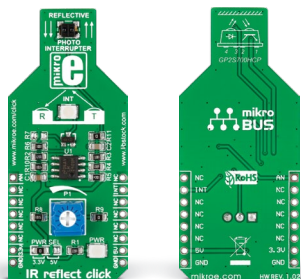# IR reflect click™

1. Introduction

IR reflect click™ carries a **GP2S700HCP reflective photointerrupter**. On this type of photointerrupter the infrared emitter and receiver are facing the same direction; the infrared beam from the emitter gets bounced back to the receiver when an object is placed within the detecting range of the sensor (Optimal Sensing Distance is 3mm). IR reflect click™ communicates with the target board microcontroller through **mikroBUS™** AN and INT pins (an onboard potentiometer sets the Interrupt threshold). It's designed to use either a 3.3V (by default) or 5V power supply.
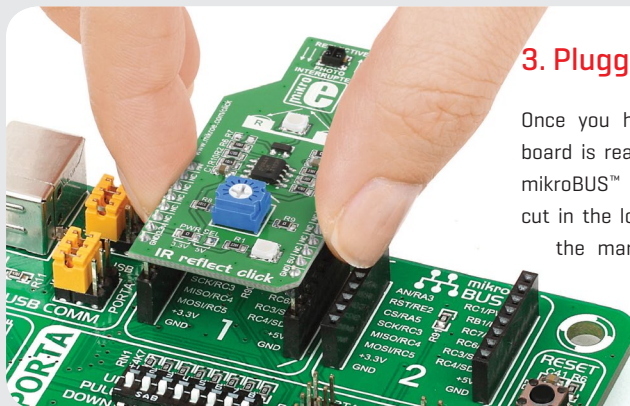
2. Soldering the headers

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.
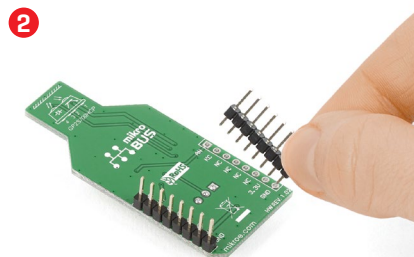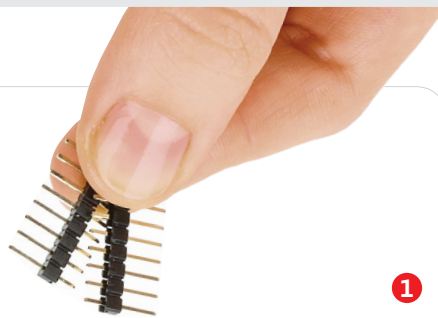
2 Turn the board upside down so that the bottom side is facing you upwards. Place shorter pins of the header into the appropriate soldering pads.
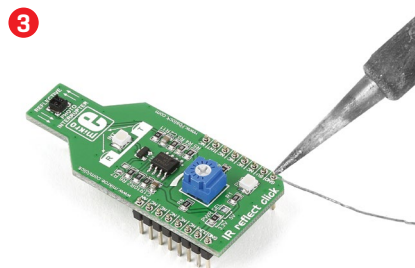
3 Turn the board upward again. Make sure to align the headers so that they are perpendicular to the board, then solder the pins carefully.

3. Plugging the board in

Once you have soldered the headers your board is ready to be placed into the 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 the pins are aligned correctly, push the board all the way into the socket.
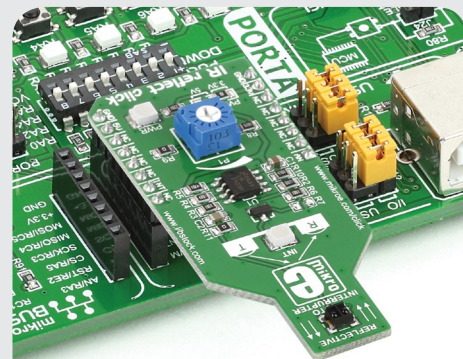
4. Essential features

These sensors are used to detect an object's presence or motion, such as a piece of paper passing through a printer. To avoid setting off false alarms, avoid exposing the sensor to other sources of infrared light (which could come from an ordinary incandescent light bulb). Also, black objects won't reflect infrared so the click™ won't detect them. On the other hand, reflective metalic surfaces will trigger the sensor from a larger range.
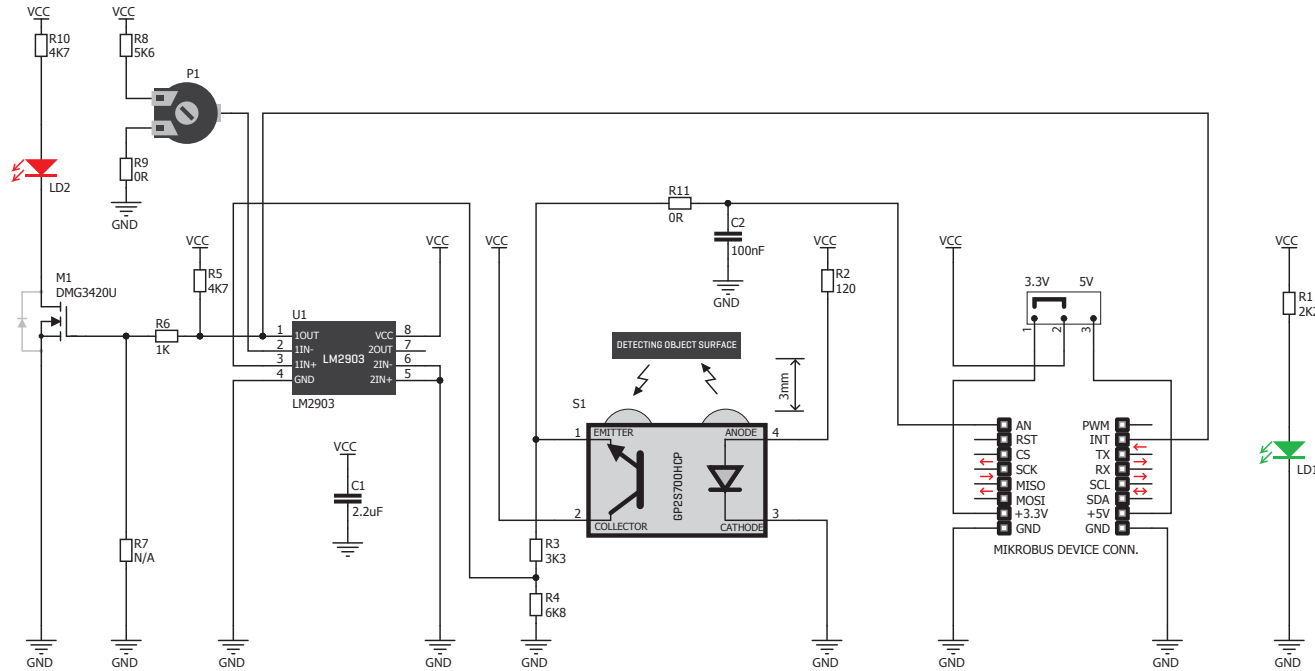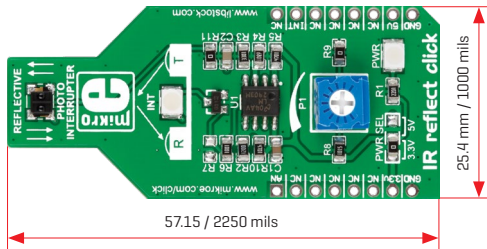
click™
BOARD
www.mikroe.com

0100000077290

5. Schematic

Component labels visible in schematic:

VCC R10 4K7 · VCC R8 5K6 · P1 · LD2 · R9 0R · GND · M1 DMG3420U · VCC R5 4K7 · R6 1K · U1 LM2903 1OUT VCC 8, 1IN- 2OUT 7, 1IN+ 2IN- 6, GND 2IN+ 5 · VCC C1 2.2uF · R7 N/A · R11 0R · C2 100nF · GND · VCC R2 120 · DETECTING OBJECT SURFACE · 3mm · S1 · EMITTER ANODE · GP2S700HCP · COLLECTOR CATHODE · R3 3K3 · R4 6K8 · 3.3V 5V · VCC R1 2K2 · LD1

MIKROBUS DEVICE CONN.

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

GND GND GND GND GND GND GND GND GND

6. Dimensions

IR reflect click

25.4 mm / 1000 mils

57.15 / 2250 mils

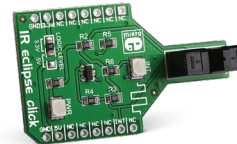|	mm	mils
LENGTH	57.15	2250
WIDTH	25.4	1000
HEIGHT*	7.62	300

* without headers

7. IR eclipse click™

A different type of photo interrupter, one in which the emitter and receiver face each other is also available, with IR eclipse click™. Visit: **www.mikroe.com/click/ir-eclipse**

8. Code examples

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

LIBSTOCK.com

9. Support

MikroElektronika offers **free tech support (www.mikroe.com/support)** until the end of the product's lifetime, so if something goes wrong, we're ready and willing to help!

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10. Disclaimer

MikroElektronika assumes no responsibility or liability for any errors or inaccuracies that may appear in the present document. Specification and information contained in the present schematic are subject to change at any time without notice.

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