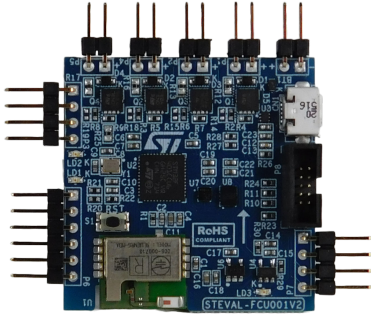


## Flight controller unit evaluation board for mini drones



### Features

- Compact flight controller unit (FCU) evaluation board with firmware example for a small or medium sized quad-copter
- On-board LiPo 1-cell battery charger
- Possibility to directly drive 4 DC brushed motors through the low voltage on-board MOSFET or alternatively use external ESC for DC brushless motor configuration
- Main components:
  - [STM32F401](#) – 32-bit MCU with ARM® Cortex®
  - [LSM6DSR](#) – iNEMO inertial module: 3D accelerometer and 3D gyroscope
  - [LPS22HH](#) – High-performance MEMS nano pressure sensor: 260-1260 hPa absolute digital output barometer
  - [BlueNRG-M0](#) – Very low power network processor module for Bluetooth® low energy v4.2
  - [STL10N3LLH5](#) – N-channel 30 V, 9 A, PowerFLAT(TM) STripFET(TM) V Power MOSFET
  - [STC4054](#) – 800 mA standalone linear Li-Ion battery charger
- RoHS compliant
- WEEE compliant

### Description

The [STEVAL-FCU001V2](#) is designed to support quad-copter drone designers.

A complete firmware example project allows the designer to begin flying small or medium sized quad-copters (with brushed or brushless DC motors) immediately and evaluate the performance of the IMU sensors under real flight conditions.

The user can refer to the [STEVAL-DRONE02](#) as its companion kit to make their own mini-drone kit.

The FCU can be controlled by a standard external remote controller (PWM input interface) or by a smartphone or tablet through the on-board Bluetooth low energy module (CE, FCC, ARIB, BQE certified).

Pressure sensor is also embedded to support 3D navigation applications.

SWD, I<sup>2</sup>C and USART connectors are available for firmware development and debugging, and to support additional external sensors or RF modules.

Product summary	
Flight controller unit evaluation board for toy drones	<a href="#">STEVAL-FCU001V2</a>
iNEMO Inertial Module: 3D Accelerometer and 3D Gyroscope	<a href="#">LSM6DSRTR</a>
High-performance MEMS nano pressure sensor: 260-1260 hPa absolute digital output barometer	<a href="#">LPS22HHTR</a>
Very low power network processor module for Bluetooth® low energy v4.2	<a href="#">BlueNRG-M0A</a>
N-channel, STripFET Power MOSFET	<a href="#">STL10N3LLH5</a>
Drone remote controller app for Android	<a href="#">ST_BLE_DRONE</a>
Reference design firmware for mini drones	<a href="#">STSW-FCU001</a>
Applications	Drones

# 1 Schematic diagrams

Figure 1. STEVAL-FCU001V2 – circuit schematic (1 of 4)

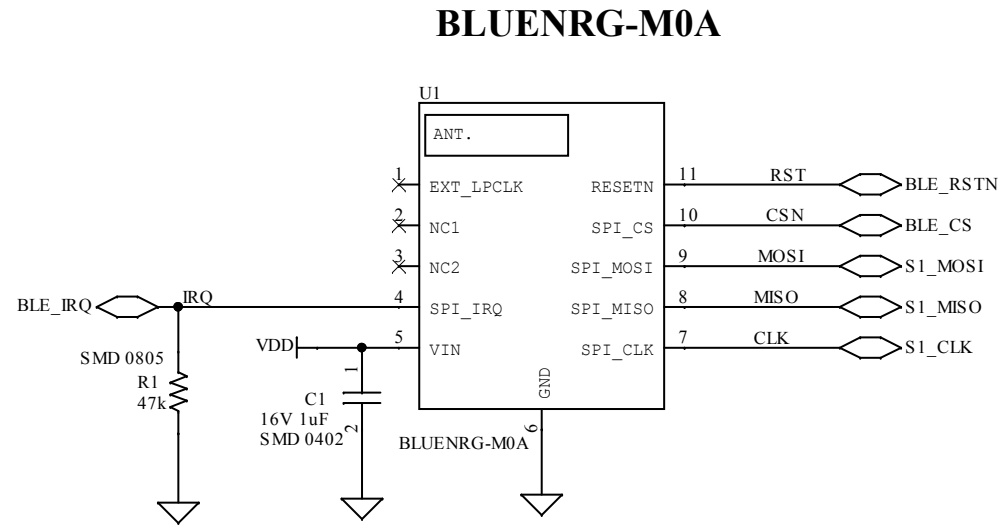


Figure 2. STEVAL-FCU001V2 – circuit schematic (2 of 4)

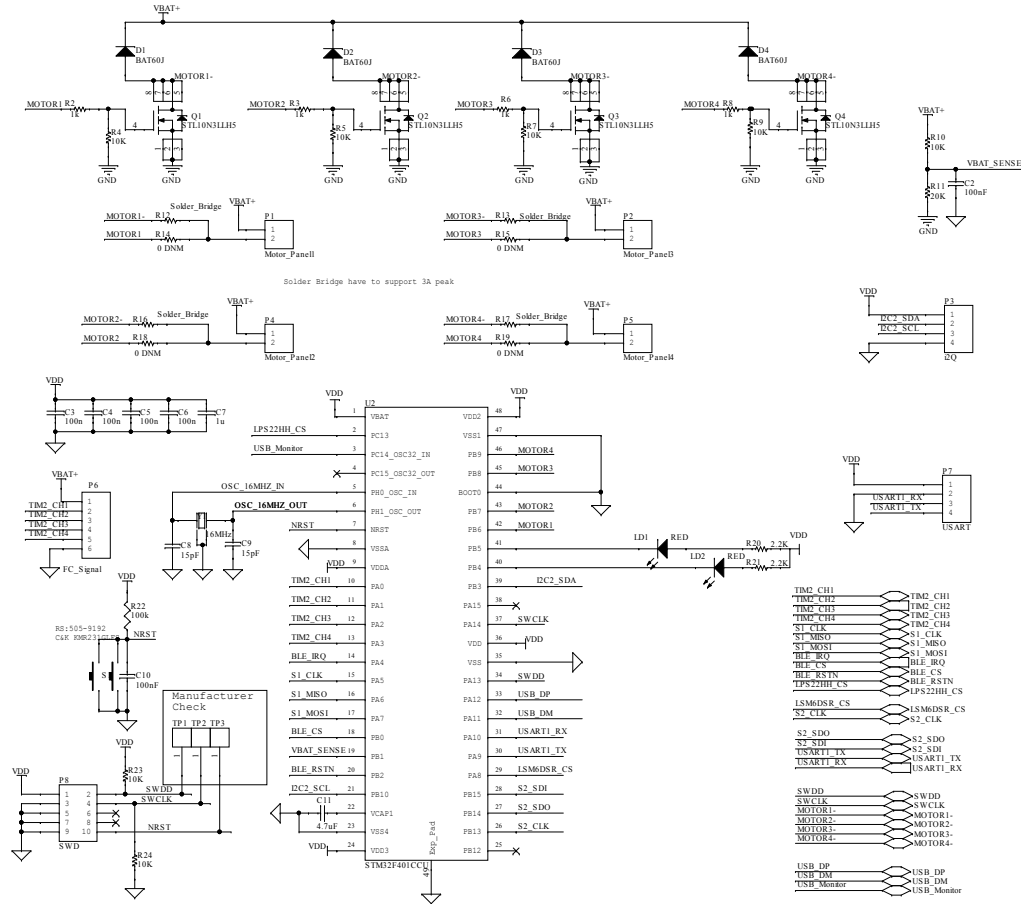


Figure 3. STEVAL-FCU001V2 – circuit schematic (3 of 4)

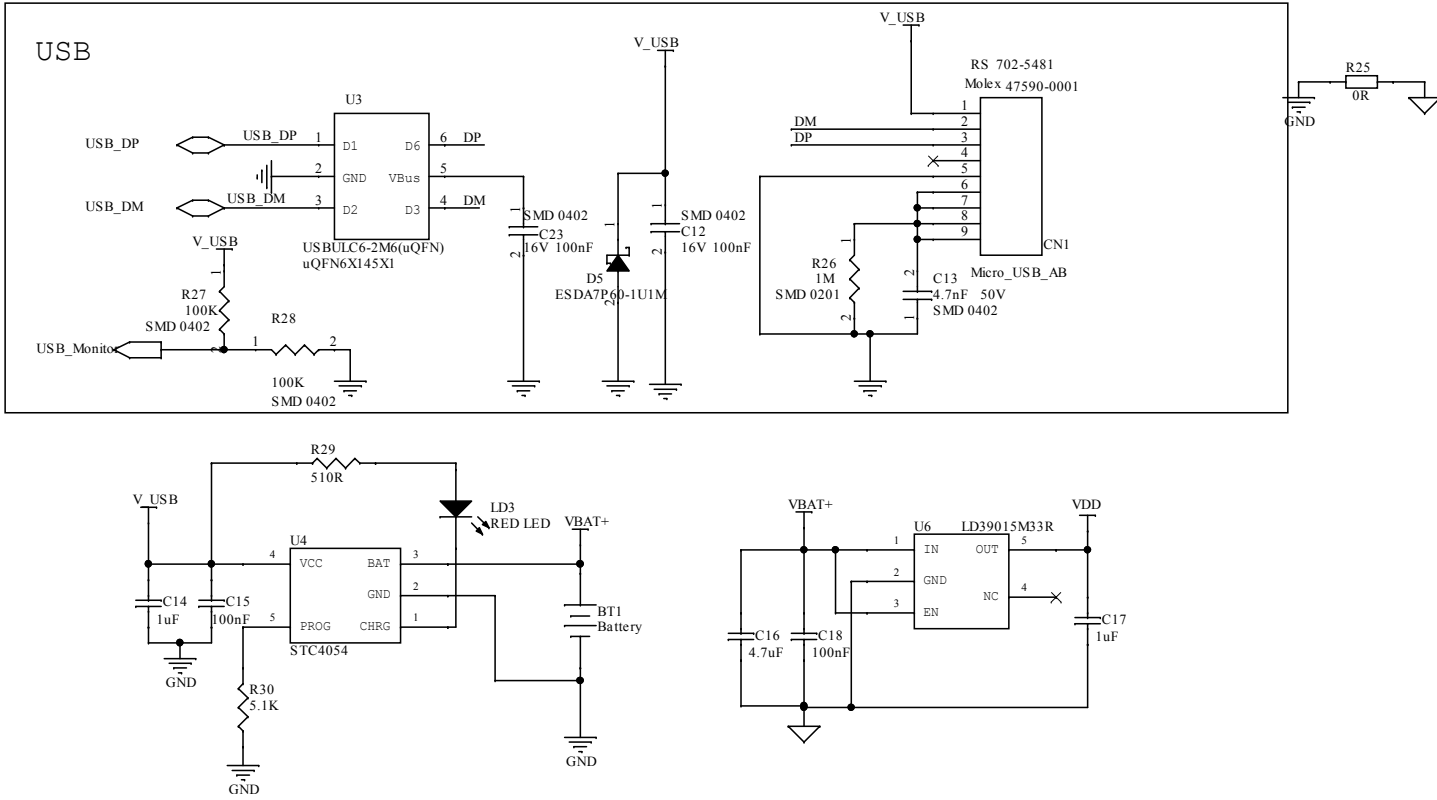
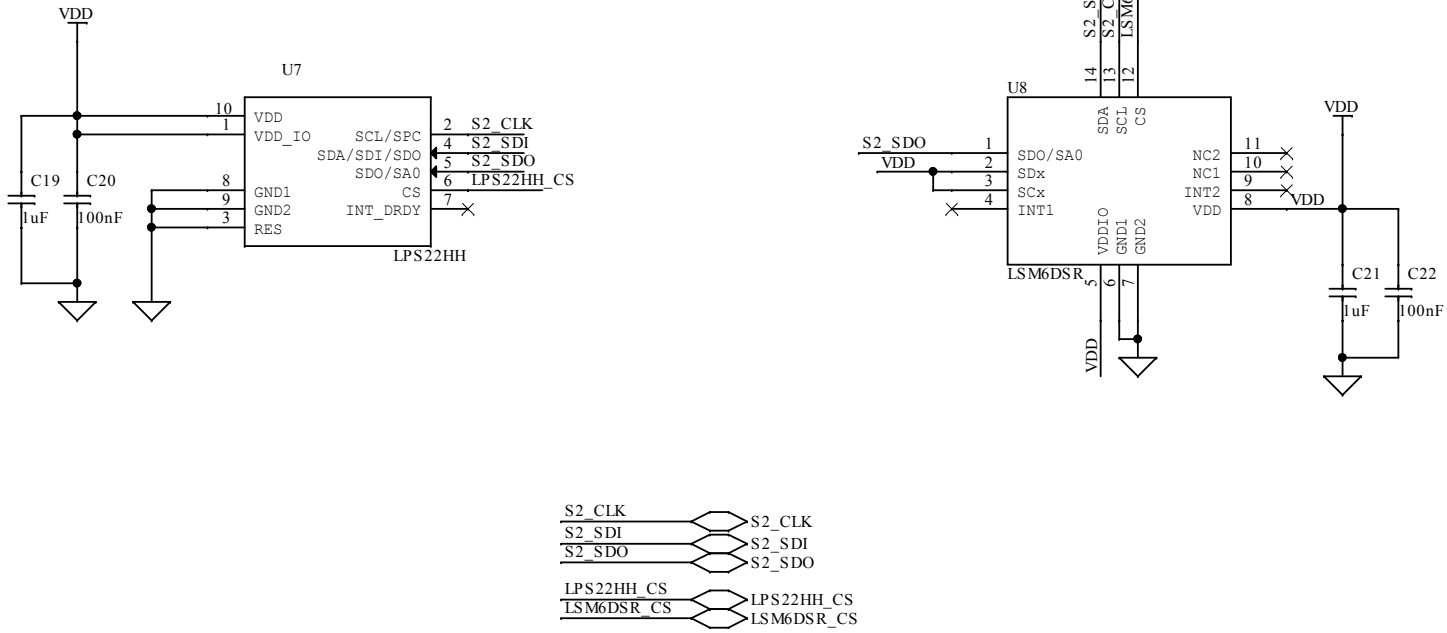


Figure 4. STEVAL-FCU001V2 – circuit schematic (4 of 4)



## 2 Board versions

Table 1. STEVAL-FCU001V2 versions

Finished good	Schematic diagrams	Bill of materials
STEVAL\$FCU001V2A <sup>(1)</sup>	STEVAL\$FCU001V2A schematic diagrams	STEVAL\$FCU001V2A bill of materials

1. This code identifies the STEVAL-FCU001V2 evaluation board first version.

## Revision history

**Table 2. Document revision history**

Date	Revision	Changes
22-Aug-2023	1	Initial release.
21-May-2024	2	Updated product summary table, <a href="#">Section Features</a> , <a href="#">Section Description</a> and <a href="#">Section 1: Schematic diagrams</a> .

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