

## LPC824 Lite



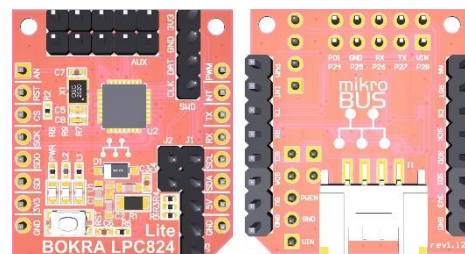
The **BOKRA LPC824 Lite** module is based on a simple and economical microcontroller LPC824M201JHI33 (further - LPC824) with Cortex M0+ architecture. This microcontroller is real alternative to 8-bit MCU.

Frequency – 30 MHz. MCU flash memory - 32 kB, RAM - 8 kB. The microcontroller supports up to four I2C (SMBus) interfaces, up to three UART interfaces and up to two SPI. The microcontroller contains 12-bit ADC (speed up to 1.2 Msps). Most of the 22 I / O pins are available on the **BOKRA LPC824 Lite** module.

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).

**BOKRA LPC824 Lite** 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 LPC824 microcontroller is widely used in the following areas:

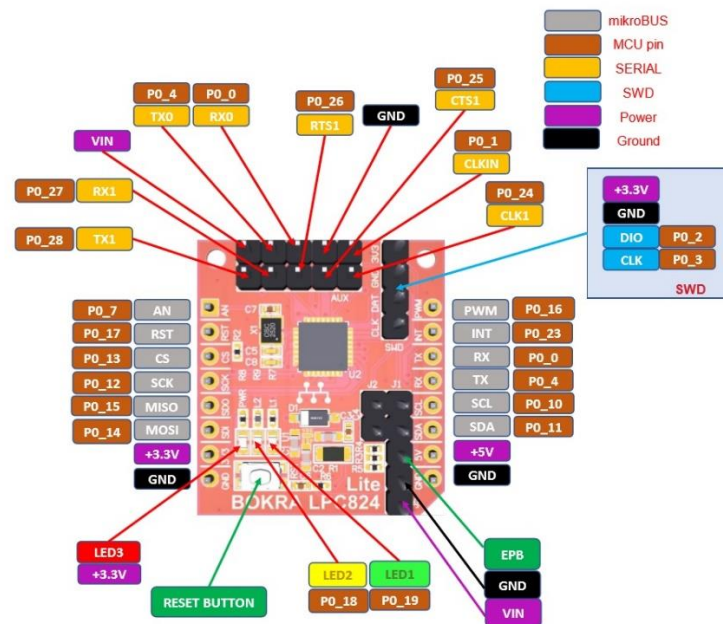
- Sensors and sensor gateways
- Industrial Applications
- Game controllers
- Consumer devices
- Climate control
- Simple motor control
- Portable and wearable devices
- Lighting
- Fire and security applications

### Specifications

The main characteristics of the **BOKRA LPC824 Lite** are as follows:

Name	BOKRA SAMD21 Lite
Microcontroller	LPC824M201JHI33
Core	Cortex-M0+
Frequency, MHz	30
Flash Memory, KB	32
RAM, KB	8
Interface for debugging	SWD
Serial interfaces	SPI, I <sup>2</sup> C, USART
External connectors	
mikroBUS	1
I2C	1
Input power	5V
Voltage regulator	MIC5528
Output current	500 mA
Button	RESET
LED	Red (power) Yellow (software) Green (software)
Size	28,6 x 25,4 mm

The matching of the **BOKRA LPC824 Lite** contacts and the LPC824M201JHI33 microcontroller contacts is as follows:



The module has an EPB pin, which allows you to turn on / off the VIN power supply to the MIC5528. In addition, with the help of jumpers J1 and J2, you can enable and disable pull-up resistors for I2C.

The pin assignment (contacts) in the **BOKRA LPC824 Lite** is almost the same as the assignment in other popular boards based on the LPC824M201JHI33 microcontroller. Comparison in the following table:

Pin	BOKRA LPC824 Lite	SwitchScience mbed LPC824	LPCXpresso824-MAX	MoonLander
P0_0	RX	GPIO	RXD	RXD
P0_1	CLKIN	GPIO	CLKIN	-
P0_2	DIO	-	SWDIO	SWDIO
P0_3	CLK	-	SWCLK	SWCLK
P0_4	TX	GPIO / Analog In	TXD	TXD
P0_7	AN	-	GPIO	VBAT
P0_10	SCL	SDA	SCL	SCL
P0_11	SDA	SCK	SDA	SDA
P0_12	SCK	GPIO	Red Tricolor LED / ISP Button	ENTRY
P0_13	CS	GPIO / Analog In	GPIO	GPIO / Analog In
P0_14	SDI	GPIO	GPIO	GPIO / Analog In
P0_15	SDO	GPIO	SSEL0	-
P0_16	PWM	GPIO	Green Tricolor LED	SW1
P0_17	RST	GPIO / Analog In	GPIO	GPIO / Analog In
P0_18	Yellow LED	-	GPIO	GPIO / Analog In
P0_19	Green LED	GPIO / Analog In	GPIO	GPIO / Analog In
P0_23	INT	GPIO / Analog In	GPIO	GPIO / Analog In
P0_24	CLK1	GPIO	SCK	EEPROM_WP
P0_25	CTS1	GPIO	MISO	-
P0_26	RTS1	GPIO	MOSI	-
P0_27	RX1	GPIO	Blue Tricolor LED	-
P0_28	TX1	GPIO	GPIO	LED

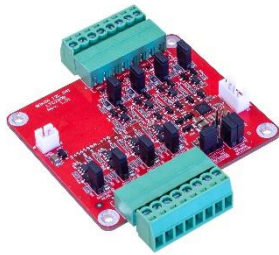
On the bottom side of the module is a Grove I<sup>2</sup>C connector.

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



Attention! BOKRA LPC824 Lite is compatible with Click® modules that use 3.3V, compatibility with 5V Click® modules is not guaranteed.

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 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 LPC824 Lite** via the I<sup>2</sup>C connector.



**BOKRA LPC824 Lite**, along with several mikroBUS form factor modules, can form stackable or flat designs.

The **BOKRA LPC824 Lite** package includes contact headers for forming the mikroBUS slot. Before connecting modules with the mikroBUS interface, these headers must be soldered to **BOKRA LPC824 Lite**. When ordering, you can also optionally indicate the need for presetting these contact headers.

The **BOKRA LPC824 Lite** scheme is as follows:

