GAINSTRONG

Oolite V2.1 Module

Specification Version 1.0.4

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Revision	Date	Contents of Revision Change	Remark
1.0.1	2016-12-14	First release	
1.0.2	2016-12-15	Modify content	
1.0.3	2016-12-15	Add pictures	
1.0.4	2018-01-16	Update	James

1 PRODUCT OVERVIEW

General Description:

The Oolite V2.1 is a complete,small 802.11 b/g/n Wi-Fi Solution optimized for low-cost, and highly integrated AP and consumer electronic devices,the module integrates all Wi-Fi functionality in a package friendly to low-cost PCB design, requiring only a 3.3V power supply .

The module based on the AR9331 chip whichintegrates an 802.11n 1x1 MAC/BB/radio with internal PA and LNA. It supports 802.11n operations up to 72 Mbps for 20 MHz and 150 Mbps for 40 MHz channelrespectively,and IEEE 802.11b/g data rates.

The module support AP mode, client mode at the same time , and include mass serviceapplication software to reduce the research and design work of customer.

Applications Stage:

- Smart home network equipment
- Wireless WIFI device, unmanned aerial vehicle
- Dual band Router, Industry Controller and so on

Features:

- CPU: AR9331 with 400 MHz MIPS 24Kc
- RAM: 64MB DDR2 RAM (32MB optional)
- Flash: 16MB SPI NOR Flash(8MB/16MB optional)
- Wireless speed: 150Mbps
- USB: 1xUSB 2.0 master interface
- Power supply voltage: 3.3V
- Net Port: 1xWan Port,1xLan Port
- GPIO:18
- Antenna: built-in PCB and external antenna IPEX(optional)
- 25 MHz reference clock input
- Advanced power management with dynamic clock switching for ultra-low power modes

2 PICTURES

Top

Bottom

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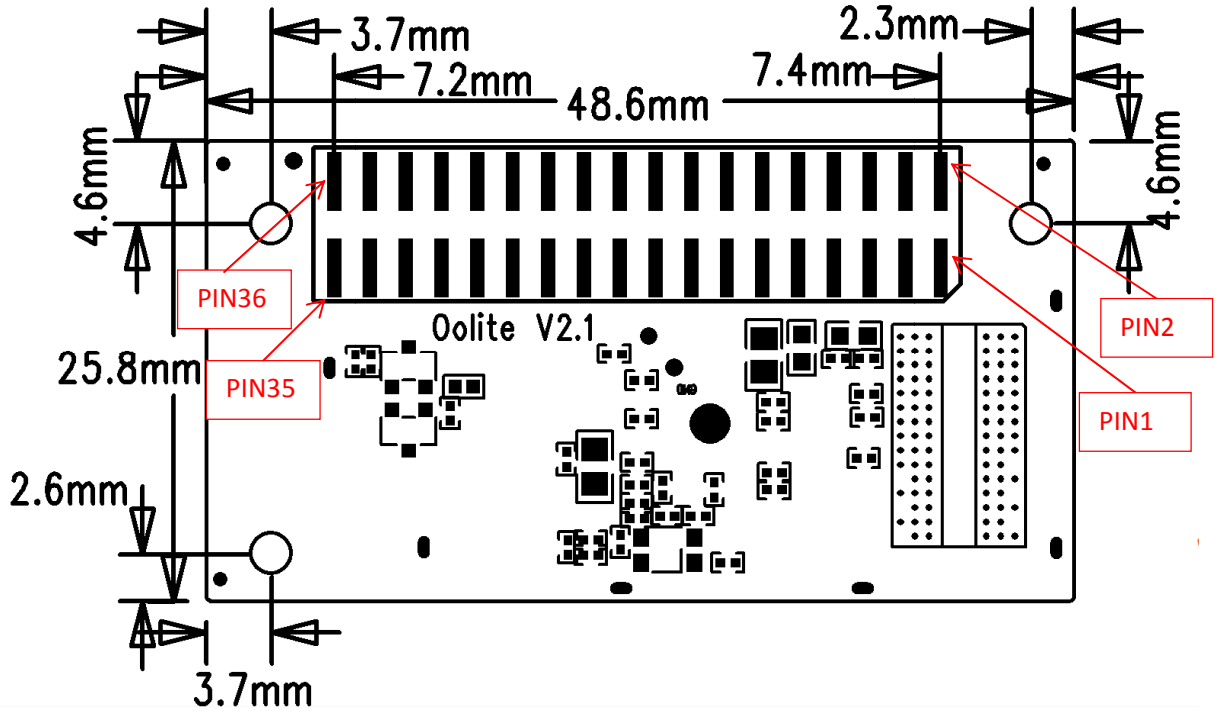
3 MECHANICAL

Dimensions (mm)	Length	Width	Height
	48.6 (Tolerance:±0.2mm)	25.8 (Tolerance:±0.2mm)	1.2 (Tolerance:±0.2mm)



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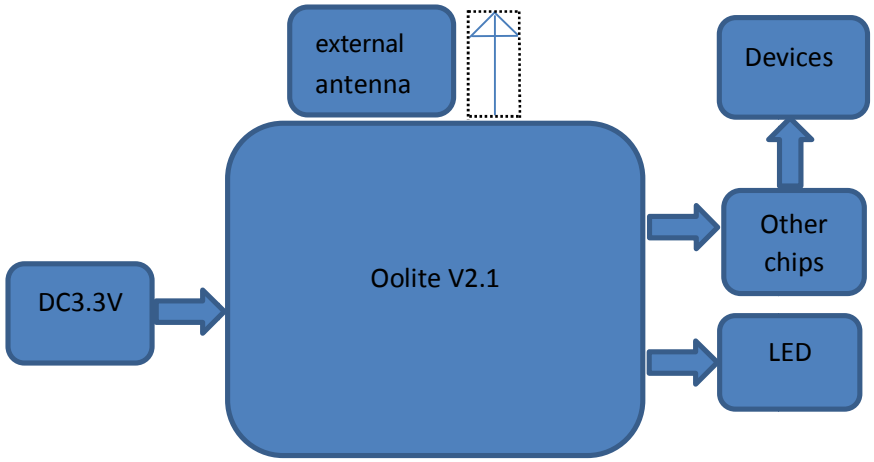
4 HARDWARE OVERVIEW

System Block Diagram

The general Hardware architecture is shown below Figure:



5 PIN DESCRIPTION

Pin No	Name	Description
1	GPO13(PU)/CFG	GPIO 13 (pull up) or configuration.
2	GPIO1(PU)/CFG/SPI_LCD_CS#	GPIO 1 (pull up) or configuration or SPI LCD chip select (low active)
3	GPO15(PD)/CFG/SPI_LCD_CLK	GPIO 15 (pull down) or configuration or SPI LCD clock.
4	GPO14(PD)/CFG/SPI_LCD_A0	GPIO 14 (pull down) or configuration or SPI LCD address output.
5	GPIO28(PU)/CFG	GPIO 28 (pull up) or configuration.
6	GPO16(PD)/CFG/SPI_LCD_DO	GPIO 16 (pull down) or configuration or SPI LCD data output.
7	+3.3V	System supply voltage.
8	+3.3V	System supply voltage.
9	UART_TX	UART transmit (debug use only)
10	UART_RX	UART receive (3.3V and debug use only)
11	TP1	GPIO23/SPDIF_OUT (GPIO 23 or SPDIF output).
12	TP2	GPIO20/I2S_SD or SLIC_FS_IN.
13	TP3	GPIO19/I2S_WS or SLIC_FS_OUT
14	TP4	I2S_CL (Stereo clock)
15	TP5	GPIO22/I2S_MICIN or SLIC_DATA_IN.
16	TP7	GPIO21/I2S_MCK or SLIC_DATA_OUT
17	GND	Ground
18	GND	Ground
19	P0_RX+	Ethernet receive positive .
20	P0_RX-	Ethernet receive negative.
21	P0_TX+	Ethernet transmit positive.
22	P0_TX-	Ethernet transmit negative.
23	USB_D+	USB data positive.
24	+2.0V	Regulated 2.0 V power supply;connects to the external PNP collector.
25	USB_D-	USB data negative.
26	GPIO27(PU)/I2C_SCL	GPIO 27 (pull up) or IIC serial clock.
27	GPIO8(PD)/LED_OUT	GPIO 8 (pull down) or LED output.
28	GPIO26(PU)/I2C_SDA	GPIO 26 (pull up) or IIC serial data.
29	GND	Ground
30	GND	Ground
31	GPIO6/JTAG_TDI/KB_INT#	GPIO 6 or keyboard interrupt (active low)
32	GPIO11(PD)/CFG/SPI_RGB_CLK	GPIO 11 (pull down) or configuration or SPI RGB controller clock.
33	GPIO12(PD)/CFG/SPI_RGB_DO	GPIO 12 (pull down) or configuration or SPI RGB controller data output
34	GPIO7/BUTTON_IN#	GPIO 7 or button input (active low)

35	HW_RESET#	System reset (active low).
36	UNNAMEDENT145	

6 ELECTRICAL CHARACTERISTICS

Absolute Maximum Rating				
Parameter	Symbol	Min	Max	Units
Power Supply Voltage				
3.3V	2.97	-0.3	3.63	V
GND	0	-0.3	——	V
GPIO Voltage				
VIH	——	0.7	——	V
VIL	——	0.3	——	V
VOH	——	2.44	——	V
VOL	——	——	0.1	V
GPIO Current				
IIH	——	——	10	uA
IOH	——	——	24	mA
Environment				
Storage Temperature	Tstg	-40	80	°C
Peak Reflow Soldering Temperature <10s	Tpeak		260	°C
Humidity			95	%

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7.ENVIRONAMENT

Operating Temperature	0℃ ~ 40℃
Storage Temperature	-40℃ ~ 70℃
Operating Humidity	10%~90% non-condensing
Storage Humidity	Storage Humidity: 5%~90% non-condensing