Digi ConnectCore Solutions
for Healthcare Applications

Connected Healthcare Devices for Clinics, Hospitals and Homes

Digi's ultra-compact, low-power, highly integrated **Digi ConnectCore® system-on-modules** (SOMs) offer design flexibility with multiple connectivity options, along with best-in-class security. Part of a complete solution, the Digi ConnectCore ecosystem helps engineering managers and OEMs build more cost-efficient designs, and achieve faster time to market as well as reliable, long-term operation for a range of medical devices.

The Innovation Device Manufacturers Need

The medical device market is vast, and innovation is critical to support the range of devices, from diagnostic machines, infusion pumps and rolling medical carts to automated external defibrillators (AEDs), medical wearables and telehealth systems. Manufacturers today strive to achieve several critical goals.

✓ Faster time to market

Those who are first to market often own the market. But regulatory hurdles can lengthen product development cycles. Device makers want proven, pre-certified components so they can bring their products to market faster.

✓ Connected healthcare

Connected healthcare devices — that can be accessed remotely or tie into Electronic Medical Record (EMR) systems — improve patient outcomes, accelerate payment cycles and ensure accurate cost capture.

✓ Development tools

The Digi ConnectCore SOM family starts with development kits to expedite prototyping, and includes libraries and tools, such as Digi ConnectCore Smart IOmux, which simplifies the tasks involved in building out a design and tailoring the electrical characteristics of each pin to the specifics of the underlying hardware and the desired features.

✓ Security

Cybersecurity, data privacy and Health Insurance Portability and Accountability Act (HIPAA) compliance are vitally important to any healthcare organization, as is the security of devices that may be monitoring patient vital signs or administering medication. For these reasons, device security is mission critical in healthcare product design.

Digi ConnectCore SOMs

- **Industry leading 3-year warranty**
- **Scalable, future-proof wireless system building blocks**
- **Designed for reliability and 10+ year longevity**
- **Vibration/shock and HALT tested**
- **Fully integrated pre-certified Wi-Fi/Bluetooth® Low Energy**
- **Superior power management with advanced power save modes through Digi Microcontroller Assist™**
- **Complete Digi TrustFence® device security framework**
- **Digi ConnectCore Cloud Services for secure OTA software updates and device performance data collection**
- **Design scalability and future-proofing with Digi ConnectCore SOM family and Smart IOmux Tool**
- **Digi ConnectCore Security Services for security maintenance throughout the entire product lifecycle and compliance with new cybersecurity regulations**

For more information, visit:

www.digi.com

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✓ Reliability

Medical devices must withstand intensive daily use in critical situations, all day, every day. This includes all of your embedded components, connectivity, and supporting software. Digi ConnectCore meets these requirements with intensive testing and certifications, and an industry-leading three-year warranty. Even the best technology for monitoring or treating an illness is of little use if medical professionals can't trust it to work reliably all the time, every time.

✓ Longevity and future-proofing

Medical device manufacturers and end users need stable, long-term product availability. Once a medical device is developed and certified, it is important for that product to be available for long-term production. Digi's extended availability and pin-compatible families ensure long product life and easy upgradability to next-generation ConnectCore SOMs.

Digi ConnectCore: Scalable, Wireless, High-Performance SOMs

Digi ConnectCore MP1

Intelligent, wireless and secure embedded system-on-module based on the STMicroelectronics STM32MP1 MPU family for headless applications, with turnkey Linux support in the robust Digi SMTplus® standard form factor.

Digi ConnectCore MP25

Versatile, secure, wireless SOM based on the STMicroelectronics' STM32MP25 processor, with NPU and ISP for edge AI and computer-vision applications and complete Linux support in the Digi SMTplus form factor.

Digi ConnectCore 91/93

Embedded, wireless system-on-module based on the NXP i.MX 91/93 processor in the SMTplus form factor, with an AI/ML NPU, designed for longevity and scalability in industrial IoT applications.

Digi ConnectCore 8M Nano/Mini

Based on NXP i.MX 8M Mini and i.MX 8M Nano processors, these compact SOMs in the SMTplus form factor feature display and camera capabilities with graphics and video hardware acceleration and pre-certified dual-band Wi-Fi 5 and Bluetooth 5 connectivity.

Applications	Digi Solution
Defibrillators	Digi ConnectCore SOMs help accelerate time to market for systems that meet strict requirements and provide superior user experiences. These devices use local wireless networks where they are located (such as corporate buildings, airports, malls and casinos), so you can monitor operational status and proactively prevent equipment failures. Excellent power management means superior operational readiness, long life and greater reliability.
Cart on wheels	These wireless, battery-operated mobile nursing stations use visual displays (with keyboards or touchscreens) for EMR access/updates, Computerized Provider Order Entry (CPOE), medication administration, vital-sign capture, lab results and more. Digi ConnectCore SOMs provide location awareness/asset tracking, battery readings and other status information for these carts as well as the ability for device manufacturers to design intuitive user interfaces for clinicians.
Pulse oximeters	The built-in intelligence, network connectivity and graphical capabilities of Digi ConnectCore SOMs translate into a better user experience, secure connectivity over hospital networks, and integration with additional applications and features. Battery-powered designs can support mobile/semi-mobile models.

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Applications	Digi Solution
Smart hospital beds	Hospital beds now house sophisticated patient diagnostics and metrics. ConnectCore SOMs allow manufacturers to build smarter beds that provide integrated weight measurements, occupancy tracking, patient entertainment, environmental controls and more. Wireless integration via Bluetooth is also possible.
Smart infusion pumps	Infusion pumps built by medical device manufacturers using Digi embedded solutions alert clinicians if they are programmed to over- or under-deliver drugs to a patient. Secure wireless connectivity can integrate seamlessly and securely into a hospital's network and ensure that the pump's internal drug library data is up-to-date. Network connectivity can also trigger alerts on pump maintenance issues and provide centralized asset tracking of pumps dispersed throughout a hospital.

Support for Security and Lifecycle Management

The Digi ConnectCore family of SOMs is part of a full suite of developer tools, libraries, kits, documentation and value-added services.

Today, **emerging regulations** like the Medical Device Regulation (MDR) and the Cyber Resilience Act (CRA) are increasingly requiring OEMs to remotely monitor security and manage over-the-air software updates over the entire product lifecycle.

To support these requirements, Digi offers **Digi ConnectCore Cloud Services**, **Digi ConnectCore Security Services** and **Digi TrustFence**.

⊘ Digi ConnectCore Cloud Services enable OEMs to create connected devices with remote-dashboard, -service and -application capabilities using Digi ConnectCore SOMs.

⊘ Digi ConnectCore Security Services are services and tools that enable OEMs to maintain the security of devices throughout the entire product lifecycle. These services enable the monitoring and analysis of security risks and vulnerabilities for a custom software bill of material (SBOM) and binary image running on Digi ConnectCore system-on-modules.

For more information on how Digi ConnectCore solutions can bring cost-effective innovation and security to your healthcare device designs, visit our **Medical Industry web page** or **contact us** to speak to a Digi expert. ⊕