General Description
The MAX30205 evaluation kit (EV kit) provides a convenient way to evaluate the MAX30205 human body temperature sensor. The sensor uses a high-resolution, sigma-delta, analog-to-digital converter to accurately measure temperature and convert it to digital form. The kit includes a USB-to-I2C controller and GUI program to simplify evaluation.

Features
- Quick Evaluation of the MAX30205
- USB Powered
- Full Assembled and Tested
- Windows® 7, 8, and 10-Compatible Software

Quick Start
Required Equipment
- MAX30205 EV kit temperature sensor PCB
- MAX30205 EV kit USBDTMB PCB
- MAX30205 EV kit 10-pin flex cable
- Micro-USB cable
- MAX30205 EV kit GUI program
- Windows PC

Ordering Information appears at end of data sheet.

Figure 1. MAX30205 EV Kit Temperature Sensor and USBDTMB Controller PCB

Windows is a registered trademark and service mark of Microsoft Corp.
MAX30205 Human Body Temperature Sensor Evaluation Kit

Procedure
The MAX30205 EV kit is fully assembled and tested. Follow the steps below to verify board operation:

1) Visit www.maximintegrated.com/evkit-software to download the most recent version of the EV kit software, MAX30205EVKitSetupVx.x.ZIP. Save the EV kit software to a temporary folder and uncompress the ZIP file.

2) Open up MAX30205EVKitSetupVx.x.exe and follow the instructions from the pop-up windows.

3) Insert one end of the ribbon cable to the J3 connector of the USBDTMB and the other end of the ribbon cable to the J1 connector of the MAX30205 EV kit. Make sure that both connectors and blue ends of the ribbon cable is facing the user.

4) Connect the USB cable from the PC to the EV kit board. Windows automatically installs all drivers.

5) Open the MAX30205EVKit.exe and verify that the EV kit is connected by observing the status bar at the lower left corner of the GUI. See Figure 2.

6) The GUI program updates the temperature every 20s.

Figure 2. MAX30205 EV Kit GUI Main Window
Detailed Description
The MAX30205 EV kit provides a convenient way to evaluate the MAX30205 human body temperature sensor. The sensor PCB contains a MAX30205 human body temperature sensor to allow for temperature data to be sampled and transferred to the GUI. The MAX30205 EV kit USB DT MB PCB is used to do I2C to HID transaction translation, transporting the raw temperature data to the PC through the USB.

Units
Temperature units can be displayed in either Celsius or Fahrenheit.

Refresh Rate
Use the GUI to set the temperature sample refresh rate. A minimum of 10sps should be used to avoid self-heating of the sensor.

Configuration Register
The MAX30205 temperature sensor configuration register can be set by selecting the check boxes in the GUI. Refer to the MAX30205 IC data sheet for detailed information regarding the operation of the IC.

Ordering Information

<table>
<thead>
<tr>
<th>PART</th>
<th>TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX30205EVSYS#</td>
<td>EV Kit</td>
</tr>
</tbody>
</table>

#Denotes RoHS compliant.

Table 1. Slave Address Configuration

<table>
<thead>
<tr>
<th>LOGIC INPUTS</th>
<th>I2C SLAVE ADDRESS</th>
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</thead>
<tbody>
<tr>
<td>A2 A1 A0 B7 B6 B5 B4 B3 B2 B1 R/W</td>
<td>READ ADD WRITE ADD</td>
</tr>
<tr>
<td>0 0 0 1 0 0 1 0 0 0 0 1/0</td>
<td>0x91 0x90</td>
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Table 2. Temperature Register Definition

<table>
<thead>
<tr>
<th>UPPER BYTE</th>
<th>LOWER BYTE</th>
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<tbody>
<tr>
<td>S</td>
<td>64 32 16 8 4 2 1 1/2 1/4 1/8 1/16 1/32 1/64 1/128 1/256</td>
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<tr>
<td>2^6</td>
<td>2^5 2^4 2^3 2^2 2^1 2^0 2^-1 2^-2 2^-3 2^-4 2^-5 2^-6 2^-7 2^-8</td>
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(S sign bit, Units in °C)

Table 3. Connector J1

<table>
<thead>
<tr>
<th>PIN</th>
<th>SIGNAL</th>
<th>DESCRIPTION</th>
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<tbody>
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<td>1</td>
<td>GND</td>
<td>Ground</td>
</tr>
<tr>
<td>2</td>
<td>N.C.</td>
<td>—</td>
</tr>
<tr>
<td>3</td>
<td>N.C.</td>
<td>—</td>
</tr>
<tr>
<td>4</td>
<td>GND</td>
<td>Ground</td>
</tr>
<tr>
<td>5</td>
<td>SDA</td>
<td>I2C Data</td>
</tr>
<tr>
<td>6</td>
<td>GND</td>
<td>Ground</td>
</tr>
<tr>
<td>7</td>
<td>SCL</td>
<td>I2C Clock</td>
</tr>
<tr>
<td>8</td>
<td>GND</td>
<td>Ground</td>
</tr>
<tr>
<td>9</td>
<td>N.C.</td>
<td>—</td>
</tr>
<tr>
<td>10</td>
<td>VDD</td>
<td>3.0V Power</td>
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</table>
Evaluates: MAX30205

MAX30205 Human Body Temperature Sensor Evaluation Kit

MAX30205 EV Bill of Materials

<table>
<thead>
<tr>
<th>ITEM</th>
<th>REF_DES</th>
<th>DNI/DNP</th>
<th>QTY</th>
<th>MFG PART #</th>
<th>MANUFACTURER</th>
<th>VALUE</th>
<th>DESCRIPTION</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>C1</td>
<td>—</td>
<td>1</td>
<td>GRM188R72A104K735; COO603KR708B104</td>
<td>MURATA; TDK</td>
<td>0.1UF</td>
<td>CAPACITOR; SMT (0603); CERAMIC CHIP; 0.1UF; 100V; TOL=10%; TG=55 DEGC TO +125 DEGC; TC=X7R</td>
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<td>2</td>
<td>J1</td>
<td>—</td>
<td>1</td>
<td>66711014522</td>
<td>WURTH ELECTRONICS INC.</td>
<td>66711014522</td>
<td>CONNECTOR; FEMALE; SMT; 0.5MM ZIF HORIZONTAL BOTTOM CONTACT WR-FPC; RIGHT ANGLE; 10PINS</td>
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<td>3</td>
<td>U1</td>
<td>—</td>
<td>1</td>
<td>MAX30205MTA+</td>
<td>MAXIM</td>
<td>MAX30205MTA+</td>
<td>IC; SNSR; HUMAN BODY TEMPERATURE SENSOR; TDFN8-EP</td>
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<td>4</td>
<td>J2</td>
<td>DNP</td>
<td>0</td>
<td>TSW-105-07-L-S</td>
<td>SAMTEC</td>
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<td>CONNECTOR; THROUGH HOLE; TSW SERIES; SINGLE ROW; STRAIGHT; 5PINS</td>
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<td>VENKEL LTD./VISHAY DALE</td>
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<td>RESISTOR; 0402; 4.87K OHM; 1%; 100PPM; 0.063W; THICK FILM</td>
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<tr>
<td>6</td>
<td>PCB</td>
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<td>1</td>
<td>MAX30205</td>
<td>MAXIM</td>
<td>PCB</td>
<td>PCB Board:MAX30205 EVALUATION KIT</td>
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NOTE: DNI—DO NOT INSTALL; DNP—DO NOT PROCURE

MAX30205 EV Schematic

DNI

VDD

66711014522

J1

VDD

DNI

R1 4.87K

SCL

OS

SDA

1

2

3

4

5

6

7

8

9

10

11

12

U1

MAX30205MTA+

SDA

VDD

SCL

OS

GND

A0

A1

A2

C1

0.1UF

EP

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MAX30205 Human Body Temperature Sensor Evaluation Kit

Evaluates: MAX30205

MAX30205 EV PCB Layout Diagrams

MAX30205 EV—Top Silkscreen

MAX30205 EV—Bottom Silkscreen

MAX30205 EV—Top

MAX30205 EV—Bottom
Revision History

<table>
<thead>
<tr>
<th>REVISION NUMBER</th>
<th>REVISION DATE</th>
<th>DESCRIPTION</th>
<th>PAGES CHANGED</th>
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<tbody>
<tr>
<td>0</td>
<td>9/16</td>
<td>Initial release</td>
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For pricing, delivery, and ordering information, please contact Maxim Direct at 1-888-629-4642, or visit Maxim Integrated's website at www.maximintegrated.com.

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