

SPEC SHEET | 01 DEC 2020

Nornir Developer Kit with RTW

Index

About	0
Specifications	2
Hardware	2
Power Supply	2
Wi-Fi	2
Bluetooth	3
Software	3
Size Chart	4
Pin Diagram	4
Product Images	5



About

This IoT developer kit is perfect for professionals, students or amateurs – containing everything you need to start prototyping your own low-powered wireless IoT solutions for the Real Time Web (RTW).

The kit is based on an ESP module with Wi-Fi support, which you can configure to use your local Wi-Fi settings. The kit shows how you can share data online using data links and access SynxBIOS. RTW is the fastest IoT network in the world and this kit makes it simple for you to learn how to connect to the new web network topology and control your network resources globally.

RTW provides more direct communication, better advantage and user experience against online services. You can write/change code and see the result in the serial or remote terminal window immediately. Supports Arduino family and more direct/professional experience that

can be educational when exploring Real Time Web for the first time. Also beneficial for regular programmers who are more used to the direct interaction with computers.

Example source code and training videos are available from the community site nornir.academy.

This is the world's first RTW kit made by developers for developers.

Included in the kit

- 1 x TTGO T-Display (4MB / 16MB)
- 1 x Charging Cable
- 1 x 3.7V lithium Battery
- 2 x Pin row 1x12
- 12 month domain subscription at cioty.com

Real Time Web (RTW)

RTW is very similar to its big brother World Wide Web (WWW), but there are several distinctive differences. WWW uses hyperlinks to link information (files) between web pages. The information is then distributed in networks by someone making a request against it. This is done primarily by people who are in search of information.

RTW uses data links to link data sources. The data sources are distributed in the network when a change of state occurs and then it is shared to everyone who has a link or is part of the linking path from the source. This is done primarily by machines that are capable of processing data as it arises. RTW is a neural web of "machines".

The Real Time Web concept is based on a new technology invented by Nornir. The core technology is based on a networking kernel named SynxBIOS. SynxBIOS provides ownership and data access control that can be administered directly by sending network commands to the network kernel at runtime, doing all sort of things without using middleware or server logic.

To learn more about Synx technology please visit SynxHive.com where all Synx related tools are explained and described.

Welcome to the future and enjoy your kit!

Specifications

Hardware

Chipset	ESPRESSIF-ESP32 240MHz Xtensa® single-/dual-core 32-bit LX6 microprocessor
FLASH	QSPI flash 4MB
SRAM	520 kB SRAM
Button	Reset
USB to TTL	CP2104
Modular interface	UART/SPI/SDIO/I2C/LED PWM/TV PWM/I2S/IRGPIO/ADC/capacitor touch sensor/DACLNA pre-amplifier

Power Supply

Power supply	USB 5V/1A
Charging current	500mA
Battery	3.7V lithium battery
JST Connector	2Pin 1.25mm
USB	Type C

Wi-Fi

Standard	FCC/CE-RED/IC/TELEC/KCC/SRRC/NCC(esp32 chip)
Protocol	802.11 b/g/n(802.11n,speed up to150Mbps)A-MPDU and A-MSDU polymerization,support 0.4µS Protection interval
Frequency range	2.4GHz~2.5GHz(2400MHz~2483.5MHz)
Transmit power	22dBm
Communication distance	300m

Bluetooth

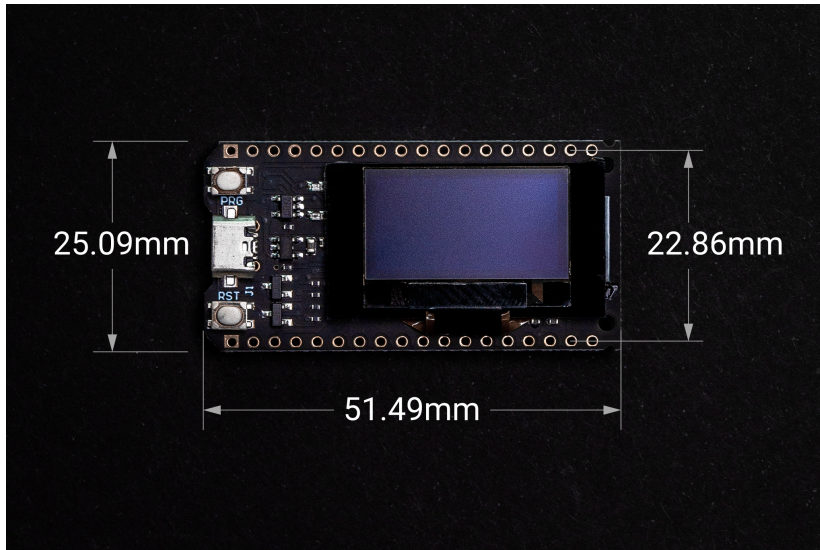
Protocol	Meet bluetooth v4.2BR/EDR and BLE standard
Radio frequency	With -97dBm sensitivity NZIF receiver Class-1,Class-2&Class-3 emitter AFH
Audio frequency	CVSD&SBC audio frequency

Software

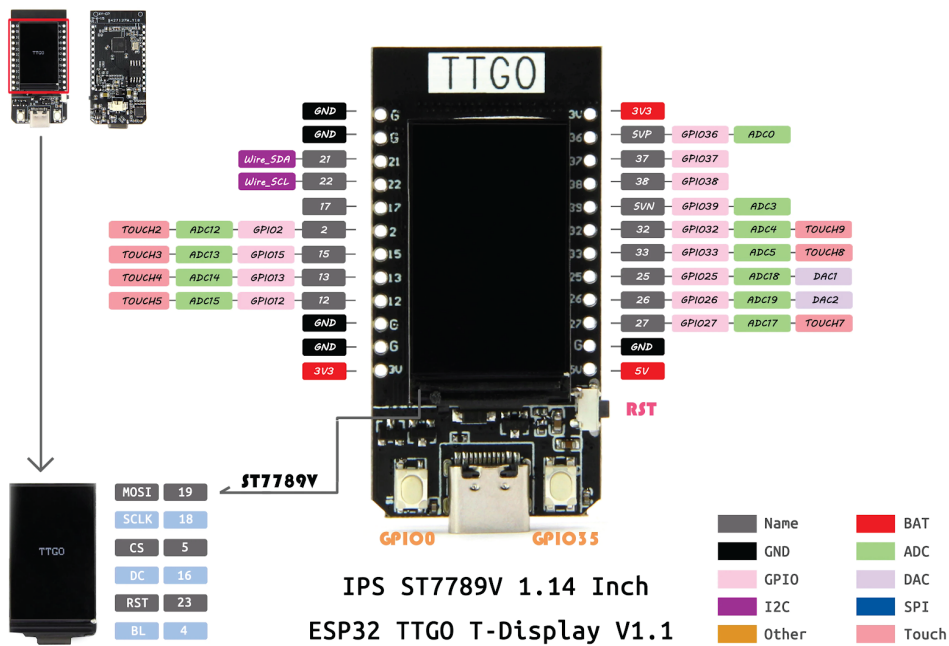
Wi-Fi Mode	Station/SoftAP/SoftAP+Station/P2P
Security mechanism	WPA/WPA2/WPA2-Enterprise/WPS/SynxPass*
Encryption Type	AES/RSA/ECC/SHA
Firmware upgrade	UART download/OTA(Through network/host to download and write firmware)
Software Development	Support arduino development IDE /SDK for user firmware development
Networking protocol	IPv4/IPv6/SSL/TCP/UDP/HTTP/FTP/SynxBIOS*
User Configuration	AT + Instruction set, nornir.cioty.com/devit , android/iOS app
OS	FreeRTOS/SynxBIOS*

*Synx tools enable distributed network kernel for Real Time Web. This enhances the HTTP/HTTPS and websocket to be used directly by the device and active web communication with any network resources globally. Please check nornir.academy for how to set up the communication, or synxhive.com for more detailed technical description of the Real Time Web network topology.

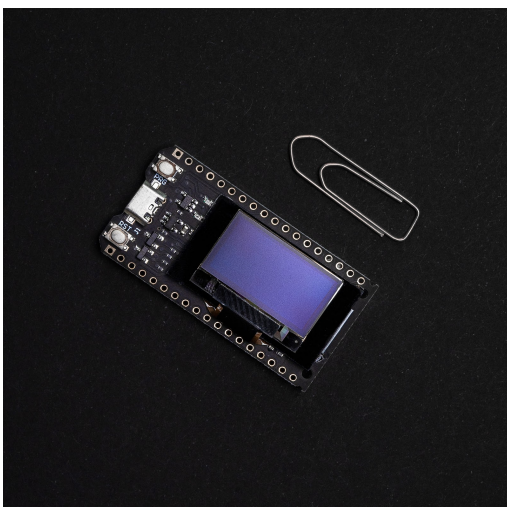
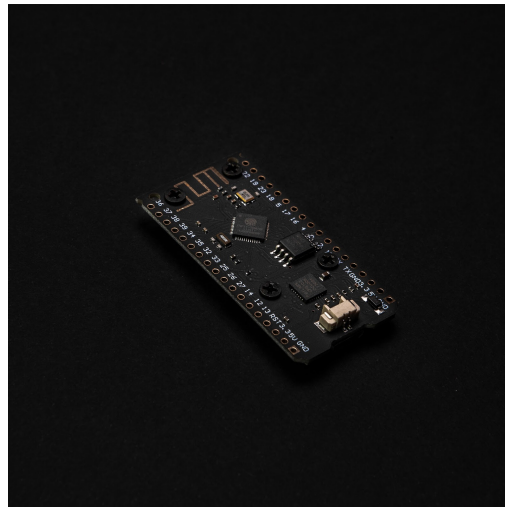
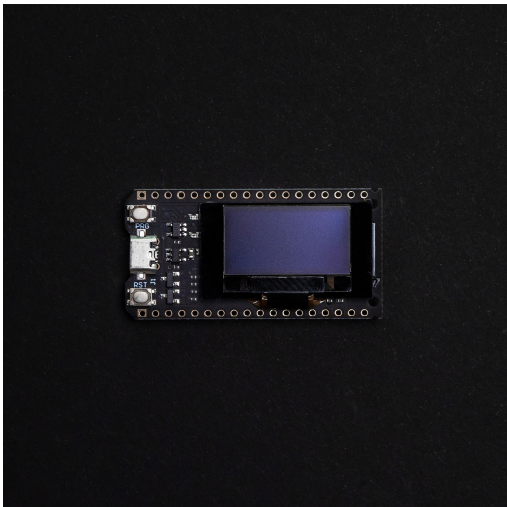
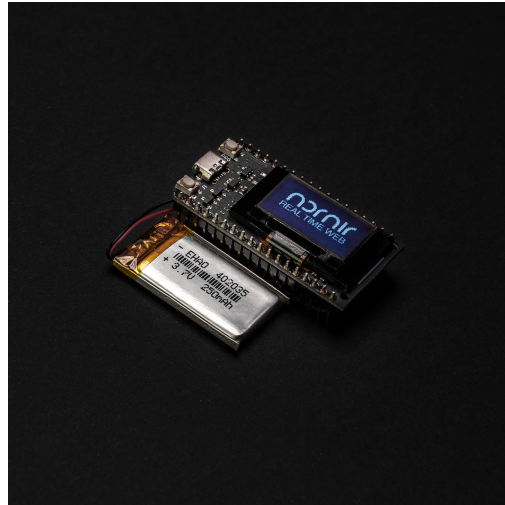
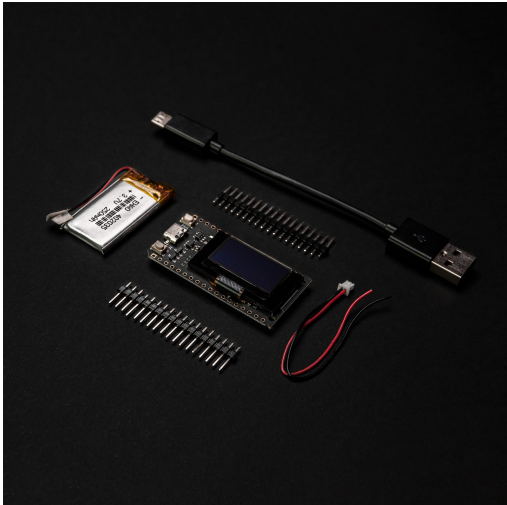
Size Chart



Pin Diagram



Product Images



**Access to
Real Time Web**

The fastest way to send and receive data in a network.