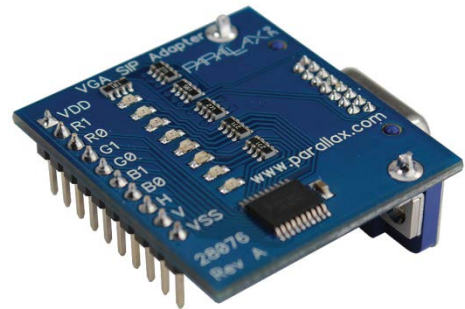


## VGA SIP Adapter Board (#28076)

The multicore Propeller P8X32A microcontroller can generate VGA signals, adding a powerful visual dimension to your applications. This handy board makes it easy to add a VGA socket to your Propeller development platform. Designed with our breadboard-based Propeller educational platforms in mind, the connected module sits on the same level as the board, keeping your project tidy and placing no strain on the pin connections.

### Features

- VGA DE-15 female socket accepts standard VGA cables.
- Color-matched LEDs give visual verification of signal activity on each line.
- Indicator LEDs are optional; only a ground connection is required for the VGA signal, permitting lower-power operation.



### Specifications

- Power Requirements: 3.3 VDC @ 95 mA with optional LEDs
- Communication Interface: VGA
- Operating temperature: -40 to +257 °F (-40 to +125 °C)
- Dimensions: 1.4 x 1.5 x 0.6 in (3.6 x 3.7 x 1.6 cm)

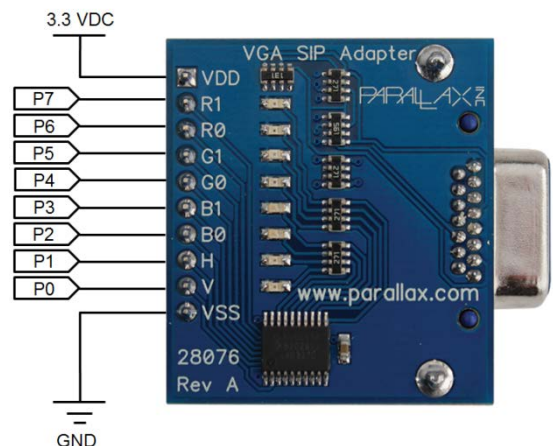
### Application Ideas

- Display graphical sensor data output
- Combine with human input devices to make a stand-alone terminal application
- Add VGA graphics to an interactive art installation

### Example Circuit

**Important: the GND connection is always required.** But, the 3.3 VDC connection is not needed to send VGA signals through the adapter. The 3.3 V connection powers to the onboard LED buffer chip, so the LEDs can give a visual indication when VGA signals pass through. If you do not wish to use the LEDs, the 3.3 V connection is not necessary. The VGA signaling alone draws 63 mA via the I/O pins.

**Important: I/O Pin Grouping Matters.** The eight VGA signal pins must be connected to one of the following groups of eight contiguous Propeller I/O pins: P0..P7, P8..P15, P16..P23, or P24..P31. See the Video Configuration Register section in the Propeller Manual or Datasheet for details.



## Pin Definitions and Ratings

| Pin | Name | Type | Function  |
|-----|------|------|---|
| 1   | VDD  | P    | 3.3 V supply, optional for using the indicator LEDs |
| 2   | R1   | I    | Red, most significant bit                           |
| 3   | R0   | I    | Red, least significant bit                          |
| 4   | G1   | I    | Green, most significant bit                         |
| 5   | G0   | I    | Green, least significant bit                        |
| 6   | B1   | I    | Blue, most significant bit                          |
| 7   | B0   | I    | Blue, least significant bit                         |
| 8   | H    | I    | Horizontal synch                                    |
| 9   | V    | I    | Vertical synch                                      |
| 10  | VSS  | G    | Ground (0 volt) connection, always required         |

Pin Type: P = Power, G = Ground, I = Input, O = Output

## Propeller C Library

The library `vgatext.h` is included in the Learn/Simple Tools folder. This folder is distributed with the free SimpleIDE programming software, and folder updates are also released separately as new libraries and example code are added. See <http://learn.parallax.com/propeller-c-set-simpleide>.

## Propeller P8X32A Spin/Assembly Objects

A number of VGA demos and drivers are included with the Propeller Tool software for Windows, a free download from <http://www.parallax.com/propellertool>. Additional VGA drivers are available for free download from the Propeller Object Exchange. Go to <http://obex.parallax.com> and search "VGA."

## Example Programs and Tutorials

For links to tutorials and demo programs see the Additional Resources links on the VGA SIP Adapter product page. Go to [www.parallax.com](http://www.parallax.com) and search "28076."