

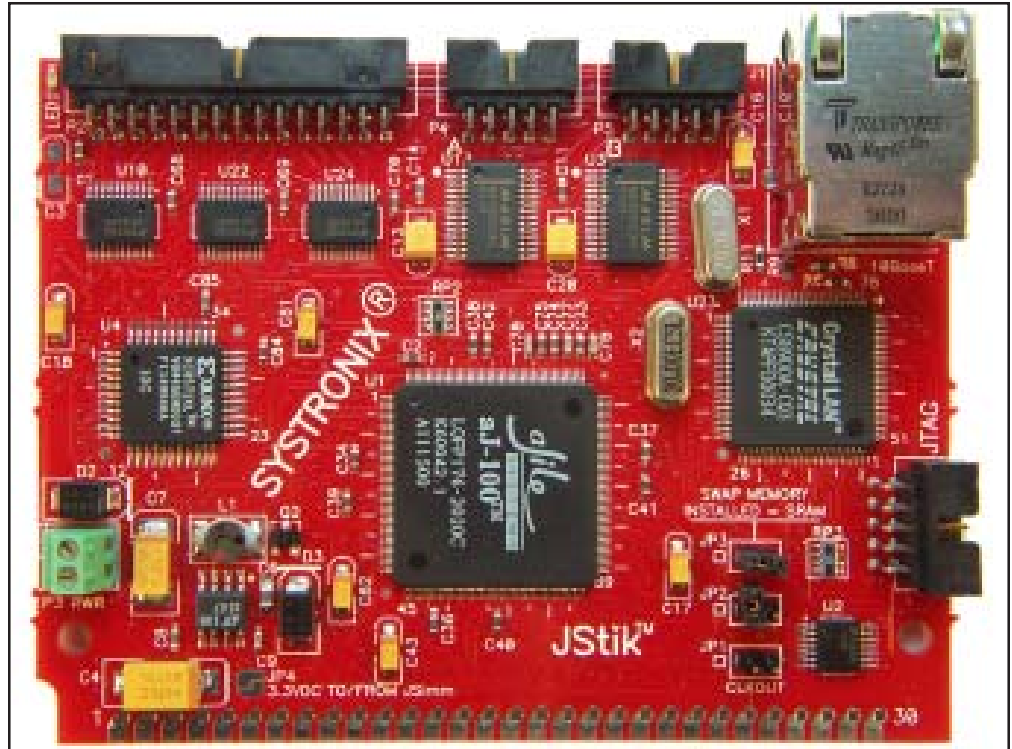
## Real-time Native Java™ Network Module

Experience the rapid development and reliability of Java -- with FAST native execution and deterministic real-time capability! This is the high-speed Java network module you've been waiting for.

The buffered high-speed I/O bus is ideal for streaming images, high speed data acquisition, multiple UARTs, and control systems.

JStik typically executes 15-20 million Java byte codes per second at 103 MHz (5-6 times the speed of JStamp running at 73 MHz).

Actual size is 3.00 x 2.65 inches



**JStik** - the **power** of real-time J2ME/CLDC **Java** with the **speed** of native execution.

**JStik** - fast 32-bit memory, 10BaseT, **high-speed I/O bus**, all in a **compact SIMM30** module

Development teams using Java can develop more robust applications, more quickly than any other language. JStik brings those benefits to a very high speed, 32-bit, native-execution, embedded ethernet module. The silicon JVM and RTOS provide exceptional reliability and simplicity.

JStik is complete with power converter, 10BaseT ethernet, byte-wide buffered high-speed I/O bus, dual UARTs with RS232 level shifters, SPI, JTAG programming and debugging port, JSimm / SimmStick I/O bus, and more.

Power-efficient JStik is ideal for battery operated applications.

- 32-bit aJile aJ-100™ Real-time Java Processor executes Java code natively.
- 2 MBytes SRAM, 4 MBytes Flash. 32-bit wide memory data path.
- Dual UARTs (TTL or RS-232 voltage level), with IrDA support. Available adapters for DCE, DTE and IrDA configurations. Javaxcomm support is provided for all UARTs.
- 10BaseT ethernet with RJ45 and status LEDs.
- High-speed buffered I/O bus, SPI, I<sup>2</sup>C, and JSimm/SimmStick bus for expansion
- Low power 3.3V system, accepts 5-14 VDC or 3.3VDC
- Power and heartbeat LEDs

aJ-100 is a TradeMark of aJile Systems  
Java is a TradeMark of Sun Microsystems, Inc  
JStamp, JStik and JSimm are TradeMarks of Systronix, Inc  
1-Wire is a TradeMark of Dallas Semiconductor Corp  
SimmStick is a TradeMark of Dontronics

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AND SECURE ON-LINE ORDERING

## JStik - Native Java Execution with Real-time Java Support!

JStik uses the powerful aJ-100 native Java processor from aJile Systems. This provides fast and efficient Java instruction execution, plus a small memory footprint - 2 to 3 times denser than code for 32-bit RISC machines.

JStik includes a microprogrammed real-time Java thread manager with typical RTOS functions included. It includes Java threading primitives implemented as atomic instructions, a priority-based scheduler, and extremely fast context switching and fast interrupt response.

JStik supports multiple application execution through "multiple JVMs" in which applications execute in a deterministic, time-sliced schedule. Each application has its own thread management and event handlers.

### JStik Makes Embedded Java Hardware Easy

JStik includes the aJ-100, 32-bit wide memory, ethernet controller and magnetics, crystal, power converter, reset logic, and all other necessary circuitry. The high-speed system memory bus is isolated from JStik I/O pins. All you have to provide is power and a SIMM30 socket. The JSimm bus is compatible with many SimmStick modules - plug them in and go.

The on-board ethernet controller and TCP/IP stack of J2ME/CLDC provide an open, standards-based ethernet API for rapid network application development.

### Timers and Counters

The aJ-100 has multiple timers and counters, including PWM output.

### Memory

JStik is ready for serious work with 2 MBytes of SRAM and 4 MBytes of Flash. Code can be executed from flash or SRAM. Because the JVM is in silicon, all of this memory is available for your application. There are no conventional software JVM, OS, or RTOS layers to slow you down - it's all in silicon.

### User I/O Pins

JStik has eight 24-mA I/O pins plus fifteen additional 8-mA pins (some of which also serve the UART and SPI functions). All I/O pins are TTL-level compatible (thresholds of 0.8 and 2.0 volts) and are 5-volt tolerant. They are compatible with 3V and 5V TTL and 3V CMOS logic. Like other 3V systems, they are not compatible with 5V CMOS which has a 2.5V threshold.

### I/O Expansion & Networking

JStik includes a SPI interface for easy peripheral and I/O expansion. 10BaseT ethernet controller and magnetics are on-board. Plug-on JSimm modules for Dallas 1-Wire network, IrDA, RF modems with JXTA, graphic LCDs, analog I/O, power relays, and more are available or under development. Of course, many current SimmStick modules are JSimm compatible.

The high speed buffered I/O bus has an eight-bit wide data bus, twelve-bit wide address bus, two chip selects, read and write strobes, 3.3V and ground, and supports variable I/O timing.

### Easy JTAG Programming and Debugging

The JTAG interface provides rapid programming and debugging with aJile's JEM Builder and Charade development tools, and the JSwat Java source-level debugger. Charade requires 32-bit Windows and a PC parallel port.

### Free Tool Updates, Tutorials and Support

Tutorials and examples come on CDROM and are online with product-specific links at [www.jrealtime.com](http://www.jrealtime.com). Free tool updates and documentation are available online. New online tutorials and benchmarks at [www.PracticalEmbeddedJava.com](http://www.PracticalEmbeddedJava.com). Expert user discussion groups are free and open to everyone.

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## JStik TECHNICAL DETAILS

**Processor** aJ-100, 32-bit internal core, ALU, and memory. Direct JVM bytecode execution requires no interpreter or JIT compiler. The controller executes at user-selectable integer multiples of the 7.3728 MHz crystal.

**Java** Sun-licensed J2ME/CLDC with additions such as floating point primitives and periodic threads.

**Memory** 32-bit wide data path to 2 MBytes of 55 nsec SRAM and 4 MBytes of 90 nsec flash.

**Power** Unregulated 5 (4.75V min) to 14 VDC, or regulated 3.3 VDC. Typical active current requirement at 74 MHz is 265 mA @3.3V, 270 mA @5 volts, 150 mA @9V, 115 mA @12V. Power use is lower at lower frequencies. The lowest possible power consumption is achieved by powering JStik with 3.3 VDC and setting the PLL as slow as possible. For example, at 3.3V, typical current is 310 mA @103 MHz and 160 mA @7.4 MHz

An efficient switching regulator powers the JStik and provides 3.3V @ 100 mA (max) for use off-module. Recommended power sources are 6-12 VDC batteries, or a 5 VDC, 5% regulated supply from the host socket. JStik is excellent for battery operated systems.

**Serial I/O** Dual UARTs similar to 16550, with IrDA support. 5x2 2mm headers accept standard Systronix DCE, DTE, or IrDA adapters. TTL level serial I/O is available on the JSimm bus. Javacomm support for all UARTs.

**SPI** MISO, MOSI, CLK and four chip selects. JCX addressing can increase this to 32 slave chip selects.

**I2C** SCL and SDA on user-selectable pins.

**Ethernet** 10BaseT with link and activity LEDs

**High-Speed Buffered I/O Bus** 8-bit data bus, 12-bit address bus, strobes, and variable timing to match peripheral speed. 15x2 2mm header.

**Size & Weight:** 3.00 x 2.65 inches with SIMM30 0.100 inch contacts. Weighs 37 grams (1.3 ounces).

**Environmental** Commercial temperature 0 to 70 deg C.

**Support & Warranty** Friendly technical support. One year warranty against defects (processor is warranted separately by aJile Systems).

## Save \$100...

...on a JStik development kit if you are a current JStamp or SaJe user. Details in the online store.

### All development systems include:

- aJile development tools license, CD-ROM data sheets, PDF quick reference, technical reference and schematics, choice of power cube, IEE1284 to JTAG adapter, one each 2mm to DB9 DTE and DCE adapters, JSimm backplane, one JSimm prototyping board. Free on-line tool updates.
- You must purchase at least one Systronix JStamp, JStik, or SaJe development kit to obtain the aJile tools and support license. Thereafter you can purchase additional OEM boards, JTAG pods, and so forth "ala carte".