

Datasheet

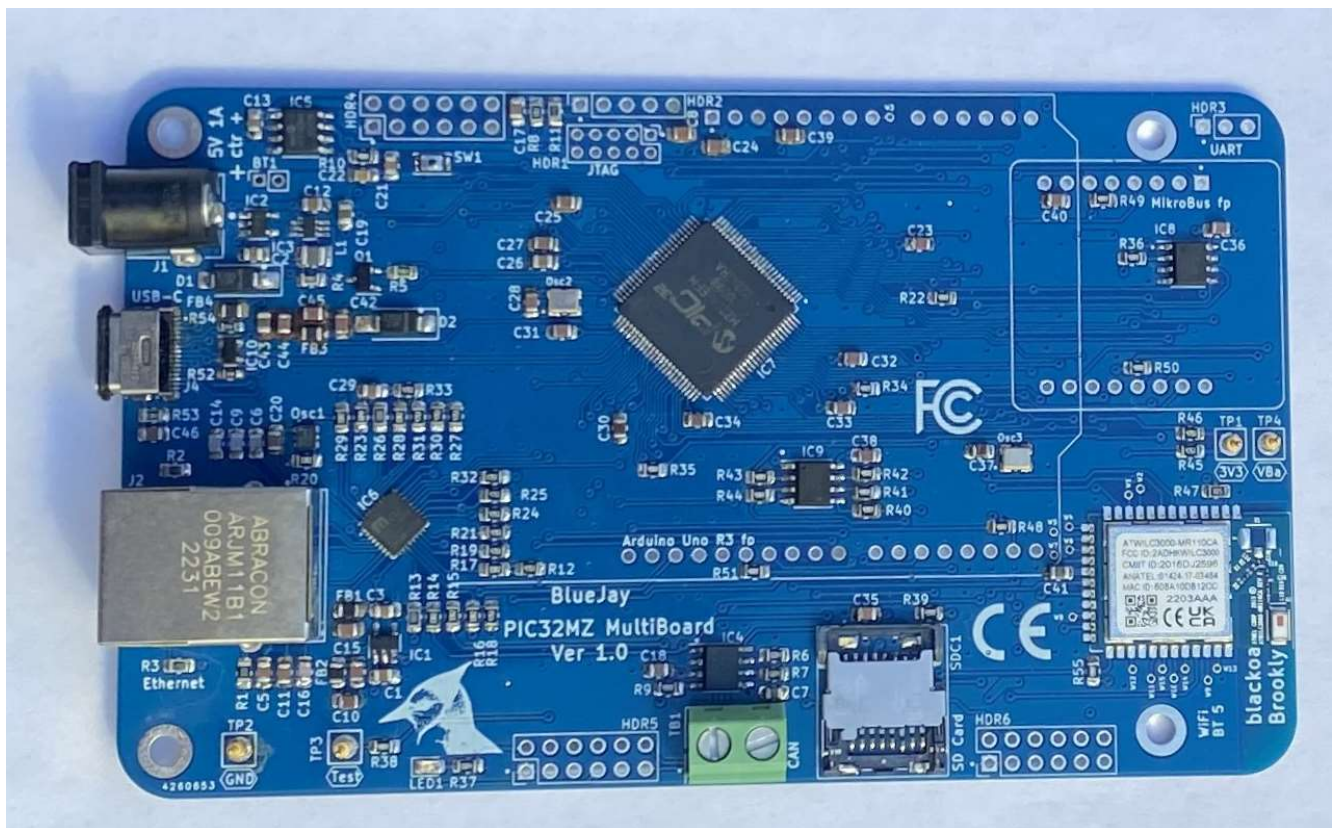
Black Oak Engineering

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BlueJay PIC32MZ MultiBoard



Part number BE-BLUJ



Description. The Black Oak Engineering (BOE) BlueJay PIC32MZ MultiBoard goes beyond a typical eval or demo board. It is a Single Board Computer (SBC) designed to take on many jobs. It also makes a good training tool. It is like a Swiss Army Knife that fits on your pocket. It is based on the popular and widely available Microchip PIC32MZ 32 bit processor. It lends itself well to the development of systems for data acquisition, user interface, IOT, and automation. It supports both Wi-Fi and Bluetooth wireless. It is compact, but still large enough for easy access by human hands. A free, thorough Board Support Package, including a Harmony BSP, is available on GitHub. Firmware models for many use cases are also available.

Basic PIC32 specifications

- PIC32MZ2048EFH100-250I/PL , 250 MHz, or equivalent.
- 2 MB Flash, 512 KB SRAM, MIPS32® M-Class.
- EBI/EMI, Ethernet, I²C, PMP, SPI, SQI, USART, USB OTG.
- Easily programmable with Microchip's free [MPLAB XC](#) development environment.

Standard features

- 3.0 × 5.0 inches (7.6 × 12.7 cm).
- 4× 4-40 (M3) mounting holes.
- Shipping package weight 4 oz (100 g).
- Ethernet 10/100 Base-T, RJ-45.
- Serial QSPI Flash 8Mb standard.
- EEPROM 128 K × 8.
- USB Device, USB-C connector.
- CAN port.
- SD card.
- Real Time Clock.
- Crypto engine.
- RS232 TTL.
- Arduino Uno R3 Shield breakout footprint.
- MikroBus Click breakout footprint.
- All IO broken out on 100 headers. Either header pins or sockets may be added.
- Test points.
- Precision voltage reference for ADC.
- Dedicated analog low noise area.
- Low power design.
- IIC.
- 2× SPI channels.
- JTAG & ICSP.
- Transient protection widespread.
- Temperature stable oscillators.
- Diagnostic LED.
- Reset switch.
- Supports Harmony framework.

Power

- +5V power in via USB or external barrel connector.
- Low power, sleep states firmware controlled.

BOE is continuously improving. We also strive to keep one step ahead of procurement shortfalls. We will deliver to you the latest hardware version possible. In some cases specifications will change.

Options

- Wi-Fi and Bluetooth wireless. Part number BE-MDWB-01
 - IEEE 802.11 b/g/n.
 - Bluetooth 5.0, includes BLE.
 - Integrated chip antenna.
- Lithium Polymer battery. Part number BE-BLIP-01
 - 3.7 V, 1.9 A-hr.
 - Standard JST 2 mm connector on wire leads.
 - Battery is charge managed as long as an external 5 Vdc source is present.
 - Note, lithium batteries may not generally be transported via aircraft.

Accessories

- Charger, 5 Vdc, 1 A, barrel connector. Part number BE-ACDC-01

Environmental

- Temperature. -22 to +165 °F, -30 to +75 °C.
- If a battery is used the temperature range is reduced.
- Humidity / water exposure. The PCBA does not include a protective enclosure. Nor is it conformally coated. Condensing humidity and water exposure must be completely avoided.

Links. [blackoakeng.com/BlueJay: Code examples for the blackoakeng.com BlueJay PIC32MZ multiboard \(github.com\)](https://blackoakeng.com/BlueJay: Code examples for the blackoakeng.com BlueJay PIC32MZ multiboard (github.com))

Approvals & Compliance

- RoHS.
- REACH.
- California Prop 65.
- RF Regulatory. The BlueJay wireless module is approved for use in all jurisdictions as an intentional radiator. Contact us with any specific questions for your location.

Value Added Design. Want to use the BlueJay in a new project but need a little assistance? Not a problem. BOE contracts regularly with end users for value added design.

Warranty Policy. Any instrument ordered from BOE may be returned for full refund, less shipping costs, within 30 days of delivery, provided that the instrument has not, in the opinion of BOE been damaged or misused. An RMA number is required in all cases. See our *Standard Terms & Conditions - Instruments* for more details.

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