

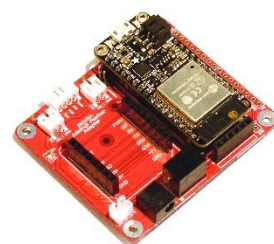
# Adafruit Feather Adapter



**BOKRA Adafruit Feather Adapter** is designed to install Adafruit Feather (or compatible) and mikroBUS modules and provides a device based on this module with non-isolated 5VDC power, up to 1A.

Using the Adafruit Feather slot allows you to design devices based on mikroBUS modules, various BOKRA modules and Adafruit Feather compatible SoM such as:

[Adafruit Huzzah32](#), [Adafruit Feather M0 with RFM95 LoRa Radio](#), [Adafruit Feather M0 Express](#), [Adafruit Feather M4 Express](#), [Adafruit Feather nRF52840 Express](#), [Adafruit Feather STM32F405 Express](#) from Adafruit



[Xenon](#), [Argon](#) and [Boron](#) from Particle



[MAX32620FTHR](#) and [MAX32630FTHR](#) from Maxim Integrated

[Wio Lite W600](#) and [Wio Lite MG126](#) from Seeed



with all software and services from specified companies.

The correspondence between Adafruit Feather pins and mikroBUS pins on the **BOKRA Adafruit Feather Adapter** is as follows:

mikroBUS pin	Adafruit Feather pin
AN	A0
RST	9 (15/A8 на Huzzan32)
CS	12 (12/A11 на Huzzan32)
SCK	SCK
MISO	MISO
MOSI	MOSI
PWM	11 (27/A10 на Huzzan32)
INT	A3
RX	RX
TX	TX
SCL	SCL
SDA	SDA
3V3	3V3
+5V	VBUS
GND	GND

The MBL (labeled P1) and MBR (labeled P8) connectors are all mikroBUS bus signals. Thus, through these connectors it is easy to connect another module (or even several) with mikroBUS slots, increasing the number of slots on the common bus.

Almost all signals not used by mikroBUS from the installed Adafruit Feather are output to the P12 connector, which makes it possible to use almost all Adafruit Feather functions without changing the programs. The correspondence of the Adafruit Feather pins and the P12 connector pins is shown below, in the figure with the arrangement of elements on the **BOKRA Adafruit Feather Adapter**.

Third-party ESP-M3 modules can be installed in J4. Thus, a device based on **BOKRA Adafruit Feather Adapter** can be easily provided with Wi-Fi connection. The ESP-M3 is UART controlled from the 2nd mikroBUS slot on the module. For stability, there is a DC-DC converter that provides 3.3VDC power for the ESP-M3, independent of the power supply on the mikroBUS common bus. There is a software control option for turning on the ESP-M3 using a single-pin P4 connector. To do this, P4 must be connected using the jumper JP12.

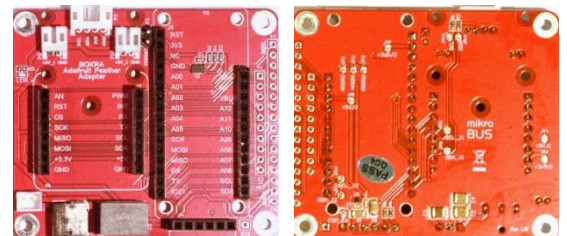


The I<sup>2</sup>C interface is most often used when designing devices based on this module. To do this, the adapter has an I<sup>2</sup>C connector, through which you can connect external devices and sensors.

The adapter has a temperature sensor - an [LM75B](#) chip, also connected via I<sup>2</sup>C. Temperature measurement accuracy:  $\pm 2$  °C for the temperature range from  $-25$  °C to  $+100$  °C,  $\pm 3$  °C for the temperature range from  $-55$  °C to  $+125$  °C. The LM75B chip can be replaced by the user on the [TMP1075](#) chip (maximum accuracy -  $\pm 1$  °C). The I<sup>2</sup>C address for the LM75B is 1001111\*. This address can be changed by the user using jumpers JP1, JP2 and JP3.

The module power supply is non-isolated, in the range from 9VDC to 36VDC. The module converts the input power to the output, 5VDC. The maximum current is 1A. There are two connectors for distributing 5VDC to other modules and a connector for transmitting VIN input voltage to other modules.

Since some of the modules installed in mikroBUS and Adafruit Feather slots can themselves generate 5VDC and 3.3VDC, the module provides the ability to disconnect the corresponding power contacts of the mikroBUS slot from the common mikroBUS bus. It is also possible to disconnect SCL and SDA signals from the common bus for each mikroBUS slot.



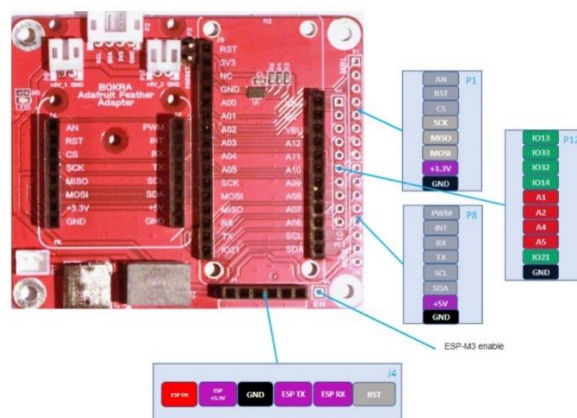
If necessary, you can connect pull-up resistors for I<sup>2</sup>C (jumpers J3 and J4).

**BOKRA Adafruit Feather Adapter** size 65 x 56 mm. The format of the module corresponds to the popular format of the Raspberry Pi 3A+, which greatly simplifies its use with the Raspberry Pi.

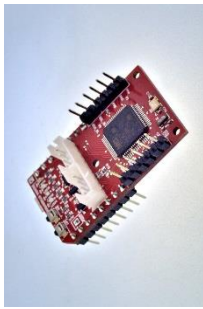
The main areas of application of the module:

- Industry and transport
- Data acquisition systems (DAS) and PLC
- Heating, Ventilation, & Air Conditioning (HVAC)
- Consumer electronics
- Measuring and medical devices
- Ecology monitoring
- Smart home
- Motor control
- Security systems

The following figure shows the **location of elements on the BOKRA Adafruit Feather Adapter**.



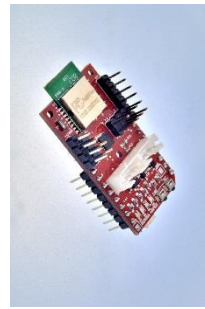
Install on your **BOKRA Adafruit Feather Adapter** in the mikroBUS slot one of the BOKRA SoM Pro or Lite series, one of the modules for wireless communication or another module with the mikroBUS interface:



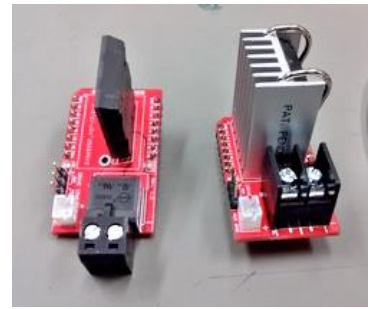
BOKRA STM32F405 Pro



BOKRA LPC824 Lite



BOKRA BT832

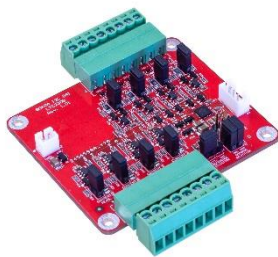


BOKRA mikroBUS 60VDC SSR

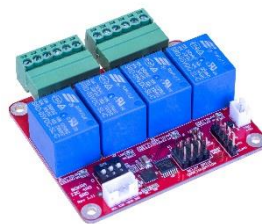
[MikroElektronika](http://MikroElektronika.com) manufactures numerous modules with mikroBUS interface - Click® modules:



Through I<sup>2</sup>C or MBL and MBR connectors, you can easily connect Raspberry Pi 3A+ (65 x 56 mm) format modules manufactured by us or modules of the same size from other manufacturers to the adapter:



Analog input  
BOKRA I2C 8AI LTC2309



Relay  
BOKRA I2C 4RO SRD

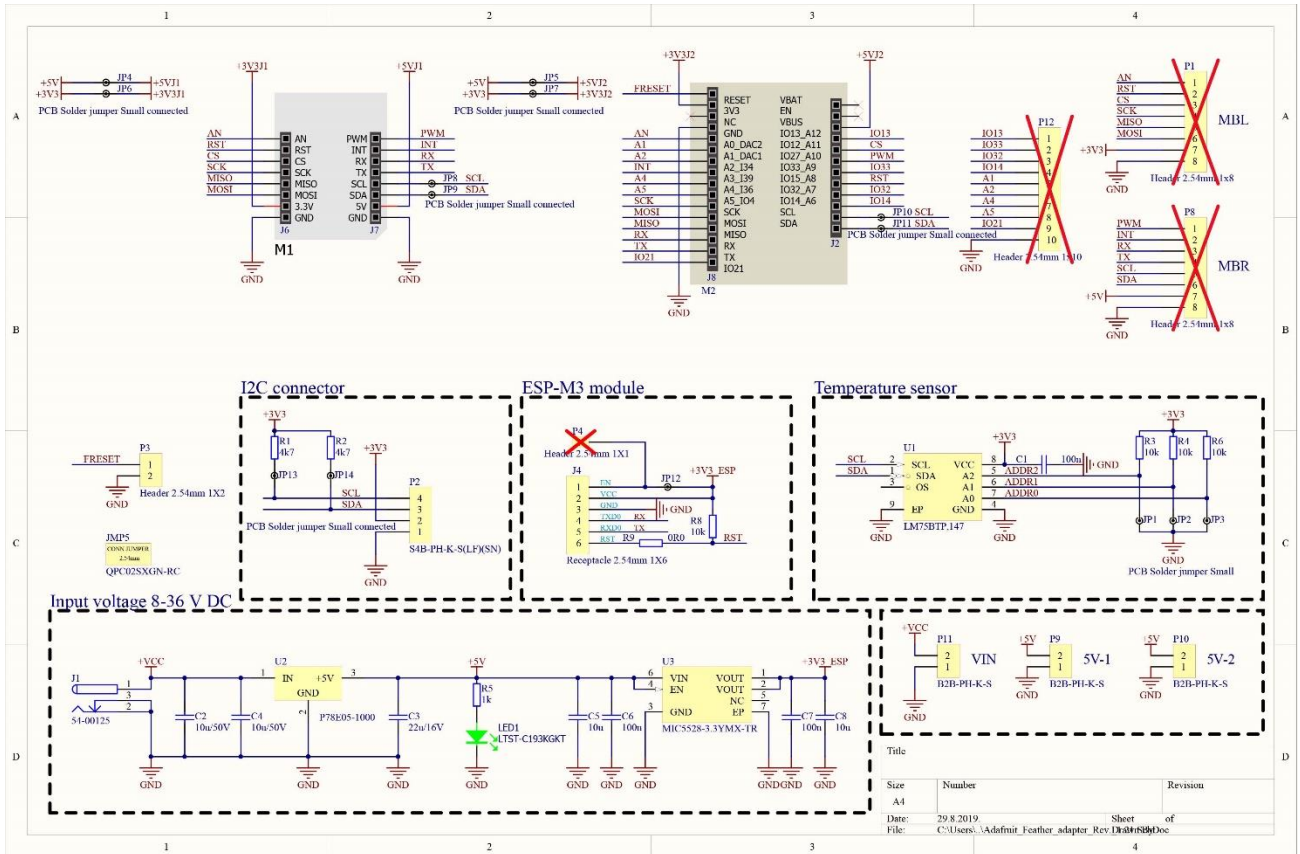


Digital input and output  
BOKRA I2C 4DI+4DO

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



# BOKRA Adafruit Feather Adapter schematic:



1

2

3

4

A

B

C

D

A

B

C

D