

# Applied Data Systems Bitsy™ Plus

Embedded Platform Ideal for Developing Handheld Applications

## Versatility arrives in a small package

With the introduction of the Bitsy Plus, ADS brings developers a versatile platform to create powerful handheld or small form-factor OEM applications. Based on an Intel StrongARM® SA-1110 core and the SA-1111 companion chip, the Bitsy Plus has low-level drivers and stacks complete, designed as an application-ready platform to reduce your handheld product-to-market cycle from 12 months to a 2 - 3 month cycle.

The StrongARM SA-1110 core is known for having rich power capability combined with low power consumption and low heat generation. The power management options further extend the life of battery-driven applications. The SA-1111 companion chip rounds out the comprehensive IO offering with USB host and client, as well as full support of the PCMCIA Client.

## Sociability through “personality” connector boards

The Bitsy Plus core hardware is scalable, providing maximum flexibility and versatility with a range of “personality” connector boards making the 3 x 5" platform significantly expandable. Developers can increase the range of applications through Bitsy Plus connector board options, making the product fully scalable with virtually an unlimited number of IO options including Ethernet, compact flash or Bluetooth.

Versatility is further enhanced with a range of operating system options, which include WindowsCE, CE.NET and embedded Linux. Robust Java Virtual Machine (JVM) suite options include Java, Blackdown, Hewlett Packard's Chai or OTI. The Linux options are ported from Open Source with standard GNU tools.

## Power management extends battery life

This capability is significant for power savings with battery-operated systems and handheld devices.

As a reference, ADS' Bitsy Plus single board computer system consumes less than 1.5W (1,500 mW) of power in full operation, with a little less than half a Watt (400 mW) consumed by the StrongARM coprocessor. In contrast, the Bitsy Plus uses less than 25 mW in sleep mode. With sleep mode, in comparison to idle mode, all peripherals are powered off. Only the SDRAMs and the StrongARM (IOs, Real Time Clock and touch screen) remain active in a minimum power mode. This state is initiated by a call to a sleep function by the application or by an inactivity timeout. All the device drivers are notified of transition to this state by a call to their respective power management functions. With sleep mode, the kernel stays resident in RAM and can “wake up” in a timely fashion without having to reload and uncompress the kernel from non-volatile memory.

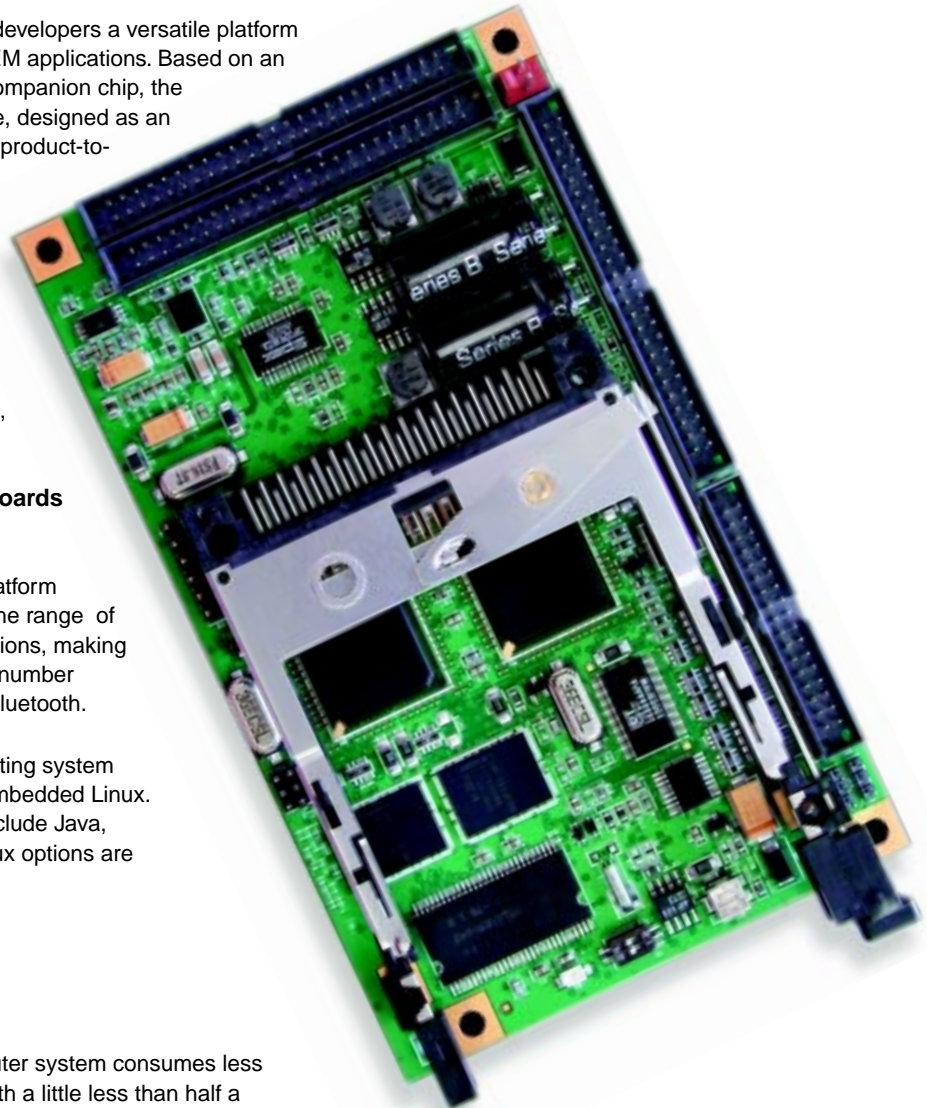
## Battery-operated wireless systems

This capability extends the life of battery-operated systems to several weeks, without requiring recharging. Having power management with sleep mode has been an increasingly significant market need and further enhances the products versatility in wireless applications.

## Select the “personality” connector boards you need and meet your deadline

One of the most robust and powerful small platforms available for OEM designs, the Bitsy Plus with the optional connector boards allows you to choose exactly the technical structure you need with connector board schematics and drivers.

Please contact us to arrange for a demonstration or evaluation system.



Embedded Computer Systems

[www.applieddata.net](http://www.applieddata.net)



## Applied Data Systems Bitsy Plus Embedded Platform for Handheld Applications

### Bitsy Plus Specifications

The Bitsy Plus is specially designed for high-Graphics applications with complete support requirements, full power management, and a validated industrial rating (-40°C to +85°C). A typical ADS Bitsy Plus single board computer would provide:

#### Processors

- 32-bit Digital StrongARM SA-1110 RISC processor:
  - 235 (Dhrystone 2.1) MIPS @ 206 MHz
  - <400 mW @ 1.75V/206 MHz
  - Power and memory management functionality
- SA-1111 StrongARM companion chip, providing USB host functionality

#### Graphics

- Video interface up to XGA (1024 x 768) color
- VEE generator with PWM control by software
- Backlight connector with PWM + ON/OFF controlled by software

#### Memory

- Program/Frame Buffer 103MHz SDRAM 16/32/64 Mbytes
- Flash Memory 8/16/32/64 Mbytes

#### Operating Environments

- Operating Environments include Windows CE, CE.NET, Linux, VxWorks, QNX and Nucleus
- Power Management
- Supports Java with an RTOS, Blackdown, Chai and OTI

#### ADS: Embedded Computer Solutions

Applied Data Systems (ADS) is a leading manufacturer of single board computers used in industries such as process control, medical instrumentation, environmental monitoring, fleet management, kiosks and industrial automation equipment requiring flat panel displays. With 15 years of graphics hardware and software development experience, ADS uniquely delivers customized display connectivity and network communications. Applied Data Systems is headquartered in Columbia, Maryland, USA.

#### What makes the Bitsy Plus a Plus?

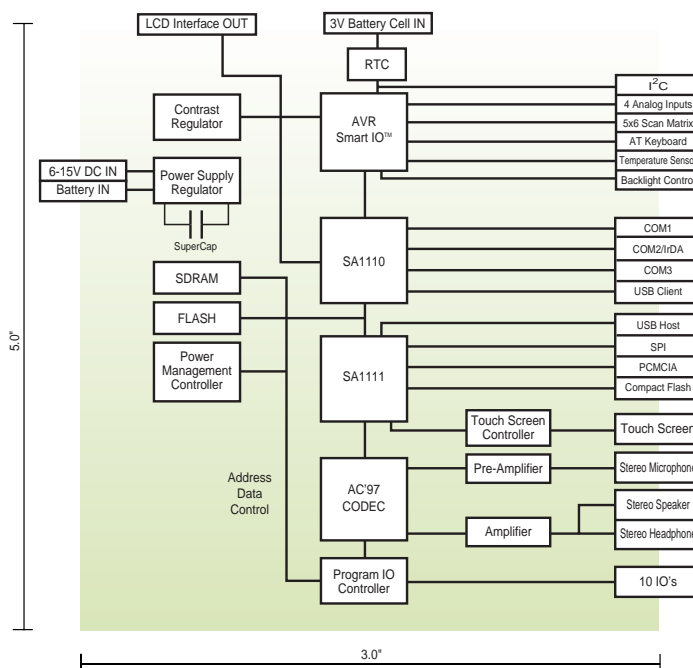
- Dedicated RTC
- SPI bus interface
- I<sup>2</sup>C Bus interface
- Highly efficient power supply: 5V or 6-15V input
- Full power management with Supercap option
- 16 bits of data/11 lines of address, optional (compact flash interface)

To order the Bitsy Plus from Applied Data Systems call toll-free or visit

[www.applieddata.net](http://www.applieddata.net)

### Comprehensive Communications

- USB Host Controller
- USB Client Controller
- One PCMCIA Type II slot
- Three serial ports:
  - COM1: RS232 (8 Wire) or TTL
  - COM2: External IRDA, TTL
  - COM3: RS232 or TTL
- ADSmartIO™ providing any of several user-selectable configurations, including:
  - 5 x 4 keypad, or
  - 4 Analog Inputs + 5 Digital I/Os or 9 Digital I/Os
- Burr Brown touchscreen controller for 4 or 5 wire interface
- On-board Codec:
  - 16 Bit Stereo Audio DAC, 1 W Stereo Amplifier, Stereo Microphone Inputs
- Inputs/Outputs:
  - 10 TTL Digital Inputs/Outputs, software configurable
- PS2 Keyboard, Real Time Clock, Touch Screen, I<sup>2</sup>C Interface, (Analog/digital - see configurable IO)
- On board switching power supply:
  - Operates from single 5V or 6-15V input
- Connector board with development systems includes USB Type A, B connector, plus Compact Flash or 10/100bT Ethernet, Li-ION battery charger
- Physical dimension of 5.0 inches by 3.0 inches



[Applieddata.net](http://Applieddata.net)

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