New Product Update

Reduce system design efforts with BeagleBoard single-board computers and accessories

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Agenda

- Beagle introduction

  - What is Beagle?

  - Beagle = Easiest path to prototype

  - Hero **BeagleBone** products

- New BeagleBoard.org products

  - **BeaglePlay** featuring AM625

  - **BeagleConnect Freedom** featuring CC1352P7

  - PREVIEW: **PocketBeagle 2** featuring AM623

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Beagle introduction

Overview and hero products

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What is Beagle?

- Supported by Michigan, USA based non-profit BeagleBoard.org Foundation

- Focus on embedded, reliability, longevity, control and machine learning, not just cheap computers

- Approach is open and collaborative with open hardware, detailed documentation and fully open source software

- Entrepreneurial and open community of domain experts that share our passion and approach

Visit **bbb.io/about** to learn more

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Beagle = Easiest path to prototype

Top 3 reasons to use Beagle for rapid prototyping:

1. Less effort

2. Increased visibility

3. Faster time to market

- Reference design used for over 200 million boards
    >90% AM3x designs used BeagleBone Black as their reference

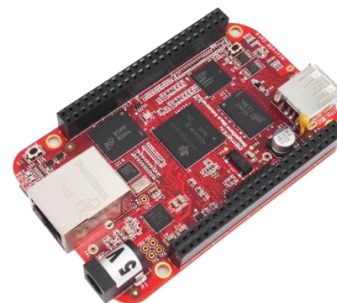- Strong community with extended network of partners

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Hero Beagle products

BeagleBone® AI-64 - TDA4VM

BEAGL-BONE-AI-64 on ti.com

BeagleBone® Black - AM335

BEAGL-BONE-BLACK on ti.com

BeagleBone® Black Industrial - AM335

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New BeagleBoard.org products

BeaglePlay + BeagleConnect Freedom

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New Beagle boards

BeaglePlay® - AM625

BEAGL-PLAY-SBC on ti.com

BeagleConnect™ Freedom - CC1352P7

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What is **BeaglePlay?**

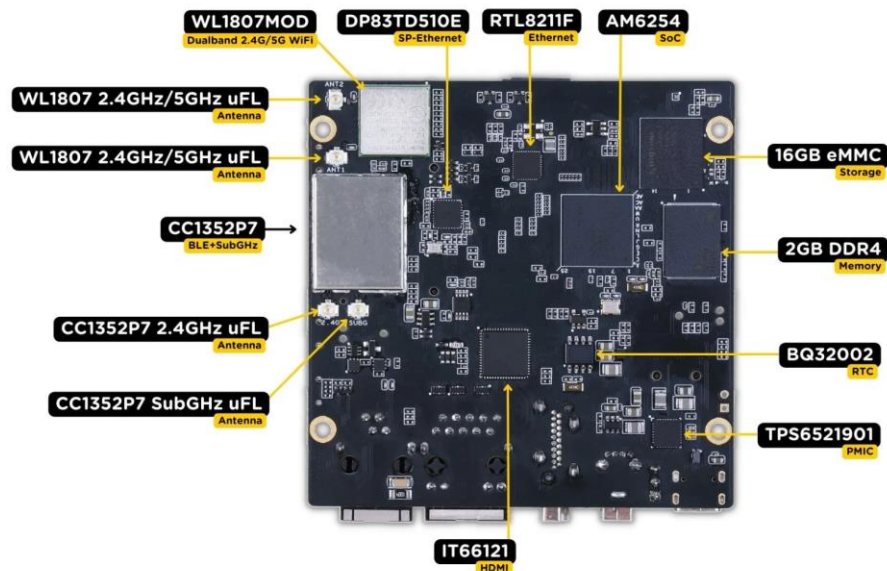BeaglePlay® single-board computer from the BeagleBoard.org foundation based on AM62x
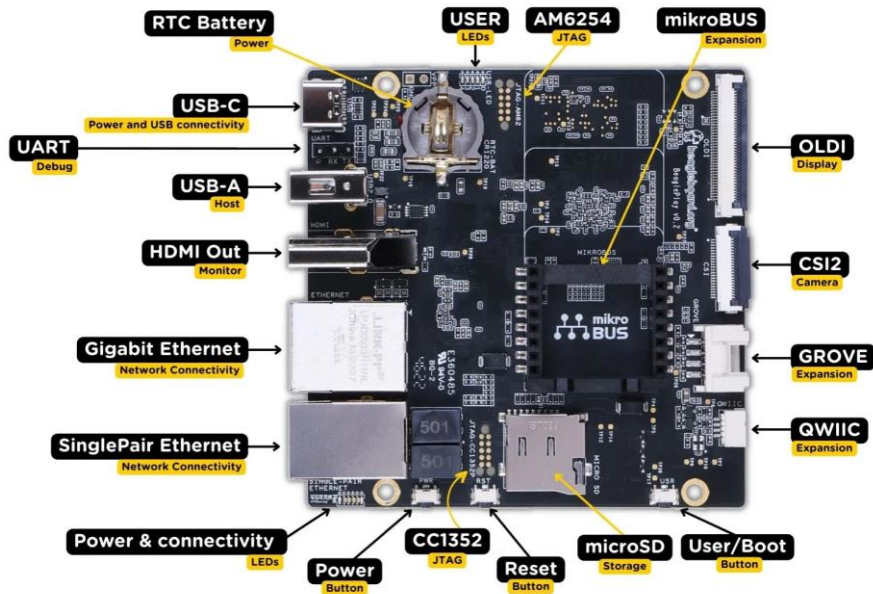
Features

- *Small form-factor*: **8 cm x 8 cm**
- *Memory*: 2GB DDR4, 16GB eMMC flash / microSD socket
- *Display*: HDMI (1080P, 24-bit), LVDS FFC connector for touchscreen displays
- *Wireless Networking*: 2.4/5GHz MIMO Wi-Fi, 2.4GHz BLE, Sub-1GHz
    - Zigbee, Wi-SUN, Amazon Sidewalk protocols
- *Wired Networking*: Gb Ethernet (RJ45), single-pair Ethernet with 5V PoDL (RJ11)
- *Expansion*: mikroBUS, Seeed Grove, Sparkfun QWIIC
- *Other*: Camera FFC connector, RTC with battery back-up, JTAG debug connection

Featured TI Components: AM625, TPS65219, DP83TD510E, WL1807MOD, CC1352P7

Applications: Home automation, building automation, factory automation, smart grid

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BeaglePlay **board tour**

BeaglePlay **software features**

Features

- Customized Beagle Debian image
- Zero install boot to desktop
- Remote development via web browser
- USB cable connection to PC/laptop
- WiFi access point with captive portal
- BeagleConnect gateway function
- Drivers for 100s of mikroBUS add-ons
- Configuration tool: bb-config
- PRU tool: simpPRU
- Learn more at docs.beagleboard.org

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What is BeagleConnect Freedom?

BeagleConnect Freedom® from BeagleBoard.org foundation based on CC1352P7 SimpleLink Sub-1G and 2.4GHz wireless transceiver with integrated M4F MCU
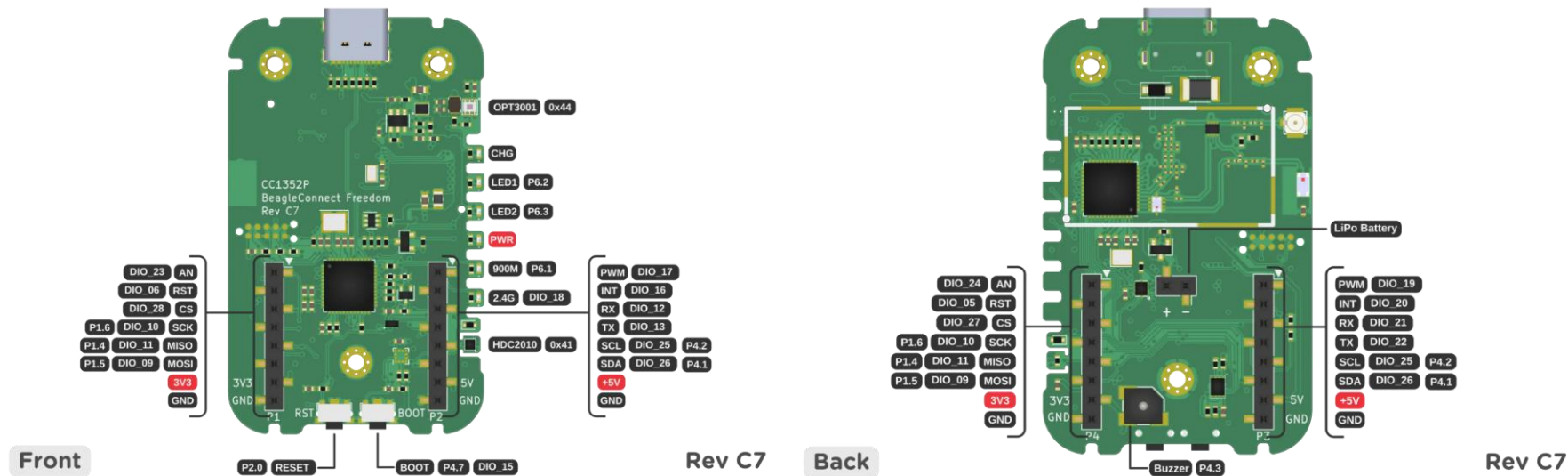
Features

- BeaglePlay + BeagleConnect Freedom + mikroBUS = tightly integrated HW/SW ecosystem
- Network access via BeaglePlay (Linux gateway)
- Long-range, low-power wireless communication
- Thousands of sensor and actuator options via mikroBUS
- No software development required to grab sensor data
- High-level and low-level software support with long-range networking

Featured TI Components: CC1352P7, HDC2010, OPT3001, BQ2104, MSP430F5503

Applications: IoT sensors/actuators for home automation, building automation, factory automation

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BeagleConnect Freedom **board tour**

Front

CC1352P
BeagleConnect Freedom
Rev C7

OPT3001 0x44
CHG
LED1 P6.2
LED2 P6.3
PWR
900M P6.1
2.4G DIO_18
HDC2010 0x41

DIO_23 AN
DIO_06 RST
DIO_28 CS
P1.6 DIO_10 SCK
P1.4 DIO_11 MISO
P1.5 DIO_09 MOSI
3V3
GND

3V3
GND
RST
BOOT
P1
P2
5V

PWM DIO_17
INT DIO_16
RX DIO_12
TX DIO_13
SCL DIO_25 P4.2
SDA DIO_26 P4.1
+5V
GND

P2.0 RESET
BOOT P4.7 DIO_15

Rev C7

Back

LiPo Battery

DIO_24 AN
DIO_05 RST
DIO_27 CS
P1.6 DIO_10 SCK
P1.4 DIO_11 MISO
P1.5 DIO_09 MOSI
3V3
GND

3V3
GND
P4
P3
5V
GND

PWM DIO_19
INT DIO_20
RX DIO_21
TX DIO_22
SCL DIO_25 P4.2
SDA DIO_26 P4.1
+5V
GND

Buzzer P4.3

Rev C7

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Preview PocketBeagle 2

PocketBeagle 2® from BeagleBoard.org foundation based on AM6232

Features

64-bit PocketBeagle form factor with USB Type-C

Expansion

- Pre-populated 2x 36-pin headers
- MSPM0-based 8-channel 3.3V ADC
- uSD card cage

Memory

- 512MB DDR
- 4GB eMMC

Other

- JTAG
- Battery charger (1-cell LiPo)
- Power via USB, header ("AC"), or battery via header

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Getting Started

Content Type	Content Title	Link
Company Profile	*BeagleBoard.org* partner page on ti.com	https://www.ti.com/partner/BEAGLE
Tool Folder	*BeaglePlay* product page on ti.com	https://www.ti.com/tool/BEAGL-PLAY-SBC
User Guide	*BeaglePlay* system reference manual	https://docs.beagleboard.org/latest/boards/beagleplay/index.html
Design Files	*BeaglePlay* design files	https://git.beagleboard.org/beagleplay/beagleplay
Product Page	BeagleConnect Freedom product page	https://beagleconnect.org/
All BeagleBoard.org product documentation		https://docs.beagleboard.org
BeagleBoard.org community forum		https://forum.beagleboard.org

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Visit www.ti.com/npu

For more information on the New Product Update series, calendar and archived recordings

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