

## IR Sense click

PID: MIKROE-2677

Weight: 22 g



**IR Sense click** carries the AK9750 quantum-type IR sensor. The click is designed to run on a 3.3V power supply. It communicates with the target microcontroller over I2C interface, with additional functionality provided by the INT pin on the mikroBUS™ line.

IR Sense click detects the temperature of objects and people in motion. It can also detect a human body that remains still. So, it distinguishes heat regardless of the fact whether or not an object is moving.

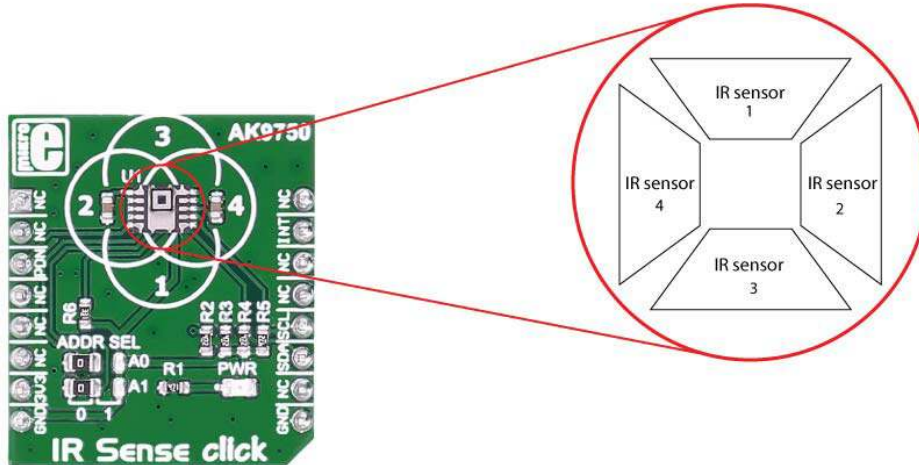
### AK9750 features

The AK9750 is an ultra-low power and compact infrared-ray (IR) sensor module. It is composed of four quantum IR sensors and an integrated circuit (IC) for characteristic compensation.

An integral analog-to-digital converter provides 16-bits data outputs. Additional integrated features include a field of view limiter and an optical filter.

## How it works

The IR sensors are arranged as shown. Each sensor detects the diagonal area, as indicated in the image below:




The observable area of the four sensors is as you see it on the silk of the IR Sense click board™.

## Specifications

Type	Temperature, Humidity
Applications	Detecting heat with the four IR sensors
On-board modules	AK9750 IR sensor
Key Features	Low current consumption: Max. 1µA in Power down Mode; Integrated temperature sensor, 16-bits Digital Outputs to I2C bus
Interface	I2C
Input Voltage	3.3V
Click board size	S (28.6 x 25.4 mm)

## Pinout diagram

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

Notes	Pin					Pin	Notes
	ALR	1	AN	PWM	16	NC	
	NC	2	RST	INT	15	<b>INT</b>	Interrupt
Power down pin	<b>PDN</b>	3	CS	TX	14	NC	
	NC	4	SCK	RX	13	NC	
	NC	5	MISO	SCL	12	<b>SCL</b>	SCL I2C line
	NC	6	MOSI	SDA	11	<b>SDA</b>	SDA I2C line
Power supply	<b>+3.3V</b>	7	3.3V	5V	10	NC	
Ground	<b>GND</b>	8	GND	GND	9	<b>GND</b>	Ground

## Jumpers and settings

Designator	Name	Default Position	Default Option	Description
A0	A0	Left	0	Selection of I2C address bit 0
A1	A1	Left	1	Selection of I2C address bit 1

## Programming

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

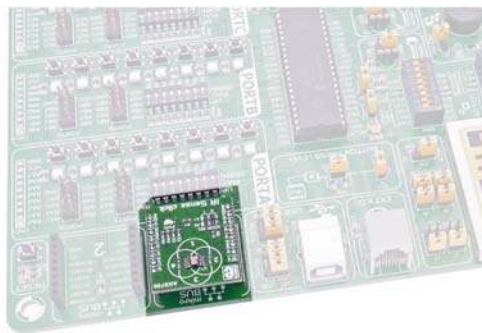
### *Code snippet*

The following code snippet shows the main loop of the IR Sense click example, which reads data every few second and then displays it via UART.

```

01 while( 1 )
02     {
03         Delay_ms (5000);
04
05
06         IRGRID2_readAll (readData);
07
08         //Upper area sensor value
09         UART2_Write_Text ("rn      ");
10         tempValue = readData [5] + ( readData [6] << 8 );
11         IntToStr (tempValue, uartText);
12         UART2_Write_Text (uartText);
13
14         //Left area sensor value
15         UART2_Write_Text ("rn");
16         tempValue = readData [3] + ( readData [4] << 8 );
17         IntToStr (tempValue, uartText);
18         UART2_Write_Text (uartText);
19         //Right area sensor value
20         UART2_Write_Text ("      ");
21         tempValue = readData [7] + ( readData [8] << 8 );
22         IntToStr (tempValue, uartText);
23         UART2_Write_Text (uartText);
24
25         //Lower area sensor value
26         UART2_Write_Text ("rn      ");
27         tempValue = readData [1] + ( readData [2] << 8 );
28         IntToStr (tempValue, uartText);
29         UART2_Write_Text (uartText);
30         UART2_Write_Text ("rn-----");
31     }

```



<https://shop.mikroe.com/ir-sense-click-8-2-17>