HELTEC AUTOMATION 2A2GJHTIT Wi-Fi BLE LoRa node Instructions

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Introduction

The Wireless Stick is an Arduino compatible network development board (LoRa, WiFi, Bluetooth). With ultra mini size, fit in a standard breadboard (with), A tiny 64*32 OLED display and Lithium Battery Management (with SH1.25-2P socket) system also assembled on board. It’s the best choice for your IoT project development. The Wireless Stick had a well-matched RF circuit, providing good and stable RF signal. We also provide an Arduino library for the LoRaWAN stack, makes it can directly connect to any standard LoRa gateway via LoRaWAN protocol. The main control chip of this product is Xtensa LX6 32bit dual-core processor: ESP32. a powerful CPU, provide BLE and state-of-the-art WiFi radio.

processor

- Espressif ESP32 chipset
- Dual processor WiFi radio System on chip
- 32 Bit Dual-core 240MHz Main Frequency
- Integrating WiFi and Bluetooth

- The main processor is completely free to run the user application
- An additional ULP coprocessor that monitors GPIOs, ADC channels, and controls most internal peripherals

Human–Computer Interaction

- 0.49 inch 64*32 resolution OLED screen
- Press buttons (reset and program)

Power Supply

- Input power: USB, lithium battery
- Output power: +5V (only when powered by USB), +3.3V
- Integrated Lithium Battery Charging Circuit
- External power supply controlled by IO port facilitates development board access to low power consumption

Lora

- Semtech SX1276 chipset
  For different regions, LoRa offers the following options (Reference only, subject to national laws and regulations)
  - 433MHz Europe, max 10dB output
  - 470 ~510MHz China, Max 20dB Output
  - 868MHz Europe, max 14dB output
  - 915MHz North America, South America, Australia and New Zealand, with a maxi output of 20dB output
- It can be either a LoRa node or a micro gateway.
- Work with Heltec ESP32-LoRaWAN Arduino library.
- Transmission distance: 6 Km in open area
- Output power: up to + 20dBm (+2dBm)

Interface

- 2 x UART 2 x SPI 2 x I2C I2S
- Analog channels: 8_12 bit ADCs
- Timers: 4_16 bit with PWM and input capture
- DMA on all peripherals
- 24 GPIO
- 5 input port

storage

- RAM 4MB
- External FLASH: 64M-Bit

Power waste

- Deep dormancy 800uA
- WiFi AP 135mA
- LoRa 10dB output 50mA
- LoRa 15dB output 110mA
- LoRa 20dB output 130mA

WiFi

- 802.1b/g/n 16mbps

Mechanical structure

- size 60mm x 23mm x 8mm (see appendix)

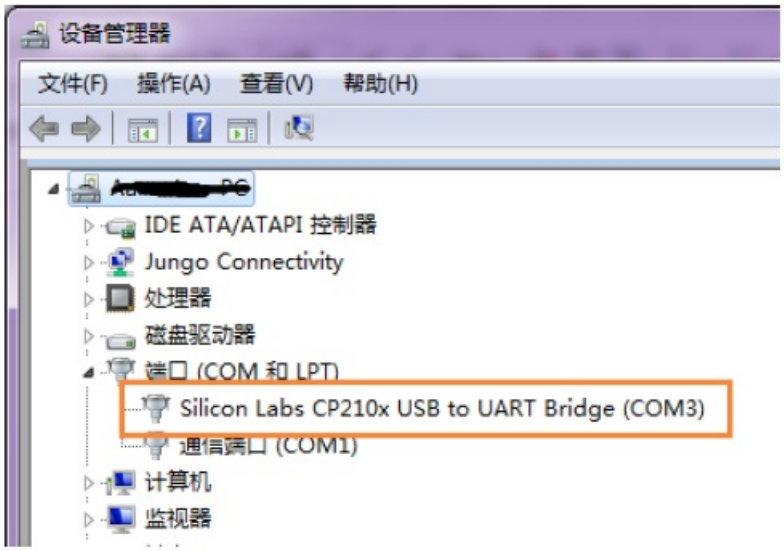
Bluetooth

- Low energy Bluetooth(BLE)
- Classic bluetooth

Development environment installation

Driver installation

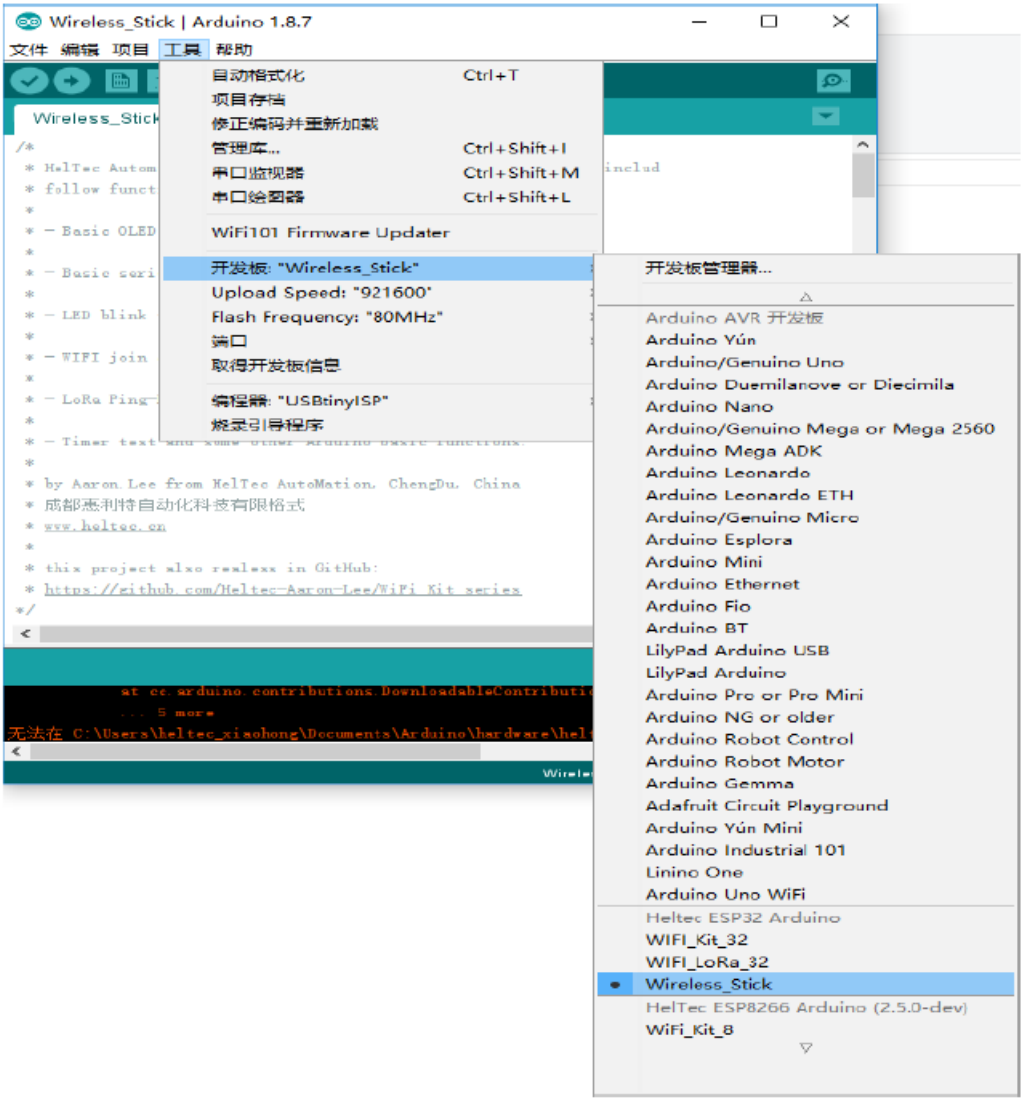
For Mac OS, Ubuntu, Windows 7 or above operating system, the driver is automatically installed, if not automatically installed or prompted error, please go to Silicon Labs official website to download and install the latest version of the driver CP210X version driver download address As we tested, we found that the driver of the CP210x series chip version 6.7.0.0 is the most stable. This version is highly recommended: download link To Windows operating system, for example, if the drive is installed, you can in the “Device Manager – port” to see a similar message:



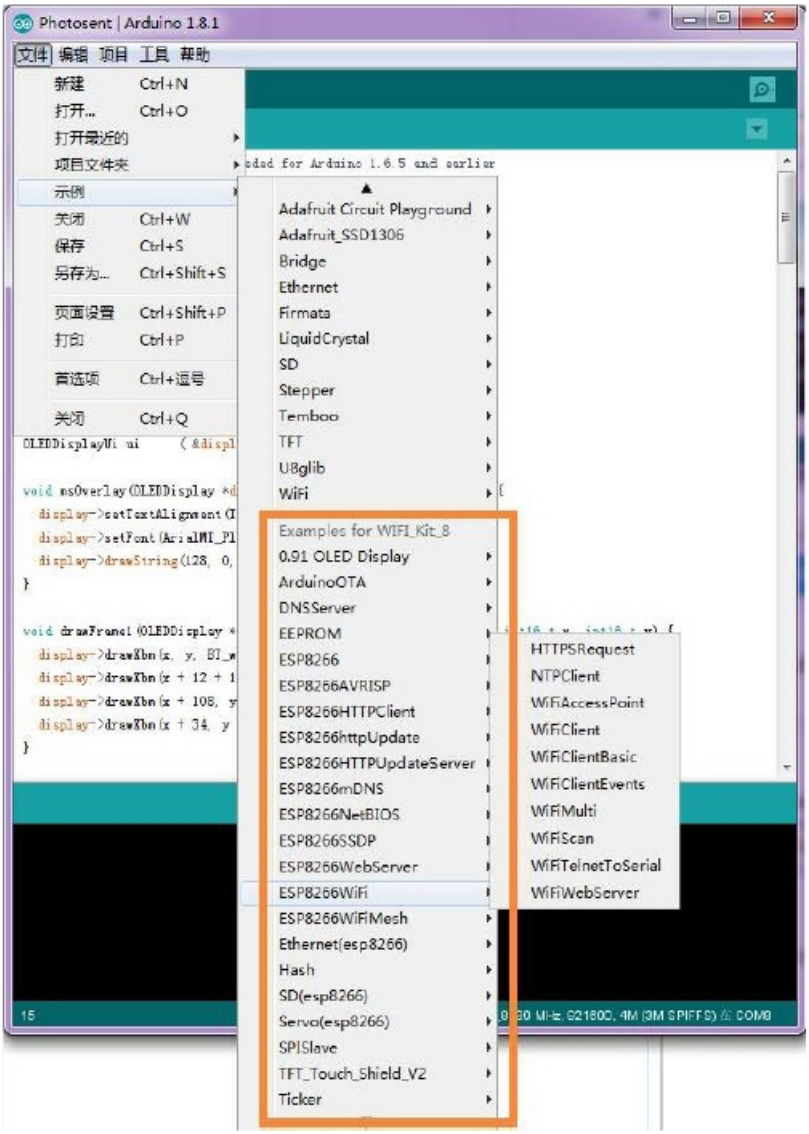
Development environment installation

All the operations are based on that your computer had installed the newest Arduino IDE. The Wireless Stick development board belongs to the HelTec WIFI Kit series. For the installation of the development environment, please refer to the Heltec WIFI Kit series development environment:The latest installation method is posted at this address **http://www.heltec.cn/the-installation**-method-of-wifi-kit-series-products-in-arduino-development-environment/?lang=en If everything is ok, you can find the Wireless Stick development board in the Tools –

Development Board menu. As shown in Figure 2-1:



You can find the board Arduino routines for various resources in the “Examples” menu, which you can compile directly and download to your WIFI Kit development board. Attention to the corresponding development board model, choose the wrong model may lead to compile errors. As shown in Figure 2-2:



Resources

- Summary of Common Questions
- ESP32-LoRaWAN Arduino library https://github.com/HelTecAutomation/ESP32_LoRaWAN To prevent unearned copy of the board, to run ESP32-LoRaWAN code need a license relate to your board's Chip ID: http://www.heltec.cn/search/
- Size and 3D drawing
- AutoCAD 2004 version board size Download
- SolidWorks 2014 version 3D drawing Download For more questions, please [visit www.heltec.cn](http://www.heltec.cn)

Notice

- Wireless Stick have an SH1.25-2P Lithium battery socket, you may need a normal SH1.25 wire to connect with a battery.

- The LoRa communication function of the Wireless Stick must be used with an antenna with suitable frequency. If there is no antenna, the LoRa chip may be damaged. The IPEX interface is left on the development board, but the antenna is not equipped. Please purchase the antenna separately.

Contact us

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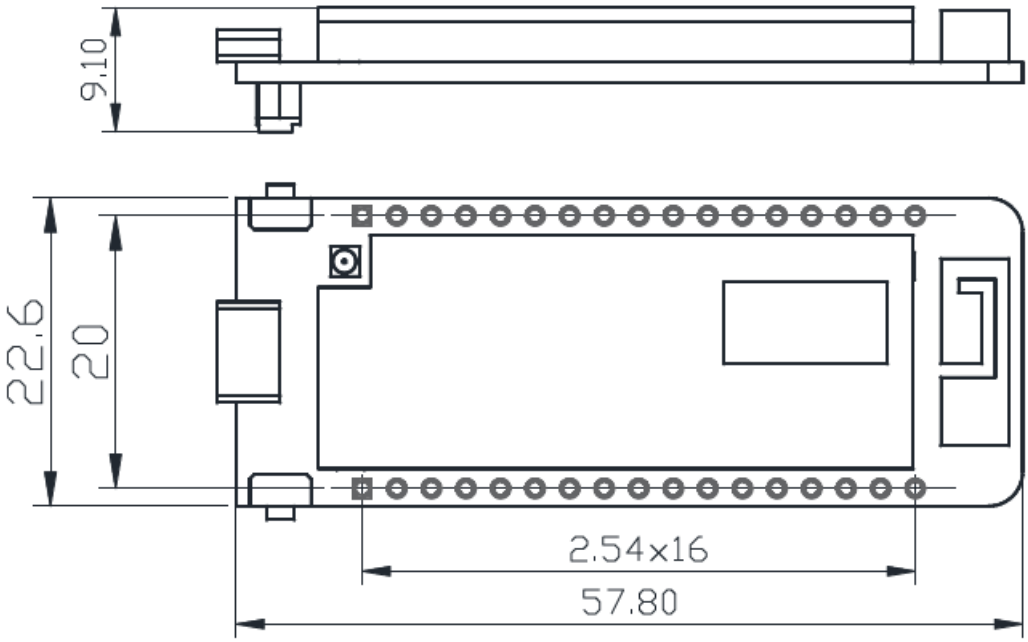
Appendix



FCC 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 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 assure continued compliance, any changes or modifications not expressly approved by the party. Responsible for compliance could void the user's authority to operate this equipment. (Example- use only shielded interface cables when connecting to computer or peripheral devices).This equipment complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: This device may not cause harmful interference, and This device must accept any interference received, including interference that may cause undesired operation.

FCC Radiation Exposure Statement:
The equipment complies with FCC Radiation exposure limits set forth for uncontrolled enviroment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.

Documents / Resources

	HELTEC AUTOMATION 2A2GJHTIT Wi-Fi BLE LoRa node [pdf] Instructions HTIT, 2A2GJ-HTIT, 2A2GJHTIT, 2A2GJHTIT Wi-Fi BLE LoRa node, 2A2GJHTIT, Wi-Fi BLE LoRa node

References

- [-]
- 14blog.com
- Heltec Automation –
- Heltec Automation –
- Search ChipID relative License – Heltec Automation
- Support – Heltec Automation
- GitHub - Heltec-Aaron-Lee/WiFi_Kit_series: Arduino source codes and toolchain for WiFi_Kit_series made by HelTecAutomation.
- GitHub - HelTecAutomation/ESP32_LoRaWAN: Transplanted from Semtech LoRaWAN(https://github.com/Lora-net/LoRaMac-node) protocol to "ESP32 + Arduino" platform. Use RTC, support deep sleep, only working with ESP32 + LoRa boards made by HelTec Automation(TM). N
- CP210x USB to UART Bridge VCP Drivers - Silicon Labs