# Implementation of a Highly Accurate Smart Battery

# Portable Design Challenges

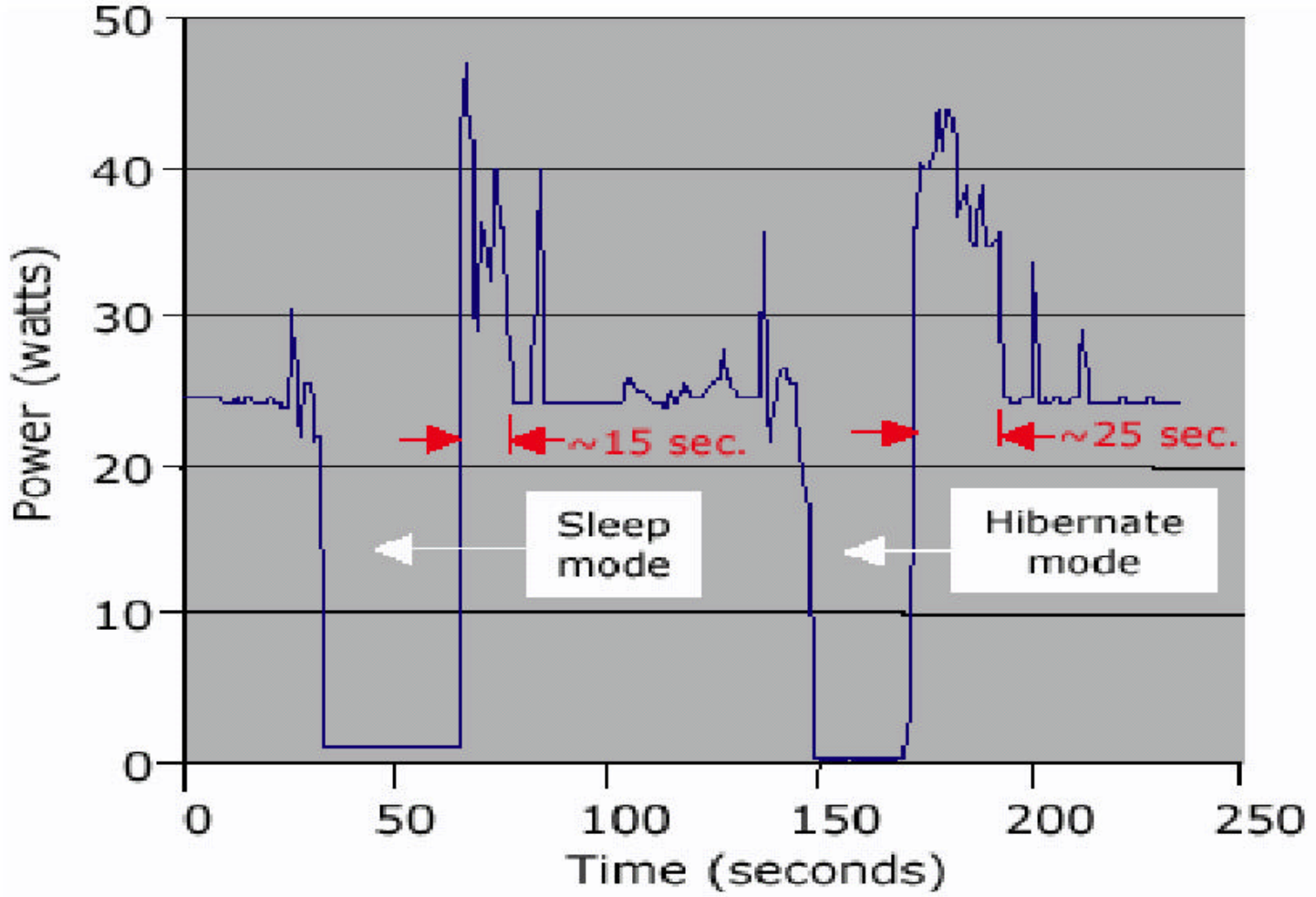
**Notebook Computers - Peak demand of 65 watts driven by GHz processors and increased loading from peripherals**

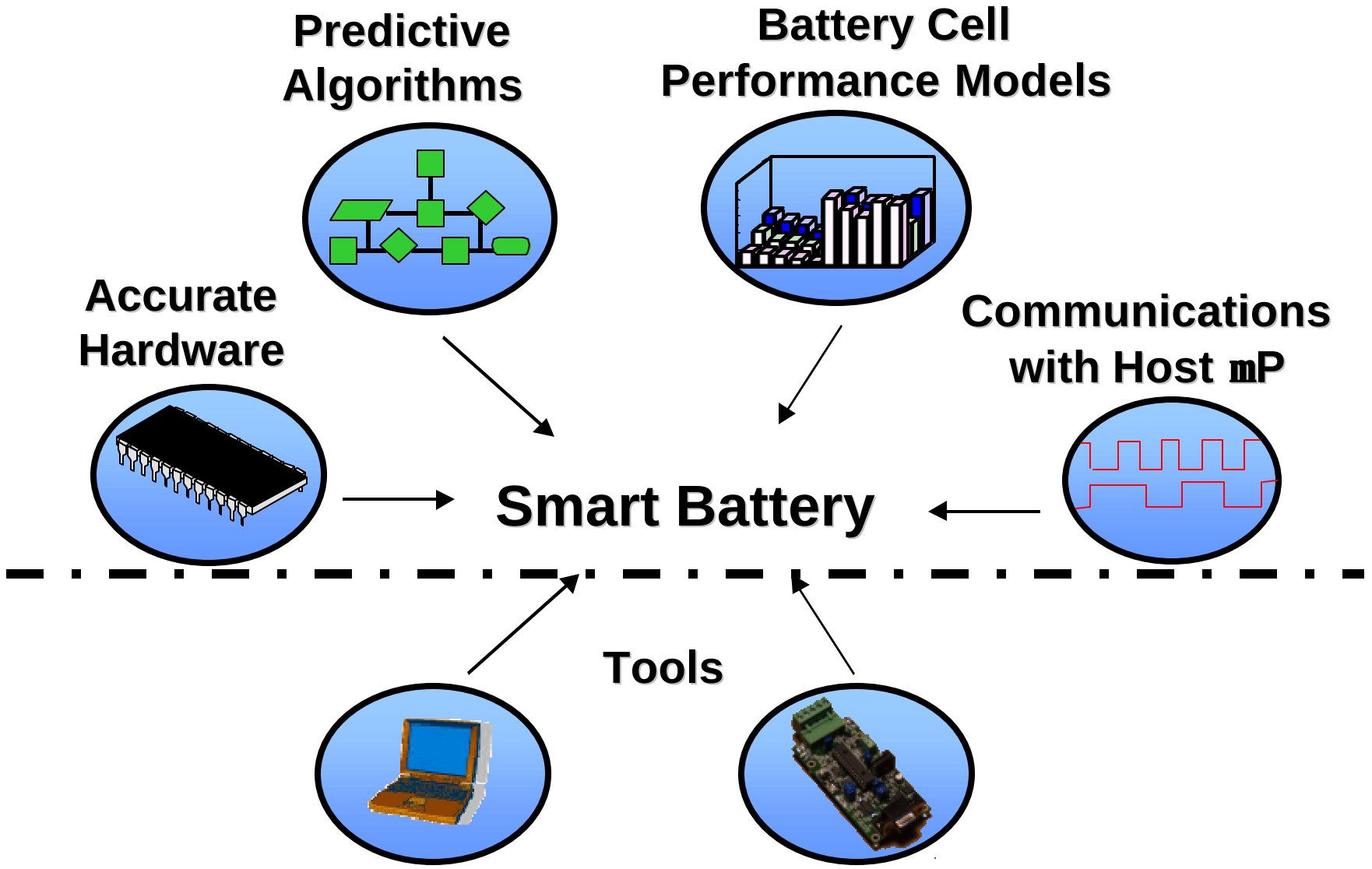
**Cellular/PDA – Power requirements**

**uble driven by increased demand for data, hanced displays and video**

**Digital Camera – Increased power consumption, improved resolution, larger displays, expanded memory and full motion video**

# Notebook Power Waveform Pentium III 850 MHz





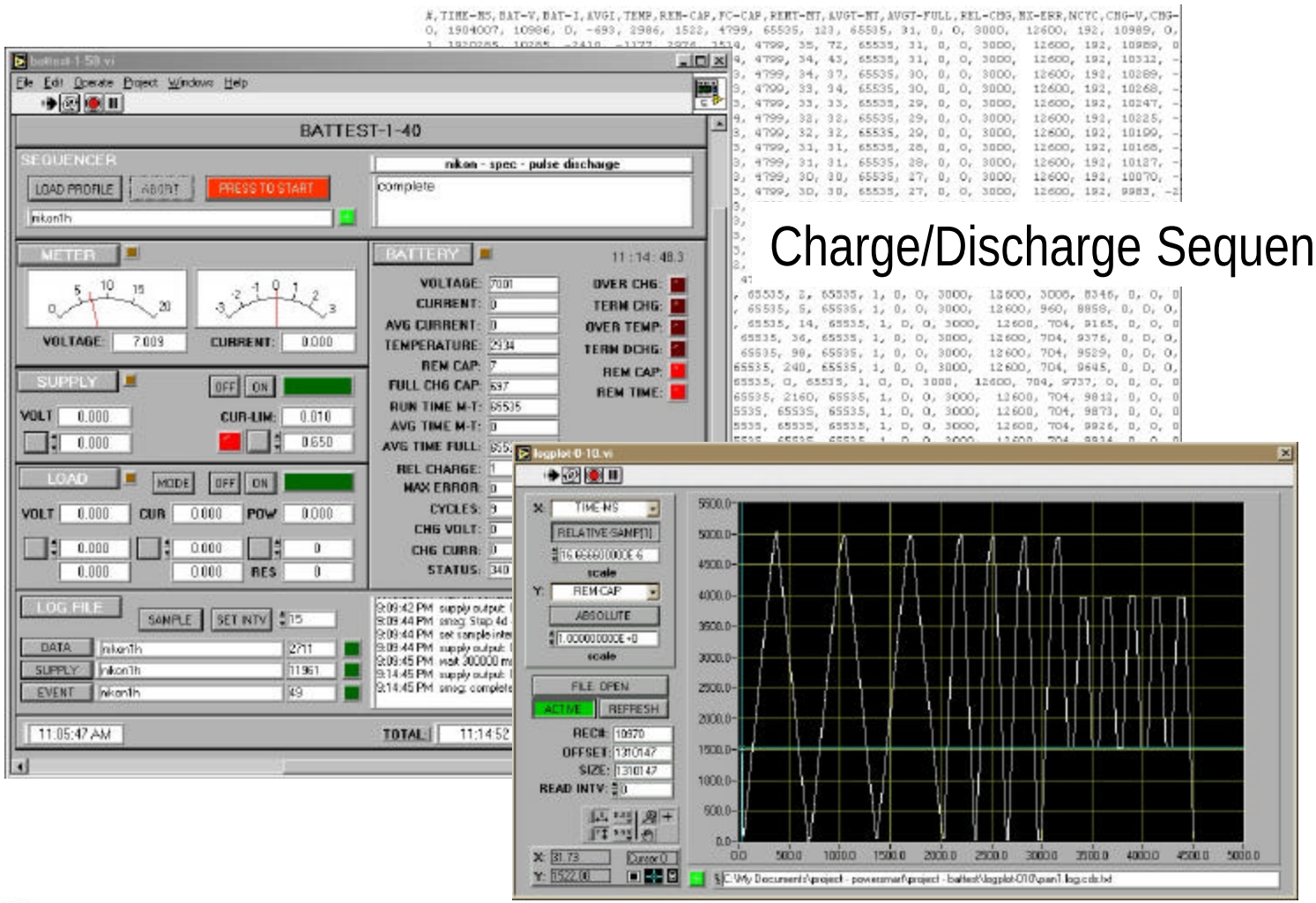

***Multiple "Smart" Components Required***

# Configuration for High Accuracy

| Smart Battery Component | | Example |
|---|---|---|
| Battery (Cell Parameters) | ⇔ | Data collecting |
| Software (IC Parameters) | ⇔ | Programming |
| Hardware (A/D Converter) | ⇔ | Scheduling |
| Pack | ⇔ | Calibrating |

**Comprehensive Tools Necessary to Simplify Configuration**

# Smart battery data collection tool for cell modeling and performance verification




Charge/Discharge Sequencer

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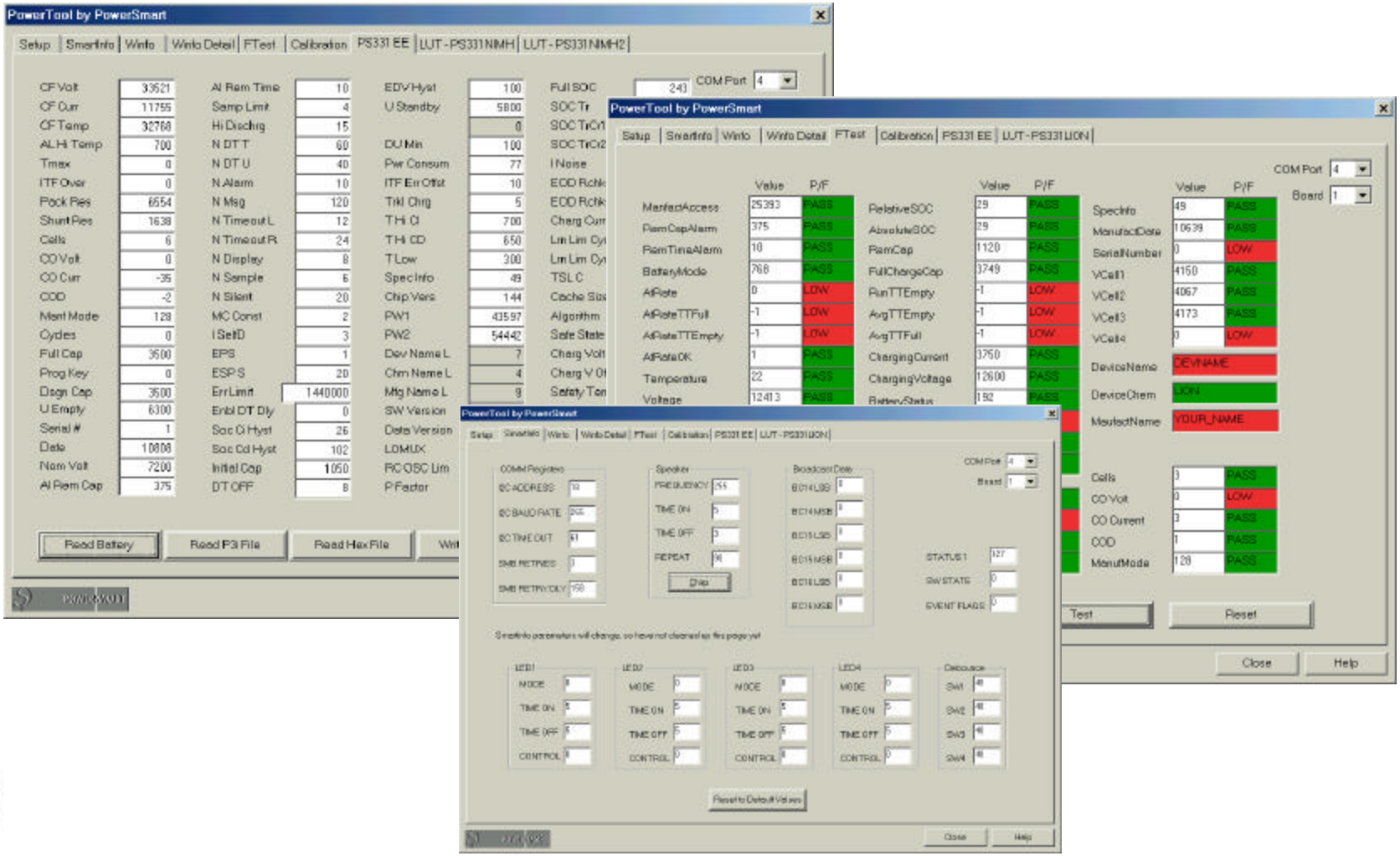
# Flexible software interfaces simplify IC and LUT customization

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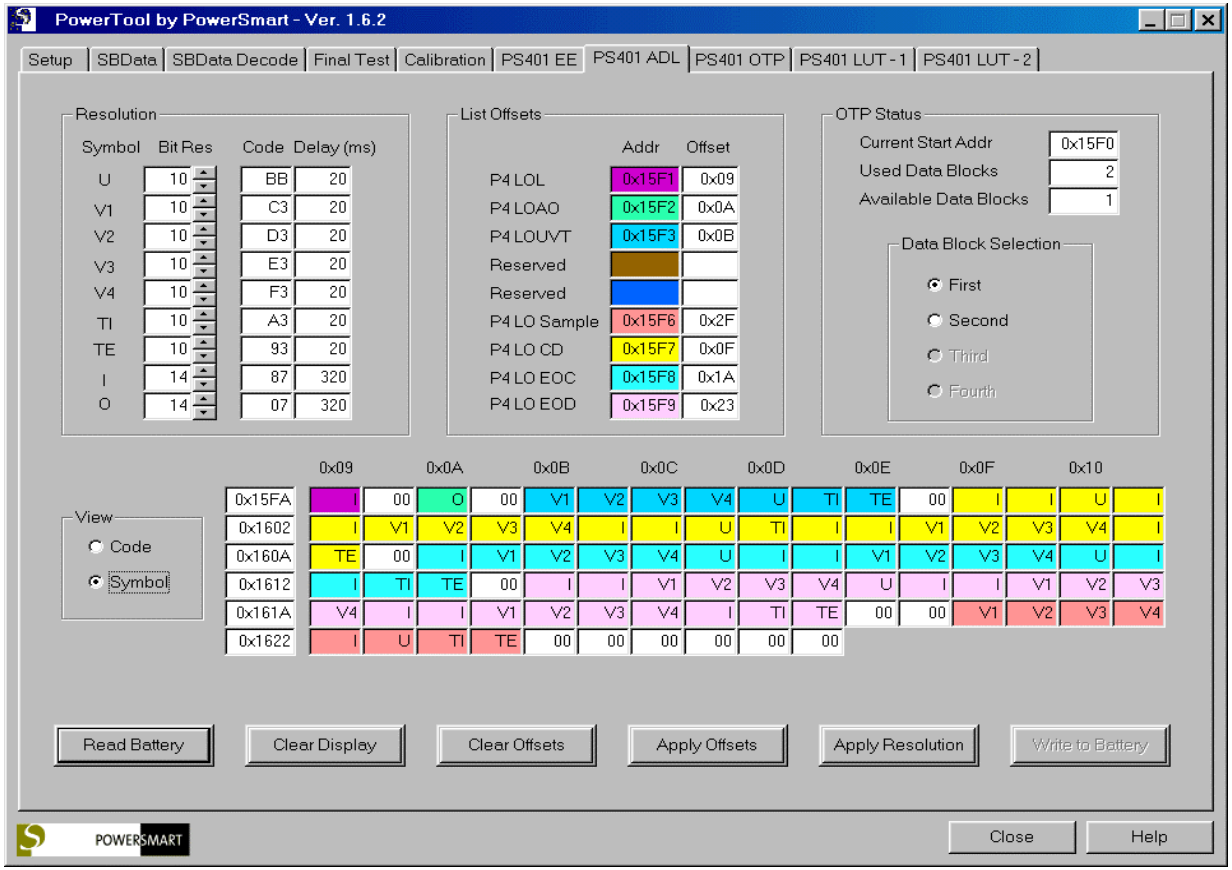
# Development tools aid in hardware configuration

- Programmable 15-bit A/D converter
- Selectable measurement resolution and integration times.

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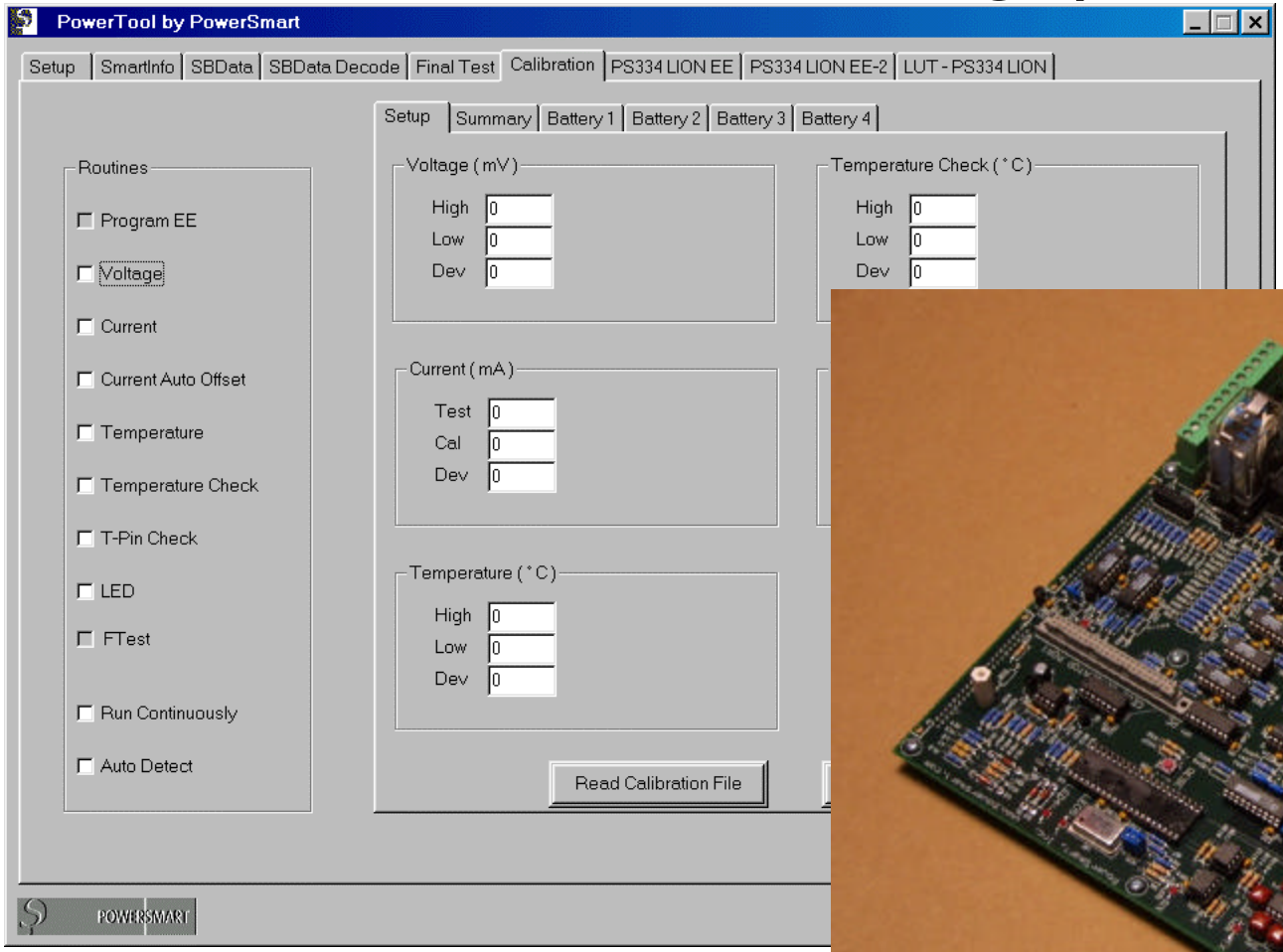
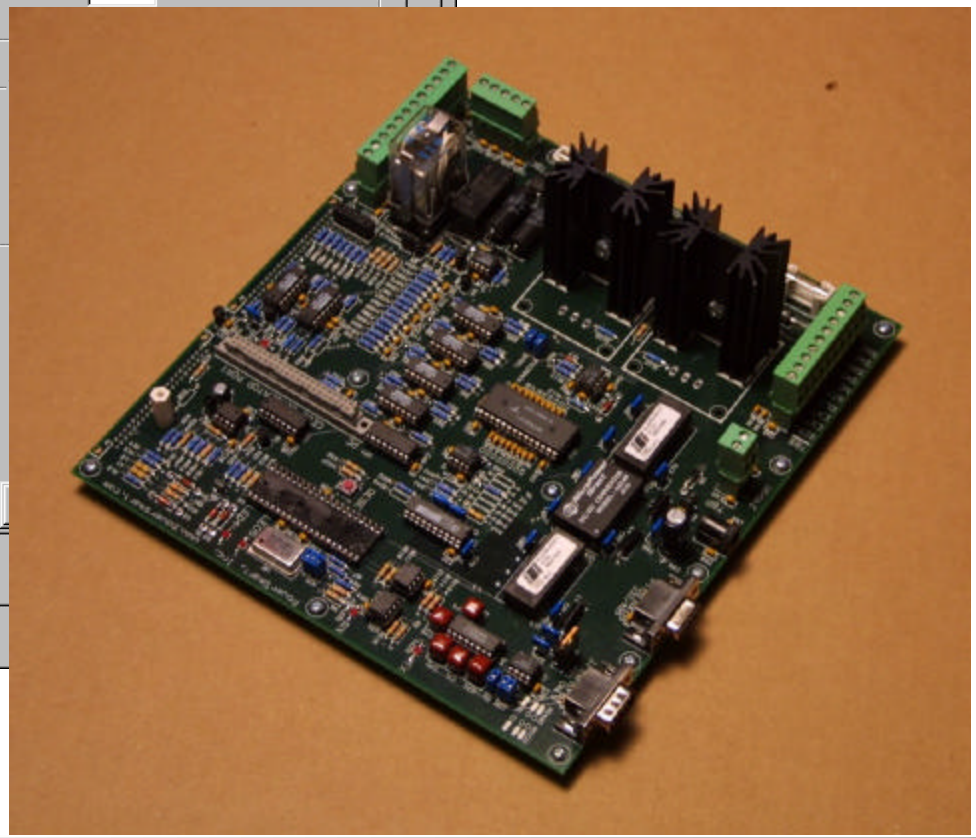
# Production tools maximize voltage and current calibration throughput



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# Complete Smart Battery Solutions include …


- *Comprehensive data collection*
- *Flexible programming*
- *Precise, configurable hardware*
- *Development and production support*

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