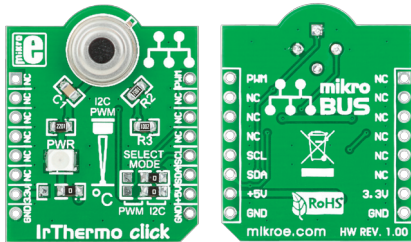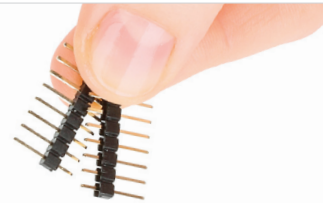5V

IrThermo click™

1. Introduction

IrThermo Click™ is an accessory board in **mikroBUS**™ form factor. It's a compact and easy solution for adding InfraRed (Ir) Thermometer to your design. It features **MLX90614ESF-AAA** single zone Infrared (Ir) thermometer module. IrThermo Click™ communicates with target board microcontroller via **mikroBUS**™ I²C lines (SCL, SDA) and PWM line. The board is designed to use 5V power supply only. LED diode indicates the presence of power supply.
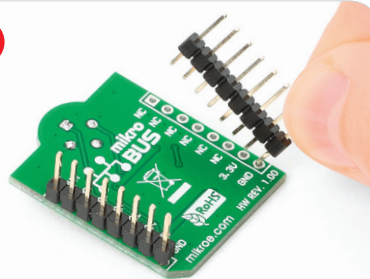
2. Soldering the headers

Before using your click board™, make sure to solder 1x8 male headers to both left and right side of the board. Two 1x8 male headers are included with the board in the package.
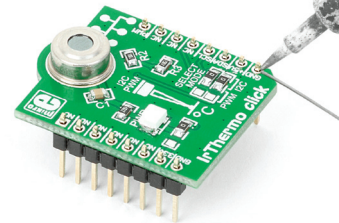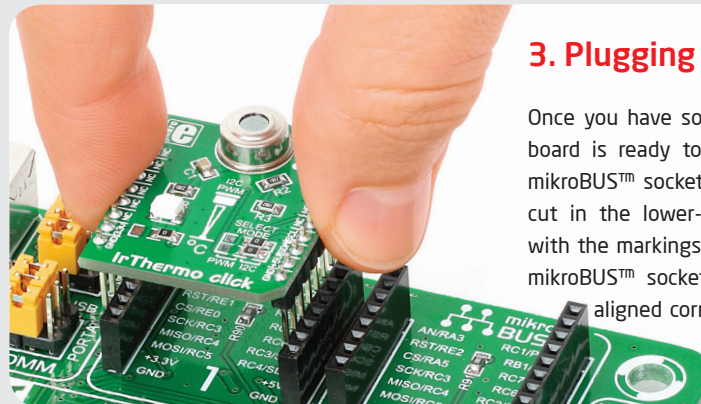
2 Turn the board upside down so that bottom side is facing you upwards. Place shorter parts of the header pins in both soldering pad locations.
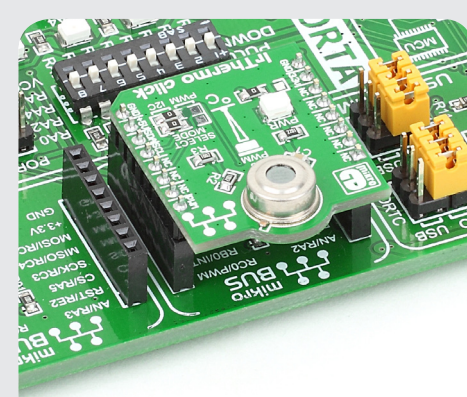
3 Turn the board upward again. Make sure to align the headers so that they are perpendicular to the board, then solder the pins carefully.

3. Plugging the board in

Once you have soldered the headers your board is ready to be placed into desired mikroBUS™ socket. Make sure to align the cut in the lower-right part of the board with the markings on the silkscreen at the mikroBUS™ socket. If all of the pins are aligned correctly, push the board all the way into the socket.

4. Essential features

IrThermo Click™ with it's **MLX90614** IC is a compact solution for non contact temperature measurements. The **MLX90614** contains 17-bit ADC , powerful DSP unit and 10-bit PWM. It is calibrated in wide temperature ranges: -40 to 85℃ for the ambient temperature and -70 to +380 ℃ for the object temperature (-20 to 120 ℃ in PWM mode). These features make this board ideal for automotive, industrial control, body temperature and many more.
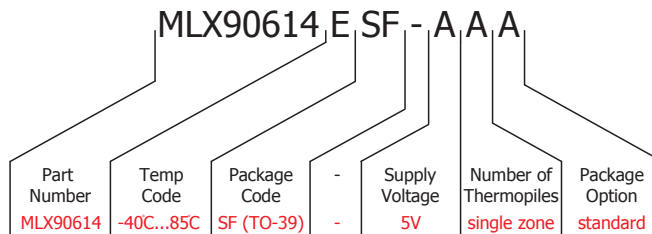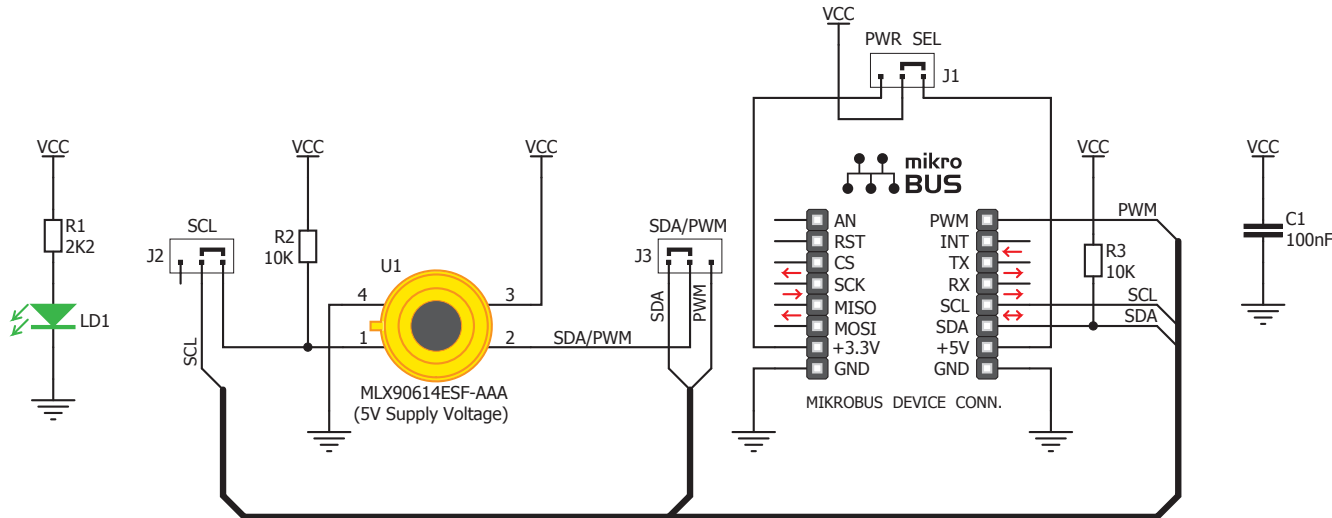
click™
BOARD
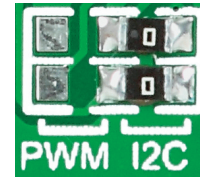www.mikroe.com

IrThermo click - 5V
ver. 1.00

0 100000 022849

5. IrThermo Click™ Board Schematic

VCC

PWR SEL

J1

```
mikro
BUS
```

VCC

VCC

VCC

R1
2K2

SCL

J2

R2
10K

U1

4   3

1   2   SDA/PWM

MLX90614ESF-AAA
(5V Supply Voltage)

SCL

LD1

SDA/PWM

J3

SDA

PWM

AN	PWM
RST	INT
CS	TX
SCK	RX
MISO	SCL
MOSI	SDA
+3.3V	+5V
GND	GND

MIKROBUS DEVICE CONN.

PWM

R3
10K

SCL

SDA

C1
100nF

MLX90614 E SF - A A A

Part Number	Temp Code	Package Code	-	Supply Voltage	Number of Thermopiles	Package Option
MLX90614	-40C...85C	SF (TO-39)	-	5V	single zone	standard

6. SMD Jumpers

By placing SMD jumpers **J2** and **J3** in appropriate position (I²C or PWM) you will be able to change communication interface between target board microcontroller and **MLX90614** module. Jumpers are soldered in I²C position by default.

7. Code Examples

Once you have done all the necessary preparations, it's time to get your click board up and running. We have provided the examples for mikroC, mikroBasic and mikroPascal compilers on our **Libstock** website. Just download them and you are ready to start.

LIBSTOCK.com

8. Support

MikroElektronika offers **Free Tech Support (www.mikroe.com/esupport)** until the end of product lifetime, so if something goes wrong, we are ready and willing to help!

MikroElektronika
DEVELOPMENT TOOLS | COMPILERS | BOOKS