endiio EN-WM2 Wireless Module User Manual

Contents

endiio EN-WM2 Wireless Module

Revision History

Revision	Date	Description
v1.0	12.12.2024	Initial Release
v1.1	30.01.2025	Adding a Note in the Section Electrical & Mechanical Specification

Introduction

The endiio Wireless Module is a Sub-GHz (915MHz) wireless device based on the CC1352P7 microcontroller. It allows the wireless communication between the low-energy wireless sensor nodes and the central unit (Gateway). It supports the 2.4GHz wireless communication as well but this feature is not implemented.
The endiio Wireless module has the ability to communicate with a big variety of sensors over the I²C and SPI buses and a couple of Analog and digital lines.

Product Marketing Information

Table 1 Product Marketing Information

Module Name	Endiio Wireless Module v2
UPN (Unique Product №)	ENWM2
PMN (Product Marketing №)	endiio WM
HVIN (Hardware Version Id №)	V2.2
HMN (Host Marketing Name)	endiio Wireless System
FCC ID	2BL4CEN-WM2
IC Number	33310-ENWM2

Electrical & Mechanical Specification

Table 2 Product Electrical and Mechanical Specification

Input Voltage	2.9 – 3.6 V
Operating Temperature	-30 – 120 °C
Wireless Frequency Band	902 – 928 MHz
No. of Wireless Channels	4 (915.4, 915.6, 915.8, 916.0 MHz)
Maximum Output Transmission Power	8 dBm
Antenna	MikroTik 868 Omni antenna
Antenna Gain	4.5 dBi
Wireless Modulation	GFSK
Wireless Protocol	IEEE 802.15.4
Sampling Rate	15 min.
Polling Rate	30 sec.
Dimensions (W x H x D)	32 x 3.2 x 23 mm

Note: The Omni-Antenna is realized with SMA connector by manufacturing. A SMA-RPSMA adapter is mounted and glued to the antenna using epoxy compound at our factory prior to shipment, see the figures below. Thus, the antenna would be shipped with a unique connector.

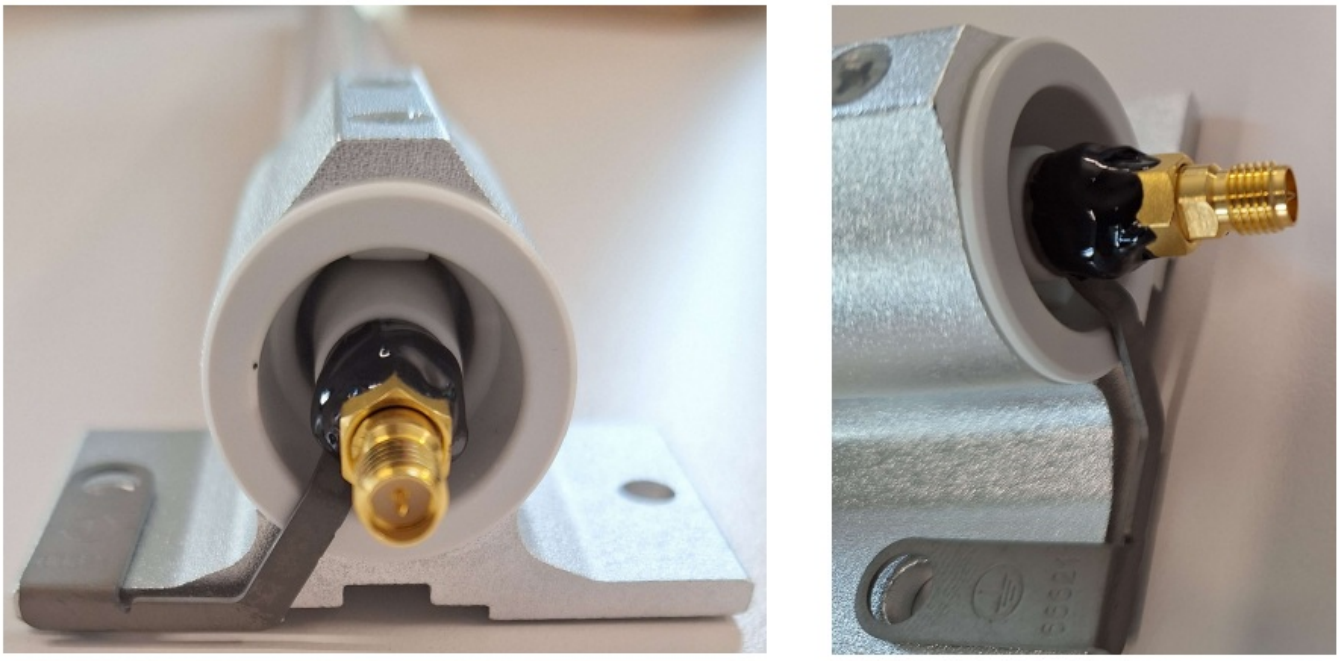


Figure 1: Modified Antenna at endiio

Product Photo

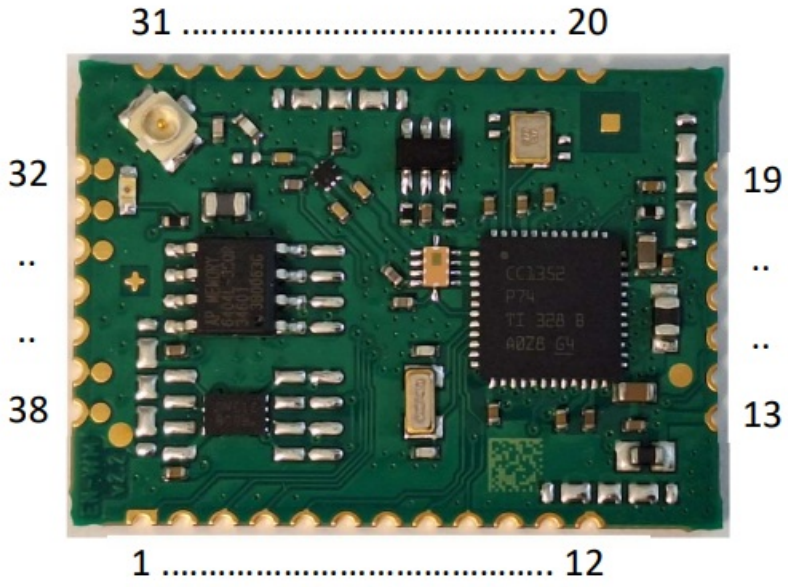


Figure 2: endiio Wireless Module v2

Pinout

Table 3 endiio Wireless Module Pinout

Pin#	I/O	Functionality	Pin#	I/O	Functionality
1	I/O	DIO26	20	Power	GND
2	I	HOST_SPI/UART-_(DIO19)	21	O	SPI_CS_RAM_(DIO7)
3	O	Mem_Power_Enable_(DIO27)	22	I/O	DIO14
4	I/O	DIO28	23		NC
5	I	Comm_Req_(DIO5)	24	I	SPI_B_MISO_(DIO8)
6	I/O	SDA_(DIO21)	25	O	SPI_B_MOSI_(DIO9)
7	O	SCK_(DIO20)	26	O	SPI_B_CLK_(DIO10)
8	I/O	DIO15	27	O	SPI_A_MOSI_(DIO13)
9	O	LED_PCB_(DIO6)	28	I	SPI_A_MISO_(DIO12)
10	I	INT#1_(DIO29)	29	Power	GND
11	I	INT#2_(DIO30)	30	I/O	RF Port
12	Power	GND	31	Power	GND
13	Power	VDD (2.9 – 3.6 V)	32	Power	GND
14	I	Ain3_(DIO25)	33	I	JTAG – tms
15	I	nRst	34	I	JTAG – tck
16	I	Ain2_(DIO24)	35	I/O	JTAG – tdo/LED_(DIO16)
17	I	Ain1_(DIO23)	36	I/O	JTAG – tdi/HF_Ctrl2_(DIO17)
18	O	SPI_A_CLK_(DIO18)	37	I	nRst
19	Power	GND	38	Power	VDD (2.9 – 3.6 V)

Certifications and Compatibilities

CE RED (Europe)
The device is RED (Radio Equipment Directive) certified for the Sub-GHz. Frequency band (868 MHz).

FCC Part 15 (USA) and ISED RSS (Canada)
This wireless module contains a licence-exempt transmitter/receiver that complies with Innovation, Science and Economic Development Canada's licence-exempt RSS(s) and complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

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

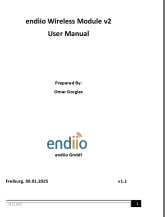
RF Exposure Information
This equipment complies with FCC and ISED radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 cm between the radiator and your body.
This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Note: Changes or modifications made to this equipment not expressly approved by endiio Engineering GmbH may void the FCC authorization to operate this equipment.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Freiburg, 30.01.2025
v1.1

Documents / Resources

	endiio EN-WM2 Wireless Module [pdf] User Manual EN-WM2, 2BL4CEN-WM2, 2BL4CENWM2, EN-WM2 Wireless Module, EN-WM2, Wireless Module, Module

References

- User Manual