Digi IX40

5G edge computing industrial IoT cellular router solution, purpose-built for Industry 4.0

Digi IX40 is a 5G edge computing industrial IoT router solution, integrated with **Digi Remote Manager**® (Digi RM) to empower rapid processing, analysis, and integration of industrial asset data on 5G public and private cellular networks.

Purpose-built for Industry 4.0, Digi IX40 supports the 5G connectivity and edge intelligence needed to enable numerous use cases ranging from predictive maintenance and asset monitoring to machine learning and advanced robotics. It seamlessly connects multiple machines, whether wired or wireless, in the most demanding environments, optimizing integration of cloud-delivered operational technology (OT) services with information technology (IT) to streamline complex operations and scale IT infrastructure.

With its all-in-one design, strong computing power and integrated memory, Digi IX40 offers substantial capabilities for real-time data processing, edge computing and advanced precision while reducing complexity and total cost of ownership. **Digi Containers** facilitate potent and cost-effective applications, providing additional flexibility and scalability for Industry 4.0, energy, smart cities and other uses.
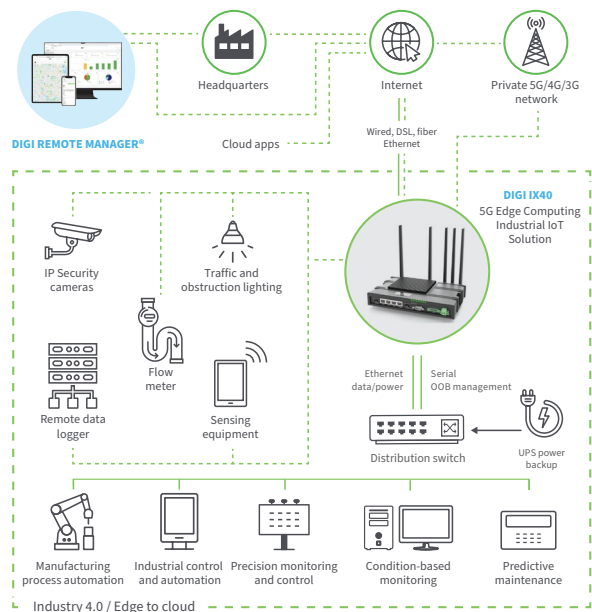
The Digi IX40 solution offers **FirstNet Capable™** models designed to meet the demands of critical applications where reliability is essential for industrial use cases and emergency response. Additional use cases include manufacturing process automation, precision monitoring and control, industrial automation, utilities and traffic management.

Gain critical insights and manage your network with Digi RM — the cloud-based command center for your deployment. Digi RM also provides secure terminal access for out-of-band management of edge devices via serial port and command-line interface.

Related Digi industrial IoT software and solutions

Digi IX30   **Digi IX20**   **Digi IX10**   **Digi Remote Manager**
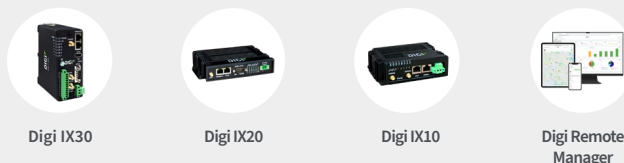
Key features, benefits and applications

- Global 5G and LTE support and certification on major carriers
- **Digi Containers** to enable powerful, cost-efficient applications
- Integrated industrial edge computing capabilities for hosting containerized applications and custom solutions
- Support for CBRS and global private 5G networking deployments
- Ethernet, SFP, serial, I/O and Modbus bridging
- Extremely resilient cellular connection through Digi's patented **SureLink**®, VRRP+ protocol and dual SIM slots
- GNSS receiver supporting GPS, GLONASS, BeiDou and Galileo
- License-free enterprise software: VPN, firewall, logging and authentication
- **Digi Remote Manager** platform for easy setup, mass configuration and management
- Rugged enclosure with options for DIN rail or shelf mounting
- **Digi WAN Bonding** for WAN aggregation and immediate failover

APPLICATION EXAMPLE

DIGI REMOTE MANAGER®

Headquarters   Internet   Private 5G/4G/3G network

Cloud apps   Wired, DSL, fiber Ethernet

DIGI IX40
5G Edge Computing Industrial IoT Solution

IP Security cameras   Traffic and obstruction lighting

Flow meter

Remote data logger   Sensing equipment

Ethernet data/power   Serial OOB management

Distribution switch   UPS power backup

Manufacturing process automation   Industrial control and automation   Precision monitoring and control   Condition-based monitoring   Predictive maintenance

Industry 4.0 / Edge to cloud

Management

Digi Accelerated Linux (DAL OS) and Digi Remote Manager (Digi RM)

DAL OS

DAL OS is Digi's standard operating system integrated into Digi **Enterprise** (EX), **Industrial** (IX) and **Transportation** (TX) routers, **console servers** and **USB-connected devices**. Developed for speed and simplicity, DAL OS enables advanced capabilities that support today's demanding applications.

Learn more at www.digi.com/DAL.

Digi Remote Manager

Digi Remote Manager (Digi RM) is a proven technology platform that brings networks to the next level, empowering networks — and the people who manage them — to work smarter. Digi RM transforms a multitude of dispersed IoT devices into a dynamic, intelligent network. It's easy to deploy, monitor and diagnose thousands of mission-critical devices from a single point of command on a desktop, tablet or phone. All the while, software-defined security diligently safeguards your entire Digi ecosystem.

Learn more at www.digi.com/digi-remote-manager.

Digi RM Infrastructure

- Hosted in a commercial-grade cloud server environment that meets SOC 1®, SOC 2® and SOC 3® standards
- Superior availability, operating at 99.9% or greater uptime
- Open APIs are available to support application development

Digi RM Security

- Comprehensive security controls to protect your data
- Member of the Center for Internet Security® (CIS®)
- Enables compliance with security frameworks like ISO27002, HIPAA, NIST and more
- Earned Skyhigh's CloudTrust™ Program highest rating of Enterprise-Ready

DAL OS and Digi RM Capabilities

- **DAL OS with Digi Remote Manager:** Remote console access, Configuration Manager, HTTP proxy, device event logs, configurable maintenance window
- **Serial:** Modbus, serial-over-TCP/UDP
- **Customization:** Python 3, Python pip, PyCharm integration, shell scripting, containers, MQTT client
- **Troubleshooting tools:** iPerf and nuttcp bandwidth testing, Find Me tool
- **GNSS:** NMEA/TAIP location forwarding to multiple servers, geo-fencing
- Activate, monitor and diagnose your mission-critical devices through a single portal
- Schedule key operations — including firmware updates and file management — on a single device or on a group of devices, keeping your network functionality up-to-date and maintaining compliance standards
- Manage edge devices out-of-band via console terminal access
- Monitor equipment health and connectivity across deployments of any size
- Create detailed reports and enable real-time alerts for specified conditions
- Integrate device data through open APIs to gain deeper insights and control with third-party applications
- Report and alert on performance statistics, including connection history, signal quality, latency, data usage and packet loss

Security and Value-Added Services

Digi TrustFence

BUILT-IN SECURITY. DELIVERED.

Designed for mission-critical applications, **Digi TrustFence**®
enables users to easily integrate device security, device identity,
and data privacy capabilities into product design. Digi TrustFence
security for IoT devices is designed to grow and adapt with new
and evolving threats.

Learn more at www.digi.com/trustfence.

**Digi TrustFence is a device security framework that
simplifies the process of securing multiple connected
devices.**

- **Secure boot:** Programs and code running on the device are
  validated to be from an approved source or manufacturer.
- **Protected hardware ports:** Internal and external I/O ports are
  hardened and access-controlled to prevent unwanted intrusion.
- **Authentication:** TrustFence provides data authentication and
  device identity management options and ensures that products
  are not shipped with default user and password settings.
- **Secure connections:** These connections utilize the latest
  encryption protocols for data in motion and over-the-air (OTA)
  transmissions to ensure the integrity of network data.
- **Ongoing monitoring and support:** Digi provides ongoing threat
  measurement and monitoring services and performs external
  security audits.

Digi Containers

DIGI REMOTE MANAGER ENABLES DEPLOYMENT OF CUSTOM APPLICATIONS VIA CONTAINERS

Digi Containers simplify and centralize the process of building, deploying and running custom applications on devices
managed with **Digi Remote Manager** as the central portal. Containers with custom programs or Python applications
can be loaded via Digi RM on any device running the **Digi Accelerated Linux** operating system (DAL OS).

As an add-on service to Digi Remote Manager, Digi Containers are a powerful capability implemented via Lightweight
Linux Containers (LXC). LXC tools enable developers to package up a custom application, with its dependencies and
configuration, into a lightweight, portable bundle that shares only the running kernel with the host device.

Digi WAN Bonding

RESILIENT CONNECTIVITY AND MAXIMUM PERFORMANCE ACROSS MULTIPLE CONNECTIONS

Digi WAN Bonding combines multiple connections into a seamless and resilient connectivity solution that ensures
optimal performance and maximum uptime anywhere around the world.

Digi devices provide a range of connectivity options including cellular failover with features such as **Digi SureLink**,
policy-based routing and interface bonding. These features are excellent at preventing any external network failures
from causing downtime.

*Digi Containers and Digi WAN Bonding are available as a subscription added to Digi Remote Manager Premier.
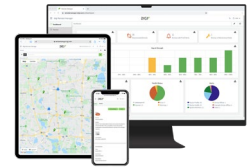
Specifications

**Manage and configure Digi IX40
with Digi Remote Manager**

SPECIFICATIONS	DIGI IX40
WIRELESS INTERFACES	
CELLULAR / WWAN	
IX40-05: 5G NSA, 5G SA, 4G LTE-ADVANCED PRO CAT 19	**5G NR bands:** n1, n2, n3, n5, n7, n8, n12, n13, n14, n18, n20, n25, n26, n28, n29, n30, n38, n40, n41, n48 CBRS, n66, n71, n75, n76, n77, n78, n79 **4G LTE-Advanced Pro bands:** B1, B2, B3, B4, B5, B7, B8, B12, B13, B14 FirstNet®, B17, B20, B25, B26, B28, B29, B30, B32, B38, B40, B41, B42, B43, B46, B48, B66, B71 **3G bands:** B1, B2, B3, B4, B5, B6, B8, B19
IX40-04: 4G LTE-ADVANCED PRO CAT 12, 3G HSPA+	**4G LTE-Advanced Pro bands:** B1, B2, B3, B4, B5, B7, B8, B12, B13, B14 FirstNet®, B17, B18, B19, B20, B25, B26, B28, B29, B30, B38, B39, B40, B41, B42, B43, B48, B66, B71 **3G bands:** B1, B2, B4, B5, B6, B8, B9, B19
CONNECTORS	(2) or (4) 50 Ω SMA center pin: female
SIM SLOTS	(2) SIM Nano-SIM (4FF) holders
SIM SECURITY	SIM slot cover plate included
GNSS	
TECHNOLOGY	GNSS Gen 9 with band L1 LNA for passive antenna use
ANTENNA	Upper L-band: GPS L1; Glonass G1; Beidou B1; Galileo E1 IX40-04: supports passive GNSS antennas rated at 1.5 – 3 dBi only IX40-05: supports passive GNSS antennas rated at 1.5 – 3 dBi or active antennas with 7.5 – 26 dB gain
PROTOCOL	NMEA 4.11 and TAIP
CONNECTOR	(1) 50 Ω SMA center pin: female
WIRED INTERFACES	
ETHERNET	
PORTS / CONNECTOR	(4) RJ-45; 10/100/1000 Mbps Base-T (auto-sensing); IEEE 802.3; configurable as WAN or LAN
I/O	
PORTS / CONNECTOR	(2) Digital input/outputs; (2) analog inputs (0 - 10 V; 4 - 20 mA; 12-bit resolution)
SFP	
PORTS / CONNECTOR	(2) 1 Gb capable SFP sockets
SERIAL	
PORTS / CONNECTOR	(1) RS-232/422/485; DB-9 male (DTE)
SOFTWARE AND MANAGEMENT	
REMOTE MANAGEMENT	**Digi Remote Manager** (cloud based); SNMP v1/v2c/v3 (user installed/managed), SMS
LOCAL MANAGEMENT	Web UI (HTTPS); CLI (SSH, serial)
MANAGEMENT TOOLS	SFTP, SCP; protocol analyzer with PCAP for Wireshark; event logging with Syslog
PROCESSOR	
APPLICATION PROCESSOR	1.6 GHz quad-core i.MX 8M Plus ARM® Cortex®-A53 processor
MEMORY	
RAM / FLASH	1 GB / 8 GB
PHYSICAL	
DIMENSIONS	234 mm x 154 mm x 41 mm (9.21 in x 6.06 in x 1.61 in)
WEIGHT	1.14 kg (2.51 lb)
STATUS LEDS	Power, WWAN, Ethernet (link, activity)
ENCLOSURE / RATING	Glass-filled polyphenylene sulphide; IP30 −40 °C to 85 °C (−40 °F to 185 °F)

Specifications, Partners and Technologies

Manage and configure Digi IX40
with Digi Remote Manager

SPECIFICATIONS	DIGI IX40
POWER REQUIREMENTS	
POWER INPUT	9 – 30 VDC
POWER CONNECTOR	Screw down removable terminal block
POWER CONSUMPTION	4.5 W (light traffic), 8 W (peak data), 3.5 W (idle traffic)
ENVIRONMENTAL	
OPERATING TEMPERATURE	−30 °C to 70 °C (−22 °F to 158 °F)
STORAGE TEMPERATURE	−45 °C to 85 °C (−49 °F to 185 °F)
RELATIVE HUMIDITY	0% to 95% (non-condensing) at 25 °C (77 °F)
APPROVALS	
CELLULAR	PTCRB, AT&T, FirstNet Capable™, T-Mobile
SAFETY	IEC 62368-1, CB scheme
EMISSIONS / IMMUNITY	FCC Part 15 Subpart B, ISED, CE, RED, UKCA
WARRANTY	
PRODUCT WARRANTY	3-year

*Expected in 2023; visit **www.digi.com/resources/certifications** for latest certifications
**Standard 3-year warranty upgradeable to 5 years with purchase of a Digi Remote Manager Premier 5-year subscription applicable to the product purchased only at the time of product purchase and with product registration at that time in Digi Remote Manager.

ENTERPRISE SOFTWARE	DESCRIPTION
PROTOCOL SUPPORT	HTTPS, TLS, SCP (client and server), SFTP, SNMP (v3), SSH, Telnet and CLI for web management; remote management via **Digi Remote Manager**; protocol analyzer, ability to capture PCAP for use with Wireshark; DynDNS, Dynamic DNS client compatible with No-IP/DynDNS; Captive portal, Intelliflow; Nagios, DNS server, NTP server, Multicast, mDNS, IPerf
SECURITY / VPN	IP filtering, stateful inspection firewall with scripting, address and port translation; VPN: IPSec with IKEv1, IKEv2, NAT Traversal; SSLv3, FIPS 197, Open VPN client and server; L2TP; VPN tunnels; cryptology: SHA-1, MD5, RSA; encryption: DES, 3DES and AES up to 256-bit (CBC mode for IPsec); authentication: RADIUS, TACACS+, SCEP for X.509; certificates; content filtering (via 3rd party); MAC address filtering; VLAN support
ROUTING	IP pass-through; NAT, NAPT with IP port forwarding; Ethernet bridging; GRE; multicast routing; routing protocols: PPP, PPPoE, RIP (v1, v2) OSPF, BGP, iGMP routing (multicast); IP failover: VRRP, VRRP+TM; automatic failover/failback to second GSM network/standby APN; **Digi SureLink**
EMISSIONS / IMMUNITY	DHCP; Dynamic DNS client compatible with No-IP/DynDNS; QoS via TOS/DSCP; Modbus UDP/TCP to serial; Modbus bridging for connecting diverse field assets

Featured Partners and Technologies

*FirstNet® and FirstNet Ready™ are registered trademarks and service marks of the First Responder Network Authority. All other trademarks are property of their respective owners.

DIGI IX40
Product Photos

Digi IX40 Photos

DIGI IX40 — FRONT

DIGI IX40 — BACK

Part Numbers

PART NUMBERS	DIGI IX40
IX40-05	Digi IX40 — 5G with LTE-Advanced Pro Cat 19 4x4 and 3G fallback, quad Ethernet, RS-232/422/485, GNSS, FirstNet Capable™
IX40-04	Digi IX40 — 4G LTE-Advanced Pro Cat 12 with 3G fallback, quad Ethernet, RS-232/422/485, GNSS, FirstNet Capable™

PART NUMBERS	AVAILABLE ACCESSORIES*
76002147	Digi IX40 5G Industrial Starter Kit — includes 30 W power supply and 4 wideband cellular antennas
76002148	Digi IX40 LTE Industrial Starter Kit — includes 30 W power supply and 2 wideband cellular antennas
76002114	Antenna — 5G/LTE 600 MHz to 6 GHz, swivel, black
76000954	Magnetic GNSS antenna base — SMA, 1 m, RG174
76002093	DIN rail mounting bracket kit

*Sold separately, unless otherwise noted.

PART NUMBERS	DIGI REMOTE MANAGER AND VALUE-ADDED SERVICES
DIGI REMOTE MANAGER SUBSCRIPTIONS	
DIGI-RM-PRM-1YR	Digi Remote Manager Premier — 1-year subscription
DIGI-RM-PRM-3YR	Digi Remote Manager Premier — 3-year subscription
DIGI-RM-PRM-5YR	Digi Remote Manager Premier — 5-year subscription
VALUE-ADDED SUBSCRIPTIONS	
DIGI-RM-PRM-CS	Digi Containers subscription — 1-year subscription
DIGI-SRV-WB-TIER1-1YR	Digi WAN Bonding subscription with 100 Mbps max throughput — 1-year subscription
DIGI-SRV-WB-TIER2-1YR	Digi WAN Bonding subscription with 200 Mbps max throughput — 1-year subscription
DIGI-SRV-WB-TIER3-1YR	Digi WAN Bonding subscription with 1 Gbps max throughput — 1-year subscription

The information provided in this document is preliminary and may be subject to change without notice.

For more information, please visit digi.com

For more information about Digi IX40,
visit **www.digi.com/ix40**.

877-912-3444 | 952-912-3444

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