Introduction Guide

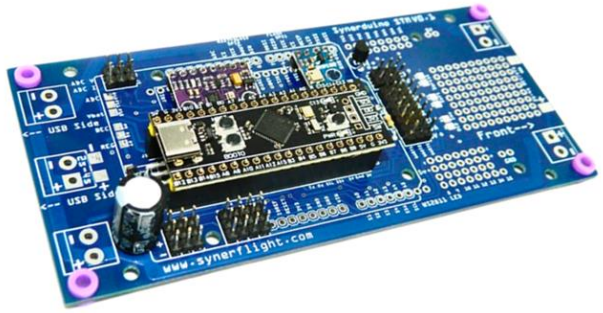
Synerduino STM

VERSIONS: F405, F411, H743

For more Information:
www.synerflight.com

STM VERSIONS THROUGHOUT THE YEARS

F411



SYNERDUINO STM
F411

1

F405

SYNERDUINO STM
F405

2

H743

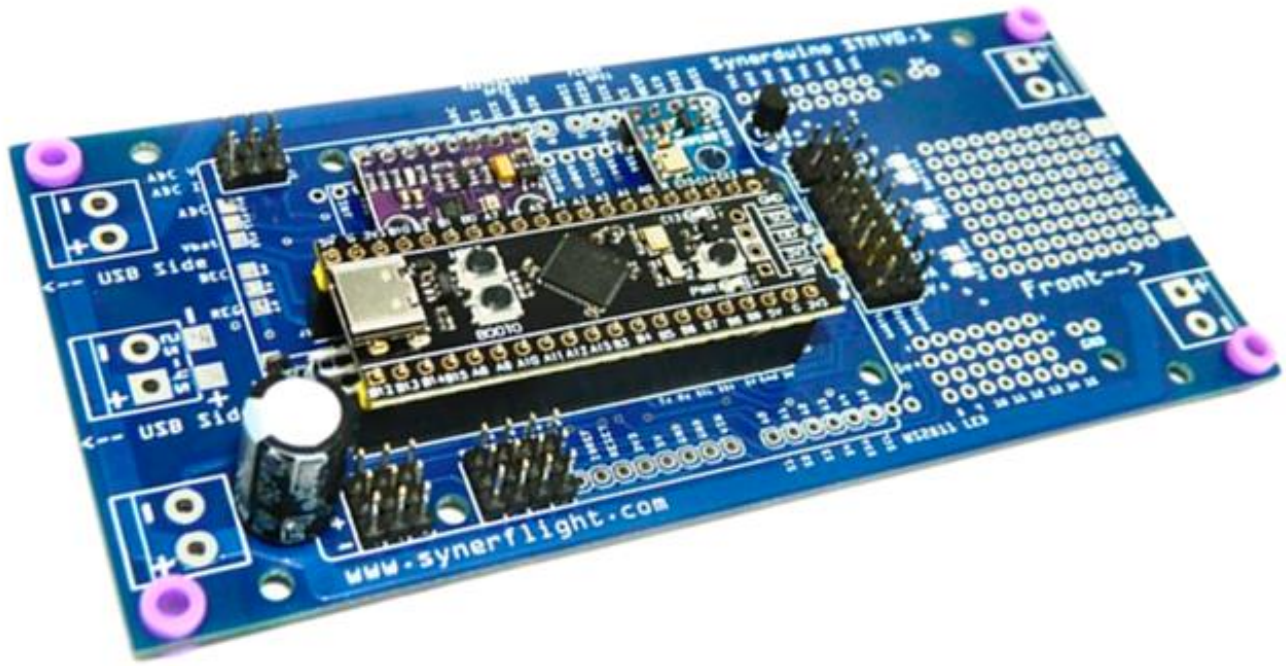
SYNERDUINO STM
H743

3

INTRODUCTION

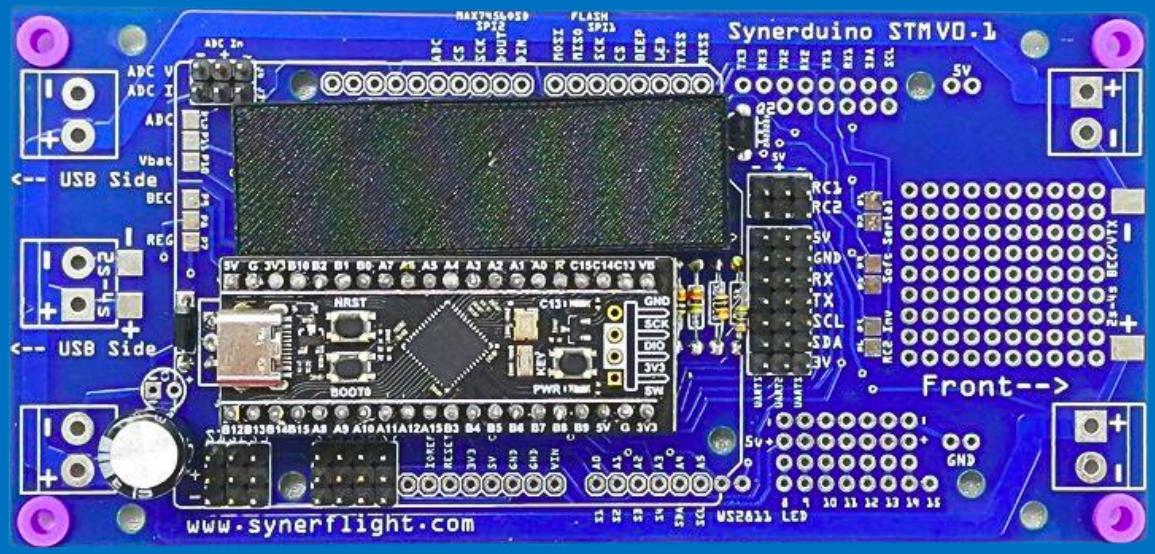
The Synerduino STM is a 32-bit version of the Synerduino shield family, designed to enhance the performance of your drone applications, making it an ideal tool for research developers in robotics and drone technology.

More details will be shared as they become available. The Synerduino STM shield is built on an STM32-based platform, offering advanced functionality for your drone projects while maintaining the classic Arduino form factor, ensuring compatibility with existing Arduino prototyping boards.



SYNERDUINO STM F411

ABOUT THE BOARD



Power

- WS2811 LED Power 5V 1.5A
- Serial Power Rail 5V 1.5A
- PWM Power Rail Regulated – 5V 1.5A
- Drone Power Input Voltage – 12.6V (3S) or 16.8V (4S)
- Power Distribution Lines – 12.6V-25.2V 80A

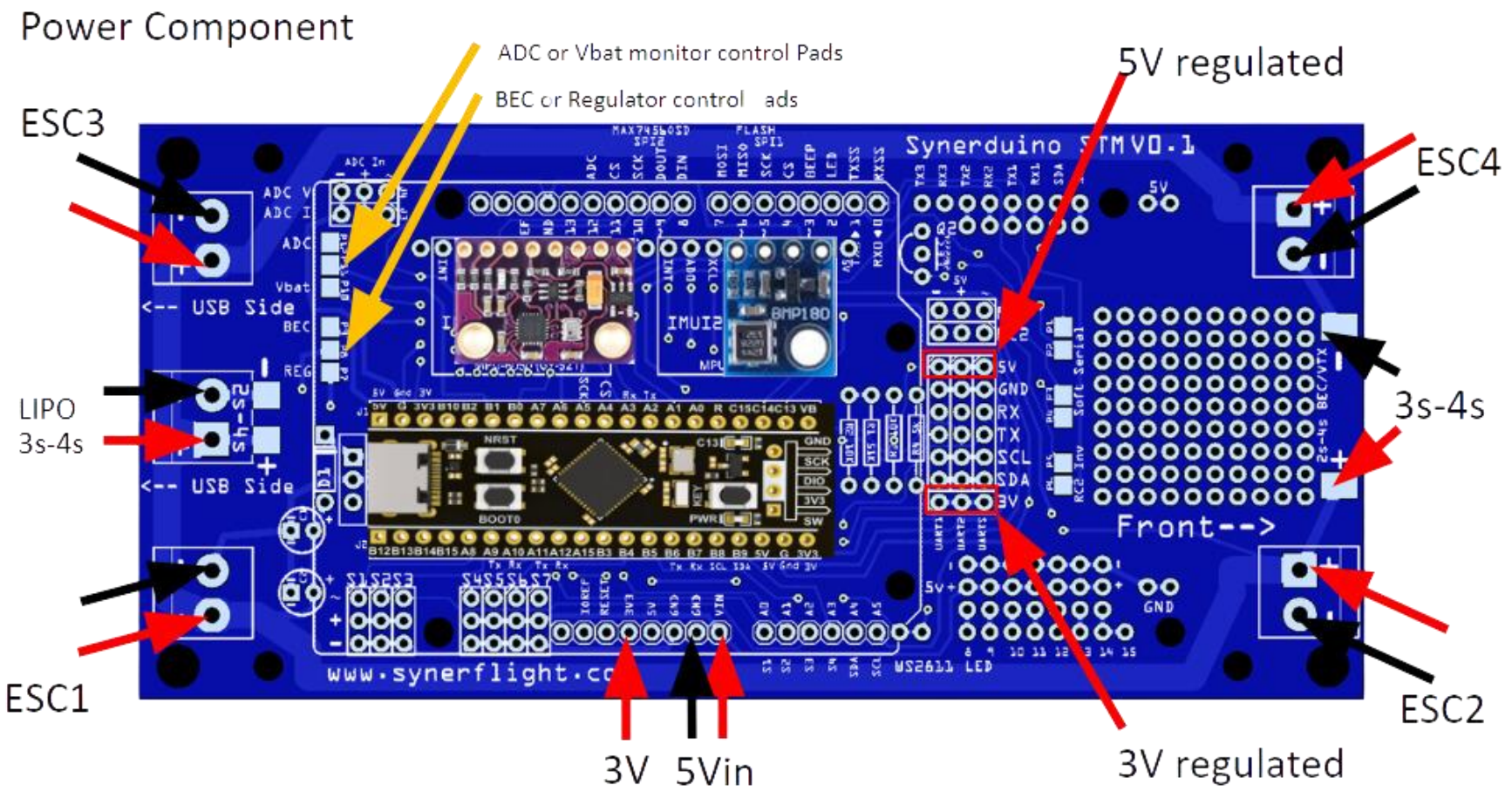
Properties

- Dimensions: 128 x 62 x 28 mm LWH / (V1.1)135mm x 62mm x 28mm
- Weight: 46.1g
- Arduino Prototyping Shield Footprint
- 4 Solder Pad set s for 4 ESCs and Motors
- DIY section for component addons
- 7 3-Pin PWM Headers S1-S7
- 2 3-Pin RC Headers w/ Sbus inverter
- 3 7-Pin Serial Headers
- 2 3pin ADC in (Voltage and Current)
- 2 RC Serial input Pin
- WS2811 LED output

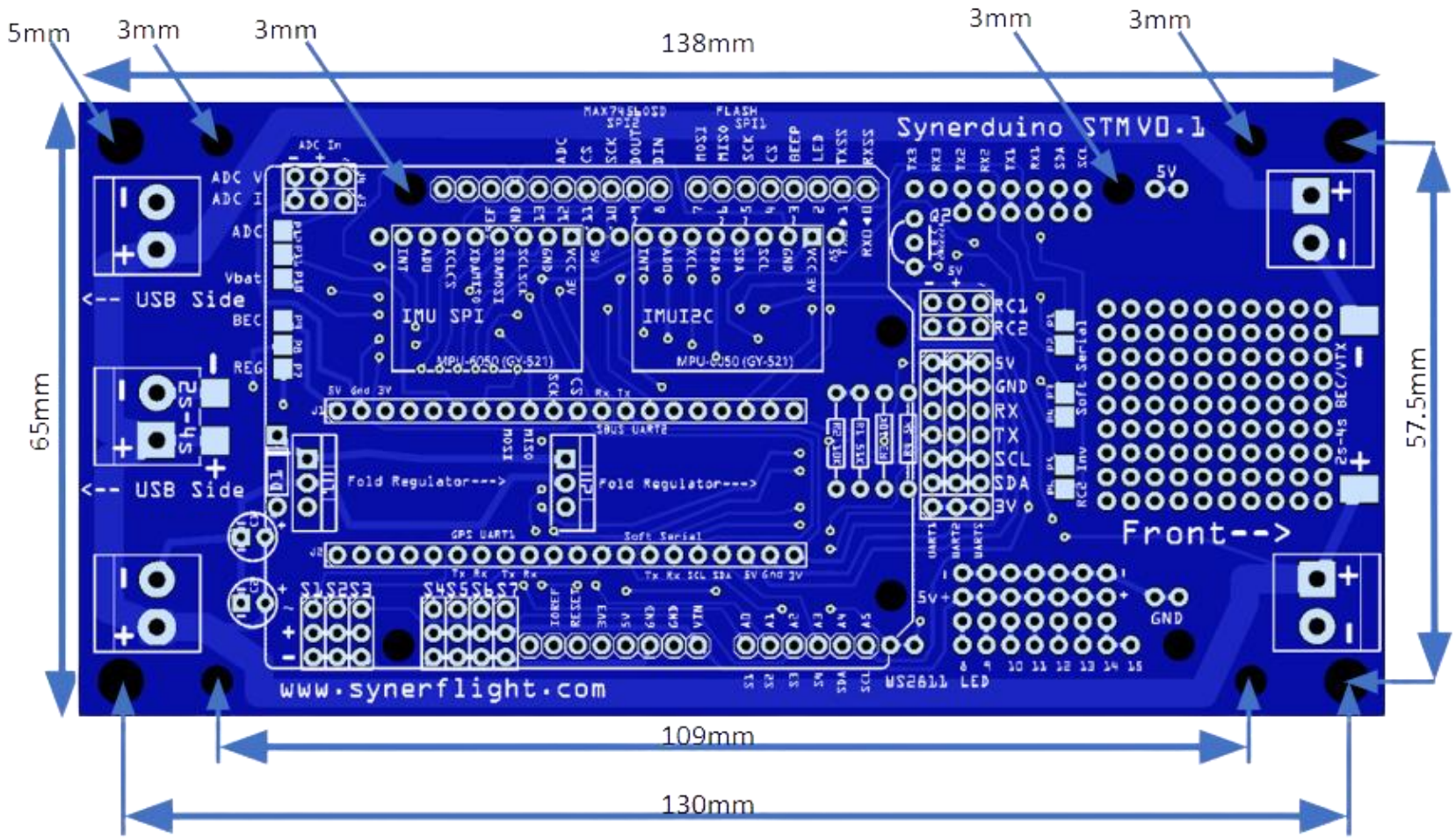
Compatibility

- GYRO/ACC: BMI160 (Align CW 0)
- MAG: HMC5883/QMC5883 (Align CW 180)
- BARO: BMP180/280

SYNERDUINO STM F411 SHIELD

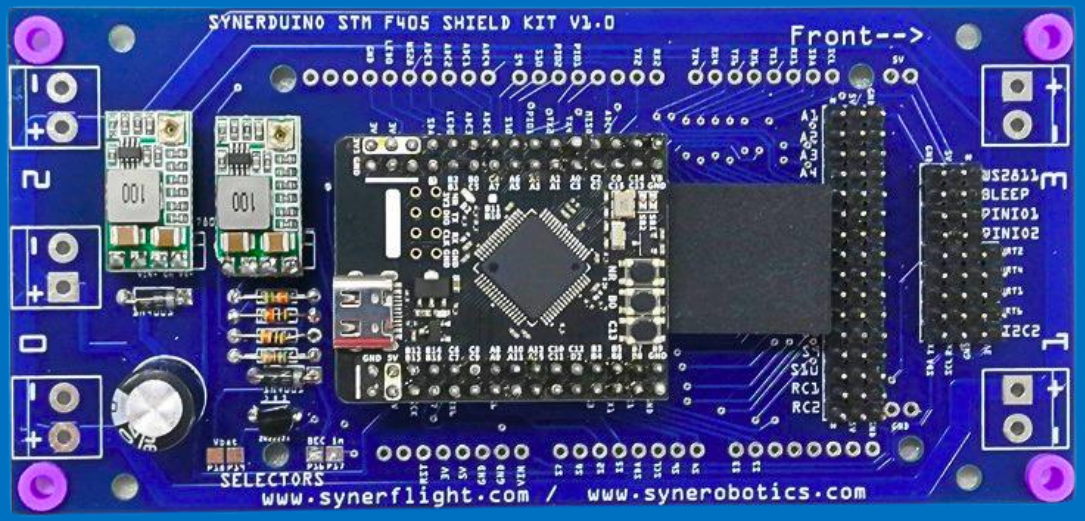


SYNERDUINO STM F411 SHIELD



SYNERDUINO STM F405

ABOUT THE BOARD



Power

- WS2811 LED Power 5V 3A
- Serial Power Rail – 3.3V 3A
- PWM Power Rail Regulated – 5V 3A
- Drone Power Input Voltage – 12.6V (3S) or 25.2V (6S)
- Power Distribution Lines – 12.6V-25.2V 80A

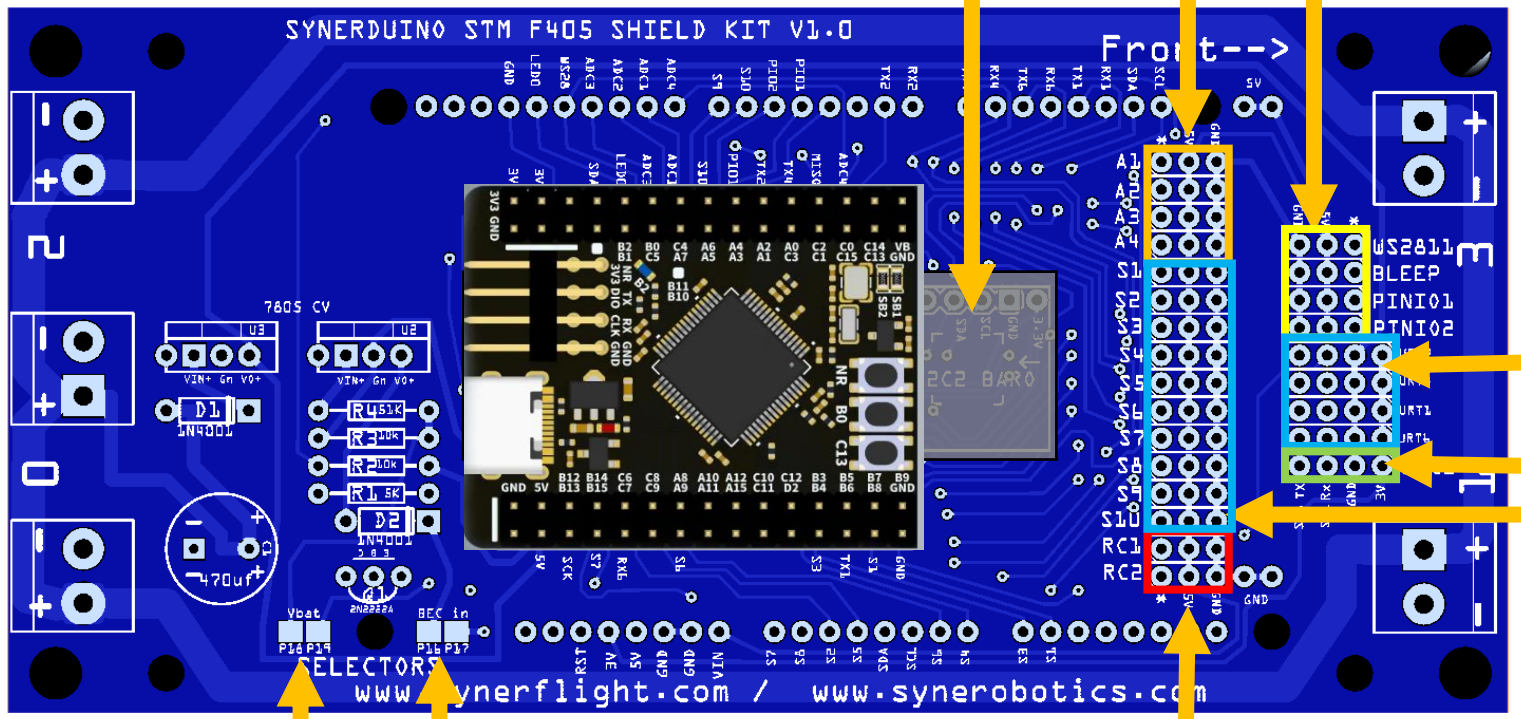
Properties

- Dimensions: 128 x 62 x 28 mm LWH / (V1.1)135mm x 62mm x 28mm
- Weight: 46.1g
- Arduino Prototyping Shield Footprint
- 4 Solder Pad set s for 4 ESCs and Motors
- DIY section for component addons
- 10 3-Pin PWM Headers S1-S10
- 2 3-Pin RC Headers w/ Sbus inverter
- 4 4-Pin Serial Headers
- 4 3pin ADC in (Voltage and Current)
- 2 RC Serial input Pin
- 1 WS2811 LED output
- 2 PIN IO (User Action)

Compatibility

- GYRO/ACC: BMI160 (Align CW 0)
- MAG: HMC5883/QMC5883 (Align CW 180)
- BARO: BMP180/280

SYNERDUINO STM F405 SHIELD



Sensors must be covered with the provided housing glued into place using PVA white glue

ADC input headers

WS2811 & I/O

UART headers

I2C headers

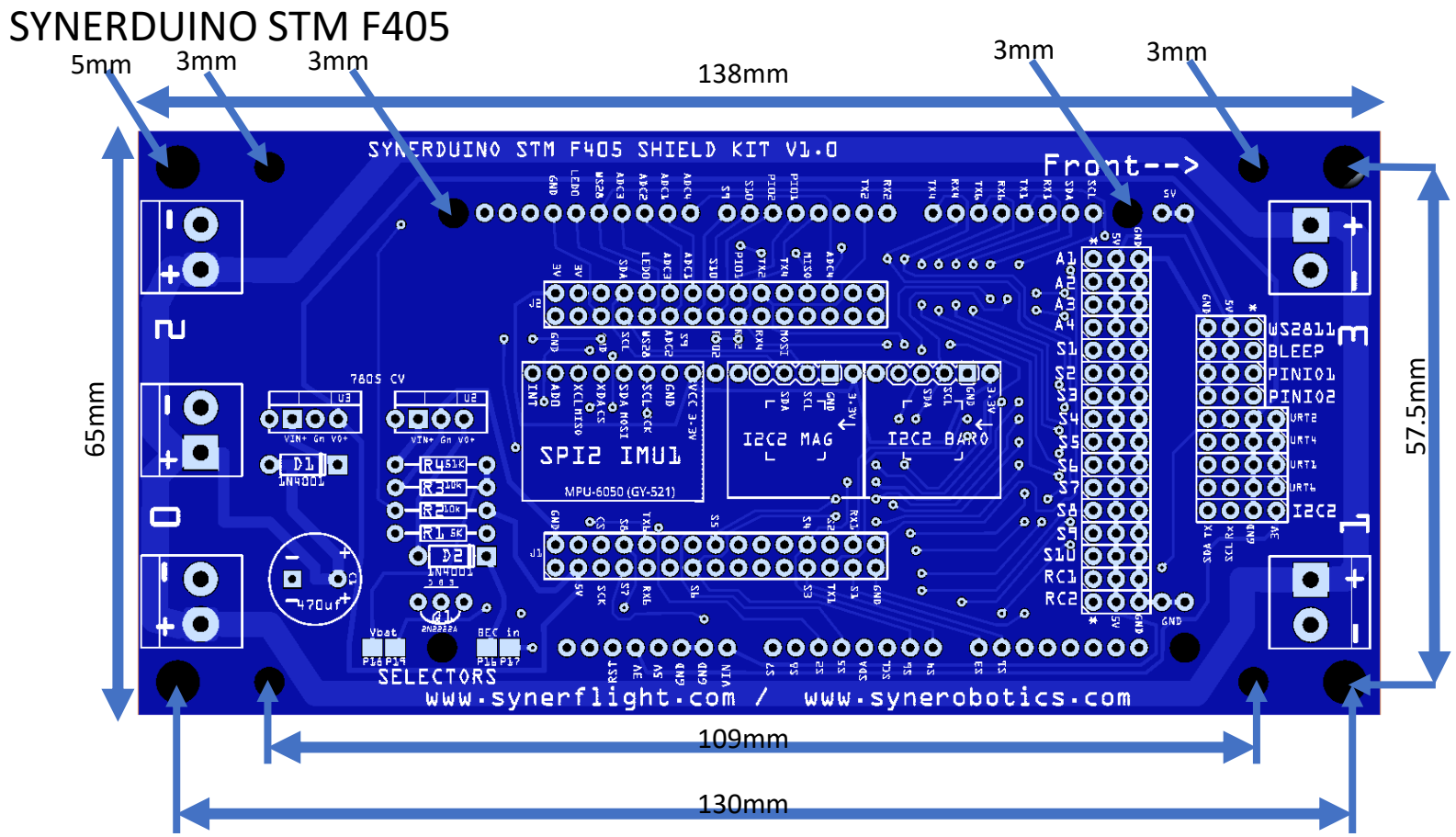
PWM output headers

UBEC /Regulator Selection Pads

RC1 & RC2 (UART2)

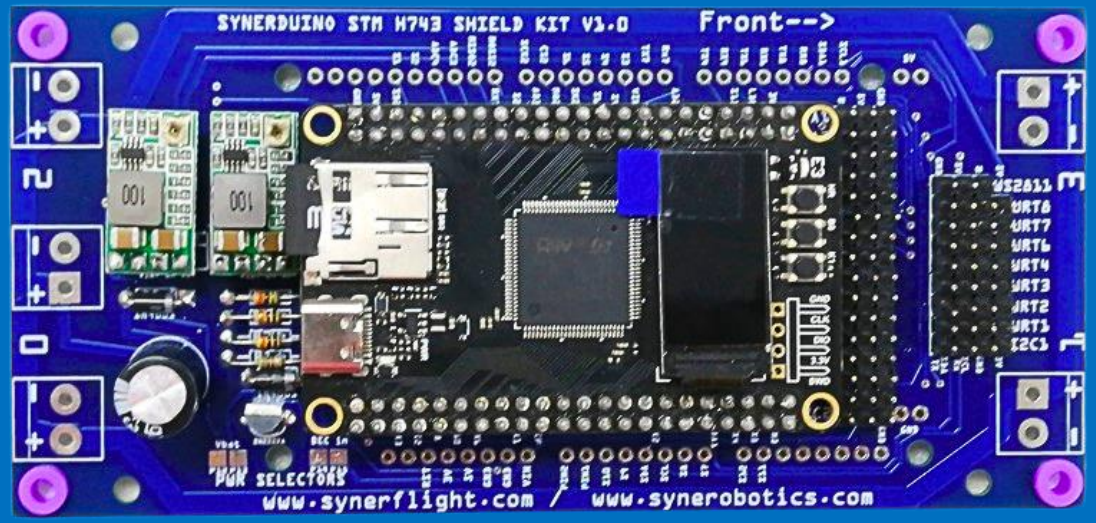
ADC and Battery Monitoring

SYNERDUINO STM F405 SHIELD



SYNERDUINO STM H743

ABOUT THE BOARD



Power

- WS2811 LED Power 5V 3A
- Serial Power Rail – 3.3V 3A
- PWM Power Rail Regulated – 5V 3A
- Drone Power Input Voltage – 12.6V (3S) or 25.2V (6S)
- Power Distribution Lines – 12.6V-25.2V 80A
- Note: 8S – 12S Use External UBEC 5V to the main power input and external ESC Power distribution

Properties

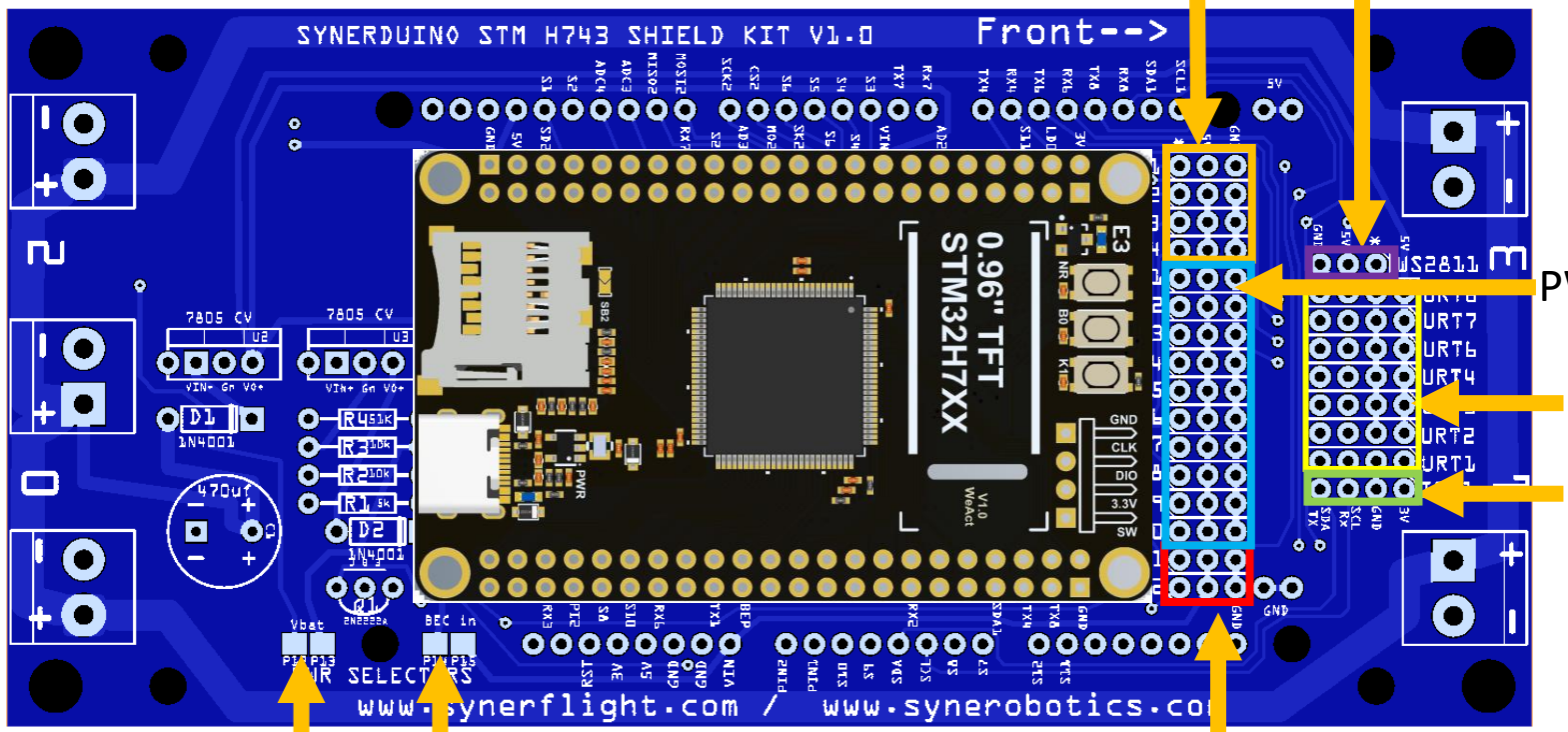
- Dimensions: 128 x 62 x 28 mm LWH / (V1.1)135mm x 62mm x 28mm
- Weight: 46.1g
- Arduino Prototyping Shield Footprint
- 4 Solder Pad set s for 4 ESCs and Motors
- DIY section for component addons
- 10 3-Pin PWM Headers S1-S10
- 2 Aux PWM Headers S11-S12
- 2 3-Pin RC Headers w/ Sbus inverter
- 7 4-Pin Serial Headers
- 4 3pin ADC in (Voltage and Current)
- 2 RC Serial input Pin
- 1 WS2811 LED output
- 2 Pin IO (User Action)

Compatibility

- GYRO/ACC: BMI160 (Align CW 0)
- MAG: HMC5883/QMC5883 (Align CW 180)
- BARO: BMP180/280

SYNERDUINO STM H743 SHIELD

Sensors must be covered with the provided housing glued into place using PVA white glue



ADC input headers

WS2811

PWM output headers

UART headers

i2C Headers

UBEC /Regulator Selection Pads

RC1 & RC2 (UART2)

ADC and Battery Monitoring

SYNERDUINO STM H743 SHIELD