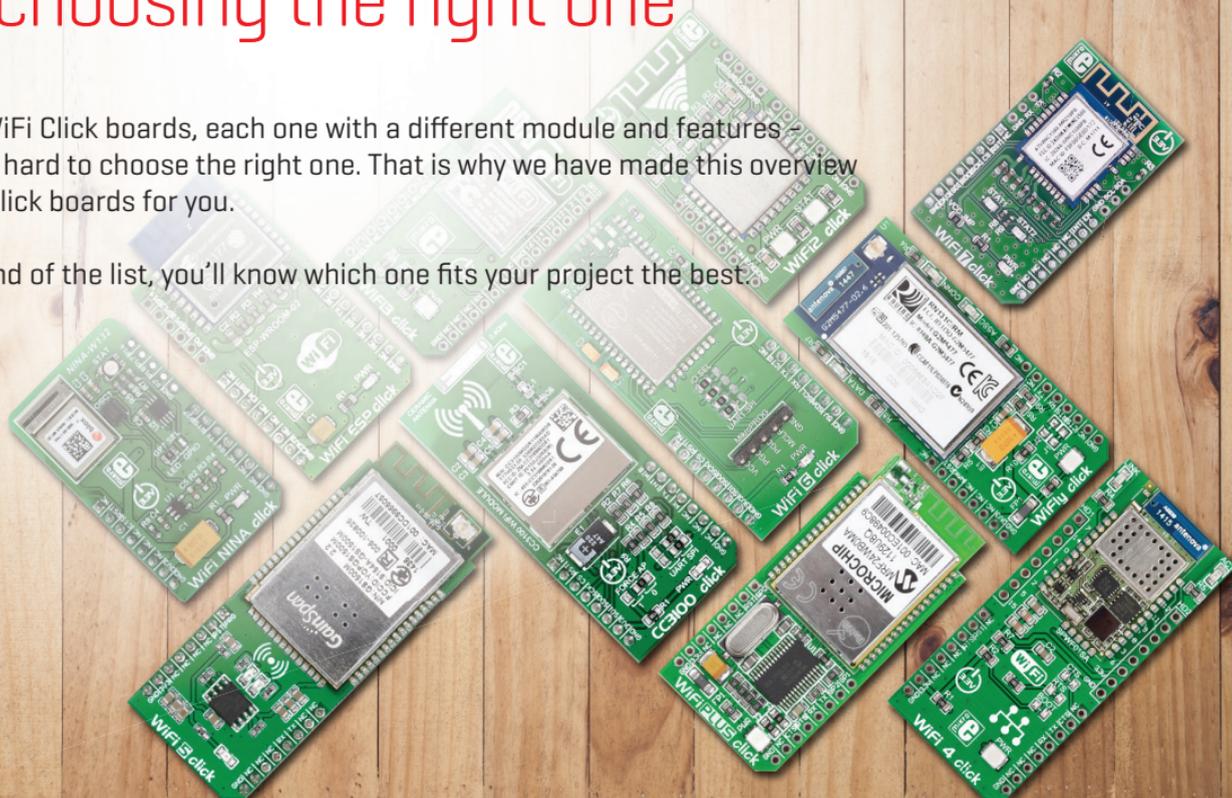# WiFi Click boards - the best guide for choosing the right one

Eleven WiFi Click boards, each one with a different module and features - it can be hard to choose the right one. That is why we have made this overview of WiFi Click boards for you.

By the end of the list, you'll know which one fits your project the best.

WiFi NINA click

WiFi NINA click is equipped with the state-of-the-art NINA-W132 module from u-blox, that can be easily configured with the u-blox s-center software, using AT commands. It offers a complete WiFi stack, it is really easy to use and provides a simple way to build secure IoT applications.

This WiFi module integrates a powerful dual 32bit MCU and a radio for wireless communication.

- Easily configured with the u-blox s-center software, using AT commands
- The WiFi module integrates a powerful dual 32bit MCU
- Offers a complete WiFi stack

WiFi 7 click

WiFi 7 click, optimized for low-power IoT applications, with a module that has a Cortus APS3 32-bit processor. This should be your choice if you are building a wearable or small hand-held device.

This 32-bit processor performs many of the MAC functions, including but not limited to association, authentication, power management, security key management, and more.

- Optimized for low-power IoT applications
- The onboard module has a Cortus APS3 32-bit processor
- This processor performs many of the MAC functions: authentication, power management, security key management and more

WiFi 6 click

WiFi 6 click comes with a module that has a fully integrated radio and 32-bit microcontroller. This makes it ideal for embedded applications. If you are building a device that requires low-power wireless TCP/IP connectivity, this is the Click board™ for you.

In WiFi client mode, the WF121 radio core automatically powers on the RF circuitry only when needed. The WiFi core processors support automatic sleep modes when not communicating actively, allowing very low idle consumption.

- Fully integrated radio and 32-bit microcontroller
- **mikroProg connector** allows updating the firmware
- WiFi client mode

WiFi 5 click

WiFi 5 click features Gainspan's GS1500M 802.11b/g/n Low Power Wi-Fi module with a PCB trace antenna. The click is suited for battery powered applications, due to its multiple power modes: standby, sleep, deep sleep).

The onboard module supports WiFi PHY rates up to 72.2 Mbps and is fully compliant with 802.11b/g/n and meets worldwide regulatory requirements.

- Multiple power modes: standby, sleep, deep sleep
- A PCB trace antenna
- WiFi PHY rates up to 72.2 Mbps

WiFi 4 click

WiFi 4 click carries SPWF01SA, a complete standalone WiFi module with a single-chip 802.11 b/g/n transceiver, a 32-bit STM32 MCU, along with a built-in 2.4 GHz ISM band antenna.

The 14 additional GPIO pins that line the edges of the board have alternate functions like SPI, ADC, I2C, DAC (although access to those functions depends on the firmware version loaded in the module).

- Built-in 2.4 GHz ISM band antenna
- A 32-bit STM32 MCU
- **1.5 MB of internal flash**
- 64 KB of RAM

WiFi 3 click

WiFi 3 click is a complete self-contained WiFi solution carrying the ESP8266 module with a system on a chip.

The Standby power consumption of < 1.0mW is ideally suited for IoT projects and devices that need long battery life.

The module supports standard IEEE802.11 b/g/n agreement and has an integrated TCP/IP protocol stack.

- Easy to integrate it with sensors and actuators through its GPIOs
- Connect a whole device to the internet with minimal development time
- Features a PCB trace antenna

WiFi 2 click

WiFi2 click features the HLK-M30 WiFi module with a built-in TCP/IP protocol stack. WiFi2 click can be set up both as a TCP/IP client or server. You can configure it with either a static or dynamic IP address.

WiFi2 click supports standard security authentication systems [WEP64/WEP128/ TKIP/ AES, WEP/WPA-PSK/ WPA2-PSK]; as well as multiple network protocols [TCP/UDP/ DHCP/DNS]. All these features make WiFi2 click ideal for home automation applications, remote controls, telemetry etc.

- Built-in TCP/IP protocol stack
- supports standard security authentication systems
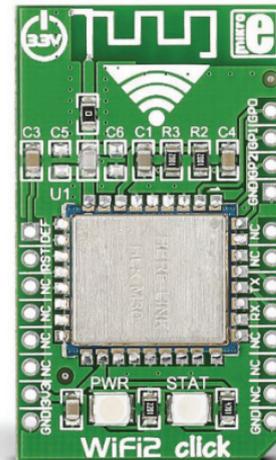
WiFi ESP click

WiFi ESP click can function in both AP (Access Point) WiFi mode, as well as in WiFi client mode. The click brings easy implementation and usage.

The module supports the following network protocols: IPv4/TCP/UDP/HTTP/FTP. Thanks to this the click can operate as a client device requesting a file from a file server device (FTP - file transfer protocol) in local network systems, or request a web page via the internet (IP/TCP/HTTP). It can also be used as a small web server, for example, a wireless weather station prototype, etc.

- Functions as Access Point and as WiFi client mode
- The module supports these network protocols: IPv4/ TCP/UDP/HTTP/FTP

WiFi PLUS click

WiFi PLUS click features MRF24WB0MA – **2.4GHz, IEEE std. 802.11** - compliant module from Microchip, as well as MCW1001 companion controller with onboard TCP/IP stack and 802.11 connection manager.

The combination of the MRF24WB0MA and MCW1001 results in support for IEEE Standard 802.11 and IP services.

- Integrated PCB antenna with a range up to **400m**
- **Low power consumption** (250 μA in sleep mode)

WiFly click

WiFly click features the well-known RN131 from Microchip. With preloaded firmware and built-in networking stacks, the integration of the WiFly click is really easy.

Another great thing is that users with a beginner-level of knowledge can use this click to set up a home network. WiFi Protected Setup (WPS) protocol on the Click board is designed for an easy and secure establishment of wireless home networks.

- Preloaded firmware
- Built-in networking stacks
- Easy to set-up a home network, even for beginners

CC3100 click

CC3100 click carries the successor of the highly popular CC3000 module from Texas Instruments. Its claim to fame was that it simplified WiFi for embedded developers by integrating multiple Internet Protocols and a Wifi driver with a simple API.

CC3100 inherits all these benefits, and on top of that, adds an updated protocol stack (support for 802.11n) and cutting-edge security features (TSL encryption, hardware crypto-engine and more).

CC3100 click also has a 2.4GHz PCB antenna.

- Sophisticated power optimization features
- Powerful on-chip crypto engine
- CC3100 can function either as an access point, a station (connects to a router), or a node in a P2P connection

Brief Overview

NAME	MODULE	PRICE	INTERFACE	POWER SUPPLY
WiFi NINA	NINA-W132	$45	UART	3.3V
WiFi 7 click	ATWINC1510-MR210PB	$29	SPI	3.3V
WiFi 6 click	WF121-A	$69	I2C, SPI, UART	3.3V
WiFi 5 click	GS1500M	$9	UART	3.3V
WiFi 4 click	SPWF01SA	$49	UART	3.3V
WiFi 3 click	ESP8266	$27	UART	3.3V
WiFi 2 click	HLK-M30	$29	UART	3.3V
WiFi ESP click	ESP-WROOM-02	$15	UART	3.3V
WiFi PLUS click	MRF24WB0MA	$45	UART	3.3V
WiFly click	RN-131	$69	UART	3.3V
CC3100 click	CN3100	$49	SPI, UART	3.3V

We hope that you found this overview useful. Next time you are searching for that perfect WiFi click, you'll know where to look for guidance. Let us know if you think we should do another post for a different category of Click boards™.

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