WiFi LoRa 32 razvojna ploča

https://heltec.org/product/wifi-lora-32-v2/

Hardverske karakteristike (1)

Resource	Parameter		
Master Chip	ESP32(240MHz Tensilica LX6 dual-core + 1 ULP, 600 DMIPS)		
Wireless Communication	Wi-Fi	Bluetooth	LoRa
	802.11 b/g/n (802.11n up to 150 Mbps)	Bluetooth V4.2 BR/EDR and Bluetooth LE specification	Node-to-node communication or LoRaWAN
LoRa Chip	SX1276/SX1278		
LoRaWAN Area	hardware version	Support frequency	
	LF	EU433	
		CN470	
	HF	IN865	
		EU868	
		US915	
		AU915	
		KR920	
		AS923	
LoRa Maximum Output Power	19dB ± 1dB		
Hardware Resource	UART x 3; SPI x 2; I2C x 2; I2S x 1; 12-bits ADC input x 18; 8-bits DAC output x 2; GPIO x 22，GPI x 6		
FLASH	8MB(64M-bits) SPI FLASH		
RAM	520KB internal SRAM		
Interface	Micro USB x 1; LoRa Antenna interface(IPEX) x 1; 18 x 2.54 pin x 2		
Maximum Size (Including protruding parts such as switch and battery compartment)	51 x 25.5 x 10.6 mm		
USB to Serial Chip	CP2102		
Battery	3.7V Lithium (SH1.25 x 2 socket)		
Solar Energy	x		
Battery Detection Circuit	√		
External Device Power Control (Vext)	√		
Low Power	Deep Sleep 800μA		
Display Size	0.96-inch OLED		
Working Temperature	-40~80℃		

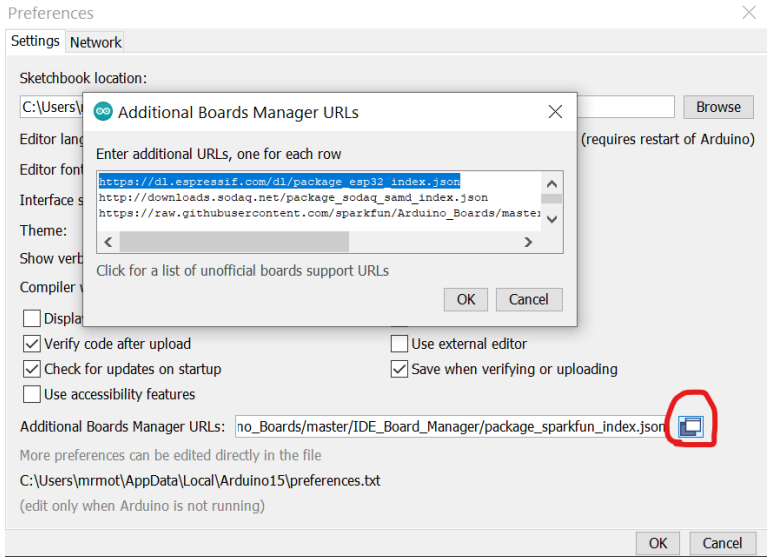
Hardverske karakteristike (2)

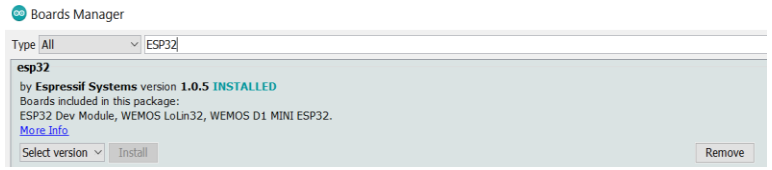
WiFi LoRa 32 is a part of the “Heltec LoRa“ series, with the following features:

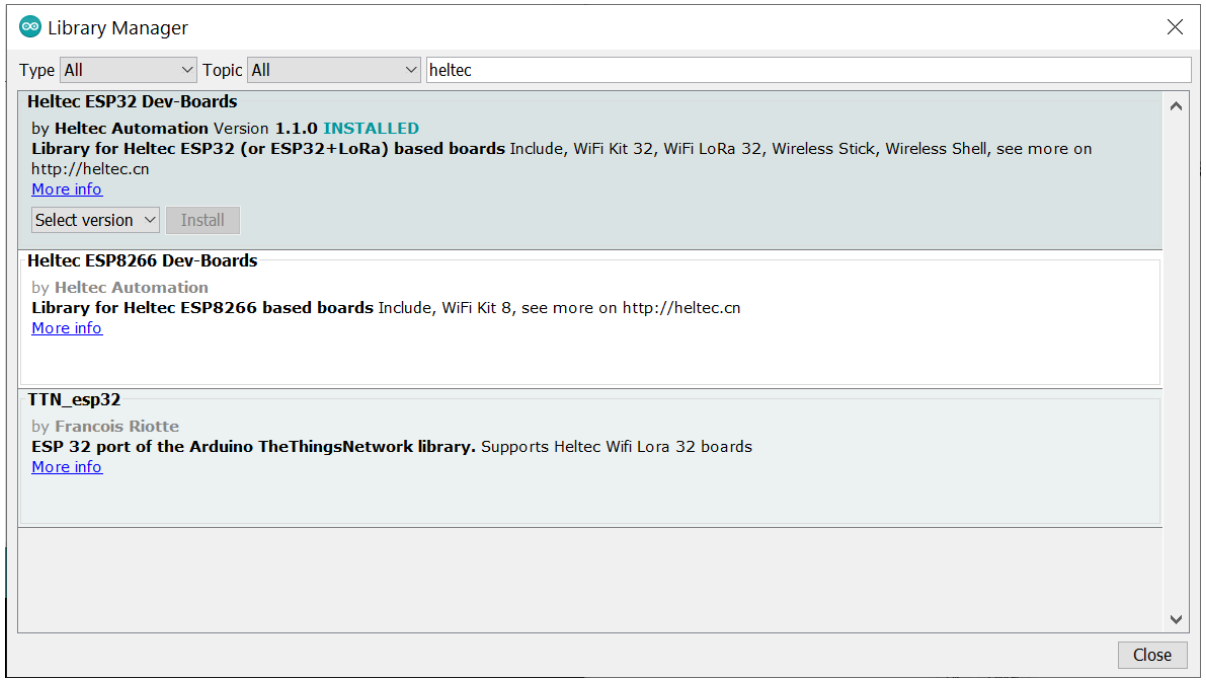
- **CE Certificate**;
- Microprocessor: ESP32 (dual-core 32-bit MCU + ULP core), with LoRa node chip SX1276/SX1278;
- Micro USB interface with a complete voltage regulator, ESD protection, short circuit protection, RF shielding, and other protection measures;
- Onboard SH1.25-2 battery interface, integrated lithium battery management system (charge and discharge management, overcharge protection, battery power detection, USB / battery power automatic switching);
- Integrated WiFi, LoRa, Bluetooth three network connections, onboard Wi-Fi, Bluetooth dedicated 2.4GHz metal 3D antenna, reserved IPEX (U.FL) interface for LoRa use;
- Onboard 0.96-inch 128*64 dot matrix OLED display, which can be used to display debugging information, battery power, and other information;
- Integrated CP2102 USB to serial port chip, convenient for program downloading, debugging information printing;
- Support the Arduino development environment;
- We provide ESP32 + LoRaWAN protocol Arduino® library, this is a standard LoRaWAN protocol that can communicate with any LoRa gateway running the LoRaWAN protocol. In order to make this code running, a unique license is needed. it can be found on this page;
- With good RF circuit design and basic low-power design (sleep current ≤800uA), it is convenient for IoT application vendors to quickly verify solutions and deploy applications.

Instalacija potrebnog softvera

- Primeri koji će biti rađeni koriste **Arduino IDE**
- Neophodno je dodati novu ploču pomoću opcije File -> Preferences -> Additional Boards Manager URLs -> https://dl.espressif.com/dl/package_esp32_index.json
- Nakon toga, instalira se nova ploča opcijom Tools -> Board -> Boards Manager -> ESP32
- U okviru opcije Sketch -> Include Library -> Manage Libraries instalirati **Heltec ESP32 Dev-Boards**

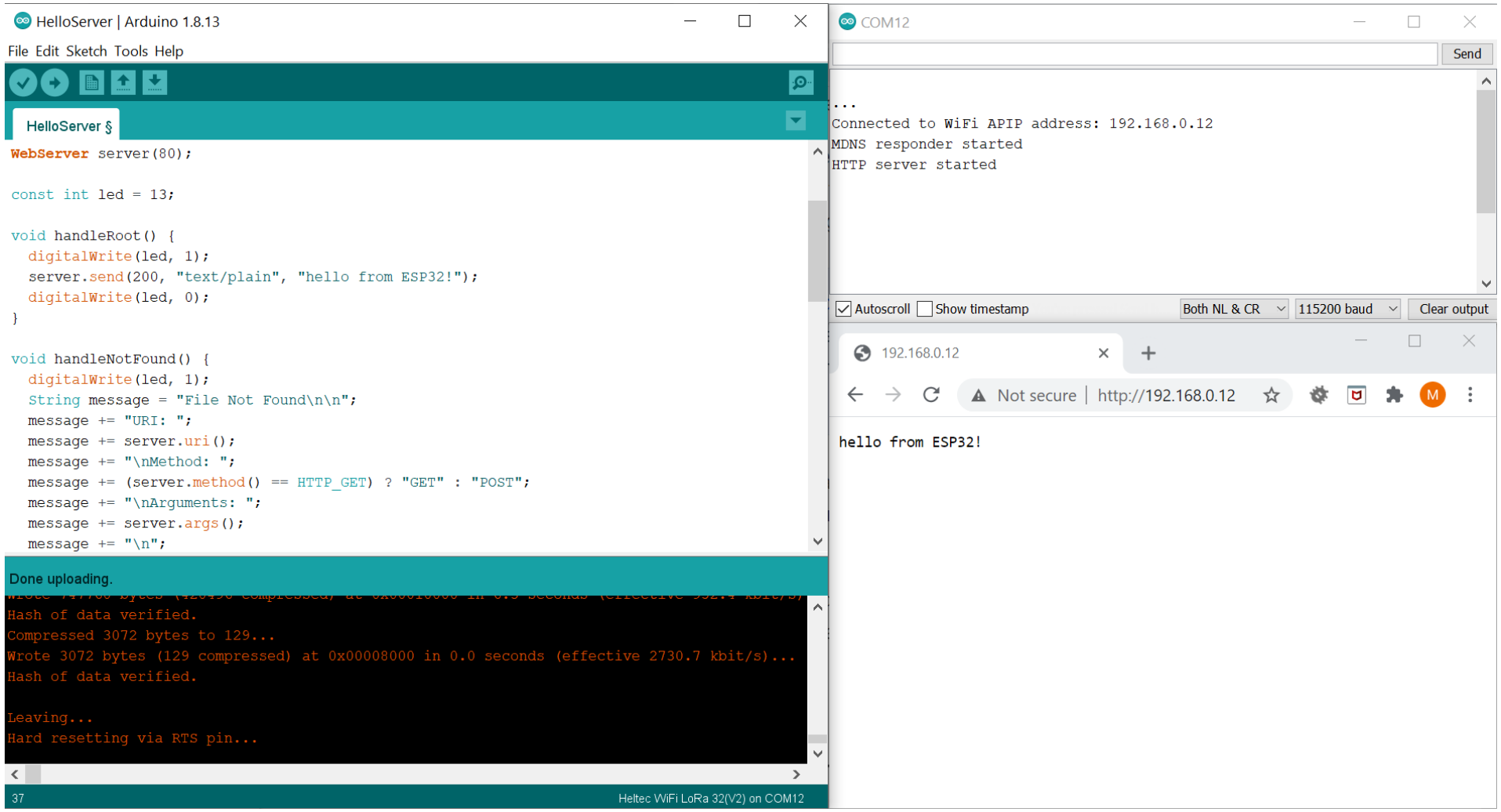






Primer 1: Web server

File -> Examples -> Examples for ESP32 Dev Module -> WebServer -> HelloServer



Primer 2: OLED displej

File -> Examples -> Examples from custom libraries -> Heltec ESP32 Dev Boards -> OLED -> SS1306SimpleDemo