



**MATEKSYS**

# **FLIGHT CONTROLLER H743-WING**

## **QUICK START GUIDE**

MCU: STM32H743VIT6, 480MHz, 2MB Flash  
IMU: MPU6000 (SPI1) & ICM20602 (SPI4)  
Baro: DPS310 (I2C2)  
OSD: AT7456E (SPI2)  
Blackbox: MicroSD card slot (SDIO)

7x Uarts (1,2,3,4,6,7,8) with built-in inversion  
13x PWM outputs  
2x I2C  
1x CAN  
6x ADC (VBAT, Current, RSSI, Analog AirSpeed, VB2, CU2 )  
1x SPI3 breakout

Switchable Dual Camera Inputs  
Switchable 5V/9V(12V) for Camera/VTX

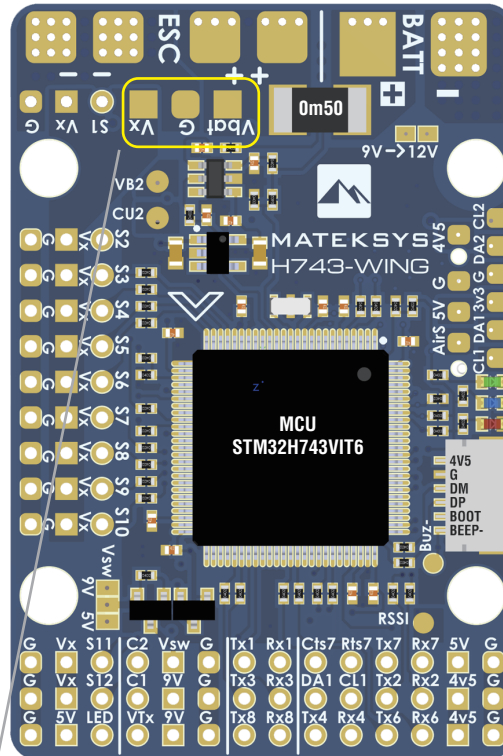
9~36V DC IN (3~8S LiPo)  
High-precision Current Sense 132A Range  
BEC 5V 2A for FC  
BEC 9V 2A for camera/VTX, 12V option  
BEC Vx 8A cont. 10A burst for servos, 5V, 6V or 7.2V option  
LDO 3.3V 200mA

ArduPilot hwdef: MATEKH743  
INAV: MATEKH743

# LAYOUT

+ & - : Battery & ESC power pads, 9-36V DC(3-8S LIPO).

Battery Voltage Sensor: 1K:10K  
 Current Sensor: 132A, 3.3V ADC  
 Current Sense resistor: 60A continuous, 132A burst.



S1-S12, LED: PWM1-PWM13

Vx: BEC 5V/6V/7.2V for servos, Default is 5V  
 8A cont. Max.10A



5V: onboard BEC 5V 2A cont. Max.3A  
 9V: onboard BEC 9V 2A cont. Max.3A,  
 \*\*\* 9V rise to 12V if "9V->12V" jumper is bridged.  
 G: Ground

connection with silicon wires 20-24 AWG

Vsw: 5V/9V selection  
 \*\*\* ON/OFF can be switched via ArduPilot Relay or Modes/USER1 (INAV)  
 \*\*\* Max.1A load on this pad. (Default ON)  
 \*\*\* Vsw jumper one or the other must be bridged

C1: Camera-1 video IN (Default)  
 C2: Camera-2 video IN  
 \*\*\* C1/C2 can be switched via ArduPilot Relay or Modes/USER2 (INAV)

VTX: Video OUT for Video Transmitter

## ArduPilot tips

on board battery voltage: BATT\_VOLT\_PIN 10, BATT\_VOLT\_MULT 11  
 on board current sensor: BATT\_CURR\_PIN 11, BATT\_AMP\_PERVLT 40

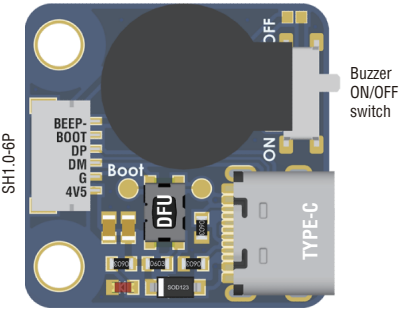
VB2: Voltage divider 1K:10K, Max.36V supported  
 BATT2\_VOLT\_PIN 18, BATT2\_VOLT\_MULT 11  
 CU2: for external current sensor, 0-3.3V  
 BATT2\_CURR\_PIN 7

9V->12V 9V rise to 12V

AirS: Analog Airspeed sensor (0-6.6V)  
 1: 1 voltage divider built-in  
 ARSPD\_PIN 4

DA2 & CL2: I2C2  
 DA1 & CL1: I2C1  
 3.3: LD03.3V 200mA

LED 0: Blue, FC Status  
 LED 1: Green, FC Status  
 LED 3.3: Red, 3.3V Status



Rssi: Analog RSSI, RSSI\_ANA\_PIN 8 (ArduPilot)

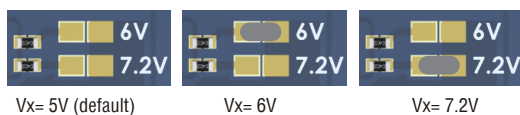
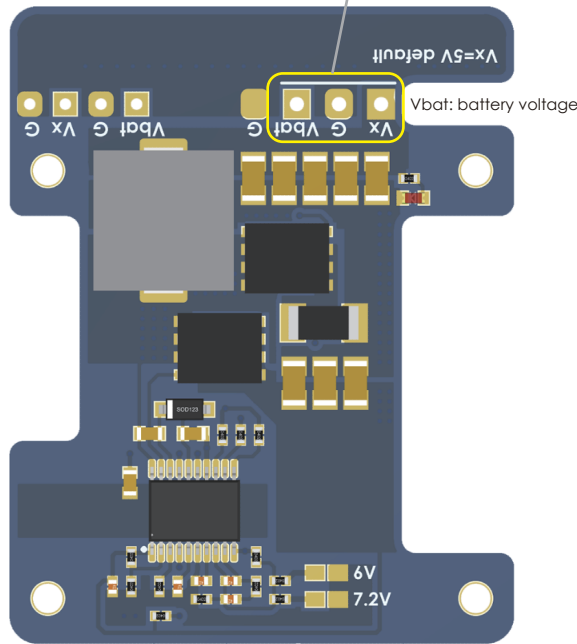
4V5: 4.4-4.8V, Max.500mA  
 \*\*\* the voltage is also supplied when connecting via USB

TX1/RX1: UART1, TX3/RX3: UART3  
 TX8/RX8: UART8, TX4/RX4: UART4

TX7/RX7: UART7  
 CTS7/Rts7: UART7\_CTS/RTS for ArduPilot Telem1

TX2/RX2: UART2  
 DA1 & CL1: I2C1, for compass

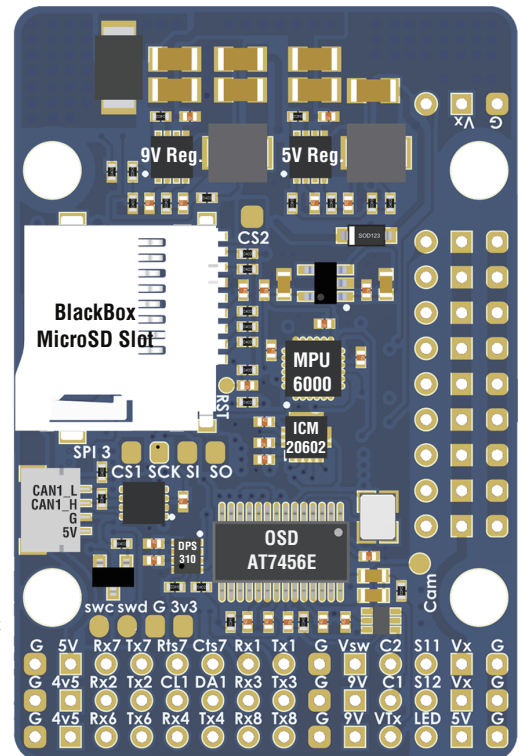
RX6: UART6-RX for Serial\_RX by default  
 PPM share RX6 pad  
 TX6: UART6-TX



SPI3 breakout

CAN Port  
 SH1.0-4P connector

SWC & SWD: STlink

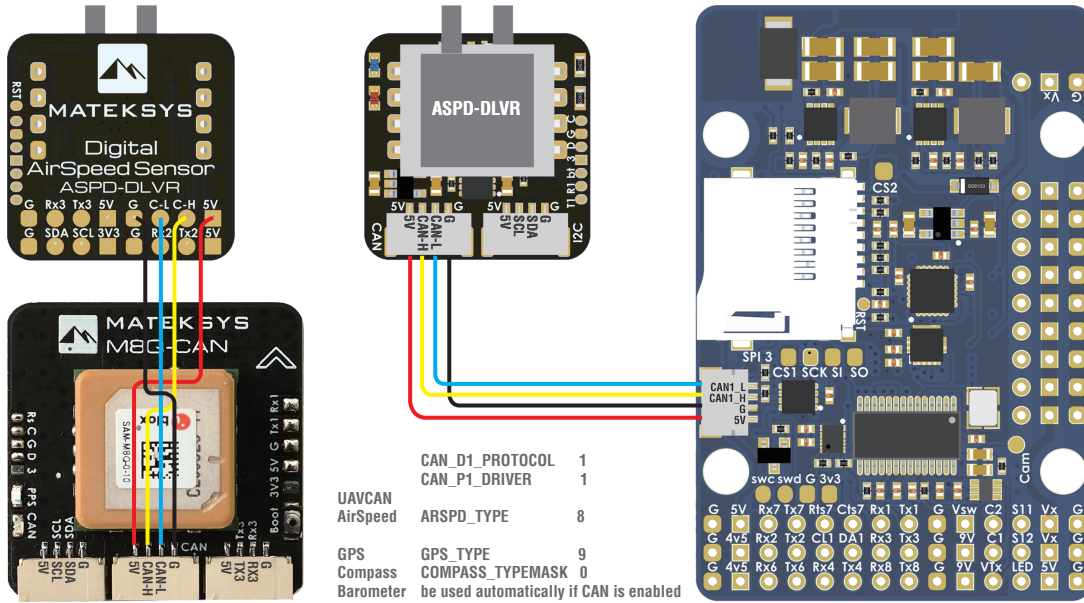


Size: 54x36x13mm  
 Weight: 30g w/ top and bottom plate & USB extender  
 Holes:  $\Phi$ 4mm, 30.5mm mounting  
 M3 Silicon Grommets included

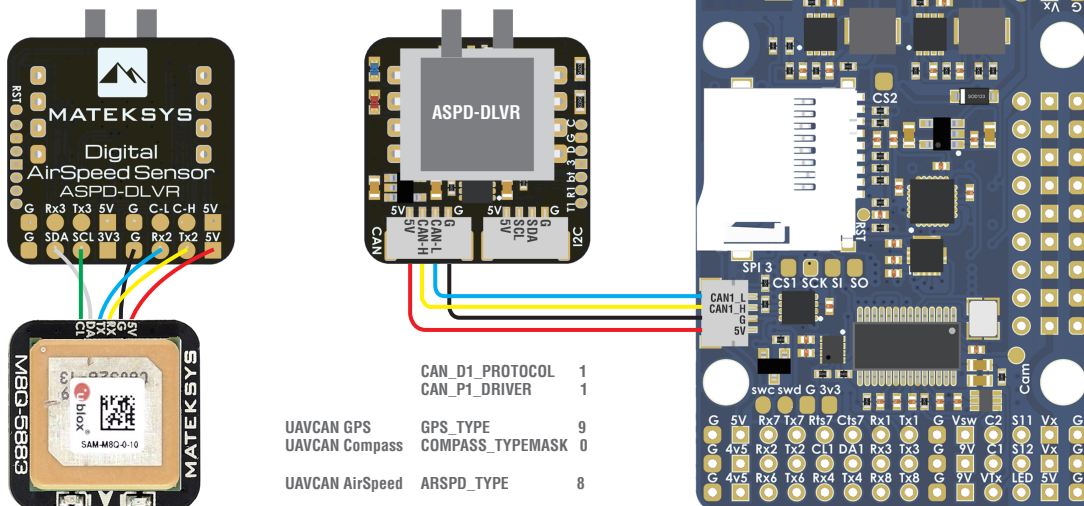


# CAN (UAVCAN) Peripherals

2x CAN Peripherals in parallel



## ASPD-DLVR CAN Node



## M8Q-CAN Node, ASPD-DLVR I2C mode

