
# Panduit PAN100 WiFi/Bluetooth Radio Module Instructions



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## Overview

The PAN100 is a WiFi and Bluetooth radio module from Espressif, part number ESP32-WROVER-IE that is paired with a Taoglas antenna, part number FXP840.07.0055B. Refer to the manufacturer's datasheets for usage and specifications.

| Device | Datasheet Name |
|---|---|
| ESP32-WROVER-IE | Esp32-wrover-e_esp32-wrover-ie_datasheet_en.pdf |
| FXP840.07.0055B | FXP840.07.0055B.pdf |

### Radio Specifications

| Parameter | Condition | Min | Typ | Max | Unit |
|---|---|---|---|---|---|
| Operating Frequency | | 2412 | – | 2484 | MHz |
| Tx Power | 11n, MCS7 | 12 | 13 | 14 | dBm |
| Tx Power | 11b mode | 18.5 | 19.5 | 20.5 | dBm |

### Integration Instructions

This module has been granted modular approval for mobile applications. OEM integrators for host products may use the module in their final products without additional FCC / IC (Industry Canada) certification if they meet the following conditions. Otherwise, additional FCC / IC approvals must be obtained.

- The host product with the module installed must be evaluated for simultaneous transmission requirements.
- The user's manual for the host product must clearly indicate the operating requirements and conditions that must be observed to ensure compliance with current FCC / IC RF exposure guidelines.
- To comply with FCC / IC regulations limiting both maximum RF output power and human exposure to RF radiation, the maximum antenna gain including cable loss in a mobile-only exposure condition must not exceed 3.6 dBi.
- A label must be affixed to the outside of the host product with the following statements:
    - **Contains FCC ID:** 2AVV3-PAN100
    - **Contains IC:** 11688B-PAN100

The final host / module combination may also need to be evaluated against the FCC Part 15B criteria for unintentional radiators in order to be properly authorized for operation as a Part 15 digital device.

If the final host / module combination is intended for use as a portable device (see classifications below) the host manufacturer is responsible for separate approvals for the SAR requirements from FCC Part 2.1093 and RSS-102.

### Operating Requirements

The following power levels for the 2.4 GHz WiFi modulations schemes listed below were needed to meet FCC

15.247 conformity and will be needed in the final end-product, as set by the host software.

- 802.11g with 2.0 dB attenuation (8 X 0.25 dB).
- 802.11n 20 MHz channel bandwidth with 2.0 dB attenuation (8 X 0.25 dB).
- 802.11n 40 MHz channel bandwidth with 7.0 dB attenuation (28 X 0.25 dB).

## Compliance Notices

#### FCC Interference Statement

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 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.

#### FCC Part 15 Clause 15.21

Changes or modifications not expressly approved by the party responsible for compliance could void the user’s authority to operate the equipment.

#### FCC Interference Compliance Statement

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.

#### ISED Canada RSS-Gen Notice

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.

#### ISED Canada Notice for Equipment with Detachable Antennas

This radio transmitter 11688B-PAN100 has been approved by Innovation, Science and Economic Development Canada to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are

strictly prohibited for use with this device.

| Antenna Type | Maximum Antenna Gain (dBi) | Antenna Impedance (Ohms) |
|---|---|---|
| Monopole | 3.6 | 50 |

## Documents / Resources

| | |
|---|---|
|  | **Panduit PAN100 WiFi/Bluetooth Radio Module** [pdf] Instructions<br>PAN100, 2AVV3-PAN100, 2AVV3PAN100, PAN100 WiFi Bluetooth Radio Module, Bluetooth Radio Module, Radio Module, Module |