

# Digi XBee Hive Border Router

High-performance, programmable XBee border router simplifies deployments and delivers resilient, Wi-SUN scalable mesh connectivity

The **Digi XBee® Hive Border Router** is a flexible, production-ready solution that accelerates time-to-market and simplifies every step of deployment for Wi-SUN® mesh networks. As part of the complete Digi wireless ecosystem designed around the principles of Build, Deploy, Manage — the Wi-SUN border router supports your Wi-SUN network from development to full-scale operation. It provides a straightforward path to reliable, scalable mesh networking and seamless interoperability across the **Digi XBee ecosystem** of hardware, software, services and award-winning tools.

The Digi XBee Hive Border Router is optimized for renewable energy (solar), street lighting, environmental monitoring, oil and gas, agriculture and other industrial applications. For developers needing a highly secure, unified platform that reduces costs and streamlines development, deployment and management, this border router minimizes risk, adds flexibility and drives efficiencies.

A simple, open source Python development environment included with the Digi XBee Hive Border Router enables custom applications to perform edge computing locally while ensuring resilient connectivity between your XBee network and cloud-based applications. **Digi Containers** also support flexible, resource-efficient applications and open-source development.

Gain critical insights into deployed devices and manage your network with SOC 2® Type 2-certified **Digi Remote Manager®** (Digi RM) — the command center for your deployment. Digi RM simplifies setup, mass configuration and maintenance with visibility into network health for dozens or thousands of devices, plus secure terminal access for out-of-band management. Together, these capabilities make the Digi XBee Hive Border Router a trusted path to scalable Wi-SUN mesh networking.

## Related Digi devices and software



Digi XBee  
RF modules



Digi XBee  
cellular modules



Digi ConnectCore®  
MP157



Digi XBee  
Studio

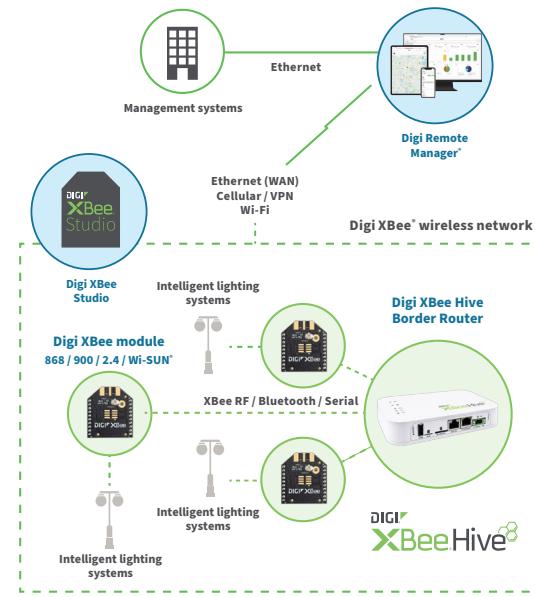


Digi Remote  
Manager

## Key features, benefits and applications

- Digi XBee for Wi-SUN (900, 920, 868 and 865 MHz), Bluetooth® 5.2 and RS-232/485 for connection to local devices
- Open source Python environment and **Digi Containers** for custom application development
- LTE Cat 1 cellular and 10/100 Ethernet WAN connectivity
- Integrated with the SOC 2 Type 2-certified **Digi Remote Manager** platform for easy setup, mass configuration, out-of-band and remote management
- Full-featured industrial cellular routing platform
- Redundant, persistent network connectivity options including Wi-Fi and cellular with always-on **Digi SureLink®**
- Built-in **Digi TrustFence®** for device security, identity and privacy
- **Digi XBee Tools** to simplify tasks and get to market faster

## Application example



Need custom design and engineering support?  
Contact **Digi Wireless Design Services**.

## DIGI XBEE HIVE BORDER ROUTER

# Management and Security

## Build. Deploy. Manage.

### Digi Remote Manager (Digi RM)

**Digi Remote Manager** 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 \*\*digi.com/digi-remote-manager\*\*.](http://digi.com/digi-remote-manager)

#### Digi RM infrastructure and security

- Hosted in a commercial-grade cloud server environment that meets SOC 1<sup>®</sup>, SOC 2<sup>®</sup>, SOC 2<sup>®</sup> Type 2 and SOC 3<sup>®</sup> standards
- Superior availability, operating at 99.9% or greater uptime
- Open APIs are available to support application development
- Comprehensive security controls to protect your data
- Member of the Center for Internet Security<sup>®</sup> (CIS<sup>®</sup>)
- Enables compliance with security frameworks like ISO27002, HIPAA, NIST and more
- Earned Skyhigh's CloudTrust<sup>™</sup> Program highest rating of Enterprise-Ready

### Digi Accelerated Linux (DAL OS)

**DAL OS** is Digi's standard operating system integrated across an entire range of connected devices. Developed for speed and simplicity, DAL OS enables advanced capabilities that support today's demanding applications. [Learn more at \*\*digi.com/DAL\*\*.](http://digi.com/DAL)

### Digi TrustFence

The Digi TrustFence device security framework simplifies the process of securing multiple connected devices.



Designed for mission-critical applications, **Digi TrustFence** enables users to easily integrate device security, device identity, and data privacy capabilities into product design. Together with SOC 2 Type 2-certified Digi Remote Manager, Digi TrustFence delivers unified, auditable security and compliance from device to cloud.

[Learn more at \*\*digi.com/trustfence\*\*.](http://digi.com/trustfence)



#### Data plans, Digi RM and DAL OS capabilities

- **Data plans:** Simple, cost-effective global cellular connectivity
- **DAL OS with SOC 2 Type 2-certified Digi Remote Manager:** Remote console access, configuration templates, 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:** iPerf and nuttcp bandwidth testing, Find Me tool
- **GNSS:** NMEA/TAIP location forwarding to 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 device or group of devices, keeping 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
- Create detailed reports and 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

#### Built-in Security. Delivered.

- **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:** Data authentication and device identity management options, with updated user and password settings
- **Secure connections:** Latest encryption protocols for data in motion and over-the-air (OTA) transmissions to ensure integrity
- **Ongoing monitoring and support:** Ongoing threat measurement and monitoring services, with external security audits

# Tools and Configuration

## Build. Deploy. Manage.

### Digi XBee Studio

Free multi-platform application that enables developers to manage Digi XBee devices through a simple-to-use graphical interface

**Digi XBee Studio** is the definitive tool to manage and configure Digi XBee devices. This next generation configuration tool suite supersedes **Digi XCTU®** and offers an advanced set of tools that make it easy to set up, configure, communicate with and test Digi XBee modules and devices

The first thing you need to do in order to work with XBee devices in XBee Studio is to add them to the tool. In XBee Studio, this is easier than ever.

#### Simple setup and connectivity

Just after startup, XBee Studio will automatically look for XBee devices connected to your computer. As modules are found, they will appear in the Device Browser view. The Device Browser view displays all the devices connected to your computer.

#### View and manage your Digi XBee devices

View all of your Digi XBee devices in one table, or if they are geolocated, you can switch to the map view and see the location of each one.

Digi XBee Studio also offers a simple and step-by-step way to access and manage devices, including additional options for configuration, diagnostics, development, remote management and other utilities.

#### Proven experience and expert support

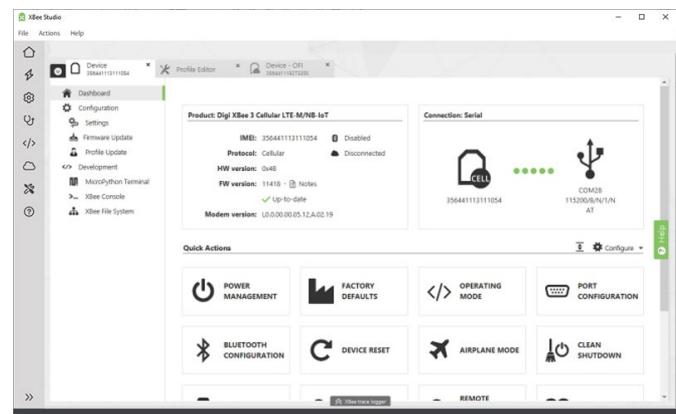
Our decades of embedded experience and millions of deployed devices tell our story; Digi is a trusted solutions provider dedicated to simplifying the way OEMs design, build, deploy and maintain secure connected products.

**Digi Wireless Design Services** (WDS) is an engineering team that provides additional connectivity integration support, certification assistance, and custom design and build services to get your products to market smarter and faster. The expert team of WDS engineers can support you wherever you are along your development path.



#### Key features

- Deploy on multiple platforms:** Digi XBee Studio is compatible with the most popular operating systems, including Microsoft Windows, macOS and Linux
- Discover your devices:** Automatically discover XBee devices connected to your computer, regardless of their port connections or configured settings
- Configure any device:** Manage and configure multiple XBee devices at once, including devices enrolled in your Digi Remote Manager account located anywhere in the world
- Communicate with your devices:** Use the new smart XBee console to communicate with your devices regardless of whether they are configured for API mode or transparent mode
- Access a range of tools:** Use embedded tools to perform operations like creating XBee profiles or recovering your devices
- Get automatic updates:** Automatically update the application itself, as well as the radio firmware library, without downloading any extra files



## Specifications



Manage and configure Digi XBee Hive Border Router with Digi XBee Studio

Specifications		Digi XBee Hive Border Router
<b>HARDWARE</b>		
DIGI XBEE FOR WI-SUN MODULE		900 MHz: Digi XBee for Wi-SUN — 900 MHz, Full Function Node (FFN), U.FL, MMT, North America (XB-WSB-UM-001) 920 MHz: Digi XBee for Wi-SUN — 920 MHz, Full Function Node (FFN), U.FL, MMT, Japan (XB-WSB-UM-051) 868 MHz: Digi XBee for Wi-SUN — 868 MHz, Full Function Node (FFN), U.FL, MMT, Europe (XB-WSB-UM-081) 865 MHz: Digi XBee for Wi-SUN — 868 MHz, Full Function Node (FFN), U.FL, MMT, India (XB-WSB-UM-071)
DIGI CONNECTCORE MP157		STMicroelectronics STM32MP157C, Arm® dual Cortex®-A7 at 650 MHz, Cortex®-M4 at 209 MHz with FPU/MPU, 3D GPU, secure boot, crypto engine, 512 MB SLC NAND flash and 512 GB DDR3L, STMicroelectronics Power Management IC — STPMIC1
TRANSMIT POWER		Up to 19 dBm ERP (North America)
RECEIVER SENSITIVITY		–114 dBm at 50 kbps (FSK)
BLUETOOTH VERSION		Supports Bluetooth Low Energy 5.2 and capable of interoperating with Bluetooth Low Energy 5.2 devices that support 1M PHY. Hardware is software upgradeable to 5.2 (not yet enabled except payload extensions).
XBEE CONNECTOR		(1) 50 ohm RP-SMA (center pin: male)
MEMORY		512 MB RAM, 512 MB flash; (1) microSD card slot
USB		(1) USB type 2.0
<b>SOFTWARE AND MANAGEMENT</b>		
PYTHON		Python 3
REMOTE MANAGEMENT		<b>Digi Remote Manager</b> ; SNMP v2/v3 (user installed/managed)
LOCAL MANAGEMENT		WebUI (HTTP/HTTPS); CLI (Telnet, SSH)
MANAGEMENT / TROUBLESHOOTING TOOLS		FTP client, SCP; protocol analyzer with PCAP for Wireshark; event logging with syslog and SMTP client; NTP/SNTP; Nagios, Intelliflow, iPerf, Dynamic DNS, ping, traceroute
<b>ETHERNET</b>		
PORTS		(1) RJ-45; 10/100 Mbps (auto-sensing)
<b>SERIAL</b>		
PORTS		(1) RJ-50 10 pin (10P10C); RS-232/485; software-selectable - RS-232 DTE (RXD, TXD, RTS, CTS, DTR, CDC, DSR, RI) - RS-485 (TX/RX+;RX/TX-); half-duplex
<b>WI-FI / BLUETOOTH LOW ENERGY</b>		
TECHNOLOGY		Wi-Fi 5 dual-band 802.11a/b/g/n/ac 1x1 radio (up to 433.3 Mbps) with strong SPA3-Enterprise authentication/encryption, Bluetooth 5.2 (Basic Rate, Enhanced Data Rate and Bluetooth Low Energy)
SECURITY		WPA, WPA2 and WPA3 Personal and Enterprise, Open and Open Enhanced security standards
HOTSPOT		Captive portal with customizable splash page, terms and conditions, shared password, user-specific password, RADIUS authentication
THIRD-PARTY SERVICES		Content filtering, embedded advertising
USER MANAGEMENT		Per-client usage limit and reporting
MODES		Simultaneous client and access point support
CONNECTORS		(1) 50 Ω RP-SMA (center pin: male)
<b>CELLULAR</b>		
4G LTE CAT 1		XBee 3 Global LTE Cat 1 (Thales PLS63-W)
ANTENNAS		(2) 50 Ω RP-SMA (center pin: female)
SIM		(1) External (4FF SIM)

## DIGI XBEE HIVE BORDER ROUTER

# Specifications



Manage and configure Digi XBee Hive Border Router with Digi XBee Studio

Specifications		Digi XBee Hive Border Router
<b>PHYSICAL</b>		
<b>DIMENSIONS (L X W X H)</b>		148 mm x 99 mm x 33 mm (5.83 in x 3.9 in x 1.3 in)
<b>WEIGHT</b>		0.24 kg (0.53 lb)
<b>STATUS LEDS</b>		Power, XBee, Cellular (where applicable), Wi-Fi (where applicable), User
<b>BUTTONS</b>		Erase, User
<b>ENCLOSURE</b>		ABS, flame rating: UL94-HB
<b>POWER REQUIREMENTS</b>		
<b>POWER INPUT</b>		9 - 30 VDC, 1.0 A Maximum
<b>POWER CONSUMPTION</b>		1.75 W typical (idle); 9 W typical (peak Tx/Rx)
<b>ENVIRONMENT</b>		
<b>OPERATING TEMPERATURE</b>		PCB: -40 °C to 70 °C (-40 °F to 158 °F) With enclosure: 0 °C to 40 °C (32 °F to 104 °F)
<b>RELATIVE HUMIDITY</b>		95% ROHS
<b>REGULATORY APPROVALS*</b>		
<b>SAFETY</b>		IEC62368-1
<b>EMISSIONS</b>		CE; RED; FCC Part 15, Subpart B*; ICES-003; AU/NZS CISPR32
<b>CELLULAR AND REGULATORY</b>		Visit <a href="http://digi.com/resources/certifications">digi.com/resources/certifications</a> for latest certifications and approvals.
<b>WARRANTY</b>		
<b>PRODUCT WARRANTY</b>		3-year

\*Visit [digi.com/resources/certifications](http://digi.com/resources/certifications) for latest certifications and approvals.

Enterprise Software	Description
<b>NETWORK PROTOCOL SUPPORT</b>	HTTPS, FTP client, TLS v1.2, SCP (client and server), SFTP, SMTP client for use by scripts and the command line, SNMP (v2/v3), SSH; remote management via <b>Digi Remote Manager</b> ; protocol analyzer, ability to capture PCAP for use with Wireshark; DynDNS; dynamic DNS client compatible with BIND9/No-IP/DynDNS; captive portal, Intelliflow; Nagios, DNS server, NTP server, multicast, mDNS, IPPerf
<b>SECURITY</b>	IP filtering, stateful firewall, custom firewall rules (iptables), address and port translation, TLS 1.2 and above, OpenVPN client and server, VPN tunnels; Authentication: RADIUS, TACACS+; certificates; MAC address filtering; VLAN support
<b>VPN</b>	IPSec with IKEv1, IKEv2, NAT Traversal; OpenVPN client and server; GRE VPN tunnels; Cryptology: SHA-1/256/384/512, MD5, RSA; Encryption: 3DES and AES up to 256-bit (CBC mode for IPsec); Diffie Hellman: DH groups 1-32 (CURVE448)
<b>ROUTING/FAILOVER</b>	IP pass-through; NAT, NAPT with IP port forwarding; GRE; multicast routing; routing protocols: RIP (v1, v2) OSPF, BGP; IP failover: VRRP; automatic failover, <b>Digi SureLink</b>
<b>OTHER PROTOCOLS</b>	DHCP; dynamic DNS client compatible with No-IP/DynDNS

\*For a comprehensive list of operating system features, please visit [digi.com/solutions/by-technology/dal-operating-system/features](http://digi.com/solutions/by-technology/dal-operating-system/features).

## DIGI XBEE HIVE BORDER ROUTER

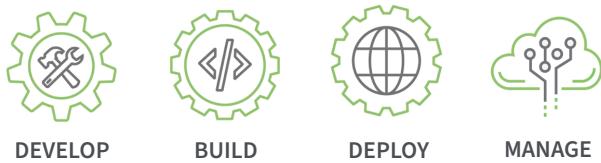
# Digi XBee Ecosystem, Tools and Supporting Services

### Digi XBee Ecosystem

The world-renowned XBee module is part of a family of cellular modems and RF modules that provide ultimate flexibility for IoT application developers, with three programmable form factors, and a range of popular wireless protocols. The XBee family also includes IoT gateways and management tools to connect, monitor and manage your XBee network.

[Learn more at \[digi.com/xbee\]\(http://digi.com/xbee\).](http://digi.com/xbee)

### Digi XBee Tools



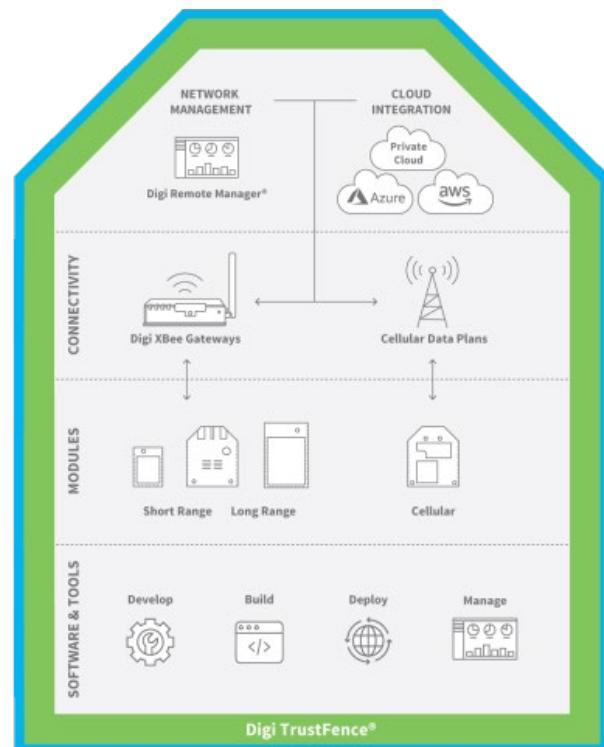
The **Digi XBee Ecosystem** is fully supported with the award-winning **Digi XBee Tools** suite. Designed to support the full product lifecycle, from prototyping and development to deployment and ongoing monitoring, Digi XBee Tools includes code libraries, testing and prototyping tools, product development and manufacturing support, and tools for deploying and managing end devices in the field.

### Digi Wireless Design Services

#### Digi WDS supports new designs and redesigns

We offer services to support you wherever you are along your development path, with a record that speaks for itself.

- Proof of concept
- Architecture consultation
- Requirements definition
- System, software and electrical design
- Design reviews
- Certifications
- Prototype build
- Manufacturing test fixtures
- 250+ product development projects
- 100+ certification failure rescues
- 100 million connected devices around the globe



#### Get to market faster with Digi WDS

**Digi Wireless Design Services** (WDS) has a proven history of helping clients speed down the path to success by guiding them through the technological and regulatory certification pitfalls that botch budgets and disrupt product introductions.

We begin by actively listening to your business and technical requirements, and then leverage our proven methodology, world-class engineering expertise and library of IP to design a cost-effective solution that is tailored to your specific needs. Accelerate toward the solution that is right for you and your customers.

Contact **Digi WDS** to find out how we can guide you to success.

## DIGI XBEE HIVE BORDER ROUTER

### Product Photos

#### Digi XBee Hive Border Router



Digi XBee Hive Border Router — front

Digi XBee Hive Border Router with accessories — back



Digi XBee Hive Border Router — back



## DIGI XBEE HIVE BORDER ROUTER

### Part Numbers

Part Numbers	Digi XBee Hive Border Router
DIGI XBEE HIVE BORDER ROUTER MODELS	
XH-WS0-CEO-001	Digi XBee Hive Border Router — 900 MHz, Full Function Node (FFN), Ethernet, North America
XH-WS0-CW1-101	Digi XBee Hive Border Router — 900 MHz, Full Function Node (FFN), LTE Cat 1, Wi-Fi, Ethernet, North America
XH-WS8-CEO-001	Digi XBee Hive Border Router — 868 MHz, Full Function Node (FFN), Ethernet, Ethernet, EU
XH-WS8-CW1-101	Digi XBee Hive Border Router — 868 MHz, Full Function Node (FFN), LTE Cat 1, Wi-Fi, Ethernet, EU
XH-WS7-CEO-001	Digi XBee Hive Border Router — 865 MHz, Full Function Node (FFN), Ethernet, Ethernet, India
XH-WS7-CW1-101	Digi XBee Hive Border Router — 865 MHz, Full Function Node (FFN), LTE Cat 1, Wi-Fi, Ethernet, India
XH-WS5-CEO-001	Digi XBee Hive Border Router — 920 MHz, Full Function Node (FFN), Ethernet, Japan
XH-WS5-CW1-101	Digi XBee Hive Border Router — 920 MHz, Full Function Node (FFN), LTE Cat 1, Wi-Fi, Ethernet, Japan

Part Numbers	Digi XBee Hive Accessory Kit
DIGI XBEE HIVE BORDER ROUTER ACCESSORIES	
76002163	Digi XBee Hive Border Router Accessory Kit — 2.4 GHz
76002164	Digi XBee Hive Border Router Accessory Kit — 900 MHz
76002165	Digi XBee Hive Border Router Accessory Kit — 865/868 MHz

For more information, visit [digi.com](https://digi.com).



For more information on Digi XBee for Wi-SUN,  
visit our Wi-SUN solutions at [digi.com/wi-sun](https://digi.com/wi-sun).

877-912-3444 | 952-912-3444

