

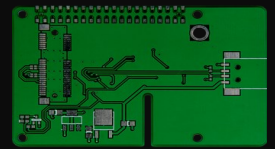
ESP-12F

WiFi Module



The ESP12-F is an ultra-low-power UART WiFi module specially designed for the needs of the networked world. It offers an excellent range of functions in the smallest design. Specially developed for mobile devices and the Internet of Things, the ESP12-F offers an independent network solution.

The module has powerful on-board processing and memory functions that allow minimal development time under minimal load during runtime.



TECHNICAL SPECIFICATIONS

GENERAL DATA

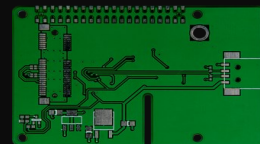
Model	ESP-12F
Article No.	SBC-ESP8266-12F
MCU	Low Power 32-Bit
ADC	10-Bit Analog-Digital-Converter
Peripherals	SDIO 2.0, UART, HSPI, I2C, I2S, IRDA, GPIO, PWM
Amount of Pins	Total: 18, GPIO: 10

NETWORKING DATA

Network	TCP/IP Protocol-Stack, supports antenna diversity
Network Protocols	IPv4, TCP, UDP, HTTP, FTP
Infrastructure-Modes	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 Modes	STBC, 1x1 MIMO, 2x1 MIMO
Packet Transmission	A-MPDU, A-MSDU, 0,4s guard interval

OPERATING DATA

Operating Temperature	-40°C - +125°C
Operating Voltage	3.0 - 3.6V
Operating Current	Average: 80mA
Standby Consumption	<1.0mW (DTIM3)
Deep Sleep Power	<10uA
Power Down Leakage Current	<5uA
Output Power	+20dBm (im 802.11b Mode)

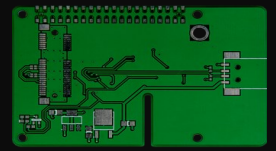


OTHER DATA

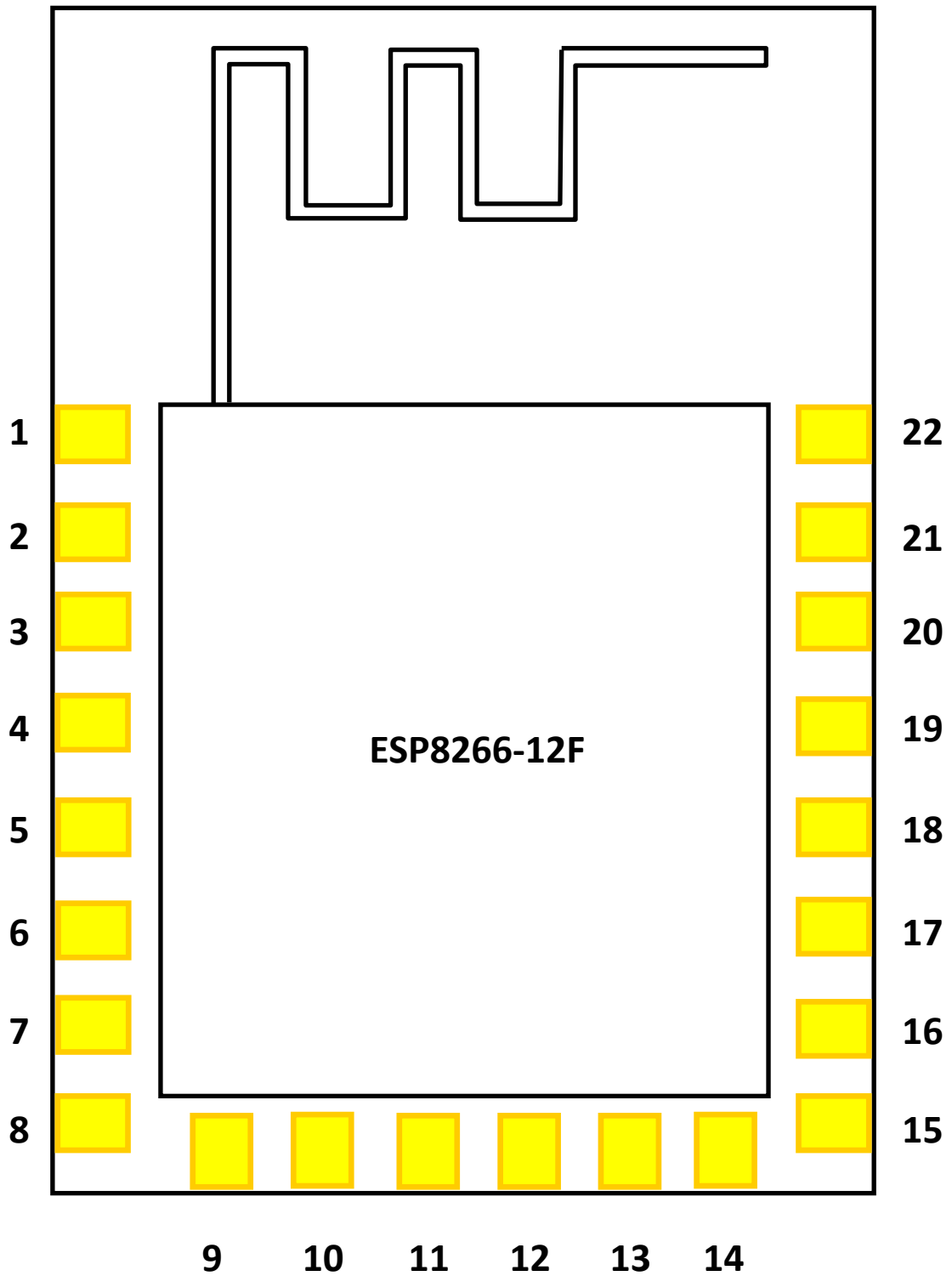
Mobile Devices	Supports Smart Link for Android and iOS devices
Other Features	Wakes up and transmits packets in: <2ms Firmware upgrade via UART Download and OTA Supports cloud server development
Scope of Delivery	ESP-12F
EAN	4250236816999

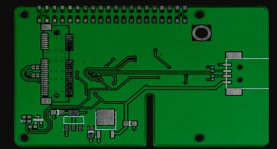
TECHNICAL SPECIFICATIONS

MCU	ESP8266EX
Flash	XMC XM25QH32B [connected with Quad SPI]
Quartz	SJK 26 MHz



PIN ASSIGNMENT





PIN ASSIGNMENT

No.	Name	Function
1	RST	Reset the module
2	ADC	A/D Conversion result Input voltage range: 0 - 1V Scope: 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	3,3V
9	CS0	Chip selection
10	MISO	Slave-Output, Main-Input
11	GPIO9	GPIO9
12	GPIO10	GPIO10
13	MOSI	Main-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	Serial Data-Input (Receive Data)
22	TXD0	Serial Data-Output (Transmit Data)