**Power board and arduino shield bodges**

How it’s setup on nostromo:

|  |  |  |  |
| --- | --- | --- | --- |
| **line** | **Power board header** | **Arduino shield header** | **Arduino pin** |
| Radio power control | Vsense | VBAT | A4 |
| Servo power control | Raux | RAUX | A3 |
| Vbat control | Rmain | R5 | A2 |
| 12v control | R12v | R12 | A1 |
| Servo pwm | Servo | SRVO | A0 |
| gnd | Gnd | GND | GND |
| +5 | 5v | 5v | 5v |
| NC | 9v | Vin | Vin |

How it will be wired on new power boards and new arduino shields:

|  |  |  |  |
| --- | --- | --- | --- |
| **line** | **Power board header** | **Arduino shield header** | **Arduino pin** |
| Radio power control | Sense | unwired | A4 |
| Servo power control | 6v | RAUX | A3 |
| Vbat control | Not labeled | unwired | A2 |
| 12v control | 12v | R12 | A1 |
| Servo pwm | Servo | SRVO | A0 |
| gnd | Gnd | GND | GND |
| +5 | vin | 5v | 5v |
| vbat | Not labeled | VBAT | n/a |

Some additional notes on the new design:

* Power board:
  + Vbat must be jumped to pin next to vin
  + Vbat control (between 12v and 5v pins) must be wired to pin 1 of its optorelay
  + Radio power control must be manually wired on the power board (to a connector in the proto area along with 5v)
  + The optorelay for 6v must be doubled up for current carrying capacity, and it’s associated resistor (vertical just to the left) should be halved
* Arduino shield:
  + Radio power control and vbat control must be manually wired on arduino shield
  + There’s a transistor on the 12v control line that can be bypassed (arduino shield)

Arduino shield notes:

* motor driver is wired to serial uart 2
* gumstix is wired to serial uart 1
* tmp102 on i2c bus
* sbus wired to uart3
* current sensor should be wired to A14

**motor driver box**

roboteq I/O connector:  
2 – tx – green – top left

3 – rx – blue – top right

4 – DIN1 – e-stop – top right

13 – gnd – switch led gnd

14 – 5v – switch led + and e-stop top left

Also on connector to cpu box – gnd bottom left, vbatt bottom right

Switch C1 – power control

Switch NO – vbatt

Switch NC – gnd

**Power connectors:**

Batteries use positive on left, gnd on right

Power box input uses gnd on left, positive on right

motor connector uses gnd on left, positive on right

battery balance connector highest top right, decreasing clockwise (lowest top left)

**radio box:**

gnd – top right

+5 – top left

Ctrl – bottom right

Vbatt – bottom left

**Duovero**

Usb host is the one farther from Ethernet port

40 pin header information found here:

<http://pubs.gumstix.com/boards/PARLOR/PCB40002-R3902/B40002.pdf>

we need gnd, vcc\_1.8, v\_batt\_5, and uart2 tx and rx

**Tritech Depth Sounder**

3-pin impulse connector

Pin 1 is higher than the others and closer to pin2 than pin3

1-gnd

2-signal (rs232, 9600baud)

3-power (vbatt ok, 10.5-20v)

Cpu box (nostromo)

Vbatt top right

Gnd top left

Oj – bottom right – cpu tx

Yellow – bottom left – cpu rx – tritech signal

Draws around 110mA at 12v