GAINSTRONG
Oolite V5.0_SPEC_EN

Specification Version 1.0.4

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January 30, 2018

Revision	Date	Contents of Revision Change	Remark
1.0.3	2017-05-17	First release	
1.0.4	2018-01-30	Modify PCB then update	James

目录

1 PRODUCT OVERVIEW

General Description

Oolite V5.0 Module is a highly integrated wireless routing module.. s.It is not only a wireless module, it is a complete route, only energized, it can work in a wireless AP/STA module, if coupled with 5 network transformers and RJ45 network ports, it is a wireless router.

Oolite V5.0 Module power is 3.3V, and it has 300M wireless transmission rate,two antennas, up to 15 GPIOs,1 USART port,1 RESET pin,1 USB2.0 and 5 Ethernet ports can be defined as input and output.

It's design for WiFi hard disk, WiFi router, remote monitoring, remote video, Industrial control DIY and so on.The module based on the single chip QCA9531 which integrates an 802.11 b/g/n 2T2R MAC/BB/radio with internal PA and LNA. It supports 802.11n operations up to 150 Mbps for 20 MHz and 300 Mbps for 40 MHz channel respectively, and IEEE 802.11b/g data rates.

Features:

● CPU: QCA9531 560Mhz MIPS core

● RAM: 64MB DDR2 RAM(128MB optional)

● Flash: 16M SPI NOR Flash (8MB/16MB optional)

● Wireless: 80211bgn 300Mbps

● 1 * Mini-Pcie (include USB interface can support 3G/4G Module)

● General GPIO: 15 (not including TX, RX)

● USB: Usb 2.0 master interface, support USB hub extension

● Port: 5×100Mbps network interface(1 WAN + 4 LAN)

● Antenna: 2 X the built-in PCB/IPX/Ceramic external Antennas.

● Debug: serial debugging interface(UART) has been out.

● SPI interface pin out.

● Metal shield

● Power supply voltage: 3.3V.

● Product size: 38.4mm*51.6mm

2 PRODUCT PICTURES(STANDARD VERSION)
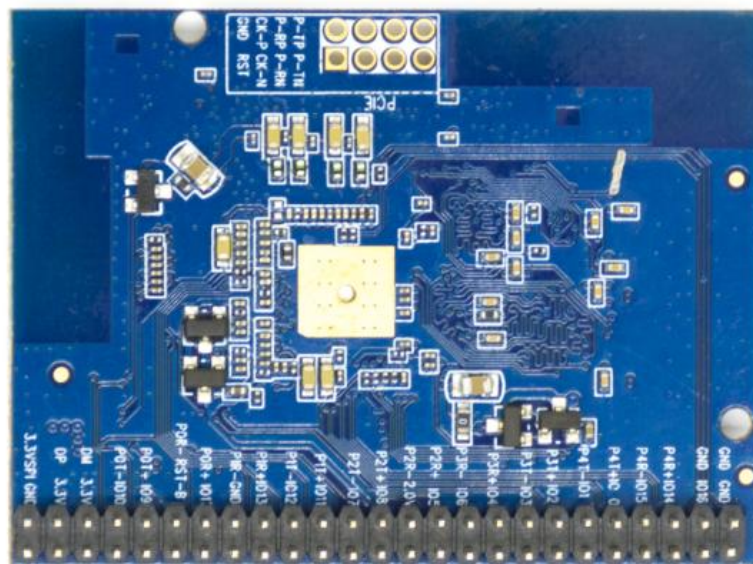
3 SIZE MARKING
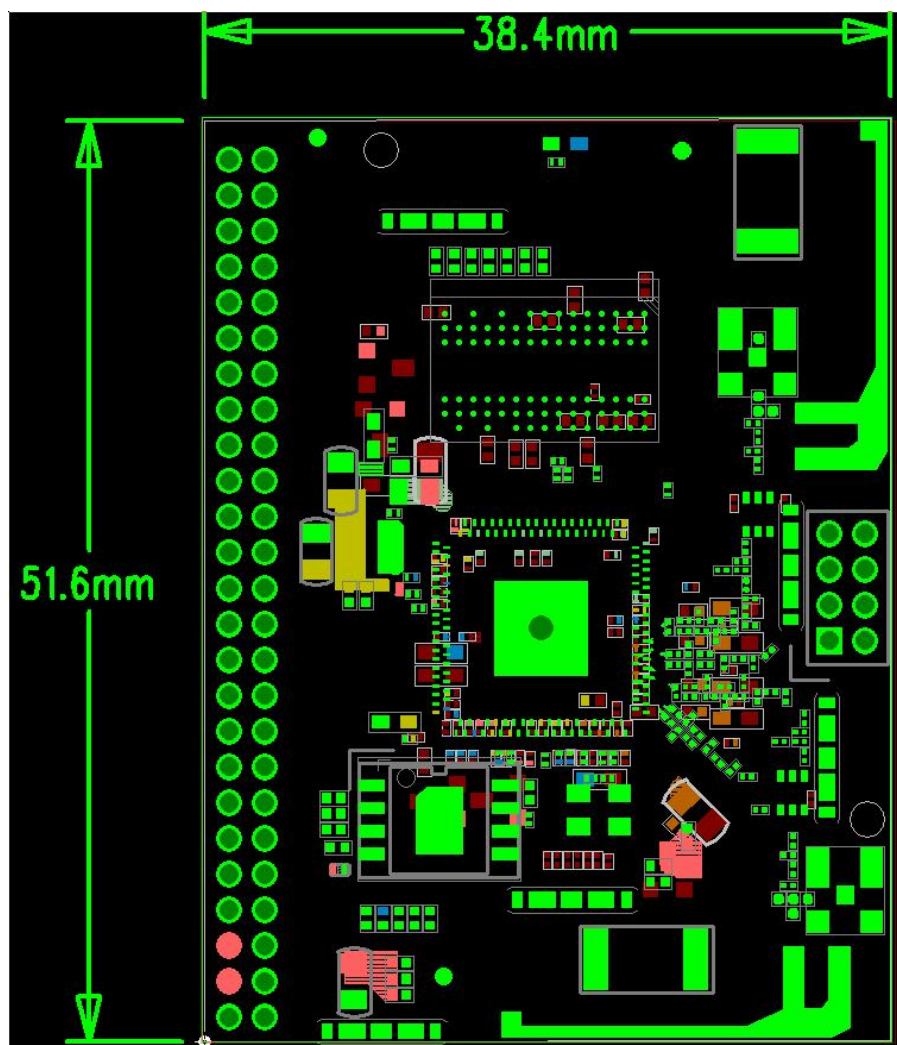
4 SPECIFICATIONS

Items	Contents
Wireless Standards	IEEE 802.11n, IEEE 802.11g, IEEE 802.11b
Frequency	2.412GHz - 2.472GHz
Signal Rate	11n: Up to 2x150Mbps(dynamic)
	11g: Up to 2x54Mbps(dynamic)
	11b: Up to 2x11Mbps(dynamic)
Wireless Modes	AP Mode, Router Mode , Repeater Mode，Bridge Mode
Wireless Security	64/128/152-bit WEP, WPA/WPA2, WPA-PSK/WPA2-PSK
WAN Type	Dynamic IP, Static IP, PPPoE, PPTP, L2TP
Port Forwarding	Virtual Server, Port Triggering, UPnP, DMZ
Dynamic DNS	DynDns, Comexe, NO-IP
Management	Access Control Local Management Remote Management
Certification	CE, FCC
Package Contents	Power Adapter Quick Installation Guide
System Requirements	Windows,MACOS,UNIX , Linux

5 RF HARDWARE PERFORMANCE

Item	type	measured parameters
Antenna 0	Frequency error	-20ppm < +20 ppm
	power	CCK 11M 16.0dbm OFDM 54M 13.5dbm MCS7(HT20) 13.5dbm MCS7(HT40) 13.0dbm
	EVM	CCK 11M -30.0db OFDM 54M -32.0db MCS7(HT20) -31.0db MCS7(HT40) -31.0db
	Reception Sensitivity	CCK 11M -85dbm OFDM 54M -65dbm MCS7(HT20) -62dbm MCS7(HT40) -61dbm

| Item	type	measured parameters
Antenna 1	Frequency error	-20ppm < +20 ppm
	power	CCK 11M 16.0dbm OFDM 54M 13.5dbm MCS7(HT20) 13.5dbm MCS7(HT40) 13.0dbm
	EVM	CCK 11M -30.0db OFDM 54M -32.0db MCS7(HT20) -31.0db MCS7(HT40) -31.0db
	Reception Sensitivity	CCK 11M -85dbm OFDM 54M -65dbm MCS7(HT20) -62dbm MCS7(HT40) -61dbm

6 ENVIRONAMENT

Power Supply	3.3V
Operating Temperature	0℃ ~ 50℃
Storage Temperature	0℃ ~ 70℃
Operating Humidity	10%~90% non-condensing
Storage Humidity	Storage Humidity: 5%~90% non-condensing

7 HARDWARE DESIGN NOTICE

NOTE：

1. All power supply pins (VCC3V3) are power input pin, in theory, the input 3.3V voltage in a pin on it, No.45 and No.47 pins together for power supply. recommended

2. Unused GPIO can empty, no need pull-up or pull-down.

3. The power supply voltage of GPIO is 2.62V, when the GPIO outputs high, the voltage is 2.62V, the low voltage is 0V.

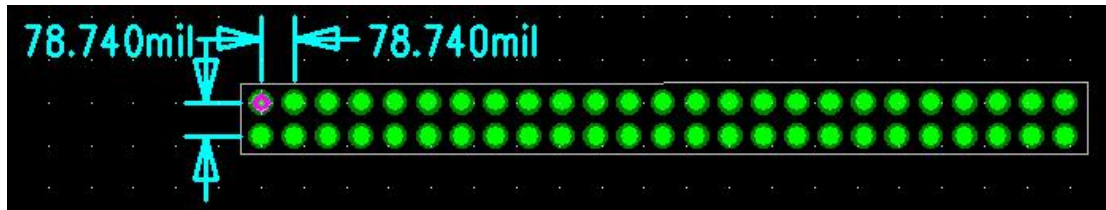4. Now, GPIO17 (RESET_N_SW) set to be RESET pins, If the control circuit of GPIO11 access to 3.3V, recommended circuit

Input mode：
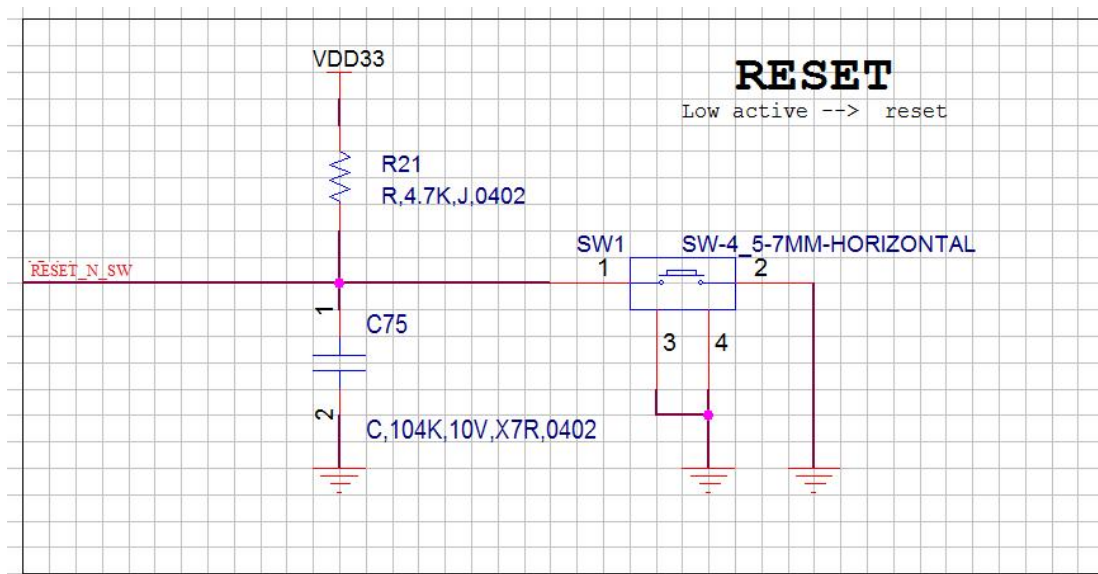
1. 'AVDD20'pin, Network transformer bias power output. The output of 2.0V, to offset the use of wired network transformer
2. network port(default)：P0、P1、P2、P3、P4Lan/Wan can be programmer

Pins Size：

2.0X2.0mm PIN Header

Bootstrap: