



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

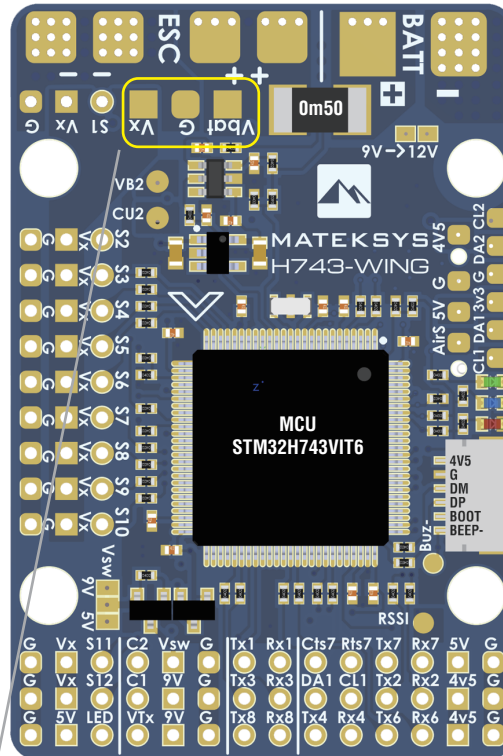
9~36V DC IN (3~8S LiPo)
High-precision Current Sense 132A Range
BEC 5V 2A for FC
BEC 9V 2A for camera/VTX, 12V option
BEC Vx 8A cont. 10A burst for servos, 5V, 6V or 7.2V option
LDO 3.3V 200mA

ArduPilot hwdef: MATEKH743

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

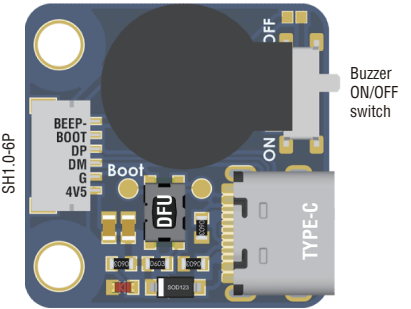
VB2: Voltage divider 1K:10K, Max.36V supported
 BATT2_VOLT_PIN 18, BATT2_VOLT_MULT 11
 CU2: for external current sensor, 0-3.3V
 BATT2_CURR_PIN 7

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)

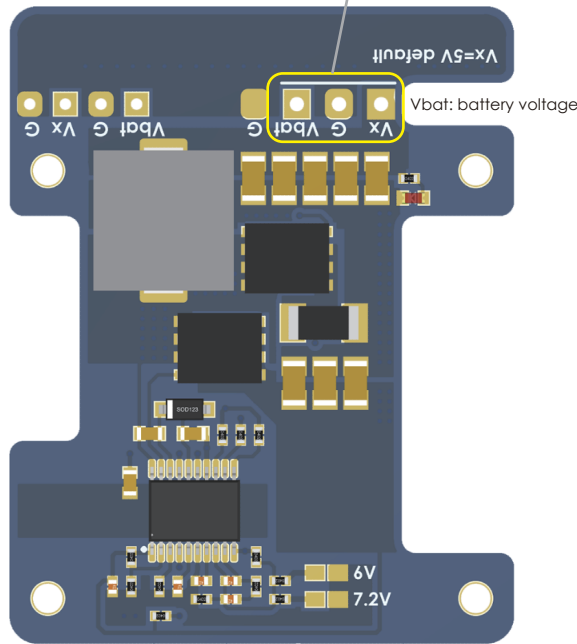
4V5: 4.4-4.8V, Max.500mA
 *** the voltage is also supplied when connecting via USB

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

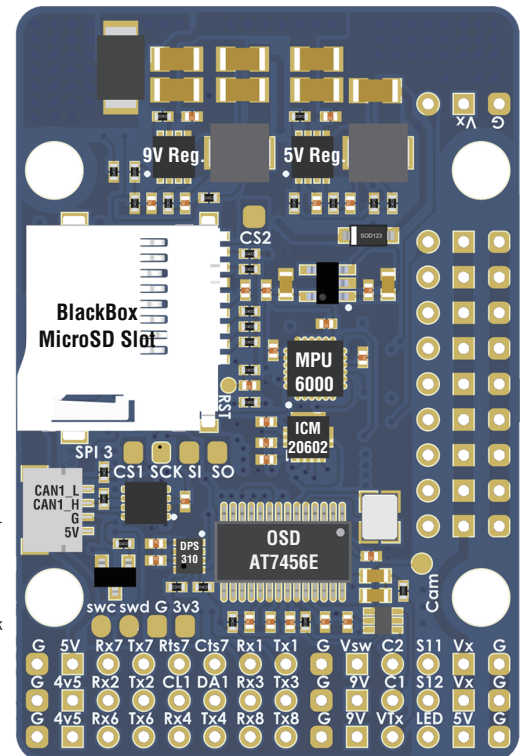
RX6: UART6-RX for Serial_RX by default
 PPM share RX6 pad
 TX6: UART6-TX



SPI3 breakout

CAN Port
 SH1.0-4P connector

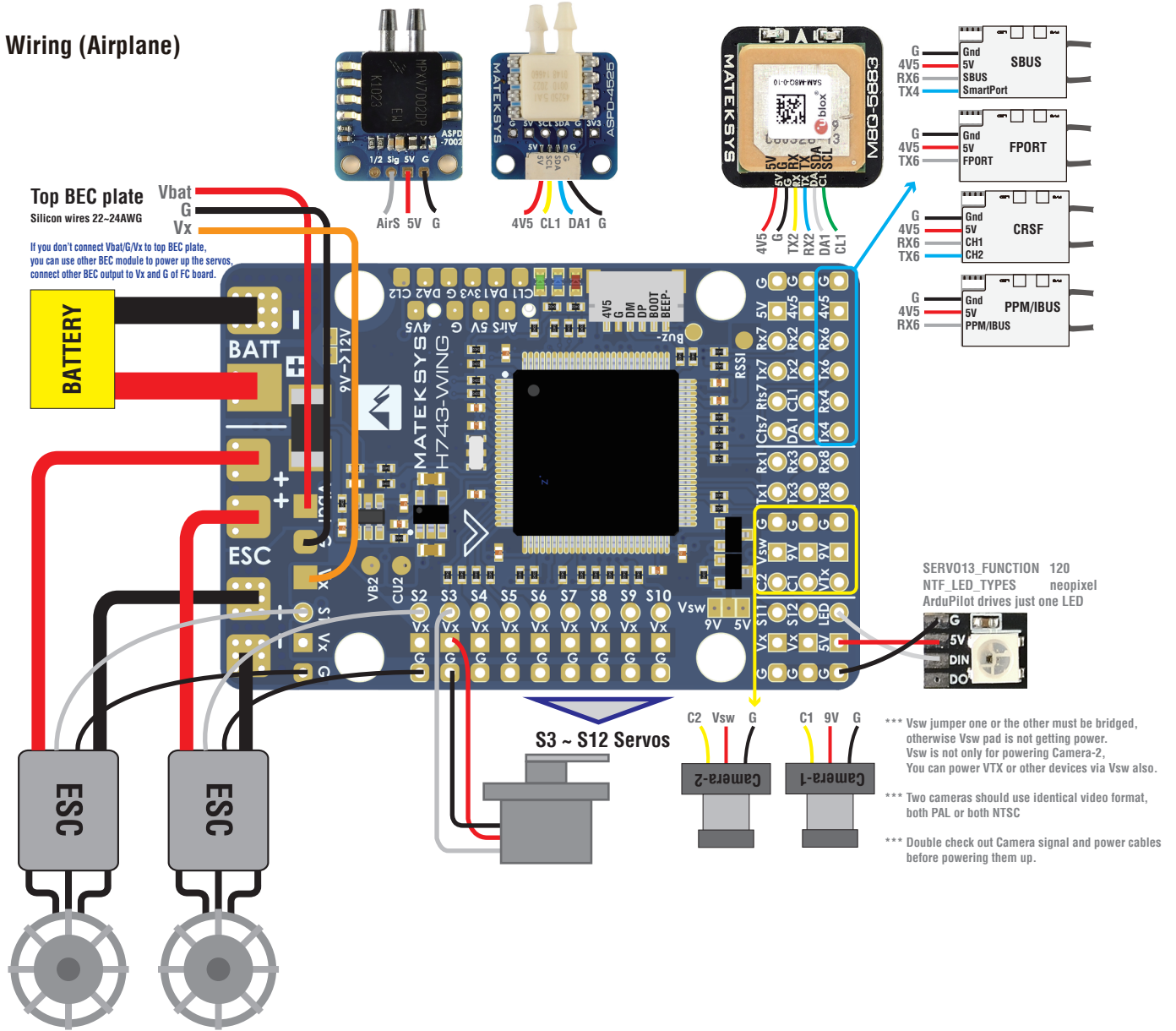
SWC & SWD: STlink



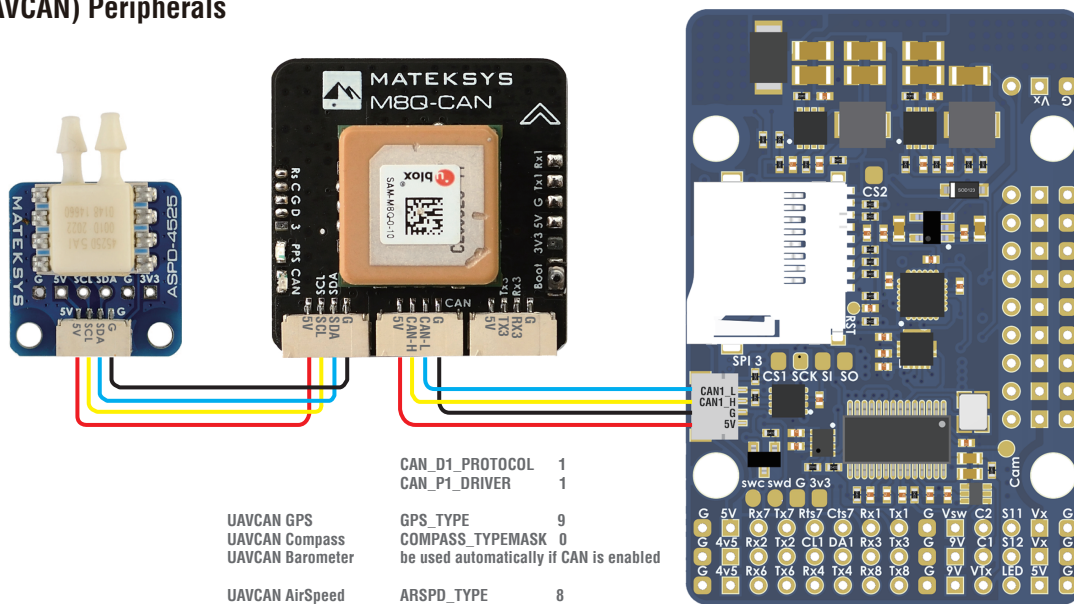
Size: 54x36x13mm
 Weight: 30g w/ top and bottom plate & USB extender
 Holes: Φ 4mm, 30.5mm mounting
 M3 Silicon Grommets included

ArduPilot hwdef: MATEKH743

Wiring (Airplane)

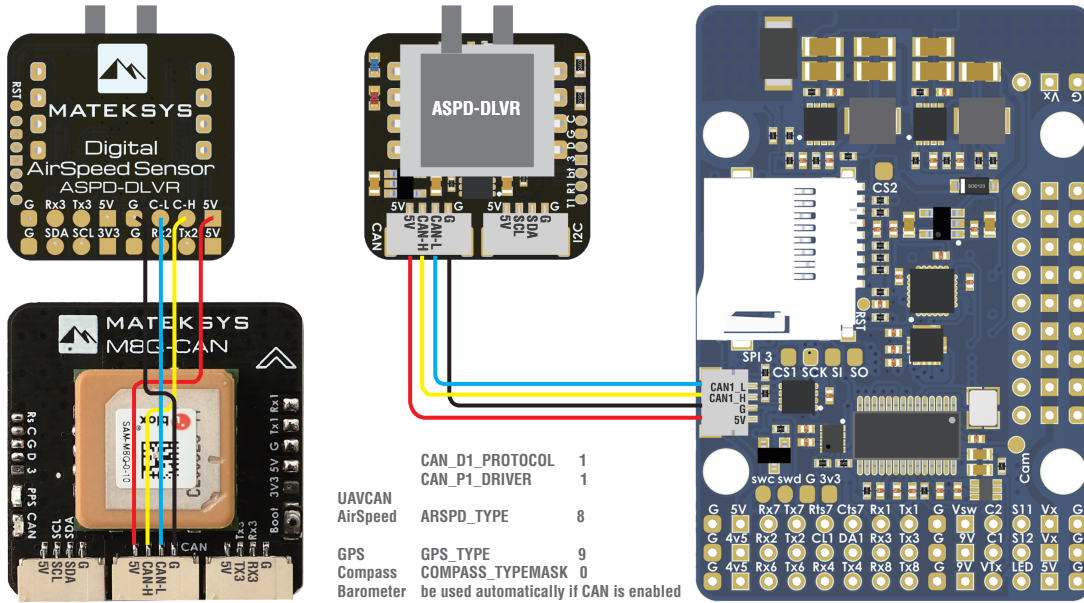


CAN (UAVCAN) Peripherals

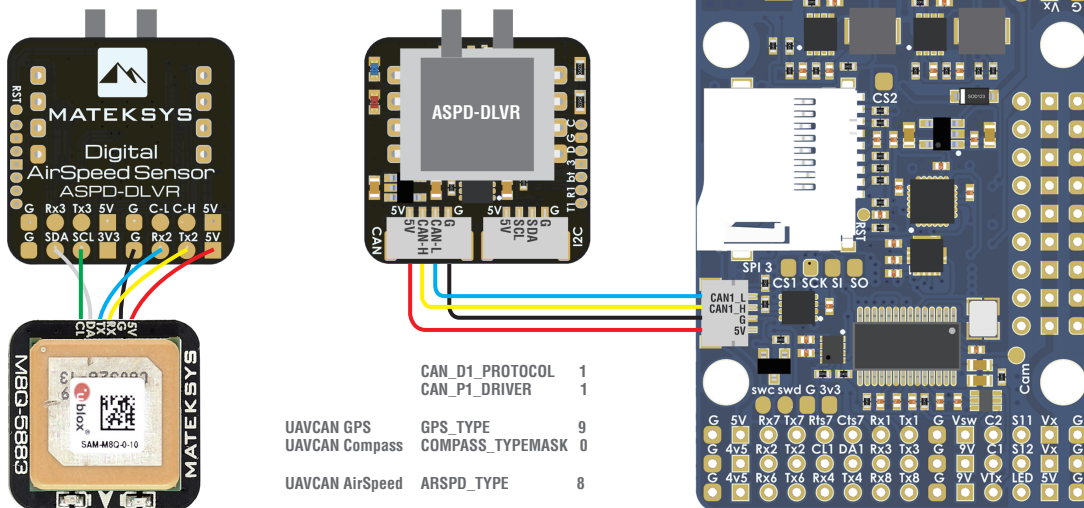


CAN (UAVCAN) Peripherals

2x CAN Peripherals in parallel



ASPD-DLVR CAN Node



M8Q-CAN Node, ASPD-DLVR I2C mode

