EXPAND 3 click™

1. Introduction

EXPAND 3 click™ is an accessory board in **mikroBUS™** form factor. It includes an **8-channel programmable I/O expander DS2408** that communicates with the target board MCU through a 1-Wire interface (15.3 kbps or 100kbps) The onboard GP SEL jumper allows you to specify the communication pins (either OW1 or OW0, which are in place of the usual AN and PWM pins on mikroBUS™). An additional reset line (RST) is also connected. The board is designed to use either a 3.3V or 5V power supply.

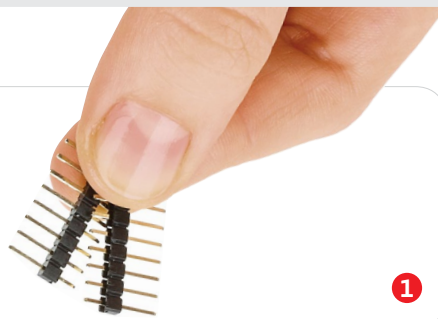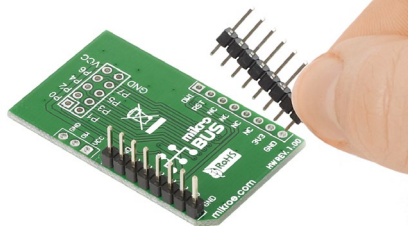## 2. Soldering the headers

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.
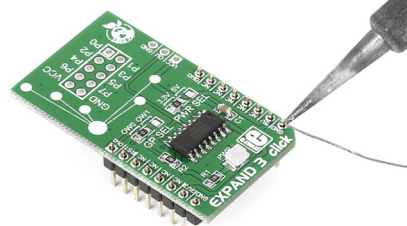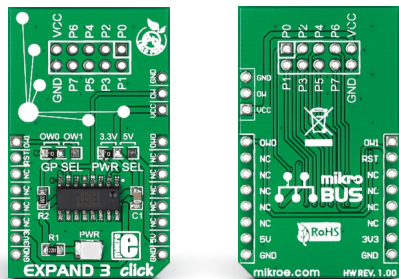
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❷

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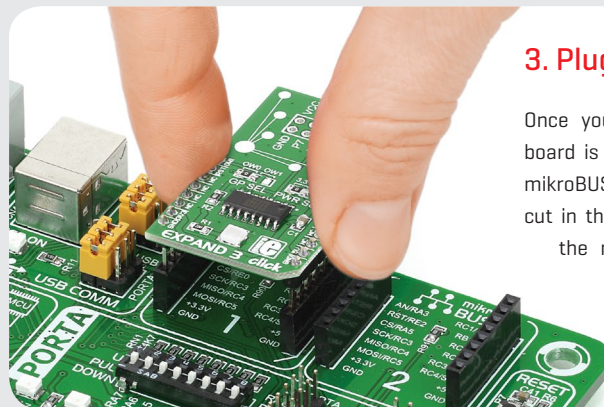
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Turn the board upward again. Make sure to align the headers so that they are perpendicular to the board, then solder the pins carefully.
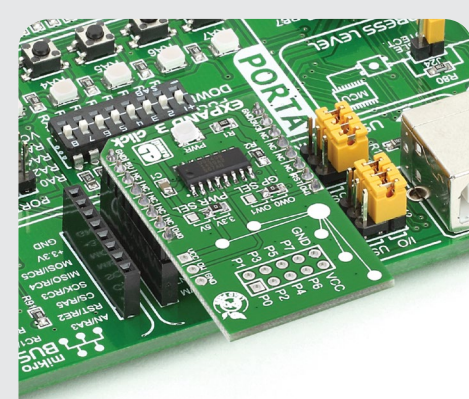
3. Plugging the board in

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

Each DS2408 IC has a **factory-lasered 64-bit registration number**. Combined with the standard **Dallas Semiconductor 1-Wire protocol** it uses to communicate with the target board MCU, the registration number enables multiple devices to reside on the same data line, each one with a unique ID. To connect multiple Expand 3 clicks™, use the additional three pins positioned above the mikroBUS™ socket (VCC, OW, GND).
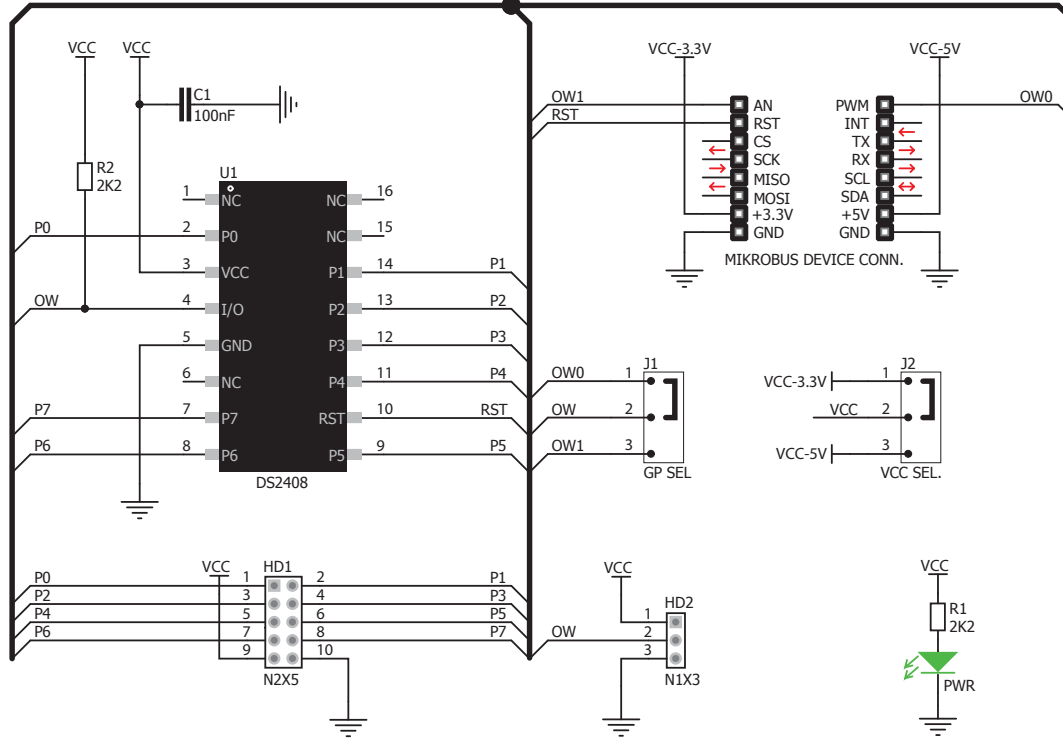
click™
BOARD

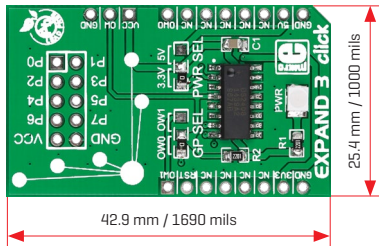www.mikroe.com

5. Schematic

VCC VCC

C1
100nF

R2
2K2

U1
1	NC	NC	16
2	P0	NC	15
3	VCC	P1	14
4	I/O	P2	13
5	GND	P3	12
6	NC	P4	11
7	P7	RST	10
8	P6	P5	9

DS2408

P0
OW
P7
P6

P1
P2
P3
P4
RST
P5

OW0 1
OW   2
OW1 3

J1
GP SEL

VCC-3.3V 1
VCC   2
VCC-5V   3

J2
VCC SEL.

VCC-3.3V
OW1
RST

VCC-5V

OW0

MIKROBUS DEVICE CONN.

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

HD1
VCC	1	2	P1
P2	3	4	P3
P4	5	6	P5
P6	7	8	P7
	9	10	

N2X5

P0

VCC

HD2
1	
2	
3	

OW

N1X3

VCC

R1
2K2

PWR

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.

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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6. Dimensions

42.9 mm / 1690 mils

25,4 mm / 1000 mils

	mm	mils
LENGTH	42.9	1690
WIDTH	25.4	1000
HEIGHT*	3.3	130

* without headers

7. SMD Jumper
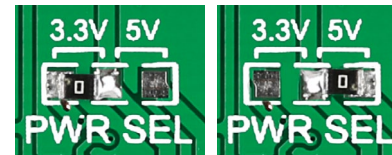
The board features a VCC SEL. Jumper (zero ohm resistor) that allows you to choose between a **3.3V or 5V power supply**. By default it's soldered in the 3.3V position.

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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