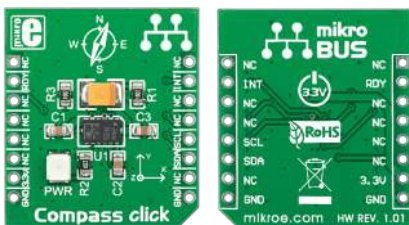# Compass click™

1. Introduction

Compass Click™ is an accessory board in **mikroBUS™** form factor. It's a compact and easy solution for adding compass module to your design. It features **LSM303DLHC** ultra compact high performance e-compass module. Compass Click™ communicates with the target board microcontroller via **mikroBUS™** I²C (SDA, SCL), INT and RST lines. The board is designed to use 3.3V power supply only. LED diode (GREEN) indicates the presence of power supply.
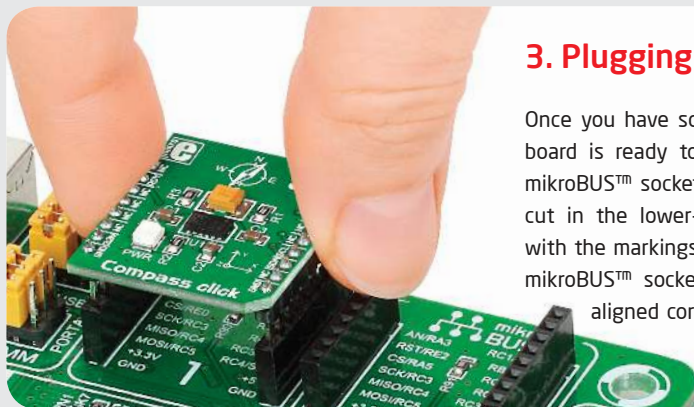
2. Soldering the headers

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.
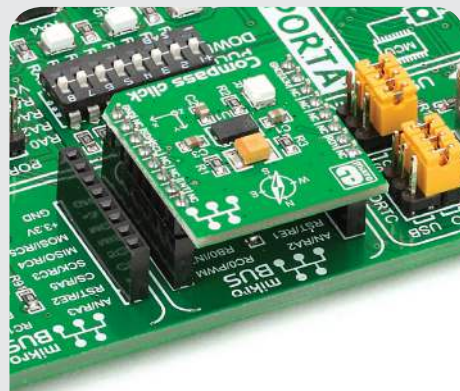
4. Essential features

Compass Click™ with it's **LSM303DLHC** IC includes specific sensing element and an IC interface capable of measuring both linear acceleration (full-scale of ±2g/±4g/±8g/±16g) and magnetic field (From ±1.3 to ±8.1 gauss full-scale) and to provide a 16-bit data output through I²C interface. All these features make this board ideal for compensated compass, position detection, display orientation and many more.
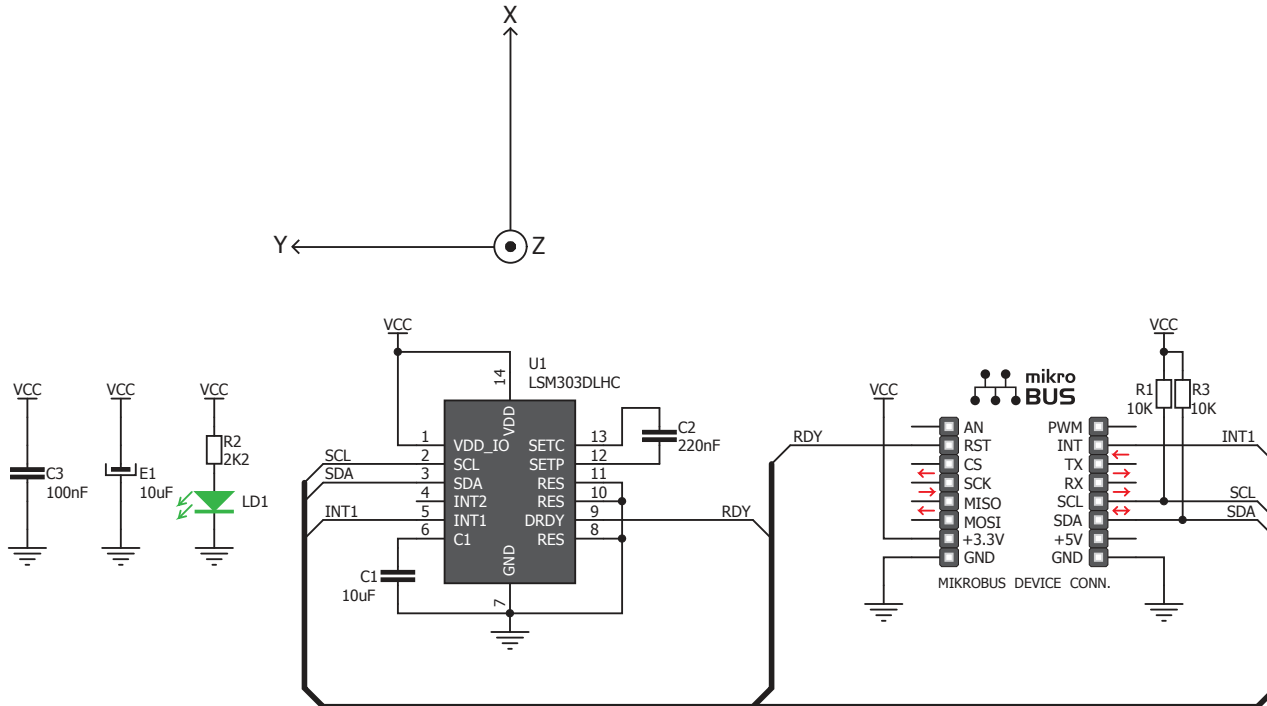
click™ BOARD

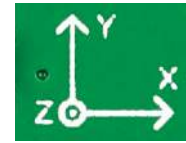www.mikroe.com

Compass click Manual
ver. 1.01

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5. Compass Click™ Board Schematic

X

Y ← ⊙ Z

VCC

U1
LSM303DLHC

SCL	1	VDD_IO VDD	SETC	13
SDA	2	SCL	SETP	12
	3	SDA	RES	11
INT1	4	INT2	RES	10
	5	INT1	DRDY	9
	6	C1	RES	8

C2
220nF

RDY

VCC   VCC   VCC

C3
100nF

E1
10uF

R2
2K2

LD1

C1
10uF

GND
7

RDY

VCC

mikro
BUS

MIKROBUS DEVICE CONN.

AN	PWM	
RST	INT	INT1
CS	TX	
SCK	RX	
MISO	SCL	SCL
MOSI	SDA	SDA
+3.3V	+5V	
GND	GND	

VCC

R1   R3
10K   10K

INT1

SCL
SDA

6. Axis direction

The **LSM303DLHC** IC is a system based on a three dimensional sensing elements. The orientation of each axis is clearly designated on the board silkscreen. Readings received from the IC can be processed and used to determine earth's magnetic north pole.

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!

MikroElektronika
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