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Proteus VSM for ARM® LPC2000;

System Level Simulation for ARM® LPC2000 Variants.

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 ARM&reg7/LPC2000;' product includes the following main software modules:

- Professional Schematic Capture module
- ProSPICE professional Simulation Engine
- All supported VSM microcotroller variants in the ARM7® Family.
- All of the Proteus Embedded Simulation Peripheral Libraries.
- VSM Studio IDE with automatic compiler configuration.
- Over 10,000 standard simulation models.

⚠ *Proteus VSM for ARM® Bundle products are ideal if you need to simulate more than one family of ARM micro-controllers.*

Variants

The following is a current list of supported variants in the ARM7 family:

- LPC2104, LPC2105, LPC2106.
- LPC2114, LPC2124
- LPC2131, LPC2132, LPC2134, LPC2136, LPC2138.
- LPC2101, LPC2102, LPC2103.
- ARM7TDMI and ARM7TDMI-S core models.

Features

We believe our simulation models are the most accurate and the most complete on the market today. A summary of model capabilities is listed below:

- Full support for both ARM and THUMB instruction sets.
- Supports all port and other I/O pin operations.
- Supports all on-chip peripherals (GPIO, timers, RTC, U(S)ARTs, SPI, I2C, MAM, PLL & ADC).
- Supports full functionality of the VIC interrupt system.
- Up to 10MIPS simulation throughput on 3GHz PC.
- Load and debug any ELF/DWARF2 program file.
- Debugger drivers available for IAR Embedded Workbench and Keil UV3.
- Internally generated processor clock for performance. Event timing accurate to one clock period.
- Provides internal consistency checks on code (e.g. execution of invalid op-codes, illegal memory accesses, stack overflow checking, etc.).
- Fully integrated in to the VSM source level debugging system.
- Fully integrated into the Proteus Diagnostic Control System.

Limitations

The following is a listing of known limitations in the current version of the ARM7®:

x The bootloader is not modelled.

x The JTAG interfaces and in-circuit programming modes are not supported.

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

- IAR
- GCC
- Keil

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.