

Intel BB2.AL.B

Intel Edison Breakout Board User Manual

Model: BB2.AL.B

1. INTRODUCTION

The Intel Edison development platform is designed to facilitate the creation of wearables and other Internet of Things (IoT) products. This breakout board provides a robust set of features in a compact size, offering performance, durability, and extensive I/O and software support. It aims to lower the barriers to entry for developers and entrepreneurs, enabling rapid innovation from prototype to production.

This manual provides essential information for setting up, operating, maintaining, and troubleshooting your Intel Edison Breakout Board.

2. PRODUCT OVERVIEW

The Intel Edison Breakout Board integrates key components and features to support diverse development needs:

- **Processor:** Intel Atom system-on-a-chip (SoC) based on 22 nm Silver Mont microarchitecture, featuring a dual-core CPU and a single-core microcontroller (MCU).
- **Connectivity:** Integrated Wi-Fi (802.11b/g/n) and Bluetooth LE for wireless communication.
- **Memory & Storage:** Includes integrated memory and 4GB eMMC storage.
- **I/O Interfaces:** Supports over 30 industry-standard I/O interfaces via a 70-pin connector.
- **Expansion:** Compatible with a series of Intel and partner-created expansion boards.
- **Software Support:** Supports Yocto Linux, Arduino, Python, and Node.js.
- **Cloud Integration:** Integrates with cloud platforms for data visualization, dynamic rule evaluation/alerting, and analytics.

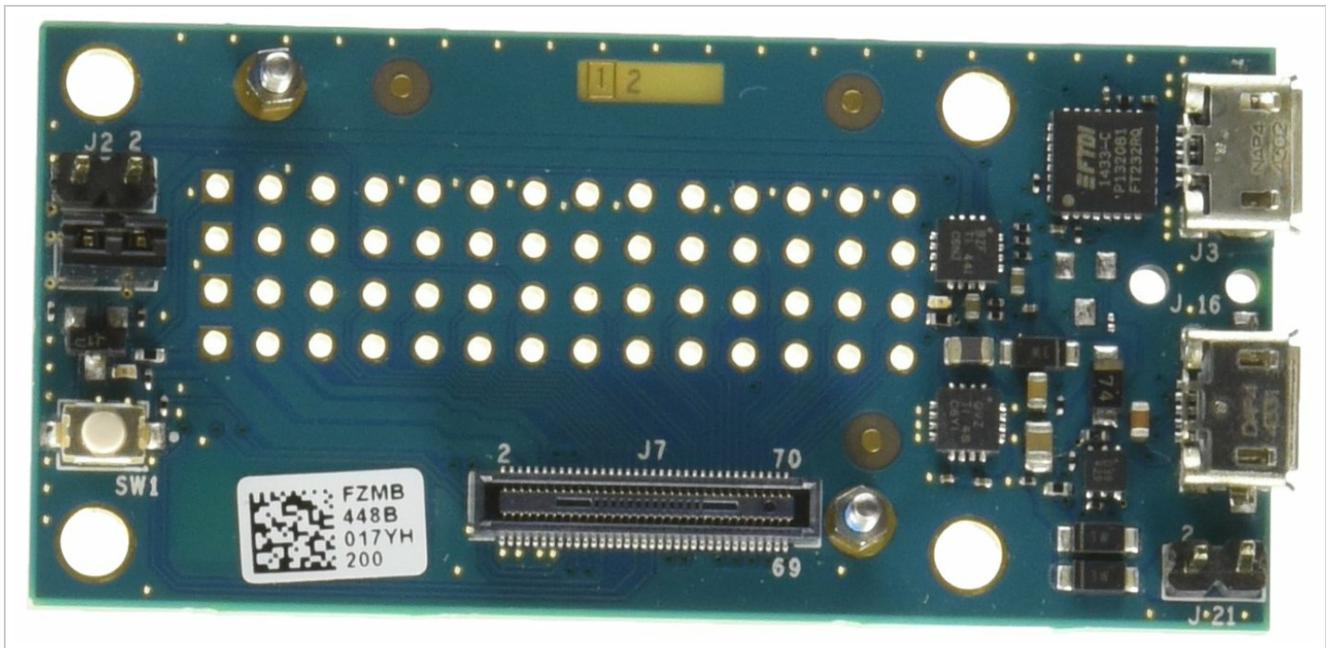


Figure 2.1: Intel Edison Breakout Board. This image displays the compact design of the board, highlighting its various components and connectors.

3. SETUP

Follow these steps to set up your Intel Edison Breakout Board:

1. **Unpacking:** Carefully remove the Intel Edison Breakout Board from its packaging. Inspect for any visible damage.
2. **Power Supply:** Connect a compatible 1.8V power supply to the designated power input on the board. Ensure the power supply meets the board's voltage and current requirements.
3. **USB Connection:** Connect the board to your computer using a USB cable. This connection typically provides power and enables serial communication for programming and debugging.
4. **Driver Installation:** Install any necessary drivers for your operating system. Refer to the official Intel Edison documentation for specific driver requirements.
5. **Software Environment:** Set up your preferred development environment (e.g., Yocto Linux, Arduino IDE, Python, Node.js). Ensure all required SDKs and toolchains are installed.
6. **Initial Boot:** Power on the board. Observe the indicator LEDs for proper boot sequence.

4. OPERATING INSTRUCTIONS

The Intel Edison Breakout Board is designed for flexible operation across various development platforms:

- **Programming:** Utilize the chosen development environment (e.g., Arduino IDE for C++, Python interpreter, Node.js runtime) to write and upload code to the Edison module.
- **Connectivity:** Configure Wi-Fi and Bluetooth LE settings through the operating system or specific libraries to enable network and device communication.
- **I/O Expansion:** Connect external sensors, actuators, and other peripherals to the 70-pin connector. Refer to the pinout documentation for correct connections.
- **Debugging:** Use the USB serial connection for console access and debugging output. Integrated debugging tools within your IDE can also be utilized.
- **Cloud Services:** Integrate your projects with cloud platforms for data logging, remote control, and advanced

analytics.

5. MAINTENANCE

Proper maintenance ensures the longevity and reliable operation of your Intel Edison Breakout Board:

- **Keep Clean:** Regularly clean the board with a soft, dry brush or compressed air to remove dust and debris. Avoid using liquids.
- **Handle with Care:** Avoid touching the electronic components directly. Always handle the board by its edges to prevent electrostatic discharge (ESD) damage.
- **Storage:** Store the board in a dry, cool environment, away from direct sunlight and extreme temperatures. Use anti-static bags if storing for extended periods.
- **Firmware Updates:** Periodically check for and apply firmware updates from Intel to ensure optimal performance and security.
- **Power Management:** Always use a stable and appropriate power supply. Disconnect power before making any physical changes to the board or connected peripherals.

6. TROUBLESHOOTING

If you encounter issues with your Intel Edison Breakout Board, consider the following troubleshooting steps:

- **No Power:**
 - Verify the power supply is correctly connected and providing the specified 1.8V.
 - Check the power indicator LED on the board. If it's off, try a different power source or cable.
- **Connection Issues (USB/Serial):**
 - Ensure the USB cable is securely connected to both the board and your computer.
 - Check if the correct drivers are installed on your computer.
 - Verify the correct serial port is selected in your development environment.
- **Wi-Fi/Bluetooth Connectivity Problems:**
 - Confirm that Wi-Fi and Bluetooth modules are enabled in your software configuration.
 - Check network credentials and ensure the board is within range of the access point.
- **Code Upload Failure:**
 - Ensure the board is in the correct programming mode.
 - Check for syntax errors in your code.
 - Verify that the correct board and port are selected in your IDE.
- **Physical Damage:**
 - Inspect the board for any bent pins, broken components, or signs of overheating.
 - Note: The screw holes can be fragile; avoid overtightening.

If problems persist, consult the official Intel Edison community forums or support resources.

7. SPECIFICATIONS

Feature	Specification
Processor	Intel Atom (22 nm Silver Mont microarchitecture), Dual-core CPU, Single-core MCU
RAM	4 GB
Memory Speed	800 MHz
Hard Drive	Embedded MultiMediaCard (eMMC)
Wireless Type	802.11b, 802.11g, 802.11n (Wi-Fi), Bluetooth LE
Operating System Support	Yocto Linux, Arduino, Python, Node.js
Item Model Number	BB2.AL.B
Item Weight	2.4 ounces
Product Dimensions (LxWxH)	4.17 x 3.43 x 1.57 inches
Voltage	1.8 Volts
Manufacturer	Intel
ASIN	B00PTVSZ2U
Date First Available	March 23, 2015

8. WARRANTY AND SUPPORT

For information regarding product warranty, technical support, and additional resources, please refer to the official Intel website or contact Intel customer service. Keep your purchase receipt as proof of purchase for any warranty claims.

Online resources often include:

- Product documentation and datasheets.
- Driver and software downloads.
- Community forums and knowledge bases.