|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **ESP8266-12** | **CC3000** | **CC3200** | **Wifily Shield** | **Wifi Shield** | **Jinou2016** |
| *Company* | Espressif | Adafruit | TI chip (URS) | Sparkfun | Arduno.cc | TI chip |
| *Processer* |  | ? | ARM Cortex-M4 core |  |  |  |
| *Transmit Power* | 19.5dBm |  | 17.25dBm |  |  |  |
| *Receive Sensitivity* |  |  | -73.25dBm |  |  |  |
| *Main Frequency* |  |  | 80Mhz |  |  |  |
| *Network Protocol* | TCP, UDP | TCP, UDP | TCP, UDP, | TCP, UDP | TCP, UDP | TCP, UDP |
| *Wifi standard* | 802.11 b/g/n | 802.11 b/g | 802.11 b/g/n | 802.11 b/g | 802.11 b/g | 802.11 b/g/n |
| *Network mode* | Soft-AP | No AP | AP/ Station | AP | No AP | AP |
| *Size* | 24\*16mm | 26.22\*40.45\*2.95mm | 18.22\*26.65\*2.8mm SMT | 66\*53mm | 26.22\*40\*45\*2.95mm | 31.75\*19.5mm |
| *Warranty* | ? | ? | 2 years |  |  | 2 years |
| *Interface* | UART | SPI | 2 UART | SPI | SPI | 1 UART |
| *Data BW* |  |  | 300-3Mbps |  |  | 115200bps max |
| *Encryption* | WEP, WPA, WPA2 | WEP, WPA, WPA2 | WEP, WPA, WPA2 | WEP, WPA, WPA2 | WEP, WPA, WPA2 | WEP, WPA, WPA2 |
| *Sleep current* | <10uA | ? | 25uA | 4uA | ? | ? |
| *Transmit current* | 215mA | <350mA | 18mA…. | 210mA | ~210mA | 100mA (max) |
| *Power supply* | ~3.3V | ~3.3V | ~3.3V | ~3.3V | ~3.3V | ~3.3V |
| *Support Antenna* | Internal | Internal, External | Internal, External | Internal |  | Internal, External |
| *Certificated* | ? | ? | FCC/CE | ? |  |  |
| *Cost* | $3 to $7 | $34,95 | $10 to $18 | $70 | ~$85 | $10 to $17 |
| *Link* | http://www.amazon.in/ESP8266-Serial-Wireless-Transceiver-Module/dp/B00O34AGSU | https://www.adafruit.com/product/1469 | http://en.usr.cn/Industrial-Low-Power-Serial-UART-to-Wifi-Module-with-TI-CC3200.html | https://www.sparkfun.com/products/retired/9954 | https://www.arduino.cc/en/Main/ArduinoWiFiShield | https://www.alibaba.com/product-detail/Jinou-2016-Industrial-Low-Power-Serial\_60221516472.html |
| *Support* |  |  |  | More interface, memory bigger… | More interface, memory bigger… | More interface, memory bigger… |
| *Review on Amazon* | 4/5 stars |  | 4/5 stars |  |  |  |

MODULE WIFI: CC3200

* Module wifi của USR sử dụng chip TI CC3200:

+ Link amazon: ($16,03 + free ship)

<https://www.amazon.com/USR-C322-Industrial-Serial-Module-CC3200/dp/B00UOHAOJG>

+ Link trang chủ USR: ($11.8 chưa có ship)

<http://en.usr.cn/Industrial-Low-Power-Serial-UART-to-Wifi-Module-with-TI-CC3200.html>

* Module wifi và chip của TI:

+ Link digikey: (Module: $20, nếu mua 250 con thì 15$; Chip: $12.16/ 1 con)

<http://www.digikey.com/products/en/rf-if-and-rfid/rf-transceiver-ics/879?k=cc3200>

PIN cúc áo 3v Philips: (20k/1 viên)

<http://www.pintuandung.com.vn/p51-s130-c151-pid2036/CR2025-Philips-3v-Lithium-hop-10-vien.html>

MODULE Bluetooth sử dụng chip TI:

* Module: ($16.5/ 1 con)

<http://www.digikey.com/product-detail/en/lsr/450-0119C/450-0119C-ND/5138594>

* Chip: ($5.4/ 1 con)

<http://www.digikey.com/product-detail/en/texas-instruments/CC2640R2FRHBT/296-45196-1-ND/6579559>

Vi xử lý dòng MSP430:

+ link digikey: ($3.94/1 con)

<http://www.digikey.com/products/en?mpart=MSP430F5308IPT&v=296>