Digi XB2B-WFPT-001

DIGI XB2B-WFPT-001 WiFi Module User Manual

XBee Wi-Fi (S6B) with PCB Antenna, Through-Hole

Introduction

This manual provides comprehensive instructions for the installation, operation, and maintenance of the DIGI XB2B-WFPT-001 WiFi Module. This RF TXRX Module, part of the XBee Wi-Fi (S6B) series, features an integrated PCB Antenna and is designed for through-hole mounting, making it suitable for integration into various electronic projects and devices, particularly personal computers.
The XBee Wi-Fi module offers robust wireless connectivity, enabling devices to communicate over Wi-Fi networks. Please read this manual thoroughly before using the module to ensure proper functionality and safety.

Safety Information

Observe the following safety precautions to prevent damage to the module or injury to yourself:

- Ensure proper electrostatic discharge (ESD) precautions are taken when handling the module.
- Do not expose the module to extreme temperatures, humidity, or corrosive environments.
- Verify power supply voltage and polarity before connecting the module. Incorrect power can cause permanent damage.
- Only qualified personnel should perform installation and maintenance.
- Avoid touching the PCB antenna area during operation to prevent signal interference.

Package Contents

Upon opening the package, please verify that all components are present and undamaged:

- 1 x DIGI XB2B-WFPT-001 WiFi Module (XBee Wi-Fi S6B with PCB Antenna)
- (Note: The PCB antenna is integrated into the module.)

Setup

Physical Installation

The XB2B-WFPT-001 module is designed for through-hole mounting. Ensure the target PCB has appropriate pin

headers or solder pads for secure attachment.

1. Identify the correct orientation of the module on your host board. Pin 1 is typically marked on the module.
2. Carefully insert the module's pins into the corresponding holes on the host PCB.
3. Solder each pin securely to the host PCB. Ensure good solder joints and avoid bridging pins.
4. Verify that the PCB antenna area is clear of obstructions for optimal wireless performance.

Figure 1: Example XBee modules. The XB2B-WFPT-001 features an integrated PCB antenna, similar to the module on the left in this image.

Electrical Connections

Connect the module to your system's power supply and communication lines (e.g., UART, SPI) as per the module's datasheet. Ensure the power supply meets the voltage and current requirements of the XBee Wi-Fi module.

Software and Driver Installation

For communication with a personal computer, you may need to install appropriate drivers or software. Refer to the official Digi International website for the latest XBee Wi-Fi drivers and XCTU configuration utility, which is essential for configuring the module's network settings.

- Download and install the XCTU software from the Digi website.
- Connect your host system (with the XBee module) to your computer via a suitable interface (e.g., USB-to-UART converter).
- Use XCTU to discover and configure the module for your specific Wi-Fi network (SSID, password, security type).

Operating

Basic Functionality

The DIGI XB2B-WFPT-001 functions as an RF Transceiver (TXRX) module, enabling wireless communication over Wi-Fi. Once configured, it can join a Wi-Fi network and send/receive data.

Network Connection

After initial setup with XCTU, the module will attempt to connect to the configured Wi-Fi network upon power-up. The module's status indicators (if available on your host board) or serial output can provide feedback on connection status.

Data Transmission and Reception

Data can be sent to and received from the module via its serial interface (UART). The module handles the Wi-Fi communication protocols internally. Refer to the XBee Wi-Fi S6B product manual for detailed AT commands and API modes for advanced data handling.

- **AT Command Mode:** Used for configuration and basic data transfer.
- **API Mode:** Provides structured data packets for more complex applications and reliable data transfer.

Maintenance

The DIGI XB2B-WFPT-001 module requires minimal maintenance. However, adhering to these guidelines can prolong its lifespan and ensure optimal performance:

- **Cleaning:** If necessary, gently clean the module with a dry, soft, lint-free cloth. Do not use liquid cleaners or solvents.
- **Storage:** Store the module in a dry, cool, and static-free environment when not in use.
- **Firmware Updates:** Periodically check the Digi International website for firmware updates. Updating the firmware can provide performance enhancements, bug fixes, and new features. Use the XCTU utility for firmware updates.

Troubleshooting

If you encounter issues with your DIGI XB2B-WFPT-001 module, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
Module not powering on.	Incorrect power supply voltage or polarity; poor solder joints.	Verify power connections and voltage. Check solder joints for continuity.
Cannot connect to Wi-Fi network.	Incorrect SSID/password; out of range; Wi-Fi channel interference.	Double-check Wi-Fi credentials in XCTU. Move module closer to access point. Try a different Wi-Fi channel on your router.
Poor signal strength or intermittent connection.	Obstructions around PCB antenna; excessive distance from access point; interference.	Ensure no metal or large objects are blocking the PCB antenna. Reduce distance to access point. Identify and mitigate sources of interference.
Module not responding to serial commands.	Incorrect serial port settings (baud rate, parity, data bits, stop bits); module in API mode.	Verify serial port settings match module configuration. If in API mode, switch to AT command mode or use API framing.

For more advanced troubleshooting, consult the comprehensive XBee Wi-Fi S6B product manual available on the Digi International support website or contact Digi technical support.

Specifications

Feature	Detail
Model Number	XB2B-WFPT-001
Brand	Digi
Manufacturer	DIGI
Module Type	RF TXRX Module, XBee Wi-Fi (S6B)
Antenna Type	Integrated PCB Antenna
Mounting Type	Through-Hole

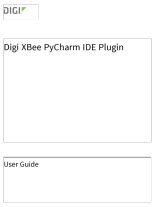
Feature	Detail
Compatible Devices	Personal Computer (via appropriate interface)
ASIN	B07FWHMDHD
Date First Available	July 25, 2018

Warranty and Support

For information regarding product warranty, technical support, and additional resources, please visit the official Digi International website. You can find detailed documentation, FAQs, and contact information for their support team.
Website: www.digi.com/support

Related Documents - XB2B-WFPT-001

	Digi XBee® BLU User Guide Comprehensive user guide for the Digi XBee® BLU wireless module, detailing its configuration, Bluetooth Low Energy (BLE) capabilities, MicroPython integration, AT commands, and API frame structures for seamless IoT deployments.
	Digi XBee Drop-in Networking Accessories User Guide: Seamless Wireless Connectivity This comprehensive user guide provides detailed information on Digi's XBee Drop-in Networking Accessories, including adapters, sensors, routers, and smart plugs, enabling robust wireless connectivity for IoT applications.
	XBee®/XBee-PRO® S2C Zigbee® RF Module User Guide This user guide provides comprehensive information on the XBee®/XBee-PRO® S2C Zigbee® RF Module, covering technical specifications, hardware details, operation, Zigbee networks, transmission, addressing, security, and module support.

	Digi XBee PyCharm IDE Plugin User Guide User guide for the Digi XBee PyCharm IDE Plugin, detailing installation, project creation, coding, building, running, and debugging Python/MicroPython applications for Digi devices.
	Digi XBee Mobile User Guide User guide for the Digi XBee Mobile application, an iOS and Android compatible app for connecting and configuring Digi XBee3 devices via Bluetooth Low Energy (BLE).
	Digi XBee XR 868 RF Module User Guide Comprehensive user guide for the Digi XBee XR 868 RF Module, covering specifications, secure access, networking, sleep modes, AT commands, and hardware design. Essential for developers and integrators.