MATEKSYS

FLIGHT CONTROLLER F722-WPX

QUICK START GUIDE

MCU: 216MHz STM32F722RET6
IMU: MPU6000 (SPI)
Baro: DPS310 (I2C)
OSD: Pixel OSD/FrskyOSD (Uart6)
Blackbox: MicroSD socket (SPI)

6x UARTs(5 Spare) with built-in inversion
1x Softserial_Tx option
10x PWM outputs
1x I2C
4x ADC (VBAT, Current, RSSI, AirSpeed)
1x SH1.0_6pin connector (4V5/G/TX4/RX4/SDA/SCL) for GPS/compass
1x SH1.0_6pin connector for external USB and buzzer

Switchable Dual Camera Inputs
Switchable Vbat for Camera/VTX

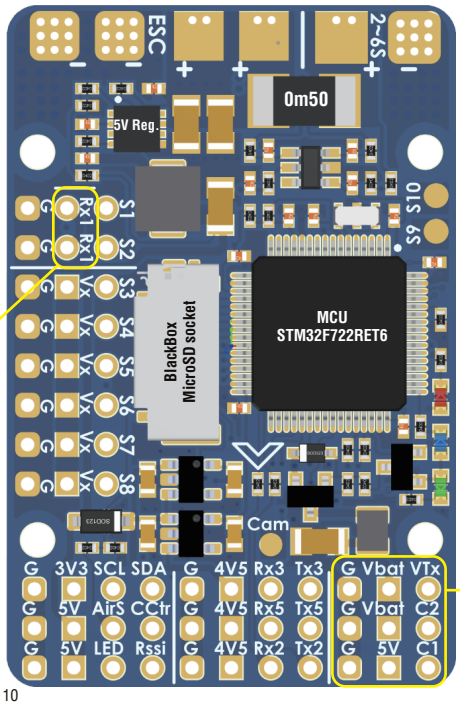
6~30V DC IN (2~6S LiPo)
132A high-precision Current Sense
BEC 5V 2A for FC & Peripherals
BEC Vx 5A for servos, 5V/ 6V option
Vbat filtered output 1A for VTx and Camera
LDO 3.3V 200mA

INAV Target MATEKF722WPX

LAYOUT

+ & - : Battery & ESC power pads, 6~30V DC(2~6S LIPO).

Battery Voltage Sensor: 1K:10K, Scale 1100
Current Senor: 132A, 3.3V ADC, Scale 250
Current Sense resistor: 0.5mR, 60A continuous, 132A burst.



INAV Plane mixer
S1/S2: ESC signal
S3/S4/S5/S6/S7/S8: Servo signal

Vx: BEC 5V/6V for servos, 5A cont.
Default is 5V

Rx1: UART1_RX for ESC telemetry
DO NOT connect the ESC onboard BEC output(Red wire) to Rx1 pad.

INAV Plane mixer
S9/S10: Servo signal

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

AirS: Analog Airspeed sensor
(0~6.6V)
1: 1 voltage divider built-in
LED: 2812 LED signal output
Rssi: Analog RSSI IN
CCtr: Not support

SCL / SDA: I2C1
*** compass QMC5883/ HMC5883 / MAG3110 / IST8310 / LIS3MDL
*** Digital AirSpeed sensor Pitot_MS4525
*** OLED 0.96"

Vbat: Filtered battery voltage
*** ON/OFF switch via Modes/USER1
*** Max.1A load on this rail. (Default ON)

VTx: Analog Video OUT to Video Transmitter

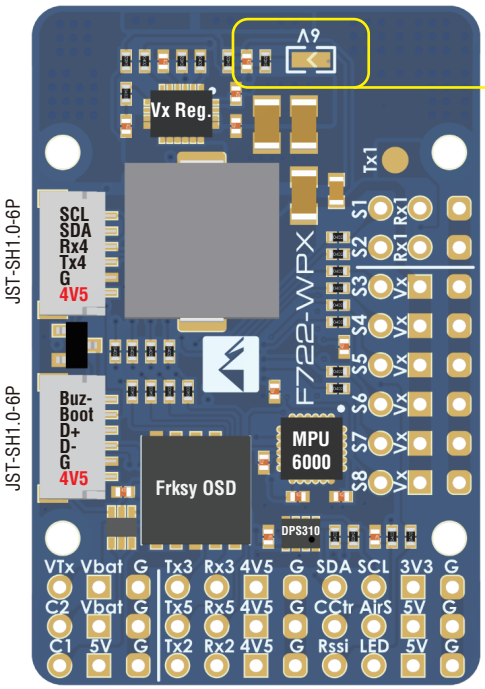
C1: Camera-1 video IN (Default)
C2: Camera-2 video IN
*** C1/C2 switch via Modes/USER2
*** Two cameras should use identical video format, both PAL or both NTSC
*** Double check out Camera signal and power cables before powering them up.

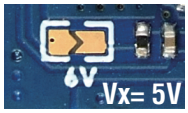
Tx3/Rx3: UART3_TX & RX
Tx5/Rx5: UART5_TX & RX

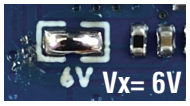
RX2: UART2_RX for Serial RX by default, PPM share RX2 pad
TX2: UART2_TX w/o CPU based serial ports enabled
TX2: Softserial_TX1 w/ CPU based serial ports enabled

3V3: LDO3.3V 200mA
5V: onboard BEC 5V 2A cont. Max.3A
4V5: 4.4~4.8V, Max.500mA
*** the voltage is also supplied when connecting via USB

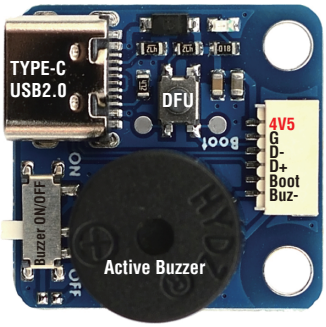
*** F722 all UARTs have built-in inversion, SBUS can be connected to any spare UART_RX.
*** Frsky FPort, SmartPort, Tramp & SmartAudio can be connected to any spare UART_TX







Tx1/Rx1: UART1_TX & RX



Φ3mm, 16mm mounting

Size: 44x29x10mm
Weight: 20g w/ bottom plate & USB externder
Holes: Φ2mm, 25mm mounting

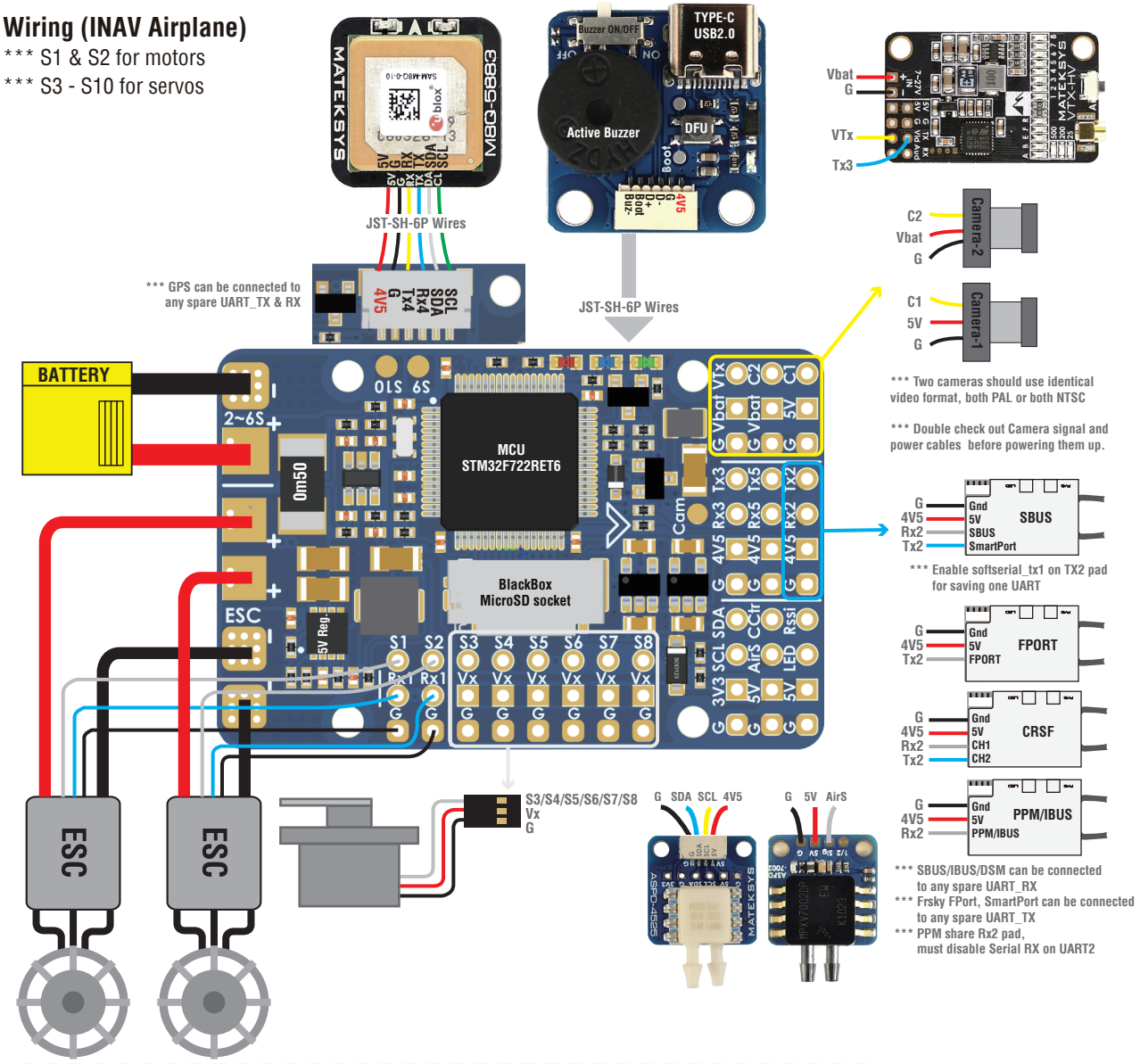
INAV Target: MATEKF722WPX

*** CLI defaults after reflashing

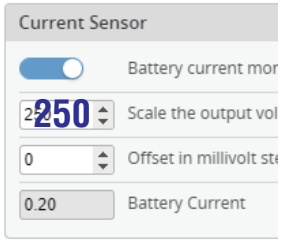
Wiring (INAV Airplane)

*** S1 & S2 for motors

*** S3 - S10 for servos



Identifier	Data	Telemetry	RX	Sensors	Peripherals
USB VCP	MSP 115200	Disabled AUTO	Serial RX	Disabled 115200	Disabled 115200
UART1	MSP 115200	Disabled AUTO	Serial RX	Disabled 115200	ESC output/telemetry 115200
UART2	MSP 115200	Disabled AUTO	Serial RX	Disabled 115200	Disabled 115200
UART3	MSP 115200	Disabled AUTO	Serial RX	Disabled 115200	IRC Tramp 115200
UART4	MSP 115200	Disabled AUTO	Serial RX	GPS 115200	Disabled 115200
UART5	MSP 115200	Disabled AUTO	Serial RX	Disabled 115200	Disabled 115200
UART6	MSP 115200	Disabled AUTO	Serial RX	Disabled 115200	FrSky OSD 115200
SOFTSERIAL1	MSP 115200	SmartPort AUTO	Serial RX	Disabled 115200	Disabled 115200



FrskyOSD is enabled on UART6 by default
Do not change it.

Vbat Power / Camera switch

USER1 Add Range	No USER1 definition Vbat ON by default
USER2 Add Range	No USER2 definition C1 (Camera-1) ON by default