

This is the Revision A version of the Line3 module. The status of this project is finished.

# Line3 Module (Revision A)

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## 1. Introduction

The Line3 module has 3 infrared (IR) sensors for sensing lines on flat surfaces. There are sensor that straddle the line and one that can detect when the line simply ends.

## 2. Programming

{ more goes here. }

In addition to the common shared commands and the shared interrupt commands, the Line3 RoboBrix supports following commands:

| Command                       | Send/<br>Receive | Byte Value |   |   |   |   |     |     |     | Discussion  |
|-------------------------------|------------------|------------|---|---|---|---|-----|-----|-----|---|
|                               |                  | 7          | 6 | 5 | 4 | 3 | 2   | 1   | 0   |   |
| Read Interrupt Bits           | Send             | 1          | 1 | 1 | 0 | 1 | 1   | 1   | 1   | Return the interrupt pending bit $p$ and the interrupt enable bit $e$ . |
|                               | Receive          | 0          | 0 | 0 | 0 | 0 | 0   | $e$ | $p$ |   |
| <u>Set Interrupt Commands</u> | Send             | 1          | 1 | 1 | 1 | 0 | $c$ | $c$ | $c$ | Set Interrupt Command $ccc$ .   |
| <u>Shared Commands</u>        | Send             | 1          | 1 | 1 | 1 | 1 | $c$ | $c$ | $c$ | Execute common shared command $ccc$                                     |

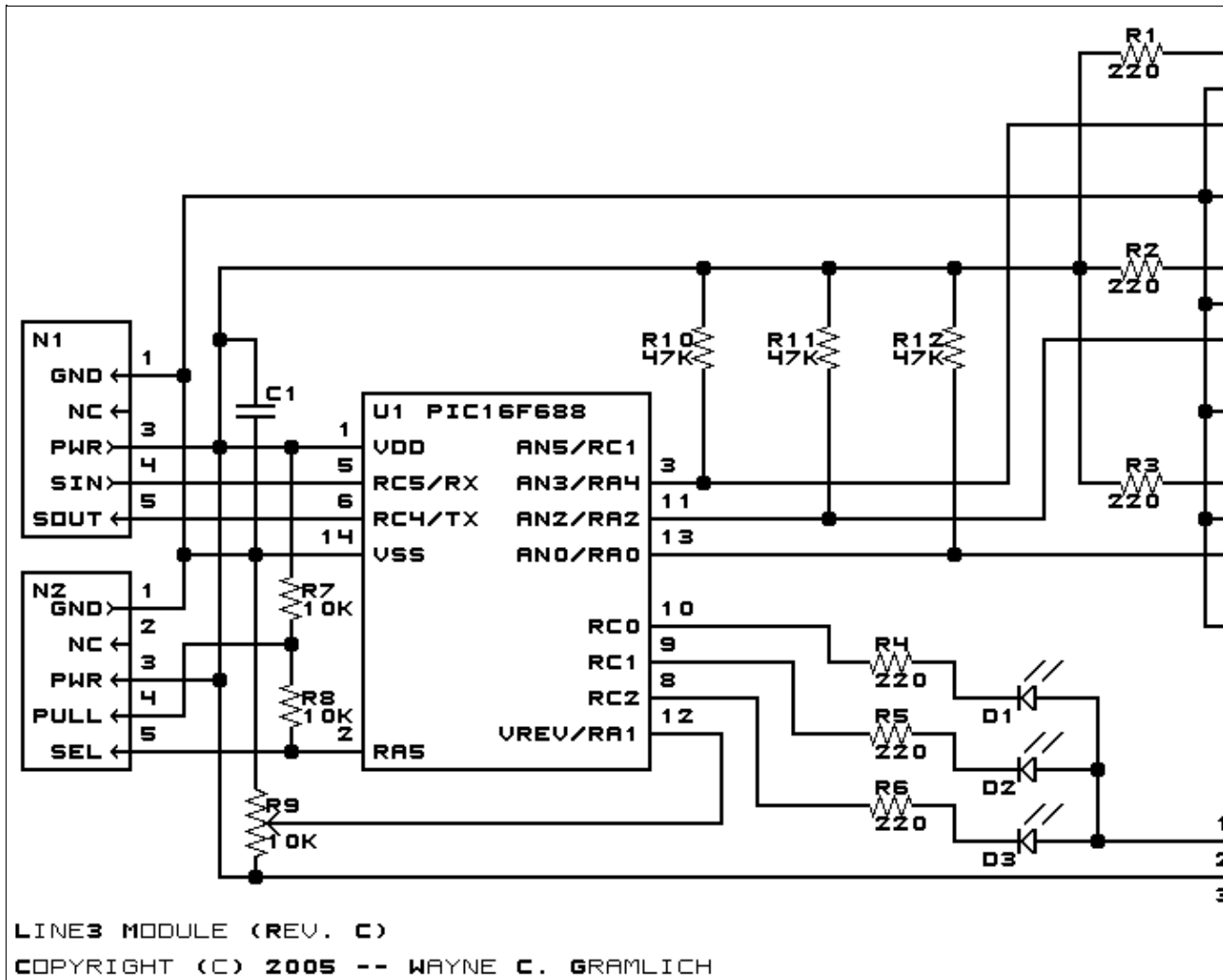
## 3. Hardware

The hardware consists of a circuit schematic and a printed circuit board.

### 3.1 Circuit Schematic

The schematic for the Line3 RoboBrix is shown below:

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The parts list kept in a separate file -- [line3.ptl](#).

### 3.2 Printed Circuit Board

The printed circuit board files are listed below:

[line3\\_back.png](#)

The solder side layer.

[line3\\_front.png](#)

The component side layer.

[line3\\_artwork.png](#)

The artwork layer.

[line3.gbl](#)

The RS-272X "Gerber" back (solder side) layer.

[line3.gtl](#)

The RS-272X "Gerber" top (component side) layer.

[line3.gal](#)

The RS-272X "Gerber" artwork layer.

[line3.drl](#)

The "Excellon" NC drill file.

*line3.tol*

The "Excellon" tool rack file.

## 4. Software

The Line3 software is available as one of:

*line3.ucl*

The  $\mu$ CL source file.

*line3.asm*

The resulting human readable PIC assembly file.

*line3.lst*

The resulting human readable PIC listing file.

*line3.hex*

The resulting Intel<sup>®</sup> Hex file.

## 5. Issues

Any fabrication issues will be listed here.

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