

seed studio

INDUSTRIAL PRODUCT DATASHEET

BeagleBadge

The BeagleBoard® BeagleBadge is a high-performance, fully programmable, open-source smart-wearable development board in a badge form factor.

SKU

100061953

UPDATED

2026-04-27 09:39:53

PRICE

\$99.00(Excl. VAT)



Overview



The BeagleBoard® BeagleBadge is a high-performance, fully programmable, open-source smart-wearable development board in a badge form factor. Powered by the low-power TI AM62L32 SoC, it includes a 4.2-inch ePaper display via a 24-pin FPC connector, and includes onboard sensing (IMU, ambient light, temperature & humidity) plus intuitive physical controls. With Wi-Fi 6, Bluetooth® 5.2, and LoRaWAN connectivity—and Grove/Qwiic/mikroBUS expansion—it's a versatile platform for interactive IoT, event badges, and portable human-machine interface (HMI) prototypes.

Key Features

01 Prominent e-Paper Display & Intuitive UI

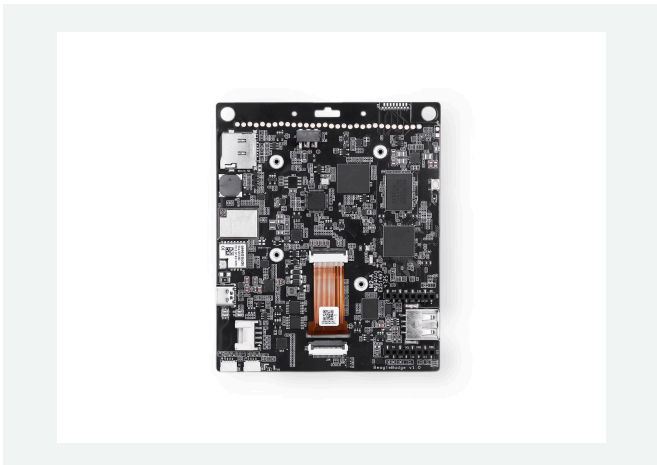
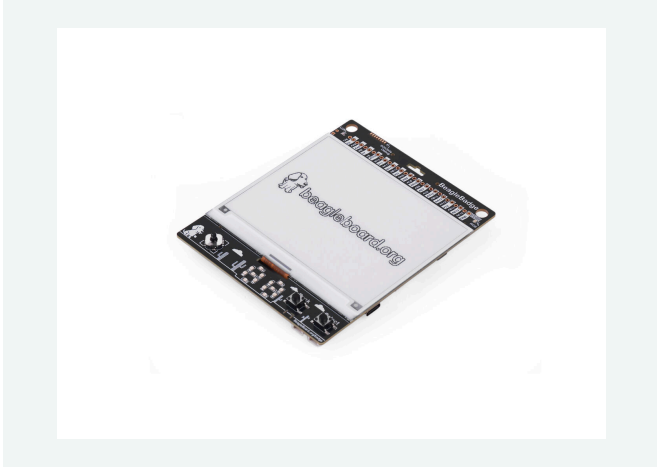
02 Next-Gen Processing Power

03 Comprehensive Wireless Connectivity

04 Rich Sensing & Limitless Expansion

05 Robust Open-Source Ecosystem

Product Gallery



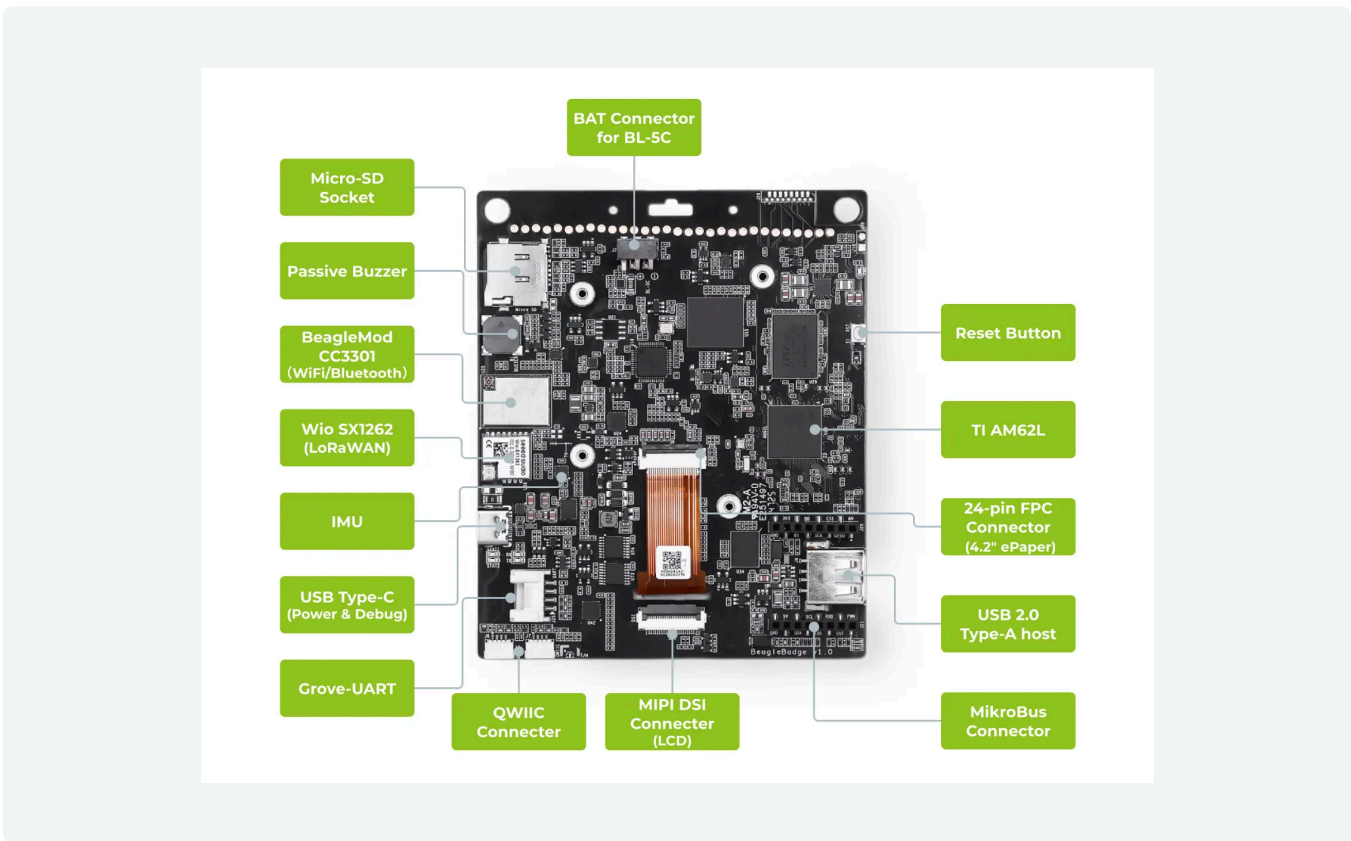
Specification

TI AM62L32(Low-power SoC for IOT, HMI)

Processor	SoC	
Processor	CPU Architecture	Dual-core Arm® Cortex®-A53 @1.25GHz
Memory	RAM	2GB (128M x 16bit)-1600MHz 3200Mbps LPDDR4
Storage	eMMC	4GB eMMC
Storage	Flash	256Mb OSPI flash
Storage	EEPROM	32Kb EEPROM
Wireless Connectivity	WiFi & Bluetooth	WiFi 6 (2.4GHz) & Bluetooth 5.2 - via BeagleMod CC3301 (MHF4 Connector)
Wireless Connectivity	LoRaWAN	LoRaWAN - via Wio SX1262 (u.FL Connector)
On Board	Display	4.2" e-paper (With 24-pin FPC Connector)
On Board	1x MIPI DSI connector for LCD	4.2" e-paper (With 24-pin FPC Connector)
Sensors	1x IMU Sensor	
Sensors	1x Ambient light sensor	
Sensors	1x Temperature & Humidity sensor (Unpopulated)	
Ecosystem Ports	1x MikroBus Connector	
Ecosystem Ports	1x Grove Connector	
Ecosystem Ports	2x QWIIC Connector	
External Ports	1x USB 2.0 Type-A host	
External Ports	1x Micro-SD socket	
User Interface	Buttons	1x Resetbuttons
User Interface	2x Tactile buttons (Back/Select)	1x Resetbuttons
User Interface	Joystick	1x 4-way Joystick (with press)
Output	1x Passive Buzzer	
Indicators	1x RGB status LED	
Indicators	2x 7-segment LED displays	
PowerInput	Interface	1xUSB Type-C (Power & Debug)
PowerInput	1x BAT Connector for BL-5C (with fuel gauge monitoring)	1xUSB Type-C (Power & Debug)
Software	Supported Platforms	Linux
Software	ZephyrRTOS	Linux
Software	LVGL	Linux
Software	MicroPython	Linux
Software	Meshtastic&ActivityPub	Linux

Hardware Overview





Applications

- **Smart Wearables & Smart Badges:** Utilizing the ePaper display and sensing capabilities for dynamic event badges or personal assistants.
- **Edge Computing Devices:** Leveraging the high-performance TI AM62L32 processor and Linux capabilities to process sensor data locally at the edge, reducing latency and cloud dependency.
- **Off-grid Communication Nodes:** Leveraging Meshtastic and LoRaWAN for decentralized messaging in remote areas.
- **Environmental & Health Monitoring:** Using the built-in LUX/IMU sensors combined with external bio-sensors via expansion ports.
- **Embedded control systems:** Taking advantage of the TI AM62L32 processor's real-time processing capabilities.

Part List

BeagleBadge	x1
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Compliance & Logistics

HSCODE	8471504090
USHSCODE	8517180050
EUHSCODE	8471707000
COO	CHINA

Logistics	Value
ECCN	5A992
HSCODE	8471504090
USHSCODE	8517180050
EUHSCODE	8471707000
COO	CHINA

Resource Links

- <https://www.seeedstudio.com/BeagleBadge-p-6725.html>

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