WiFi Module

BMC81M001
User Guide

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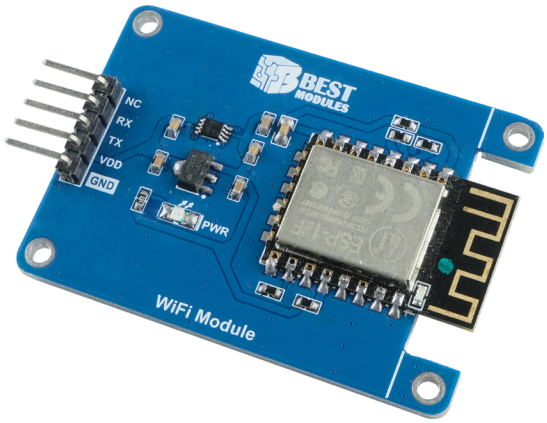
www.bestmodulescorp.com

Contents

Introduction **3**
Features **3**
Block Diagram **4**
Pin Description **4**
Technical Specifications **5**
Recommended Operation Conditions 5
Timing Specifications 5
Hardware Overview **6**
Power Supply 6
LED 7
Communication Interface 7
Application Circuit **7**
Dimensions **8**

Introduction

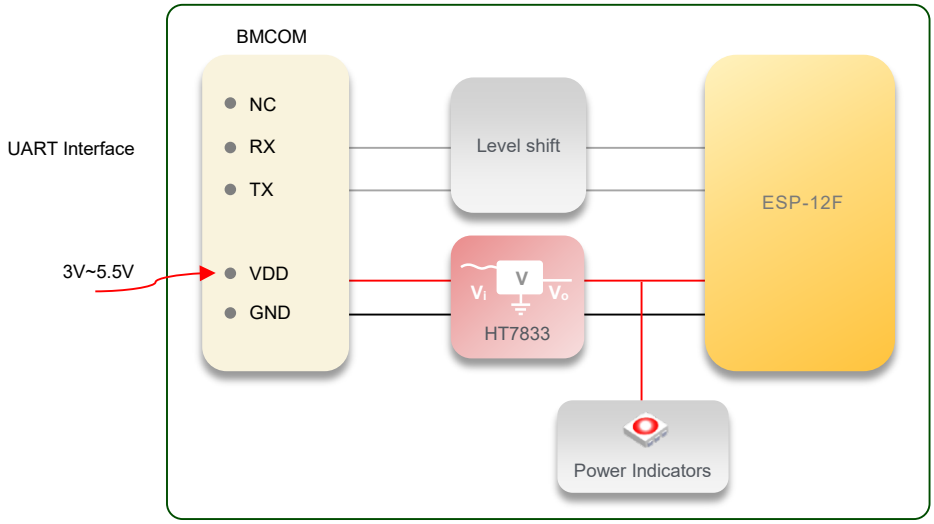
The BMC81M001 is a WiFi module from Best Modules. It includes an integrated ESP-12F module. The module supports wireless standard IEEE802.11 b/g/n protocol and complete TCP/IP protocol stack. Users can use this module to add a network function for existing devices or to build an independent network controller. The module uses the BMCOM interface and UART communication method to implement WiFi configuration and data transparent transmission. The module is suitable for use in smart home, Internet of things and other field applications.



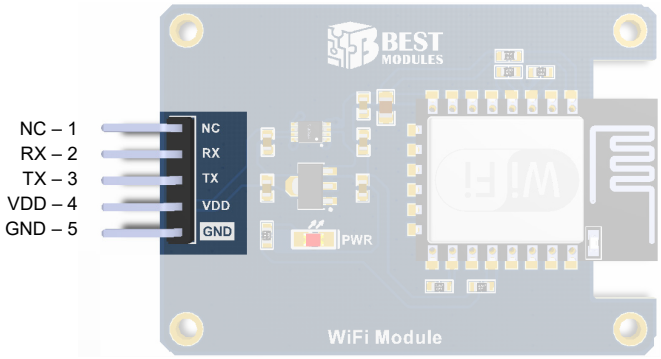
Features

- Operating voltage: 3V~5.5V
- Operating current
  - Transmit data: 180mA @ 3.3V/11Mbps
  - Receive data: 60mA @ 3.3V/70dBm
- Standby current: 4mA @ 3.3V
- Integrated WiFi module: ESP-12F
  - Wireless protocol: 802.11b/g/n
  - Spectrum range: 2400~2483.5MHz
- Communication interface:
  - BMCOM×1 (NC, RX, TX, VDD, GND)
  - Communication method: UART (baud rate: 115200bps)
- Provides Arduino Library support
- Module size: 50mm×35.3mm×7.5mm

Block Diagram



Pin Description



BMCOM pins:

Pin	Function	Description
1	NC	—
2	RX	UART receiving data line
3	TX	UART transmitting data line
4	VDD	Positive power supply
5	GND	Negative power supply, ground

Technical Specifications

Recommended Operation Conditions

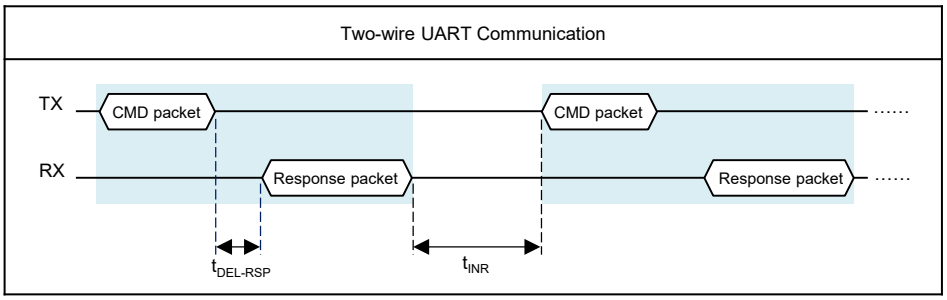
Ta=25°C

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V_{DD}	Input voltage	—	3	3.3	5.5	V
I_{DD}	Operating Current	Transmit data, 3.3V @ 11Mbps	—	180	—	mA
		Receive data, 3.3V @ 70dBm	—	60	—	mA
I_{STB}	Standby Current	V_{DD}=3.3V	—	4	—	mA

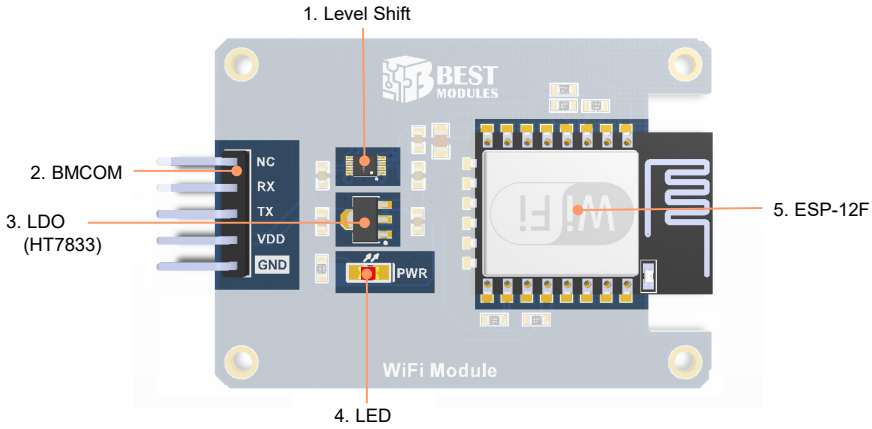
Timing Specifications

Ta=25°C

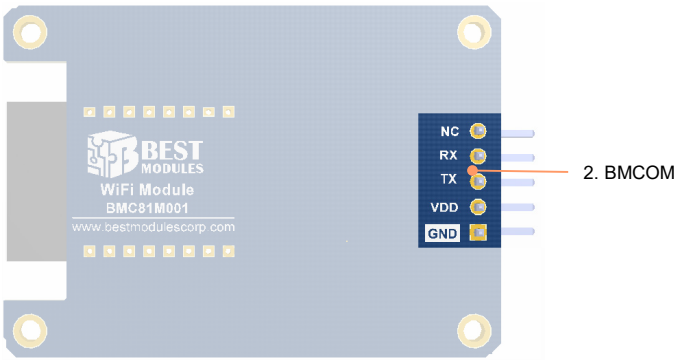
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
$t_{DEL-RSP}$	Response Delay Time	Has response only	—	2	—	ms
		Has response and data	—	—	1	s
t_{INR}	Interval Time	—	—	200	—	ms



Hardware Overview

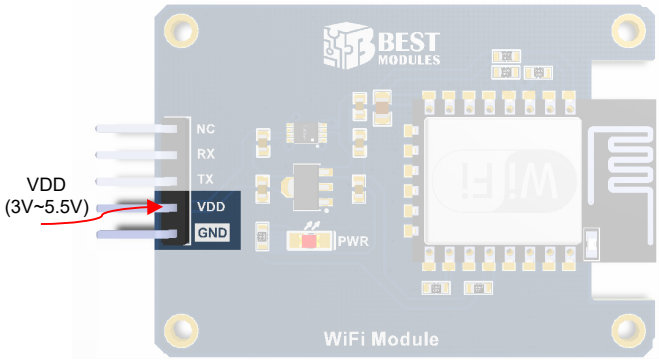


PCBA Front View



PCBA Back View

Power Supply



- BMCOM pin: provided by the VDD input, 3V~5.5V.

It is recommented that the external power supply current must be greater than 500mA.

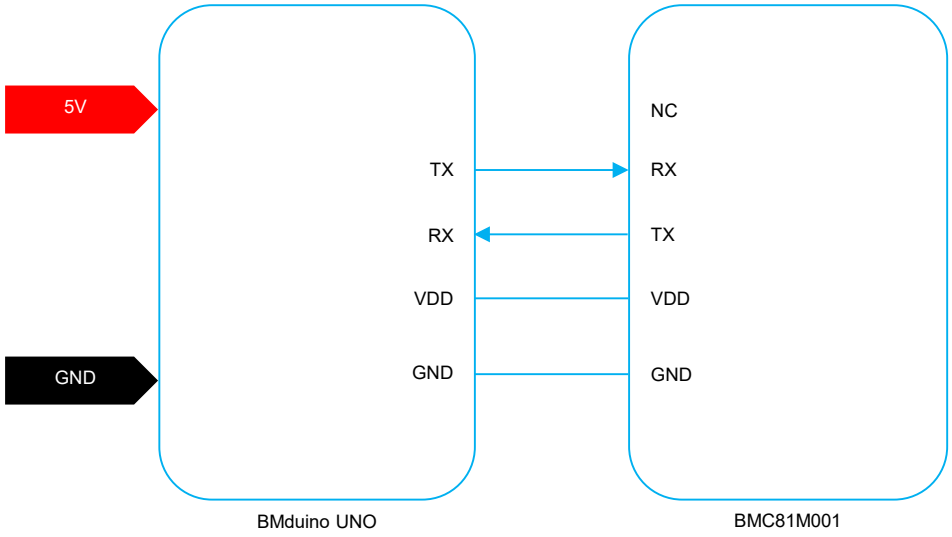
LED

- PWR: power indicator

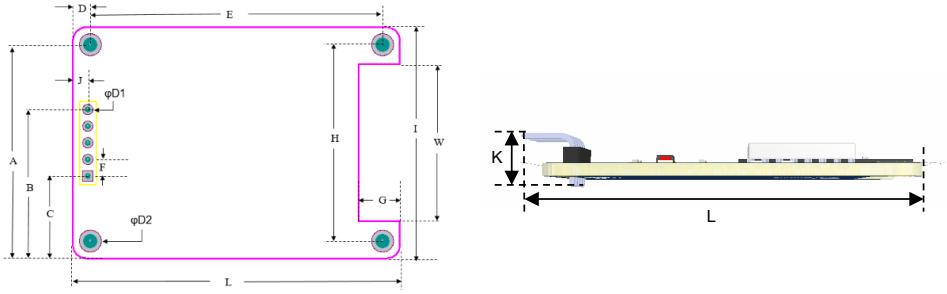
Communication Interface

- Communication method: UART
- Baud rate: 115200bps
- Communication logic reference voltage: 3V~5.5V
- Communication protocol:
  - The detail instruction description and communication protocol can refer the ESP8266 official AT instruction set.

Application Circuit



Dimensions



Dimension Information

NO. \ Unit	mm	inch
A	32.6	1283.54
B	22.69	893.21
C	12.53	493.21
D	2.65	104.33
E	44.7	1760
F	2.54	100
G	6.35	250
H	30	1180.67
I	35.25	1387.87
J	2.27	89.37
K	7.5	0.295
L	55	2.165
W	23.94	943.91
D1	0.9	35.43
D2	2.2	86.61

Dimension List

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