

Manual
WISE-2410B

LoRaWAN Module

Copyright

The documentation and the software included with this product are copyrighted 2020 by Advantech Co., Ltd. All rights are reserved. Advantech Co., Ltd. also reserves the right to improve the products described in this manual at any time without notice. No part of this manual may be reproduced, copied, translated, or transmitted in any form or by any means without the prior written permission of Advantech Co., Ltd. The information provided in this manual is intended to be accurate and reliable. However, Advantech Co., Ltd. assumes no responsibility for its use, nor for any infringements of the rights of third parties that may result from its use.

Acknowledgements

Intel and Pentium are trademarks of Intel Corporation.

Microsoft Windows and MS-DOS are registered trademarks of Microsoft Corp.

All other product names or trademarks are properties of their respective owners.

Product Warranty (2 years)

Advantech warrants the original purchaser that each of its products will be free from defects in materials and workmanship for two years from the date of purchase.

This warranty does not apply to any products that have been repaired or altered by persons other than repair personnel authorized by Advantech, or products that have been subject to misuse, abuse, accident, or improper installation. Advantech assumes no liability under the terms of this warranty as a consequence of such events.

Because of Advantech's high quality-control standards and rigorous testing, most customers never need to use our repair service. If an Advantech product is defective, it will be repaired or replaced free of charge during the warranty period. For out-of-warranty repairs, customers are billed according to the cost of replacement materials, service time, and freight. Please consult your dealer for more details.

If you believe your product is defective, follow the steps outlined below.

1. Collect all the information about the problem encountered. (For example, CPU speed, Advantech products used, other hardware and software used, etc.) Note anything abnormal and list any onscreen messages displayed when the problem occurs.
2. Call your dealer and describe the problem. Please have your manual, product, and any helpful information readily available.
3. If your product is diagnosed as defective, obtain a return merchandise authorization (RMA) number from your dealer. This allows us to process your return more quickly.
4. Carefully pack the defective product, a completed Repair and Replacement Order Card, and proof of the purchase date (such as a photocopy of your sales receipt) into a shippable container. Products returned without a proof of purchase date are not eligible for warranty service.
5. Write the RMA number clearly on the outside of the package and ship the package prepaid to your dealer.

Declaration of Conformity

Federal Communication Commission Interference Statement

Notice to OEM integrator

- (1). This module limit can be used to install in the host below.
Product name: LoRaWAN Smart Condition Monitoring Sensor
Model: WISE-2410
- (2). The antenna(s) used for this transmitter must be installed to the provided separation distance of at least 20cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.
- (3). The module shall be only used with the integral antenna(s) that has been originally tested and certified with this module.

As long as 3 conditions above are met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirement with this module installed (for example, digital device emission, PC peripheral requirements, etc.)

FCC WARING 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.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Radiation Exposure Statement:

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

NCC 警语

第十二條 經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。

第十四條 低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。前項合法通信，指依電信法規定作業之無線電通信。低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

VCCI

この装置は、クラス B 機器です。この装置は、住宅環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。

使用説明書に従って正しい取り扱いをして下さい。

VCCI-B



Warnings, Cautions, and Notes

Warning! Warnings indicate conditions that if not observed may cause personal injury!



Caution! Cautions are included to help prevent hardware damage or data losses. For example, "Batteries are at risk of exploding if incorrectly installed. Do not attempt to recharge, force open, or heat the battery. Replace the battery only with the same or equivalent type as recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions."



Note! Notes provide additional optional information.



Safety Instructions

1. Read these safety instructions carefully.
2. Retain this user manual for future reference.
3. For pluggable equipment, the power outlet socket must be located near the equipment and easily accessible.
4. Place the equipment on a reliable surface during installation. Dropping or letting the equipment fall may cause damage.
5. Ensure that the voltage of the power source is correct before connecting the equipment to a power outlet.
6. All cautions and warnings on the equipment should be noted.
7. If the equipment is not used for a long time, disconnect it from the power source to avoid damage from transient overvoltage.
8. Never pour liquid into an opening. This may cause fire or electrical shock.
9. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.
10. If one of the following occurs, have the equipment checked by qualified service personnel:
 - The USB port is damaged.
 - Liquid has penetrated the equipment.
 - The equipment has been exposed to moisture.
 - The equipment is malfunctioning, or does not operate according to the user manual.
 - The equipment has been dropped and damaged.
 - The equipment shows obvious signs of breakage.
11. Do not leave the equipment in an environment with a storage temperature of below -20 °C (-4 °F) or above 85 °C (185 °F) USB powered/50 °C (122 °F)
12. Battery powered as this may cause damage. The equipment should be kept in a controlled environment.
13. CAUTION: Batteries are at risk of exploding if incorrectly replaced. Replace only with the same or equivalent type as recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.
14. According to IEC 704-1:1982 standards, the sound pressure level at the operator's position does not exceed 70 dB (A).

DISCLAIMER: These instructions are provided in accordance with IEC 704-1. Advantech disclaims all responsibility for the accuracy of any statements contained herein.

Safety Precautions - Static Electricity

Follow these simple precautions to protect yourself from harm and the products from damage.

- Disconnect the power supply before making any configuration changes. The sudden rush of power after connecting a jumper or installing a card may damage sensitive electronic components.

1 Product Specification

1.1 Wireless Interface

Power Supply	3.6VDC from CN1 connector 5VDC from USB
Operating Frequency	JP: 920.6-923.4MHz TW: 920.3-923.4MHz US: 902-928MHz
Data Rate	980 bps ~ 5.47Kbps
Antenna Type	Chip antenna
Chip Antenna Gain	868~870MHz: 1dBi 902~928MHz: 1dBi
Transmit Power	Up to +20dBm
Receiver Sensitivity	-136 dBm at 125KHz bandwidth
Topology	Star
Operating temperature	-20~85°C
Storage temperature	-30~85°C
Operating humidity	10~95% RH
Storage humidity	5~95% RH

1.2 Configuration

Interface: USB virtual COM port

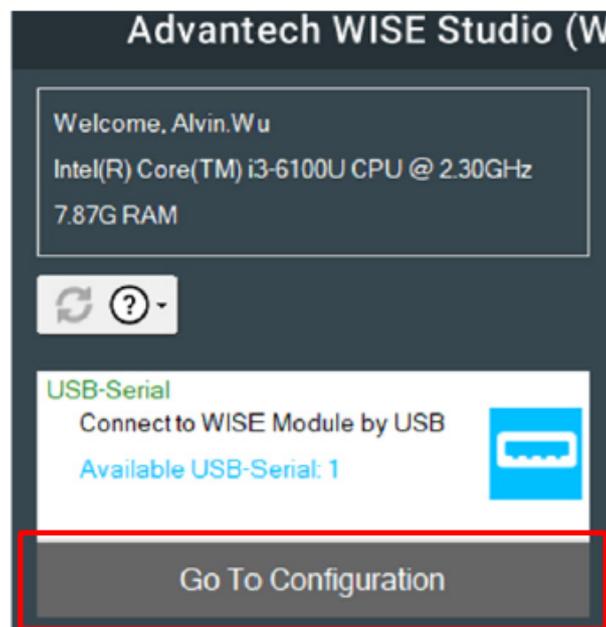
Connector: Micro-B USB

USB chipset: Silicon Labs CP210x

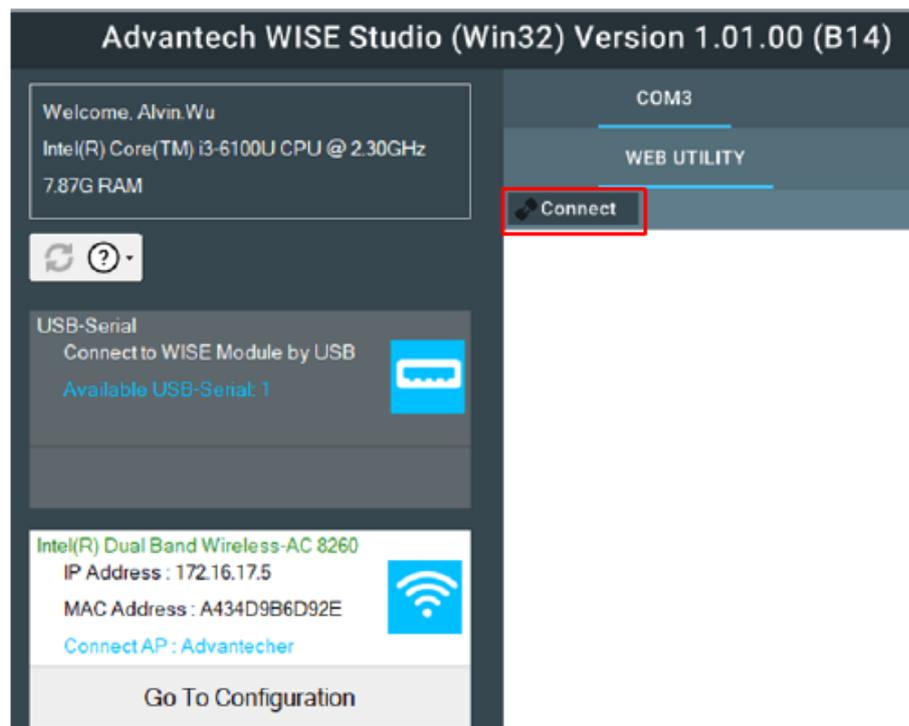
Driver: CP210x USB to UART Bridge VCP Drivers

(<https://www.silabs.com/products/development-tools/software/usb-to-uart-bridge-vcp-drivers>)

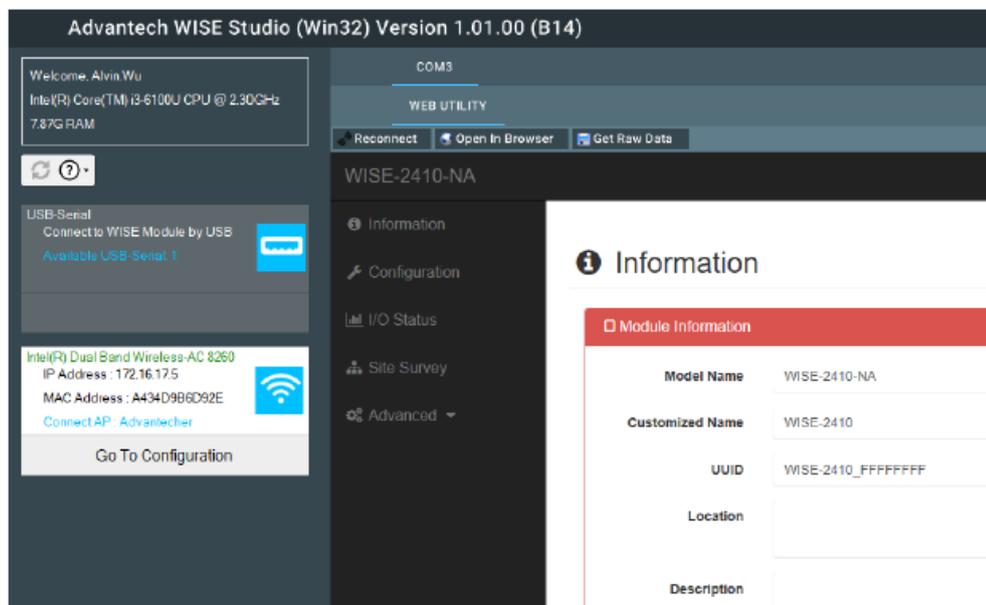
1. Download and install WISE Studio through https://support.advantech.com/support/new_default.aspx.
2. Connect the module to your computer via the micro-USB port.
3. Execute WISE Studio.
4. Clicking **Go to Configuration** while it shows "available USB-Serial" in USB-Serial box, press Go To Configuration.



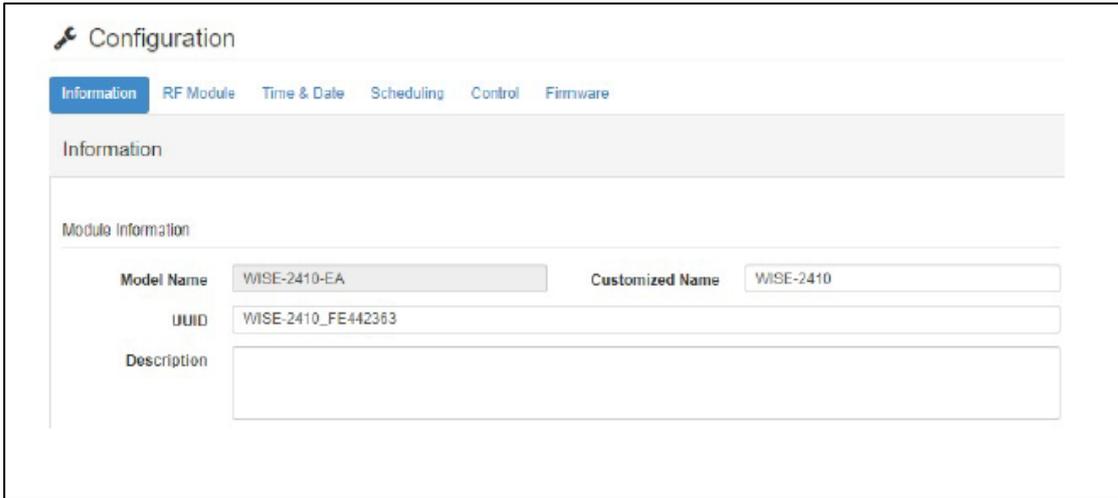
5. Click **Connect** to link the WISE-2410 and the web configuration page will appear.



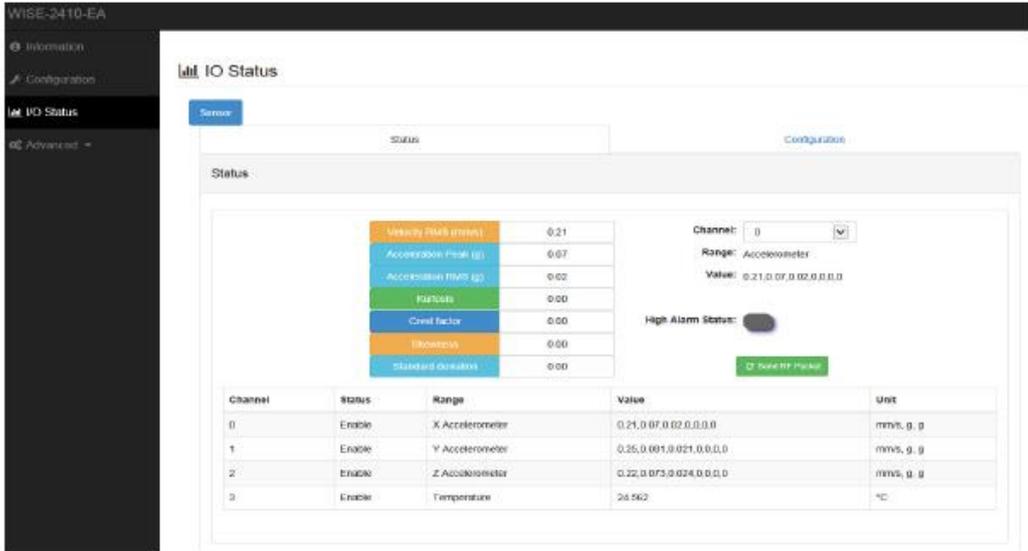
6. Use web configuration in WISE Utility or press Open In Browser to open the web configuration in any browser (Google Chrome is recommended).



7. Click **Information** to check the basic information of the module.
8. Click **Configuration** to use Information, RF Module, Time&Date, Scheduling, Control, Firmware settings.



9. Click **IO Status** to check vibration and temperature data.



1.3 Function Block

