Servo Control

Code for controling a 2-axis servo turret from an Arduino's serial input.

Table of Contents

- Servo Control
    - Table of Contents
    - Usage
        - Examples
            - Setting Angles
            - Reseting Turret
        - Using the turret with C++ on Windows
    - Parameters

Usage

To set the turret simply send a comma separeted list of the pitch and yaw angles, terminated by a .

Examples

Setting Angles

Sending the following string over serial

        -30,50.

Sets the pitch (rotation around axis perpendicular to facing direction) to `-30`° and the yaw (rotation around the vertical axis) to `50`°.

Reseting Turret

Sending the following string over serial

        .

Resets the pitch (rotation around axis perpendicular to facing direction) to `0`° and the yaw (rotation around the vertical axis) to `0`°.

Using the turret with C++ on Windows

To use the turret in Windows with C++, connect to the serial port and send your angles formated as an ASCII string. See PC_Demo for a demo.

```cpp
#include "serial.h" //libraries
#include <string>

int main() {
  serial myserial("COM5"); //connect to COM port

  string str = "";    //new string
  str = to_string(pitch) + "," + to_string(yaw) + ".";    // concatenate string and angles from int to string
  const char* c = str.c_str();    //convert strin to const char*

  myserial.write(c, str.size());   //send string over serial

  return 0;
}
```

Parameters

Parameter	Default Value	Explanation
BAUD_RATE	115200	Baud rate for serial communications
EOPmarker	'.'	End of serial packet marker
Servo_up_pin	9	PWM pin for top servo
Servo_down_pin	10	PWM pin for bottom servo
UP_ZERO	(-18)	Center point for top servo
DOWN_ZERO	(65)	Center point for bottom servo
UP_MIN	(-90)	Minimum angle value for top servo
UP_MAX	90	Maximum angle value for top servo
UP_MIN	(-135)	Minimum angle value for bottom servo
UP_MAX	135	Maximum angle value for bottom servo