

Discussion about this topic is at Orion Robotics forum:

<http://forums.orionrobotics.com/robotics-f3/>

## Battery

You will need to buy one, where voltage corresponds to 7.4V for servos. This means 2 cells for LiPo. Recommended

is [http://www.hobbyking.com/hobbyking/store/\\_\\_9459\\_\\_Turnigy\\_2200mAh\\_2S\\_30C\\_Lipo\\_Pack.html](http://www.hobbyking.com/hobbyking/store/__9459__Turnigy_2200mAh_2S_30C_Lipo_Pack.html) You do not need extra board for checking battery voltage - it can be measured on analog pin A2. Default SW has limit set to 6.2V.

## Default Firmware

The DaVinci board could be preprogrammed with firmware for control via cable of PlayStation2 (PS2). You will hear beep after power up. No need to worry about programming at the first stage. Calibration procedure and meaning of various controls is listed at the end of construction manual. Note, that PS2 is not part of the FireAnt Kit.

## Programming

If you decide you want to program the board, be prepared for troubles with drivers on Windows OS. The USB chip is FTDI, but it has modified EEPROM to VID\_0403&PID\_A559, so original drivers won't work for you. You have to edit INF files (both ftdiport.inf and ftdibus.inf) replace PID number and remove all other alternatives. Then it may work.

Once is your COM port working you may use Arduino programming environment. Use C: drive only - mapped drives do not work. The board "DaVinci" has nothing to do with "Leonardo" - you must select "Duemilanove" (on some other kits board "Uno" is used). Correct pins are listed in Serve Shield datasheet: LEDs A0,A1, buttons 2,4, tone generator 3, voltage reference A2.

If you want to restore original firmware, the simplest way is to unzip (<http://downloads.orionrobotics.com/downloads/code/arduino.zip> Arduino Libraries) directly into **arduino-1.0.x\libraries** folder so that you do not have to import them one-by-one.

# Power

If you want to power FireAnt from single battery, make sure that jumpers JP6 are parallel with buttons. Some boards are shipped with jumpers perpendicular to buttons. Servo Shield doc does not describe JP6, but you may find a note in

([http://downloads.orionrobotics.com/downloads/datasheets/Nomad\\_Shield\\_R0407.pdf](http://downloads.orionrobotics.com/downloads/datasheets/Nomad_Shield_R0407.pdf) Nomad\_Shield\_R0407.pdf)

# Servo Jumpers

Make sure that you have jumpers on Servo Headers set to VS. Otherwise the servos will be powered by the Arduino on board regulator. You will see robot constantly resetting ...

# Calibration

Calibration is time consuming process. Once you flash the default FireAnt firmware make sure that first you calibrate CENTER and then RANGE!!! The min/max angles are linked to offset (they are not "physical min/max" but rather "logical"), so it is critical to first calibrate center and then range!

Dissussion about this topic is at Orion Robotics

forum: <http://forums.orionrobotics.com/walking-robots-f6/fireant-guide-for-dummies-t76.html>