

## Propeller Mini (#32150)

The Propeller Mini is a low cost solution for embedding a controller in hard to reach places, where a full sized development board is not practical. Though small in size and component count, it has the necessary features that you would look for in a control board. You can solder wires and leads directly to the through holes on the board, or solder in a male or female header for easy connectivity to a breadboard or prototyping board.

### Features

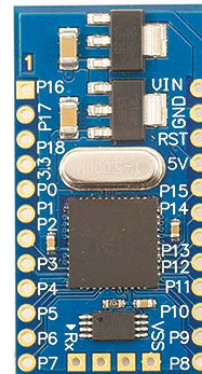
- Propeller P8X32A-M44 multi-core microcontroller
- 64 KB EEPROM for program storage
- Removable 5 MHz crystal
- Access to 19 general-purpose I/O pins
- 40-pin male/male header included
- Onboard voltage regulators provide 3.3 VDC regulated output @ 400 mA max, 5 VDC regulated output @ 600 mA max

### Key Specifications

- Power requirements: 6.5 to 12 VDC through VIN Pin
- Communication: Prop Plug for programming (not included)
- Operating temperature: -40 to +185 °F (-40 to +85 °C)
- PCB dimensions: 0.81 x 1.52 in (20.5 X 38.6 mm)

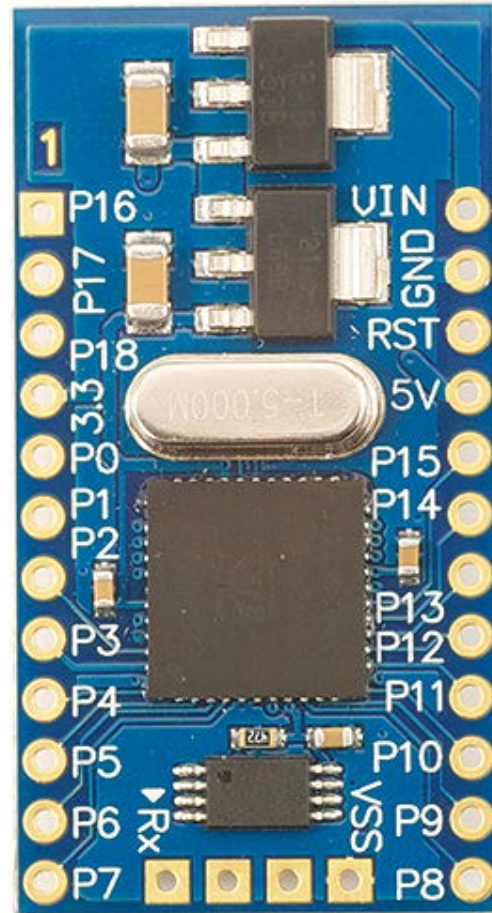
**NOTE:** Programming the Propeller Mini requires a Prop Plug and USB A to Mini B cable (Parallax #32201), not included. You may optionally solder a section of the single-row header to the four pins on the bottom edge of the Propeller Mini to accommodate the Prop Plug's 4-pin female socket.

**CAUTION:** Although it is of a similar size and form factor, the Propeller Mini is not pin-compatible, nor code-compatible with the discontinued Spin Stamp (Parallax #SS1-IC). Do not attempt to plug a Propeller Mini into any socket meant for a 24-pin BASIC Stamp module.



## Pin Definitions & Assignments

Pin	Definition/Assignment
P0-P18	General-purpose I/O
P28-P29 SCL & SDA	P28 = I <sup>2</sup> C Clock, P29 = I <sup>2</sup> C Data Connects to 32 KB EEPROM for non-volatile program and data storage
P30 & RX	RX serial communication to USB. Used on Prop Plug Connection.
P31 & TX	TX serial communication to USB. Used on Prop Plug Connection.
RST	Propeller reset pin, inverted. Pulled to VDD. Driven low on internal reset. Drive low to externally reset the Propeller.
5V	5 V Regulator output. Do not draw more than 600 mA if also using the 3.3V output, as the 3.3 V regulator can use up to 400 mA of the 5 V regulator's output.
3.3	3.3V Regulator output. Maximum current draw of 400 mA.
VSS	Ground
GND	Ground
VIN	Voltage Input: regulated 6.5–12 VDC @ 1A



## Programming the Propeller Mini

The 4-pin programming connection along the end of the board is designed to use with a 4-pin header plugged into the Prop Plug. You may optionally solder the 4-pin header directly to these through holes. However, these through holes were deliberately designed with slightly tighter spacing than the typical 0.1" spacing, to provide a friction-fit for a 4-pin header. This allows you to plug in the Prop Plug for programming and/or communication and remove it again without the need to solder and unsolder.

Tip: for programming the Propeller Mini with Propeller GCC, choose the GENERIC board type. Board type can be selected in the Project Manager pane of SimpleIDE.

## Resources and Downloads

Find the latest version of this document, the PCB schematic, and other resources on the Propeller Mini product page. Go to [www.parallax.com](http://www.parallax.com) and search by product number: 32150.

## Revision History

V1.1: added "Programming the Propeller Mini paragraph, above.

V1.2: EEPROM upgraded to 64 KB. Boards purchased before 1/21/2014 feature a 32 KB EEPROM.