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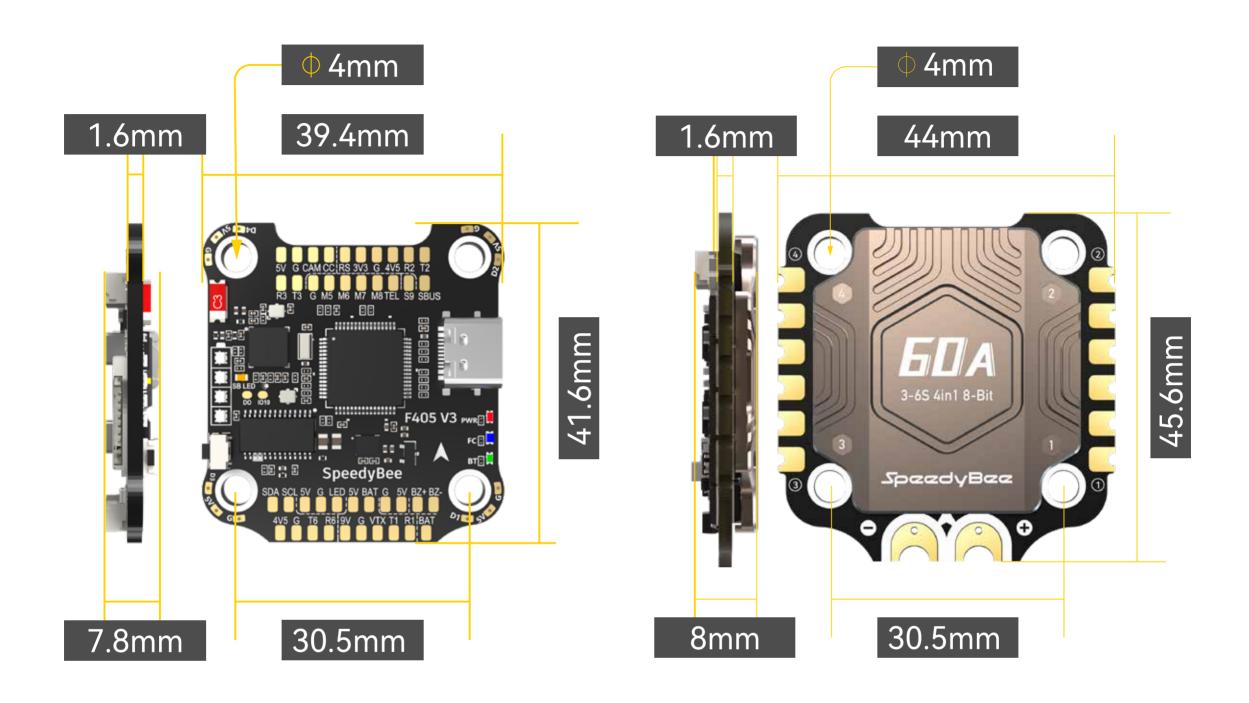
F405 V3 BLS 60A 30x30 Stack

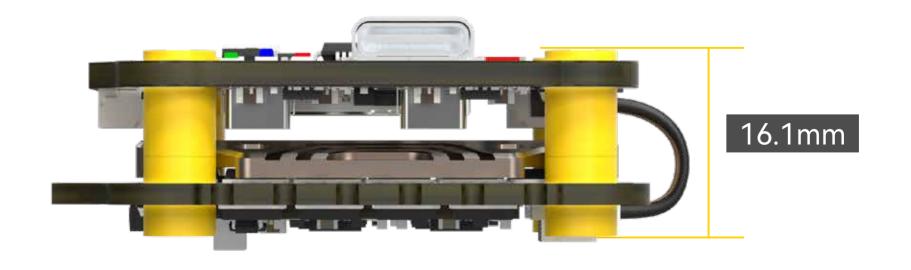
Part 1 - OverView

Specs Overview

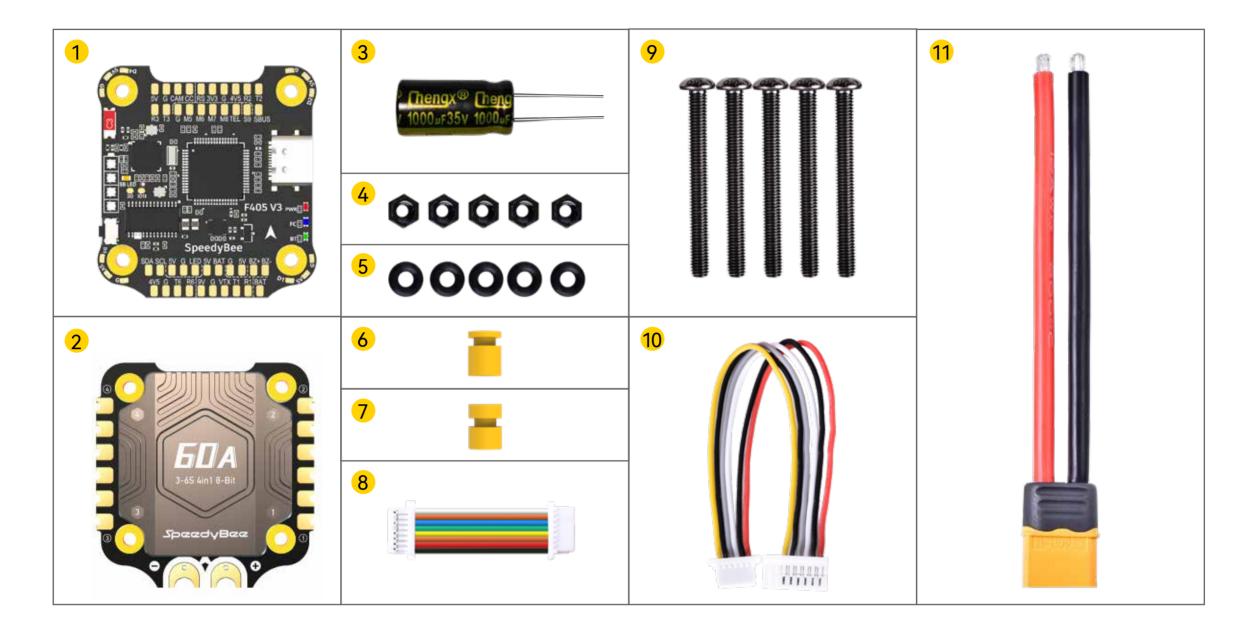
1/15

Product Name	SpeedyBee F405 V3 BLS 60A 30x30 Stack
Flight Controller	SpeedyBee F405 V3 Flight Controller
ESC	SpeedyBee BLS 60A 4-in-1 ESC
Bluetooth	Supported. For FC & ESC parameter settings
Wireless FC Firmware Flashing	NOT Supported
Wireless Blackbox Dwonload & Analysis	NOT Supported
Power Input	3-6S LiPo
Mounting	30.5 x 30.5mm (4mm hole size)
Dimension	45.6mm(L) x 44mm(W) x 18.3mm(H)
Weight	23.4g





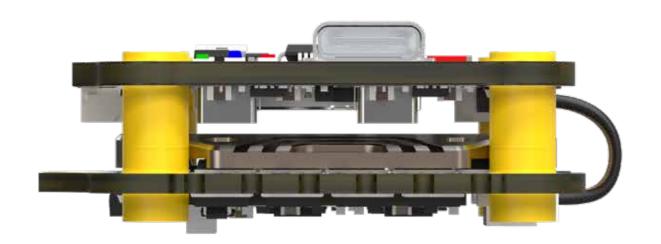
SpeedyBee F405 V3 60A 30x30 Stack

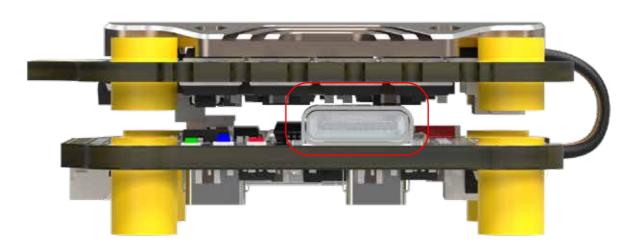


- 1 SpeedyBee F405 V3 Flight Controller x 1
- 2 SpeedyBee BLS 60A 4-in-1 ESC x 1
- 3 35V 1000uF Low ESR Capacitor x 1
- M3 Nylon Nut x 5
- 5 M3 silicone O Ring x 5
- 6 M3*8mm Silicone Grommets(for FC) x 1
- 7 M3*8.1mm Silicone Grommets(for ESC) x 1
- 8 SH 1.0mm 25mm-length 8pin Cable(for FC-ESC connection) x 1
- 9 M3*30mm Iner-hexagon Screws x 5
- 10 DJI 6pin Cable(80mm) x 1
- 11 XT60 Power Cable(100mm) x 1

Important Tips for Installing the Flight Stack

Please ensure that the flight stack is installed in the standard manner, with the flight controller (FC) on top and the electronic speed controller (ESC) on the bottom. To change the gyroscope direction and motor sequence, use the "Settings." Any damage resulting from improper installation is not covered under our warranty.





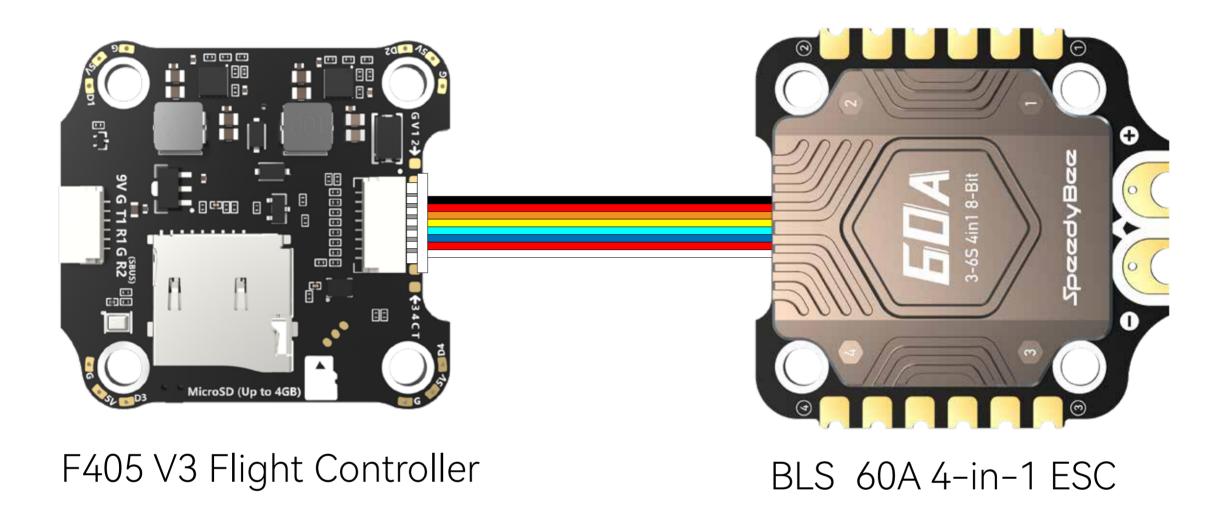
Standard Installation Manner

The installation method shown is incorrect and may cause direct contact between FC and ESC.

Use the 8-pin cable in the package to connect the FC and the ESC. Or solder 8 wires directly to the 8 pads on each end.

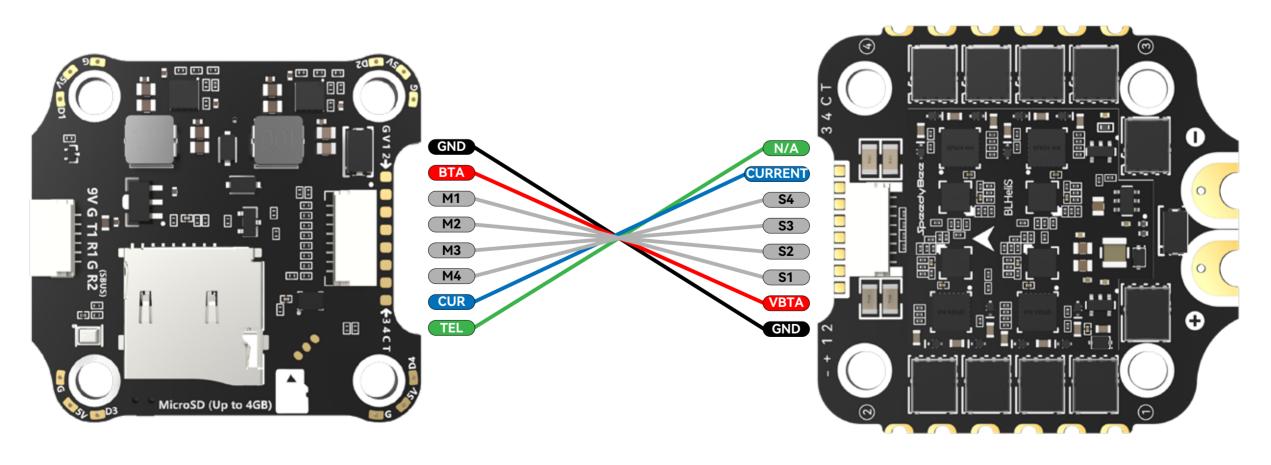
Method 1 - Using 8-pin cable

Use any end of the 8-pin JST cable to connect the FC to the ESC.



Method 2 - Direct soldering

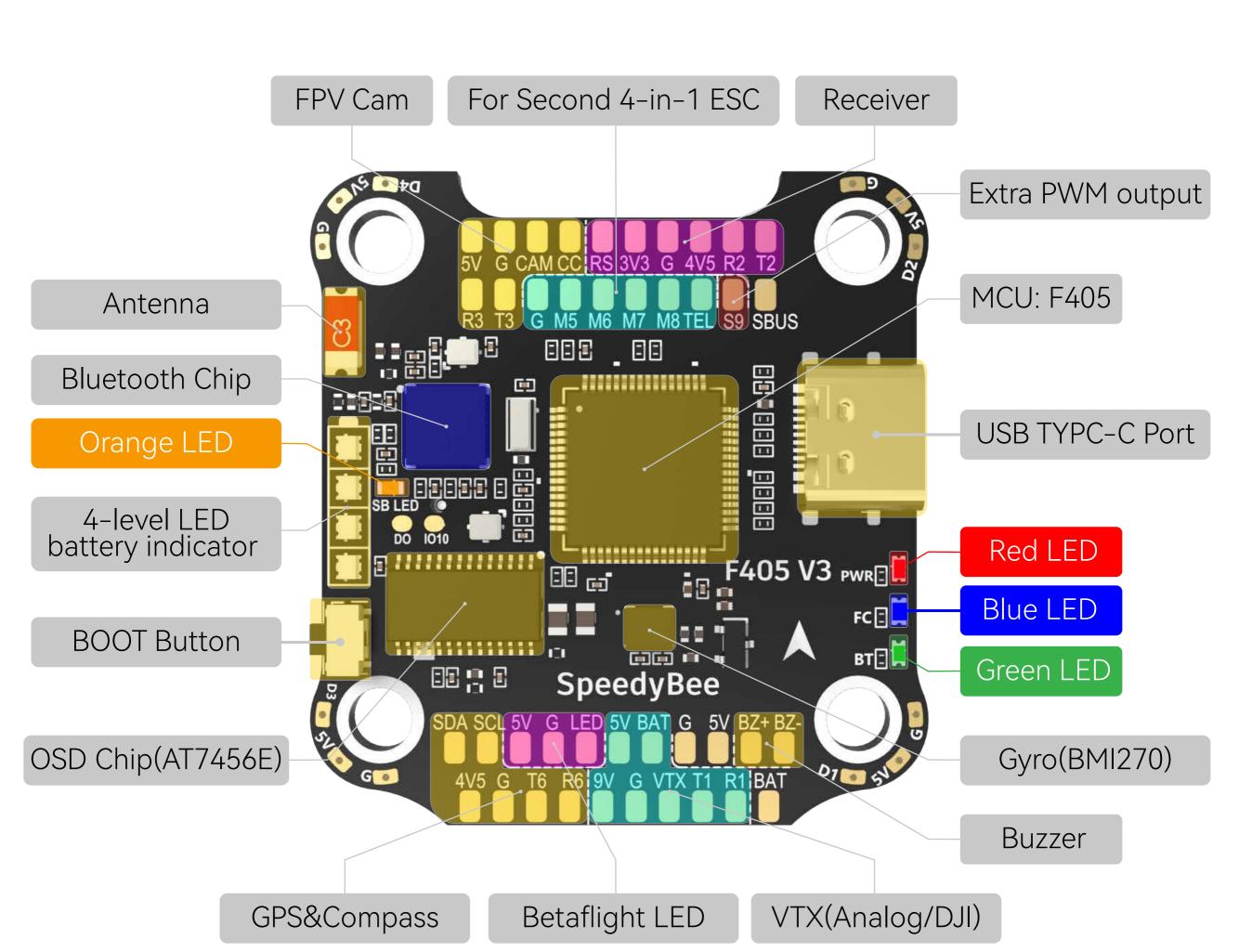
Solder 8 wires to the 8 pads on each end referring to the pad definition below.

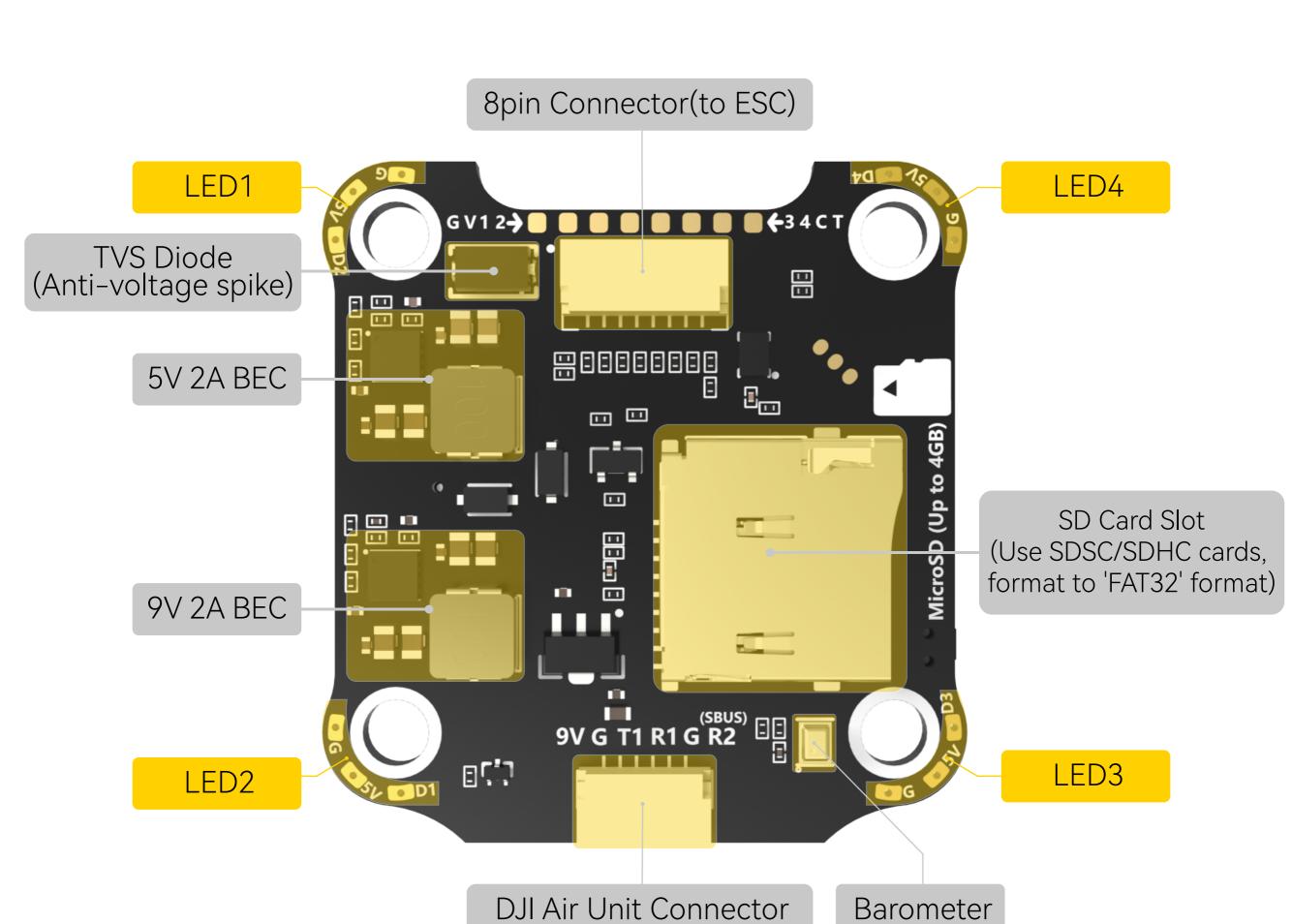


F405 V3 Flight Controller

BLS 60A 4-in-1 ESC

Layout 6/15





LED Indicator Definition

- RED LED Power Indicator.Solid Red after powering up.
- GREEN LED Bluetooth status light. Solid Green indicates Bluetooth is connected.
- BLUE LED Flight controller status light which is controlled by the flight controller firmware. Orange LED - LED Control Mode Indicator. It indicates the 4 sets of LED strips connected to LED1-LED4 pads on the corners of the flight controller are controlled by Betaflight

firmware(BF_LED mode) or the Bluetooth chip(SB_LED mode). **Solid Orange**: tindicates the 4 x LEDs are in SB_LED mode. In this mode, when the FC is powered on and in standby mode, press the BOOT button to cycle the display modes

OFF: indicates the 4 x LEDs are controlled by Betaflight firmware.

Long press the button for 3 seconds to switch the control modes between BF_LED mode and SB_LED mode.

of the LEDs.

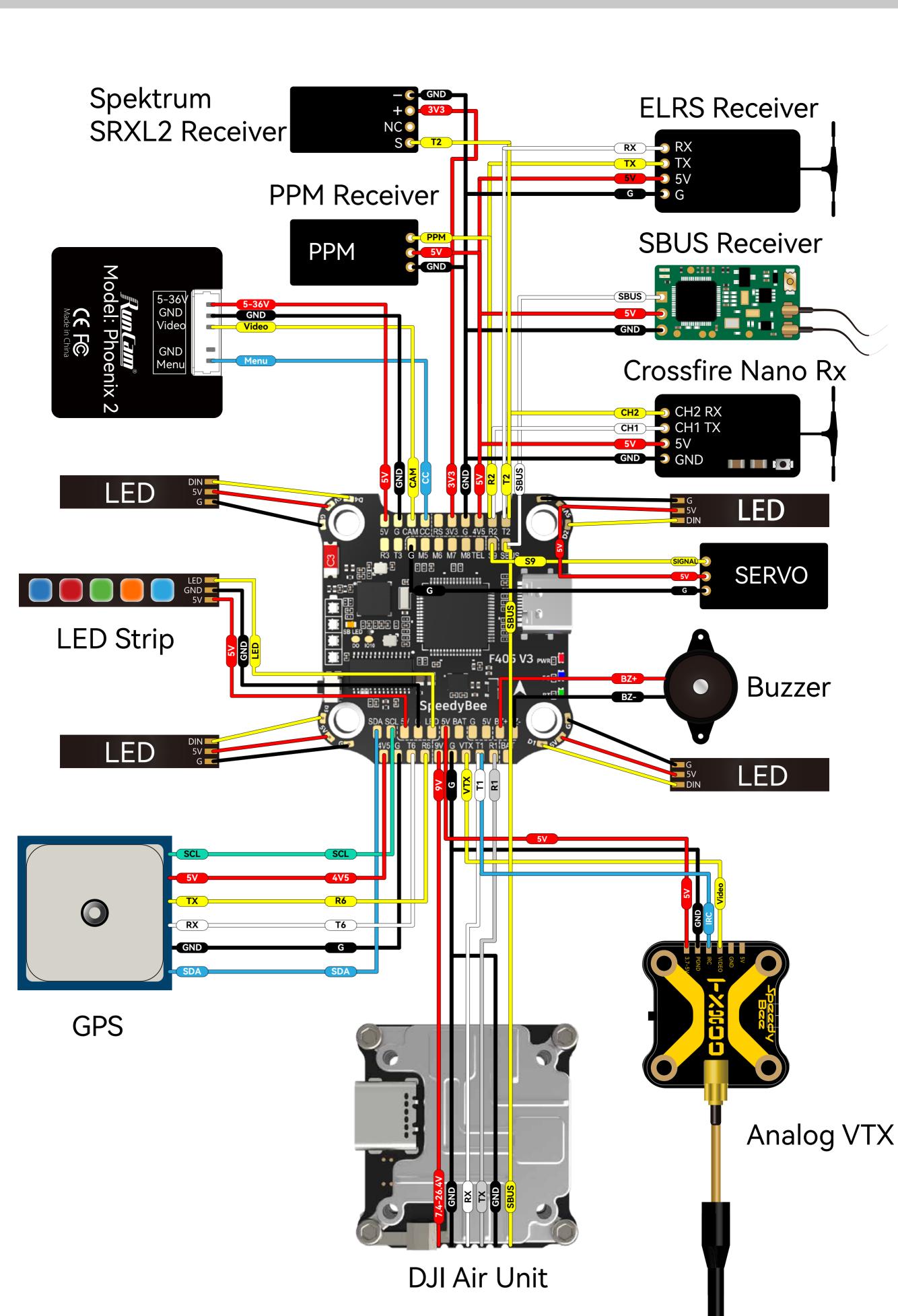
BOOT Button [A]Only if the flight controller gets bricked and can't power up, please follow these

Insert a USB A to TYPE-C cable to your PC.

steps to re-flash firmware for it:

- Press and hold the BOOT button, insert the USB cable into the flight controller, then release the BOOT button.
- Open Betaflight/INAV configurator on the PC, go to the 'Firmware Flashing' 3 page, choose the target 'SPEEDYBEEF405V3' and flash.

[B]. When the FC is powered on and in standby mode, the BOOT button can be used to controller the LED strips connected to LED1-LED4 pads on the corners. By default, short-press the BOOT button to cycle the LED displaying mode. Long-press the BOOT button to switch between SpeedyBee-LED mode and BF-LED mode. Under BF-LED mode, all the LED1-LED4 strips will be controlled by the Betaflight firmware.



When using an SBUS receiver, the SBUS signal wire of the receiver

Importance notice for SBUS receiver

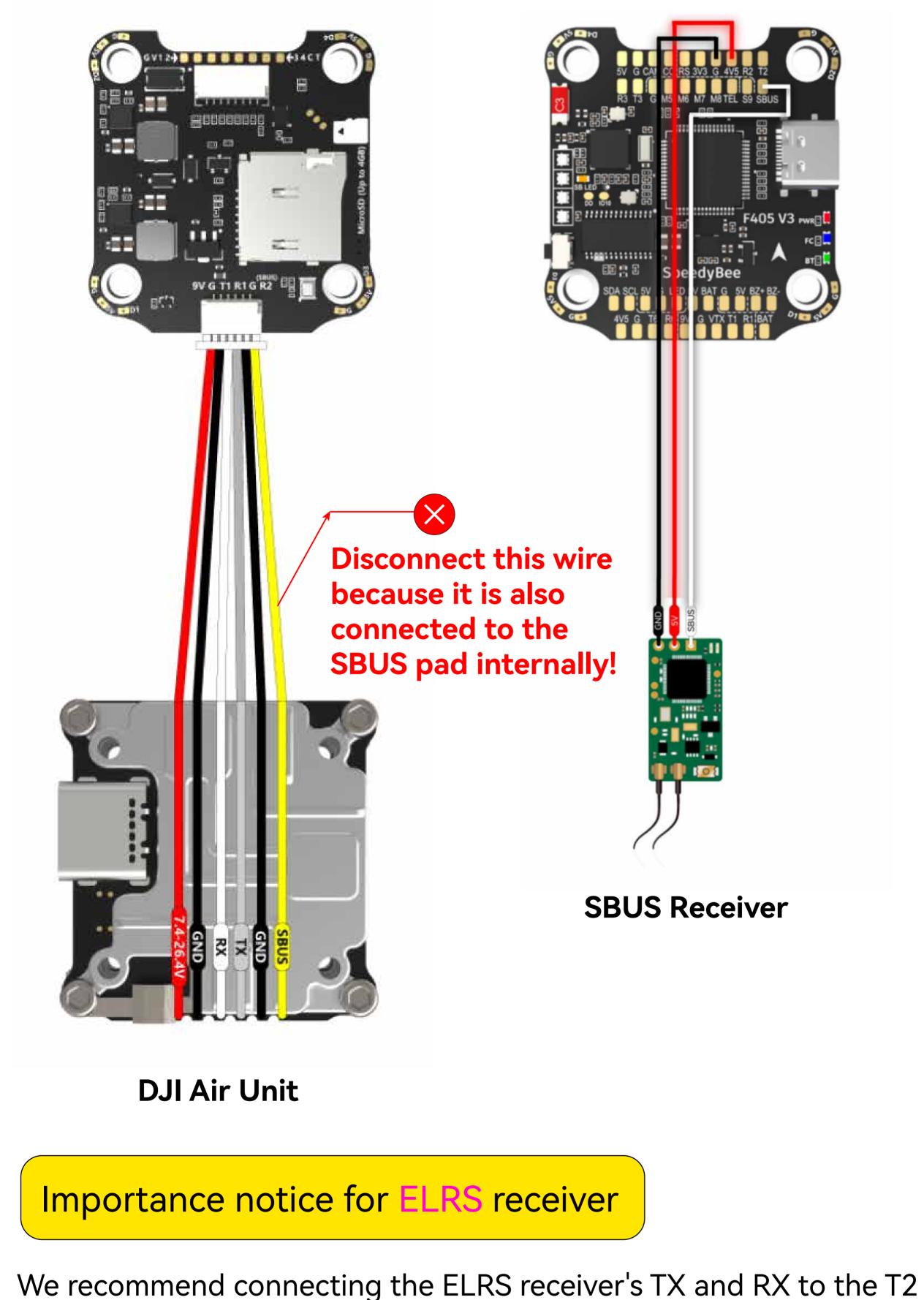
must be connected to the SBUS pad on the front side of the flight controller (this pad internally uses UART2).

If you are also using the DJI Air Unit and have connected it to the

flight controller through the dedicated 6-pin harness on the back, you will need to disconnect the SBUS signal wire from the Air Unit harness. Failure to do so will prevent the SBUS receiver from being properly recognized by the flight controller. You can use tweezers to pick out the SBUS wire from the 6-pin harness connector (or directly cut this wire) and insulate the exposed part of the wire carefully.

F405 V3 Bottom Side

F405 V3 Front Side



Unit simultaneously, some ELRS receivers may not be recognized properly by the flight controller. If you encounter this issue, you

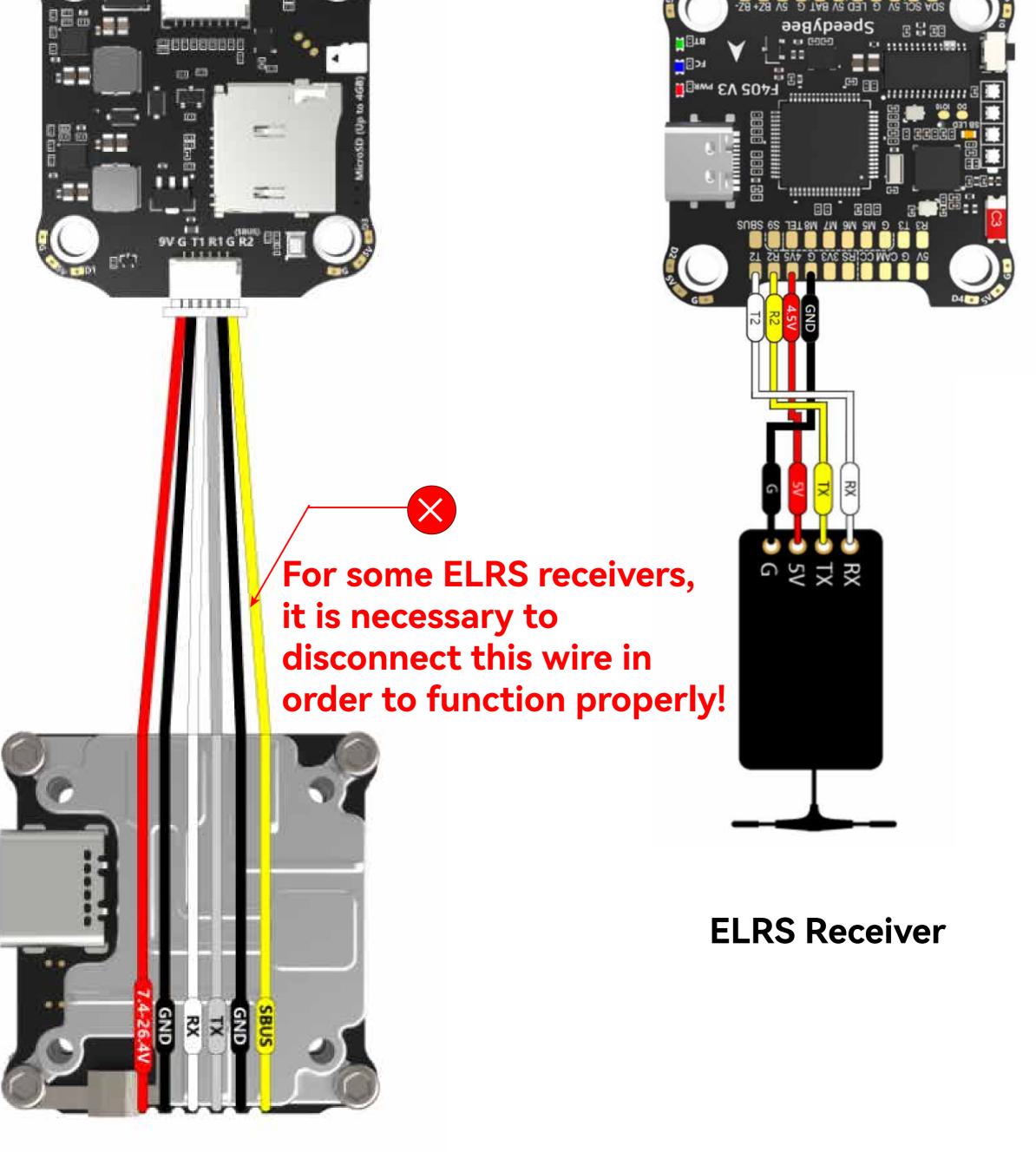
You can use tweezers to pick out the SBUS wire from the 6-pin harness connector (or directly cut this wire) and insulate the exposed part of the wire carefully.

F405 V3 Bottom Side

F405 V3 Front Side

and R2 pads on the flight controller. However, when using the DJI Air

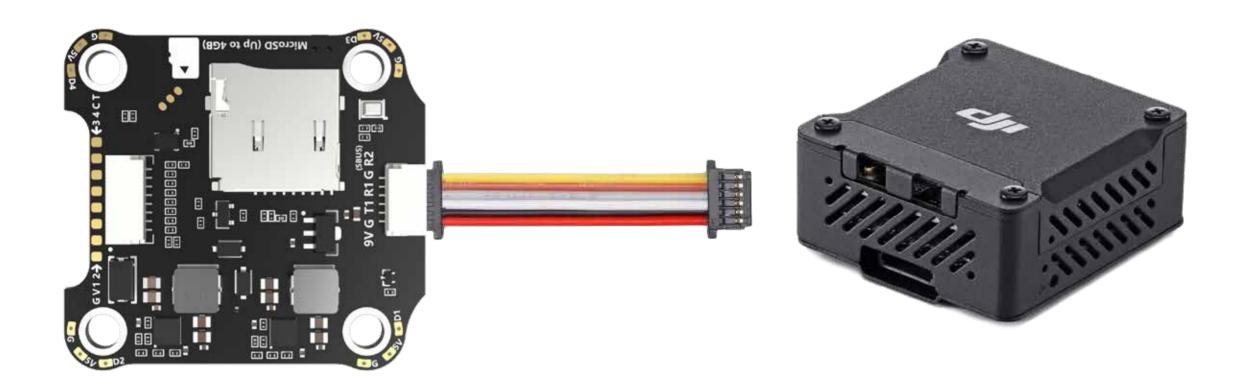
need to disconnect the SBUS signal wire from the Air Unit harness.



DJI Air Unit

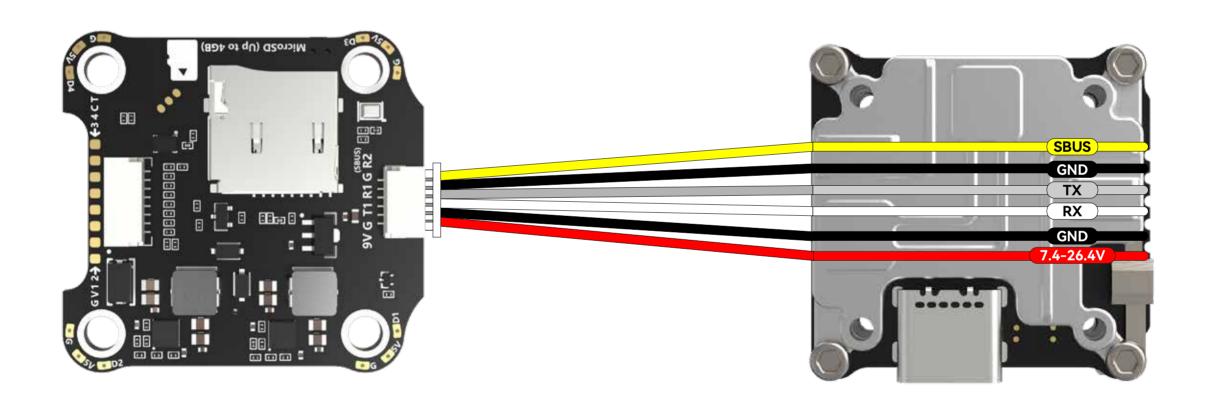
Cable Connection vs DJI O3 Air Unit

Use 6-pin cable comes with the O3 Air Unit



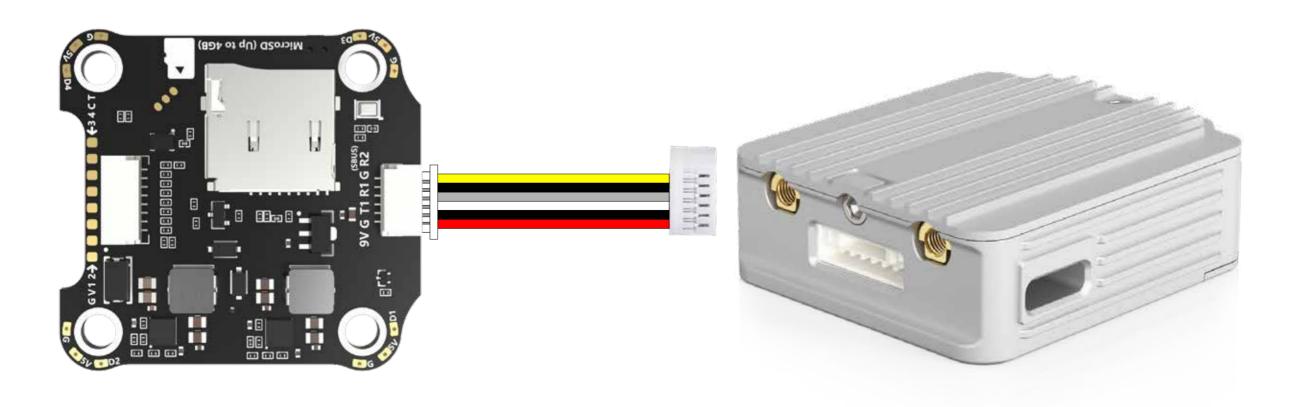
Cable Connection vs RunCam Link/ Caddx Vista Air Unit

Use 6-pin cable comes with the F405 V3 stack (See the accessory No.10 in the package section)



Cable Connection Vs DJI Air Unit V1

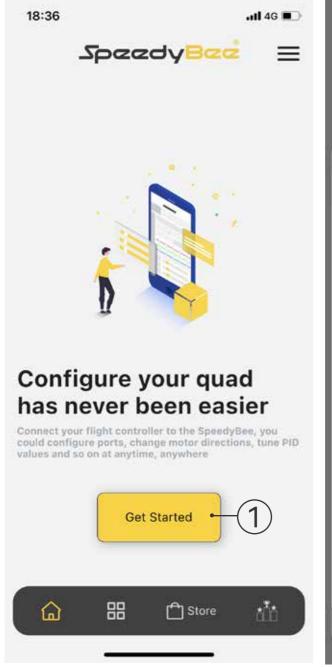
Use 6-pin cable comes with the F405 V3 stack (See the accessory No.10 in the package section)



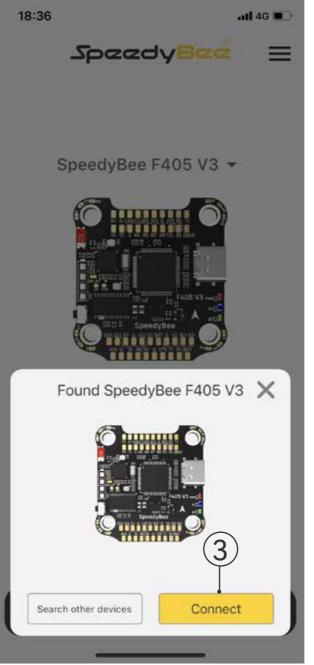
Get the SpeedyBee App

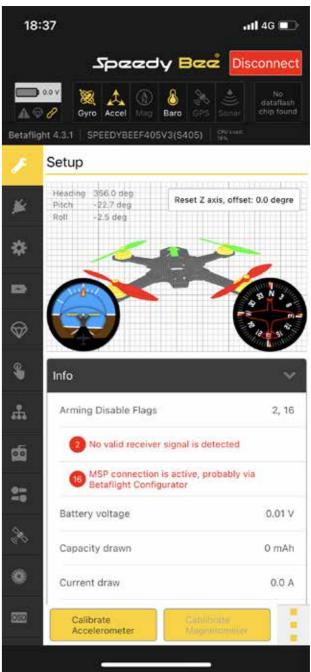
Search 'SpeedyBee' on Google Play or App Store. Or download the Android .apk file on our website: https://www.speedybee.com/download.

FC Configuration





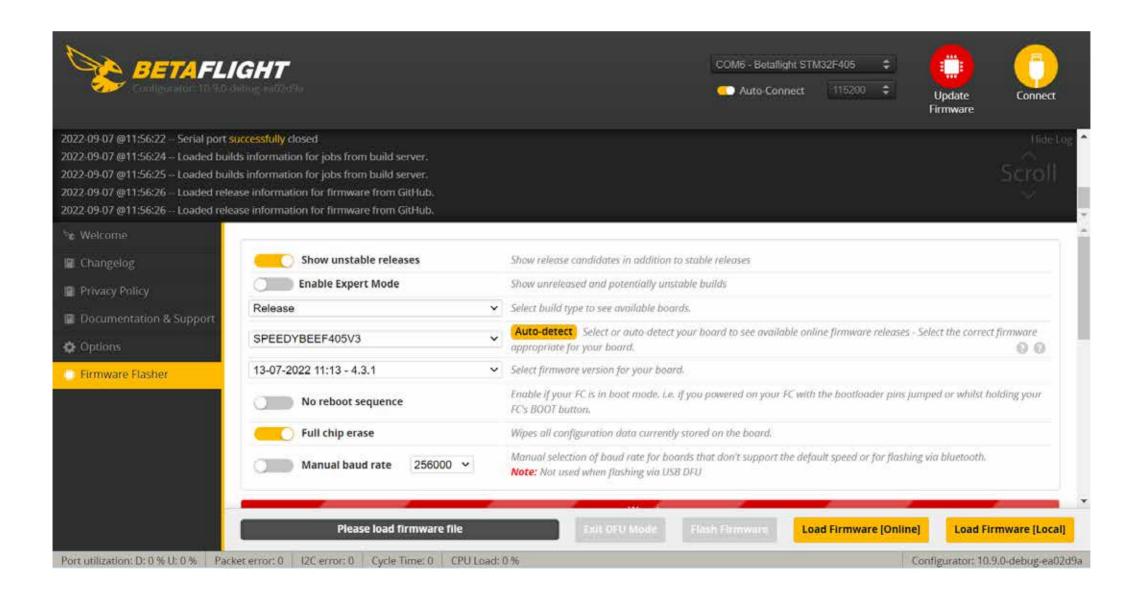




FC Firmware Update

SpeedyBee F405 V3 flight controller does not support wireless firmware flashing, so please flash firmware for it on your PC following the steps below:

- ① Connect the flight controller to the PC with a USB cable
- ② Open Betafight/ INAV configurator on your PC. Take Betaflight configurator as an example, go to the 'Firmware Flashing' page, choose the target 'SPEEDYBEEF405V3' and flash.

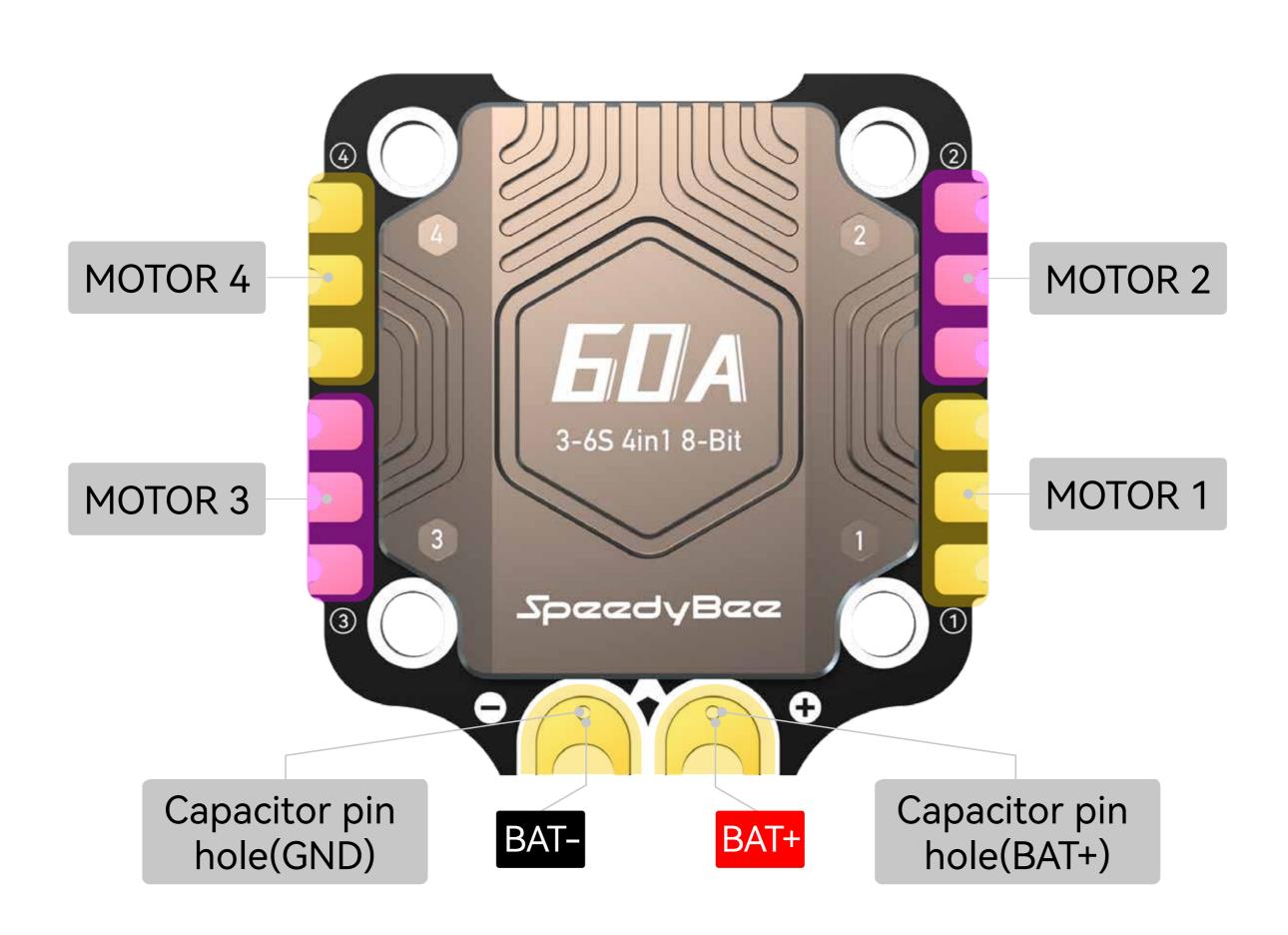


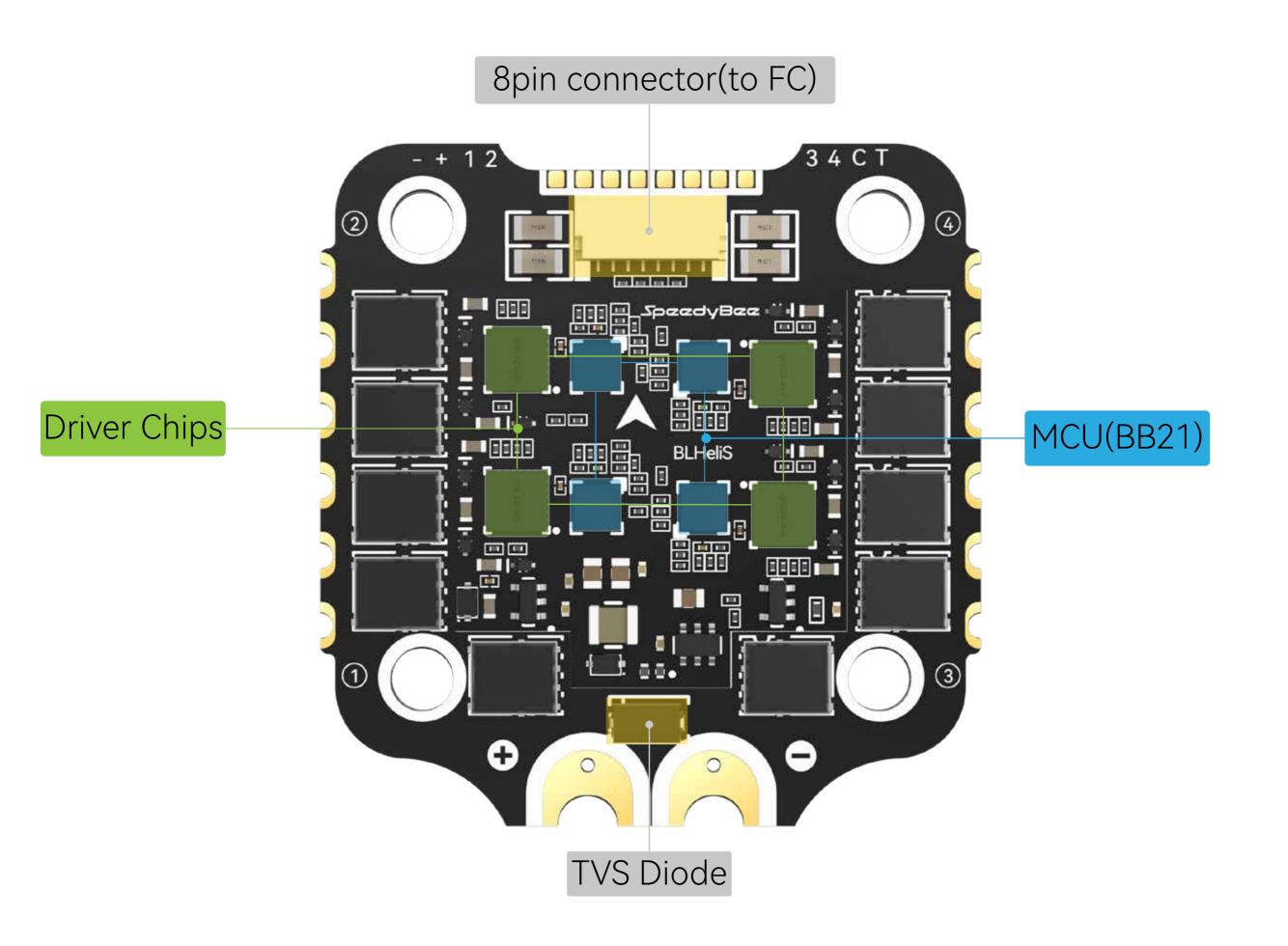
Specifications

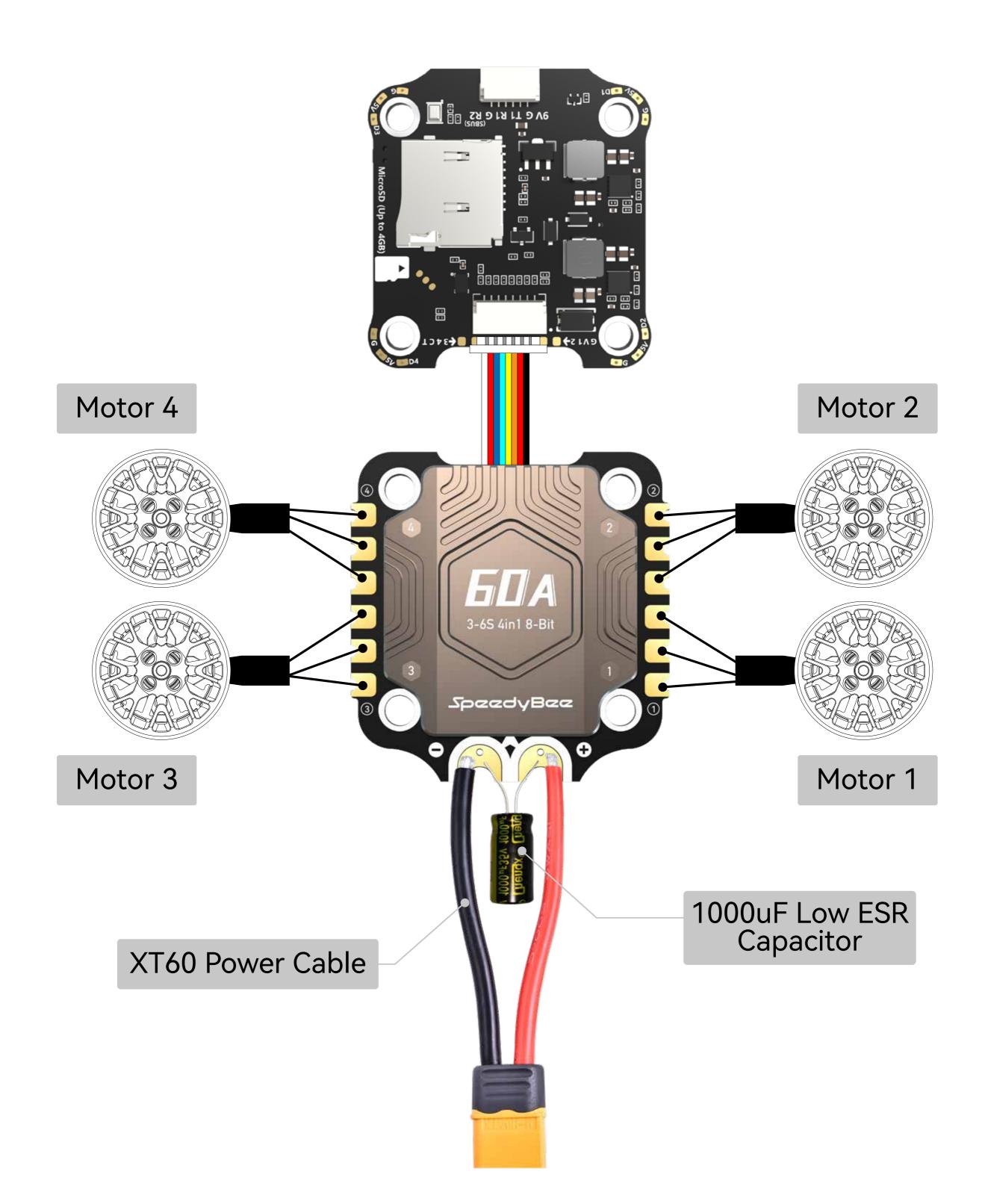
INUICOYNO) BMI270 Type C Barometer Bullium AT7460E chip Supported. Used to connect with the SpeedyBee App for flight controller and ESC parameter configuration. Pressor make a suit the ISSP evilibility to entroller and ESC parameter configuration. Pressor make a suit the ISSP evilibility to entroller and ESC parameter configuration. Pressor make a suit the ISSP evilibility to a valuation of the ISSP evilibility to a valuation of the ISSP parameter configuration. Pressor make a suit to the ISSP evilibility to a valuation of the ISSP evilibility to evilibility	Product Name	SpeedyBee F405 V3 30x30 Flight Controller
Type-C Buttonerer Bull-In OSD Chip AT74595 chip Supported Used to connect with the SpeedyBee App for flight controller and ESC parameter configuration. Piesse makes sure the MSP switch on UART 4 is turned on and set to a baud real of 118200, choinwise Bluedoolthuncterality will not be available. WIFI Not supported Not supported Not supported Not supported Not supported Supported. Completely compatible with Dul O3/RunCam Link/Caddx VistarDul Air Unit Vir, no wire is needed to be changed Felin Dul Air Unit Connection Way Supported. Completely compatible with Dul O3/RunCam Link/Caddx VistarDul Air Unit Vir, no wire is needed to be changed Felin Capacity (SDHC), so actended capacity cards (SDXC) are not supported(Many high speed V3 cards are SDXC). Also the card NuST be formatted with the FAT16 or FAT32 (recommended) Registerins. So, you could use any SD card less than 2505, but the Beteflight dan only recognize 4GB mealimum. We suggest you use this 3rd party formatting tool and not observe Overwrite format then format your card. Note out high of the recommended SD cards or buy the busided parts from our store. Current Sensor Input Supported. For SpeedyBee Bit S 60A ESC, please set scale = 400 and Offset = 0. 3-65 LPD. The flight controller is powered through the G, V wires of the 6pin cable or G, V pads from the bottom side of the light controller. SV Output Supported. For SpeedyBee Bit S 60A ESC, please set scale = 400 and Offset = 0. 2 groups of 5V output, our =6V pad on it not store. LED 5V pads. The total current load is 2A. 2 groups of 9V output, our =6V pad on it not side and other included in a connection on bottom side. The total current load is 2A. 2 groups of 9V output, our =6V pad on it not side and other included in a connection on bottom side. The total current load: Supported. Designed for receiver and GPS module even when the FC is powered through the USS port	MCU	STM32F405
Built-in OSD Chip AT7458E chip Supported. Used to connect with the SpeedyBee App for flight controller and ESC parameter configuration. Pleases make sure the MSP switch on UART 4 is furned on and sait to a baud role of 115000, otherwise Busined Ministrationally will not be available. WIFI Not supported. DUI Air Unit Connection Way Two ways supported: 8-pin connector or direct soldering. Supported. Completely compatible with DuI O3/RumCam Link/Caddx Vista/DuI Air Unit V1, no wire is needed to be changed. Betaflight firmware requires the type of the microSD card to be citizen Standard (SDSC) or High capacity (SDHC), an extended capacity cards (SDXC) are not supported. Many high-speed US cards are SDXC), but the card MUST be formatized with the FAT for FAT32 (recommended) Bleaysterm. So, you could use any SD card least han 32CB, but the Betaflight can only recognize 45B maximum. We suggest you use this 3rd party formating tool and choose Overwrite format then formst your card. Also check out bags for the recommended SD cards or boy the Isabet cards from our store. Current Sensor Input Supported. For SpeedyBee BLS 60A ESC, please set scale = 400 and Offset = 0. 3-85 LiPo. The flight controller is powered through the G, V wires of the 8pin cable or G, V pads from the bottom dad for the fight controller. Sy Output 9 groups of 5V output, one 49V pads and 1 BZ+ pad (used for Bizzer) on front side, and 4x LED SV pads. The total current load is 2A. 2 groups of 5V output, one 49V pad on front side and other included in a connection on bollom side. The total current load is 2A. Supported. Designed for a 3-Vinput receivers. Up to 500mA current load. Supported. Designed for Facever and BPS module even when the FC is powered through the US port. Up to 1 A current load is 2A. Supported. Designed for Facever and and side of magnetometer, sonar, etc. Supported. Supported. Sp & SCL pads on front side. Used for magnetometer, sonar, etc. Supported. Supported. Sp and LED pads on bollom of the front side. Used for WS281	IMU(Gyro)	BMI270
AT7459E chip AT7459E chip AT7459E chip BLE Bibetooth AT7459E chip Supported. Used to connect with the SpeedyBee App for flight controller and ESC parameter configuration. Please makes sure the MSP switch on UART7 it is turned on and set to a based rate of 15200, otherwise Bluetoothfunctionality will not be available. WIFI Not supported DII Air Unit Connection Way Supported. Completely compatible with DII Q3/Funcam Link/Caddx Vista/DII Air Unit V1. no ways supported: C-piln connector or direct soldering. Supported. Completely compatible with DII Q3/Funcam Link/Caddx Vista/DII Air Unit V1. no wito is needed to be changed. Betallight firmware requires the type of the microSD card to be either Standard (SDSC) or High capacity (SDHC), so extended capacity cards (SDXC) are not supported/Mainy high-speed U3 cards are SDXC). As on the card MUST be formatted with the FAT16 or FAT32 (recommended SD cards or to my recognize 4 GR maximum. We suggest you use this 3rd party bromating tool and choose Overwise format then format your card. Also check out page for the recommended SD cards or buy the issaled cards from our store. Currenti Sensor Input Supported. For SpeedyBee BLS 80A ESC, please sot scale = 400 and Offsot = 0. 3-SE LIPa. The flight controller is powered through the C, V wires of the 8pin cable or C, V pads from the bollom side of the flight controller. SO Output 9 groups of 5V output, four +SV pads and 1 BZ+ pad(used for Buzzer) on front side, and 4x LED SV pads. The total current load is 2A. 2 groups of 5V output, one +SV pads and 1 BZ+ pad(used for Buzzer) on front side. The load current load is 3A. Supported. Designed for receiver and GPS module even when the FC is powered through the USB port Up to 1A current load. Supported. Designed for receiver and GPS module even when the FC is powered through the USB port Up to 1A current load. Supported. Supported. SQL Card Supported for SQL Cards on front side. Used for magnetometer, sonar, etc. Supported. Supported. SQL Cards on front side. Use	USB Port Type	Type-C
Supported. Used to connect with the SpeedyBee App for flight controller and ESC perameter configuration. Please make sure the MSP evince on UART 4 is uned on and set to a search and to 11 s200, otherwise Bubuschianchorally will not be available. WIFI Not supported. Two ways supported: Spin connector or direct soldering. Supported. Completely companible with Dull O3/Run/Cam Link/Caddx Vatar/Dull Air Unit V1, no were is needed to be changed. Peterflight firmware requires the type of the microSD card to be either Standard (SDSC) or High capacity (SDHC), so extended capacity cards (SDXC) are not supported/Many high-speed U3 cards are SDXC). Also the card MUST be formatted with the FAT16 or FAT32 (recommended) fleeyatems. So, you could use any SD card is standard. Sole, but the Betaffight can only recognize 4GB maximum. We suggest you use this 3dp party formatting tool and choose. Overwite format then format your card. Also betek out being for the recommended SD cards or buy the tested cards from our store. Supported. For SpeedyBee BLS 80A ESC, please set scale = 400 and Offset = 0. Supported. For SpeedyBee BLS 80A ESC, please set scale = 400 and Offset = 0. SS Output. 9 groups of SV output, four +5V pack and is BLP pacif used for Buzzer) on front side, and 4x LED SV yeads. The total current load is 2A. 9V Output. 2 groups of SV output, four +5V pack and IBLP pacif used for Buzzer) on front side, and 4x LED SV yeads. The total current load is 2A. 3.3V Output. Supported. Designed for 3 3V-input receivers. Up to 500mA current load. Supported. Designed for side on front side. BSC Signal M1 - Ms no bottom side and MS-M8 on front side. WIFT BLANCH Designed for SUZER and SH-M8 on front side. BSC Felemetry UART SE Supported. Designed for Suzerer Supported. Supported. Supported. Suzerer Supported. Supported. Supported. Suzerer Supported. Supported. Suzered and side of the front side. Used for magnetometer, sonar, etc. Supported. Suzer and BSC pack and side of the front side. Used for Suzerer Supporte	Barometer	Built-in
Bill E Blustooth configuration. Please make sure the MSP which on UART 4 is sured on and set to a baud rate of 115200, otherwise Blustoothmictonality will not be available. WIFI Not supported Dill Air Unit Connection Way Two ways supported: 6-pin connector or direct soldering. G-pin Dill Air Unit Connection Way Supported. Completely compatible with Dill O3/RunCarn Link/Caddx VistarDill Air Unit V1. no wire is needed to be changed. Pleatility of the microSD card to be either Standard (SDSC) or High capacity (SDHC), so extended capacity cards (SDXC) are not supported(Many high-speed US cards are SDXC), Also the card MUST be formated with me FAT1s or FAT3 can only recognize 4GB maximum. We suggest you use this 3rd party prentanting tool and choose Overwrite format then format your card. Also check out baze for the recommended SD cards or buy the tested cards from our store. Current Sensor Input Supported. For SpeedyBee BLS 60A ESC, please set scale = 400 and Offset = 0. 3-65 Life. The flight controller is powered through the G, V wires of the 8pin cable or G, V pads from the bottom side of the flight controller. SV Output 9 groups of 5V output, bur +5V pads and 1 BZ+ pad (used for Buzzer) on front side, and 4x LED SV pads. The total current load is 2A. 9V Output Supported. Designed for 3-3V-input receivers. Up to 500mA current load is 2A. Supported. Designed for 3-3V-input receivers. Up to 500mA current load. ESC Signal M1 - M4 on bottom side and M5-M8 on front side. BESC Talemetry UART 6 sest(QART1, UART2, UART2, UART3, UART4 (Dedicated for Bluetooth connection)), UART6 (Bellicated for ESC telemetry), UART6 ESC Talemetry UART 6 ESC Supported. SV Supported. SV and LED pads on front side. Used for magnetometer, sonar, etc. Supported. SV Supported. SV G and LED pads on bottom of the front side. Used for WS2812 LED controlled by Betallight LED Pad Supported. SV G and LED pads on bottom of the front side. Used for WS2812 LED controlled by Betallight Immava. BUZZER BESU Input Supported. Named	OSD Chip	AT7456E chip
DUI Air Unit Connection Way Two ways supported: 6-pin connector or direct soldering. Supported. Completely compatible with DJI O3/RunCarm Link/Caddx Vistar/DJI Air Unit V1, no wire is needed to be changed. Beafailight imware requires the type of the microSD card to be either Standard (SDSC) or High capacity (SDHC), so extended capacity cards (SDXC) are not supported (Many high-speed U3 cards are SDXC). Also the card MINST be formatted with the FATTs or FAT32 (recommended) fliesystems. So, you could use any SD card less than 32GB, but the Betaflight can only recognize 46SB maximum. We suggest you use this 3rd party formatting tool and choose Covarwine format their format your card. Also check out higher for the recommended SD cards or buy the tested cards from our store. Current Sensor Input Supported. For SpeedyBee BLS 60A ESC. please set scale = 400 and Offset = 0. 3-SS LIPo. The flight controller is powered through the G, V wires of the 8pin cable or G, V pads from the bottom side of the flight controller. 97 Output 9 groups of 5V output, four +5V pads and 1 BZ+ pad (used for Buzzer) on front side, and 4x LED SV pads. The total current load is 2A. 3-3V 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 2A. 4-9V Output Supported. Designed for 3-Ximput receivers. Up to 500mA current load. Supported. Designed for 3-Ximput receivers. Up to 500mA current load. M1 - M4 on bottom side and M5-M8 on front side. 6 sets(UART1, LURT2, LURT3, LUART3, LUART4(Dedicated for Bluetooth connection)), LUART5(Dedicated for ESC telemetry), LUART R6 Supported. SV G and LED pads on bottom of the firmt side. Used for WS2812 LED controlled by Belafight LED Pad BOOT Button 8 Set Format and Format Pad used for 5V Buzzer Supported. SV G and LED pads on bottom of the firmt side. Used for WS2812 LED controlled by Belafight Emware. BC+ and BC- pad used for 5V Buzzer Supported. SV G and LED pads on bottom of the front side. Used for WS2812 L	BLE Bluetooth	configuration. Please make sure the MSP switch on UART 4 is turned on and set to a baud
Supported. Completely compatible with DJI O3/RunCam Link/Caddx Visita/DJI Air Unit V1, no wire is needed to be changed. Betaflight firmware requires the type of the microSD card to be either Standard (SDSC) or High capacity (SDHC), so extended capacity cards (SDXC) are not supported (Many high-speed U3 cards are SDXC). Also the card MUST be formated with the FAT for FAT32 (recommended) filesystems. So, you could use any SD card less than 32GB, but the Betaflight can only recognize 46B maximum. We suggest you use this 3rd party formating tool and choose Voewints format then format your card. Also check out bars for the recommended SD cards or buy the tested cards from our store. Current Sensor Input Supported. For SpeedylBee BLS 80A ESC, please set scale = 400 and Offset = 0. 3-8S LIPo. The flight controller is powered through the G, V wires of the 8pin cable or G, V pads from the bottom side of the flight controller. 5V Output 9 groups of 5V output, four +5V pads and 1 BZ+ pad(used for Buzzer) on front side, and 4x LED 5V pads. The lotal current load is 2A. 3-3V Output 2 groups of 9V output, four +5V pads and 1 BZ+ pad(used for Buzzer) on front side, and 4x LED 5V pads. The lotal current load is 2A. 3-3V Output 3 Supported. Designed for 3-3V-input receivers. Up to 500mA current load. 4-3V Output 4 Supported. Designed for receiver and GPS module even when the FC is powered through the USB port. Up to 1 A current load. 5-5 Signal M1 - M4 on bottom side and M5-M8 on front side. 5-6 Signal M1 - M4 on bottom side and M5-M8 on front side. 5-7 Supported. Spad SCL pads on front side. Used for magnetometer, sonar, etc. 5-8 Supported. Spad s SCL pads on front side. Used for magnetometer, sonar, etc. 5-8 Supported. Spad s SCL pads on front side. Used for magnetometer, sonar, etc. 5-9 Supported. Spad s SCL pads on front side. Used for magnetometer, sonar, etc. 5-9 Supported. Spad s SCL pads on front side. Used for magnetometer, sonar, etc. 5-9 Supported. Spad s SCL pads on front side. Used for be sent the	WIFI	Not supported
wire is needed to be changed. *Betaflight firmware requires the type of the microSD card to be either Standard (SDSC) or High capacity (SDHC), so exended capacity cards (SDXC) are not supported/Many high-spend US cards are SDXC). Also the card MUST be formatted with the ATT for FAT32 (recommended) filesystems. So, you could use any SD Card lass than 326H, but the Betaflight can only recognize 4GB maximum. We suggest you use this 3rd party formatting tool and choose "Overwrite format then format your card. Also check out being for the recommended SD cards or by the figietic durate from our store. **Current Sensor Input** Supported. For SpeedyBee BLS 60A ESC, please set scale = 400 and Offset = 0. 3-68 LIPo. The flight controller is powered through the G, V wires of the 8pin cable or G, V pads from the bottom side of the flight controller is powered through the G, V wires of the 8pin cable or G, V pads from the bottom side of the flight controller. 9 groups of 5V output, four +6V pads and 1 BZ+ pad(used for Buzzer) on front side, and 4x LED 5V pads. The total current load is 2A. 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 2A. 33V Output Supported. Designed for a 3-V-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 1A current load. \$4.5V Output USB port. Up to 1A current load. \$5.6EC Signal M1- M4 on bottom side and M5-M8 on front side. \$6.5EC Signal M1- M4 on bottom side and M5-M8 on front side. \$6.5EC Signal M1- M4 on bottom side and M5-M8 on front side. \$6.5EC Telemetry UART R5 \$12C Supported. SDA & SCL pads on front side. Used for magnetometer, sonar, etc. \$7.7EC Supported. SDA & SCL pads on front side. Used for magnetometer, sonar, etc. \$8.7EC Supported. SDA & SCL pads on front side. Used for MS2812 LED controlled by \$8.8EM pink in firmware. \$8.7EC Supported. SDA & SCL pads on front side. Used for MS281	DJI Air Unit Connection Way	Two ways supported: 6-pin connector or direct soldering.
High capacity (SDHC), so extended capacity cards (SDXC) are not supported/Many high- speed U3 cards are SDXC). Also the card MUST be formatted with the FAT16 or FAT32 (recommended) filesystems. So, you could use any SD card less than 32CB, but the Betaflight can only recognize 4GB maximum. We suggest you use this 3rd party formatting bool and choose? Overwrite format then format you card. Also check out here for the recommended SD cards or buy the lessled cards from our store. Current Sensor Input Supported. For SpeedyBee BLS 60A ESC, please set scale = 400 and Offset = 0. 3-65 LIPo. The flight controller is powered through the G, V wires of the 8pin cable or G, V pads from the bottom side of the flight controller. 5V Output 9 groups of 5V output, four +5V pads and 1 BZ+ pad(used for Buzzer) on front side, and 4x LED 5V pads. The total current load is 2A. 9V Output Supported. Designed for 3.3V-input receivers. Up to 500mA current load. 4.5V 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 1A current load in an AMS-MB on front side. 6 sets(UART1, UART2, UART3, UART4(Dedicated for Bluetooth connection)), UART5(Dedicated for ESC telemetry), UART6 ESC Telemetry UART 8. Supported. SDA 8 SCL pads on front side. Used for magnetometer, sonar, etc. Supported. SDA 8 SCL pads on front side. Used for WS2812 LED controlled by Betaflight firmware. BUZER BZ+ and BZ- pad used for 5V Buzzer Supported. SDA 8 SCL pads on front side. Used for magnetometer, sonar, etc. Supported. SDA 8 SCL pads on front side. Used for magnetometer, sonar, etc. Supported. SDA 8 SCL pads on front side. Used for WS2812 LED controlled by Betaflight firmware. BC- and BZ- pad used for 5V Buzzer Supported. SDA 8 SCL pads on front side. Used for magnetometer, sonar, etc. Supported. SDA 8 SCL pads on front side. Used for WS2812 LED controlled by Betaflight firmware. BC- and BC- pad used f	6-pin DJI Air Unit Plug	
Power Input 3-SS LIPO. The flight controller is powered through the G, V wires of the 8pin cable or G, V pads from the bottom side of the flight controller. 5V Output 9 groups of 5V output, four +5V pads and 1 BZ+ pad(used for Buzzer) on front side, and 4x LED 5V pads. The total current load is 2A. 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 2A. 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 14 current load. 8ESC Signal Mf - M4 on bottom side and M5-M8 on front side. 6 sets(UART1, UART2, UART3, UART4(Dedicated for Bluetooth connection)). UART 6 sets(UART1, UART2, UART3, UART4(Dedicated for Bluetooth connection)). UART BESC Telemetry UART R5 Supported. SQ, 6 and LED pads on bottom of the front side. Used for WS2812 LED controlled by Betaflight LED Pad Buzzer BZ+ and BZ- pad used for 5V Buzzer Supported. [A]. 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. [B]. When the FC is powered on and in standby mode, the BOOT button controller the LED strips connected to LED 1-LED4 connectors on the bottom side and to switch between SpeedyBee+LED mode and BF-LED mode, all the LED1-LED4 strips will be controlled by Betaflight firmware. RSSI Input Smart Port / FPort Not supported. Supported. Please note that DShot is not supported.) Smart Port / FPort Supported Flight Controller Firmware BetaFlight(Default), INAV (INAV firmware can only use Multishot (recommended) and OneShot125. Please note that DShot is not supported.) Smart Port / FPort Supported Flight Controller Firmware SPEEDVBEEFAGSV3 Mounting 3.0.5 x 30.5mm(4mm hole diameter)	Blackbox MicroSD Card Slot	High capacity (SDHC), so extended capacity cards (SDXC) are not supported (Many high-speed U3 cards are SDXC). Also the card MUST be formatted with the FAT16 or FAT32 (recommended) filesystems. So, you could use any SD card less than 32GB, but the Betaflight can only recognize 4GB maximum. We suggest you use this 3rd party formatting tool and choose 'Overwrite format' then format your card. Also check out here for the recommended SD
Fower Input from the bottom side of the flight controller. 9 groups of 5V output, four +5V pads and 1 BZ+ pad(used for Buzzer) on front side, and 4x LED 5V pads. The total current load is 2A. 9V Output 2 groups of 5V output, one +9V pad on front side and other included in a connector on bottom side. The total current load is 2A. 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 1A current load. 4.5V Output M1 - M4 on bottom side and M5-M8 on front side. 6. sets(UART1, UART2, UART3, UART3, UART4(Dedicated for Bluetooth connection)). UART CSC Signal M1 - M4 on bottom side and M5-M8 on front side. 6. sets(UART1, UART2, UART3, UART4(Dedicated for Bluetooth connection)). UART (Supported. SDA & SCL pads on front side. Used for magnetometer, sonar, etc. Supported. SUPPORTED SUPPORT	Current Sensor Input	Supported. For SpeedyBee BLS 60A ESC, please set scale = 400 and Offset = 0.
LED 5V pads. The total current load is 2A. 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 2A. 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 14 current load. ESC Signal M1 - M4 on bottom side and M5-M8 on front side. UART 6 Sets(UART1, UART2, UART3, UART4(Dedicated for Bluetooth connection)), UART5(Dedicated for ESC telemetry), UART6 ESC Telemetry UART 8 IZC Supported. SDA & SCL pads on front side. Used for magnetometer, sonar, etc. Traditional Betaflight LED Pad Supported. SV, G and LED pads on bottom of the front side. Used for WS2812 LED controlled by Betaflight firmware. BUZZER BZ+ and BZ- pad used for 5V Buzzer BOOT Button SQ, Person and Indian 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. [B]. When the FC is powered on and in standby mode, the Bot Dutton can be used to controller the LED strips connected to LED1-LED4 connectors on the bottom side. By default, short-press the BOOT button to cycle the LED displaying mode. Long-press the BOOT button to switch between SpeedyRee-LeD mode and BF-LED mode. Under BF-LED mode, all the LED1-LED4 strips will be controlled by Betaflight firmware. RSSI Input Supported. Named as RS on the front side. Smart Port / F.Port Not supported BetaFlight(Default), INAV (INAV firmware can only use Multishot (recommended) and OneShot125. Please note that DShot is not supported.) Firmware Target Name SPEEDYBEEF405V3 Mounting 30.5 x 30.5mm (4mm hole diameter) 1 2 groups and refer to table the DShot is not supported.)	Power Input	3-6S LiPo. The flight controller is powered through the G, V wires of the 8pin cable or G, V pads from the bottom side of the flight controller.
side. The total current load is 2A. 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 1A current load. ESC Signal M1 - M4 on bottom side and M5-M8 on front side. 6 sets(UART1, UART2, UART3, UART4(Dedicated for Bluetooth connection)), UART5 (Dedicated for ESC telemetry), UART6 ESC Telemetry UART 5 IZC Supported. SDA & SCL pads on front side. Used for magnetometer, sonar, etc. Supported. SUPPORT SUPP	5V Output	
Supported. Designed for receiver and GPS module even when the FC is powered through the USB port. Up to 1A current load. M1 - M4 on bottom side and M5-M8 on front side. UART 6 sets(UART1, UART2, UART3, UART4(Dedicated for Bluetooth connection)), UART5(Dedicated for ESC telemetry), UART6 ESC Telemetry UART R5 Supported. SDA & SCL pads on front side. Used for magnetometer, sonar, etc. Traditional Betaflight LED Pad Supported. SV, G and LED pads on bottom of the front side. Used for WS2812 LED controlled by Betaflight firmware. BUZZER BZ+ and BZ- pad used for 5V Buzzer Supported. [A], 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. [B]. When the FC is powered on and in standby mode, the BOOT button can be used to controller the LED strips connected to LED1-LED4 connectors on the bottom side. By defaulit, short-press the BOOT button to cycle the LED displaying mode. Long-press the BOOT button to switch between SpeedyBee-LED mode and BF-LED mode. Under BF-LED mode, all the LED1-LED4 strips will be controlled by Betaflight firmware. RSSI Input Supported. Named as RS on the front side. Smart Port / F.Port Not supported Supported Flight Controller Firmware BetaFlight(Default), INAV (INAV firmware can only use Multishot (recommended) and OneShot125. Please note that DShot is not supported.) Firmware Target Name SPEEDYBEEF405V3 Mounting 30.5 x 30.5mm(4mm hole diameter) 41.6(L) x 39.4(W) x 7.8(H)mm	9V Output	
USB port. Up to 1A current load. ESC Signal M1 - M4 on bottom side and M5-M8 on front side. UART 6 sets(UART1, UART2, UART3, UART4(Dedicated for Bluetooth connection)), UART5(Dedicated for ESC telemetry), UART6 ESC Telemetry UART 8 IZC Supported. SDA & SCL pads on front side. Used for magnetometer, sonar, etc. Supported. 5V, G and LED pads on bottom of the front side. Used for WS2812 LED controlled by Betaflight LED Pad BZ+ and BZ- pad used for 5V Buzzer BZ+ and BZ- pad used for 5V Buzzer Supported. [A]. 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. [B]. When the FC is powered on and in standby mode, the BOOT button can be used to controller the LED strips connected to LED1-LED4 connectors on the bottom side. By default, short-press the BOOT button to cycle the LED displaying mode. Long-press the BOOT button to switch between SpeedyBee-LED mode and BF-LED mode. Under BF-LED mode, all the LED1-LED4 strips will be controlled by Betaflight firmware. RSSI Input Supported. Named as RS on the front side. Smart Port / F.Port Not supported BetaFlight(Default), INAV (INAV firmware can only use Multishot (recommended) and OneShot125. Please note that DShot is not supported.) Firmware Target Name SPEEDYBEEF405V3 Mounting 30.5 x 30.5mm(4mm hole diameter) Dimension 41.6(L) x 39.4(W) x 7.8(H)mm	3.3V Output	Supported. Designed for 3.3V-input receivers. Up to 500mA current load.
UART 6 sets(UART1, UART2, UART3, UART4(Dedicated for Bluetooth connection)), UART5(Dedicated for ESC telemetry), UART6 ESC Telemetry UART R5 IZC Supported. SDA & SCL pads on front side. Used for magnetometer, sonar, etc. Traditional Betaflight LED Pad Supported. 5V, G and LED pads on bottom of the front side. Used for WS2812 LED controlled by Betaflight firmware. BUZZER BZ+ and BZ- pad used for 5V Buzzer Supported. [A]. 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. [B]. When the FC is powered on and in standby mode, the BOOT button can be used to controller the LED strips connected to LED1-LED4 connectors on the bottom side. By default, short-press the BOOT button to cycle the LED displaying mode. Long-press the BOOT button to switch between SpeedyBee-LED mode and BF-LED mode. Under BF-LED mode, all the LED1-LED4 strips will be controlled by Betaflight firmware. RSSI Input Supported. Named as RS on the front side. Smart Port / F.Port Not supported BetaFlight(Default), INAV (INAV firmware can only use Multishot (recommended) and OneShot125. Please note that DShot is not supported.) Firmware Target Name SPEEDYBEEF405V3 Mounting 30.5 x 30.5mm(4mm hole diameter) Dimension 41.6(L) x 39.4(W) x 7.8(H)mm	4.5V Output	
UART 5(Dedicated for ESC telemetry), UART6 ESC Telemetry UART R5 IZC Supported. SDA & SCL pads on front side. Used for magnetometer, sonar, etc. Traditional Betaflight LED Pad Supported. 5V, G and LED pads on bottom of the front side. Used for WS2812 LED controlled by Betaflight firmware. Buzzer BZ+ and BZ- pad used for 5V Buzzer Supported. [A]. 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. [B]. When the FC is powered on and in standby mode, the BOOT button can be used to controller the LED strips connected to LED1-LED4 connectors on the bottom side. By default, short-press the BOOT button to cycle the LED displaying mode. Long-press the BOOT button to switch between SpeedyBee-LED mode and BF-LED mode. Under BF-LED mode, all the LED1-LED4 strips will be controlled by Betaflight firmware. RSSI Input Supported. Named as RS on the front side. Smart Port / F.Port Not supported Supported Flight Controller Firmware BetaFlight(Default), INAV (INAV firmware can only use Multishot (recommended) and OneShot125. Please note that DShot is not supported.) Firmware Target Name SPEEDYBEEF405V3 Mounting JANA (4mm hole diameter) Dimension UART R5 Supported. Supported. Supported. Supported. Supported.)	ESC Signal	M1 - M4 on bottom side and M5-M8 on front side.
Supported. SDA & SCL pads on front side. Used for magnetometer, sonar, etc. Supported. SV, G and LED pads on bottom of the front side. Used for WS2812 LED controlled by Betaflight firmware. Buzzer BZ+ and BZ- pad used for 5V Buzzer Supported. [A]. 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. [B]. When the FC is powered on and in standby mode, the BOOT button can be used to controller the LED strips connected to LED1-LED4 connectors on the bottom side. By default, short-press the BOOT button to cycle the LED displaying mode. Long-press the BOOT button to switch between SpeedyBee-LED mode and BF-LED mode. Under BF-LED mode, all the LED1-LED4 strips will be controlled by Betaflight firmware. RSSI Input Supported. Named as RS on the front side. Smart Port / F.Port Not supported Supported Flight Controller Firmware BetaFlight(Default), INAV (INAV firmware can only use Multishot (recommended) and OneShot125. Please note that DShot is not supported.) Firmware Target Name SPEEDYBEEF405V3 Mounting 30.5 x 30.5mm(4mm hole diameter) Dimension	UART	
Supported. 5V, G and LED pads on bottom of the front side. Used for WS2812 LED controlled by Betaflight firmware. Buzzer BZ+ and BZ- pad used for 5V Buzzer Supported. [A]. 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. [B]. When the FC is powered on and in standby mode, the BOOT button can be used to controller the LED strips connected to LED1-LED4 connectors on the bottom side. By default, short-press the BOOT button to cycle the LED displaying mode. Long-press the BOOT button to switch between SpeedyBee-LED mode and BF-LED mode. Under BF-LED mode, all the LED1-LED4 strips will be controlled by Betaflight firmware. RSSI Input Supported. Named as RS on the front side. Smart Port / F.Port Not supported BetaFlight(Default), INAV (INAV firmware can only use Multishot (recommended) and OneShot125. Please note that DShot is not supported.) Firmware Target Name SPEEDYBEEF405V3 Mounting 30.5 x 30.5mm(4mm hole diameter) Dimension 41.6(L) x 39.4(W) x 7.8(H)mm	ESC Telemetry	UART R5
by Betaflight LED Pad by Betaflight firmware. Buzzer BZ+ and BZ- pad used for 5V Buzzer Supported. [A]. 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. [B]. When the FC is powered on and in standby mode, the BOOT button can be used to controller the LED strips connected to LED1-LED4 connectors on the bottom side. By default, short-press the BOOT button to cycle the LED displaying mode. Long-press the BOOT button to switch between SpeedyBee-LED mode and BF-LED mode. Under BF-LED mode, all the LED1-LED4 strips will be controlled by Betaflight firmware. RSSI Input Supported. Named as RS on the front side. Smart Port / F.Port Not supported Supported Flight Controller Firmware BetaFlight(Default), INAV (INAV firmware can only use Multishot (recommended) and OneShot125. Please note that DShot is not supported.) Firmware Target Name SPEEDYBEEF405V3 Mounting 30.5 x 30.5mm(4mm hole diameter) Dimension 41.6(L) x 39.4(W) x 7.8(H)mm	I2C	Supported. SDA & SCL pads on front side. Used for magnetometer, sonar, etc.
Supported. [A]. 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. [B]. When the FC is powered on and in standby mode, the BOOT button can be used to controller the LED strips connected to LED1-LED4 connectors on the bottom side. By default, short-press the BOOT button to cycle the LED displaying mode. Long-press the BOOT button to switch between SpeedyBee-LED mode and BF-LED mode. Under BF-LED mode, all the LED1-LED4 strips will be controlled by Betaflight firmware. RSSI Input Supported. Named as RS on the front side. Smart Port / F.Port Not supported BetaFlight(Default), INAV (INAV firmware can only use Multishot (recommended) and OneShot125. Please note that DShot is not supported.) Firmware Target Name SPEEDYBEEF405V3 Mounting 30.5 x 30.5mm(4mm hole diameter) Dimension 41.6(L) x 39.4(W) x 7.8(H)mm	Traditional Betaflight LED Pad	
[A]. 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. [B]. When the FC is powered on and in standby mode, the BOOT button can be used to controller the LED strips connected to LED1-LED4 connectors on the bottom side. By default, short-press the BOOT button to cycle the LED displaying mode. Long-press the BOOT button to switch between SpeedyBee-LED mode and BF-LED mode. Under BF-LED mode, all the LED1-LED4 strips will be controlled by Betaflight firmware. RSSI Input Supported. Named as RS on the front side. Smart Port / F.Port Not supported BetaFlight(Default), INAV (INAV firmware can only use Multishot (recommended) and OneShot125. Please note that DShot is not supported.) Firmware Target Name SPEEDYBEEF405V3 Mounting 30.5 x 30.5mm(4mm hole diameter) 41.6(L) x 39.4(W) x 7.8(H)mm	Buzzer	BZ+ and BZ- pad used for 5V Buzzer
Smart Port / F.Port Supported Flight Controller Firmware BetaFlight(Default), INAV (INAV firmware can only use Multishot (recommended) and OneShot125. Please note that DShot is not supported.) Firmware Target Name SPEEDYBEEF405V3 Mounting 30.5 x 30.5mm(4mm hole diameter) Dimension 41.6(L) x 39.4(W) x 7.8(H)mm	BOOT Button	[A]. 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. [B]. When the FC is powered on and in standby mode, the BOOT button can be used to controller the LED strips connected to LED1-LED4 connectors on the bottom side. By default, short-press the BOOT button to cycle the LED displaying mode. Long-press the BOOT button to switch between SpeedyBee-LED mode and BF-LED mode. Under BF-LED mode, all the
Supported Flight Controller Firmware BetaFlight(Default), INAV (INAV firmware can only use Multishot (recommended) and OneShot125. Please note that DShot is not supported.) Firmware Target Name SPEEDYBEEF405V3 Mounting 30.5 x 30.5mm(4mm hole diameter) Dimension 41.6(L) x 39.4(W) x 7.8(H)mm	RSSI Input	Supported. Named as RS on the front side.
Supported Flight Controller Firmware OneShot125. Please note that DShot is not supported.) Firmware Target Name SPEEDYBEEF405V3 Mounting 30.5 x 30.5mm(4mm hole diameter) Dimension 41.6(L) x 39.4(W) x 7.8(H)mm	Smart Port / F.Port	Not supported
Mounting 30.5 x 30.5mm(4mm hole diameter) Dimension 41.6(L) x 39.4(W) x 7.8(H)mm	Supported Flight Controller Firmware	
Dimension 41.6(L) x 39.4(W) x 7.8(H)mm	Firmware Target Name	SPEEDYBEEF405V3
	Mounting	30.5 x 30.5mm(4mm hole diameter)
Weight 9.6g	Dimension	41.6(L) x 39.4(W) x 7.8(H)mm
	Weight	9.6g

Part 3 - SpeedyBee BLS 60A 4-in-1 ESC

Layout 11/15

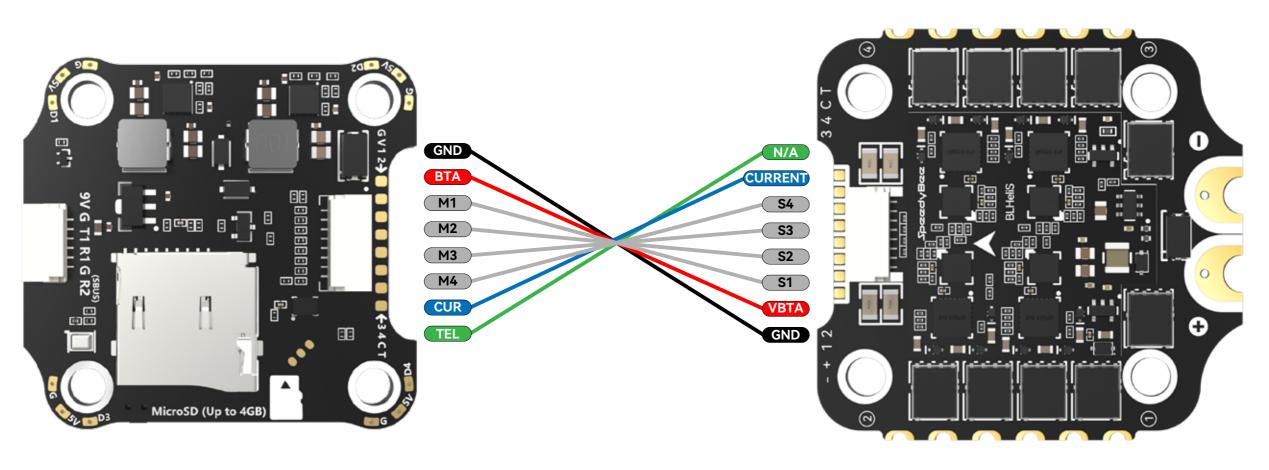






Note1: In order to prevent the stack from being burnt out by voltage spikes on powering up, it is strongly recommended to use the Low ESR capacitor in the package.

Note2: The FC and ESC can also connected via direct soldering. Soldering pads definition is as follows.

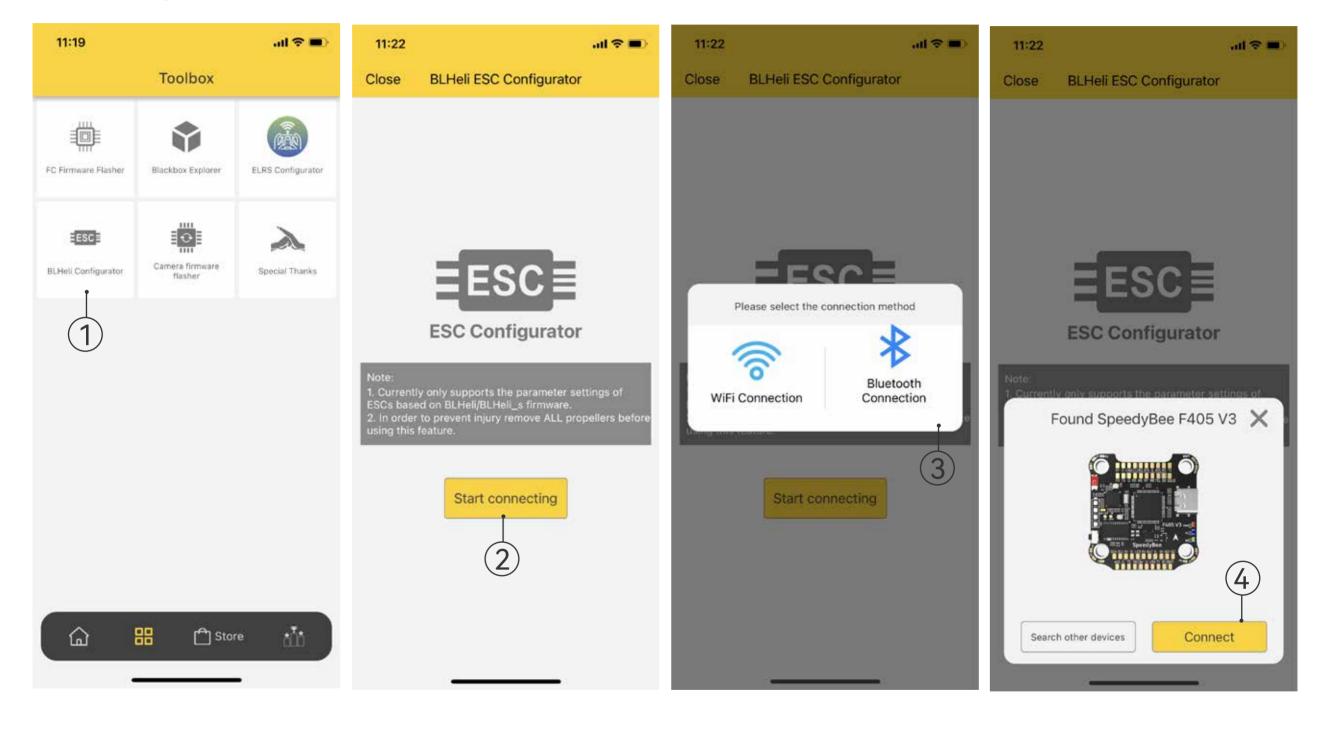


F405 V3 Flight Controller

BLS 60A 4-in-1 ESC

ESC Configuration

■ You could use SpeedyBee app to completely configure this 8-bit ESC. The steps are as follows:



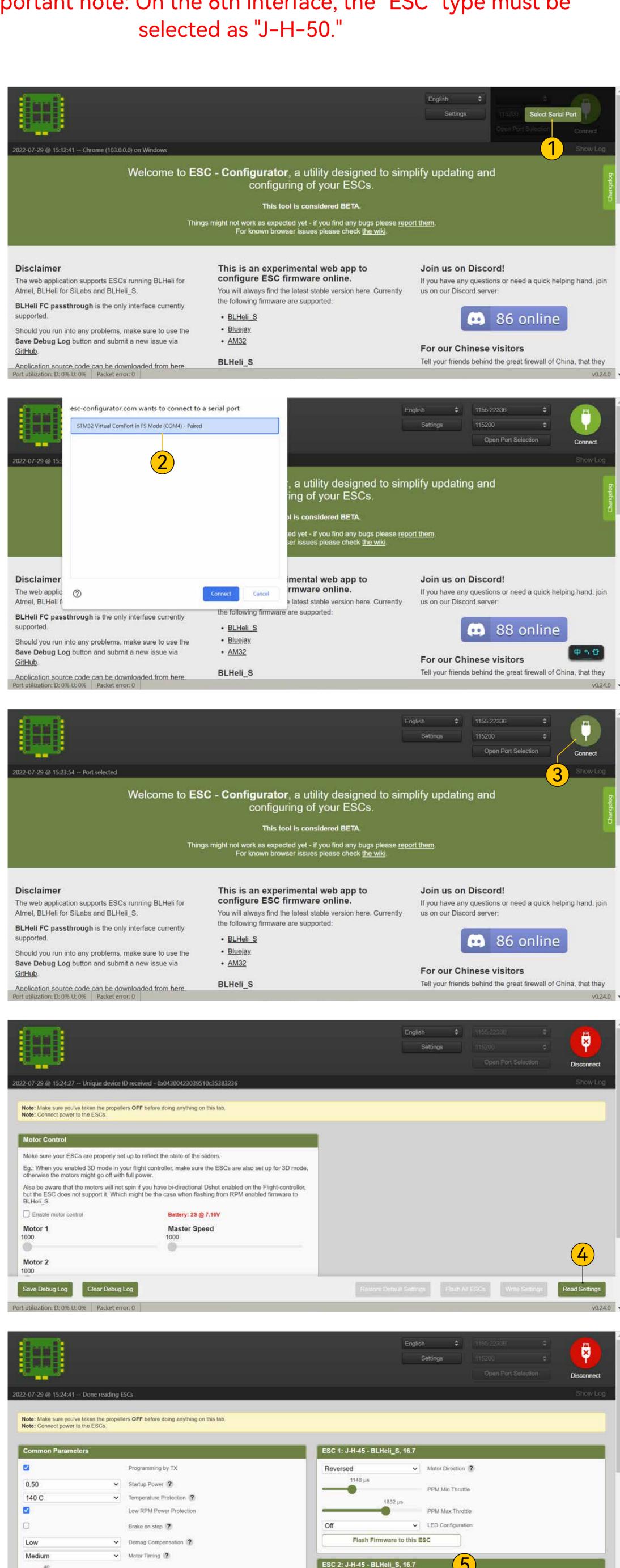
■ You could also use PC configurators to configure this ESC. We recommend the ESC Configurator. Please use Google Chrome browser and visist: http://www.esc-configurator.com.

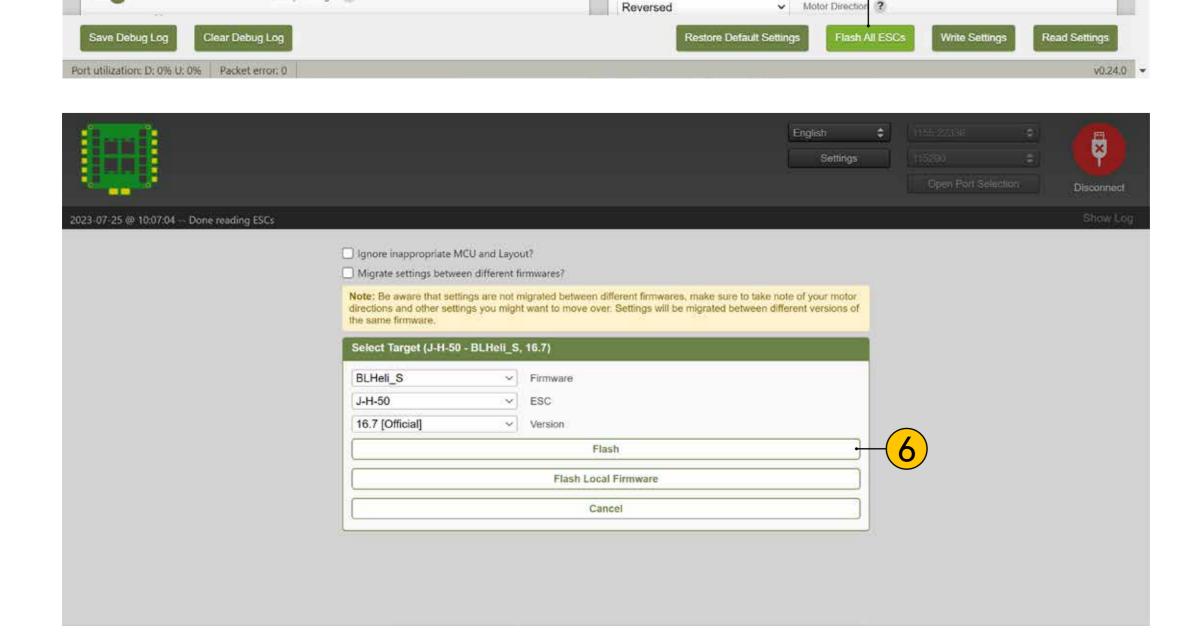
■ This 8-bit 60A ESC can run BLHeliS or Bluejay firmware. It is loaded with BLHeliS firmware by default. You could also flash it to Bluejay firmware which can support RPM filtering and Bi-directional Dhsot.

Firmware flashing steps are as follows:

- Remove all the propellers from your drone.
- Ensure that the flight controller is connected properly to the ESC, then power up the drone. This step ensures that the ESC starts up correctly.
- Connect the flight controller to the computer using a USB Type-C cable.
- Open the Chrome browser and visit the following website: https://www.esc-configurator.com/
- Follow the firmware flashing steps as shown in the screenshots below.

Important note: On the 6th interface, the "ESC" type must be selected as "J-H-50."





Beep Strength ?

Specifications

Product Name	SpeedyBee BLS 60A 30x30 4-in-1 ESC
Firmware	BLHeli_S J-H-40
PC Configurator Download Link	https://esc-configurator.com/
Continuous Current	60A * 4
Burst Current	80A(10sec)
TVS Protective diode	Yes
External Capacitor	1000uF Low ESR Capacitor(In the package)
ESC Protocol	DSHOT300/600
Power Input	3-6S LiPo
Power Output	VBAT
Current Sensor	Support (Scale=400 Offset=0)
ESC Telemetry	Not supported
Mounting	30.5 x 30.5mm(4mm hole diameter)
Dimension	45.6(L) * 44(W) *8mm(H)
Weight	23.5g