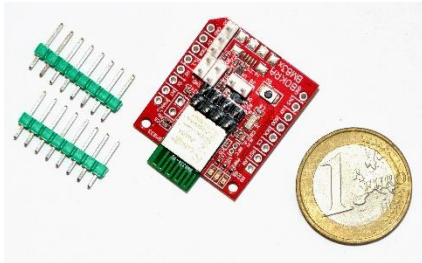


# BM83x



The **BOKRA BM83x** module uses one of the following [Fanstel](#) Compact SIP (System-in-Package) based on Nordic's miniature Bluetooth Low Energy (BLE) chip:

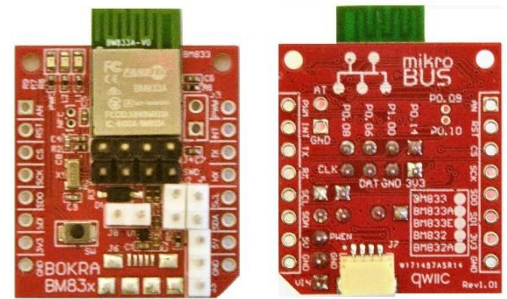
- [BM833](#) (based on Nordic nRF52833 QIAA)
- [BM833A](#) (based on Nordic nRF52811 QFAA)
- [BM833E](#) (based on Nordic nRF52833 QIAA)
- [BM832](#) (based on Nordic nRF52832 QFAA)
- [BM832A](#) (based on Nordic nRF52810 QFAA)

**BOKRA BM83x** module size - 28,6 x 25,4 mm.

Comparison of the main characteristics of the module when using different SIP and corresponding Nordic chips in the following table:

Characteristic	BM833	BM833A	BM833E	BM832	BM832A
Microcontroller Core	nRF52833 QIAA Cortex-M4F	nRF52811 QFAA Cortex-M4	nRF52833 QIAA Cortex-M4F	nRF52832 QFAA Cortex-M4F	nRF52810 QFAA Cortex-M4
Frequency, MHz	64	64	64	64	64
Flash Memory, KB	512	192	512	512	192
RAM, KB	128	24	128	64	24
Interface for debugging	SWD				
Serial interfaces	SPI, I2C, USART				
BLE	5.1	5.1	5.1	5.0	5.0
Antenna	PCB Trace	PCB Trace	u.FL	PCB Trace	PCB Trace
Bluetooth Range	1400m	680m	3400m	340m	340m
NFC	NFC-A tag	-	NFC-A tag	NFC-A tag	-
ADC	12 bit/200KSps, 8 channels				
External connectors					
mikroBUS	1	1	1	1	1
I2C	1	1	1	1	1
USB	1	-	1	-	-
Input power	5V				
Voltage regulator	MIC5528				
Output current	500 mA				
Button	RESET				
LED	Red (power) Yellow (software) Green (software)				

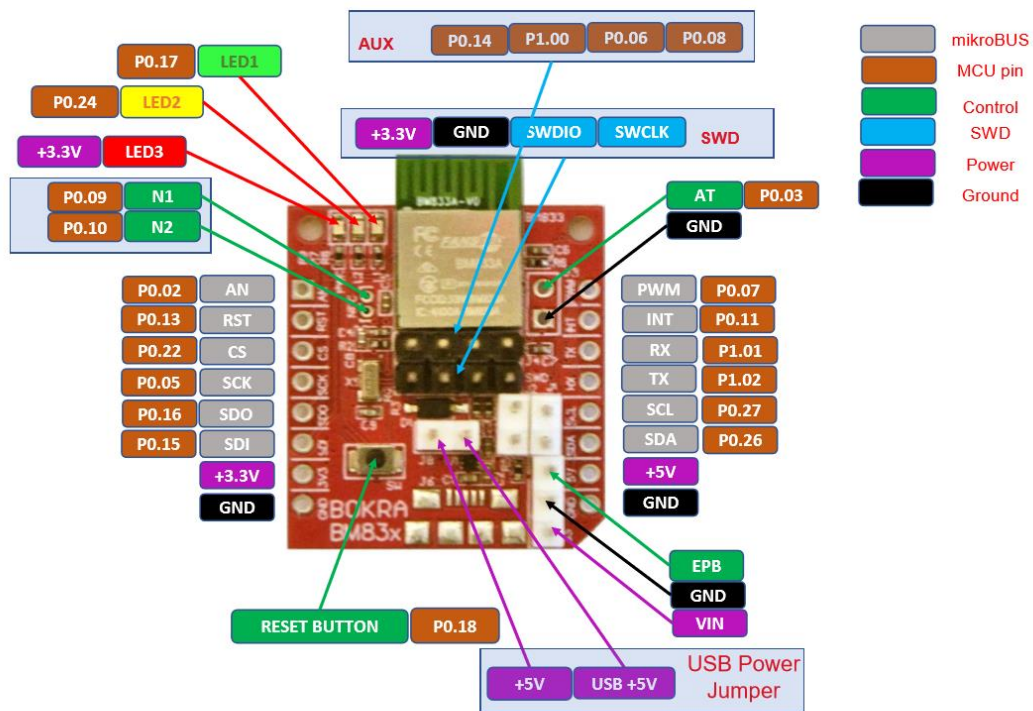
**BOKRA BM83x** makes it easy to implement IoT projects (smart sensors, climate control, industrial automation) using expansion modules with mikroBUS interface, Grove Systems peripherals (sensors and devices), as well as any other I<sup>2</sup>C bus-controlled modules. You no longer need to mockup the system, and then think first about how to make a prototype, and then how to start serial production. You can assemble the desired configuration and after debugging you only need to put the system into the case and buy the selected boards to start production.



The main areas of application of **BOKRA BM83x**:

- IoT (Internet of Things)
- Portable devices
- Agriculture and agro-industry
- Sensors
- Fitness / Sport
- Buildings and houses automation
- Lighting products
- Interactive entertainment devices

The matching of the **BOKRA BM83x** contacts and microcontroller contacts is as follows:



There are contacts on the module:

- AT (P0.03) – to select AT mode
- NFC1 (P0.09) and NFC2 (P0.10) – for connecting an NFC antenna
- EPB – allows you to turn on/off 3.3V output voltage regulator MIC5528

The auxiliary AUX connector enables the use of pins P0.06, P0.08, P0.14 и P1.0.

Jumpers J1 and J2 enable and disable pull-up resistors for the I<sup>2</sup>C.

On the bottom side of the module is a QWIIC I2C connector.

MikroElektronika manufactures numerous modules with a mikroBUS interface - Click® modules:



Attention! **BOKRA BM83x** is compatible with Click® modules that use 3.3V, compatibility with 5V Click® modules is not guaranteed.



Install your **BOKRA BM83x** on a BOKRA BaseA + 5W or similar module, add one of the many IO boards, LED or OLED control, a stepper motor driver and much, much more to it. Almost everything that may be required for your project is already in the range of modules with the mikroBUS interface.

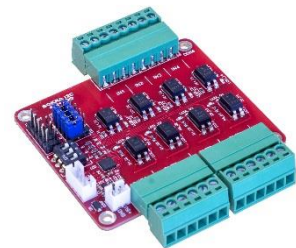
Any modules managed via the I<sup>2</sup>C bus can be connected to the I<sup>2</sup>C connector, for example, those we produce in BOKRA.



Analog input  
BOKRA I2C 4AI ADS1x15 Pro

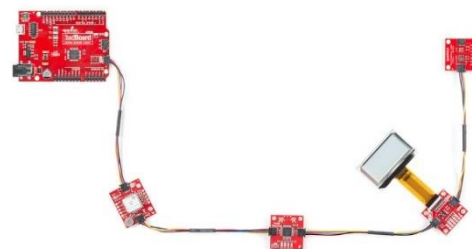


Relay  
BOKRA I2C 4RO SRD



Digital input and output  
BOKRA I2C 4DI+4DO

It is also easy to connect numerous sensors, peripherals and modules from Grove Systems to the **BOKRA BM83x** via the I<sup>2</sup>C connector.



**BOKRA BM83x**, along with several mikroBUS form factor modules, can form stackable or flat designs.

The **BOKRA BM83x** package includes contact headers for forming the mikroBUS slot. Before connecting modules with the mikroBUS interface, these headers must be soldered to **BOKRA BM83x**. When ordering, you can also optionally indicate the need for presetting these contact headers.

The **BOKRA BM83x** scheme is as follows:

