

# EasyMega v3.0 Test Plan v1.0

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Data	Version	Introduction	Author
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## **1. Product Introduction**

EasyMega is a six channel flight computer for model rocketry. There are six major components on the board, the STM32F103 microcontroller, a BMI088 six-axis IMU, an ADXL375 3-axis accelerometer, an MMC5983 3-axis magnetometer, a Measurement Specialties MS5607 barometric sensor and a W25Q64 8Mb flash memory.

## **2. Test theory**

1. Flash firmware to SoC
2. Connect Ground to the gnd terminal on J1 (pin 9)
3. Connect +4V to the lipo terminal on J1 (pin 7)
4. Verify Power-on Self-Test result via audio pattern.
5. Power off the board.

## **3. Test tools**

Hardware:

- EasyMega flight computer with STM32F103 micro controller
- 4V DC @ 100mA power supply
- PC compatible with dfu-util.

Software:

- dfu-util. Available here: <https://dfu-util.sourceforge.net/>

## **4. Test Program**

- easymega-v3.0-combined-1.9.18.dfu

## 5. Test procedure

### 5.1 Test Preparation procedure

1. Connect USB to computer with dfu-util application and easymega-v3.0-combined-1.9.18.dfu file.
2. Connect +4V DC to the “lipo” screw terminal on J1 (pin 7), and ground to the “gnd” screw terminal on J1 (pin 9). See included image.

### 5.2 Testing procedure

1. Program firmware using the following command:  

```
dfu-util -a 0 -D easymini-v3.0-combined-1.9.18.dfu
```
2. With USB connected, verify battery charger LED (D1) status. Both colors (red + green) should be illuminated.
3. Disconnect the USB connector.
4. Disconnect and then reconnect the +4V DC on J1 pin 7 to power cycle the board.
5. Verify that the beeper emits the following tone sequence. This indicates that the Power-on Self-Test procedure has run and that the board is operating correctly.
  1. Power supply voltage in tenths. Each digit is represented by a number of beeps, with a zero digit represented by a single longer beep. To indicate 4.0V, the device will emit four short beeps, a pause and then one long beep. The reported voltage

should be within .2V of the provided power supply value.

2. Uncalibrated sensor indication. One long beep, two short beeps, one long beep.

3. Self test status

a) Success: silence

b) Failure: a number of long beeps indicating a particular component failure.

## **6. Test result**

Please record the test results and defective phenomena.

