Light click™

1. Introduction
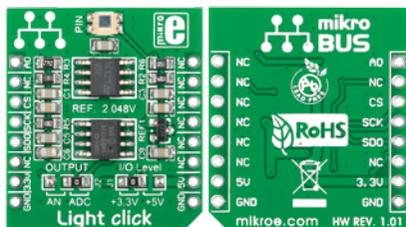
Light Click™ is an accessory board in **mikroBUS™** form factor. It's a compact and easy solution for adding light sensor to your design. It features **PD15-22C-TR8** PIN photodiode, **MAX6106** voltage reference and **MCP3201** ADC with SPI interface. Light Click™ communicates with the target board microcontroller via **mikroBUS™** SPI (MISO, SCK, CS) and AN lines. The board is designed to use 3.3V and 5V power supply. LED diode (GREEN) 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.

1
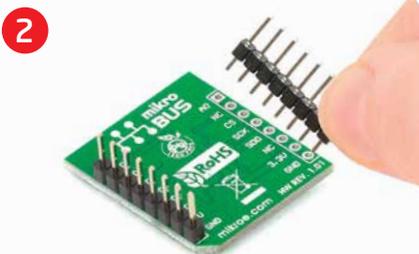
2 Turn the board upside down so that bottom side is facing you upwards. Place shorter parts of the header pins in both soldering pad locations.
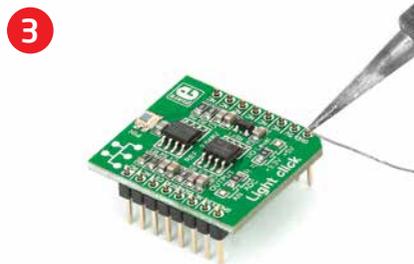
3 Turn the board upward again. Make sure to align the headers so that they are perpendicular to the board, then solder the pins carefully.
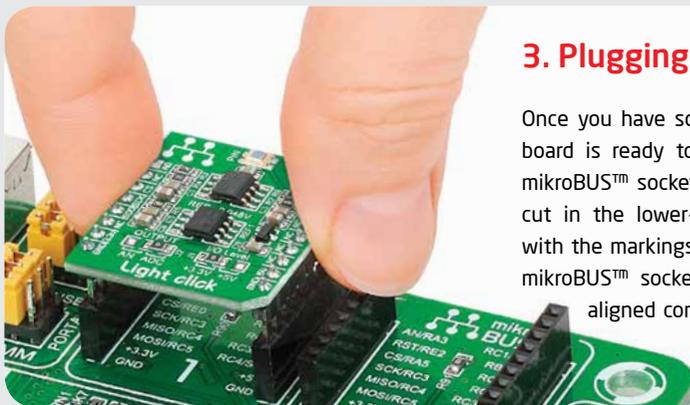
3. Plugging the board in

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.
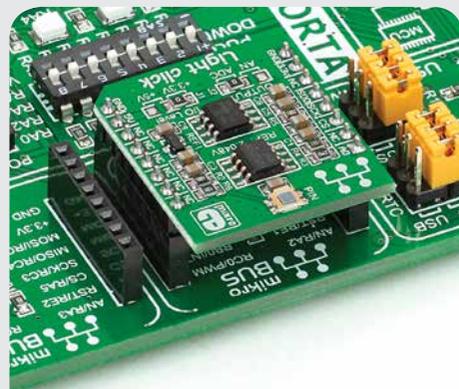
4. Essential features

Light Click™ with it's **PD15-22C-TR8** and **MCP3201** ICs is a high photosensitive light sensor with fast response time. The board is capable of measuring ambient light intensity and provides a signal (analog or digital) to the main board microcontroller. All these features make this board ideal for high speed photo detector, copier, game machine and many more.

5. Light Click™ Board Schematic

VCC-3.3V VCC-3.3V

C1 100nF   C2 1uF

VCC VCC

C3 100nF   C4 1uF

REF1
1 VIN
   VSS
2 VOUT   3
MAX6106EUR+

VCC-3.3V VCC   PWR SEL
                      J1

R3 27K4   R4 100K

A/D SEL
        J2

C9 100nF

U2B
6
5   7
+
LM358

VCC

VCC

R2 1M   R6 150K

C8 100nF

U3
1 Vref   Vdd 8
2 IN+   CLK 7   SCK
3 IN-   Dout 6   SDO
4 Vss   CS 5   CS#
MCP3201

R5 10K

AN_OUT

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

mikro BUS

VCC-3.3V

U2A
LM358
8
−
2
3 +   1
4

U1
1   2
1   2
PD15-22C-TR8

VCC VCC
C5 100nF   C6 1uF

MIKROBUS DEVICE CONN.

AN_OUT

6. SMD Jumpers

The Light Click™ board communicates with the main board microcontroller via I²C interface (ADC) or directly through the analog pin (AN) depending on the position of the **J2** SMD jumper (ADC position by default). There is one zero-ohm SMD jumper **J1** used to select whether 3.3V or 5V power supply will be used. (3.3V 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!

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