

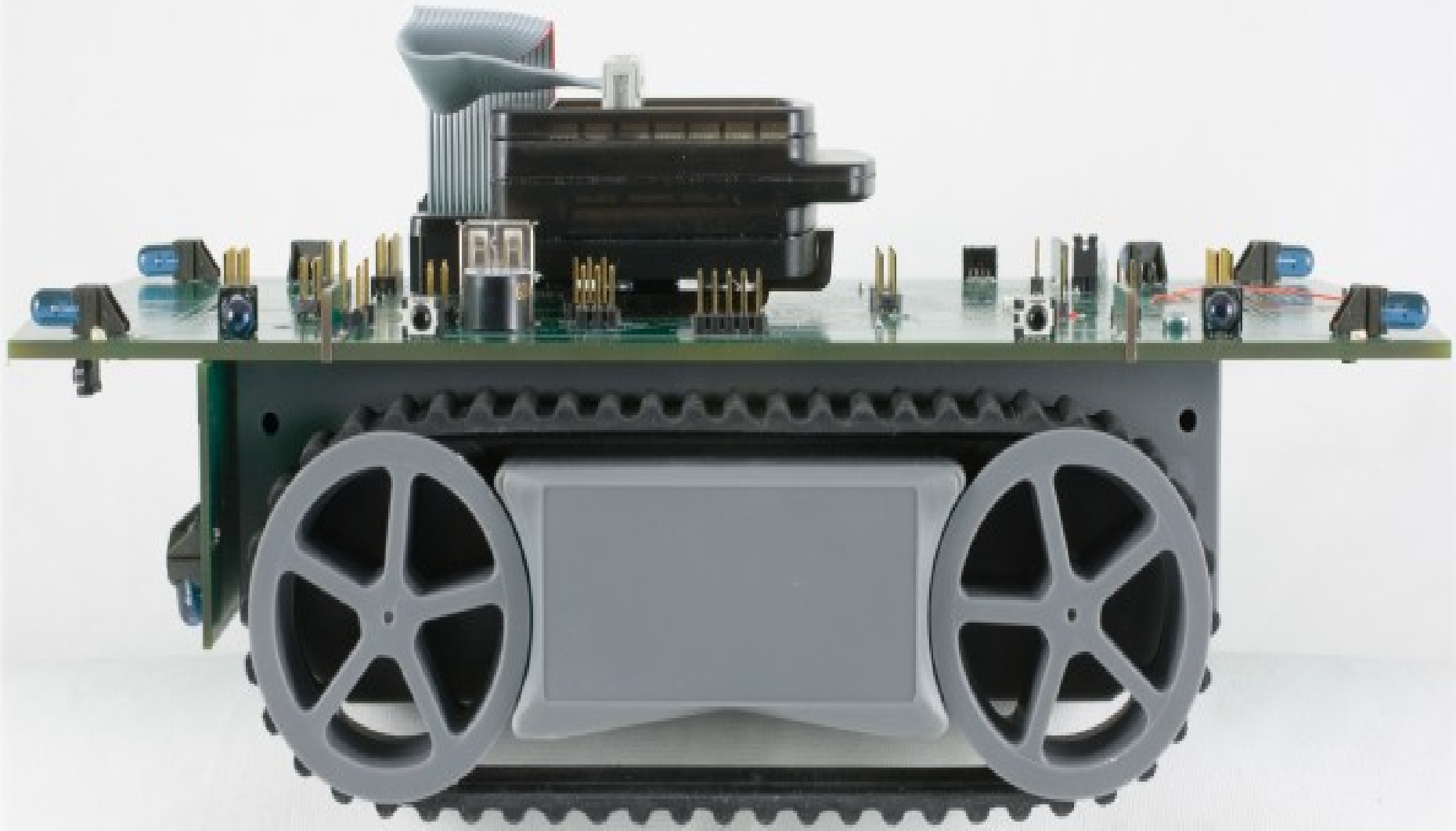
SunSPOT and TrackBot Demo

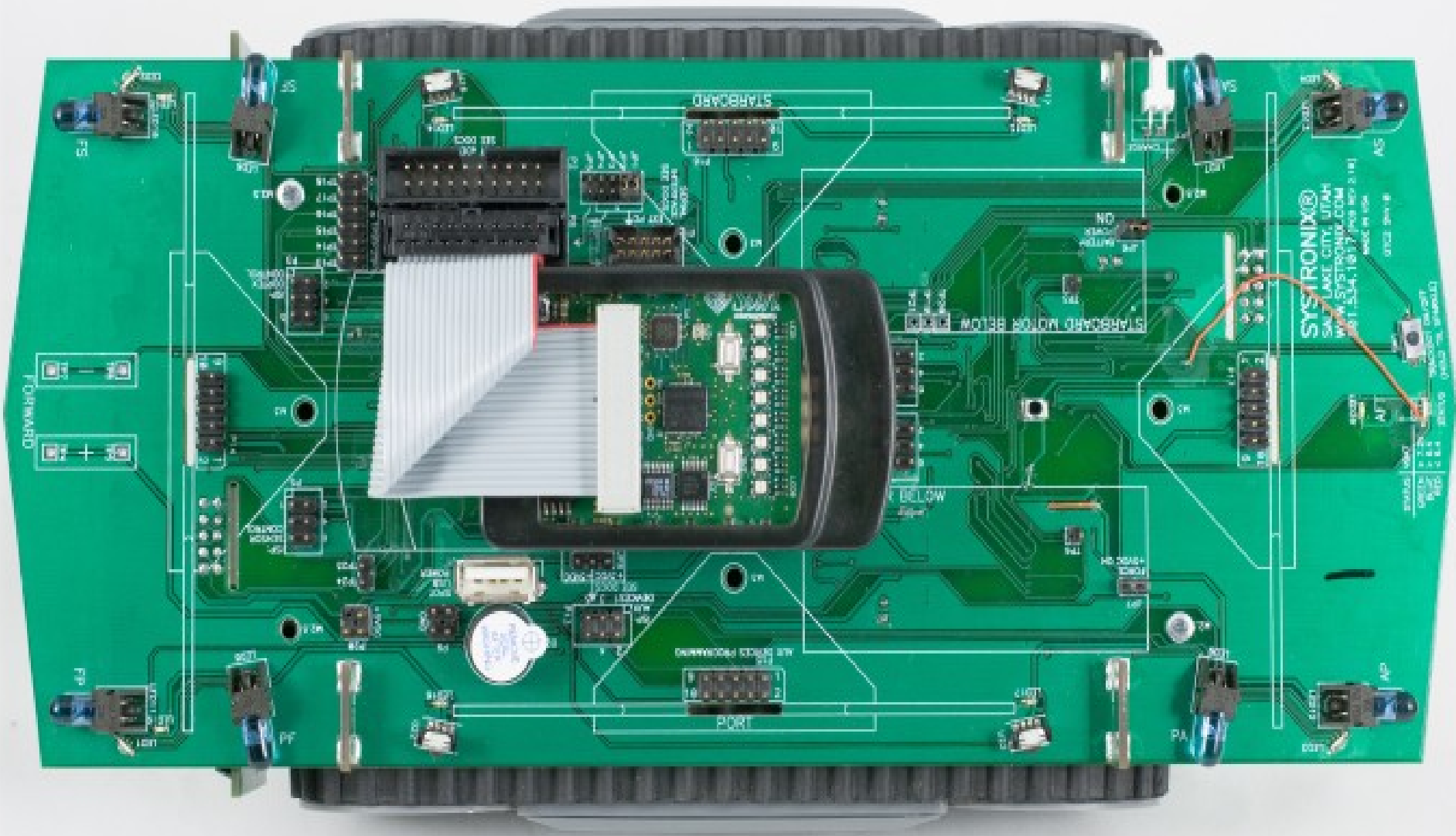
Bruce Boyes & Sridhar Reddy
Systronic Sun Microsystems

Agenda

- SunSPOT Introduction
- TrackBot Introduction
- Demos

SunSPOTs and TrackBot Demo





FORWARD

ALL OTHERS RESERVED

PORT

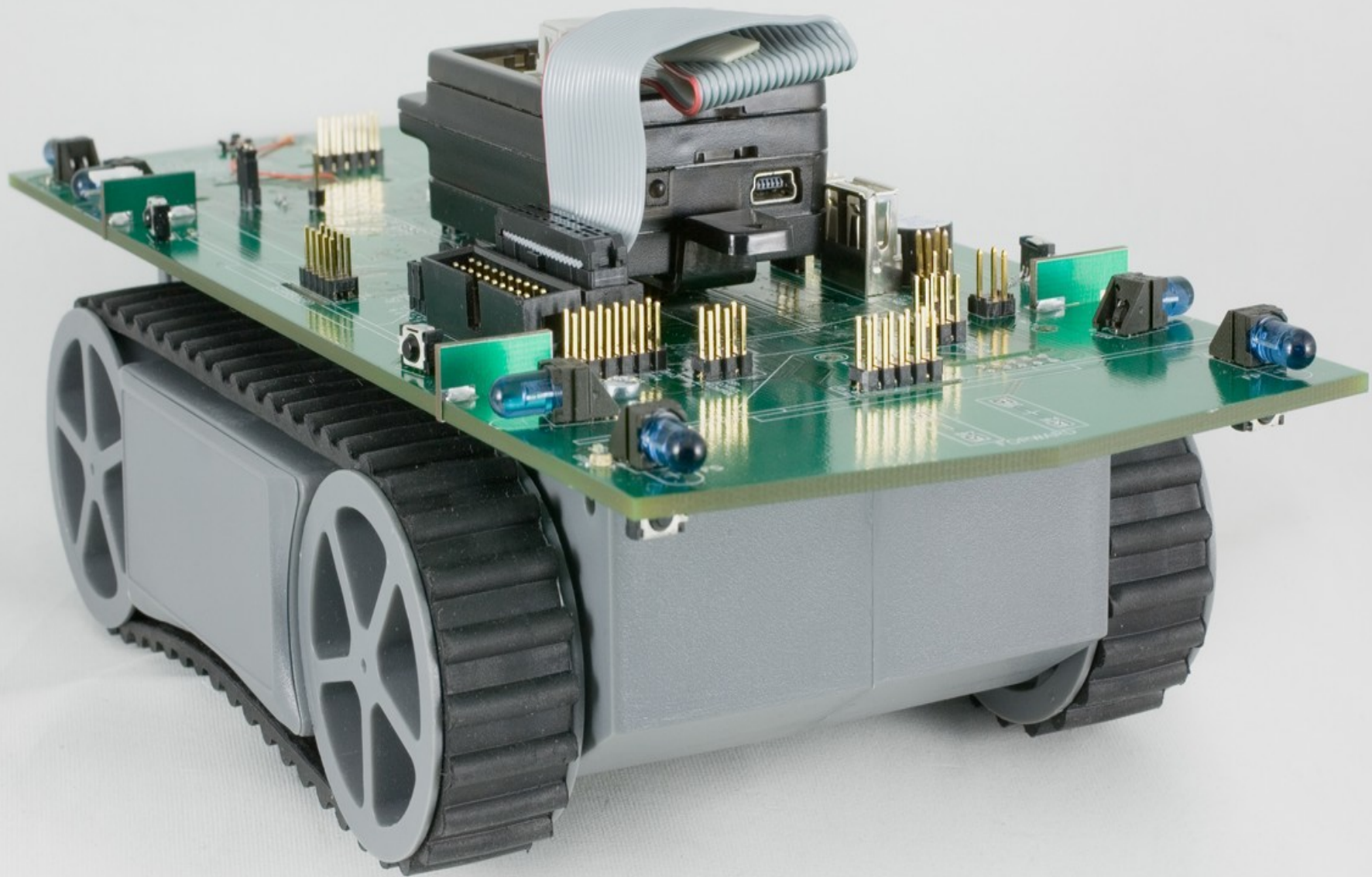
BELOW

STARBOARD MOTOR BELOW

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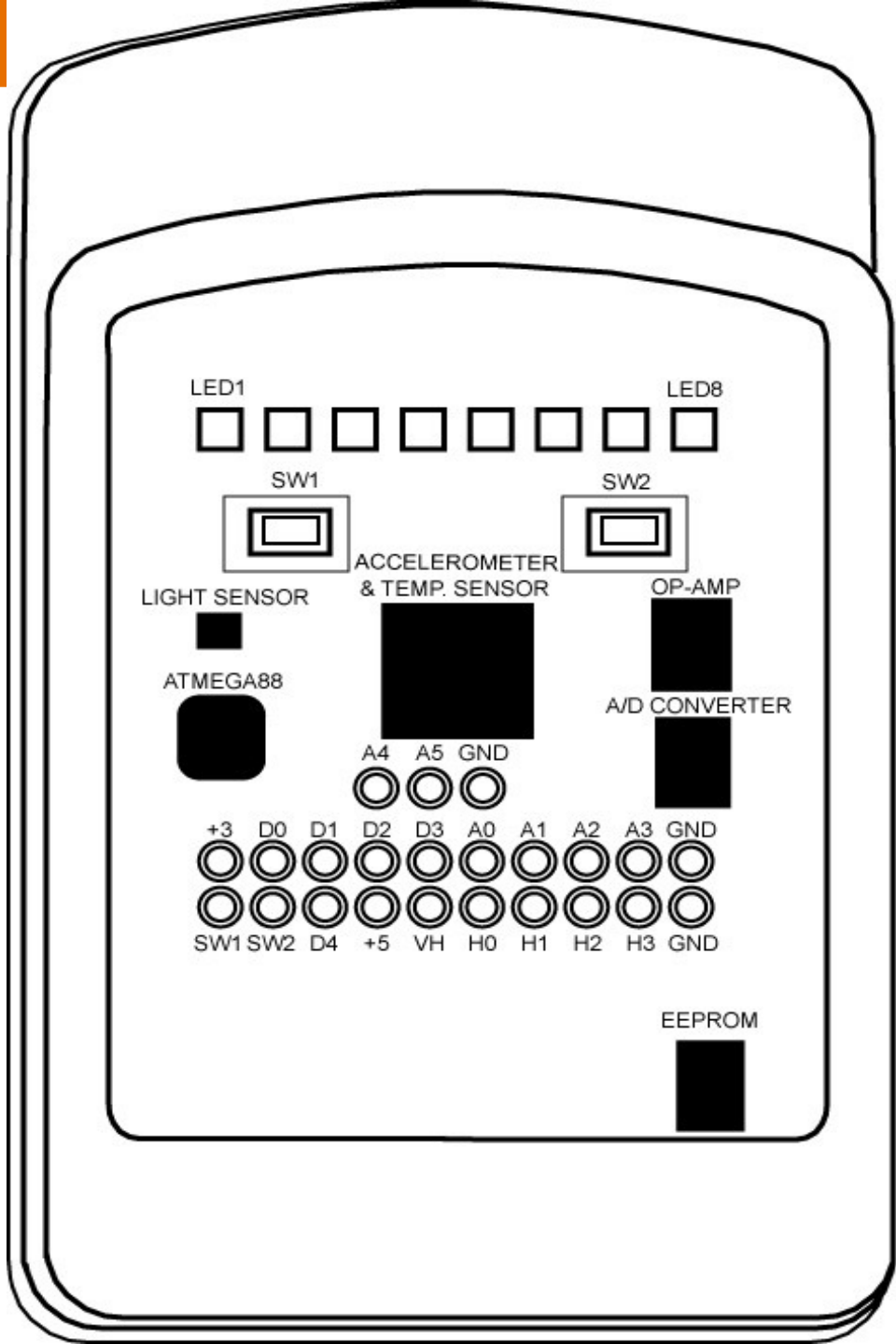
**SENSOR
BOARD**

**PROCESSOR
BOARD**

BATTERY



- 32-bit ARM-9 processor
 - 512KB RAM
 - 4 MB flash
 - IEEE 802.15.4 Radio
 - running JavaME CLDC 1.1
-
- 3-axis accelerometer
 - Light sensor
 - Temperature sensor
 - 8 tri-color LEDs
 - 2 input push buttons



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Sun SPOT Java Development Kit



Supported Platforms & Requirements

- Windows XP x86
- Solaris Express x86
- Linux x86
 - > Fedora Core 5, SuSE 10.1 and Ubuntu 6.06
- Mac OS X 10.4.3 (Tiger) PowerPC, Intel
- Memory requirement: 256 minimum, 512M recommended
- Disk space requirement: 100M bytes

Sun SPOT VM

- Sun SPOTs use a fully capable Java ME implementation, called Squawk
- Supports CLDC 1.1 and MIDP 1.0
- The VM executes directly out of flash memory. All the device drivers are also written in Java.

Developing Applications

- bootstrap suite: which contains the base J2ME and CLDC libraries, and other system-level Java classes
- Sun SPOT application is actually implemented as a MIDlet
- Use ant scripts to deploy and run applications on Sun SPOTs

Use Sun SPOT libraries to control

○

- Read and write persistent properties
- Read and write flash memory
- Access streams across the USB connection
- Use deep sleep mode to save power
- Access http
- Radio

Sample Applications

- Sun SPOTs in the Blackbox
[Moving data center]
 - > <http://www.youtube.com/watch?v=aeLPCn31oIM>
- To monitor habitat
- Used in Defence
- Medical application

SunSPOTs and TrackBot Demo

Demo 1: Pre-programmed SPOT to drive the TrackBot to go around in a Square

Demo 2: Deploy a new program on the host SPOT to read the input from a remote SPOT to drive the TrackBot

Demo 3: More features of TrackBot

Further Information

- www.sunspotworld.com
- www.systronix.com

SunSPOT and TrackBot Demo

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