Farnell
AN AVNET COMPANY

# Accelerate Your Innovation

## From Prototype to Production

# Your Application Begins with Farnell

Farnell stocks and sells a wide assortment of single board computers (SBCs) and development boards, as well as HATs, shields, capes and accessories to extend their functionality.

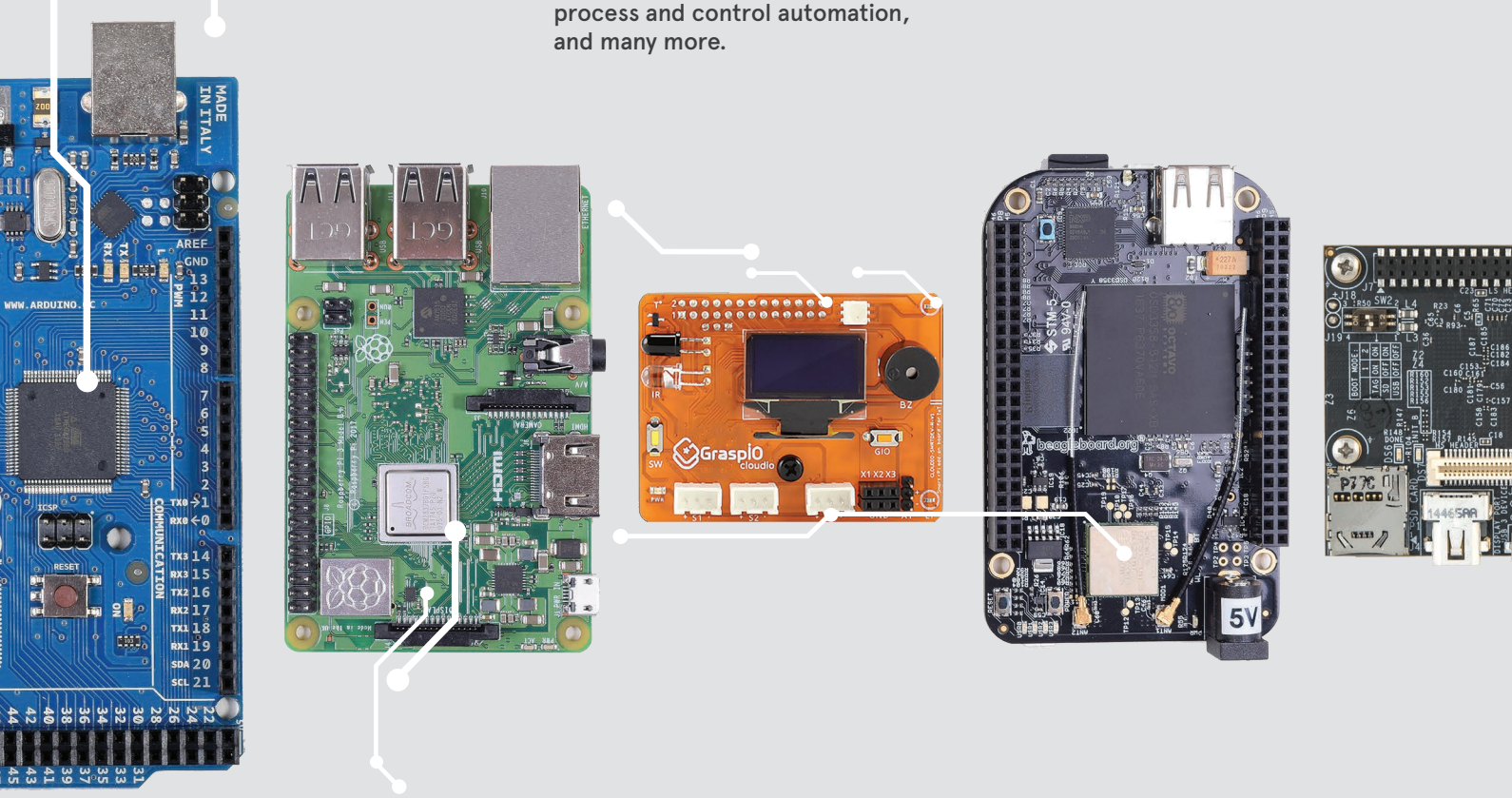
## Single Board Computers

An SBC is defined as a "complete computer on a board." It features an operating system, inputs and outputs, a microprocessor, and memory. More often than not, the board has no moving parts, such as a fan, making it very reliable. An SBC is a great solution where a project requires the capability of a full computer, but with a smaller footprint.

Industrial applications vary, but examples include IoT applications, kiosk and training displays, process and control automation, and many more.

The need for these boards continues to grow, as more and more projects revolve around SBCs and dev boards.

Following this need, the selection in the market is also rapidly expanding. Navigating the world of these boards can be intimidating. Use this guide to help identify the best solution on which to base your industrial project.



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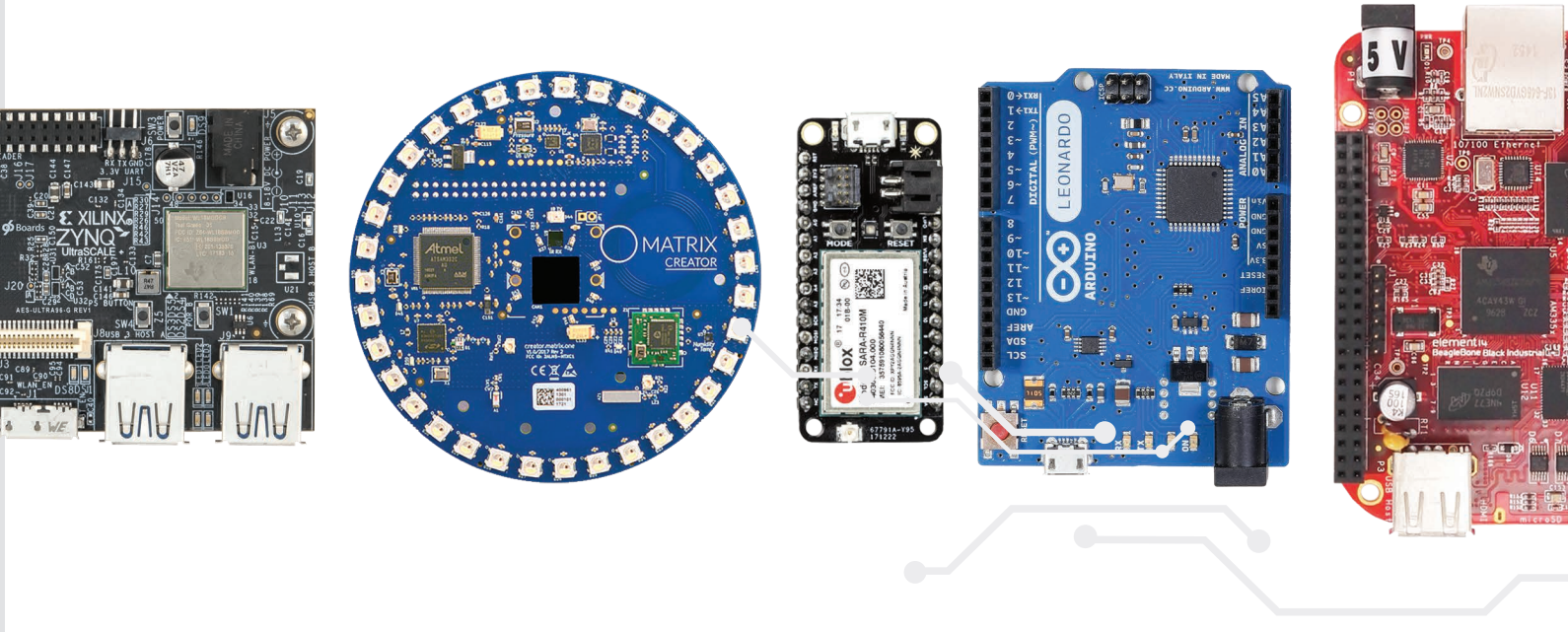
BRAINIUM



# Customisation Services

Element14's Product Customisation service is ideal for taking your SBC based designs or prototypes to market.

As manufacturers of the Raspberry Pi and BeagleBone® Black, you can leverage our design know-how and existing manufacturing volumes to produce cost optimised products, getting your designs to market faster.

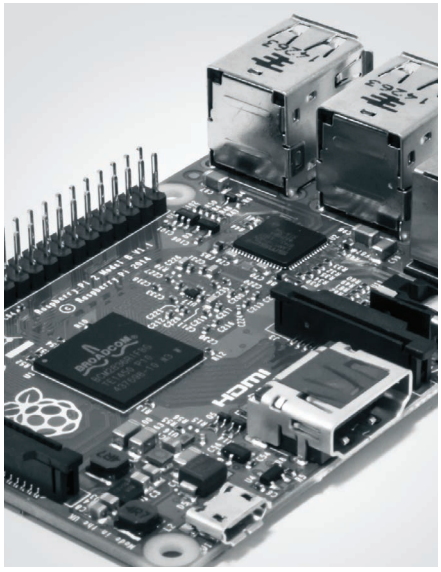
### Design platforms include:

- Raspberry Pi*
- BeagleBone® Black
- Warp7
- Any other ARM or x86 based designs

*element14 is the Exclusive provider of Raspberry Pi Customisation Services

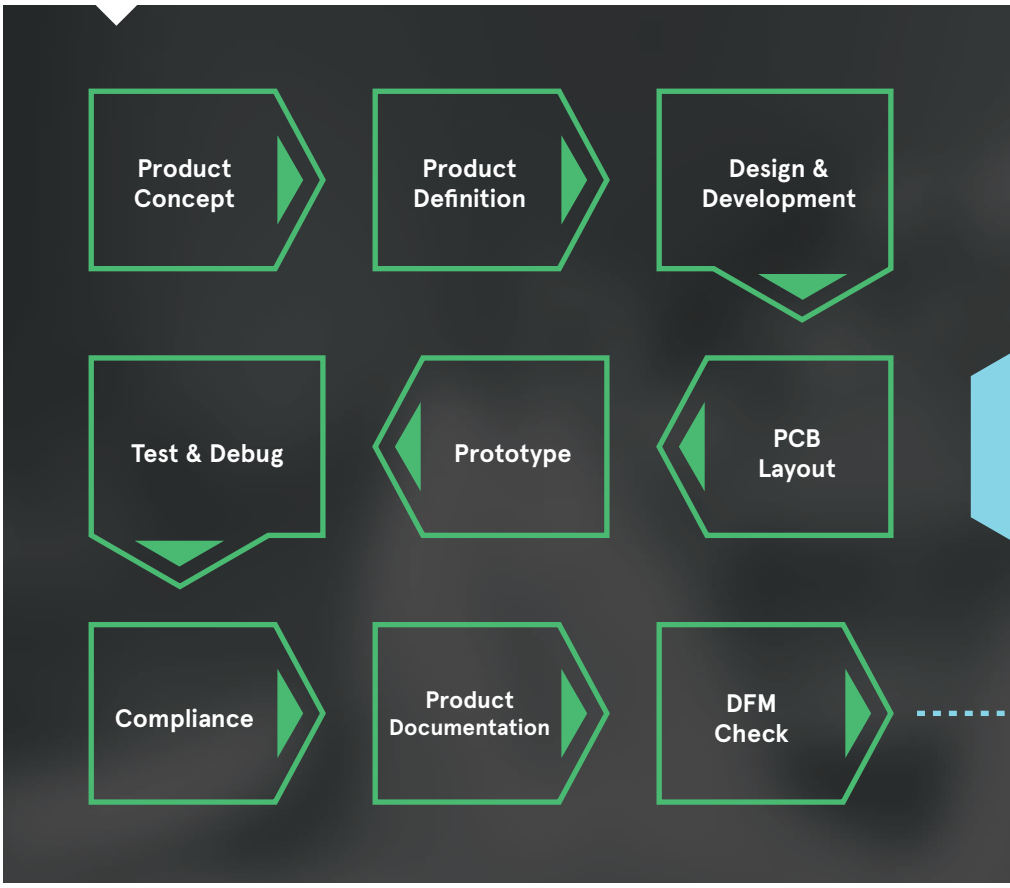
### Common customisation requests include:

- Memory upgrades/ embedded flash
- Wireless connectivity addition/ upgrade –Zigbee, WiFi, Z-Wave, Sub-GHz ISM
- User interface/ HMI Design
- PCB layout, header & interface modification
- GSM, LTE modem Inclusion
- Emerging IoT protocols - (LoRaWAN, etc)
- And many more, including complete design modifications



# Design Services

As specialists in the design and development of electronic systems, our expertise in hardware design and embedded software development has helped element14 become a trusted design partner to many of the world's leading semiconductor, medical, aerospace, military, automotive, industrial and consumer markets.




### Hardware Design

- Embedded design
- MCU/MPU based SBCs and modules
- Wireless (BT, WiFi, 802.15.4, ISM), RFID)
- Analogue, sensing, motor control
- HMI interface
- Wireless power
- Power conversion
- Battery operation and charging
- Harsh environment
- Hazardous location
- Wireless HART
- FPGA design and implementation
- ASIC conversion

### Software Development

- Embedded firmware development and integration
- Control, I/O processing, communication and GUI
- Application and driver development for OS such as Windows and Linux

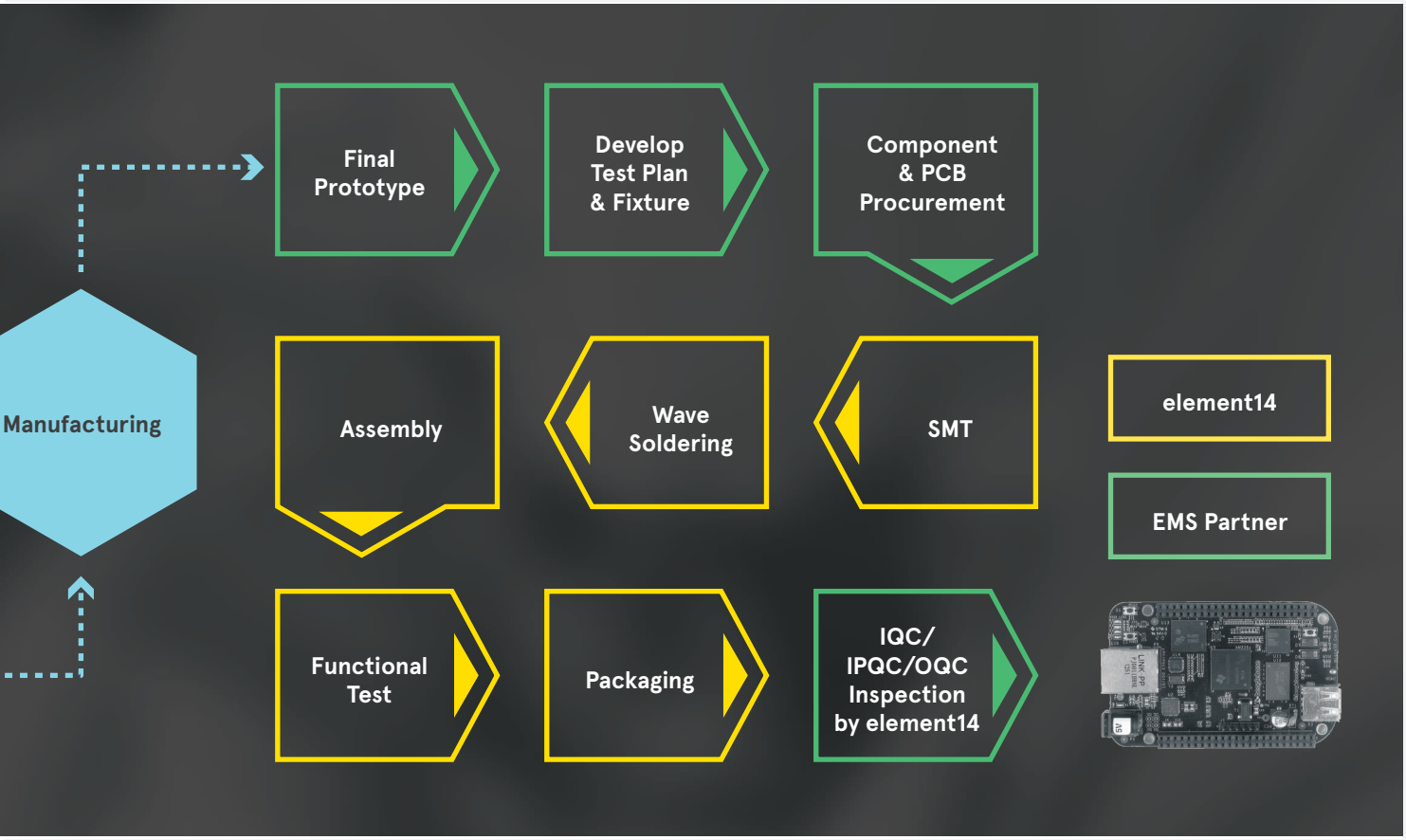
### PCB Design

- High–speed digital, analogue, RF, power, mixed signal and other advanced technologies
- Rigid-Flex, HDI, low loss materials, SI planning, pre/post design & fab simulations
- Schematic & database translations, data migrations, library & general CAD support

### Simulation & Verification Services

- CAM verification/Gerber edits and checks
- Digital simulation for signal integrity
- Thermal simulations

| | |
|---|---|
| SMT Lines | 25 |
| High Speed Lines | 13 |
| Labourers | 2,420 |
| Quality Control Staff | 197 |
| CEM Partners | 4 |
| Total Space | 28,300 |
| Compliance | ISO9001, TS16949, ISO13845, ISO14001 EHS system |




# Electronic Manufacturing Services

We provide medium/high-volume manufacturing services to the world's leading semiconductor manufacturers and consumer, medical, aerospace, military, automotive, industrial and consumer customers.

## Certifications & Standards

We'll help you design, test and obtain certification for a broad array of standards & regulations, including:

- CE, FCC, R&TTE, UL, FM, shock, vibration
- MIL, ITAR
- Automotive
- FM, CSA, ATEX, and IEC for Haz-Loc, explosion proof
- FCC Part 68 (modems), USB, PCIe, VISA, HART
- RoHS & REACH

## Superior Quality

Quality manufacturing is ensured through rigorous and standardised processes and proven EMS partners.

- World-class manufacturing capabilities – ISO9001 certified
- Industrial & Automotive qualified EMS
- On-site production engineers
- Rigorous NPI management & introduction process
- SIPOC quality control process

## Value Added Customer Service

Our dedicated staff in the US, EU and APAC will assist your teams wherever they reside.

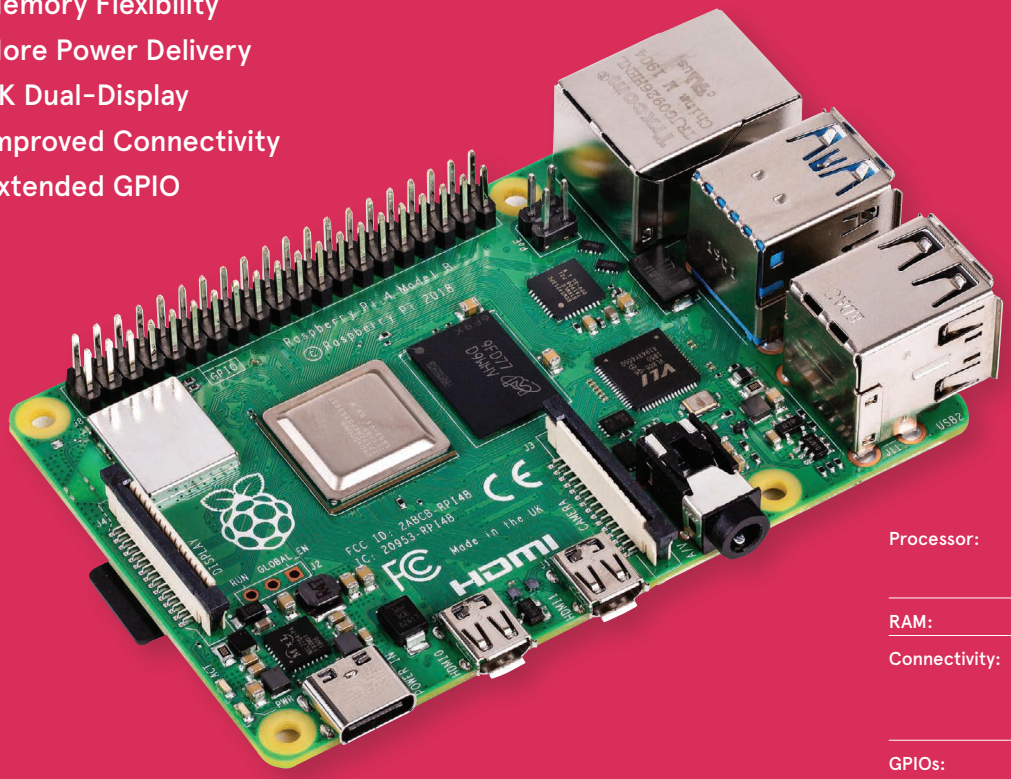
- Dedicated program management team
- Comprehensive global supply chain
- Inventory management
- Custom enclosures
- Packaging solutions including manuals & user guides

# Raspberry Pi 4 Computer

## The most powerful Raspberry Pi. Ever.

The Raspberry Pi 4 Model B boasting a 64-Bit quad-core processor running at 1.5GHz, dual-display support at resolutions up to 4K at 60fps, up to 4GB of RAM, dual-band 2.4/5.0 GHz wireless LAN, Bluetooth 5.0/BLE, True Gigabit Ethernet, USB 3.0, and PoE capability (via a separate PoE HAT add-on).

- Faster Processor
- Memory Flexibility
- More Power Delivery
- 4K Dual-Display
- Improved Connectivity
- Extended GPIO



| | |
|---|---|
| Processor: | Broadcom BCM2711, quad-core Cortex-A72 (ARM v8) 64-bit SoC @ 1.5GHz |
| RAM: | 1 GB, 2GB or 4GB LPDDR4 SDRAM |
| Connectivity: | 2.4GHz and 5.0GHz dual-band wireless LAN, Bluetooth 5.0, BLE, True Gigabit Ethernet, 2x USB 3.0 ports, 2x USB 2.0 Ports |
| GPIOs: | Fully backwards compatible 40-pin GPIO header |
| Video & Sound: | Dual micro HDMI with 4K support, MIPI DSI Display port, MIPI CSI camera port, 4-pole stereo audio and composite video port. |
| Multimedia: | H.265 decode (4Kp60), H.264 decode (1080p60), OpenGL ES 1.1, 2.0, 3.0 graphics |

**element14.com/raspberrypi**

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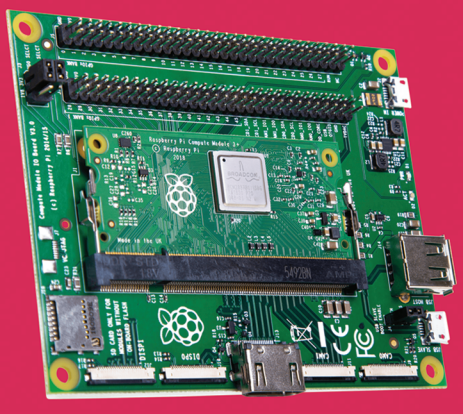
# Raspberry Pi Compute Module 3+ Development Kit



**Harness the power of the Raspberry Pi within embedded applications.**

**Designed for developing embedded applications, the Raspberry Pi Compute Module 3+ Development Kit simplifies the design process, saving time by providing you with everything you need to start your designs. The kit is a complete, time-saving solution for starting your design.**

**Features: BCM2837B0 quad-core processor @ 1.2GHz, 1 GB RAM options, 8/16/32 GB eMMC Flash, 120 GPIO pins, an HDMI port, a USB port, two camera ports, and two display ports.**

# Raspberry Pi

Raspberry Pi is the most popular SBC, and has seen many model revisions since inception. Its most redeeming feature is sure to be the low cost, but it packs a punch, making it a great value in today's SBC market.

Recent models run on a quad core ARM Cortex processor at higher clock speeds than much of the competition. An official selection of Foundation supported accessories is available, while a large following ensures support for nearly any type of project.

| | Raspberry Pi Model A+ | Raspberry Pi 3 Model A+ | Raspberry Pi Model B+ | Raspberry Pi 2 Model B | Raspberry Pi 3 Model B | Raspberry Pi 3 Model B+ | Raspberry Pi 4 Model B | Raspberry Pi Compute Module | Raspberry Pi Compute Module 3 | Raspberry Pi Compute Module 3+ |
|---|---|---|---|---|---|---|---|---|---|---|
| Dimensions | 65x56mm | 85x56mm | 85x56mm | 85x56mm | 85x56mm | 85x56mm | 88x58x19.5mm | 67.6x30mm | 67.6x31mm | 67.6x31mm |
| Software | Linux | Linux | Linux | Linux | Linux | Linux | Linux | Linux | Linux | Linux |
| SoC | BCM2835 | BCM2837B0 | BCM2835 | BCM2836 | BCM2837 | BCM2837B0 | BCM2711 | BCM2835 | BCM2837 | BCM2837B0 |
| Core Arch. | ARMv6 | ARMv8 | ARMv6 | ARMv7 | ARM Cortex-A53 | ARM Cortex-A53 | ARM Cortex-A72 | ARMv6 | ARMv8 | ARMv8 |
| CPU Speed | 700MHz | 1.4GHz | 700MHz | 900MHz | 1.2GHz | 1.4GHz | 1.5GHz | 700MHz | 1.2GHz | 1.2GHz |
| Cores | Single | Quad | Single | Quad | Quad | Quad | Quad | Single | Quad | Quad |
| RAM | 256MB | 512MB | 512MB | 1 GB | 1 GB | 1 GB | 1, 2 & 4 GB | 512MB | 1 GB | 1 GB |
| Storage | Micro SD | SD Card | Micro SD | Micro SD | Micro SD | Micro SD | Micro SD | 4GB eMMC | 4GB eMMC | 4, 8 & 16 GB eMMC |
| LAN | - | - | 10/100mb Ethernet | 10/100mb Ethernet | 10/100mb Ethernet | 10/100/ 1000mb Ethernet | 10/100/ 1000mb Ethernet | - | - | - |
| Wireless | - | - | - | - | 802.11 b/g/n | 2.4GHz/ 5GHz | 2.4GHz/ 5GHz | - | - | - |
| Bluetooth | - | - | - | - | 4.1/BLE | 4.2/BLE | 5.0/BLE | - | - | - |
| GPIO Pins | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 46 | 46 | 46 |
| Video Out | HDMI/ | HDMI/ | HDMI/ | HDMI/ | HDMI/ | HDMI/ | Dual micro-HDMI | HDMI/ | HDMI/ | HDMI/ |
| | 3.5mm/DSI | 3.5mm/DSI | 3.5mm/DSI | 3.5mm/DSI | 3.5mm/DSI | 3.5mm/DSI | 3.5mm/DSI | DSI | DSI | DSI |
| Audio Out | HDMI/ 3.5mm | HDMI/ 3.5mm | HDMI/ 3.5mm | HDMI/ 3.5mm | HDMI/ 3.5mm | HDMI/ 3.5mm | micro-HDMI/DSI | HDMI/ 3.5mm Analogue | HDMI/ Composite/ Analogue | HDMI/ Composite/ Analogue |
| USB Ports | 1 | 1 | 4 | 4 | 4 | 4 | 2x USB 3.0/2x USB 2.0 | 1 | 1 | 1 |
| Input Voltage | 5V | 5V | 5V | 5V | 5V | 5V | 5.1V | 5V | 5V | 5V |
| Order Code | 2536236 | 2946269 | 2456986 | 2612474 | 2525226 | 2842228 | 3051885<br>3051886<br>3051887 | 2427122 | 2675716 | 2989464 |

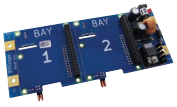
element14.com/raspberrypi

# Raspberry Pi Add-on Listing

An SBC or dev board is a great start to your next project, but it won't always have all the functionality needed. Explore the latest range of HATs and accessories to extend the capabilities of the Raspberry Pi.

### 4D Systems 2.4" Display
Application: Display
Interface: HAT
Order Code: 2456984

### AmberPi - sub-1-GHz RF interface
Application: Atmospheric Sensing
Interface: HAT
Order Code: 2889298



### Bitscope Duo
Application: Test and Measurement
Interface: Module
Order Code: 2546577

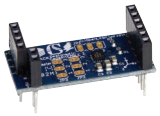
### Bitscope Uno
Application: Test and Measurement
Interface: Module
Order Code: 2546576

### Bitscope Quad
Application: Test and Measurement
Interface: Module
Order Code: 2546578

### GraspIO Cloud.IO
Application: Atmospheric Sensing
Interface: HAT
Order Code: 2612584

### Matrix Labs Matrix Creator
Application: Sense and Control
Interface: HAT
Order Code: 2675819

### Matrix Labs Matrix Voice
Application: Voice
Interface: HAT
Order Code: 2846912



### Microstack Accelerometer
Application: Accelerometer
Interface: Module
Order Code: 2434229

### Microstack GPS Module
Application: GPS
Interface: Module
Order Code: 2434228

### PiFace Real Time Clock
Application: Real Time Clock
Interface: Shim
Order Code: 2434226

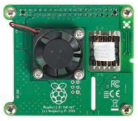
### PiFace Digital 2
Application: Sense and Control
Interface: HAT
Order Code: 2434230

### PiJuice
Application: Power
Interface: HAT
Order Code: 2671595

### Pi Supply Flick HAT
Application: Touch/Gesture
Interface: HAT
Order Code: 2687144

### Pi Supply Flick Large HAT
Application: Touch/Gesture
Interface: HAT
Order Code: 2687143

### Pi Supply Flick Zero HAT
Application: Touch/Gesture
Interface: HAT
Order Code: 2687145



### PoE HAT
Application:
Interface: Power Over Ethernet
Order Code: 2945677

### Raspberry Pi Camera NoIR
Application: Photo/Video
Interface: DSI
Order Code: 2510729

### Raspberry Pi Camera
Application: Photo/Video
Interface: DSI
Order Code: 2510728

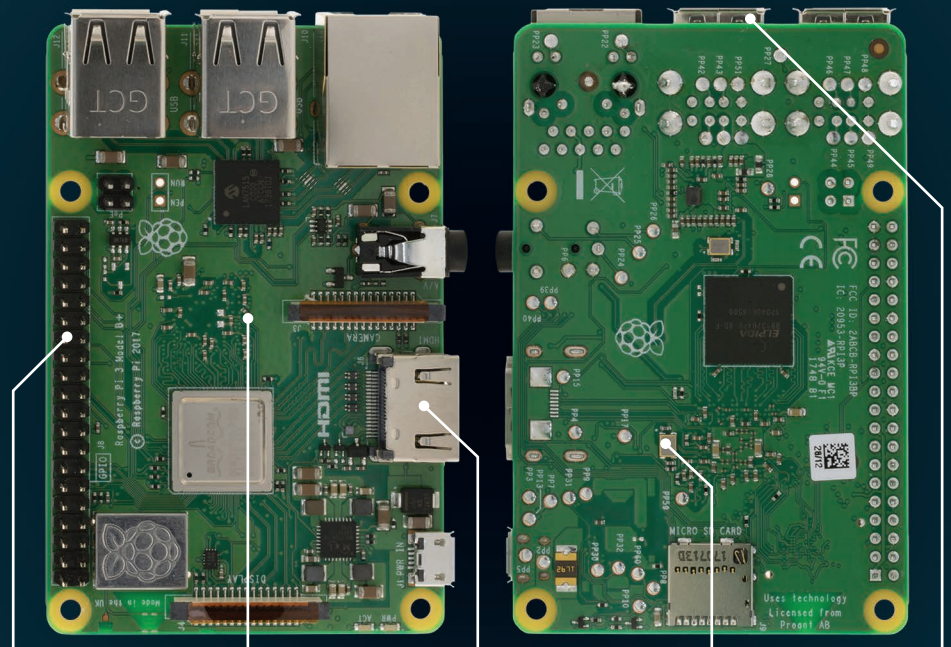
### Raspberry Pi Sense HAT
Application: Sense and Control
Interface: HAT
Order Code: 2483095

### Raspberry Pi Touchscreen Display
Application: Display
Interface: DSI
Order Code: 2473872

### TE RPi Weather Shield
Application: Atmospheric Sensing
Interface: HAT
Order Code: 2780397

### Zymbit Zymkey
Application: Security
Interface: Module
Order Code: 2947716

# Raspberry Pi Customisation Service



**Re-configure** the board layout

Incorporate **additional functionality** onto the PCB

**Add / remove** headers and connectors

**Change** configuration

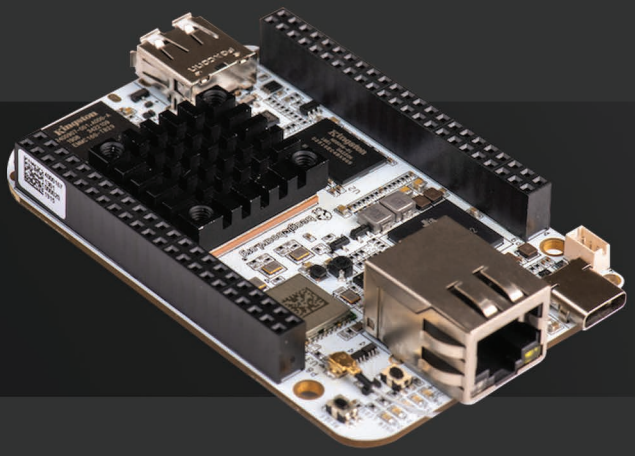
**Add / remove** interfaces

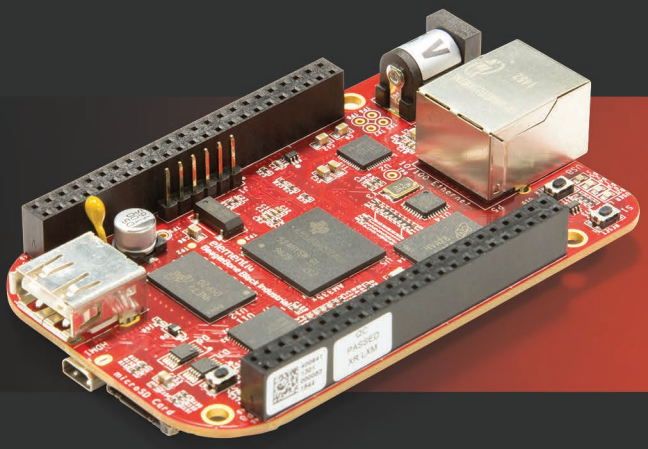
**Find out more:**

**element14.com/custompi**

# Meet the Beagles:

## Open Source Computing





### BeagleBoard.org® BeagleBone AI

BeagleBone® AI is a high-end Single Board Computer aimed at developers interested in implementing machine-learning and computer vision with simplicity.

### element14 BeagleBone® Black INDUSTRIAL

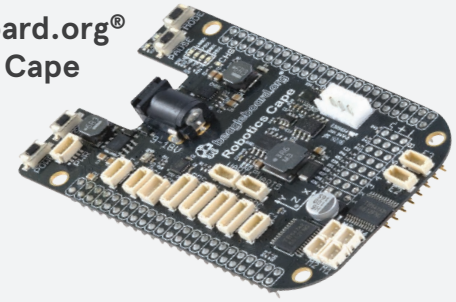
element14 BeagleBone® Black Industrial answers the need for an industrial rated SBC with extended temperature range. The element14 BeagleBone® Black Industrial is also software and cape compatible with the original BeagleBoard.org® BeagleBone® Black.

| | Pocket Beagle | BeagleBone® Blue | BeagleBone® Black Rev C | BeagleBone® Black Wireless | BeagleBone® Black Industrial | BeagleBone® AI |
|---|---|---|---|---|---|---|
| Dimensions | 56x35mm | 88.9x54.6mm | 86.40×53.3mm | 86.40×53.3mm | 86.40×53.3mm | 86.4x54.6mm |
| Software | Linux | Linux | Linux | Linux | Linux | Linux |
| Processor | AM3358 | AM3358 | AM3358 | AM3358 | AM3358 | AM5729 |
| | ARM Cortex-A8 | ARM Cortex-A8 | ARM Cortex-A8 | ARM Cortex-A8 | ARM Cortex-A8 | ARM Cortex-A15 |
| CPU Speed | 1 GHz | 1 GHz | 1 GHz | 1 GHz | 1 GHz | 1.5GHz |
| Cores | Single | Single | Single | Single | Single | Dual |
| RAM | 512MB | 512MB | 512MB | 512MB | 512MB | 1 GB |
| Storage | Micro SD | 4GB eMMC | 4GB eMMC/Micro SD | 4GB eMMC/Micro SD | 4GB eMMC/Micro SD | 16GB eMMC/Micro SD |
| LAN | - | - | 10/100mb | | 10/100mb | 10/100/1000mb |
| | - | | Ethernet | | Ethernet | Ethernet |
| Wireless | - | 802.11 b/g/n | - | 802.11 b/g/n | - | 2.4GHz/5GHz |
| Bluetooth | - | 4.1/BLE | - | 4.1/BLE | - | 4.2/BLE |
| GPIO Pins | 72 | 136 | 92 | 92 | 92 | 92 |
| Video Out | - | - | HDMI D Type | HDMI D Type | HDMI D Type | micro-HDMI |
| Audio Out | - | - | HDMI D Type | HDMI D Type | HDMI D Type | micro-HDMI |
| USB Ports | 1 Micro | 1 | 1 | 1 | 1 | 1 |
| Input Voltage | 500mA | 9-18V | 5V | 5V | 5V | 5V |
| Order Code | 2806159 | 2612583 | 2422228 | 2671597 | 2493088 | 3132825 |

# BeagleBoard.org® BeagleBone® Capes and Accessories

Capes are daughter-board add-on products for the BeagleBone®-family. Each extends the functionality of your BeagleBone® for new exciting capabilities.

## BeagleBoard.org® Robotics Cape

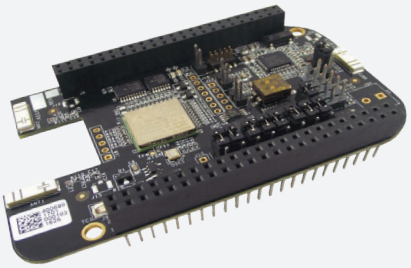


**Everything needed for mobile robotics.**

Loaded with innovative features and a comprehensive software library designed to effortlessly take your robotics concepts from design to reality. A huge array of on-board sensors and controllers and even more expansion options give you everything you need for your robotics project.

Order Code: **2612581**

## Wireless Connectivity Cape

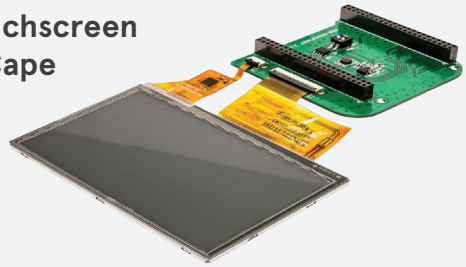


**Add wireless functionality to your existing BeagleBoard.org® BeagleBone® Black.**

This Cape is all about connectivity and supports WiFi (2.4GHz and 5GHz), Bluetooth (Classic and BLE), ZigBee, RF4CE, and NFC. Integrated antennas ensure constant connection and multiple headers are available for development and debugging.

Order Code: **2478611**

## 4.3" Touchscreen Display Cape



**4.3" Capacitive Touchscreen Display Cape for BeagleBoard.org® BeagleBone® family.**

Featuring a vivid 4.3" LED backlit 480 × 272 TFT LCD with capacitive overlay for smartphone-like input. Plug-and-play display solution, no drivers required. Perfect for interactive projects, embedded systems and standalone installations.

Order Code: **2526164**

## 5MP Digital USB Camera Module

**CAM8200-U is a 5-megapixel USB digital camera module designed by Embest Technology.**

Featured with automatic focus, white balance, exposure control and gain control.

Order Code: **2444567**

# Arduino

## Open Source Electronics Platform

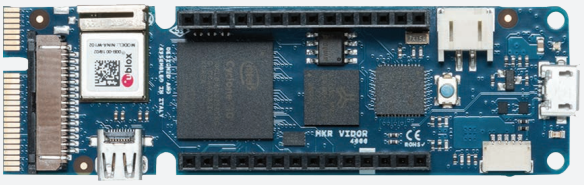
Arduino is an open-source electronics prototyping platform based on flexible, easy-to-use hardware and software.

## Arduino Maker Family

The Arduino MKR family has been specifically designed with a new standardised modular form factor that streamlines the journey from prototype to small-run production.

The Arduino MKR family currently supports most shortand long-range wireless protocols (e.g. Wi-Fi, Sigfox, LoRa, and 3G/2G); each board also offers ultra low power consumption, while most are equipped with an encryption accelerator for secure communication.

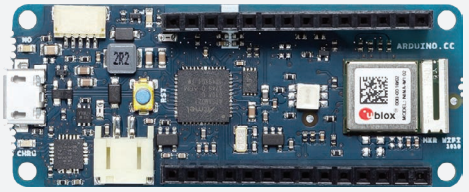
### MKR VIDOR 4000



**Arduino VIDOR 4000** is the first Arduino to feature an FPGA processor, all in the familiar MKR form factor.

Order Code: **2917571**

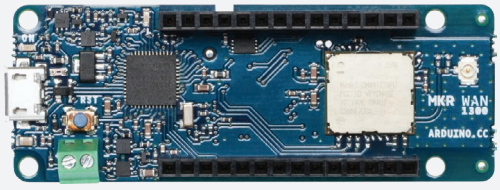
### MKR WIFI 1010



**Arduino MKR WIFI 1010** is the evolution of the Arduino MKR1000 and is equipped with an ESP32 module made by U-BLOX.

Order Code: **2917569**

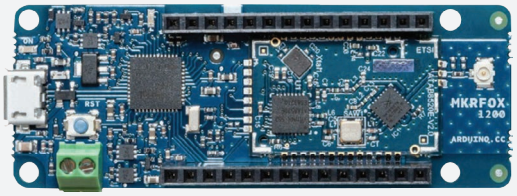
### MKR WAN 1300



**Arduino MKR WAN 1300** is a powerful board that combines the LoRa connectivity with the MKR form factor.

Order Code: **2851778**

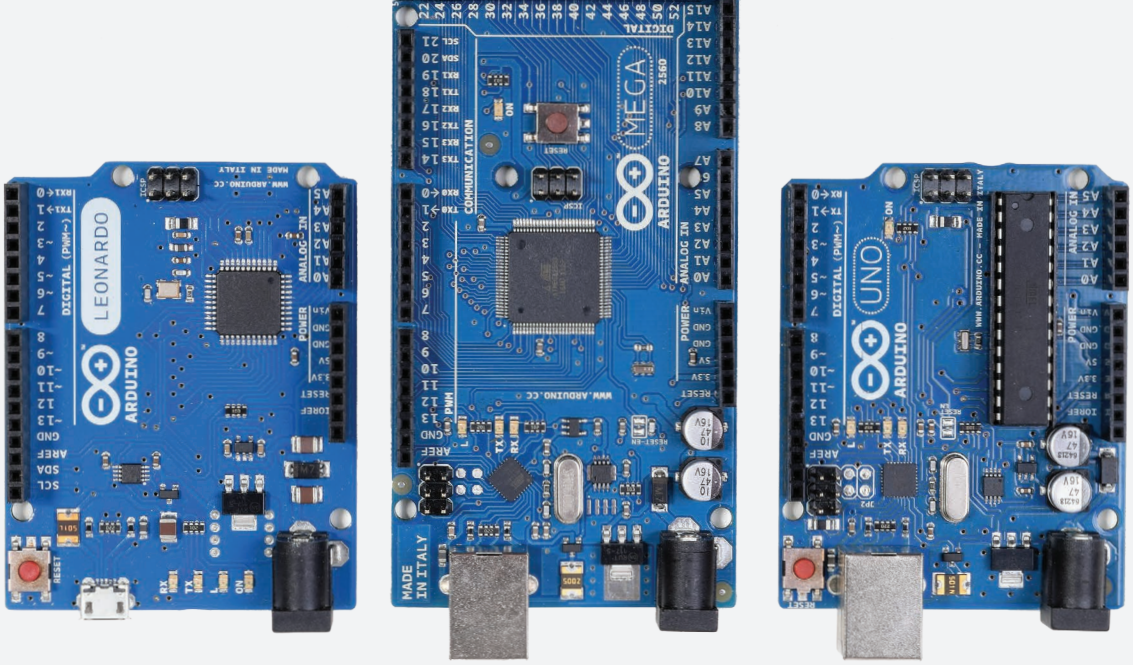
### MKR FOX 1200



**Arduino MKR FOX 1200** is a powerful board that combines the Sigfox connectivity with the MKR form factor.

Order Code: **2830994**

**element14.com/Arduino**



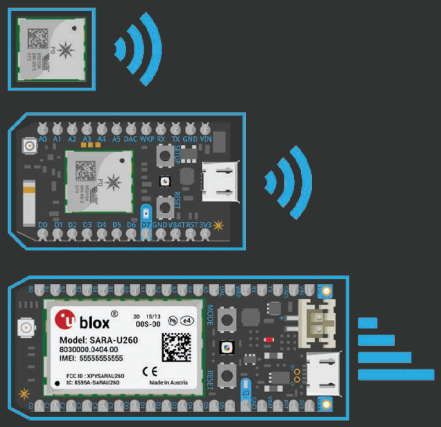

| | CPU Speed | Processor | Operating Voltage | Input Voltage | Ethernet | WiFi | Bluetooth | Data Network | GPIO Pins | Ideal Usage | Order Code |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Arduino Due** | 84 MHz | ATSAM3X8E | 3.3V | 7-12V | No | No | No | No | 54 | General | 2250861 |
| **Arduino Nano** | 16 MHz | ATmega328P | 5V | 7-9V | No | No | No | No | 30 | General | 1848691 |
| **Arduino Mega** | 16 MHz | ATmega2560 | 5V | 7-12V | No | No | No | No | 70 | General | 2212779 |
| **Arduino Leonardo** | 16 MHz | ATmega32U4 | 5V | 7-12V | No | No | No | No | 32 | General | 2133070 |
| **Arduino Yun Rev 2** | 16 MHz | ATmega32U4 | 5V | 5V | Yes | 802.11 b/g/n | No | No | 20 | IoT | 2888818 |
| **Arduino Leonardo ETH** | 16 MHz | ATmega32u4 | 5V | 7-12 V | Yes | No | No | No | 20 | IoT | 2780391 |
| **Arduino MKRZero** | 48 MHz | SAMD21 Cortex-M0+ | 3.3V | 5V | No | No | No | No | 22 | Audio | 2830993 |
| **Arduino MKR 1000 WiFi** | 48 MHz | SAMD21 | 3.3V | 5V | No | 802.11 b/g/n | No | No | 28 | IoT | 2830991 |
| **Arduino MKR 1010 WiFi** | 48 MHz | SAMD21 | 3.3V | 5V | No | 802.11 b/g/n | No | No | 28 | IoT | 2917569 |
| **Arduino MKR 1300 WAN** | 48 MHz | SAMD21 | 3.3V | 5V | No | No | No | LoRaWAN | 28 | IoT | 2851778 |
| **Arduino MKR 4000 VIDOR** | 200 MHz | Intel Cyclone 10CL016 | 3.3V | 5V | No | No | No | No | 22* | Digital Audio/ Video | 2917571 |
| **Arduino MKR 1500 NB** | - | SAMD21 Cortex-M0+ | 3.3V | 5V | No | No | No | Narrow Band | 22 | IoT | 2917565 |
| **Arduino MKR 1200 FOX** | 48 MHz | SAMD21 Cortex-M0+ | 3.3V | 5V | No | No | No | SigFOX | 8 | IoT | 2830994 |
| **Arduino MKR CAN Shield** | - | - | 3.3V | 5V | No | No | No | CAN Bus | No | Industrial | 2917572 |
| **Arduino MKR 1500 NB Shield** | - | - | 3.3V | 5V | No | No | No | Narrow Band | No | IoT | 2917565 |
| **Arduino MKR Ethernet Shield** | - | - | 3.3V | 5V | No | No | No | Ethernet | No | IoT | 2917570 |
| **Arduino MKR 485 Shield** | - | - | 3.3V | 5V | No | No | No | RS-485 Bus | No | Industrial | 2917566 |

* 25 Mini PCI Express

**element14.com/Arduino**

# Particle

## Everything You Need to Empower IoT



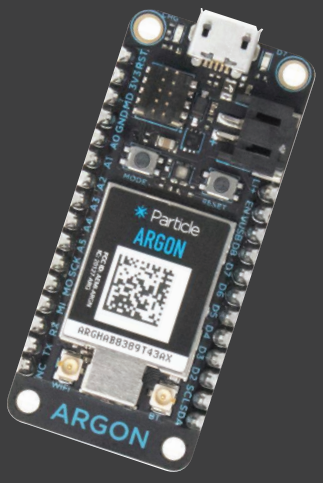
The new all-in-one IoT platform, from device to cloud.

Get started in minutes

Say "Hello, World" to Device OS

Built to scale

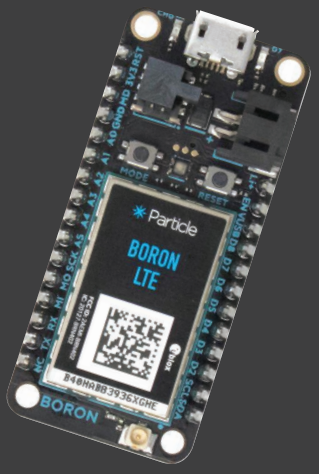
### Argon WiFi Mesh




A Wi-Fi enabled development board that can act as either a standalone Wi-Fi endpoint or Wi-Fi enabled gateway for Particle Mesh networks.

Order Code: 2965719

### Boron LTE/3G/2G Mesh




A powerful LTE CAT-M1/NB1 enabled development kit that can act as either a standalone cellular endpoint or LTE/3G/2G enabled gateway for Particle Mesh networks.

Order Code: 2965720

# The Things Network

## Build Your Own Fully Distributed Internet of Things LoRaWAN Data Infrastructure

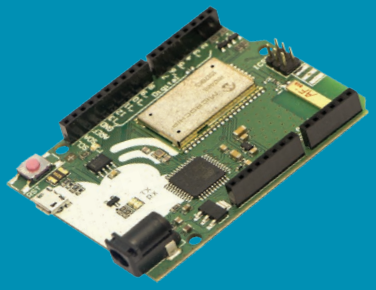
The Things Network is about enabling low power Devices to use long range Gateways to connect to an open-source, decentralised Network to exchange data with Applications.

### The Things Gateway

The main building block of the network. Compact in size and easy to install. With the three steps process you can get up and running with the network in less than 5 minutes.

Order Code: 2675813

### The Things Uno



The Things Uno is the perfect board to start prototyping your IoT ideas or make an existing project wireless with up to 10km range by simply swapping boards.

Order Code: 2675815

### The Things Node

The Things Node is the perfect LoRa node to start prototyping your ideas without having to deal with bread boards, wires and sensors.

Order Code: 2675817

# SmartEdge Industrial IoT Gateway Solution

## Raspberry Pi based Low-Cost Avnet SmartEdge IoT Gateway for Industrial Application

The new Avnet SmartEdge Industrial IoT Gateway has been designed specifically to aid those interested in developing industrial automation applications such as, remote monitoring, predictive maintenance, process control and automation and it will support Avnet's IoT Connect platform to enable cloud connectivity to Microsoft Azure

- Powered by Raspberry Pi
- Quad-Core ARM Based Platform
- Reliable Industrial Connectivity
- Comprehensive Data Security
- Free 30-Day IoT Connect Trial
- Easy Configuration
- Real-Time Data Visualisation
- Rugged Hardware Platform

POWERED BY Raspberry Pi

| Applications: | |
|---|---|
| SMART FACTORY | Predictive analysis to take production line monitoring beyond just automation. |
| SMART ASSET MONITORING | Track and monitor your assets used in your business remotely. |
| SMART BUILDING | Real-time and modern monitoring solution for your facilities. |
| SMART RETAIL | Enhance customers' shopping experience by merging the digital world with the real world. |

# Symbisa

## Mobile IoT Sensing Kit

The Symbisa sensing kit combines a variety of sensors and GSM modems coupled with a secure global communication network.

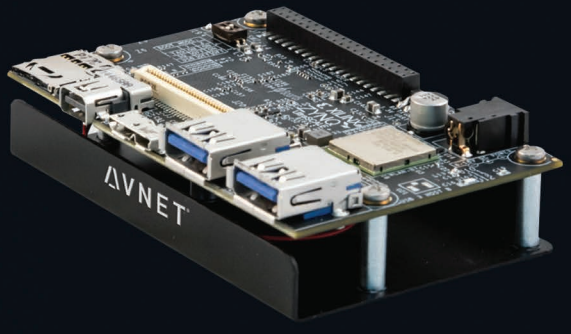
This allows development of an easy-to-implement, truly plug-and-play global mobile sensing solution that displays data directly into an Excel worksheet.

element14.com/Symbisa

AVNET
Reach Further™

# Ultra96 V2

## The Platform to Simplify Machine Learning




Ultra96™ is an Arm-based, Xilinx Zynq UltraScale+™ MPSoC development board based on the Linaro 96Boards specification.

Using programmable logic to accelerate the development of machine and deep learning solutions, Ultra96 enables breakthroughs in artificial intelligence technology.

element14.com/Ultra96

# Azure Sphere MT3620 Starter Kit

## An end-to-end solution for securing microcontroller based smart things.

The Avnet Azure Sphere MT3620 Starter Kit supports rapid prototyping of highly secure, end-to-end IoT implementations using Microsoft's Azure Sphere. The small form-factor carrier board includes a production-ready MT3620 Sphere module with Wi-Fi connectivity, along with multiple expansion interfaces for easy integration of sensors, displays, motors, relays, and more.

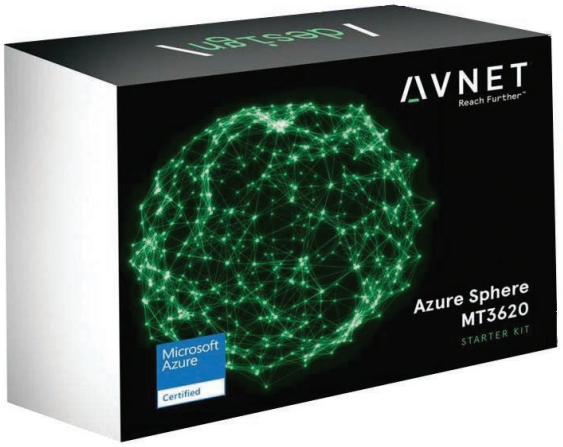
---

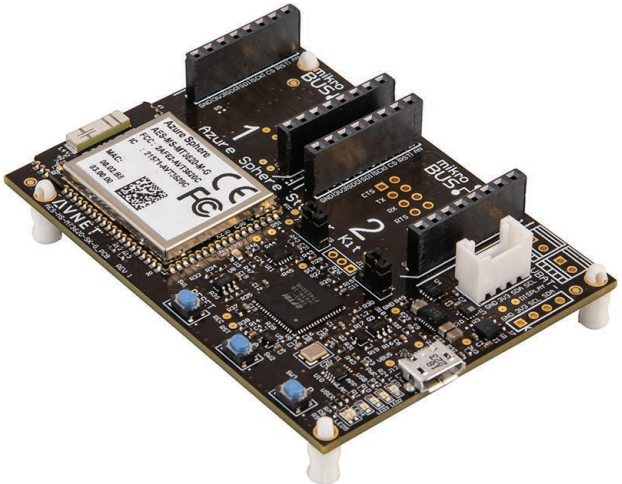
Features:

- Processor: Azure Sphere MediaTek MT3620AM tri-core SoC Module
- Connectivity: Dual-band 2.4/5GHz 802.11 a/b/g/n WiFi
- Security:  Microsoft security
- Interface: USB, GPIOs, UART, SPI, I2C, ADC, PWM, RTC, OLED 128x64 display
- Expansion: MikroE Click board & Grove expansion connectors
- On-Board Sensors: 3-Axis accelerometer with gyro and multiple environmental sensors
- Power: 5V DC

SKU: 3106884

**element14.com/AzureSphere**



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**Internet of Things (IoT)** – join the conversation on nodes, gateways and the cloud - from selecting the right hardware to designing for safety and security.

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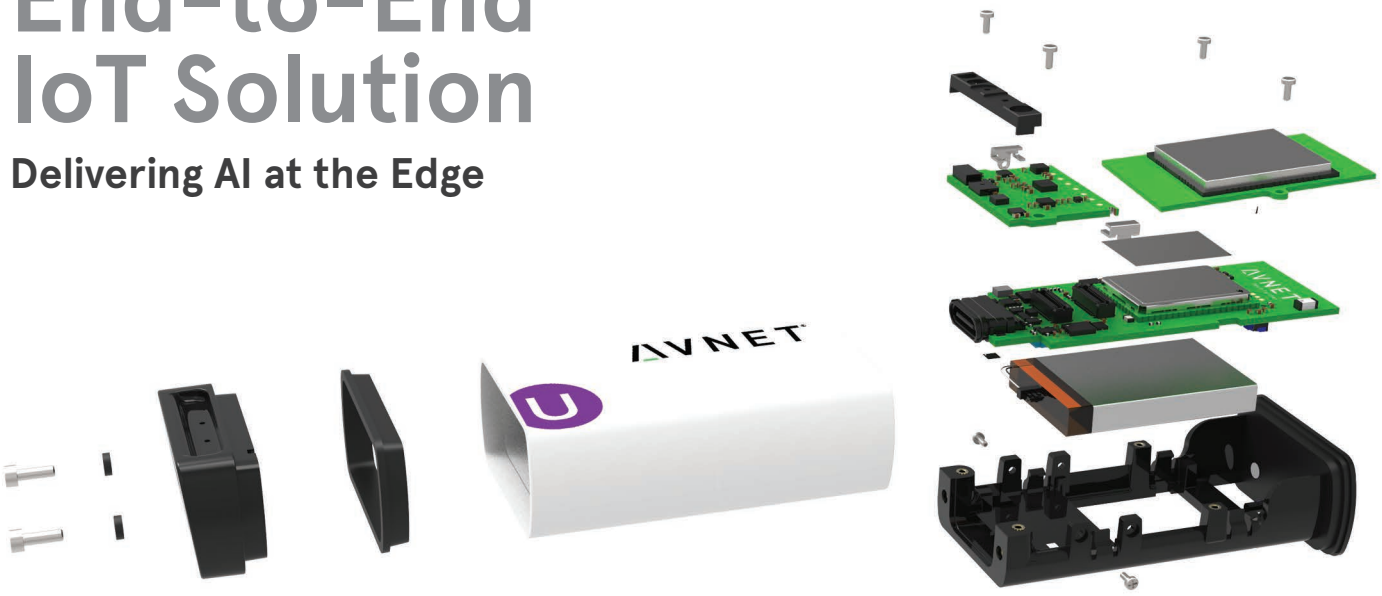
**Join the conversation**
*Follow element14 on*

# End-to-End IoT Solution

## Delivering AI at the Edge

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BRAINIUM

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**Industrial Grade**

**Certified and Ready to Use**

**Modular Hardware**

**Secure Edge-to-Cloud Integration**

## Applications

Predictive Maintenance

Smart Factory

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