




Proteus VSM for Arduino™ AVR®

System Level Simulation for Arduino™ AVR®.

Summary

Proteus Virtual System Modelling (VSM) combines mixed mode SPICE circuit simulation, animated components and microprocessor models to facilitate co-simulation of complete microcontroller based designs. The 'Proteus VSM for Arduino™ AVR®' product includes the following main software modules:


- Professional Schematic Capture module
- ProSPICE professional Simulation Engine
- All supported VSM microcontroller variants in the Arduino AVR Family.
- All of the Proteus Embedded Simulation Peripheral Libraries.
- VSM Studio IDE with automatic compiler configuration.
- Over 10,000 standard simulation models.

 *The full Proteus VSM for AVR Product also includes simulation of the entire range of supported Atmel AVR variants.*

Variants

The following is a current list of supported variants in the Arduino™ AVR® family:

- ATMEGA168, ATMEGA328, ATMEGA2560

 The full Proteus VSM for AVR Product also includes simulation of the entire range of supported Atmel AVR variants.

Shields

There is a vast selection of available Arduino™ Shields available. These are listed below:

- Any schematic of a shield that you draw yourself
- Arduino™ 4 Channel Relay Shield.
- Arduino™ 7-segment Common Anode Breakout Board.
- Arduino™ 7-segment Common Cathode Breakout Board.
- Arduino™ 8x8 LED's.
- Arduino™ 16-channel PWM Servo Adafruit Shield.
- Arduino™ 74HC595 Shift Register Breakout Board.
- Arduino™ AD8495 K-Type Thermocouple Amplifier Breakout Board.
- Arduino™ Data Logger Shield.
- Arduino™ DHT22 Humidity & Temperature sensor Breakout Board.
- Arduino™ DS18B20 Breakout Board.
- Arduino™ DS1302 RTC Breakout Board.
- Arduino™ EA DOGS102N-6 Graphics Display Breakout Board.
- Arduino™ ENC28J60 Ethernet Breakout Board.
- Arduino™ HYT271 Precision Humidity & Temperature sensor Breakout Board.
- Arduino™ I2C 16x2 LCD Breakout Board.
- Arduino™ I2C 20x4 LCD Breakout Board.
- Arduino™ IOX-16 Shield with MCP23017 I/O Expander.
- Arduino™ KS0108 128x64 Graphics Display Breakout Board.
- Arduino™ KS0108 192x64 Graphics Display Breakout Board.
- Arduino™ LCD Shield.
- Arduino™ LED Bar Breakout Board.
- Arduino™ LED Shield.
- Arduino™ MCP3208 12bit ADC Breakout Board.
- Arduino™ MCP3304 13bit ADC Breakout Board.
- Arduino™ MCP3421 18-bit ADC Breakout Board.
- Arduino™ MCP4921 12bit DAC Breakout Board.
- Arduino™ MCP23008 I2C Expander.
- Arduino™ Motor Shield with Servos.
- Arduino™ Motor Shield.
- Arduino™ MPX4250AP absolute pressure sensor Breakout Board.
- Arduino™ Nokia 5110-3310 Monochrome LCD Breakout Board.
- Arduino™ PCA9555 I2C Expander Breakout Board.
- Arduino™ SD Card Breakout Board.
- Arduino™ Serial 16x2 LCD Breakout Board.
- Arduino™ Serial LED Breakout Board.
- Arduino™ Serial LED Horizontal Breakout Board.
- Arduino™ SRF04 Ultrasonic Ranger Breakout Board.
- Arduino™ SSD1306 128x64 Graphics Display I2C Breakout Board.
- Arduino™ SSD1306 128x64 Graphics Display SPI Breakout Board.
- Arduino™ Temperature & Light Breakout Board.
- Arduino™ Terminal Shield.
- Arduino™ Thermistor Breakout Board.
- Arduino™ Wave Shield.
- Arduino™ Weather Station Shield.

Limitations

The following is a listing of known limitations in the current version of the Arduino™ AVR@:

- x No significant functional limitations.
- x HFINTOSC as CLC1 input is not supported for efficiency reasons.
- x IVR Internal Voltage Regulator and VREGCON register effect are not modeled.
- x BORCON register effect are not modeled.

Compilers

Supported Third Party Compilers

Proteus VSM models will fundamentally work with the exact same HEX file as you would program the physical device with. However, far more debugging information is available when using a compiler to write the firmware and providing these object files to Proteus in place of the HEX file provides a much richer working environment.

We recommend you use the free Labcenter VSM Studio IDE. This will greatly simplify the task as it will automatically configure supported compilers to work with a Proteus VSM simulation.

If you prefer to work inside your own IDE then you will need to set your compiler options manually. After compiling for debug, all you need to do is specify the debug file from the compiler as the program property of the microcontroller on the schematic.

VSM Studio supported toolchains

- Arduino
- GCC



With continual development on the Proteus Design Suite we endeavour to keep all content updated with the latest product details. On rare occasions this may not happen immediately, and website content will then be incomplete or inaccurate. We will attempt to correct any such errors as soon as possible, E&OE.