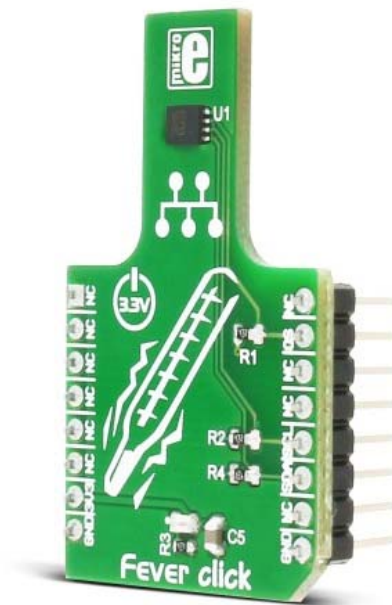


Fever click

PID: MIKROE-2554

Weight: 22 g



Fever click measures your body temperature with the accuracy of 0.1°C (37°C to 39°C). The click carries MAX30205 human body temperature sensor. Fever click is designed to work on a 3.3V power supply. It communicates with the target MCU over I2C interface.

MAX30205 sensor features

The MAX30205 temperature sensor accurately measures temperature and provide an overtemperature alarm/interrupt/shutdown output.

This device converts the temperature measurements to digital form using a high resolution, sigma-delta, analog-to-digital converter (ADC). An I2C-compatible two-wire serial interface allows access to conversion results.

The MAX30205 has 0.1°C accuracy (37°C to 39°C), and 16-Bit ($0.00390625^{\circ}\text{C}$) temperature resolution.

Normal body temperature

The normal body temperature, of a healthy person, is 37°C. But this depends on various factors, like the age and sex of the person, the temperature of the room the person is in, the time of the day, etc.

A body temperature above 37.5°C up to 40°C is considered a fever.

Key features

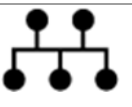
- MAX20305 sensor
 - 0.1°C Accuracy (37°C to 39°C)
 - 16-Bit (0.00390625°C) Temperature Resolution
 - 600µA (typ) Operating Supply Current
- I2C interface
- 3.3V power supply

Specification

| | |
|------------------|---|
| Product Type | Temperature / Humidity |
| Applications | Fitness and medical applications |
| MCU | MAX30205 human body temperature sensor |
| Key Features | 0.1°C Accuracy (37°C to 39°C), 16-Bit (0.00390625°C) temperature resolution |
| Interface | I2C |
| Power Supply | 3.3V |
| Compatibility | mikroBUS |
| Click board size | M (42.9 x 25.4 mm) |

Pinout diagram

This table shows how the pinout on **Fever click** corresponds to the pinout on the mikroBUS™ socket (the latter shown in the two middle columns).

| Notes | Pin |  mikroBUS™ | | | | Pin | Notes |
|---------------|-----|--|-----|-----|----|-----|--|
| Not connected | NC | 1 | AN | PWM | 16 | NC | Not connected |
| Not connected | NC | 2 | RST | INT | 15 | OS | Overtemperature Shutdown Output. Open-drain. |

| | | | | | | | |
|---------------|-------|---|------|-----|----|-----|--|
| Not connected | NC | 3 | CS | TX | 14 | NC | Not connected |
| Not connected | NC | 4 | SCK | RX | 13 | NC | Not connected |
| Not connected | NC | 5 | MISO | SCL | 12 | SCL | Serial-Data Clock Input. Open-drain. |
| Not connected | NC | 6 | MOSI | SDA | 11 | SDA | Serial-Data Input/Output Line. Open-drain. |
| Power supply | +3.3V | 7 | 3.3V | 5V | 10 | NC | Not connected |
| Ground | GND | 8 | GND | GND | 9 | GND | Ground |

Maximum ratings

| Description | Min | Typ | Max | Unit |
|------------------------------|------|--------|-----|------|
| Supply Voltage | -0.3 | | 4 | V |
| Input Current at Any Pin | | 5 | | mA |
| Continuous Power Dissipation | | 1951.2 | | mW |
| Operating Temperature Range | 0 | | 50 | °C |

Programming

Code examples for Fever click, written for MikroElektronika hardware and compilers are available on Libstock.

Fever click library communicates with the sensor, and converts the measured data into useful format. It also contains functions for the configuration of the click.

Code snippet

The following code snippet shows initialization of the system, writing a value into the register, and then reading that value.

```
01 void main()
02 {
03     system_init();
04     fever_init(0x48);
05     Delay_ms (100);
06     /*sets the temperature limit to specified value*/
```

```
07 fever_write_temperature (37.80, FEVER_TOS);
08 /*reads stored temperature limit, with 0.01 rounding error*/
09 fever_read_temperature_text (uart_text, FEVER_TOS);
10
11 UART_Write_Text("rn Current temperature limit for output signal: ");
12 UART_Write_Text(uart_text);
13 Delay_ms( 1000 );
```