# Digi ConnectCore Comparison Guide

Digi ConnectCore system-on-module (SOM) solutions and specifications comparison chart






| | Digi ConnectCore 91 | Digi ConnectCore 93 | Digi ConnectCore 95 | Digi ConnectCore 95 SMARC |
|---|---|---|---|---|
| **Form Factor L x W x H** | SMTplus<br>40 mm × 45 mm × 3.5 mm,<br>118-pad castellated vias, or LGA-474 | SMTplus<br>40 mm × 45 mm × 3.5 mm,<br>118-pad castellated vias, or LGA-474 | SMTplus<br>40 mm × 45 mm × 3.5 mm<br>118-pad castellated vias, or LGA-474 | SMARC®<br>82 mm × 50 mm<br>SMARC 2.2, 314 pins, Trusted Platform Module |
| **CPU** | NXP® i.MX 91<br>1× Cortex®-A55 at 1.4 GHz | NXP® i.MX 93<br>1-2× Cortex®-A55 at 1.7 GHz,<br>1× Cortex®-M33 core at 250 MHz | NXP® i.MX 95<br>Up to 6× Cortex®-A55 cores at 1.8 GHz, 1× Cortex®-M7 core at 800 MHz, 1× Cortex®-M33 core at 250 MHz | NXP® i.MX 95<br>Up to 6× Cortex®-A55 cores at 1.8 GHz, 1× Cortex®-M7 core at 800 MHz, 1× Cortex®-M33 core at 250 MHz |
| **Network Connectivity** | Wi-Fi 6 802.11 a/b/g/n/ac/ax (1×1),<br>Bluetooth® 5.4,<br>2× Gigabit Ethernet (1 × TSN) | Wi-Fi 6 802.11 a/b/g/n/ac/ax (1×1),<br>Bluetooth® 5.4,<br>2× Gigabit Ethernet (1 × TSN) | Wi-Fi 6E tri-band 802.11 a/b/g/n/ac/ax (1×1, 2x2 MIMO ready), Bluetooth® 5.4, 2× 1 GbE with TSN, AVB, IEEE 1588 PTP, Energy Efficient Ethernet (EEE) + 1× 10 Gigabit Ethernet | Wi-Fi 6E tri-band 802.11 a/b/g/n/ac/ax (1×1, 2x2 MIMO ready), Bluetooth® 5.4, 2× 1 GbE with TSN, AVB, IEEE 1588 PTP, Energy Efficient Ethernet (EEE) + 1× 10 Gigabit Ethernet |
| **Memory** | Up to 32 GB eMMC flash, up to 2 GB LPDDR4 | Up to 32 GB eMMC flash, up to 2 GB LPDDR4 | Up to 128 GB eMMC flash, up to 16 GB LPDDR5 | Up to 128 GB eMMC flash, up to 16 GB LPDDR5<br>EEPROM — population option |
| **Artificial Intelligence** | | Arm® Ethos U65 micro NPU at 1.0 GHz, 1.0 TOPS | AI/ML NXP eIQ® Neutron NPU N3-1024S, 2 TOPS (hard-ware), up to 8 TOPS sparse model performance | AI/ML NXP eIQ® Neutron NPU N3-1024S, 2 TOPS (hard-ware), up to 8 TOPS sparse model performance |
| **Graphics** | I2C/SPI only, audio, parallel YUV/RGB | LVDS, MIPI display port and parallel RGB,<br>MIPI camera port and parallel YUV/RGB,<br>2D Engine | Arm® Mali G310 GPU (OpenGL), 2D Blitter,<br>VPU 4K60P H.265/H.264 encode/decode,<br>up to three displays, MIPI-DSI, 4K30P or 3840x1440P60, up to 1080p60 LVDS Tx or 2x 1080P30,<br>MIPI-CSI with PHY, NXP® ISP | Arm® Mali G310 GPU (OpenGL), 2D Blitter,<br>VPU 4K60P H.265/H.264 encode/decode,<br>up to three displays, MIPI-DSI, 4K30P or 3840x1440P60, up to 1080p60 LVDS Tx or 2x 1080P30,<br>MIPI-CSI with PHY, NXP® ISP |
| **OS Support** | Digi Embedded Yocto Linux® | Digi Embedded Yocto Linux® | Digi Embedded Yocto Linux® | Digi Embedded Yocto Linux® |
| **Wireless Certifications** | US, Canada, EU, Japan, Australia,<br>New Zealand, Brazil, Mexico | US, Canada, EU, Japan, Australia,<br>New Zealand, Brazil, Mexico | US, Canada, EU, Japan, Australia,<br>New Zealand, Brazil, Mexico | US, Canada, EU, Japan, Australia,<br>New Zealand, Brazil, Mexico |
| **Environmental** | Temperature: IEC 60068-2-1,<br>IEC 60068-2-2, IEC 60068-2-78<br>Vibration/Shock: IEC 60068-2-6,<br>IEC 60068-2-64, IEC 60068-2-27, HALT | Temperature: IEC 60068-2-1,<br>IEC 60068-2-2, IEC 60068-2-78<br>Vibration/Shock: IEC 60068-2-6,<br>IEC 60068-2-64, IEC 60068-2-27, HALT | Temperature: IEC 60068-2-1,<br>IEC 60068-2-2, IEC 60068-2-78<br>Vibration/Shock: IEC 60068-2-6,<br>IEC 60068-2-64, IEC 60068-2-27, HALT | Temperature: IEC 60068-2-1,<br>IEC 60068-2-2, IEC 60068-2-78<br>Vibration/Shock: IEC 60068-2-6,<br>IEC 60068-2-64, IEC 60068-2-27, HALT |
| **Operating Temperature** | −40 °C to 85 °C<br>(−40 °F to 185 °F) | −40 °C to 85 °C<br>(−40 °F to 185 °F) | −40 °C to 85 °C (−40 °F to 185 °F) or<br>0 °C to 70 °C (32 °F to 158 °F) | −40 °C to 85 °C (−40 °F to 185 °F) or<br>0 °C to 70 °C (32 °F to 158 °F) |
| **Development Kits** | CC-WMX93-KIT<br>Optional LCD kit — CC-ACC-LCDH-10 | CC-WMX93-KIT<br>Optional LCD kit — CC-ACC-LCDH-10 | CC-WMX95-KIT<br>Optional LCD kit — CC-ACC-LCDH-10 | CC-WMX95-KIT<br>Optional LCD kit — CC-ACC-LCDH-10 |


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# Digi ConnectCore Comparison Guide

Digi ConnectCore system-on-module (SOM) solutions and specifications comparison chart







| | Digi ConnectCore MP133 | Digi ConnectCore MP157 | Digi ConnectCore MP255 |
|---|---|---|---|
| **Form Factor L x W x H** | SMTplus<br>29 mm × 29 mm × 3 mm,<br>76-pad castellated vias, or LGA-245 | SMTplus<br>29 mm × 29 mm × 3 mm,<br>76-pad castellated vias, or LGA-245 | SMTplus<br>30 mm × 30 mm × 3 mm,<br>LGA 333 pads |
| **CPU** | STMicroelectronics® STM32MP133C<br>1× Cortex®-A7 at 650 MHz | STMicroelectronics® STM32MP157C<br>2× Cortex®-A7 at 650 MHz,<br>Cortex® M4 at 209 MHz with FPU/MPU | STMicroelectronics® STM32MP255C<br>2× Cortex®-A35 at 1.2 GHz, Cortex® M33 at 400 MHz with FPU/MPU,<br>Cortex® M0+ at 200 MHz in SmartRun |
| **Network Connectivity** | Wi-Fi 5 802.11 a/b/g/n/ac (1×1),<br>Bluetooth® 5.2,<br>2× Gigabit Ethernet | Wi-Fi 5 802.11 a/b/g/n/ac (1×1),<br>Bluetooth® 5.2,<br>1× Gigabit Ethernet | Wi-Fi 6E tri-band 802.11 a/b/g/n/ac/ax (1x1),<br>Bluetooth® 5.4,<br>2× Gigabit Ethernet, optional 3× Gigabit Ethernet<br>with GMAC interfaces and 2+1 switch |
| **Memory** | Up to 1 GB SLC NAND flash,<br>up to 1 GB DDR3L | Up to 1 GB SLC NAND flash,<br>up to 1 GB DDR3L | Up to 128 GB flash (eMMC™),<br>up to 2 GB DDR4 |
| **Artificial Intelligence** | | | Neural Processing Unit (NPU)<br>VeriSilicon® at 800 MHz, 1.2 TOPS |
| **Graphics** | | 3D GPU at up to 533 MHz, parallel LCD-TFT controller,<br>24-bit digital RGB888, WXGA at 60 fps or HD at 30 fps,<br>MIPI DSI 2 data lanes up to 1 Gbps each,<br>8- to 14-bit camera | 3D GPU — VeriSilicon at 800 MHz; OpenGL® ES 3.2.8 — Vulkan 1.2; Open CL™ 3.0, OpenVX™ 1.3; up to 138 Mtriangle/s, 900 Mpixel/s; LCD-TFT controller, high-resolution MIPI, LVDS or parallel display interfaces, MIPI camera port with ISP |
| **OS Support** | Digi Embedded Yocto Linux® | Digi Embedded Yocto Linux® | Digi Embedded Yocto Linux® |
| **Wireless Certifications** | US, Canada, EU, Japan, Australia,<br>New Zealand, Brazil, Mexico | US, Canada, EU, Japan, Australia,<br>New Zealand, Brazil, Mexico | US, Canada, EU, Japan, Australia,<br>New Zealand, Brazil, Mexico |
| **Environmental** | Temperature: IEC 60068-2-1,<br>IEC 60068-2-2, IEC 60068-2-78;<br>Vibration/Shock: IEC 60068-2-6,<br>IEC 60068-2-64, IEC 60068-2-27, HALT | Temperature: IEC 60068-2-1,<br>IEC 60068-2-2, IEC 60068-2-78;<br>Vibration/Shock: IEC 60068-2-6,<br>IEC 60068-2-64, IEC 60068-2-27, HALT | Temperature: IEC 60068-2-1,<br>IEC 60068-2-2, IEC 60068-2-78;<br>Vibration/Shock: IEC 60068-2-6,<br>IEC 60068-2-64, IEC 60068-2-27, HALT |
| **Operating Temperature** | −40 °C to 85 °C<br>(−40 °F to 185 °F) | −40 °C to 85 °C<br>(−40 °F to 185 °F) | −40 °C to 85 °C<br>(−40 °F to 185 °F) |
| **Development Kits** | CC-WMP133-KIT | CC-WMP157-KIT<br>Optional LCD kit — CC-ACC-LCDH-10 | CC-WMP255-KIT<br>Optional LCD kit — CC-ACC-LCDH-10 |



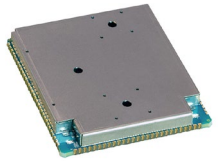
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# Digi ConnectCore Comparison Guide

Digi ConnectCore system-on-module (SOM) solutions and specifications comparison chart







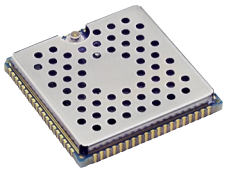
| | Digi ConnectCore 8M Nano | Digi ConnectCore 8M Mini | Digi ConnectCore 8X |
|---|---|---|---|
| **Form Factor L x W x H** | SMTplus<br>40 mm × 45 mm × 3.5 mm,<br>118-pad castellated vias, or LGA-474 | | SMTplus<br>40 mm × 45 mm × 3.5 mm,<br>118-pad castellated vias, or LGA-474 |
| **CPU** | NXP® i.MX 8M Nano<br>1-4× Cortex®-A53 cores at 1.4 GHz,<br>1× Cortex®-M7 core at 600 MHz | NXP® i.MX 8M Mini<br>4× Cortex®-A53 cores at 1.6 GHz,<br>1× Cortex®-M4 core at 400 MHz | NXP® i.MX 8X<br>2-4× Cortex®-A35 cores at 1.0 GHz,<br>1× Cortex®-M4F core at 264 MHz |
| **Network Connectivity** | Wi-Fi 5 802.11 a/b/g/n/ac (1x1),<br>Bluetooth® 5.0,<br>1× Gigabit Ethernet | | Wi-Fi 5 802.11 a/b/g/n/ac (2x2),<br>Bluetooth® 5.0,<br>2× Gigabit Ethernet |
| **Memory** | Up to 8 GB eMMC flash,<br>up to 2 GB LPDDR4 | | Up to 16 GB eMMC flash,<br>up to 2 GB LPDDR4 |
| **Graphics** | One display, LCDIF display controller,<br>1080p display through MIPI DSI,<br>GPU available — GC7000UL (2-shader),<br>OpenGL/CL, ext. LVDS ref, design | One display, LCDIF display controller,<br>1080p display through MIPI DSI,<br>GPU-GC NanoUltra 3D (1-shader) + GC320 2D,<br>VPU-1080p60 HEVC H.265 (decode),<br>VP9, H.264, VP8 (encode/decode) | Up to two displays, 1080p, MIPI-DSI/LVDS,<br>2D/3D acceleration,<br>GPU-GC7000Lite (2-/4-shader),<br>OpenGL/CL VPU available — encode/decode 1080p |
| **OS Support** | Digi Embedded Yocto Linux® | Digi Embedded Yocto Linux®<br>Digi Embedded Android™ | Digi Embedded Yocto Linux®<br>Digi Embedded Android™ |
| **Wireless Certifications** | US, Canada, EU, Japan,<br>Australia, New Zealand | | US, Canada, EU, Japan,<br>Australia, New Zealand |
| **Environmental** | Temperature: EC 60068-2-1,<br>IEC 60068-2-2, IEC 60068-2-78<br>Vibration/Shock: IEC 60068-2-6<br>IEC 60068-2-64, IEC 60068-2-27, HALT | | Temperature: IEC 60068-2-1,<br>IEC 60068-2-2, IEC 60068-2-78<br>Vibration/Shock: IEC 60068-2-6,<br>IEC 60068-2-64, IEC 60068-2-27, HALT |
| **Operating Temperature** | −40 °C to 85 °C<br>(−40 °F to 185 °F) | | −40 °C to 85 °C<br>(−40 °F to 185 °F) |
| **Development Kits** | CC-WMX8MN-KIT<br>Optional LCD kit — CC-ACC-LCDH-10 | CC-WMX8MM-KIT<br>Optional LCD kit — CC-ACC-LCDH-10 | CC-WMX8-KIT<br>Optional LCD kit — CC-ACC-LCDH-10 |

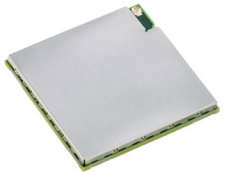


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# Digi ConnectCore Comparison Guide

Digi ConnectCore system-on-module (SOM) solutions and specifications comparison chart







| | Digi ConnectCore 6UL | Digi ConnectCore 6+ | Digi ConnectCore 6N |
|---|---|---|---|
| **Form Factor L x W x H** | SMTplus<br>29 mm × 29 mm × 3.5 mm,<br>76-pad castellated vias, or LGA-245 | SMTplus<br>40 mm × 45 mm × 3.5 mm,<br>LGA-400, 2 mm pitch, fully shielded (heat-spreading) | SMTplus<br>50 mm × 50 mm × 5 mm,<br>LGA-400, 2 mm pitch, fully shielded (heat-spreading) |
| **CPU** | NXP® i.MX6UL<br>1× Cortex®-A7 at 528 MHz | NXP® i.MX6Plus<br>1× Cortex®-A9 at 800 MHz | NXP® i.MX6Solo/DualLite/Dual/Quad<br>Up to 4× Cortex®-A9 at up to 1.2 GHz |
| **Network Connectivity** | Wi-Fi 5 802.11 a/b/g/n/ac (1x1),<br>Bluetooth® 5.0,<br>2× 10/100 Ethernet | Wi-Fi 5 802.11 a/b/g/n/ac (1x1),<br>Bluetooth® 5,<br>1× Gigabit Ethernet | Wi-Fi 5 802.11 a/b/g/n/ac (1x1),<br>Bluetooth® 5,<br>1× Gigabit Ethernet with IEEE 1588 |
| **Memory** | Up to 1 GB SLC NAND flash,<br>up to 1 GB DDR3 | Up to 8 GB eMMC flash,<br>up to 2 GB DDR3 | Up to 64 GB eMMC flash,<br>up to 2 GB DDR3 |
| **Graphics** | 2D Pixel Processing Pipeline (PXP),<br>8/10/16/24-bit parallel LCD display | LVDS, MIPI display port, MIPI camera port and HDMI v1.4 | Multi-stream-capable HD video, 1080p60 decode, 1080p30 encode,<br>3D graphics with up to 4 shaders at 200 Mt/s with OpenCL support;<br>separate 2D and/or Vertex acceleration engines for UI support;<br>stereoscopic image sensor support for 3D imaging |
| **OS Support** | Digi Embedded Yocto Linux® | Digi Embedded Yocto Linux® | Digi Embedded Yocto Linux® |
| **Wireless Certifications** | US, Canada, EU, Japan, Australia,<br>New Zealand, Brazil | US, Canada, EU, Australia, New Zealand | US, Canada, EU, Japan, Australia,<br>New Zealand, Brazil |
| **Environmental** | Temperature: IEC 60068-2-1,<br>IEC 60068-2-2, IEC 60068-2-78;<br>Vibration/Shock: IEC 60068-2-6,<br>IEC 60068-2-64, IEC 60068-2-27, HALT | Temperature: IEC 60068-2-1,<br>IEC 60068-2-2, IEC 60068-2-78;<br>Vibration/Shock: IEC 60068-2-6,<br>IEC 60068-2-64, IEC 60068-2-27, HALT | Temperature: IEC 60068-2-1,<br>IEC 60068-2-2, IEC 60068-2-78;<br>Vibration/Shock: IEC 60068-2-6,<br>IEC 60068-2-64, IEC 60068-2-27, HALT |
| **Operating Temperature** | –40 °C to 85 °C<br>(–40 °F to 185 °F) | –40 °C to 85 °C<br>(–40 °F to 185 °F) | Industrial: -40 °C to 85 °C (-40 °F to 185 °F)<br>Ext. Commercial: -20 °C to 70 °C (-4 °F to 158 °F)<br>Depending on use case and enclosure/system design |
| **Development Kits** | CC-WMX6UL-KIT<br>Optional LCD kit — CC-ACC-LCDH-10 | CC-WMP133-KIT | CC-WMP255-KIT<br>Optional LCD kit — CC-ACC-LCDH-10 |



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# Digi ConnectCore Value

Digi offers a selection of ultra-compact and highly integrated embedded **system-on-modules** (SOMs) and **single board computers** (SBCs) for building intelligent and secure connected devices that require long-term availability. Develop and deploy diagnostics, logging, monitoring and control applications within a variety of demanding industries, including medical device, transportation, industrial, energy and smart cities. **Digi TrustFence** is a complete device security framework that simplifies building secure connected products.

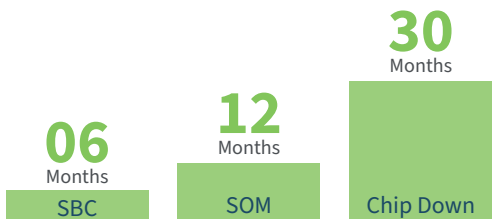
## HOW TO DECIDE WHEN TO BUY VS. BUILD

Using a system-on-module (SOM) or single board computer (SBC) is a common way to connect a product to the Internet of Things (IoT). Digi ConnectCore SOMs and SBCs, combined with the major benefit of Digi's extensive development and wireless connectivity expertise, reduce design complexity and accelerate time to market.

### Questions to consider:

- What are the development costs and risks?
- What certifications and approvals are required (testing and validation)?
- How much does is cost to maintain and stay current (Moore's Law)?
- What are the production and supply chain cost?
- What is the core competency of your organization?

### TIME TO MARKET




Using an SBC can reduce average deployment times by 80%

*Source: Digi International

### Embedded SOMs and SBCs enable original equipment manufacturers to achieve:

**Faster time-to-market** — Wireless connectivity and certification hurdles lengthen product-development cycles. Smart, connected device makers want proven components so they can bring products to market faster.

**Connected** — Smart devices need to be connected — in most cases wirelessly. Connectivity enables OEMs to access and manage devices remotely. Digi offers a wide array of short- and long-range wireless connectivity options that integrate with our SOMs and SBCs.

**Simplicity** — Sophisticated devices require simpler interfaces. Arcane codes and keypads are shifting to visual displays and touchscreens — requiring greater computing power.

**Reliability and longevity** — Embedded devices must withstand daily intensive use in critical situations over a period of years. Manufacturers need robust components and long-term availability of parts to ensure a lengthy product lifecycle.

Digi International has many ready to deploy embedded solutions, and **Digi Wireless Design Services** has years of experience and a library of proven IP to build exactly to your specifications.

DIGI TRUSTFENCE

### Digi TrustFence built-in security with a full range of production-ready features

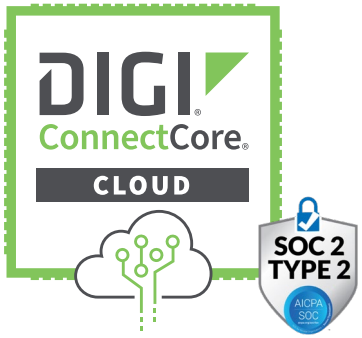
Designed for the long product life cycles of embedded devices, **Digi TrustFence** allows you to easily integrate device security, device identity and data privacy capabilities.

- ✓ Secure boot ensures only signed software images can run on a device
- ✓ Local file system encryption keeps internal device data safe
- ✓ Access-controlled internal and external ports prevent unwanted "back doors"
- ✓ Tamper detection detects unauthorized attempts to access the system
- ✓ Best practices and guidelines for properly securing a device, security threat monitoring, alerts and notifications
- ✓ Secure remote firmware updates of devices with signed firmware images


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# Digi ConnectCore Solutions

**Digi ConnectCore Cloud Services** provide integrated edge-to-cloud connectivity to enable over-the-air software updates, remotely manage deployments, improve product quality and ease-of-use, automate processes and reduce costs. **Digi ConnectCore Security Services** provide additional services and tools to maintain the security of your devices throughout the entire product lifecycle. **Digi Wireless Design Services** helps companies integrate wireless technologies with engineering and support from concept to certification and manufacturing.




## Manage your network and connected devices from edge-to-cloud (SOC 2 Type 2 compliant)

**Digi ConnectCore Cloud Services** enable OEMs in a wide range of industries to create connected devices with remote-dashboard, -service and -application capabilities using Digi ConnectCore system-on-modules (SOMs).

- ✓ Industry-leading cloud and edge tools for rapid device deployment, and easier asset management
- ✓ Automate mass firmware and software updates to enhance functionality, stay in compliance and scale your deployment
- ✓ Access data from edge devices that were previously out of reach
- ✓ Integrate device data through open APIs for greater insights and control with third-party applications
- ✓ Monitor network, device, and asset performance and security with bi-directional communications
- ✓ Receive real-time alerts and detailed network reports
- ✓ Accelerate development, testing and deployment of web applications for connected devices with a flexible, scalable **IoT application framework and IoT device simulator**




## Keep your product secure during the entire product lifecycle

Maintaining the security for connected devices after product release is challenging. **Digi ConnectCore Security Services** enable customers to keep products secure. Digi ConnectCore Security Services are services and tools that enable you to maintain the security of your devices throughout the entire product lifecycle.

- ✓ Make security easier and more accessible by providing a curated security analysis
- ✓ Provide visibility on the Digi Embedded Yocto (DEY) security status with available vulnerability reports
- ✓ Identify security issues in Digi ConnectCore DEY-based customer products
- ✓ Monitor and maintain security in devices throughout the entire product lifecycle
- ✓ Utilize Digi engineering and consulting services to help resolve security issues
- ✓ Take advantage of SBOM analysis and CVE monitoring
- ✓ Review binary image scans for additional vulnerability insights




## Digi Wireless Design Services (WDS)

**Digi WDS** helps companies solve business problems and create innovative IoT products with embedded SOMs, wireless technologies, a library of proven IP and a dedicated team of creative designers and engineers. Let our RF experts and world class engineering team guide you through the development cycle from concept to certification and production.

- ✓ World-class engineering expertise
- ✓ Technological and regulatory certification
- ✓ Consulting, concept, architecture and design
- ✓ Prototype build and manufacturing support

## Global deployment and connectivity

- ✓ Pre-certified for use in various global regions
- ✓ Optional dual-band 802.11a/b/g/n/ac/ax Wi-Fi, Bluetooth 5.3 and dual 10/100/1000M Gigabit Ethernet connectivity
- ✓ Seamless **Digi XBee** integration to extend wireless connectivity to a variety of popular IoT protocols including cellular


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