



# Digi XBee<sup>®</sup> 3

## USB Adapter Pro

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### User Guide

## Revision history—90002382

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| Revision | Date          | Description      |
|----------|---------------|------------------|
| A        | December 2019 | Initial release. |

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## Warranty

To view product warranty information, go to the following website:

[www.digi.com/howtobuy/terms](http://www.digi.com/howtobuy/terms)

## Safety

The XBee 3 USB Adapter Pro is not a toy and should only be used under adult supervision.



**WARNING!** Do not bring this device in close proximity to the head or body of a user or bystander.

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## Customer support

**Gather support information:** Before contacting Digi technical support for help, gather the following information:

- Product name and model
- Product serial number (s)
- Firmware version
- Operating system/browser (if applicable)
- Logs (from time of reported issue)
- Trace (if possible)

Description of issue

Steps to reproduce

**Contact Digi technical support:** Digi offers multiple technical support plans and service packages. Contact us at +1 952.912.3444 or visit us at [www.digi.com/support](http://www.digi.com/support).

## Feedback

To provide feedback on this document, email your comments to

[techcomm@digi.com](mailto:techcomm@digi.com)

Include the document title and part number (Digi XBee®3 USB Adapter Pro User Guide, 90002382 A) in the subject line of your email.

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# About the XBee 3 USB Adapter Pro

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Digi’s XBee 3 USB Adapter Pro is an easy-to-use USB to XBee Wireless Personal Area Network (WPAN) adapter, providing local connectivity to wireless networks. When connected to a USB port in a fixed installation, away from any person's head or body, the adapter provides access to a Digi XBee network and connected devices. This compact, USB-powered wireless adapter enables local network configuration, diagnostics or device monitoring.

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## **Compatibility with other XBee devices**

The XBee 3 USB Adapter Pro can be programmed with Zigbee, 802.15.4, or DigiMesh 2.4 firmware. If your network does not operate on the same protocol that the XBee 3 USB Adapter Pro is programmed with, it will not be able to connect to your network. You can change the firmware on the XBee 3 USB Adapter Pro through XCTU.

## **LEDs**

Characters sent from the computer to the XBee 3 USB Adapter Pro through DIN illuminate the white LED.

Characters sent from the XBee 3 USB Adapter Pro to the computer through DOUT illuminate the yellow LED.

The XBee Associate/DIO5 line is connected to the Blue LED. It indicates whether the XBee 3 USB Adapter Pro is powered and its network association status. This LED functions differently depending on the RF protocol for the product, or you can configure it.

# Technical specifications

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The following tables provide general specifications for the XBee 3 USB Adapter Pro.

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## Environmental specifications

The following table provides the environmental specifications for the XBee 3 USB Adapter Pro.

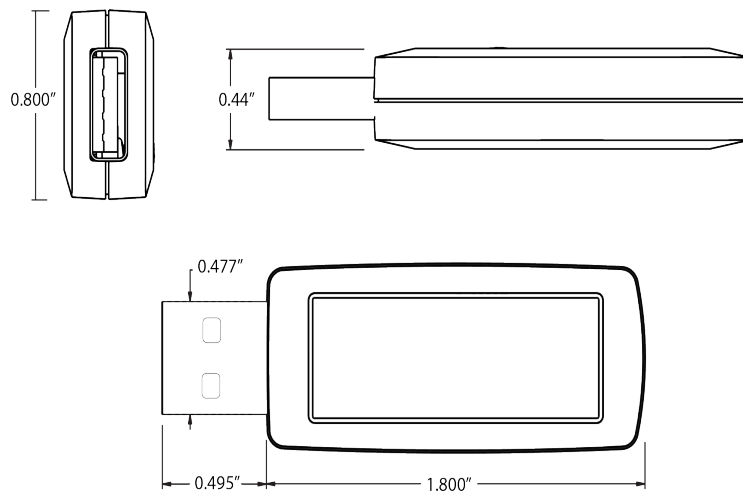
| Specification         | Value                            |
|-----------------------|----------------------------------|
| Operating temperature | -40°C to +85°C (-40°F to +185°F) |
| Relative humidity     | 5% to 95% (non-condensing)       |

## Power requirements

The following table describes the power requirements for the XBee 3 USB Adapter Pro.

| Specification                         | Value                                                  |
|---------------------------------------|--------------------------------------------------------|
| Supply voltage                        | 5V ( $\pm 0.25$ V) from USB port of PC <sup>1</sup>    |
| Operating current (transmit, typical) | 140 mA, + 19 dBm                                       |
| Operating current (receive, typical)  | 31 mA                                                  |
| Power-down current, typical           | Do not put the XBee 3 USB Adapter Pro into sleep mode. |

## Dimensions



The following table provides the dimensions for the XBee 3 USB Adapter Pro.

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<sup>1</sup>USB port needs to be SELV limited supply, meeting the USB1 Implementers Forum specification.

| Specification | Value             |
|---------------|-------------------|
| Length        | 2.29 in (5.83 cm) |
| Width         | 0.80 in (2.03 cm) |
| Height        | 0.44 in (1.12 cm) |

## RF operation specifications

The following table describes the RF operation specifications for the XBee 3 USB Adapter Pro.

| Specification            | Value                 |
|--------------------------|-----------------------|
| Operating frequency band | 2.4 GHz ISM           |
| Connector                | USB Type A            |
| Antenna options          | Internal antenna only |

## RF performance specifications

The following table describes the RF performance specifications for the XBee 3 USB Adapter Pro.

| Specification                                    | Value                 |
|--------------------------------------------------|-----------------------|
| Outdoor RF line-of-sight range                   | 1200 m (0.75 mi)      |
| XBee 3 Transmit Power Output (nominal 25°C)      | 79 mW (19 dBm)        |
| RF data rate                                     | 250 kb/s              |
| Serial interface data rate (software selectable) | 1200 b/s - 921.6 kb/s |
| XBee 3 receiver sensitivity                      | -103 dBm              |

## Networking and security specifications

The following table describes the networking and security specifications for the XBee 3 USB Adapter Pro.

| Specification                            | Value                      |
|------------------------------------------|----------------------------|
| Supported network topologies             | DigiMesh, 802.15.4, Zigbee |
| Number of channels (software selectable) | 16                         |
| Addressing options                       | PAN, Channel, and address  |

## Regulatory conformity summary

| Approval                                                   |                                      |
|------------------------------------------------------------|--------------------------------------|
| United States (FCC Part 15.247)                            | Approved, contains FCC ID: MCQ-XBEE3 |
| Innovation, Science and Economic Development Canada (ISED) | Approved, contains IC: 1846A-XBEE3   |

## Configure the XBee 3 USB Adapter Pro

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## Connect the XBee 3 USB Adapter Pro



**WARNING!** The XBee 3 USB Adapter Pro product is NOT to be used in portable applications.



**WARNING!** The XBee 3 USB Adapter Pro product cannot be operated in close proximity to the human head or body.

The XBee 3 USB Adapter Pro must be installed so that it is never in near proximity to human heads or bodies.

The XBee 3 USB Adapter Pro requires a device driver, **FT232R**. To download this device driver, go to [ftdichip.com/drivers/vcp.htm](http://ftdichip.com/drivers/vcp.htm) and select the download appropriate for your operating system.

The USB connection is converted to UART communications and are connected to DIN, DOUT, RTS, CTS and DTR of the XBee 3 device.

## Programming options

There are many options to consider when making wireless programmatic access to an XBee network of devices or device adapters. In broad terms, you can write a program which runs on a computer to interact with a network or you can use a gateway device.

When using a computer, consider using Command mode for the XBee device attached to the computer. Although using this mode is straight forward it does not offer you as fine of control as when using the API mode option.

You can also use Digi Remote Manager to program the XBee 3 USB Adapter Pro; see the [Digi Remote Manager Programming Guide](#).

## Configure the XBee 3 USB Adapter Pro

For information on configuring the XBee 3 USB Adapter Pro, see the user guide for the protocol you are running:

- [XBee 3 DigiMesh 2.4 RF Module User Guide](#)
- [XBee 3 802.15.4 RF Module User Guide](#)
- [XBee 3 Zigbee RF Module User Guide](#)

## Hardware reset

There is no external access to the hardware reset pin on the XBee 3 USB Adapter Pro. If a hardware reset is required, hold the UART break line for an extended time to hardware reset the XBee 3 USB Adapter Pro.

Hardware reset will occur between 4 and 20 seconds.

## Regulatory information

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## FCC notices

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.



**CAUTION!** Changes or modifications not expressly approved by Digi International Inc. could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

To conform to FCC requirements the XBee 3 USB Adapter Pro must be installed as described in [Connect the XBee 3 USB Adapter Pro](#).

## ISED notices

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

1. L'appareil ne doit pas produire de brouillage;
2. L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

To conform to ISED requirements the XBee 3 USB Adapter Pro must be installed as described in [Connect the XBee 3 USB Adapter Pro](#).