



Manage this device with X-ON cloud IoT platform

# DIGI LORAWAN STARTER KIT

A complete, end-to-end device, gateway and cloud kit to accelerate development of your IoT solution

The Digi LoRaWAN™ starter kit provides a complete device, gateway and cloud IoT platform for developing end-to-end LoRaWAN solutions. The Digi LoRaWAN kit includes a multi-sensor device, a multi-channel gateway and X-ON™ cloud IoT free trial. The X-ON cloud demonstrates automated provisioning for devices and gateways.

The Digi LoRaWAN starter kit provides a cloud application using the X-ON industrial IoT platform, a highly-scalable microservices platform for large-scale LoRaWAN solutions. Each gateway supports 1.5 million messages per day delivered to the X-ON cloud. The included HXG3000 gateway offers high receive sensitivity and up to 27 dBm transmit power to deliver long-range, non-line-of-sight, two-way communications over LoRaWAN. The starter kit provides LoRaWAN Class A and Class C for both low-power battery and always-on real-time cloud-to-device control applications, respectively.

The Digi LoRaWAN Client Shield (expansion board) supports rapid prototyping and development of LoRaWAN sensors on ST® Nucleo and Arduino® platforms. The client shield features the LoRaWAN module, addressing long-range, low-power, wide-area networks (LPWAN), with stackable Arduino connectors, digital input switch, RGB LED, u.FL connector, antenna and temperature sensor. An embedded AT command language and simplified Mbed C++ Embedded API support rapid integration.

## Your kit includes:

- ✓ Digi 8-channel LoRaWAN HXG3000 Ethernet gateway
- ✓ Client shield with LoRaWAN module, LED, digital input and temperature sensors
- ✓ Digi X-ON cloud platform 30-day free trial account with scan-and-go mobile provisioning

PART NUMBER	DESCRIPTION
XON-9-L1-KIT-001	Digi LoRaWAN starter kit with LoRaWAN gateway and client shield

The module is certified with support for Class A, Class C and secure multicast. The client shield is compatible with select ST Nucleo and Arduino boards providing LoRaWAN client-side connectivity. The starter kit provides a complete framework for a fully functional LoRaWAN client device.

With the full suite of Digi services and solutions, OEMs can streamline development and time-to-market with integrated performance and security features.

## SPECIFICATIONS

## DIGI LORAWAN GATEWAY

## FEATURES

<b>GATEWAY</b>	Modular gateway available for different LoRaWAN™ channel plans, supporting multiple frequency bands
<b>CAPACITY</b>	Up to 1.5 million messages per day
<b>EDGE COMPUTING</b>	Enable local data and applications to be deployed on the gateway supported with X-ON.Edge
<b>SENSE AND CONTROL</b>	Complex sense and control functions can be operated independently of cloud connectivity for high reliability and low latency
<b>ANTENNA</b>	1.7 dBi omnidirectional antenna
<b>POWER</b>	AC or PoE power supply for alternative installation options
<b>CONNECTIVITY</b>	Ethernet and LTE backhaul models available, installed with single cable and auto-connect to the X-ON™ cloud platform
<b>PROVISIONING</b>	Simple provisioning with mobile scanning app
<b>ENCLOSURE</b>	Indoor enclosure for wall or table mount
<b>CERTIFICATION</b>	FCC and IC certified

## LORAWAN RADIO

<b>REGIONAL BANDS</b>	US900
<b>TX POWER / RX SENSITIVITY</b>	+27 dBm; -138 dBm
<b>CHANNELS</b>	8 Rx; 1 Tx
<b>ANTENNA</b>	+1.7 dBm (SMA type)

## INTERFACES

<b>ETHERNET BACKHAUL</b>	10/100 RJ-45
<b>CELLULAR BACKHAUL</b>	Cat M1 (LTE version only)
<b>POWER</b>	5 VDC; 5.5 mm
<b>LTE SIM</b>	Micro SIM
<b>CONSOLE PORT</b>	Micro USB; 115200 baud

## SOFTWARE AND MANAGEMENT

<b>SYSTEM</b>	CLI and API management; auto-discovery over IP
<b>TOOLS</b>	Access control lists, system monitor, logging, radio configuration, remote software upgrade
<b>NETWORKING</b>	IPv4, SSH, AES 256-bit, DHCP, TFTP, firewall and ACL

## PHYSICAL

<b>DIMENSIONS (L x W x H)</b>	14.61 cm x 14.61 cm x 3.17 cm (5.75 in x 5.75 in x 1.25 in); antenna length: 12.06 cm (4.75 in)
-------------------------------	---

## SPECIFICATIONS

## DIGI LORAWAN CLIENT SHIELD

## FEATURES

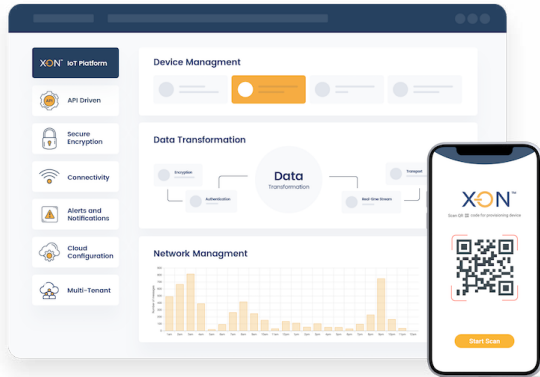
<b>SENSOR</b>	Low-power thermistor temperature sensor
<b>SWITCH</b>	Digital input slide switch
<b>LEDS</b>	Digitally controlled RGB LED
<b>REGULATOR / CONVERTER</b>	On-board 3.3 V; on-board logic converter to support both 5 V and 3.3 V I/O
<b>JUMPERS</b>	Use any MCU pins to communicate with the client
<b>ANTENNA</b>	U.FL connector (antenna included in the kit)
<b>API</b>	Arm® Mbed™ Embedded API ( <a href="https://os.mbed.com">https://os.mbed.com</a> )
<b>ARDUINO / NUCLEO</b>	Arduino® stackable connectors and ST® Nucleo compatible

## HARDWARE AND INTERFACES

<b>POWER</b>	Ultra-low power consumption with auto-hibernate
<b>LORA / LORAWAN</b>	Semtech® LoRa® and LoRaWAN™
<b>FREQUENCY RANGE</b>	902 MHz to 928 MHz (900)
<b>SUPPORT</b>	LoRaWAN Class A, Class C and secure multicast
<b>OUTPUT POWER</b>	14 dBm to 20 dBm
<b>VOLTAGE RANGE</b>	2.0 V to 3.6 V
<b>TEMPERATURE RANGE</b>	-40° C to 85° C (-40° F to 185° F)
<b>COMMUNICATION</b>	USART communication interface

## SYSTEM REQUIREMENTS AND DEVELOPMENT TOOLCHAINS

<b>OPERATING SYSTEM</b>	Windows® OS (10), Linux® 64-bit or macOS®
<b>USB</b>	Type-A to Mini-B cable
<b>DEVELOPMENT</b>	Arm Mbed online



Digi X-ON™ is a complete device-to-cloud platform for connected IoT devices. The platform provides a data-ready device solution from development through to operation. X-ON contains an integrated LoRaWAN™ network server and join server to support devices and gateways that use the LoRaWAN wireless connectivity standard. X-ON with LoRaWAN provides cloud-enabled secure, long-range and low-power wireless connectivity for self-built or commercial off-the-shelf LoRaWAN devices.

The X-ON platform is designed to collect and analyze data directly from devices and manage the wireless network base stations that provide campus, city or nationwide coverage. X-ON and LoRaWAN support many different applications and use cases such as connected cities, smart utility, industrial IoT and smart agriculture.

Learn more at [www.digi.com/lorawan](http://www.digi.com/lorawan)

## CAPABILITIES

- Enables you to configure, monitor and diagnose your mission-critical devices or gateways from the X-ON web and mobile interface
- Automates deployment of devices and gateways with provisioning app
- The Stream feature provides inter-cloud API for real-time two-way device data between multiple cloud platforms
- Data templates include Transform functions for simplified integration of device data to multiple cloud platforms
- Provides a multi-tenant hierarchy of accounts for OEMs, resellers and end users for managing complex business structures with role-based access controls
- Users can create comprehensive IoT applications by utilizing the X-ON platform AppEngine
- Provides advanced scheduling for events or timers for proactive maintenance, automated business operations and process control
- Enables real-time alerts and notifications with email, SMS or API
- Provides on-demand or scheduled reporting with business insights, network health or custom reports
- Enables logging and tracing of real-time data messages for interactive operations and troubleshooting with devices and gateways
- Lets you integrate data through open APIs to develop more complex applications with third-party utilities

## INFRASTRUCTURE

- Hosted in a commercial-grade cloud server environment that meets SOC 1®, SOC 2® and SOC 3® standards
- Superior availability, operating to 99.9% or greater with N+1 high-availability microservices
- Open APIs available to support application development
- Auto-scale elastic capacity 2M devices/min, 20k gateways/min, 6k users/min

## SECURITY

- TLS PKI security across all applications
- Member of the Center for Internet Security® (CIS®)
- AES encryption for LoRaWAN

FOR MORE INFORMATION  
PLEASE VISIT [DIGI.COM](http://DIGI.COM)

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

**DIGI SERVICE AND SUPPORT** / You can purchase with confidence knowing that Digi is always available to serve you with expert technical support and our industry leading warranty. For detailed information visit [www.digi.com/support](http://www.digi.com/support).

© 1996-2021 Digi International Inc. All rights reserved.  
All trademarks are the property of their respective owners.

91004474  
A4/621

**DIGI INTERNATIONAL WORLDWIDE HQ**  
877-912-3444 / 952-912-3444 / [www.digi.com](http://www.digi.com)

**DIGI INTERNATIONAL JAPAN**  
+81-3-5428-0261 / [www.digi-intl.co.jp](http://www.digi-intl.co.jp)

**DIGI INTERNATIONAL GERMANY**  
+49-89-540-428-0

**DIGI INTERNATIONAL SINGAPORE**  
+65-6213-5380

**DIGI INTERNATIONAL CHINA**  
+86-21-50492199 / [www.digi.com.cn](http://www.digi.com.cn)

