



## SIAB Construction Guide V1.0

This guide assumes you already have a preconfigured Arduino Nano!

You will need the following components: -

- One Push button connects Pin D2 to ground. This is used to initiate a diagnosis scan and pushed again to transmit the heal data.
- One key switch that connects pin D3 to ground. With the key in the 'on' position the unit is allowed to rule a player as "dead". If this switch is not connected then the unit will never give the "dead" indication, similarly if the pin is directly wired to ground then character "death" is always an option.
- One slide/rocker switch (to turn the unit on and off)
- One IR LED One 940nm IR emitter LED, typically a Vishay TSAL6100 (note the IR LEDs in Arduino starter kits are often NOT 940nm). This is wired to GND and PIN D13
- One 220Ω Resistor between the IR LED and GND
- Seven RGB WS2812 'neopixel' addressable LEDs. These are wired both to GND, the 5V and PIN D7 (for data)
- Suitable Power Supply, the units run on 6V, but the Arduino can handle between 5V to 12V, the units built so far are all running ok on 6V (typically 4 AA batteries) but it could also utilise a 9V square battery.

The Neopixels will operate as following: -

1. Status Indication
2. Head
3. Chest
4. Left Arm
5. Right Arm
6. Right Leg
7. Left Leg

When you turn the unit on, all of the LEDs will light up and cycle through red, yellow and then green. When only the single Status LED is glowing RED then the unit is ready. After you press the button and the diagnosis phase has finished then it will glow green with the result shown.

