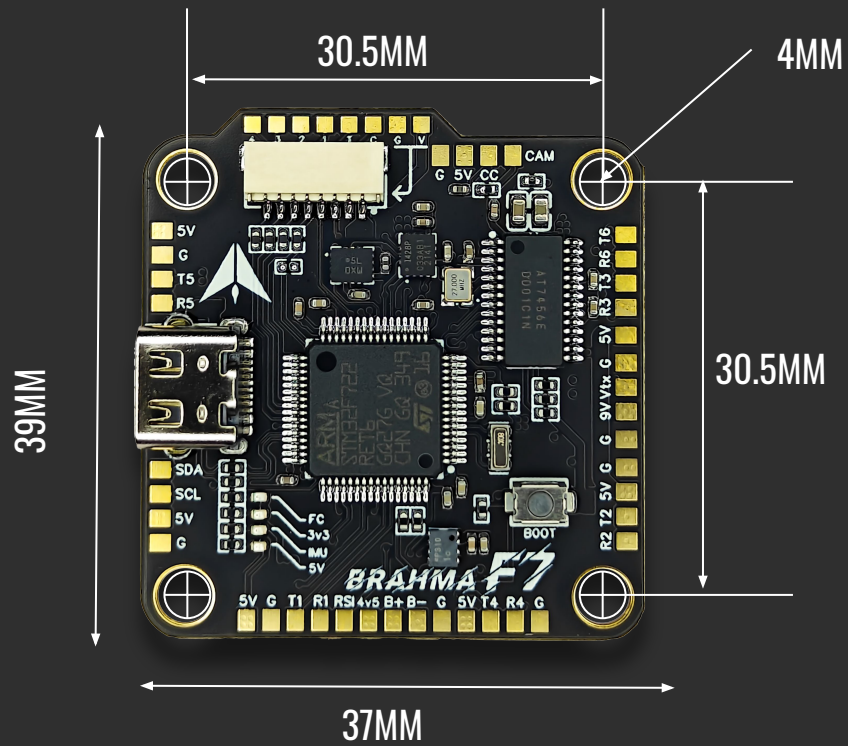
BOOT Button	Supported. Press and hold BOOT button and power the FC on at the same time will force the FC to enter DFU mode, this is for firmware flashing when the FC gets bricked.
RSSI Input	Supported. Named as RSI on the front side.
SmartPort	Use any TX pad of UART for the SmartPort feature.
UART	6 sets(UART1, UART2, UART3(For ESC Telemetry), UART4, UART5, UART6)
ESC Telemetry UART	R3(UART3)
I2C	Supported. SDA & SCL pads on front side. Used for magnetometer, sonar, etc.
OPERATING TEMPERATURE	-10°C TO 55°C
COUNTRY OF ORIGIN	INDIA

VISHNU 60 – Specifications

Product Name	DARKMATTER VISHNU 60
Product Category	ELECTRONIC SPEED CONTROLLER (ESC)
Firmware	BLHeli_S /BlueJay (JH_50)
Burst Current	90A (7 Seconds)
Continuous Current	60A x 4 = 240A
ESC Protocol	DSHOT300/600
Power Input	3-6S BAT IMPORTANT Please solder the low ESR capacitor between VBAT "+" and" -", and the VBAT "-" should be connected to the -ve side of the capacitor only.
Power Output	VBAT
Current Sensor	Inbuilt
Mounting	30.5 x 30.5mm, 4mm hole size
Dimensions	46 * 48.8 * 5.7mm
Weight	14g
Supported Motors	PLEASE CHECK MOTOR MAX CURRENT DRAW FROM MOTOR MANUFACTURER'S MANUAL, SHOULD BE BELOW 70-80A. PROVIDED YOU ARE NOT PLANNING TO FLY ON 100% THROTTLE FOR 100% OF THE TIME WITH THE LARGEST PROP SUPPORTED BY THE MOTOR, IF THAT'S THE CASE LOOK FOR 60A OR BELOW.
Operating Temperature	-20 to 70 Degree Celsius
COUNTRY OF ORIGIN	INDIA

BRAHMA F7 DIMENSIONS

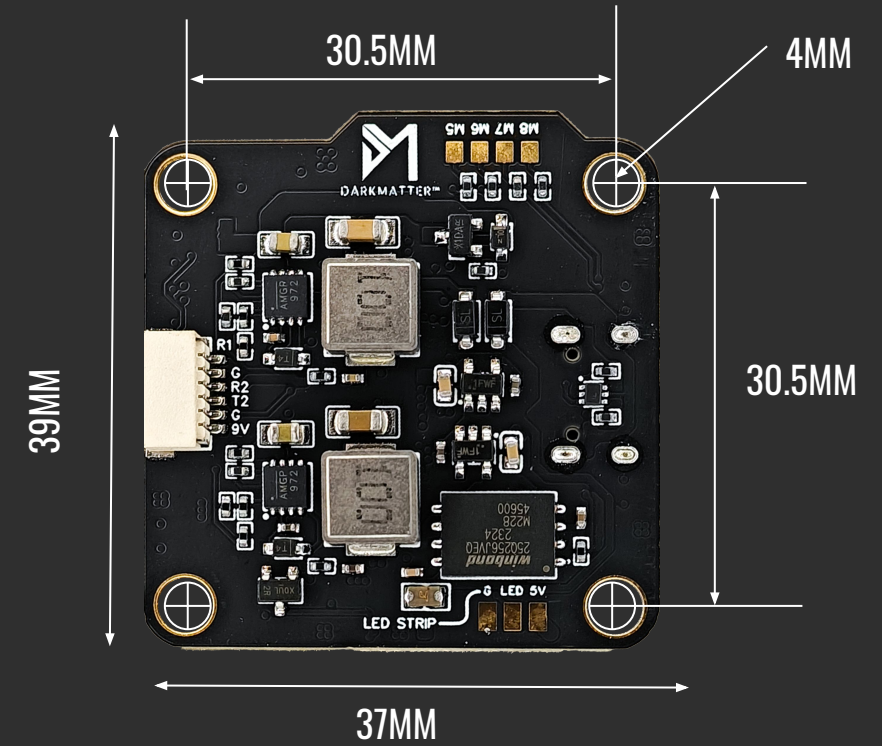
Front



Side

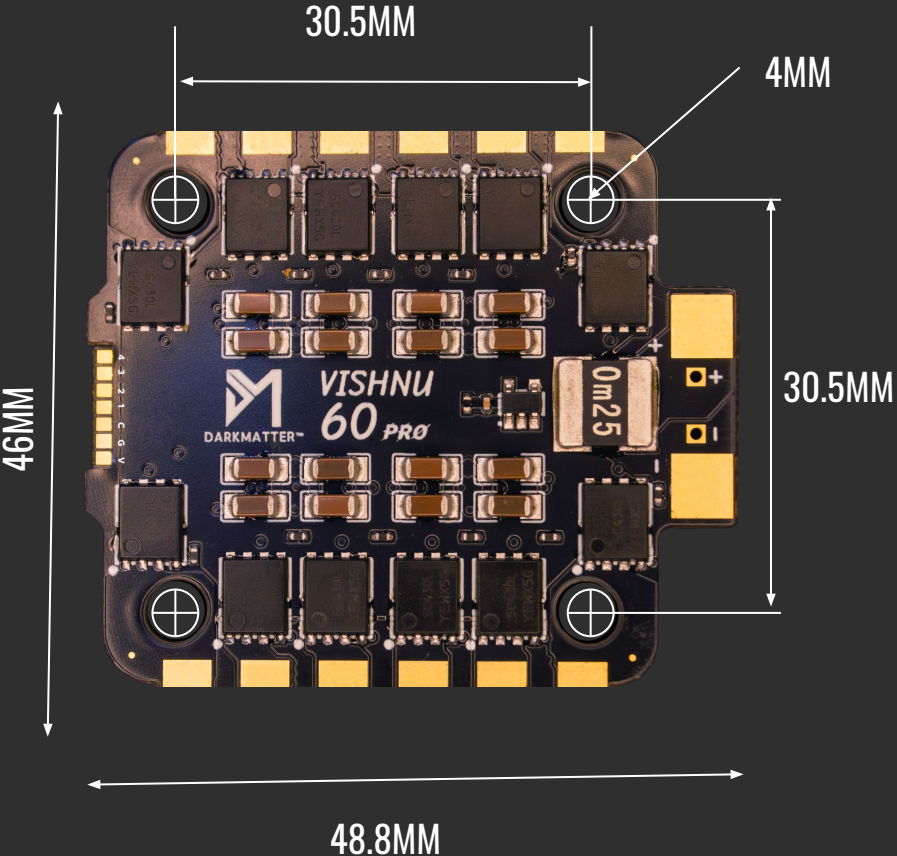


Back

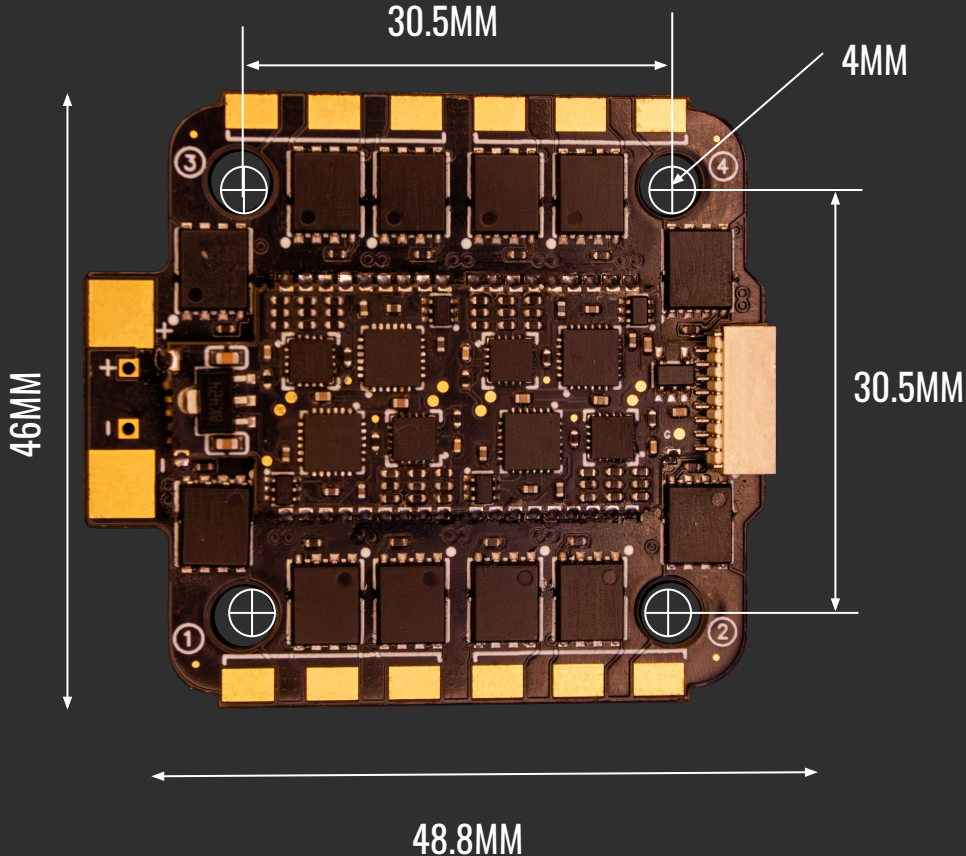


DIMENSIONS

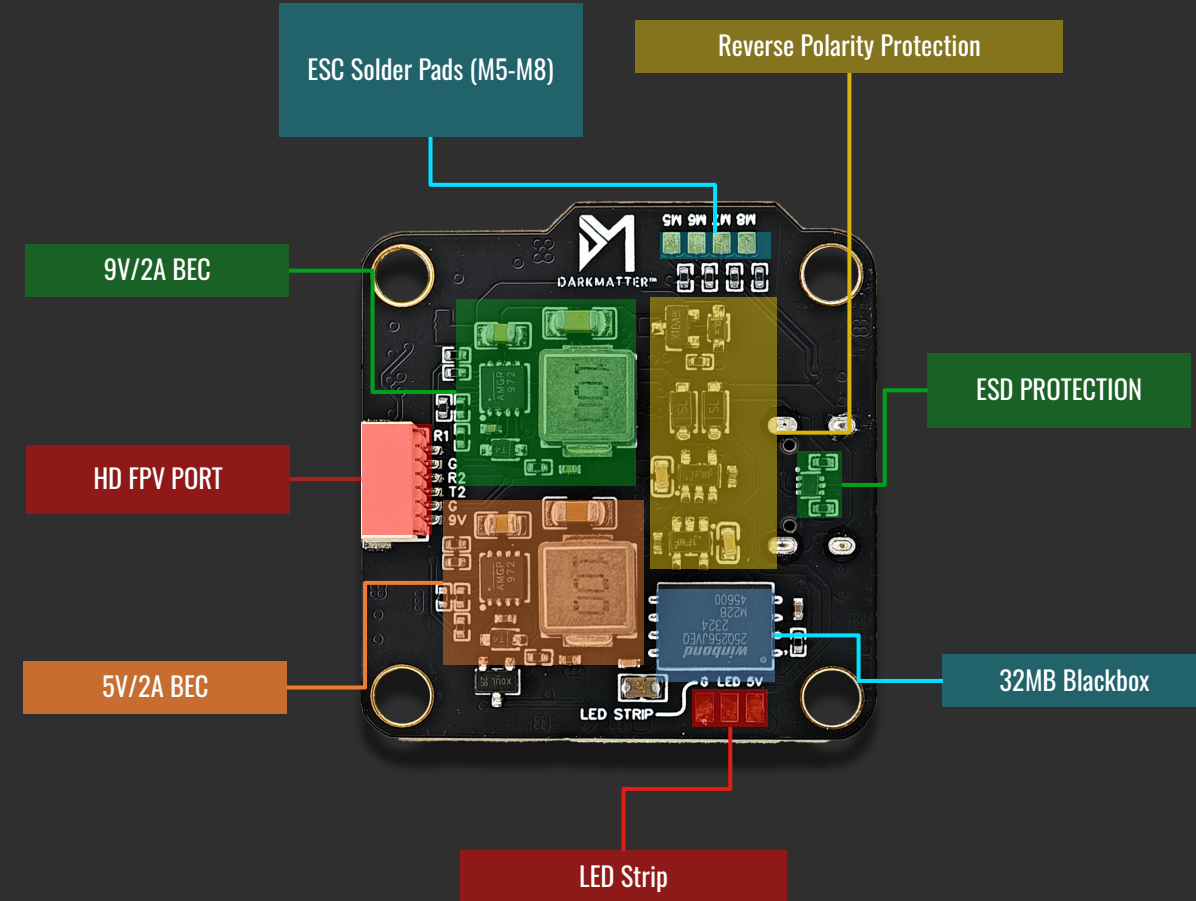
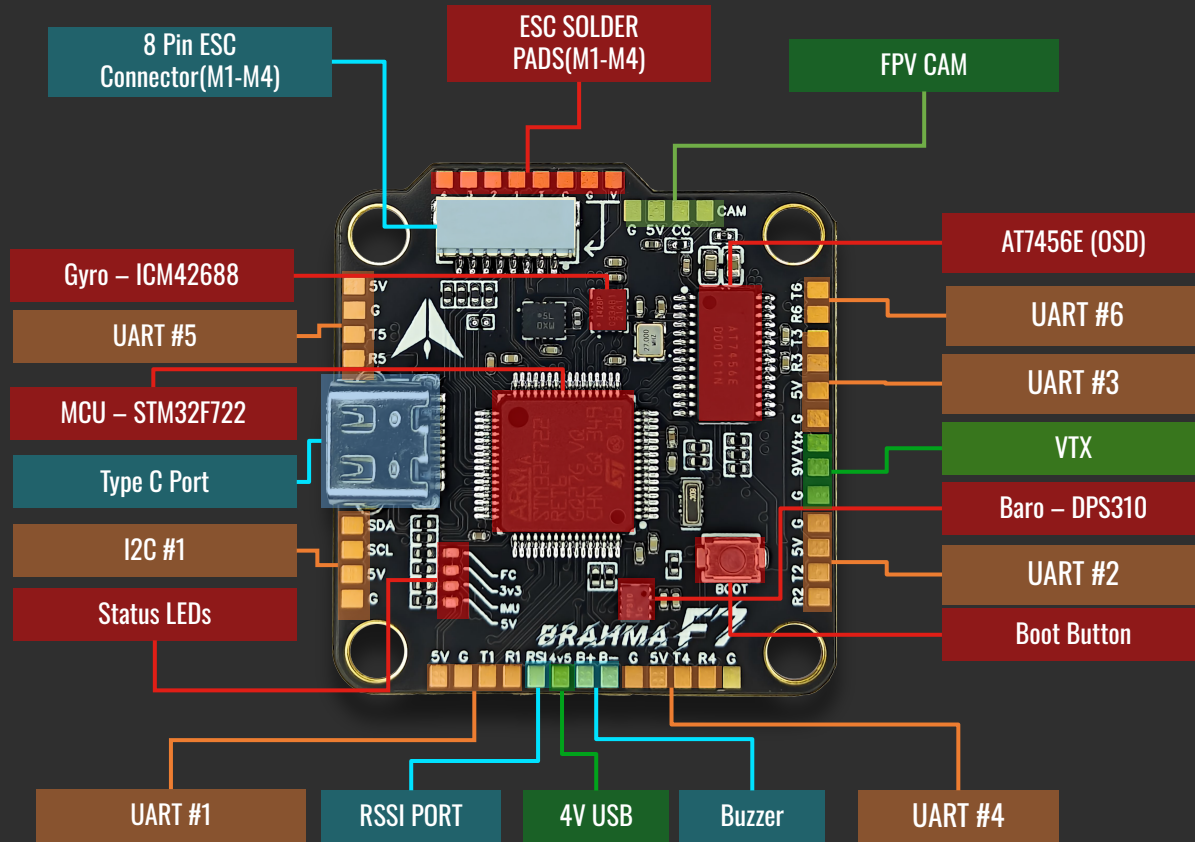
Front



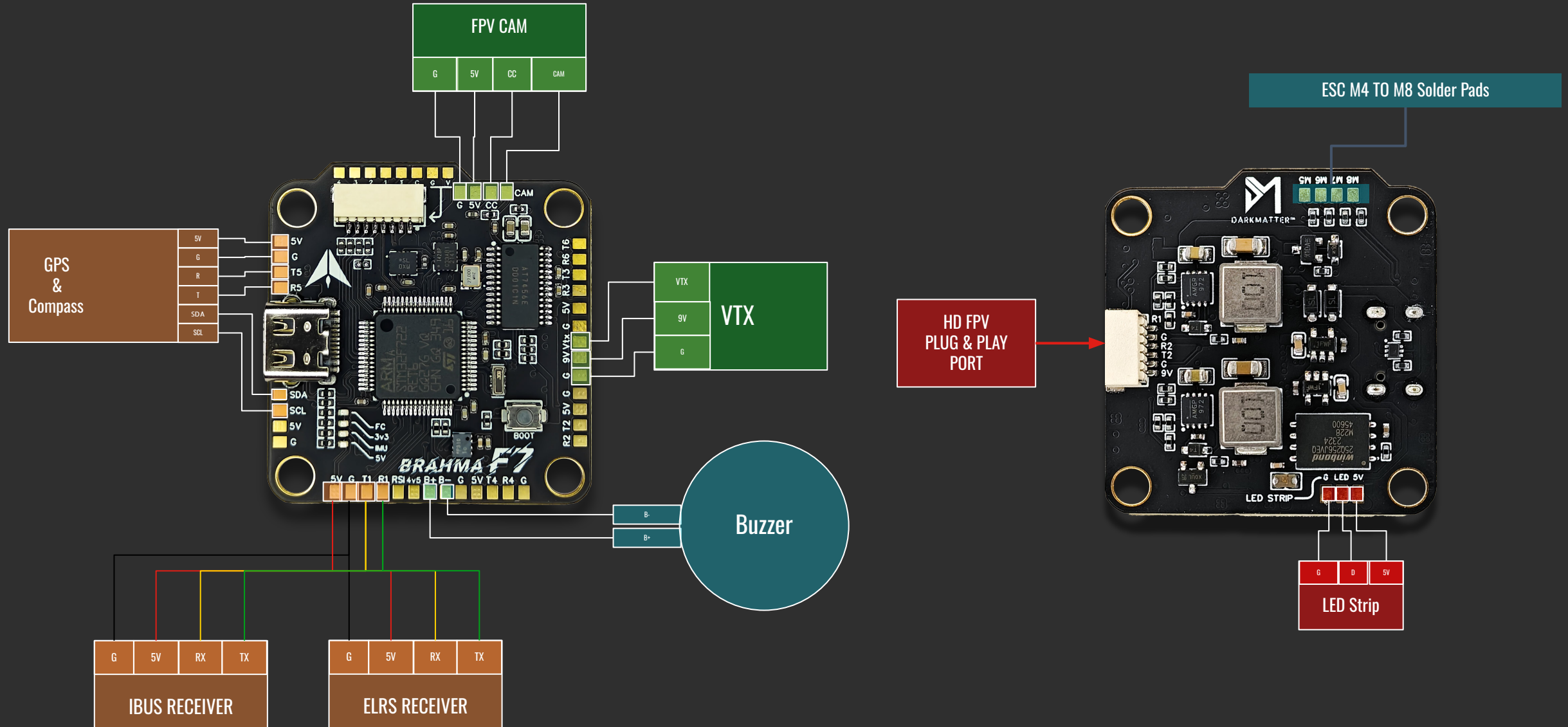
Back



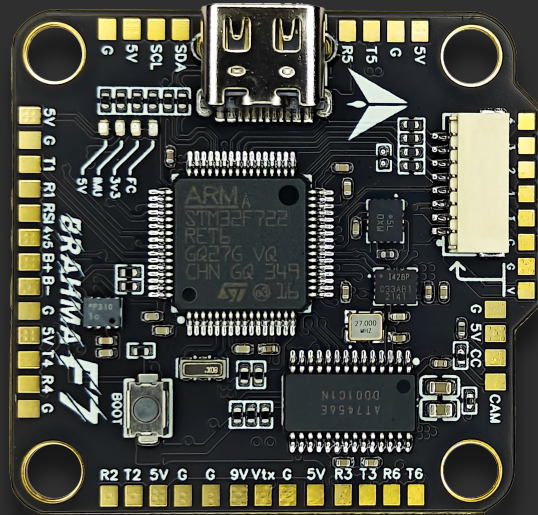
Flight Controller Layout



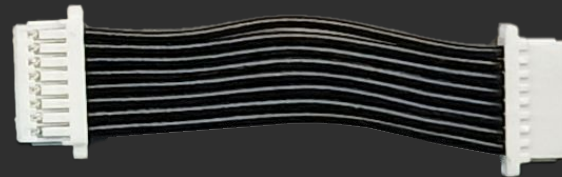
Flight Controller – Peripheral Connection



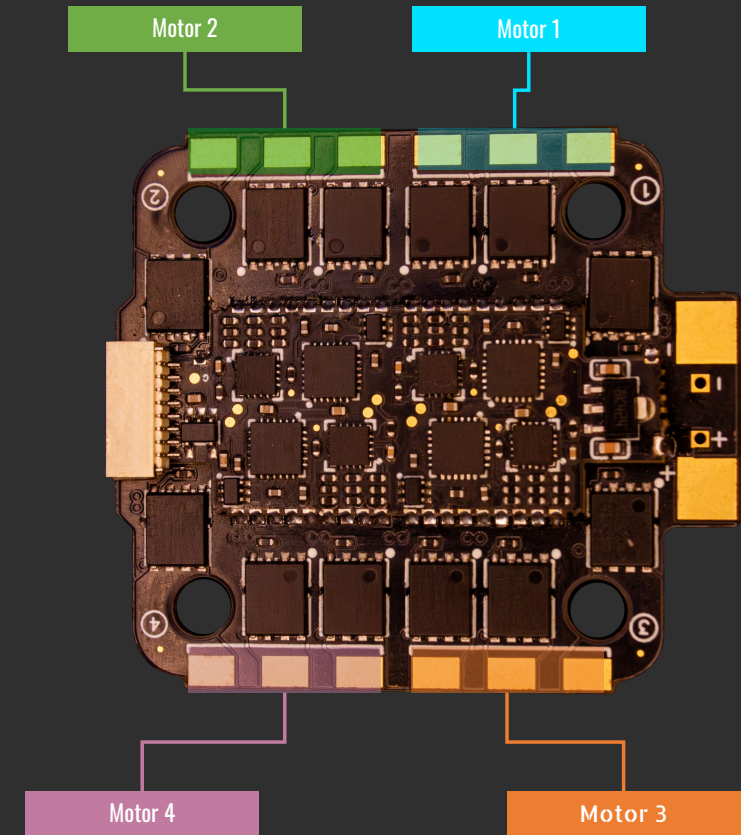
4 in 1 ESC Plug and Play Connection



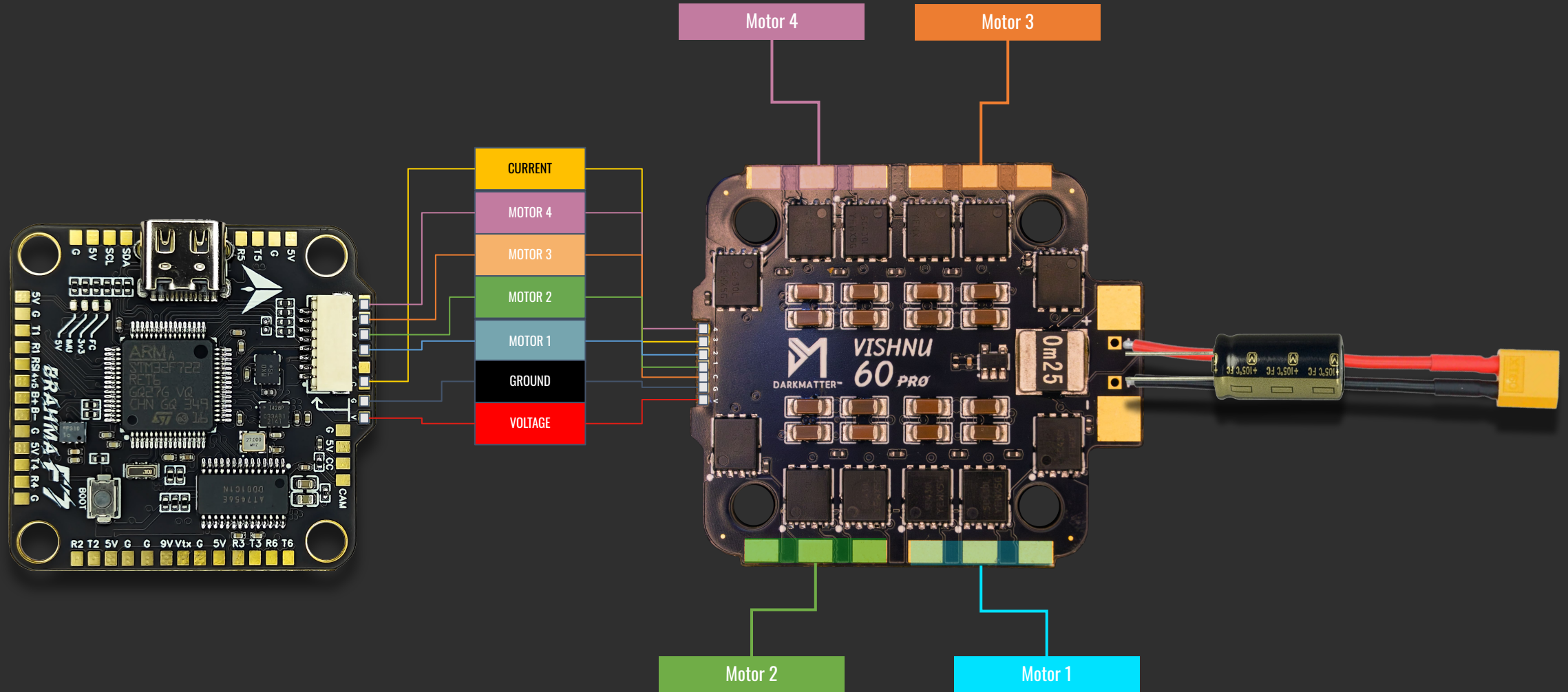
VOLTAGE
GROUND
CURRENT
TELEMETRY
MOTOR 1
MOTOR 2
MOTOR 3
MOTOR 4



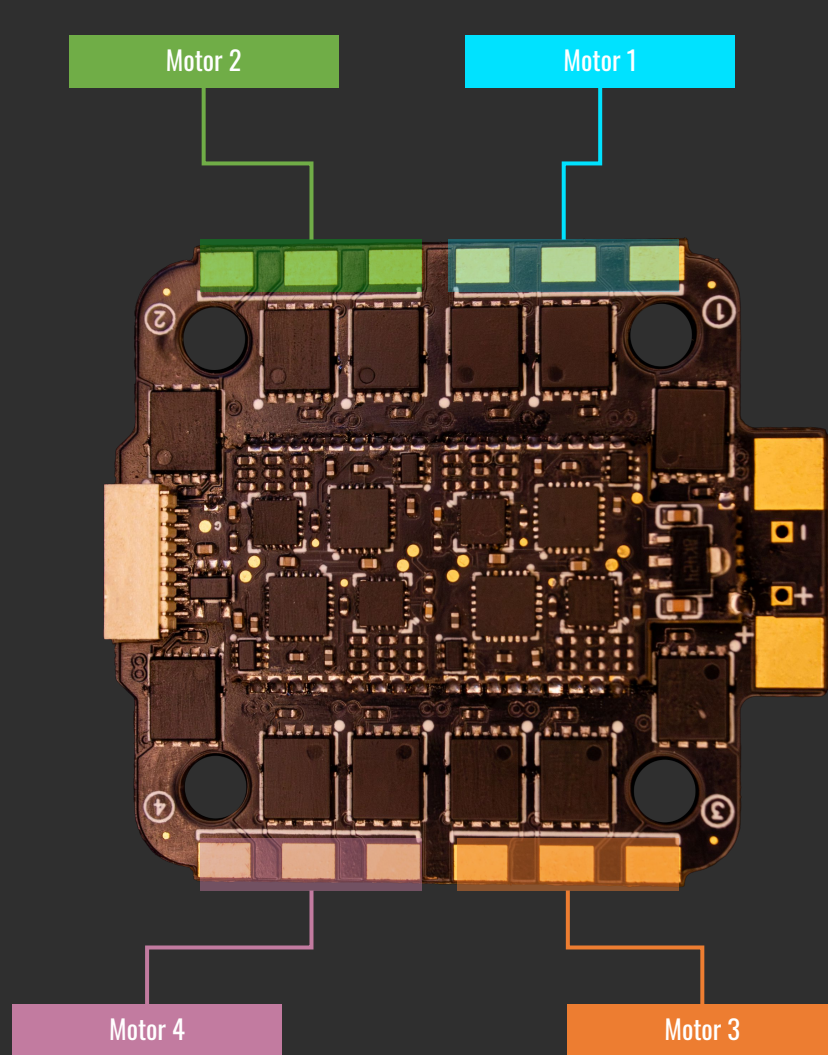
BETAFLIGHT
STANDARD CONNECTOR



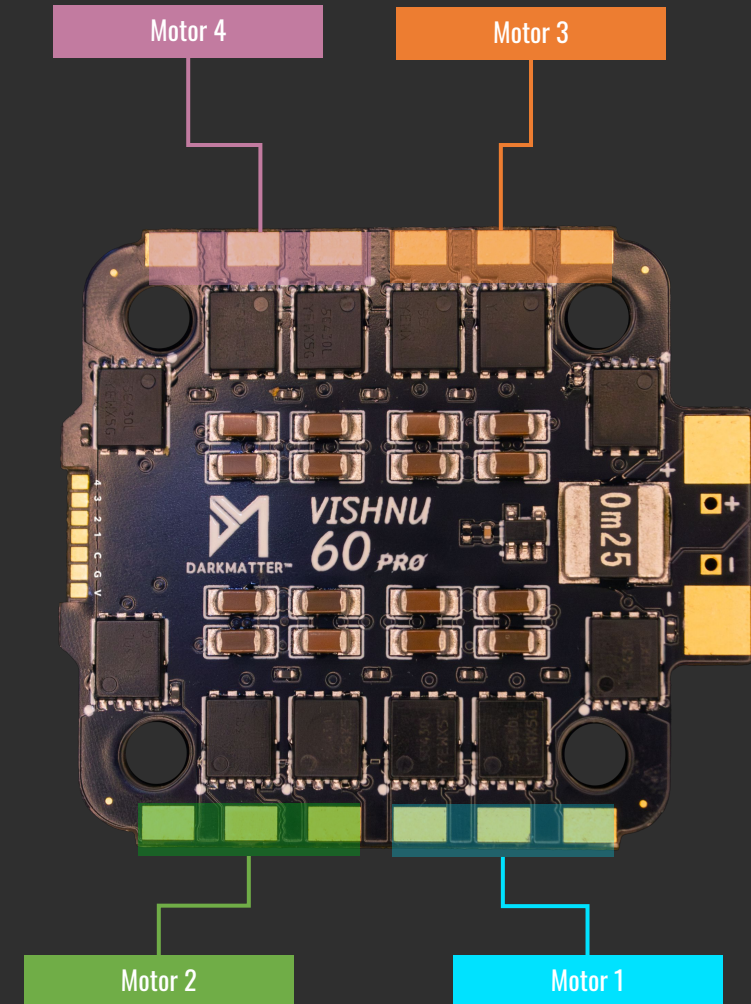
4 in 1 ESC Direct Soldering Connection



4 in 1 ESC Motor Connection Numbering

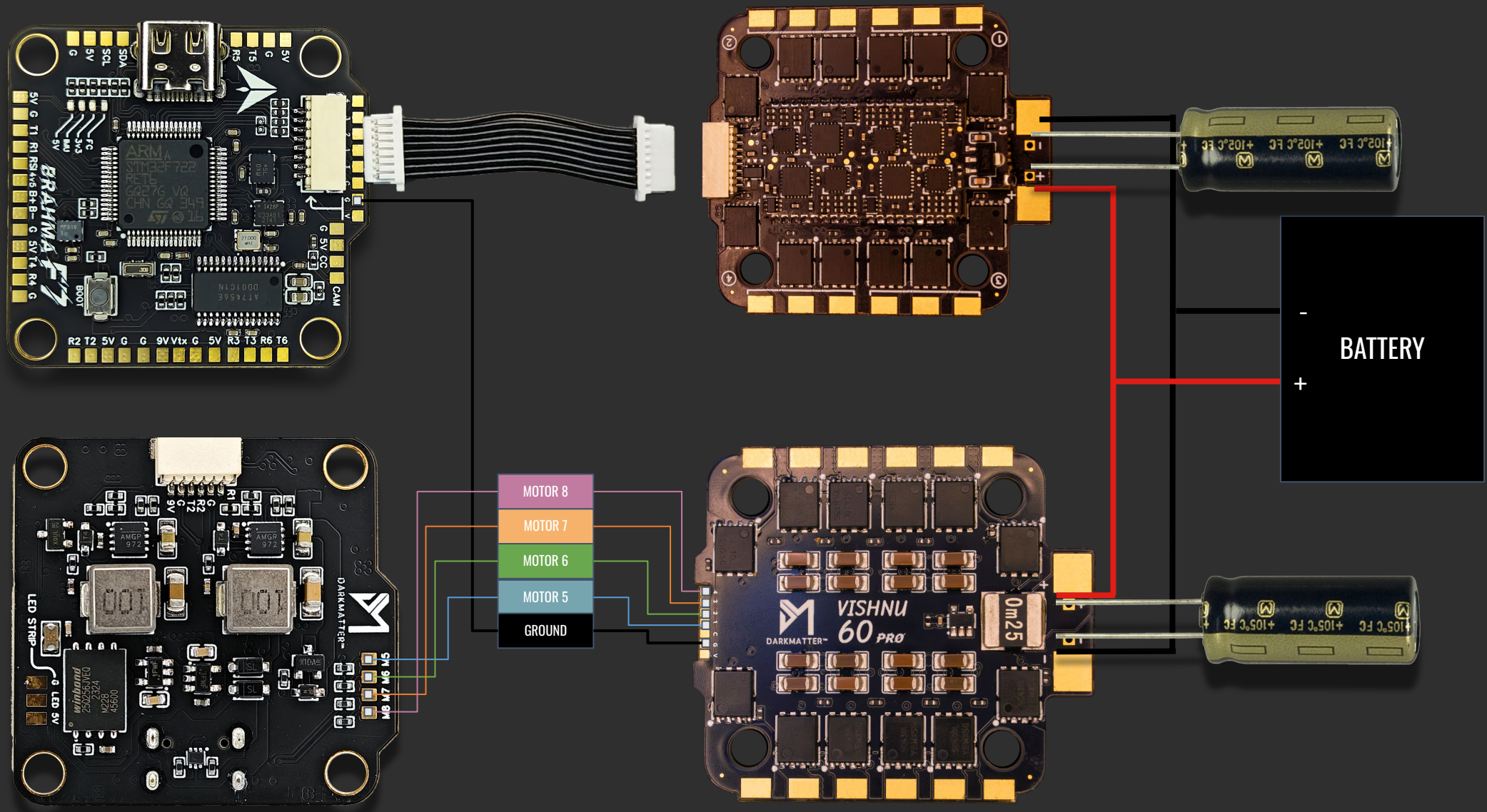


THIS SIDE FACING UP

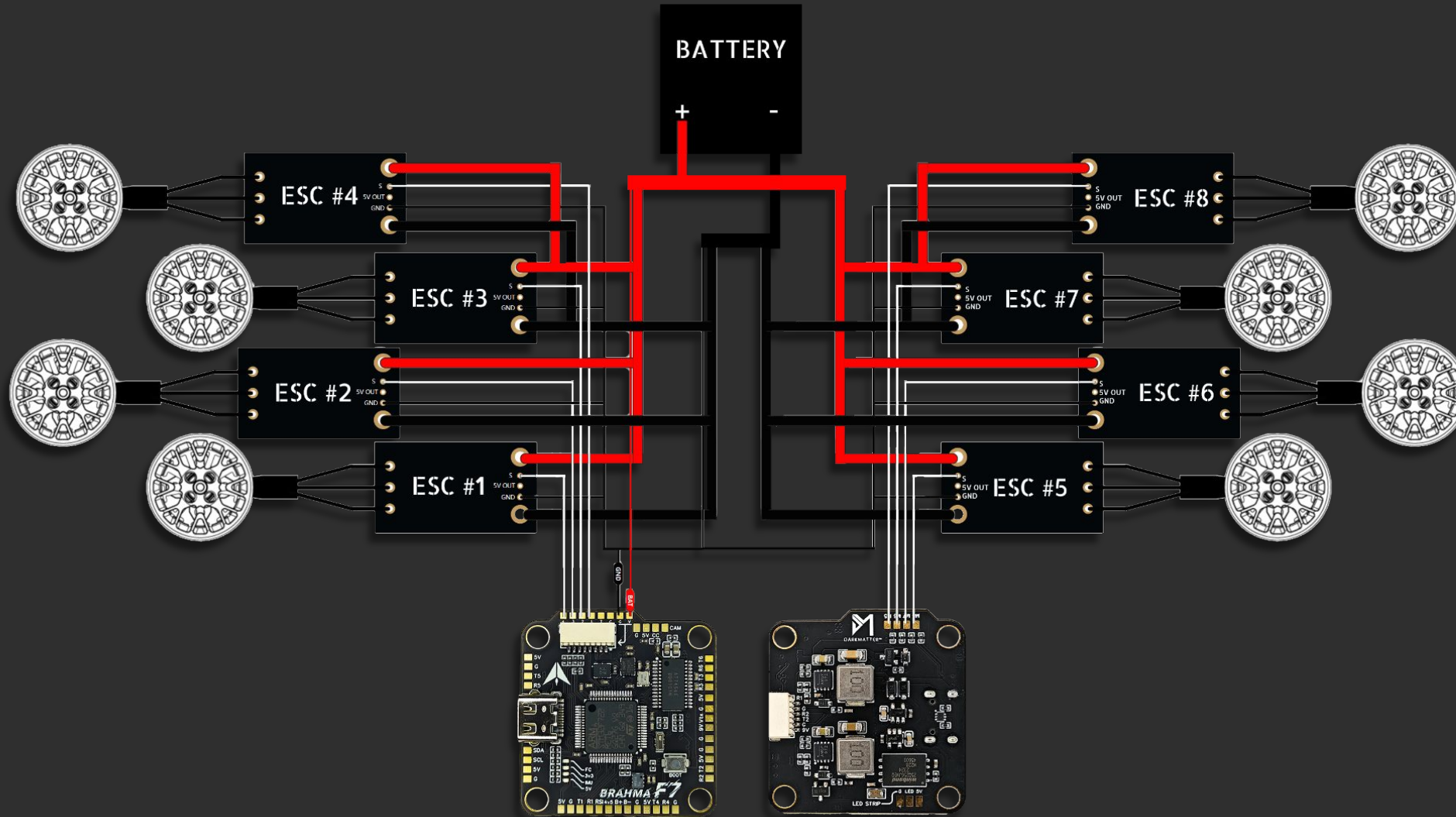


THIS SIDE FACING DOWN

2 x 4 in 1 ESC Direct Soldering Connection For 8 Motors

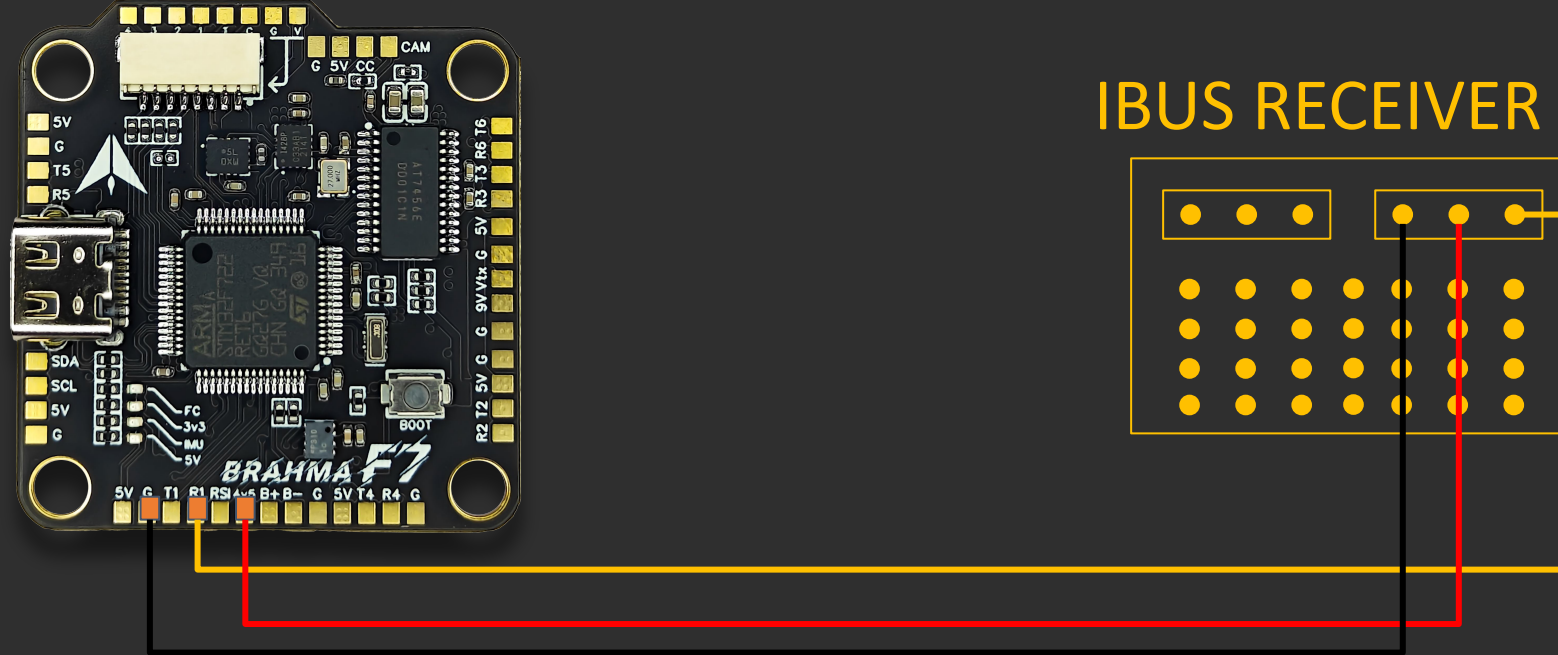


Single ESCs Direct Soldering Connection For 8 Motors



IMPORTANT: PLEASE DO NOT CONNECT THE 5V OUT OF THE ESC TO FC, IT WILL CAUSE THE ESC/FC TO BURN

CONNECT BRAHMA F7 WITH IBUS RECEIVER



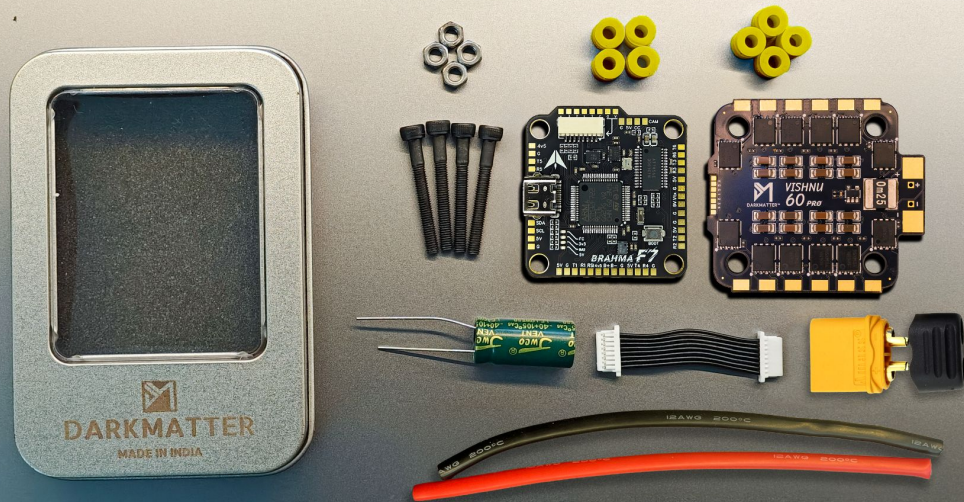
*IF USING BETAFLIGHT KINDLY REFLASH WITH IBUS PROTOCOL SELECTED AND THEN TURN ON Serial Rx ON UART 1

STACK 760 – Package Contents

DARKMATTER® STACK 760

MADE IN INDIA

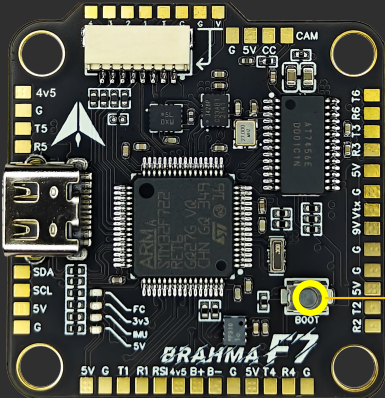
PACKAGE CONTENTS



- 1x Brahma F7
- 1x Vishnu 60
- 1x 8Pin ESC FC Connector Cable
- 8x Grommets (Gummies)
- 1x 1000uF Low ESR Capacitor
- 1x XT60 Battery Connector Plug
- 1x 12AWG Wire for Battery Connection
- 4x M3 25mm Screws
- 4x M3 Bolts
- 1x Tin Container Box

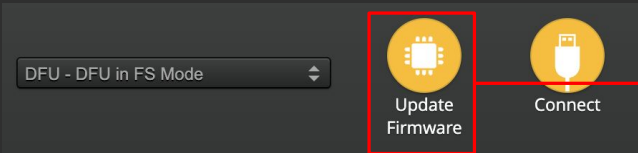
HOW TO FLASH BETAFLIGHT ON BRAHMA F7 (1/2)

1



PRESS AND HOLD THE BOOT BUTTON and connect to PC and open BETAFLIGHT CONFIGURATOR

2



ONCE IN DFU CLICK ON UPDATE FIRMWARE

3



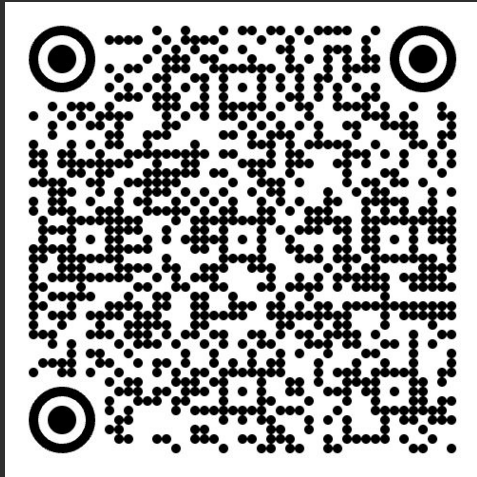
MAKE SURE FULL CHIP ERASE IS ON

4



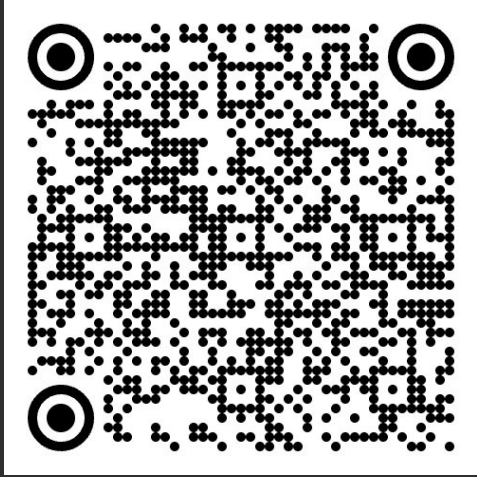
CLICK ON LOAD FIRMWARE LOCAL

5A



SCAN TO DOWNLOAD THE HEX FILE AND SELECT THAT - FOR CRSF - IF you want to connect ELRS Rx
BETAFLIGHT4.5.2 - BRAHMA F7 - CRSF.hex

5B



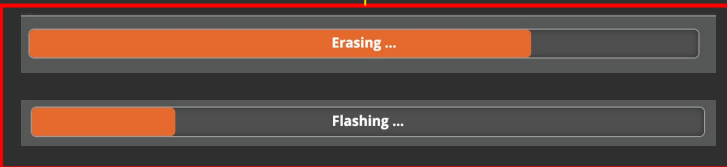
SCAN TO DOWNLOAD THE HEX FILE AND SELECT THAT - FOR IBUS - If you want to connect IBUS Rx
BETAFLIGHT4.5.2- BRAHMA F7 - IBUS.hex

6



CLICK ON LOAD FLASH FIRMWARE

7



WAIT A BIT FOR THE ERASING AND FLASHING TO COMPLETE

HOW TO FLASH BETAFLIGHT ON BRAHMA F7 (2/2)

8

Warning

The following problems with your configuration were detected:

- the accelerometer is enabled but it is not calibrated.

If you plan to use the accelerometer, please follow the instructions for 'Calibrate Accelerometer' on the 'Setup' tab. If any function that requires the accelerometer (auto level modes, GPS rescue, ...) is enabled, arming of the craft will be disabled until the accelerometer has been calibrated.

If you are not planning on using the accelerometer it is recommended that you disable it in 'System configuration' on the 'Configuration' tab.

You need to fix these problems before attempting to fly your craft.

Close

9

Setup

Ports

Configuration

Power & Battery

Failsafe

Presets

PID Tuning

Receiver

Modes

Adjustments

Motors

OSD

Video Transmitter

LED Strip

Sensors

Tethered Logging

Blackbox

CLI

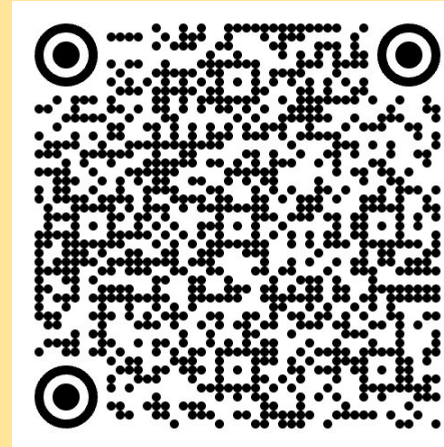
CLICK ON CLOSE

CLICK ON CLI FROM THE LEFT HAND SIDE MENU

10A. INCASE YOUR BRAHMA F7 HAS TWO 4V5 PADS

Write your command here. Press Tab for AutoComplete.

Enter the following in the command box, and enter save at last to save and reboot



DOWNLOAD TXT FILE
WHICH YOU NEED OPEN THEN
CTRL/CMD + A, CTRL/CMD + C AND
THEN OPEN BETAFLIGHT CLI AND
CLICK ON WHERE ITS WRITTEN
"WRITE YOUR COMMAND HERE",
THEN CTRL/CMD + V -> PRESS
ENTER.

10B. INCASE YOUR BRAHMA F7 HAS ONE 4V5 PAD

Write your command here. Press Tab for AutoComplete.

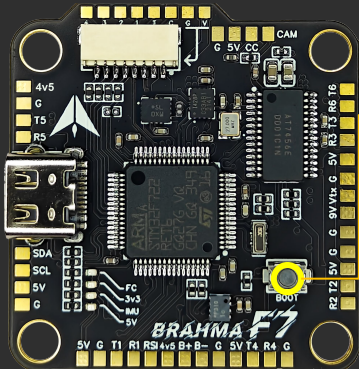
Enter the following in the command box, and enter save at last to save and reboot



DOWNLOAD TXT FILE
WHICH YOU NEED OPEN THEN
CTRL/CMD + A, CTRL/CMD + C AND
THEN OPEN BETAFLIGHT CLI AND
CLICK ON WHERE ITS WRITTEN
"WRITE YOUR COMMAND HERE",
THEN CTRL/CMD + V -> PRESS
ENTER.

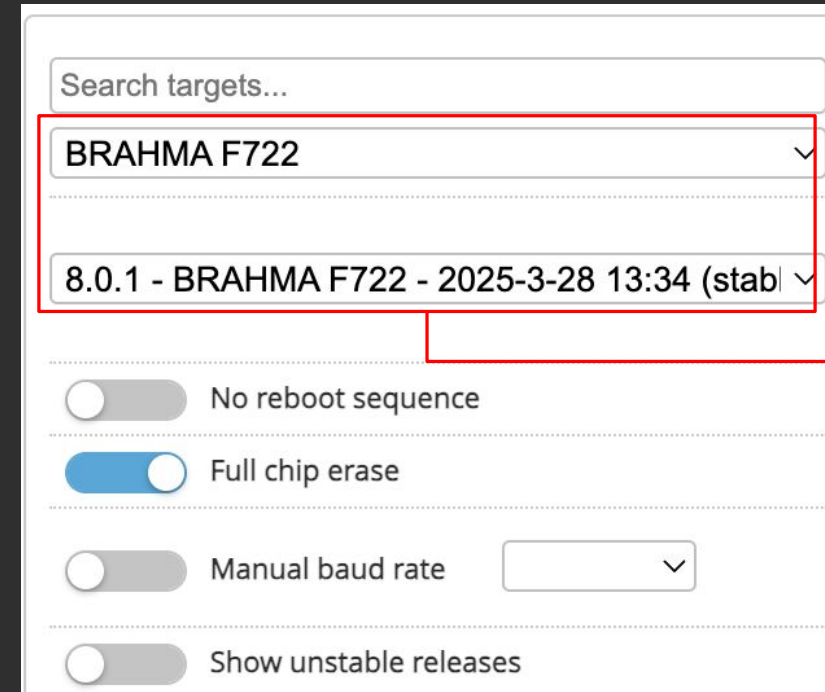
HOW TO FLASH INAV ON BRAHMA F7 (1/2)

1



PRESS AND HOLD THE BOOT BUTTON and connect to PC and open INAV CONFIGURATOR

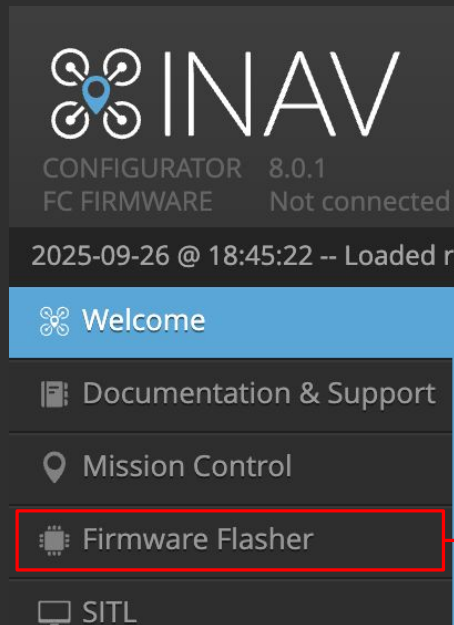
3



SELECT BRAHMA F722

☐ No reboot sequence
☒ Full chip erase
☐ Manual baud rate
☐ Show unstable releases

2



ONCE IN DFU CLICK ON FIRMWARE FLASHER

4

CLICK ON LOAD LOAD FIRMWARE ONLINE

Load Firmware [Online]

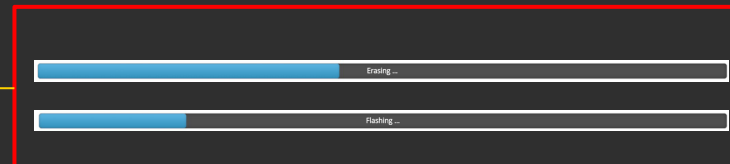
5

CLICK ON LOAD FLASH FIRMWARE

Flash Firmware

6

WAIT A BIT FOR THE ERASING AND FLASHING TO COMPLETE



HOW TO FLASH INAV ON BRAHMA F7 (2/2)

8

SELECT THE TYPE OF
CRAFT YOU ARE
MAKING

Default values

INAV Configurator would like to know which kind of UAV you are configuring. Based on this information it will modify some default values to unlock the best flying performance.

Avoid blindly restoring all PID and filter configuration from the previous version of INAV. The best result can be obtained by retuning from defaults!

Mini Quad with 3" propellers

Mini Quad with 5" propellers

Mini Quad with 7" propellers

Airplane with a Tail

Airplane without a Tail (Wing, Delta, etc)

Rovers & Boats

Keep current settings (Not recommended)

9

SELECT THE UART &
THE RECEIVER
PROTOCOL FOR RX

Receiver wizard

Configure receiver serial port and protocol. If you unsure about serial port or protocol, click `Skip` to go to the next page. You can change those settings later with the configurator UI.

Receiver Serial Port

Receiver Protocol

Skip

Next

10

SELECT THE UART PORT
FOR GPS

GPS wizard

Configure GPS and port. If you unsure about serial port or protocol, click `Skip` to go to the next page. You can change those settings later with the configurator UI. If no GPS installed, choose **None**.

GPS Serial Port

GPS Baud Rate

GPS Protocol

Skip

Next



STACK 760 - 6 Months Warranty

- **Warranty Period:** The STACK 760 comes with a 6-month warranty for **any manufacturing defects** from the date of purchase.
- **Proof of Purchase:** Please retain and provide a copy of the purchase invoice for warranty claims.
- **Exclusions:** The warranty does not cover :
 - Any **physical damage** to the product due to usage like **water damage, tampered components**
 - **Burnt circuit** due to **wrong wiring** or **overloading**.
 - **Burning ESC** due to **spinning motors without propellers** beyond **15%** during initial testing for motor direction.
 - **Burning ESC** due to **arming the drone without propellers** in **Angle mode** and expecting it to stop spinning by lowering the throttle, which it will not, as the FC is trying hard to level but it can't, as you guessed it, there is no propeller.
- **Warranty Process:** If a claim is made within the warranty period, we will examine the PCB for physical damage and the points stated above. If the product is eligible, we will provide a replacement at no additional cost and support you for your build.

Your satisfaction and product performance are our top priorities. For any warranty-related inquiries, please contact us at +918017193277.



DARKMATTER®

Disruptive Momentum

IAF ISO 9001:2015

GST: 19AAVFD6551E1Z1

Thank you!

Please visit thedarkmatter.in for firmwares, manuals and support.