Features

- Four digital temperature sensor devices:
  - Atmel® AT30TSE002B
  - Atmel AT30TS75
  - Atmel AT30TS750
  - Atmel AT30TSE758
- Four event LEDs
- Four alarm status LEDs:
  - Critical, high, low, and normal
- Software switchable V_{CC}: 3.3V, 5.0V, and OFF
- Power LED

Contents

- One Atmel AT30TK175 adapter board
- One Atmel AT88Microbase AVR® base module
- 6-inch USB cable
- 18-inch extension cable

Introduction

This starter kit utilizes the Atmel AT30TK175 adapter board to allow users to experiment and develop with the Atmel AT30TSE002B, AT30TS75, AT30TS750, and AT30TSE758 digital temperature sensors.

The AT30TK175 daughterboard interfaces with the Atmel AT88Microbase board (included in the kit) to provide communication to a PC via a USB interface, allowing designers to learn and experiment with the temperature sensor demonstration utility. In addition, this kit supports a modular approach, enabling the AT30TK175 daughterboard to connect directly to an Atmel STK® series AVR development platform to easily add temperature monitoring capabilities to applications.

Figure 1. Atmel AT30TK175 adapter board

![Atmel AT30TK175 adapter board with labeled components]
1. **Atmel AT30TK175STK Starter Kit**

The AT30TK175 is sold with the AT88Microbase to form the Atmel AT30TK175STK starter kit. For additional information on the AT88Microbase, see the “Atmel AT88Microbase Hardware User Guide.”

![Atmel AT30TK175 daughterboard with the Atmel AT88Microbase module](image)

2. **Board Configuration**

Table 2-1. Seven-bit device address

<table>
<thead>
<tr>
<th>Device</th>
<th>Atmel AT30TSE002B</th>
<th>Atmel AT30TS75</th>
<th>Atmel AT30TS750</th>
<th>Atmel AT30TSE758</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature sensor address</td>
<td>0x1B</td>
<td>0x48</td>
<td>0x49</td>
<td>0x4A</td>
</tr>
<tr>
<td>Serial EEPROM address</td>
<td>0x53</td>
<td>-</td>
<td>-</td>
<td>0x52</td>
</tr>
</tbody>
</table>

2.2. **10-pin Interface Header**

Table 2-1. **I²C pins: SCL, SD**

<table>
<thead>
<tr>
<th>Pins</th>
<th>10</th>
<th>9</th>
<th>8</th>
<th>7</th>
<th>6</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signal</td>
<td>VCC</td>
<td>GND</td>
<td>CRIT LED</td>
<td>VCC SEL</td>
<td>NORM LED</td>
<td>VCC EN</td>
<td>HIGH LED</td>
<td>LOW LED</td>
<td>SDA</td>
<td>SCL</td>
</tr>
</tbody>
</table>
Figure 2-2. 10-pin interface header orientation

Note: VCC_SEL and VCC_EN are board-level options that allow users to set the board $V_{cc}$ to 3.3V or 5.0V and disable $V_{cc}$ with VCC_EN. These options are provided to allow the temperature sensor to be evaluated with both $V_{cc}$ operating voltages and to evaluate the nonvolatile registers (see Section 2.3).

2.3. Alarm Status LEDs

Table 2-1. Alarm status LEDs

<table>
<thead>
<tr>
<th>LED</th>
<th>Critical</th>
<th>High</th>
<th>Low</th>
<th>Normal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Red</td>
<td>Red</td>
<td>Yellow</td>
<td>Green</td>
</tr>
<tr>
<td>Active state</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>High</td>
</tr>
</tbody>
</table>

2.4. $V_{cc}$ Enable and Select Pins

Table 2-1. $V_{cc}$ enable and select pins

<table>
<thead>
<tr>
<th>Control</th>
<th>High</th>
<th>Low</th>
<th>State</th>
</tr>
</thead>
<tbody>
<tr>
<td>VCC_EN</td>
<td>X</td>
<td>ON</td>
<td>ON (Default)</td>
</tr>
<tr>
<td>VCC_SEL</td>
<td>X</td>
<td>3.3V</td>
<td>5.0V</td>
</tr>
<tr>
<td>VCC_EN</td>
<td>X</td>
<td>OFF</td>
<td></td>
</tr>
</tbody>
</table>
3. References and Further Information
Schematics, Gerber files, bill of materials (BOM), and development and demonstration software are conveniently downloadable from the Atmel website.

4. EVALUATION BOARD/KIT IMPORTANT NOTICE

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