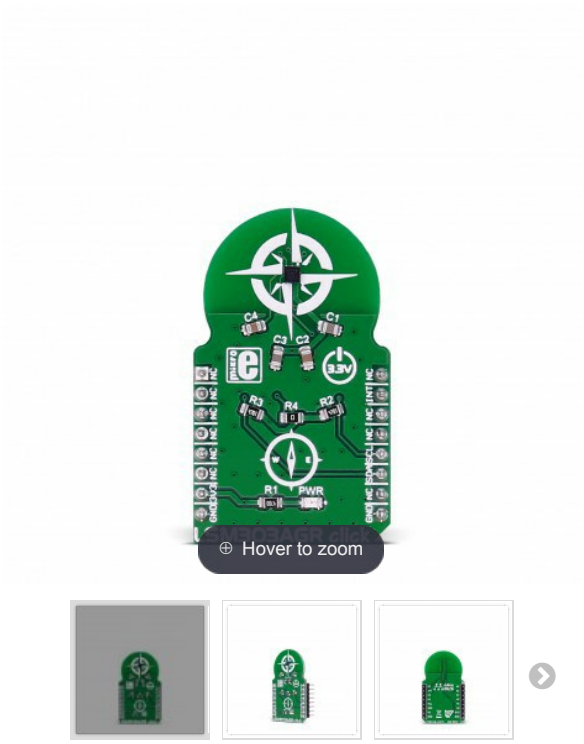

LSM303AGR click

PID: MIKROE-2684

Weight: 23 g

LSM303AGR click measures acceleration and magnetic field characteristics. It carries the LSM303AGR 3D accelerometer and 3D magnetometer.

LSM303AGR click is designed to run on a 3.3V power supply. It communicates with the target microcontroller over I2C interface, with additional functionality provided by the INT pin on the mikroBUS™ line.

Quantity

1 - +

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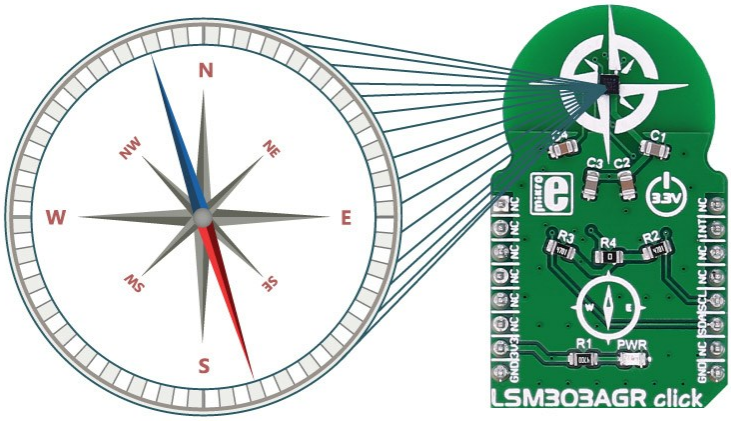
How the click works

The acceleration and magnetic field data is contained in the onboard chip's registers, and it can be read out through I2C communication. You'll never lose your way with the LSM303AGR click by your side.



3D accelerometer and 3D magnetometer

LSM303AGR microcontroller features

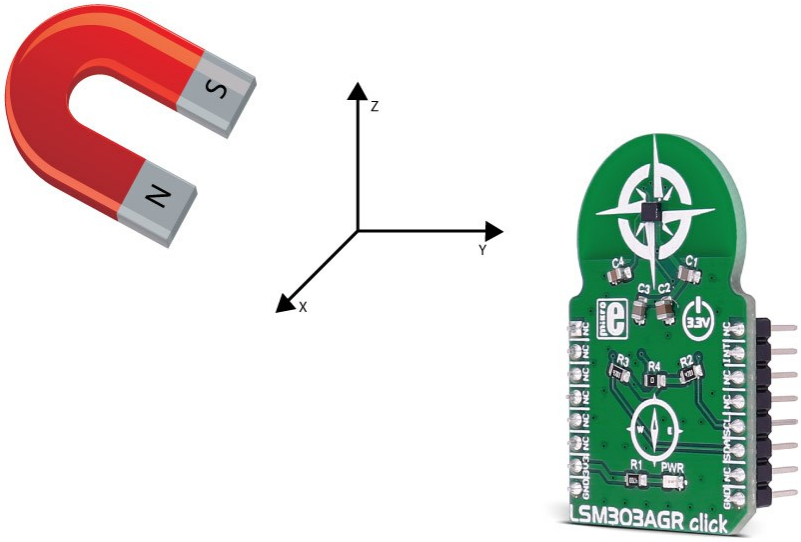
The LSM303AGR is an ultra-low-power high-performance system-in-package featuring a 3D digital linear acceleration sensor and a 3D digital magnetic sensor.

The sensor has linear acceleration full scales of **±2g/±4g/±8g/±16g** and a magnetic field dynamic range of **±50 gauss**.

The magnetic and accelerometer blocks can be enabled or put into power-down mode separately.

Accurate three-dimensional sensing

LMS303AGR click offers precise three-dimensional magnetic sensing. It detects the magnetic field in x,y, and z direction. With the low power consumption, it's ideally suited for small IoT projects and hand-held devices.



Specifications

Type	Magnetometer
Applications	Digital compass applications, pedometers, display orientation, gaming and virtual reality input devices, etc.
MCU	LSM303AGR
Key Features	3 magnetic field channels and 3 acceleration channels, ±50 gauss magnetic dynamic range, ±2/±4/±8/±16 g selectable acceleration full scales
Interface	I2C,GPIO
Input Voltage	3.3V
Compatibility	mikroBUS

Click board size	M (42.9 x 25.4 mm)

Pinout diagram

This table shows how the pinout on **LSM303AGR click** corresponds to the pinout on the mikroBUS™ socket (the latter shown in the two middle columns).

Notes	Pin	mikroBUS				Pin	Notes
	NC	1	AN	PWM	16	NC	
	NC	2	RST	INT	15	**INT**	Magnetometer interrupt/data-ready signal
	NC	3	CS	TX	14	NC	
	NC	4	SCK	RX	13	NC	
	NC	5	MISO	SCL	12	**SCL**	I2C serial clock
	NC	6	MOSI	SDA	11	**SDA**	I2C serial data
Power supply	**+3.3V**	7	3.3V	5V	10	NC	
Ground	**GND**	8	GND	GND	9	**GND**	Ground

Programming

Code examples for LSM303AGR click, written for MikroElektronika hardware and compilers are available on Libstock.

Code snippet

The following code snippet shows the initialization and reading of the sensor.

```
01 LSM303AGR_disableAcc();
02 LOG( "Accelerometer disablednr" );
03 LSM303AGR_setPowerMode( LSM303AGR_MAG, LSM303AGR_LOW_POWER );
04 LOG( "Magnetometer power mode set to low-powernr" );
05 LSM303AGR_setMeasureMode( LSM303AGR_CONT );
06 LOG( "Magnetometer measuring mode set to continuousnr" );
07 LSM303AGR_SetDataRate( LSM303AGR_MAG, 0x00 );
08 LOG( "Magnetometer data rate set to 10Hznr" );
09 LSM303AGR_readOutput( LSM303AGR_MAG, output );
10 LOG( "Reading magnetometer outputnr" );
11 Delay_ms( 200 );
12 WordToHex( output[0], txt );
13 LOG( "X: " );
14 LOG( txt );
15 WordToHex( output[1], txt );
16 LOG( "nrY: " );
17 LOG( txt );
18 WordToHex( output[2], txt );
19 LOG( "nrZ: " );
20 LOG( txt );
21 LOG( "nr" );
```

Downloads

mikroBUS™ Standard specification

LSM303AGR datasheet

LibStock: LSM303AGR click library

LSM303AGR click schematic

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