

This is the Revision C version of the [Compass360 RoboBrix](#). The status of this project is [finished](#).

# Compass360 RoboBrix (Revision C)

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## 1. Introduction

The Compass360 RoboBrix is a RoboBrix that can be used to connect to a [Devantech CMPS01](#) compass module. This compass uses two Philips KMZ10A magnetic field sensors to measure the direction accurate to 0–3599 (i.e. .01 degree accuracy.) Please note that the magnetic field inside a build can be off by 10's of degrees.

## 2. Programming

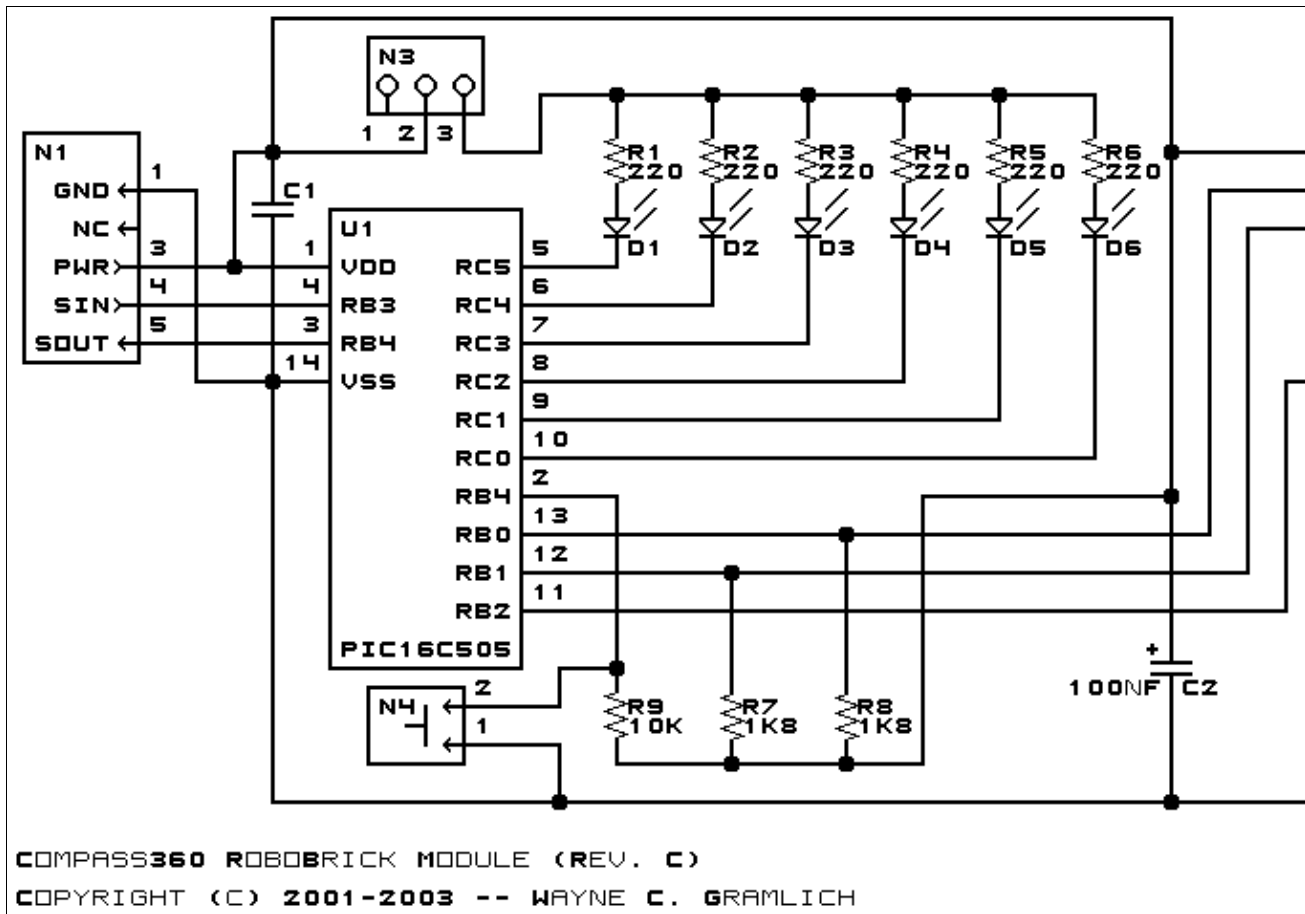
{To be written}

## 3. Hardware

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

### 3.1 Circuit Schematic

The schematic for the Compass360 RoboBrix is shown below:



The parts list kept in a separate file -- [compass360.ptl](#).

### 3.2 Printed Circuit Board

The printed circuit board files are listed below:

[compass360\\_back.png](#)

The solder side layer.

[compass360\\_front.png](#)

The component side layer.

[compass360\\_artwork.png](#)

The artwork layer.

[compass360.gbl](#)

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

[compass360.gtl](#)

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

[compass360.gal](#)

The RS-272X "Gerber" artwork layer.

[compass360.drl](#)

The "Excellon" NC drill file.

[compass360.tol](#)

The "Excellon" tool rack file.

## 4. Software

The Compass360 software is available as one of:

[compass360.ucl](#)

The  $\mu$ CL source file.

[compass360.asm](#)

The resulting human readable PIC assembly file.

[compass360.lst](#)

The resulting human readable PIC listing file.

[compass360.hex](#)

The resulting Intel<sup>®</sup> Hex file that can be fed into a PIC16C505 programmer.

The Compass360 test software is available as one of:

[compass360\\_test.ucl](#)

The  $\mu$ CL source file.

[compass360\\_test.asm](#)

The resulting human readable PIC assembly file.

[compass360\\_test.lst](#)

The resulting human readable PIC listing file.

[compass360\\_test.hex](#)

The resulting Intel<sup>®</sup> Hex file that can be fed into a PIC16F628 programmer.

## 5. Issues

Any fabrication issues that come up are listed here.

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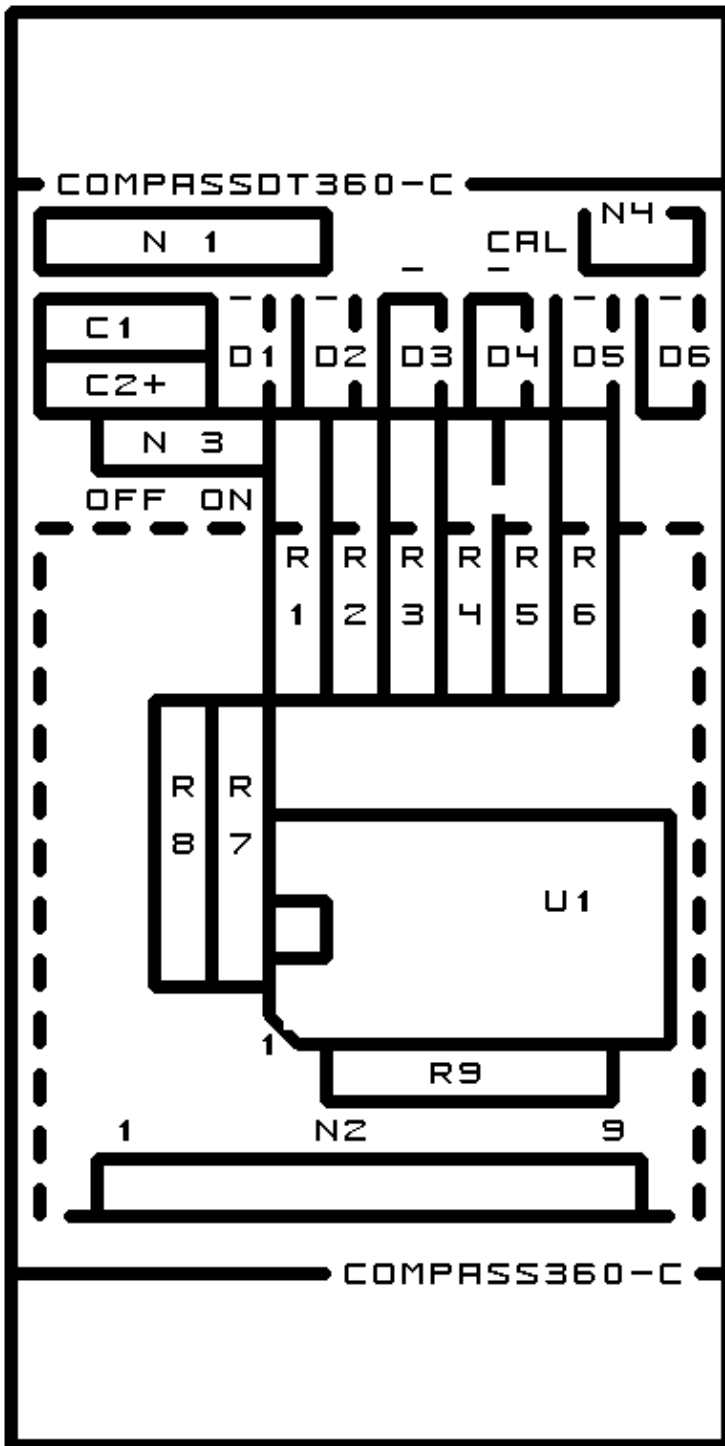
[Copyright](#) (c) 2001–2002 by [Wayne C. Gramlich](#). All rights reserved.



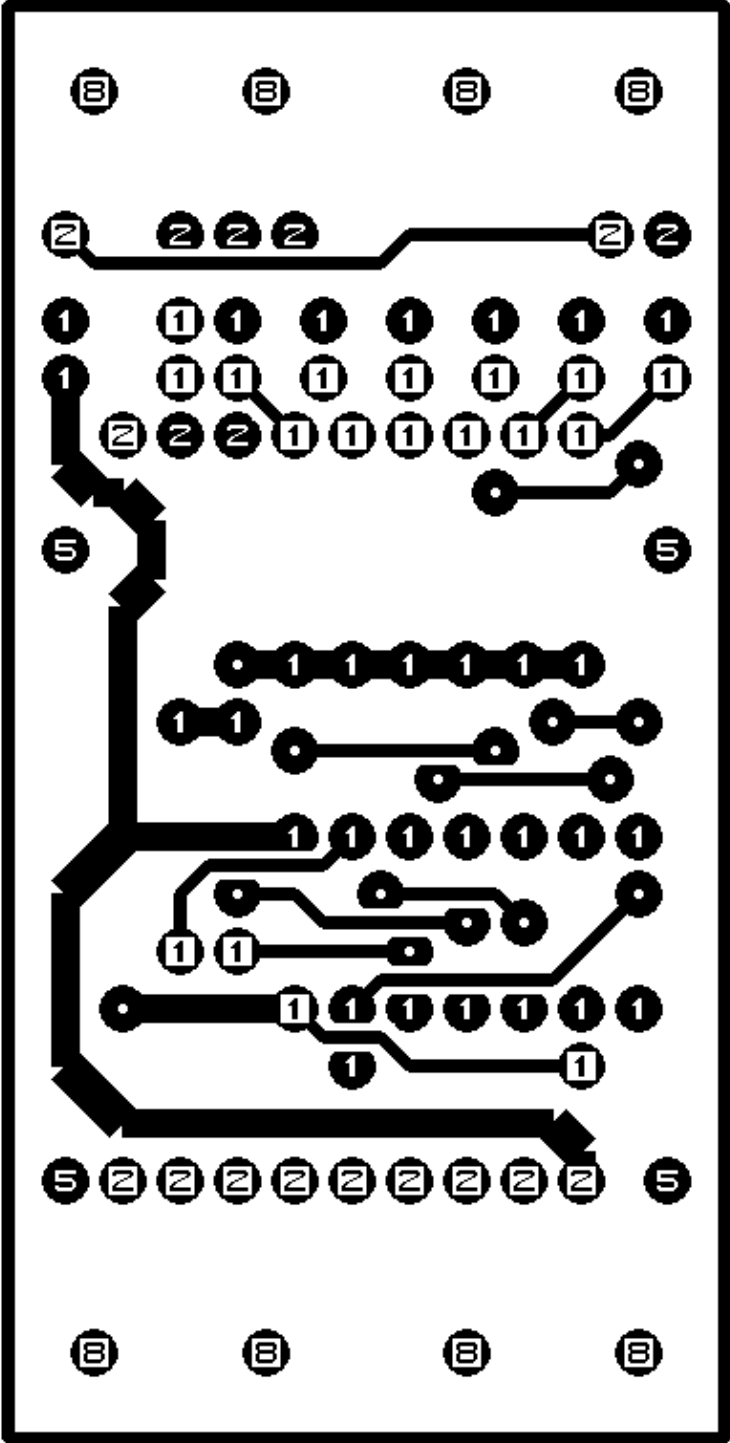
## A. Appendix A: Parts List

```
# Parts list for Compass360 RoboBrix (Rev. C)
#
C1: Capacitor10pF - 10 pF Ceramic Capacitor [Jameco: 15333]
C2: Capacitor100nF - .1 uF Tantalum Capacitor [Jameco: 33486]
D1-6: LEDGreen - Green LED [Jameco: 34606]
N1: Header1x5.Compass360 - 1x5 Male Header [5/40 Jameco: 160881]
N2: Header1x9.CompassDT1 - 1x9 Female Header [9/36 Digikey: 929974-01-36-ND]
N3: Header1x3.CompassDT1 - 1x3 Male Header [3/40 Jameco: 160881]
N4: Header1x2.CompassDT1 - 1x2 Male Header [2/40 Jameco: 160881]
R1-6: Resistor220 - 220 Ohm 1/4 Watt Resistor [Jameco: 30470]
R7-8: Resistor1K8 - 1.8K Ohm 1/4 Watt Resistor [Digikey:1K8-QBK-ND]
R9: Resistor10K - 10K Ohm 1/4 Watt Resistor [Jameco: 29911]
U1: PIC16C505.CompassDT1 - Microchip PIC16C505 [Digikey: PIC16C505-04/P-ND]
```

## B. Appendix B: Artwork Layer



### C. Appendix C: Back (Solder Side) Layer



### D. Appendix D: Front (Component Side) Layer

