Home » Products » XV Lidar Controller v1.2

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# XV Lidar Controller v1.2

★★★★★ (1 customer review)

~~$32.95~~ **$29.95**

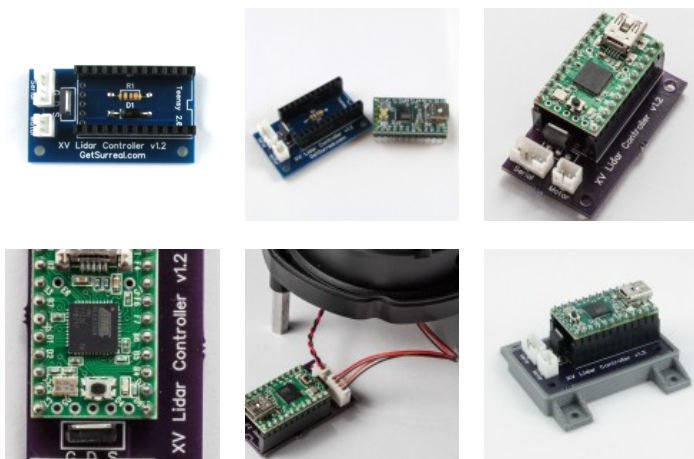Control the Neato XV Lidar with an Arduino compatible board.

Available fully assembled or as a kit.

In stock

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SKU: 102 Category: XV Lidar








| **Description** | **Additional Information** | **Reviews (1)** |
|---|---|---|

# Product Description

This is as close to plug and play as you can get with interfacing the Neato XV Lidar.  The board connects directly to the Neato XV Lidar, receives the serial data from the XV Lidar, controls of the rotation speed with a PID loop by reading the the RPM data embedded in the stream and relays all the Lidar data through the USB connection for an upstream host device (PC, BeagleBone, Raspberry Pi, etc.) for interpolation of the data.

Dimension 1 x 1.75 in (25.4 x 44.45 mm)

## Hardware Requirements

- Neato XV Lidar – Available on eBay

**Get Surreal**
## Open Source Software

The Teensy comes pre-programmed, but you are able to customize and build from source.

- Firmware https://github.com/getSurreal/XV_Lidar_Controller
- Arduino IDE (Tested versions: v1.6.6 – v1.6.8)
- Teensyduino – Software add-on to run Arduino sketches on the Teensy (v1.27 – v1.28) http://www.pjrc.com/teensy/teensyduino.html
- Copy the included libraries to the Arduino libraries directory

# Usage

Connect to the Teensy USB port at 115200 baud. When sending commands, use the "newline" character sequence to signify the end of a command.

**Quick test for the XV Lidar Controller**

**Visual test for the XV Lidar Controller**

# Commands (v1.3.0)

## Control commands

- ShowConfig – Show the running configuration
- SaveConfig – Save the running configuration to EEPROM
- ResetConfig – Restore the original configuration
- SetAngle – Show distance data for a multiple angles (Ex: SetAngle 0, 15-30, 45-50, 10)
- SetRPM – Set the desired rotation speed (min: 180, max: 349)
- MotorOff – Stop spinning the lidar
- MotorOn – Enable spinning of the lidar

## Data commands

- ShowRaw – Enable the output of the raw lidar data (default)
- HideRaw – Stop outputting the raw data from the lidar
- ShowDist – Show angles with distance data
- HideDist – Hide the distance data
- ShowErrors – Show all error types (CRC, Signal Strength, and Invalid)
- HideErrors – Hide angles with errors
- ShowRPM – Show the rotation speed
- HideRPM – Hide the rotation speed
- ShowInterval – Show time interval per revolution in ms, at angle=0
- HideInterval – Hide time interval
- ShowAll – Show the distance, errors, RPMs and interval data
- HideAll – Hide the distance, errors, RPMs and interval data

## PID commands

- SetKp – Set the proportional gain
- SetKi – Set the integral gain
- SetKd – Set the derivative gain

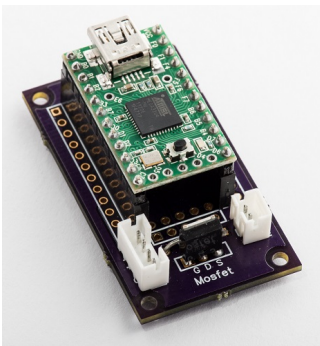- SetSampleTime – Set the frequency the PID is calculated (ms)     ⌃

## Output comma-separated format:

- A,{Angle},{Distance in mm},{Signal Strength}
- C,CRC
- R,{RPMs},{PWM value}
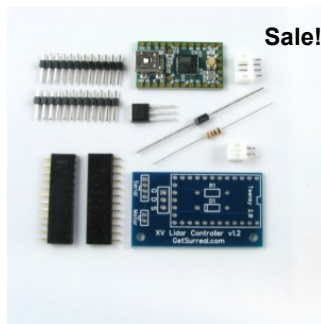- T,{Time interval in milliseconds between each angle 0}

## Errors:

- CRC = Data did not pass CRC check
- I = LIDAR reports Invalid data for this angle
- S = LIDAR reports Poor signal strength for this angle

## Related Products

**XV Lidar Controller v1.1**

**Read More**

**XV Lidar Controller v1.2 (Kit)**

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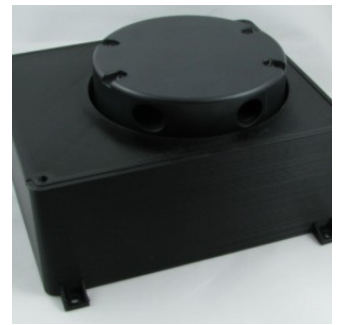
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**XV Lidar Sensor Enclosure Package**

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