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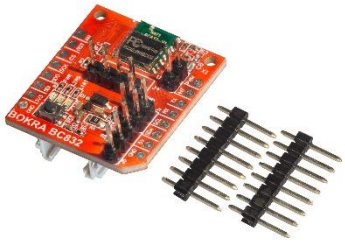
BC832



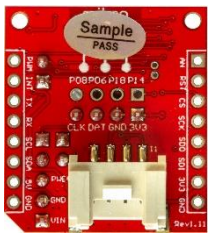
The **BOKRA BC832** module uses the Fanstel compact SIP (system-in-package) BC832. The BC832 is a powerful, very flexible, low-power Bluetooth (BLE) small module that uses the Nordic nRF52832 CIAA. This microcontroller has a Cortex M4 architecture, extended FPU (floating point calculation). Frequency – 64 MHz. MCU flash memory - 512 kB, RAM - 64 kB. The microcontroller supports up to two I²C interfaces, up to three SPI interfaces and USART. The microcontroller contains 12-bit ADC (speed – 200 Ksps).

The BC832 SIP contains a built-in 2.4 GHz multi-protocol transceiver and an integrated antenna for the printed circuit board. The range of BLE - up to 50 meters.

It is possible to use the interface NFC-A tag.

Debug Interface - SWD. External connectors - I²C and mikroBUS.

Input Power – 5V. The voltage regulator is Microchip's MIC5528, which provides 500 mA output current. The module has a RESET button and three LEDs (power and two program-controlled).



The Fanstel website lists the main areas of use for SIP BC832. Listed below are the ones for which the **BOKRA BC832** module is best suited:

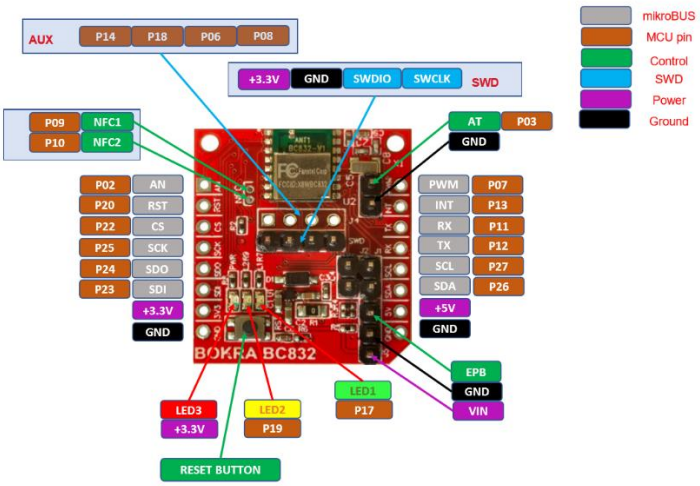
- IoT (Internet of Things)
- Portable devices
- Smart toys
- Sensors
- Fitness / Sport
- Buildings and houses automation
- Lighting products
- Interactive entertainment devices

Specifications

The main characteristics of the **BOKRA BC832** are as follows:

Characteristic	BOKRA BC832
Microcontroller Core Frequency, MHz	nRF52832 CIAA Cortex-M4 (F) 64
Flash Memory, KB	512
RAM, KB	64
Interface for debugging	SWD
Serial interfaces	SPI, I2C, USART
Wireless interfaces	Bluetooth Low Energy (BLE) 2,4 ГГц, NFC-A tag
External connectors mikroBUS I2C	 1 1
Input power Voltage regulator Output current	5V MIC5528 500 mA
Button	RESET
LED	Red (power) Yellow (software) Green (software)
Size	28,6 x 25,4 mm

The matching of the **BOKRA BC832** contacts and microcontroller contacts is as follows:



There are contacts on the module:

- AT (P03) – to select AT mode
- NFC1 и NFC2 – 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 P05, P06, P14, P15 and P18.

Jumpers J1 and J2 enable and disable pull-up resistors for the I2C interface.

The pin assignment in the **BOKRA BC832** largely coincides with the assignment in other popular boards (including the BOKRA BT832 module) based on Nordic nRF52832. Comparison in the following table:

nRF52832	Fanstel BT832	Fanstel BC832	BOKRA BT832	BOKRA BC832	Adarfuit Feather nRF52832	BLE Nano 2
P0.00/XL1	P00/XL1	P00/XL1	XL1	XL1	XL1	XL1
P0.01/XL2	P01/XL2	P01/XL2	XL2	XL2	XL2	XL2
P0.02/AIN0	P02/AIN0	P02/AIN0	AN	AN	A0	SCL0/SPI1_SCK
P0.03/AIN1	P03/AIN1	P03/AIN1	AT	AT	A1	SPI0_SS
P0.04/AIN2	P04 (A3)	P04 (A3)	D0	-	A2	PWM
P0.05/AIN3	P05 (A4)	P05 (A4)	D1	-	A3	PWM
P0.06	P06 (B4)	P06 (B4)	DFU	AUX P06	TX	SPI0_MOSI
P0.07	P07 (A5)	P07 (B5)	PWM	PWM	7	SPI0_MISO
P0.08	P08 (B5)	P08 (A5)	FRST	AUX P08	RX	SPI0_SCL
P0.09/NFC1	P09/NFC1	P09 (C5)	NFC1	NFC1	NFC1	-
P0.10/NFC2	P10/NFC2	P10 (D5)	NFC2	NFC2	NFC2	-
P0.11	P11 (D5)	P11/RX	RX	RX	11	LED/PWM
P0.12	P12 (C5)	P12/TX	TX	TX	SCK	-
P0.13	P13/BOTTOM	P13/BUTTON	INT	INT	MOSI	-
P0.14	P14 (D4)	P14 (D4)	LiPo MON	AUX P14	MISO	-
P0.15	P15 (C4)	P15 (C4)	SOFTWARE BUTTON	-	15	-
P0.16	P16 (D3)	P16 (D3)	-	-	16	-
P0.17	P17 (C3)	P17 (A2)	Green LED	Green LED	LED1	-
P0.18	P18	P18	-	AUX P18	SWO	-
P0.19	P19 (D2)	P19 (D2)	Yellow LED	Yellow LED	LED2	-
P0.20	P20/LED	P20/LED	RST	RST	DFU	-
P0.21/RESET	P21/RESET	P21/RESET	EXTERNAL RESET	RST BUTTON	RESET	MRST/PWM
P0.22	P22 (C2)	P22 (C2)	CS	CS	FRST	-
P0.23	P23 (D1)	P23 (D1)	SDI	SDI	-	-
P0.24	P24 (C1)	P24 (C1)	SDO	SDO	-	-
P0.25	P25 (B1)	P25 (B1)	SCK	SCK	SDA	-
P0.26 (SDA on EV)	P26/SDA	P26/SDA	SDA	SDA	SCL	-
P0.27 (SCL on EV)	P27/SCL	P27/SCL	SCL	SCL	27	-
P0.28/AIN4	P28 (A1)	P28 (A1)	-	-	A4	SDA0/SPI1_SS
P0.29/AIN5	P29 (A2)	P29 (B2)	-	-	A5	TX/SPI1_MOSI
P0.30	P30 (B2)	P30/DEC4	-	-	A6	RX/SPI1_MISO
P0.31	P31 (B3)	P31/DCC	-	-	A7 (LiPO Mon)	-
SWDCLK	SWDCLK	SWDCLK	SWDCLK	SWDCLK	SWDCLK	SWDCLK
SWDIO	SWDIO	SWDIO	SWDIO	SWDIO	SWDIO	SWDIO

On the bottom side of the module is a Grove I^{2}C connector.

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

Attention! **BOKRA BC832** is compatible with Click® modules that use 3.3V, compatibility with 5V Click® modules is not guaranteed.

Install your **BOKRA BC832** on a BOKRA BaseA + 5W or similar module, add one of the many communication 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 I²C bus can be connected to the I²C connector, for example, those we produce in BOKRA.

Analog input
BOKRA I2C 8AI LTC2309

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 BC832** via the I²C connector.

BOKRA BC832, along with several mikroBUS form factor modules, can form stackable or flat designs.

The **BOKRA BC832** package includes contact headers for forming the mikroBUS slot. Before connecting modules with the mikroBUS interface, these headers must be soldered to **BOKRA BC832**. When ordering, you can also optionally indicate the need for presetting these contact headers.

The **BOKRA BC832** scheme is as follows: