

## AMETHYST COLOUR VIDEO SYSTEM

The Amethyst is a retro-styled 'home computer' built around an Atmel ATmega1284 microcontroller. It features composite (NTSC) video output with both high-color and high-resolution modes, mono audio output, and a full-travel mechanical keyboard. It includes a full-featured implementation of the powerful Forth programming language, with graphics and sound commands, debugger, and screen editor. A single USB Type-A cable provides 5V power as well as serial communication with a PC. Amethyst is compatible with the Arduino bootloader, and new firmware may be uploaded to it without a specialized programming device.

### FULL SPECIFICATIONS

- \* ATmega1284 microcontroller (8-bit) running at 14.318 MHz
- \* 16 KB internal memory. (16,352 bytes available for applications)
- \* 4 KB nonvolatile EEPROM memory
- \* Mechanical keyboard with Cherry MX keyswitches
- \* NTSC color and monochrome composite video output:
  - + 256-color, 16-color, and 4-color bitmap graphics at resolutions up to 160x200 pixels
  - + Monochrome bitmap graphics at resolutions up to 640x200 pixels
  - + 40x25 and 80x25 text modes (monochrome)
  - + 40x25 color text mode
  - + 40x25 color tiled graphics mode
- \* Single-channel audio output (pulse wave or PWM)
- \* USB serial communication at speeds up to 57600 baud
- \* Four SPI expansion ports for peripherals, controllers, and storage devices
- \* Laser-cut walnut plywood enclosure

Amethyst is a hobby project and is not currently available for purchase.

Copyright (C) 2019 Matt Sarnoff. [twitter.com/txsector](https://twitter.com/txsector) [msarnoff.org](http://msarnoff.org) 10/29/19