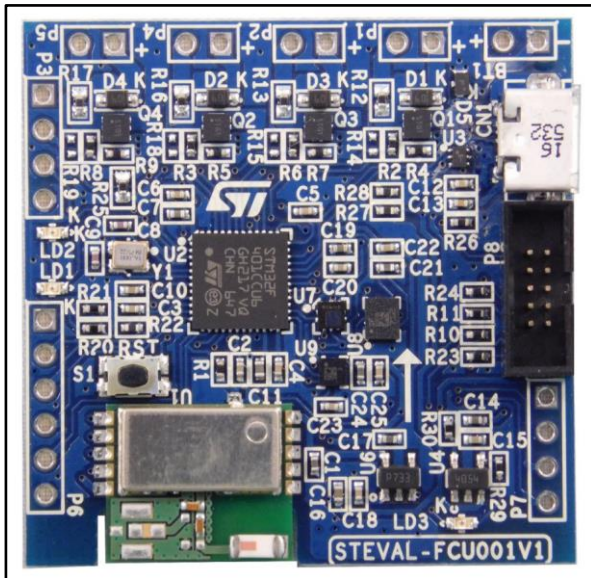


Flight controller unit evaluation board for toy drones

Data brief



- STL6N3LLH6 - N-channel 30 V, 6 A STripFET H6 Power MOSFET
- STC4054 - 800 mA Standalone linear Li-Ion battery charger
- RoHS compliant

Description

The STEVAL-FCU001V1 is designed to support quadcopter drone designers.

A complete sample FW project allows the designer to begin flying small and medium size quadcopters (with brushed or brushless DC motors) immediately and evaluate the performance of the IMU sensors under real flight conditions.

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

Magnetometer and pressure sensors are also embedded to support 3D navigation applications.

SWD, I²C and USART connectors are available for FW development and debugging, and to support additional external sensors or RF modules.

Features

- Compact Flight Controller Unit evaluation board complete with sample firmware to a small and medium size quadcopter
- Lipo 1-cell battery charger on-board
- Possibility to drive directly 4 DC brushed motors through low voltage on-board MOSFET or alternatively use external ESC for DC brushless motor configuration
- Main components:
 - STM32F401 – 32-bit MCU with ARM® Cortex®
 - LSM6DSL – iNEMO inertial module: 3D accelerometer and 3D gyroscope
 - LIS2MDL – High performance 3D Magnetometer
 - LPS22HD – MEMS pressure sensor: 260-1260hPa absolute digital output barometer
 - SPBTLE-RF – Very low power module for Bluetooth Smart v4.1

1 Schematic diagrams

Figure 1: STEVAL-FCU001V1 – block diagram

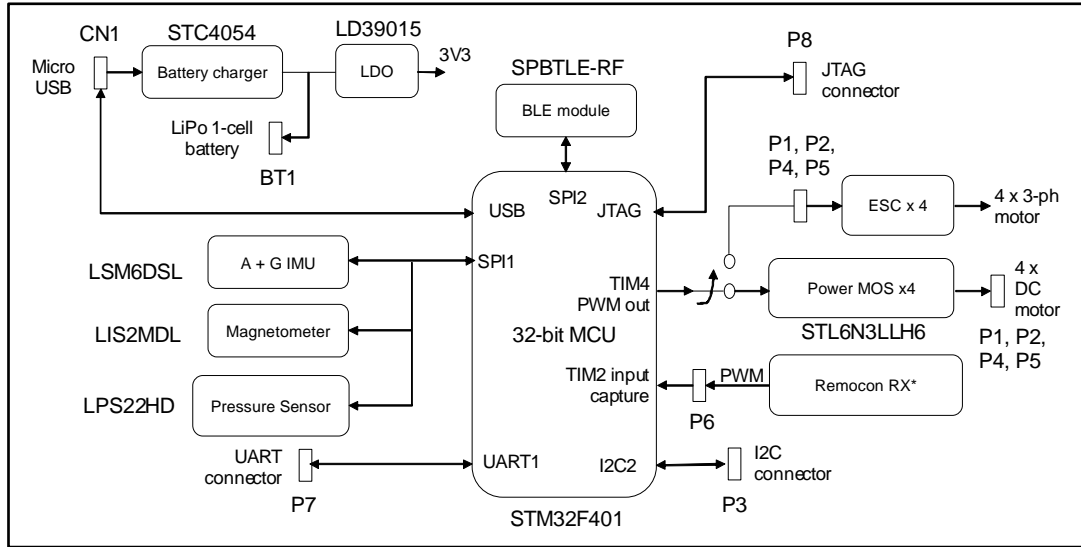


Figure 2: STEVAL-FCU001V1 – circuit schematic (1 of 4)

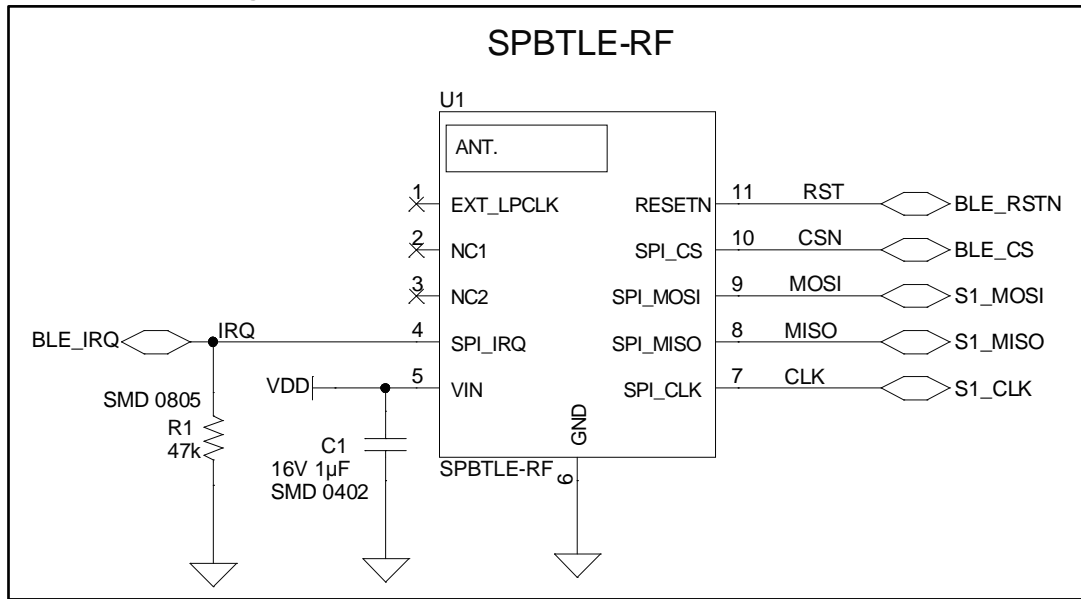


Figure 3: STEVAL-FCU001V1 – circuit schematic (2 of 4)

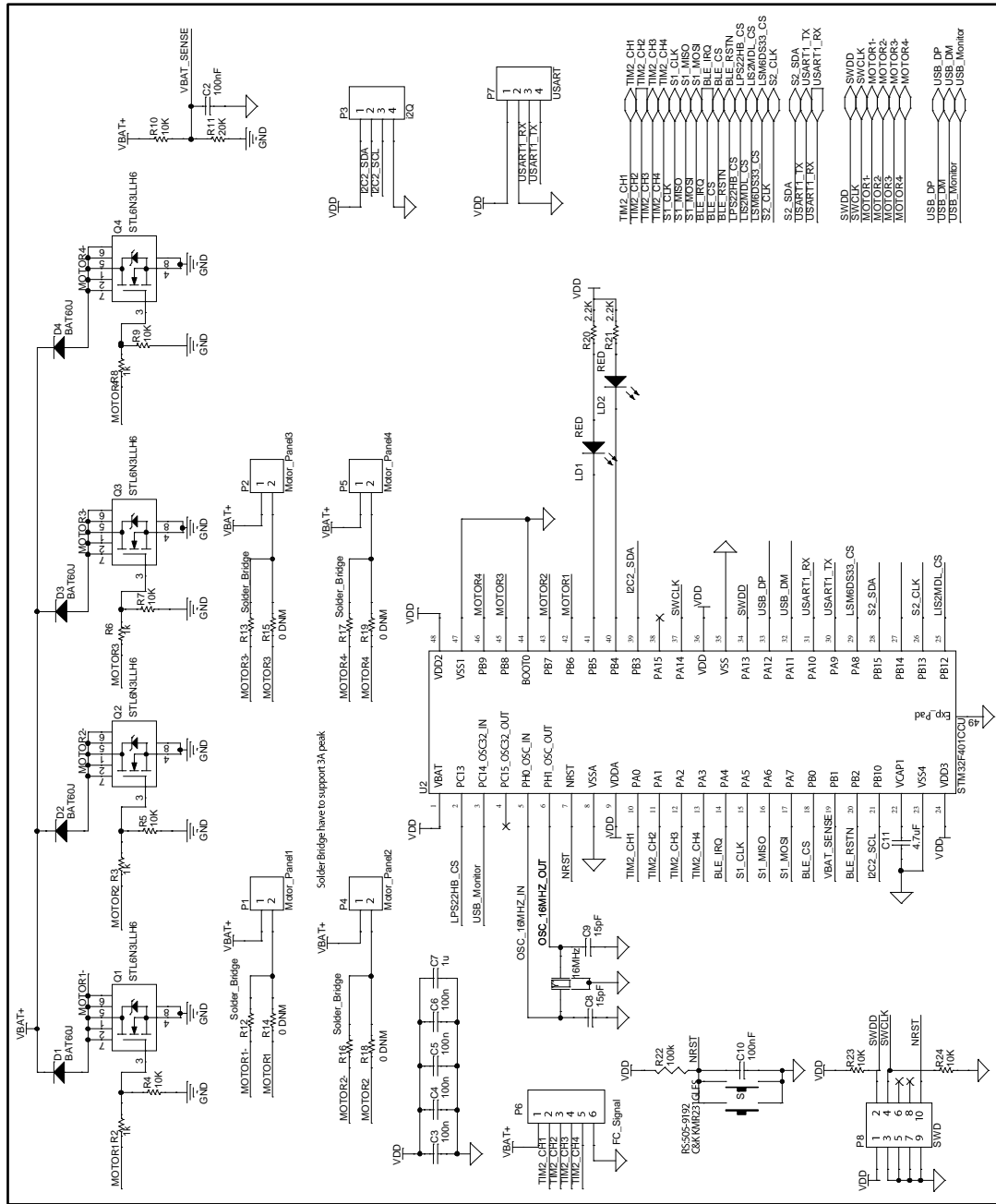


Figure 4: STEVAL-FCU001V1 – circuit schematic (3 of 4)

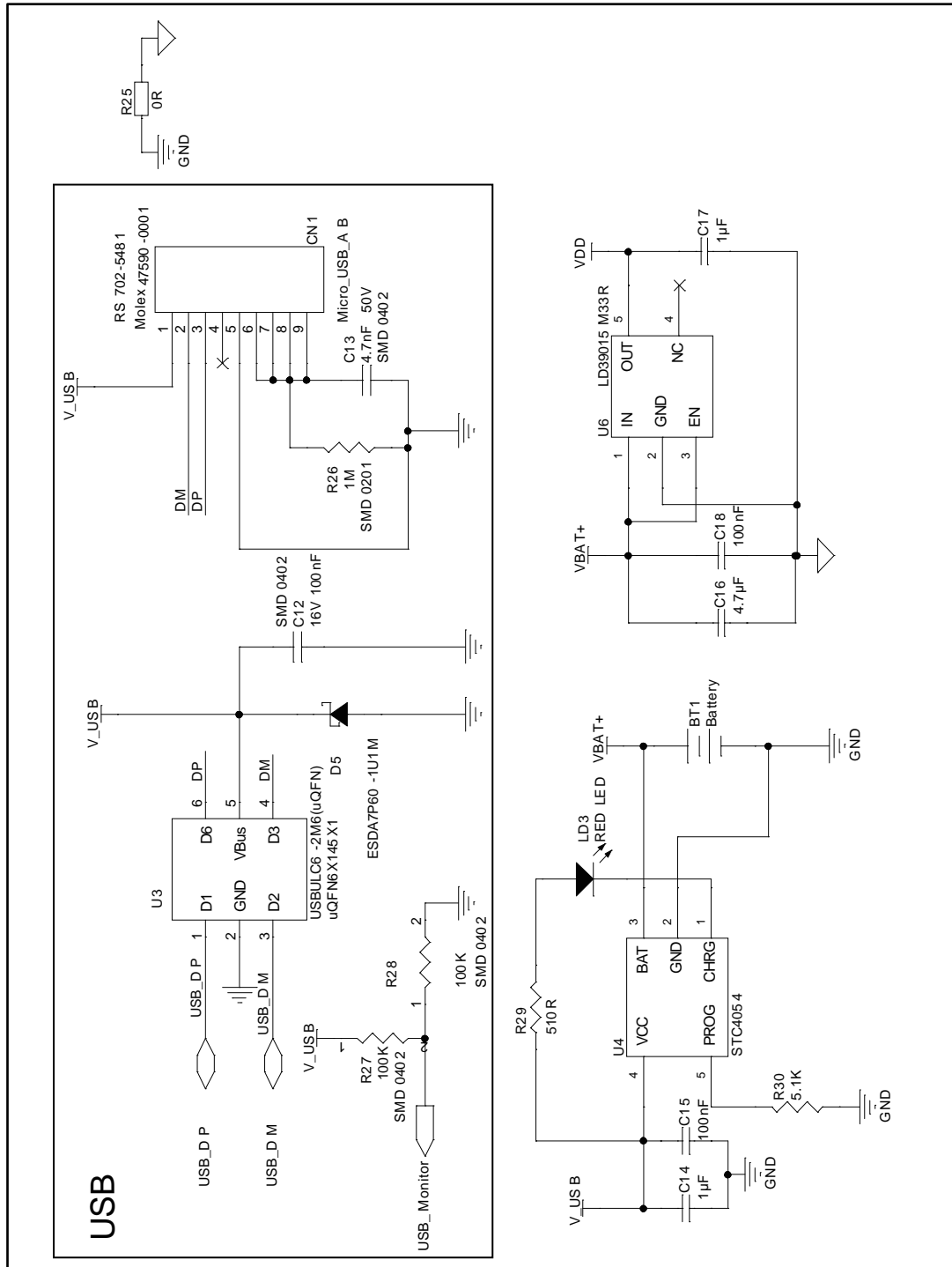
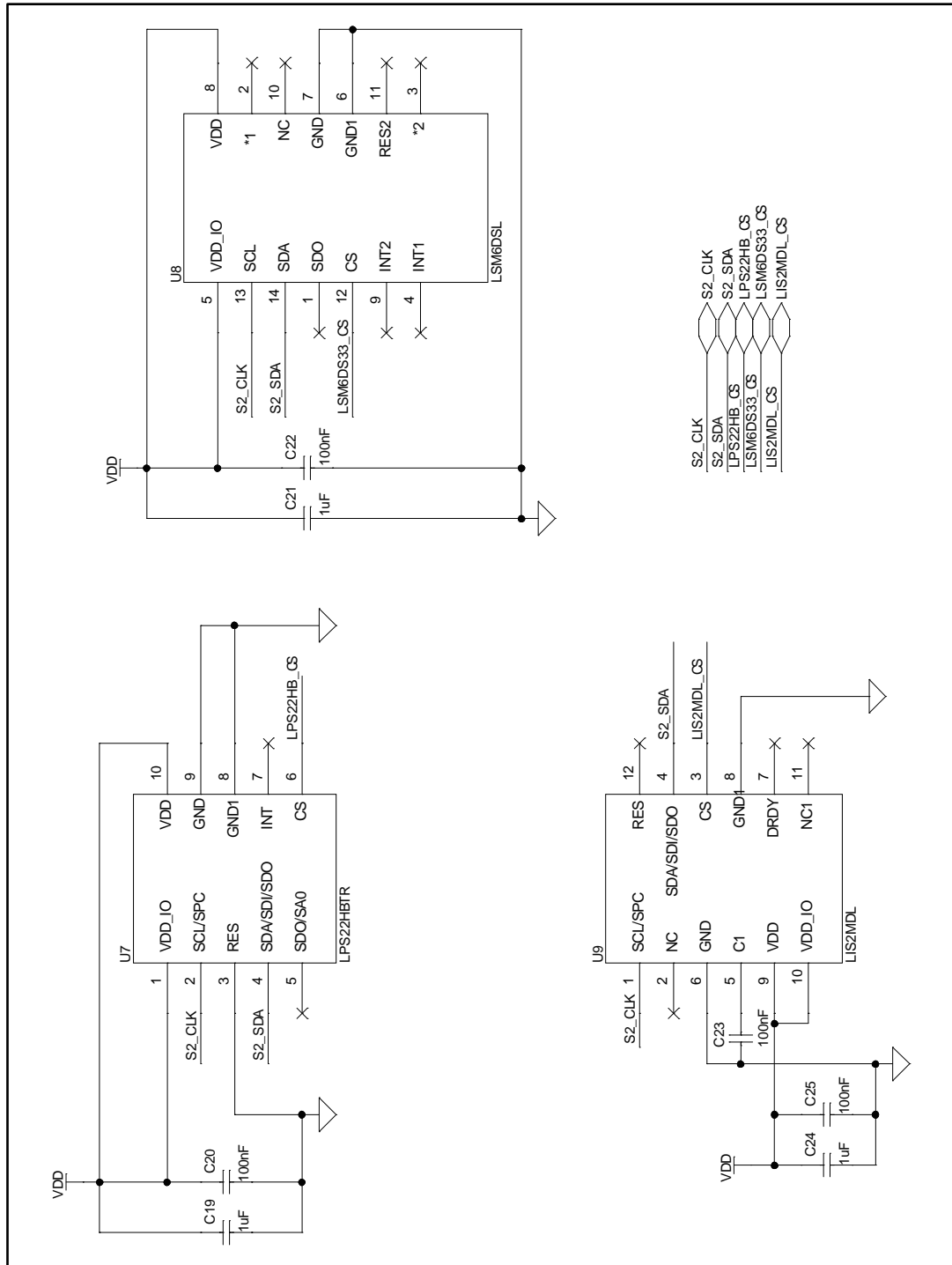


Figure 5: STEVAL-FCU001V1 – circuit schematic (4 of 4)



2 Revision history

Table 1: Document revision history

Date	Version	Changes
05-Oct-2017	1	Initial release.

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