Thumbstick click™

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
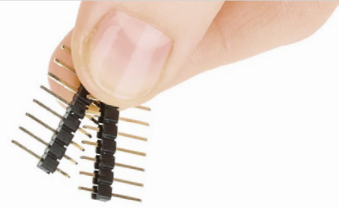
Turn the board upside down so that the bottom side is facing you upwards. Place shorter pins of the header into the appropriate soldering pads.

3
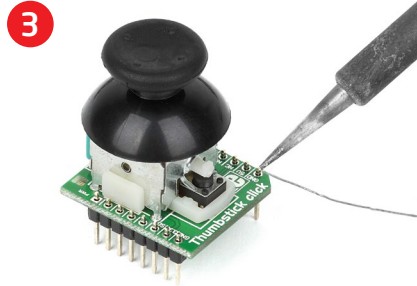
Turn the board upward again. Make sure to align the headers so that they are perpendicular to the board, then solder the pins carefully.

4. Essential features

Thumbstick click™ is a high precision input device. The dual axis, spring return, pushbutton enabled joystick is similar to the ones used on joypads on popular gaming consoles like Playstation or Xbox. It has two potentiometers connected to a stick for receiving directional input in the x and y axes. The mechanical pushbutton sends an interrupt signal to the microcontroller. The on-board MCP3204 12-bit A/D converter sends the digital signal through SPI lines.
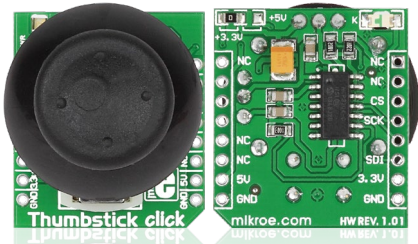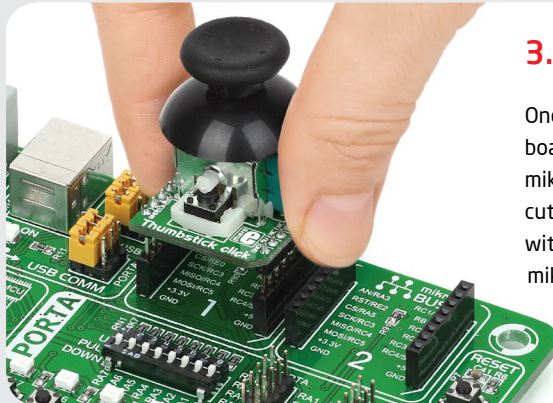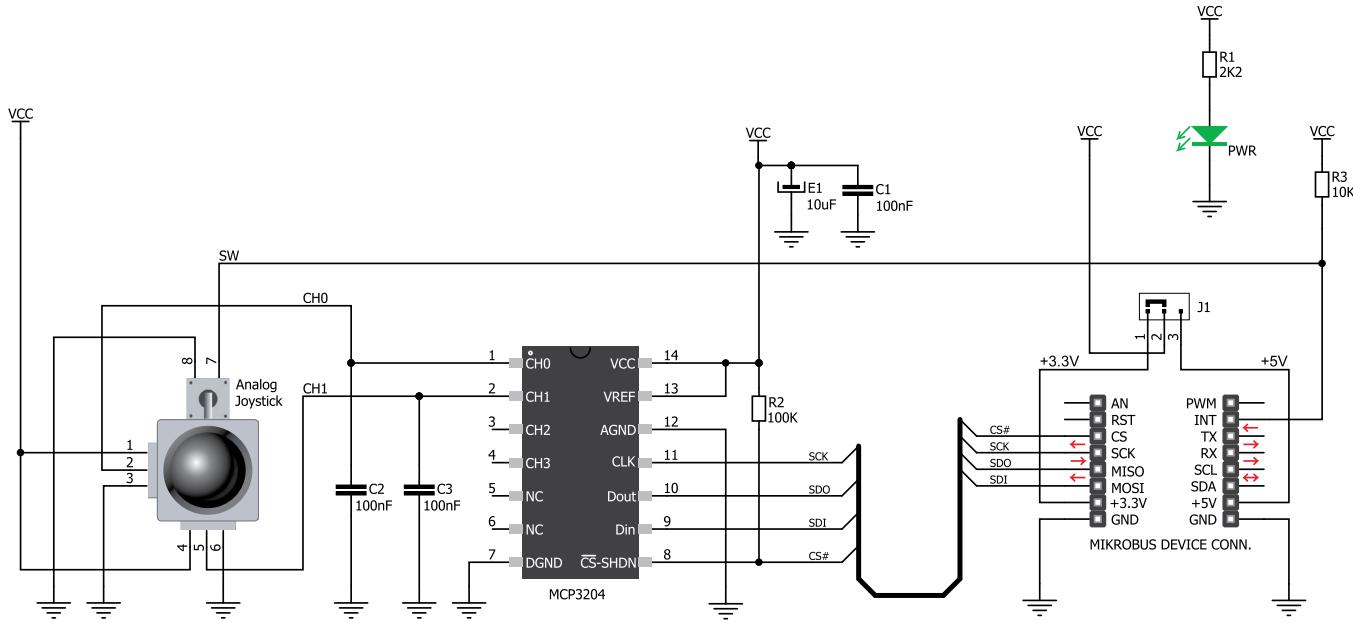
1. Introduction

Thumbstick click™ is a simple solution for adding an analog thumb joystick to your design. Along with the dual axis joystick unit, the board also carries an **MCP3204** 12-bit A/D converter. Thumbstick click™ communicates with the target board microcontroller through **mikroBUS™** SPI (CS, SCK, MISO and MOSI) lines. The board is designed to use either a 3.3V or a 5V power supply.

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.

5. Thumbstick click™ board schematic

MCP3204

Pin			Pin
1	CH0	VCC	14
2	CH1	VREF	13
3	CH2	AGND	12
4	CH3	CLK	11
5	NC	Dout	10
6	NC	Din	9
7	DGND	$\overline{CS}$-SHDN	8

Analog Joystick

SW
CH0
CH1

VCC
E1 10uF
C1 100nF
R2 100K

VCC
R1 2K2
PWR
VCC
R3 10K

C2 100nF
C3 100nF

SCK
SDO
SDI
CS#

J1

+3.3V   +5V

CS#
SCK
SDO
SDI

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

MIKROBUS DEVICE CONN.
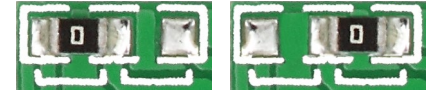
6. SMD jumper

There is a single SMD jumper (zero-ohm resistor) **J1** which is used to select between 3.3V or 5V power supplies. By default, it's soldered in the 3.3V position.

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 examples for mikroC™, mikroBasic™ and mikroPascal™ compilers on our **Libstock** website. Just download them and you are ready to start.

8. 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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