Atmel® AT89LP family consists of high performance 8-bit microcontrollers that execute most instructions in a single clock cycle, whereas the classic 8051 CPU requires 12 clock cycles. At the same MIPS throughput as the classic 8051, existing applications can use a much lower clock frequency, thus allowing designers to either reduce power consumption by up to 80%. Designers can also boost the application performance and reach up to 20 MIPS throughput, i.e. 12 times faster than the traditional 8051 core.

Key Features & Benefits
- Binary Compatibility with Existing 8051 Product
  - Easy Application Upgrade Without Costly and Time-consuming Redesign
- Single Clock Cycle per Byte Fetch
- Boosted Performance: 20 MIPS @ 20 MHz
  - 12 Times Faster than the Traditional 8051 Core
- Power Consumption Reduced by 80%
- EMC Issues Solved by Reducing Operating Frequency
- 2.0V to 5.5V Operating Range
- On-chip Flash Data for Data Storage
- On-chip Debug

Applications
- Battery Management
- White Goods
- Universal Remote Control
- Power Management
- Industrial and Motor Control
Reduced Power Consumption

<table>
<thead>
<tr>
<th>Mode</th>
<th>AT89LP</th>
<th>AT89</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Mode</td>
<td>1.59 mA @ 1 MHz</td>
<td>7.5 mA @ 12 MHz</td>
</tr>
<tr>
<td>Idle Mode</td>
<td>0.56 mA @ 1 MHz</td>
<td>1.48 mA @ 12 MHz</td>
</tr>
<tr>
<td>Power Down Mode</td>
<td>&lt;2 μA</td>
<td>14.3 μA</td>
</tr>
</tbody>
</table>

Development Tools

AT89ISP
In-System Programmer (ISP) for Atmel AT89LP devices. It provides an intuitive interface for In-System Programming that can be run from a personal computer.

USB-Based Programmer
USB-powered Small-factor ISP Programmer for AT89LP derivatives. This tool is ideal for field code upgrades and easy portability.

On-chip Debug
Hardware debug system with Windows® IDE interface. It allows the user to access debugging functions built into AT89LP derivatives. This results in faster development and verification of user codes in real-time.

Third Party Tools
Various third party tool providers for the AT89LP family are available at: www.atmel.com/products/8051/thirdparty.asp