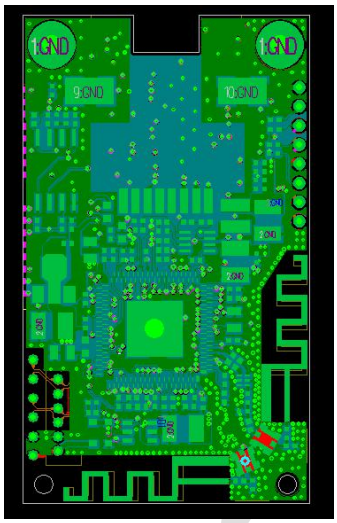
VM300-L and VM300-H Module Specifications

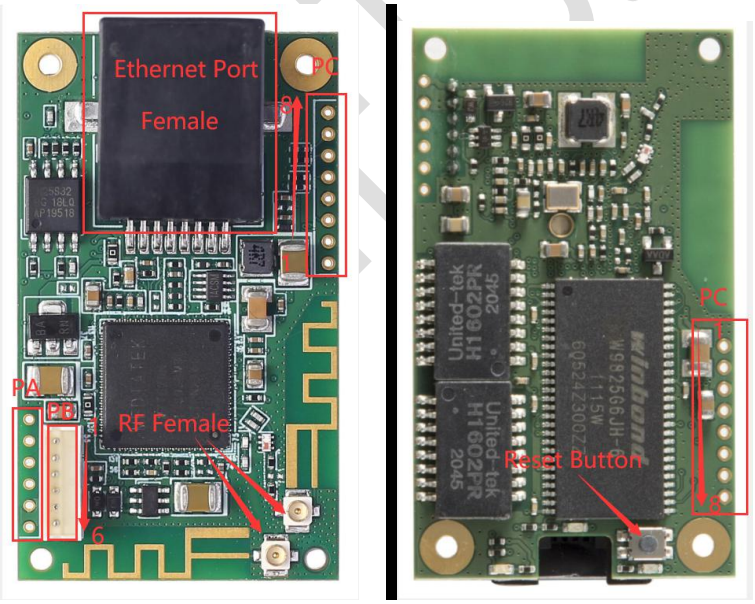
1. Features (PCB version: 4.0/5.0)

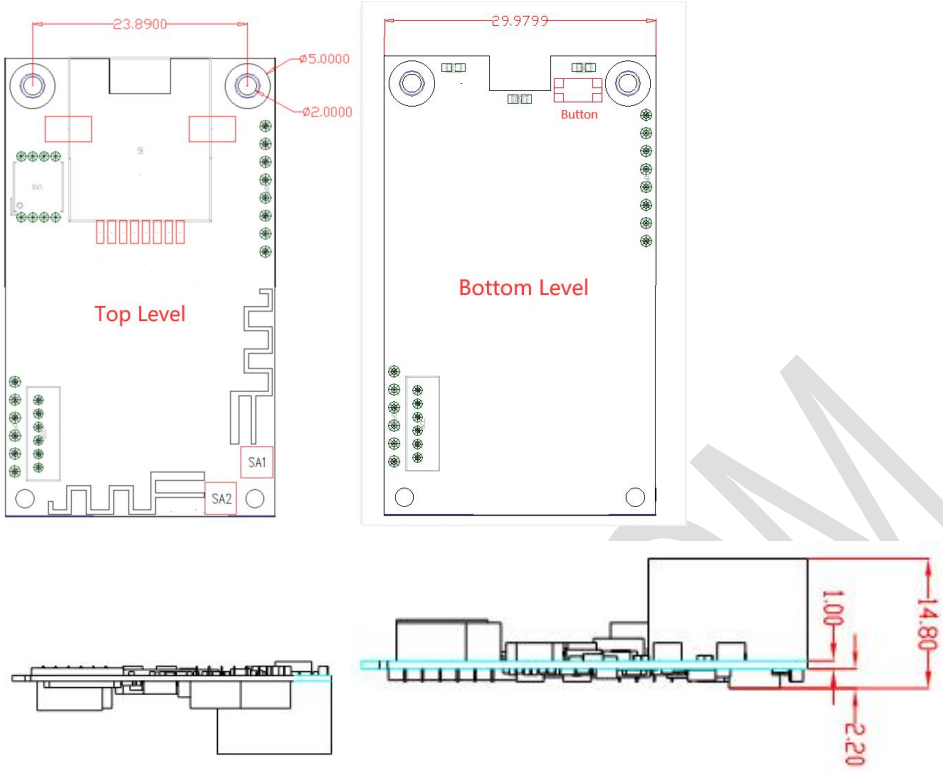
1.1 Hardware Features

- Top view screenshot:



- Module packaging:





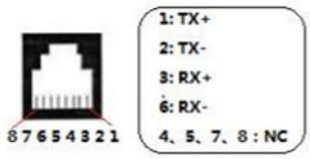
- Two hardware versions: built-in antenna (VM300-L) and external antenna (VM300-H)
- Two external antenna RF female sockets (VM300-H only)
- Comes with a button to restore factory parameters
- Wide power supply working voltage: DC5V--15V
- Support power input overvoltage protection function (power supply voltage exceeds 15.5V automatically power down)
- Main chip: MT7620N, 580MHz
- 32Mb SDRAM, can be expanded to 64Mb; 4Mb SPI Flash, can be expanded to 16Mb (Byte)
- WiFi working frequency band: 2.4GHz, 2T2R dual antenna, 300Mbps transmission rate
- Support 1--14 WiFi channels
- Rated average power consumption <2W
- Module RF output power 14.5dbm--16dbm (two levels of output power can be adjusted)
- Support temperature compensation and frequency stabilization technology (TAFC) to ensure the stability of WiFi signal.
- Support 802.11b/g/n protocol
- Working environment temperature: -25℃-- 55℃

1.2 Function Features

- Two software-controllable working modes: routing mode, bridge + repeater mode
- Support intelligent transparent bridge mode, and support AP Client and AP Station at the same time
- Support VDNS technology, use domain name to log in to the configuration page in bridge mode
- The relevant parameters of the device can be configured through the WEB page configuration or the VCC mobile phone APP
- Software adjustable two-level WiFi RF output power (14.5dbm/16dbm)
- Support SSA 1.2 version signal strength remote center alarm protocol
- Support VONETS-Configuration Management Protocol V2.3 (Top Secret)
- Support transparent transmission of serial and network data (VONETS-UART_UDP or TCP data forwarding instructions 3.0)
- Online software upgrade
- The main functional interfaces are as follows:

Female interface / Subinterface	**6PIN female (PB)**	**6PIN pin interface (PA)**	**8PIN pin interface (PC)**	**RJ45 female**	**Description**
VIN+	√	√			DC5V--15V
WAN				√	Software control interchangeable
LAN	√	√			
WAN status indication			√		1. MOS tube open circuit output, built-in 330Ω limit flow resistance 2. Output current: 10mA
WiFi bridge connection status indication			√		1. MOS tube open circuit output, built-in 330Ω limit flow resistance 2. Output current: 10mA
Reset signal input			√		Restore factory parameters
UART					Used for transparent transmission between serial port and network data

2.Hardware Interface Details

Female interface / Subinterface	Hardware pin definition (PIN)			Description
	PA	PB	PC	
VIN+	6	6		DC5V--15V, the input voltage ripple is required to be less than 100mV, otherwise it will affect the WiFi transmission performance
GND	5	5	8、4	Module ground
LAN	1:RX- 2:RX+ 3:TX- 4:TX+	1:RX- 2:RX+ 3:TX- 4:TX+		
LAN Port Status Indication Output			3	1. MOS tube open circuit output, built-in 330Ω current limiting resistor 2. Output current: 10mA
WAN Port Status Indication Output			2	1. MOS tube open circuit output, built-in 330Ω current limiting resistor 2. Output current: 10mA
WiFi Status Indication Output			1	1. MOS tube open circuit output, built-in 330Ω current limiting resistor 2. Output current: 10mA
Reset Signal Input			5	After the module works normally, keep the low level for more than 3 seconds, the module will restore the factory parameters (less than 0.6V is the low level)
UART-TX			6	TX signal line of UART used for serial port transparent transmission, TTL level output
UART-RX			7	RX signal line of UART used for serial port transparent transmission, TTL level input
Standard RJ45 female socket pin definition reference				

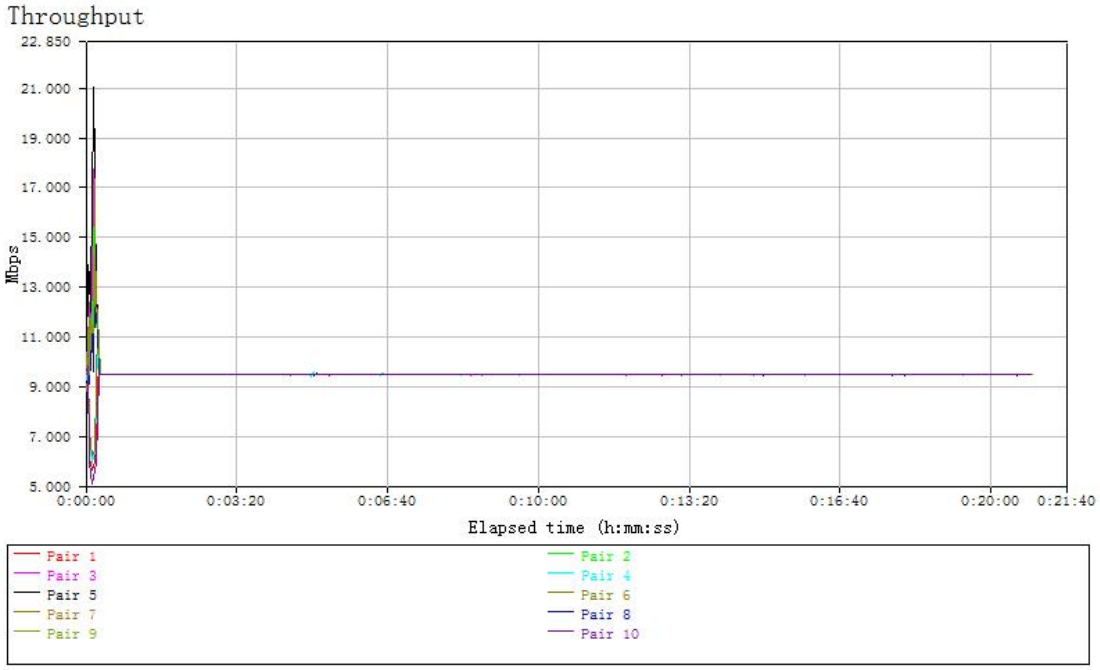
3. Electrical Performance Parameters

1. Power Supply Parameters				
Supply voltage range	Input power	Typical power supply	Power ripple	Protection voltage upper limit
DC5-15V	⩾5W	5V/1A	＜100mV	15.5V

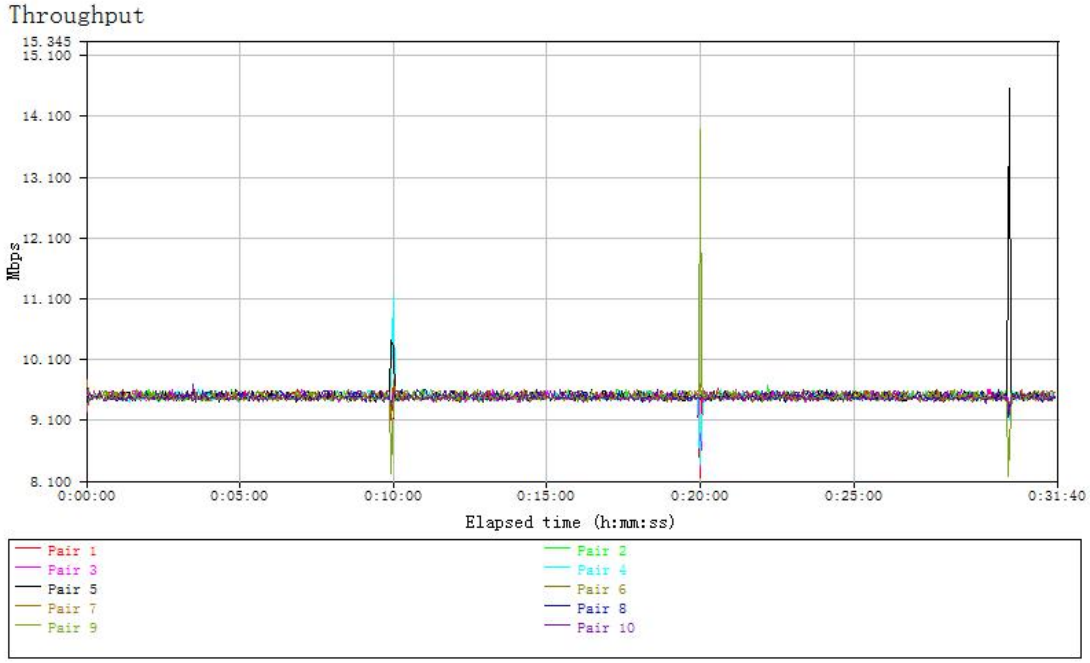
2. Measured table of performance parameters of working electrical appliances (ambient temperature: 27℃)			
Supply voltage	Work Stage	Working current (mA)	Main chip temperature (℃)
5V	Booting	80-270	27-43
	Standby	180-259	46
	transfer data	450-580	70

4. Network throughput test

- VM300-L throughput test fluctuation graph:



- VM300-H throughput test fluctuation graph:



5. Supplied accessories

- Two 3dBi external antennas of VM300-H with RF cable buckle