

ESP-12F

WiFi Module



The ESP12-F is an ultra-low power UART WiFi module specifically designed for the needs of the networked world. It offers an outstanding range of functions in a small package. Specially developed for mobile devices and the Internet of Things, the ESP12-F provides a stand-alone network solution.

The module features powerful on-board processing and memory capabilities that allow for a minimum development time under minimum load during runtime.

MAIN FEATURES

Model	ESP-12F
MCU	Low Power 32-Bit
ADC	10-bit analog-to-digital converter
Peripherie	SDIO 2.0, UART, HSPI, I2C, I2S, IRDA, GPIO, PWM
Pin quantity	Total: 18, thereof GPIO: 10
SPI Flash	Standard 32Mbit
Dimensions	25x17x4 mm (LxWxH)
Scope of delivery	ESP-12F

NETWORK DATA

Network	TCP/IP protocol stack, supports antenna diversity
Network protocols	IPv4, TCP, UDP, HTTP, FTP
Operation mode	STA, AP, STA+AP
Encryptions	WEP, TKIP, AES
WiFi	802.11 b/g/n, 2,4 GHz - 2,5 GHz (2400M - 2483,5M) (supports WPA, WPA2)
RF Switch	Integrated TR switch, balun, LNA, power amplifier
Transmission types	STBC, 1x1 MIMO, 2x1 MIMO
Packet transmission	A-MPDU, A-MSDU, 0.4s protection intervals

PERFORMANCE DATA

Operating temperature	-20 °C to +80 °C
Operating voltage	3.0 to 3.6 V, Typically 3.3 V
Operating current	Average: 80 mA

Standby consumption	< 1,0 mW (DTIM3)
Deep Sleep Consumption	< 10 μ A
Leakage current	< 5 μ A
Output power	+ 20 dBm (in 802,11 d Mode)

OTHER DATA

Mobile devices	Supports Smart Link for Android and iOS
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More features	Powers up and transmits packets in: <2ms Firmware upgrade via UART download and OTA possible Supports Cloud Server Development
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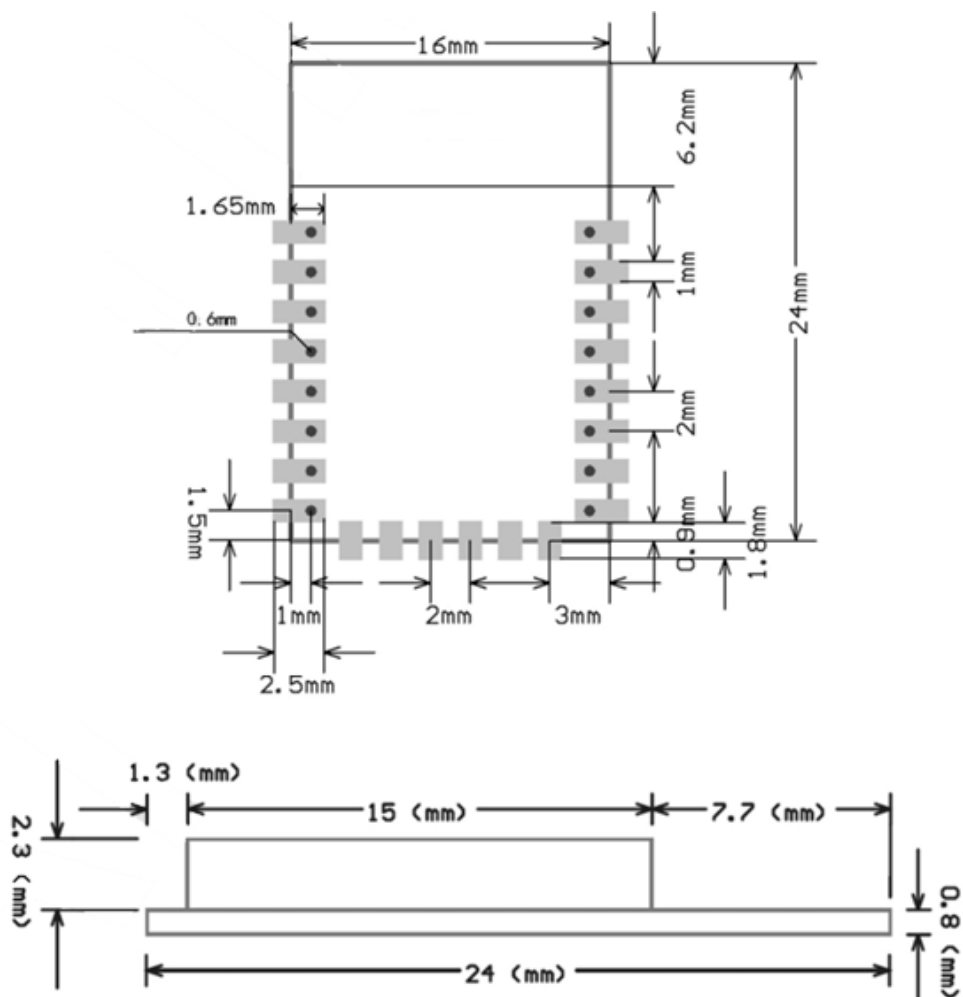
Quartz	SJK 26 MHz
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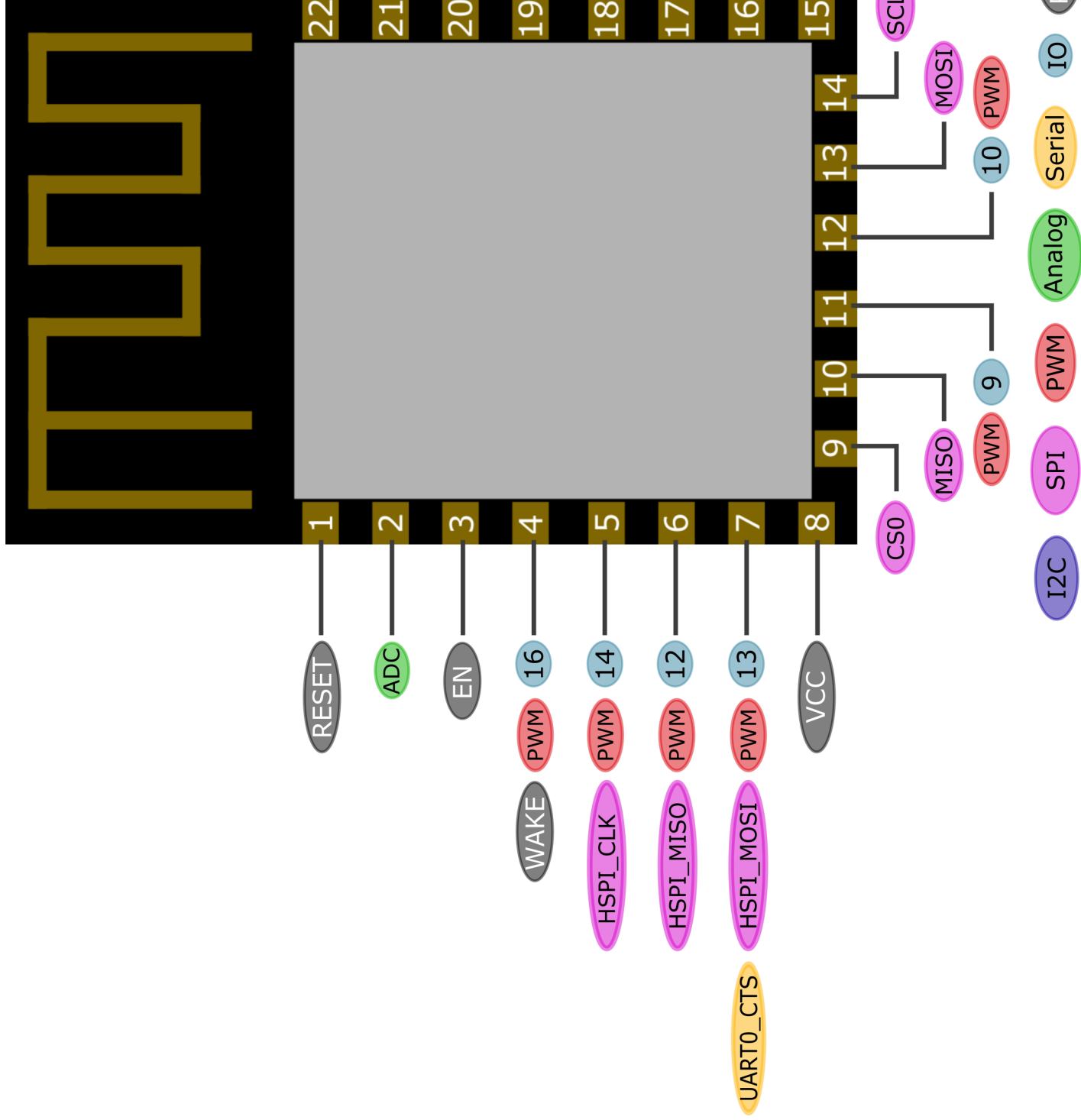
MORE DETAILS

Article No.	SBC-ESP8266-12F
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PINOUT		
Number	Name	Function
1	RST	Reset the module (Active Low)
2	ADC	A/D conversion result Input voltage range: 0 - 1V Range: 0-1024
3	EN	Chip Enable Pin (Active High)
4	GPIO16	GPIO16, activation from Deep Sleep Mode
5	GPIO14	GPIO14, HSPI_CLK
6	GPIO12	GPIO12, HSPI_MISO
7	GPIO13	GPIO13, HSPI_MOSI, UART0_CTS
8	VCC	Supply Voltage (3.0V - 3.6V)
9	CS0	Chip Selection
10	MISO	Slave-Output, Master-Input
11	GPIO9	GPIO9
12	GPIO10	GPIO10
13	MOSI	Master-Output, Slave-Input
14	SCLK	Clock
15	GND	GND
16	GPIO15	GPIO15, MTDO, HSPICS, UART0_RTS
17	GPIO2	GPIO2, UART1_TXD
18	GPIO0	GPIO0
19	GPIO4	GPIO4
20	GPIO5	GPIO5
21	RXD0	GPIO3, UART0_RXD
22	TXD0	GPIO1, UART0_TXD