



MATEKSYS

FLIGHT CONTROLLER F411-WSE

QUICK START GUIDE

MCU: 100MHz STM32F411CEU6
IMU: MPU6000 (SPI)
Baro: BMP280 (I2C)
OSD: AT7456E (SPI)
Blackbox: No

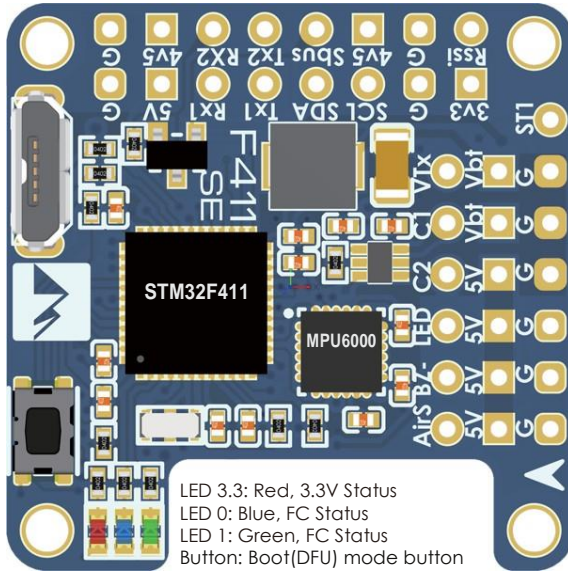
2x Uarts
2x Softserial_Tx
2x Motors & 4x Servos outputs
1x I2C
4x ADC (VBAT, Current, RSSI, AirSpeed)

Switchable Dual Camera Inputs

6~30V DC IN (2~6S LiPo)
Current Sense 78A, Scale 423
BEC 5V 2A cont. 3A Max. for FC
BEC Vx 3.5A cont. 5A Max. for servos, 6V option
LDO 3.3V 200mA
Vbat filtered output power

TARGET: INAV MATEKF411SE

LAYOUT



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

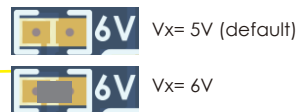
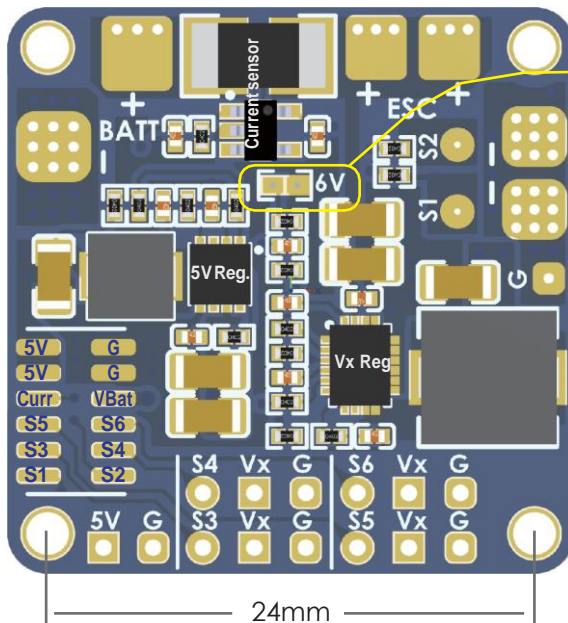
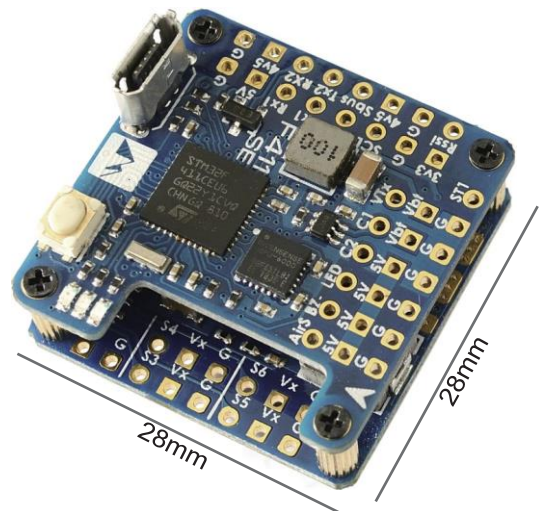
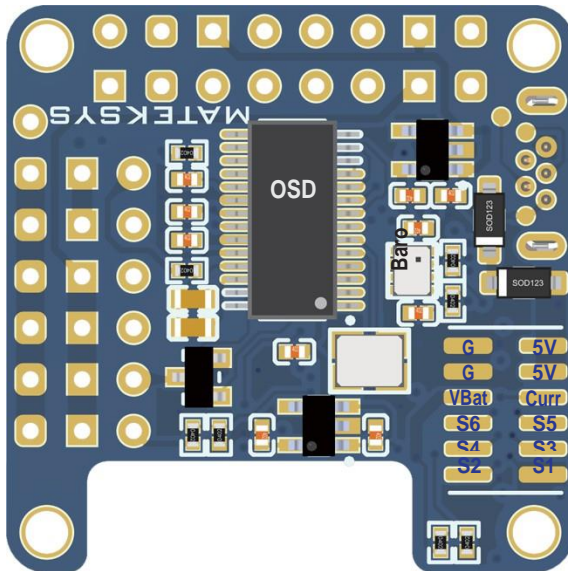
Tx2: UART2-TX, Softserial_Tx2 share Tx2 pad
Rx2: UART2-RX, PPM share RX2 pad
Sbus: RX2 with inversion for SBUS input

Tx1/Rx1: UART1
SCL/SDA: I2C1 for compass / OLED / Digital AirSpeed
*** compass HMC5883 /MAG3110 /QMC5883 /IST8310
*** Digital AirSpeed sensor Pitot_MS4525
*** OLED 0.96" 128x64

Rssi: Analog RSSI input
ST1: Softserial_Tx1

VTX: Video OUT for Video Transmitter
C1: Camera-1 video IN (Default)
C2: Camera-2 video IN
*** C1/C2 can be switched via Modes/USER1

LED: WS2812 LED signal output
Bz- & 5V: General active 5V buzzer
Bz-, 5V & G: Matek Dbuz5V
AirS: Analog Airspeed sensor (0~6.6V)
1:1 divider resistance built-in



+ & -: Battery & ESC power pads, 6~30V DC(2~6S LIPO)
Voltage meter scale: 1100
Current Sensor: 78A (Scale 423)

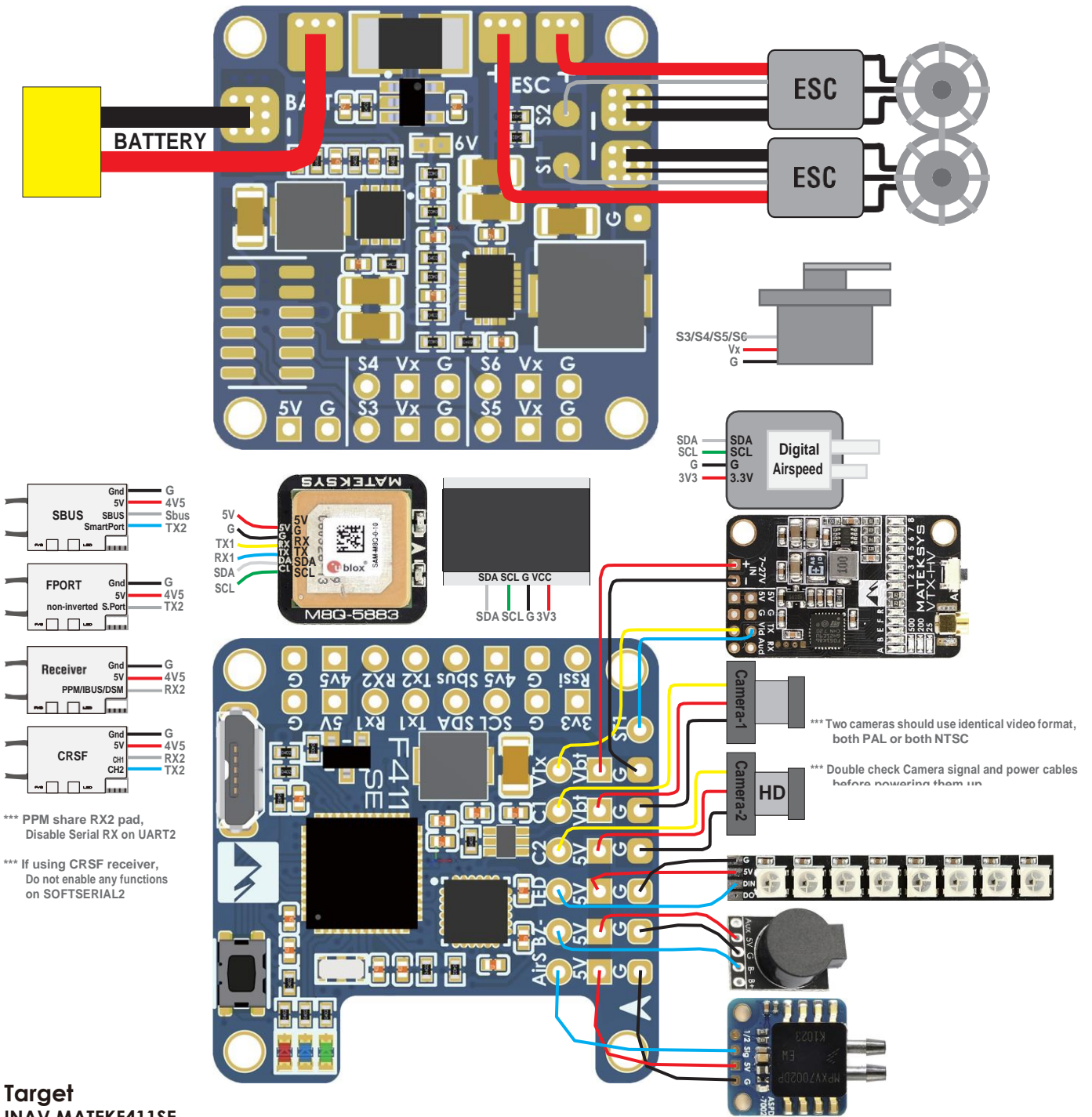
S1/S2: ESC signal for motor 1 & 2
G: ESC signal ground

S3/S4/S5/S6: Servo signal
Vx: onboard BEC for servos, Default is 5V
3.5A cont. Max.5A
5V: onboard BEC 5V 2A cont. Max.3A

Size: 28x28x14mm
Weight: 8.5g
Holes: Φ2mm, 24mm mounting

Wiring (INAV Airplane)

Airplane S7 & S8 for motors
S1/S2/S3/S4/S5/S6 for servos



Target INAV MATEK F411SE

*** CLI defaults after reflashing

Identifier	Data	Telemetry	RX	Sensors	Peripherals
USB VCP	<input checked="" type="checkbox"/> MSP 115200	Disabled AUTO	<input type="checkbox"/> Serial RX	Disabled 115200	Disabled 115200
UART1	<input type="checkbox"/> MSP 115200	Disabled AUTO	<input type="checkbox"/> Serial RX	GPS 57600	Disabled 115200
UART2	<input type="checkbox"/> MSP 115200	Disabled AUTO	<input checked="" type="checkbox"/> Serial RX	Disabled 57600	Disabled 115200
SOFTSERIAL1	<input type="checkbox"/> MSP 115200	Disabled AUTO	<input type="checkbox"/> Serial RX	Disabled 115200	IRC Tramp 115200
SOFTSERIAL2	<input type="checkbox"/> MSP 115200	SmartPort 115200	<input type="checkbox"/> Serial RX	Disabled 115200	Disabled 115200

Current Sensor

Battery current monitor

2423 Scale the output voltage

0 Offset in millivolt steps

0.20 Battery Current

Camera switcher

USER1 No USER1 definition
C1 (Camera-1) ON by default

Add Range

USER1 CH 8 C1 ON & C2 OFF

Add Range

Min: 1300 Max: 2100

900 1000 1200 1400 1500 1600 1800 2000 2100